

Abebe Gebremariam, Hajira Mohammed, Aynalem Hailemichael, Hailemariam Legesse, Abebe Teshome, Tamiru Kassa, Afework Mulugeta, Yasin Habib, Abdella Mohammed, Tina Asnake, Lynn M. Sibley. *Ethiop Med J*, 2019, Supp. 3

## ORIGINAL ARTICLE

### COMMUNITY-BASED NEWBORN CARE IN AFAR: LESSONS LEARNED

Abebe Gebremariam, MD<sup>1</sup>, Hajira Mohammed, BSc, MSc<sup>1</sup>, Aynalem Hailemichael, BSc, MPH<sup>1</sup>, Hailemariam Legesse, MD<sup>2</sup>, Abebe Teshome, BSc, MPH<sup>1</sup>, Tamiru Kassa, BSc, MPH<sup>1</sup>, Afework Mulugeta, PhD<sup>3</sup>, Yasin Habib, BSc, MPH<sup>4</sup>, Abdella Mohammed, BSc, MPH<sup>1</sup>, Tina Asnake, BSc, MPH<sup>5</sup>, Lynn M. Sibley, PhD<sup>6</sup>

#### ABSTRACT

**Introduction:** Neonatal mortality in the pastoralist areas of Ethiopia is higher than the national average. There is much disparity in availability and use of key services in these areas and services at health centers and health posts are variable and low.

**Objectives:** This paper describes the development and adaptation of a community based newborn care model for the pastoralist areas of Ethiopia.

**Methods:** Data were assembled from studies and surveys conducted in Afar region including a health facility assessment, baseline surveys and formative research with health workers and communities. Guidelines and lessons learned were drawn from review of manuals, strategy documents and plans including the National Newborn and Child Survival Strategy (NCCSS), the Health Extension Program, social mobilization documentation, and national Community-Based Newborn Care and pastoralist integrated community case management implementation plans. Other learning was distilled from a desk review of project documents for the Maternal Newborn Health and Nutrition model for pastoralist regions including training, coaching, supervision, and review meeting documents.

**Results:** There has been low access, quality, and utilization of Community-Based Newborn Care services in the pastoralist communities of the Afar region. In pastoralist communities there are multiple and unique barriers to demand for care that include scattered settlements, mobile lifestyles, and traditional practices. As a result, the Federal Ministry of Health service delivery strategies such as the Health Extension Program do not work as was designed for more densely settled agrarian regions, all of which require adaptation or redesign of programs such as Community-Based Newborn Care. Previously, the Afar Regional Health Bureau and Emory University adapted the maternal newborn health and nutrition model for the regional context that was associated with significant improvements to care. This model and Community-Based Newborn Care national guidelines have been further adapted to the context and are being tested for effectiveness in improving newborn health in pastoralist regions. Drawing from the Community-Based Newborn Care the model aims to reach 'every woman and baby, in-time, every time' and consists of the four interrelated interventions of capacity building, demand creation, quality improvement, and monitoring, evaluation and research.

**Conclusion:** In order for Community-Based Newborn Care to succeed at national level, adapted models are needed for different populations such as pastoralists in emerging regions. The adaptation process included local data gathering to inform the adaptation process and community participation combined with application of program guidelines. This process is considered feasible by the Federal Ministry of Health, Afar Regional Health Bureau and partners, thus the adapted Community-Based Newborn Care C model can be implemented for further evaluation and refinement to be scaled up to other pastoralist areas.

**Key words:** Community based newborn care, Maternal and newborn health and nutrition model, Pastoralist community, Afar

#### INTRODUCTION

Afar is one of the nine regions of Ethiopia with 1.8 million people living widely dispersed as pastoralists (1). It is classified as having hardship environmental conditions (very high temperatures, very low rainfall) and is prone to recurrent emergencies such as drought, floods, and disease outbreaks (2-5).

Low literacy, low social status of women, inadequate health services, and weak leadership are barriers to the provision of newborn and other health services (4). Improvements in the health of the population are running at least a decade behind the national average (6-8). Neonatal mortality in Afar is 38, which is 31% higher than 29 for Ethiopia (8).

<sup>1</sup> Emory University, Ethiopia Country Office. <sup>2</sup> Unicef, Ethiopia Country Office. <sup>3</sup> School of Public Health, Mekelle University. <sup>4</sup> Afar regional Health Bureau. <sup>5</sup> Federal Ministry of Health. <sup>6</sup> Emory University, Atlanta, Georgia, USA.

\*Corresponding Author E-mail: abebemariam@yahoo.com

Large disparities in availability and use of key services are evident. Only 25% of health centers (HCs) provide integrated management of neonatal and childhood illnesses (IMNCI) and only 15% of health posts (HPs) provide integrated community case management (iCCM) services (9).

The Health Extension Program (HEP) that was designed to bridge these gaps is neither well adapted nor fully operational. HEWs have marked skill gaps due to low educational levels and are weakly managed (10). There is high absenteeism, compounded by inadequate supplies. Since the HEWs are stationary, they cannot follow the mobile communities seasonally. The Afar HEP is hampered by an almost non-existent health development army (HDA). The FMOH recognizes that health services as currently provided do not meet the needs of pastoralists and is committed to ensuring equitable health services, and have stressed the need for innovative solutions (11). In this context, the Federal Ministry of Health (FMOH), Afar Regional Health Board (RHB), United Nations Children's Fund (UNICEF), and Emory University initiated a pilot study of CBNC in 8 woredas of Afar in 2015.

The objectives of this paper are to understand newborn health needs and current service delivery in Afar, to describe the adaptation process for Community Based Newborn Care (CBNC), and to describe the adapted CBNC model that has been initiated.

## METHODS

CBNC was initiated in eight woredas of Zone 1, Afar region (Chifra, Mile, Asayita, Afambo, Ada'ar, Kori, Dupiti, Elida'ar) by the RHB in collaboration with the EU and UNICEF. These woredas include 117 kebeles, 587,376 people, and 16,858 live births per year. Multiple methods were used to develop this CBNC model, including rapid assessment, baseline survey, formative research, document review, and continuous quality improvement.

A rapid health facility assessment was conducted in February 2016 to determine the status of human resources, equipment and supplies, iCCM/CBNC service availability, and recording and reporting systems. The sample included all eight woreda health offices (WorHOs), 40% of health centers (HCs) (8) and 30% of HPs (28) open during the assessment period. The assessment included interviews, document review, and on-site observation using a structured data-collection instrument. Data entry and descriptive data analysis were done using MS-Excel and SPSS.

Two baseline surveys, one for each of iCCM and CBNC were conducted. The purpose was to establish a baseline on MNCH service utilization and care seeking behavior for common childhood illnesses (pneumonia, fever, and diarrhea) among under-five children. The sample size was determined using single population proportion sampling (80% power, 95% CI, 5% margin of error, design effect of 2), 10% compensation for non-response and assuming 33.8% of caregivers seek treatment (7) and 6.4% of mothers had post natal care (PNC) within 48 hours (12). For iCCM, 600 women who had at least one child under-five during the survey period were interviewed and for CBNC, 518 mothers who gave birth in the preceding year were included. The study followed a two-stage cluster sampling approach.

Formative research was conducted to assess MNCH knowledge, attitudes, and practices of health care providers and community members, including HEWs. The aim was to identify demand and supply challenges to service utilization. The samples were drawn using purposive sampling and eight focus group discussions (FGDs) took place. Four of these were with women with children under the age of five and four were with men from the community. A total of 17 key informant interviews took place with the RHB, district health office representatives, health professionals from HCs, HEWs, community volunteers/traditional birth attendants (TBAs), kebele leaders, and religious leaders. Baseline surveys and formative research took place after ethical clearance was obtained from Mekelle University, Tigray region.

### *Document review*

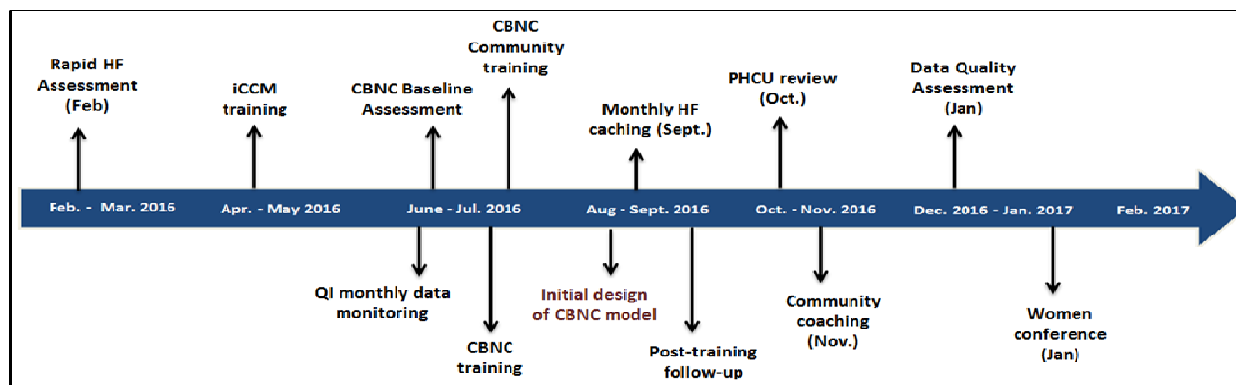
The project team reviewed documents that included health care provision assessments, the NNCSS, the HEP package, social mobilization documents, the national CBNC implementation plan, the pastoralist iCCM implementation plan, the MNHN model for pastoralist regions, MaNHEP, Amhara, and Oromia project papers and materials. Moreover, project implementation documents for pastoralist regions including training, coaching, supervision, and review meeting documents were reviewed.

### *Sequencing of activities in relation to implementation and model development*

Figure 1 shows how these activities were integrated. The implementation started with a facility service availability and readiness assessment. This was followed by provision of iCCM training at all levels to strengthen the iCCM platform.

A CBNC baseline and formative assessment was conducted and quality improvement (QI) monthly data monitoring started. CBNC cascade training was given at the community level. Following the training, the initial CBNC model was designed, post-training follow-up was conducted, and monthly coaching visits to health facilities began.

Then periodic follow-up activities including primary health care unit (PHCU) review, community coaching, data quality assessment, and women's conferences continued.



**Figure 1:** Sequence of activities in CBNC implementation, Afar region.

## RESULTS

### *Understanding the needs and the service delivery modality*

By 2012, HEP challenges were clear. Poor perceptions of health workers by the community, unmet demands for manpower, inadequate participation of community members, limited capacity in HCs to provide services or to support HPs, and a weak referral system, prevailed.

The baseline survey confirmed low health service utilization of MNH services including CBNC (Table 1).

Slightly more than a quarter (28%) of mothers had at least one ANC visit and fewer than 10% had  $\geq 4$  ANC visits, most (89%) mothers gave birth at home, and postnatal visits were insignificant – 2% of mothers and 2.5% of newborns.

Only one in four (24%) newborns were given breast milk immediately. Nearly three quarters (72%) of the mothers discarded colostrum. A tenth (10%) of them reported that their newborn was sick in the first two months of life; and less than half of them sought advice or treatment from health care providers.

**Table 1:** CBNC Service in Zone 1, Afar Region, Ethiopia, June 2016

Variables	%
ANC – I	28%
ANC – 4+	10%
Health facility delivery	9.5%
PNC – 48 hours	2%
Newborns received PNC check	2.5%
Immediate breast feeding	24%
Discarded colostrum	72%
Newborn illness (0-59 days)	10%
% of newborns sought advice from HP or HC	46%

iCCM is a pre-requisite platform for CBNC. The facility assessment revealed that only 44% of HPs in project woredas had trained health workers and standard registers. About 45% of children had at least one of the three illnesses (pneumonia, fever, and diarrhea) in the two weeks prior to the survey. Nearly half of the mothers sought treatment from health facility or health care provider; of these, most ( $\geq 80\%$ ) sought advice or treatment after two days.

There are multiple barriers to demand for care that include: isolation and long distances to services, lack of community awareness about danger signs and lack of a sense of urgency for acting on them, lack of transportation, more trust in TBAs than in health workers in the system, the persistence of harmful traditional practices, and inadequate participation of community volunteers.

HEWs' limited involvement in newborn and child care ('Diagnosing and treating sick newborn infants is not my responsibility'), cost of medication for sick children, and shuttered HPs were evidence of low access, utilization, and quality of CBNC services. Thus, the program chose to strengthen iCCM in parallel with the CBNC program.

#### ***Adaptation Process***

The Afar RHB and Emory University adapted the MNHN model, which had both community and facility components and was associated with improvements in competence, confidence, and leadership in providing care and using a collaborative quality improvement model. The model creates the platform for people to listen to, learn from, and share ideas with each other, it combines both research and service delivery, it creates ownership to ensure sustainability and it was implemented within the existing government platform, PHCU and HEP structures.

#### ***Develop/redesign appropriate model and pilot***

Drawing from the national CBNC package, the CBNC pastoralist model is organized into four interrelated interventions: capacity building, demand creation, quality improvement, and monitoring, evaluation (M&E) and research. It shows how the CBNC care package can be provided to "every woman and baby, in time, every time" in the pastoralist community.

***Capacity building:*** To address health worker skill gaps, hands-on CBNC training and supervision were provided for health care providers at all levels. The training used a cascade approach.

***Demand creation:*** Based on lessons from CBNC implementation in the agrarian regions, a new community intervention was included in the model to enhance participation. It started with selection of 5 to 7 community members representing community mobilization teams and HDA. Training was given to enable them to identify pregnant women and sick babies, to identify danger signs and facilitate early referral, and to orient family members. Women's conferences involved pregnant mothers and mothers with children under five, and CBNC was included as one agenda item. To address the hard-to-reach kebeles, regular outreach services were organized, in which community volunteers mobilized the community. These interventions were not part of the agrarian CBNC implementation plan.

***Quality improvement activities:*** QI was introduced to improve CBNC service accessibility, utilization, and quality through strengthening health facility and community coaching, supportive supervision, home visits, and performance reviews. In addition to joint supervision, performance review, clinical mentoring meetings (PRCMMs) and home PNCs were conducted. This model included adapting and introducing the existing MNHN change package and monthly community review meeting to support teams to develop, test, and implement change ideas, monthly coaching for all health facilities, and home visits by community volunteers.

***Monitoring and Evaluation:*** The following core activities were included in the pastoralist model: baseline and end line surveys, monthly quality monitoring, data quality assessment and operational research to strengthen program monitoring and ensure data quality.

Although changes in service coverage have not yet been documented, several capacity building, coaching and supply distribution activities have been carried out since the baseline study. Training was completed for all levels of the health system and monthly coaching visits to all HPs and HCs have been initiated. The program has held monthly community review meetings at kebele level and joint supportive supervision visits. All health posts in the zone have started providing CBNC service.

<sup>1</sup>Solutions or ideas that have been tested and found to be most successful in MNHN improvement in the previous MaNHEP Afar project. It includes solutions with detailed descriptions of how to implement them.

**Table 2:** Components of the MNHN, CBNC Agrarian, and CBNC Pastoralist Models

Category	Components of the model		
	MNHN model	CBNC agrarian model	CBNC pastoralist model
Capacity Building	Training of trainers Health workers' training HEW/FLW training	Training of trainers Health workers' training HEW/FLW training	Training of trainers Health workers' training HEW/FLW training
Demand creation/ BCC	Community volunteers' training Family meetings Support women's conferences Support outreach services	Linking with HEP (different demand creation models by different implementing partners; use of FHG, which is not specific to CBNC) Support pregnant women conference	Community volunteers' training Family orientation and counseling Support outreach services Support and adopt women's conference
QI activities	QI Training of trainers QI health facility staff training QI community training Monthly coaching for all HPs and HCs Woreda learning session Regional learning session Strengthen home PNC Birth audit	Post training follow up Quarterly supportive supervision and mentoring Biannual joint supportive supervision PRCMM Strengthen home PNC	Introduce existing change package (at community level) Monthly coaching for all HPs and HCs Monthly community review meeting Quarterly supportive supervision Bi-annual joint supportive supervision PRCMM Strengthening PHCU Strengthening home PNC Home visits by community volunteers
Monitoring & Evaluation	Baseline/end line Survey Monthly QI monitoring Data quality assessment	Baseline, mid-term and end line survey Operational research Quarterly review meeting Annual review meeting	Baseline/end line survey Monthly QI monitoring Data quality assessment Annual review meeting Operational research

### Conclusion

The coverage of CBNC implementation has reached more than 90% in agrarian regions, however pastoralist communities and emerging regions lag behind due to important natural, cultural, and health system differences. The adapted model being demonstrated by the FMOH and RHB with the support of partners has made CBNC services available for the first time. The adaptation process was carried out at local level with the active participation of providers and end users. This has ensured responsiveness to local perspectives and flexibility to improve. There were challenges during the adaptation process including low education and experience of health workers, engaging a highly mobile community, and limited time. The CBNC program in this zone has not run long enough to measure its effects or to assess its costs. This has been done in December 2017 and recommendations made to scale what works in other relevant geographic areas.

### ACKNOWLEDGEMENT

We would like to thank the Federal Ministry of Health, Federal Democratic Republic of Ethiopia, Afar Regional Health Bureau Heads, and UNICEF – Ethiopia for their support of the Emory University, ICCM and CBNC Afar project. We express our gratitude to the woreda health office, hospital, health center and health post staffs, community volunteers, women and men in the project communities who are involved in the project to improve the health and wellbeing of mothers and babies in their communities.

### Conflict of interest:

The authors had no conflict of interest to declare.

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