

BRIEF COMMUNICATION**NEWBORN CARE CORNER: A SIMPLIFIED APPROACH TO PROVIDING OPTIMAL NEWBORN CARE IMMEDIATELY AFTER BIRTH**Assaye Kassie Nigussie, MD^{1*}, Bogale Worku, MD²**ABSTRACT**

Introduction: In 2005, a quarter of all child deaths in Ethiopia happened in the neonatal period, with one quarter of them caused by perinatal asphyxia. The proportion of neonates receiving essential newborn care, including basic life support was alarmingly low. In response to this lack of care, a new and innovative Newborn Care Corner approach was established. The primary objective of establishing a NBC near the labor and delivery room of health centers and primary hospitals was to ensure that all steps of essential newborn care are provided as one clinical bundle to all neonates, including resuscitation of asphyxiated neonates within the first few minutes of life.

Objective: To assess the impact and feasibility of the NBC approach,

Methods: One hundred resuscitation units were locally manufactured and piloted in 100 health facilities.

Results: The pilot demonstrated that health workers could effectively resuscitate neonates and save more than 95% of asphyxiated babies in their respective facilities. As a result, Ethiopia procured approximately 2,000 standard neonatal resuscitation units to move toward full-scale national implementation.

Conclusion: The NBC approach is now in use across all regions of Ethiopia and in over 2,000 health facilities across the country with 85% coverage. To obtain the maximum benefit from this approach, future efforts will need to improve the quality of care provided by frontline health workers through regular supportive supervision and clinical mentorship programs

Key words: Newborn Care Corner, Neonatal resuscitation, Asphyxia

INTRODUCTION

In 2005, 25% of deaths to children under five years were due to newborn conditions. Thus, for Ethiopia to achieve Millennium Development Goal 4 (MDG4) by 2015, it was necessary to develop a comprehensive newborn care package across all health service delivery levels from the community to the hospital (1,2). This paper describes the development of Newborn Care Corners (NBCs) in health centers (HCs) and hospitals.

Services for children under five in Ethiopia's health facilities included, Integrated Management of Childhood Illnesses (IMCI). This strategy guided comprehensive, integrated preventive and curative care for sick children aged 7 days to 59 months but did not address common newborn complications within the first week of life. They were excluded because, it was assumed that complications in these age groups would also require maternal care interventions that could not be addressed in the IMCI package. However, newborn complications do occur after delivery and discharge and thus they were not well captured. Major contributing factors to early neonatal mortality are asphyxia (30.1%), severe bacterial infections or neonatal sepsis, pneumonia, meningitis, (20.3%), preterm complications (hypothermia, respiratory distress syndrome, and late onset metabolic problems) (15.5%).

In 2006, Ethiopia's National Child Survival Technical Working Group (NCSTWG) revised the IMCI guidelines to incorporate common newborn complications during the first week of life. Ethiopia was the first country in sub-Saharan Africa to include guidelines focused on children from 0-59 months of age. The revised approach or Integrated Management of Newborn and Childhood Illnesses (IMNCI) was launched and included Kangaroo Mother Care (KMC) for preterm or low birth weight babies, neonatal resuscitation, and infection prevention, as well as advanced life support in referral hospitals (2).

Resuscitation of Asphyxiated Babies

In Ethiopia, birth asphyxia accounts for 23% of the neonatal mortality rate (NMR) (3,4). With the need for strengthening Essential Newborn Care (ENC) in facilities as well as resuscitation of asphyxiated newborns, the NBC approach was designed. NBC requires both a space and a clinical bundle of service packages. The space is a

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suitable corner or room attached or close to the delivery room in HCs and hospitals. In 2009, UNICEF, the World Health Organization (WHO) and the Federal Ministry of Health (FMOH) jointly launched the first NBC in Ethiopia.

MATERIALS AND METHODS

Defining the Structural units of NBC and Essential Services

The NBC is a small room of around 10m², located within the labor room environment or close to the delivery room, and equipped with equipment, supplies, and consumables and a trained health personnel to provide the necessary care. To make this approach cost effective and sustainable, low cost, locally available material was initially used to produce the neonatal resuscitation unit and the NBC was intended to provide the following services:

- an acceptable thermal environment for all infants at birth including a radiant warmer;
- clear observation of the newborn including an overhead light source;
- a resuscitation kit to be used for asphyxiated babies;
- other essential care at birth, including cord care, early initiation of breastfeeding, eye care, and weighing.

Developing the prototype and Establishing the First NBC in Ethiopia

In 2009, the cost of one Chinese-made neonatal resuscitation unit (NRU) was more than US \$2,500 and at this price, national-scale implementation of ENC in Ethiopia's health facilities was not feasible. Thus, UNICEF worked with a local metal workshop in Addis Ababa to develop a locally made variant specified by newborn health experts (Table 1 and Figure 1).

Table 1: Newborn Corner Unit Specifications

<ul style="list-style-type: none"> • Low cost (US \$120/unit) • A hard table • Attached overhead heat and light sources • Drawer to store essential supplies • Self-inflating ambu bag, an oxygen reservoir, and face masks in different sizes. • Easy to disassemble and reassemble for cleaning and disinfection.

In 2009, the NBC initiative was launched with an initial batch of 100 units in Dire Dawa (Figure 1).



Figure 1: The first locally produced NRU (2009) *Source: Ethiopian Pediatric Society*

¹Distribution of cause of death in new born babies in Ethiopia : University based Surveillance Sites report using a verbal autopsy method, Addis Ababa, Ethiopia, 2009

RESULTS

NBC: Demonstration in 100 facilities

Since 2010, the Ethiopian Pediatric Society (EPS) has taken the lead in supporting the national roll out of NBCs in Ethiopia (Figure 2). The EPS collaboration with the FMOH aimed to increase the proportion of asphyxiated newborns who are effectively resuscitated from 7% to 75% and to increase the proportion who received simplified antibiotic treatment for suspected neonatal sepsis, from 25% to 74% (3).

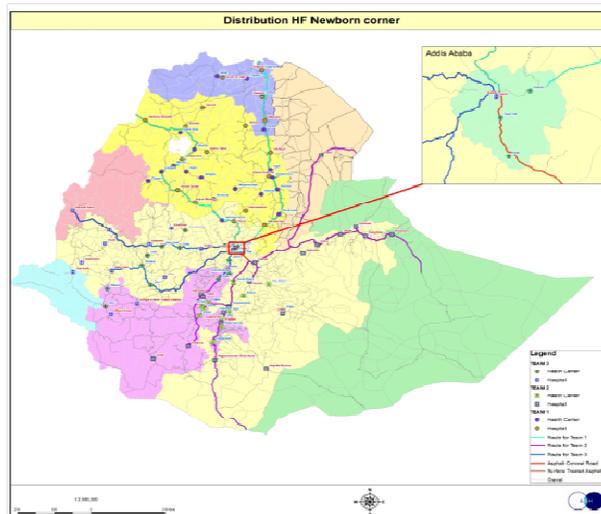


Figure 2: Initial roll out to 100 health facilities

Capacity building of health professionals to improve their knowledge and skill in ENC took place in parallel and was followed with periodic supportive supervision and comprehensive monitoring and evaluation. Initial results were encouraging. Most resuscitated babies survived. (Figure 3).

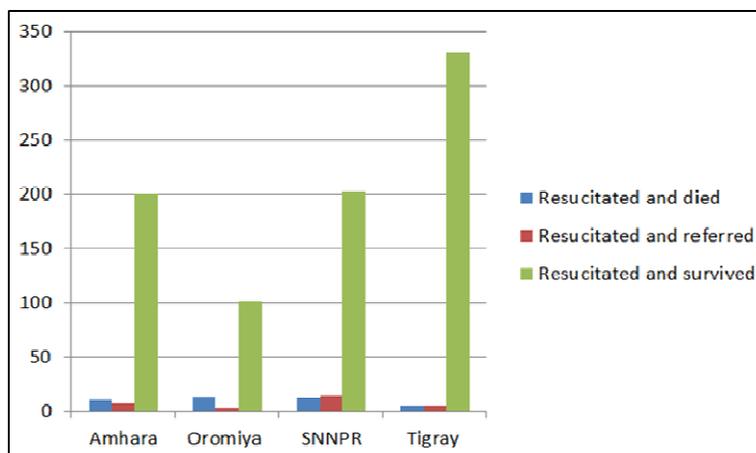


Figure 3: Outcome of babies resuscitated one month prior to the survey
Source: Ethiopian Pediatric Society, 2012

National-Scale Implementation of the NBC

In 2011, the decision was made to scale the program nationally. EPS developed participant training manuals, facilitator guides, and newborn registration logbooks. Training materials included NeoNatalie mannequins, Helping Babies Breathe flipcharts, and a KMC video. A cascade training approach was used to train 224 health professionals and 800 staff in health centers in all regions of Ethiopia in the first round. This was accompanied by supportive supervisory visits (4). In 2015, more than 45,000 babies were born in the facilities with 1,037 deaths or a 2.3% neonatal case fatality rate.

A second wave of training of health workers for 2,000 HCs was initiated in 2012. Rollout has continued through the end of 2012, at which time, the FMOH has shifted to purchasing standard NBC Units from international manufacturers, and a total of 2,000 have been distributed. At this time, 3000 HCs out of a total of 4,000 of HCs have NBCs (85%).