

***Innovative
Community-
Based Strategies
for Improved
Reproductive,
Maternal,
Newborn, and
Child Health***



BRIDGING FAMILIES AND COMMUNITIES TO PRIMARY HEALTH CARE

BACKGROUND

The Last Ten Kilometers (L10K) project, implemented by JSI Research & Training Institute, Inc. with funds from the Bill and Melinda Gates Foundation, has been implemented since 2008 to connect households and communities to the primary health care system and advance the Millennium Development and Sustainable Development Goals MNCH targets in Ethiopia. To achieve this, the project supports the Government of Ethiopia (GOE) to strengthen the Health Extension Program (HEP) and community engagement strategies through testing and implementing innovative community-based strategies.¹

L10K tested innovative approaches on a small scale in select kebeles and, when proven effective and feasible, scaled and implemented the community-based strategies in 115 woredas (including more than 3,000 kebeles and reaching over 20 million people). The strategies aimed to improve and streamline interactions between frontline health workers, the Women's Development Army (WDA), and families and include interventions such as non-financial incentives (NFI) for community health promoters (CHPs) and WDA members, Community-based Data for Decision Making (CBDDM), family conversations, and a community-based birth notification system (BNS). These community-based interventions became L10K's platform strategy and the project designed, tested, and implemented them in collaboration with health system actors and local sub-grantees from the four agrarian regions: Amhara; Tigray; Oromia; and Southern Nations, Nationalities, and Peoples' Region (SNNP).³ The essential components of the strategy strengthen the skills of HEWs, through regular supportive supervision and performance reviews, and provide them

with tools to aid their work and their support to CHPs/WDA volunteers (for negotiation and communicating key health messages). In partnership with 12 local civil society organizations, L10K used these strategies

to help frontline health workers and communities work together to improve the accessibility, efficiency, and equity of RMNCH services to improve health outcomes in Ethiopia.

FIGURE 1: L10K's supported 115 implementation woredas

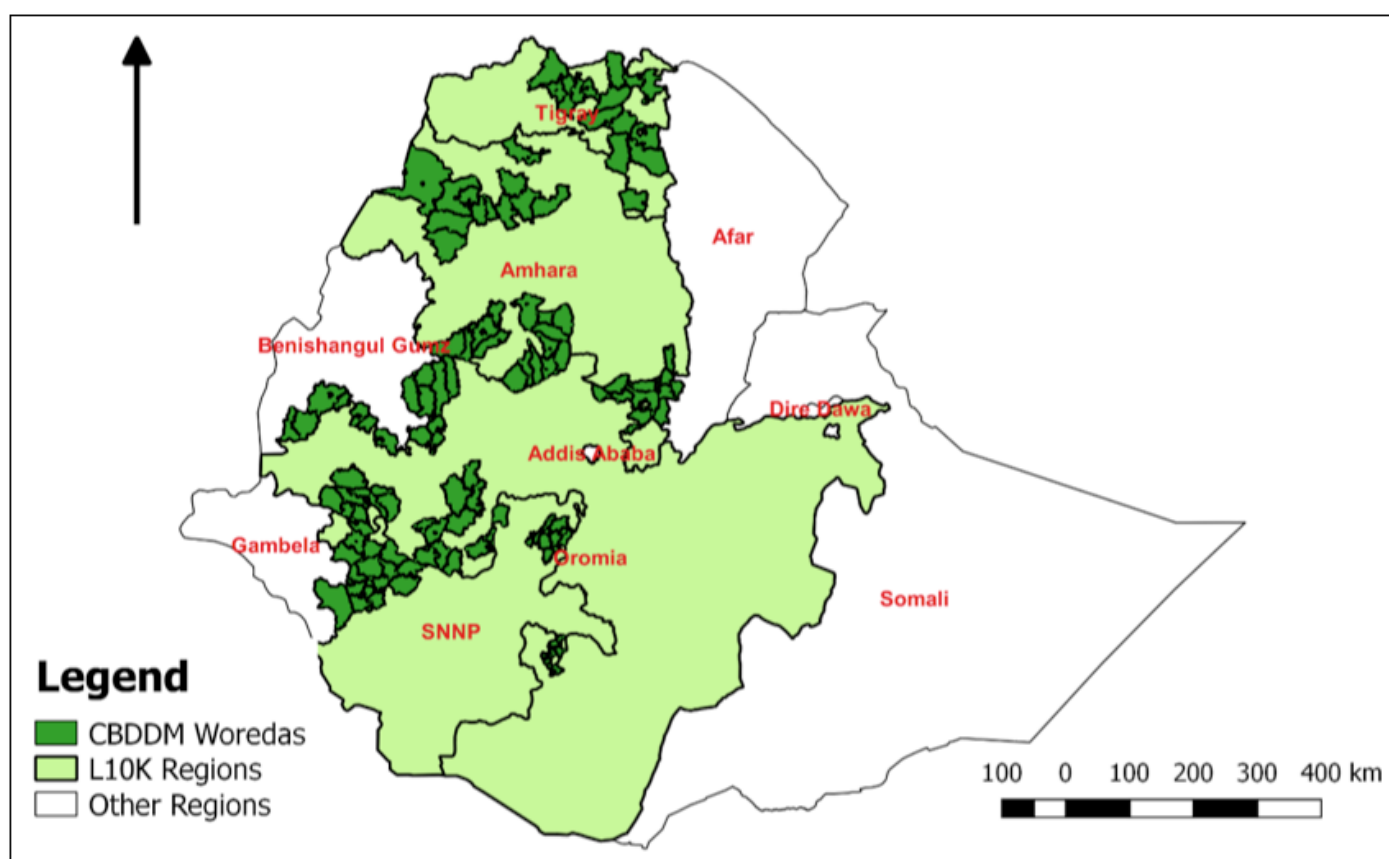


FIGURE 2: A CBDDM map on the wall of a WDA member's home, which she uses to monitor the health of 35 households in her community.



DESCRIPTION OF INNOVATIVE COMMUNITY-BASED SOLUTIONS

Community-based data for decision making (CBDDM)

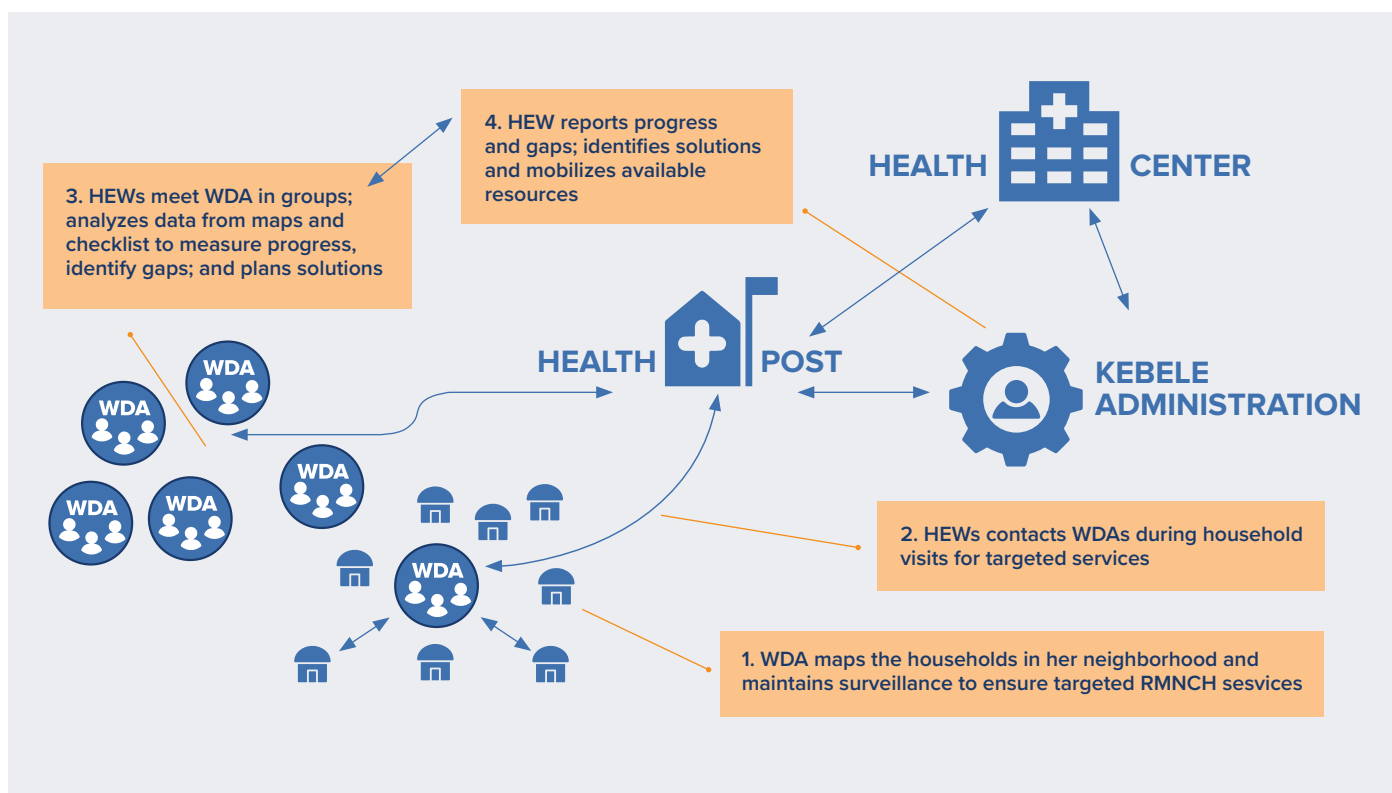
In collaboration with the Ministry of Health (MOH) and Regional Health Bureaus (RHBs), L10K designed and tested CBDDM as a surveillance system for WDA team leaders. WDA team leaders use CBDDM to gather and map by hand the data from their network of about 30 households on RMNCH service needs and environmental sanitation practices. CBDDM helps HEWs track women and children along the continuum of care: family planning, pre-pregnancy, ANC, labor, delivery, post-partum care for mothers

and newborns, immunization, and growth monitoring and promotion services for children up to two years. CBDDM helps WDA members to identify the health needs of households, link people with the health system for appropriate care, and follow up with them for continuity of care and practices. Through CBDDM, WDA members create and maintain a living map of each household's health status.² HEWs are trained to support WDA team leaders to map the 30 households in their catchment areas, helping to make sure each household is connected to the health system and has access to community-level resources and advocates. The hand-drawn mapping is intentionally designed to be maintained and updated by low-literacy individuals with little to no access to technology.

CBDDM provides HEWs a means to motivate and monitor the WDA team leaders' activities and local community-leaders, mainly the kebele steering committee, a tool to monitor the services the HEP provides to the community. The WDA team leaders use a map register (a simplified monthly reporting

format) to report CBDDM data to HEWs during their monthly meeting. The HEWs compile and aggregate this data and identify low performing areas and barriers to access that require the support of the kebele administration.² Figure 3 below presents the CBDDM workflow.³

FIGURE 3: CBDDM workflow (Source: Adapted from Karim et al.⁵)



Family conversation

Along with CBDDM, family conversations (FC) and the birth notification system (BNS) were designed, tested, and implemented to reinforce the efforts of WDAs to improve the use of antenatal care (ANC), skilled delivery, and early postnatal care (PNC).

Despite improvements in key maternal and newborn indicators, service coverage is still low in Ethiopia.⁴ In Ethiopia, family power dynamics can affect service uptake and health outcomes. A pregnant woman, though she has been trained

by health workers and is aware of her need for care, is not always able to decide for herself whether she visits the health facility. Her husband, her mother-in-law, her mother, and sometimes her neighbors, who might be less informed about recommended health practices and therefore more inclined to follow traditional practices, often make decisions regarding household practices and care-seeking on her behalf.⁵ Therefore, HEWs and/or WDA members need to engage with family members and discuss with them the risks around childbirth for both mother and newborn to encourage improved health care-seeking and uptake of MNCH care practices and behaviors.

An FC is an informal meeting between an HEW or WDA team leader and household members and neighbors who have a role in making decisions about health care services for a woman and her children. The FC focuses on creating a conducive and supportive environment for women to access ANC, facility delivery, and PNC including newborn care. As facilitators, HEWs or WDA team leaders use a pictorial FC discussion guide to facilitate the discussion at the house of a pregnant woman.⁶ The family conversation was designed and micro-tested in 2012 and became part of the L10K platform strategy in 2013.

Birth notification system

In Ethiopia, because many women (52%) still give birth at home, they and their newborns (66%) do not receive proper PNC.⁴ Many women (68.7%) who had a spontaneous vaginal delivery at a health facility do not stay for the required 24 hours postnatal period in health facilities.⁷ Previously, there was no system to notify HEWs of these births so they could provide home visits. Such a system would help facilitate improved early PNC uptake and promote healthy MNCH practices.

L10K supported the development of a birth notification system (BNS) which notifies HEWs of home and institutional births so they can provide early PNC care within 48 hours of delivery. Early PNC is critical to identifying maternal and newborn health danger signs and providing life-saving measures. When a woman delivers at a health facility, health workers provide her with a green birth notification card to be given to an HEW. This prompts the HEW to conduct a home visit to provide early PNC to the woman and her newborn. Similarly, when a woman within the network of a WDA leader gives birth at home, the WDA team leader will either bring a yellow birth notification card to the HEW or send it through a neighbor to notify the HEW of the home delivery and the need to provide PNC.⁸

DESIGN AND IMPLEMENTATION OF INNOVATIVE COMMUNITY SOLUTIONS

L10K designed and piloted innovations, partnered with local civil society organizations (CSOs) and non-governmental organizations (NGOs), and built on existing community systems to improve the interactions of families and communities with the PHCU.

Partnership with local CSOs and NGOs

To increase L10K's reach and share lessons learned, L10K partnered with and enhanced the capacity of 12 local CSOs and NGOs. The L10K project provided technical and management capacity building training; developed and provided monitoring, mentorship, and social behavior communication change tools and job aids; conducted integrated and joint supportive supervision with the health system managers; supported regular refresher training and performance review meetings; undertook various on-site and on-job training; and made household visits.

The local CSOs and NGOs included Amhara Development Association, Ethiopian Kale Hiwot Church, Silti Development Association, Keffa Development Association, Sheka's Development Association, Bench Maji Development Association, Southern Region's Women Association, Fayyaa Integrated Development Association, Illu Women and Children Integrated Development, Oromia Development Association, Relief Society of Tigray, and Women's Association of Tigray. These organizations provided support to HEWs through organizing training, supportive supervision, and review meetings. Through these partnerships, L10K's interventions reached over 13 million people with quality maternal and child health care.⁹

Building on existing community health care system

Improving how communities and families interact with PHCUs was crucial to implementing effective innovative community-based solutions to improve RMNCH outcomes. A higher density of active WDAs¹⁰ and better interactions between HEWs and families and communities (e.g., household visits by HEWs and WDA team leaders, household possession of family health guides, and model households)¹¹ are associated with better HEP implementation. To improve the capacity of health center staff, HEWs, and WDA members to provide services and engage with the community, L10K provided capacity building trainings, conducted supportive supervision, mentorship, and organized performance review meetings.

Designing and testing of innovative community-based strategies

Identifying pregnant women for ANC services has typically been difficult because women in rural areas do not want to disclose early pregnancy due to cultural norms, even to their husbands. When they experience pregnancy symptoms, they may consult mothers-in-law, close neighbors, or other family members rather than seeking ANC.¹² L10K designed and piloted the CBDDM strategy to identify early pregnancy and map pregnant women along the continuum of care for about two years in 140 kebeles in 14 woredas in the four agrarian regions. An evaluation of the pilot showed that kebeles where the CBDDM strategy was implemented performed better across many key RMNCH indicators as compared to their counterparts (see Table 1).⁹ Based on the evidence showing the CBDDM strategy to be effective and scalable, L10K incorporated it into the larger project implementation strategy in 2011.

TABLE 1: Additional effect of CBDDM intervention on L10K platform strategy (December 2008 and December 2010)

| MNCH Indicators | Program strategy | Dec-08 | Dec-10 | Change | The added value of CBDDM | |
|--------------------------------------------|-----------------------|--------|--------|--------|--------------------------|----|
| Contraceptive prevalence rate (CPR) | CBDDM & Foundation*** | 30.3 | 47.1 | 16.8 | 6.7 | ** |
| | Foundation only | 29.5 | 39.6 | 10.1 | | |
| Antenatal care | CBDDM & Foundation | 54.3 | 79.3 | 25.0 | 7.5 | * |
| | Foundation only | 49.2 | 66.7 | 17.5 | | |
| HEW assisted delivery | CBDDM & Foundation | 3.1 | 11.2 | 8.1 | 6.3 | ** |
| | Foundation only | 4.0 | 5.8 | 1.8 | | |
| PNC in 7 days | CBDDM & Foundation | 3.9 | 26.6 | 22.7 | 14.1 | ** |
| | Foundation only | 4.4 | 13.0 | 8.6 | | |
| Applied butter to cord | CBDDM & Foundation | 39.5 | 23.6 | -15.9 | -9.0 | ** |
| | Foundation only | 29.8 | 22.9 | -6.9 | | |
| Delay bathing baby (>6 hrs) | CBDDM & Foundation | 22.6 | 54.8 | 32.2 | 15.0 | ** |
| | Foundation only | 27.8 | 45.0 | 17.2 | | |
| Received colostrum | CBDDM & Foundation | 45.2 | 70.3 | 25.1 | 15.2 | ** |
| | Foundation only | 41.7 | 51.6 | 9.9 | | |
| Received measles | CBDDM & Foundation | 63.1 | 81.3 | 18.2 | 13.4 | ** |
| | Foundation only | 71.0 | 75.8 | 4.8 | | |

*Chi-square $p < 0.1$; **p-value < 0.05 ; ***foundation: Interventions aimed at improving interactions between HEWs, households, and communities to improve MNCH outcomes

Evidence-based scale up

Based on the evidence mentioned above, L10K scaled up CBDDM from 140 kebeles in 14 piloting woredas to more than 3,000 kebeles in all 115 woredas in the four agrarian regions. Over 80,000 women development teams completed their village maps to identify and follow up on the needs of member households and link them with the health system.

Robust monitoring, evaluation, learning, and documentation

L10K used a mobile-based management information system (MIS) to routinely monitor the implementation of innovative community-based strategies. The project also conducted a series of surveys to evaluate the effects of these interventions on health-seeking behavior, healthy household practices, and the use of RMNCH services. L10K also implemented the Most Significant Change (MSC) technique and regularly documented stories to track impact achieved by the project and to disseminate results through various platforms.

RESULTS

The project's innovative community-based strategies strengthened the interaction of HEWs with communities and families on maternal and newborn health care access and information, resulting in improved health outcomes.

Improved interaction of HEWs with communities and families

L10K's 2015 survey found that 91% of WDA team leaders had a CBDDM map of their catchment network of 25 to 30 households and maintained household health surveillance, helping WDAs and HEWs to provide targeted information and services to households. About half (49.8 %) of the WDA team leaders interacted with HEWs through formal

reporting of CBDDM data in the preceding month. This enabled the HEWs to maintain and update health post CBDDM registers based on data reported by WDA team leaders. Close to 47% of HEWs reported that they drew on kebele leaders to identify and address key barriers to access and use of maternal and newborn health services based on CBDDM data in the last three months of the survey data collection.¹⁴

Home-based family conversations created opportunities for HEWs and/or WDAs to interact with pregnant women and the decision-makers around pregnant women and women with newborns. As evidenced by L10K's household survey 2015, 17% (798) of women and their families had had at least one meeting with HEWs and/or WDAs to discuss key maternal and newborn health issues during their most recent pregnancy.^{6, 14}

The birth notification strategy helped HEWs to be updated on births regardless of the place of delivery so they could conduct home visits to ensure early PNC for women and their newborns. According to L10K's follow-up survey 2017, HEWs were notified of 55% of home deliveries and 50% of institutional deliveries after birth, which prompted HEWs to conduct timely PNC visits for women and their children.⁵

Improved maternal and newborn health outcomes

As of 2012, L10K's innovative community-based strategies had been scaled up in 115 agrarian region woredas, helping to improve health-seeking behavior, healthy household practices, and use of RMNCH services across the continuum of care. An effectiveness study conducted between 2010-11 and 2014-15 assessed dose-response relationships between changes over time in CBDDM implementation strength score (i.e., % of WDA team leaders who have the map; % WDA team leaders reported CBDDM data in the

previous month; % of kebele command posts that used CBDDM data for decision making; and % kebeles that have updated CBDDM register). It also measured changes in maternal and newborn care practices between the two surveys, showing that kebeles with relatively higher CBDDM implementation strength scores had higher coverage of neonatal-tetanus

protected childbirths, institutional deliveries, clean cord care for newborns, thermal care for newborns, and immediate initiation of breastfeeding with rates of increase at 23%, 47%, 21%, 29%, and 27% respectively, compared with kebeles with lower CBDDM implementation strength scores (see Table 2).³

TABLE 2. Average treatment effects (ATE) of CBDDM on MNH outcomes

| Maternal and Newborn Health care practices | ATE of CBDDM | | |
|--------------------------------------------|--------------|-----------|---------|
| | % of points | (95 % CI) | p-value |
| Neonatal tetanus protected at birth | 9 | (4,14) | 0.001 |
| Institutional delivery | 15 | (9,20) | <0.001 |
| Clean cord care among home deliveries | 7 | (1,14) | 0.030 |
| Thermal care | 10 | (3,17) | 0.003 |
| Immediate initiation of breastfeeding | 10 | (3,13) | 0.002 |

The family conversation strategy, specifically the involvement of the primary household decision-makers, was also instrumental in improving key maternal and newborn health outcomes. The family conversation strategy was found to be positively associated with institutional delivery, early PNC, clean cord care, and thermal care for the newborn; albeit, only 17% of the

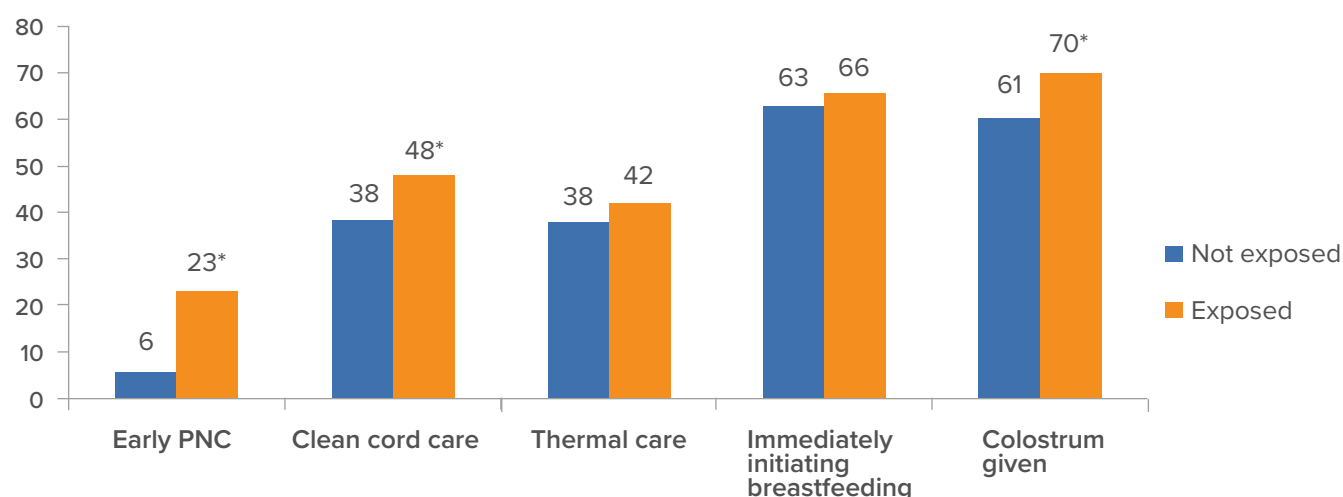
respondents reported having had a family conversation during their last pregnancy. As shown in Table 3, the family conversation strategy reported having average treatment effects of 7, 12, 9, and 16 percentage-points respectively for institutional deliveries, early PNC, clean cord care, and thermal care of the newborn.^{6, 14}

TABLE 3. Exposure to the family conversation and average treatment effects on MNH indicators

| MNH Outcomes | Family Conversation | | Average treatment effect | | |
|--------------------------------------|----------------------|------------------|--------------------------|-------------------------|---------|
| | Not exposed % (N) | Exposed % (N) | %-points | 95% Confidence interval | p-value |
| Institutional delivery | 56 (3502) | 63(688) | 7 | (1.5, 11.9) | 0.011 |
| Early postnatal care | 8 (3502) | 20 (688) | 12 | (7.6, 17.2) | <0.001 |
| Clean cord care | 34 (1622) | 48 (207) | 14 | (6.1, 21.1) | <0.001 |
| Thermal care | 54 (1622) | 64 (207) | 9 | (4.3, 14.3) | <0.001 |
| Immediately initiating breastfeeding | 79 (1622) | 85 (207) | 6 | (-0.8, 12.2) | 0.087 |
| Colostrum given | 75 (1622) | 84 (207) | 9 | (4.8, 13.2) | <0.001 |

The birth notification system improved early PNC for mothers and their newborns. It was found to have 17, 10, and 9 percentage points increments, respectively, for early PNC, clean cord care, and colostrum is given, among exposed and unexposed women respondents (see Figure 4).⁸

FIGURE 4. Exposure to birth notification system (source: L10K 2015 survey)



*Statistically significant difference ($P < 0.05$) between exposed and unexposed

Institutionalization of innovative community-based strategies into the health system

L10K's engagement in shaping policies at the national level has contributed to the integration of L10K's proven community tools and approaches in training manuals for the HEW integrated refresher training and women development groups HEP competency training. The innovative community-based solutions were institutionalized through their integration into health system planning, budgeting, monitoring, reporting, and performance reviews. L10K's routine monitoring system showed that the CBDDM approach, family conversation strategy, and birth notification system were institutionalized and streamlined into the workstreams of all L10K implementation woredas. However, the institutionalization process was implemented for a shorter period

due to the re-scoping of the L10K project from implementation to system strengthening support.

Consequently, woredas did not fully reach the capacity level to sustain the implementation of the strategy on their own. A qualitative study conducted one year after L10K's implementation support was withdrawn revealed that the family conversation strategy and birth notification system were more affordable, adaptable, and aligned with government priorities and were successfully integrated and sustained. This was not the case with CBDDM mapping mainly due to the lack of viable options to replace supplies. Additionally, the level of effort of integration was more pronounced at lower levels, mainly woredas and primary health care units, that later gained limited technical and administrative support from the Ministry of Health and regional bureaus after the project shifted its support.¹³

LESSONS LEARNED

In summary, the implementation of innovative community-based interventions such as CBDDM, family conversations, and the birth notification system has improved key maternal and newborn health outcomes. The design, testing, and evidenced-based scale-up of innovative community-based solutions are critical to overcoming key barriers to RMNCH service

provision and improving health-seeking behavior, healthy household practices, and RMNCH outcomes. The engagement of all levels of the health system, alignment with government priorities, further simplification of tools (including the use of mHealth), and the design of alternative options could facilitate stronger and sustained integration and institutionalization of innovative community-based solutions into the existing health system.

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FOR MORE INFORMATION, CONTACT:

Wuleta Betemariam
L10K Project Director/JSI Country Representative for Ethiopia
wuleta_betemariam@jsi.com