Ethiopian Ministry of Health

LONDON SCHOOL of HYGIENE &TROPICAL MEDICINE

Community Based Newborn Care Programme in Ethiopia 2013 - 2017

EXECUTIVE SUMMARY
FINAL EVALUATION

March 2019

JaRco Consulting Ethiopia

IDEAS

Acknowledgements

IDEAS would like to acknowledge the assistance of the Federal Ministry of Health, the CBNC evaluation steering committee, UNICEF, L10K, IFHP, Save the Children and all those who collaborated with the study team during fieldwork.

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Published: April 2019

Citation: Berhanu D., Avan B.I. (2019) Community Based Newborn Care Programme in Ethiopia 2013 - 2017: Final Evaluation EXECUTIVE SUMMARY , March 2019. London: IDEAS, London School of Hygiene & Tropical Medicine.

Executive Summary

Photo: Preventing asphyxia in newborns, Ethiopia © IDEAS/Paolo Patruno 2015

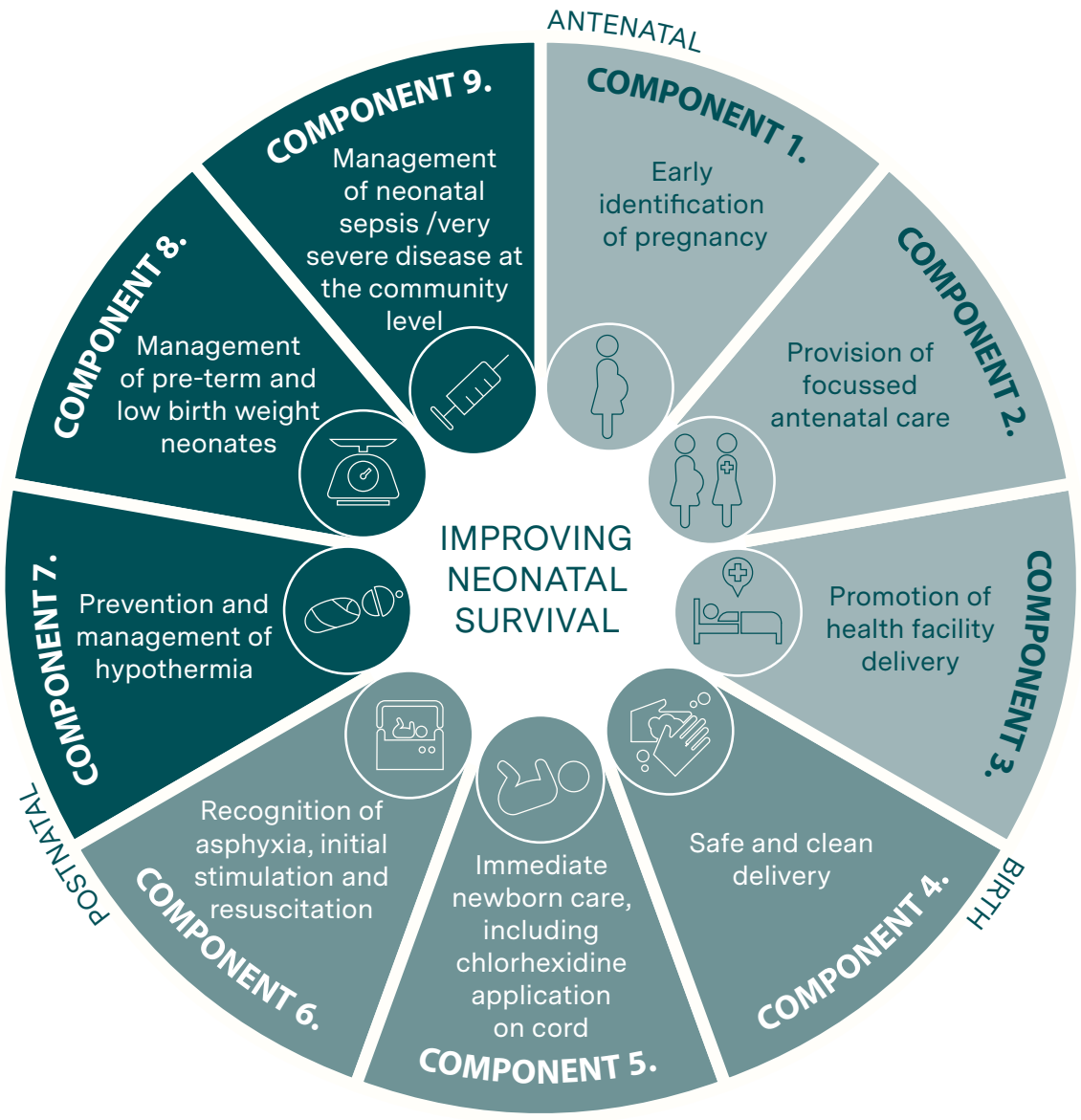
Background and Methods

The Ethiopian Government introduced the Community Based Newborn Care (CBNC) programme in 2013, to improve maternal and newborn health outcomes. The programme has nine components (Figure i.), including the innovative step of antibiotics provision by community health workers for young infants (0-2 months of age) with very severe disease. Signs and symptoms for very severe disease include convulsions, reduced or no feeding, high (>37.5°C) or low (<35.5°C) temperature, fast breathing, no or limited movement and severe chest in-drawing. Phase 1 of the CBNC programme was implemented in 2014, in 176 districts (woredas) across four regions of Ethiopia. Phase 2 of the programme was launched in 2015, covering the remaining zones within the four regions.

The Informed Decisions for Actions in Maternal and Newborn Health (IDEAS) group at the London School of Hygiene & Tropical Medicine was requested to conduct an evaluation of the CBNC programme. The overall evaluation plan included baseline, quality of care and follow up surveys, as well as two qualitative studies. It was conducted in collaboration with JaRco Consulting, based in Ethiopia.

The baseline survey, conducted in October 2013, assessed coverage of key maternal and newborn health indicators associated with the CBNC programme. A similar follow-up survey was conducted in 2017 to estimate changes in coverage in CBNC services between 2013 and 2017. In November 2015, a quality of care study was conducted. Using qualitative methods, in November 2014 we also assessed how community health workers (Health Extension Workers (HEWs) and community volunteers (the Women's Development Army (WDA) leaders) deliver CBNC services, and in November 2015 we focussed on the administrative side of CBNC service delivery.

Figure i: The CBNC programme components



The baseline and follow-up population-based surveys were conducted in 52 CBNC Phase 1 and 49 Phase 2 districts across the four regions of Ethiopia (Figure ii.). Each survey year included 206 household clusters with 50 households per cluster. Women in these households were asked questions regarding their live births in the 3-15 months preceding the survey as well as care seeking for sick young infants. In 2013, 10,295 households and 925 women with a recent live birth were surveyed. Similarly, in 2017, 10,300 households and 1,076 women with a recent live birth were interviewed. As CBNC programme scale-up to Phase 2 districts was initiated in 2015, prior to the completion of the

evaluation, the findings of the household surveys are presented as overall difference between baseline and follow-up surveys.

In both the 2013 and 2017, the health system readiness was also assessed by surveying the HEWs and WDA leaders and the health facilities serving the selected household clusters. In 2013, 605 WDA leaders, 206 HEWs, 206 health posts and 206 health centres serving the selected household clusters were surveyed. Similarly, in 2017, 412 WDA leaders, 335 HEWs, 201 health posts and 206 health centres were surveyed.

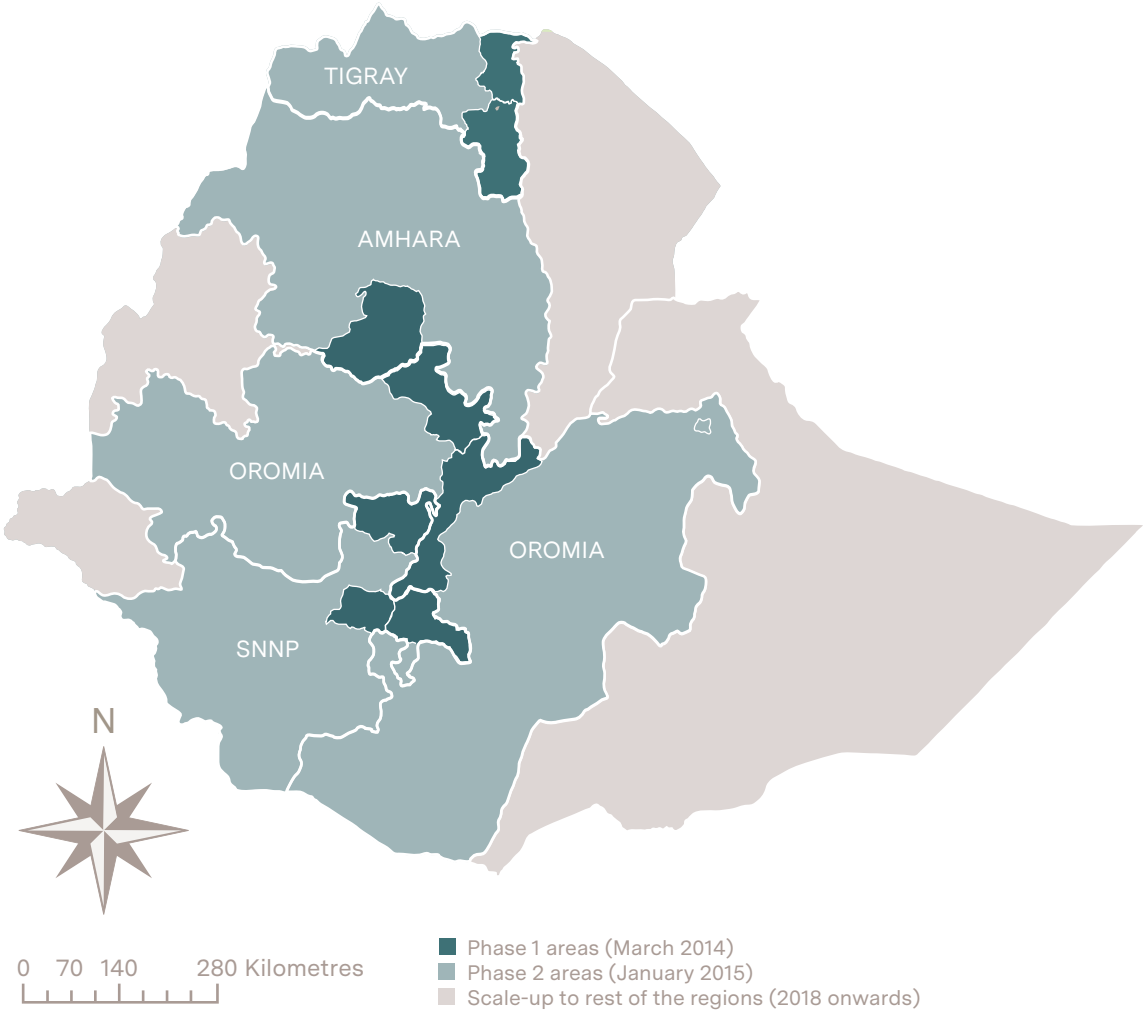
The CBNC quality of care study was done in a sub-sample of districts involved in the baseline and follow-up surveys. Eighteen of the 52 Phase 1 districts and 12 of the Phase 2 districts were selected with probability proportional to population size. Primary Health Care Units (PHCUs) were then selected with probability proportional to the population size of the woredas, leading to 70 PHUCs in the 18 Phase 1 woredas and 40 PHCUs in the 12 Phase 2 woredas. On average, we selected two health posts per PHCU. In total, 240 WDA leaders, 240 HEWs, 240 health posts and 117 health centres were surveyed. The assessment also included direct observation of HEWs consultation with 893 sick young infants. The quality of care survey assessed CBNC programme maturity by comparing Phase 1 areas that had on average 19 months of programme implementation to Phase 2 areas where on average the programme had been implemented for three months.

A qualitative study was done in 2014 to assess how HEWs and WDA leaders provide CBNC services and included focus group discussions and in-depth interviews with HEWs and WDA leaders as well as in-depth interviews with woreda health office heads and health centre staff. A second round was conducted in 2015 to understand the administrative level challenges of the CBNC programme and included interviews with woreda health office heads, health centre staff heads and non-governmental organisation representatives supporting the CBNC implementation.

"The primary focus of this report are the results from the follow-up survey. For key CBNC indicators however, comparisons are made between the 2013 and 2017 household surveys."

The primary focus of the full evaluation report are the results from the follow-up survey. For key CBNC indicators however, comparisons are made between the 2013 and 2017 household surveys. For the health system readiness component, comparisons are made between the 2015 quality of care survey, which was conducted after CBNC services were embedded in the system, and the 2017 follow-up survey. Findings from the follow-up survey are also cross referenced to the qualitative studies conducted under this evaluation.

Figure ii. The CBNC implementation areas in three phases: Phase 1 (March 2014) shown in dark green, Phase 2 (January 2015) in pale green and areas in grey where scale up was initiated in 2018.



Results: Household Surveys

Coverage of nine CBNC components

There were some remarkable changes between 2013 and 2017 for some of the indicators covered by the CBNC programme. Antenatal care (ANC) service use increased from 69% to 83% and initial ANC visits were earlier in 2017 than in 2013. Women having four ANC visits also increased from 39% to 55% and compared with 2013, more women in 2017 were having the recommended first visit at health centres. Facility delivery also showed a remarkable increase from 23% to 64%. Components of safe and clean delivery for facility deliveries were relatively high both at baseline and follow-up surveys. In 2017, more newborns with a breathing problem were receiving appropriate care. Antiseptic use for cord care also showed an increase particularly for facility deliveries (23%

vs 67%). For home deliveries, more mothers were delaying bathing their babies for 24 hours (36% vs 52%). Skin-to-skin care also increased for both home (13% vs 25%) and facility (29% vs 37%) deliveries. More young infants with signs and symptoms of very severe disease were getting antibiotic treatment in 2017 compared with 2013. Use of amoxicillin for seven days increased from one-third to two-thirds and gentamicin injection for seven days slightly increased from 16% to 23%. At both time points, concurrent use of both antibiotics was low.

Some CBNC services showed low coverage in 2013 and 2017, a few even showing some decrease. Misoprostol use was reported for less than 10% of home deliveries at both time points. Cord care for home deliveries remained poor with only 12% in 2017 reporting use of antiseptic. In 2013 and 2017, around 60% of mothers who delivered in a facility reported that their baby was weighed and for home deliveries the proportion dropped to less than 10%. At baseline, approximately a quarter of babies had received postnatal checks in the first 6 weeks post-delivery and the proportion decreased in the follow-up survey (16%). On average, visits were taking place in the third week after delivery.

Results: Health System Readiness Surveys

1. PHCU infrastructure

In 2017 health centres had good availability of drugs for the management of very severe disease as well as vaccines to be given in the first six weeks after birth. At health posts, although 79% had amoxicillin, only one-third had gentamicin on the day of the survey. Health posts also did not have sufficient forms used for the checks and balances of drug availability and re-supply. The availability of utilities remained a problem, particularly at health posts where only two-fifths had a piped water supply and one-fifth had an electricity supply on the day of the survey. Two-thirds of health posts indicated that the last obstetric referral used a vehicle that was not government-owned. Health posts also lacked some equipment necessary for the provision of CBNC services. An Ambu bag was not available in 83% of health posts, while infant scales and a clinical thermometer were not available in 31% and 21% of health posts, respectively.

2. Technical support and staff potential to provide CBNC services

In 2017, supervisions from health centres to health posts were taking place regularly, where three-quarters of HEWs reported a visit in the last month. Around two thirds of HEWs who had received a supervisory visit had received verified written feedback from health centre staff. Content of supervision included ANC and promotion of facility delivery, but lacked focus on newborn and sick young infant care. These topics were more likely to be covered in the performance review and clinical mentoring meetings, however, these were held irregularly. HEWs reported that more support on the technical aspects of the CBNC service would improve the quality of supportive supervisory visits. Overall, most HEWs (70%) were motivated to deliver CBNC services. A deeper delve into the different domains of motivation suggested that some HEWs lacked the support to sustain their drive and commitment to deliver CBNC services.

With respect to human resources, there were insufficient trained health centre staff that could provide CBNC programme specific supervision. HEWs and WDA leaders were also not receiving continued training on newborn and sick young infant care.

3. Cultural context and community participation

In 2017, more mothers with a delivery in the previous year reported practicing some form of newborn isolation than what was reported by HEWs and WDA leaders. Among mothers that kept their newborns exclusively at home, they were kept on average for 46 days, whereas HEWs and WDA leaders reported approximately 20 days. Pregnant women's conferences were common, organised monthly mostly by HEWs, with an average of 17 pregnant women attending.

Overall HEWs had good unprompted knowledge on when postnatal care (PNC) visits should take place, while few WDA leaders had such knowledge (less than 15%). Only one-third of mothers with a delivery in the previous year had ever used the family health guide. The majority (three-quarters) of WDA leaders and almost all (98%) HEWs reported past use of the family health guide. Mothers had difficulty identifying messages depicted in the family health guide. Although HEWs identified more images compared with WDA leaders, they still did not have optimal understanding of the images. HEWs had insufficient unprompted knowledge of very severe disease danger signs and management. Compared with the 2015 quality of care survey, in 2017, HEWs' unprompted knowledge of very severe disease danger signs and management decreased. WDA leaders' knowledge of unprompted knowledge of very severe disease danger signs was low and remained the same in 2015 and 2017.

Photo: Immediate newborn care, Ethiopia © IDEAS/Paolo Patruno 2015

4. Health system documentation on the management of sick young infants

A record review done during the follow-up survey (2017) showed that only one-fifth of health posts had registered one or more sick young infants in the three months preceding the survey, whereas over 80% of health centres had at least one record. A detailed review of each record showed that gestational age and birthweight were poorly recorded at health centres and health posts. Temperature was recorded in one out of 10 health post registers and respiratory rate was recorded in less than half of health post and health centre registers. Where they were recorded, high temperature and respiratory rate were the most frequently recorded signs of very severe disease. Of the recorded sick infants, we found 105 (8%) who were classified as having very severe disease in health centres and 21 (15%) in health posts. Two out of five young infants were referred from health posts to health centres. In health centres, one in five young infants with very severe disease were given incorrect treatment whereas in health posts all were given either correct (25%) or partially correct (75%) treatment. Almost all (95%) of the newborns treated at health posts had a known successful outcome.

Discussion

At the community level, there were remarkable changes between 2013 and 2017 for facility delivery and antiseptic use for cord care in facility deliveries. There was also an increase for: one ANC visit, four ANC visits, care for newborns with a breathing problem, delayed bathing for home deliveries and skin-to-skin care. In contrast, postnatal checks in the first six weeks were very low and had even decreased since baseline. At baseline and follow-up, some newborns delivered in a facility and almost all newborns delivered at home were not weighed, indicating that pre-term and low birthweight babies are likely to be missed at birth. Although not universal, in 2017 more young infants with symptoms for very severe disease were receiving antibiotics than in 2013. However, not all children that got amoxicillin also received gentamicin.

"Although not universal, in 2017 more young infants with symptoms for very severe disease were receiving antibiotics than in 2013."

When correlating these community-level findings with the health system readiness findings, most supportive supervisory visits to health posts covered antenatal care and promotion of facility delivery, potentially contributing to the high coverage of these services. Very few addressed newborn and sick young infant care. The referral means and communication between health posts and health centres were poor. This has potentially led to missed opportunities for HEWs to provide postnatal checks for the increasing numbers of women who delivered at facilities. The lack of thermometers and infant scales also meant that HEWs were unable to provide CBNC services,

which could potentially explain the incomplete records for sick young infants observed in the register reviews. On the day of the survey, almost 80% of health posts had amoxicillin and only one-third had gentamicin, which correlates with a higher proportion of young infants with symptoms of very severe disease being provided with 7-day amoxicillin, but had incomplete or no gentamicin concurrently given. Register reviews showed similar findings.

Comparison between 2015 (quality of care) and 2017 (follow-up) survey

Compared with 2013, more HEWs reported receiving supportive supervision in 2017, particularly a visit in the last one month, and the content of the supportive supervision covered more CBNC components. Compared with the 2015 quality of care survey, in 2017 the availability of CBNC related equipment such as thermometers and infant scales remained the same at health centres, while at health posts there was less availability. There was better availability of CBNC related drugs (gentamicin and amoxicillin) at health centres, while there was less availability at health posts. HEWs' unprompted knowledge of very severe disease danger signs decreased, while WDA leaders' knowledge remained more or less the same. In 2017, fewer HEWs had unprompted knowledge on how to manage sick young infants with very severe disease. A comparison of the register reviews also showed compared with the quality of care study, HEWs from the follow-up survey kept poorer records in the sick young infant registers.

Photo: Mothers looking at the family health guide, Ethiopia © IDEAS/Christopher Smith 2019

"Overall, most HEWs (70%) were motivated to deliver CBNC services."

Recommendations to improve the CBNC programme

Given the observed gaps the following actions can be recommended:

Health workers

- Integrate CBNC into in-service training for both health centre staff and HEWs
- Strengthen staff practice of immediate newborn care by promoting adherence to essential newborn care actions listed in the Integrated Management of Newborn and Childhood Illness (IMNCI) guidelines
- Allocate budget for HEWs' continued training on sick young infant management, through annual integrated refresher trainings and biannual performance reviews and clinical mentoring meetings
- Ensure that staff appraisals give equal importance to all aspects of service provision, including newborn care
- Train HEWs and WDA leaders to improve their understanding and use of the family health guide
- Increase WDA awareness of the importance of measuring birthweight immediately after delivery so they can promote such messages among pregnant women in their networks

Health centre readiness

- Increase the number of maternity and kangaroo mother care beds, to improve postnatal, low birth weight and pre-term care at health centres
- Increase the availability of government-owned ambulances to be used for newborn referral

Health post readiness

- Ensure the availability of good quality Ambu bags, scales and thermometers for HEWs
- Improve the availability of gentamicin 20 mg/2ml supplied to health posts
- Given emerging research evidence, ensure implementation of the updated (simplified) antibiotic regimen for management of very severe disease

Health System linkages

- Integrate components of sick young infant care, including technical support, into regular supportive supervisory visits
- Clarify guidelines for referral procedures for WDA leaders, HEWs and health centre staff
- Improve linkages between health posts and health centres for PNC provision and sick young infant referral, by always using referral slips
- Ensure that supervision from health centres to health posts assesses and supports the linkages between HEWs and 1-30 WDA leaders[1]
- Promote better coordination between WDA leaders and HEWs to improve WDA leaders' awareness and reporting of timely PNC visits
- Utilise community structures like the pregnant women's conference, kebele (village) cabinet and WDA leaders to create awareness of:
  - The importance of facility delivery
  - Key aspects of immediate newborn care including weighing
  - CBNC services provided at the health post that can lead to timely care seeking for sick young infants

Conclusion

Overall, differences between baseline and follow-surveys show good progress in some areas along the continuum of care. This report also shows where continuous improvement is needed in the national CBNC programme to improve neonatal health outcomes in Ethiopia.

1. There are two levels to the WDA network. The 1-5 network refers to five neighbouring households which are led by one volunteer. Five or six of these 1-5 networks are then grouped and led by one team leader. This is called the 1-30 network.

Community Based Newborn Care programme Evaluation and Resources

The Community Based Newborn Care (CBNC) programme is a key milestone of the Ethiopian Health Extension Program. The goal is to reduce newborn mortality through strengthening the primary health care unit approach and the Health Extension Program.

CBNC Products

Berhanu D., Avan B.I. (2017) Community Based Newborn Care: Quality of CBNC programme assessment - midline evaluation report, March 2017. London: IDEAS, London School of Hygiene & Tropical Medicine

Berhanu D., Avan B.I. (2017) Community Based Newborn Care: Quality of CBNC programme assessment - midline evaluation Executive Summary, March 2017. London: IDEAS, London School of Hygiene & Tropical Medicine

Berhanu, D., Avan, B.I., (2014) Community Based Newborn Care: baseline report summary, Ethiopia October 2014. London: IDEAS, London School of Hygiene & Tropical Medicine

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