

# Midterm Summary Report

## Changes in Maternal, Newborn and Child Health in 115 Rural Woredas of Amhara, Oromia, SNNP, and Tigray, 2008 – 2010

Addis Ababa, Ethiopia  
August 2012



## The Last Ten Kilometers: What it takes to Improve Health Outcomes in Rural Ethiopia

*The Last Ten Kilometers: What it takes to Improve Health Outcomes in Rural Ethiopia* is a Bill & Melinda Gates Foundation funded project implemented by JSI Research & Training Institute, Inc. The Last Ten Kilometers Project (L10K) aims to strengthen the bridge between households, communities, and the health extension program (HEP) of the Ethiopian Government. L10K mobilizes families and communities to more fully engage to improve household and community health practices, ultimately leading to improved key maternal, neonatal and child health (MNCH) outcomes and contributing towards achieving Millennium Development Goals 4 and 5 (i.e., decrease child and maternal mortality rates). In order to spread its reach and learning, L10K partners with and enhances the capacity of 12 local Civil Society Organizations and Non-Governmental Organizations to cover 115 *woredas* (i.e., districts) and reach about 14 million people in four of the most populous regions of the country: Amhara, Oromia, Tigray, and the Southern Nations, Nationalities and People's Region (SNNPR). The L10K foundational community strategy improves the skills of Health Extension Workers (HEWs) to work with their communities by organizing and utilizing a network of Community Health Promoters (CHPs), now the Health Development Army (HDA). The L10K project mobilizes existing community structures, organizations and institutions (such as *idirs*, churches, mosques, and women's and youth associations) to act as anchors to motivate and sustain the activities of the HDA. In addition to the foundational community strategy, L10K also implements four distinct innovative community strategies. These are: Community Based Data for Decision Making (CBDDM), Participatory Community Quality Improvement (PCQI), Community Solution Fund (CSF), and Non-Financial Incentives (NFI). These four strategies are implemented in addition to the L10K foundational strategy in a limited number of *woredas* (14 *woredas* per strategy) to demonstrate their added value in achieving the project objectives.

### Recommended Citation

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### Abstract

Data from the December 2008 L10K baseline survey and the December 2010 midterm survey was used to assess changes in the *kebele* health systems supporting the HEP, changes in access and exposure to MNCH messages and services, and changes in MNCH care behavior and practices. For these purposes, bivariate statistical procedures were used to analyze information obtained from 6,292 women and 204 communities (i.e., *kebeles*) during the baseline survey and 9,960 women and 330 *kebeles* during the midterm survey. The findings indicate that the HEP coverage was almost universal during baseline; nevertheless, the midterm survey recorded further expansion of HEP infrastructure and greater deployment of human resources since then. Interactions between the HEP frontline workers, i.e., the HEWs and CHPs (now HDA), and households increased. MNCH behavior and practices including utilization of services improved in L10K areas between the survey periods. For example, over the analysis period the contraceptive prevalence rate increased from 29 to 40 percent; antenatal care coverage increased from 52 to 66 percent; institutional deliveries increased from 6 to 11 percent; coverage of any postnatal care increased from 8 to 19 percent; thermal care of the newborn increased from 12 to 23 percent; and initiation of breastfeeding immediately after birth increased from 43 to 53 percent. However, the rate of change of some indicators, mainly relating to delivery and postnatal care, were not on track to reach MDG 5; while the quality of services is still not optimal. Special attention will be needed to increase institutional deliveries, deliveries assisted by trained professionals and the quality of maternal and neonatal health services provided by HEWs. This summary report has implications for future maternal and newborn health interventions in the country.

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**CHANGES IN MATERNAL, NEWBORN AND CHILD  
HEALTH IN 115 RURAL WOREDAS OF AMHARA,  
OROMIA, SNNP, AND TIGRAY REGIONS OF ETHIOPIA,  
2008 – 2010**

**FINDINGS FROM THE LAST TEN KILOMETERS PROJECT  
BASELINE AND MIDTERM SURVEYS**

Addis Ababa, Ethiopia

July 2012



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# ACKNOWLEDGMENT

First of all, we would like to thank the Bill & Melinda Gates Foundation for funding this midterm survey and the Federal Ministry of Health of the Ethiopian Government for supporting it. The findings from the midterm survey were crucial for monitoring and evaluating the progress of the L10K project, as well as planning its future direction.

The implementation of the baseline and midterm surveys would not have been possible without the support of the Regional Health Bureaus (RHBs) of Amhara, Oromia, Southern Nations, Nationalities, and Peoples' Region (SNNPR), and Tigray. The involvement of the RHBs during the baseline and midterm surveys, including providing us with staff from the regions to be trained as interviewers and supervisors, has been crucial for maintaining data quality. We thank the interviewers and the supervisors for their hard work, their dedication, and for finishing the field work on schedule.

We are especially grateful to our implementing partners: Amhara Development Association, Bench Maji Development Association, Ethiopian Kale Hiwot Church, Fayyaa Integrated Development Association, Illu Women and Children Integrated Development Association, Kaffa Development Association, Oromiya Development Association, Sheka Peoples' Development Association, Siltie Development Association, Southern Region's Women's Association, Relief Society of Tigray, and Women's Association of Tigray.

We also thank the woreda health bureau staff, health extension workers and the community health promoters for their sincerity and hard work. Their hard work has brought about significant improvements in maternal, newborn and child health care behaviors and practices. We express our gratitude to our implementing partners for providing staff support for survey supervision, as well as logistics support which helped contain survey expenses. The sincere dedication of the supervisors was key to maintaining survey quality and finishing the field work on time.

The contributions of those who worked as consultants during the midterm survey were vital for maintaining survey quality. Dr. Alemayehu Mekonnen provided training for the survey teams in Amhara and SNNP regions; Ato Saail Mohammed and Ato Kasahun Mengistu provided training to the Oromia survey team and coordinated their activities; Ato Dawit Birhanu and Ato Ambanesh Necho coordinated field operations in the Amhara region; Ato Hibret Bireda coordinated field operations in SNNP; Ato Legesse Hadush coordinated field activities in Tigray; and Dr. Solomon Shiferaw lead the midterm survey database design and management, which was instrumental for maintaining the quality of electronic data capturing, data cleaning and data validation.

The contributions of the central and regional L10K teams at every step of the process have been the foundation of its success. We express our appreciation to the L10K team for their perseverance; hard work, enthusiasm and a can-do mentality made this survey possible.

Many have contributed to this report: Comments from Dr. Mary Taylor throughout all stages of the survey were vital in the preparation of this report. Questions and comments from health and development partners during the midterm survey dissemination workshop were also essential. Comments and support from Dr. Kesetebirhane Admassu were helpful and noteworthy. The technical review of the first draft of this report by Dr. Simon Cousens, IDEAS, London School of Hygiene and Tropical Medicine, was also very helpful.

Lastly, we would also like to thank the women, including the health extension workers who took their time to respond to the questionnaire and share with us a glimpse of their realities. Their feedback was invaluable not only for L10K but for all partners and stakeholders supporting the Government of Ethiopia's health extension program.

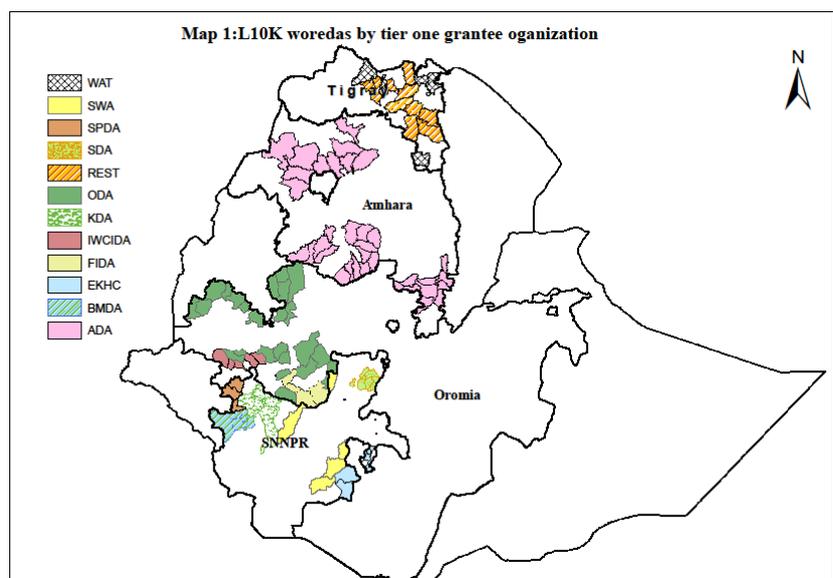
# INTRODUCTION

Since December 2008, the Last Ten Kilometers Project (L10K), funded by the Bill & Melinda Gates Foundation and implemented by JSI Research & Training Institute, Inc., has provided grants and technical support to 12 regional-level civil society organizations. These civil society organizations implement innovative strategies to engage local communities to participate in and strengthen the Health Extension Program (HEP) of the Ethiopian Government to improve maternal, neonatal,<sup>1</sup> and child health (MNCH). These activities are ongoing in 115 rural *woredas*<sup>2</sup> of Amhara, Oromia, Southern Nations, Nations and Nationalities and Peoples (SNNP), and Tigray regions, and contribute towards Ethiopia's Millennium Development Goals (MDGs) 4 and 5. Map 1 shows the distribution of L10K *woredas* by implementing partner.

A baseline survey was conducted in December 2008 – January 2009 to benchmark the MNCH indicators in the L10K intervention areas. A midterm survey was then conducted in December 2010. This report presents the changes between the baseline and midterm surveys in 1) the *kebele* health system situation supporting the HEP; 2) access and exposure to MNCH messages and services; and 3) MNCH behavior and practices.

This summary report is adapted from the Executive Summary of the complete midterm report, which is titled, "Changes in maternal, newborn and child health in 115 rural *woredas* of Amhara, Oromia, SNNP, and Tigray, 2008–2010: Findings from the L10K baseline and midterm survey" and available at

<http://l10k.jsi.com/>. For more in-depth descriptions of the study methodology, results, and conclusions, along with complete references, a description of the health extension program, a list of *woredas* by first and second generation strategies, a list of tier one grantees, and full acknowledgements of the staff who made the midterm survey possible, please consult the full version of the midterm report.



<sup>1</sup> Newborn and neonate are used synonymously in this report to indicate the first four weeks of life.

<sup>2</sup> *Woredas* are administrative units comprising about 20 *kebeles*, on average.

## METHODOLOGY

The baseline and midterm surveys were conducted with two-stage stratified cluster sampling of representative women and communities in the L10K intervention areas. In the first stage, *kebeles* were randomly selected; one community questionnaire was completed in each *kebele* by interviewing at least one health extension worker (HEW). In the second stage, households in the *kebele* were selected for interviews with three target populations—women of reproductive age, women with children 0 to 11 months, and women with children 12 to 23 months. The WHO 30 by 7 sampling method was used to select respondents. During the baseline survey 204 *kebeles* were visited, from which 203 community questionnaires were completed and 6,292 women were interviewed, including 4,080 women of reproductive age, 2,448 women with children 0 to 11 months, and 2,040 women with children 12 to 23 months. During the midterm survey 330 *kebeles* were visited, from which 326 community questionnaires were completed and 9,967 women were interviewed, including 3,960 women of reproductive age, 3,959 women with children 0 to 11 months, and 3,948 women with children 12 to 23 months.

Data from the community questionnaires were used for the situation analysis of the *kebele* health systems. Interviews with women of reproductive age were used in the analysis of family planning indicators; interviews of women with children 0 to 11 months were used in the analysis of maternal and newborn health indicators; and interviews of women with children 12 to 23 months were used in the analysis of child health indicators. Tests were done to see whether differences in MNCH indicators over time and across regions were statistically significant. Thresholds for statistical significance were set at  $p < 0.10$  for the situation analysis of the *kebele* health systems, and  $p < 0.05$  for the analysis of the women's interviews. Only statistically significant results are presented in this report, and findings are generalizable to the L10K areas only.

# RESULTS

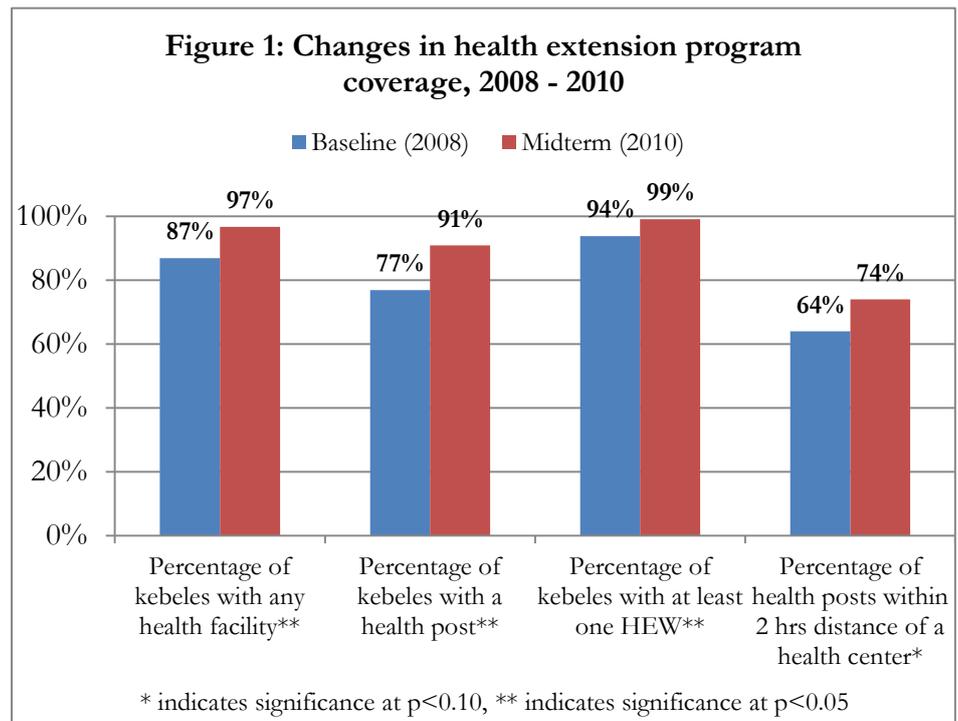
## Changes in the situation of kebele health services

**Health extension program coverage:** The percentage of *kebeles* with at least one health post increased from 77 to 91 percent between the baseline and midterm surveys (Figure 1). At midterm Tigray had the lowest proportion of *kebeles* with at least one health post (78 percent); health posts were more common in *kebeles* in Amhara (99 percent), SNNP, and then Oromia (87 percent). The proportion of *kebeles* with at least one HEW increased from 94 to 99 percent, while the population-to-HEW ratio remained unchanged. At the time of the midterm survey the population-to-HEW ratio was 3,104 people per HEW; which was higher in Amhara and Tigray (3,977 people per HEW, and 3,699 people per HEW, respectively) compared to SNNP and Oromia (2,290 people per HEW and 2,162 people per HEW, respectively).

### The Last Ten

#### Kilometers Project (L10K)

**coverage:** Ninety-seven percent of HEWs reported during the midterm survey that they had received training from the L10K project, while 95 percent attended at least one review meeting organized by L10K. The level of L10K intensity in *kebeles* was measured using an index constructed from 11 items that assessed the HEWs' perception of the level of support they receive from the



L10K project for each of the eleven MNCH components.<sup>3</sup> The average L10K intensity score during the midterm survey was 39 percent of the maximum possible score, with significant regional differences: Oromia (58 percent), Tigray (40 percent), Amhara (37 percent), and SNNP (18 percent).

**Community health promoters (CHPs):**<sup>4</sup> The median number of households (HHs) covered by one community health promoter (CHP) decreased from 99 to 31 HHs per CHP during the analysis period. During the midterm survey, the average number of HHs per CHP ranged between 29 and 37; 41 percent of CHPs were female—the proportion of female being the highest in Tigray (65 percent), followed by Oromia (45 percent), then Amhara and SNNP (36 and 28 percent, respectively).

<sup>3</sup> The MNCH components considered were EPI, nutrition/growth monitoring, essential newborn care, ANC, delivery, referral, PNC, breastfeeding counseling, complementary feeding, family planning and CHP training/follow-up.

<sup>4</sup> The CHP strategy was present during the time of the midterm survey. The CHPs are now being replaced by women volunteers referred to as the Health Development Army (HDA) with increased density. While one CHP was responsible for providing health education to 25 to 30 households, one HDA will be responsible for the same for 5 households.

The level of support HEWs provide to CHPs was measured with an index combining four aspects of HEW support.<sup>5</sup> Between the two survey periods the average score of this index increased from 61 to 85 percent of the maximum possible score (Figure 2). HEW support for CHPs was strongest in Amhara and Oromia and weakest in Tigray and SNNP. At the time of the midterm survey the HEW support for CHP was the highest in Amhara and Oromia (91 and 86 percent, respectively), followed by Tigray and SNNP (82 and 76 percent, respectively).

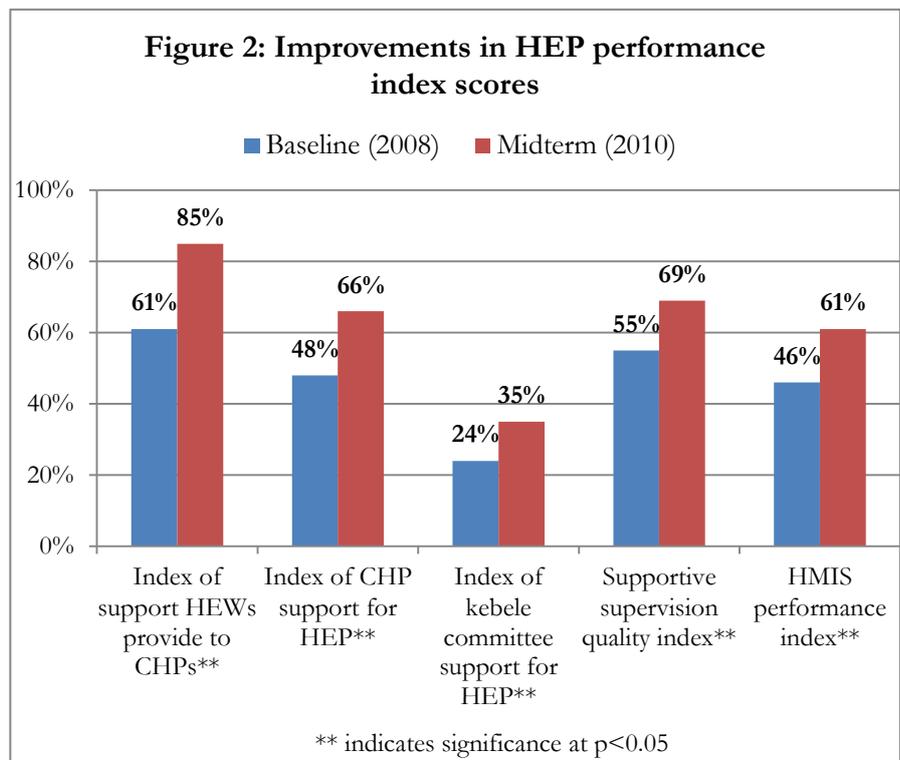
Like the HEP support for CHP index, the extent of CHPs' support for the HEP (as perceived by HEWs) was measured with an index combining 17 aspects of support from CHPs.<sup>6</sup> The average score on this index increased from 48 to 66 percent of the maximum between the surveys (Figure 2).

**Kebele health committee:**

The regularity (i.e., at least one meeting in three months) of *kebele* health committee meetings increased from 38 to 54 percent of the maximum in the last two years. Support from *kebele* health committee for HEP activities was measured with an index combining 12 different aspects of support.<sup>7</sup> Between the survey periods the average *kebele* health committee support for HEP index score increased from 24 to 35 percent (Figure 2)

**Supportive supervision:**

The regularity of supportive supervisory (i.e., at least one visit in the last three months) visits to HEWs increased from 62 to 76 percent between the surveys, with the lowest rates in Amhara followed by the other regions that ranged between 80 and 90 percent. The quality of supportive supervision was measured with an index constructed from 10 components of good supervision.<sup>8</sup> The average score on this index increased from 55 to 69 percent of the maximum possible (Figure 2).



<sup>5</sup> The index was the sum of four items: 1) conducted regular meeting with the CHPs, 2) planned activities together, 3) set and reviewed targets for CHPs, and 4) provided supportive supervision to the CHPs.

<sup>6</sup> The 17 items were: immunization, child health/nutrition, essential neonatal care, diarrhea management, recognition of the danger signs of childhood illnesses, breastfeeding practices, complementary feeding, family planning, maternal health (ANC, delivery & PNC), latrine construction and use, personal hygiene, community mobilization, training/follow-up of model families; personal hygiene, community mobilization, household visits, outreach services, HMIS, and malaria.

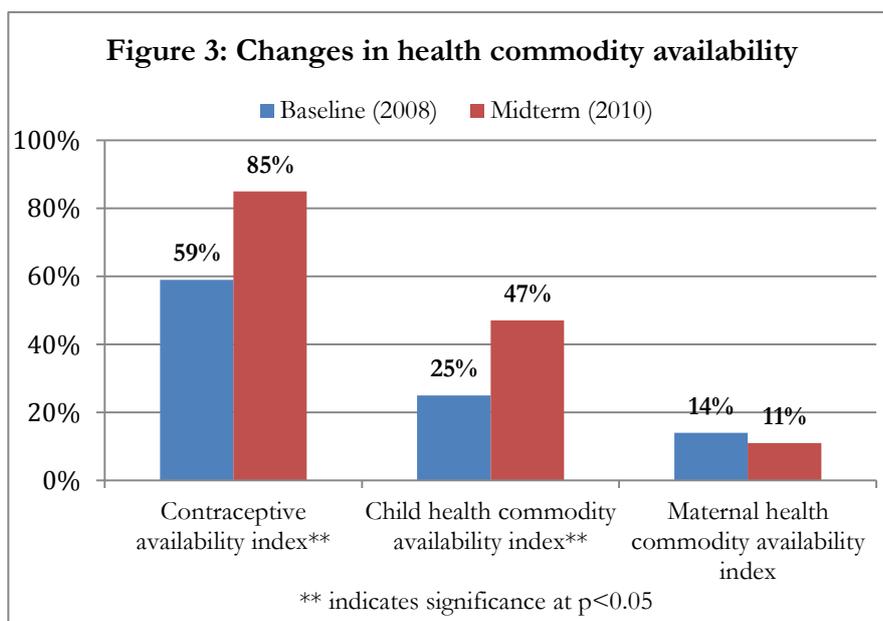
<sup>7</sup> The 12 items were: planning and monitoring HEP activities, pulling essential supplies from the *woreda*, pulling supportive supervision from the *woredas*, identifying barriers to the quality of services, coordinating with local developmental partners, referral services for EOC, referral services for sick children, community mobilization, latrine construction, personal hygiene, school health, and, provide incentives/motivation to CHPs.

<sup>8</sup> The following 10 aspects of supportive supervision were summed to produce the index: supplies, record keeping and reporting (HMIS), observe client interaction, provide written feedback, provide encouragement, provide administrative and technical updates, discuss problems encountered, conducted household visits, reviewed work-plan and results, and discussed CHP activities.

**Health management information system (HMIS):** HMIS performance was measured with an index combining nine services monitored by HMIS.<sup>9</sup> The average HMIS performance score increased from 46 to 61 percent of the maximum (Figure 2). HMIS performance was strongest in Tigray (72 percent) and weakest in SNNP (51 percent); while it was in between in the other two regions.

**Commodity availability:**

Three indices were constructed to measure the availability of MNCH commodities (Figure 3). The *contraceptive availability index* (i.e., availability of pills, condoms & injectables) increased from 59 to 85 percent of the maximum. The *child health commodity availability index* (i.e., ORS, Vitamin A, Vaccine, anthelmintics, cotrimoxizole, and ACT) score increased from 25 to 47 percent of the maximum. Child health commodities were more



available in Amhara and Tigray (59 and 52 percent, respectively) than in SNNP and Oromia (where it was 39 and 33 percent, respectively). The *maternal health commodity availability index* (i.e., iron tablets, misoprostol and ergometrine) remained problematically low, at 11 percent of the maximum possible index score during the midterm survey. During the midterm survey, the maternal health commodity availability index score was the highest in Tigray (22 percent) followed by the other three regions (ranging from 8 to 10 percent).

## Changes in exposure of households and families to the health extension program

**Household visits by HEWs:** The proportion of women visited by a HEW in the six months preceding the survey increased from 37 to 50 percent between the survey periods (Figure 4). The quality of household visits by HEWs was measured with an index composed of 12 items HEWs should discuss during a home visit (i.e., women were asked to recall which topics the HEW discussed).<sup>10</sup> The assumption is that better interaction of the HEWs' visit with women would result in better recall of the topics discussed during the interaction. The average score of this index increased from 27 to 32 percent of the maximum scores.

**Household visits by CHPs:** The proportion of women visited by a CHP in the six months preceding the survey doubled from 16 to 32 percent (Figure 4), with higher coverage in Tigray (56 percent) and the lowest coverage in Oromia (20 percent). Similar to the quality of HEW's household visits, the quality of CHP household visits was

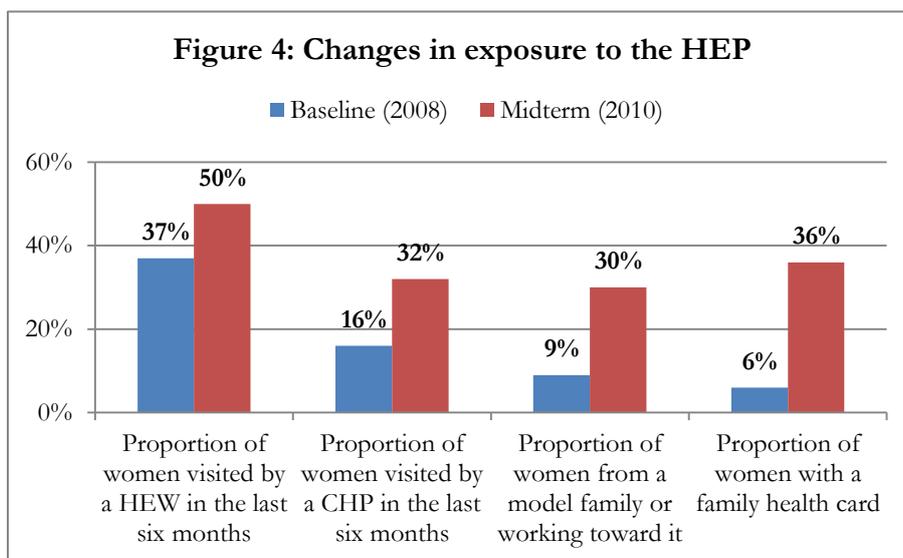
<sup>9</sup> The following nine items were summed to construct the index: vaccination, growth monitoring, essential newborn care, ANC, delivery, PNC, family planning, follow-up model families, and follow-up CHPs.

<sup>10</sup> The following 12 items were summed to create this index: The items were latrine use, hygiene, pit latrine construction, immunization, child nutrition, safe water use, family planning, pregnancy care, HIV/AIDS, newborn care, diarrhea treatment, and PNC.

measured with an index of 12 items that should be discussed (with women being asked to recall what the CHP discussed.<sup>11</sup> This score increased from 22 to 27 percent of the maximum.

**Model family households:** The percentage of the women in L10K areas who were from a model family household or working towards becoming one increased from 9 to 30 percent (Figure 4). Model families are more common in Amhara and Tigray (45 and 37 percent, respectively) than SNNP and Oromia (15 and 1 percent, respectively).

**Family health cards:** The percentage of women with a family health card increased from 6 to 36 percent between the survey periods (Figure 4), with the highest coverage in Tigray (49 percent), followed by the other three regions (which ranged between 32 to 37 percent).



## Changes in family planning indicators

The percentage of women of reproductive age who were in a union and currently using a contraceptive method (i.e., the contraceptive prevalence rate or CPR) increased from 29 to 40 percent. The method mix shifted between the two surveys, the proportion of contraceptive users using injectables declined from 87 to 81 percent; the proportion using implants increased from four to 10 percent; while the proportion using oral pills declined from eight to five percent.

The proportion of contraceptive nonusers who were advised about family planning by a health worker increased from 25 to 40 percent in the last two years. During the midterm survey, the health worker's interactions with contraceptive nonusers to discuss family planning were highest in Tigray (53 percent), followed by SNNP (43 percent), and then Amhara and Oromia (37 and 33 percent, respectively).

There were no changes in future desire to use contraceptives among nonusers (62 at midterm); the desired number of children among women of reproductive age (4.5 children); and the desire to limit childbirth among women of reproductive age (39 percent).

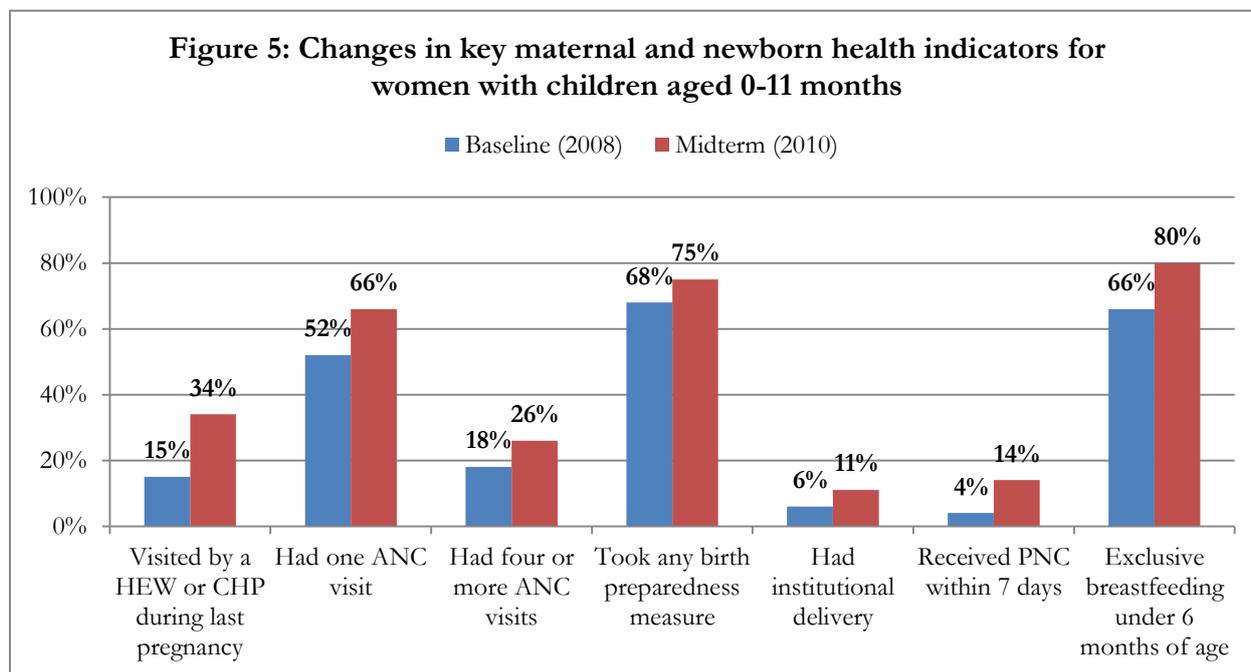
## Changes in maternal and newborn health indicators

**Household visits by health workers during pregnancy:** The percentage of women with children 0 to 11 months who were visited by a HEW or CHP during their last pregnancy increased from 15 to 34 percent in midterm (Figure 5). At midterm household visits by health workers during pregnancy were the highest in Tigray (43 percent) and the lowest in Oromia (27 percent), and in-between in the other two regions. An index of quality of household visits by health workers during pregnancy (composed of 19 items health workers should discuss, as recalled by women in the survey)

<sup>11</sup> The 12 items were: hygiene, pit latrine construction, immunization, child nutrition, latrine use, safe water use, HIV/AIDS, pregnancy care, family planning, diarrhea treatment, and family health services.

increased from 11 to 17 percent of the maximum possible.<sup>12</sup> The quality score during the midterm was the highest in Oromia (22 percent) followed by Tigray (18 percent), and then Amhara and SNNP (15 percent, each).

**Tetanus toxoid injection:** The percentage of women with children 0 to 11 months who reported that they received two or more tetanus toxoid injection during their last pregnancy increased from 41 to 45 percent in midterm. During the midterm the tetanus toxoid coverage was the highest in SNNP (56 percent; while in the other regions it ranged between 39 and 48 percent).



**Antenatal care:** The percentage of women with children 0 to 11 months who visited a health facility during their last pregnancy for a check-up (i.e., ANC coverage) increased from 52 to 66 percent (Figure 5). ANC coverage varied significantly by region—coverage was the highest in Tigray (87 percent), then SNNP (74 percent), Oromia (64 percent), and then in Amhara (56 percent). The proportion of women receiving four or more ANC visits increased from 18 to 26 percent during the same period. The percentage receiving four or more ANC was the highest in SNNP and Tigray (37 and 34 percent, respectively) followed by Oromia (28 percent) and then Amhara (15 percent).

The source of ANC changed between the surveys. Whereas during the baseline more women received ANC at health centers (54 percent compared to 33 percent at health posts), by the midterm survey the two types of facilities each provided about half of ANC. ANC quality was measured with an index constructed from 7 types of services and counseling as recalled by women.<sup>13</sup> The assumption is that better interaction during ANC is expected to result in better recall of the services received by the women. The index increased from 27 to 40 percent of the maximum possible score. During the midterm the quality of ANC was the highest in Tigray (47 percent) and between 37 and 39 percent in the other regions.

<sup>12</sup> The 19 items were: to get ANC, to get TT vaccination, take iron tablet, take extra food, take rest, avoid heavy work, seek care if health problem, exclusive breastfeeding, put the baby to breast after birth, to save money for emergency, delay bathing the newborn, sleep under bed net, counsel and test for HIV, No pre-lacteals, to arrange emergency transport, give colostrum, LAM, ensure a trained birth attendant, and apply nothing on umbilical stump.

<sup>13</sup> The 7 items were: weight taken, blood pressure measured, urine sample taken, blood sample taken, iron supplement given, given drugs for malaria, and intestinal parasite drugs given.

**Birth preparedness:** The percentage of women with children 0 to 11 months who reported taking any birth preparedness measure during their last pregnancy increased from 68 to 75 percent (Figure 5). The number of birth preparedness measures taken by women increased from 17 to 23 percent (of seven possible measures).<sup>14</sup>

**Bed net use by pregnant women:** The percentage of pregnant women in malarious regions who slept under a bed net during the night preceding the survey increased from 24 to 45 percent.

**Safe and clean delivery:** The percentage of institutional deliveries increased from six to 11 percent (Figure 5). At midterm, the practice of institutional deliveries was the highest in Tigray (18 percent) followed by the other three regions where it ranged between nine to 11 percent. Deliveries assisted by health professionals (including HEWs) increased from 10 to 16 percent. The indicator at midterm was the highest in Tigray (26 percent) followed by Oromia and SNNP (16 percent each), and then Amhara (11 percent).

Cutting the umbilical cord with a clean or sterile blade remained almost universal (97 percent at midterm). Tying the cut cord stump with sterile or clean thread increased from 54 to 64 percent; it was highest during the midterm survey in Tigray (84 percent) followed by SNNP (79 percent), then Oromia (60 percent), and then Amhara (52 percent). Application of butter to the stump of the umbilical cord decreased slightly, from 29 to 25 percent. At midterm, the practice of applying butter to the cord was least common in SNNP (10 percent), followed by Oromia (23 percent), and then Amhara and Tigray (30 and 35 percent, respectively).

**Postnatal care:** The percentage of women with children 0 to 11 months whose last birth took place at home and who received a postnatal check-up (PNC) within 7 days increased from 4 to 14 percent (Figure 5), while PNC within 48 hours increased from 1.6 to 5.8 percent. The highest coverage of PNC in 7 days was observed in SNNP and Tigray (20 and 17 percent, respectively) during the baseline survey, followed by Oromia and Amhara (11 percent each); with similar patterns for PNC in 48 hours coverage. The PNC quality was measured with an index summing 7 components of PNC.<sup>15</sup> Better quality of PNC was expected to lead to better recall of the services received. This index of the quality of PNC by HEWs and CHPs increased from 14 to 24 percent.

**Newborn check-up:** PNC coverage for women was used as a proxy for newborn check-up services provided by health workers. The quality of newborn check-ups was measured with an index of nine components of the check-up.<sup>16</sup> This index quality of newborn check-ups increased from 12 to 23 percent.

**Newborn health practice:** Of women with children 0 to 11 months whose last delivery was not attended by a skilled health professional, the proportion who *took clean care of the umbilical cord* (i.e., cleanly cut and tied the cord and applied nothing to the cut stump) increased from 30 to 42 percent. Clean cord care at midterm was the highest in SNNP (63 percent), followed by Tigray and Oromia (47 and 39 percent, respectively), then Amhara (30 percent). The proportion of women with children 0 to 11 months in L10K areas who reported that they *took thermal care of the newborn* increased from 12 to 23 percent.<sup>17</sup>

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<sup>14</sup> The 7 birth preparedness measures considered: financial, transport, food, arrange birth attendant, identify health facility for delivery, prepare delivery materials, and identify blood donor.

<sup>15</sup> The 7 items were: examined body, checked breast, checked for heavy bleeding, counseled on danger signs, counseled on family planning, counseled on nutrition, and referred to health center/hospital.

<sup>16</sup> The 9 items were: examined baby's body, weighed baby, checked cord, counseled on breastfeeding, observed breastfeeding, counseled on keeping baby warm, checked on danger signs, counseled on danger signs, and referred to health center/hospital.

<sup>17</sup> Thermal care of the newborn includes drying and wrapping the baby before the placenta was delivered or immediately after birth, delaying bathing the baby more than six hours, and always maintaining skin-to-skin contact.

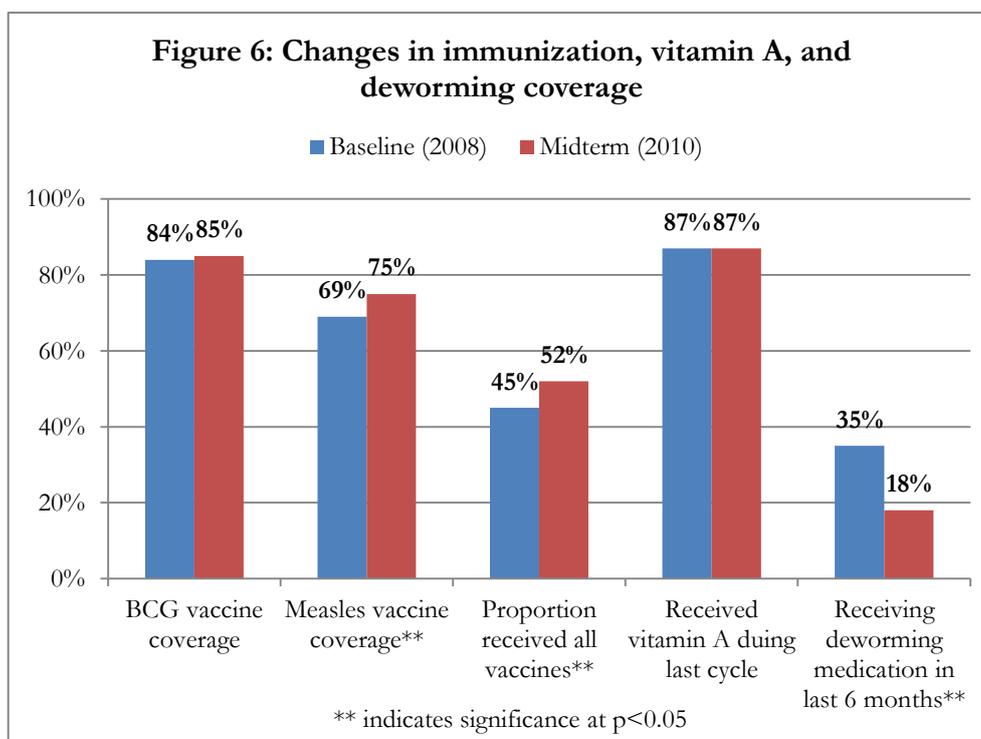
**Breastfeeding the newborn:** The proportion reported *giving first milk (i.e., colostrum)* to the baby increased from 44 to 53 percent (Figure 5), with the highest rate now being in Tigray (69 percent), followed by Oromia (58 percent), SNNP (52 percent) and then Amhara (44 percent). *Putting the baby to the breast immediately after birth* also increased from 43 to 53 percent, with the highest rates now in SNNP and Oromia (68 and 66 percent, respectively) followed by Tigray (54 percent) and then Amhara (34 percent). *Feeding the baby only breast milk during the first three days of life* increased from 70 to 80 percent. Again, this indicator was lowest in Amhara (60 percent) while in the other regions it ranged between 89 and 96 percent.

*Exclusive breastfeeding* of infants under six months of age during the 24 hours preceding the survey increased substantially from 66 to 80 percent. During the midterm survey the practice of exclusive breastfeeding was more-or-less at the same levels in Tigray, Amhara and SNNP (between 82 and 87 percent) while it was lagging behind in Oromia (73 percent).

### Changes in child health indicators

**Childhood immunization:** Access to immunization, as measured by coverage of the Bacillus Calmette–Guérin (BCG) vaccine for tuberculosis, remained more-or-less the same (at about 85 percent, see Figure 6). BCG coverage was highest at midterm in Tigray (97 percent), followed by Oromia (86 percent), then the other two regions (about 81 percent each). The dropout rate between the first and third dose of pentavalent declined modestly from 26 to 21 percent. The dropout rate at midterm was lowest in Tigray (7 percent), followed by Oromia (20 percent), and then the other two regions (about 26 percent

each). Measles vaccine coverage increased slightly, from 69 to 75 percent (Figure 6). At midterm, the measles vaccine coverage was the highest in Tigray (90 percent), followed by the other regions (which ranged between 71 and 74 percent). The percentage of children fully vaccinated increased from 45 to 52 percent (Figure 6), which during the midterm was the highest in Tigray (77 percent), followed by Oromia (53 percent), then the other two regions (about 46 percent each).



**Childhood illness and its care seeking behaviors:** Of children 0 to 23 months of age with any ARI symptoms, the percentage taken to a health provider or given antibiotics remained unchanged (36 and 27 percent, respectively). Of children 0 to 23 months of age with diarrhea, the percentage taken to a health provider increased from

36 to 45 percent. ORS treatment for children with diarrhea increased from 23 to 28 percent. Of children aged 0 to 23 months with fever, the percentage taken to a health provider or given anti-malarials remained mostly unchanged (41 and 4 percent, respectively).

***Children sleeping under bed nets:*** The proportion of children between the ages 0 and 23 months who slept under a bed net the night before the survey increased by 13 percentage points from 31 to 44 percent. In the malarious area the increase was even greater (from 36 to 55 percent; i.e., increased by 19 percentage points). During the midterm survey the proportion of children in malarious areas who were sleeping under a bed net was lowest in Oromia (46 percent), while it ranged between 55 and 62 percent in the other areas.

***Knowledge about danger signs of childhood illnesses:*** Mothers' knowledge of danger signs during childhood was measured with an index constructed from 19 items. This score increased from 18 to 23 percent of the maximum possible. The knowledge of childhood illness signs among women was higher at midterm in Tigray and Oromia (about 25 percent each) compared to the Amhara and SNNP (where it was 22 and 19 percent, respectively).

## CONCLUSIONS AND RECOMMENDATIONS

There have been significant improvements in HEP infrastructure establishment and human resources deployment in L10K areas. The *kebele* level health systems and functions supporting HEWs and the HEP have also improved; this includes the HMIS, MNCH commodity logistics systems, supportive supervision systems, *kebele* health committees and CHPs. Despite these improvements, the *kebele* health systems are still less than optimal; as such, the health and development partners (including L10K) should target their efforts on areas where performance is lagging behind expectations. **Special efforts will be required to improve maternal and child health commodity availability; to improve *kebele* health committee's support of HEP activities; to improve the performance of HMIS; to improve the availability of essential equipment and materials required to provide HEP services, and to improve the frequency and quality of supportive supervision.**

Although the coverage of L10K training for HEWs is universal, **the intensity of the support the project provides to HEWs can be improved further. The L10K project should also track CHPs who have been replaced by the HDA to ensure that they are properly trained on high impact MNCH interventions.**

The intensity, quality, and efficiency of the interactions between the frontline health workers—i.e., HEWs and CHPs—with households and families have been improving in L10K areas. However, there is room for improvement both in overall quality and in particular regions that are lagging behind. **The intensity of household visits by CHPs is lagging in Amhara, Oromia, and especially in SNNP; special attention will be required to help these regions catch-up with Tigray's achievements. Distribution of family health cards can also be improved in Amhara, Oromia and SNNP. All regions have room for improvement in the quality of health workers' interactions with families, with special attention towards improving counseling on maternal and newborn health during household visits.**

There have been significant increases in contraceptive use, and there is evidence that women are beginning to choose longer-acting methods. This reflects the national family planning policy and its emphasis on promoting the use of implant. In the 2011 Ethiopia Demographic and Health Survey (EDHS) the total demand for family planning was 54 percent, which is not enough to reach the Federal Ministry of Health's (FMOH) target for CPR—65 percent. **As such, multi-sectorial initiatives will be required to increase the demand for family planning in Ethiopia. There is also an opportunity for the FMOH to expand the use of intra-uterine devices (IUDs) and permanent contraceptive methods, which in the long run will reduce costs for the national family planning program.**

More and better interactions between the HEP frontline health workers and women during pregnancy, delivery, and postnatal periods have been taking place since the inception of the L10K project. However, the observed improvements are not sufficient to reach the maternal health related MDG targets of the FMOH. There is an opportunity for learning within the project to improve these maternal and newborn health (M&NH) indicators. **Best practices should be identified from high performing areas to be replicated in the others.** Still, replication of these best practices will not be sufficient to attain some of the MDG targets set by Health Sector Development Program (HSDP) IV. **Special, additional initiatives will be required to increase PNC, skilled attendance during delivery, and institutional deliveries. The impact of the HEP on M&NH can be further enhanced by improvements in the quality of M&NH services.**

Over the past two years child immunization coverage improved in L10K areas. The dropout rate of immunization from DPT1 to DPT3 was higher at midterm in SNNP, Amhara, and Oromia (between 20 and 27 percent) compared to Tigray (7 percent), which is consistent with the EDHS 2011. **Immunization coverage strategies being implemented in Tigray should be identified and replicated.**

There have been no major improvements in the management of childhood illness in L10K areas, other than an increase in the use of oral rehydration therapy for treating diarrhea. As such it is encouraging to note that the Integrated Community Case Management of Common Childhood Illnesses (ICCM) is being scaled up in Ethiopia.



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