

## 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.

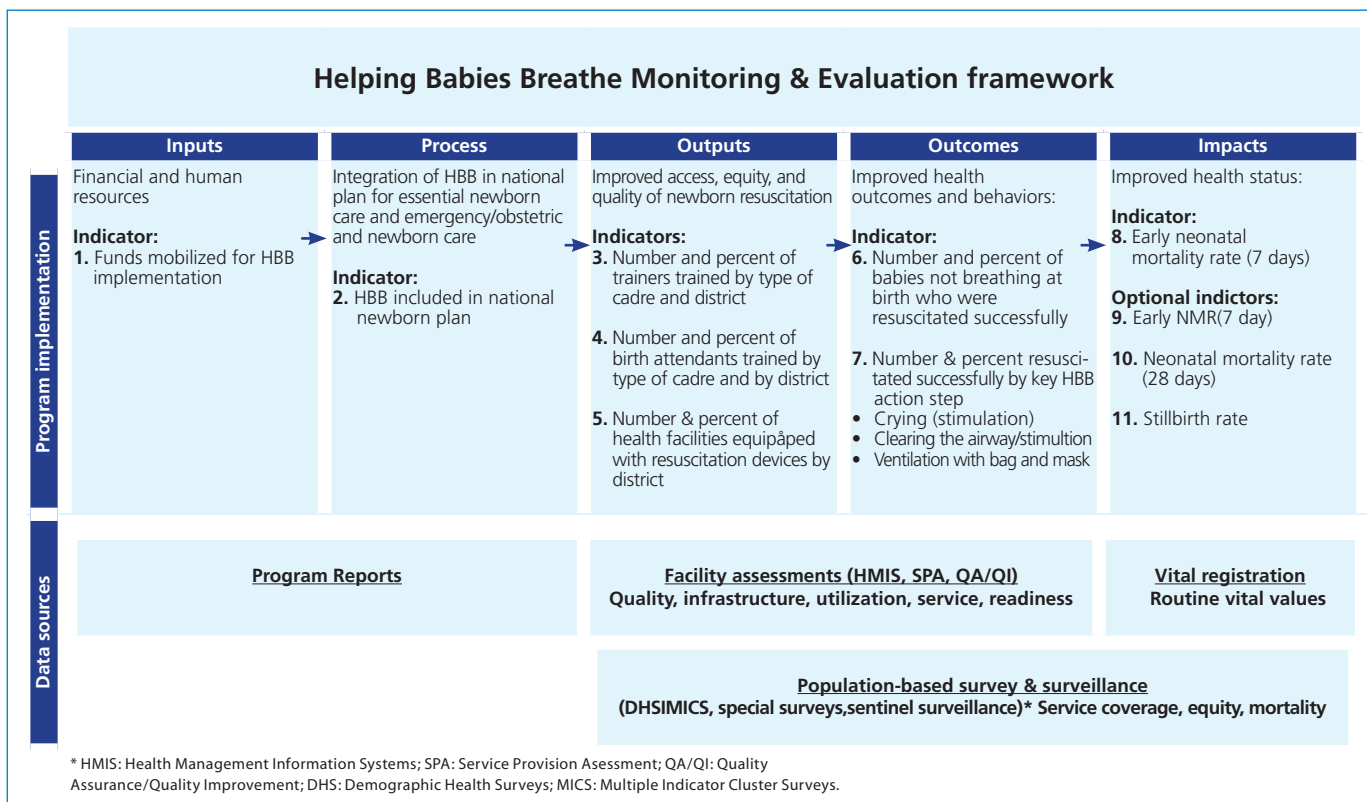
### B. Monitoring the process and quality of training

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.



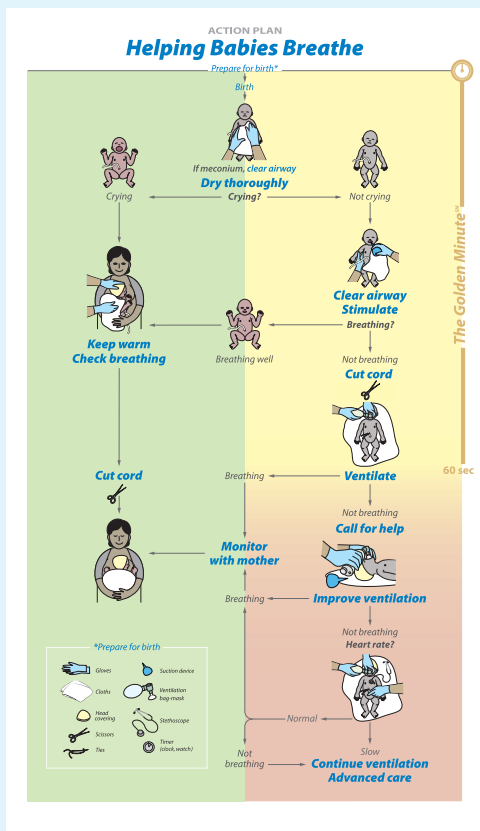
## D. Collecting neonatal outcome measures and vital statistics

### 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

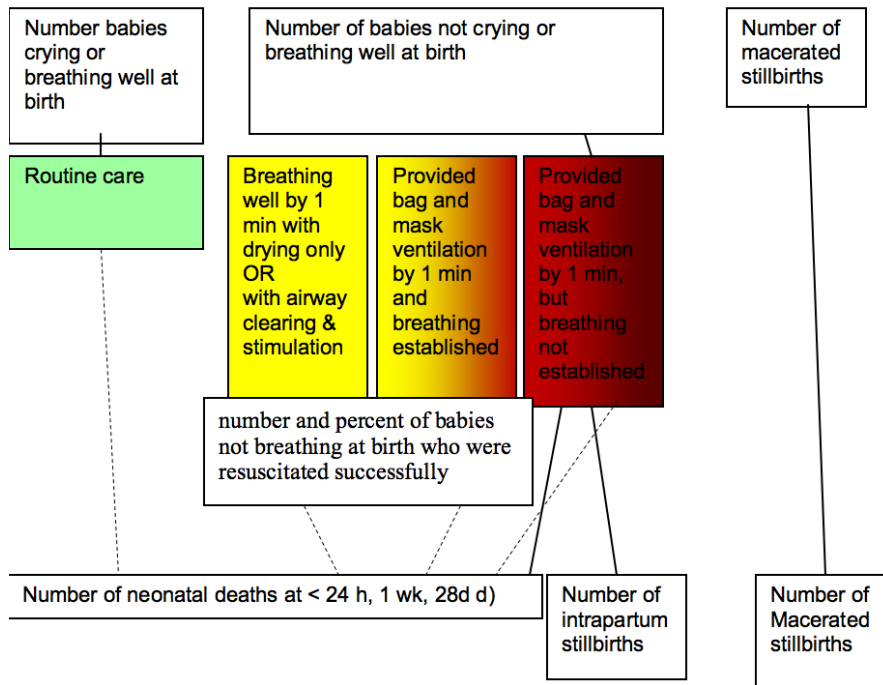
**If no, was the baby a neonatal death (heart rate present but failed to breathe adequately)**

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  $47 \pm 5.7\%$  to  $97 \pm 1.1\%$ ; 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.