

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,

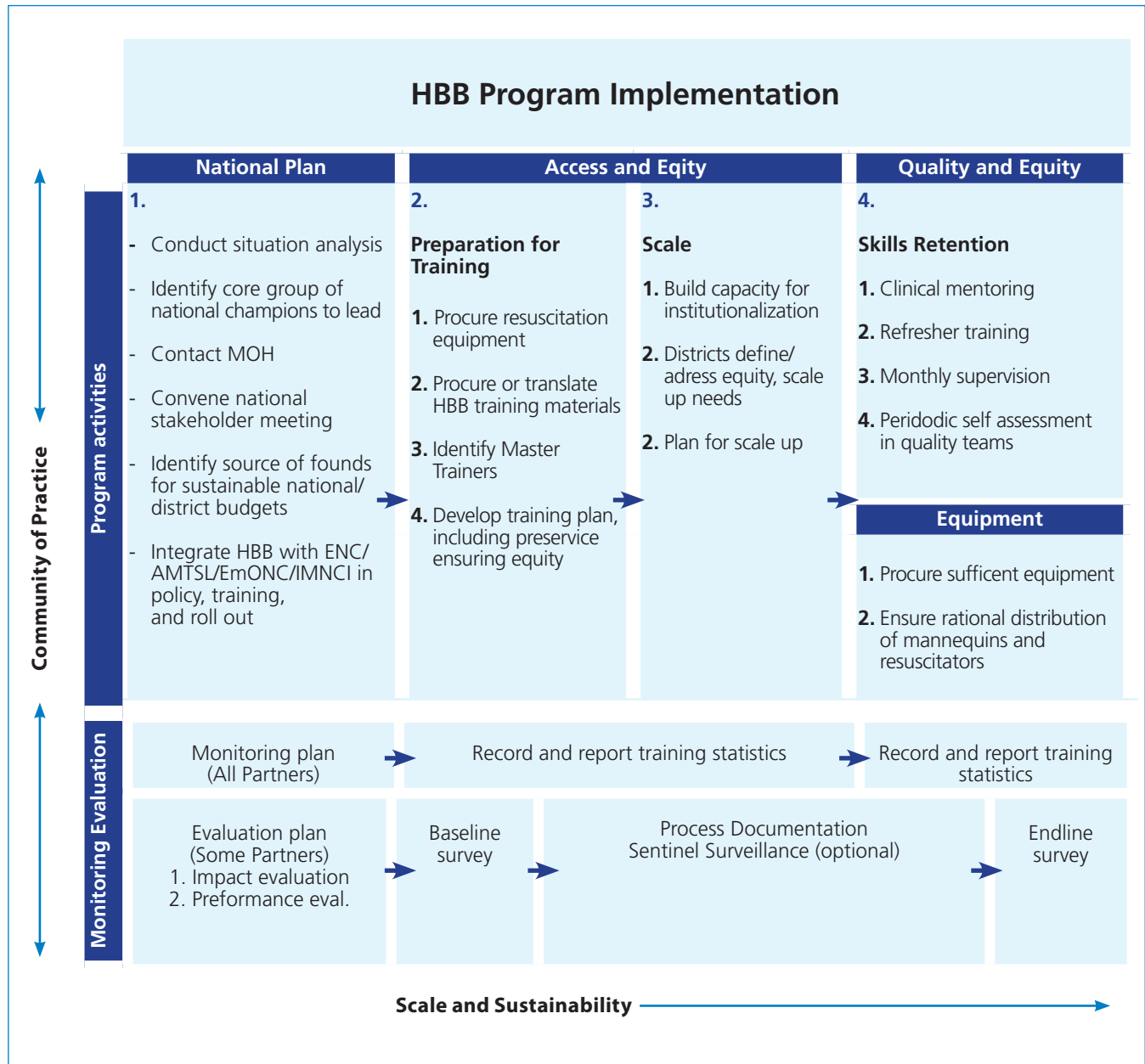
including cesarean sections and neonatal specialty care. HBB is designed with educational flexibility to span this continuum as determined by countries' health systems. HBB prepares birth attendants with a variety of experience levels to resuscitate newborns who are not breathing. In order to reduce 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.