Guide for Implementation of Helping Babies Breathe®

Strengthening neonatal resuscitation in sustainable programs of essential newborn care

Helping Babies Breathe®

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Guide for Implementation of Helping Babies Breathe® (HBB): Strengthening neonatal resuscitation in sustainable programs of essential newborn care.

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Helping Babies Breathe® (HBB) aims to help meet Millennium Development Goal 4 targets for reduction of child mortality by addressing one of the most important causes of neonatal death: intrapartum-related events (birth asphyxia). HBB is an evidence-based educational program which teaches the simple steps that effectively resuscitate the majority of infants not breathing at birth.

Helping Babies Breathe is designed to coordinate with other interventions in a package selected to improve neonatal and maternal health. HBB can be used as the resuscitation component in courses teaching Essential Newborn Care (WHO) and courses in midwifery skills. HBB can be used at all levels in the health system. It extends resuscitation training to first-level health facilities and health workers in resource-limited settings, where these skills are most lacking. It also can be used in higher-level health facilities, including tertiary facilities, where it complements, but does not replace, comprehensive resuscitation programs such as the Neonatal Resuscitation Program (NRP). Both HBB and NRP teach the same first steps in resuscitation, but NRP also includes the use of supplemental oxygen, chest compressions, intubation, and medications. .

HBB uses a learner-centered educational methodology with emphasis on mastery of key skills. Pictorial, color-coded print materials and a low-cost, high-fidelity neonatal simulator engage learners and empower them to continue learning in the workplace. HBB encourages frequent practice, using job aids, simulators, and mannequins available in the workplace to maintain skills.

As an integral element of maternal and neonatal care, HBB can act as a catalyst for broader improvements in these services, particularly at the periphery of the health system.

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I. Purpose, Audience, and Objectives of the Implementation Guide

The purpose of this resource is to provide guidance on implementation of Helping Babies Breathe (HBB) as a program for neonatal resuscitation in low-resource settings, and as a catalyst for advancing sustainable national programs for newborn and maternal health. HBB seeks to improve and expand existing neonatal resuscitation efforts in the context of essential newborn care. HBB is designed to be integrated into existing newborn or maternal and neonatal health training, but it can be implemented as a stand-alone program, depending on national priorities.

Who Should Use This Guide?

This guide is for national planners and policymakers, program managers, and implementation partners, including those who will conduct training with the HBB educational program.

- ***Policymakers and planners*** will find key information for improving their existing neonatal resuscitation training and services in Section II.
- ***Program managers,*** as well as ***master trainers and facilitators*** in Helping Babies Breathe can use Section III to help plan, implement, monitor, and evaluate the program.
- Sections IV and V provide suggestions useful to ***all users*** regarding monitoring of coverage and evaluation of impact as the program reaches scale and sustainability.

What Will Users of This Guide Gain?

- Users will understand why neonatal resuscitation is important and how it can be linked to essential services for mother and baby.
- Users will be able to facilitate a systematic, rapid situation analysis to identify neonatal resuscitation gaps and needs, opportunities and platforms, stakeholders and resources.
- Users will understand the components needed to develop a strategic plan among partners and stakeholders to implement and/or strengthen newborn resuscitation to sub-national/national level coverage.
- Users will have a basic understanding of the HBB educational program, target audience, materials, and methods.
- Users will be able to monitor and evaluate the process of implementation and outcomes of neonatal resuscitation.
- Users will be able to plan for scale-up and sustainability of the program at a national level.

How Should Users Access the Materials in This Guide?

This manual complements the HBB package of training tools, which includes:

- Facilitator Flip Chart
- Learner Workbook
- Action Plan Wall Chart
- Neonatal Simulator or Mannequin

The guide cross-references these materials and follows their design and color-coding. Each section in the guide begins with a summary of its objectives, tools, and target audience. Tools can be accessed through hyperlinks in the text or as a separate pdf available at www.helpingbabiesbreathe.org. Questions about the guide, other HBB materials, or their content can also be submitted via that website.

II. Developing a Sustainable HBB Program

A. Neonatal resuscitation in the context of essential services for mother and baby

Who should read:
- ☐ *Policymakers*
- ☐ *Program Planners*

Objectives of section II:
- ☐ *Users will understand HBB in the context of essential services for mother and baby*
- ☐ *Users will begin to develop strategies for stakeholder engagement, implementation, and sustainability, based on a situation analysis*

Tools in this section:
- ☐ *Video and Powerpoint overviews of HBB program*
- ☐ *Relevant websites*
- ☐ *Links to tools for planning process and monitoring outcomes*

Helping Babies Breathe is an educational program in neonatal resuscitation for birth attendants in resource-limited settings. The goal of Helping Babies Breathe is to prepare birth attendants to care for healthy newborns and those who are not breathing at birth. Ideally, at every birth, there should be a person who can provide essential services to both mother and infant and who is skilled and equipped to help babies breathe. Helping Babies Breathe is focused on the Golden Minute® following birth when stimulation to breathe and ventilation with bag and mask can save a life.

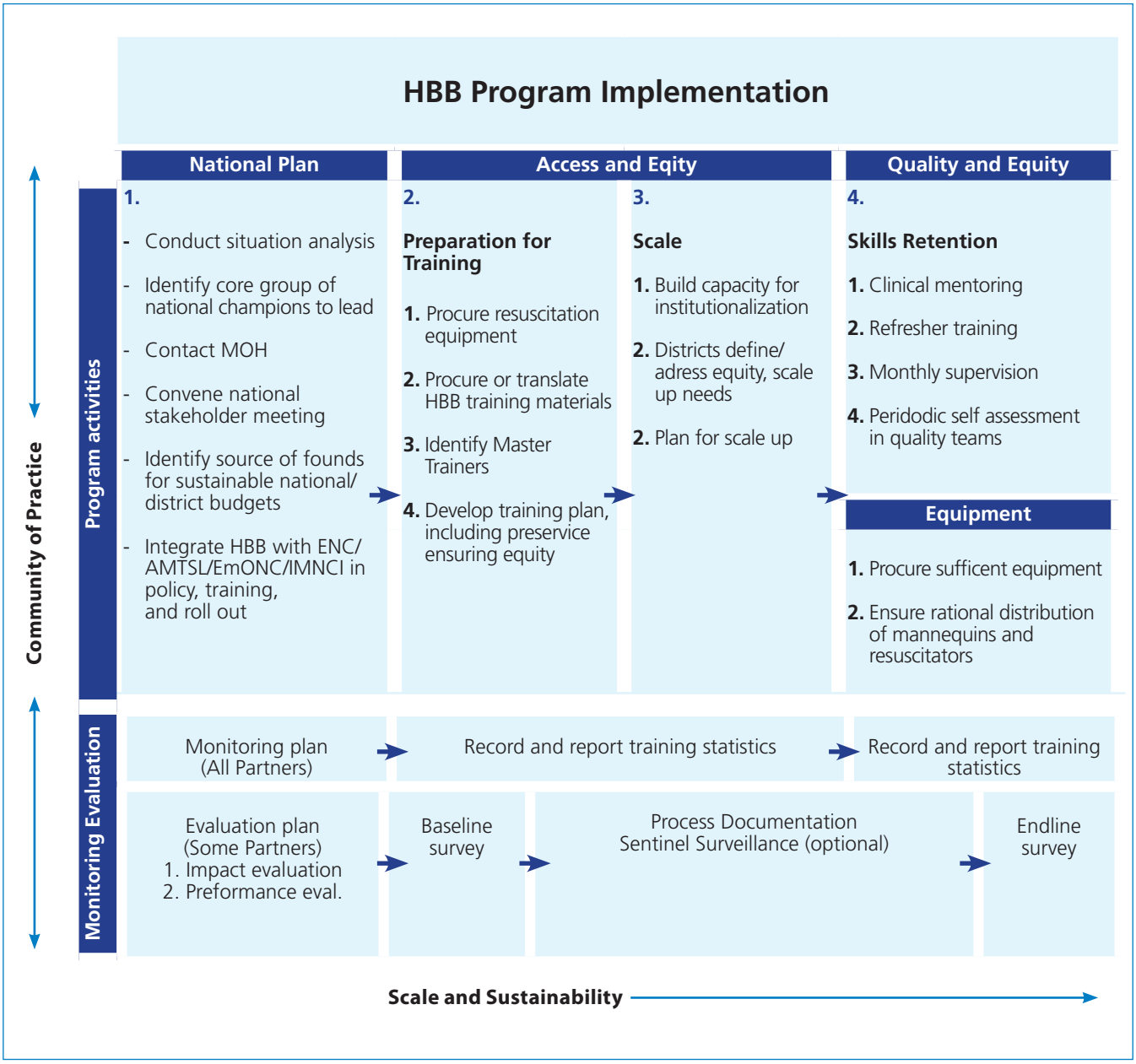
HBB is an integral part of a comprehensive package of obstetric, intrapartum, and postpartum care and referral for pregnant women, new mothers, and neonates. Planning for HBB needs to occur in the context of national strategies and training programs for these services. Planning needs to be grounded in the local context of pregnancy, birth, and delivery.

Births may occur at home with a minimally trained provider or in a well-equipped facility where personnel can provide comprehensive emergency services, including cesarean sections and neonatal specialty care. HBB is designed with educational flexibility to span this continuum as determined by countries' health systems. HBB prepares birth attendants with a variety of experience levels to resuscitate newborns who are not breathing. In order to reduce the number of infants who die or sustain life-long injury due to intrapartum events (Halloran DR, 2008), birth attendants at every level of the health system need to both learn and maintain resuscitation skills over time. The HBB program is designed to fill this coverage gap through its simple, low-cost training materials, job aids, and simulation methods.

For 99 percent of babies, simple interventions can be lifesaving. All babies need assessment and routine care at birth – cleanliness, warmth, early breastfeeding. For most, such simple care is enough. Among the 10-20 percent of babies who do not breathe at birth, many will respond to drying and warmth, plus clearing the airway and specific stimulation to breathe. Only a small percentage of newborns (an estimated 3-6 percent) will require bag and mask ventilation, and less than 1 percent of babies require advanced methods of resuscitation, such as chest compressions and medications.

By focusing on the timely delivery of the essential interventions of drying, warmth, clearing the airway, stimulation to breathe, and bag and mask ventilation, most babies who are not breathing at birth can be saved. A recent randomized, controlled trial of training to provide such interventions in facilities and in the community showed a reduction in stillbirths, suggesting improved recognition of babies who are not breathing, but who can respond to simple measures (Carlo WA 2010). Analysis of seven facility-based studies estimated that a neonatal resuscitation educational intervention reduced the neonatal mortality rate between 17 and 43 percent (Wall SN 2009). A summary of similar interventions focused at the community level showed 15–29 percent reduction in the perinatal mortality rate (Wall SN 2009).

The figure below outlines the framework for planning a sustainable HBB intervention.



B. Building Consensus and Planning for Sustainability

Stakeholders in Creating a Sustainable Neonatal Resuscitation Program	
Groups and Organizations	**Individuals**
Ministries of Health, Education, Labor, Women and Gender, Finance	Key community leaders
Professional medical, midwifery, nursing, and public health organizations, including private-sector providers	Birth attendants and community health workers providing prenatal/intrapartum/postnatal care
Community groups dealing with health	Pregnant/new mothers and their families
Maternal-Child Health Programs (governmental, NGO, multi- and bilateral)	Donors
Pre- and in-service training programs (universities, technical schools, government training programs)	Specialists in monitoring and evaluation, training quality/standards, health information management, and information technology
Health research and educational institutions	Leading academicians
Public and private media	Societal leaders/spokespersons

1. Identification of stakeholders at all levels

Key stakeholders need to engage from the outset in order to develop a comprehensive, sustainable program operating at scale. Planners need to provide orientation and background to the stakeholders that will enable them to understand the importance of neonatal resuscitation. From the beginning, emphasis should be on the integration and incorporation of HBB into national guidelines, strategic plans, and long-range budgeting. The persons and groups involved as stakeholders will vary in perspective and commitment, and many will be working together for the first time. However, broad representation from policy makers to community members is necessary to assure that neonatal resuscitation is available in all delivery sites, particularly those at the periphery of the health system where most preventable deaths occur.

2. Mobilization of national stakeholders to plan for sustainability

Obtaining appropriate government approvals to implement a pilot HBB training program is only the first step to building a sustainable program that operates at scale under the leadership of national health authorities. To achieve this long-range goal, it is critical to convene the stakeholders needed for program success as early as possible. Identifying the appropriate national "home" for HBB is essential for institutionalization. An early consensus-building meeting officiated by a credible national health leader can immediately build ownership and put neonatal resuscitation in the context of national health priorities and other essential maternal-newborn services and training programs. It can serve to initiate working groups for introduction, scale-up, and sustainability.

Occasional, focused stakeholder meetings consolidate commitment. Such meetings might include dissemination of situation analyses and program findings and local examples of success. Dissemination activities can be critical in securing commitment to scaling up. (See box below.) They can forge agreement on extension strategies and secure support and resources for neonatal resuscitation/immediate newborn care.

Dissemination of Local Pilot Study Results

Secures Commitment for National HBB Scale Up in Bangladesh

Bangabandhu Sheikh Mujib Medical Hospital and Save the Children (through the USAID-funded Maternal and Child Health Integrated Program [MCHIP]) conducted a pilot study to train 300 skilled birth attendants on neonatal resuscitation in Bangladesh. At a national stakeholder meeting on September 5, 2010, data showed that skilled birth attendants can be trained to successfully resuscitate newborns at all levels of the health system, including the community. At the meeting, a community-based birth attendant, Jubaida, demonstrated the bag and mask resuscitation skills she was trained in that saved the life of a baby girl, Shifa.

3. Orientation to the Helping Babies Breathe educational program

The following hyperlinks lead to two resources that users of the implementation guide can adapt to present the HBB program to policy makers and program planners. These include an annotated PowerPoint presentation describing the development of the program and its elements and a 45-minute video focusing on the role of simulation in education, implementation, and community participation. (Please note, the video will take several minutes to load.) Additional information about the HBB program can also be found at www.helpingbabiesbreathe.org.

Guide users may consider joining the Healthy Newborn Network (www.healthynewbornnetwork.org), with links to a range of agencies, resources, and experiences supporting global newborn health.

The Implementation Guide and accompanying tools are available on the Helping Babies Breathe website as well as the HBB Community of Practice website http://www.k4health.org/toolkits/hbb-community/implementation-guidance. Information on joining the community of practice is available on the web page. HBB implementers are also encouraged to share lessons learned, innovations, and results on this site.

C. Conducting a Situation Analysis of Neonatal Resuscitation

HBB builds on existing national programs and structures, such as Maternal and Neonatal Health task forces, addressing gaps and using available resources to strengthen neonatal resuscitation. Many countries are implementing a pilot HBB program to test strategies and materials at the same time they plan for eventual program extension. To design the initial phase, planners and partners should conduct a situation analysis with respect to neonatal resuscitation/immediate newborn care. Such an analysis would typically include:

- ***Policy review:*** national targets and goals, strategy, standards/guidelines, provider credentialing and re-credentialing, facility accreditation
- Review of neonatal resuscitation training programs: in-service or pre-service national training programs and curricula for different cadres in maternal and neonatal care, NGO and multi/bilateral programs, basic or advanced resuscitation programs, training quality of each program (duration, competency-based outcomes, practicum component, refresher training, post-training support)
- Identification of sites providing neonatal resuscitation: the full continuum from tertiary/referral hospital to trained community birth attendants
- Identification of need: a thorough description of delivery sites and attendants, service gaps and inequities
- Availability of equipment for neonatal resuscitation: by site/level, health facility assessment system for availability/functionality, supply chain management/ local vendors
- Description of monitoring and evaluation systems: tracking process indicators, (e.g., providers trained) and outcomes of resuscitation events; data sources for births attended by personnel skilled in resuscitation, availability of basic resuscitation equipment; reporting system for stillbirths and neonatal mortality, cause-specific mortality
- Lessons learned from previous efforts: experience gained from implementation or scale up of neonatal resuscitation or other neonatal care programs, at a national or sub-national level
- Financial resources available: inclusion in annual budgeting process at national, regional, and district levels; MDG4 initiatives; global, regional, and national initiatives supporting neonatal care; commitment of national partners (e.g., donors, NGOs, professional associations)

Once completed, the findings of the situation analysis should be disseminated to all stakeholders. Local examples of success and the role for Helping Babies Breathe in moving forward can form the basis for further discussion.

A Red Letter (Birth)day for All Newborns in China

China is aggressively addressing birth asphyxia, one of the three leading causes of death in Chinese children under five years of age (Rudan I 2010). The ambitious goal of the Chinese Neonatal Resuscitation Program, started in 2004, is to have at least one person trained in neonatal resuscitation available for every birth in the country. Partners ranging from national to local government, technical and donor partners, and a variety of professional associations planned from the outset to institutionalize pre-and in-service resuscitation training of all birth attendants. To date, twenty provinces involving more than 97 percent of existing maternity services now have strong educational programs with broad coverage. The other ten provinces and autonomous regions have now joined the effort in order to reach the goal of every birth attendant trained.

A "Red Letter" policy edict issued by the China Ministry of Health changed the job description of midwives to include neonatal resuscitation. Instead of waiting for the pediatrician, who may be several minutes away when a baby un-expectedly does not breathe well, midwives now have the authority and skills to begin resuscitation immediately. Updated training in neonatal resuscitation is now a part of licensure and re-licensure for all clinical obstetricians and midwives.

D. Developing a Strategic Plan for Neonatal Resuscitation

With leadership from the national neonatal health program, working groups of stakeholders can use results from the situation analysis to develop or update elements of a strategic plan to strengthen neonatal resuscitation. ***Tool 1:*** Implementation matrix provides a framework for integration of HBB into national strategic planning, developing the goals and elements of a training plan, and identifying process and outcome measures of training and neonatal health.
Key components in a national strategic plan include:

1. Program implementation

a. Policy and advocacy
Supportive policies, service standards, and guidelines need to be in place to move from pilot programs to scale-up. Written national guidance on all elements in the strategic plan needs to be actively disseminated at all levels. UN health agencies and other donors, professional organizations, and Ministries of Health and Education can assist with policy development and dissemination in all sectors that support maternal and newborn health services.

b. Training
The situation analysis may result in a decision to amend current neonatal resuscitation practices through task-sharing, the provision of resuscitation equipment and training at lower levels in the system, etc. Objective measurement of neonatal resuscitation skills among those already providing neonatal care may indicate the need for further training to strengthen capacity. The plan for training should include:

- Interim and long-term goals and timelines for numbers, type, and location of trainees to be reached through pre-service and in-service training
- Sanctioned training package(s) and any necessary adaptations and/or translations
- Training sites and personnel
- Establishment of procurement chain for training equipment/supplies
- Standards for successful course completion, refresher training, assessment of skill retention, supervision
- Process for inclusion of training plan in national, regional, and district plans and budgets

Helping Babies Breathe is designed to serve as the resuscitation component of training packages in midwifery and neonatal care. In order to achieve reduction in neonatal mortality, neonatal resuscitation must be practiced in conjunction with other essential skills in midwifery and immediate neonatal care. For example, Helping Babies Breathe can be used as the resuscitation module in Essential Newborn Care (ENC) and midwifery curricula. HBB can also stand alone as a focused in-service training where this particular need is identified.

In Tanzania, to accelerate and sustain reductions in neonatal mortality, districts include in-service HBB trainings in their annual plans and budget for them.

c. Clinical services
The strategic plan should address any gaps affecting continuous availability of services identified during the situation analysis. These might include:

- Provision of resuscitation equipment to priority sites
- Plans to build and sustain an adequate workforce (including task sharing) to improve the coverage of skilled attendance at birth
- Strengthening of capacity in sites providing referral and specialty care
- Establishment of procurement chain for clinical equipment/supplies
- Process for inclusion of resuscitation equipment and services of trained birth attendants in national, regional, and district plans and budgets

2. Monitoring and evaluation of process and outcomes

The implementation plan should include periodic checks to determine if activities are on track to achieve objectives and to make corrections if they are not. Components to include in the monitoring and evaluation plan include:

- ***Regulations, service guidelines, and compliance:*** Regional and district health administrators should oversee monitoring exercises with health facility directors, staff, and clients to supervise the quality of services and address needs as they arise.
- Training of health care providers: In addition to monitoring process indicators, such as numbers and proportion of providers trained, planners need to specify and measure criteria for successful completion of training, supervise the training process, and put in place a system for post-training supervised clinical experience in the workplace.
- ***Geographic coverage: Monitoring which facilities*** are equipped and have staff trained in neonatal resuscitation helps ensure that this intervention is not limited to certain geographic areas.
- ***Consistent availability of quality services:*** Monitoring systems for ensuring continuity of equipment supply, trained staff at delivery sites, and staff skills retention over time help ensure service availability and support ongoing improvement efforts.
- ***Clinical outcomes:*** To determine the effect of the program on saving newborn lives, planners need to select and measure outcome indicators (such as proportion of births attended by a trained provider and number of neonatal asphyxia births/deaths resuscitated by trained service providers).
- ***Building capacity for birth registration:*** Improved ability to count births and deaths and measure progress towards universal coverage of deliveries by skilled attendants is necessary to project workforce and training needs.
- Integrating newborn resuscitation indicators in the national Health Management Information System: Information from health facilities on birth registration, neonatal resuscitation, early postnatal care, and clinical outcomes will be necessary to track national progress in providing life-saving newborn care. Tracking complications and deaths by cause will also strengthen monitoring.
- ***Mechanisms to translate health outcome statistics into quality improvement:*** Identification of preventable deaths can help direct training and use of healthcare resources. Routine clinical monitoring systems, including case reviews, neonatal and maternal death audit, and confidential enquiries can provide feedback to improve training, supervision, and quality of service delivery.

Planners and evaluators should be aware that neonatal mortality rates may initially appear to rise with introduction of neonatal resuscitation due to more accurate enumeration of deaths.

Tools to assist with monitoring and evaluation of process and outcomes are presented and discussed in more detail in Sections III. Implementation and IV. Monitoring and Evaluation. These tools may be used during strategic planning as a basis for discussion, modification, and achieving consensus on specific measures to be used nationally and regionally.

3. Scale-up and sustainability

Efforts to reduce prematurity, infection, and asphyxia are the key elements of life-saving newborn care and need to be integrated into national child health strategies and goals. Including program elements in facility, district, regional, and national work plans and budgets is the best way to ensure coverage and continuity.

Once the training package including neonatal resuscitation is in place, planners can build the network of facilitators until it reaches every clinical service site. Planners should include periodic renewal of certification in resuscitation in the national service standards and incorporate resuscitation refreshers as part of in-service training programs. They should plan to update resuscitation training packages periodically, as materials are revised to remain in accordance with revisions to the International Liaison Committee on Resuscitation guidelines (http://www.ilcor.org). They also should plan to identify and prioritize additional maternal/newborn health initiatives based on changes in outcome indicators.

III. Implementation of Training in Helping Babies Breathe

A. Strategic planning

Who should read:

- ☐ *Master trainers*
- ☐ *Facilitators*
- ☐ *Program managers*

Objectives of section II:

- ☐ *Users will be able to plan, implement, monitor and evaluate the HBB training program*
- ☐ *Users can identify the qualifications and respon sibilities of planners and trainers in the program*

Tools in this section:

- ☐ *Tool 1: Implementation matrix*
- ☐ *Tool 2: Target audiences and curriculum*
- ☐ *Tool 3: Translation and in-country printing*
- ☐ *Tool 4: Suggested guidelines for adapting and pre-testing HBB materials*
- ☐ *Tool 5: Sample course outline for master trainer and facilitator workshops*
- ☐ *Tool 6: Sample course outline for provider workshop*
- ☐ *Tool 7: Preparing the neonatal simulator*
- ☐ *Tool 8: Understanding the educational design of HBB*
- ☐ *Tool 9: Considering the health system, culture, and environment*
- ☐ *Tool 10: Developing appropriate teaching methods*
- ☐ *Tool 11: Deciding on supplemental content*
- ☐ *Tool 12: Timeline for course preparation*
- ☐ *Tool 13: Assembling the teaching materials*
- ☐ *Tool 14: Reviewing the practice exercises*
- ☐ *Tool 15: Practicing with the neonatal simulator or mannequin*
- ☐ *Tool 16: HBB course evaluation*
- ☐ *Tool 17: Monitoring numbers trained*
- ☐ *Tool 18: Checklists for supervisory visits*
- ☐ *Tool 19: Monitoring impact on practice and neonatal outcomes*

Helping Babies Breathe is an educational program in neonatal resuscitation for birth attendants in resource-limited settings. The goal of Helping Babies Breathe is to prepare birth attendants to care for healthy babies and babies who are not breathing at birth. Ideally, at every birth, there should be a person who is skilled and equipped to help babies breathe.

For a HBB skilled person to attend every birth requires:

- Strategic planning (refer to Section II. D).
- Training of master trainers and facilitators
- Facilitation of learning sessions for birth attendants
- Continuation of learning in the workplace

In addition to offering guidance for strategic planning at the national level, this guide for implementation provides a framework for those who will directly use the educational program Helping Babies Breathe. The roles of these direct users – program managers and mentors, master trainers (including national faculty and regional/district trainers), and facilitators – will be defined in the following sections.

User	Implementation Step
Program Managers and Mentors	• Strategic planning • Planning for training of master trainers • Adaptation and integration of materials, if necessary • Support for reporting of all training workshops on the Helping Babies Breathe website • Monitoring process and outcomes and using data to improve program
Master trainers (national faculty with competence in both HBB content and skills-based training and regional/district trainers)	• Training of other trainers and facilitators • Monitoring process and quality of training
Facilitators	• Training of birth attendants • Continuation of learning in the workplace

1. Planning context

Success in implementing a large-scale training program will be more likely if certain characteristics are met:

- Neonatal care is a political priority.
- Skilled attendance at birth is part of health policy.
- There are funding commitments to support the program.
- There is collaboration among interested organizations.
- There is coordination among interested organizations, the government, and the health system.
- Health authorities and birth attendants themselves are seeking training.
- Local au thorities and birth attendants have ownership of the training process.
- Training and the necessary supplies/equipment to put the training into use are available simultaneously.
- Outcome measures are planned in advance, collected as training is conducted, and data are used to give feedback and guide management of implementation.
- Planning for sustainability occurs from the beginning.

2. Planning process

As outlined in Section I, developing a sustainable HBB program begins at the national level with building consensus, conducting a situation analysis of neonatal resuscitation, and developing a strategic plan among stakeholders. Program managers from stakeholder groups should take part in strategic planning as well as implementation. One or more mentors for HBB should be involved in strategic planning at the national level. A mentor has specific training as a master trainer in HBB and qualifications to serve as an advocate for neonatal health, a champion for training in neonatal resuscitation, and a leader of HBB implementation. Such a mentor may be designated as a national coordinator for HBB.

Role of Program Managers and Mentors in Planning and Training

Program Managers' and Mentors' Goal: develop a plan for implementation of the educational program and measurement of outcomes; oversee training of master trainers

Qualifications:
- Experienced leader in the field of neonatal care/maternal and child health
- Knowledge of stakeholders
- Ability to collaborate with health authorities and engage representatives of various groups of birth attendants receiving training in design of the program
- Training and/or experience in learner-focused, skills-based education

Responsibilities:
Work with relevant health authorities to:
- create a national/regional plan for training and monitoring of outcome measures
- Adapt and translate training materials, maintaining their technical integrity
- Identify and oversee training of master trainers and provide supportive supervision
- Oversee reporting of educational program data nationally
- Ensure monitoring and evaluation data is collected, analyzed, and used for program adjustment

Planning Step 1: Continue the strategic planning process by completing the linked planning tool:
Tool 1: Implementation matrix.

Program managers, HBB mentors and others tasked with implementation can complete this matrix for locations at the sub-national level by incorporating information from the national strategic plan together with local specifics. Tool 1 considers the context for planning training. The tools included in this guide build on each other, so once completed, they should be consulted as the planning process continues.

Two important parts of implementation planning are identifying the target audiences and deciding on the curriculum.

Helping Babies Breathe teaches the skills needed by health care workers throughout the health system who provide care to newborns. Several different types of training are possible:

- In-service training – improving the performance of birth attendants already at work in health posts, health clinics, primary care centers, and district hospitals. Such attendants might include:
  - Physicians, medical officers
  - Midwives, nurses, auxiliary nurse midwives
  - Community health workers and community-based midwives
- Pre-service training – equipping students with knowledge and skills before entering the workplace
  - Medical students and residents in general medicine, pediatrics, and obstetrics
  - Medical graduates entering their year of government/community service
  - Nursing and midwifery students
  - Community health students
- Training new cadres of health workers and birth attendants – extending training in neonatal resuscitation to new groups to expand the workforce
  - Specialized maternal-child health workers
  - Technicians
  - Paramedics
  - Clinical associates

Helping Babies Breathe can be offered as an independent educational program, always in the national context of emergency obstetric and neonatal care, or together with other training. The HBB training package may vary from one group to another. HBB can function as:

- An expanded resuscitation module of Essential Newborn Care
- A complement to the neonatal module of Integrated Management of Childhood Illness
- Part of midwifery training for skilled birth attendants (Integrated Management of Pregnancy and Childbirth)
- An element in a program highlighting maternal and neonatal topics of local importance

Planning Step 2: List the target audiences and other topics to be presented on the linked worksheet: ***Tool 2:*** Target audiences and curriculum.

Program managers and HBB mentors should oversee the process of translating and adapting the training materials if necessary to meet local needs. Managers should review translations for accuracy and relevance and submit them for approval by the copyright holder for HBB, the American Academy of Pediatrics (see ***Tool 3:*** Translation and in-country printing). Once approved, translated materials should be pre-tested with the intended target audience before use. Adaptations may also be necessary at the national or subnational level. ***Tool 4:*** Suggested guidelines for adapting and pre-testing *Helping Babies Breathe* materials provides guidance in these areas.

An example of adapted materials can be found in the Training section on www.hbb-community.org. ***The adapted checklists for OSCE A and B include more details on integration with active management of the third stage of labor (AMSTL) and ENC protocols.***

Once the target audiences are known, program managers and HBB mentors should begin to build the training cascade by identifying candidates for the role of master trainer at the national faculty level. National faculty (the most highly qualified master trainers, competent in both HBB content and competency-based training skills) will be responsible for training regional/district trainers, who in turn will train facilitators and providers. The training

Role of Master Trainers in Preparing Other Trainers and Facilitators

Program Managers' and Mentors' Goal: train additional trainers and facilitators and monitor process and quality of training

Qualifications:

- Experienced in learner-centered, skills-based education and content expert in neonatal resuscitation
- Successful completion of training courses in HBB content and training skills
- Certified by an HBB master trainer after co-training at least once
- Knowledgeable of work circumstances of target group to be trained
- Proficient in reading English or translated materials

Responsibilities:

- Identify and train regional/district trainers and facilitators
- Explain scientific principles
- Equip facilitators to practice learner-centered techniques.
- Help structure continued learning in the workplace
- Provide supportive supervision and feedback to trainees
- Report training workshops on Helping Babies Breathe website

cascade will be customized in each country according to geography, density of delivery services, and target groups to receive training. Program managers and HBB mentors will serve as monitors of quality at each step in the training cascade, including supportive supervision and regular feedback to lead trainers. Trainers at all levels – national, regional, and district – must focus on achieving good learning results in order to attain the goal of birth attendants who can resuscitate a baby who is not breathing.

Master trainers are responsible for preparing other trainers in the cascade. Master trainers may be responsible for training regional/district trainers, who in turn train facilitators to use the educational methodology of Helping Babies Breathe with birth attendants. Limiting the levels in the training cascade may help preserve the fidelity of program implementation. Master trainers should be encouraged to participate in training of facilitators at the local level and to serve directly as facilitators of learning for birth attendants in their own health facilities. In addition to thorough understanding of the content of Helping Babies Breathe, master trainers need skills in adult learning that include:

- Understanding the educational design of the course materials
- Emphasis on practice to integrate knowledge and skills into performance
- Promotion of active learning and continued learning and empowerment of learners
- Localization and adaptation of course content
- Methods for evaluation

Master trainers also monitor the process and quality of training throughout the training cascade and serve as the link between implementation at the local level, and program managers and HBB mentors at the national level.

Role of Facilitators in Training Birth Attendants and Promoting Continued Learning

Program Managers' and Mentors' Goal: to prepare and monitor birth attendants so that they can successfully resuscitate babies who are not breathing at birth

Qualifications:

- Experience in care of newborns
- Aptitude for teaching and facilitating small groups
- Ability to engage and confirm learning of participants with various ability levels
- Successful completion of HBB training course as provider
- Successful completion of HBB training course for facilitators
- Certified by an experienced HBB trainer after co-training at least once

Responsibilities:

- Plan courses and select participants and other session facilitators
- May serve as course leader
- Present the Facilitator Flip Chart material – lead discussion and moderate the experience of learners, provide cultural interpretation, localization
- Demonstrate and practice skills with small groups of learners
- Evaluate courses and learner performance
- Prepare participants for continued learning in the workplace
- Monitor trainee performance over time, as designated in national plans
- Report training workshops on Helping Babies Breathe website

Facilitators have direct responsibility for training birth attendants using Helping Babies Breathe, although master trainers may also train birth attendants. Facilitators need to have a thorough understanding of the content of HBB and skills in the techniques of adult learning, as outlined above for master trainers. The goal is to prepare birth attendants so that they can successfully resuscitate babies who are not breathing at birth.

Whether the course leader presents the flip chart material and demonstrates skills or all course facilitators do this in small groups will depend on the experience level of trainers and the national training plan. Some countries allow three days (or 24 hours) to train master trainers (who are experienced trainers) in HBB content and two days (16 hours) to train facilitators. If budget does not allow for this amount of time, planners may need to compensate with more intensive post-training mentorship.

Planning Step 3: Initiate the training cascade in Helping Babies Breathe.

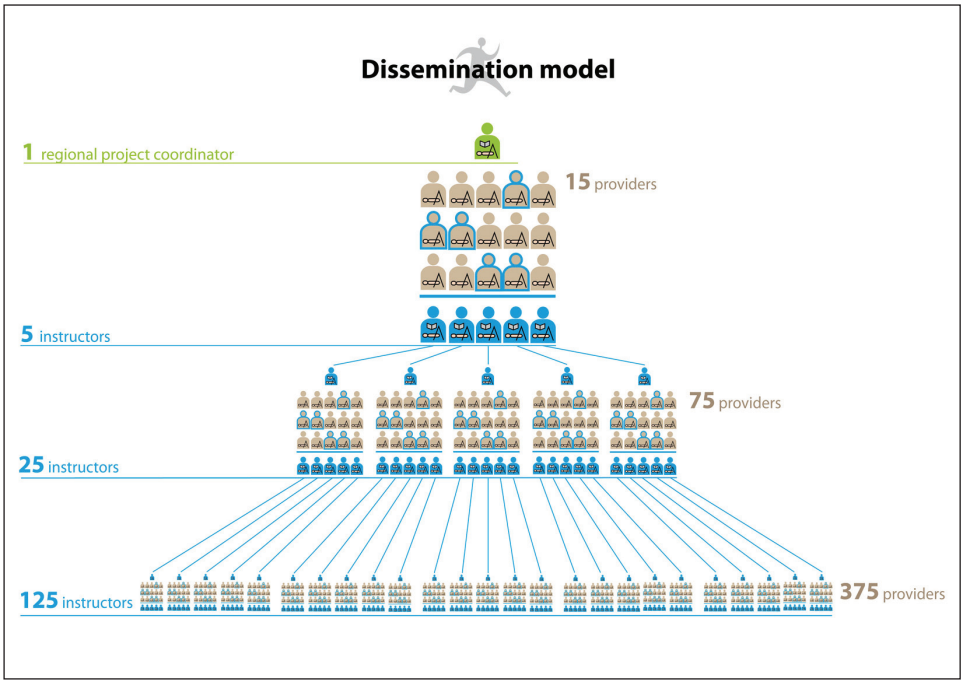
Tool 5: Sample course outline for master trainer and facilitator workshops summarizes the preparation of master trainers and facilitators. ***Tool 6:*** Sample course outline for provider workshop summarizes the preparation of birth attendants. Course outlines for a 1-day and 2-day provider workshop agenda are included. The outlines provided are suggestions that can be modified to fit local circumstances; however, they include the important elements for learning.

The graphic to the right illustrates a possible cascade for training facilitators and providers. As described in the section above, program managers and HBB mentors organize the overall training plan and prepare and supervise the master trainers. Master trainers lead training courses for regional/district trainers and facilitators and oversee training quality.

In some countries, master trainers may do most or all of the program training. In others with larger programs, regional/district trainers may train facilitators. A facilitator may begin by serving as a small group facilitator during a provider training course and – with experience and mentorship – go on to become course leader, as shown in the graphic. The number of participants in a given course selected to become facilitators will depend on program need, the capacity of candidate participants to serve as trainers, and the program's ability to supervise and mentor new facilitators. Ideally, each health facility or community/region should have a birth attendant trained as a facilitator for Helping Babies Breathe.

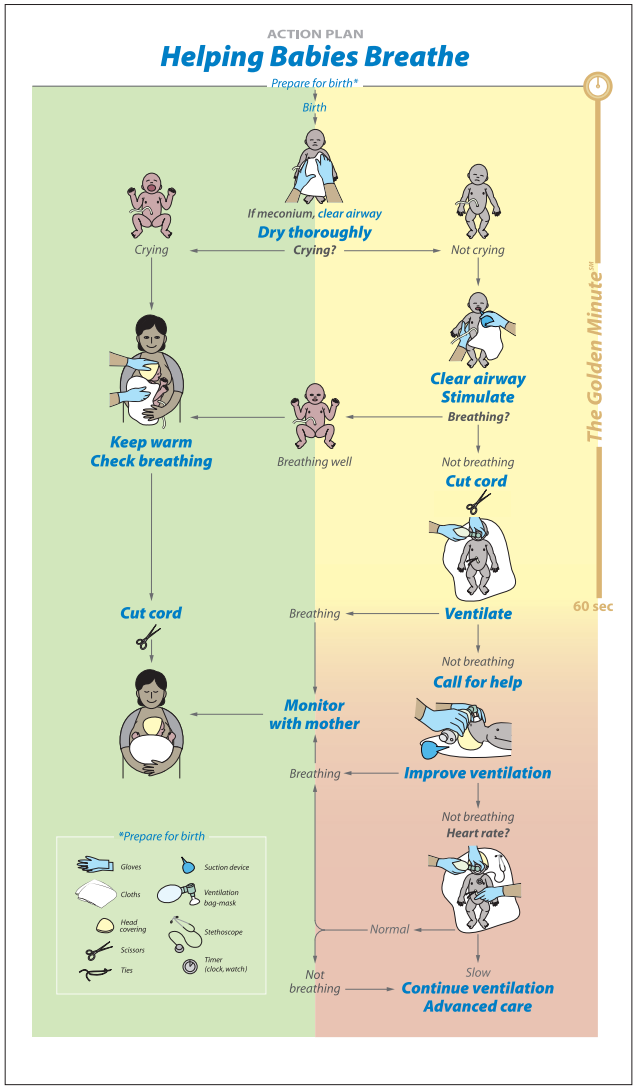
The planning process for workshops at every level of the training cascade (national or regional/district trainer, facilitator, provider) involves thorough understanding of the content and educational design of Helping Babies Breathe as well as application of adult learning techniques.

The proposed training scheme focuses on in-service training. For sustainability, planners and program managers should work with national authorities to integrate the same training content into pre-service training programs.

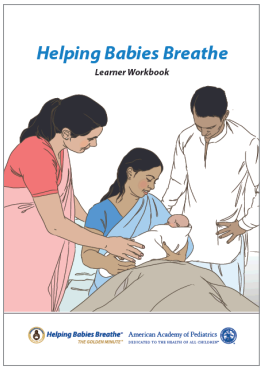


Understanding the educational design of the course materials

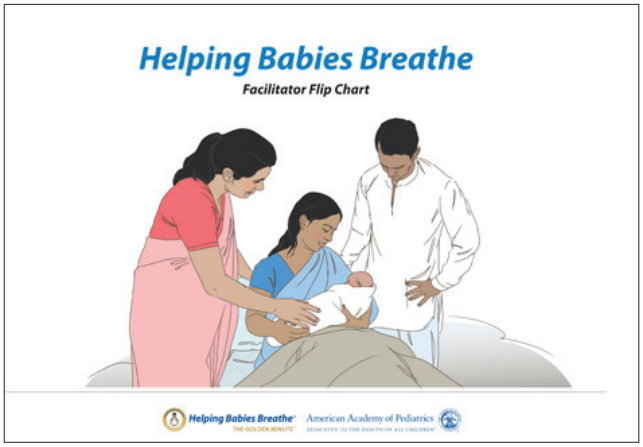
The educational tools used in Helping Babies Breathe include:



Action Plan
a simple, pictorial wall chart outlining the decision tree to follow when helping a newborn to breathe. A smaller version serves as a job aid.



Learner Workbook
training material that can serve as a guide for pre-learning and as a post-training resource for learners during a course; it also provides supplemental information.

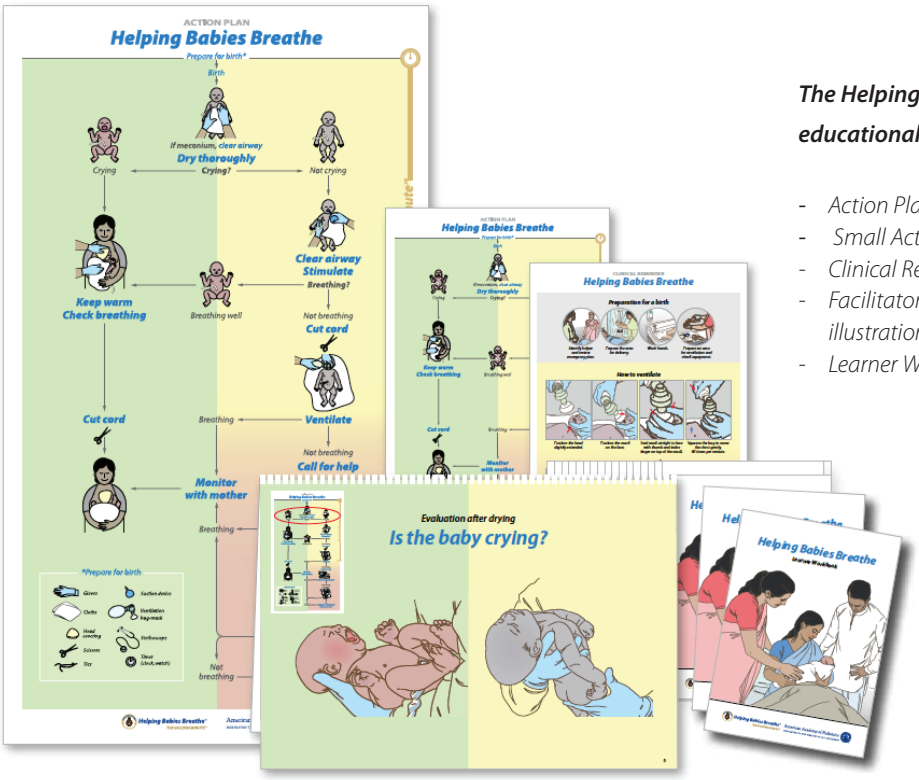


Facilitator Flipchart
pictorial material for discussion with learners that includes key messages at the back to guide trainers and facilitators

Now available from the American Academy of Pediatrics and Laerdal Global Health:

Helping Babies Breathe® Training Program

A neonatal resuscitation curriculum for resource limited circumstances



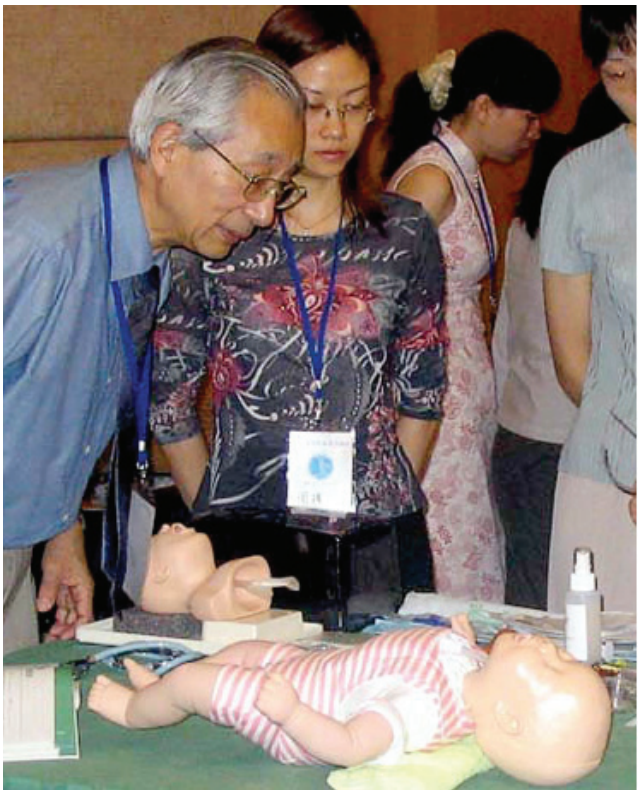
The Helping Babies Breathe educational material includes:

- *Action Plan Wall Poster*
- *Small Action Plan*
- *Clinical Reminder*
- *Facilitator Flip Chart illustrations*
- *Learner Workbooks*

See the Helping Babies Breathe website for ordering information.

Evaluation Materials
skills-based assessment materials include written/verbal evaluation guides, bag/mask performance evaluation checklist, and Objective Structured Clinical Evaluations (OSCEs) in the Facilitator Flip Chart. The bag/mask skills check is also included in the Learner Workbook.

Neonatal simulator/mannequin
life-like model of a newborn for practice of resuscitation and other neonatal care skills (jump to ***Tool 7:*** Preparing the neonatal simulator for use). A number of neonatal mannequins and simulators can be used with Helping Babies Breathe. Instructions included here apply to the mannequin distributed in the current HBB training kit.



Because they emphasize different learning approaches, (e.g., reading, listening, visualizing, practicing, reviewing) these educational materials reinforce learning through multiple modalities. They are linked by their graphic design which helps guide facilitators and learners through the process of acquiring knowledge and skills and integrating them into successful performance of neonatal resuscitations.

Planning Step 4: Analyze all the educational tools using *Tool 8:* Understanding the educational design of Helping Babies Breathe. Tool 8 explains the educational package in more detail and how it contributes to adult learning.

Emphasis on practice to integrate knowledge and skills into performance

In keeping with adult learning theory, the focus of a Helping Babies Breathe course should be learning of skills, practice, and integration of skills and decisionmaking.

- Learners can gain knowledge in advance of a course by reading the Learner Workbook and completing the Check yourself questions. Small groups of learners can prepare in their workplaces 1–2 weeks before a classroom skills session. Learners can reflect and think of their questions.
- Learners should practice individual skills as they are introduced in the Facilitator Flipchart pages.
- Learners practice sequences of skills in the exercises that summarize each section of the Action Plan and Learner Workbook.
- Learners integrate knowledge and skills with decision making in the practice of case scenarios.

Promotion of active learning and continued learning among peers

Experience in the classroom should encourage participants to be active as both learners and teachers, so that they learn from each other as well as the facilitator.

Developing a Sustainable Master Trainer Corps in Kenya

As one of two countries to conduct formative evaluations of the HBB training package, Kenya has participated in the global initiative since its first planning days. The Kenyan HBB training program is well respected and master trainers recently discussed elements that contributed to the success of the program:

- Trainers think and act as a group, typically conducting trainings together to avoid burnout, assessing and reinforcing training skills, and supporting each other
- HBB planners agreed with government officials from the outset that, as salaried government employees, master trainers would not get paid beyond their costs and a small stipend for their HBB training role, making the program sustainable.
- Small incentives motivating the trainers in their work include paying transport and lodging costs in advance, so trainers do not have out-of-pocket expenses, providing minimal cell phone credit per training to deal with the unexpected, supplying local contact information and support for logistics
- Masters trainers have full ownership of the process for identifying, mentoring, and evaluating new trainers and facilitators for program expansion

The Kenya HBB program has also invested in a supportive training system as follows:

Master Trainers	3 days training
Facilitators	2 days
Learners	1 day
Refreshers	1 day

Countries that cannot afford trainings of this length should consider other ways to support learning, such as more intensified clinical mentoring post-training.

The classroom experience should form a basis for continued learning and problem-solving in the workplace after the course.

Trainers and facilitators serve as important role models for active learning when they:

- Spend most classroom time on practice
- Use discussion instead of lectures
- Always emphasize positive performance first, then suggest ways to improve, and finally end with encouragement or a positive comment
- Review the written/verbal evaluation with learners, as well as the performance evaluations
- Encourage learners to develop self-evaluation abilities so they can constructively critique their own performance and become peer teachers
- Encourage learners to support each other in the workplace through skills reinforcement exercises and mutual assessment of actual performance

Localization (and adaptation) of course content

Trainers and facilitators have the responsibility to tailor Helping Babies Breathe to the local culture, environment, and health system. The basic steps of the Action Plan will remain unchanged, because they are based on evaluation of scientific research and physiology. The equipment and supplies used to carry out the basic clinical steps and the methods and content used in teaching will vary from one place to another.

Planning Step 5: Use the following worksheets to analyze regional and local differences as you read the Learners Workbook and the Facilitator Flipchart. Then make an individualized course plan that will meet the needs of learners.

- ***Tool 9:*** Considering the health system, culture, and environment
- ***Tool 10:*** Developing appropriate teaching methods
- ***Tool 11:*** Deciding on supplemental content

Methods of evaluation

Helping Babies Breathe includes three different and complementary evaluations with different criteria for successful completion:

- Written/verbal evaluation – 80 percent of questions correct
- Bag/mask performance evaluation – 100 percent performance of required steps
- Objective structured clinical evaluations – 80 percent overall performance, including all required steps

Details of these evaluations are available in ***Tool 8:*** Understanding the educational design of Helping Babies Breathe. The evaluations themselves are at the back of the Facilitator Flip Chart. The written/verbal evaluation is administered first. Learners may be unfamiliar with performance evaluation. Facilitators need to explain why and how the tools are used and practice with performance checklists and case scenarios before carrying out formal evaluation of learners. Learners should be encouraged to work individually or with peers once they return to the workplace to practice, and objectively evaluate how well they are maintaining the skills they have learned.

India has used pre-training skills tests very effectively in its Navjat Shishu Suraksha Karyakram (NSSK) program in basic newborn care and resuscitation. Such pretests can serve as a baseline for training and to tailor training programs to the needs of specific participants.

B. Training implementation

Program managers, HBB mentors, trainer, and facilitators who are preparing to implement a *Helping Babies Breathe* course need to complete the following steps:

1. Following a timeline for course preparation and delivery
2. Assembling the teaching materials
3. Delivering the course
4. Continuation of learning in the clinical setting

1. Following a timeline for course preparation and delivery

Implementation Step 1:
Follow *Tool 12:* Timeline for course preparation **as a guide to the entire process.**

2.Assembling the teaching materials

Implementation Step 2:
Use Tool 13: Assembling the teaching materials **well in advance of the course.**

Some of the teaching materials will be ordered from distant suppliers, so time will need to be calculated for shipping and clearing customs. Other materials may be fabricated locally (such as blankets) or readily available from local suppliers.

The format of a course for Helping Babies Breathe can be tailored to the local circumstances. The entire course can be completed in as little as 6–8 hours. Consider presenting the course over two days if learners are traveling on the same day as the course, or if new facilitators or learners are unfamiliar with the material. Introduce the course material on the first day and allow free time to practice skills and case scenarios. After additional practice and answering questions, complete the evaluations on the second day.

3. Delivering the course

Conducting a Helping Babies Breathe course includes the following steps:

- Distribute Learner Workbooks in advance (when possible)
- Prepare content and teaching methods for each learning group
- Prepare the classroom space
- Engage the learners
- Evaluate the learners and the course

Distribute Learner Workbooks in advance when possible. Learners who have read the text and answered the "Check yourself" questions will be prepared to ask questions, learn skills, and begin integrating knowledge and skills. Preparing in small groups increases the motivation to complete advanced study.

Prepare content and teaching methods for each learning group

- Review local statistics on neonatal mortality and causes of death.
- Review considerations in ***Tool 9***: Consider the Health System, Environment, and Culture to adapt training, as needed to the context.
- Review the Learner Workbook and Facilitator Flip Chart before a course.
- ***Use Tool 14:*** Reviewing the practice exercises
- Prepare case scenarios for practice with integrating skills and decisionmaking.
- Prepare any supplemental content.

Prepare the classroom space

- Prepare a table or similar platform for presentation of the Action Plan, the Facilitator Flip Chart pages, and demonstration using the neonatal simulator or mannequin. Each group of six learners should work with a facilitator, an Action Plan, and Facilitator Flip Chart. The course leader may choose to do the verbal presentation of the Facilitator Flip Chart for the entire class, but the small group facilitators can answer questions and assist with practice. Every participant should use the Learner Workbook to make notes.
- For each pair of learners, prepare an area for practice with the neonatal simulator or mannequin and a

complete set of equipment and supplies.

- Learners will complete the discussion questions in their small group after each exercise. Decide how to seat the learners so that there is maximum participation. This often means seating small groups around separate tables rather than in rows. Everyone should be able to see the facilitator and demonstration materials easily.

Engage the learners

Following minimal, explicit explanation and demonstration, most of the time in the classroom – whether in a pre- or in-service training setting – should be spent on hands-on skill building as well as problem-solving discussions. (Refer to Tool 15: Practicing with the neonatal simulator or mannequin.)

- Encourage learners to explore equipment and practice techniques as they are introduced. Facilitators should supervise this practice and provide feedback (reinforcement/correction) as necessary.
- Invite learners to point out steps on the Action Plan and make notes in the Learner Workbook.
- Ask the learners to summarize the key learning points, then reinforce or correct their responses as necessary.
- Ask learners to provide answers to the "Check yourself" questions.
- Invite learners to ask questions and share their experiences during group discussions. Help learners identify useful, neutral, and potentially harmful traditional practices and plan sensitive ways they can address harmful practices.
- Help draw out the important lessons from experiences. Learning from one another can create a pattern for continued learning outside the classroom, especially when encouraged to do so.

Evaluate the learners and the course.

The evaluation of learners is described under preparation of facilitators, in Section III.A.2 above. Evaluation of the course itself can take the form of a written evaluation or a feedback session (***Tool 16***). Facilitators should note points which worked well and parts that need improvement. They should address these points before their next course and seek help from a master trainer or other mentor if they feel assistance is needed or major changes should be made.

4. Continuation of learning in the clinical setting

Facilitators should also prepare participants for continued learning in the workplace. Facilitators can support these activities in the following ways:

- Observe and provide feedback on peer learning/teaching: Facilitators can observe and provide feedback on practice or actual performance during a resuscitation.
- Structure regular practice by pairs of HBB providers with the neonatal simulator or mannequin: In some health centers, birth attendants complete an exercise when they report for work. Regular practice is essential to retain skills in areas where there are relatively few deliveries.
- Lead debriefing after a simulated or actual resuscitation: Debriefing involves a participant-directed examination of an event for the purpose of improving performance. Debriefing may involve clinical directors, ancillary services, and even families, as well as birth attendants.
- Video recording and review can be incorporated into debriefing on simulated resuscitations.

C. Monitoring the process and quality of training

1. Process indicators

(***Tool 17:*** Monitoring the numbers trained)

Periodic evaluation of the progress of training helps make sure that timelines and goals for dissemination are met. Some recommended process indicators include:

- Master trainers – number of trainers and facilitators trained (vs. projected) by cadre and region, number of provider trainings supported/supervised (vs. projected), number of site visits to support continued learning (vs. projected)
- Facilitators – number and proportion (vs. projected) of birth attendants trained by cadre and region; number and proportion (vs. projected) of sites with activities to promote continued learning and supervise clinical experience in the workplace
- Health facilities – proportion of districts in country with > 20% of all health facilities with at least one trained and appropriately equipped provider of resuscitation; proportion of districts with > 80% of all facilities with > 95% of providers trained and equipped for neonatal resuscitation.

2. Quality indicators

(***Tool 18:*** Checklists for Supervisory Visits)

Quality indicators help monitor progress toward the goal of training birth attendants who can resuscitate a baby who is not breathing. Some of these quality indicators can also be used to monitor maintenance of skills over time and the fidelity of successive generations of trainers in the cascade.

- Ratio of facilitators to learners; ratio of neonatal simulators/mannequins to learners; total number of learners per workshop
- Proportion of total course time spent in practice
- Total length of workshop (in hours) and number of days over which training or evaluation occurred
- Quantitative and qualitative data from workshop evaluations
- Pre-/post-training change in scores on written/verbal knowledge check and bag and mask ventilation skills check
- Proportion of learners meeting criteria for successful course completion
- Proportion of learners demonstrating successful performance on re-measure in the workplace
- Number of neonatal simulators available/number of health facilities providing delivery care by region or district (available from purchase and distribution data)

3. Course completion and certification

HBB mentors working with stakeholders at the national level should consider establishing criteria for successful course completion. These criteria may differ for different groups of birth attendants. At a minimum, all participants should pass the written/verbal knowledge check with a score of 80 percent and demonstrate mastery of bag and mask ventilation skills. OSCE A and B can be administered as formative or summative evaluations of performance, with 80 percent successful completion, including all required steps. National programs may choose to create and maintain a system of certification in neonatal resuscitation. National programs control certification; the American Academy of Pediatrics does not offer certification in HBB. In some settings, certification in life-saving skills may be linked to licensure.

D. Scale-up and sustainability of training

1. Amplifying the training cascade

Sufficient master trainers should be trained to provide coverage of all targeted geographic areas and professional groups. Master trainers should commit to conducting a specified number of train-the-trainer workshops and facilitator workshops (or training a certain number of trainers and facilitators) within a defined time period. Similarly, facilitators should commit to conducting a specified number of provider workshops (or training a certain number of birth attendants). National planning should establish an overall timeline and training objectives that achieve the national training goals.
2. Maintaining training coverage

After initial training in HBB has taken place, changes in personnel may require that facilitators train new or relocating birth attendants as they enter a workplace.

3. Revision and renewal cycle for HBB materials

HBB educational materials are revised on a five-year cycle (next in 2015) following the cycle of revision of neonatal resuscitation guidelines by ILCOR (International Liaison Committee on Resuscitation). Planning and budgets at the national, regional, and local level should incorporate time for training updates and funds for distribution of revised materials. Revisions assure that the latest scientific evidence in neonatal resuscitation can rapidly reach birth attendants and benefit babies. Updated information – including the most recent versions of this manual–is regularly posted on the Helping Babies Breathe website: www.helpingbabiesbreathe.org.

4. Maintaining trainer, facilitator, and provider (birth attendant) credentials

National-level stakeholders, HBB mentors, and program managers are charged with establishing criteria for maintenance of credentials in neonatal resuscitation. Trainers at all levels and facilitators generally maintain their credentials by actively facilitating courses in HBB.

Some national programs may require documentation of a supervised training or recertification every few years. Birth attendants may be required to participate in a renewal course or submit evidence of continued self-learning at a pre-specified interval to maintain their credentials. Birth attendants should also be encouraged to seek out supervision by peers or facilitators if they note a deficiency in their skill level or a death audit indicates a problem with resuscitation skills.

IV. Monitoring and Evaluation

Who should read:
- ☐ *Policymakers*
- ☐ *Program Planners*
- ☐ *Trainers and Facilitators*

Objectives of section IV:
- ☐ *Users will be able to monitor and evaluate processes and outputs of training and contribute to evaluation of program performance and impact.*

Tools in this section:
- ☐ *Tool 17: Monitoring numbers trained*
- ☐ *Tool 18: : Checklists for supervisory visits*

A. Monitoring and evaluation considerations

HBB programs should include both assessment of program implementation and impact evaluation. The indicators proposed in the framework below may be adapted based on context and stage of program implementation.

B. Monitoring the process and quality of training

As previously noted, monitoring the process and quality of training is vital to assure dissemination to all sites providing care at birth and coverage of all births within those sites. Please see details on monitoring for training process and quality in Section III.C. above and in Tools 17 and 18

C. Monitoring and evaluating the rollout of a program

In addition to monitoring the process and quality of training, program managers need to monitor and evaluate the performance and impact of scaling up neonatal resuscitation. The purpose of this is two-fold: accountability to stakeholders and learning to improve effectiveness. To serve the aim of accountability, programs need to measure meaningful indicators to determine outputs, outcomes, and impact. To better learn from experience and introduce improvements as newborn resuscitation is implemented at scale, programs need to systematically generate knowledge about the determinants of project performance such as health system facilitators and barriers, cultural facilitators and barriers, etc.

Below is a map of key indicators and data sources for tracking inputs, process, outputs, outcomes, and impact.

Helping Babies Breathe Monitoring & Evaluation framework

Program implementation

Inputs	Process	Outputs	Outcomes	Impacts
Financial and human resources **Indicator:** **1.** Funds mobilized for HBB implementation	Integration of HBB in national plan for essential newborn care and emergency/obstetric and newborn care **Indicator:** **2.** HBB included in national newborn plan	Improved access, equity, and quality of newborn resuscitation **Indicators:** **3.** Number and percent of trainers trained by type of cadre and district **4.** Number and percent of birth attendants trained by type of cadre and by district **5.** Number & percent of health facilities equipâped with resuscitation devices by district	Improved health outcomes and behaviors: **Indicator:** **6.** Number and percent of babies not breathing at birth who were resuscitated successfully **7.** Number & percent resuscitated successfully by key HBB action step • Crying (stimulation) • Clearing the airway/stimultion • Ventilation with bag and mask	Improved health status: **Indicator:** **8.** Early neonatal mortality rate (7 days) **Optional indictors:** **9.** Early NMR(7 day) **10.** Neonatal mortality rate (28 days) **11.** Stillbirth rate

Data sources

Program Reports	**Facility assessments (HMIS, SPA, QA/QI)** **Quality, infrastructure, utilization, service, readiness**	**Vital registration** **Routine vital values**
	Population-based survey & surveillance **(DHSIMICS, special surveys,sentinel surveillance)* Service coverage, equity, mortality**	

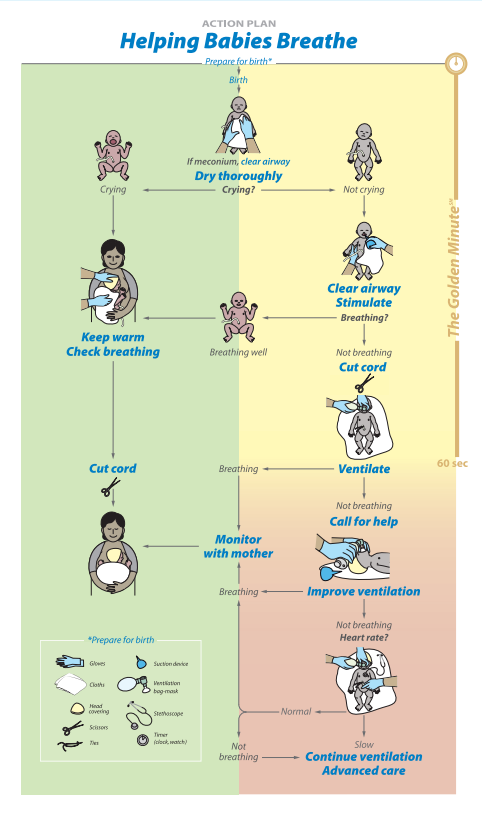
* HMIS: Health Management Information Systems; SPA: Service Provision Asessment; QA/QI: Quality Assurance/Quality Improvement; DHS: Demographic Health Surveys; MICS: Multiple Indicator Cluster Surveys.

D. Collecting neonatal outcome measures and vital statistics

1. Technical support for collecting outcome measures and vital statistics

Decision-makers need evidence to support bringing neonatal resuscitation programs to scale. The ability to register births and document positive as well as adverse outcomes provides the baseline for programming as well as a way to track impact. Birth registries are necessary to document impact on lives saved as well as provide data on workforce and training needs. HBB programs should make an effort to improve this capacity at all levels of the health system.

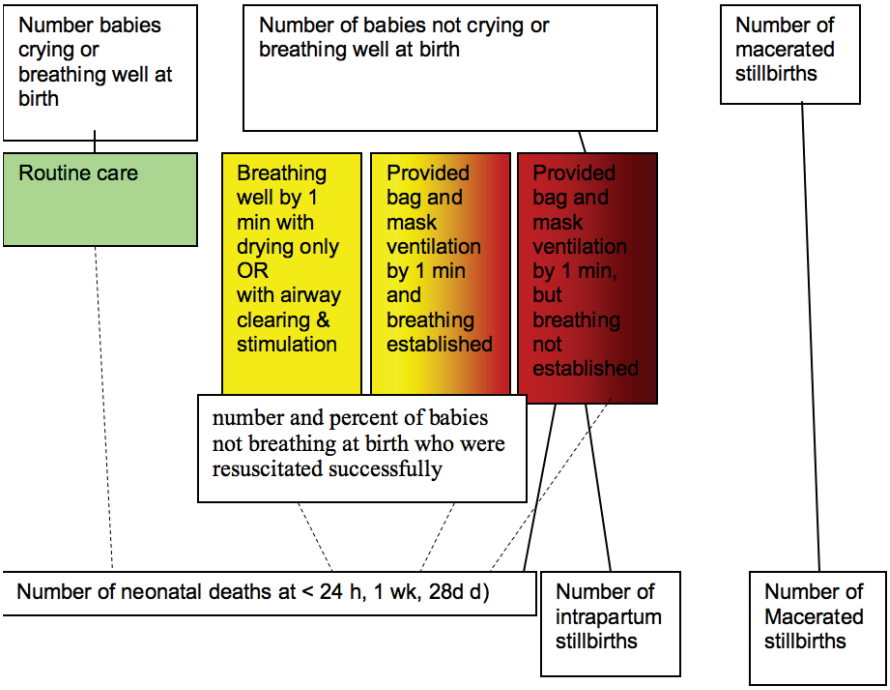
A core set of neonatal outcome measures will include the information necessary to calculate the indicators included in the diagram above. Health facility registers and summary forms may need to be revised to ensure that these pieces of information are routinely collected. Optional indicators based on the specific action steps of the resuscitation algorithm in the HBB Action Plan may be collected in sentinel sites and optional population-based indicators can be calculated for impact evaluation study sites. Various indicators are measured along the pathway outlined in the Action Plan to assess the effectiveness of HBB in decreasing neonatal mortality and misclassification of live newborns as stillbirths.



Is the baby crying or breathing at birth?
***If yes**, live birth – routine care*

If not breathing at birth, is the baby breathing by 1 min?
***If yes,** did the baby respond to drying thoroughly?*
OR
Clearing the airway and specific stimulation to breathe?
OR
Ventilation with bag and mask?

If not breathing at birth, is breathing re-established after 1 min?
***If yes**, did the baby respond to prolonged ventilation?*
OR
***If no**, was the baby a neonatal death (heart rate present but failed to breathe adequately)*
OR
Intrapartum stillbirth (no heart rate, no signs of maceration)
OR
macerated stillbirth



Vital registry outcome indicators may be prioritized for collection as registry systems gain capacity and sophistication (i.e., beginning with number of births, then including response to resuscitation or beginning with short-term neonatal mortality and extending to 28-day mortality). Basic data should be collected and compiled from all delivery sites; more detailed information may be collected only at sentinel surveillance sites or as part of research studies (Tool 19: Infant outcomes). Macerated stillbirths are reviewed for preventable prenatal and obstetrical issues, as are fresh stillbirths. Fresh stillbirths, neonatal deaths, and all infants requiring bag and mask resuscitation are reviewed for preventable prenatal, obstetrical, or neonatal circumstances.
Long-term outcomes of infants who required resuscitation should be compared to those who did not.

As listed in the diagram on the HBB Monitoring and Evaluation Framework, the national Health Management and Information System (HMIS) should include data on the following indicators:

- Number of live births
- Number of stillbirths, disaggregated by fresh and macerated
- Number of babies born not crying/breathing (asphyxiated)
- Number of babies born not crying/breathing who are successfully resuscitated
- Number of very early newborn deaths (within 24 hours of birth)

In general, some of these data are not readily available and, with the exception of national surveys, have to be initiated or improved by the program. Even when the data are captured in the current national HMIS, there are often problems with data quality, such as missing data, and misclassification of stillbirths. Data management capacity building should be included in the HBB training program for providers and supervisors.

2. Information systems technology

Efforts to spread computer-based technologies further out in the health system can be supplemented at the community level by mobile devices, such as cell phones, for reporting vital statistics; reinforcing knowledge, skills, and performance; and communicating with program managers, trainers at all levels, and facilitators.

Use of Mobile Phones to Improve Case Finding for Vital Statistics Registries in Rural Kenya

In Kenya, improving the poor accuracy and completeness of vital statistic registries was a key to addressing high rates of maternal and neonatal mortality in 16 geographic clusters in Western Province. With 60 percent of births taking place at home in the project's catchment area, 4000–8000 births occurring annually, and low rates of case discovery and birth weight reporting, village elders knowledgeable about health events at the village level were recruited to assist with reporting.

As part of the U.S. National Institute of Child Health and Development Global Network for Women's and Children's Health Research, village elders received cell phones, accurate infant weighing scales, and training to dramatically increase reporting to birth registry administrators via text messaging of pregnancies, births, infant or maternal deaths, and infant weight in their areas. Between October 2008 and July 2010, monthly variability in reporting of births, infant deaths, and calculated neonatal mortality was reduced and recorded birth weights increased from 47±5.7% to 97±1.1%; an increase that was sustained over time. In addition, the number of neonatal deaths also rose because there were pregnancies – and therefore deaths – that had previously gone unrecorded.

Mobile technologies can greatly improve accurate reports of births and maternal, infant, and child deaths, including better information on causes of mortality and morbidity, leading to more focused interventions.

(Liechty, E 2010 and Medscape Medical News, 2010)

3. Communication of data for decision-making at multiple levels

Sharing data and program information in a proactive way that fosters action helps build success. Policymakers need to clearly understand data trends and their implications in order to set priorities. Workers at all levels in the system – whether public, private, or NGO sector – need to understand national goals and targets and track their own progress in achieving them. Health workers should understand the context for data and be able to provide qualitative interpretation that informs constructive change. Community members need to clearly understand the benefits of having births attended by a skilled attendant trained in resuscitation techniques. Programs can foster information exchanges that propagate successful actions for improvement.

4. Building quality improvement around HBB

It is critical for programs to create a safe environment where learners can honestly address performance weaknesses and adverse outcomes, including deaths. Sometimes those who report adverse outcomes – whether birth attendants, supervisors, or district health officers – are punished for their honesty, inhibiting future disclosure. Quality improvement efforts should support vigorous integration and practice of all elements of essential newborn care. Some techniques for quality improvement include:

- Experience logs – a tool for reflective learning in which individuals identify training and personal skills, strengths, and deficits. The log can be used for self reflection and/or in discussion with peers, supervisors, facilitators, and program evaluators
- Case audits – identification and remediation of preventable causes of death and system weaknesses. Audits are most useful when conducted in a spirit of continuous quality improvement rather than one of inspection and sanction
- Processes for improving the quality of health services through performance standards, systematic implementation, measurement, and recognition of achievement
- Quality collaboratives – facilitated networks of providers who set mutual objectives and test, refine, validate, and scale up promising interventions. The cornerstone of the quality collaborative is joint problem solving, based on clear identification of program weaknesses.

Improving Essential Newborn Care in Uganda through Quality Improvement Collaboratives

The Ugandan Ministry of Health requested that the USAID/Health Care Improvement (HCI) Project enhance essential newborn care (ENC) – including newborn resuscitation – in Luwero and Masaka districts, using the HBB methodology and tools. USAID/HCI is using the improvement collaborative approach to strengthen the quality of ENC. An improvement collaborative engages multiple sites to share and learn from each other through a facilitated process to achieve a common aim. In Luwero and Masaka districts, multiple facilities engage in a facility-level ENC improvement collaborative and multiple communities in the catchment area of the facilities engage in a community-level improvement collaborative. The collaboratives decide which changes they will test to improve ENC. District health team members serve as coaches to facilitate improvement collaborative teams at each facility and for village health teams in each community. The coaches are trained in quality improvement and ENC, HBB, and active management of the third stage of labor. Indicators, such as percent of newborns who are breast fed within one hour of birth, are selected to measure progress in providing improved ENC. Data entry is done by health facility staff and village health teams and collected by the coaches during monthly visits. The teams decide on the basis of data analysis if the change is working and whether they should scale it up. They share their successes and challenges during joint learning sessions. The coaches also provide mentoring and on the spot training/re-training. A national level newborn health coordinator is being hired with support from USAID/HCI and Ugandan project staff also participate in newborn steering committee and MCH meetings with stakeholders.

V. Scale-Up and Sustainability

Who should read:

- ☐ *Policymakers*
- ☐ *Program Planners*

Objectives of section II:

- ☐ *Users will understand how to use HBB to advocate for health system improvements, particularly im provements in maternal and neonatal care*
- ☐ *Users will consider how to engage the community in support of neonatal resuscitation and related ser vices*
- ☐ *Users will be aware of possible unexpected develop- ments and ways to address them*

A. Strengthening the health system

1. Advocacy for system improvements

A critical challenge to taking neonatal resuscitation programs to scale is the ability to control reliable functioning of the systems needed to support it. Advocates need to proactively engage in general health-system strengthening initiatives to focus them on achieving desired health outcomes, including neonatal survival. It is useful to contribute to national, regional, and district systems strengthening efforts such as those supported by the US Global Health Initiative, the World Bank, the World Health Organization, and the GAVI Alliance. At a minimum, the following systems should be strengthened to sustain neonatal resuscitation rollout: training and skills retention of birth attendants, supply of resuscitation devices, quality improvement systems, recording of information and reporting systems, supportive supervision, functioning referral system, and monitoring/evaluation.

2. Training in advanced resuscitation – district hospitals and above

HBB strengthens the capacity to provide neonatal resuscitation from the level of the community to the district hospital. Neonatal specialty care is usually available at the level of the district hospital; this may include ventilator care and availability of advanced resuscitation, oxygen therapy, and intravenous fluids, and alternative methods of feeding. As birth attendants at lower levels of the health system make appropriate referrals of pregnant women and sick newborn to higher-level facilities, these facilities may find it necessary to strengthen their capacity as well. The Neonatal Resuscitation Program teaches advanced resuscitation. Other resources, such as ETAT (Emergency Triage Assessment and Treatment), IMCI (Integrated Management of Childhood Illness), IMNCI (Integrated Management of Neonatal and Childhood Illnesses), and the Pocket Book of Hospital Care for Children provide further opportunities for training and capacity-building.

3. Access to Comprehensive Emergency Obstetric Care Services (CEmOC)

Neonatal resuscitation is one component in the essential services mothers and babies need at birth. CEmOC includes the ability to reliably provide parenteral antibiotics, anticonvulsants, oxytocics, and blood. CEmOC – when appropriate and timely – will reduce the need for neonatal resuscitation and prevent neonatal deaths. However, some CEmOC programs do not explicitly include neonatal resuscitation. Countries can close this gap by ensuring that advanced neonatal resuscitation is part of their CEmOC services package. Comprehensive services also include assisted vaginal delivery (vacuum extraction), emergency cesarean delivery, manual removal of the placenta, and manual aspiration of products of conception. The goal should be to provide these services to every mother and baby on a 24-hour basis throughout the year.

4. Criteria for referral of pregnant women and newborns

With increased availability of CEmOC and specialty neonatal care, establishment of criteria for referral of pregnant women and newborns becomes crucial. Updating and dissemination of these guidelines for referral can be incorporated into HBB courses and continued learning activities. Supportive feedback to the referring provider reinforces learning, the ability to refer appropriately, and the knowledge and actions to avoid unnecessary referrals.

5. Development of communication and transportation system

The ability to quickly access information and services at various levels in the system is the hallmark of a functional emergency referral program. Improving health services to offer more comprehensive obstetric and neonatal care is a wasted effort if birth attendants, women and families cannot reach them, or choose not to.

B. Extending advocacy into the community

Ultimately, demand for improved services for mothers and infants must come from the community itself. Health workers and program managers can engage various community stakeholders to improve support for, and use of, services provided by trained birth attendants who can act in The Golden Minute® after birth to save an infant who is not breathing. Important groups to enlist include:

1. Women of all ages
2. Family decisionmakers– fathers, mothers-in-law
3. Community groups – women's and youth groups, religious and secular communities
4. Community officials and leaders – mayors, councilpersons, health and budget committee members, other elected leaders, religious and secular leaders
5. Traditional birth attendants – to link to the health system

C. Dealing with challenges and unintended consequences

Experience to date has revealed some unexpected challenges that are important to consider. As the program evolves, more instructive stories from the field will be posted at www.helpingbabiesbreathe.org.

Stories from the Field: Some Unexpected Challenges Already Met

Problem	Possible Ways to Handle
Challenge from breastfeeding advocates that taking each newborn from mother to ensure breathing is established interferes with bonding and initiation of breastfeeding	At project outset, form a technical advisory group of national experts to review such disagreements and establish priorities
Discovery of active gendercide/neonaticide or passive non-resuscitation, dictated by cultural/socioeconomic forces	• Reinforce professional and ethical expectations as part of training and supportive supervision • Improve M&E systems to document gender imbalances and address gender issues with community leaders and other authorities; raise gender imbalances as a social issue • Advocate with communities for family planning, adoption, and support services
Importation of training materials and simulators takes longer than expected to clear customs, jeopardizing training schedule,	• Include customs authorities in stakeholder engagement activities to enlist their support • Engage health authorities to manage supply chain issues

VI. Conclusion

This manual builds on experience to date implementing the Helping Babies Breathe initiative. It is a living document that will be updated as the program evolves to reflect field needs and experiences. User insights and questions about implementing the program and using the Helping Babies Breathe package of planning and training materials – including suggestions for other useful tools – are welcome. Questions can be directed to HBB@aap.org and experiences shared at www.helpingbabiesbreathe.org or www.healthynewbornnetwork.org.

Endnotes

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Annex 1
Additional Resources

Related Organizations and Partnerships

AAP – American Academy of Pediatrics (www.aap.org)

GDA – Global Development Alliance for Helping Babies Breathe (www.helpingbabiesbreathe.org/docs/HBB%20GDA%20Brochure%20June%202010.pdf)

HBB – Helping Babies Breathe (helpingbabiesbreathe.org)

ICM – International Confederation of Midwives (www.internationalmidwives.org)

IPA – International Pediatric Association (www.ipa-world.org)

JHPIEGO/MCHIP – Maternal and Child Health Integrated Program (www.mchip.net)

PMNCH – The Partnership for Maternal, Newborn, and Child Health (www.who.int/pmnch/en)

Save the Children – Saving Newborn Lives (www.savethechildren.org/savenewborns)

Healthy Newborn Network (www.healthynewbornnetwork.org)

UNICEF – United Nations Children's Fund (www.unicef.org)

USAID – United States Agency for International Development (www.usaid.gov)

WHO – World Health Organization (www.who.int)

In-country and International Technical Advisors/Experts

NICHD – Global Network for Maternal and Child Health (http://www.nichd.nih.gov/research/supported/globalnetwork.cfm and http://gn.rti.org)

Information Resources

Emergency Triage Assessment and Treatment (ETAT) course
www.who.int/child_adolescent_health/documents/9241546875/en/index.html

Integrated Management of Childhood Illness (IMCI)
www.who.int/child_adolescent_health/topics/prevention_care/child/imci/en/index.html

Monitoring emergency obstetric care: a handbook. WHO, 2009 (ISBN 978 92 4 154773 4)
(www.who.int/reproductivehealth/publications/monitoring/9789241547734/en/)

Neonatal Resuscitation Program (NRP)
www.aap.org/nrp/nrpmain.html

Nine steps for developing a scaling-up strategy. WHO, 2010 (ISBN 978 92 4 150031 9)
(www.who.int/reproductivehealth/publications/strategic_approach/9789241500319/en/index.html)

Pocket Book of Hospital Care for Children
(www.who.int/child_adolescent_health/documents/9241546700/en/index.html)

Victora, C. et al. Measuring impact in the MDG era and beyond: a new approach to large-scale effectiveness evaluation, Lancet DOI:10.1016/S0140-6736(10)60810-0.
(www.millenniumpromise.org/pdf/Lancet_MDGS_070910.pdf)

Additional Resources

Tool 1: Implementation Matrix

Implementation of Helping Babies Breathe in

(location).....

Integration with national strategic planning

1. What are the national/regional goals of training in Helping Babies Breathe? What are the goals of training in this location?

2. What are the policies, service standards, and guidelines supportive of neonatal resuscitation?

3. What lessons have been learned from current newborn and maternal health programs in this location?

4. What specific opportunities and barriers to training in neonatal resuscitation exist in this location?

5. What organizations and implementation partners (national and international) are already present who can help with the following?

Program Element	Partners (specify lead partner)	Comments
Dissemination of policies, service standards, and guidelines		
Procurement/supply of training materials, simulators/mannequins, ventilation bag and mask for training and service delivery		
Training • Facility-based • Community-based		
Community mobilization		
Community-based services		
Participation of private providers		
Other		

Specifics of training plan

1. What are the interim and long-term goals and timelines for who should be trained (numbers, type, and location of trainees to be reached)?

    a. Does the national/regional plan call for task-sharing?
    b. Does the national/regioaal plan call for training of current providers in neonatal resuscitation?
    c. Is neonatal resuscitation included in pre-service training?

2. What curriculum elements will be included in the training package(s) for each group?

    a. What elements of Essential Newborn Care (ENC) and Emergency Obstetric Care (EmOC) are currently implemented in the health system in this location?
    b. Will translations and/or adaptations of any new materials addressing resuscitation be prepared?

3. Which organizations and what key persons will make implementation successful in this location?

4. Who will be recruited as possible master trainers?

5. Where will training take place?

6. How will training equipment/supplies be obtained?

7. How will funds for training and monitoring be obtained?

8. What else is needed before training in Helping Babies Breathe can begin?

9. When is the geographic location covered in this training ready to begin implementation?

10. How can HBB be included in annual plans and budgets – particularly at district level – to ensure sustainable newborn care for every baby delivered?

Program Element	Comments	Comments
Essential Newborn Care		
• Temperature control		
• Cleanliness/prevention of infection		
• Early and exclusive breastfeeding		
• Identification and treatment of sepsis		
• Identification and management of asphyxia		
• Other?		
Emergency Obstetric Care		
• Hemorrhage/shock		
• Sepsis		
• Birth injury/obstructed labor		
• Other?		

Monitoring of process and training outcomes

1. What will be the standards for successful course completion for each type of birth attendant trained?

2. What are the numbers and proportion of providers to be trained in this location, according to the national and/or local timeline?

3. How will the training process be supervised?

4. How will clinical experience be supervised in the workplace post-training?

5. How will continued learning occur in the workplace?

6. How will retention and application of skills be assessed?

7. What measurable objectives (outcomes) will be sought in this location after training in Helping Babies Breathe?

Tool 2: Target Audiences and Curriculum

Refer to Tool 1: Implementation Matrix to review the context for the training program.

Identify the groups of birth attendants who will receive training in Helping Babies Breathe, the setting in which they will be trained, other topics that will be presented, and curriculum to be used for those topics. Be sure that training materials have been approved for use by the appropriate authorities.

Groups of birth attendants to be trained	Setting for training	Other topics to be presented and curriculum to be used

Tool 3: Translation and In-Country Printing of Helping Babies Breathe Training Package

Translations may be initiated in-country, under the guidance of HBB mentors and master trainers.

Translations must be submitted to the American Academy of Pediatrics for review. This process requires completing a short application. There is no fee for translations prepared in collaboration with partners of the Global Development Alliance (GDA). More information on the GDA can be found at www.helpingbabiesbreathe.org/docs/HBB%20GDA%20Brochure%20June%202010.pdf

To ensure that the training content is consistent, the American Academy of Pediatrics will seek an independent reviewer who is a native speaker of the language of the translation. This reviewer will often be a member of the Section on Perinatal Pediatrics or the Section on International Child Health.

Authorization of the translation will granted after reconciliation of any translation issues identified The translation becomes available to all other users of Helping Babies Breathe. The American Academy of Pediatrics retains copyright for all translations.

Licensing agreements can be sought for in-country printing of Helping Babies Breathe materials. This process requires completing a short application. There is no fee for licensing agreements with MDG-4 target countries when submitted in collaboration with partners of the Global Development Alliance (GDA).

Applications for translation and licensing agreements should be submitted directly to helpingbabiesbreathe@aap.org with "Request for translation" or "Request for in-country printing" in the subject line.

Tool 4: Suggested Guidelines for Adapting and Pre-Testing Helping Babies Breathe Materials

The objectives of adapting and pre-testing the HBB educational program include:

- To focus on the most important issues that birth attendants from the district to community level must be able to address for prevention and care related to neonatal resuscitation
- To make training and support materials consistent with national treatment guidelines and policies
- To make the educational program feasible to implement through the health system and acceptable to families in the communities served

I. General Guidelines

1) Proposed changes should be consistent with WHO protocols.
2) Groups seeking to make changes must submit them to the AAP for approval to ensure that the integrity of the program is maintained.
3) AAP copyright and HBB authors can not be changed; however, attributions to local translators can be added.

II. Working with key Stakeholders

An effective adaptation process requires identification of key stakeholders (nationally and locally) and vesting these stakeholders in decisions about adaptation (see section III). Including representatives from national Ministries of Health, health regulatory bodies, professional associations, provincial and district health managers, NGOs and community groups within the adaptation discussion will ensure that materials will be acceptable to all and assure consistency. A roster of all organizations participating, names of all individuals, and minutes of meetings with the stakeholders is required for verification.

III. Possible adaptation considerations subject to review and approval

1) Changes to the graphic images to better represent cultural aspects of the population will be considered (i.e. changes to clothing and facial features).
2) Changes in terms will be considered only if a glossary is submitted for review along with the rationale for the requested change.
3) Language translations must provide documentation of peer review.
4) Addition of useful contextual information, such as mentioning the availability of compatible government programs. (A copy of these materials will be required)
5) Addition of exercises to include local examples.

IV. Non-permissable adaptations

1) No changes will be permitted to the Golden Minute sequence.
2) No changes to the science or program content, even for local practice, as materials reflect the international consensus on resuscitation science, which is evidence-based. (Evidence-based medicine is the systematic, scientific and explicit use of current best evidence in making decisions about the care of individual patients).

Some suggested ways to proceed with adaptation of materials follow.

Country-Level Adaptation

A. Form a review committee relevant in the national context. This might include Ministry of Health staff, technical staff of other key stakeholders (see II above), HBB mentors and master trainers, etc. Participants can be opinion leaders or representatives of national working group on neonatal resuscitation or perinatal care.

B. Have team members read through all available materials so they are familiar with the whole content.

C. Once the group has read the entire educational program, members can either review materials in plenary or divide up to review and adapt the individual materials. Dividing the sessions can save time, but it may be helpful for everyone to stay in the same meeting venue to facilitate discussion and share resources. The group moderator should also circulate to make sure adaptations are proceeding in a coordinated way.

The Group discussion questions after each exercise in the Learner Workbook address health systems issues, environment, and culture. They provide keys to possible needs for adaptation. Review each educational material carefully to:

1. Align content with national context and guidelines/policy. For instance,

a. Insert names and contact information of appropriate emergency transport services, referral centers, staff members or community officials
b. Add useful contextual information such as availability of government guidelines for emergency transport, clinical care, training/retraining/supervision
c. List national policies, guidelines, and standards that provide a framework for local action: i.e., permissions for or restrictions on community health responders treating newborns; role of community organizations and officials in advocacy for neonatal resuscitation and perinatal care.

2. Make the materials relevant for participants in the country from the district level to the community level. This may include:
   a. Adding illustrations to make them local
   b. Translating into local language(s)
   c. Developing or using more pictorial materials or verbal exercises for low-literate trainees
   d. Adapting exercises to use local examples, names, etc.

3. Assemble or prepare additional materials (tools, visual aids, supplies) to be used to conduct training sessions, along with the HBB materials.

   If existing local materials are used to supplement HBB materials, read through both to be sure messages do not conflict or duplicate unnecessarily.

D. Summarize in plenary the adaptations to each piece of the HBB educational materials and designate who will review entire training package for completeness and flow.

Planning for Pre-Testing

A. Discuss and plan for pre-testing the adapted HBB educational materials. It may be most useful to use experienced, district-level master trainers to conduct the test in a poorer district. Pre-test planning should outline:
   1. Participants (target groups)
   2. Trainers
   3. Venue
   4. Timing (1.5–2 days)
   5. Final preparation and provision of training materials, supplies (i.e., flipchart paper, handouts)
   6. Other?

B. Implement the training sessions at district/community level. (See instructions and questionnaire on next page.) Explain to participants the purpose of the pre-test and the importance of speaking up with comments, clarification requests, etc.

C. It may be helpful to have a notetaker available to record suggested changes for the curricula team to use in post-test adaptation.

Pre-test Instructions and Questionnaire

Before each session, explain to participants that this is a pre-test of an educational program that will be used all over the world. It is important to get their feedback on what works/doesn't work, terms or instructions that are unclear, what information they think is missing and if they think the session meets its objectives.

While the session is being conducted, participants should note anything that is unclear, confusing or incomplete. They can share this information during the session or make note of their feedback and share it afterward. The facilitator should check in occasionally with questions such as "Is this clear? Are there any words that need further explanation? Do you have suggestions for this section?"

After conducting the training session, the facilitator should take 20–30 minutes to lead a discussion using the following questionnaire as a guide. (The questionnaire should be adapted, as needed.)

A notetaker should record the pertinent points to share with the adaptation team.

1. Did you understand the objectives of the course? (re-read the section What you will learn)

2. Do you think the course met its objectives? Why or why not?
3. Do you understand what you would be expected to do to help a baby breathe, based on what you learned, i.e., would you be able to perform the necessary actions? If not, what more would you need to know?
4. Were there are any terms, words, or explanations that were unclear in the session?
5. How could this session be improved to meet the needs of birth attendants like you?
6. Which parts of the session were most useful? Why?
7. Which parts were least useful? Why?
8. Any other suggestions for improvement?

Thank you.

Tool 5: Sample Course Outline for Master Trainer and Facilitator Workshops

Helping Babies Breathe – Master Trainer and Facilitator Workshops Two-DayAgenda

Course Objectives:

At the end of the provider course element in a facilitator workshop, the participant will be able to:

- Explain from firsthand experience the interaction that occurs between a pair of participants using the neonatal simulator (roles of learner/teacher/baby)
- Understand and utilize the linkages among HBB materials
- Identify key messages of Helping Babies Breathe and successfully carry out all the exercises – (Preparation, Routine Care for All Babies, The Golden Minute, Continued Ventilation with Normal or Slow Heart Rate)
- Identify regional practices through group discussion questions
- Demonstrate mastery of baby and mask ventilation (skill check) and successfully complete the written/verbal knowledge check and OSCE A and B

At the end of the facilitator component of the workshop, the participant will be able to:

- Describe the evolution and purpose of the educational program Helping Babies Breathe
- Demonstrate presentation of HBB content, including key messages from the Facilitator Flip Chart, and incorporation of all the HBB learning materials.
- Facilitate learning in small groups with participants of various ability levels
  - o Demonstrate skills
  - o Lead practice and provide feedback on skills and performance
  - o Moderate the experience of learners and obtain consensus on regional best practices
  - o Provide cultural interpretation and localization (best and potentially harmful practices)
  - o Create realistic scenarios
- Evaluate learner performance
- Prepare and supervise participants in continued learning in the workplace
- Access resources to plan and evaluate courses
- Explain the integration of HBB with other interventions according to the regional implementation plan

Day 1

0800–0900 Registration

0900–0945 Opening Ceremony – Welcome and Introduction of Faculty, Overview of Agenda

- o Acknowledge leadership, stakeholders, supporters
- o Introduce faculty and staff
- o Invite participants to introduce themselves – What brings you to this workshop? What do you want to learn? Why do you want to be a facilitator? (Discussion may take place with entire group or within small groups of six participants)
- o Overview of objectives and workshop agenda
  - Goal of HBB: to have the knowledge, skills, and equipment to help a baby breathe at birth; Provider-component objectives
  - Goal of HBB facilitators: to help others gain this ability; Facilitator component objectives
  - Role as facilitator of learning – emphasis on paired learning
  - Request to suspend expert knowledge and become immersed as learner

PROVIDER COMPONENT - EMPHASIS ON CONTENT

0945–1000 Dialogue – Causes of Neonatal Death (optional)
Opening visualization

1000–1045 Preparation for a Birth (emphasis on linkage among HBB learning materials)

- o Presentation/demonstration, Practice with the Action Plan, Check yourself
- o Skill practice in pairs with feedback from table facilitators
  - Identify a helper and review the emergency plan
  - Prepare the area for delivery
  - Wash hands
  - Prepare area for ventilation and check equipment
- o Demonstration of Preparation for a Birth exercise by facilitators
- o Practice in pairs with feedback and repetition to correct
- o Group discussion questions – Preparation for a Birth

1045–1100 Break

1100–1145 Routine Care (emphasis on learning with the neonatal simulator)

- o Presentation/demonstration, Practice with the Action Plan, Check yourself
- o Skill practice in pairs with feedback from table facilitators
  [Repeat above for each of 4 flipchart pages and skills]
  - Dry thoroughly; if meconium, clear airway before drying
  - Evaluate crying
  - Keep warm, check breathing
  - Clamp/tie and cut the cord
- o Demonstration of Routine Care exercise by facilitators
- o Practice in pairs with feedback and repetition to correct
- o Group discussion questions – Routine Care

1145–1230 The Golden Minute® (clear airway and stimulate breathing)

- o Presentation/demonstration, Practice with the Action Plan, Check yourself
- o Skill practice in pairs with feedback from table facilitators
  [Repeat above for each of 2 flip chart pages and skills]
  - Position the head, clear the airway, stimulate breathing
  - Evaluate breathing
- o Demonstration of The Golden Minute – clear airway and stimulate breathing
- o Practice in pairs with feedback and repetition to correct (scenarios with and without meconium-stained amniotic fluid)
- o Group discussion questions – The Golden Minute (part 1)

1230–1330 Lunch

1330–1415 The Golden Minute (ventilation)

- o Presentation/demonstration, Practice with the Action Plan, Check yourself
- o Skill practice in pairs with feedback from table facilitators
- o [Repeat above for each of 3 flip chart pages and skills]
  - Initiate ventilation
  - Ventilate with bag and mask

- Evaluate breathing
- o Demonstration of The Golden Minute – ventilation
- o Practice in pairs with feedback and repetition to correct
- o Group discussion questions – The Golden Minute (part 2)

1415–1500 Continued Ventilation with Normal and Slow Heart Rate

- o Presentation/demonstration, practice with the Action Plan, Check yourself
- o Skill practice in pairs with feedback from table facilitators
- o [Repeat above for each of 5 flip chart pages and skills]
  - • Call for help and improve ventilation
  - • Evaluate heart rate
  - • Continue ventilation and monitor with mother
  - • Continue ventilation and activate the emergency plan
  - • Support the family
- o Demonstration of Continued Ventilation with normal heart rate
- o Practice in pairs with feedback at end of performance and repetition to correct
- o Group discussion questions – Continued ventilation with normal heart rate
- o Demonstration of Continued Ventilation with slow heart rate
- o Practice in pairs with feedback at end of performance and repetition to correct
- o Group discussion questions – Continued ventilation with slow heart rate

1500–1515 Break

1515–1700 Participant Evaluations – Mastering the Action Plan

- o Expectations for the evaluations
- o Practice and scenario development (Trace Six Cases – p. 37 of Learner Workbook)
- o Knowledge check (written)
- o Bag and mask ventilation skill check

  Faculty does first evaluation, then participant who has successfully completed the evaluation acts as facilitator to qualify the next participant, etc., with feedback from faculty and other small group members
- o OSCE – Station A (The Golden Minute, part 1)
- o OSCE – Station B (Continued ventilation with normal heart rate)

  Faculty does first OSCE evaluation with a single participant, then the participant who has successfully completed the evaluation takes the role of facilitator with the next participant, etc., with feedback from faculty and other small group members

FACILITATOR COMPONENT – EMPHASIS ON WAYS TO PROMOTE LEARNING

1700–1730 Evaluation of Learner Knowledge and Performance (discussion in large group)

- • Written/verbal knowledge check – locate answer key; practice verbal administration of the questions; discuss advantages/disadvantages of written and verbal formats; discuss any difficult questions and how to remediate learners who do not pass
- • Bag and mask skills check – discuss the use of Mastering bag and mask ventilation as a formative evaluation (repeated until mastery – 100% correct performance – attained)
- • OSCE A and B – practice giving clear responses with the neonatal simulator or verbal responses with a mannequin; hold feedback until the end of the scenario
- • Review program criteria for successful completion of each evaluation and review any regional criteria for elements that must be successfully completed for each group trained

1730–1800 Preparation of Participants for Continued Learning in the Workplace

- Analyze the elements of a successful scenario (description of infant, mention of pertinent complications or risk factors, decision on responses to evaluation questions consistent with infant description and risk factors)
- Invite facilitator candidates to describe a difficult resuscitation and have the small group design a scenario; encourage facilitator candidates to share these to start a file of scenarios for use in their courses
- Review the self-reflection questions on page 38 of the Learner Workbook and develop (or disseminate) locally appropriate systems to promote self-reflection and peer learning (e.g., resuscitation logs, resuscitation debriefing in the workplace, case audits)
- Discuss the use of Mastering bag and mask ventilation as in situ skills practice and case scenarios as ongoing performance improvement – how frequent, short refresher training can be incorporated into existing training structures

1800 Adjourn for the Day

- Review of agenda for Day 2 and assignments for facilitator candidates
  - o Prepare a regionally appropriate dialogue on causes of death in newborns
  - o Present a page from the Facilitator Flip Chart to the small group
  - o Lead an exercise for the small group

Day 2

Begin in the small groups (6 facilitator candidates with one faculty) to practice facilitation skills and emphasize localization of the course

0800–0900 Overview of course objectives

- Review objectives for a provider course (What you will learn, pp. 4–5 in Learner Workbook)
- Discuss what supplemental material to present in the orientation (use Tool 2 from Implementation Guide)
- Discuss techniques to draw out learner experiences and moderate them
- Invite a facilitator candidate to present the Opening dialogue and visualization exercise for a provider course (and provide feedback from the group)

0900–1030 Presentation of the Content of the Facilitator Flip Chart

- Analyze the key learning points, skills, and tips to promote learning for each page of the Facilitator Flip Chart (include review of background and educational advice section)
  - o Emphasize active learning with practice during each page of Flip Chart
  - o Identify the most frequent problems in performing skills and how to remediate
  - o Review the purpose and technique for providing feedback
  - o Provide cultural interpretation and localization (Use Tools 9 and 10 in Implementation Guide) along with review of each Flip Chart page
  - o Use Check yourself questions to indicate gaps in understanding and need for further explanation
- Invite each facilitator candidate to present a page from the Facilitator Flip Chart (and provide feedback from the group)
- Invite each facilitator candidate to lead the small group in an exercise while working through the content of the Facilitator Flip Chart (and provide feedback from the group)
  - o Discuss techniques to facilitate learning with providers of various abilities
    - Demonstrate, invite a learner to participate in demonstration, have a learner demonstrate, have all learners practice in pairs with feedback from one another and facilitator, invite learners to practice in pairs only with feedback from one another

- Use teaching tips provided in Tools 14 and 15 of Implementation Guide
- Pair experienced and novice providers from the same workplace
- Support the group in working together to help find solutions for understanding difficult concepts or performing difficult skills
  - Lead Group discussion questions with the goal of reaching consensus for a workplace; help participants evaluate and interpret their experiences (e.g., helpful, harmful, neutral practices; physiologic principles underlying some traditional practices)

1030–1045 **Break**

1045–1200 **Presentation of Content of the Facilitator Flip Chart (continued) and review of OSCE evaluation format**

- Encourage facilitator candidates to practice administration of OSCE B to mastery
- Develop alternative scenarios for advanced OSCEs incorporating specific learning objectives

1200–1300 **Lunch and Open Discussion**

1300–1430 **Plan and Evaluate Courses (entire group)**

- Review the timeline for course preparation (Tool 12 in Implementation Guide)
- Discuss equipment procurement – neonatal simulators, educational materials, bag and mask, and additional local equipment and supplies
- Review Advice for course facilitators in back of Facilitator Flip Chart (24b)
- Review additional resources for facilitators
  - Preparing the neonatal simulator (Tool 7 in Implementation Guide
  - Cleaning and testing equipment (Flip Chart page 25)
  - More resources section in Learner Workbook (pages 39–43)
  - Implementation Guide (Web resource and pdf of Tools)
  - www.helpingbabiesbreathe.org
  - Instructor video, videos of skills, videos of clinical evaluation points
- Review a template for a course evaluation (Tool 16 in Implementation Guide) modified to meet local needs
- Practice emptying/filling neonatal simulator and dis-assembling/re-assembling the ventilation bag

1430–1530 **Dissemination/Perpetuation Plan (panel of faculty/MOH representatives)**

- Initial training of providers; integration of HBB and Emergency Neonatal Care (i.e., other interventions); relationship of HBB and Neonatal Resuscitation Program
- Supervision of continued learning in the workplace
- Maintaining quality of training; updating with ILCOR neonatal resuscitation guidelines
- Documentation and reporting of educational activity
- Monitoring and evaluation – changes in practice and clinical outcomes
- Formulation of written dissemination/perpetuation plan by each facilitator candidate (one copy to be retained and one to be shared with master trainers)
- Question and answer session with facilitator candidates

1530–1600 **Conclusion**

- Recap facilitator responsibilities and regional commitment (expected number of courses provided, learners trained, workplace supervision, etc.)
- Answer questions regarding national or regional plan for dissemination
- Describe the process to become a course leader or master trainer
- Complete course evaluations
- Present certificates

Comments on Facilitator Workshop Agenda Outline

Each facilitator candidate should complete a provider course in Helping Babies Breathe. If all candidates have completed a provider component previously (on a separate occasion), the provider component can be omitted from the facilitator workshop. Facilitator candidates who are new to HBB should complete a provider course at the beginning of their facilitator workshop. The total length of such a provider course will depend on the participants. Master trainers should be alert that participants who have received prior training may need to re-learn or un-learn some ways of thinking and patterns of behavior. The provider segment may be completed in as little as 3–4 hours or as long as 2 days to allow for consolidation of new learning prior to assessment of knowledge and skills.

The ideal facilitator workshop is small, with approximately 18–24 participants. One master trainer should lead the course, and each group of six participants works with a master trainer.

The participants should experience a provider course as they will present it for future learners. If the course leader (master trainer) presents each flip chart page and demonstrates each skill to the entire group, the participants should be able to follow along with a flip chart in their small group. Table facilitators (who are also master trainers) may choose to perform or repeat the demonstration for a group of six learners. Table facilitators provide feedback on practice in the small groups. Each page is concluded with linkage to the Action Plan and a participant(s) answering the Check yourself questions. This can be done within the small groups.

Exercises after each section of the Learner Workbook should be demonstrated in the groups of six learners. Participants should work through each exercise in the role of the birth attendant and the role of the helper (who provides the responses of the neonatal simulator). Responses to the Group Discussion questions may represent circumstances in a number of different facilities, so it may not be possible to reach consensus on a technique or practice.

If video equipment is available, segments from the HBB Instructor Video can be used to model the teaching and facilitation interaction. The video also presents demonstrations of each of the six exercises, close-up views of the skills, and clinical vignettes illustrating the evaluation points.

At the end of the provider course, participants should design scenarios for additional practice and practice with the checklist Mastering bag and mask ventilation (Learner Workbook, p. 38). The methods for promoting continued learning should be discussed, but will be considered in depth in the facilitator segment.

Facilitator candidates must successfully complete all assessments (written/verbal, bag and mask ventilation skills, OSCE A and B).

The proposed agenda can be modified to fit local timeframes and accommodate additional content. For example, travel schedules may require a later start time or earlier conclusion. When training master trainers or those who will serve as mentors at a national level, the final sessions on dissemination, quality monitoring, sustainability, and measurement of outcomes will be expanded. The master trainer and mentor course presents information that is necessary to link local and regional efforts to the national plan for resuscitation training and neonatal health.

Tool 6: Sample Course Outline for Provider Workshop

Helping Babies Breathe – Provider Course
One-Day Agenda

Objectives:

At the end of the training in Helping Babies Breathe, the participant will be able to:

- Work in pairs with another participant and the neonatal simulator, assuming roles of learner and teacher
- Successfully carry out all the exercises – Preparation for Birth, Routine Care, The Golden Minute (2 exercises), Continued Ventilation with Normal and Slow Heart Rate (2)
- Identify regional practices (best practices and potential harmful practices) agreed upon through group discussion questions
- Demonstrate mastery of bag and mask ventilation (skill check)
- Successfully complete the knowledge check
- Successfully complete OSCE(s)
- Articulate a plan for continued learning in the workplace

0800–0900 Registration

0900–0930 Opening ceremony – Welcome and Introduction of Faculty and Participants

0930–0945 Pre-course Baseline Evaluations
(optional – may also conduct with registration) (knowledge check, bag and mask ventilation skill check)

0945–1000 Dialogue – Causes of Neonatal Death (optional)
Opening visualization

1000–1045 Preparation for a Birth

- Presentation/demonstration, Practice with the Action Plan, Check yourself
- Skill practice in pairs with feedback from table facilitators
- Demonstration of Preparation for a Birth exercise by facilitators
- Practice in pairs with feedback and repetition to correct
- Group discussion questions – Preparation for a Birth

1045–1100 Break

1100–1200 Routine Care

- Presentation/demonstration, Practice with the Action Plan, Check yourself
- Skill practice in pairs with feedback from table facilitators
- [Repeat above for each of 4 flipchart pages and skills]
- Demonstration of Routine Care exercise by facilitators
- Practice in pairs with feedback and repetition to correct
- Group discussion questions – Routine Care

1200–1245 The Golden Minute (clear airway and stimulate breathing)

- o Presentation/demonstration, Practice with the Action Plan, Check yourself
- o Skill practice in pairs with feedback from table facilitators
- o [Repeat above for each of 2 flip chart pages and skills]
- o Demonstration of The Golden Minute – clear airway and stimulate breathing
- o Practice in pairs with feedback and repetition to correct
- o Group discussion questions – The Golden Minute (part 1)

1245–1330 Lunch

1330–1430 The Golden Minute (ventilation)

- o Presentation/demonstration, Practice with the Action Plan, Check yourself
- o Skill practice in pairs with feedback from table facilitators
- o [Repeat above for each of 3 flip chart pages and skills]
- o Demonstration of The Golden Minute – ventilation
- o Practice in pairs with feedback and repetition to correct
- o Group discussion questions – The Golden Minute (part 2)

1430–1530 Continued Ventilation with Normal and Slow Heart Rate

- o Presentation/demonstration, practice with the Action Plan, Check yourself
- o Skill practice in pairs with feedback from table facilitators
- o [Repeat above for each of 5 flip chart pages and skills]
- o Demonstration of Continued Ventilation with normal heart rate
- o Practice in pairs with feedback at end of performance and repetition to correct
- o Group discussion questions – Continued Ventilation with normal heart rate
- o Demonstration of Continued Ventilation with slow heart rate
- o Practice in pairs with feedback at end of performance and repetition to correct
- o Group discussion questions – Continued Ventilation with slow heart rate

1530–1545 Break

1545–1645 Participant Evaluations – Mastering the Action Plan

- o Expectations for the evaluations
- o Knowledge check (verbal or written)
- o Bag and mask ventilation skill check
- o Practice and scenario development (as needed while waiting for OSCE stations)
- o OSCE – Station A (The Golden Minute, part 1)
- o OSCE – Station B (Continued ventilation with normal heart rate)

1645–1730 Continued learning in the workplace

- o Setting up clinical experience and supervision
- o Reflective learning on experience
- o In situ refresher practice (skills practice, case scenarios)
- o Case reviews with the neonatal simulator
- o Perinatal quality improvement initiatives
- o Wrap-up question and answer session

1730–1745 Course Evaluation by Participants

1745–1800 Presentation of Certificates

Helping Babies Breathe – Provider Course
Two-Day Agenda

Objectives:

At the end of the training in Helping Babies Breathe, the participant will be able to:

- Work in pairs with another participant and the neonatal simulator, assuming roles of learner and teacher
- Successfully carry out all the exercises – Preparation for Birth, Routine Care, The Golden Minute (2 exercises), Continued Ventilation with Normal and Slow Heart Rate (2)
- Identify regional practices (best practices and potential harmful practices) agreed upon through group discussion questions
- Demonstrate mastery of bag and mask ventilation (skill check)
- Successfully complete the knowledge check
- Successfully complete OSCE(s)
- Articulate a plan for continued learning in the workplace

Day 1

0930–1030 **Registration**

1030–1100 **Opening Ceremony – Welcome and Introduction of Faculty and Participants**

1100–1115 **Pre-course Baseline Evaluations** (optional–may also conduct with registration)
(knowledge check, bag and mask ventilation skill check)

1115–1130 **Dialogue – Causes of Neonatal Death** (optional)
Opening visualization

1130–1215 **Preparation for a Birth**

- Presentation/demonstration, Practice with the Action Plan, Check yourself
- Skill practice in pairs with feedback from table facilitators
- Demonstration of Preparation for a Birth exercise by facilitators
- Practice in pairs with feedback and repetition to correct
- Group discussion questions – Preparation for a Birth

1215–1330 **Lunch and Break**

1330–1430 **Routine Care**

- Presentation/demonstration, Practice with the Action Plan, Check yourself
- Skill practice in pairs with feedback from table facilitators
- [Repeat above for each of 4 flipchart pages and skills]
- Demonstration of Routine Care exercise by facilitators
- Practice in pairs with feedback and repetition to correct
- Group discussion questions – Routine Care

1430–1515 **The Golden Minute (clear airway and stimulate breathing)**

- Presentation/demonstration, Practice with the Action Plan, Check yourself
- Skill practice in pairs with feedback from table facilitators
- [Repeat above for each of 2 flip chart pages and skills]
- Demonstration of The Golden Minute – clear airway and stimulate breathing
- Practice in pairs with feedback and repetition to correct
- Group discussion questions – The Golden Minute (part 1)

1515–1530 Break

1530–1630 The Golden Minute® (ventilation)

- o Presentation/demonstration, Practice with the Action Plan, Check yourself
- o Skill practice in pairs with feedback from table facilitators
- o [Repeat above for each of 3 flip chart pages and skills]
- o Demonstration of The Golden Minute – ventilation
- o Practice in pairs with feedback and repetition to correct
- o Group discussion questions – The Golden Minute (part 2)

1630–1730 Continued Ventilation with Normal and Slow Heart Rate

- o Presentation/demonstration, practice with the Action Plan, Check yourself
- o Skill practice in pairs with feedback from table facilitators
- o [Repeat above for each of 5 flip chart pages and skills]
- o Demonstration of Continued Ventilation with normal heart rate
- o Practice in pairs with feedback at end of performance and repetition to correct
- o Group discussion questions – Continued Ventilation with normal heart rate
- o Demonstration of Continued Ventilation with slow heart rate
- o Practice in pairs with feedback at end of performance and repetition to correct
- o Group discussion questions – Continued Ventilation with slow heart rate

1730 Break until Day 2

- o Expectations for the evaluations
- o Encouragement of practice and scenario development

Day 2

0800–0900 Questions for Facilitators and Practice with Supervision Available

0900–1100 Participant Evaluations – Mastering the Action Plan

- o Expectations for the evaluations
- o Knowledge check (verbal or written)
- o Bag and mask ventilation skill check
- o Practice and scenario development (as needed while waiting for OSCE stations)
- o OSCE – Station A (The Golden Minute, part 1)
- o OSCE – Station B (Continued ventilation with normal heart rate)

1100–1145 Continued learning in the workplace

- o Setting up clinical experience and supervision
- o Reflective learning on experience
- o In situ refresher practice (skills practice, case scenarios)
- o Case reviews with the neonatal simulator
- o Perinatal quality improvement initiatives
- o Wrap-up question and answer session

1145–1200 Course Evaluation by Participants

1200–1215 Presentation of Certificates

(Lunch as a group or independently if departing for travel home)

Tool 7: Preparing the Neonatal Simulator for Use

This tool reviews the preparation of one type of simulator currently distributed as part of the HBB training package. There are other simulators that can also be used to teach bag and mask skills.

When filled with 2L of warm water, the neonatal simulator has the warmth, the weight (2 kg), and the tone of a baby who needs help to breathe. The simulator can be filled with air instead of water, but it will not be as realistic and it may be more difficult for learners to use.

Work in an area with a deep sink, over towels, or outdoors where the ground can get wet, when filling the neonatal simulator with water.

Assemble all of the pieces of the neonatal simulator.
Simulator body with attached tubing and bulbs for breathing (green) and heart rate (red)
Screw cap and valve for inflation with air
Squeaker bulb (detached, green) to simulate crying

Use the bag and mask device to help prepare the neonatal simulator.
- Prevent contamination of the simulator by using the ventilation bag, rather than your mouth, to inflate it.
- Use the mask as a funnel to fill the simulator with water.

Prepare 2L of water to fill the neonatal simulator.
- Warm water (around 36°C or 98°F) makes the neonatal simulator feel more realistic than cold water.
- Fill the neonatal simulator directly from the tap if there is a clean water source in a place where you can hold the neonatal simulator underneath the tap without touching the sink or the ground.

OR
- Fill one or more containers with 2L of water. Empty soda bottles (500mL, 1L, or 2L) can be rinsed and re-used to fill the neonatal simulator.

Open a space inside the neonatal simulator to receive water.
Place the screw cap with valve (filling cap) on the top opening (filling extension) of the neonatal simulator, and open the valve. Fit the patient outlet of the ventilation bag over the filling cap and valve, and inflate the body with two or three squeezes of the ventilation bag. Holding down the pressure-relief valve sends more air into the body with each breath. Move the air into the arms and legs so that they will fill easily with water. Disconnect the bag and unscrew the filling cap.

Hold the empty neonatal simulator so that it hangs freely.
Neither the legs nor the arms should be resting on anything in order to fill completely. You can hold the neonatal simulator by the top opening as you begin to fill it. You can also support the simulator on the narrow back of a chair with the legs hanging free on either side.

Fill the neonatal simulator with water.
Insert the mask upside down into the top opening of the neonatal simulator to act as a funnel. Fit the mask loosely in the top opening to allow air to escape as water enters. Pour the water slowly and distribute it into the legs and arms of the neonatal simulator.

As the weight of the simulator increases, it is convenient to have a second person hold the simulator under the arms or position the simulator with the legs straddling the back of a chair – still allowing the body, legs, and arms to hang freely.

Fill the neonatal simulator until no more water will enter. Remove the mask from the top opening. Return the filling cap.

If the neonatal simulator not is completely filled, you may add more water using a bulb suction. Open the valve. Fill the bulb suction – or another suitable irrigation device – with water, and use this to insert additional water into the simulator's body until the body feels firm. Close the valve.

Lay the neonatal simulator on its back on a flat surface and check for leaks from the filling cap. Leaks may occur if the filling cap is not tight. Dry the inside of the face mold, as water may have collected there while filling the body of the neonatal simulator.

Fold the filling extension forward and tuck it under the face, where it clicks into a central groove to hold it in place.

If the neonatal simulator is leaking from the top opening, check that the filling cap is not crooked.

Filling the neonatal simulator with air is more rapid than filling with water, but the lighter weight and stiffer tone that result are less realistic.
To fill with air, attach the filling cap to the top opening with the valve open. Inflate with the ventilation bag until the body is firm. Close the air valve and tuck the filling extension under the face, until it clicks into the central groove that holds it in place.

Cleaning and storing the neonatal simulator
Avoid soiling and contamination of the neonatal simulator. Everyone should wash hands before using the neonatal simulator (see Preparation for Birth in the Learner Workbook for detailed instructions). Keep pens and markers away from the neonatal simulator. Use the ventilation bag to prepare the neonatal simulator for use and storage when emptied. (Do not blow into the top opening of the neonatal simulator with your mouth.) Avoid using mouth-to-mouth breathing with the neonatal simulator. If the neonatal simulator is used to teach this skill, consider the use of mouth-to-mask or mouth-to-tube and mask.

The neonatal simulator may be kept filled with water for regular practice at clinical sites. Cover the neonatal simulator with a clean cloth when not in use. Store the neonatal simulator filled with water in a protective cloth bag. It may be convenient to empty the neonatal simulator for transport. Unscrew the filling cap and drain the body, arms, and legs thoroughly. Inflate the neonatal simulator with several squeezes of the ventilation bag and leave the screw top and valve off the top opening to permit drying. Keep all the pieces together in a box or cloth bag.

If the neonatal simulator is soiled or contaminated, wash with soap and water, then rinse with clean water. The neonatal simulator may be disinfected with a solution of 200mL bleach in 2L of clean water, and then rinsed with clean water.

The neonatal simulator is designed to withstand conditions that human beings can tolerate. Do not immerse the neonatal simulator into boiling water. Do not use strong chemicals for disinfection of the neonatal simulator. Tears in the neonatal simulator may be repaired with silicone adhesive and a patch.

Troubleshooting the neonatal simulator
If chest movement is not obtained when squeezing the green bulb to show spontaneous breathing, inspect the tubes to the simulator to be sure they are not kinked. Near the body of the simulator, the tubes may become kinked, especially if the simulator is overlying the tubing.

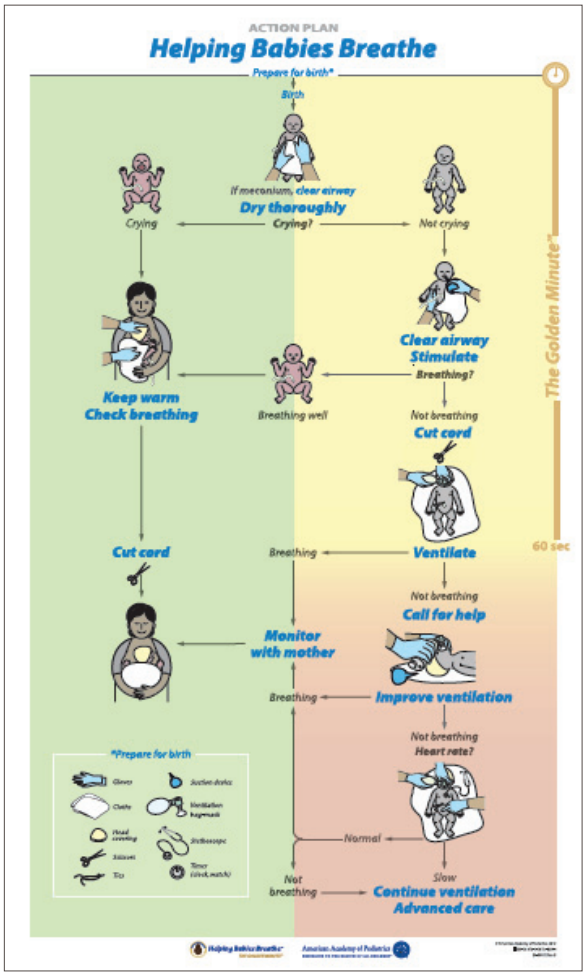
If leaks occur from the filling cap, remove and replace the cap. Leaks may occur if the filling cap is not tight, or if it is not correctly positioned on the screw base.

Tool 8: Understanding the Educational Design of Helping Babies Breathe

I. Adult Learning Principles Used

This training package is designed to teach adult learners of varying educational, cultural, and professional backgrounds the knowledge and skills necessary to resuscitate a newborn who is not breathing. It focuses on interactive exercises and materials that maximize participation and practice. To facilitate learning, representatives of trainee groups should be included in local adaptations of the package, training groups should be small to allow for coaching and feedback, and multiple learning methods (self-learning, short verbal explanations, demonstration, practical exercises, group discussions, etc.) should be used to accommodate different learner styles.

II. Action Plan



The Action Plan uses pictures and only a few words to guide birth attendants through the evaluation, decision, and action steps in neonatal resuscitation. The Action Plan is the core of the educational program and the guide for clinical care in the workplace. The wall poster can be used for teaching in the classroom, and a smaller version of the Action Plan can be hung in the delivery area along with the Clinical Reminder.

Three color zones signify the level of help needed:

- Green – routine care
- Yellow – initial steps of help to breathe
- Red – continued ventilation and possible need for advanced care

The block labeled *Prepare for birth summarizes:

- the preparation of persons and the delivery area before birth
- the equipment and supplies for resuscitation

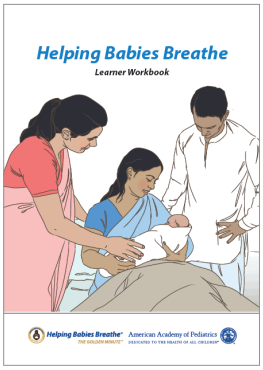
The Golden Minute® adds time to the Action Plan to emphasize that the baby is the priority in the minute after birth.

The evaluation-decision-action cycle that repeats throughout a neonatal resuscitation is presented in the symbols and words:

- Evaluation – bold black words followed by question marks
  - Crying?
  - Breathing?
  - Heart rate?
- Decision – drawing of babies and labels (black, not bold)
  - Crying
  - Not crying
  - Breathing well, not breathing, breathing
  - Normal, slow (heart rate)
- Action – drawings of babies with mother and/or birth attendant
  - Dry thoroughly
  - Keep warm, check breathing
  - Cut cord
  - Monitor with mother
  - Clear the airway and stimulate
  - Cut cord
  - Ventilate
  - Call for help
  - Improve ventilation
  - Continue ventilation, advanced care

Meconium-stained amniotic fluid is a special circumstance which requires an immediate evaluation, decision, and action: If meconium, clear airway before drying the baby.

III. Learner Workbook



The Learner Workbook presents the knowledge needed to resuscitate a baby and provides exercises to build skills and integrate knowledge and skills into performance.

Color coding links four sections of the Learner Workbook to the Action Plan:

- Gray – Preparation for birth and care for all babies
- Green – Routine care
- Yellow – The Golden Minute®
- Red – Continued ventilation, advanced care

The page titled What you will learn (page 3) introduces the color coding and serves as a table of contents and a list of learning objectives. The inset illustrations from the Facilitator Flip Chart and the exercises at the end of each section (pages 8, 14, 18, 24, 32, 34) also use this color coding.

Each section of the Learner Workbook follows the same format:

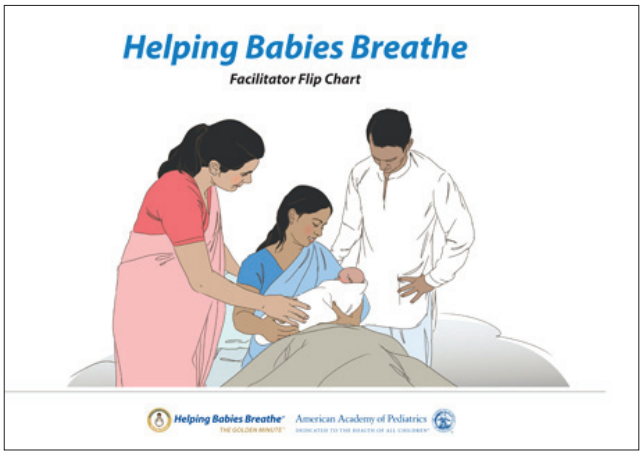
- Presentation of knowledge content
  - Illustration from the Facilitator Flip Chart
  - Visual link of specific content (circled in red) to steps on the Action Plan
  - Short paragraphs with headings and lists for easy review and drills
  - Check yourself questions to help learners focus on the main points
  - Follow the Action Plan instruction to link back again to the Action Plan and practice the evaluation or skill just learned
- Exercise
  - Action Plan with path through the current section highlighted
  - Instructions to the learners
  - Checklist for complete performance of the skills
  - Group discussion
  - Questions to help learners apply their knowledge and skills in the workplace
  - Opportunity for facilitators to explain local variations in practice and help solve problems

Additional resources for practice and reference can be found at the end of the Learner Workbook:

- Full Action Plan with six case scenarios
- Unlabeled Action Plan to help learners integrate knowledge and skills
- Individual case scenarios to provide additional practice
- Technique for hand cleaning
- Cleaning and testing of resuscitation equipment
- Glossary of terms
- Apgar scoring system

A pocket card with the Action Plan and Course Completion Certificate can be detached from the back page of the Learner Workbook.

IV. Facilitator Flip Chart



The Facilitator Flip Chart has information on both sides of each page:

- Front illustration – pictorial representation of an evaluation or skill
- Back text – presentation guide for the facilitator

A built-in stand positions the Facilitator Flip Chart so both sides are visible:

- Illustrations face the learners
- Presentation guide faces the facilitator
- Fold-out stand prevents slipping

Each page of the Facilitator Flip Chart follows the same format:

Front (facing learners)

- Illustration of an evaluation, action step, or technique
- Inset of the Action Plan with step corresponding to the illustration circled in red

Back upper (facing facilitator)

- Present and demonstrate – main points of knowledge and skills presented in the front illustration and text on the corresponding page of the Learner Workbook
- Practice with the Action Plan – cues to encourage learners to refer to the Action Plan and to practice individual evaluations and skills
- Check yourself – review of the Check yourself questions from the Learner

Back lower (facing facilitator)

- Illustration (same as front) of an evaluation, action step, or technique
- Background and educational advice – additional information for facilitators to amplify the main points and some issues that may have variations in practice

Exercises and group discussion questions end each color-coded section of the Facilitator Flip Chart:

- Preparation for Birth
- Routine Care
- The Golden Minute® – clear the airway and stimulate breathing and ventilation
- Prolonged Ventilation with Normal or Slow Heart Rate

A checklist for facilitators can be used on the day of a Helping Babies Breathe course.

Learner evaluations (written/verbal and objective structured clinical evaluations) can be found at the back of the Facilitator Flipchart.

V. Neonatal Simulator/Mannequin

Skills practice in Helping Babies Breathe is most effective when a neonatal simulator is used that can show spontaneous breathing and cry, chest movement with bag and mask ventilation, and umbilical cord pulse.

A simpler neonatal mannequin may also be used for practice, but the facilitator or a learner must then tell the birth attendant (resuscitator) how the mannequin is responding. A neonatal simulator allows the learner to practice evaluation of the baby and to take the role of the baby and provide the appropriate response to actions. In this way learners develop an understanding of the link between actions and responses.

To prepare the neonatal simulator, refer to package instructions or the linked guide, **Tool 7: Preparing the Neonatal Simulator for Use.**

Squeeze the separate, green bulb to create spontaneous breathing.

- Normal breathing – regular, gentle movement of the chest
- Abnormal breathing – fast, slow, irregular, shallow, gasping
- No breathing – apnea

Squeeze the squeaker bulb to simulate crying.

Squeeze the red bulb to make an umbilical pulse.

- Normal heart rate – greater than 100 beats per minute
- Slow heart rate – less than 100 beats per minute

Hold the bulbs under a table or behind your body to conceal their operation from the learner.

Position the head in a hyperextended or flexed position to block the airway. Pressing on the clear tube in the neck (the "trachea") will also block the airway. Squeezing the green bulb to inflate the chest will result in decreased chest movement while giving breaths with the ventilation bag.

When clamping and cutting the cord, take care to avoid damaging the inflatable portion at the base of the cord. Position the lower clamp or tie above the base and simply pull off the cord while indicating the use of scissors or a blade.

Mastering bag and mask ventilation

Ventilation with bag and mask can be lifesaving when a baby does not breathe after clearing the airway and stimulation. Mastering and maintaining this skill require ongoing practice. Use the following steps to practice so that you can perform all of the steps perfectly.

	Done	Not done
1. ***Check equipment and select the correct mask***	☐	☐
Test function of bag and mask		
Make sure mask fits the baby's face		
2. ***Apply the mask to make a firm seal***	☐	☐
Extend the head, place mask on the chin, then over the mouth and nose		
A firm seal permits chest movement when the bag is squeezed		
3. ***Ventilate at 40 breaths per minute***	☐	☐
The rate should not be less than 30 or more than 50 breaths per minute		
4. ***Look for chest movement***	☐	☐
Check that every ventilation breath produces chest movement		
5. ***Improve ventilation if the chest does not move:***		
a) Head – reapply mask and reposition head	☐	☐
b) Mouth – clear secretions and open the mouth	☐	☐
c) Bag – squeeze the bag harder	☐	☐

The **Written/verbal Evaluation Knowledge Check** near the end of the Facilitator Flip Chart covers the knowledge to be gained in Helping Babies Breathe. Learners may complete the evaluation by reading the questions silently to themselves and answering on a printed form. Facilitators may also choose to read the questions aloud to an individual learner or a group of learners. An individual learner can answer verbally. A group of learners can mark answers on printed forms or close their eyes and raise their hands to indicate the correct answer.

Learners should answer 80 percent of the questions (14 out of 17) correctly to successfully complete the written/verbal evaluation. Use the answer key in the Facilitator Flip Chart to correct the evaluation.

Review with a learner the questions answered incorrectly. A learner who did not pass the written/verbal evaluation may need to study more and re-take the evaluation later.

Every learner should successfully complete the **Bag/mask Performance Evaluation** (7 out of 7 steps) before attempting the OSCE evaluations.

Learners should perform every step correctly to successfully complete this evaluation. Learners should practice on their own with the checklist (Mastering bag and mask ventilation on p. 38 in the Learner Workbook) before the evaluation. The evaluation can be administered more than once if necessary to achieve successful completion. Once learners have mastered this skill, the full range of skills learned in Helping Babies Breathe can be integrated by using case scenarios.

The **Objective Structured Clinical Evaluations (OSCEs)** found on p. 25b in the Facilitator Flip Chart can be used for both practice and/or qualifying evaluations. To be certified, learners must demonstrate skills, as summarized below.

OSCE A examines the skills and decision-making in Routine Care and the initial steps of The Golden Minute®. Learners must correctly perform three key steps marked with * (dries thoroughly, recognizes baby is not crying, and positions head and clears airway) and a total of 10 out of 13 steps to successfully complete OSCE A.

OSCE B examines the skills of bag/mask ventilation and assessment of heart rate. Learners must correctly perform four key steps marked with * (recognizes baby is not breathing, ventilates at 40 breaths per minute, looks for chest movement, and improves ventilation) and a total of 14 out of 18 steps to suc

Tool 9: Consider the Health System, Culture, and Environment

Refer to completed Tools 1–3 to provide context for the training program.

Consider how regional and sub-regional differences in the health system may change the teaching of *Helping Babies Breathe*. Many of the Group discussion questions associated with the exercises deal with the health system, environment, and culture. Facilitators should prepare to guide discussion on topics by becoming familiar with any national/regional/local guidelines and standards for practice in the areas below. Note the considerations for HBB in the right column. Use the blank spaces to add other issues.

Regional differences in the health system	Considerations for Helping Babies Breathe
Type of ventilation device in use	
Type of suction device in use (bulb, tube and reservoir, gauze wipe)	
Method for cord clamping/tying, cutting and supplies used (clamp, ties, scissors, blade)	
System and functionality of the system for obtaining, maintaining, and replacing equipment (disposable and re-usable)	
Contents of the delivery kit/birthing kit	
Use of handwashing or handrub	
Helper(s) available to a birth attendant, their possible roles, and the preparation they need from a birth attendant	
Communication system among health care facilities and providers (radio, cell phone, internet)	
Emergency transport system	
Criteria for referral to higher-level health facility	
Special considerations to prevent infection (HIV, malaria, TB; personal protection guidelines for birth attendants)	
Management of meconium-stained amniotic fluid	
How mother and infant are safely identified (e.g., ID bands)	
Where the baby who does not breathe after stimulation will be placed for ventilation	
Where a baby who needs ventilation for longer than several minutes will receive care	
What conditions can be cared for where the participants work	
Reasons for transfer of a baby where the participants work	
When ventilation might be stopped for a baby who continues to have a slow heart rate or does not breathe	
Strength of supervision system for training/how support for continued learning will take place	
Financial support for initial training and continued learning (district planning and budgeting process)	
Other?	

Regional differences in environment and culture	Considerations for Helping Babies Breathe
Ways to maintain warmth in the delivery setting	
Ways to have adequate light in the delivery setting	
Availability of clean water or preparation of clean water; availability of soap and sanitizers	
When the umbilical cord will be clamped and tied or cut if the baby needs ventilation	
Device used to record time (timer, clock, watch, cell phone)	
Women's preferences for delivery setting	
What makes the delivery setting comfortable for the pregnant woman/new mother	
Minority and marginalized populations	
Acceptability of skin-to-skin care of baby immediately after birth	
Traditional methods of umbilical cord care (useful/harmful/neither)	
Methods of stimulating breathing (useful/harmful/neither)	
Attitudes and beliefs about breastfeeding immediately after birth	
Beliefs about babies who do not breathe, illness, and death	
Local terms for babies who do not breathe at birth	
Local terms for difficulty breathing or not breathing well	
Other?	

Tool 10: Developing Appropriate Teaching Methods

Incorporate familiar terms, cultural references, and teaching styles (e.g., mnemonics, songs, verbal drills) into Helping Babies Breathe to aid the learners. Review completed Tool 9: Consider the health system, culture, and environment for themes to incorporate into training design. Including representatives of different participant groups in pre-testing of the HBB materials before a training may provide helpful insights. If learners experience difficulty with a skill, work with them to develop a teaching method that will overcome it. Often the learner pairs can help one another with difficult concepts or skills.

Knowledge and skills	Teaching methods
Local terms for babies who do not breathe at birth	
Local terms for difficulty breathing or not breathing well	
Ventilating with 40 breaths per minute	
Counting the umbilical pulse or heart rate and deciding if it is greater than or less than 100	
Connecting knowledge in HBB to previously learned knowledge (e.g., "5 cleans")	
Connecting HBB to other elements of ENC/BEmOC	
Add others below	

Tool 11: Deciding on Supplemental Content

Master trainers and course leaders may choose to present a brief summary of the rates and causes of neonatal mortality for a country or region where they are teaching Helping Babies Breathe. The management of infectious diseases in the region or programs focusing specifically on neonatal infection, breastfeeding, or Kangaroo Mother Care might supplement Helping Babies Breathe. In facilities with more advanced services, available topics such as use of supplemental oxygen or the Neonatal Resuscitation Program can be offered.

Regional topic of importance	Supplemental content for Helping Babies Breathe
Regional rates and causes of neonatal mortality	
Management of prevalent infectious diseases (HIV, malaria)	
Specific methods to decrease neonatal infection	
Breastfeeding	
Kangaroo Mother Care	
Other elements of ENC	
Elements of EmOC	
Interpersonal communication skills	
Other?	

Tool 12: Timeline for Course Preparation – Helping Babies Breathe

Date	Preparation Step
	Long-term (6–12 months)
	• Determine need for course and course format.
	• Decide on the number of participants and number of facilitators needed.
	• Select course facilitators.
	• Select potential participants.
	• Decide date and place of course.
	• Obtain sponsorship and prepare a budget.
	Medium-term (3–6 months)
	• Select and reserve course location.
	• Obtain all teaching materials, including simulators.
	• Plan ample time for procurement schedules, such as customs clearance.
	• Have a planning meeting with facilitators and organizers/sponsors.
	• Make a detailed course agenda with times.
	• Contact potential participants.
	• Arrange for food, beverages, and travel allowances, if necessary.
	• Check mannequins, supplies and equipment.
	• Prepare participant and course evaluation materials (photocopies).
	• Arrange for post-course clinical supervision.
	Short-term (1–3 months)
	• Distribute Learner Workbook and travel allowances to participants (if applicable).
	• Organize teaching materials for small groups.
	• Confirm reservations for course location, food, and beverages.
	Day of the course
	• Arrive early.
	Post signs to direct learners to the course location.
	Set up demonstration area and small group practice areas. (Fill simulators.)
	Keep a record of learner evaluations.
	Sign completion certificates.

	After the course
	Clean and reorganize teaching materials.
	Replace or repair equipment and supplies as necessary.
	Make notes of what worked well and what to do differently.
	Complete reports for budget, participation, and evaluation of learners and course.
	Follow-up on clinical supervision of learners.

Tool 13: Assemble the Teaching Materials

Number of learners .....
Number of facilitators (1 per 6 learners) .....

Calculate the number needed for each item:

Number needed	Partners (specify lead partner)	Comments
	Teaching materials	
	Action Plan Wall Chart	1 per 6 learners
	Facilitator Flip Chart	1 per 6 learners
	Learner Workbooks	1 per learner
	Neonatal mannequin or simulator	1 per 2 learners
	Water (clean or disinfected) to fill neonatal simulator	2L per simulator
	Water for handwashing or hand cleaner	for all participants
	Equipment and supplies to care for the baby at birth	1 set per 2 learners
	• 2 pairs of gloves	
	• 2 towels or cloths	
	• 1 head covering for baby	
	• 1 scissors or blade	
	• 2 cord ties or clamps	
	• 1 suction device	
	• 1 ventilation bag	
	o 2 masks – term and preterm	
	• 1 stethoscope	
	• 1 timer (clock or watch)	
	Written/Verbal Knowledge Check recording sheet	1 per learner
	Written/verbal Knowledge Check answer sheet	1 per facilitator
	Bag and mask Performance Evaluation recording sheet	1 per learner
	Objective Structured Clinical Evaluation recording sheet (OSCE A and B)	1 per learner

Tool 14: Reviewing the Practice Exercises in Helping Babies Breathe – a facilitator preparation guide

Preparation for Birth.

You may demonstrate correct hand washing and/or use of alcohol-based cleanser. (See p. 39 Learner Workbook and p. 2b in the Facilitator Flip Chart.) You should have all participants practice correct hand cleaning. Gather the supplies needed for demonstration or practice before the course.

Familiarize yourself with the equipment and supplies used by the learners in their workplaces. Be sure you can demonstrate how to check and use the ventilation bag if it is different from the one you use. Be prepared to offer suggestions for adequate light and warmth in the area for resuscitation.

Ensure that learners can identify an emergency plan as part of this exercise. You may prepare a scenario that stimulates learners to discuss and plan how they would deal with the unexpected. Be prepared with information on your region's system for emergency consultation and referral.

Routine Care.

You should discuss with learners the possible ways to handle meconium-stained amniotic fluid. (See p. 10, Learner Workbook and pp. 4a and 4b in the Flip Chart.) Until high-quality data are available on management of meconium-stained fluid without intubation, practices may differ from one region to another. In some regions, the nose and mouth may be cleared of meconium-stained fluid before delivery of the shoulders. In other regions, the nose and mouth may be suctioned after delivery if the baby does not cry spontaneously. Emphasize the correct technique to dry thoroughly – using a rubbing motion, not patting.

The Golden Minute®. The action sequence for a baby who does not cry at birth should be mastered by all learners. Within The Golden Minute, the baby should be crying, breathing well, or receiving help to breathe. Consider ways to help learners develop a sense of time and the correct speed for actions.

Prolonged Ventilation with Normal or Slow Heart Rate.

Make sure that learners ventilate with good chest movement of the simulator or mannequin and show the steps to improve ventilation. Recognize when the simulator or mannequin's head is flexed or hyper extended. Learners should know how and when to seek emergency consultation or referral for advanced care. Ask each participant to make an individual emergency plan and review it, either in plenary or working in small groups or dyads if time is short. Be familiar with the resources for advanced care and transport in your region, and make sure that participants' emergency plans are consistent with these resources and health system procedures.

Tool 15: Practicing with the Neonatal Simulator or Mannequin

Explain to learners how they will work together using the neonatal simulator during the performance exercises. For many learners, simulation may be a new experience.

- Two learners should work together as a pair, one in the role of the birth attendant and the other taking the role of the baby. The second learner can also act as a helper.
- After completing an exercise successfully, the learners switch roles and repeat the exercise. If each pair of learners has a neonatal simulator and equipment set, all learners can practice simultaneously. Otherwise, those who are not practicing can take notes and provide feedback.
- Explain to learners that, unlike in this simulation exercise, in reality, equipment and supplies should not be shared or reused, without disinfection. Cloths, suction devices, ventilation bag and mask, and stethoscope should be thoroughly cleaned and disinfected. Umbilical ties and blades to cut the cord may be disposable or clamps and scissors may be cleaned and disinfected according to regional guidelines.

Introduce a skill or a sequence of skills in the following way:

- Demonstrate a skill or a sequence of skills with two facilitators.
- Repeat the demonstration with a learner acting as helper.
- Ask each learner pair to work through the exercise as the birth attendant and the baby/helper. Facilitators provide feedback including suggestions for improvement and corrections.
    - Learners may describe their actions as they are performing them and review the evaluation questions, i.e., "Is the baby crying?" "Is the baby breathing well?", "Is the heart rate normal or slow?".
    - When using a neonatal simulator, learners can squeeze the appropriate bulb to simulate a cry, create breathing movements, or provide an umbilical pulse.
    - Learners will provide verbal information on crying, breathing, and heart rate when using a mannequin or when listening with a stethoscope.
- Each learner pair works through the exercise independently and evaluates its own performance.

Tool 16: Helping Babies Breathe Course Evaluation

Use the scale 1–5 from Strongly Disagree–Strongly Agree to rate each item

Organization of the Workshop

- I had enough time to learn how to help babies breathe
- I could ask questions
- The facilitator listened to my questions
- The facilitator answered my questions
- I had enough time to practice helping babies breathe

1 Strongly Disagree	2 Disagree	3 Neither Agree Nor Disagree	4 Agree	5 Strongly Agree

Course Content

- I understand why The Golden Minute is important
- I can use the Action Plan to help babies breathe

1 Strongly Disagree	2 Disagree	3 Neither Agree Nor Disagree	4 Agree	5 Strongly Agree

Course Materials

- The following course materials helped me to learn:
  Learner Workbook
  Flip Chart
  Action Plan
  Neonatal simulator and equipment
- The pictures in the Learner Workbook and Flip Chart tell me how to help babies breathe
- Self-check questions were helpful
- Exercises after each section of the Action Plan were helpful
- Group discussion questions were helpful
- The mix of teaching, discussion, and practice was appropriate

1 Strongly Disagree	2 Disagree	3 Neither Agree Nor Disagree	4 Agree	5 Strongly Agree

Assessments

- The course prepared me to answer the knowledge check questions
- The course prepared me to perform the bag and mask skill check
- The course prepared me to make decisions and actions in a case scenario

1 Strongly Disagree	2 Disagree	3 Neither Agree Nor Disagree	4 Agree	5 Strongly Agree

Overall

- I can help babies breathe

What is the best part of the course? Why?

How can the course become better?

Other comments:

Tool 17: Monitoring Numbers Trained

In addition to reporting, as requested, to national authorities, master trainers should report training figures on the www.helpingbabiesbreathe.org website.

What is the purpose of documenting training numbers?

To monitor the dissemination of training and progress toward the goal of a person trained in neonatal resuscitation at every delivery

How often?
Every 3, 6 or 12 months, depending on program specifications

By whom?
Master trainers and facilitators keep records of all trainings and supervisions; facilitators work with health facilities in their region to complete training coverage statistics.

Master Trainers

Projected training of facilitators and supervisory visits for the period ___ to ___ (from national/regional plan)

Location	Number of facilitators by cadre			Supervisory visits (dates)	
	Midwives	Medical officers	Others	Provider training	Continued learning

Actual training of facilitators and supervisory visits for the period _____ to _____

Location	Number of facilitators by cadre			Supervisory visits (dates)	
	Midwives	Medical officers	Others	Provider training	Continued learning

Facilitators

Projected training of providers and establishment of activities for continued learning for the period _____ to _____ (from national/regional plan)

Location	Number of facilitators by cadre			Supervisory visits (dates)	
	Midwives	Medical officers	Others	Provider training	Continued learning

Actual training of providers and establishment of activities for continued learning for the period _____ to _____

Location	Number of facilitators by cadre			Supervisory visits (dates)	
	Midwives	Medical officers	Others	Provider training	Continued learning

Actual training of providers and establishment of activities for continued learning for the period _____ to _____

Location	Number of facilitators by cadre			Supervisory visits (dates)	
	Midwives	Medical officers	Others	Provider training	Continued learning

Tool 18: Checklists for Supervisory Visits

I. Supervision of Provider Training

Completed by:

Date(s) of training:

Location:

Course leader:

Facilitators:

Total number of participants (learners) by cadre
Midwives:
Medical officers:
Others:
Ratio of learners to facilitators:

Ratio of learners to neonatal simulators/mannequins
Total length of workshop (in hours):
Time spent in practice:
Evaluation on same day as training? Yes No
Best aspects of workshop (from evaluations):

Suggestions for improvement (from evaluations):

Rates of Successful Completion of Assessments

Assessment	Number attempting	Number successful	Proportion successful
Written/verbal knowledge check			
Bag and mask ventilation skills check			
OSCE A			
OSCE B			

Pre/Post-Course Change in Knowledge and Skills (optional)

Assessment	Number attempting	Number successful	Proportion successful
Written/verbal knowledge check			
Bag and mask ventilation skills check			

Other comments/observations:

II. Supervision of Continued Learning

Completed by:

Date:

Location:

Responsible supervisor:

Area for regular practice with neonatal simulator/mannequin?	Yes	No
Experience logs in use?	Yes	No
Notes recording history of resuscitation attempts in use?	Yes	No
Resuscitation debriefing carried out?	Yes	No
Case reviews of neonatal resuscitations, early neonatal deaths, fresh stillbirths?	Yes	No

Describe other activities for continued learning (simulated resuscitations, skills checks, etc.)

How are new birth attendants trained in neonatal resuscitation as they enter service in this site?

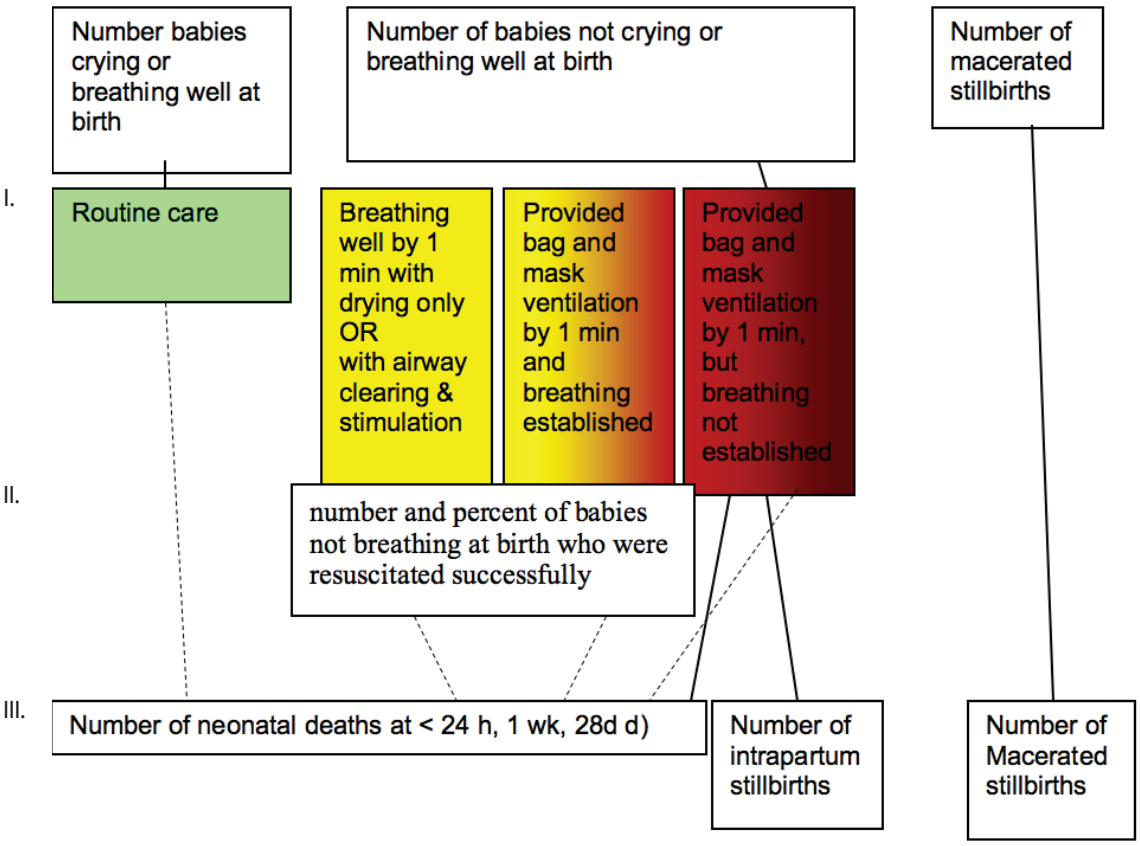
Performance of Selected Birth Attendants on Skills Check and OSCE (successful or unsuccessful)

Birth attendant (by cadre)	Bag and mask ventilation skill check - mastery	OSCE A (or equivalent)*	OSCE B or equivalent*

* for details on the OSCE A and B evaluation tools, refer to p. 25b in the Facilitator Flip Chart

Tool 19: Monitoring Impact on Practice and Neonatal Outcomes

Each country will need to decide how this information will be collected and by whom; how this information will be incorporated into the national HMIS; and how it will be disseminated to national, regional, district and facility managers to guide decision making.



Key indicators:

I. Condition at birth – percent of infants who do not cry at birth
II. Resuscitation – percent of infants not crying at birth who are resuscitated
III. Neonatal outcome – percent of infants (live births+not crying or breathing well) alive at 24 hours

Additional indicators may be collected as specified by the individual health system.
Deaths in the delivery setting – percent of infants (live births+not crying or breathing well) who die in the immediate delivery period.
Deaths in the first 7 days – early neonatal mortality
Deaths in the first 28 days – neonatal mortality