



# IMPLEMENTATION EXPERIENCE: 2022-2023 Helping Babies Breathe (HBB) cascade training strategy. Médecins Sans Frontières (MSF) Spain

Ana Victoria Valori<sup>1</sup>, Juncal González<sup>2</sup>, Silvia Álvarez<sup>3</sup>

<sup>1</sup>Paediatric Adviser, MSF OCBA, Barcelona Office; <sup>2</sup>Medical Learning Program Field Deployment Coordinator, MSF OCBA Learning Unit; <sup>3</sup>Medical Learning & Development Referent, MSF OCBA, Barcelona Office

## BACKGROUND AND OBJECTIVES

**Birth asphyxia**, defined as the failure to establish breathing at birth, accounts for an **estimated 900,000 deaths yearly**. In our projects during **2021**, it ranked as the **second leading cause of neonatal death**, only after **low birth weight/prematurity complications**, and accounted for **25% of all neonatal inpatient mortality** (441 out of 1768 total neonatal deaths). **Helping Babies Breathe (HBB)** is an evidence and skills-based **educational programme developed to teach neonatal resuscitation in resource-limited settings**. The programme emphasises **critical steps** within the “**Golden Minute**” after birth, including **drying, stimulating, and warming** babies who fail to breathe at birth alongside **bag-and-mask ventilation** for infants who continue to experience breathing difficulties despite initial interventions. Notably, the implementation of HBB has been shown to **reduce early neonatal mortality by 47% in Tanzania**<sup>1</sup>.

In collaboration, **MSF Spain's medical department and learning unit** developed a comprehensive **training implementation plan**. Their objective was to **enhance basic neonatal resuscitation skills** among all medical and paramedical staff involved in assisting deliveries, using the HBB programme. The final goal was to cover all target staff across MSF Spain health facilities **on the assumption that a large proportion of deaths and complications related to birth asphyxia can be prevented**.

<sup>1</sup>Pertman JM, Msemo G, Ersdal H, Ringia P. Designing and Implementing the Helping Babies Breathe Program in Tanzania. J Pediatr Intensive Care. 2017 Mar;6(1):28-38. doi: 10.1055/s-0036-1584674. Epub 2016 Jun 29.

## METHODS

The HBB programme dissemination model comprises **3 roles: Providers, Facilitators and Master Trainers** (Table 1). The first two roles undergo specific training with manuals and tests tailored to their roles. The **MSF implementation plan** followed the **cascade training strategy**, outlined in the “Guide for Implementation of HBB, 2011” (Figure 1). Once a pool of Providers is trained, some are identified as potential Facilitators to continue delivering Provider trainings locally. Experienced Facilitators can eventually progress to Master Trainers.

First, during **2022**, **International Mobile Staff (IMS)** were trained as facilitators and **delivered project-based HBB Provider courses** for **Locally Hired Staff (LHS)** to develop a pool of Providers. Subsequently, in 2023, regional **Training of Facilitators (ToF)** sessions were conducted to expand the pool of Facilitators (see Figure 2).

The Provider courses mentioned in our results used the standard training material and tests. The ToF courses also used the programme Facilitators' material, but the delivery methods were adapted after each ToF experience.

HBB Role	Description	MSF Target
<b>Provider</b>	A <b>skilled birth attendant</b> who is able to help a baby who does not breathe spontaneously after birth and promote warmth, cleanliness, and breastfeeding for all babies (following HBB action plan and guides).	All <b>medical and paramedical staff assisting deliveries</b> and providing care for the newborn (midwives, nurses, doctors and clinical officers/physician assistants).
<b>Facilitator</b>	All the above <b>plus training of birth attendants (Providers)</b> . Fosters <b>continuous workplace learning</b> .	<b>Key medical/paramedical staff</b> who completed the HBB Provider course and are <b>identified as skilled to become Facilitators</b> by other Facilitators/Master Trainers, line managers, and HR at project level.
<b>Master trainer</b>	All the above <b>plus training of Facilitators and Providers</b> . <b>Monitoring</b> processes and learning quality.	<b>Experienced Facilitators</b> (at least 5 Provider courses delivered) with <b>strong teaching skills</b> .

Table 1. HBB programme roles description and MSF target staff

## RESULTS

Over **2022 and 2023**, MSF Spain supported **11 missions (18 projects)** classified as target projects (**assisting deliveries**). The number of individual target staff was not available. The number of Providers and Facilitators trained is shown in Table 2.

Year	Staff trained	Trained by	Training Locations
<b>2022</b>	96 Providers (LHS <sup>2</sup> )	Paediatric and SRH mobile trainers	Project-based
	44 Facilitators (LHS, IMS)	MSF Master Trainers	Copenhagen <sup>3</sup> (EN), Dakar (FR)
<b>2023</b>	62 Providers (LHS <sup>2</sup> , IMS)	Paed and SRH mobile trainers - Master Trainers	Project-based + Dakar (FR), Nairobi (EN)
	24 Facilitators (LHS, IMS)	MSF and external Master Trainers	Dakar (FR), Nairobi (EN)

Table 2. Trainings done in 2022 and 2023.

<sup>2</sup>Participants 2022: MSF Spain: 3 missions, 4 projects; 2023: MSF Spain and other sections: 8 missions, 10 projects.

<sup>3</sup>One day training, part of an ALSO course (Advanced Life Support in Obstetrics).

### Dissemination model

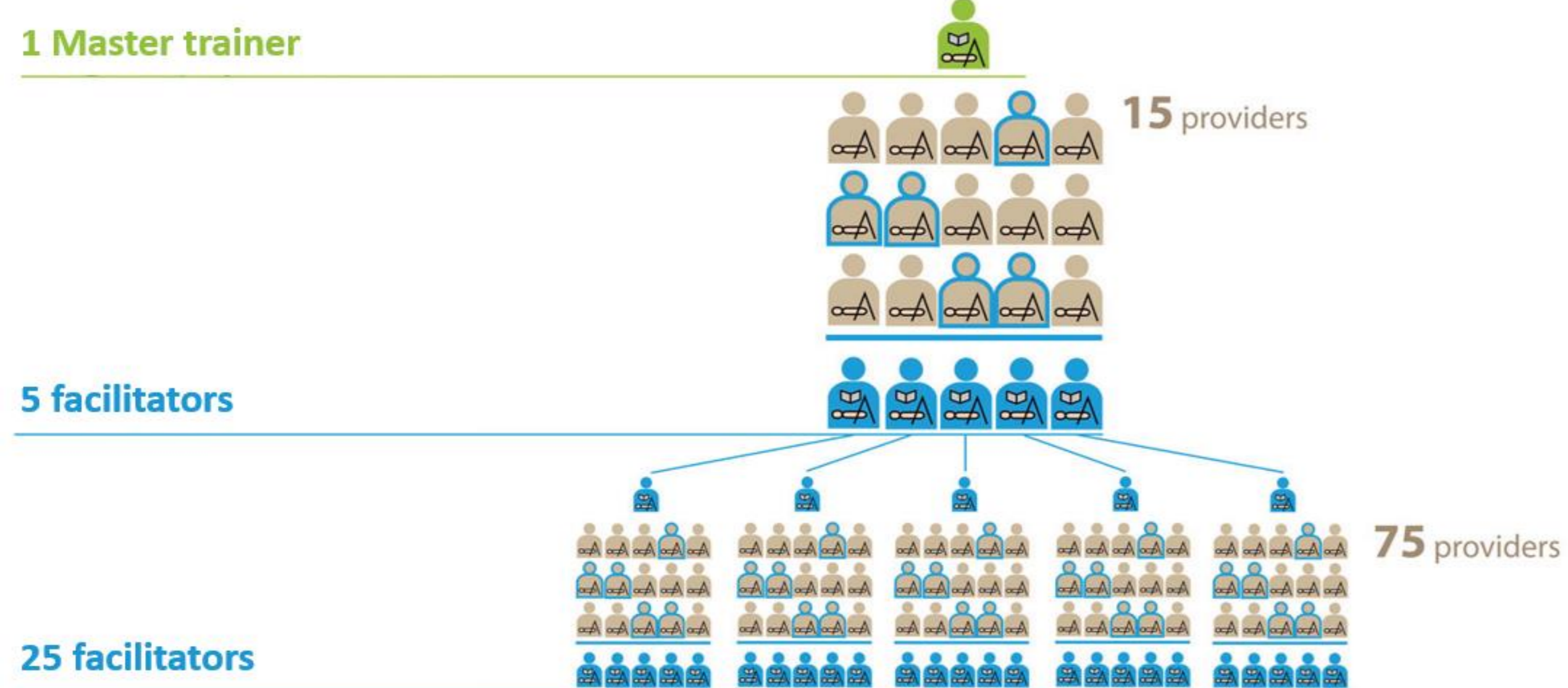


Figure 1. Dissemination model from “Guide for Implementation of Helping Babies Breathe® (HBB): Strengthening neonatal resuscitation in sustainable programs of essential newborn care. 2011. Elk Grove Village, IL: American Academy of Pediatrics

## DISCUSSION

The strategy encountered **several challenges** in achieving its goal, described below:

<p><b>1. Target staff:</b></p> <ul style="list-style-type: none"> <li>Large target group including various technical areas (midwives, nurses, clinical officers, doctors, and paediatricians).</li> <li>High turnover rates, especially among LHS.</li> <li>Security restrictions hindered access to some projects.</li> <li>Multiple training priorities within the same staff.</li> </ul>	<p><b>3. Monitoring:</b></p> <ul style="list-style-type: none"> <li>Lack of specific neonatal resuscitation indicators for impact assessment, and multiple factors affecting indirect indicators like neonatal mortality.</li> <li>Current indicators focus on quantitative aspects (target projects, staff, and completed trainings).</li> </ul>
<p><b>2. Local support for continuous learning:</b></p> <ul style="list-style-type: none"> <li>HBB is a skills-based training, regular simulation-based practice is needed to maintain acquired skills.</li> </ul>	<p><b>4. Medical Department capacities:</b></p> <ul style="list-style-type: none"> <li>Internal gaps in key positions limited the Sexual and Reproductive Health (SRH) team's involvement in the strategy implementation</li> </ul>

**Continuation:** Even with the mentioned challenges, we have managed to **expand the pool of trained staff** as Providers and Facilitators. We will continue next year with a **focus on increasing awareness within operational medical coordinators and managers on HBB as part of Essential Newborn Care in MSF-supported health facilities running maternities**.

Additionally, SRH team involvement and expanding on **monitoring tools for local HBB Provider courses** as well as **the implementation of high-frequency, low-dose simulation-based training** will be key in achieving our goal.

When full implementation is achieved, **with further project ownership and involvement** in the continuous learning process, changes in medical indicators are more likely to happen.



Figure 2. HBB Training of Facilitators practice. Dakar, Senegal. October 2023

## ETHICS STATEMENT

This descriptive study is based on routinely collected programmatic data. MSF OCBA Medical Director has granted an Ethics exemption for presentation at the MSF Paediatric Days.

