

# Cost Analysis for Scaling Up a Practice Improvement Package for HBB/ENC in Rwanda

May 2018

[www.mcsprogram.org](http://www.mcsprogram.org)

## Background

Despite attempts to reduce newborn deaths in Rwanda through the introduction of the Helping Babies Breathe program, birth asphyxia remained the leading cause of newborn deaths in Rwanda. In 2016, the Ministry of Health (MOH), with assistance from the US Agency for International Development's flagship Maternal and Child Survival Program (MCSP), rolled out a new integrated practice improvement package for clinical management of newborns with birth asphyxia. The Helping Babies Breathe/Essential Newborn Care (HBB/ENC) practice improvement package was initially implemented in four priority districts and later scaled up in an additional six districts. The improvement package includes low-dose, high-frequency (LDHF) training for health care workers, mentoring, and focused quality improvement (QI) activities. Results from the four initial implementation districts indicated that the HBB/ENC practice improvement package built provider capacity, improved clinical practices, and reduced fresh stillbirths and newborn deaths due to birth asphyxia.

To inform the scale-up of the HBB/ENC practice improvement package to an additional 20 districts<sup>1</sup> in Rwanda, this document presents the rationale, methods, and findings of a cost analysis. Based on the cost inputs required to implement the approach in the four initial MCSP-supported districts, a flexible cost model was developed to project the costs of scaling up the package to the national level. The outputs of the model provide information on the expected range of financial resources needed to bring the newborn practice improvement package to national scale in Rwanda.

## Summary of Practice Improvement Package and Costed Activities

The practice improvement package integrates three strategies to improve health care providers' clinical management for preventing and managing birth asphyxia. The three strategies are:

- **LDHF training:** innovative curriculum delivery integrating HBB/ENC into three modularized sessions held in facilities once a week, over three weeks
- **Mentorship:** regular mentoring visits by district hospital-based mentors who engage with health center providers to identify gaps and reinforce the practice of HBB/ENC. MCSP trained and dispatched four mentors per district during the initial roll-out phase
- **Focused QI:** tailored QI activities to assess outcome indicators and identify facility readiness issues during mentorship visits

<sup>1</sup> The analysis includes 10 MCSP-supported districts and the 14 districts in which the Partners in Health All Babies Count model for essential newborn care is not operational.

The following integral activities to implement the practice improvement package were costed:

- **Preparatory activities**, including situational analysis, provider skill assessment, training equipment procurement, ENC/HBB refresher training for trainers, and engagement with district health stakeholders
- **Training of mentors** on the LDHF method to deliver it to health center providers, including a master training of trainers (TOT), standard TOT, and biannual refresher TOT over the course of scale-up
- **LDHF training** of providers working in district hospital and health center maternities by mentors, including refresher trainings every two years over the course of implementation
- **Mentorship** and support for QI activities by the district hospital-based mentors, including travel and facilitation fees
- **Focused oversight of QI activities** in districts by dedicated advisors

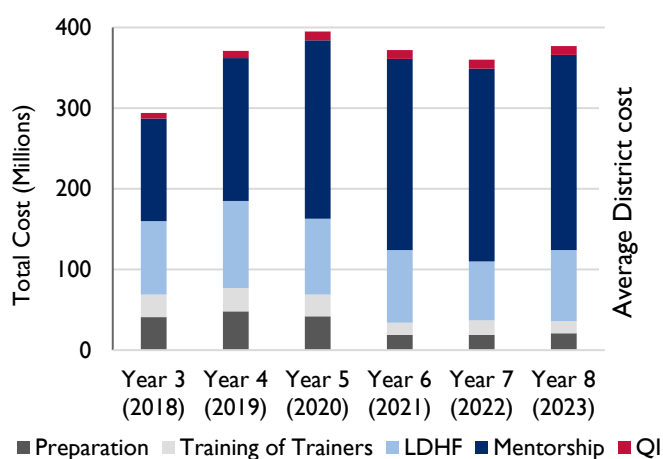
## Methodology and Assumptions

Cost data from the roll-out of the approach in four MCSP-supported districts from November 2015 to October 2016 were retroactively collected from May to September 2017. The information needed was compiled from structured interviews with program staff and documents from MCSP Rwanda country offices and MCSP headquarters. The collected data were analyzed using an activity-based approach to identify the key cost inputs and drivers for scale-up. Cost modeling was conducted to estimate the costs of scale-up to other districts under a range of scenarios, including translating the costs from an implementer’s perspective (i.e., MCSP) to that of the MOH to generate cost estimates to support sustainability of the approach in the future. The modeling used standard MOH salary, transport, and facilitation fees (i.e., per diem). Salaries were included for technical management, coordination, training, and mentor oversight roles. The model allowed mentor salaries to be included or excluded—they are excluded in the results discussed in this document. A key assumption of the analysis is that the activities remain consistent as the package is scaled to other districts. The analysis does not include the cost of any commodities or indirect costs outside of technical oversight functions. A one percent annual cost increase is assumed based on current annual changes in Rwanda’s consumer price index.

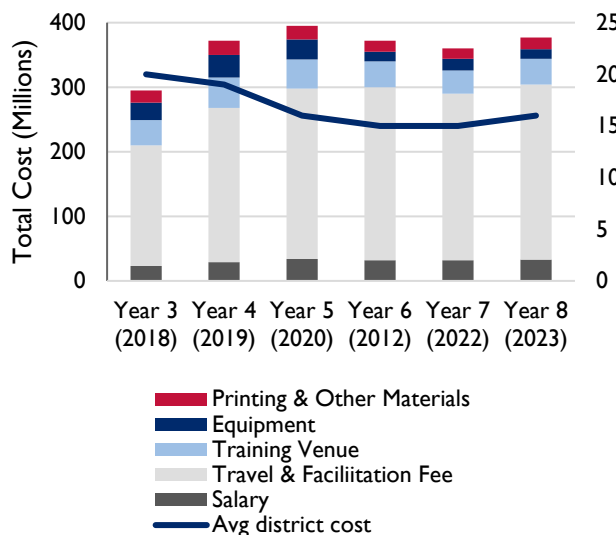
The outputs of the cost modeling exercise represent the costs associated with scaling up an ideal approach<sup>2</sup> to 24 districts over the course of five years, and the costs associated with maintaining the approach for at least three additional years. The results are based on standard cost inputs, such as MOH standard salary

<sup>2</sup> The “ideal” package includes all preparatory activities; TOT for all district trainers in LDHF; LDHF training of 50 providers per district with one training mannequin per facility replaced every two years; six mentorship visits per facility in the first year, followed by monthly visits in recurring years; and monthly oversight of QI activities outside of the mentorship visit. Costs for two-day refresher TOT and LDHF trainings have been estimated as occurring every two years and assuming a 15 percent annual trainer and health worker turnover rate with full replacement.

**Figure 1. Annual costs by package strategies, in millions of Rwandan francs**



**Figure 2. Annual costs by category and average district costs, in millions of Rwandan francs**



and per diem rates, and annual cost inflation (one percent). The analysis does not include the salary costs of district-based mentors, who are assumed to be existing staff.

## Key Findings<sup>3</sup>

Across the components of the practice improvement package (and start-up activities), mentorship constitutes the largest cost driver for the overall intervention. This is followed by initial and refresher LDHF trainings and then preparatory activities in each district the year they first implement the package (**Figure 1**). When excluding the level of effort of district-based mentors, by far the largest cost drivers include travel and facilitation fees, which aligns with the relative proportion of costs for mentorship (**Figure 2**). Total annual costs for implementation increase through the next three years (Y3–Y5) of scale-up, but then drop to an average total annual maintenance cost of approximately RF 370 million (USD 438,000). This annual cost represents less than one percent of the government’s domestic health spending.<sup>4</sup>

At the district level, in the first year of implementation, it will require RF 31 million to introduce the package; once a district is maintaining the package, annual costs per district drop to RF 15 million (USD 17,000). After full scale-up, the annual cost per birth is RF 1,080 per year or RF 35 per capita per year. If costs of mentor salaries are included, the total annual cost and average district costs after full scale-up increase by approximately 40 percent.

## Implications for Scale-up

The results of the cost modeling exercise demonstrate that the practice improvement package for HBB/ENC is a relatively affordable and scalable intervention for improving newborn survival in Rwanda. Further modeling of scenarios could aid in planning and discussions on the appropriate form of the package to scale to national level. Coupled with improvements in health worker capacity and changes in health outcomes related to HBB/ENC in the initial 10 MCSP districts, the cost analysis provides important inputs into longer-term sustainability planning for the HBB/ENC practice improvement package.

This brief is made possible by the generous support of the American people through the United States Agency for International Development (USAID) under the terms of the Cooperative Agreement AID-OAA-A-14-00028. The contents are the responsibility of the Maternal and Child Survival Program and do not necessarily reflect the views of USAID or the United States Government.

<sup>3</sup> The presented results assume full scale-up to 24 districts by Y5 and maintenance costs in Y6–Y8. The 24 districts include the 10 MCSP-supported districts and the 14 remaining districts in which the Partners in Health All Babies Count model is not operational. For the 10 MCSP-supported districts, only costs to maintain the approach have been included starting in 2018. After scale-up in four MCSP-supported districts in Y1, the sequence follows six districts in Y2 (MCSP priority districts), five districts in Y3, five districts in Y4, and four districts in Y5.

<sup>4</sup> Rwanda National Health Accounts 2014