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Multilevel analysis of factors associated with maternal and newborn health service utilization in rural Ethiopia: individual, communal and provider level determinants of care

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Abstract

Multilevel analysis of factors associated with maternal and newborn health service utilization in rural Ethiopia: individual, communal and provider level determinants of care

By Danika Barry

Ethiopia has some of the world's highest maternal and newborn mortality rates, and presently over 90 percent of births occur in home settings. Severe health workforce shortages indicate that home-based strategies delivered by community level health workers present the only viable solution for the short to medium term. In response, the Ethiopian government has rapidly scaled up over 30,000 Health Extension Workers (HEWs), who serve as the first line of care at the community level. However, HEWs' impact on mortality has been limited.

Cross-sectional baseline survey data from the Maternal and Newborn Health in Ethiopia Partnership (MaNHEP) was used for Amhara and Oromiya Regions, Ethiopia. A multilevel, clustered data analysis was performed to link individual, community and provider-level factors associated with receipt of antenatal (ANC), delivery and postnatal care (PNC) from skilled providers or HEWs. Additionally, factors associated with use of misoprostol for postpartum hemorrhage (PPH) were assessed.

Knowledge of home-based life saving skills was significantly associated with receipt of ANC, PNC and use of misoprostol. Women with a high level of knowledge were nearly twice as likely to have received antenatal care [OR: 1.94 (1.14, 3.26)], and nearly five-times more likely to have received postnatal care [OR: 4.58 (1.35, 15.49)]. Women's level of adherence to potentially harmful traditional practices was also a significant factor; women with low adherence were nearly twice as like to have received ANC [OR: 1.98 (1.11, 3.54)], and four times as likely to have received delivery care [OR: 3.98 (1.88, 8.43)]. Women's trust in HEWs' abilities and HEWs' frequency of interaction with other frontline health workers were also significantly associated with receipt of ANC. Furthermore, patterns of association between women's education and income status and that of her spouse indicate the important role husbands play in care seeking decision-making.

This study demonstrates that interventions focused on community-level health education and behavior change could significantly improve receipt of care from skilled providers and HEWs. Furthermore, coordination amongst frontline health workers and inclusion of husbands in health messaging could increase coverage and continuity of care.

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Chapter I: Background

Maternal and Newborn Health: Global Perspective

Worldwide, 4 million newborn deaths occur every year constituting nearly 40% of all under-5 child mortality (1). Furthermore, the World Health Organization (WHO) estimates that up to 358,000 maternal deaths occur each year (2). These deaths occur almost exclusively in developing countries (99%) (3).Yet, the vast majority of these deaths are preventable, particularly if early detection and proper treatment are administered by caregivers and frontline health workers (4-7). While progress in post-neonatal mortality has been substantial, deaths within the first 28 days of life remain one of the largest impediments towards achieving Millennium Development Goal (MDG) 4 on Child Survival (8). In addition, progress on Millennium Development Goal 5 to reduce maternal mortality has been uniquely stunted in sub-Saharan Africa, where a woman's lifetime risk of death due to pregnancy-related causes is 1 in 31 (2, 9). The corresponding risk for women in developed countries is 1 in 4300 (2).

In order to achieve MDG 5 of reducing the maternal mortality ratio (MMR) by 75% between 1990 and 2015, MMR must decrease by 5.5% annually (2). However, the global annual percentage decline in MMR between 1990 and 2008 was only 2.3% (2). Sub-Saharan has the highest regional MMR (640 maternal deaths per 100,000 live births), compared to an MMR of 14 in developed regions (2). Furthermore, of the 88 countries with MMR $\geq$ 100 in 1990, 30 have made insufficient or no progress, and 23 of these are in sub-Saharan Africa (2).

Maternal and Newborn Health: Ethiopia

Ethiopia is widely regarded by scientists as the cradle of humanity: it is the site of the oldest known hominid fossil remains, estimated at 4.2 million years old, and written records of civilization date back to 3000 B.C. (10, 11). Aside from a five-year Italian occupation (1935-1941), it has the unique distinction of being the only African nation never to be colonized; an immense source of continental pride (12). Despite this rich historical past, the United Nations Development Programme (UNDP) ranks Ethiopia among the lowest in its Human Development Index, at 174th of 187 countries listed (13). The adult life expectancy in Ethiopia is 50.9 years for males and 53.5 years for females, and it has some of the world's highest maternal and newborn mortality rates (14). Additionally, an estimated 39% of its population lives below the poverty line of 1.25 USD per day (14). Ethiopia is the second most populous nation in Africa (82 million), yet it is also one of the least urbanized countries in the world, with 84% of its population living in rural areas (14, 15). Significant urban-rural disparities in distribution of health care providers and access to facilities complicate progress for health and development. Yet since 2003, the Ethiopian government has attracted international attention with its Health Extension Program, an ambitious commitment to promoting universal access primary health care, by targeting rural communities (16). Ethiopia is poised to be a leader in advancing health, and improvements made amidst these challenges may serve to inform other resource-constrained settings, particularly in sub-Saharan Africa.

Mortality Trends

Maternal Mortality

In Ethiopia, 30 percent of deaths in women 15-49 years of age are due to pregnancy or pregnancy-related causes, resulting in over 25,000 maternal deaths per year (15, 17, 18). Maternal deaths are defined as any death occurring during pregnancy, childbirth, or within 42 days after birth or termination of a pregnancy (19).The high number of maternal deaths likely underlies gender disparities in overall adult mortality trends. In the 2005 Ethiopian Demographic and Health Survey (EDHS), the female adult mortality was slightly higher than the adult male mortality rate (6.4 v. 5.9 deaths per 1,000 population, respectively) (17). Furthermore, while male mortality declined by 26% from 2000-2005, female morality declined a mere 4% during the same period (18).

The nominal decline in female mortality is mirrored by similar trends for maternal mortality. It should be noted that measuring maternal mortality in Ethiopia is difficult, as no vital events registry exists and large sample sizes are needed to provide reliable measures (17). As of 2000, the EDHS has served as the only regular national household survey measure of maternal mortality (20). The maternal mortality ratio (MMR) is generally used as a quantification of obstetric risk associated with each live birth, by dividing the age-standardized maternal mortality rate by the age-standardized general fertility rate (17). The MMR lessens the high degree of sampling error and limited interpretability of age-specific maternal mortality rates, which remain a relatively rare occurrence for a given age group, even in the highest mortality settings (17, 21).

The 2000 EDHS reported a MMR of 871 deaths per 100,000 live births (95%CI: 703, 1039), placing Ethiopia among the world's highest MMRs (20). The MMR reported in the 2005 EDHS of 673 deaths per 100,000 live births (95%CI: 548, 799) may represent a reduction in mortality,

however the high degree of sampling error precludes judgment on whether it represents a true decline from the 2000 figure (17).

Ahead of the release of the 2011 EDHS, the Ethiopian Federal Ministry of Health's (fMoH) Health Sector Development Programme (HSDP) IV predicted that MMR had declined to 590 deaths per 100,000 live births, by the report's published date of November 2011 (22). Furthermore, a 2010 WHO Report and the United Nations (UN) Millennium Development Goals Indicator Database (last updated July 2011) both projected a 2008 MMR of 470 deaths per 100,000 live births [Table 1] (2, 23). Yet the April 2012 release of the 2011 EDHS indicates that these projection may be overly optimistic, instead estimating MMR at 676 maternal deaths per 100,000 live births (95%CI: 541, 810) (15). This latest figure is nearly identical to the 2005 EDHS estimate, and the confidence intervals indicate that it is not significantly different from the MMRs reported in either the 2000 or 2005 EDHS. Additionally, the 2011 EDHS estimate marks a reversal in the trend for the percent of all female adult mortality (15-49 years) attributable to maternal causes: from 25% in the 2000 EDHS, 21% in the 2005 EDHS, and now 30% in the 2011 EDHS (15).

These different MMR estimates have implications for assessing current progress, as well as what Ethiopia's target MMR should be to achieve MDG 5, which is defined as a 75% reduction in the 1990 MMR by 2015. According to the UN and WHO reports, this target should be an MMR of 248 (2, 23). However, the Ethiopian National Reproductive Health Strategy (2006) cited a target MMR of 350, while the most recent HSDP IV (2011) cited an MMR 267 as the target (18, 22).

The fMoH figures provide the most encouraging MMR trend: a 58% reduction from 1995 to 2010, with an annual percent decrease of 5.6% [**Table 1**]. Similarly, the WHO/UN figures indicate a 53% decrease in MMR from 1990 to 2008, with an annual percent decrease of 4.1%. However this trend is markedly attenuated under the EDHS figures, which indicate a 22%

reduction in MMR from 2000 to 2011, with an annual percent decrease of just 2.3%. A 2009 time-series study which used a combination of the EDHS and fMoH figures for 1995-2008 determined that a statistically significant decreasing trend occurred during this period (24). Nevertheless, this study also predicted that MMR in 2015 would be 531 (95%CI: 486, 576), falling short of the target MMR of 267 (24). Arguably the most recent EDHS figures should be used, as they are supported by the strongest empirical evidence (versus projections), based on the largest sample size. Furthermore, the source for the figures in the fMoH report is not clearly stated. However, regardless of the set of figures used, Ethiopia will have to more than double and perhaps septuple past annual percent decreases in MMR to achieve its 2015 target (from 5.6% to 14.7% or 2.1% to 17.0%, using the fMoH and EDHS figures, respectively).

Child and Newborn Mortality

Ethiopia has made significant reductions in child mortality over the last decade; however deaths during the neonatal period provide the largest barrier to further improvement, and an estimated 120,000 newborns die in Ethiopia each year (25). Unlike for maternal mortality, there is little to no discrepancy for UN (last updated: 23 Sep 2011)- and EDHS-reported figures, and thus only the EDHS figures are reported here. According to the 2011 EDHS, the under-five mortality rate (U5MR) was reduced 28% from the 2005 DHS figures, from 123 to 88 deaths per 1,000 live births (LB) [Table 2] (17, 26). The infant mortality rate (IMR) was reduced 23%, from 77 to 68 deaths per 1,000 LB (17, 26). Yet neonatal mortality rates (NMR) showed only a modest 5% reduction, from 39 to 37 deaths per 1,000 LB (17, 26).

Millennium Development Goal 4 aims to reduce the 1990 under-five mortality rate and infant mortality rate by two-thirds by 2015 (23). Accordingly, HSDP IV outlines a 2015 target U5MR of 68 per 1,000 LB and target IMR of 31 per 1,000 LB (22). To achieve the 2015 IMR target, Ethiopia would have to accelerate decreases in IMR by 6 times the annual percent decrease

experienced from 2005-2010 (from 2.5% to 14.5% per annum) [Table 2]. HSDP IV also outlines a goal to reduce NMR to 15 per 1,000 LB by 2015,(22) which would require a 16-fold increase in the annual percent decrease experienced from 2005-2010 (from 1.0% to 16.5% per annum). As progress in post-neonatal mortality improves, newborn deaths contribute a growing proportion of infant and overall under-five mortality. Currently newborn deaths are responsible for over half of infant deaths and over 40% of under-five deaths [Table 2] (17, 26). Improvements in neonatal mortality will thus be essential for meeting U5MR and IMR targets.

Maternal and Newborn Health Care Content and Trends

Antenatal Care

Antenatal care allows for screening and treatment of pregnancy and potential delivery complications, knowledge sharing on recognition of complications, and promotion of birth preparation and complication readiness plans (27). To this end, the WHO endorses four focused ANC visits in order to maximize the amount of time in which key health messages can be shared (28, 29). Generally, the first ANC visit is used to screen and treat medical conditions which can serve as risk factors during pregnancy and delivery, and which are best treated early in pregnancy, for example syphilis, anemia and malaria (94). Thus, ANC initiation is recommended during the first trimester or by the end of the fourth month of pregnancy, with subsequent visits spaced at 24-28, 32 and 36 weeks, respectively (95).

According to the 2011 Ethiopian DHS, 44% of women received any antenatal care from a skilled provider or Health Extension Worker (33.9% from a skilled provider and 10.1% from a HEW) (26) [Table 3]. This represents an increase from 2005, when receipt of any ANC was estimated at 27%, a figure which was basically unchanged from 2000 (26%) (17, 20). However, less than half of the women who received any ANC completed four visits (19%), though this figure does mark an improvement over the 2005 estimate (12%) (17, 26). Additionally, the average month of ANC initiation was 5.2 months (26).

Delivery Care

Delivery assistance with skilled providers has been shown as one of the most important interventions for reducing maternal mortality, and also has the potential to reduce stillbirths (30, 31). The WHO has defined a skilled attendant as accredited health professionals, including midwives, doctors or nurses, who have the training and skills to manage normal (uncomplicated)

pregnancies and childbirth, and identify complications requiring more specialized referral (32). In practice, delivery care provided is generally subsetted into basic and comprehensive care, based on the facility type in which the provider serves. Basic Emergency Obstetric Care (BEmOC) generally includes antibiotic, oxytocic and anticonvulsant drugs and interventions such as manual extraction of the placenta and other retained products (53). Comprehensive Emergency Obstetric Care (CEmOC) includes these items, as well as blood transfusions, Caesarean sections and other major obstetric surgeries (53).

In the 2011 EDHS, approximately 10% of women had a skilled provider at delivery, while 0.9% had a HEW as their delivery attendant (26) [Table 3]. This marks an increase from the figures in 2000 and 2005, which were both reported as 6% (17, 20). Additionally, the proportion of facility births increased from 5% in 2005, to 10% in 2010. (26)

Postnatal Care

As maternal and newborn deaths are concentrated within the first 48 hours following delivery, a postnatal care visit during this time can monitor and treat complications stemming from delivery and significantly reduce mortality (33). Postnatal care visits also serve as a way for mothers to receive information on immediate and exclusive breastfeeding, family planning, and vaccinations for the newborn (34).

However, the 2011 EDHS reports that only 7% of women had a postnatal care visit within two day of delivery (6.3% from a skilled provider, and 0.4% from a HEW) [Table 3]. This figure does nonetheless mark a modest improvement, from 2005 (5%), which had in turn modestly improved from 2000 (2%) (17, 20).

Determinants of Maternal and Newborn Mortality and Care Utilization

Direct Causes of Mortality

In Sub-Saharan Africa, over half of maternal deaths are from direct obstetric complications that occur around the time of childbirth (12, 13). Correspondingly, over half of maternal mortality occurs within 24 hours of birth (35). In Ethiopia the top five causes of maternal mortality include: postpartum hemorrhage, ruptured uterus, preeclampsia/eclampsia, puerperal sepsis, and complications from abortion (36). Indirect causes comprise a smaller percentage of maternal deaths, and include various infection in pregnancy such as malaria, pneumonia or hepatitis (37).

Furthermore, of all newborn deaths, 70% occur in the first week of life (17). These deaths are further concentrated, with the majority of early neonatal deaths occurring within the first 24 hours following birth (38). In addition, approximately 1% of all births are stillborn (17). These early deaths are generally due to intrapartum-related causes (birth asphyxia and birth injuries) and prematurity (39). Deaths which occur later in the neonatal period are primarily due to infections: sepsis, pneumonia and tetanus (39).

Sociocontextual Factors

The direct causes of mortality serve as manifestations of much deeper structural issues related to utilization of care, which occur at the individual, community and health system level [Figure 1]. The “three delays model” provides a framework for understanding maternal and newborn deaths in this context, as it accounts demand-side issues related to the mother and community, as well as supply side issues, related to the health system (40). Delay one refers to delays in care-seeking, delay two relates to ability to reach facilities and skilled providers, and delay three relates to receiving adequate treatment from these providers (41).

Use of ANC, delivery care and PNC from skilled providers is generally associated with decreased age, birth order and distance from facilities, and positively associated with increased wealth, education and residence in urban (versus rural) settings (15, 42, 43).

Furthermore, two studies in Ethiopia found that whether woman's spouse had a positive attitude to ANC was significantly associated with ANC utilization (42, 44). Control over health decision-making is highly gendered in Ethiopia. Only 13% of currently married women responded that they made their own decisions about their health care, and 25% responded that her husband mainly makes these decisions for them (15). In addition, studies have found that women with low autonomy over healthcare decisions are more likely to have low modern contraceptive use, low antenatal care visits, low facility delivery, and high unwanted and mistimed pregnancies (45, 46). Women's education and income status can be important markers of autonomy, and allow women to seek out higher quality health services (47).

Traditional beliefs surrounding pregnancy and childbirth care can also be related to attempts to disclose pregnancy status, thus complicating early enrollment into antenatal care (48). Additionally, adherence to traditional practices, such as covering the umbilical cord with foreign substances such as dung, dirt or butter introduce the possibility of infection (48). Other preferences for home delivery, or the perception that there is no need to seek care in the case of a 'normal' pregnancy further complicate receipt of skilled care (49).

Low care utilization due to lack of access to skilled providers is also related to severe health work force shortages. The current physician to population ratio in Ethiopia is 1 per 22,19 (24). This is approximately half the WHO standard of 1 per 10,000 (24). Thus, distance to the nearest skilled provider is often prohibitive. In Jimma Zone, Oromiya Region, only 35% of the population lived within 5km of a health centre, and the average distance to a hospital (which can provide

comprehensive emergency obstetric care services like blood transfusion and caesarean sections) was 50 km (50).

Some studies show that women are willing to travel longer distances to seek care if she perceives it will be of high quality. In a study in Tanzania, of the women who sought facility delivery care, 40% actually bypassed the nearest facility, entailing greater transportation costs, in order to attend a facility for which she had greater trust in the providers present and who were of perceived higher quality (51). Furthermore, a population discrete choice experiment in Ethiopia revealed that the most significant health facility factors which would promote care-seeking were: availability of drugs and equipment, opportunity to see a physician over lower-cadre health workers, and a receptive provider attitude (50).

Ethiopian Federal Ministry of Health Policy: Goals and Programs

Ethiopia first developed its national safe motherhood program in 1987, in response to the Global Safe Motherhood Initiative held in Nairobi during that same year (25). This effort was renewed in 2004 when the African Union urged member states to develop country-specific Road Maps to accelerate progress on Millennium Development Goals 4 and 5, specifically pertaining to maternal and neonatal health (25). The attainment of these goals was a central feature of the Health Sector Development Program III (HSDP III), and continues to be so under HSDP IV (22, 52).

Ethiopian Health Extension Program and Health System

The Health Extension Program (HEP), first introduced in 2003, was established with the goal of universal primary health care access for all, at the community (kebele) level. Kebeles serve as the smallest administrative unit in Ethiopia, and have a population of approximately 3,000 to 5,000.

A key strategy of the HEP has been the scale-up of over 30,000 Health Extension Workers (HEWs) (52). HEWs are young women, generally residents in the kebeles in which they will serve, and who must have completed grade 10 in school. HEWs are recruited by kebele committees and Woreda Health Office staff—woredas are like districts, and are second smallest administrative unit in Ethiopia. HEWs are given one year of training and stationed in pairs at kebele-level health posts.

The kebele health posts serve as the lowest level of Ethiopia's four-tier health system. At the outset of the HEP, 15,000 new health posts were estimated to be needed to ensure 1 health post per kebele in rural areas. As of 2010, over 11,000 health posts had been constructed; 73% of the target number (16). Approximately 5 health posts feed into a health center (total pop. 25,000), which in turn feeds into woreda primary care hospitals (pop. 250,000). Collectively, these three

entry-point levels serve as the Primary Health Care Unit (PHCU). The next tiers consist of zonal hospitals (pop. 1,000,0000) and finally, specialized referral hospitals (pop. 5,000,000) (22).

HEWs are required to spend less than 20% of their time in health posts, and instead focus on health promotion and outreach activities in the community, especially to conduct household visits for mothers and children (22). HEWs are tasked with providing all 16 packages of the HEP to households. Households undergo 96 hours of trainings with HEWs before they are ultimately certified and graduate from the program. These households can then serve as "model households" which are tasked with mobilizing their neighbors to further promote health practices in the HEP (53). Each of the HEP packages represents a distinct content area, for example construction of pit latrines under the water and sanitation package, or maternal health and delivery.

HEWs provide several selected health care services, including: the extended programme on immunizations (EPI), outpatient therapeutic programme (OTP), diagnosis and treatment of malaria and pneumonia, clean delivery and essential newborn care services, including Active Management of the Third Stage of Labor (AMTSL) with misoprostol, and management of diarrhea and dehydration using oral rehydration solution (ORS) (22). HEWs generally manage approximately twenty Community Health and Development Agents (CHDAs), who assist with the HEWs in their duties. The CHDAS are predominately men, as literacy is a primary selection criterion. CHDAs are often also members of model households (54).

Each health center serves as the first line of referral, and provides preventive and curative services. Each health center has an average inpatient capacity of 11 beds and is staffed with about 20 individuals, usually including at least two diploma level midwives and one health officer with emergency obstetric care training (16). These individuals provide a supervisory role for the HEW, and the health center provides a location for practical training services. In combination with what

HEWs can provide at the health posts, all health centers are expected to be able to provide Basic Emergency Obstetric Care (BEmOC).

Primary (woreda-level) hospitals are aimed to provide inpatient and ambulatory services, including emergency surgical services involved in Comprehensive Emergency Obstetric Care (CEmOC) (55). The primary hospitals are envisioned to have an average inpatient capacity of 35 beds and a staff of 53 people (22). The Woreda Health Office (WorHO) is often housed within or adjacent to this hospital. A key feature of the HEP is its decentralized structure, with WorHO's receiving a block grant to manage budgetary and staffing needs, and kebele committees aiding with planning and implementation.

After the PHCUs, general hospitals comprise the secondary level of care, and serve as a point of referral for primary woreda-level hospitals. These hospitals generally exist at the zonal level (the next administrative unit following the woredas). These hospitals are envisioned to have an inpatient capacity of 50 beds and a staff of 234 people, and providing a location for training of nurses, health officers and emergency surgeons. The Zonal Health Department is the corresponding administrative body at this level.

The Regional Health Bureau serves as the highest administrative unit after the federal level and works closely with the Zonal Health Departments. Ethiopia is divided into 9 ethnically-based regions, which have a high level of autonomy in policy decisions. A specialized hospital may exist at this level, and constitute the tertiary care level. These hospitals are envisioned to have an inpatient capacity of 110 beds and are staffed by 440 people.

Goals and Targets

The specific targets for 2015 are ambitious, and include: 90% antenatal care coverage of ≥ 1 visit, 62% of births attended by a skilled health professional (defined as a nurse, midwife, health/clinical officer, or physician, 38% of births attended by Health Extension Workers and increasing PNC coverage (≤ 2 days after birth) to 78% [Table 4] (22). Additionally, the goals include increasing availability of basic emergency obstetric care (BEmOC) and comprehensive emergency obstetric care (CEmOC) to 100%, while increasing the Caesarean section rate to 7% (22). Thus in a sense, HEWs are considered acceptable providers of ANC and PNC, however only "semi-skilled" for delivery care (56).

Impact on Maternal and Newborn Health

To date, HEWs' impact on maternal and newborn health has been limited (48, 50, 52, 57). The one-year training for the first round of HEWs was criticized as overly didactic, with inadequate training supplies (e.g. English materials instead of materials in local languages),and a lack of hands-on training in clinical settings (58). A qualitative study with HEWs found that they often lack the confidence to provide care for birth and delivery due to their lack of practical experience (48). Additionally, difficulties in finding a sufficient number of local HEWs in rural areas who had reached grade 10 led to recruitment of HEWs who either did not meet the education requirement, or were from outside areas, 50% of whom were urban in the first round (58). Furthermore, the level of supervision for HEWs was found to be insufficient, as health center supervisory visits were only planned to occur only every three months (59).

However, improvements attributed to HEWs have been documented One study has found however that coverage of any ANC has improved from 26% in 2005 to 54% in the project area, contraceptive prevalence increased from 16% to 32% and institutional deliveries increased from

5% to 9% (60). However, coverage of postnatal care remained unchanged during the period at 7% (60).

Furthermore, while significant progress was made in health post construction and the number of HEWs hired, only 685 of the required 3200 health centers were constructed by 2008, and significant health workforce shortages for higher levels of care. In the two most populous regions of Ethiopia, Amhara and Oromiya (which account for over 60% of the country's total population), targets for midwives and physicians are particularly deficient. As of 2009, there was 1 midwife per 83,983 population in Amhara and 1:100,197 in Oromiya. However, the fMoH target was 1:6,759 [Table 5] (22). Additionally, the physician to population ratio was 1:58,567 and 1:76,075 in Amhara and Oromiya, respectively—short of the 1:14,662 target, as well as the WHO standard of 1:10,000 population. Interestingly however, the nurse per population ratio, of approximately 1:5,000, was met. However, midwives were envisioned as the primary referral support at the health center level.

Finally, a recent survey found that only 174 obstetricians/gynecologists existed in the entire country (pop. over 82 million), and less than half of surveyed hospitals and health centers could provide BEmOC and EmOC (61). As almost all of the direct causes of maternal mortality require EmOC, the lack of formally trained physicians and properly equipped facilities continues to contribute to high mortality rates (35, 62, 63).

Use of Misoprostol for Postpartum Hemorrhage

Postpartum hemorrhage (PPH) is the leading cause of global maternal mortality, and is associated with a third of maternal death s in Africa, yet it is highly preventable (46, 47). PPH is most commonly caused by failure of the uterus to contract properly following child birth, and can also result due to the retention of placental tissues and genital tract lacerations (32). Underlying causes include prolonged or obstructed labor, multigravidity, high parity, and anemia (32).The high prevalence of anemia, coupled with lack of access to blood transfusions contribute to PPH's disproportionate contribution to mortality in resource poor settings (64-66). Women with anemia are more sensitive to blood loss, and death from PPH can result within 2 hours or less (67, 68).

Community perceptions on the cause of postpartum hemorrhage can reflect lack of knowledge or access to interventions. Qualitative research in Amhara and Oromiya Regions of Ethiopia found that women often refer to symptoms associated with PPH as *serqian* (also spelled *serkian*) (48). *Serqian* was a problem commonly reported by women to occur during delivery, and can result in loss of consciousness, excessive bleeding and retained placenta (referred to as the *seng*). Women also noted that *serqian* could result in rapid death of the mother. *Serqian* was believed to be caused by a spirit, and thus efforts to scare away the spirit are undertaken, including shooting bullets in the air, or banging on pots. Many women did not understand the reasons why *serqian* might occur, often stating divine or fatalistic causes.

However, postpartum hemorrhage is highly preventable. Active Management of the Third Stage of Labor (AMTSL) is a combination of interventions which can reduce PPH incidence by as much as 66% (69). AMTSL aims to help with the contraction of the uterus following delivery, and allow for safe delivery of the placenta. The WHO recommends thus use of two utertonics, oxytocin or ergometrine (32). These drugs are injected within one minute of the birth of the baby, then placental delivery is facilitated by uterine massage and controlled cord traction (32).

However, oxytocin and ergometrine are ill-suited for use in rural settings like Ethiopia, where the majority of women deliver at home, as they require refrigeration and intramuscular injection. Misoprostol however, has proven efficacy as an utertonic for control of PPH (70, 71). It also has numerous desirable characteristics for use in the field, including low cost, temperature stability not requiring refrigeration, easy storage and ability to be administered in oral tablet form (8).

Because of its effectiveness and ease of administration, the International Federation of Gynecology and Obstetrics (FIGO) and the International Confederation of Midwives (ICM) have jointly supported use of misoprostol for home births without skilled attendants (8). The WHO has further supported use of misoprostol, even in the absence of AMTSL by a trained health worker.

Findings from numerous studies in Africa, South Asia and the Middle East demonstrate that misoprostol can be safely and effectively administered by community-level health workers for prevention of PPH for home births (72-77). Documented side effects fall within the mild range (shivering, fever and vomiting), are self-limiting, and generally do not require medical attention (78).

Due to the unpredictability of PPH, and the rapidity with which it can cause deaths, advance distribution of mispporostol visits has been advocated. Mothers then self administer the misoprostol following child birth or after the birth of the placenta. This strategy aims to ensure that all mothers have access to the drug at the time of need, recognizing the exisiting constraints in access to timely, appropriate care in low resource settings. Projections by Pagel et al. estimate that advance community-based distribution of misoprostol to pregnant women through outreach and antenatal care with complementary strengthening of health facilities and referrals and health facilities could reduce maternal mortality by as much as 36% (79).

However, a 2012 Cochrane review by Oladapo et al. found that few studies on advance distribution exist. Only three studies, in Afghanistan, India and Nepal were identified, and these

demonstrated high community acceptabilty of the intervention as well as dtramatically increased use. (74, 78, 80, 81). However, these studies do not provide evidence on morbidity or mortality impact attributable to advance distribution, and none met the review inclusion critera of a randomized or strong quasi-randomized controlled trial (78).

The Ethiopian fMoH has recently included AMTSL with misoprostol into HEW's duties (implementation initiated during Summer 2010), and the official national misoprostol policy is currently being written (82). Due to the high degree of decentralization amidst Regional Health Bureaus, implementation strategies have varied. For example in Amhara Region, the HEW must be present at birth for the mother to receive misoprostol, however Oromiya Region allows advance distribution during antenatal care.Evidence comparing misoprostol coverage, use, safety and efficacy is needed to guide decision-making.

Maternal and Newborn Health in Ethiopia Partnership (MaNHEP)

Under the leadership of the Federal Ministry of Health, the Maternal and Newborn Health in Ethiopia Partnership, (MaNHEP)(83) is working to strengthen implementation of the Health Extension Program by building skills and teamwork among frontline health workers such as Health Extension Workers (HEWs), Community Health Development Agents (CHDAs) and traditional birth attendants (TBA), and by developing the district-wide administrative and health systems needed to reliably deliver quality maternal and newborn health care around the time of birth when women and newborns are most likely to die. MaNHEP works in six rural districts in Amhara and Oromia Regions, is funded by the Bill & Melinda Gates Foundation, and led by Emory University in collaboration with John Snow Research and Training Inc., University Research Co. LLC, and Addis Ababa University. It is a "learning" project with an overall aim to demonstrate a community model of maternal and newborn care in rural Ethiopia and position best practices for scale-up.

Project Design

MaNHEP was initiated in 2010, and works in 51 kebeles (total population approx. 255,000) in 6 woredas (districts) in Amhara and Oromiya Regions of Ethiopia. These include Mecha, North Achefer and South Achefer woredas in the West Gojjam zonal administration in Amhara, and Degem, Kuyu and Warajarso woredas in the North Shoa zonal administration in Oromiya [Table 6; Table 7; Figure 3]. These six woredas were selected based on their regional representatives, comparability based on health indicators and population sizes and densities, and level of accessibility(84).

MaNHEP has developed an integrated program of maternal and newborn health training and quality improvement, and behavior change communications to ensure care reaches all women and newborns, in time, every time.

MaNHEP's Community Maternal and Newborn Health (CMNH) Training Program works with existing Ministry of Health structures to teach a package of evidence-based practices that, if effectively delivered can increase maternal and newborn survival during the critical birth-to-48 hour period (Figure 2). These practices were adopted from the American College of Nurse Midwives Home Based Life Saving Skills Package (85, 86). This package focuses on building community competency for preventive health and basic curative care, as well reducing delays for referral (87). The HBLSS Package has been field-tested in Ethiopia, and all training materials have been developed into the local languages of Amharic and Oromiffa. At 90% coverage of pregnant women, this package has been predicted to reduce newborn deaths by 37% (88).

In weeklong workshops, frontline health workers including Health Extension Workers, Community Health Development Agents, and Traditional Birth Attendants share their local knowledge and expertise, while learning new knowledge and skills for maternal and newborn care. Working in pairs called Guide Teams, they teach what they have learned to pregnant women and their family caregivers during Family Meetings. The approach involves participation of group members in ways that respect and builds on local knowledge and skills through discussions, demonstrations, negotiations and practice. Together, these Guide Teams, pregnant women, and family caregivers work towards adopting safe practices that are culturally acceptable (89).

Barriers often exist which may prevent women and newborns from receiving care during birth and the early postnatal period. These barriers include difficulties identifying pregnant women and determining when they begin labor and give birth. Using a collaborative quality improvement approach, MaNHEP supports Quality Improvement (QI) Teams, which include community stakeholders and frontline health workers, such as: kebele administrators, religious leaders, elders, women's association members, mother-in-laws, husbands, pregnant women.

The teams use participatory decision-making to identify, implement and test ideas to support the CMNH Family Meetings and to ensure that women and their newborns receive quality antenatal, labor and birth, and postnatal care. Examples of barriers to care include difficulties identifying women who are pregnant, learning when pregnant women begin labor and give birth, ensuring reliable supplies of medications, and securing transportation to health facilities in emergencies.

The community QI Teams receive monthly coaching (supervision and support) from Woreda Health Office and Health Center staff, trained in the Community and Maternal and Newborn Health Program and MaNHEP's QI approach. QI Coaches may include: Regional Health Bureau and Zonal Health Department administrators, Woreda Health Office and Health Center staff, HEW Supervisors, Maternal and Child Health Coordinators, HEP Focal Persons, and midwives.

The teams share solutions for common issues tested during each Action Period (AP) at regular Learning Sessions (LS) with the goal of spreading practices that are common across teams—and kebeles—within participating communities.

A third prong of MaNHEP is behavior change communications. Through dramas, songs, and poetry contests, MaNHEP aims to influence community demand for services and to promote teamwork amongst frontline health workers for better service delivery.

MaNHEP also aims to improve abilities of district health system managers at each level–hospital, health center, and health post–to advocate for, work with, and support frontline workers. Success is defined as a district health system that is capable of supporting frontline workers and committed to addressing the needs of childbearing women and their families; and one that is able to continuously identify, test and disseminate successful solutions to critical challenges in maternal and newborn health services delivery. More broadly, this district health system will have the ability to apply this approach to tackle other critical challenges in service delivery in the health sector.

Chapter II: Methods

Study Questions and Hypotheses

This study was concerned with factors associated with women's receipt of maternal and newborn health care services from skilled providers or Health Extension Workers. The particular services of interest were any antenatal care, delivery care, a postnatal care visit within two days of birth, and use of misoprostol for postpartum hemorrhage.

Individual, communal and health provider-level factors were all expected to contribute to receipt of care. Factors of interest were divided into those which are potentially modifiable by health and behavior change interventions, and those which are not directly modifiable. The primary potentially modifiable factor of interest was knowledge of Home-Based Life Saving Skills (HBLSS) Package items, which serve as the core implementation package of the Maternal and Newborn Health in Ethiopia Partnership (MaNHEP). Related factors included adherence to potentially harmful traditional practices and positive care-seeking behaviors and attitudes. Trust in HEWs for care provision was also considered a potentially modifiable factor. Increased knowledge of HBLSS Package items, decreased adherence to potentially harmful traditional practices, increased positive care-seeking behaviors and trust in HEWs were all hypothesized to be associated with receipt of care.

Communal- and health provider-level measures of these factors, as well as HEW's conception of teamwork and health service capacity, were considered as potentially modifiable factors of secondary interest. Women living in communities with a high degree of knowledge of HBLSS Package items, positive care-seeking norms, and high trust in HEWs were hypothesized to be more likely to receive care. Similarly, women in communities with highly capable and competent HEWs were expected to be more likely to receive care. Various other sociodemographic indicators were also considered as not directly modifiable factors, and examined as potential confounders.

Population

Women with a birth in the last 12 months living in rural Ethiopia are the primary population of interest. Various other stakeholders involved in these women's experience of pregnancy and delivery include adult men and women who reside within her community (kebele) and Health Extension Workers, which serve as government health care providers for her kebele.

Sample

Three datasets from the Maternal and Newborn Health in Ethiopia (MaNHEP) baseline surveys, conducted in June to July 2010 were used. The surveys measured baseline indicators of knowledge, attitudes and practices of the core elements of MaNHEP's maternal and newborn health care package (Figure 2), amongst various community-level stakeholders. Each dataset corresponds to a survey administered for a different population of interest: women with a recent pregnancy (MOMs), adult men and women (ADULTs) and frontline health workers (FLWs). The ADULTs survey was aimed at capturing community-level knowledge and practices, while the FLWs survey provides information on health worker capacity and competence.

All respondent women are nested within shared kebeles of residence. The kebele also serves as the level at which FLWs provide health care services. Health Extension Workers are generally stationed in pairs at kebele-level Health Posts. Kebeles are in turn nested within Health Centers (approximately 4 kebeles per Health Center). Health Centers serve as the primary referral point for Basic Emergency Obstetric Care, and are where HEWs receive supervisory support. Health Centers are in turn nested within woredas (approximately 2 MaNHEP project Health Centers per woreda). Woreda Health Offices are closely involved with staffing and budgeting decisions for health facilities, and each woreda generally has a referral hospital which can provide Comprehensive Emergency Obstetric Care (CEmOC). Woredas are situated within zones, which

are further nested within regions. The Zonal Health Departments and Regional Health Bureaus aid in setting broad-based health policies. Ethiopia has a total of 11 regions, each with a high level of autonomy in implementing the Ethiopian Federal Ministry of Health mission. The complete survey questionnaires used are included in the appendices [Appendix A; Appendix B; Appendix C].

The surveys were conducted in North Achefer, South Achefer and Mecha Woredas in the West Gojjam Zonal Administration in Amhara region, and in Degem, Kuyu and Warajarso Woredas in the North Shoa Zonal Administration in Oromiya Region, Ethiopia [Figure 3]. Kebeles were the primary sampling unit, and approximately 6-8 kebeles were randomly sampled from a list of all MaNHEP project kebeles in each woreda [Table 6; Table 7]. For both the MOMS and ADULTS surveys, two data collectors began at a locally-defined central point of the kebele, and proceeded in opposite directions, screening every third household for eligible participants (90).

The MOMS survey used a random sample of women of reproductive age who gave birth in the year prior to the survey (women, n =1077; kebeles, k = 46). Women were asked about beliefs, knowledge and care-seeking behaviors related to maternal and newborn health, as well as practices in their most recent pregnancy. Exclusions were made if there was incomplete kebele name data (n=5), and if the mother resided in a non-MaNHEP project kebele (n=50; k=7). The sample size for the univariate analysis was 1027 women nested within 40 kebeles [Table 8]. In order to perform a multilevel analysis based on kebeles in the ADULTS and FLW surveys, exclusions were also made if surveys were not performed for corresponding kebeles in the ADULTS or FLWs datasets (n=119; k=5) [Table 9]. The final sample for bivariate analysis and multilevel modeling used consisted of 1027 women in 35 kebeles (n=1027, k=35) [Table 10].

The ADULTS survey sampled adult men and women 18 years of age and older (n=501, k=39) [Table 8]. The purpose of this survey was to capture general community-level knowledge on

attitudes and beliefs on maternal and newborn care, and particularly how these may vary by gender. All adults sampled had a valid kebele, which was within the MaNHEP project area. Exclusions for multilevel analysis were made using the same criteria as for the MOMs data set (n=53, k=4) [Table 9]. The sample for bivariate analysis and multilevel modeling consisted of 219 men and 229 women (n=448, k=35) [Table 10].

The FLW survey purposively sampled various cadres of frontline health workers from a list previously compiled by MaNHEP staff.(90) A maximum of 10 FLWs were sampled per kebele, including all HEWs (1 to 4 per kebele), as well as a distribution of CHDAs and TBAs which varied by kebele. As this study is concerned with receipt of care from HEWs, who serve at kebele Health Posts, only the data for the Health Extensions Workers was used. HEWs were excluded if they did not have a valid kebele listed, or if they resided in a kebele that was not within the MaNHEP project area (n=8, k=5). The sample size for univariate analysis was 61 HEWs in 36 kebeles (n=61, k=36) [Table 8]. One HEW was excluded for the purpose of bivariate and multilevel analysis (n=1, k=1) [Table 9], and the final sample size used was 60 HEWs in 35 kebeles (n=60, k=35) [Table 10].

MaNHEP staff collected the survey data after approval from Emory University's Institutional Review Board and the Ethiopian Federal Ministry of Health. All three datasets received from the MaNHEP project principal investigator were de-identified. This study was determined not to be human subjects research by Emory University's Institutional Review Board (IRB), and thus did not require IRB review (IRB00050538).

Study Design

This is a multilevel cross-sectional study, where each observation refers to an individual woman with a pregnancy in the year prior to the survey, in the MOMS dataset. Women living within the same kebele are expected to experience similar community exposures. Furthermore, since Health Extension Workers are stationed at Health Posts (1 Health Post per kebele), all women within a kebele have the same HEWs. Kebele-level variables were thus created based on averages from the ADULTs and FLWs datasets, and linked based on a shared kebele of residence.

The purpose of this study was to explore individual and kebele-level factors associated with receipt of care from a skilled provider or HEW, as well as use of misoprostol for postpartum hemorrhage. This study is primarily explorational in nature, with factors that are potentially modifiable via MaNHEP program interventions of greatest interest.

Outcome Definition

There were four outcomes of interest for this study. The first outcome was receipt of any antenatal care from a skilled provider or Health Extension Worker, at any point during pregnancy. The second outcome was a skilled provider or HEW as a birth attendant. The third outcome was a postnatal care visit for either the mother or newborn within two days after birth, from either a skilled provider or HEW. A skilled provider could include a physician, health officer or clinical officer, nurse or midwife. Finally, use of misoprostol for postpartum hemorrhage was of interest. All outcomes were based on the woman's self-report in the MOMS survey for her last pregnancy experience, which must have occurred within the year previous to the survey in order to be eligible.

Individual-level Exposure Definition

For the women in the MOMs dataset, various sociodemographic indicators which have been found to be associated with receipt of care in the literature were considered. These included the woman's age, parity, history of an infant death (death within the first year of life), education, personal cash income and age at marriage. Due to the overall low educational attainment of women in the survey, education was dichotomized as any versus none. Similarly, personal cash income was dichotomized as any versus none in the past month. Furthermore, due to the high number of women who did not know their current age or age at marriage, age was treated categorically. Women who report not to know their age may represent a unique and perhaps high-risk group of women with different patterns of exposures and outcomes than women who do know their age. Thus, retaining these women in the analysis was important. Various sociodemographic characteristics of the women's spouses were also identified, including: education (any vs. none), cash income in the last month (any vs. none). Any household land ownership was also used as a sociodemographic indicator.

Women's current use of a modern contraception method, as defined by the World Health Organization, was used as an indicator of women's health service utilization, particularly as a proxy measure of both access and women's empowerment (91).

Furthermore, as this study is concerned with receipt of care from a HEW or skilled provider, whether the women know how to reach the HEW in her own kebele was also included, as well as the woman's level of trust in the HEW for providing the outcome of interest (ANC, delivery or PNC). Women were asked to rank their level of trust using a pictorial analogue of a ladder, with 5 rungs indicating different levels of trust. Level 1 indicated low trust while Level 5 indicated high trust. These two indicators were considered potentially modifiable by MaNHEP project interventions.

Othe8r indicators considered potentially modifiable by MaNHEP project interventions included women's knowledge of Home-Based Life Saving Skills (HBLSS) Package practices, adherence to harmful traditional practices, and care-seeking behavior and attitudes.

The HBLSS Package serves as the core MaNHEP intervention package, and includes 18 items [Figure 2]. As the neonatal resuscitation question was asked only in Amhara Region, a 17 item HBLSS Knowledge Index was created. This index summed the total number of items that women reported to have heard of before, thus higher scores related to greater knowledge of HBLSS Package items. The index was categorized into tertiles: Low (know 0-2 items), Medium (know 3-8 items), High (know 9-17 items).

Various traditional practices for maternal and newborn care were gathered through qualitative research MaNHEP undertook prior to the baseline surveys (48). Women were asked if they agreed or disagreed with 14 statements which represented potentially harmful traditional practices elucidated from the qualitative research. For example, these could include plastering butter on the umbilical cord or withholding colostrum from the baby. Based on the statement, adherence could be indicated by either agreement or disagreement. The sum of the total number of items which related to adherence to a harmful traditional practice was scored into an Adherence to Traditional Practices Index, with higher numbers indicating greater adherence to harmful traditional practices. The index was further categorized into tertiles: Low (adhere to 0-5 items), Medium (adhere to 6-8 items), High (adhere to 9-14 items).

The formative qualitative research was also used to formulate questions on care-seeking behaviors and attitudes. Women were asked if they agreed or disagreed with 15 statements which could be used to indicate the extent to which a woman seeks care from formal providers. For example, a woman may believe that there is no reason to a call a health worker unless the labor is serious. Additionally, these statements examined attitudes which may discourage a woman from

seeking care, for example the belief that a health workers would not come to deliver a baby at nighttime. A 15-item Care-Seeking Behaviors and Attitudes Index was created for each woman, with higher scores representing an increased propensity to seek care from formal providers. The index was further categorized into tertiles: Low (seek for 0-4 items), Medium (seek for 5-7 items), High (seek for 8-15 items).

The extent to which women experienced a continuum of care from a skilled provider of HEW was also of interest. Thus some outcomes also served as exposures. For example ANC from a skilled provider or HEW was a factor which could be associated with a skilled provider or HEW at delivery or for PNC. Similarly a skilled provider or HEW at delivery was a factor which could be associated with a PNC visit from a skilled provider or HEW. Finally any ANC or delivery care from a skilled provider or HEW could be associated with misoprostol use.

Kebele-level Exposure Definition

The ADULTS kebele-level variables describe indicators of community socioeconomic status as well as community-level knowledge and attitudes towards maternal and newborn health care. Community socioeconomic variables included were the proportion of adults with any education in the kebele, the proportion with any cash income in the last month, and the proportion with any household land ownership. Additionally, the education and income variables were subsetted to measure the proportion of females with any education or cash income in the last month. This was done to examine if women's socioeconomic status may be more strongly associated with receipt of care compared to a kebele's overall socioeconomic status.

Three indices which were identical to those in the MOMS survey were used to indicate community-level knowledge, beliefs and attitudes. These included the HBLSS Knowledge index, the Adherence to Traditional Practices Index and the Care-Seeking Behaviors and Attitudes index

Again, these indices were of interest as factors potentially modifiable by MaNHEP project activities.

The FLWs kebele-level variables describe indicators of Health Extension Worker's sociodemographic characteristics, health service capacity and knowledge. Sociodemographic variables included were age, average years of education and parity. These variables were considered un-modifiable by MaNHEP project interventions, however nearly all other HEW variables outlined below, were potentially modifiable.

Health service capacity variables included average years of work experience as a HEW, whether the HEW had received Clean and Safe Birth Training, the average number of women the HEWs provided with ANC, delivery and PNC care per month, and whether or not the HEW indicated she had the necessary supplies to provide these three types of care, as well as if she had a supply of misoprostol. HEWs were asked about PNC care provision and supplies for mothers and newborns separately; however these numbers were averaged since the outcome of interest relates to PNC for either the mother or newborn. Furthermore, only the care provision and supply variables which corresponded to the outcome of interest were used to examine associations.

In addition, a five-item challenges scale, based on the formative research, was created to capture the extent to which HEWs felt their efficacy was compromised, for example due to interfering household chores or because of far distances between households in their kebele. A score of 5 indicated a higher number of challenges while a score of 0 indicated a low level of challenges.

Two other important domains of health service capacity included confidence and teamwork. HEWs were asked about their general confidence in providing ANC, delivery and PNC care, using a visual analogue of a ladder with 10 rungs. The lowest run corresponded to feeling "Very unconfident," while the highest run corresponded to feeling, "Very confident."

HEWs were additionally asked 20 specific confidence questions, based on themes which emerged from the formative research. These included various factors which could influence HEW confidence such as supervisory support, perceived community member perceptions, and adequacy of training. An index was created in which a score of 20 indicated high specific confidence, while lower scores indicated low specific confidence.

Teamwork was first assessed by whether the HEW self-identified as being a part of a team. Additionally, HEWs were asked to rate the quality of their teamwork on scale of 1 to 4, with 4 indicating high quality. Finally, an operational definition of teamwork based on the average number of monthly interactions with other FLW cadres, including other HEWs, TBAs and CHDAs, was assessed.

A HBLSS Knowledge Index, identical to the one described previously was also used, as well as an Adherence to Traditional Practices Index. A Care-Seeking Behaviors Index was also used, but the questions varied slightly in order to cater to the health provider (versus health care recipient) perspective. A total of 10 items were used to create a care-seeking behavior index, with higher scores corresponding to belief associated with greater care-seeking and provision.

Finally, approximate distances from a locally defined kebele center point to the nearest Health Center, in kilometers, was used, as a control variable. This data was provided within a MaNHEP project document (92).

Analysis

The analysis was performed using SAS version 9.3 (Cary, NC). The data were cleaned and appropriate kebele names were assigned with assistance from MaNHEP project staff. Univariate analysis for a large number of indicators was performed in order to provide a rich contextual understanding of maternal and newborn health beliefs and practices. Significant regional differences were assessed using the Fisher's Exact Test. Based on the univariate analysis and existing literature, the aforementioned variables were selected to represent key domains of interest. These variables were further explored in a bivariate analysis to assess if the indicator varied significantly by outcome. Logistic regression was used to calculate unadjusted odds ratios and p-values. Additionally, the SAS GENMOD procedure for generalized estimating equations was used to provide p-values adjusted for clustering by kebele for the kebele-level variables. An exchangeable correlation structure was specified. This allowed for a crude assessment of the impact of clustering by kebele.

Variable screening was performed using collinearity diagnostics based on the inverse of the information matrix. A SAS macro developed at CDC and modified at Emory University's School of Public Health was used (93, 94). A collinearity problem was diagnosed if the largest condition index was greater than 30 and at least two of the associated variance decomposition proportions was greater than or equal to 0.5 (95). The variable which was most likely to be the source of the collinearity issue was removed, and collinearity diagnostics were rerun. This process proceeded in an iterative fashion until all collinearity issues were resolved. Patterns of collinearity provided information on variables which may have measured similar domains. For example, the Adherence to Traditional Practices Index was found to be highly collinear with the HBLSS Knowledge Index. These two indices likely provide inverse measures of the same concept. That is, women who are have greater knowledge of the HBLSS Package items are less likely to adhere to traditional practices. In this case, the HBLSS Knowledge Index was chosen to represent the

primary exposure of interest at the individual-level, as it most closely embodies MaNHEP project interventions. In this way, variables were selected in order to ensure representation of each domain of interest, and screened out if another variable within the same domain was able to be retained [Table 11].

Furthermore the adjusted bivariate analysis was used to inform variable screening when the collinearity diagnostics implicated two exposure variables of interest. The one-at-a-time consideration of exposures in the bivariate analysis can be appropriate as long as it is not used to screen out potential confounders (95). In this study, all variables considered potentially modifiable by the MaNHEP project are of interest as exposures, while the various socioeconomic variables are only of interest as potential confounders. Thus, when deciding between two modifiable exposure variables, the variable with a statistically significant adjusted p-value in the bivariate analysis was preferred. Additionally, screening decisions aimed to retain modifiable exposure variables in a way that preserved comparability amongst individual- and kebele-level variables, as well as across the four different outcome models.

The reduced pool of variables is presented by the domains which emerged during screening, and which are supported conceptually [Table 11]. The HBLSS Knowledge Index emerged as a primary modifiable exposure of interest at the individual-level. These variables were entered in a generalized estimating equation (GEE) using the SAS GENMOD procedure, clustered by kebele. An exchangeable working correlation structure was used as well as robust sandwich variance estimators.

The GEE model was chosen since causal inference on population average effects based on covariate groups was of greatest interest, rather than the ability to make inferences for a particular kebele (i.e. via a random effects model). GEE models are less sensitive to incorrect distributional assumptions, while regression parameters in mixed models are more likely to be biased due to

additional untestable assumptions about the joint distribution of observed data and random effects (96, 97). Furthermore, correctly specified GEE models yield parameter estimates which are consistent and distributed asymptotically normal (95). A sufficiently large number of clusters thus allows for robust estimation of standard error even if the model was misspecified under GEE, however this is not the case for mixed models (98). Finally, the GEE model will generally provide a more conservative estimate of coefficients than the corresponding mixed effects model if the true model is a random intercept model (99).

The exchangeable correlation structure was specified since women within a kebele are expected to be correlated due to shared community-level exposures, as well as shared Health Extension Workers—who serve at the kebele level. The exchangeable correlation structure was also chosen because the ordering of observations within the cluster is arbitrary and the number of observations per cluster varies; two features which the exchangeable correlation structure allows (95). This is not true for autoregressive, stationary or unstructured correlation structures (95).

Two-way interaction terms were considered among the individual-level woman and corresponding spouse variables, for education and income. Effect modification was of interest to indicate varying importance of the woman or spouse's characteristics for the outcome. Backward elimination of insignificant interaction terms using a Score test proceeded. Following interaction assessment, insignificant main effects for potential confounders or exposures of secondary interest were removed if their removal did not cause a greater than 10% change in coefficient estimates for the primary exposures of interest, and if hierarchically well-formulated subsets involved in two-way interaction terms were preserved.

Furthermore, the Quasi-likelihood under the Independence model Criterion (QIC) and QICu statistics were used to assess goodness of fit. The QIC statistics are analogous to the Akaike's Information Criterion (AIC) statistic used for comparing models fit with likelihood based

methods (100). QIC is used to aid in selection of the appropriate working correlation structure, while the QICu can be used to determine the best subset of covariates for the model (101). Small QIC values are preferred, and QICu values which approximate the QIC indicate the model is correctly specified (101).

The final model was also run without robust sandwich estimators, as a way of assessing if the exchangeable working correlation structure specified was appropriate.

Chapter III. Results

Contextual Findings

Women with a Pregnancy in the Prior Year (MOMs Survey)

Univariate statistics for women in the MOMs survey are outlined in Table 14 - Table 20. These include background sociodemographic characteristics [Table 14], including a bivariate analysis of women's age with other potential confounders [Table 15], health service utilization characteristics [Table 16], including a bivariate analysis of women who use a modern contraceptive method [Table 17], access and trust of HEWs and knowledge of the HBLSS Package [Table 18], adherence to traditional practices [Table 19], and care-seeking behaviors and attitudes [Table 20].

Sociodemographic Characteristics

Background characteristics of women included in the MOMs survey are shown in Table 14. Most women are between 20-34 years of age, with the average age slightly higher in Oromiya than Amhara (28 v. 26 years, $p<0.001$) [Table 14]. However, 38% of women in Amhara reported that they did not know their age, while only 4% of women in Oromiya reported this. Women who did not know their age were more likely to have no formal education and no personal cash income, compared to women in all other age groups ($p<0.001$) [Table 15]. These women were also more likely to be married to spouses who had no formal education and no cash income, compared to all other age groups ($p<0.001$).

Virtually all women were married (93%) and Christian Orthodox religion (99%) [Table 14]. Education level was low overall, but significantly higher in Oromiya region compared to Amhara (31% v.15% with any formal education, $p<0.001$). Women in Oromiya were also more likely to have any personal cash income in the last month (18% v. 8%, $p<0.001$). Furthermore, for 15% of women their last pregnancy experience was their first birth, while 36% of women had 2-3 births,

28% had 4-5, and 21% had 6 or more. Additionally, about 20% of women had experienced the death of one of their children before they reached 1 year of age. Age at marriage was also significantly younger in Amhara; over half of women were married by 15 years of age, while the average age at marriage was 17 years in Oromiya ($p<0.001$). Women's spouses were also more likely to have any formal education in Oromiya compared to Amhara, 38% v. 28% ($p=0.001$). Women's spouses were also more likely to have any cash income in Oromiya, 23% v. 8%, ($p<0.001$). Approximately 64% of women reported any household land ownership.

Health Service Utilization and Trust

Health service utilization characteristics of women in the MOMs survey are shown in Table 16. Approximately 47% of women in Oromiya and 29% of women in Amhara were currently using a modern method of contraception ($p<0.001$) [Table 16]. Modern methods dominate over traditional methods, and injections and oral pills were most frequently cited. The MOMs survey did not ask questions to distinguish between the various reasons why a mother was not currently using a modern contraceptive method, though these reasons may lend quite different implications for inference. For example a mother who was not currently using contraception solely because she was attempting to get pregnant again may vary along various sociodemographic characteristics from a mother who did not use these methods due to lack knowledge or access. Use of a modern contraceptive method was associated with increased age, parity, education, personal income, spouse's education and income, trust in HEWs increased knowledge of Home-Based Life Saving Skills, decreased adherence to potentially harmful traditional practices, and increased positive care-seeking behaviors [Table 17].

Compared to women in Amhara, significantly more women in Oromiya had ever heard of HEWs, (83% v. 63%, $p<0.001$) [Table 18]. Correspondingly, a greater proportion of women in Oromiya had ever used HEWs' services and knew how to reach the HEW in her kebele. However, in both

regions there was a 8-10% discrepancy between the percentage of women who had heard of HEWs and those who knew how to reach them if needed. Women in Oromiya were also more likely to have higher trust in HEWs for providing ANC, delivery and PNC services, with an average trust scale score of 3.6 out of 5 in Oromiya, compared to 3.1 out of 5 in Amhara ($p<0.001$).

Knowledge of HBLSS Package Items

Women in Oromiya also had greater knowledge of HBLSS Package items than women in Amhara, with a mean overall score of 8.1 out of 17, compared to 3.8 out of 17 ($p<0.001$) [Table 18]. In Amhara, the items which fewest women knew about were: use of misoprostol for PPH (0.2%), neonatal resuscitation (1%), not inserting items in the vagina during delivery (5%),uterine massage for delivery of the placenta (6%), and checking the newborn for proper color and breathing after birth (7%). These items were also among the least known in Oromiya, albeit at significantly higher percentages: not inserting items in the vagina during delivery (22%), uterine massage (24%), misoprostol (27%), checking baby for proper color and breathing (40%). The question about neonatal resuscitation was added to the survey later on, and thus was only asked for women in Amhara.

While the most known item in Amhara was safe delivery of the placenta (55%), very few women knew about associated items like misoprostol use for PPH, uterine massage or a postpartum check of the mother for fever or bleeding (17%). In Oromiya, the greatest number of women had heard of exclusive breastfeeding for the first 6 months following birth (67%), changing positions during labor (63%) and clean cord care (62%).

Adherence to Potentially Harmful Traditional Practices

In contrast to the pattern observed for HBLSS knowledge, women in Amhara adhered to a greater number of potentially harmful traditional practices, 8.1 out of 14, compared to 5.9 out of 14 in Oromiya [Table 19]. The most common practices women adhered to in both regions were plastering the umbilical cord with butter (72% and 66% in Amhara and Oromiya) and washing the baby immediately after birth (84% and 74% in Amhara and Oromiya).

Practices with high adherence in Amhara but not Oromiya included: cutting the uvula (78% v. 20%), keeping the baby away from the mother until after placental delivery (85% v. 44%) and the belief that nothing could be done about postpartum hemorrhage since it is caused by *serqian* (82% v. 40%), all $p<0.001$.

Furthermore, over 50% of women in both regions believed that the colostrum was unclean and should not be given to the baby, while a similar percentage believed that butter should be given to the baby immediately after birth. Finally, 65% of women in Amhara thought that both men and women had a role in helping with delivery, while only 46% of women in Oromiya thought this ($p<0.001$).

The relatively higher knowledge of an HBLSS Package item in Oromiya did not necessarily correspond to decreased adherence to related traditional practices. For example 62% of women in Oromiya reported knowing about clean cord care, yet a similar percentage (66%) also believed that the baby's cord should be plastered with butter [Table 18; Table 19]. Similarly in Oromiya, while 57% had heard of keeping the baby warm and dry after birth, a greater percentage (74%) believed the baby should be washed immediately after birth.

Care-seeking Behaviors and Attitudes

Care-seeking behaviors and attitudes are detailed in Table 19. Women in Oromiya adhered to a higher number of positive care-seeking behaviors and attitudes compared to women in Amhara,

9.6 v. 8.8 out of 15 ($p<0.001$) [Table 19]. While 73% of women believed she should notify a health worker of her pregnancy, 53% believed that there was no reason for a healthy pregnant woman to attend health check-ups by health workers. Additionally, only 38% of women believed a health worker should be notified of labor. Furthermore, if the labor was not serious, 72% of women agreed that there was no reason to call a health worker and 88% thought the woman should deliver at home.

A high percentage of women were able to recognize serious conditions requiring referral, including breeched birth, delayed labor or placental delivery, and postpartum hemorrhage (all over 91%). However, 42% of women had fatalistic beliefs about maternal and newborn mortality, agreeing with the statement that, "There is little to be done to save the life of a mother or child—if one dies during delivery, it is just a matter of time."

A third of women agreed that it was a problem if HEWs were not available in the Health Post when needed, and the percentage of women who thought a health worker would come to deliver a baby at night time was 51% and 64% in Amhara and Oromiya, respectively ($p<0.001$). Finally, women's perceptions of HEW roles varied significantly between regions; 74% of women in Amhara believed that HEWs only help with birth spacing and vaccination, while only 45% of women in Oromiya believed this ($p<0.001$).

Adult Men and Women Over 18 Years of Age (ADULTs Survey)

Univariate statistics for adult men and women in the ADULTs survey are presented in Table 21 - Table 24. These include background sociodemographic characteristics and health service utilization characteristics [Table 21], knowledge of the HBLSS Package [Table 22], adherence to traditional practices [Table 23], and care-seeking behaviors and attitudes [Table 24].

Sociodemographic Characteristics

Background sociodemographic and health utilization characteristics for men and women in the ADULTs survey is shown in Table 21. In Oromiya, women were significantly more likely to have any formal education compared to men (66% v. 46%, p=0.001), however the reverse was true in Amhara (21% v. 38%, p=0.007) [Table 21]. The overall proportion of adults with any formal education was higher in Oromiya than Amhara (p<0.001). The percentage of adults with any cash income in the last month did not vary significantly by gender within regions, but did vary significantly overall between the regions. Adults in Oromiya were almost twice as like to have any cash income in the last month compared to adults in Amhara (30% v. 15%, p<0.001). Approximately 77% of adult reported any household land ownership, and this figure did not vary significantly by gender or region (p=0.52).

Health Service Utilization and Trust

A significantly larger percentage of adults in Oromiya compared to Amhara reported having ever heard of HEWs, knowing the HEW in their kebele, and knowing how to reach their HEW. However, the percent of adults who had ever actually used HEW services (71%) did not vary significantly by region (p=0.32). Furthermore, none of the HEW access and knowledge indicators varied by gender within regions.

Finally, adults' trust in HEWs for ANC, delivery and PNC did was approximately 3.5 on a scale of 1-5. This measure did not vary significantly by gender or region.

Knowledge of HBLSS Package Items

Overall knowledge of HBLSS Package items did not vary significantly by gender, however knowledge was significantly higher in Oromiya region; average score of 9.3 out of 17 items, compared to 4.6 in Amhara ($p<0.001$) [Table 22]. A very high percentage of adults had heard of preparing a safe birth plan in Oromiya compared to in Amhara (96% v. 19%, $p<0.001$). These numbers were also higher than those reported by women in the MOMs survey, 41% and 14%, for Oromiya and Amhara, respectively [Table 18].

In Amhara, the least-known items were: neonatal resuscitation (0.4%), use of misoprostol for PPH (0.8%), uterine massage (3.3%), not inserting items in the vagina during delivery (13%), and having clean hands during delivery (13%). These items were also among the least-known in Oromiya, though still relatively more known that in Amhara: uterine massage (26%), not inserting items in the vagina during delivery (28%), misoprostol (35%). Knowledge of clean hands during delivery was an exception, as 58% of women knew about this item. Furthermore, the question on neonatal resuscitation was asked in Amhara only.

The most-known items in Amhara were safe delivery of the placenta (59%) and exclusive breastfeeding for the first 6 months of life (54%). The most-known items Oromiya were exclusive breastfeeding for the first 6 months of delivery (70%) and labor notification (65%). Finally, knowledge of only two items varied by gender: safe delivery of the placenta in Amhara (66% of men v. 51% of women knew about this item, $p=0.03$), and not inserting items in the vagina during delivery in Oromiya (34% of men v. 22% of women knew about this item, $p=0.04$).

Adherence to Potentially Harmful Traditional Practices

Overall, adults in Amhara were more likely to adhere to potentially harmful traditional practices compared to adults in Oromiya: adherence to 7.7 out of 14 items vs. 5.0 out of 14 items, ($p<0.001$) [Table 23]. While this overall adherence score varied by region, adherence to any one particular item did not vary significantly by region. However this may be due to the small sample size. Furthermore, no significant differences were observed between male and female respondents. The most commonly adhered to practices were: immediate washing of the baby after birth (81%), disposing of the colostrum (61%), keeping the baby away from the mother until after the birth of the placenta (59%), and the belief that nothing could be done about postpartum hemorrhage because it is caused by *serqian* (59%). A majority of adults also believed that both men and women could help during delivery (66%).

Care-seeking Behaviors and Attitudes

Unlike the women in the MOMs survey, adults in Amhara had a marginally higher number of positive care-seeking behaviors and attitudes than adults in Oromiya: 9.9 v. 9.3 out of 14 items, ($p<0.001$) [Table 23]. The only significant differences between male and female respondents were among adults in Oromiya region, for three items. While 76% of women believed that husbands prefer that their wives deliver in the health center, only 63% of men felt this way ($p=0.04$). Additionally, while 84% of men in Oromiya thought that a woman should go to the health center if the baby was delayed, only 70% of women felt this way ($p=0.01$). This item was also the only one which varied significantly between the regions, with 98% of adult respondents in Amhara agreeing with this statement ($p=0.01$). Additionally, while 84% of women in Oromiya believed that the traditional doctor should be called if the placenta did not detach, only 73% of men believed this ($p=0.048$).

Health Extension Workers (FLWs Survey)

Univariate statistics for Health Extension Workers are presented in Table 25 - Table 29. These include background sociodemographic characteristics and health service capacity [Table 25], challenges and teamwork [Table 26], specific and general confidence [Table 27], knowledge of HBLSS Package items [Table 28], and adherence to traditional practices and care-seeking behaviors [Table 29].

Sociodemographic Characteristics and Health Service Capacity

The average age of HEWs was 24 years, and did not vary by region [Table 25]. HEWs in Amhara had slightly more years of schooling than HEWs in Oromiya (11.3 v. 9.4 years, p=0.048). Half of HEWs were married, 44% were single and 5% were divorced or widowed. Additionally, the majority of HEWs (59%) had never given birth. A quarter of HEWs had one live birth, 12% had 2-3 and 5% had 3 births.

Significantly more HEWs in Oromiya had received Clean and Safe Birth Training compared to HEWs in Amhara, 85% v. 54% (p=0.02). The majority of HEWs in Oromiya had worked as HEWs for 4 or more years (69%), compared to 40% of HEWs in Amhara. Additionally, HEWs in Oromiya had worked in their position for an average of 3.9 years, compared to 2.8 years in Amhara (p=0.004). Specific information on the volume of care provision and supplies for ANC, delivery and PNC services will be detailed in their respective sections, later in this document.

Challenges and Teamwork

Few HEWs felt that farming duties, household chores or childcare interfered with their health duties (all percentages <12%) [Table 25]. However, over 70% of HEWs in Oromiya felt that insufficient supplies and long distances between households in their kebele posed challenges to

health service provision, while only about 40% of HEWs in Amhara felt this way (p=0.009 and p=0.01, respectively).

Additionally, almost all HEWs identified themselves as being a part of a team (93%), yet HEWs in Oromiya rated the strength of their teamwork slightly higher than Amhara HEWs, 3.5 v. 3.0 out of 5 (p=0.02) [Table 25]. However, HEWs in Amhara interacted with other HEWs more frequently than HEWs in Oromiya, averaging 9.3 interactions per month compared to 2.6 interactions per month (p<0.001). HEWs' reported monthly interactions with Community Health and Development Agents and traditional birth attendants were comparable across regions, at 2.7 and 1.9 times per month, respectively. Overall average frontline health worker interaction frequency per month in Amhara was almost double that in Oromiya, 14.2 v. 7.5 interactions per month (p=0.01).

Specific Confidence

Overall, HEWs in Oromiya had a slightly higher score on the Specific Confidence Scale compared to HEWs in Amhara, 15.6 v. 14.2 items out of 20 items (p=0.02) [Table 27]. Nearly all HEWs reported being able communicate with kebele leaders about their work, were eager to perform their duties, and felt they received positive affirmation from community members (all percentages >97%). However, 41% of HEWs reported that they did not have enough support from a supervisor to perform their health tasks, and 87% felt they had too many health activities to perform.

Furthermore, only 61% of HEWs felt they could attend delivery alone, and half felt they had the knowledge but not the practical experience to provide delivery care. HEWs in Oromiya were significantly more likely than HEWs in Amhara to report having someone to help them when faced with a difficult labor, 73% v. 46%, respectively (p=0.04). Compared to Amhara HEWs, Oromiya HEWs also more frequently reported that they had the training to provide care to

mothers and babies, 89% v. 54% (p=0.005). HEWs in Oromiya were also more likely than HEWs in Amhara to feel like they had sufficient knowledge to manage postpartum hemorrhage, 69% v. 21%, respectively (p<0.001). However, approximately the same proportion of HEWs in both regions (67%) felt that they forgot what they had learned in training because it occurred long ago.

General confidence for ANC, delivery and PNC will be reported in their corresponding sections, later in this document.

Knowledge of HBLSS Package Items

HEWs in Oromiya knew slightly more HBLSS Package items than HEWs in Amhara: 12.7 v. 11.4 items out of 17 (p=0.008) [Table 28]. HEWs in both regions generally had very high knowledge of HBLSS items, especially for those pertaining to breastfeeding, creating a safe birth plan, and labor notification (all >98%). However, compared to HEWs in Oromiya, significantly fewer HEWs in Amhara knew about having clean hands during delivery (68% v. 100%, p=0.001). The only other area of significant discordance between regions was knowledge of misoprostol use for PPH, 29% v. 89%, in Amhara and Oromiya, respectively (p<0.001). The items with lowest knowledge for both regions included: uterine massage (56%), neonatal resuscitation (67%)—asked in Amhara only, and not inserting items in the vagina during delivery (69%). Over 85% of HEWs had knowledge of all other items.

Adherence to Potentially Harmful Traditional Practices and Care-seeking Behaviors

Overall, very few HEWs adhered to potentially harmful traditional practices: average adherence was 1 out of 14 item [Table 28; Table 29]. However, significantly more HEWs in Oromiya than Amhara believed that nothing could be done about postpartum hemorrhage because it is caused by *serqian* (27% v. 0%, p=0.002). The two potentially harmful practices that HEWs adhered with

most frequently were that the baby should be washed immediately after birth (12%) and that the baby should be kept away from the mother until the delivery of the placenta (13%).

Additionally, slightly more HEWs in Amhara than in Oromiya adhered with positive care-seeking behaviors or attitudes: 8.2 v. 7.5 out of 10 items (p=0.02) [Table 29]. While all HEWs in Amhara believed that a health worker should be called to the home when labor begins, only 81% of HEWs in Oromiya believed this (p=0.01). Furthermore, 10% of HEWs believed that if the labor is not serious, then the woman should deliver at home and that there is no reason for women to call a health worker. Finally, over half of the HEWs believed that they only help with birth spacing and vaccinations.

Distance to Health Centers

Distance from a locally-defined kebele center point to the nearest health center was provided by MaNHEP project staff [Table 30]. Distance ranged from 0 km (in the case that the Health Center was located in the kebele center), to 38 km. The average distance was 11.7 km in Amhara and 9.2 km in Oromiya Region.

Study Question 1: Antenatal Care from a Skilled Provider or HEW

Univariate Analysis

Approximately 42% of women received any antenatal care from a skilled provider or HEW in their last pregnancy; this overall figure did not vary significantly by region (p=0.13) [Table 31]. However, significantly more women in Oromiya utilized HEWs for this care than in Amhara (25% v. 11%, respectively, p<0.001), while a greater percentage of women in Amhara utilized skilled providers (31% v. 23%, p=0.006). Among women with any ANC, women attended an average of 3.5 visits, and initiated care during the fifth month of pregnancy [Table 16]. Formal providers constituted the majority of ANC providers, particularly HEWs and nurses. Furthermore, most women (87%) did not pay for ANC services.

In terms of the number of women provided care per month, HEWs provide the greatest volume of care for ANC (compared to delivery or PNC). HEWs provide ANC for approximately 15 women per month [Table 25]. Nearly all HEWs (93%) felt they had the supplies needed to provide ANC care. Additionally, HEWs in Oromiya reported higher general confidence in ANC provision compared to HEWs in Amhara: 8.9 v. 7.3 out of 10 (p<0.001) [Table 27].

Bivariate Analysis

Bivariate analysis for receipt of ANC was performed for individual-level factors in the MOMs survey [Table 32], as well as kebele-level factors in the ADULTs and FLW surveys [Table 33]. Unadjusted odds ratios, as well as odds ratios adjusted for clustering at the kebele level were calculated.

At the individual-level, women 15-34 years of age were nearly twice as likely to receive ANC compared to women who did not know their age or were 35 years and older (p<0.001) [Table 32]. Parity was also inversely related to receipt of ANC, with women nearly twice as likely to receive

care if it was their first birth, compared to if it was their fourth birth or higher (p=0.003). Women with a history of an infant death were less likely to receive ANC, however this association was not significant after adjusting for clustering (p=0.07). Later age at marriage was also significantly associated with increased ANC utilization (p=0.001). Any education and any cash income, for the woman or her spouse, was associated with increased receipt of ANC (all p<0.001 or p=0.01), while any household land ownership was not (p=0.26). Modern contraceptive use, knowing how to reach the HEW in their kebele, higher trust in HEWs for ANC provision, greater knowledge of HBLSS Package items, lower adherence to potentially harmful traditional practices, and greater care-seeking behaviors were all associated with increased ANC utilization. Furthermore, additive interaction appeared to exist between women's cash income and spouse's level of formal education. Women with personal cash income who were married to spouses with any education had 5 times the odds of receiving ANC, compared to women without either of these factors [Table 40].

At the kebele-level, women were more likely to receive ANC if they lived in kebeles with a greater proportion of adults with cash income, lower adherence to traditional practices and increased positive care-seeking behaviors [Table 33]. However, only living in a kebele with an increased proportion of women with cash income was associated with ANC provision after adjusting for clustering (p=0.03).

Additionally, women were more likely to receive ANC if they lived in kebeles served by HEWs with more years of schooling, misoprostol supplies, greater general and specific confidence, higher perceived teamwork strength and FLW interaction frequency. However, only HEWs' years of schooling and FLW interaction frequency remained significant after adjusting for clustering.

Living in a kebele which was closer to health centers was associated with increased likelihood of receiving ANC, however this was only significant in the unadjusted analysis (p=0.04). Finally, significant differences in ANC utilization existed depending on kebele of residence and referral health center (p<0.001).

Multilevel Model

The initial multilevel model fit after variable screening and collinearity diagnostics, as well as the "gold standard" and final model selected are shown in Table 42. Receipt of antenatal care from a skilled provider or HEW was significantly associated with women who had a higher level of knowledge of HBLSS Package items and lower adherence to traditional practices [Table 42]. Compared to women with low HBLSS knowledge, women with medium knowledge had 1.59 times greater odds of ANC utilization (95%CI: 1.12, 2.27), and women with high knowledge had 1.94 times greater odds (95%CI: 1.15, 3.26). Women with low adherence to potentially harmful traditional practices had nearly twice the odds of receiving ANC (OR: 1.98, 95%CI: 1.11, 3.54), while women with medium adherence had 1.78 times the odds (95%CI: 1.08, 2.95); both compared to women with high adherence. Furthermore, a 1 point increase in trust in HEWs for ANC provision, on a 5-point trust scale, increased odds of ANC by 1.25 times (1.12, 1.40). HEW's frequency of interactions with other frontline health workers was also found to be significantly positively associated with receipt of ANC. For every additional monthly reaction, the odds of receiving care increased by 1.11 times (95%CI: 1.05, 1.19).

Other important factors associated with receipt of ANC were decreased parity and use of a modern contraceptive method. Significant interaction existed between women's personal cash income and spouse's education. Women who had personal cash income and a spouse with any formal education had 3.16 times the odds of receiving ANC, compared to women with neither factor. Finally, spouse's income was not significantly associated with ANC receipt, but retained

in the model as a confounder. Woman's age, education, history of an infant death and the kebele's distance to a health center were all insignificant and did not confound the association between the primary exposures of interest and the outcome.

Study Question 2: Delivery Care from a Skilled Provider or HEW

Univariate Analysis

Women in Oromiya were nearly twice as likely to have a skilled provider or HEW as a birth attendant, compared to women in Amhara region (20% v. 10%, p<0.001) [Table 31]. Furthermore, women in Oromiya used skilled providers and HEWs in near equal frequencies (10%), while women in Amhara were more likely to use skilled providers over HEWs (7% v. 3%). The vast majority of women delivered at home: 94% in Amhara and 87% in Oromiya (p<0.001) [Table 16]. In Oromiya, 8% of women delivered at the kebele Health Post, and 4% in other facilities, while no women in Amhara delivered in Health Posts, and 6% delivered in facilities. The majority of women had a family, friend or other untrained person as their birth attendant, however this varied by region, 81% v. 57% in Amhara and Oromiya, respectively (p<0.001). Traditional birth attendants were the next-most common delivery care providers, 12% v. 23% in Amhara and Oromiya, respectively (<0.001). Most women did not pay for delivery services, however women in Oromiya were more likely to do so than women in Amhara (12% v. 8%, p=0.03).

Compared to ANC or PNC, HEWs provide the smallest number of women with delivery care, approximately 1.5 women per month [Table 25]. Additionally, while 92% of HEWs in Amhara felt they had the supplies needed to provide delivery care, only 58% of HEWs in Oromiya felt this way (p=0.009). Overall, HEWs rated their general confidence in providing delivery care the lowest (7.2 out of 10), compared to ANC or PNC [Table 27].

Bivariate Analysis

Bivariate analysis for receipt of delivery care was performed for individual-level factors in the MOMs survey [Table 34], as well as kebele-factors in the ADULTs and FLW surveys [Table 35].

Women who were 20-34 years of age had the highest odds of receiving delivery care, followed by women who were 15-19 years old, 35+ years old, and women who didn't know their age, respectively ($p<0.001$) [Table 34]. After adjusting for clustering, factors which were significantly associated with receipt of delivery care included: lower parity, no history of an infant death, any education or cash income, having a spouse with any education, current use of a modern contraceptive method, receipt of ANC from a HEW or skilled provider, knowing how to reach their kebele HEW, trusting HEWs for delivery, a higher HBLSS Package Knowledge score, lower adherence to traditional practices and increased positive care-seeking behaviors.

Factors associated with receipt of delivery care at the kebele-level, based on the ADULTs survey, included: residing in a kebele with a greater proportion of adults with any education or cash income, residing in a kebele with a higher HBLSS knowledge index score, lower adherence to traditional practices and increased positive care-seeking behaviors [Table 35]. Furthermore, while numerous kebele-level HEW factors were associated with receipt of delivery care, only increased general confidence in delivery provision remained significant after adjusting for clustering. Finally, significant differences in receipt of delivery care existed based on kebele of residence, referral health center, woreda and region of residence. Women residing in Oromiya region had 2.5 times the odds of receiving ANC compared to women in Amhara ($p<0.001$).

Multilevel Model

The initial multilevel model fit after variable screening and collinearity diagnostics, as well as the "gold standard" and final model selected are shown in Table 43. Lower adherence to potentially harmful traditional practices was significantly associated with receipt of delivery care; however knowledge of HBLSS Package items was not [Table 43]. Compared to women with high adherence to traditional practices, women with the low adherence had 3.98 times greater odds of receiving delivery care (95%CI: 1.88, 8.43) and women with medium adherence had 2.14 times

the odds (1.05, 4.35). Trust in HEWs to provide delivery care was not significantly associated with receipt of care, however previous receipt of antenatal care from a skilled provider or HEW was associated with 2.32 times greater odds of delivery care from these providers (95%CI: 1.49, 3.61).

Other factors associated with delivery care included if the woman had any formal education or personal cash income. Parity and spouse's income were kept in the model as confounders. Finally, no significant interactions between women and spouse's education and income were found, and history of an infant death, use of modern contraceptive methods, and region of residence were not found to be significantly associated with the outcome, nor confound the effect observed for the primary exposures of interest.

Study Question 3: Postnatal Care Visit within Two Days of Birth for Mother or Newborn from a Skilled Provider or HEW

Univariate Analysis

Women in Oromiya were over twice as likely to have a postnatal care visit within two days of birth from a skilled provider or HEW compared to women in Amhara region (11% v. 5%, $p<0.001$) [Table 31]. Furthermore, women in Oromiya used skilled providers and HEWs in near equal frequencies (8%), while women in Amhara were more likely to receive a PNC visit from HEWs over skilled providers (4% v. 1%). Additionally for both regions, the number of women who reported a PNC visit for the mother was roughly equal to those reporting one for the newborn, as these likely occurred in the same visit. A third of women in Oromiya received a first PNC visit for either the mother or newborn immediately or within the first 4 hours after birth; however this was the case for only 8% of mothers in Amhara [Table 16]. Family, friends or other untrained individuals were the most common PNC providers cited, 7% and 21% in Amhara and Oromiya, respectively ($p<0.001$). Depending on the region, TBAs and HEWs followed as the most common PNC providers. Lastly, about 15% of women reported paying for a PNC visit.

Following ANC, PNC contributes the next-highest volume of services provided by HEWs, though this varied by region. HEWs in Amhara on average provide slightly more mothers and newborns with postnatal care than in Oromiya, 12 per month v. 8 per month ($p=0.02$). Over 86% of HEWs in both regions felt they had the supplies needed to provide PNC for either the mother or newborn. Overall HEWs rated their general confidence in providing PNC fairly highly, yet HEWs in Oromiya reported higher general confidence in providing PNC for the mother (8.8 v. 7.7 out of 10, $p=0.04$), yet confidence in providing PNC for newborns did not vary by region (8.2 out of 10, $p=0.83$) [Table 27].

Bivariate Analysis

Bivariate analysis for receipt of postnatal care was performed for individual-level factors in the MOMs survey [Table 36], as well as kebele-factors in the ADULTs and FLW surveys [Table 37].

At the individual-level, women who were 20-34 years old were most likely to receive PNC compared to all other age groups (p=0.003) [Table 36]. Other factors associated with receipt of PNC, after adjusting for clustering included: if it was the woman's first birth, any education or personal cash income, older age at marriage, having a spouse with any education, modern contraceptive use, previous receipt of ANC or delivery care from a HEW or skilled provider, increased knowledge of HBLSS package items, decreased adherence to traditional practices, and increased positive care-seeking behaviors.

At the kebele-level, factors associated with receipt of PNC after adjusting for clustering included: living in a kebele with a greater proportion of adults with any schooling or cash income, higher HBLSS knowledge and lower adherence to traditional practices [Table 37]. Additionally, women were more likely to receive PNC if she lived in a kebele with HEWs who had: received Clean and Safe Birth Training, greater specific confidence and general confidence in PNC provision, increased HBLSS Package knowledge and higher perceived teamwork strength. Finally, odds of receiving PNC varied significantly by referral health center, woreda and region of residence. Women who lived in Oromiya Region had over 2.5 times the odds of receiving PNC than women in Amhara.

Multilevel Model

The initial multilevel model fit after variable screening and collinearity diagnostics, as well as the "gold standard" and final model selected are shown in Table 44. Knowledge of the HBLSS Package was significantly associated with receipt of PNC only when comparing women with the

highest knowledge to women with the lowest knowledge [Table 44]. Women with high knowledge of HBLSS Package items had 4.58 times the odds of receiving PNC (95%CI: 1.35, 15.49), compared to women with low knowledge. Adherence to traditional practices could not be included in the model due to collinearity issues with knowledge of the HBLSS Package. Trust in HEWs to provide PNC was also not significantly associated with receipt of care.

Previous receipt of ANC and delivery care from skilled providers or HEWs were strongly associated with receipt of PNC from these providers. Women who had received ANC had 3.43 times the odds of also receiving PNC (95%CI: 1.63, 7.26), while women who had received delivery care had 8.80 times the odds (95%CI: 4.62, 16.76).

Only spouse's education was retained in the model as a confounder for the effect of the primary exposures of interest. No significant interaction between women's and spouse's education and income existed. Parity, history of an infant death, women's education and income, spouse's education and the proportion of women at the kebele level with cash income were all found to be insignificantly associated with the outcome and not confounders for the primary exposures of interest.

Study Question 4: Use of Misoprostol for Postpartum Hemorrhage (Oromiya Region)

Univariate Analysis

As Amhara Region had yet to fully initiate implementation of its misoprostol policy at the time of the baseline surveys, none of the women in Amhara region used misoprostol for postpartum hemorrhage in their last pregnancy [Table 31]. However 20% of women in Oromiya region had used misoprostol in their last delivery [Table 31].Additionally, none of the HEWs in Amhara listed misoprostol as a supply they had to provide women with during pregnancy, while 69% of HEWs in Oromiya had misoprostol supplies ($p<0.001$) [Table 25].

Bivariate Analysis

Bivariate analysis for use of misoprostol was performed for individual-level factors in the MOMs survey [Table 38], as well as kebele-factors in the ADULTs and FLW surveys [Table 39], for women living in Oromiya only.

Individual-level variables which remained significant after adjusting for clustering included: any formal education or personal cash income, having a spouse with any formal education, current use of a modern contraceptive method, ANC or delivery care from a HEW or skilled provider, knowing how to reach kebele HEWs, higher trust in HEWs for delivery care, increased HBLSS Package knowledge and increased positive care-seeking behaviors [Table 38]. Additionally, significant additive interaction appeared to exist between women's personal cash income and spouse's level of formal education. Women with any cash income, married to spouses with any education were 5 times as likely to have used misoprostol in their last pregnancy, compared to women without either of these factors [Table 41].

After adjusting for clustering, the only kebele-level variable which was significantly associated with increased use of misoprostol was residence in a kebele with lower average adherence to traditional practices (p=0.03).

Multilevel Model

Due to high presence of collinearity issues, interaction terms between women and spouse's education and income status could not be assessed. Thus, only the initial multilevel model fit after variable screening and collinearity diagnostics and final model selected are shown in Table 45.

Knowledge of the HBLSS Package was significantly associated with use of misoprostol for PPH only when comparing women with the highest knowledge to women with the lowest knowledge [Table 45]. Women with high knowledge of HBLSS Package items had 24.28 times the odds of misoprostol use (95%CI: 2.77, 212.68), compared to women with low knowledge. The high degree of uncertainty in this estimate likely reflects the small sample size used for this analysis. Furthermore, adherence to traditional practices could not be included in the model due to collinearity issues with knowledge of the HBLSS Package. Trust in HEWs to provide delivery care was also not significantly associated with use of misoprostol.

Women who received delivery care from a skilled provider or HEW had 2.47 times increased odds of misoprostol use, compared to women who did not receive delivery care from these providers (95%CI: 1.19 5.11). Furthermore, women who currently used a modern method of contraception had 2.15 times the odds of having used misoprostol for PPH (95%CI: 1.27, 3.62).

Women with any formal education were also 1.5 times more likely to have used misoprostol, compared to women without any education. A spouse with any cash income was actually found to decrease odds for misoprostol use; women married to spouses without cash income were 1.89 times more likely to have used misoprostol (95%CI: 1.35, 2.63). Spouse's education was not

significantly associated with misoprostol use, but was retained in the model as a confounder for the relationship between the primary exposures of interest and the outcome. History of an infant death and kebele distance to health centers were not significantly associated with the outcome and not found to be confounders.

Chapter IV. Discussion

This study considered a variety of individual, community and health provider-level factors in order to understand factors associated with receipt of maternal and newborn health services from a skilled provider or Health Extension Worker in rural Ethiopia. Two domains at the individual level comprised the potentially modifiable factors of primary interest: 1) knowledge of HBLSS Package items, adherence to traditional practices, and care-seeking behavior and attitudes, and 2) trust of HEWs. Potentially modifiable variables of secondary interest included: 1) continuity of care at the individual level, 2) knowledge, adherence and care-seeking at the community and provider level, and 3) HEW health service capacity and teamwork. Sociodemographic variables were not considered directly modifiable by project interventions, but may provide important considerations for the design of appropriate and effective strategies.

Knowledge of HBLSS Package

The primary potentially modifiable exposure of interest, knowledge of HBLSS Package items, was significantly positively associated with receipt of antenatal care, a postnatal care visit within two days of birth, and use of misoprostol for postpartum hemorrhage. Compared to women with a low level of knowledge (knowledge of 0-2 items out of 17 items), both a medium and high level of knowledge (3-8 and 9-17 items, respectively) showed a significant dose-response relationship for ANC utilization [Table 46]. However, only a high level of knowledge was significantly associated with receipt of PNC and misoprostol.

Because this is a cross-sectional study, the time-order of exposure to outcome is difficult to ascertain. For example in the ANC model, it may be that the outcome actually also "causes" the exposure. That is, the receipt of antenatal care resulted in increased HBLSS Package Knowledge. This idea is supported by the literature, as one of the primary purposes of ANC is to promote the exchange of knowledge and interventions (27). To this end, the WHO endorses four focused ANC visits initiated during the first trimester of pregnancy, in order to maximize the amount of

time in which key health messages can be shared (28, 29). Of course the effect of early ANC and knowledge-sharing may also promote continued ANC visits. Thus a synergistic relationship between the exposure and outcome may exist. In this case, women who attended more ANC visits would be more likely to have higher HBLSS Package knowledge; perhaps explaining the dose-response outcome observed.

On the other hand, the reverse time-order might be expected for the PNC and misoprostol outcome. That is, a woman's increased HBLSS Package knowledge subsequently increased her likelihood of seeking and receiving postnatal care and misoprostol. Numerous studies demonstrate how knowledge gained during ANC visits establishes relationships with providers and can build demand for subsequent services (102-105).

The only outcome not significantly associated with HBLSS Knowledge Index was receipt of delivery care. Interestingly, a qualitative study in South Wollo, Ethiopia observed a similarly puzzling effect: an association between increased knowledge and decreased care-seeking for delivery (106). The South Wollo study specifically examined women who accessed facilities for maternal and newborn health services at other times (e.g. for ANC or PNC), but not for delivery. Their qualitative research revealed that women perceived that the home-based birthing skills providers shared were intended as a way to promote home delivery. This idea was further strengthened in the women's minds since they were never explicitly told by health providers to seek a facility birth. Thus, the more home-based skills knowledge the woman gained, the more confident she felt in a home delivery, and the less likely she was to seek facility care. Furthermore, many women held a pre-existing preference for home delivery, perceiving it as the appropriate place to give birth when the delivery was 'normal.' This latter view was pervasive amongst nearly all women in this study, as well as in 10% of HEWs [Table 29]. A corresponding proportion of women and HEWs also believed that even birth notification to a health provider was unnecessary in the case of a normal delivery.

Promoting better management of home deliveries is an intended goal of the HBLSS intervention, as it in many ways provides a realistic and appropriate solution given existing resource and health workforce constraints (34, 87). However, this is not intended to occur at the expense of facility care-seeking behaviors, nor in a way which breaks down communication between women and HEWs, e.g. via a perceived decreased need for birth notification. Emergency obstetric complications can arise suddenly, and thus complication readiness plans must be pre-coordinated to provide a means for timely referral from the home to the facility(68). HBLSS is best suited for preventive and promotive health functions (87). It is not capable of dealing with severe emergency obstetric complications, for which higher-level skilled care is needed. Thus, HBLSS without a strong referral system is unlikely to lead to significant decreases in mortality (107-109). Thus, care should be taken to ensure that HBLSS Package knowledge is given in a way which emphasizes coordinate approaches.

Adherence to Potentially Harmful Traditional Practices

Women's adherence to potentially harmful traditional practices showed a negative dose-response relationship with receipt of ANC and delivery care [Table 46]. Therefore, the more a woman adhered to potentially harmful traditional practices, the less likely she was to have received ANC or delivery care. Adherence to traditional practices could not be assessed for PNC or misoprostol since it was implicated in a collinearity issue with the HBLSS Knowledge Index variable. The Care-seeking Behaviors Index additionally could not be assessed due to collinearity with the HBLSS Knowledge and Adherence to Traditional Practice Indices; indicating that these measures may be intimately related.

Interventions aimed at increasing knowledge of HBLSS Package items should thus simultaneously focus on raising awareness on how certain traditional practices can be harmful for the health of the mother or baby, as both factors are important independent predictors of care.

Furthermore, since both factors remained significant in the ANC and delivery models, it demonstrates that increased knowledge of HBLSS Package items may not naturally lead to a decreased adherence to related traditional practices. Two notable areas of discordance were for women's perceptions of clean cord care as well the prevention of neonatal hypothermia [Table 18; Table 19]. Health education and behavior change interventions should explicitly link how a HBLSS practice is related to various traditional practices, and explore other potential areas of discordance.

Trust in HEWs

Women's level of trust in HEWs to provide care was only significant for the antenatal care outcome. Overall, women expressed the highest level of trust in HEWs for ANC provision, compared to delivery or postnatal care [Table 18]. Women's increased trust for HEW's provision of ANC care may have been related to the fact that HEWs themselves had the highest self-rated confidence for ANC provision, compared to delivery care or PNC [Table 27]. In fact, only 61% of HEWs felt they could attend deliveries alone [Table 27]. Additionally compared to delivery care or PNC, ANC was the service that most HEWs felt they had appropriate supplies for, and arguably had the most experience providing [Table 25]. For example, HEWs provided an average of 15 women per month with ANC, compared to only 1.5 women per month with delivery care [Table 25].

A study in Tanzania found that trust in the health care provider and a perception of care quality were both independent significant predictors of women's care-seeking behavior, particularly for delivery care (51). Thus, trust alone may not be an important enough predictor if perceived quality of care is low. Furthermore, a population discrete choice experiment in Ethiopia revealed that women were willing to travel further distances and even pay more for services if she believed the health facility would have the proper drugs and equipment available (50). Again, this

demonstrates that trust alone cannot compensate for perceived poor quality due to insufficient stock of supplies or equipment. This may particularly be the case for delivery and PNC, for which HEWs reporter less confidence, experience and supplies for.

Furthermore, existing care-seeking behaviors may be more important determinants of receipt of care, and unrelated to trust in HEWs. While a majority of women (73%) believe she should notify a health worker of her pregnancy, only 38% believed a health worker should be notified of labor [Table 20].This may explain why women are more likely to receive ANC care compared to delivery care. Additionally, the majority of women believed that women should deliver at home unless the labor is serious (88%). The South Wollo study found that women perceived health facilities as 'places of illness,' and thus not suited for 'normal' labor (106). Therefore, a woman may seek care at facilities for other maternal and newborn health services, like ANC, but she would be unlikely to go for delivery care. Trust in the provider is irrelevant.

Finally, the majority of home births in this study were attended by family members, neighbors, and friends (69%), with few additionally attended by traditional birth attendants (18%). A similar relative pattern existed for PNC, however the vast majority of women received no PNC (80%). Thus women rarely sought delivery care even from presumably more accessible and more trusted TBAs. While the surveys did not directly ask women about PNC care-seeking behavior, we can surmise it would be quite low, and likely lower than that for delivery care. The preference for family and friends to be present at birth may also explain why women do not seek care at facilities. Again in the South Wollo study, a key reason cited by women who did not seek facility care was that they would feel 'alone' at the facility if all of their family and friends could not attend (106).

It is also important to note that the outcome of interest was not limited to receipt of care from HEWs alone, but also from skilled providers. Thus, a direct relationship between trust in HEWs

may not be observed, especially if a woman's receipt of care from skilled providers is unrelated to her level of trust in HEWs' abilities.

This might occur if the reason the woman sought care from a skilled provider was for a serious emergency obstetric complication. Skilled providers operate in higher-level facilities which have the capacity to perform CEmOC, including blood transfusions and caesarean sections (55). These services are not possible at health posts or with HEW's skills.

Additionally, the literature suggests that women who seek care from skilled providers may be distinct from other women due to her level of income, education or autonomy (110). Thus these women may be predisposed to seek care from a skilled provider regardless of her attitudes towards HEWs.

Additionally, trust is a difficult concept to capture quantitatively, and thus misspecification bias may have occurred. While trust scales have been used in various other health services studies, it is unclear if the 5-point trust scale allowed for enough heterogeneity in responses (111). Furthermore, very few women received the delivery and PNC outcome overall, and even fewer received it from HEWs exclusively. The ANC outcome was relatively more common, occurring two- to four-times more frequently. Thus, any correlation with the trust scale may have been difficult to observe for these relatively rare outcomes.

Continuum of Care and HEW Interaction

Previous receipt of care from skilled providers or a HEW was a strong predictor for receipt of subsequent care from these providers. This finding is strongly supported by the literature, with studies demonstrating how enrollment into ANC, and particularly completion of numerous ANC visits, may help build relationships with providers and allow women to learn about the importance of skilled care and immediate postnatal care (102-105).

This finding points to two strategies, the first of which is to increase the number of women who enroll in antenatal care in the first place. A key challenge relates to how women may perceive antenatal care: while 73% would notify a health worker of her pregnancy, 53% believed that there was no reason for a healthy pregnant woman to attend health check-ups [Table 20]. There are numerous reasons why women may hold this belief, including the belief that 'normal' pregnancies do not require the attention of health professionals, as previously mentioned.

Other reasons may help to explain why the HEW frequency of monthly frontline health worker interactions variable was significantly associated with the ANC outcome. A study in Harare, Zimbabwe found that the usual lectures given by health professionals were not nearly as effective at conveying health knowledge as interactive techniques coordinated by traditional birth attendants and other community mobilizers (112). Cooperation with these community members to share ANC content led to increased retention of knowledge for pregnancy danger sign recognition and birth preparation (112). Furthermore, a community mobilization strategy based on women's groups meetings in Nepal resulted in decreased maternal mortality (107). Thus, by partnering with other community mobilizers and frontline health workers (and thus interacting with them more frequently), HEWs can more effectively recruit women to initiate ANC through a variety of channels which they may find more comfortable or engaging.

The second strategy the continuity of care finding points to is to target the women who received ANC but who did not follow the continuum on to delivery and postnatal care. These women represent a missed opportunity. Overall, 42% of women received at least one ANC visit from a skilled provider or HEW, yet only 15% received delivery care from these providers and only 8% received postnatal care [Table 31]. Other studies in sub-Saharan African and Asia have shown that even among women who attend four or more ANC visits, at least 20% will not seek skilled delivery care (104). A qualitative study in rural Tanzania targeted these "missed opportunities" and found that, as in the South Wollo study, women had strong preferences for home births and

that providers did not clearly communicate the importance of skilled delivery or PNC during antenatal care visits (113). Furthermore, the study found that these women did not plan for delivery, either through the creation of an emergency preparedness plan, keeping savings, or preparing items for safe and clean delivery; all activities which could have been initiated during ANC, and which might have strengthened the continuum on to skilled delivery care (114). Finally, ANC visits failed to involve the participation of family members, and in particular, husbands who served as "gatekeepers" over women's health decisions (113).

The role of spouses in receipt of care also emerged as an important factor in this study. Spouse's education was significantly positively associated with receipt of delivery care, and was a confounder in the PNC and misoprostol models [Table 46]. Additionally spouse's education was involved in a significant positive interaction effect with women's income for the ANC model. Spouse's income however was highly negatively associated with the misoprostol outcome.

Control over health decision-making is highly gendered in Ethiopia. Only 13% of currently married women responded that they made their own decisions about their health care, and 25% responded that her husband mainly makes these decisions for them (15). Studies have found that women with low autonomy over healthcare decisions are more likely to have low modern contraceptive use, low antenatal care visits, low facility delivery, and high unwanted and mistimed pregnancies (45, 46). Women's education and income status can be important markers of autonomy, and allow women to seek out higher quality health services (47).

Some studies however have found that modern contraceptive may be a better measured of women's autonomy (115). Current modern contraceptive use was found to be significant in the ANC and misoprostol models [Table 46]. Unfortunately however, women were not specifically asked for the reason they might not be currently using a modern contraceptive method, which may complicate interpretation of this variable, as a woman who is not using contraception due to

a desire for another pregnancy, versus a woman who is not using it due to a lack of access, represent two very different things. However, since contraception still had a significant effect even after controlling for the woman and spouse's education and income level, parity, knowledge of HBLSS items and adherence to traditional practices (all expected confounders for the contraception variable), it may still be valid as an indicator of autonomy.

Additionally, access to contraception can have numerous other impacts on care-seeking. For example, a study in southern Ethiopia found that mothers with unwanted or untimely pregnancies were significantly less likely to receive ANC are delivery care, perhaps due to decreased motivation or denial of their pregnancy (110).

Regardless, consideration of women's decision-making autonomy is likely to be an important factor when designing intervention, especially given the highly patriarchical nature of Ethiopian society. Since women are likely to have constrained autonomy, interventions should make a point in involving spouses. Numerous other studies have found that inclusion of key family members is important given the social significance often attributed to pregnancy and childbirth. Furthermore, including family members in discussions about skilled delivery care during ANC led to increases in birth preparation and receipt of care (28, 116, 117).

Strengths and Limitations

This study considered a variety of individual, community and health provider-level factors in order to understand factors associated with receipt of maternal and newborn health services from a skilled provider or Health Extension Worker in rural Ethiopia. Simultaneous examination of all these factors in one model allowed for a rich perspective on the various factors influencing receipt of care.

Furthermore, the focus on potentially modifiable factors which could be targeted in interventions maintains a pragmatic and applied focus. In particular, numerous variables on behaviors, attitudes and beliefs were grounded in extensive qualitative research which preceded the survey, and thus represent unique and contextually relevant measures for this setting.

However, since the baseline surveys were administered before Amhara had initiated implementation of its misoprostol policy, only data for Oromiya was able to be included in the analysis. Yet, regional differences may be substantial. Oromiya Region currently allows advance distribution of misoprostol during ANC visits, while Amhara only allows HEWs and skilled providers to administer the drug. Thus factors associated with receipt of misoprostol are expected to differ between the two regions.

Additionally, because so few women received maternal and newborn health services from HEWs, exclusive modeling of the multilevel factors associated with receipt of care from these providers alone was not supported. However, the factors associated with receipt of care from HEWs, may vary considerably from those associated with receipt of care from skilled providers.

Several other limitations to this study existed. The variables under consideration had to be reduced markedly in order to be appropriate for the sample size. This led to the construction of

various indices, for example of adherence to traditional practices. The validity of these indices should be assessed in future studies.

Furthermore, because this is a cross-sectional study, recall bias is a concern. However, differential recall due to the outcome, i.e. women's receipt of care from a HEW or skilled provider (as well as misoprostol use), is not expected.

Additionally, since the number of women in the MOMs dataset varied by cluster (average cluster size=30, range 14 to 50) [Table 10], the unbalanced design could have reduced the performance of the model. Finally, several community-level variables were averaged based on a small number of observations. Sensitivity analyses which exclude observations based on small sample sizes may allow for assessment of bias.

Chapter V. Public Health Implications and Future Directions

Public Health Implications

Maternal mortality represents the single largest cause of death among women aged 15-49 years of age, and has significant implications for child mortality(35). Furthermore, over 4 million newborn deaths occur globally each year, and comprise the single largest portion of all under-5 child deaths (8). Maternal and newborn mortality are highly preventable, and indicative of deep disparities, occurring almost exclusively in developing countries (99%) (3). Yet, progress on reducing these deaths has been stunted, particularly in sub-Saharan Africa (2, 9).

As demonstrated with the Ethiopia government's rapid scale up of over 30,000 Health Extension Workers (HEWs) in health posts across the country, community-level health workers are able to be recruited and trained much more quickly than formally trained skilled providers. These community-level providers are thus of great interest for countries with severe health workforce shortages, and indeed may provide the only solution for care in the short- to medium-term.

However, HEWs lack the skills and equipment needed to deal with the emergency obstetric complications which underlie the majority of maternal and neonatal deaths. Thus, HEWs will only lead to decreases in mortality if they can promote care-seeking behaviors and strengthen links to health centers and hospitals for emergency care.

Strategies which can achieve these goals include early initiation into antenatal care, as ANC visits provide a key time to share knowledge on recognition of danger signs and the importance of birth preparation and complication readiness. In Oromiya Region, women also have the opportunity to receive misoprostol for postpartum hemorrhage during ANC visits.

Engaging with community-level health workers and community mobilizers may also be key in ensuring that knowledge on home-based life saving skills (HBLSS), shared during ANC, is presented in an engaging and culturally relevant manner. Furthermore, these community members

may be better poised to appropriately and explicitly address how the HBLSS items relate to traditional practices.

Furthermore, factors which can promote a continuum of care from ANC to delivery and postnatal care must be promoted. This includes involving spouses, as key household decision makers, in the ANC messaging their wives receive. By involving spouses, a shared appreciation for care-seeking behaviors and complication preparedness can ensure a continuum of care into the postnatal period.

Ethiopia has some of the world's highest maternal and newborn mortality rates, and faces significant health workforce, infrastructural and other poverty-related challenges (14). However, the Ethiopian government's impressive commitment to ensure universal primary health care by targeting women at the community-level may provide key links from homes to facilities. Ethiopia is poised to be a leader in advancing health, and improvements made amidst these challenges may serve to inform other resource-constrained settings, particularly in sub-Saharan Africa.

Future Directions

Further research could examine the HEW and skilled provider outcomes separately, as factors associated with each may vary. The HEW is a relatively new cadre of health worker, and thus data on the HEW is limited. However, HEW's have the potential to greatly improve access to care. Future work could also examine how HEWs interact with other frontline health workers, including Community Health Development Agents and Traditional Birth Attendants.

Additionally, research which can compare the factors associated with misoprostol use in both regions may provide insight which can guide interventions, as well as national policy. Additional research comparing misoprostol coverage, use, safety and efficacy in reducing PPH should be undertaken, and may add to the literature on advance distribution of misoprostol.

Additionally, various issues related to how women's decision-making power and autonomy are constructed were raised in this analysis. Future work could explore the influence of personal and spousal factors, as well as the role of modern contraceptive use. Related research on how the inclusion of spouses and family members in ANC may be used to increase women's decision-making power could also be undertaken.

Finally, this study had incredibly rich information on local traditional practices and care-seeking behaviors. This provides a unique insight into how women and communities perceive various maternal and newborn health issues, including how new knowledge is incorporated with existing beliefs. Future work could explore the robustness and inter-relationships between the various knowledge, attitude and beliefs indices constructed.

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VII. Tables

Table 1. Ethiopia Maternal Mortality Ratio Trends and Targets (1990-2015), by Source

Source	1990	1995	2000	2005	2008	2010/1	2015 Target	% Change to Date Overall (Annual)*	% Change Needed Overall (Annual)†
EDHS	-		871	673	-	676	267	-22(-2.3)	-61(-17.0)
fMoH		1400‡	-	-	-	590	267	-58 (-5.6)	-55 (-14.7)
WHO/UN	990	920	750	560	470	-	248	-53 (-4.1)	-47 (-8.7)

Table 2. Ethiopia Child and Newborn Mortality Trends and Targets (2000-2015), EDHS/fMoH

Indicator§	2000	2005	2010	2015 Target	% Change 2005-2010 Overall (Annual)	% Change Needed 2010-2015 Overall (Annual)**
Under-5 Mortality Rate	166	123	88	68	-28 (-6.5)	-23 (-5.0)
Infant Mortality Rate (≤ 1 year)	97	77	68	31	-12 (-2.5)	-54 (-14.5)
Neonatal Mortality Rate††	49	39	37	15	-5 (-1.0)	-59 (-16.5)
Early Neonatal Mortality Rate	-	27.1	-	-	-	-
Late Neonatal Mortality Rate	-	11.9	-	-	-	-
Stillbirth Rate	-	10.4	-	-	-	-
Percent Attributable to Neonatal Mortality				-	-	-
Of All Under-5 Mortality	30	32	42	-	-	-
Of All Infant Mortality	51	51	54			

* Percent change calculated for largest range of years available.
† Additional percent change needed from most recent reported figure to achieve the 2015 target.
‡ Back-calculated from the 2006 fMoH National Reproductive Health Strategy,and as cited by Abraha *et al.* 2009 as the results from a 1994 census.
§ All per 1,000 live births, except for stillbirth rate, which is per 1,000 total births
** Additional percent change needed from most recent reported figure to achieve the 2015 target.
†† Refers to deaths within the following time periods after birth: neonatal mortality rate (0-28 days), early neonatal mortality rate (0-7days), late neonatal mortality rate (8-28 days)

Table 3. Maternal and Newborn Health Services Trends and Targets in Amhara and Oromiya Regions, Ethiopia (2000-2015), EDHS

Indicator	Amhara			Oromiya			Ethiopia Average			Target*
	2000	2005	2010	2000	2005	2010	2000	2005	2010	2015
Antenatal Care, ≥1 Visit, %†										
Skilled Provider‡	18.9	26.5	33.6	27.0	24.8	31.3	26.7	27.6	33.9	-
HEW	-	-	8.4	-	-	9.1	-	-	10.1	-
Skilled Provider or HEW	-	-	42.0	-	-	40.4	26.7	27.6	44.0	90.0
Number of ANC Visits, %										
None	-	-	-	-	-	-	72.6	71.5	57.1	-
1	-	-	-	-	-	-	6.0	4.6	4.5	-
2-3	-	-	-	-	-	-	10.4	11.3	19.0	-
4+	-	-	-	-	-	-	10.4	12.2	19.1	86.0
Don't Know/Missing	-	-	-	-	-	-	0.6	0.4	0.3	-
Median Number of Visits (for those with ANC)	-	-	-	-	-	-	2.5	-	-	-
Number of Months Pregnant at Time of First ANC Visit, %										
No antenatal care	-	-	-	-	-	-	72.6	71.5	57.1	-
<4 months	-	-	-	-	-	-	6.2	6.4	11.2	-
4-5 months	-	-	-	-	-	-	9.7	9.7	16.5	-
6-7 months	-	-	-	-	-	-	7.9	9.1	12.1	-
8+ months	-	-	-	-	-	-	3.1	3.0	2.8	-
Don't Know/Missing	-	-	-	-	-	-	0.5	0.4	0.3	-
Median Months Pregnant at First Visit (for those with ANC)	-	-	-	-	-	-	5.5	5.6	5.2	-
Birth Attendant, %										
Skilled Provider	3.1	3.7	10.1	4.9	4.8	8.1	5.6	5.7	10.0	62.0
HEW	-	-	0.6	-	-	0.9	-	-	0.9	38.0
Skilled Provider or HEW	-	-	10.7	-	-	9.0	-	-	10.9	-
Place of Delivery, %										
Facility	2.8	3.5	10.2	4.3	4.3	8.0	5.0	5.3	9.9	
PNC Visit ≤ 2 Days of Birth, %										
Any Provider	0.5	3.3	-	2.4	3.7	-	2.4	4.6	6.7	78.0

* As set in HSDP-IV (Nov 2010)

†For ANC, delivery and PNC, women list all providers, thus since some women had both a skilled provider and a HEW, the sum of these individual categories can be greater than the combined category for "Skilled Provider or HEW."

‡ Physician, Health Officer/Clinical Officer, Nurse, Midwife

Table 4. Ethiopian Maternal and Newborn Health Targets (2010-2015), HSDP-IV

Indicator	Baseline (2010)	Target (2015)
ANC Coverage, ≥1 Visit	68%	90%
ANC Coverage, ≥4 Visits	31%	86%
Births Attended by Skilled Health Personnel	18%	62%
Births Attended by HEW (Clean and Safe Delivery)	11%	38%
Early PNC Coverage (≤ 2 Days of Birth)	34%	78%
Newborns Who Received 2 Home Visits in the First Week of Birth	5%	65%
Availability of BEmOC	5%	100%
Availability of CEmOC	51%	100%
Caesarean Section Rate	1%	7%

Table 5. Human Resources for Health in Amhara and Oromiya Regions, Ethiopia (2009), HSDP-IV

Region	Physician (GP, specialist)		Health Officer (HO)		Nurses		Midwives		HEW	
	No.	Ratio (No.: Pop)	No.	Ratio (No.: Pop)	No.	Ratio (No.: Pop)	No.	Ratio (No.: Pop)	No.	Ratio (No.: Pop)
Amhara	304	1:58,567	434	1:41,024	3,790	1:4,698	212	1:83,983	7,471	1:2,383
Oromiya	378	1:76,075	448	1:64,189	5,040	1:5,706	287	1:100,197	13,856	1:2,075
fMoH Target	-	1:14,662	-	1:63,785	-	1:4,725	-	1:6,759	-	1:2,500
WHO Standard	-	1:10,000	-	-	-	1:5,000	-	-	-	-

Table 6. MaNHEP Project Area Population Amhara Region, Ethiopia

Zone	Woreda	Health Center	Health Post / Kebele	MaNHEP Project Pop.			Total Woreda Pop.	MaNHEP Pop. / Woreda Pop.
				Male	Female	Total		
West Gojam	**Mecha**	Merawi	Bachima	5096	4996	10092		
			Enachenifalen	4772	4629	9401		
			Enaminret	3182	3119	6301		
			KuretBahir	3550	3480	7030		
		Birakat	Meder Genet	2931	2873	5804		
			ZemeneHiwot	4828	4752	9580		
			TatekGebrie	3074	3013	6087		
			Birakat	4094	4013	8107		
		Subtotal		**31,527**	**30,875**	**62,402**	**307,703**	**20.3%**
	S. Achefer	Durbete	AbchekliZuria	4787	4884	9671		
			Ahuri	5542	5654	11196		
			Care	4888	4986	9874		
			Guta	4859	4957	9816		
		Lalibela	Korench	3023	3084	6107		
			Lalibela	4534	4626	9160		
			Dilamo	2373	2421	4794		
		Subtotal		**30,006**	**30,612**	**60,618**	**165,800**	**36.6%**
	N. Achefer	Liben	LibenZuria	3108	3170	6278		
			Kongerie	3597	3669	7266		
			Dembola	3072	3134	6206		
		Yismala	YismalaJankit	4267	4353	8620		
			Shambela	3419	3488	6907		
			Ambeshen	4710	4804	9514		
			Kuala Baka	3185	3250	6435		
		Subtotal		**25,358**	**25,868**	**51,226**	**184,255**	**27.8%**
	Total			**86,891**	**87,355**	**174,246**	**657,758**	**28.2%**

Table 7. MaNHEP Project Area Population Oromiya Region, Ethiopia

Zone	Woreda	Health Center	Health Post / Kebele	MaNHEP Project Pop.			Total Woreda	MaNHEP Pop. / Woreda Pop.
				Male	Female	Total		
North Shoa	Degem	Hambisso	TumanoAbdi	3671	3821	7492		
			Anokere	2402	2502	4904		
			ElemuEferso	2529	2634	5163		
			Ano Degem	2286	2380	4666		
			Raso Menya	1718	1790	3508		
		Ali Doro	AlidoroAbo	2683	2793	5476		
			Anajiru Gedam	2334	2430	4764		
			Yaya Haro	3598	3746	7344		
		Subtotal		**21,221**	**22,096**	**43,317**	**109,215**	**39.7%**
	Kuyu	G.Guracha	DebanaAgalu	3170	3300	6470		
			Sanbo Cheka	1620	1688	3308		
			Wuye Gose	3551	3696	7247		
			Liban Kura	4327	4505	8832		
			Dire Hacho	2467	2568	5035		
		Birity	Birity	3499	3642	7141		
			Hariro Derso	1344	1399	2743		
			Bonde Gidabo	3527	3671	7198		
			Hamuma Wuchale	1923	2003	3926		
			Roge Kolati	3144	3273	6417		
		Subtotal		**28,572**	**29,745**	**58,317**	**138,513**	**42.1%**
	Warajarso	Gohatsiyon	Wale Chilelu	1650	1718	3368		
			LenchoBorsu	4493	4677	9170		
			AboKeku	4319	4497	8816		
			JarsoTuti	2153	2242	4395		
			JemoBardada	3558	3704	7262		
		Tulu Milky	AboYeyebena	4373	4552	8925		
			MeleyuChewa	3874	4034	7908		
			NonoGondin	3762	3916	7678		
			Bitomilky	3243	3377	6620		
		Subtotal		**31,425**	**32,717**	**64,142**	**182,251**	**35.2%**
	Total			**81,218**	**84,558**	**165,776**	**429,979**	**39.0%**

Table 8. Sample Size for All Three Surveys, by Region, Woreda, Health Center and Kebele (Univariate Analysis)

Region (n=2)	Woreda (n=6)	Health Center (n=12)	Kebele (k=40)	MOMS (n=1027)	ADULTS			FLW
					Men (n=248)	Women (n=253)	Total (n=501)	HEWs (n=61)
Amhara	**Mecha**	**Merawi**	Bachima	21	5	7	12	3
			Enachenifalen	22	5	8	13	3
			Enaminret	25	6	7	13	-
			Enguti	22	3	7	10	1
			Kudmi	18	6	6	12	1
			Kuret Bahir	21	1	2	3	2
			Subtotal (k=6)	129	26	37	63	10
		Birakat	Birakat	19	7	5	12	2
			Zemene Hiwot	14	7	5	12	1
			Subtotal (k=2)	33	14	10	24	3
		Subtotal (k=8)		162	40	47	87	13
	North Achefer	**Liben**	Dembola	24	6	7	13	2
			Kongerie	22	5	6	11	1
			Liben Zuria	21	7	4	11	2
			Subtotal (k=3)	67	18	17	35	5
		Yismala	Ambeshen	26	7	4	11	1
			KualaBaka	25	7	4	11	1
			Shambela	17	4	4	8	1
			Yismala Jankit	23	3	6	9	3
			Subtotal (k=4)	91	21	18	39	6
		Subtotal (k=7)		158	39	35	74	11
	South Achefer	**Durbete**	Abchekli Zuria	25	6	6	12	2
			Ahuri	22	6	6	12	1
			Care	24	6	4	10	2
			Guta	29	8	5	13	1
			Subtotal (k=4)	100	26	21	47	6
		Lalibela	Dilamo	28	7	11	18	1
			Korench	22	5	7	12	2
			Lalibela	23	3	2	5	2
			Subtotal (k=3)	73	15	20	35	5
		Subtotal (k=7)		173	41	41	82	11
	Subtotal (k=22)			534	120	123	243	35
Oromiya	**Degem**	**Hambiso**	Ano Degem	34	4	4	8	-
			Anokere	43	5	2	7	3
			Elemu Eferso	32	3	3	6	2
			TumanoAbdi	38	4	5	9	1
			Subtotal (k=4)	147	16	14	30	6
		Ali Doro	Alidoro Abo	20	11	9	20	1
			Anajuru Bishandimo	47	13	14	27	1
			Subtotal (k=2)	67	24	23	47	2
		Subtotal (k=6)		214	40	37	77	8
	Kuyu	**G. Guracha**	Debana Agalu	21	18	11	29	2
			Liban Kura	50	18	9	27	2
			Sanbo Cheka	21	4	5	9	2
			Wuye Gose	21	-	-	-	1
			Subtotal (k=4)	113	40	25	65	7
		Birity	Birity	20	7	6	13	-
			Bonde Gidabo	38	9	8	17	1
			Subtotal (k=2)	58	16	14	30	1
		Subtotal (k=6)		171	56	39	95	8
	Warajarso	**Gohatsiyon**	Abo Keku	26	5	5	10	1
			Jarso Tuti	18	3	6	9	2
			Jemo Bardada	32	12	11	23	2
			Lencho Borsu	36	0	4	4	4
			Wale Chilelu	19	12	7	19	-
			Subtotal (k=5)	131	32	33	65	9
		Tulu Milky	Bitomilky	18	0	21	21	1
			Subtotal (k=1)	18	0	21	21	1
		Subtotal (k=6)		149	32	54	86	10
	Subtotal (k=18)			493	128	130	258	26

Table 9. Exclusions for Multilevel Analysis and Final Sample Size

Final Sample	Kebele (k=5)	MOMS (n=119)	ADULTS			FLW HEWs (n=1)
			Men (n=29)	Women (n=24)	Total (n=53)	
Excluded if not sampled for any one of the three surveys	Enaminret	25	6	7	13	-
	Ano Degem	34	4	4	8	-
	Wuye Gose	21	-	-	-	1
	Birity	20	7	6	13	-
	Wale Chilelu	19	12	7	19	-

Table 10. Sample Size for All Three Surveys, by Region, Woreda, Health Center and Kebele (Bivariate and Multilevel Analysis)

Region (n=2)	Woreda (n=6)	Health Center (n=12)	Kebele (k=35)	MOMS (n=908)	ADULTS			FLW HEWs (n=60)
					Men (n=219)	Women (n=229)	Total (n=448)	
Amhara	**Mecha**	**Merawi**	Bachima	21	5	7	12	3
			Enachenifalen	22	5	8	13	3
			Enguti	22	3	7	10	1
			Kudmi	18	6	6	12	1
			Kuret Bahir	21	1	2	3	2
			Subtotal (k=5)	104	20	30	50	10
		Birakat	Birakat	19	7	5	12	2
			Zemene Hiwot	14	7	5	12	1
			Subtotal (k=2)	33	14	10	24	3
		Subtotal (k=7)		137	34	40	74	13
	North Achefer	**Liben**	Dembola	24	6	7	13	2
			Kongerie	22	5	6	11	1
			Liben Zuria	21	7	4	11	2
			Subtotal (k=3)	67	18	17	35	5
		Yismala	Ambeshen	26	7	4	11	1
			KualaBaka	25	7	4	11	1
			Shambela	17	4	4	8	1
			Yismala Jankit	23	3	6	9	3
			Subtotal (k=4)	91	21	18	39	6
		Subtotal (k=7)		158	39	35	74	11
	South Achefer	**Durbete**	Abchekli Zuria	25	6	6	12	2
			Ahuri	22	6	6	12	1
			Care	24	6	4	10	2
			Guta	29	8	5	13	1
			Subtotal (k=4)	100	26	21	47	6
		Lalibela	Dilamo	28	7	11	18	1
			Korench	22	5	7	12	2
			Lalibela	23	3	2	5	2
			Subtotal (k=3)	73	15	20	35	5
		Subtotal (k=7)		173	41	41	82	11
	Subtotal (k=21)			468	114	116	230	35
Oromiya	**Degem**	**Hambiso**	Anokere	43	5	2	7	3
			Elemu Eferso	32	3	3	6	2
			TumanoAbdi	38	4	5	9	1
			Subtotal (k=3)	113	12	10	22	6
		Ali Doro	Alidoro Abo	20	11	9	20	1
			Anajuru	47	13	14	27	1
			Bishandimo					
			Subtotal (k=2)	67	24	23	47	2
		Subtotal (k=5)		214	40	37	77	8
	Kuyu	**G. Guracha**	Debana Agalu	21	18	11	29	2
			Liban Kura	50	18	9	27	2
			Sanbo Cheka	21	4	5	9	2
			Subtotal (k=3)	92	40	25	65	6
			Bonde Gidabo	38	9	8	17	1
			Subtotal (k=1)	38	9	8	17	1
		Subtotal (k=4)		171	56	39	95	8
	Warajarso	**Gohatsiyon**	Abo Keku	26	5	5	10	1
			Jarso Tuti	18	3	6	9	2
			Jemo Bardada	32	12	11	23	2
			Lencho Borsu	36	0	4	4	4
			Subtotal (k=4)	112	20	26	46	9
		Tulu Milky	Bitomilky	18	0	21	21	1
			Subtotal (k=1)	18	0	21	21	1
		Subtotal (k=6)		149	32	54	86	10
	Subtotal (k=13)			493	128	130	258	26

Table 11. Exposure Variables by Screening Conceptual Domain, Individual-level (MOMS)

Domain	Antenatal Care	Delivery	Postnatal Care	Misoprostol
Knowledge, Attitudes and Practices Primary Modifiable Factors	**HBLSS Knowledge Index** Others represented in domain: • Adherence to Traditional Practices Index • Care-Seeking Behaviors and Attitudes Index	**HBLSS Knowledge Index** Others represented in domain: • Adherence to Traditional Practices Index Care-Seeking Behaviors and Attitudes Index	**HBLSS Knowledge Index** Others represented in domain: • Adherence to Traditional Practices Index Care-Seeking Behaviors and Attitudes Index	**HBLSS Knowledge Index** Others represented in domain: • Adherence to Traditional Practices Index Care-Seeking Behaviors and Attitudes Index
Trust Primary Modifiable Factor	**Trust HEW for ANC** Others represented in domain: • Know How to Reach HEW	**Trust HEW for Delivery** Others represented in domain: • Know How to Reach HEW	**Trust HEW for PNC** Others represented in domain: • Know How to Reach HEW	**Trust HEW for Delivery** Others represented in domain: • Know How to Reach HEW
Continuity of Care Secondary Modifiable Factors		• ANC from a Skilled Provider or HEW	• ANC from a Skilled Provider or HEW • Delivery Care from a Skilled Provider or HEW	• ANC from a Skilled Provider or HEW • Delivery Care from a Skilled Provider or HEW
Sociodemographic Factors Potential Confounders	• Age • Age at Marriage • Parity • History of an Infant Death • Education • Personal Income • Spouse's Education • Spouse's Income • Modern Contraceptive Use	• Age • Age at Marriage • Parity • History of an Infant Death • Education • Personal Income • Spouse's Education • Spouse's Income • Modern Contraceptive Use	• Age • Age at Marriage • Parity • History of an Infant Death • Education • Personal Income • Spouse's Education • Spouse's Income • Modern Contraceptive Use	• Age • Age at Marriage • Parity • History of an Infant Death • Education • Personal Income • Spouse's Education • Spouse's Income • Modern Contraceptive Use

Table 12. Exposure Variables by Screening Conceptual Domain, Kebele-level (ADULTS)

Domain	Antenatal Care	Delivery	Postnatal Care	Misoprostol
Knowledge, Attitudes and Practices	HBLSS Knowledge Index	HBLSS Knowledge Index	HBLSS Knowledge Index	HBLSS Knowledge Index
Secondary Modifiable Factors	Others represented in domain: • Adherence to Traditional Practices Index • Care-Seeking Behaviors and Attitudes Index	Others represented in domain: • Adherence to Traditional Practices Index • Care-Seeking Behaviors and Attitudes Index	Others represented in domain: • Adherence to Traditional Practices Index • Care-Seeking Behaviors and Attitudes Index	Others represented in domain: • Adherence to Traditional Practices Index • Care-Seeking Behaviors and Attitudes Index
Sociodemographic Factors Potential Confounders	• Average Proportion of Women with Education • Average Proportion of Women with Personal Income	• Average Proportion of Women with Education • Average Proportion of Women with Personal Income	• Average Proportion of Women with Education • Average Proportion of Women with Personal Income	• Average Proportion of Women with Education • Average Proportion of Women with Personal Income
	Others represented in domain: • Average Proportion of Adults with Education • Average Proportion of Adults with Personal Income	Others represented in domain: • Average Proportion of Adults with Education • Average Proportion of Adults with Personal Income	Others represented in domain: • Average Proportion of Adults with Education • Average Proportion of Adults with Personal Income	Others represented in domain: • Average Proportion of Adults with Education • Average Proportion of Adults with Personal Income

Table 13. Exposure Variables by Screening Conceptual Domain, Kebele-level (FLWs)

Domain	Antenatal Care	Delivery	Postnatal Care	Misoprostol
Teamwork Secondary modifiable factors	FLW Interaction Frequency Others represented in domain: • Self-identification as part of a team • Teamwork quality score	FLW Interaction Frequency Others represented in domain: • Self-identification as part of a team • Teamwork quality score	FLW Interaction Frequency Others represented in domain: • Self-identification as part of a team • Teamwork quality score	FLW Interaction Frequency Others represented in domain: • Self-identification as part of a team • Teamwork quality score
Health Service Capacity Secondary modifiable factors	• Number of Women Provide ANC per month • Have ANC Supplies • Have Misoprostol Supplies • Work Experience • General Confidence in ANC Provision • Specific Confidence Index • Challenges Index	• Number of Women Provide Delivery Care per month • Have Delivery Supplies • Have Misoprostol Supplies • Work Experience • General Confidence in Delivery Provision • Specific Confidence Index • Challenges Index	• Number of Women Provide PNC per month • Have PNC Supplies • Work Experience • General Confidence in PNC Provision • Specific Confidence Index • Challenges Index	• Number of Women Provide Delivery Care per month • Have Delivery Supplies • Have Misoprostol Supplies • Work Experience • General Confidence in Delivery Provision • Specific Confidence Index • Challenges Index
Knowledge, Attitudes, Practice Secondary modifiable factors	• HEW Clean and Safe Birth Training • HBLSS Knowledge Index • Adherence to Traditional Practices Index • Care-Seeking Behaviors Index	• HEW Clean and Safe Birth Training • HBLSS Knowledge Index • Adherence to Traditional Practices Index • Care-Seeking Behaviors Index	• HEW Clean and Safe Birth Training • HBLSS Knowledge Index • Adherence to Traditional Practices Index • Care-Seeking Behaviors Index	• HEW Clean and Safe Birth Training • HBLSS Knowledge Index • Adherence to Traditional Practices Index • Care-Seeking Behaviors Index
Sociodemographic Potential Confounders	• Age • Parity • Years of Schooling	• Age • Parity • Years of Schooling	• Age • Parity • Years of Schooling	• Age • Parity • Years of Schooling
Distance to Health Centers, Potential Confounder	• Distance to Health Centers	• Distance to Health Centers	• Distance to Health Centers	• Distance to Health Centers

Table 14. Background Characteristics of Women with a Pregnancy in the Year Prior to the Survey (MOMS Survey, June-July 2010), by Region

Indicator	Amhara (n=493)	Oromiya (n=534)	Total (n=1027)	p-value*
Age, n(%)				
15-19	34 (7.0)	28 (5.2)	62 (6.0)	<0.001**
20-34	239 (48.9)	388(72.7)	627(61.3)	
35+	32 (6.5)	96 (18.0)	128(12.5)	
Don't Know	184(37.6)	22 (4.1)	206(20.1)	
Age				
mean (SD)	25.7(5.7)	28.0(6.4)	27.2(6.2)	<0.001**
Marital Status, n(%)				
Single (Never Married)	2(0.4)	3(0.6)	5(0.5)	0.04*
Married	469(95.3)	489(91.6)	958(93.4)	
Divorced/Widowed	21(4.3)	42(7.9)	63(6.1)	
Education, n(%)				
Any	75 (15.2)	163(30.5)	238(23.2)	<0.001**
None	418(84.8)	371(69.5)	789(76.8)	
Religion, n(%)				
Christian Orthodox	490 (99.6)	527(98.7)	1017(99.1)	0.29
Christian Protestant	2(0.4)	4(0.8)	6(0.6)	
Other	0(0.0)	3(0.6)	3(0.3)	
Own Cash Income, n(%)				
Any in Last Month	41(8.4)	97(18.2)	138(13.5)	<0.001**
None in Last Month	448(91.6)	437(81.8)	885(86.5)	
Parity, n(%)				
1	73(14.9)	84(15.9)	157(15.4)	0.47
2-3	187(38.2)	177(33.4)	364(35.7)	
4-5	132(26.9)	154(29.1)	286(28.0)	
6+	98(20.0)	115(21.7)	213(20.9)	
Last Baby Born Alive, n(%)†				
Yes	491(99.6)	527(98.9)	1018(99.2)	0.29
No	2(0.4)	6(1.1)	8(0.8)	
Stillbirth Rate				
Still births per 1,000 live births	4.1	11.2	7.8	0.29
History of An Infant Death (≤ 1 Year), n(%)				
Any	88(17.9)	113(21.2)	201(19.6)	0.21
None	405(82.2)	421(78.8)	826(80.4)	
Number of Infant Deaths (≤1 Year), n(%)				
0	404(82.1)	420(78.8)	824(80.4)	0.16
1	65(13.2)	70(13.1)	135(13.2)	
2	14(2.9)	24(4.5)	38(3.7)	
3+	5(1.0)	15(2.8)	20(2.0)	
Don't Know	4(0.8)	4(0.8)	8(0.8)	
Current Number of Living Children, n(%)				
0	1(0.2)	1(0.2)	2(0.2)	0.51
1-2	175(35.5)	180(33.8)	355(34.6)	
3-4	167(33.9)	167(31.3)	334(32.6)	
5+	150(30.4)	185(34.7)	335(32.7)	

* Fisher's Exact Two-sided p-values, *: p<0.05, **: p<0.001.
† The baby experience for which this survey asks specific questions for.

Sex Ratio Among Living Children				
Males per 100 Females	122	108	114	
Age at Marriage (Exact Age First Married by), n(%)				
15 years	144(51.8)	158(33.6)	302(40.3)	
18 years	222(79.9)	362(76.9)	584(78.0)	
20 years	249(89.6)	422(89.6)	671(89.6)	
22 years	263(94.6)	441(93.6)	704(94.0)	
25 years	270(97.1)	457(97.0)	727(97.1)	
Never Married	2(0.4)	3(0.6)	5(0.7)	
Don't Know/Missing (of total sample)	215(43.6)	63(11.8)	278(27.1)	
Age at Marriage, n(%)				
≤15 years	144 (57.4)	158(37.2)	302(44.7)	<0.001**
16-18 years	78(31.1)	204(48.0)	282(41.7)	
19+ years	27(10.8)	60(14.1)	87(12.9)	
Never Married	2(0.8)	3(0.7)	5(0.7)	
Age at First Marriage, mean (SD)				
	15.1 (5.0)	17.1(3.5)	16.4(4.2)	<0.001**
Spouse's Education, n(%)[*]				
Any	123(28.1)	188(38.0)	311(33.3)	0.001*
None	315(71.9)	307(62.0)	622(66.7)	
Spouse's Cash Income, n(%)[†]				
Any in Last Month	38(8.1)	115(23.1)	153(15.8)	<0.001**
None in Last Month	431(91.9)	383(76.9)	814(84..2)	
Spouse's Age at Marriage (Exact Age First Married by), n(%)				
15 years	9(5.8)	7(2.1)	16(3.3)	
18 years	21(13.6)	42(12.7)	63(13.0)	
20 years	41(26.6)	77(23.2)	118(24.3)	
22 years	25(16.2)	57(17.2)	82(16.9)	
25 years	34(22.1)	82(24.7)	116(23.9)	
25+ years	24(15.6)	67(20.2)	91(18.7)	
Don't Know/Missing (of total sample)	339(68.8)	202(37.8)	541(52.7)	
Spouse's Age at Marriage, n(%)[‡]				
≤15 years	9(5.8)	7(2.1)	16(3.3)	0.09*
16-18 years	21(13.6)	42(12.7)	63(13.0)	
19+ years	124(80.5)	283(85.2)	407(83.7)	
Spouse's Age at First Marriage, mean (SD)				
	21.9(5.7)	22.9(5.1)	22.6(5.3)	0.04*
Household Land Ownership, n(%)				
Any	326(66.4)	325(61.1)	651(63.6)	0.08
None	165(33.6)	207(38.9)	372(36.4)	

[*] Don't Know/Missing, Amhara: 55(11.2), Oromiya: 39(7.3).
[†] Don't Know/Missing, Amhara: 24(4.9), Oromiya: 36(6.7).
[‡] Don't Know/Missing, Amhara: 339(68.8), Oromiya: 202(37.8).

Table 15. Bivariate Analysis of Women's Age and Selected Potential Confounders, Amhara and Oromiya Regions, Ethiopia, (MOMs Survey, June-July 2010)

Characteristic, n(%)		**Age** (yrs)*				**Total** (n=904)	**p-value**†
		15-19 (n=53)	**20-34** (n=544)	**35+** (n=108)	**Don't Know** (n=199)		
Education (Woman)	**Any**	29(54.7)	155(28.5)	15(13.9)	10(5.0)	209(23.1)	<0.001**
	None	24(45.3)	389(71.5)	93(86.1)	189(95.0)	695(76.9)	
Income‡ (Woman)	**Any**	6(11.3)	95(17.5)	13(12.0)	5(2.5)	119(13.2)	<0.001**
	None	47(88.7)	448(82.5)	95(88.0)	192(97.5)	782(86.8)	
Education§ (Spouse)	**Any**	27(55.1)	181(36.1)	24(24.0)	32(18.8)	264(32.2)	<0.001**
	None	22(44.9)	320(63.9)	76(76.0)	138(81.2)	556(67.8)	
Income** (Spouse)	**Any**	8(16.7)	99(19.3)	15(14.4)	10(5.3)	132(15.5)	<0.001**
	None	40(83.3)	414(80.7)	89(85.6)	178(94.7)	721(84.5)	

* Missing=4, (0.4%)
† Wald Test Two-sided p-values, *: p<0.05, **: p<0.001.
‡ Missing=3, (0.3%)
§ Missing=85, (9%).
** Missing=52, (6%)

Table 16. Health Service Utilization Characteristics of Women with a Pregnancy in the Year Prior to the Survey (MOMS Survey, June-July 2010), by Region

Indicator	Amhara (n=493)	Oromiya (n=534)	Total (n=1027)	p-value*
Current Use of Contraception, n(%)†				
Any Method (Contraceptive Prevalence Rate)‡	142(28.8)	263(49.3)	405(39.4)	<0.001**
Any Modern Method	140(28.5)	253(47.4)	393(38.3)	<0.001**
Female Sterilization	0(0.0)	0(0.0)	0(0.0)	-
Male Sterilization	0(0.0)	0(0.0)	0(0.0)	-
Oral Pills	6(1.2)	30(5.6)	36(3.5)	<0.001**
Intrauterine Device	0(0.0)	3(0.6)	3(0.3)	0.25
Injections	130(26.4)	235(44.0)	365(35.6)	<0.001**
Implant	6(1.2)	11(2.1)	17(1.7)	0.34
Male Condom	0(0.0)	1(0.2)	1(0.1)	0.99
Female Condom	0(0.0)	0(0.0)	0(0.0)	-
Other Modern§	0(0.0)	0(0.0)	0(0.0)	-
Any Traditional Method	1(0.2)	10(1.9)	11(1.1)	<0.001**
Rhythm/Standard Days	0(0.0)	3(0.6)	3(0.3)	0.25
Withdrawal	0(0.0)	0(0.0)	0(0.0)	-
Lactational Amenorrhoea	1(0.2)	4(0.8)	5(0.5)	0.38
Other Traditional	0 (0.0)	3(0.6)	3(0.3)	0.25
Not Currently Using	351(71.3)	271(50.8)	622(60.6)	<0.001**
Number of ANC Visits, n(%)				
None	259(52.5)	268(50.6)	527(51.5)	0.003*
1	21(4.3)	11(2.1)	32(3.1)	
2-3	119(24.1)	131(24.7)	250(24.4)	
4+	65(13.2)	105(19.8)	170(16.6)	
Don't Know/Missing	29(5.9)	15(2.8)	44(4.3)	
Mean Number of Visits, mean (SD)**				
	3.4(2.0)	3.7(1.6)	3.5 (1.8)	0.14
Month of ANC Initiation, n(%)**				
No antenatal care	259(52.5)	268(50.6)	527(51.5)	<0.001**
<4 months	33(6.7)	89(16.8)	122(11.9)	
4-5 months	82(16.6)	86(16.2)	168(16.4)	
6-7 months	81(16.4)	68(12.8)	149(14.6)	
8+ months	18(3.7)	11(2.1)	29(2.8)	
Don't Know	20(4.1)	8(1.5)	28(2.7)	
Month of ANC Initiation, mean(SD)**				
	5.2(1.6)	4.5(1.9)	4.8(1.8)	<0.001**
ANC Provider, n(%)††				
Physician	47(9.5)	25(4.7)	72(7.0)	0.004*
Health Officer/Clinical Officer	3(0.6)	12(2.3)	15(1.5)	0.089*
Nurse	84(17.0)	88(16.5)	172(16.8)	0.77
Midwife	26(5.3)	10(1.9)	36(3.5)	0.007*
HEW	53(10.8)	131(24.75)	184(17.9)	<0.001**
TBA (trained or untrained)	5(1.0)	22(4.1)	27(2.6)	0.002*
CHDA	1(0.2)	6(1.1)	7(0.7)	0.21
Family/Friend/Other Non-Trained	33(6.7)	6(1.1)	39(3.8)	<0.001**
None	259(52.5)	268(50.2)	527(51.3)	0.16

* Fisher's Exact Two-sided p-values, *: p<0.05, **: p<0.001.
† Proportions may not equal 100% since some women are using more than one method.
‡ Proportion of women of reproductive age using any type of contraceptive method (modern or traditional) at any given point in time.
§ Other modern methods include female condom, diaphragm/foam/jelly.
** Among women with any ANC.
†† Proportions may not equal 100% since some women may have more than one ANC provider.

Indicator	Amhara (n=493)	Oromiya (n=534)	Total (n=1027)	p-value*
Payment for ANC Services, n(%)*				
Any	29(12.4)	36(13.7)	66(13.1)	0.69
None	205(87.6)	226(86.3)	431(86.9)	
Knowledge of Pregnancy Complications, n(%)				
High Fever	66(13.4)	86(16.1)	152(14.8)	<0.001**
Severe Headache/ Blurred Vision	33(6.7)	41(7.7)	74(7.2)	<0.001**
Swelling of Hands and Face	30(6.1)	29(5.4)	59(5.7)	<0.001**
Retained Placenta	93(18.9)	133(24.9)	226(22.0)	<0.001**
Convulsions/Fit/Eclampsia	45(9.1)	29(5.4)	74(7.2)	<0.001**
Any Amount of Vaginal Bleeding	55(11.2)	70(13.1)	125(12.2)	<0.001**
Foul Smelling Discharge	9(1.8)	58(10.9)	67(6.5)	<0.001**
Labor >12 Hours	61(12.4)	18(3.4)	79(7.7)	<0.001**
Malpresentation of Baby	31(6.3)	6(1.1)	37(3.6)	<0.001**
Other	25(5.1)	12(2.3)	37(3.6)	<0.001**
Don't Know	35(7.1)	2(0.4)	37(3.6)	<0.001**
Place of Delivery, n(%)				
Home	460 (93.9)	451 (86.6)	911 (90.1)	<0.001**
Facility (not including Health Post)	30 (6.1)	23 (4.4)	53 (5.2)	
Health Post	0 (0.0)	40 (7.7)	40 (4.0)	
Other	0 (0.0)	7 (1.3)	7 (0.7)	
Birth Attendant, n(%)†				
Physician	13(2.6)	29(5.4)	42(4.1)	<0.001**
Health Officer/Clinical Officer	1(0.2)	7(1.3)	8(0.8)	<0.001**
Nurse	17(3.5)	19(3.6)	36(3.5)	<0.001**
Midwife	9(1.8)	8(1.5)	17(1.7)	<0.001**
HEW	16(3.3)	51(9.6)	67(6.5)	<0.001**
TBA (Trained or Untrained)	57(11.6)	124(23.2)	181(17.6)	<0.001**
CHDA	2(0.4)	12(2.3)	14(1.4)	<0.001**
Family/Friend/Other Non-Trained	399(80.9)	305(57.1)	704(68.6)	<0.001**
Mother	110(22.3)	129(24.2)	239(23.3)	<0.001**
Mother-in-Law	79(16.0)	117(21.9)	196(19.1)	<0.001**
Sister	19(3.9)	37(6.9)	56(5.5)	<0.001**
Other family	19(3.9)	16(3.0)	35(3.4)	<0.001**
Neighbors/Friends	323(65.6)	185(34.6)	508(49.5)	<0.001**
Other Non-trained	15(3.0)	6(1.1)	21(2.0)	<0.001**
None	42(8.5)	98(18.4)	140(13.6)	<0.001**
Payment for Delivery Services, n(%)‡				
Any	36(8.0)	54(12.4)	90(10.2)	0.03*
None	415(92.0)	382(87.6)	797(89.9)	
Time After Delivery for First PNC for Woman, n(%)				
Immediately	35(7.1)	86(16.2)	121(11.8)	<0.001**
<4 Hours (Not Immediately)	5(1.0)	46(8.7)	51(5.0)	
4-23 Hours	3(0.6)	15(2.8)	18(1.8)	
24-48 Hours	9(1.8)	4(0.8)	13(1.3)	
Don't Know (But ≤48 Hours)	2(0.4)	5(0.9)	7(0.7)	
>49 Hours/None§	439(89.1)	376(70.7)	815(79.5)	

* Of women with any ANC.
† Proportions may not equal 100% since some women may have more than one delivery attendant.
‡ Of women with any delivery provider.
§ These categories must be lumped due to the survey skip pattern.

Indicator	Amhara (n=493)	Oromiya (n=534)	Total (n=1027)	p-value*
PNC Provider for Woman, n(%)*				
Physician	4(0.8)	18(3.4)	22(2.1)	<0.001**
Health Officer/Clinical Officer	0(0.0)	2(0.4)	2(0.2)	<0.001**
Nurse	3(0.6)	21(3.9)	24(2.3)	<0.001**
Midwife	2(0.4)	4(0.8)	6(0.6)	<0.001**
HEW	18(3.7)	22(4.1)	40(3.9)	<0.001**
TBA (Trained or Untrained)	1(0.2)	39(7.3)	40(3.9)	<0.001**
CHDA	1(0.2)	4(0.8)	5(0.5)	<0.001**
Family/Friend/Other Non-Trained	29(5.9)	84(15.7)	113(11.0)	<0.001**
Mother	14(2.8)	35(6.6)	49(4.8)	<0.001**
Mother-in-Law	6(1.2)	27(5.1)	33(3.2)	<0.001**
Sister	2(0.4)	11(2.1)	13(1.3)	<0.001**
Other family	3(0.6)	3(0.6)	6(0.6)	<0.001**
Neighbors/Friends	13(2.6)	26(4.9)	39(3.8)	<0.001**
Other Non-trained	2(0.4)	0(0.0)	2(0.2)	<0.001**
None	439(89.1)	376(70.4)	815 (79.4)	<0.001**
Payment for PNC Visit for Mother, n(%)†				
Any	3(5.6)	20(12.8)	23(11.0)	0.21
None	51(94.4)	136(87.2)	192(89.1)	
Time After Delivery for First PNC for Newborn, n(%)				
Immediately	22(4.5)	112(21.0)	134(13.1)	<0.001**
<4 Hours (Not Immediately)	6(1.2)	27(5.1)	33(3.2)	
4-23 Hours	2(0.4)	14(2.6)	16(1.6)	
24-48 Hours	9(1.8)	6(1.1)	15(1.5)	
Don't Know (But ≤48 Hours)	3(0.6)	0(0.0)	3(0.3)	
>49 Hours/None‡	449(91.5)	375(70.2)	824(80.4)	
PNC Provider for Newborn, n(%)§				
Physician	3(0.6)	11(2.1)	14(1.4)	<0.001**
Health Officer/Clinical Officer	0(0.0)	2(0.4)	2(0.2)	<0.001**
Nurse	1(0.2)	24(4.5)	25(2.4)	<0.001**
Midwife	0(0.0)	5(0.9)	5(0.5)	<0.001**
HEW	9(1.8)	30(5.6)	39(3.8)	<0.001**
TBA (Trained or Untrained)	13(2.6)	40(7.5)	53(5.2)	<0.001**
CHDA	1(0.2)	5(0.9)	6(0.6)	<0.001**
Family/Friend/Other Non-Trained	20(4.1)	71(13.3)	91(8.9)	<0.001**
Mother	11(2.2)	31(5.8)	42(4.1)	<0.001**
Mother-in-Law	9(1.8)	31(5.8)	40(3.9)	<0.001**
Sister	3(0.6)	11(2.1)	14(1.4)	<0.001**
Other family	5(1.0)	2(0.4)	7(0.7)	<0.001**
Neighbors/Friends	8(1.6)	14(2.6)	22(2.1)	<0.001**
Other Non-trained	0(0.0)	1(0.2)	1(0.1)	<0.001**
None	449(91.1)	375(70.2)	824(80.2)	<0.001**
Payment for PNC Visit for Newborn, n(%)**				
Any	2(4.8)	4(2.5)	6(3.0)	0.61
None	40(95.2)	155(97.5)	195(97.0)	

* Proportions may not equal 100% since there may be more than one PNC provider for the mother.
† Of those who received a PNC visit for the mother.
‡ These categories must be lumped due to the survey skip pattern.
§ Proportions may not equal 100% since there may be more than one PNC provider for the newborn.
** Of those who received a PNC visit for the newborn.

Indicator	Amhara (n=493)	Oromiya (n=534)	Total (n=1027)	p-value*
Time After Delivery for First PNC for Mother or Newborn, n(%)				
Immediately	35(7.1)	131(24.6)	166(16.2)	<0.001**
<4 Hours (Not Immediately)	6(1.2)	44(8.3)	50(4.9)	
4-23 Hours	3(0.6)	14(2.6)	17(1.7)	
24-48 Hours	10(2.0)	4(0.8)	14(1.4)	
Don't Know (But ≤48 Hours)	3(0.6)	2(0.4)	5(0.5)	
>49 Hours/None*	435(88.4)	337(63.4)	772(75.4)	
PNC Provider for Mother or Newborn, n(%)†				
Physician	4(0.8)	21(3.9)	25(2.4)	<0.001**
Health Officer/Clinical Officer	0(0.0)	3(0.6)	3(0.3)	<0.001**
Nurse	3(0.6)	30(5.6)	33(3.2)	<0.001**
Midwife	2(0.4)	6(1.1)	8(0.8)	<0.001**
HEW	19(3.9)	41(7.7)	60(5.8)	<0.001**
TBA (Trained or Untrained)	13(2.6)	60(11.2)	73(7.1)	<0.001**
CHDA	2(0.4)	8(1.5)	10(1.0)	<0.001**
Family/Friend/Other Non-Trained	32(6.5)	110(20.6)	142(13.8)	<0.001**
Mother	17(3.5)	52(9.7)	69(6.7)	<0.001**
Mother-in-Law	9(1.8)	43(8.1)	52(5.1)	<0.001**
Sister	5(1.0)	17(3.2)	22(2.1)	<0.001**
Other family	7(1.4)	4(0.8)	11(1.1)	<0.001**
Neighbors/Friends	15(3.0)	32(6.0)	47(4.6)	<0.001**
Other Non-trained	2(0.4)	1(0.2)	3(0.3)	<0.001**
None	434(88.0)	337(63.1)	771(75.1)	<0.001**
Payment for PNC Visit for Mother or Newborn, n(%)‡				
Any	4(10.3)	21(16.7)	25(15.2)	0.45
None	35(89.7)	105(83.3)	140(84.9)	

* These categories must be lumped due to the survey skip pattern.
† Indicates if this provider gave a PNC visit for either the mother or newborn. Proportions may not equal 100% since there may be more than one PNC provider for the mother or newborn.
‡ Of those who received a PNC visit for either the mother or the newborn.

Table 17. Bivariate Analysis of Current Use of a Modern Contraceptive Method and Selected Potential Confounders, Amhara and Oromiya Regions, Ethiopia, (MOMs Survey, June-July 2010)

Characteristic, n(%)	**Any** (n=336)	**None** (n=571)	**Total**[*] (n=907)	**p-value**[†]
Age				<0.001**
15-19	10(3.0)	43(7.6)	53(5.9)	
20-34	223(66.6)	321(56.5)	544(60.2)	
35+	43(12.8)	64(11.3)	107(11.9)	
Don't Know	59(17.6)	140(24.7)	199(22.0)	
Parity (categorical)				0.07
1	43(12.8)	97(17.1)	140(15.5)	
2-3	109(32.5)	208(36.8)	317(35.2)	
4-5	106(31.6)	145(25.6)	251(27.9)	
6+	77(23.0)	116(20.5)	193(21.4)	
History of an Infant Death (Any)	57(17.0)	122(21.4)	179(19.8)	0.12
Education (Any)	101(30.1)	108(18.9)	209(23.0)	<0.001**
Personal Cash Income in Last Month (Any)	64(19.1)	56(9.9)	120(13.3)	<0.001**
Spouse's Education (Any)	146(45.5)	119(23.8)	265(32.2)	<0.001**
Spouse's Cash Income in Last Month (Any)	75(23.1)	58(10.9)	133(15.6)	<0.001**
Household Land Ownership (Any)	213(63.8)	367(64.5)	580(64.2)	0.83
Trust HEW for Delivery[‡]	3.0(1.8)	2.1(1.9)	2.5(1.9)	<0.001**
HBLSS Knowledge Index (ordinal)	7.4(5.3)	4.9(4.2)	5.8(4.8)	<0.001**
HBLSS Knowledge Index (tertiles)				<0.001**
Low (Know 0-2 Items)	71(21.9)	201(36.2)	272(30.9)	
Medium (Know 3-8 Items)	117(36.0)	241(43.4)	358(40.6)	
High (Know 9-17 Items)	137(42.2)	114(20.5)	251(28.5)	
Adherence to Traditional Practices Index (ordinal)	6.3(2.7)	7.4(2.6)	7.0(2.7)	<0.001**
Adherence to Traditional Practices Index (tertiles)				<0.001**
Low (Adhere to 0-5 Items)	118(36.7)	125(23.0)	243(28.1)	
Medium (Adhere to 6-8 Items)	130(40.4)	225(41.4)	355(41.0)	
High (Adhere to 9-14 Items)	74(23.0)	194(35.7)	268(31.0)	
Care-Seeking Behaviors Index (ordinal)	9.6(2.3)	8.9(2.1)	9.2(2.2)	<0.001**
Care-Seeking Behaviors Index (tertiles)				<0.001**
Low (Seek for 0-4 Items)	52(16.3)	134(25.1)	186(21.8)	
Medium (Seek for 5-7 Items)	160(50.0)	281(42.4)	441(51.6)	
High (Seek for 8-15 Items)	108(33.8)	120(22.4)	228(26.7)	

[*] Missing: 1 (0.1%)
[†] Wald Test Two-sided p-values, *: p<0.05, **: p<0.001.
[‡] Only among women who had heard of HEWs. This trust scale (1-5) variable is set to 0 for these women.

Table 18. HEW Access and Trust and HBLSS Package Knowledge of Women with a Pregnancy in the Year Prior to the Survey (MOMS Survey, June-July 2010), by Region

Indicator	Amhara (n=493)	Oromiya (n=534)	Total (n=1027)	p-value*
Knowledge of and Access to HEWs, n(%)				
Ever Heard of HEWs	311(63.3)	441(82.6)	752(73.4)	<0.001**
Know HEW in own Kebele	288(59.0)	427(80.1)	715(70.0)	<0.001**
Ever Used HEW Services	273(55.9)	412(77.2)	685(67.0)	<0.001**
Know How to Reach HEW	260(54.1)	397(74.8)	657(64.9)	<0.001**
Trust HEWs to Provide Services, mean(SD)†				
ANC	3.3(1.6)	3.7(1.0)	3.6(1.3)	<0.001**
Delivery	3.1(1.6)	3.6(1.2)	3.4(1.4)	<0.001**
PNC	3.1(1.6)	3.6(1.2)	3.4(1.4)	<0.001**
Knowledge of HBLSS Package Items, n(%)‡				
Safe Birth Plan	68(13.9)	219(41.0)	287(28.0)	<0.001**
Labor Notification	89(18.1)	294(55.1)	383(37.3)	<0.001**
Clean Birth Environment	96(19.5)	298(55.8)	394(38.4)	<0.001**
Clean Hands	82(16.8)	272(51.0)	354(34.6)	<0.001**
Change Positions During Labor	162(32.9)	335(63.0)	497(48.5)	<0.001**
Not Inserting Items in Vagina During Delivery	23(4.7)	119(22.3)	142(13.8)	<0.001**
Clean Cord Care	94(19.1)	331(62.1)	425(41.5)	<0.001**
Checking Baby for Proper Color and Breathing	34(6.9)	211(39.7)	245(23.9)	<0.001**
Neonatal Resuscitation§	6(1.2)	n/a	n/a	n/a
Keeping Baby Warm and Dry After Birth	70(14.3)	301(56.6)	371(36.3)	<0.001**
Immediate Breastfeeding After Delivery	173(35.1)	302(56.6)	475(46.3)	<0.001**
Exclusive Breastfeeding for First Six Months	254(51.6)	355(66.5)	609(59.4)	<0.001**
Proper Positioning During Breastfeeding	143(29.0)	278(52.1)	421(41.0)	<0.001**
Misoprostol Use for PPH	1(0.2)	142(26.7)	143(14.0)	<0.001**
Safe Delivery of Placenta	272(55.2)	250(47.0)	522(50.9)	0.01*
Uterine Massage	31(6.3)	130(24.4)	161(15.7)	<0.001**
Postpartum Check of Mother for Fever/Bleeding	83(16.9)	208(39.3)	291(28.5)	<0.001**
Postpartum Rest for Mother, ≥12 Days After Birth	170(34.6)	258(48.3)	428(41.7)	<0.001**
Overall Score (out of 17 items), mean (SD)	3.8(3.3)	8.1(5.2)	6.0(4.9)	<0.001**

* Fisher's Exact Two-sided p-values, *: p<0.05, **: p<0.001.
† Score on a Trust Scale of 1-5, where 1 indicates least trust while 5 indicates most trust. Only among women who had ever heard of HEWs.
‡ Ever Heard of, for 17 Practices
§ This question was asked in Amhara only, and is not be part of the Overall Score calculation

Table 19. Adherence to Traditional Practices of Women with a Pregnancy in the Year Prior to the Survey (MOMS Survey, June-July 2010), by Region

Indicator	Amhara (n=493)	Oromiya (n=534)	Total (n=1027)	p-value*
Adherence to Traditional Practices, n(%)†				
A mother who has had peaceful births in the past will always have peaceful births in the future.	222(45.8)	172(32.3)	394(38.8)	<0.001**
A woman and family should not prepare for a problem ahead of time because the birth may be peaceful.	145(29.4)	124(23.3)	269(26.2)	0.03*
The seng cord should be tied at both the mother and baby's ends. ‡	233(47.3)	170(31.8)	403(39.2)	<0.001**
If the cord has trouble detaching it should be pulled out in the home.	75(15.3)	80(15.0)	155(15.2)	0.93
A baby's cord should be plastered with butter.	352(72.1)	349(65.6)	701(68.7)	0.03*
The baby should be away from the mother after birth while she sits over the hole to detach the seng.	417(84.6)	234(44.3)	651(63.8)	<0.001**
The first milk is unclean and should not be given to the baby.	312(63.5)	288(54.1)	600(58.7)	0.002*
A baby should be given butter immediately after birth.	268(54.5)	275(51.7)	543(53.0)	0.38
The baby should be washed immediately after birth.	415(84.4)	393(74.0)	808(79.0)	<0.001**
It is best to cut the uvula if it has dropped.	386(78.3)	105(19.7)	491(47.9)	<0.001**
Nothing can be done about excessive bleeding after delivery because it is caused by serqian.	401(82.0)	214(40.3)	615(60.3)	<0.001**
Both women and men can help with delivery.‡	314(64.5)	243(45.7)	557(54.7)	<0.001**
A woman should have the same workload before and after pregnancy.	188(38.6)	133(24.9)	321(31.4)	<0.001**
A mother should take rest only up to 10 days after birth.	342(69.7)	77(14.6)	419(41.1)	<0.001**
Overall Score (out of 14 items), mean (SD)	8.1(2.6)	5.9(2.4)	6.9(2.7)	<0.001**

* Fisher's Exact Two-sided p-values, *: p<0.05, **: p<0.001.
† Whether a woman adheres to a traditional practice (by agreeing or disagreeing with a statement), for 14 statements.
‡ If woman disagreed with this statement then this contributed to the overall score.

Table 20. Care-Seeking Behaviors and Attitudes of Women with a Pregnancy in the Year Prior to the Survey (MOMS Survey, June-July 2010), by Region

Indicator	Amhara (n=493)	Oromiya (n=534)	Total (n=1027)	p-value*
Care-Seeking Behavior and Attitudes, n(%)†				
A woman should tell a health worker when she knows she is pregnant.	361(73.5)	389(72.9)	750(73.2)	0.83
There is no reason for healthy pregnant women to go to check-ups by health workers.‡	271(55.7)	272(51.0)	543(53.2)	0.15
When labor begins, a health worker should be called to the home.	204(41.6)	189(35.4)	393(38.3)	0.046*
If the labor is not serious, then there is no reason to call a health worker.‡	406(83.4)	329(62.2)	735(72.3)	<0.001
A woman should deliver in the home unless the labor is serious.‡	447(91.6)	456(85.6)	903(88.4)	0.003*
Husbands prefer that their wives deliver in a hakim bet.	261(53.8)	347(65.5)	608(59.9)	<0.001**
A woman should go to a health center if the baby comes in a different position.	487(99.6)	500(93.8)	987(96.6)	<0.001**
A woman should go to a health center if the baby is delayed.	487(99.2)	485(91.2)	972(95.0)	<0.001**
A woman should go to a health center if the placenta does not detach.	486(99.2)	507(95.1)	993(97.1)	<0.001**
A woman should go to a health center if the woman experiences serqian.	482(98.2)	500(93.8)	982(95.9)	<0.001**
If the seng does not detach then a traditional doctor [awake] should be called.‡	440(90.2)	285(53.8)	725(71.2)	<0.001**
There is little to be done to save the life of a mother or child – if one dies during delivery, it is just a matter of time.‡	193(39.4)	238(44.7)	431(42.2)	0.09
It is a problem that the health workers are not in the health post when they are needed.	115(23.5)	213(40.0)	328(32.1)	<0.001**
A health worker will come to deliver a baby at nighttime.	247(50.5)	339(63.8)	586(57.5)	<0.001**
HEWs only help with birth spacing and vaccination.‡	363(74.1)	238(44.9)	601(58.9)	<0.001**
Overall Score (out of 15 items), mean (SD)	8.8(2.0)	9.6(2.3)	9.2(2.2)	<0.001**

* Fisher's Exact Two-sided p-values, *: p<0.05, **: p<0.001.
† Whether a woman adheres to a care-seeking behavior or attitude that increases her propensity to seek care (by agreeing or disagreeing with a statement), for 15 statements.
‡ If woman disagreed with this statement then this contributed to the overall score.

Table 21. Background and Health Service Utilization Characteristics of Adult Men and Women over 18 years of Age (ADULTS Survey, June-July 2010), by Gender and by Region

	Amhara				Oromiya				Total	
	Men (n=120)	Women (n=123)	Total (n=243)	p-value	Men (n=128)	Women (n=130)	Total (n=258)	p-value	Total (n=501)	p-value*
Education, n(%)										
Any	44(37.6)	26(21.1)	70(29.2)	0.007*	58(45.7)	86(66.2)	144(56.0)	0.001*	214(43.1)	<0.001*
None	73(62.4)	97(78.9)	170(70.8)		69(54.3)	44(33.9)	113(44.0)		283(56.9)	
Own Cash Income, n(%)										
Any in Last Month	20(16.8)	15(12.4)	35(14.5)	0.37	36(28.1)	42(32.3)	78(30.2)	0.50	113(22.7)	<0.001*
None in Last Month	100(83.3)	106(87.6)	206(85.5)		92(71.9)	88(67.7)	180(69.8)		386(77.4)	
Household Land Ownership, n(%)										
Any	98(82.4)	92(74.8)	190(78.5)	0.16	91(72.2)	103(79.8)	194(76.1)	0.19	384(77.3)	0.52
None	21(17.7)	31(25.2)	52(21.5)		35(27.8)	26(20.2)	61(23.9)		113(22.7)	
Knowledge of and Access to HEWs, n(%)										
Ever Heard of HEWs	98(81.7)	91(74.0)	189(77.8)	0.17	111(88.1)	117(90.0)	228(89.1)	0.69	417(83.6)	<0.001*
Know HEW in own Kebele	95(79.2)	82(68.3)	177(73.8)	0.08	109(87.2)	112(86.8)	221(87.0)	0.99	398(80.6)	<0.001*
Ever Used HEW Services	88(73.3)	78(63.9)	166(68.6)	0.13	94(75.2)	91(70.5)	185(72.8)	0.48	351(70.8)	0.32
Know How to Reach HEW	91(75.8)	80(66.7)	171(71.3)	0.15	98(80.3)	106(82.8)	204(81.6)	0.63	375(76.5)	0.008*
Trust HEWs to Provide Services, mean(SD)†										
ANC	3.5(1.3)	3.8(1.2)	3.7(1.3)	0.10	3.6(1.2)	3.6(1.0)	3.6(1.1)	0.60	3.6(1.2)	0.44
Delivery	3.5(1.3)	3.6(1.2)	3.6(1.3)	0.71	3.6(1.2)	3.5(1.1)	3.5(1.1)	0.86	3.5(1.2)	0.91
PNC	3.5(1.4)	3.6(1.2)	3.5(1.3)	0.49	3.5(1.2)	3.5(1.2)	3.5(1.2)	0.96	3.5(1.3)	0.86

* Fisher's Exact Two-sided p-values, *: p<0.05, **: p<0.001.
† Score on a Trust Scale of 1-5, where 1 indicates least trust while 5 indicates most trust. Only among women who had ever heard of HEWs.

Table 22. Knowledge of HBLSS Package Items Among Adult Men and Women over 18 years of Age (ADULTS Survey, June-July 2010), by Gender and by Region

HBLSS Package Items, n(%)*	Amhara				Oromiya				Total	
	Men (n=120)	Women (n=123)	Total (n=243)	p-value	Men (n=128)	Women (n=130)	Total (n=258)	p-value	Total (n=501)	p-value†
Safe Birth Plan	24(20.2)	22(17.9)	46(19.0)	0.74	122(96.1)	124(95.4)	246(95.7)	0.99	292(58.5)	<0.001**
Labor Notification	37(31.1)	29(23.6)	66(27.3)	0.20	81(63.3)	86(66.2)	167(64.7)	0.70	233(46.6)	<0.001**
Clean Birth Environment	30(25.4)	22(18.0)	52(21.7)	0.21	59(46.1)	57(43.9)	116(45.0)	0.80	168(33.7)	<0.001**
Clean Hands	14(11.8)	18(14.6)	32(13.2)	0.57	72(56.3)	77(59.2)	149(57.8)	0.71	181(36.2)	<0.001**
Change Positions During Labor	48(40.3)	60(48.8)	108(44.6)	0.20	79(61.7)	71(54.6)	150(58.1)	0.26	258(51.6)	0.003*
Not Inserting Items in Vagina During Delivery	18(15.1)	13(10.6)	31(12.8)	0.34	43(33.6)	28(21.5)	71(27.5)	0.04*	102(20.4)	<0.001**
Clean Cord Care	23(19.3)	21(17.1)	44(18.2)	0.74	83(64.8)	83(63.9)	166(64.3)	0.90	210(42.0)	<0.001**
Checking Baby for Proper Color and Breathing	16(13.5)	18(14.6)	34(14.1)	0.85	64(50.0)	52(40.0)	116(45.0)	0.13	150(30.0)	<0.001**
Neonatal Resuscitation‡	0(0.0)	1(0.8)	1(0.4)	0.99	n/a	n/a	n/a	n/a	n/a	n/a
Keeping Baby Warm and Dry After Birth	28(23.5)	32(26.0)	60(24.8)	0.66	79(62.2)	81(62.3)	160(62.3)	0.99	220(44.1)	<0.001**
Immediate Breastfeeding After Delivery	52(43.7)	58(47.2)	110(45.5)	0.61	76(59.4)	78(60.0)	154(59.7)	0.99	264(52.8)	0.002*
Exclusive Breastfeeding for First Six Months	63(52.5)	68(55.3)	131(53.9)	0.70	88(68.8)	92(71.3)	180(70.0)	0.68	311(62.2)	<0.001**
Proper Positioning During Breastfeeding	38(31.7)	41(33.3)	79(32.5)	0.79	74(57.8)	76(58.5)	150(58.1)	0.99	229(45.7)	<0.001**
Misoprostol Use for PPH	0(0.0)	2(1.6)	2(0.8)	0.50	49(38.3)	46(35.4)	95(36.8)	0.70	97(19.4)	<0.001**
Safe Delivery of Placenta	61(51.3)	81(65.9)	142(58.7)	0.03*	60(46.9)	65(50.0)	125(48.5)	0.62	267(53.4)	0.03*
Uterine Massage	5(4.2)	3(2.5)	8(3.3)	0.49	34(26.6)	32(24.6)	66(25.6)	0.78	73(14.7)	<0.001**
Postpartum Check of Mother for Fever/Bleeding	28(23.3)	24(19.5)	52(21.4)	0.53	64(50.0)	72(55.4)	136(52.7)	0.45	188(37.5)	<0.001**
Postpartum Rest for Mother, ≥12 Days After Birth	66(55.0)	59(48.0)	125(51.4)	0.31	71(55.5)	68(52.3)	139(53.9)	0.62	264(52.7)	0.59
Overall Score (out of 17 items), mean (SD)	4.5 (3.1)	4.6 (2.7)	4.6 (2.9)	0.92	9.4 (5.3)	9.1 (4.9)	9.3(5.1)	0.57	7.0 (4.8)	<0.001**

* Ever Heard of, for 17 Practices
† Fisher's Exact Two-sided p-values, *: p<0.05, **: p<0.001.
‡ This question was asked in Amhara only, and is not be part of the Overall Score calculation

Table 23. Adherence to Traditional Practices Among Adult Men and Women over 18 years of Age (ADULTS Survey, June-July 2010), by Gender and by Region

Adherence to Traditional Practices, n(%)*	**Amhara**				**Oromiya**				**Total**	
	Men (n=120)	**Women (n=123)**	**Total (n=243)**	**p-value**	**Men (n=128)**	**Women (n=130)**	**Total (n=258)**	**p-value**	**Total (n=501)**	**p-value†**
A mother who has had peaceful births in the past will always have peaceful births in the future.	50 (41.7)	52 (42.3)	102(42.0)	0.99	41(32.0)	45(35.4)	86 (33.7)	0.60	188(37.8)	0.64
A woman and family should not prepare for a problem ahead of time because the birth may be peaceful.	53(44.9)	49(39.8)	102(42.3)	0.44	25(19.5)	28(21.5)	53(20.5)	0.76	155(31.1)	0.77
The seng cord should be tied at both the mother and baby's ends.‡	55(45.8)	61(49.6)	116(47.7)	0.61	54(42.5)	59(45.4)	113(44.0)	0.71	229(45.8)	0.47
If the cord has trouble detaching it should be pulled out in the home.	14(11.8)	14(11.4)	28(11.6)	0.16	9(7.1)	12(9.2)	21(8.2)	0.65	49(9.8)	0.77
A baby's cord should be plastered with butter.	72(60.5)	81(66.4)	153(63.5)	0.35	58(45.3)	59(45.7)	117(45.5)	0.99	270(54.2)	0.53
The baby should be away from the mother after birth while she sits over the hole to detach the seng.	94(78.3)	95(77.2)	189(77.8)	0.88	53(41.7)	54(41.5)	107(41.6)	0.99	296(59.2)	0.93
The first milk is unclean and should not be given to the baby.	86(71.7)	82(66.7)	168(69.1)	0.41	65(50.8)	73(57.0)	138(53.9)	0.38	306(61.3)	0.85
A baby should be given butter immediately after birth.	80(67.2)	71(57.7)	151(62.4)	0.15	49(38.3)	57(43.9)	106(41.1)	0.38	257(51.4)	0.72
The baby should be washed immediately after birth.	105(87.5)	104(94.6)	209(86.0)	0.58	96(75.0)	98(76.0)	194(75.5)	0.89	403(80.6)	0.82
It is best to cut the uvula if it has dropped.	83(70.3)	87(70.7)	170(70.5)	0.99	13(10.2)	21(16.4)	34(13.3)	0.20	204(41.1)	0.41
Nothing can be done about excessive bleeding after delivery because it is caused by serqian.	92(76.7)	84(68.9)	176(72.7)	0.20	56(44.4)	59(45.7)	115(45.1)	0.90	291(58.6)	0.52
Both women and men can help with delivery‡	85(70.8)	85(69.1)	170(70.0)	0.78	77(60.6)	81(62.8)	158(61.7)	0.80	328(65.7)	0.99
A woman should have the same workload before and after pregnancy.	32(26.7)	32(26.2)	64(26.5)	0.99	19(15.0)	21(16.3)	40(15.6)	0.86	104(20.9)	0.91
A mother should take rest only up to 10 days after birth.	78(65.0)	77(62.6)	155(63.8)	0.79	19(14.8)	12(9.3)	31(12.1)	0.19	186(37.2)	0.41
Overall Score (out of 14 items), mean (SD)	7.9(2.5)	7.6(2.6)	7.7(2.5)	0.26	5.0 (2.4)	5.1(2.4)	5.0(2.4)	0.65	6.4(2.8)	<0.001*

* Whether the respondent adheres to a traditional practice (by agreeing or disagreeing with a statement), for 14 statements.
† Fisher's Exact Two-sided p-values, *: p<0.05, **: p<0.001.
‡ If woman disagreed with this statement then this contributed to the overall score.

Table 24. Care-Seeking Behaviors and Attitudes of Adult Men and Women over 18 years of Age (ADULTS Survey, June-July 2010), by Gender and by Region

Care-Seeking Behavior and Attitudes, n(%)*	Amhara				Oromiya				Total	
	Men (n=120)	Women (n=123)	Total (n=243)	p-value	Men (n=128)	Women (n=130)	Total (n=258)	p-value	Total (n=501)	p-value†
A woman should tell a health worker when she knows she is pregnant.	110(91.7)	104(85.3)	214(88.4)	0.16	92(71.9)	99(76.2)	191(74.0)	0.48	405(81.0)	0.82
There is no reason for healthy pregnant women to go to check-ups by health workers.‡	62(51.7)	74(60.7)	136(56.2)	0.20	63(49.6)	65(50.0)	128(49.8)	0.99	264(52.9)	0.32
When labor begins, a health worker should be called to the home.	102(85.7)	107(87.0)	209(86.4)	0.85	87(68.5)	86(66.2)	173(67.3)	0.69	382(76.6)	0.92
If the labor is not serious, then there is no reason to call a health worker.‡	88(68.8)	93(71.5)	181(70.2)	0.68	95(79.2)	98(79.7)	193(79.4)	0.99	374(74.7)	0.68
A woman should deliver in the home unless the labor is serious.‡	106(88.3)	109(89.3)	215(88.8)	0.84	89(69.5)	99(76.2)	188(72.9)	0.26	403(80.6)	0.31
Husbands prefer that their wives deliver in a hakim bet.	96(80.7)	83(67.5)	179(74.0)	0.03	81(63.3)	96(75.6)	177(69.4)	0.04*	356(71.6)	0.99
A woman should go to a health center if the baby comes in a different position.	120(100.0)	122(99.2)	242(99.6)	0.99	118(92.9)	122(93.9)	240(93.4)	0.81	482(96.4)	0.99
A woman should go to a health center if the baby is delayed.	116(97.5)	122(99.2)	238(98.4)	0.36	109(83.9)	90(70.3)	199(77.1)	0.01*	63(12.6)	0.01*
A woman should go to a health center if the placenta does not detach.	120(100.0)	120(97.6)	240(98.8)	0.25	116(90.6)	116(89.2)	232(89.9)	0.84	472(94.2)	0.45
A woman should go to a health center if the woman experiences serqian.	119(99.2)	123(100.0)	242(99.6)	0.49	119(93.0)	119(91.5)	238(92.3)	0.82	480(95.8)	0.99
If the seng does not detach then a traditional doctor [awake] should be called	106(88.3)	106(87.6)	212(88.0)	0.99	94(73.4)	109(83.9)	203(78.7)	0.048*	415(83.2)	0.15
There is little to be done to save the life of a mother or child – if one dies during delivery, it is just a matter of time.	42(35.3)	42(34.2)	84(34.7)	0.89	60(46.9)	58(45.3)	118(46.1)	0.90	202(40.6)	0.78
It is a problem that the health workers are not in the health post when they are needed.	110(91.7)	111(92.5)	221(92.1)	0.99	75(58.6)	72(55.4)	147(57.0)	0.62	368(73.9)	0.76
A health worker will come to deliver a baby at nighttime.	87(72.5)	90(73.2)	177(72.8)	0.99	79(61.7)	80(61.5)	159(61.6)	0.99	336(67.1)	0.99
HEWs only help with birth spacing and vaccination‡	89(74.2)	84(68.3)	173(71.2)	0.33	56(44.1)	54(41.9)	110(43.0)	0.80	283(56.7)	0.42
Overall Score (out of 15 items), mean (SD)	10.0(1.6)	9.8(1.7)	9.9(1.7)	0.35	9.2(2.1)	9.3(2.0)	9.3(2.1)	0.76	9.6(1.9)	<0.001**

* Whether a woman adheres to a care-seeking behavior or attitude that increases her propensity to seek care (by agreeing or disagreeing with a statement), for 15 statements.
† Fisher's Exact Two-sided p-values, *: p<0.05, **: p<0.001.
‡ If woman disagreed with this statement then this contributed to the overall score.

Table 25. Background Characteristics and Health Service Capacity of Health Extension Workers (FLWs Survey, June-July 2010), by Region

Indicator	Amhara (n=35)	Oromiya (n=26)	Total (n=61)	p-value*
Age, mean (SD)				
	23.2(3.6)	23.8(3.1)	23.5(3.4)	0.51
Years of Schooling				
mean (SD)	11.3(0.9)	9.4(4.7)	10.5(3.2)	0.048*
Marital Status, n(%)				
Single (Never Married)	18 (51.4)	9 (34.6)	27(44.3)	0.39
Married	15(42.9)	16(61.5)	31(50.8)	
Divorced/Widowed	2(5.7)	1(3.9)	3(4.9)	
Parity, n(%)				
None	21(60.0)	15(57.7)	36(59.0)	0.91
1	9(25.7)	6(23.1)	15(24.6)	
2-3	4(11.4)	3(11.5)	7(11.5)	
4-5	1(2.9)	2(7.7)	3(4.9)	
6+	0(0.0)	0(0.0)	0(0.0)	
Received Clean & Safe Birth Training, n(%)				
Yes	19(54.3)	22(84.6)	41(67.2)	0.02*
No	16(45.7)	4(15.4)	20(32.8)	
Years of Work Experience, n(%)				
< 1 year	5(14.3)	1(3.9)	6(9.8)	0.08
1-3 years	16(45.7)	7(26.9)	23(37.7)	
4+ years	14(40.0)	18(69.2)	32(52.5)	
Years of Work Experience				
mean (SD)	3.9(1.4)	2.8(1.6)	3.3(1.6)	0.004*
Number Provide Care for, per Month, mean (SD)				
ANC	15.9(12.7)	13.0(8.0)	14.7(11.0)	0.29
Delivery	1.2(1.0)	1.8(2.2)	1.5(1.6)	0.24
PNC (for Mother)	13.5(9.2)	9.2(5.7)	11.7(7.6)	0.02*
PNC (for Newborn)	10.5(10.0)	6.7(5.2)	8.9(8.4)	0.06
PNC (for Mother or Newborn)†	12.0(8.2)	8.0(5.2)	10.3(7.4)	0.02*
Have Supplies Needed to Provide Care, n(%)				
ANC	34 (97.1)	23(88.5)	57(93.4)	0.30
Delivery‡	24(92.3)	15(57.7)	39(75.0)	0.009*
PNC (for Mother)	30(88.2)	21(84.0)	51(86.4)	0.71
PNC (for Newborn)	30(88.2)	23(88.5)	53(88.3)	0.99
Misoprostol Listed as an Available Supply to Give to Women During Pregnancy, n(%)				
Yes	0(0.0)	18(69.2)	18(29.5)	<0.001**
No	35(100.0)	8(30.8)	43(70.5)	

* Fisher's Exact Two-sided p-values, *: p<0.05, **: p<0.001.
† Averaged between PNC (for Mother) and PNC (for Newborn)
‡ Missing: 9, all were HEWs who reported that they did not provide delivery care.

Table 26. Challenges and Teamwork Reported by Health Extension Workers (FLWs Survey, June-July 2010), by Region

Indicator	Amhara (n=35)	Oromiya (n=26)	Total (n=61)	p-value*
Challenges Scale, n(%)				
"My farming duties interfere with my health duties."	0(0.0)	2(7.7)	2(3.3)	0.18
"My household chores interfere with my health duties."	1(2.9)	3(12.0)	4(6.7)	0.30
"Taking care of my children interferes with my health duties."	0(0.0)	3(12.0)	3(5.0)	0.07
"I have difficulty providing health services because I don't have the materials I need."	13(37.1)	19(73.1)	32(53.5)	0.009*
"I have difficulty providing health services because the distance between the houses in my kebele is too great."	15(42.9)	20(76.9)	35(57.4)	0.01*
Overall Score (out of 5 items), mean (SD)	0.8(0.7)	1.9(1.1)	1.3(1.0)	<0.001**
Teamwork				
Identifies Self As Part of Team, n(%)†	32(91.4)	25(96.2)	57(93.4)	0.63
Teamwork Strength, mean (SD) ‡	3.0(0.5)	3.5(0.8)	3.2(0.7)	0.02*
FLW Interaction Frequency in Last Month				
HEW	9.3(10.3)	2.6(1.8)	6.6(8.6)	<0.001**
CHDA	2.7(3.4)	2.7(5.6)	2.7(4.5)	0.99
TBA	1.9(2.5)	1.9(1.6)	1.9(2.2)	0.92
Overall Interaction Frequency, mean(SD)	14.2(12.5)	7.5(6.7)	11.4(10.9)	0.01*

* Fisher's Exact Two-sided p-values, *: p<0.05, **: p<0.001.
† See self as part of a team for maternal and newborn care provision in kebele
‡ Ranking on a scale of 1-4, where 1: Very weak, 2: Weak, 3: Strong, 4: Very strong.

Table 27. Specific and General Confidence of Health Extension Workers (FLWs Survey, June-July 2010), by Region

Indicator	Amhara (n=35)	Oromiya (n=26)	Total (n=61)	p-value*
Specific Confidence Scale, n(%)				
"I have had training to provide care to mothers and babies."	19(54.3)	23(88.5)	42(68.9)	0.005*
"I have a role in a health committee in my kebele."	35(100.0)	25(96.2)	60(98.4)	0.43
"I have the knowledge, but I don't have the practical experience to attend to delivery."†	19(54.3)	11(42.3)	30(49.2)	0.44
"I know when to say no for the health services I can't do."	33(97.1)	23(88.5)	56(93.3)	0.31
"I am eager to work my health activities."	35(100.0)	26(100.0)	61(100.0)	-
"I have too many health activities as a health worker." †	33(94.30	20(76.9)	53(86.9)	0.06
"Sometimes when I perform my health duties, I have fear in my face." †	9(25.7)	6(23.1)	15(24.6)	1.00
"I feel I have sufficient knowledge and experience to manage *serakian***"**	7(20.6)	18(69.2)	25(41.7)	<0.001**
"I do not have enough support from a supervisor in my health tasks." †	14(40.0)	11(42.3)	25(41.0)	1.00
"I communicate with kebele leaders about my work."	32(94.1)	26(100.0)	58(96.7)	0.50
"If I have the training, I can provide service which is better than what I am doing now."	35(100.0)	24(96.0)	59(98.3)	0.42
"I forget things from my training because it was long ago." †	27(77.1)	14(53.9)	41(67.2)	0.10
"I am able to attend a delivery alone."	21(60.0)	16(61.5)	37(60.7)	1.00
"People ask for my help if there is a problem with mothers and babies."	35(100.0)	24(92.3)	59(96.7)	0.18
"People in the community tell me that I helped them get better."	35(100.0)	26(100.0)	61(100.0)	-
"When I face a difficult labor, I have someone who will come and help me."	16(45.7)	19(73.1)	35(57.4)	0.04*
"If I have the training, I have the capability of becoming a nurse."	34(100.0)	22(84.6)	56(93.3)	0.03*
"I have written materials I can refer to if I need more information."	31(88.6)	21(80.8)	52(85.3)	0.48
"My main duty focuses on mothers and babies."	28(80.0)	24(92.3)	52(85.3)	0.28
"When I need advice about a health problem, I feel there is someone I can ask."	29(82.9)	23(88.5)	52(85.3)	0.72
Overall Score (out of 20 items), mean (SD)	14.2(2.2)	15.6(2.4)	14.8(2.4)	0.02*
General Confidence Scale, n(%)				
ANC	7.3(1.6)	8.9(1.7)	8.0(1.8)	<0.001**
Delivery	7.0(1.7)	7.4(2.5)	7.2(2.1)	0.43
PNC (for Mother)	7.7(1.8)	8.8(2.1)	8.1(2.0)	0.04*
PNC (for Newborn)	8.2(1.8)	8.3(2.2)	8.2(1.9)	0.83
PNC (for Mother or Newborn)‡	7.9(1.6)	8.5(1.8)	8.2(1.7)	0.19
Overall Score (out of 40), mean (SD)	30.1(5.9)	33.5(6.2)	31.5(6.2)	0.03*

* Fisher's Exact Two-sided p-values, *: p<0.05, **: p<0.001.

† If the HEW disagreed with this statement then this contributed to the overall score.

‡ Averaged between PNC (for Mother) and PNC (for Newborn), not included in the Overal General Confidence Score calculation.

Table 28. Knowledge of HBLSS Package Items Among Health Extension Workers (FLWs Survey, June-July 2010), by Region

HBLSS Package Items, n(%)*	**Amhara (n=35)**	**Oromiya (n=26)**	**Total (n=61)**	**p-value†**
Safe Birth Plan	34(97.1)	26(100.0)	60(98.4)	0.99
Labor Notification	35(100.0)	26(100.0)	61(100.0)	-
Clean Birth Environment	33(94.3)	26(100.0)	59(96.7)	0.50
Clean Hands	23(67.7)	26(100.0)	49(81.7)	0.001*
Change Positions During Labor	29(85.3)	25(96.2)	54(90.0)	0.22
Not Inserting Items in Vagina During Delivery	24(68.6)	18(69.2)	42(68.9)	1.00
Clean Cord Care	34(97.1)	26(100.0)	60(98.4)	1.00
Checking Baby for Proper Color and Breathing	30(85.7)	22(84.6)	52(85.3)	1.00
Neonatal Resuscitation‡	22(66.7)	n/a	n/a	n/a
Keeping Baby Warm and Dry After Birth	33(94.3)	25(96.2)	58(95.1)	1.00
Immediate Breastfeeding After Delivery	35(100.0)	26(100.0)	61(100.0)	-
Exclusive Breastfeeding for First Six Months	35(100.0)	26(100.0)	61(100.0)	-
Proper Positioning During Breastfeeding	35(100.0)	25(100.0)	60(100.0)	-
Misoprostol Use for PPH	10(28.6)	23(88.5)	33(54.1)	<0.001**
Safe Delivery of Placenta	31(88.6)	25(96.2)	56(91.8)	0.38
Uterine Massage	20(57.1)	14(53.9)	34(55.7)	1.00
Postpartum Check of Mother for Fever/Bleeding	30(85.7)	23(88.5)	53(86.9)	1.00
Postpartum Rest for Mother, ≥12 Days After Birth	30(85.7)	22(84.6)	52(85.3)	1.00
Overall Score (out of 17 items), mean (SD)	11.4(2.4)	12.7(1.0)	12.0(2.1)	0.008*

* Ever Heard of, for 17 Practices
† Fisher's Exact Two-sided p-values, *: p<0.05, **: p<0.001.
‡ This question was asked in Amhara only, and is not be part of the Overall Score calculation

Table 29. Adherence to Traditional Practices and Care-Seeking Behavior and Attitudes Among Health Extension Workers (FLWs Survey, June-July 2010), by Region

	Amhara (n=35)	Oromiya (n=26)	Total (n=61)	p-value*
Adherence to Traditional Practices, n(%)†				
A mother who has had peaceful births in the past will always have peaceful births in the future.	2(5.7)	1(3.9)	3(4.9)	1.00
A woman and family should not prepare for a problem ahead of time because the birth may be peaceful.	0(0.0)	1(3.9)	1(1.6)	0.43
The seng cord should be tied at both the mother and baby's ends. ‡	35(100.0)	19(73.1)	54(88.5)	0.002*
If the cord has trouble detaching it should be pulled out in the home.	0(0.0)	2(7.7)	2(3.3)	0.18
A baby's cord should be plastered with butter.	0(0.0)	1(3.9)	1(1.6)	0.43
The baby should be away from the mother after birth while she sits over the hole to detach the seng.	3(8.6)	5(19.2)	8(13.1)	0.27
The first milk is unclean and should not be given to the baby.	0(0.0)	1(3.9)	1(1.6)	0.43
A baby should be given butter immediately after birth.	1(2.9)	0(0.0)	1(1.7)	1.00
The baby should be washed immediately after birth.	5(14.3)	2(7.7)	7(11.5)	0.69
It is best to cut the uvula if it has dropped.	0(0.0)	0(0.0)	0(0.0)	-
Nothing can be done about excessive bleeding after delivery because it is caused by serqian.	0(0.0)	7(26.9)	7(11.5)	0.002*
Both women and men can help with delivery.‡	34(97.1)	23(88.5)	57(93.4)	0.30
A woman should have the same workload before and after pregnancy.	0(0.0)	0(0.0)	0(0.0)	-
A mother should take rest only up to 10 days after birth.	0(0.0)	1(3.9)	1(1.6)	0.43
Overall Score (out of 14 items), mean (SD)	0.3(0.6)	1.2(1.6)	0.7(1.2)	0.01
Care-Seeking Behavior and Attitudes, n(%)§				
It is only by chance when health workers discover that a woman is pregnant	5(14.7)	0(0.0)	5(8.3)	0.06
A woman should tell a health worker when she knows she is pregnant.	35(100.0)	25(96.2)	60(98.4)	0.43
There is no reason for healthy pregnant women to go to check-ups by health workers. ‡	0(0.0)	1(3.9)	1(1.6)	0.43
When labor begins, a health worker should be called to the home.	35(100.0)	21(80.8)	56(91.8)	0.01*
If the labor is not serious, then there is no reason to call a health worker.‡	1(2.9)	5(19.2)	6(9.8)	0.07
A woman should deliver in the home unless the labor is serious.‡	2(5.7)	4(15.4)	6(9.8)	0.39
There is little to be done to save the life of a mother or child – if one dies during delivery, it is just a matter of time.	2(5.7)	3(11.5)	5(8.2)	0.64
It is a problem that the health workers are not in the health post when they are needed.	29(82.9)	23(88.5)	52(85.3)	0.72
A health worker will come to deliver a baby at nighttime.	32(91.4)	24(92.3)	56(91.8)	1.00
HEWs only help with birth spacing and vaccination.	18(51.4)	15(57.7)	33(54.1)	0.80
Overall Score (out of 10 items), mean (SD)	8.2(0.8)	7.5(1.2)	7.9(1.1)	0.02*

* Fisher's Exact Two-sided p-values, *: p<0.05, **: p<0.001.
† Whether the respondent adheres to a traditional practice (by agreeing or disagreeing with a statement), for 14 statements.
‡ If woman disagreed with this statement then this contributed to the overall score.
§ Whether a woman adheres to a care-seeking behavior or attitude that increases her propensity to seek care (by agreeing or disagreeing with a statement), for 10 statements.

Table 30. Distance from Kebele to Health Centers, Amhara and Oromiya Regions, Ethiopia

Region	Woreda	Health Center	Kebele	Distance to Health Centers (km)
Amhara	**Mecha**	**Merawi**	Bachima	10
			Enachenifalen	8
			Enaminret	8
			Enguti	6
			Kudmi	5
			Kuret Bahir	15
			mean, (SD)	8.7 (3.2)
		Birakat	Birakat	0
			Zemene Hiwot	38
			mean, (SD)	16.1 (19.1)
		mean, (SD)		10.2 (9.5)
	North Achefer	**Liben**	Dembola	8
			Kongerie	9
			Liben Zuria	0
			mean, (SD)	5.8 (4.0)
		Yismala	Ambeshen	20
			KualaBaka	16
			Shambela	24
			Yismala Jankit	12
			mean, (SD)	17.6 (4.3)
		mean, (SD)		12.6 (7.2)
	South Achefer	**Durbete**	Abchekli Zuria	0.5
			Ahuri	11
			Care	5
			Guta	7
			mean, (SD)	5.8 (3.7)
		Lalibela	Dilamo	23
			Korench	21
			Lalibela	18
			mean, (SD)	20.8 (2.1)
		mean, (SD)		12.1 (8.1)
	mean, (SD)			11.7 (8.3)
Oromiya	**Degem**	**Hambiso**	Ano Degem	4
			Anokere	4
			Elemu Eferso	3
			TumanoAbdi	0
			mean, (SD)	2.7 (1.7)
		Ali Doro	Alidoro Abo	10
			Anajuru Bishandimo	15
			mean, (SD)	13.5 (2.3)
		mean, (SD)		6.1 (5.3)
	Kuyu	**G.Guracha**	Debana Agalu	15
			Liban Kura	6
			Sanbo Cheka	5
			Wuye Gose	11
			mean, (SD)	8.4 (3.8)
		Birity	Birity	23
			Bonde Gidabo	14
			mean, (SD)	17.1 (4.3)
		mean, (SD)		11.4(5.7)
	Warajarso	**Gohatsiyon**	Abo Keku	11
			Jarso Tuti	14
			Jemo Bardada	16
			Lencho Borsu	5
			Wale Chilelu	6
			mean, (SD)	10.3 (4.5)
		Tulu Milky	Bitomilky	18
			mean, (SD)	18.0 (0.0)
		mean, (SD)		11.2 (4.9)
	mean, (SD)			9.2 (5.9)

Table 31. Univariate assessment of study outcomes among women with a pregnancy in the year prior to the survey (MOMS survey, June-July 2010), by region

Outcome	Amhara (n=493)	Oromiya (n=534)	Total (n=1027)	p-value*
Antenatal Care (Any), n(%)†				
Skilled Provider‡	153 (31.1)	124 (23.4)	277 (27.1)	0.006*
HEW	53 (10.8)	131 (24.7)	184 (18.0)	<0.001**
Skilled Provider or HEW	193 (39.2)	233 (44.0)	426 (41.7)	0.13
Birth Attendant, n (%)				
Skilled Provider‡	33 (6.7)	55 (10.3)	88 (8.6)	0.044*
HEW	16 (3.3)	51 (9.6)	67 (6.5)	<0.001**
Skilled Provider or HEW	47 (9.5)	104 (19.5)	151 (14.7)	<0.001**
PNC Visit ≤ 2 Days of Birth, for Mother, n(%)				
Skilled Provider‡	7 (1.4)	40 (7.5)	47 (4.6)	<0.001**
HEW	18 (3.7)	22 (4.1)	40 (3.9)	<0.001**
Skilled Provider or HEW	24 (4.9)	60 (11.3)	84 (8.2)	<0.001**
PNC Visit ≤ 2 Days of Birth, for Newborn, n(%)				
Skilled Provider‡	4 (0.8)	38 (7.1)	42 (4.1)	<0.001**
HEW	9 (1.8)	30 (5.6)	39 (3.8)	<0.001**
Skilled Provider or HEW	12 (2.4)	66 (12.4)	78 (7.6)	<0.001**
PNC Visit ≤ 2 Days of Birth, for Mother or Newborn, n(%)				
Skilled Provider‡	6 (1.2)	43 (8.1)	49 (4.8)	<0.001**
HEW	19 (3.9)	41 (7.7)	60 (5.8)	<0.001**
Skilled Provider or HEW	24 (4.9)	60 (11.3)	84 (8.2)	<0.001**
Misoprostol Use for PPH, n (%)				
Use in last pregnancy	0 (0.0)	109 (20.4)	109 (10.6)	<0.001**

* Fisher's Exact Two-sided p-values, *: p<0.05, **: p<0.001.
† For ANC, delivery and PNC, women list all providers, thus since some women had both a skilled provider and a HEW, the sum of these individual categories can be greater than the combined category for "Skilled Provider or HEW."
‡ Physician, Health Officer/Clinical Officer, Nurse, Midwife

Table 32. ANC from a Skilled Provider or HEW, Bivariate Analysis for Individual-level Variables (MOMs Survey, June-July 2010), n=904[*]

Indicator	Unadjusted Odds Ratio (95% CI)[†]	p-value[‡]	Adjusted p-value[§]
Level 1: MOMS			
Age		<0.001**	<0.001**
15-19	2.22(1.20, 4.14)		
20-34	2.30(1.61, 3.26)		
35+	1.52(0.93, 2.50)		
Don't Know	Ref		
Parity (ordinal)	0.90(0.84, 0.95)	<0.001**	0.002*
Parity (categorical)			
1	1.93(1.23, 3.02)	0.01*	0.003*
2-3	1.68(1.16, 2.44)		
4-5	1.29(0.87, 1.91)		
6+	Ref		
History of an Infant Death	0.70(0.50, 0.98)	0.04*	0.07
Education	2.49(1.81, 3.42)	<0.001**	<0.001**
Personal Cash Income in Last Month	2.39(1.61, 3.54)	<0.001**	<0.001**
Age at Marriage		<0.001**	0.001*
Single (Never Married)	1.07(0.10, 11.95)		
≤ 15 Years	1.49(1.04, 2.13)		
16-18 Years	2.21(1.53, 3.18)		
19+ Years	2.11(1.37, 3.22)		
Don't Know	Ref		
Spouse's Education	2.48(1.83, 3.34)	<0.001**	<0.001**
Spouse's Cash Income in Last Month	1.61(1.11, 2.33)	0.01*	0.01*
Household Land Ownership	1.12(0.85, 1.49)	0.40	0.26
Modern Contraceptive Method Use	2.07(1.57, 2.72)	<0.001**	<0.001**
Know How to Reach HEW	3.65(2.68, 4.97)	<0.001**	<0.001**
Trust HEW for ANC[**]	1.27(1.13, 1.43)	<0.001**	<0.001**
HBLSS Knowledge Index (ordinal)	1.13(1.09, 1.16)	<0.001**	<0.001**
HBLSS Knowledge Index (tertiles)		<0.001**	<0.001**
Low (Know 0-2 Items)	Ref		
Medium (Know 3-8 Items)	2.21(1.57, 3.12)		
High (Know 9-17 Items)	3.94(2.72, 5.70)		
Adherence to Traditional Practices Index (ordinal)	0.83(0.78, 0.87)	<0.001**	<0.001**
Adherence to Traditional Practices Index (tertiles)		<0.001**	<0.001**
Low (Adhere to 0-5 Items)	3.15(2.18, 4.55)		
Medium (Adhere to 6-8 Items)	1.98(1.41, 2.78)		
High (Adhere to 9-14 Items)	Ref		
Care-Seeking Behaviors Index (ordinal)	1.22(1.15, 1.31)	<0.001**	<0.001**
Care-Seeking Behaviors Index (tertiles)		0.005*	<0.006*
Low (Seek for 0-4 Items)	Ref		
Medium (Seek for 5-7 Items)	0.79(0.18, 3.43)		
High (Seek for 8-15 Items)	1.41(0.33, 5.94)		

[*] Reduced sample so have kebele-level information across all three surveys. Four women with missing data.
[†] Unadjusted logistic regression odds ratios, naïve model (assumes no clustering).
[‡] Wald Test Two-sided p-values, *: p<0.05, **: p<0.001.
[§] Adjusted for clustering by kebele of residence with an exchangeable working correlation structure. Wald Test Two-sided p-values, *: p<0.05, **: p<0.001.
[**] Only among women who had heard of HEWs. This trust scale (1-5) variable is set to 0 for these women.

Table 33. ANC from a Skilled Provider or HEW, Bivariate Analysis for Kebele-level Variables(ADULTs & FLWs Survey, June-July 2010), n=904 [*]

Indicator	Unadjusted Odds Ratio (95% CI)[†]	p-value[‡]	Adjusted p-value[§]
Administrative Nesting Levels			
Region (Amhara v. Oromiya)	0.80(0.61, 1.04)	0.10	0.34
Woreda		0.16	0.50
Health Center		0.15	<0.001**
Kebele		<0.001**	-
Level 2: ADULTS			
Education			
All	1.10(0.57, 2.14)	0.77	0.97
Women	1.03(0.68, 1.57)	0.90	0.98
Cash Income in Last Month			
All	2.43(1.22, 4.84)	0.01*	0.11
Women	2.73(1.50, 4.98)	0.001*	0.03*
Land Ownership	0.66(0.27, 1.59)	0.35	0.48
HBLSS Knowledge Index	1.0(0.99, 1.08)	0.13	0.26
Adherence to Traditional Practices Index	0.92(0.85, 0.99)	0.03*	0.15
Care-Seeking Behaviors Index	1.24(1.02, 1.52)	0.03*	0.21
Level 2: HEWs			
Age	1.00(0.98, 1.03)	0.76	0.94
Education (years)	1.07(1.00, 1.14)	0.03*	0.04*
Parity	0.95(0.87, 1.03)	0.18	0.41
Clean and Safe Birth Training	1.34(0.86, 2.09)	0.19	0.47
Work Experience (years)	0.96(0.93, 1.01)	0.13	0.32
ANC Provision Volume (women/month)	1.00(0.99, 1.02)	0.66	0.76
Have ANC Supplies	1.22(0.73, 2.05)	0.45	0.67
Misoprostol Supplies	2.01(1.01, 4.00)	0.048*	0.20
General Confidence in ANC Provision	1.13(1.04, 1.23)	0.005*	0.06
Specific Confidence Index	1.13(1.03, 1.24)	0.01*	0.08
HBLSS Knowledge Index	1.01(0.96, 1.07)	0.74	0.92
Adherence to Traditional Practices Index	0.95(0.85, 1.06)	0.37	0.51
Care-Seeking Behaviors Index	1.05(0.90, 1.22)	0.56	0.67
Challenges Index	1.01(0.86, 1.19)	0.92	0.98
Team Identification	1.59(0.84, 3.01)	0.15	0.38
Teamwork Strength	1.68(1.07, 2.64)	0.02*	0.09
FLW Interaction Frequency	1.08(1.03, 1.14)	0.001*	0.01*
Level 2: Distance from Kebele Center to Health Centers			
Distance to Health Centers (km)	0.98(0.97, 1.00)	0.05	0.05
Distance to Health Centers (km), per 5 km	0.91(0.83, 1.00)	0.04*	0.05

[*] Reduced sample so have kebele-level information across all three surveys. Missing outcome: 4.
[†] Unadjusted logistic regression odds ratios, naïve model (assumes no clustering).
[‡] Wald Test Two-sided p-values, *: p<0.05, **: p<0.001.
[§] Adjusted for clustering by kebele of residence with an exchangeable working correlation structure. Wald Test Two-sided p-values, *: p<0.05, **: p<0.001.

Table 34. Delivery Attendance by a Skilled Provider or HEW, Bivariate Analysis for Individual-level Variables, (MOMs Survey, June-July 2010), n=908[*]

Indicator	Unadjusted Odds Ratio (95% CI)[†]	p-value[‡]	Adjusted p-value[§]
Level 1: MOMS			
Age		<0.001**	<0.001**
15-19	3.63(1.25, 10.53)		
20-34	5.51(2.63, 11.54)		
35+	2.71(1.06, 6.95)		
Don't Know	Ref		
Parity (ordinal)	0.86(0.78, 0.94)	0.001*	0.01*
Parity (categorical)		0.03*	0.03*
1	2.36(1.28, 4.36)		
2-3	1.43(0.82, 2.51)		
4-5	1.21(0.67, 2.20)		
6+	Ref		
History of an Infant Death	0.45(0.25, 0.81)	0.008*	0.02*
Education	3.32(2.24, 4.90)	<0.001**	<0.001**
Personal Cash Income in Last Month	3.23(2.07, 5.05)	<0.001**	<0.001**
Age at Marriage		<0.001**	0.40
Single (Never Married)	-		
≤ 15 Years	1.63(0.88, 3.00)		
16-18 Years	3.52(1.99, 6.23)		
19+ Years	3.49(1.86, 6.55)		
Don't Know	Ref		
Spouse's Education	2.62(1.75, 3.91)	<0.001**	<0.001**
Spouse's Cash Income in Last Month	1.57(0.96, 2.55)	0.07	0.22
Household Land Ownership	0.73(0.50, 1.06)	0.10	0.18
Modern Contraceptive Method Use	1.86(1.28, 2.72)	0.001*	0.02*
ANC from a HEW or Skilled Provider	3.74(2.50, 5.60)	<0.001**	<0.001**
Know How to Reach HEW	1.94(1.26, 3.00)	0.003*	0.02*
Trust HEW for Delivery	1.20(1.03, 1.39)	0.02*	0.02*
HBLSS Knowledge Index (ordinal)	1.16(1.12, 1.21)	<0.001**	<0.001**
HBLSS Knowledge Index (tertiles)		<0.001**	<0.001**
Low (Know 0-2 Items)	Ref		
Medium (Know 3-8 Items)	2.14(1.21, 3.78)		
High (Know 9-17 Items)	4.65(2.66, 8.11)		
Adherence to Traditional Practices Index (ordinal)	0.73(0.67, 0.79)	<0.001**	<0.001**
Adherence to Traditional Practices Index (tertiles)		<0.001**	<0.001**
Low (Adhere to 0-5 Items)	11.41(5.55, 23.46)		
Medium (Adhere to 6-8 Items)	4.16(2.00, 8.68)		
High (Adhere to 9-14 Items)	Ref		
Care-Seeking Behaviors Index (ordinal)	1.36(1.24, 1.49)	<0.001**	<0.001**
Care-Seeking Behaviors Index (tertiles)			
Low (Seek for 0-4 Items)	Ref	<0.001**	<0.001**
Medium (Seek for 5-7 Items)	0.20(0.02, 1.96)		
High (Seek for 8-15 Items)	1.47(0.18, 12.05)		

[*] Reduced sample so have kebele-level information across all three surveys.
[†] Unadjusted logistic regression odds ratios, naïve model (assumes no clustering).
[‡] Wald Test Two-sided p-values, *: p<0.05, **: p<0.001.
[§] Adjusted for clustering by kebele of residence with an exchangeable working correlation structure. Wald Test Two-sided p-values, *: p<0.05, **: p<0.001.

Table 35. Delivery Attendance by a Skilled Provider or HEW, Bivariate Analysis for Kebele-level Variables, (ADULTs & FLWs Survey, June-July 2010), n=908[*]

Indicator	Unadjusted Odds Ratio (95% CI)[†]	p-value[‡]	Adjusted p-value[§]
Administrative Nesting Levels			
Region (Amhara v. Oromiya)	0.41(0.27, 0.60)	<0.001**	0.005*
Woreda		<0.001**	0.007*
Health Center		<0.001**	0.02*
Kebele		<0.001**	-
Level 2: ADULTS			
Education			
All	6.16(2.37, 15.99)	<0.001**	0.001*
Women	4.02(2.19, 7.39)	<0.001**	0.002*
Cash Income in Last Month			
All	6.45(2.46, 16.94)	<0.001**	0.01*
Women	4.87(2.11, 11.24)	<0.001**	0.02*
Land Ownership	0.83(0.24, 2.89)	0.77	0.68
HBLSS Knowledge Index	1.13(1.07, 1.20)	<0.001**	0.003*
Adherence to Traditional Practices Index	0.79(0.71, 0.88)	<0.001**	0.01*
Care-Seeking Behaviors Index	1.05(0.79, 1.29)	0.76	0.91
Level 2: HEWs			
Age	1.03(0.99, 1.06)	0.20	0.59
Education (years)	1.07(0.98, 1.17)	0.11	0.27
Parity	0.89(0.80, 0.99)	0.04*	0.13
Clean and Safe Birth Training	3.40(1.82, 6.38)	<0.001**	0.05
Work Experience (years)	1.00(0.94, 1.07)	0.94	0.90
Delivery Provision Volume (women/month)	1.21(1.03, 1.41)	0.02*	0.07
Have Delivery Supplies	1.10(0.58, 2.08)	0.77	0.79
Misoprostol Supplies	5.22(2.13, 12.79)	<0.001**	0.10
General Confidence in Delivery Provision	1.29(1.12, 1.49)	<0.001**	0.02*
Specific Confidence Index	1.28(1.12, 1.46)	<0.001**	0.13
HBLSS Knowledge Index	1.09(1.01, 1.18)	0.04*	0.16
Adherence to Traditional Practices Index	1.18(1.00, 1.39)	0.04*	0.22
Care-Seeking Behaviors Index	1.26(1.01, 1.56)	0.04*	0.10
Challenges Index	1.09(0.87, 1.38)	0.45	0.70
Team Identification	1.72(0.68, 4.33)	0.25	0.61
Teamwork Strength	3.48(1.82, 6.66)	<0.001**	0.07
FLW Interaction Frequency	0.97(0.91, 1.04)	0.43	0.66
Level 2: Distance from Kebele Center to Health Centers			
Distance to Health Centers (km)	1.00(0.97, 1.02)	0.68	0.92
Distance to Health Centers (km), per 5 km	1.00(0.88, 1.14)	0.97	0.93

[*] Reduced sample so have kebele-level information across all three surveys.
[†] Unadjusted logistic regression odds ratios, naïve model (assumes no clustering).
[‡] Wald Test Two-sided p-values, *: p<0.05, **: p<0.001.
[§] Adjusted for clustering by kebele of residence with an exchangeable working correlation structure. Wald Test Two-sided p-values, *: p<0.05, **: p<0.001.

Table 36. PNC Visit ≤ 2 Days of Birth for Mother or Newborn by a Skilled Provider or HEW, Bivariate Analysis for Individual-level Variables, (MOMs Survey, June-July 2010), n=906[*]

Indicator	Unadjusted Odds Ratio (95% CI)[†]	p-value[‡]	Adjusted p-value[§]
Level 1: MOMS			
Age		<0.001**	0.003*
15-19	0.94(0.10, 8.57)		
20-34	6.76(2.43, 18.80)		
35+	2.87(0.79, 10.39)		
Don't Know	Ref		
Parity (ordinal)	0.84(0.74, 0.95)	0.004*	0.05
Parity (categorical)		0.001	0.02*
1	4.27(1.92, 9.50)		
2-3	1.68(0.76, 3.7)		
4-5	1.76(0.78, 3.96)		
6+	Ref		
History of an Infant Death	0.65(0.34, 1.26)	0.20	0.14
Education	4.25(2.64, 6.86)	<0.001**	<0.001**
Personal Cash Income in Last Month	3.70(2.19, 6.24)	<0.001**	<0.001**
Age at Marriage		0.004*	0.04*
Single (Never Married)	-		
≤ 15 Years	3.42(1.45, 8.07)		
16-18 Years	4.47(1.91, 10.48)		
19+ Years	5.68(2.32, 13.89)		
Don't Know	Ref		
Spouse's Education	3.14(1.90, 5.21)	<0.001**	<0.001**
Spouse's Cash Income in Last Month	1.89(1.06, 3.38)	0.03*	0.08
Household Land Ownership	0.70(0.44, 1.13)	0.14	0.19
Modern Contraceptive Method Use	2.19(1.37, 3.51)	0.001*	0.007*
ANC from a HEW or Skilled Provider	5.49(3.15, 9.57)	<0.001**	<0.001**
Delivery Attendance by a HEW or Skilled Provider	17.83(10.57, 30.08)	<0.001**	<0.001**
Know How to Reach HEW	2.35(1.31, 4.20)	0.004*	0.004*
Trust HEW for Postnatal Care	1.29(1.07, 1.55)	0.009*	<0.001**
HBLSS Knowledge Index (ordinal)	1.20(1.14, 1.26)	<0.001**	<0.001**
HBLSS Knowledge Index (tertiles)		<0.001**	<0.001**
Low (Know 0-2 Items)	Ref		
Medium (Know 3-8 Items)	5.47(1.89, 15.81)		
High (Know 9-17 Items)	15.03(5.33, 42.44)		
Adherence to Traditional Practices Index (ordinal)	0.70(0.63, 0.77)	<0.001**	<0.001**
Adherence to Traditional Practices Index (tertiles)		<0.001**	<0.001**
Low (Adhere to 0-5 Items)	8.75(3.87, 19.80)		
Medium (Adhere to 6-8 Items)	1.99(0.82, 4.84)		
High (Adhere to 9-14 Items)	Ref		
Care-Seeking Behaviors Index (ordinal)	1.44(1.28, 1.62)	<0.001**	<0.001**
Care-Seeking Behaviors Index (tertiles)[**]		0.006*	-
Low (Seek for 0-4 Items)	Ref		
Medium (Seek for 5-7 Items)	-		
High (Seek for 8-15 Items)	-		

[*] Reduced sample so have kebele-level information across all three surveys. Missing outcome: 2.
[†] Unadjusted logistic regression odds ratios, naïve model (assumes no clustering).
[‡] Wald Test Two-sided p-values, *: p<0.05, **: p<0.001.
[§] Adjusted for clustering by kebele of residence with an exchangeable working correlation structure. Wald Test Two-sided p-values, *: p<0.05, **: p<0.001.
[**] There was a quasi-complete separate of data points. The maximum likelihood estimate may not exist.

Table 37. PNC Visit ≤ 2 Days of Birth for Mother or Newborn by a Skilled Provider or HEW, Bivariate Analysis for Kebele-level Variables, (ADULTs & FLWs Survey, June-July 2010), n=906[*]

Indicator	Unadjusted Odds Ratio (95% CI)[†]	p-value[‡]	Adjusted p-value[§]
Administrative Nesting Levels			
Region (Amhara v. Oromiya)	0.39(0.24, 0.65)	<0.001**	0.001*
Woreda		<0.001**	<0.001**
Health Center		0.009*	<0.001**
Kebele		0.73	-
Level 2: ADULTS			
Education			
All	3.58(1.11, 11.60)	0.03*	0.02*
Women	1.77(0.84, 3.71)	0.13	0.21
Cash Income in Last Month			
All	5.58(1.69, 18.46)	0.005*	0.01*
Women	6.48(2.29, 18.37)	<0.001**	0.002*
Land Ownership	2.62(0.51, 13.49)	0.25	0.38
HBLSS Knowledge Index	1.16(1.08, 1.23)	<0.001**	<0.003*
Adherence to Traditional Practices Index	0.78(0.68, 0.88)	<0.001**	<0.003*
Care-Seeking Behaviors Index	1.10(0.77, 1.56)	0.61	0.65
Level 2: HEWs			
Age	1.02(0.97, 1.07)	0.43	0.66
Education (years)	1.07(0.96, 1.19)	0.22	0.22
Parity	0.86(0.75, 0.98)	0.03*	0.04
Clean and Safe Birth Training	3.86(1.76, 8.45)	<0.001**	<0.001**
Work Experience (years)	0.96(0.89, 1.04)	0.32	0.27
PNC Provision Volume (women/month)	1.03(0.93, 1.15)	0.52	0.42
Have PNC Supplies	0.94(0.36, 2.47)	0.89	0.90
Misoprostol Supplies	4.63(1.53, 14.01)	0.007*	0.03*
General Confidence in PNC Provision	1.44(1.19, 1.75)	<0.001**	<0.001**
Specific Confidence Index	1.34(1.14, 1.57)	<0.001**	0.009*
HBLSS Knowledge Index	1.16(1.04, 1.29)	0.006*	0.02*
Adherence to Traditional Practices Index	1.01(0.83, 1.22)	0.95	0.96
Care-Seeking Behaviors Index	0.91(0.69, 1.19)	0.47	0.30
Challenges Index	1.08(0.81, 1.45)	0.60	0.73
Team Identification	4.34(1.26, 14.98)	0.02*	0.04*
Teamwork Strength	2.78(1.24, 6.18)	0.01*	0.07
FLW Interaction Frequency	1.01(0.92	0.87	0.90
Level 2: Distance from Kebele Center to Health Centers			
Distance to Health Centers (km)	0.99(0.95, 1.02)	0.40	0.43
Distance to Health Centers (km), per 5 km	0.923(0.78, 1.10)	0.40	0.49

[*] Reduced sample so have kebele-level information across all three surveys. Missing outcome: 2.
[†] Unadjusted logistic regression odds ratios, naïve model (assumes no clustering).
[‡] Wald Test Two-sided p-values, *: p<0.05, **: p<0.001.
[§] Adjusted for clustering by kebele of residence with an exchangeable working correlation structure. Wald Test Two-sided p-values, *: p<0.05, **: p<0.001.

Table 38. Misoprostol Use for PPH, Bivariate Analysis for Individual-level Variables, Oromiya Region, (MOMs Survey, June-July 2010), n=440[*]

Indicator	Unadjusted Odds Ratio (95% CI)[†]	p-value[‡]	Adjusted p-value[§]
Level 1: MOMS			
Age		0.62	0.31
15-19	2.65(0.45, 15.5)		
20-34	2.33(0.53, 10.29)		
35+	1.83(0.38, 8.86)		
Don't Know	Ref		
Parity (ordinal)	0.99(0.90, 1.10)	0.90	0.77
Parity (categorical)		0.50	0.46
1	1.05(0.51, 2.17)		
2-3	0.72(0.38, 1.37)		
4-5	0.69(0.35, 1.34)		
6+	Ref		
History of an Infant Death	0.95(0.53, 1.70)	0.87	0.95
Education	2.17(1.34, 3.52)	0.002*	<0.001*
Personal Cash Income in Last Month	1.90(1.10, 3.28)	0.02*	<0.001*
Age at Marriage		0.53	-[**]
Single (Never Married)	-		
≤ 15 Years	0.72(0.31, 1.67)		
16-18 Years	1.13(0.52, 2.47)		
19+ Years	0.72(0.30, 1.76)		
Don't Know	Ref		
Spouse's Education	2.69(1.64, 4.42)	<0.001**	0.002*
Spouse's Cash Income in Last Month	1.04(0.59, 1.83)	0.89	0.69
Household Land Ownership	1.23(0.75, 2.02)	0.40	0.67
Modern Contraceptive Method Use	3.29(1.98, 5.46)	<0.001**	<0.001**
ANC from a HEW or Skilled Provider	2.88(1.75, 4.63)	<0.001**	<0.001**
Delivery Attendance by a HEW or Skilled Provider	3.43(2.10, 5.97)	<0.001**	<0.001**
Know How to Reach HEW	12.25(3.79, 39.61)	<0.001**	<0.001**
Trust HEW for Delivery Care	1.22(0.98, 1.51)	0.08	0.001*
HBLSS Knowledge Index (ordinal)	1.38(1.28, 1.48)	<0.001**	<0.001**
HBLSS Knowledge Index (tertiles)		<0.001**	<0.001**
Low (Know 0-2 Items)	Ref		
Medium (Know 3-8 Items)	6.86(0.88, 53.44)		
High (Know 9-17 Items)	41.58(5.66, 305.3)		
Adherence to Traditional Practices Index (ordinal)	0.91(0.82, 1.01)	0.08	0.03*
Adherence to Traditional Practices Index (tertiles)			
Low (Adhere to 0-5 Items)	1.13(0.54, 2.33)	0.57	0.78
Medium (Adhere to 6-8 Items)	0.85(0.41, 1.78)		
High (Adhere to 9-14 Items)	Ref		
Care-Seeking Behaviors Index (ordinal)	1.28(1.15, 1.44)	<0.001**	<0.001**
Care-Seeking Behaviors Index (tertiles)		0.04*	-**
Low (Seek for 0-4 Items)	Ref		
Medium (Seek for 5-7 Items)	-		
High (Seek for 8-15 Items)	-		

[*] Reduced sample so have kebele-level information across all three surveys.
[†] Unadjusted logistic regression odds ratios, naïve model (assumes no clustering).
[‡] Wald Test Two-sided p-values, *: p<0.05, **: p<0.001.
[§] Adjusted for clustering by kebele of residence with an exchangeable working correlation structure. Wald Test Two-sided p-values, *: p<0.05, **: p<0.001.
[**] Could not be computed since the generalized Hessian matrix is not positive definite.

Table 39. Misoprostol Use for PPH, Bivariate Analysis for Kebele-level Variables, Oromiya Region, (ADULTs & FLWs Survey, June-July 2010), n=440[*]

Indicator	Unadjusted Odds Ratio (95% CI)[†]	p-value[‡]	Adjusted p-value[§]
Administrative Nesting Levels			
Woreda		0.21	0.63
Health Center		0.66	-[**]
Kebele		0.24	-
Level 2: ADULTS			
Education			
All	0.34(0.05, 2.28)	0.27	0.29
Women	0.23(0.06, 0.86)	0.03*	0.24
Cash Income in Last Month			
All	1.81(0.24, 13.69)	0.56	0.68
Women	1.90(0.33, 10.92)	0.47	0.65
Land Ownership	1.69(0.37, 7.71)	0.50	0.58
HBLSS Knowledge Index	1.04(0.95, 1.14)	0.46	0.29
Adherence to Traditional Practices Index	0.82(0.66, 1.01)	0.06	0.03*
Care-Seeking Behaviors Index	1.77(1.05, 2.96)	0.03*	0.15
Level 2: HEWs			
Age	1.06(1.01, 1.11)	0.03*	0.23
Education (years)	1.03(0.92, 1.16)	0.58	0.86
Parity	1.01(0.87, 1.18)	0.89	0.87
Clean and Safe Birth Training	1.25(0.45, 3.49)	0.67	0.76
Work Experience (years)	1.00(0.95, 1.10)	0.56	0.53
Delivery Provision Volume (women/month)	0.97(0.81, 1.16)	0.73	0.73
Have Delivery Supplies	2.30(1.02, 5.17)	0.045*	0.32
Misoprostol Supplies	3.40(0.94, 12.36)	0.06	0.24
General Confidence in Delivery Provision	1.13(0.92, 1.38)	0.24	0.27
Specific Confidence Index	1.30(1.09, 1.54)	0.003*	0.12
HBLSS Knowledge Index	0.96(0.80, 1.14)	0.63	0.55
Adherence to Traditional Practices Index	1.03(0.86, 1.24)	0.76	0.82
Care-Seeking Behaviors Index	0.73(0.54, 0.99)	0.04*	0.31
Challenges Index	0.50(0.29, 0.86)	0.01*	0.08
Team Identification	7.64(1.6, 36.41)	0.01*	0.18
Teamwork Strength	2.47(0.90, 6.82)	0.08	0.12
FLW Interaction Frequency	1.09(0.99, 1.19)	0.10	0.42
Level 2: Distance from Kebele Center to Health Centers			
Distance to Health Centers (km)	1.03(0.98, 1.07)	0.23	0.36
Distance to Health Centers (km), per 5 km	1.15(0.93, 1.44)	0.20	0.37

[*] Reduced sample so have kebele-level information across all three surveys.
[†] Unadjusted logistic regression odds ratios, naïve model (assumes no clustering).
[‡] Wald Test Two-sided p-values, *: p<0.05, **: p<0.001.
[§] Adjusted for clustering by kebele of residence, only ran for kebele-level variables. Wald Test Two-sided p-values, *: p<0.05, **: p<0.001.
[**] Could not be computed since the generalized Hessian matrix is not positive definite.

Table 40. Odds of Antenatal Care from a Skilled Provider or HEW Based on Woman and Spousal Education and Income, Amhara and Oromiya Regions, Ethiopia, (MOMs Survey, June-July 2010)

Spouse		Woman			
		Education		Income*	
		Any (n=209)	None (n=699)	Any (n=120)	None (n=785)
Education†	Any (n=265)	3.80(2.49, 5.82)	2.04(1.42, 2.92)	5.29 (3.32, 8.44)	2.28 (1.63, 3.19)
	None (n=558)	1.87(1.29, 2.70)	Ref	2.32 (1.74, 3.09)	Ref
Income‡	Any (n=133)	3.18 (2.10, 4.83)	1.36 (0.99, 1.87)	2.40 (1.70, 3.40)	0.91 (0.59, 1.41)
	None (n=723)	2.34 (1.66, 3.29)	Ref	2.63 (1.70, 4.06)	Ref

Table 41. Odds of Misoprostol Use for PPH Based on Woman and Spousal Education and Income, Amhara and Oromiya Regions, Ethiopia, (MOMs Survey, June-July 2010)

Spouse		Woman			
		Education		Income	
		Any (n=137)	None (n=303)	Any (n=84)	None (n=356)
Education§	Any (n=149)	3.94(2.18, 7.10)	2.32(1.19, 4.52)	4.58 (2.32, 9.07)	2.65(1.43, 4.92)
	None (n=260)	1.70(1.32, 2.19)	Ref	1.73(1.12, 2.67)	Ref
Income**	Any (n=98)	2.23(1.52, 3.28)	0.96(0.66, 1.39)	1.63(1.08, 2.45)	0.63(0.41, 0.98)
	None (n=314)	2.32(1.74, 3.10)	Ref	2.58(1.73, 3.83)	Ref

* Missing=3 (0.3%)
† Missing=85 (9%).
‡ Missing=52 (6%)
§ Missing=31 (7%).
** Missing=28 (6%)

Table 42. Model Selection for Antenatal Care from a Skilled Provider or HEW in Amhara and Oromiya Regions, Ethiopia

Covariate	Initial Model*		Gold Standard Model		Final Model		
	$\hat{\beta}$	p-value	$\hat{\beta}$	p-value	$\hat{\beta}$	p-value†	OR (95%CI)
Intercept	-2.2964	<0.001**	-2.3216	<0.001**	-2.2026	<0.001**	
Region	0.3188	0.12	0.3059	0.15	-	-	
Age	-	0.43	-	0.43	-	-	
15-19 yrs	0.1694	0.63	0.1900	0.57	-	-	
20-34 yrs	0.1725	0.52	0.1478	0.58	-	-	
35+ yrs	0.5431	0.12	0.5328	0.14	-	-	
Don't Know	Ref	-	Ref	-	Ref	-	
Parity	-0.1467	<0.001**	-0.1458	<0.001**	-0.1409	<0.001**	0.87 (0.81, 0.93)
History of an Infant Death	-0.2060	0.37	-0.2087	0.36	-	-	
Education (Woman)	-0.1066	0.76	0.0938	0.70	-	-	
Income (Woman)	0.4821	0.26	0.1970	0.59	0.2519	0.47	1.29 (0.65, 2.54)
Education (Spouse)	0.3126	0.21	0.3099	0.21	0.3448	0.12	1.41(0.91, 2.18)
Income (Spouse)	-0.3206	0.35	-0.2801	0.35	-0.3274	0.25	0.72(0.41, 1.26)
Education (Woman)***Income** (Woman)	0.1558	0.75	-	-	-	-	
Education (Woman)* **Education** (Spouse)	0.0625	0.88	-	-	-	-	
Education(Woman)* **Income** (Spouse)	0.6795	0.32	-	-	-	-	
Income (Woman) * **Education** (Spouse)	1.1177	0.02*	1.1964	0.008*	1.1508	0.009*	3.16(1.33, 7.51)
Income (Woman) * **Income** (Spouse)	-0.6282	0.30	-	-	-	-	
Modern Contraceptive Use	0.4305	0.04*	0.4305	0.04*	0.4225	0.045*	1.53(1.01, 2.31)
HBLSS Knowledge Index	-	0.01*	-	0.02*	-	0.02*	
Low Knowledge	Ref	-	Ref	-	Ref	-	
Medium Knowledge	0.4527	0.01*	0.4562	0.01*	0.4652	0.001*	1.59(1.12, 2.27)
High Knowledge	0.7620	0.005*	0.7327	0.008*	0.6627	0.01*	1.94(1.15, 3.26)
Adherence to Traditional Practices Index	-	0.03*	-	0.03*	-	0.03*	
Low Adherence	0.6891	0.02*	0.6930	0.02*	0.6838	0.02*	1.98(1.11, 3.54)
Medium Adherence	0.5773	0.03*	0.5779	0.03*	0.5776	0.02*	1.78(1.08, 2.95)
High Adherence	Ref	-	Ref	-	Ref	-	
Trust HEW for ANC	0.2200	<0.001**	0.2252	<0.001**	0.2235	<0.001**	1.25(1.12, 1.40)
HEW's FLW Interaction Frequency	0.1012	0.002*	0.1027	0.002*	0.1083	0.001*	1.11(1.05, 1.19)
Kebele Distance to Health Center	-0.0149	0.15	-0.0145	0.17	-	-	
QIC		905.10		901.20		894.91	
QIC_u		904.46		899.49		893.16	
Exchangeable Working Correlation		0.0024		0.0030		0.0016	

* Initial model following collinearity assessment and screening.

† Wald Test Two-sided p-values, *: p<0.05, **: p<0.001, adjusted for clustering by shared kebele of residence.

Table 43. Model Selection for Delivery Care from a Skilled Provider or HEW in Amhara and Oromiya Regions, Ethiopia

Covariate	Initial Model*		Gold Standard Model		Final Model		
	$\hat{\beta}$	p-value	$\hat{\beta}$	p-value	$\hat{\beta}$	p-value†	OR (95% CI)
Intercept	-3.2688	<0.001**	-3.2485	<0.001**	-3.3823	<0.001**	
Region	-0.3722	0.16	-0.3829	0.17	-	-	
Parity	-0.0758	0.10	-0.0787	0.09	-0.0863	0.05	0.92(0.84, 1.00)
History of an Infant Death	-0.6529	0.13	-0.6141	0.15	-	-	
Education (Woman)	0.1756	0.56	0.1657	0.43	0.2360	0.23	1.27(0.86, 1.87)
Income (Woman)	0.2736	0.55	0.6569	0.01*	0.6447	0.01*	1.91(1.14, 3.18)
Education (Spouse)	0.2516	0.25	0.3330	0.02*	0.3346	0.03*	1.40(1.04, 1.88)
Income (Spouse)	-0.7439	0.16	-0.5462	0.04*	-0.4980	0.06	0.61(0.37, 1.01)
Education (Woman)***Income** (Woman)	0.7064	0.28	-	-	-	-	
Education (Woman)* **Education** (Spouse)	-1.0325	0.15	-	-	-	-	
Education(Woman)* **Income** (Spouse)	0.0970	0.85	-	-	-	-	
Income (Woman) * **Education** (Spouse)	-0.4092	0.51	-	-	-	-	
Income (Woman) * **Income** (Spouse)	0.6432	0.24	-	-	-	-	
Income (Spouse)* **Education** (Spouse)	0.6970	0.27	-	-	-	-	
Modern Contraceptive Use	0.0926	0.71	0.1174	0.63	-	-	
HBLSS Knowledge Index	-	0.1928	-	0.16	-	0.13	
Low Knowledge	Ref	-	Ref	-	Ref	-	
Medium Knowledge	0.2383	0.53	0.2131	0.57	0.1934	0.60	1.21(0.59, 2.51)
High Knowledge	0.5577	0.12	0.5572	0.11	0.5752	0.10	1.78(0.89, 3.55)
Adherence to Traditional Practices Index	-	0.004*	-	0.004*	-	0.001*	
Low Adherence	1.2823	0.001*	1.2745	0.001*	1.3806	<0.001**	3.98(1.88, 8.43)
Medium Adherence	0.7364	0.04*	0.7388	0.046*	0.7615	0.04*	2.14(1.05, 4.35)
High Adherence	Ref	-	Ref	-	Ref	-	
Trust HEW for Delivery	0.0227	0.79	0.0198	0.81	0.0191	0.80	1.02(0.88, 1.18)
ANC from Skilled Provider or HEW	0.8756	<0.001**	0.8488	0.001*	0.8404	<0.001**	2.32(1.49, 3.61)
Kebele Distance to Health Center	0.0128	0.50	0.0123	0.51	-	-	
QIC		556.12		548.97		545.74	
QIC_u		556.32		547.59		546.58	
Exchangeable Working Correlation		0.0213		0.0221		0.0306	

* Initial model following collinearity assessment and screening.

† Wald Test Two-sided p-values, *: p<0.05, **: p<0.001, adjusted for clustering by shared kebele of residence.

Table 44. Model Selection for Postnatal Care Within 2 Days of Birth from a Skilled Provider or HEW in Amhara and Oromiya Regions, Ethiopia

Covariate	Initial Model*		Gold Standard Model		Final Model		
	$\hat{\beta}$	p-value	$\hat{\beta}$	p-value	$\hat{\beta}$	p-value†	OR (95%CI)
Intercept	-5.3198	<0.001**	-5.1598	<0.001**	-5.3841	<0.001**	
Parity	-0.0920	0.30	-0.0757	0.37	-	-	
History of an Infant Death	0.1864	0.65	0.2054	0.63	-	-	
Education (Woman)	0.7704	0.02*	0.1466	0.57	-	-	
Income (Woman)	0.0751	0.91	0.6312	0.23	-	-	
Education (Spouse)	0.3342	0.50	0.2255	0.58	0.3444	0.35	1.41(0.69, 2.90)
Income (Spouse)	-0.2234	0.64	-0.3959	0.29	-	-	
Education (Woman)***Income** (Woman)	-0.0987	0.90	-	-	-	-	
Education (Woman)* **Education** (Spouse)	-0.4931	0.41	-	-	-	-	
Education(Woman)* **Income** (Spouse)	-1.3799	0.16	-	-	-	-	
Income (Woman) * **Education** (Spouse)	0.4190	0.53	-	-	-	-	
Income (Woman) * **Income** (Spouse)	0.9720	0.21	-	-	-	-	
HBLSS Knowledge Index	-	0.03*	-	0.03*	-	0.045*	
Low Knowledge	Ref	-	Ref	-	Ref	-	
Medium Knowledge	0.9049	0.11	0.8615	0.15	0.9360	0.10	2.55(0.83, 7.88)
High Knowledge	1.4964	0.01*	1.4835	0.01*	1.5217	0.01*	4.58(1.35, 15.49)
Trust HEW for PNC	0.1142	0.37	0.1086	0.42	0.1236	0.32	1.13(0.89, 1.44)
ANC from Skilled Provider or HEW	1.2106	0.002*	1.1439	0.002*	1.2338	0.001*	3.43(1.63, 7.26)
Delivery with Skilled Provider or HEW	2.0968	<0.001**	2.0962	<0.001**	2.1747	<0.001**	8.80(4.62, 16.76)
Proportion of Women with Income	0.4960	0.48	0.4977	0.46	-	-	
QIC		352.60		350.09		344.04	
QIC_u		351.27		346.19		341.71	
Exchangeable Working Correlation		-0.0024		-0.0045		-0.0057	

* Initial model following collinearity assessment and screening.

† Wald Test Two-sided p-values, *: p<0.05, **: p<0.001, adjusted for clustering by shared kebele of residence.

Table 45. Model Selection for Use of Misoprostol for Postpartum Hemorrhage in Oromiya Region, Ethiopia

Covariate	Initial Model		Final Model		
	$\hat{\beta}$	p-value	$\hat{\beta}$	p-value*	OR (95% CI)
Intercept	-5.3248	<0.001**	-4.9105	<0.001**	
History of an Infant Death	0.1619	0.63	-	-	
Education (Woman)	0.3928	0.02*	0.4085	0.002*	1.50(1.16, 1.96)
Income (Woman)	0.5247	0.13	-	-	
Education (Spouse)	-0.9531	<0.001**	0.4071	0.30	1.50(0.70, 3.22)
Income (Spouse)	0.4360	0.30	-0.6289	<0.001**	0.53(0.38, 0.74)
Income (Woman) * **Education** (Spouse)	-	-	-	-	
Income (Spouse)* **Education** (Spouse)	-	-	-	-	
Modern Contraceptive Use	0.7961	0.003*	0.7648	0.004*	2.15(1.27, 3.62)
HBLSS Knowledge Index	-	<0.001**	-	<0.001**	
Low Knowledge	Ref	-	Ref	-	
Medium Knowledge	1.6013	0.10	1.6198	0.11	5.05(0.71, 36.01)
High Knowledge	3.1553	0.004*	3.1896	0.004*	24.28(2.77, 212.68)
Trust HEW for Delivery	0.0629	0.53	0.0617	0.54	1.06(0.87, 1.29)
Delivery with Skilled Provider or HEW	0.8882	0.03*	0.9045	0.01*	2.47(1.19, 5.11)
Kebele Distance to Health Center	0.0371	0.26	-	-	
QIC		331.30		326.76	
QIC_u		329.58		326.18	
Exchangeable Working Correlation		0.0416		0.0410	

* Wald Test Two-sided p-values, *: p<0.05, **: p<0.001, adjusted for clustering by shared kebele of residence.

Table 46. Comparison of Final Models for Maternal and Newborn Health Services in Amhara and Oromiya Regions, Ethiopia

Covariate	ANC Model		Delivery Model		PNC Model		Misoprostol Model	
	$\hat{\beta}$	p-value	$\hat{\beta}$	p-value	$\hat{\beta}$	p-value	$\hat{\beta}$	p-value*
Intercept	-2.2026	<0.001**	-3.3823	<0.001**	-5.3841	<0.001**	-4.9105	<0.001**
Parity	-0.1409	<0.001**	-0.0863	0.05	-	-	-	-
Education (Woman)	-	-	0.2360	0.23	-	-	0.4085	0.002*
Income (Woman)	0.2519	0.47	0.6447	0.01*	-	-	-	-
Education (Spouse)	0.3448	0.12	0.3346	0.03*	0.3444	0.35	0.4071	0.30
Income (Spouse)	-0.3274	0.25	-0.4980	0.06	-	-	-0.6289	<0.001**
Income (Woman) * **Education** (Spouse)	1.1508	0.009*	-	-	-	-	n/a	n/a
Income (Spouse)* **Education** (Spouse)	-	-	-	-	-	-	n/a	n/a
Modern Contraceptive Use	0.4225	0.045*	-	-	-	-	0.7648	0.004*
HBLSS Knowledge Index	-	0.02*	-	0.13	-	0.045*		<0.001**
Low Knowledge	Ref	-	Ref	-	Ref	-	Ref	-
Medium Knowledge	0.4652	0.001*	0.1934	0.60	0.9360	0.10	1.6198	0.11
High Knowledge	0.6627	0.01*	0.5752	0.10	1.5217	0.01*	3.1896	0.004*
Adherence to Traditional Practices Index	-	0.03*	-	0.001*	n/a	n/a	n/a	n/a
Low Adherence	0.6838	0.02*	1.3806	<0.001**	n/a	n/a	n/a	n/a
Medium Adherence	0.5776	0.02*	0.7615	0.04*	n/a	n/a	n/a	n/a
High Adherence	Ref	-	Ref	-	n/a	n/a	n/a	n/a
Trust HEW for ANC / Delivery / PNC	0.2235	<0.001**	0.0191	0.80	0.1236	0.32	0.0617	0.54
ANC from Skilled Provider or HEW	n/a	n/a	0.8404	<0.001**	1.2338	0.001*	n/a	n/a
Delivery from Skilled Provider or HEW	n/a	n/a	n/a	n/a	2.1747	<0.001**	0.9045	0.01*
HEW's FLW Interaction Frequency	0.1083	0.001*	-	-	-	-	-	-
QIC		894.91		545.74		344.04		326.76
QIC_u		893.16		546.58		341.71		326.18
Exchangeable Working Correlation		0.0016		0.0306		-0.0057		0.0410

* Wald Test Two-sided p-values, *: p<0.05, **: p<0.001, adjusted for clustering by shared kebele of residence.

VIII. Figures

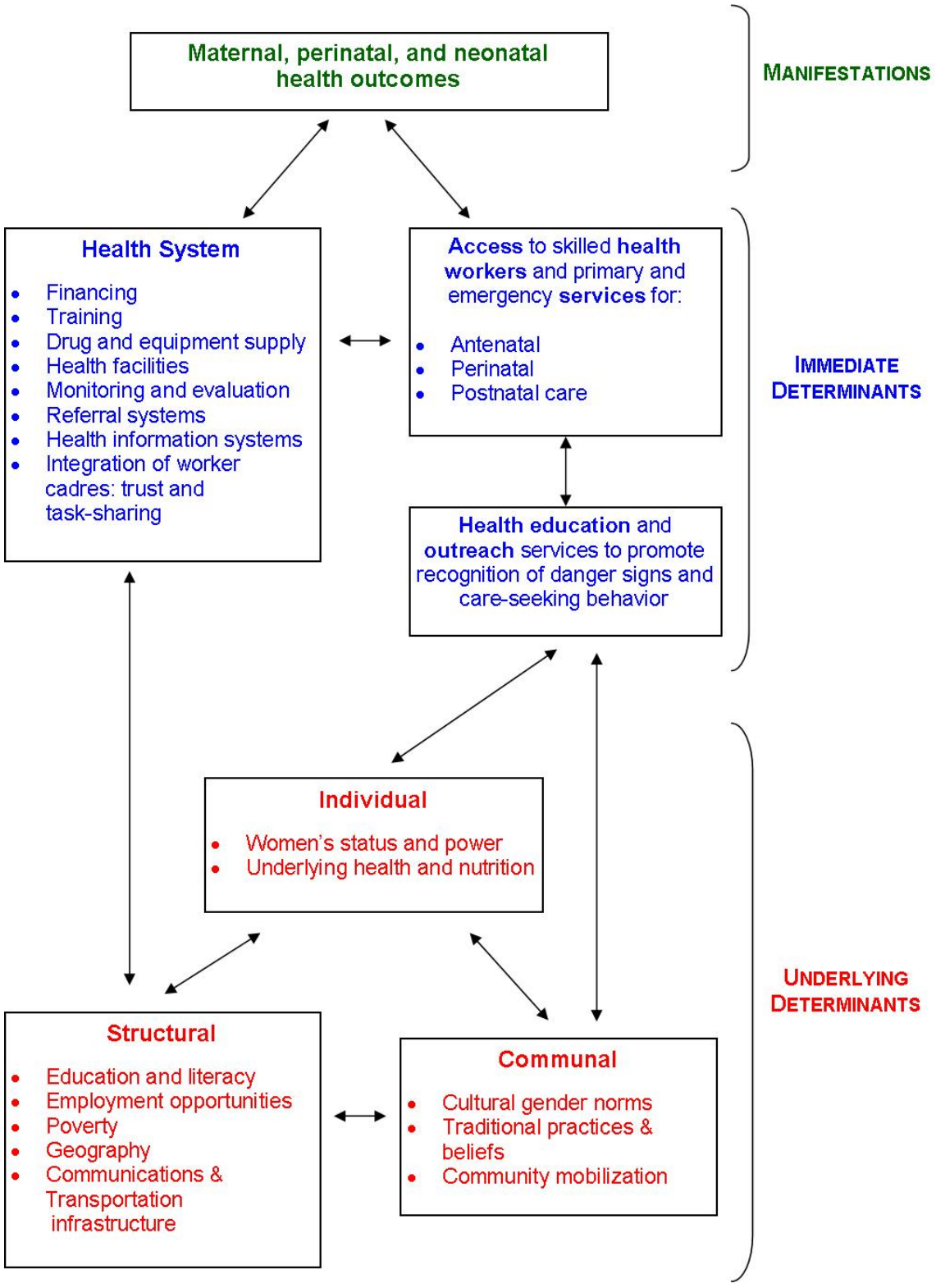

Figure 1. Conceptual framework for maternal and newborn health

Woman	Newborn
Care at Delivery • Clean delivery • Uterotonics (Misoprostol) • Uterine massage	**Postnatal Health Assessment** • Color check • Activity check • Feeding check
Postpartum Health Assessment • Breast check • Bleeding check • Trauma check (fistula) • Fever check	**Counseling** • Breastfeeding • Thermal care • Hand washing & cord care • Illness care seeking • Pneumonia management
Counseling • Breast care • Nutrition • Hygiene • Rest • Uterine massage • Illness care seeking	

Figure 2. MaNHEP Maternal and Newborn Health Care Package

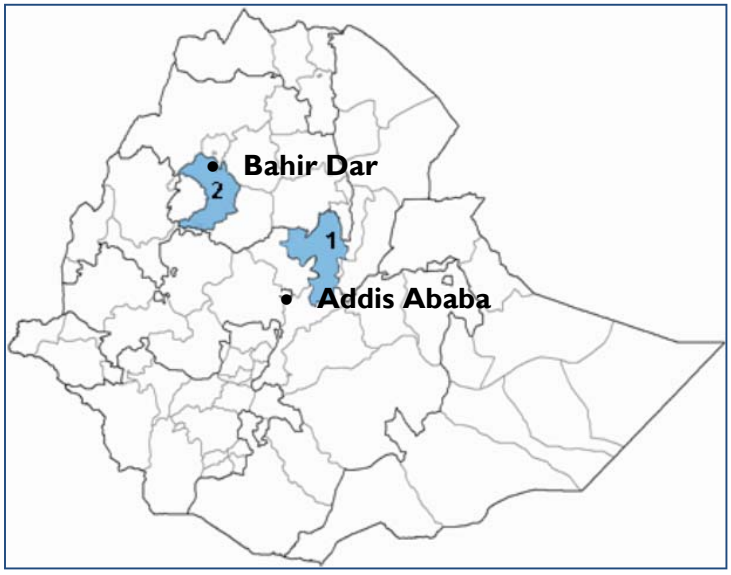

Figure 3. Map of Ethiopia displaying MaNHEP field sites: 1) Three woredas in North Shoa Zone, Oromiya Region, and 2) Three woredas in West Gojjam Zone, Amhara Region (MaNHEP 2009)

IX. Appendices

Appendix A. MOMS MaNHEP Baseline Survey: Women with a birth in the year prior to the survey, June-July 2010

Informed Consent Obtained: [ ] Yes [ ] No

Section I – Background and Demographics

INTERVIEWER COMPLETE:

Interviewer Number: _____

Survey Identification Number: _____

Kebele: _____

Woreda: _____

Date Interview Performed: _____

Interview Say: *"I am going to start by asking you some questions about you and your household."*

QUESTION	ANSWERS	SKIP
1. Have you given birth in the past year? (CIRCLE RESPONSE) [BIRTH_LASTYR]	Yes……..……...1 No…….....0	 →END SURVEY
2. What is your age? (WRITE ANSWER IN SPACE) [AGE]	[_____] years **OR** Don't Know……....99	
3. What is your religion? (DO NOT READ LIST) (ONLY ONE ANSWER POSSIBLE) (CIRCLE RESPONSE) [RELIGION]	Christian Orthodox …….…….1 Christian Protestant……..……2 Roman Catholic……3 Adventist …….4 Muslim ……5 Traditional Religion…… …6 Other ……...……..…7 None……...…..……8	
4. What is your current marital status? (DO NOT READ LIST) (ONLY ONE ANSWER POSSIBLE) (CIRCLE RESPONSE) [MARRIAGE]	Single & Never Married……...1 Married…….2 Divorced / Separated.……...…...3 Widowed……..…4	1→ Q12 3→Q10 4→Q10

5. Has your spouse ever attended school? (CIRCLE RESPONSE) [SPEVRSCH]	Yes……..……...1 No…….....0	0→Q7
6. How many years did your spouse attend school? (WRITE ANSWER IN SPACE) [SPSCHYRS]	[_____] years **OR** Don't Know……....99	
7. **Did your spouse earn any cash income in the previous month?** (CIRCLE RESPONSE) [SPWORK]	Yes……..…...……...1 No…….....0	0→Q9
8. How much cash income did your spouse earn last month? (WRITE ANSWER IN SPACE) (ROUND UP TO WHOLE BIRR) [SPINCOME]	[_____] birr **OR** Don't Know……....99	
9. How old is your spouse? (WRITE ANSWER IN SPACE) [AGESP]	[_____] years **OR** Don't Know……....99	
10. How old was your spouse when you were married? (WRITE ANSWER IN SPACE) [AGESPMAR]	[_____] years **OR** Don't Know……....99	
11. How old were you when you were married? (WRITE ANSWER IN SPACE) [AGEMAR]	[_____] years **OR** Don't Know……....99	
12. Have you ever attended school? (CIRCLE RESPONSE) [EVERSCH]	Yes……..……...1 No…….....0	0→ Q14
13. How many years did you attend school? (WRITE ANSWER IN SPACE) [SCHYRS]	[_____] years **OR** Don't Know……....99	
14. Who lives with you in your household? (DO NOT READ LIST) (MULTIPLE ANSWERS POSSIBLE) (CIRCLE ALL THAT APPLY) (IF RESPONDENT LIVES ALONE, CIRCLE "11" ONLY)	Mother ……1[HH_MOM] Father ……..2[HH_DAD] Husband.……...…...……3[HH_HUS] Child/Children …...……...4[HH_KIDS] Brother(s)…….5[HH_BRO] Sister(s)……6[HH_SIS] Mother-In-Law……7[HH_MIL] Father-In-Law……..8[HH_FIL] Other Relatives……9[HH_REL]	

	(**Specify**: _____) Other Non-Relatives……..10[HH_OTH] (**Specify**: _____) None / Lives Alone.…….11 [HH_NON]	
15. How many people slept here last night? (WRITE ANSWER IN SPACE) [LASTNIGHT]	[_____] people **OR** Don't Know (99)	
16. Did you earn any cash income last month? (CIRCLE RESPONSE) [OWNWORK]	Yes……..…...……...1 No…….....0	0→Q19
17. How much cash income did you earn last month? (WRITE ANSWER IN SPACE) (ROUND UP TO WHOLE BIRR) [OWNINCOME]	[_____] birr **OR** Don't Know……....99	
18. What is the total sum of cash income that all members of this household earned last month? (WRITE ANSWER IN SPACE) [SUMINCOME]	[_____] birr **OR** Don't Know……....99	
19. Does this household own any land? (CIRCLE RESPONSE) [LANDANY]	Yes……..…...……...1 No…….....0	0→Q21
20. How much land does this household own in hectares? (WRITE ANSWER IN SPACE) [LANDHEC]	[_____] hectares **OR** Don't Know……....99	

Section II – Birth History		
Interview Read: *"Now I would like to ask you some questions about your experiences with pregnancy and childbirth."*		
QUESTION	**ANSWER**	**SKIP**
21. **How many times have you been pregnant?** (WRITE ANSWER IN SPACE) [NUMPREG]	[_____] times **OR** Don't Know……....99	

22. How many live births have you had in your life? (WRITE ANSWER IN SPACE) [NUMLB]	[_____] live births **OR** Don't Know……....99	
23. Have you ever had a child who died in the first year of his/her life? (CIRCLE RESPONSE) [CHDEATH]	Yes……..…...……...1 No…….....0	0→Q25
24. How many children have you had who died in the first year of life? (WRITE ANSWER IN SPACE) [NUMCHDEATH]	[_____] <12months deaths **OR** Don't Know……....99	
25. How many living sons and daughters do you have? (WRITE ANSWER IN SPACE)	[_____] sons [NUMBOYS] **AND** [_____] daughters [NUMGRLS]	

Section III – Contraceptive Use		
Interview Read: *"I would like to ask you some questions about family planning, that is, the various ways that a couple can avoid or delay a pregnancy."*		
QUESTION	**ANSWER**	**SKIP**
26. Are you currently using a method to avoid or delay pregnancy? (CIRCLE RESPONSE) [FPUSE]	Yes……..……..…...……...1 No…….....0	0→Q28

27. **What method or methods of family planning are you currently using?** (DO NOT READ LIST) (MULTIPLE ANSWERS POSSIBLE) (CIRCLE ALL THAT APPLY)	Oral Pills……...…….……...1[FP_OP] Condom (male) ……..…….…….2[FP_MCON] Condom (female)……...…….…..3[FP_FCON] Male Sterilization…..……..……4[FP_MSTR] Female Sterilization…….……..5[FP_FSTR] IUD……..…...….6[FP_IUD] Standard Days / Rhythm……..……7[FP_RHY] Abstinence…….……8[FP_ABS] Implant……....9[FP_IMP] Injections……...10[FP_INJ] Diaphragm / Foam / Jelly……...11[FP_DIA] Withdrawal…….……..12[FP_WITHD] Breastfeeding……..….13[FP_BF] Other……..…14[FP_OTH] Currently Pregnant……15[FP_CUR]

Section IV – General Attitudes Towards Maternal Care	
Interview Read: *"Now I would like to ask you some questions about people who can provide care for mothers and babies in your community."*	
QUESTION	**ANSWER**
28. In your community, whose job is it to provide care for women while they are pregnant? (DO NOT READ LIST) (MULTIPLE ANSWERS POSSIBLE) (CIRCLE ALL RESPONSES GIVEN) [GA_ANCJ]	Physician……...1[GA_ANCJ_PHYS] Health Officer / Clinical Officer……...2[GA_ANCJ_HOCO] Nurse ……..……...…3[GA_ANCJ_NURSE] Midwife……..……...……4[GA_ANCJ_MIDW] Trained Traditional Birth Attendant……..5[GA_ANCJ_TTBA] Untrained Traditional Birth Attendant……..6[GA_ANCJ_UTBA] Health Extension Worker……..7[GA_ANCJ_HEW] Voluntary Community Health Worker……..8[GA_ANCJ_VCHW] Family/Friend/Other Non-Trained……9[GA_ANCJ_OTH] Don't Know…….……10[GA_ANCJ_DK] Respondent……11[GA_ANCJ_ME]
29. Whom do you trust to do provide women care while they are pregnant? (DO NOT READ LIST)	Physician……1[GA_ANCT_PHYS] Health Officer / Clinical Officer……....2[GA_ANCT_HOCO] Nurse……..…3[GA_ANCT_NURSE] Midwife……...……...…4[GA_ANCT_MIDW]

(MULTIPLE ANSWERS POSSIBLE) (CIRCLE ALL RESPONSES GIVEN) [GA_ANCT]	Trained Traditional Birth Attendant……....5[GA_ANCT_TTBA] Untrained Traditional Birth Attendant……6[GA_ANCT_UTBA] Health Extension Worker……..……..…...7[GA_ANCT_HEW] Voluntary Community Health Worker.....8[GA_ANCT_VCHW] Family/Friend/Other Non-Trained……..9[GA_ANCT_OTH] Don't Know…….……10[GA_ANCT_DK] Respondent……..…11[GA_ANCT_ME]
30. Who has the knowledge and skills to do provide women care while they are pregnant? (DO NOT READ LIST) (MULTIPLE ANSWERS POSSIBLE) (CIRCLE ALL RESPONSES GIVEN) [GA_ANCK]	Physician……..…1[GA_ANCK_PHYS] Health Officer / Clinical Officer…….....2[GA_ANCK_HOCO] Nurse …….....…3[GA_ANCK_NURSE] Midwife…….……..…4[GA_ANCK_MIDW] Trained Traditional Birth Attendant……...5[GA_ANCK_TTBA] Untrained Traditional Birth Attendant…….....6[GA_ANCK_UTBA] Health Extension Worker…….....7[GA_ANCK_HEW] Voluntary Community Health Worker.....8[GA_ANCK_VCHW] Family/Friend/Other Non-Trained……..…9[GA_ANCK_OTH] Don't Know……..……10[GA_ANCK_DK] Respondent……11[GA_ANCK_ME]
31. In your community, whose job is it to provide care for women while they are in labor? (DO NOT READ LIST) (MULTIPLE ANSWERS POSSIBLE) (CIRCLE ALL RESPONSES GIVEN) [GA_INTRAJ]	Physician……..……..…1[GA_INTRAJ_PHYS] Health Officer / Clinical Officer……..2[GA_INTRAJ_HOCO] Nurse …….……...3[GA_INTRAJ_NURSE] Midwife……..…4[GA_INTRAJ_MIDW] Trained Traditional Birth Attendant……..5[GA_INTRAJ_TTBA] Untrained Traditional Birth Attendant…….....6[GA_INTRAJ_UTBA] Health Extension Worker…….…..…….……..7[GA_INTRAJ_HEW] Voluntary Community Health Worker…..…...8[GA_INTRAJ_VCHW] Family/Friend/Other Non-Trained……..…9[GA_INTRAJ_OTH] Don't Know……...…10[GA_INTRAJ_DK] Respondent……..…11[GA_INTRAJ_ME]
32. Whom do you trust to do provide women care while they are in labor? (DO NOT READ LIST) (MULTIPLE ANSWERS POSSIBLE) (CIRCLE ALL RESPONSES GIVEN) [GA_INTRAT]	Physician……..1[GA_INTRAT_PHYS] Health Officer / Clinical Officer……2[GA_INTRAT_HOCO] Nurse …….....…3[GA_INTRAT_NURSE] Midwife……..…4[GA_INTRAT_MIDW] Trained Traditional Birth Attendant…..…....5[GA_INTRAT_TTBA] Untrained Traditional Birth Attendant…….....6[GA_INTRAT_UTBA] Health Extension Worker……..……..7[GA_INTRAT_HEW] Voluntary Community Health Worker…….....8[GA_INTRAT_VCHW]

	Family/Friend/Other Non-Trained……9[GA_INTRAT_OTH] Don't Know……..…10[GA_INTRAT_DK] Respondent…….……11[GA_INTRAT_ME]
33. Who has the knowledge and skills to do provide women care while they are in labor? (DO NOT READ LIST) (MULTIPLE ANSWERS POSSIBLE) (CIRCLE ALL RESPONSES GIVEN) [GA_INTRAK]	Physician……..…1[GA_INTRAK_PHYS] Health Officer / Clinical Officer……..2[GA_INTRAK_HOCO] Nurse …….....…3[GA_INTRAK_NURSE] Midwife……4[GA_INTRAK_MIDW] Trained Traditional Birth Attendant……...5[GA_INTRAK_TTBA] Untrained Traditional Birth Attendant……...6[GA_INTRAK_UTBA] Health Extension Worker……..…..7[GA_INTRAK_HEW] Voluntary Community Health Worker……8[GA_INTRAK_VCHW] Family/Friend/Other Non-Trained……..…9[GA_INTRAK_OTH] Don't Know……..…10[GA_INTRAK_DK] Respondent……..……11[GA_INTRAT_ME]
34. In your community, whose job is it to provide care for women after they have given birth? (DO NOT READ LIST) (MULTIPLE ANSWERS POSSIBLE) (CIRCLE ALL RESPONSES GIVEN) [GA_POSTJ]	Physician……..….1[GA_POSTJ_PHYS] Health Officer / Clinical Officer……..….2[GA_POSTJ_HOCO] Nurse ……...3[GA_POSTJ_NURSE] Midwife……...…4[GA_POSTJ_MIDW] Trained Traditional Birth Attendant……..5[GA_POSTJ_TTBA] Untrained Traditional Birth Attendant……6[GA_POSTJ_UTBA] Health Extension Worker……..…..7[GA_POSTJ_HEW] Voluntary Community Health Worker……..8[GA_POSTJ_VCHW] Family/Friend/Other Non-Trained……...…9[GA_POSTJ_OTH] Don't Know……..…10[GA_POSTJ_DK] Respondent……...……11[GA_POSTJ_ME]
35. Whom do you trust to do provide women care after they have given birth? (DO NOT READ LIST) (MULTIPLE ANSWERS POSSIBLE) (CIRCLE ALL RESPONSES GIVEN) [GA_POSTT]	Physician……..….1[GA_POSTT_PHYS] Health Officer / Clinical Officer……..…..2[GA_POSTT_HOCO] Nurse ……..…3[GA_POSTT_NURSE] Midwife……..…4[GA_POSTT_MIDW] Trained Traditional Birth Attendant…….5[GA_POSTT_TTBA] Untrained Traditional Birth Attendant……...6[GA_POSTT_UTBA] Health Extension Worker……..…..…..7[GA_POSTT_HEW] Voluntary Community Health Worker……..8[GA_POSTT_VCHW] Family/Friend/Other Non-Trained……...…9[GA_POSTT_OTH] Don't Know……10[GA_POSTT_DK] Respondent……...……11[GA_POSTT_ME]

36. Who has the knowledge and skills to do provide women care after they have given birth? (DO NOT READ LIST) (MULTIPLE ANSWERS POSSIBLE) (CIRCLE ALL RESPONSES GIVEN) [GA_POSTK]	Physician……1[GA_POSTK_PHYS] Health Officer /Clinical Officer……..…..2[GA_POSTK_HOCO] Nurse …….....…3[GA_POSTK_NURSE] Midwife…….……..…4[GA_POSTK_MIDW] Trained Traditional Birth Attendant……...5[GA_POSTK_TTBA] Untrained Traditional Birth Attendant……6[GA_POSTK_UTBA] Health Extension Worker……....7[GA_POSTK_HEW] Voluntary Community Health Worker……..8[GA_POSTK_VCHW] Family/Friend/Other Non-Trained……9[GA_POSTK_OTH] Don't Know……..…10[GA_POSTK_DK] Respondent……11[GA_POSTK_ME]
37. In your community, whose job is it to provide care for a newborn baby? (DO NOT READ LIST) (MULTIPLE ANSWERS POSSIBLE) (CIRCLE ALL RESPONSES GIVEN) [GA_NEWJ]	Physician……1[GA_NEWJ_PHYS] Health Officer /Clinical Officer……....2[GA_NEWJ_HOCO] Nurse ……....3[GA_NEWJ_NURSE] Midwife……..…4[GA_NEWJ_MIDW] Trained TBA……..…....5[GA_NEWJ_TTBA] Untrained TBA……..…...6[GA_NEWJ_UTBA] HEW…….……..…..7[GA_NEWJ_HEW] vCHW……..…….8[GA_NEWJ_VCHW] Family/Friend/Other Non-Trained……9[GA_NEWJ_OTH] Don't Know…….……10[GA_POSTJ_DK] Respondent……11[GA_NEWJ_ME]
38. Whom do you trust to do provide care for a newborn baby? (DO NOT READ LIST) (MULTIPLE ANSWERS POSSIBLE) (CIRCLE ALL RESPONSES GIVEN) [GA_NEWT]	Physician…….…1[GA_NEWT_PHYS] Health Officer / Clinical Officer……..2[GA_NEWT_HOCO] Nurse ……..…3[GA_NEWT_NURSE] Midwife……..…4[GA_NEWT_MIDW] Trained TBA……..…….....5[GA_NEWT_TTBA] Untrained TBA……...6[GA_NEWT_UTBA] HEW……..……..7[GA_NEWT_HEW] vCHW…….8[GA_NEWT_VCHW] Family/Friend/Other Non-Trained……..9[GA_NEWT_OTH] Don't Know……10[GA_NEWT_DK] Respondent……..……11[GA_NEWT_ME]
39. Who has the knowledge and skills to do provide care for a newborn baby? (DO NOT READ LIST)	Physician…….……1[GA_NEWK_PHYS] Health Officer /Clinical Officer……...2[GA_NEWK_HOCO] Nurse ……..…3[GA_NEWK_NURSE] Midwife……..……..…4[GA_NEWK_MIDW]

(MULTIPLE ANSWERS POSSIBLE) (CIRCLE ALL RESPONSES GIVEN) [GA_NEWK]	Trained TBA……...5[GA_NEWK_TTBA] Untrained TBA……...6[GA_NEWK_UTBA] Health Extension Worker……..…..7[GA_NEWK_HEW] vCHW……..8[GA_NEWK_VCHW] Family/Friend/Other Non-Trained……..…9[GA_NEWK_OTH] Don't Know……..……10[GA_NEWK_DK] Respondent……11[GA_NEWK_ME]

Section V – Knowledge of Front-Line Healthcare Workers

Interview Read: *"Now I would like to ask you some questions about people who can provide health care in your community."*

QUESTION	ANSWER	SKIP
40. Do you know of someone in your community, other than untrained neighbors or untrained family, who could provide you with care while you are pregnant, and/or help you deliver a baby? (CIRCLE RESPONSE) [KNOWHELP]	Yes……..…...……...1 No…….....0	
41. Have you heard of Health Extension Workers? (CIRCLE RESPONSE) [HEW_HEARD]	Yes……..…...……...1 No…….....0	0→Q48
42. Have you ever used the services of a Health Extension Worker? (CIRCLE RESPONSE) [HEW_USED]	Yes……..…...……...1 No…….....0	
43. Do you know who any of the Health Extension Workers are in your *kebele*? (CIRCLE RESPONSE) [HEW_KNOW]	Yes……..…...……...1 No…….....0	
44. Do you know how to reach the Health Extension Worker if you need help? (CIRCLE RESPONSE) [HEW_REACH]	Yes……..…...……...1 No…….....0	
45. On a scale of 1 to 5, with "1" being the least and "5" being the most, how much do you trust a Health Extension Worker to provide you care while you pregnant? (CIRCLE RESPONSE)		

[HEW_ANTE]		
(least) 1 2 3 4 5 (most)		
46. On a scale of 1 to 5, with "1" being the least and "5" being the most, how much do you trust a Health Extension Worker to provide you care while you are giving birth? (CIRCLE RESPONSE) [HEW_INTRA]		
(least) 1 2 3 4 5 (most)		
47. On a scale of 1 to 5, with "1" being the least and "5" being the most, how much do you trust a Health Extension Worker to provide you care after you have given birth? (CIRCLE RESPONSE) [HEW_POST]		
(least) 1 2 3 4 5 (most)		
48. Have you heard of Voluntary Community Health Workers? (CIRCLE RESPONSE) [VCHW_HEARD]	Yes……..…..……...1 No…….....0	0→Q55
49. Have you ever used the services of a Voluntary Community Health Worker? (CIRCLE RESPONSE) [VCHW_USED]	Yes……..…..……...1 No…….....0	
50. Do you know who any of the Voluntary Community Health Workers are in your *kebele*? (CIRCLE RESPONSE) [VCHW_KNOW]	Yes……..…..……...1 No…….....0	
51. Do you know how to reach a Voluntary Community Health Worker if you need help? (CIRCLE RESPONSE) [VCHW_REACH]	Yes……..…..……...1 No…….....0	
52. On a scale of 1 to 5, with "1" being the least and "5" being the most, how much do you trust a Voluntary Community Health Worker to provide you care while you are pregnant? (CIRCLE RESPONSE) [VCHW_ANTE]		
(least) 1 2 3 4 5 (most)		
53. On a scale of 1 to 5, with "1" being the least and "5" being the most, how much do you trust a Voluntary Community Health Worker to provide you care while you are giving birth? (CIRCLE RESPONSE) [VCHW_INTRA]		
(least) 1 2 3 4 5 (most)		
54. On a scale of 1 to 5, with "1" being the least and "5" being the most, how much do you trust a		

Voluntary Community Health Worker to provide you care after you have given birth (CIRCLE RESPONSE) [VCHW_POST]		
(least) 1 2 3 4 5 (most)		
55. Have you heard of Traditional Birth Attendants? (CIRCLE RESPONSE) [TBA_HEARD]	Yes……..…..……...1 No…….....0	0→Q62
56. Have you ever used the services of a Traditional Birth Attendant? (CIRCLE RESPONSE) [TBA_USED]	Yes……..…..……...1 No…….....0	
57. Do you know who any of the Traditional Birth Attendants are in your *kebele*? (CIRCLE RESPONSE) [TBA_KNOW]	Yes……..…..……...1 No…….....0	
58. Do you know how to reach a Traditional Birth Attendant if you need help? (CIRCLE RESPONSE) [TBA_REACH]	Yes……..…..……...1 No…….....0	
59. On a scale of 1 to 5, with "1" being the least and "5" being the most, how much do you trust a Traditional Birth Attendant to provide you care while you are pregnant? (CIRCLE RESPONSE) [TBA_ANTE]		
(least) 1 2 3 4 5 (most)		
60. On a scale of 1 to 5, with "1" being the least and "5" being the most, how much do you trust a Traditional Birth Attendant to provide you care while you are giving birth? (CIRCLE RESPONSE) [TBA_INTRA]		
(least) 1 2 3 4 5 (most)		
61. On a scale of 1 to 5, with "1" being the least and "5" being the most, how much do you trust a Traditional Birth Attendant to provide you care after you have given birth? (CIRCLE RESPONSE) [TBA_POST]		
(least) 1 2 3 4 5 (most)		

Section VI – Prenatal Care, Danger Signs, Delivery Care, Postnatal Care

Interview Read: *"Now, I would like to ask you some questions about the last time you were pregnant and the*

last time that you gave birth."		
QUESTION	**ANSWER**	**SKIP**
62. When you were pregnant last, did you see anyone for antenatal care? (CIRCLE RESPONSE) [ANC_ANY]	Yes……..…..……...1 No…….....0	→Q69
63. How far along in your most recent pregnancy were you when you first accessed antenatal care? (WRITE ANSWER IN SPACE) (WRITE EITHER WEEKS OR MONTHS) [ANC_WHEN]	[____] weeks **OR** [___] months **OR** Don't Know……....99	
64. During your most recent pregnancy, how many times did you access antenatal care? (WRITE ANSWER IN SPACE) [ANC_NUM]	[ ] times **OR** Don't Know……....99	
65. During your most recent pregnancy, who provided antenatal care to you? (DO NOT READ LIST) (MULTIPLE ANSWERS POSSIBLE) (CIRCLE ALL THAT APPLY)	Physician…….1[ANC_PHYS] Health Officer / Clinical Officer……...2[ANC_HOCO] Nurse ……....….3[ANC_NURSE] Midwife……..….4[ANC_MIDW] Trained Traditional Birth Attendant……...5[ANC_TTBA] Untrained Traditional Birth Attendant……...6[ANC_UTBA] Health Extension Worker…….……..7[ANC_HEW] Voluntary Community Health Worker…….8[ANC_VCHW] Family/Friend/ Other Non-Trained……9[ANC_OTH]	
66. Did you pay anyone who provided antenatal care to you with cash? [ANCPAY]	Yes……..…..……...1 No…….....0	0→Q68
67. Who did you pay for antenatal care, and how much did you pay? (ROUND UP TO WHOLE BIRR) (MULTIPLE ANSWERS POSSIBLE)	Physician……..…..[___] birr[ANCPAY_PHYS] Health Officer / Clinical Officer.....[___] birr[ANCPAY_HOCO] Nurse..……...…..……[___] birr[ANCPAY_NURSE]	

(WRITE ANSWER IN SPACE)	Midwife…….....….[___] birr [ANCPAY_MIDW] Trained TBA…….....[___] birr[ANCPAY_TTBA] Untrained TBA.....[___] birr[ANCPAY_UTBA] HEW……..…[___] birr[ANCPAY_HEW] vCHW……..…..……[___] birr[ANCPAY_VCHW] Family/Friend/ Other Non-Trained.....[___] birr[ANCPAY_OTH] (**Specify:**_____)	
68. Can you tell me what are all of the problems that can happen during pregnancy, labor, and after delivery that require immediate attention from a trained health care worker or health facility? (DO **NOT** READ LIST) (MULTIPLE ANSWERS POSSIBLE) (CIRCLE ALL ANSWERS SAID BY RESPONDENT)	High fever……..1[DS_FEV] Severe headache / Blurred vision ……...2[DS_HEAD] Swelling of hands and face …...3[DS_SWEL] Retained placenta ……4[DS_RP] Convulsions/fit/Eclampsia ……...5[DS_ECL] Any amount of vaginal bleeding……...6[DS_BLE] Foul smelling discharge ……..7[DS_DIS] Labor >12 hours…….…8[DS_LONG] Malpresentation (if any part of the baby other than the head is seen in the birth passage, like buttocks, hand, foot or cord)…..…9[DS_MAL] Other ……...10[DS_OTH] (**Specify**:_____) (**Specify**:_____) Don't know ……...11[DS_DK]	
69. Was the last baby you had born alive? (CIRCLE RESPONSE) [BORNALIVE]	Yes……..…...……...1 No…….....0	0→Q73
70. What did you name the child you most recently delivered? (WRITE NAME IN SPACE)	_____(name)	
71. Is (name) still alive? (CIRCLE RESPONSE) [STILLALIVE]	Yes……..…...……...1 No…….....0	1→Q72A 0→Q72B
72. A) How old is (name)? **B) How old was (name) when she/he died?** (WRITE ANSWER IN SPACE) (WRITE EITHER DAYS OR MONTHS) [CHAGE]	[____] days **OR** [____] months **OR** Don't Know……....99	

73. Where did you deliver (name)? (DO NOT READ LIST) (ONLY ONE RESPONSE) (CIRCLE RESPONSE) [DEL_WHERE]	Own home……...1 Other's home……...2 Government Hospital/Clinic……3 Government Health Center……4 Government Health Post……5 Other Public……6 NGO Health Facility……...7 Private Hospital/Clinic……8 Other Private……9 Other……88 (**Specify:** _____) (**Specify:** _____)	
74. Did anyone provide you with care while you were laboring to delivering (name)? (CIRCLE RESPONSE) [DEL_ANY]	Yes……..…...……...1 No…….....0	0→Q78
75. Who provided you with care while you were laboring to deliver (name)? (DO NOT READ LIST) (MULTIPLE ANSWERS POSSIBLE) (CIRCLE ALL THAT APPLY)	Mother……1[DEL_MOM] Mother-In-Law……..2[DEL_MIL] Sister……..……3[DEL_SIS] Other Family……..4[DEL_FAM] (**Specify:**_____) Neighbors / Friends…….....…5[DEL_FRND] Untrained TBA……6[DEL_UTBA] Trained TBA……7[DEL_TTBA] HEW……..8[DEL_HEW] vCHW……..……9[DEL_VCHW] Midwife……..…10[DEL_MIDW] Nurse……..…..11[DEL_NURSE] Physician……...……12[DEL_PHYS] Health Officer / Clinical Officer……13[DEL_HOCO] Other ……...14[DEL_OTH] (**Specify:**_____)	
76. Did you pay anyone who provided delivery care to you with cash? (CIRCLE RESPONSE) [DEL_PAY]	Yes……..…...……...1 No…….....0	0→Q78

77. Who did you pay for delivery care, and how much did you pay? (ROUND UP TO WHOLE BIRR) (MULTIPLE ANSWERS POSSIBLE) (WRITE ANSWER IN SPACE)	Physician……..…..[___] birr[DELPAY_PHYS] Health Officer / Clinical Officer.....[___] birr[DELPAY_HOCO] Nurse..…….....…[___] birr[DELPAY_NURSE] Midwife……...…[___] birr [DELPAY_MIDW] Trained TBA…….....[___] birr[DELPAY_TTBA] Untrained TBA……...[___] birr[DELPAY_UTBA] HEW……...…..…[___] birr[DELPAY_HEW] vCHW…….……[___] birr[DELPAY_VCHW] Family/Friend/ Other Non-Trained……..[___] birr[DELPAY_OTH] (**Specify:**_____)	
78. After (name) was born, did anyone check your health within 48 hours of birth? (CIRCLE RESPONSE) [POST_ANY]	Yes……..…...……...1 No…….....0	0→Q83
79. How long was the time period between (name)'s birth and your receiving a health check? (ONLY ONE ANSWER) (CIRCLE RESPONSE **OR** WRITE ANSWER IN SPACE) [POST_TIME]	immediately……..0 **OR** [____] hours **OR** [____] days	
80. Who checked your health after you delivered (name)? (DO NOT READ LIST) (MULTIPLE ANSWERS POSSIBLE) (CIRCLE ALL THAT APPLY)	Mother……..…1[POST_MOM] Mother-In-Law……..2[POST_MIL] Sister……..……..….3[POST_SIS] Other Family……...……..4[POST_FAM] (**Specify:**_____) Neighbors / Friends…...…5[POST_FRND] Untrained TBA……...6[POST_UTBA] Trained TBA……...…7[POST_TTBA] HEW……..……..8[POST_HEW] vCHW……..……..……9[POST_VCHW] Midwife……...…10[POST_MIDW] Nurse……...……..11[POST_NURSE] Physician……...……12[POST_PHYS] Health Officer / Clinical Officer……...….13[POST_HOCO] Other ……...14[POST_OTH]	

	(**Specify:**_____) Myself…….....15[POST_SELF]	
81. Did you pay anyone who provided postnatal care to you with cash? (CIRCLE RESPONSE) [POST_PAY]	Yes……..…..……...1 No…….....0	0→Q83
82. Who did you pay for postnatal care, and how much did you pay? (ROUND UP TO WHOLE BIRR) (MULTIPLE ANSWERS POSSIBLE) (WRITE ANSWER IN SPACE)	Physician……..….....[___] birr[POSTPAY_PHYS] Health Officer / Clinical Officer……....[___] birr[POSTPAY_HOCO] Nurse..….....…[___] birr[POSTPAY_NURSE] Midwife……..…[___] birr [POSTPAY_MIDW] Trained TBA…….....[___] birr[POSTPAY_TTBA] Untrained TBA…….[___] birr[POSTPAY_UTBA] HEW…….....…[___] birr[POSTPAY_HEW] vCHW……..…….…[___] birr[POSTPAY_VCHW] Family/Friend/ Other Non-Trained……[___] birr[POSTPAY_OTH] (**Specify:**_____)	
<u>INTERVIEWER:</u> CHECK Q69, "WAS THE CHILD BORN ALIVE?" IF YES, CONTINUE TO NEXT QUESTION (Q83) IF NO, SKIP TO Q98		
83. After (name) was born, did anyone check his/her health within 48 hours? (CIRCLE RESPONSE) [POSTCH_ANY]	Yes……..…..……...1 No…….....0	0→Q88
84. How long was the time period between (name)'s birth his/her receiving a health check? (ONLY ONE ANSWER) (CIRCLE RESPONSE **<u>OR</u>** WRITE ANSWER IN SPACE) [POSTCH_TIME]	immediately……..0 **<u>OR</u>** [____] hours **<u>OR</u>** [____] days	
85. Who checked (name)'s health after she/he was born? (DO NOT READ LIST) (MULTIPLE ANSWERS POSSIBLE) (CIRCLE ALL THAT APPLY)	Mother……..…..…1[POSTCH_MOM] Mother-In-Law……..…..2[POSTCH_MIL] Sister……..……..…..…3[POSTCH_SIS] Other Family……..……..4[POSTCH_FAM] (**Specify:**_____) Neighbors / Friends…..…5[POSTCH_FRND] Untrained TBA…..……...6[POSTCH_UTBA]	

	Trained TBA……...…7[POSTCH_TTBA] HEW……..…..…..8[POSTCH_HEW] vCHW……..……..…..…9[POSTCH_VCHW] Midwife…….....…10[POSTCH_MIDW] Nurse……...……..…...11[POSTCH_NURSE] Physician……...……..…12[POSTCH_PHYS] Health Officer / Clinical Officer…..…...…13[POSTCH_HOCO] Other ……..……...14[POSTCH_OTH] (**Specify:**_____) Myself…….....15[POSTCH_SELF]	
86. Did you pay anyone who checked (name)'s health after his/her birth with cash? (CIRCLE RESPONSE) [POSTCH_PAY]	Yes……..…...……...1 No…….....0	0→Q88
87. Who did you pay to check (name)'s health after his/her birth, and how much did you pay? (ROUND UP TO WHOLE BIRR) (MULTIPLE ANSWERS POSSIBLE) (WRITE ANSWER IN SPACE)	Physician…….....[___] birr[POSTCHPAY_PHYS] Health Officer / Clinical Officer……...[___] birr[POSTCHPAY_HOCO] Nurse..….....…[___] birr[POSTCHPAY_NURSE] Midwife……...…….…[___] birr [POSTCHPAY_MIDW] Trained TBA…….[___] birr[POSTCHPAY_TTBA] Untrained TBA…….[___] birr[POSTCHPAY_UTBA] HEW…….....…[___] birr[POSTCHPAY_HEW] vCHW……..…[___] birr[POSTCHPAY_VCHW] Family/Friend/ Other Non-Trained……[___] birr[POSTCHPAY_OTH] (**Specify:**_____)	

Section VII – Breastfeeding		
Interview Read: *"Now, I would like to ask you some questions about breastfeeding."*		
QUESTION	**ANSWER**	**SKIP**
88. After (name) was born, did you squeeze and throw away your first milk? (CIRCLE RESPONSE) [BF_COLOS]	Yes……..…...……...1 No…….....0	

89. Did you ever breastfeed (name)? (CIRCLE RESPONSE) [BF_EVER]	Yes……..…..……...1 No…….....0	0→Q98
90. How soon after birth did you first put (name) to your breast? (EITHER CIRCLE RESPONSE **OR** WRITE ANSWER IN SPACE AND CALCULATE) [BF_TIME]	immediately……0 **OR** [____]hours **OR** [____] days (x 24 hrs = [____] hours)	
91. In the first month of (name)'s life, how often in 24 hours were you giving him/her breastmilk? (WRITE ANSWER IN SPACE) [BF_FREQ]	[____] times in 24 hours	
92. After (name) was born, did you give him/her only breastmilk? (CIRCLE RESPONSE) [EBF_EVER]	Yes……..…..……...1 No…….....0	
93. Did you give (name) anything to drink besides breastmilk, such as water, tea, or animal milk, before s/he was six months old? (CIRCLE ANSWER) [BF_EARLYDRINK]	Yes……..…..……...1 No…….....0	
94. Did you give (name) anything to eat besides breastmilk, such as gruel, injera, wot, shiro, butter, dabo, or genfo, before s/he was six months old? (CIRCLE ANSWER) [BF_EARLYFOOD]	Yes……..…..……...1 No…….....0	
95. Are you currently breastfeeding (name)? (CIRCLE RESPONSE) [BF_CURRENT]	Yes……..…..……...1 No…….....0	Y→Q98
96. Are you currently giving nothing but breastmilk to (name)? (CIRCLE RESPONSE) [EBF_CURRENT]	Yes……..…..……...1 No…….....0	Y→Q98
97. How old was (name) when you stopped giving him/her breastmilk entirely? (WRITE ANSWER IN **ONE** SPACE) [BF_AGESTOP]	[ ] days **OR** [ ] months	

Section VIII – Potentially Harmful Traditional Practices / Cultural Practices		
Interview Read: *"Now, I would like to ask you about some things that might have happened the last time you were pregnant, or when you last gave birth."*		
QUESTION	**ANSWER**	**SKIP**
98. When you were laboring to deliver (name), were you massaged? (CIRCLE RESPONSE) [TP_MASSAGE]	Yes……..…..……...1 No…….....0 Don't Know…….99	
99. After (name) was born, did anyone place butter, oil, dung, or anything else on the stump of the umbilical cord? (CIRCLE RESPONSE) [TP_CORD]	Yes……..…..……...1 No…….....0 Don't Know…….99	
100. In the first day of (name)'s life, did anyone wash him or her with water? (CIRCLE RESPONSE) [TP_WASH]	Yes……..…..……...1 No…….....0 Don't Know…….99	
101. After (name) was born, did you hold him/her before the placenta was delivered? (CIRCLE RESPONSE) [TP_HOLD]	Yes……..…..……...1 No…….....0 Don't Know…….99	
102. After you had delivered (name) and the cord was cut, did anyone hold, tug or pull on the part of the cord that was still attached to you? (CIRCLE RESPONSE) [TP_TUG]	Yes……..…..……...1 No…….....0 Don't Know…….99	
103. After you had delivered (name), did anyone use string, cloth or other objects to help get the placenta out? (CIRCLE RESPONSE) [TP_STRING]	Yes……..…..……...1 No…….....0 Don't Know…….99	
104. After you had delivered (name), was there any period of time where you were not allowed to interact with people from outside your household? (CIRCLE RESPONSE) [TP_ISO]	Yes……..…..……...1 No…….....0 Don't Know…….99	

Section IX – The HBLSS Package & Practices During Previous Pregnancy + Birth

Interviewer Say: *"I am now going to describe some things that people sometimes do around the time of childbirth, and then ask you who usually does these things in your community, who should do these things in your community, and, if when you were pregnant with (name), these things happened."*

Interview Instructions: When a respondent gives an answer, write this numerical code in the appropriate blank. For example, if a respondent answer "A midwife," write a "4" in the blank space.

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[CODE LOGIC:
HB_ = Belongs to HBLSS Section
HB_X = All questions about X
HB_X_H = Heard of X?
HB_X_U = Usually does X? (a)
HB_X_B = Best to do X? (b)
HB_X_L = Happened last time? (c)
HB_X_W = Who did so? (d)]
```

OPTIONS:

1) Physician
2) Clinical Officer
3) Nurse
4) Midwife
5) Trained Traditional Birth Attendant
6) Untrained Traditional Birth Attendant
7) Health Extension Worker
8) Voluntary Community Health Worker
9) Respondent Herself/Himself
10) Family/Friend/Neighbor/Other Non-Trained

QUESTION	ANSWER	SKIP
105. Have you heard about pregnant women being counseled about creating a safe birth plan, such as saving money for birth expenses, arranging transportation to a health facility, and learning about signs of health problems for mothers and babies? (CIRCLE RESPONSE) [HB_BPLAN_H]	Yes……..…..……...1 No…….....0	0→Q106
a) Who usually counsels families about creating a safe birth plan in your community? (WRITE ANSWER CODE IN SPACE) [HB_BPLAN_U]	CODE: [_____] **OR** Don't Know……....99	
b) Who do you think is the best to counsel families about this in your community? (WRITE ANSWER CODE IN SPACE) [HB_BPLAN_B]	CODE: [_____] **OR**	

	Don't Know……....99	
c) When you were pregnant with (name), did anyone counsel you about creating a safe birth plan? (CIRCLE RESPONSE) [HB_BPLAN_L]	Yes……..…..……...1 No…….....0	0→ Q106
d) Who did so? (WRITE ANSWER CODE IN SPACE) [HB_BPLAN_W]	CODE: [_____] **OR** Don't Know……....99	
106. Have you heard about pregnant women being counseled to call for assistance when their labor begins? (CIRCLE RESPONSE) [HB_CALL_H]	Yes……..…..……...1 No…….....0	0→ Q107
a) Who usually counsels pregnant women to call for assistance once their labor begins, in your community? (WRITE ANSWER CODE IN SPACE) [HB_CALL_U]	CODE: [_____] **OR** Don't Know……....99	
b) Who is best to counsel pregnant women to call for assistance once their labor begins, in your community? (WRITE ANSWER CODE IN SPACE) [HB_CALL_B]	CODE: [_____] **OR** Don't Know……....99	
c) When you were pregnant with (name), were you counseled to call for assistance once your labor began? (CIRCLE RESPONSE) [HB_CALL_L]	Yes……..…..……...1 No…….....0	0→ Q107
d) Who did so? (WRITE ANSWER CODE IN SPACE) [HB_CALL_W]	CODE: [_____] **OR** Don't Know……....99	
107. Have you heard about pregnant women being advised to create a clean birth environment? (CIRCLE RESPONSE) [HB_SPACE_H]	Yes……..…..……...1 No…….....0	0→Q108
a) Who usually advises families to create a		

clean birth environment, in your community? (WRITE ANSWER CODE IN SPACE) [HB_SPACE_U]	CODE: [_____] **OR** Don't Know……....99	
b) Who is best to advise families to create a clean birth environment, in your community? (WRITE ANSWER CODE IN SPACE) [HB_SPACE_B]	CODE: [_____] **OR** Don't Know……....99	
c) When you were pregnant with (name), were you counseled to create a clean birth environment? (CIRCLE RESPONSE) [HB_SPACE_H]	Yes……..…...……...1 No…….....0	0→ Q108
d) Who did so? (WRITE ANSWER CODE IN SPACE) [HB_SPACE_W]	CODE: [_____] **OR** Don't Know……....99	
108. Have you heard about pregnant women being counseled that everyone present during labor and birth should wash their hands? (CIRCLE RESPONSE) [HB_HANDS_H]	Yes……..…...……...1 No…….....0	0→ Q109
a) Who usually counsels women that everyone present during labor and birth should wash their hands, in your community? (WRITE ANSWER CODE IN SPACE) [HB_HANDS_U]	CODE: [_____] **OR** Don't Know……....99	
b) Who is best to counsel women that everyone present during labor and delivery should wash their hands, in your community? (WRITE ANSWER CODE IN SPACE) [HB_HANDS_B]	CODE: [_____] **OR** Don't Know……....99	
c) When you were pregnant with (name), were you counseled that everyone present during labor and delivery should wash their hands? (CIRCLE RESPONSE) [HB_HANDS_L]	Yes……..…...……...1 No…….....0	0→ Q109
d) Who did so?		

(WRITE ANSWER CODE IN SPACE) [HB_HANDS_W]	CODE: [_____] **OR** Don't Know……....99	
109. Have you heard about women being encouraged to change positions during labor? (CIRCLE RESPONSE) [HB_MOVE_H]	Yes……..…...……...1 No…….....0	0→ Q110
a) Who usually encourages women to change position during labor, in your community? (WRITE ANSWER CODE IN SPACE) [HB_MOVE_U]	CODE: [_____] **OR** Don't Know……....99	
b) Who is best to encourage women to change positions during labor, in your community? (WRITE ANSWER CODE IN SPACE) [HB_MOVE_B]	CODE: [_____] **OR** Don't Know……....99	
c) When you were in labor with (name), were you encouraged to change positions often? (CIRCLE RESPONSE) [HB_MOVE_L]	Yes……..…...……...1 No…….....0	0→ Q110
d) Who did this? (WRITE ANSWER CODE IN SPACE) [HB_MOVE_W]	CODE: [_____] **OR** Don't Know……....99	
110. Have you heard about women being given a drug called misoprostol after the baby is born but before the placenta is delivered to help stop their bleeding? (CIRCLE RESPONSE) [HB_MISO_H]	Yes……..…...……...1 No…….....0	0→ Q111
a) Who usually gives women misoprostol, in your community? (WRITE ANSWER CODE IN SPACE) [HB_MISO_U]	CODE: [_____] **OR** Don't Know……....99	
b) Who is best to give women misoprostol, in your community? (WRITE ANSWER CODE IN SPACE) [HB_MISO_B]	CODE: [_____] **OR**	

	Don't Know……....99	
c) After you gave birth to (name), were you given misoprostol? (CIRCLE RESPONSE) [HB_MISO_L]	Yes……..…..……...1 No…….....0	0→ Q111
d) Who gave you misoprostol? (WRITE ANSWER CODE IN SPACE) [HB_MISO_W]	CODE: [_____] **OR** Don't Know……....99	
111. Have you heard about women being counseled to not have any objects inserted into their vaginas to help the baby be born? (CIRCLE RESPONSE) [HB_NOITEMS_H]	Yes……..…..……...1 No…….....0	0→ Q112
a) Who usually counsels women to not have any objects inserted into their vaginas to help the baby be born, in your community? (WRITE ANSWER CODE IN SPACE) [HB_NOITEMS_U]	CODE: [_____] **OR** Don't Know……....99	
b) Who is best to counsel women to not have any objects inserted into their vaginas to help the baby be born, in your community? (WRITE ANSWER CODE IN SPACE) [HB_NOITEMS_B]	CODE: [_____] **OR** Don't Know……....99	
c) When you were pregnant with (name), did anyone counsel you to not have any objects inserted into your vagina to help the baby be born? (CIRCLE RESPONSE) [HB_NOITEMS_L]	Yes……..…..……...1 No…….....0	0→ Q112
d) Who did so? (WRITE ANSWER CODE IN SPACE) [HB_NOITEMS_W]	CODE: [_____] **OR** Don't Know……....99	
112. Have you heard about women delivering the placenta within half an hour after birth and without force? (CIRCLE RESPONSE) [HB_PLACE_H]	Yes……..…..……...1 No…….....0	0→ Q113

a) Who usually delivers the afterbirth, in your community? (WRITE ANSWER CODE IN SPACE) [HB_PLACE_U]	CODE: [_____] **OR** Don't Know……....99	
b) Who should deliver the afterbirth, in your community? (WRITE ANSWER CODE IN SPACE) [HB_PLACE_B]	CODE: [_____] **OR** Don't Know……....99	
c) After you had given birth to (name), was the afterbirth delivered within half an hour of birth and without force? (CIRCLE RESPONSE) [HB_PLACE_L]	Yes……..…..……...1 No…….....0	0→ Q113
d) Who delivered the afterbirth? (WRITE ANSWER CODE IN SPACE) [HB_PLACE_W]	CODE: [_____] **OR** Don't Know……....99	
113. Have you heard about the practice of rubbing the womb of a woman immediately after the delivery of the placenta to stop bleeding? (CIRCLE RESPONSE) [HB_MASS_H]	Yes……..…..……...1 No…….....0	0→Q114
a) Who usually rubs a woman's womb immediately after the delivery of the placenta to stop bleeding, in your community? (WRITE ANSWER CODE IN SPACE) [HB_MASS_U]	CODE: [_____] **OR** Don't Know……....99	
b) Who is best to rub a woman's womb immediately after the delivery of the placenta to stop bleeding, in your community? (WRITE ANSWER CODE IN SPACE) [HB_MASS_B]	CODE: [_____] **OR** Don't Know……....99	
c) After you had delivered (name) and delivered the afterbirth, did anyone rub your womb? (CIRCLE RESPONSE)	Yes……..…..……...1 No…….....0	0→Q114

[HB_MASS_L]		
d) Who did so? (WRITE ANSWER CODE IN SPACE) [HB_MASS_W]	CODE: [_____] **OR** Don't Know……....99	
114. Have you heard of keeping a baby warm and dry after birth? (CIRCLE RESPONSE) [HB_WARM_H]	Yes……..…..……...1 No…….....0	0→ Q115
a) Who usually keeps a baby warm and dry after birth, in your community? (WRITE ANSWER CODE IN SPACE) [HB_WARM_U]	CODE: [_____] **OR** Don't Know……....99	
b) **Who should keep a baby warm and dry after birth, in your community?** (WRITE ANSWER CODE IN SPACE) [HB_WARM_B]	CODE: [_____] **OR** Don't Know……....99	
c) After you had given birth to (name), did someone keep (name) warm and dry? (CIRCLE RESPONSE) [HB_WARM_L]	Yes……..…..……...1 No…….....0	0→ Q115
d) Who did so? (WRITE ANSWER CODE IN SPACE) [HB_WARM_W]	CODE: [_____] **OR** Don't Know……....99	
115. Have you heard of a baby being checked for proper color and breathing after birth? (CIRCLE RESPONSE) [HB_BREATH_H]	Yes……..…..……...1 No…….....0	0→ Q116
a) Who usually checks a baby for proper color and breathing after birth, in your community? (WRITE ANSWER CODE IN SPACE) [HB_BREATH_U]	CODE: [_____] **OR** Don't Know……....99	
b) Who is best to check a baby for proper color and breathing after birth, in your community?	CODE: [_____]	

(WRITE ANSWER CODE IN SPACE) [HB_BREATH_B]	**OR** Don't Know……....99	
c) After you had given birth to (name), did anyone check (name) for proper color and breathing? (CIRCLE RESPONSE) [HB_BREATH_L]	Yes……..…...……...1 No…….....0	0→ Q116
d) Who did so? (WRITE ANSWER CODE IN SPACE) [HB_BREATH_W]	CODE: [_____] **OR** Don't Know……....99	
116. Have you heard of women being counseled to begin breastfeeding immediately after giving birth? (CIRCLE RESPONSE) [HB_IBF_H]	Yes……..…...……...1 No…….....0	0→Q117
a) Who usually counsels to begin breastfeeding immediately after giving birth, in your community? (WRITE ANSWER CODE IN SPACE) [HB_IBF_U]	CODE: [_____] **OR** Don't Know……....99	
b) Who is best to counsel women to begin breastfeeding immediately after giving birth, in your community? (WRITE ANSWER CODE IN SPACE) [HB_IBF_B]	CODE: [_____] **OR** Don't Know……....99	
c) After you delivered (name), were you counseled to begin breastfeeding immediately? (CIRCLE RESPONSE) [HB_IBF_L]	Yes……..…...……...1 No…….....0	0→ Q117
d) Who did so? (WRITE ANSWER CODE IN SPACE) [HB_IBF_W]	CODE: [_____] **OR** Don't Know……....99	
117. Have you heard of women being counseled to take care of the baby's cord cleanly, by tying the umbilical cord, cutting the cord with a sterile instrument, and not putting anything on the stump of the cord? (CIRCLE RESPONSE)	Yes……..…...……...1 No…….....0	0→ Q118

[HB_CORD_H]		
a) Who usually counsels women to take care of the baby's cord cleanly, in your community? (WRITE ANSWER CODE IN SPACE) [HB_CORD_W]	CODE: [_____] **OR** Don't Know……....99	
b) Who is best to counsel women to take care of the baby's cord cleanly, in your community? (WRITE ANSWER CODE IN SPACE) [HB_CORD_B]	CODE: [_____] **OR** Don't Know……....99	
c) When you were pregnant with (name), did anyone counsel you to take care of the baby's cord cleanly? (CIRCLE RESPONSE) [HB_CORD_L]	Yes……..…...……...1 No…….....0	0→ Q118
d) Who did so? (WRITE ANSWER CODE IN SPACE) [HB_CORD_W]	CODE: [_____] **OR** Don't Know……....99	
118. Have you heard of the practice of women being checked for problems such as a fever or bleeding after birth? (CIRCLE RESPONSE) [HB_CHECK_H]	Yes……..…...……...1 No…….....0	0→ Q119
a) Who usually checks women for problems such as fever and bleeding after birth, in your community? (WRITE ANSWER CODE IN SPACE) [HB_CHECK_U]	CODE: [_____] **OR** Don't Know……....99	
b) Who is best check women for these problems after birth, in your community? (WRITE ANSWER CODE IN SPACE) [HB_CHECK_B]	CODE: [_____] **OR** Don't Know……....99	
c) After you had given birth to (name), did anyone check you for these problems? (CIRCLE RESPONSE)	Yes……..…...……...1 No…….....0	0→ Q119

[HB_CHECK_L]		
d) Who did so? (WRITE ANSWER CODE IN SPACE) [HB_CHECK_W]	CODE: [_____] **OR** Don't Know……....99	
119. Have you heard of women being counseled to give only breastmilk to their babies for the first six months of life? (CIRCLE RESPONSE) [HB_EBF_H]	Yes……..…...……...1 No…….....0	0→ Q120
a) Who usually counsels women to give only breastmilk to their babies for the first six months of life, in your community? (WRITE ANSWER CODE IN SPACE) [HB_EBF_U]	CODE: [_____] **OR** Don't Know……....99	
b) Who should counsel women to give only breastmilk to their babies for the first six months of life, in your community? (WRITE ANSWER CODE IN SPACE) [HB_EBF_B]	CODE: [_____] **OR** Don't Know……....99	
c) When you were pregnant with (name), did anyone counsel you to give only breastmilk to the baby in the first six months of life? (CIRCLE RESPONSE) [HB_EBF_L]	Yes……..…...……...1 No…….....0	0→ Q120
d) Who did so? (WRITE ANSWER CODE IN SPACE) [HB_EBF_W]	CODE: [_____] **OR** Don't Know……....99	
120. Have you heard of women being counseled about the proper positioning of the baby during breastfeeding? (CIRCLE RESPONSE) [HB_BFADV_H]	Yes……..…...……...1 No…….....0	0→Q121
a) Who usually counsels women about the proper positioning of the baby during breastfeeding, in your community? (WRITE ANSWER CODE IN SPACE) [HB_BFADV_U]	CODE: [_____] **OR** Don't Know……....99	

b) Who is best to counsel women about the proper positioning of the baby during breastfeeding, in your community? (WRITE ANSWER CODE IN SPACE) [HB_BFADV_B]	CODE: [_____] **OR** Don't Know……....99	
c) When you had your last baby, did anyone counsel you about proper positioning of the baby during breastfeeding? (CIRCLE RESPONSE) [HB_BFADV_L]	Yes……..…...……...1 No…….....0	0→Q121
d) Who did this? (WRITE ANSWER CODE IN SPACE) [HB_BFADV_W]	CODE: [_____] **OR** Don't Know……....99	
121. Have you heard about postpartum women being counseled to rest for at least 12 days after birth? (CIRCLE RESPONSE) [HB_REST_H]	Yes……..…...……...1 No…….....0	0→Q122
a) Who usually counsels postpartum women to rest for at least 12 days after giving birth, in your community? (WRITE ANSWER CODE IN SPACE) [HB_REST_U]	CODE: [_____] **OR** Don't Know……....99	
b) Who is to best to counsel postpartum women to rest for at least 12 days after giving birth, in your community? (WRITE ANSWER CODE IN SPACE) [HB_REST_B]	CODE: [_____] **OR** Don't Know……....99	
c) With your last baby, were you counseled to rest for at least 12 days after birth? (CIRCLE RESPONSE) [HB_REST_L]	Yes……..…...……...1 No…….....0	0→Q122
d) Who did so? (WRITE ANSWER CODE IN SPACE) [HB_REST_W]	CODE: [_____] **OR** Don't Know……....99	

Section X – Community Consensus

Interview Read: *"Now, I'm going to read some statements similar to what people have said in your community. For each of these statements, I would like you to tell me whether you agree or disagree with each*

of these statements."	
QUESTION	**ANSWER**
122. The seng cord should be tied both on the mother's part and on the baby's part. [CC_TIE]	Agree……..1 Disagree…….0
123. It is a problem that the health workers are not in the health post when they are needed. [CC_ABSENT]	Agree……..1 Disagree…….0
124. A woman should have the same workload before and during pregnancy. [CC_WORK]	Agree……..1 Disagree…….0
125. A mother should only take rest for only up to 10 days after the baby is born. [CC_REST]	Agree……..1 Disagree…….0
126. If the seng has trouble detaching, it should be pulled out in the home. [CC_PULL]	Agree……..1 Disagree…….0
127. After birth, the baby needs to be away from the mother while she sits over the hole to detach the seng. [CC_HOLE]	Agree……..1 Disagree…….0
128. A mother who has had peaceful births in the past will always have peaceful births in the future. [CC_PEACE]	Agree……..1 Disagree…….0
129. A health worker will come to deliver a baby at nighttime. [CC_NIGHT]	Agree……..1 Disagree…….0
130. The baby should be washed immediately after birth. [CC_WASH]	Agree……..1 Disagree…….0
131. If the uvula has dropped, then it is best to cut the uvula. [CC_UVULA]	Agree……..1 Disagree…….0
132. A baby should be given butter immediately after birth. [CC_BUTTER]	Agree……..1 Disagree…….0
133. A woman should deliver in the home unless the labor is serious. [CC_HOME]	Agree……..1 Disagree…….0
134. When labor begins, a health worker should be called to the home. [CC_CALLED]	Agree……..1 Disagree…….0
135. A woman should tell a health worker when she knows she is	Agree……..1

pregnant. [CC_TELL]	Disagree…….0
136. A woman and family should not prepare for a problem ahead of time because the birth may be peaceful. [CC_PREPARE]	Agree……..1 Disagree…….0
137. If the seng does not detach then a traditional doctor [awake] should be called. [CC_TRAD]	Agree……..1 Disagree…….0
138. If the labor is not serious, then there is no reason to call a health worker. [CC_SERIOUS]	Agree……..1 Disagree…….0
139. It is both women and men who could help with delivery. [CC_MEN]	Agree……..1 Disagree…….0
140. There is no reason for healthy pregnant women to go to check-ups by health workers. [CC_ANC]	Agree……..1 Disagree…….0
141. There is nothing to be done about excessive bleeding after delivery because it is caused by seraqueen/serqian. [CC_SERA]	Agree……..1 Disagree…….0
142. HEWs only help with birth spacing and vaccination. [CC_HEWS]	Agree……..1 Disagree…….0
143. A baby's cord should be plastered with butter. [CC_CORD]	Agree……..1 Disagree…….0
144. The first milk is unclean and should not be given to the baby. [CC_COLOS]	Agree……..1 Disagree…….0
145. There is little to be done to save the life of a mother or child – if one dies during delivery, it is just a matter of time. [CC_FATE]	Agree……..1 Disagree…….0
146. Husbands prefer that their wives deliver in a hakim bet. [CC_HC]	Agree……..1 Disagree…….0
147. A woman should go to a health center if the baby is delayed. [CC_HCDELAY]	Agree……..1 Disagree…….0
148. A woman should go to a health center if the placenta does not detach. [CC_HCPLACE]	Agree……..1 Disagree…….0
149. A woman should go to a health center if the baby comes in a different position. [CC_HCBREECH]	Agree……..1 Disagree…….0
150. A woman should go to a health center if the woman experiences	Agree……..1

seraqueen/seriqian. [CC_HCSERA]	Disagree…….0

Appendix B. ADULTS MaNHEP Baseline Survey: Adult Men and Women 18 years and older, June-July 2010

Informed Consent Obtained: [ ] Yes [ ] No

በጥናቱ ለመሳተፍ ፈቃደኛ ነወት አወ አልፈልግም

Section I – Background and Demographics **የ ተሳታፊው ዋና ዋና መረጃወች**
INTERVIEWER COMPLETE: **Interviewer Name: _____** የ ጠያቂው መላያ ቁትር **Survey Identification Number: _____** የ ምርመራው መላያ ቁጥር **Kebele: _____** ቀበሌ **Woreda: _____** ወረዳ **Date Interview Performed: _____** ቀን _____
Interview Say: *"I am going to start by asking you some questions about you and your household."* ፈቃድዎ ከሆነ ስለዕርስዎና ስለቤተሰበዎ አንዳንድ ነገር ልተይቀዎት እፈልጋለሁ

QUESTION **ጥያቄ**	**ANSWERS** **ሜልስ**	**SKIP**
151. What is your gender? ጾታዎ (CIRCLE RESPONSE) [GENDER]	Male……..……...1 ወንድ Female..…….....0 ሴት	
152. What is your age? እድሜዎ (WRITE ANSWER IN SPACE) መልሱን በክፍት ቦታ ላይ ይመሉ [AGE]	[_____] years **OR** Don't Know……....99 አላወቅም	IF <18 YEARS OLD, END SURVEY እድሜዉ ከ18 አመት

		በላይ ከሆነ በቃ
153. What is your religion? ሀይማኖትዎ (DO NOT READ LIST ምርጫውን አያንብቡላቸው (ONLY ONE ANSWER POSASIBLE) መልሱ አንድ ብቻ ነዉ (CIRCLE RESPONSE) መልሱን ያክብቡት [RELIGION]	Christian Orthodox …….……1 ኦርቶዶክስ Christian Protestant……..……2 ፕሮቲስታንት Roman Catholic……3 የሮማ ካቶሊክ Adventist ……4 አድቬንቲስት Muslim ……5 እስልምና Traditional Religion…… …6 ባህላዊ ሃይማኖት Other ……...……..…7 ሌሎች None……...…..……8 የ ምንም	
154. What is your current marital status? አሁን ያልዎት የትዳር ሁኔታ (DO NOT READ LIST) ምርጫውን አያንብቡላቸው (ONLY ONE ANSWER POSSIBLE) መልሱ አንድ ብቻ ነው (CIRCLE RESPONSE) ያክብቡት [MARRIAGE]	Single & Never Married……...1 ላጠ/አግብቶ የሚያወቅ Married……2 ባለትዳር Not Married Now, Divorced / ባለትዳር ያልሆነ /የተፋታ Separated……..…...3 የተለያየ Not Married Now, Widowed……4 ጋለሞታ	→ Q11 →Q10 →Q10
155. Has your spouse ever attended school? የትዳር ጓደኛዎ መጀበኛ ትምህርት ቤት ገብቶ ያውቃል (CIRCLE RESPONSE) ያክብቡት [SPEVRSCH]	Yes…….…...……...1 አዎ No…….....0 አልገባም	N→ Q6

156. How many years did your spouse attend school? እስከ ስንተኛ ክፍል ተምሯል (WRITE ANSWER IN SPACE) መልሱን በክፍት ቦታው ላይ ይጻፉ [SPSCHYRS]	[_____] years OR Don't Know……....99 አላወቅም	
157. Does your spouse currently work outside the home for cash? ባሁኑ ሰአት የትዳር ጓደኛዎ ገንዘብ ለማግኘት ከአካባቢዉ ርቆ ይህዳል ወይ (CIRCLE RESPONSE) ያክብቡት [SPWORK]	Yes……..…...……...1 አዎ No…….....0 የለም	N→Q9
158. How much cash income did your spouse earn last month? ባለባትዎ ባለፈዉ ወር ምን ያህል ገንዘብ አግኝተዋል (WRITE ANSWER IN SPACE) መልሱን በክፍት ቦታው ላይ ይጻፉ (ROUND UP TO WHOLE BIRR) ወደ ሙሉ ብር ያጠጋጉት [SPINCOME]	[_____] birr ብር OR ወይም Don't Know……....99 አላወቅም	
159. How old is your spouse? የትዳር ጓደኛዎ እድሜ ስንት ነዉ (WRITE ANSWER IN SPACE) መልሱን በክፍት ቦታው ላይ ይጻፉ [AGESP]	[_____] years OR Don't Know……....99 አላወቅም	
160. How old was your spouse when you were married? ስትጋቡ የባለብትዎ እድሜ ስንት ነበር (WRITE ANSWER IN SPACE) መልሱን በክፍት ቦታው ላይ ይጻፉ [AGESPMAR]	[_____] years OR Don't Know……....99 አላወቅም	
161. How old were you when you were married? እርስዎ ለመጀመርያ ጊዜ ሲያገቡ ዕድሜዎ ስንት ነበር (WRITE ANSWER IN SPACE) መልሱን በክፍት ቦታው ላይ ይጻፉ [AGEMAR]	[_____] years እድሜ OR ወይም Don't Know……....99 አላወቅም	
162. Have you ever attended school? እርሰዎ ትምህርት ቤት ገብተዉ ያወቁ ነበር (CIRCLE RESPONSE)	Yes……..…...……...1 አዎ No…….....0	N→ Q14

ያከብቡት [EVERSCH]	የለም	
163. How many years did you attend school? እርስዎ ለስንት አመት ትምህርት ተከታትለዋል (WRITE ANSWER IN SPACE) መልሱን በክፍት ቦታው ላይ ይጻፉ [SCHYRS]]	[_____] years እድሜ OR ወይም Don't Know……....99 አላወቅም	
164. Who lives with you in your household? ከማን ጋር ይኖራሉ (READ LIST EXCEPT LAST OPTION) ዝርዝሩን ያንብቡ ከሚጨረሻው ምርጫ በቀር (MULTIPLE ANSWERS POSSIBLE) ብዙ መልስ ያቻላል (CIRCLE ALL THAT APPLY) መልሱን ያክብቡ (IF RESPONDENT LIVES ALONE, CIRCLE "11" ONLY) ተጠያቂው ብቸኛ ከሆኑ አስራ አንድን ይጻፉ	Mother ……1[HH_MOM] ከናቴ ጋር Father ……..2[HH_DAD] ካባቴ ጋር Husband.……...…...……3[HH_HUS] ከባሌ ጋር Child/Children …...……...4[HH_KIDS] ከልጆቸ ጋር Brother(s)…….5[HH_BRC] ከወንድሜ ጋር Sister(s)……6[HH_SIS] ከህቴ ጋር Mother-In-Law……7[HH_MIL] ከባሌ እናት ጋር Father-In-Law……..8[HH_FIL] ከባሌ አባት ጋር Other Relatives……9[HH_REL] ከዘመድ ጋር (Specify: _____) ይገለጽ Other Non-Relatives……..10[HH_OTH] የስጋ ዝምድና ከሌለው ሰው ጋር (Specify: _____) ይገለጽ None / Lives Alone.…….11 [HH_NON] ከማንም ብቻየን	
165. How many people slept here last night? በትናንትናው እለት ከቤትዎ ስንት ሰው አደረ (WRITE ANSWER IN SPACE) መልሱን በክፍት ቦታው ላይ ይጻፉ [LASTNIGHT]	[_____] people ሰዎች OR ወይም Don't Know (99) አላወቅም	
166. Did you earn any cash income last	Yes……..…...……...1	

month? ባለፈው ወር በጥሬ የገንዘብ ገቢ ነበረዎት (CIRCLE RESPONSE) ሜኒሱን ያክብቡ [OWNWORK]	አዎ No…….....0 የለም	N→Q18
167. How much cash income did you earn last month? ባለፈው ወር ስንት ብር አገኙ (WRITE ANSWER IN SPACE) ሜኒሱን በክፍት ቦታው ላይ ይሜሉ (ROUND UP TO WHOLE BIRR) [OWNINCOME] ወደ ሜሉ ብር ያጠጋጉት	[_____] birr ብር OR ወይም Don't Know……....99 አላወቅም	
168. What is the total sum of cash income that all members of this household earned last month? ቤተሰቡ ጠቅላላ ባለፈው ወር በብር የነበረው ገቢ ስንት ነበር (WRITE ANSWER IN SPACE) ሜኒሱን በክፍት ቦታው ለይ ይሜሉ [SUMINCOME]	[_____] birr ብር OR ወይም Don't Know……....99 አላወቅም	
169. Does this household own any land? ቤተሰቡ የራሱ ሜሬት አለው (CIRCLE RESPONSE) ሜኒሱን ያክብቡ [LANDANY]	Yes……..…...……...1 አዎ No…….....0 የለወም	N→Q21
170. How much land does this household own in Tind? (four tind is one hectare) ቤተሰባቸው ስንት ጥሜድ ሜሬት አለው (WRITE ANSWER IN SPACE) ሜኒሱን በክፍት ቦታው ለይ ይሜሉ [LANDHEC]	[_____] tinds ጥንድ x4 = [_____] hectares **OR** Don't Know……....99 አለወቅም	

Section II – General Attitudes Towards Maternal Care	
Interview Read: *"Now I would like to ask you some questions about people who can provide care for mothers and babies in your community."* *ፈቃደኛ ከሆኑ ስለ እናቶችና ህጻናት እንክድካቤ ስለሚደርጉ ሰዎች ልጠይቀዎት እፈልጋልሁ*	
QUESTION **ጥያቄ**	**ANSWER** **መልስ**

171. In your community, whose job is it to provide care for women while they are pregnant? ባካባቢያችሁ ስራዉ ነፍሰጠፎ የሆኑ ሴቶችን መንከባከብ የሆነ ማ ነዉ (DO NOT READ LIST) ምርጫዎችን አይዘርዝሩ (MULTIPLE ANSWERS POSSIBLE) ብዙ መልስ ሊኖር ይችላል (CIRCLE ALL RESPONSES GIVEN) የተሰጠትን መልሶች በሙሉ ይጻፉ [GA_ANCJ]	Physician……..1[GA_ANCJ_PHYS] ሐኪም Health Officer /Clinical Officer……..…..2[GA_ANCJ_HOCO] የጤፍ መኮንን Nurse ……....3[GA_ANCJ_NURSE] ነርስ Midwife……..…4[GA_ANCJ_MIDW] ሚድዋይፍ Trained Traditional Birth Attendant……..5[GA_ANCJ_TTBA] የሰለጠነ የልምድ አዋላጅ Untrained Traditional Birth Attendant……..…...6[GA_ANCJ_UTBA] ስልጠና የሌለዉ የልምድ አዋላጅ Health Extension Worker……..7[GA_ANCJ_HEW] የጤፍ ኤክስቴንሽን ባለሙያ Voluntary Community Health Worker……..8[GA_ANCJ_VCHW] የበጎ ፈቃድ የጤፍ ባለሙያ Family/Friend/Other Non-Trained……9[GA_ANCJ_OTH] ቤተሰብ/ጓደኛ/ሌላ ስልጠና የሌለዉ Don’t Know……..……10[GA_ANCJ_DK] አላወቅም Respondent……11[GA_ANCJ_ME] መላሹ
172. Whom do you trust to do provide women care while they are pregnant? (DO NOT READ LIST) ምርጫዎችን አይዘርዝሩ (MULTIPLE ANSWERS POSSIBLE) ብዙ መልስ ሊኖር ይችላል (CIRCLE ALL RESPONSES GIVEN) የተሰጠትን መልሶች በሙሉ ይጻፉ [GA_ANCT]	Physician……..1[GA_ANCT_PHYS] ሐኪም Health Officer /Clinical Officer……..…..2[GA_ANCT_HOCO] የጤፍ መኮንን Nurse ……....3[GA_ANCT_NURSE] ነርስ Midwife……..…4[GA_ANCT_MIDW] ሚድዋይፍ Trained TBA……..…....5[GA_ANCT_TTBA] የሰለጠነ የልምድ አዋላጅ Untrained TBA……..…...6[GA_ANCT_UTBA] ስልጠና የሌለዉ የልምድ አዋላጅ HEW……..……..…..7[GA_ANCT_HEW] የጤፍ ኤክስቴንሽን ባለሙያ vCHW……..……..8[GA_ANCT_VCHW] የበጎ ፈቃድ የጤፍ ባለሙያ Family/Friend/Other Non-Trained……9[GA_ANCT_OTH] ቤተሰብ/ጓደኛ/ሌላ ስልጠና የሌለዉ

	Don't Know……10[GA_ANCT_DK] አላወቅም Respondent……11[GA_ANCT_ME] መላሹ
173. Who has the knowledge and skills to do provide women care while they are pregnant? ለነብሰጠፍ እናቶች እንክብካቤ ለሚድረግ እወቀት እና ክህሎት ያለዉ ማን ነዉ? (DO NOT READ LIST) ምርጫዎችን አይዘርዝሩ (MULTIPLE ANSWERS POSSIBLE) ብዙ መልስ ሊኖር ይችላል (CIRCLE ALL RESPONSES GIVEN) የተሰጠትን መልሶች በሙሉ ይጻፉ [GA_ANCK]	Physician……1[GA_ANCK_PHYS] ሐኪም Health Officer / Clinical Officer……2[GA_ANCK_HOCO] የጤና መኮንን Nurse ……3[GA_ANCK_NURSE] ነርስ Midwife……4[GA_ANCK_MIDW] ሚድዋይፍ Trained Traditional Birth Attendant……5[GA_ANCK_TTBA] የሰለጠነ የልምድ አዋላጅ Untrained Traditional Birth Attendant……6[GA_ANCK_UTBA] ስልጠና የሌለዉ የልምድ አዋላጅ Health Extension Worker……7[GA_ANCK_HEW] የጤና ኤክስቴንሽን ባለሞያ Voluntary Community Health Worker……8[GA_ANCK_VCHW] የበጎ ፈቃድ የጤና ባለሞያ Family/Friend/Other Non-Trained……9[GA_ANCK_OTH] ቤተሰብ/ጓደኛ/ሌላ ስልጠና የሌለዉ Don't Know……10[GA_ANCK_DK] አላወቅም Respondent……11[GA_ANCK_ME] መላሹ
174. In your community, whose job is it to provide care for women while they are in labor? **በአካባቢያችሁ** ወስጥ በምጥ ሰአት ለእናቶች እንክብካቤ ሚድረግ የማን ስራ ነዉ? (DO NOT READ LIST) ምርጫዎችን አይዘርዝሩ (MULTIPLE ANSWERS POSSIBLE) ብዙ መልስ ሊኖር ይችላል (CIRCLE ALL RESPONSES GIVEN)	Physician……1[GA_INTRAJ_PHYS] ሐኪም Health Officer / Clinical Officer……2[GA_INTRAJ_HOCO] የጤና መኮንን Nurse ……3[GA_INTRAJ_NURSE] ነርስ Midwife……4[GA_INTRAJ_MIDW] ሚድዋይፍ Trained Traditional Birth Attendant……5[GA_INTRAJ_TTBA] የሰለጠነ የልምድ አዋላጅ Untrained Traditional Birth Attendant……6[GA_INTRAJ_UTBA] ስልጠና የሌለዉ የልምድ አዋላጅ Health Extension Worker……7[GA_INTRAJ_HEW] የጤና ኤክስቴንሽን ባለሞያ

የተሰጠትን መልሶች በሙሉ ይጻፉ [GA_INTRAJ]	Voluntary Community Health Worker……...8[GA_INTRAJ_VCHW] የበጎ ፈቃድ የጤና ባለሙያ Family/Friend/Other Non-Trained……..…9[GA_INTRAJ_OTH] ቤተሰብ/ጓደኛ/ሌላ ስልጠና የሌለዉ Don't Know……...…10[GA_INTRAJ_DK] አላዉቅም Respondent……..…11[GA_INTRAJ_ME] መላሹ
175. Whom do you trust to do provide women care while they are in labor? በምጥ ሰአት ለእናቶች እንክብካቤ እንድያድረግ ማንን ያምናሉ? (DO NOT READ LIST) ምርጫዎችን አይዘርዝሩ (MULTIPLE ANSWERS POSSIBLE) ብዙ መልስ ሊኖር ይችላል (CIRCLE ALL RESPONSES GIVEN) የተሰጠትን መልሶች በሙሉ ይጻፉ [GA_INTRAT]	Physician……1[GA_INTRAT_PHYS] ሐኪም Health Officer / Clinical Officer……2[GA_INTRAT_HOCO] የጤና መኮንን Nurse …….....…3[GA_INTRAT_NURSE] ነርስ Midwife……..…4[GA_INTRAT_MIDW] ሚድዋይፍ Trained Traditional Birth Attendant…..…....5[GA_INTRAT_TTBA] የሰለጠነ የልምድ አዋላጅ Untrained Traditional Birth Attendant……....6[GA_INTRAT_UTBA] ስልጠና የሌለዉ የልምድ አዋላጅ Health Extension Worker……..……..7[GA_INTRAT_HEW] የጤና ኤክስቴንሽን ባለሙያ Voluntary Community Health Worker……....8[GA_INTRAT_VCHW] የበጎ ፈቃድ የጤና ባለሙያ Family/Friend/Other Non-Trained……9[GA_INTRAT_OTH] ቤተሰብ/ጓደኛ/ሌላ ስልጠና የሌለዉ Don't Know……..…10[GA_INTRAT_DK] አላዉቅም Respondent…….……11[GA_INTRAT_ME] መላሹ
176. Who has the knowledge and skills to do provide women care while they are in labor? በምጥ ሰአት ለእናቶች እንክብካቤ ለሚድረግ እዉቀት እና ክህሎት ያለዉ ማን ነዉ? (DO NOT READ LIST) ምርጫዎችን አይዘርዝሩ (MULTIPLE ANSWERS POSSIBLE) ብዙ መልስ ሊኖር ይችላል	Physician……..…1[GA_INTRAK_PHYS] ሐኪም Health Officer / Clinical Officer……..2[GA_INTRAK_HOCO] የጤና መኮንን Nurse …….....…3[GA_INTRAK_NURSE] ነርስ Midwife……4[GA_INTRAK_MIDW] ሚድዋይፍ Trained Traditional Birth Attendant……...5[GA_INTRAK_TTBA] የሰለጠነ የልምድ አዋላጅ Untrained Traditional Birth Attendant……....6[GA_INTRAK_UTBA]

(CIRCLE ALL RESPONSES GIVEN) የተሰጠትን መልሶች በሙሉ ይጻፉ [GA_INTRAK]	ስልጠና የሌለዉ የልምድ አዋላጅ Health Extension Worker……..…..7[GA_INTRAK_HEW] የጠፍ ኤክስቴንሽን ባለሙያ Voluntary Community Health Worker……8[GA_INTRAK_VCHW] የበጎ ፈቃድ የጠፍ ባለሙያ Family/Friend/Other Non-Trained……..…9[GA_INTRAK_OTH] ቤተሰብ/ጓደኛ/ሌላ ስልጠና የሌለዉ Don't Know……..…10[GA_INTRAK_DK] አላወቅም Respondent……..……11[GA_INTRAT_ME] መላሹ
177. In your community, whose job is it to provide care for women after they have given birth? በአካባቢያችሁ ወስጥ ከወሊድ በኋላ ለእናቶች እንክብካቤ ሚድረግ የማን ስራ ነዉ? (DO NOT READ LIST) ምርጫዎችን አይዘርዝሩ (MULTIPLE ANSWERS POSSIBLE) ብዙ መልስ ሊኖር ይችላል (CIRCLE ALL RESPONSES GIVEN) የተሰጠትን መልሶች በሙሉ ይጻፉ [GA_POSTJ]	Physician……..….1[GA_POSTJ_PHYS] ሐኪም Health Officer / Clinical Officer……..….2[GA_POSTJ_HOCO] የጠፍ መኮንን Nurse ……...3[GA_POSTJ_NURSE] ነርስ Midwife……...…4[GA_POSTJ_MIDW] ሚድዋይፍ Trained Traditional Birth Attendant……..5[GA_POSTJ_TTBA] የሰለጠነ የልምድ አዋላጅ Untrained Traditional Birth Attendant……6[GA_POSTJ_UTBA] ስልጠና የሌለዉ የልምድ አዋላጅ Health Extension Worker……..…..7[GA_POSTJ_HEW] የጠፍ ኤክስቴንሽን ባለሙያ Voluntary Community Health Worker……..8[GA_POSTJ_VCHW] የበጎ ፈቃድ የጠፍ ባለሙያ Family/Friend/Other Non-Trained……...…9[GA_POSTJ_OTH] ቤተሰብ/ጓደኛ/ሌላ ስልጠና የሌለዉ Don't Know……..…10[GA_POSTJ_DK] አላወቅም Respondent……...……11[GA_POSTJ_ME] መላሹ
178. Whom do you trust to do provide women care after they have given birth? ከወሊድ በኋላ ለእናቶች እንክብካቤ እንድያድረግ ማንን ያምናሉ? (DO NOT READ LIST) ምርጫዎችን አይዘርዝሩ (MULTIPLE ANSWERS	Physician……..….1[GA_POSTT_PHYS] ሐኪም Health Officer / Clinical Officer……..…..2[GA_POSTT_HOCO] የጠፍ መኮንን Nurse ……..…3[GA_POSTT_NURSE] ነርስ Midwife……..…4[GA_POSTT_MIDW] ሚድዋይፍ

POSSIBLE) ብዙ መልስ ሊኖር ይችላል (CIRCLE ALL RESPONSES GIVEN) የተሰጠትን መልሶች በሙሉ ይጻፉ [GA_POSTT]	Trained Traditional Birth Attendant…….5[GA_POSTT_TTBA] የሰለጠነ የልምድ አዋላጅ Untrained Traditional Birth Attendant……...6[GA_POSTT_UTBA] ስልጠና የሌለዉ የልምድ አዋላጅ Health Extension Worker……..…...…..7[GA_POSTT_HEW] የጠፍ ኤክስቴንሽን ባለሙያ Voluntary Community Health Worker……..8[GA_POSTT_VCHW] የበጎ ፈቃድ የጠፍ ባለሙያ Family/Friend/Other Non-Trained……...…9[GA_POSTT_OTH] ቤተሰብ/ጓደኛ/ሌላ ስልጠና የሌለዉ Don't Know……10[GA_POSTT_DK] አላወቅም Respondent……...……11[GA_POSTT_ME] መላሹ
179. Who has the knowledge and skills to do provide women care after they have given birth? ከወሊድ በኋላ ለእናቶች እንክብካቤ ለሚድረግ እዉቀት እና ክህሎት ያለዉ ማን ነዉ? (DO NOT READ LIST) ምርጫዎችን አይዘርዝሩ (MULTIPLE ANSWERS POSSIBLE) ብዙ መልስ ሊኖር ይችላል (CIRCLE ALL RESPONSES GIVEN) የተሰጠትን መልሶች በሙሉ ይጻፉ [GA_POSTK]	Physician……..1[GA_POSTK_PHYS] ሐኪም Health Officer /Clinical Officer……..…..2[GA_POSTK_HOCO] የጠፍ መኮንን Nurse ……..…3[GA_POSTK_NURSE] ነርስ Midwife…….……..…4[GA_POSTK_MIDW] ሚድዋይፍ Trained Traditional Birth Attendant……...5[GA_POSTK_TTBA] የሰለጠነ የልምድ አዋላጅ Untrained Traditional Birth Attendant……6[GA_POSTK_UTBA] ስልጠና የሌለዉ የልምድ አዋላጅ Health Extension Worker……....7[GA_POSTK_HEW] የጠፍ ኤክስቴንሽን ባለሙያ Voluntary Community Health Worker……..8[GA_POSTK_VCHW] የበጎ ፈቃድ የጠፍ ባለሙያ Family/Friend/Other Non-Trained……9[GA_POSTK_OTH] ቤተሰብ/ጓደኛ/ሌላ ስልጠና የሌለዉ Don't Know……..…10[GA_POSTK_DK] አላወቅም Respondent……11[GA_POSTK_ME] መላሹ
180. In your community, whose job is it to provide care for a newborn baby? በአካባቢያችሁ ወስጥ አዲስ ለተወለዱ ህፃናት እንክብካቤ ሚድረግ የማን ስራ	Physician……..1[GA_NEWJ_PHYS] ሐኪም Health Officer /Clinical Officer……....2[GA_NEWJ_HOCO] የጠፍ መኮንን Nurse ……....3[GA_NEWJ_NURSE]

ነ ዉ? (DO NOT READ LIST) ምርጫዎችን አይዘርዝሩ (MULTIPLE ANSWERS POSSIBLE) ብዙ መልስ ሊኖር ይችላል (CIRCLE ALL RESPONSES GIVEN) የተሰጡትን መልሶች በሙሉ ይጻፉ [GA_NEWJ]	ነርስ Midwife……..…4[GA_NEWJ_MIDW] ሚድዋይፍ Trained TBA……..…...5[GA_NEWJ_TTBA] የሰለጠነ የልምድ አዋላጅ Untrained TBA……..…...6[GA_NEWJ_UTBA] ስልጠና የሌለዉ የልምድ አዋላጅ HEW…….……..…..7[GA_NEWJ_HEW] የጠፍ ኤክስቴንሽን ባለሙያ vCHW……..……8[GA_NEWJ_VCHW] የበጎ ፈቃድ የጠፍ ባለሙያ Family/Friend/Other Non-Trained……9[GA_NEWJ_OTH] ቤተሰብ/ጓደኛ/ሌላ ስልጠና የሌለዉ Don't Know……..……10[GA_POSTJ_DK] አላወቅም Respondent……11[GA_NEWJ_ME] መላሹ
181. Whom do you trust to do provide care for a newborn baby? አዲስ ለተወለዱ ህፃናት እንክብካቤ እንድያድረግ ማንን ያምናሉ? (DO NOT READ LIST) ምርጫዎችን አይዘርዝሩ (MULTIPLE ANSWERS POSSIBLE) ብዙ መልስ ሊኖር ይችላል (CIRCLE ALL RESPONSES GIVEN) የተሰጡትን መልሶች በሙሉ ይጻፉ [GA_NEWT]	Physician……..….1[GA_NEWT_PHYS] ሐኪም Health Officer / Clinical Officer……..2[GA_NEWT_HOCO] የጠፍ መኮንን Nurse ……..…3[GA_NEWT_NURSE] ነርስ Midwife……..…4[GA_NEWT_MIDW] ሚድዋይፍ Trained TBA……..…...5[GA_NEWT_TTBA] የሰለጠነ የልምድ አዋላጅ Untrained TBA……...6[GA_NEWT_UTBA] ስልጠና የሌለዉ የልምድ አዋላጅ HEW……..……..7[GA_NEWT_HEW] የጠፍ ኤክስቴንሽን ባለሙያ vCHW……8[GA_NEWT_VCHW] የበጎ ፈቃድ የጠፍ ባለሙያ Family/Friend/Other Non-Trained……..9[GA_NEWT_OTH] ቤተሰብ/ጓደኛ/ሌላ ስልጠና የሌለዉ Don't Know……10[GA_NEWT_DK] አላወቅም Respondent……..……11[GA_NEWT_ME] መላሹ

182. Who has the knowledge and skills to do provide care for a newborn baby? አዲስ ለተወለዱ ህፃናት እንክብካቤ ለማድረግ እወቀት እና ክህሎት ያለዉ ማን ነዉ? (DO NOT READ LIST) ምርጫዎችን አይዘርዝሩ (MULTIPLE ANSWERS POSSIBLE) ብዙ መልስ ሊኖር ይችላል (CIRCLE ALL RESPONSES GIVEN) የተሰጠትን መልሶች በሙሉ ይጻፉ [GA_NEWK]	Physician……..……1[GA_NEWK_PHYS] ሐኪም Health Officer /Clinical Officer……...2[GA_NEWK_HOCO] የጠፍ መኮንን Nurse ……..…3[GA_NEWK_NURSE] ነርስ Midwife……..……..…4[GA_NEWK_MIDW] ሚድዋይፍ Trained TBA……...5[GA_NEWK_TTBA] የሰለጠነ የልምድ አዋላጅ Untrained TBA……...6[GA_NEWK_UTBA] ስልጠና የሌለዉ የልምድ አዋላጅ Health Extension Worker……..…..7[GA_ NEWK_HEW] የጠፍ ኤክስቴንሽን ባለሞያ vCHW……..8[GA_NEWK_VCHW] የበጎ ፈቃድ የጠፍ ባለሞያ Family/Friend/Other Non-Trained……..…9[GA_NEWK_OTH] ቤተሰብ/ጓደኛ/ሌላ ስልጠና የሌለዉ Don't Know……..……10[GA_NEWK_DK] አላወቅም Respondent……11[GA_NEWK_ME] መላሹ

Section III – Knowledge of Front-Line Healthcare Workers **ዕናቶች በሚሰበሩ ወሰጥ ስለሚሰሩ የጠፍ ባለሞያዎች ላይ ያላቸው ግንዛቤ**		
Interview Read: "Now I would like to ask you some questions about people who can provide health care in your community." **ፈቃድዎ ከሆነ በሚሰበራችሁ ዎሰጥ የጠፍ አገልግሎት ስልሚሰጡ ሰወች ትንሺ ጥያቄዎች ላነሳ እፈልጋለ**		
<u>QUESTION</u>	**<u>ANSWER</u>**	**<u>SKIP</u>**
183. Do you know of someone in your community, other than untrained neighbors or untrained family, who could provide women with care while they are pregnant, and/or help you deliver a baby? ስልጠና ከላገኙ የጎረቤትዎና የቤተሰብዎ አባላት ወጭ በሚሰበርሰቡ ወሰጥ ለሴቶች በዎሊድ ጊዜ ሊርዳቸዉ የሚቻል ስለጠነ ሰዉ አለ (CIRCLE RESPONSE) መልሱን ያክብቡ	Yes……..…...……...1 አዎ No…….....0 አላወቅም	

[KNOWHELP]		
184. Have you heard of Health Extension Workers? ስለ ጠፍ ኤክስቴንሽን ሰራተኞች ሰምው ያዉቃሉ (CIRCLE RESPONSE) መልሱን ያክብቡ [HEW_HEARD]	Yes……..…...……...1 አዎ No…….....0 አላወቅም	N→Q41
185. Have you ever used the services of a Health Extension Worker? ጠፍ ኤክስቴንሽን ሰራተኞችን አገልግሎት ተመቅማቹሁ ታዉቃላችሁ (CIRCLE RESPONSE) መልሱን ያክብቡ [HEW_USED]	Yes……..…...……...1 አዎ No…….....0 አላወቅም	
186. Do you know who any of the Health Extension Workers are in your *kebele*? በቀበሊዎ የሚየወቁት ጠፍ ኤክስቴንሽን ሰራተኞች አሉ (CIRCLE RESPONSE) መልሱን ያክብቡ [HEW_KNOW]	Yes……..…...……...1 አዎ No…….....0 አላወቅም	
187. Do you know how to reach the Health Extension Worker if you need help? እርዳታ ስያስፈልገዎ ወደ ጠፍ ኤክስቴንሽን ሰራተኞች እንዴት መዴድ እንዳለብዎት ያዉቃሉ (CIRCLE RESPONSE) መልሱን ያክብቡ [HEW_REACH]	Yes……..…...……...1 አዎ No…….....0 አላወቅም	
188. On a scale of 1 to 5, with "1" being the least and "5" being the most, how much do you trust a Health Extension Worker to provide a woman care while she is pregnant? ጠፍ ኤክስቴንሽን ሰራተኞች በርግዝና ወቅት ለሴቶችን በሚያድርጉላቹዉ እንክብካቤ ምን ያህል እምነት አላችዉ መልሱን በደረጃ ከ 1 እስከ 5 ያሰከምጡ (1 በጣም ዝቅተገኛ 5 በጣም ከፍተገኛ) (CIRCLE RESPONSE) መልሱን ያክብቡ [HEW_ANTE]		
በጣም ዝቅተገኛ 1 2 3 4 5 በጣም ከፍተገኛ		
189. On a scale of 1 to 5, with "1" being the least and "5" being the most, how much do you trust a Health Extension Worker to provide a woman care while she is giving birth?		

ጠፍ ኤክስቴንሽን ሰራተኞች በወሊድ ወቅት ለሴቶችን በሚያድርጉላችዉ እንክብካቤ ምን ያህል እምነት አላችዉ መልሱን በደረጃ ከ 1 እስከ 5 ያሰከምጡ (1 በጣም ዝቅተኛ 5 በጣም ከፍተኛ) (CIRCLE RESPONSE) መልሱን ያክብቡ [HEW_INTRA]		
(least) በጣም ዝቅተኛ 1 2 3 4 5 (most) በጣም ከፍተኛ		
190. On a scale of 1 to 5, with "1" being the least and "5" being the most, how much do you trust a Health Extension Worker to provide a woman care after she has given birth? ጠፍ ኤክስቴንሽን ሰራተኞች ከወሊድ በኋላ ለሴቶችን ለሚያድርጉላችዉ እንክብካቤ ምን ያህል እምነት አላችዉ መልሱን በደረጃ ከ 1 እስከ 5 ያሰከምጡ (1 በጣም ዝቅተኛ 5 በጣም ከፍተኛ) (CIRCLE RESPONSE) መልሱን ያክብቡ [HEW_POST]		
(least) በጣም ዝቅተኛ 1 2 3 4 5 (most) በጣም ከፍተኛ		
191. Have you heard of Voluntary Community Health Workers? ስለ በጎ ፈቃደኛ የማህበረሰብ የጠፍ ባለሞያወች ሰምተው ያወካሉ (CIRCLE RESPONSE) መልሱን ያክብቡ [VCHW_HEARD]	Yes……..…...……...1 አዎ No…….....0 አላወቅም	N→Q48
192. Have you ever used the services of a Voluntary Community Health Worker? ከበጎ ፈቃደኛ የማህበረሰብ የጠፍ ባለሞያወች አገልግሎት ተጠቅመዉ ያዉቃሉ (CIRCLE RESPONSE) መልሱን ያክብቡ [VCHW_USED]	Yes……..…...……...1 አዎ No…….....0 አላወቅም	
193. Do you know who any of the Voluntary Community Health Workers are in your *kebele*? በቀበሌ ከሉት በጎ ፈቃደኛ የማህበረሰብ የጠፍ ባለሞያወች ያሚዉቃት አለ (CIRCLE RESPONSE) መልሱን ያክብቡ [VCHW_KNOW]	Yes……..…...……...1 አዎ No…….....0 አላወቅም	
194. Do you know how to reach a Voluntary Community Health Worker if you need help? እርዳታ ቢፈለጉ በጎ ፈቃደኛ የማህበረሰብ ጠፍ ባለሞያዎችን እነዴት እንደሚያገኙአቸው ያወቃሉ (CIRCLE RESPONSE)	Yes……..…...……...1 አዎ No…….....0 አላወቅም	

መልሱን ያክብቡ [VCHW_REACH]		
195. On a scale of 1 to 5, with "1" being the least and "5" being the most, how much do you trust a Voluntary Community Health Worker to provide a woman care while she is pregnant? በጎፈቃደኛ የሚሰበረሰብ ጠፍ ሰራተኞች በርግዝና ወቅት ለሴቶችን በሚያድርጉላቹዉ እንክብካቤ ምን ያህል እምነት አላችዉ መልሱን በደረጃ ከ 1 እስከ 5 ያሰከምጡ (1 በጣም ዝቅተገኛ 5 በጣም ከፍተገኛ) (CIRCLE RESPONSE) መልሱን ያክብቡ [VCHW_ANTE]		
(least) በጣም ዝቅተገኛ 1 2 3 4 5 (most) በጣም ከፍተገኛ		
196. On a scale of 1 to 5, with "1" being the least and "5" being the most, how much do you trust a Voluntary Community Health Worker to provide you care while you are giving birth? በጎፈቃደኛ የሚሰበረሰብ ጠፍ ሰራተኞች በወሊድ ወቅት ለሴቶችን በሚያድርጉላችዉ እንክብካቤ ምን ያህል እምነት አላችዉ መልሱን በደረጃ ከ 1 እስከ 5 ያሰከምጡ (1 በጣም ዝቅተገኛ 5 በጣም ከፍተገኛ) (CIRCLE RESPONSE) መልሱን ያክብቡ [VCHW_INTRA]		
(least) በጣም ዝቅተገኛ 1 2 3 4 5 (most) በጣም ከፍተገኛ		
197. On a scale of 1 to 5, with "1" being the least and "5" being the most, how much do you trust a Voluntary Community Health Worker to provide a woman care after she has given birth? በጎፈቃደኛ የሚሰበረሰብ ጠፍ ሰራተኞች ከወሊድ በኋላ ለሴቶችን ለሚያድርጉላችዉ እንክብካቤ ምን ያህል እምነት አላችዉ መልሱን በደረጃ ከ 1 እስከ 5 ያሰከምጡ (1 በጣም ዝቅተገኛ 5 በጣም (CIRCLE RESPONSE) መልሱን ያክብቡ [VCHW_POST]		
(least) በጣም ዝቅተገኛ 1 2 3 4 5 (most) በጣም ከፍተገኛ		
198. Have you heard of Traditional Birth Attendants? ስለ ባህላዊ የልምድ አዋላጆች ሰምተዉ ያዉቃሉ (CIRCLE RESPONSE) መልሱን ያክብቡ [TBA_HEARD]	Yes……..…...……...1 አዎ No…….....0 አልሰማሁም	N→Q55
199. Have you ever used the services of a Traditional Birth Attendant? ከባህላዊ የልምድ አዋላጆች አገልግሎት አግኝተዉ ያዉቃሉ	Yes……..…...……...1 አዎ No…….....0	

(CIRCLE RESPONSE) ሚልሱን ያክብቡ [TBA_USED]	አልሰማሁም	
200. Do you know who any of the Traditional Birth Attendants are in your *kebele*? በቀበሊያችሁ ከሚኖሩት ባህላዊ የልምድ አዋላጆች የሚያወቁት አሉ (CIRCLE RESPONSE) ሚልሱን ያክብቡ [TBA_KNOW]	Yes……..…...……...1 አዎ No…….....0 አልሰማሁም	
201. Do you know how to reach a Traditional Birth Attendant if you need help? እርዳታ ቢያስፈልገዎ ወደ ባህላዊ የልምድ አዋላጆች እንዴት ሜዴድ እንዳለብዎት ያውቃሉ (CIRCLE RESPONSE) ሚልሱን ያክብቡ [TBA_REACH]	Yes……..…...……...1 አዎ No…….....0 አልሰማሁም	

202. On a scale of 1 to 5, with "1" being the least and "5" being the most, how much do you trust a Traditional Birth Attendant to provide a woman care while she is pregnant?

የልምድ አዋለጆች በርግዝና ወቅት ለሴቶችን በሚያድርጉላቹዉ እንክብካቤ ምን ያህል እምነት አላችዉ

ሚልሱን በደረጃ ከ 1 እስከ 5 ያሰከምጡ (1 በጣም ዝቅተኛ 5 በጣም

(CIRCLE RESPONSE)

ሚልሱን ያክብቡ

[TBA_ANTE]

(least) በጣም ዝቅተኛ 1 2 3 4 5 (most) በጣም ከፍተኛ

203. On a scale of 1 to 5, with "1" being the least and "5" being the most, how much do you trust a Traditional Birth Attendant to provide a woman care while she is giving birth?

የልምድ አዋለጆች በወሊድ ወቅት ለሴቶችን በሚያድርጉላችዉ እንክብካቤ ምን ያህል እምነት አላችዉ

ሚልሱን በደረጃ ከ 1 እስከ 5 ያሰከምጡ (1 በጣም ዝቅተኛ 5 በጣም

(CIRCLE RESPONSE)

ሚልሱን ያክብቡ

[TBA_INTRA]

(least) በጣም ዝቅተኛ 1 2 3 4 5 (most) በጣም ከፍተኛ

204. On a scale of 1 to 5, with "1" being the least and "5" being the most, how much do you trust a Traditional Birth Attendant to provide a woman care after she has given birth?

የልምድ አዋለጆች ከወሊድ በኋላ ለሴቶችን ለሚያድርጉላችዉ እንክብካቤ ምን ያህል እምነት አላችዉ

ሚልሱን በደረጃ ከ 1 እስከ 5 ያሰከምጡ (1 በጣም ዝቅተኛ 5 በጣም

(CIRCLE RESPONSE)

ሚልሱን ያክብቡ

[TBA_POST]

(least) በጣም ዝቅተኛ 1 2 3 4 5 (most) በጣም ከፍተኛ

Section IV – Potentially Harmful Traditional Practices / Cultural Practices
ክፍል 4 - ጎጂ ባህላዊ ልምዶች

Interview Read: *"Now, I would like you to think about the last birth you either attended or heard about, either in your own family or a family that you know of. I am now going to ask you some questions about this previous birth.*
የጠያቂዉ ምንባብ: "አሁን ደግሞ ባለፈዉ ነብሰጡር ወይም ልጅ በወለድሽበት ወቅት ስለተከሰቱ አንዳንድ ነገሮች እጠይቅዎታለሁ

QUESTION	ANSWER	SKIP
205. While the woman was in labor, was she massaged? **ሴትዮዋ በምታምጥበት ጊዜ ሆዷን ታሽታ ነበር** (CIRCLE RESPONSE) መልሱን ያክብቡ [TP_MASSAGE]	አዎ.....1 አይደለም.....0 አላወቅም.....99 Never Attended/No Birth Knowledge……98 ተገኝቼ አላወቅም ወይም ስለ ወሊድ አላወቅም	
206. After the baby was born, did anyone place butter, oil, dung, or anything else on the stump of the umbilical cord? ልጅ ከተወለደ በኋላ ቅቤ፣ ዘይት፣ እበት ወይም ሌላ ነገር በ እትብቱ ላይ ተቀብቶ ነበር (CIRCLE RESPONSE) መልሱን ያክብቡ [TP_CORD]	Yes……...…...……...1 አዎ No…….....0 አይደለም Don't Know…….99 አላወቅም Never Attended/No Birth Knowledge……98 ተገኝቼ አላወቅም ወይም ስለ ወሊድ አላወቅም	
207. In the first day of the baby's life, anyone wash him or her with water? ልጅ እንደተወለደ በመጀመሪያዉ ቀን ሰዉነቱን ታጥቦ ነበር (CIRCLE RESPONSE) መልሱን ያክብቡ [TP_WASH]	Yes……...…...……...1 አዎ No…….....0 አይደለም Don't Know…….99 አላወቅም Never Attended/No Birth	

	Knowledge……98 ተገኝቼ አላወቅም ወይም ስለ ወሊድ አላወቅም	
208. After the baby was born, did the woman hold him/her before the placenta was delivered? ልጅ ከተወለደ በኋላ የእንግዲ ልጅ ከመወጣቱ በፊት አቅፈወት ነበር (CIRCLE RESPONSE) መልሱን ያክብቡ [TP_HOLD]	Yes……..…..……...1 አዎ No…….....0 አይደለም Don't Know…….99 አላወቅም Never Attended/No Birth Knowledge……98 ተገኝቼ አላወቅም ወይም ስለ ወሊድ አላወቅም	
209. After the baby was born and the cord was cut, did anyone hold, tug or pull on the part of the cord that was still attached to the mother? ልጅ ከተወለደ እና እትብቱ ከተቆረጠ በኋላ ባንቺ በኩል ያለዉን እትብት የጎተተ ሰዉ ነበር ወይ (CIRCLE RESPONSE) መልሱን ያክብቡ [TP_TUG]	Yes……..…..……...1 አዎ No…….....0 አይደለም Don't Know…….99 አላወቅም Never Attended/No Birth Knowledge……98 ተገኝቼ አላወቅም ወይም ስለ ወሊድ አላወቅም	
210. After the baby was born, did anyone use string, cloth or other objects to help get the placenta out? ልጅ ከተወለደ በኋላ የእንግዲ ልጁን ለማዉጣት ማሽሪያ፣ ጨርቅ ወይም ሌላ ነገር የተጠቀመ ሰዉ ነበር (CIRCLE RESPONSE) መልሱን ያክብቡ [TP_STRING]	Yes……..…..……...1 አዎ No…….....0 አይደለም Don't Know…….99 አላወቅም Never Attended/No Birth Knowledge……98 ተገኝቼ አላወቅም ወይም ስለ ወሊድ አላወቅም	
211. After the baby was born, was there any period of time where the mother was not allowed to interact with people from outside her household? ልጅ ከወለዱ በኋላ ከቤት ወጭ ከመጣ ሰዉ እንዳያነጋግሩ የተደረገበት ጊዜ ነበር (CIRCLE RESPONSE)	Yes……..…..……...1 አዎ No…….....0 አይደለም Don't Know…….99 አላወቅም	

መዝሱን ያክብቡ [TP_ISO]	Never Attended/No Birth Knowledge……98 ተገኝቼ አላወቅም ወይም ስለ ወሊድ አላወቅም	

Section V – The HBLSS Package & Practices During Previous Pregnancy + Birth
በቤት ወሰጥ አረግዞ በሚወለድብት ጊዜ ይሚድርጉ ባህላው ዲርጊቶች ላይ ያተዘጋጀ ማጠይቅ

Interviewer Say: *"I am now going to describe some things that people sometimes do around the time of childbirth, and then ask you who usually does these things in your community, who should do these things in your community, and, for the last pregnancy you heard about, and the last birth you attended or heard of, if these things were done and who did them."*
አልፎ አልፎ ህዝቡ ባካባቢያችሁ የህጻናት ወልደት ላይ ስለሚደረጉ እንቅስቃሴዎች ለመገለጽ ነወ፤ ስለዚህ ባካባቢያችሁ ይህን ስራ የሚሰራዉ ማን ነወ፤ ማን መሰራት ያለበት ይመስልዎታል እስከሰሙትና እስከተገኙበት የመጨረሻ የርግዘና ጊዜ

Interview Instructions: When a respondent gives an answer, write this numerical code in the appropriate blank. For example, if a respondent answer "A midwife," write a "4" in the blank space.
ያጠያየቅ መመርያ፣
ለተጠያቂው አማራጮች ተሰተዋል. መልሱን ከበፊቱ ያለወን ቁጥር ይጻፉ ለምሳሌ ለሚድዋይፍ 4

[CODE LOGIC:
HB_ = Belongs to HBLSS Section
HB_X = All questions about X
HB_X_H = Heard of X?
HB_X_U = Usually does X? (a)
HB_X_B = Best to do X? (b)
HB_X_L = Happened last time? (c)
HB_X_W = Who did so? (d)]

OPTIONS:

11) Physician
ሐኪም
12) Clinical Officer
ጠፍ መካንን
13) Nurse
ነርስ
14) Midwife
ሚድዋይፍ
15) Trained Traditional Birth Attendant
የሰለጠኑ የልምድ አዋላጆች
16) Untrained Traditional Birth Attendant
ያልሰለጠኑ የልምድ አዋላጆች
17) Health Extension Worker
የጠፍ ኤክስቴንሽን ባለሞያ
18) Voluntary Community Health Worker
የበጎ ፈቃድ ጠፍ ባለሞያ
19) Respondent Herself/Himself

	ሞላሹ በራሱ/ሷ 20) Family/Friend/Neighbor/Other Non-Trained ቤተሰብ/ጓደኛ/ጎረቤት/ሌላ ስልጠና የሌለዉ

QUESTION	ANSWER	SKIP
212. Have you heard about pregnant women being counseled about creating a safe birth plan, such as saving money for birth expenses, arranging transportation to a health facility, and learning about signs of health problems for mothers and babies? አንዲት ነብሰጠፎ እናት ስለ አዋላለድ እቅድ፣ ለወሊድ ጊዜ ገንዘብ መቆጠብ፣ ወደ ጤፍ ተቋማት ለመሄድ መጓጓዚ ማዘጋጀት፣ ስለ እናትና ልጅ የጠፍ ችግር ምልክቶች ምክር ያገኘች እናት ሰምተዉ ያዉቃሉ (CIRCLE RESPONSE) መልሱን ያክብቡ [HB_BPLAN_H]	አዎ.....1 ያለም.....0	N→Q63
e) Who usually counsels families about creating a safe birth plan in your community? ባካባቢያችሁ ወስጥ ስለ አወላለድ አቅድ ባብዛኛዉ የሚያስተምሩ እነማን ናቸዉ (WRITE ANSWER CODE IN SPACE) ትክክለገኛን መላያ ኮድ ክፍት ቦታው ላይ ይጻፉ [HB_BPLAN_U]	መላያ: [_____] **ወይም** አላወቅም.....99	
f) Who do you think is the best to counsel families about this in your community? ባካባቢያችሁ ወስጥ ቤተሰቦችን ቢያማክር በይበልጥ ይሻላል ብለው የሚአምኑት ማን ነው (WRITE ANSWER CODE IN SPACE) ትክክለገኛን መላያ ኮድ ክፍት ቦታው ላይ ይጻፉ [HB_BPLAN_B]	መላያ: [_____] **ወይም** አላወቅም.....99	
g) For the last pregnancy you know of, was the woman counseled to create a safe birth plan? **በቅርብ ከሚያዉቁት የእርግዝና ወቅት ችግር የለበት የዎሊድ እቅድ እንድታዎጣ የተመከረች ሴት ያዉቃሉ** (CIRCLE RESPONSE)	Yes.....1 አዎ No.....0 አይደለም Don't	N→Q63

	መልሱን ያክብቡ [HB_BPLAN_L]	Know……99 አላወቅም Never Attended/No Birth Knowledge……98 ተገኝቼ አላወቅም ወይም ስለ ወሊድ አላወቅም	99→Q63 98→Q63
	h) Who did so? ማን ነበር (WRITE ANSWER CODE IN SPACE) ትክክለኛን መላያ ኮድ ከፍት ቦታው ላይ ይጻፉ [HB_BPLAN_W]	መላያ: [_____] **ወይም** አላወቅም.....99	
213. Have you heard about pregnant women being counseled to call for assistance when their labor begins? ምጥ በመጣ ገዜ እርዳታ እድትጠራ ምክር ያገኘች ሴት ሰምተዉ ያዉቃሉ (CIRCLE RESPONSE) መልሱን ያክብቡ [HB_CALL_H]		አዎ.....1 ያለም.....0	N→Q64
	e) Who usually counsels pregnant women to call for assistance once their labor begins, in your community? ባካቢባያችሁ ብዙ ጊዜ ያረገዙ ሴቶችን በወሊድ ጊዜ የጠፍ ባለመያ እንዲጠሩ ምክር የሚሰጡ እነማን ናቸዉ (WRITE ANSWER CODE IN SPACE) ትክክለኛን መላያ ኮድ ከፍት ቦታው ላይ ይጻፉ [HB_CALL_U]	መላያ: [_____] **ወይም** አላወቅም.....99	
	f) Who is best to counsel pregnant women to call for assistance once their labor begins, in your community? ባካቢያችሁ ያረገዙ ሴቶችን የጠፍ ባለመያ እንዲጠሩ ምክር ቢሰጡ የተሸለ ይሆናል (WRITE ANSWER CODE IN SPACE) ትክክለኛን መላያ ኮድ ከፍት ቦታው ላይ ይጻፉ [HB_CALL_B]	መላያ: [_____] **ወይም** አላወቅም.....99	
	g) For the last pregnancy you know of, was the woman counseled to call for assistance once her labor began? **በሜጨረሻ ከሚያዉቁት እርግዝና ወቅት ምጥ ሲጀምራት**	Yes……...……...1 አዎ No…….....0	0→Q64

	የሚዲያት ሰዉ እንድትጠራ የተማከረች ሴት ያዉቃሉ (CIRCLE RESPONSE) መልሱን ያክብቡ [HB_CALL_L]	አይደለም Don't Know……99 አላወቅም Never Attended/No Birth Knowledge……98 ተገኝቼ አላወቅም ወይም ስለ ወሊድ አላወቅም	99→Q64 98→Q64
	h) Who did so? ማን ነበር (WRITE ANSWER CODE IN SPACE) ትክክለኛን መላያ ኮድ ክፍት ቦታው ላይ ይጻፉ [HB_CALL_W]	መላያ: [_____] **ወይም** አላወቅም.....99	
	214. Have you heard about pregnant women being advised to create a clean birth environment? ያረገዘች ሴት የምትወልድበትን ቤት እንድታጸዳ ስትመከር ሰምተዋል (CIRCLE RESPONSE) መልሱን ያክብቡ [HB_SPACE_H]	አዎ.....1 ያለም.....0	N→Q65
	e) Who usually advises families to create a clean birth environment, in your community? ባካባቢያችሁ ለመዉለጃ ንጹህ ቦታ እንዲያዘጋጁ ቤተሰቦችን የሚመክሩ እነማን ናቸዉ (WRITE ANSWER CODE IN SPACE) ትክክለኛን መላያ ኮድ ክፍት ቦታው ላይ ይጻፉ [HB_SPACE_U]	መላያ: [_____] **ወይም** አላወቅም.....99	
	f) Who is best to advise families to create a clean birth environment, in your community? ባካባቢያችሁ ለመዉለጃ ንጹህ ቦታ እንዲያዘጋጁ ማን ቢመክር የተሻለ ነዉ (WRITE ANSWER CODE IN SPACE) ትክክለኛን መላያ ኮድ ክፍት ቦታው ላይ ይጻፉ [HB_SPACE_B]	መላያ: [_____] **ወይም** አላወቅም.....99	
	g) For the last pregnancy you heard of, was the woman advised to create a clean birth environment?	Yes……...……...1 አዎ No…….....0	

	በሜጪሻ የእርግዝና ወቅት ሴትዮዋ ነጹህ የመለጃ አካባቢ እንድትፈጥር ተመካራ ነበር (CIRCLE RESPONSE) መልሱን ያክብቡ [HB_SPACE_H]	አይደለም Don't Know……99 አላወቅም Never Attended/No Birth Knowledge……98 ተገኝቼ አላወቅም ወይም ስለ ወሊድ አላወቅም	0→Q65 99→Q65 98→Q65
	h) Who did so? ማን ነበር (WRITE ANSWER CODE IN SPACE) ትክክለኛን መላያ ኮድ ክፍት ቦታው ላይ ይጻፉ [HB_SPACE_W]	መላያ: [_____] **ወይም** አላወቅም.....99	
215. Have you heard about pregnant women being counseled that everyone present during labor and birth should wash their hands? እርጉዝ የሆነች ሴት ምጥ ስትያዝ እቤት ወስጥ የነበሩ ሰወች ሁሉ እጃቸዉን መታጠብ እንዳለባቸዉ ስትመካር ሰምተዋል (CIRCLE RESPONSE) መልሱን ያክብቡ [HB_HANDS_H]		አዎ.....1 ያለም.....0	N→Q66
	e) Who usually counsels women that everyone present during labor and birth should wash their hands, in your community? በናንተ አካባቢ ለሚኖሩ እናቶች ማንም ሰው ምጥ ከተያዘች ሴት ቤት መሆን ካለበት እጁን መታጠብ እነዳለበት ባብዛኛው እናቶችን እሚመካረ ማነ ነው (WRITE ANSWER CODE IN SPACE) ትክክለኛን መላያ ኮድ ክፍት ቦታው ላይ ይጻፉ [HB_HANDS_U]	መላያ: [_____] **ወይም** አላወቅም.....99	
	f) Who is best to counsel women that everyone present during labor and delivery should wash their hands, in your community? በናንተ አካባቢ ለሚኖሩ እናቶች ማንም ሰው ምጥ ከተያዘች ሴት ቤት መሆን ካለበት እጁን መታጠብ እነዳለበት ለእናቶች ምክር ለመለጠት የሚሸል ማነ ነው (WRITE ANSWER CODE IN SPACE) ትክክለኛን መላያ ኮድ ክፍት ቦታው ላይ ይጻፉ [HB_HANDS_B]	መላያ: [_____] **ወይም** አላወቅም.....99	

	g) For the last pregnancy you heard of, was the woman counseled that everyone present during labor and delivery should wash their hands? **በሚጨረሻ የአርግዝና ወቅት በሴትዮዋ የምጥና የወልደት ጊዜ የነበረ ማንኛውም ሰዉ እጁን ማጠበ እንዳለበት ተማክራ ነበር** (CIRCLE RESPONSE) መልሱን ያክብቡ [HB_HANDS_L]	Yes……..…...……...1 አዎ No…….....0 አይደለም Don't Know…….99 አላወቅም Never Attended/No Birth Knowledge……98 ተገኝቼ አላወቅም ወይም ስለ ወሊድ አላወቅም	0→Q66 99→Q66 98→Q66
	h) Who did so? ማን ነበር (WRITE ANSWER CODE IN SPACE) ትክክለኛን መለያ ኮድ ክፍት ቦታው ላይ ይጻፉ [HB_HANDS_W]	መለያ: [_____] **ወይም** አላወቅም..... 99	
216. Have you heard about women being encouraged to change positions during labor? በምጥ ጊዜ መንቀሳቀስ ወይም አቀማመጥ መቀየር እንዳለባት የተማከረች ሴት ሰምተዋል (CIRCLE RESPONSE) መልሱን ያክብቡ [HB_MOVE_H]		አዎ..... .....1 ያለም..... 0	N→Q67
	e) Who usually encourages women to change position during labor, in your community? በምጥ ጊዜ መንቀሳቀስ ወይም አቀማመጥ መቀየር እንዳለባት በብዛት ሴቶችን የሚያማክር ማን ነዉ (WRITE ANSWER CODE IN SPACE) ትክክለኛን መለያ ኮድ ክፍት ቦታው ላይ ይጻፉ [HB_MOVE_U]	መለያ: [_____] **ወይም** አላወቅም..... 99	
	f) Who is best to encourage women to change positions during labor, in your community? በምጥ ጊዜ መንቀሳቀስ ወይም አቀማመጥ መቀየር እንዳለባት ሴቶችን የማማከር ያለበት ማን ነዉ (WRITE ANSWER CODE IN SPACE) ትክክለኛን መለያ ኮድ ክፍት ቦታው ላይ ይጻፉ [HB_MOVE_B]	መለያ: [_____] **ወይም** አላወቅም..... 99	
	g) For the last birth you heard of or attended, was the woman encouraged to change	Yes……..…...……...1 አዎ	

positions during labor? **በተገኝበትወይም በሰሞት የሜጩሻ የወልደት ወቅት ሴትዮዋ ስታመጥ ተለያየ አቀጣጫ እንድትጠቀም ተሞክራ ነበር** (CIRCLE RESPONSE) ሞልሱን ያክብቡ [HB_MOVE_L]	No…….....0 አይደለም Don't Know…….99 አላወቅም Never Attended/No Birth Knowledge……98 ተገኝቼ አላወቅም ወይም ስለ ወሊድ አላወቅም	0→Q67 99→Q67 98→Q67
h) Who did this? ማን ነበር (WRITE ANSWER CODE IN SPACE) ትክክለገኛን ሞላያ ኮድ ክፍት ቦታው ላይ ይጻፉ [HB_MOVE_W]	ሞላያ: [_____] **ወይም** አላወቅም.....99	
217. Have you heard about women being given a drug called misoprostol after the baby is born but before the placenta is delivered to help stop their bleeding? ልጅ ከተወለደ በኋላ ደም ለማቆም የእንግዴልጁ ሳይወጣ ሚኦፕሮሰቶል የተሰጣት ሴት ሰምተዉ ያዉቃሉ (CIRCLE RESPONSE) ሞልሱን ያክብቡ [HB_MISO_H]	አዎ.....1 ያለም.....0	N→Q68
e) Who usually gives women misoprostol, in your community? ባካባቢያችሁ ሚኦፕሮሰቶል የሚሰጥ ማን ነዉ (WRITE ANSWER CODE IN SPACE) ትክክለገኛን ሞላያ ኮድ ክፍት ቦታው ላይ ይጻፉ [HB_MISO_U]	ሞላያ: [_____] **ወይም** አላወቅም.....99	
f) Who is best to give women misoprostol, in your community? ባካባቢያችሁ ሚኦፕሮሰቶል መስጠት ያለበት ማን ነዉ (WRITE ANSWER CODE IN SPACE) ትክክለገኛን ሞላያ ኮድ ክፍት ቦታው ላይ ይጻፉ [HB_MISO_B]	ሞላያ: [_____] **ወይም** አላወቅም.....99	
g) At the last birth you attended or heard of, was the woman given misoprostol after the baby was born but before the placenta was delivered?	Yes……..…...……...1 አዎ No…….....0	0→Q68

በተገኝብት ወይም በሰማት የሜቪፈሻ የወልደት ወቅት ሴትዮዋ ከወለዱና የንግዴ ልጁ ከመጡጡ በፊት ሜኖፕሮስቶል ተሰጥቷት ነበር (CIRCLE RESPONSE) ሚልሱን ያክብቡ [HB_MISO_L]	አይደለም Don't Know……99 አላወቅም Never Attended/No Birth Knowledge……98 ተገኝቼ አላወቅም ወይም ስለ ወሊድ አላወቅም	99→Q68 98→Q68
h) Who gave her misoprostol? ማን ነበር የሰጠዎት (WRITE ANSWER CODE IN SPACE) ትክክለገኛን መለያ ኮድ ክፍት ቦታው ላይ ይጻፉ [HB_MISO_W]	መለያ: [_____] **ወይም** አላወቅም.....99	
218. Have you heard about women being counseled to not have any objects inserted into their vaginas to help the baby be born? እንድ ሴት በቤት ወስጥ ምጥ ስትያዝ ማንም ሰዉ የሆነ ነገር በሚህጸን ወስጥ ልጁን ለማውጣት ብሎ እንዳያስገባ የተመከረች ሰምተዉ ያዉቃሉ (CIRCLE RESPONSE) ሚልሱን ያክብቡ [HB_NOITEMS_H]	አዎ.....1 ያለም.....0	N→Q69
e) Who usually counsels women to not have any objects inserted into their vaginas to help the baby be born, in your community? በናተ አገር እንድ ሴት በቤት ወስጥ ምጥ ስትያዝ ማንም ሰዉ የሆነ ነገር ልጁን ለማውጣት ብሎ በሚህጸን ወስጥ እንዳያስገባ ምክር የሚሰጥ ማን ነው (WRITE ANSWER CODE IN SPACE) ትክክለገኛን መለያ ኮድ ክፍት ቦታው ላይ ይጻፉ [HB_NOITEMS_U]	መለያ: [_____] **ወይም** አላወቅም.....99	
f) Who is best to counsel women to not have any objects inserted into their vaginas to help the baby be born, in your community? በናተ አገር እንድ ሴት በቤት ወስጥ ምጥ ስትያዝ ማንም ሰዉ ልጁን ለማውጣት ብሎ በሚህጸን ወስጥ የሆነ ነገር እንዳያስገባ ምክር መስማት ያለበት ማን ነው (WRITE ANSWER CODE IN SPACE) ትክክለገኛን መለያ ኮድ ክፍት ቦታው ላይ ይጻፉ	መለያ: [_____] **ወይም** አላወቅም.....99	

[HB_NOITEMS_B]		
g) For the last pregnancy you heard of, was the woman counseled to not have any objects inserted into her vagina to help the baby be born **በተገኙበት ወይም በሰሙት የሜጪሻ የወልደት ወቅት ሴትዮዋ ሜህጸን ዉስጥ ማንኛዉንም ነገር እንዳታስገባ ተመክራ ነበር ወይ** (CIRCLE RESPONSE) መልሱን ያክብቡ [HB_NOITEMS_L]	Yes……..…...……...1 አዎ No…….....0 አይደለም Don't Know…….99 አላወቅም Never Attended/No Birth Knowledge……98 ተገኝቼ አላወቅም ወይም ስለ ወሊድ አላወቅም	0→Q69 99→Q69 98→Q69
h) Who did so? ከማን (WRITE ANSWER CODE IN SPACE) ትክክለገኛን መላያ ኮድ ከፍት ቦታው ላይ ይጻፉ [HB_NOITEMS_W]	መላያ: [_____] **ወይም** አላወቅም.....99	
219. Have you heard about women safely delivering the afterbirth? የእንግዴ ልጁ ያለምንም ችግር የተገላገለች ወላድ ሰምተው ያወቃሉ (CIRCLE RESPONSE) መልሱን ያክብቡ [HB_PLACE_H]	አዎ.....1 ያለም.....0	N→Q70
e) Who usually safely delivers the afterbirth, in your community? በናንተ አካባቢ የእንግዴልጅ ባብዛኛው ያለሚንም ችግር ማውጣት የሚቻል ማን ነው (WRITE ANSWER CODE IN SPACE) ትክክለገኛን መላያ ኮድ ከፍት ቦታው ላይ ይጻፉ [HB_PLACE_U]	መላያ: [_____] **ወይም** አላወቅም.....99	
f) Who should safely deliver the afterbirth, in your community? በናንተ አካባቢ የእንግዴልጅ ያለሚንም ችግር ለማውጣት የሚሸል ማን ነው (WRITE ANSWER CODE IN SPACE) ትክክለገኛን መላያ ኮድ ከፍት ቦታው ላይ ይጻፉ [HB_PLACE_B]	መላያ: [_____] **ወይም** አላወቅም.....99	

g) For the last birth you attended or heard of, was the afterbirth safely delivered? **በተገኙበት ወይም በሰሙት የሜጩሻ የወልደት ወቅት የንግዴ ልጁ በትክክል ወጥቶላታል ነበር** (CIRCLE RESPONSE) ሜልሱን ያክብቡ [HB_PLACE_L]	Yes……..…...……...1 አዎ No…….....0 አይደለም Don't Know…….99 አላወቅም Never Attended/No Birth Knowledge……98 ተገኝቼ አላወቅም ወይም ስለ ወሊድ አላወቅም	0→Q70 99→Q70 98→Q70
h) Who delivered the afterbirth? **ማን ነበር** (WRITE ANSWER CODE IN SPACE) ትክክለገኛን ሜላያ ኮድ ክፍት ቦታው ላይ ይጻፉ [HB_PLACE_W]	ሜላያ: [_____] **ወይም** አላወቅም.....99	
220. Have you heard about the practice of rubbing the womb of a woman immediately after the delivery of the placenta to stop bleeding? እናት ወደያው እንደወለደች ደም መፍሰስን ለመከላከል ሜህጸን እንደሚታሽ ሰምተው ያውቃሉ (CIRCLE RESPONSE) ሜልሱን ያክብቡ [HB_MASS_H]	አዎ.....1 ያለም.....0	N→Q71
e) Who usually rubs a woman's womb immediately after the delivery of the placenta to stop bleeding, in your community? በእናንተ አገር የእንግዴ ልጁ ወደያው እነደወጣ ሜህጸን የመያሽ ማን ነው (WRITE ANSWER CODE IN SPACE) ትክክለገኛን ሜላያ ኮድ ክፍት ቦታው ላይ ይጻፉ [HB_MASS_U]	ሜላያ: [_____] **ወይም** አላወቅም.....99	
f) Who is best to rub a woman's womb immediately after the delivery of the placenta to stop bleeding, in your community? በንንተ አገር የእንግዴ ልጁ ወደያው እነደወጣ ሜህጸን ሜሸት ያለበት ማን ነው	ሜላያ: [_____] **ወይም** አላወቅም.....99	

(WRITE ANSWER CODE IN SPACE) ትክክለኛን መለያ ኮድ ከፍት ቦታው ላይ ይጻፉ [HB_MASS_B]		
g) For the last birth you attended or heard of, was the woman's womb rubbed immediately after delivery of the placenta? **በተገኙበት ወይም በሰሙት የመጨረሻ የወልደት ወቅት የንግዴ ልጁ እንደወጣለት ማህጸኗን ተጠርጋ ነበር** (CIRCLE RESPONSE) መልሱን ያክብቡ [HB_MASS_L]	Yes……..…...……...1 አዎ No…….....0 አይደለም Don't Know…….99 አላወቅም Never Attended/No Birth Knowledge……98 ተገኝቼ አላወቅም ወይም ስለ ወሊድ አላወቅም	0→Q71 99→Q71 98→Q71
h) Who did so? ማን ነበር (WRITE ANSWER CODE IN SPACE) ትክክለኛን መለያ ኮድ ከፍት ቦታው ላይ ይጻፉ [HB_MASS_W]	መለያ: [_____] **ወይም** አላወቅም.....99	
221. Have you heard of keeping a baby warm and dry after birth? ልጅ ወደያው እነደተወለደ በመቅትና በደረቅ ሁኔታ መያዝ እንዳለበት ሰምተው ያውቃሉ (CIRCLE RESPONSE) መልሱን ያክብቡ [HB_WARM_H]	አዎ.....1 ያለም.....0	N→Q72
e) Who usually keeps a baby warm and dry after birth, in your community? ብዙ ጊዜ ልጅ ወደያው እንደተወለደ በደረቅና በመቅ ሁኔታ የመያሰቀምጥ ማን ነው (WRITE ANSWER CODE IN SPACE) ትክክለኛን መለያ ኮድ ከፍት ቦታው ላይ ይጻፉ [HB_WARM_U]	መለያ: [_____] **ወይም** አላወቅም.....99	
f) **Who should keep a baby warm and dry after birth, in your community?** ልጅ ወደያው እንደተወለደ በደረቅና በመቅ ሁኔታ መቸቀምጥ ያለበት ማን ነው (WRITE ANSWER CODE IN SPACE) ትክክለኛን መለያ ኮድ ከፍት ቦታው ላይ ይጻፉ	መለያ: [_____] **ወይም** አላወቅም.....99	

[HB_WARM_B]		
g) For the last birth you attended or heard of, was the baby kept warm and dry after birth? **በተገኙበት ወይም በሰሙት የመጨረሻ የወልደት ወቅት ልጁ መቀት እንዲያገኝና እንዲዳረቅ ተደረጓል** (CIRCLE RESPONSE) መልሱን ያክብቡ [HB_WARM_L]	Yes……..…...……...1 አዎ No…….....0 አይደለም Don't Know…….99 አላወቅም Never Attended/No Birth Knowledge……98 ተገኝቼ አላወቅም ወይም ስለ ወሊድ አላወቅም	0→Q72 99→Q72 98→Q72
h) Who did so? **ማን ነበር** (WRITE ANSWER CODE IN SPACE) ትክክለገኛን መላያ ኮድ ከፍት ቦታው ላይ ይጻፉ [HB_WARM_W]	መላያ: [_____] **ወይም** አላወቅም.....99	
222. Have you heard of a baby being checked for proper color and breathing after birth? ወደያው እንተወለደ አተነፋፈሱና የቆዳው ቀለም ምን እንደሚሞክል ባዋለጁ የተመረመረ ህጻን ሰምተው ያወቃሉ (CIRCLE RESPONSE) መልሱን ያክብቡ [HB_BREATH_H]	አዎ.....1 ያለም.....0	N→Q73
e) Who usually checks a baby for proper color and breathing after birth, in your community? በናንተ አካባቢ ወደያው የተወለደ ህጻን አተነፋፈሱና የቆዳው ቀለም ምን እንደሚሞክል ብዙ ጊዜ የሚመረምር ማን ነው (WRITE ANSWER CODE IN SPACE) ትክክለገኛን መላያ ኮድ ከፍት ቦታው ላይ ይጻፉ [HB_BREATH_U]	መላያ: [_____] **ወይም** አላወቅም.....99	
f) Who is best to check a baby for proper color and breathing after birth, in your community? በናንተ አካባቢ ወደያው የተወለደ ህጻን አተነፋፈሱና የቆዳው ቀለም ምን እንደሚሞክል ለመመርመር የሚሉው	መላያ: [_____] **ወይም** አላወቅም.....	

	ማን ነው (WRITE ANSWER CODE IN SPACE) ትክክለኛን መላያ ኮድ ከፍት ቦታው ላይ ይጻፉ [HB_BREATH_B]	99	
	g) For the last birth you attended of heard of, was the baby checked for proper color and breathing? **በተገኝበት ወይም በሰማት የመጨረሻ የወልደት ወቅት የቆዳዉን ቀለምና አተነፋፈሱን አረጋግጠዋል** (CIRCLE RESPONSE) መልሱን ያክብቡ [HB_BREATH_L]	Yes……..…...……...1 አዎ No…….....0 አይደለም Don't Know…….99 አላወቅም Never Attended/No Birth Knowledge……98 ተገኝቼ አላወቅም ወይም ስለ ወሊድ አላወቅም	0→Q73 99→Q73 98→Q73
	h) Who did so? **ማን ነበር የሚሚው** (WRITE ANSWER CODE IN SPACE) ትክክለኛን መላያ ኮድ ከፍት ቦታው ላይ ይጻፉ [HB_BREATH_W]	መላያ: [_____] **ወይም** አላወቅም..... 99	
223. Have you heard of women being counseled to begin breastfeeding immediately after giving birth? ወያው እንደወለደች ልጅዋን ጠቅ እንድታጠባ ምክር ያገኘች እናት ሰምተው ያዉቃሉ (CIRCLE RESPONSE) መልሱን ያክብቡ [HB_IBF_H]		አዎ..... .....1 ያለም..... 0	N→Q74
	e) Who usually counsels to begin breastfeeding immediately after giving birth, in your community? በናንተ አካባቢ እናቶች ወያው እንደወለዱ ጠቅ እንያጠቡ ምክር በዙ ጊዜ የሚሰጥ ማን ነው (WRITE ANSWER CODE IN SPACE) ትክክለኛን መላያ ኮድ ከፍት ቦታው ላይ ይጻፉ [HB_IBF_U]	መላያ: [_____] **ወይም** አላወቅም..... 99	
	f) Who is best to counsel women to begin breastfeeding immediately after giving birth, in your community?	መላያ: [_____] **ወይም**	

በናንተ አካባቢ እናቶች ወያው እንደወለዱ ጡት እንያጠቡ ምክር ለማጠት የሚሸል ማን ነው (WRITE ANSWER CODE IN SPACE) ትክክለገኛን መላያ ኮድ ከፍት ቦታው ላይ ይጻፉ [HB_IBF_B]	አላወቅም..... 99	
g) For the last birth you attended or heard of, was the woman counseled to begin breastfeeding immediately after birth? **በተገኙበት ወይም በሰሙት የሜጪሻ የወልደት ወቅት ሴትዮዋ ህጻኑን ወዲያዉኑ እንድታጠባ ተመክራ ነበር** (CIRCLE RESPONSE) መልሱን ያክብቡ [HB_IBF_L]	Yes……..…...……...1 አዎ No…….....0 አይደለም Don't Know…….99 አላወቅም Never Attended/No Birth Knowledge……98 ተገኝቼ አላወቅም ወይም ስለ ወሊድ አላወቅም	0→Q74 99→Q74 98→Q74
h) Who did so? **ከማን** (WRITE ANSWER CODE IN SPACE) ትክክለገኛን መላያ ኮድ ከፍት ቦታው ላይ ይጻፉ [HB_IBF_W]	መላያ: [_____] **ወይም** አላወቅም..... 99	
224. Have you heard of women being counseled to take care of the baby's cord cleanly, by tying the umbilical cord, cutting the cord with a sterile instrument, and not putting anything on the stump of the cord? እትብት ንጽህናው በተጠበቀና በትክክለገኛ ሁኔታ እንዲሁም ከቁስሉ ላይ ምንም ሳይጨምርነት እንዴት እንደሚቆረጥ ምክር ያገገኘች እናት ሰምተው ያወቃሉ (CIRCLE RESPONSE) መልሱን ያክብቡ [HB_CORD_H]	አዎ..... .....1 ያለም..... 0	N→Q75
e) Who usually counsels women to take care of the baby's cord cleanly, in your community? በተለምዶ በናንተ አገር እትብት እንዴት መቆረጥ እንዳለበት ምክር የሚሰጥ ማን ነው (WRITE ANSWER CODE IN SPACE) ትክክለገኛን መላያ ኮድ ከፍት ቦታው ላይ ይጻፉ	መላያ: [_____] **ወይም** አላወቅም..... 99	

[HB_CORD_W]		
f) Who is best to counsel women to take care of the baby's cord cleanly, in your community? ማለተማር ያለበት ማን ነው (WRITE ANSWER CODE IN SPACE) ትክክለኛን መለያ ኮድ ክፍት ቦታው ላይ ይጻፉ [HB_CORD_B]	መለያ: [_____] **ወይም** አላወቅም.....99	
g) For the last pregnancy you heard of, did anyone counsel the woman to take care of the baby's cord cleanly? **በተገኙበት ወይም በሰሙት የሚጨሻ የወልደት ወቅት ሴትዮዋ የልጅን እንብርት በንጽህና እንድትይዘዉ የማሪት ሰዉ ነበር ወይ** (CIRCLE RESPONSE) መልሱን ያክብቡ [HB_CORD_L]	Yes……..…...……...1 አዎ No…….....0 አይደለም Don't Know…….99 አላወቅም Never Attended/No Birth Knowledge……98 ተገኝቼ አላወቅም ወይም ስለ ወሊድ አላወቅም	0→Q75 99→Q75 98→Q75
h) Who did so? ምክሩን የሰጠዎት ሰው ማን ይባላሉ (WRITE ANSWER CODE IN SPACE) ትክክለኛን መለያ ኮድ ክፍት ቦታው ላይ ይጻፉ [HB_CORD_W]	መለያ: [_____] **ወይም** አላወቅም.....99	
225. Have you heard of the practice of women being checked for problems such as a fever or bleeding after birth? ከወሊድ በሁአላ ለሚሰቱ ችገሮች ለምሳሌ ደም መፍሰስና የሰወነት መቅት መጨመር መከሰታቸወን ለማወቅ ለእናቶች ምርመራ እንደሚደረግላቸው ሰምተው ያወቃሉ (CIRCLE RESPONSE) መልሱን ያክብቡ [HB_CHECK_H]	አዎ.....1 ያለም.....0	N→Q76
e) Who usually checks women for problems such as fever and bleeding after birth, in your community? በናንተ አገር በተለምዶ እናቶች እንደወለዱ በሰላም	መለያ: [_____] **ወይም**	

መላኀላቸዉን የሚያይ ማን ነው (WRITE ANSWER CODE IN SPACE) ትክክለኛን መለያ ኮድ ከፍት ቦታው ላይ ይጻፉ [HB_CHECK_U]	አላወቅም.....99	
f) Who is best check women for these problems after birth, in your community? በናንተ አገር እናቶች እንደወለዱ በሰላም መላኀላቸዉን ማየት ያለበት ማነው (WRITE ANSWER CODE IN SPACE) ትክክለኛን መለያ ኮድ ከፍት ቦታው ላይ ይጻፉ [HB_CHECK_B]	መለያ: [_____] **ወይም** አላወቅም.....99	
g) For the last birth you attended or heard of, was the woman checked for these problems after birth? **በተገኙበት ወይም በሰሙት የሚጨሻ የወልደት ወቅት ሴትዮዋ ከወሊድ በኋላ ስላሉት ችገሮች ክትትል አድርጋ ነበር ወይ** (CIRCLE RESPONSE) መልሱን ያክብቡ [HB_CHECK_L]	Yes……..…...……...1 አዎ No…….....0 አይደለም Don't Know……99 አላወቅም Never Attended/No Birth Knowledge……98 ተገኝቼ አላወቅም ወይም ስለ ወሊድ አላወቅም	0→Q76 99→Q76 98→Q76
h) Who did so? ማን ይባላሉ (WRITE ANSWER CODE IN SPACE) ትክክለኛን መለያ ኮድ ከፍት ቦታው ላይ ይጻፉ [HB_CHECK_W]	መለያ: [_____] **ወይም** አላወቅም.....99	
226. Have you heard of women being counseled to give only breastmilk to their babies for the first six months of life? እናቶች ለልጆቻቸው ስድስት ወር እስኪሞላቸው ድረስ ጡት ብቻ መስጠት እንዳለባቸው ምክር ሲሰጥ ሰምተው ያውቃሉ (CIRCLE RESPONSE) መልሱን ያክብቡ [HB_EBF_H]	አዎ.....1 ያለም.....0	N→Q77
e) Who usually counsels women to give only breastmilk to their babies for the first six months of life, in your community?	መለያ: [_____]	

በናንተ አገር እናቶች ልጆቻቸውን ስድስት ወር አስኪሆናቸው ድረስ ጡት ብቻ እንዲያጠቡ የሚመክር ማን ነው (WRITE ANSWER CODE IN SPACE) ትክክለኛን መላያ ኮድ ክፍት ቦታው ላይ ይጻፉ [HB_EBF_U]	**ወይም** አላወቅም.....99	
f) Who should counsel women to give only breastmilk to their babies for the first six months of life, in your community? እናቶች ልጆቻቸውን ስድስት ወር አስኪሆናቸው ድረስ ጡት ብቻ እንዲያጠቡ መምከር ያለበት ማን ነው (WRITE ANSWER CODE IN SPACE) ትክክለኛን መላያ ኮድ ክፍት ቦታው ላይ ይጻፉ [HB_EBF_B]	መላያ: [_____] **ወይም** አላወቅም.....99	
g) For the last pregnancy you heard of, did anyone counsel the woman to give only breastmilk to the baby in the first six months of life? **በተገኙበት ወይም በሰሙት የሚጨረሻ የእርግዝና ወቅት ሴትዮዋ እስከስድስት ወር ጡት ብቻ ማጥባት እንዳለባት የመከራት ነበር ወይ** (CIRCLE RESPONSE) መልሱን ያክብቡ [HB_EBF_L]	Yes……..…...……...1 አዎ No…….....0 አይደለም Don't Know…….99 አላወቅም Never Attended/No Birth Knowledge……98 ተገኝቼ አላወቅም ወይም ስለ ወሊድ አላወቅም	0→Q77 99→Q77 98→Q77
h) Who did so? ማን ነበር ይህን የሰራው (WRITE ANSWER CODE IN SPACE) ትክክለኛን መላያ ኮድ ክፍት ቦታው ላይ ይጻፉ [HB_EBF_W]	መላያ: [_____] **ወይም** አላወቅም.....99	
227. Have you heard of women being counseled about the proper positioning of the baby during breastfeeding? እናቶች ልጆቻቸውን እንዴት መያዝና ማጥባት እንዳለባተው ምክር ሲሰጥ ያወቃሉ (CIRCLE RESPONSE) መልሱን ያክብቡ [HB_BFADV_H]	አዎ.....1 ያለም.....0	N→Q78
e) Who usually counsels women about the		

proper positioning of the baby during breastfeeding, in your community? በናንተ አገር ማው እናቶችን ስለ ልጅ አያያዝና አጠባብ የሚያስተምር (WRITE ANSWER CODE IN SPACE) ትክክለገኛን መላያ ኮድ ከፍት ቦታው ላይ ይጻፉ [HB_BFADV_U]	መላያ: [_____] **ወይም** አላወቅም.....99	
f) Who is best to counsel women about the proper positioning of the baby during breastfeeding, in your community? በናንተ አገር ትክክልኛ የሆነ ልጅ አያያዝና አጠባብን ለናቶች የመያሳይ ማው (WRITE ANSWER CODE IN SPACE) ትክክለገኛን መላያ ኮድ ከፍት ቦታው ላይ ይጻፉ [HB_BFADV_B]	መላያ: [_____] **ወይም** አላወቅም.....99	
g) For the last birth you attended or know of, did anyone counsel the woman about proper positioning of the baby during breastfeeding? **በተገኙበት ወይም በሰማት የሜጨረሻ የወልደት ወቅት ሴትዮዋ ጡት በምታጠበት ጊዛ ስለትክክለኛዉ የልጅ አያያዝ የጣራት ነበር** (CIRCLE RESPONSE) መልሱን ያክብቡ [HB_BFADV_L]	Yes……..…...……...1 አዎ No…….....0 አይደለም Don't Know…….99 አላወቅም Never Attended/No Birth Knowledge……98 ተገኝቼ አላወቅም ወይም ስለ ወሊድ አላወቅም	0→Q78 99→Q78 98→Q78
h) Who did this? **ከማን** (WRITE ANSWER CODE IN SPACE) ትክክለገኛን መላያ ኮድ ከፍት ቦታው ላይ ይጻፉ [HB_BFADV_W]	መላያ: [_____] **ወይም** አላወቅም.....99	
228. Have you heard about postpartum women being counseled to rest for at least 12 days after birth? ከወለደች በሁአላ ለ 12 ቀናት እረፍት ማግገኘት እንዳለባት የተማከረች እናት ሰምተው ያውቃሉ (CIRCLE RESPONSE) መልሱን ያክብቡ	አዎ.....1 ያለም.....0	N→Q79

[HB_REST_H]		
e) Who usually counsels postpartum women to rest for at least 12 days after giving birth, in your community? በናንተ አገር አንድ እናት ከወለደች በሁአላ ለ 12 ቀናት እረፍት ማግኘት እንዳለባት ብዙ ጊዜ ምክር የሚሰጥ ማን ነው (WRITE ANSWER CODE IN SPACE) ትክክለኛን መለያ ኮድ ክፍት ቦታው ላይ ይጻፉ [HB_REST_U]	መለያ: [_____] **ወይም** አላወቅም.....99	
f) Who is to best to counsel postpartum women to rest for at least 12 days after giving birth, in your community? በናንተ አገር አንድ እናት ከወለደች በሁአላ ለ 12 ቀናት እረፍት ማግኘት እንዳለባት ምክር ለመስጠት የሚሻል ማን ነው (WRITE ANSWER CODE IN SPACE) ትክክለኛን መለያ ኮድ ክፍት ቦታው ላይ ይጻፉ [HB_REST_B]	መለያ: [_____] **ወይም** አላወቅም.....99	
g) For the last birth you attended or know of, was the woman counseled to rest for at least 12 days after birth? **በተገኙበት ወይም ባወቁት የሜጪሻ የወልደት ወቅት ሴትዮዋ ከወሊድ በኃላ ቢያንስ 12 ቀን ሚዛ ዕንዳለባት ተመክራ ነበር ወይ** (CIRCLE RESPONSE) መልሱን ያክብቡ [HB_REST_L]	Yes……...…...……...1 አዎ No…….....0 አይደለም Don't Know…….99 አላወቅም Never Attended/No Birth Knowledge……98 ተገኝቼ አላወቅም ወይም ስለ ወሊድ አላወቅም	0→Q79 99→Q79 98→Q79
h) Who did so? **ከማን** (WRITE ANSWER CODE IN SPACE) ትክክለኛን መለያ ኮድ ክፍት ቦታው ላይ ይጻፉ [HB_REST_W]	መለያ: [_____] **ወይም** አላወቅም.....99 Don't Know…….....99	

Section X – Community Consensus
ማህበረሰቡ የሚያምነበት

Interview Read: *"Now, I'm going to read some statements similar to what people have said in your community. For each of these statements, I would like you to tell me whether you agree or disagree*
ፈቃድዎ ከሆነ በዚህ አካባቢ የሚኖሩ ሰዎች ስለእርዝና፣ ወሊድና፣ ጠፍሻ ት የሚነወን አነ ብለወላለሁ
በየትገሮቹ አነደሚነማ እንደሚሰማሙ ይነገሩገገናል

QUESTION	ANSWER
229. The *(etibt)* cord should be tied both on the mother's part and on the baby's part. **እትብት በልጁም በናቲቱም በኩል መታሰር አለበት** [CC_TIE]	Agree……1 እስማማለሁ Disagree……0 አልስማማም Don't Know……....99 አላወቅም
230. It is a problem that the health workers are not in the health post when they are needed. **የጠፍ ባለሙያዎች በጣቢ ድርጅቶች አለመገገኘታቸው ችግር ነው** [CC_ABSENT]	Agree……1 እስማማለሁ Disagree……0 አልስማማም Don't Know……....99 አላወቅም
231. A woman should have the same workload before and during pregnancy. **እናቶች በእረግዙም ባያረግዙም የስራ ጫው ያው ነው** [CC_WORK]	Agree……1 እስማማለሁ Disagree……0 አልስማማም Don't Know……....99 አላወቅም
232. A mother should only take rest for only up to 10 days after the baby is born. **እናቶች ከወሊድ በሁአላ ሚረፍ ያለባቸው ለ 10 ቀን ብቻ ለው** [CC_REST]	Agree……1 እስማማለሁ Disagree……0 አልስማማም Don't Know……....99 አላወቅም
233. If the *seng* has trouble detaching, it should be pulled out in the home. **የእንግዴ ለጅ አልወጣ ካለ ጎትቶ ማውጣት ነው** [CC_PULL]	Agree……1 እስማማለሁ Disagree……0 አልስማማም Don't Know……....99 አላወቅም
234. After birth, the baby needs to be away from the mother while she sits over the hole to detach the *seng*. **ከጉድጉድ ለይ እናቲቱ ተቀምታ የእንግዴ ልጁ እስኪወጣላት ዲረስ ህጻኑ ለብቻ መሆን አለበት**	Agree……1 እስማማለሁ Disagree……0 አልስማማም

[CC_HOLE]	Don't Know……....99 አላ ወቅም
235. A mother who has had peaceful births in the past will always have peaceful births in the future. **አንዴ በሰላም የወለደች እናት ሁሌ በሰላም ትወልዳለች** [CC_PEACE]	Agree……1 እስ ማማለ ሁ Disagree……0 አልስ ማማም Don't Know……....99 አላ ወቅም
236. A health worker will come to deliver a baby at nighttime. **የጠፍ ባለሙያዎች ሙታም መጥተው ያዋልዳሉ** [CC_NIGHT]	Agree……1 እስ ማማለ ሁ Disagree……0 አልስ ማማም Don't Know……....99 አላ ወቅም
237. The baby should be washed immediately after birth. **ሕጻን እንደተወለደ መታጠበ አለበት** [CC_WASH]	Agree……1 እስ ማማለ ሁ Disagree……0 አልስ ማማም Don't Know……....99 አላ ወቅም
238. If the uvula has dropped, then it is best to cut the uvula. **እንጥል ከወረደ መቆረጥ አለበት** [CC_UVULA]	Agree……1 እስ ማማለ ሁ Disagree……0 አልስ ማማም Don't Know……....99 አላ ወቅም
239. A baby should be given butter immediately after birth. **ሕጻን እንደተወለደ ቅቤ ማሳሹ አለበት** [CC_BUTTER]	Agree……1 እስ ማማለ ሁ Disagree……0 አልስ ማማም Don't Know……....99 አላ ወቅም
240. A woman should deliver in the home unless the labor is serious. **እናት መወለድ ያለባት አቤት ነው ምጡ ካላስቸገረ** [CC_HOME]	Agree……1 እስ ማማለ ሁ Disagree……0 አልስ ማማም Don't Know……....99 አላ ወቅም
241. When labor begins, a health worker should be called to the home.	Agree……1 እስ ማማለ ሁ

መጥ ሲጀምር የጠፍባለማያ ማከራት አለበት [CC_CALLED]	Disagree…….0 አልስማማም Don't Know……....99 አላወቅም
242. A woman should tell a health worker when she knows she is pregnant. እንት ሚገዙአን ካወቀች ለጠፍባለማያ መገር አለባት [CC_TELL]	Agree…….1 እስማማለሁ Disagree…….0 አልስማማም Don't Know……....99 አላወቅም
243. A woman and family should not prepare for a problem ahead of time because the birth may be peaceful. ነፍሰጠፎ እናት እና ቤተሰቡ ምጥ ሰላሚ ሊሆን ሰለሚቻል አስቀድመው መጋጀት የለባቸውም [CC_PREPARE]	Agree…….1 እስማማለሁ Disagree…….0 አልስማማም Don't Know……....99 አላወቅም
244. If the *seng* does not detach then a traditional doctor [*Awakie*] should be called. እትብት አልወጣ ካለ አዋቂ ማከራት አለበት [CC_TRAD]	Agree…….1 እስማማለሁ Disagree…….0 አልስማማም Don't Know……....99 አላወቅም
245. If the labor is not serious, then there is no reason to call a health worker. [CC_SERIOUS]	Agree…….1 እስማማለሁ Disagree…….0 አልስማማም Don't Know……....99 አላወቅም
246. It is both women and men who could help with delivery. [CC_MEN]	Agree…….1 እስማማለሁ Disagree…….0 አልስማማም Don't Know……....99 አላወቅም
247. There is no reason for healthy pregnant women to go to check-ups by health workers. [CC_ANC]	Agree…….1 እስማማለሁ Disagree…….0 አልስማማም Don't Know……....99 አላወቅም

248. There is nothing to be done about excessive bleeding after delivery because it is caused by seraqueen/serqian. **ከወሊድ በኋላ ለሚመጣ ደም መፍሰስ ማቆም የሚቻልበት ምክንያት በሰረቀኝ ስለሚጣ ነዉ** [CC_SERA]	Agree……1 እስማማለሁ Disagree……0 አልስማማም Don't Know……...99 አላወቅም
249. HEWs only help with birth spacing and vaccination. **የጠፍ ኤክስቴንሽን ሰራተኞች የሚዳት በወሊድ ጊዜና በማከም ብቻ ነዉ** [CC_HEWS]	Agree……1 እስማማለሁ Disagree……0 አልስማማም Don't Know……...99 አላወቅም
250. A baby's cord should be plastered with butter. የልጅ እንብርት በቅቤ መሸፈን አለበት [CC_CORD]	Agree……1 እስማማለሁ Disagree……0 አልስማማም Don't Know……...99 አላወቅም
144. The first milk is unclean and should not be given to the baby. የመጀመሪያዉን ወተት ንጹህ ስላልሆነ መጠጡት የለበትም [CC_COLOS]	Agree……1 እስማማለሁ Disagree……0 አልስማማም Don't Know……...99 አላወቅም
251. There is little to be done to save the life of a mother or child – if one dies during delivery, it is just a matter of time. እናቶችና የተወለዱ ህጻናት በወሊድ ጊዜ ላማትረፍ ብዙ ጥረት የሚደረገዉ ቢሞቱም ጊዜአቸዉ ስለሆነ ነዉ [CC_FATE]	Agree……1 እስማማለሁ Disagree……0 አልስማማም Don't Know……...99 አላወቅም
252. Husbands prefer that their wives deliver in a hakim bet. ወንዶች ባለቤቶቻቸዉ በሀሪም ቤት ቢወልዱ ይመርጣሉ [CC_HC]	Agree……1 እስማማለሁ Disagree……0 አልስማማም Don't Know……...99 አላወቅም
253. A woman should go to a health center if the baby is delayed. እናቶች ምጥ ሲዘገይ ወደ ጠፍ ጣቢያ መሄድ አለባቸዉ [CC_HCDELAY]	Agree……1 እስማማለሁ Disagree……0 አልስማማም

	Don't Know……....99 አላ ወቅም
254. A woman should go to a health center if the placenta does not detach. እናቶች የንግዴ ልጁ አልወታ ካለ ወደ ጠፍ ጣቢያ መሄድ አለባቸዉ [CC_HCPLACE]	Agree……1 እስ ማማለ ሁ Disagree……0 አልስ ማማም Don't Know……....99 አላ ወቅም
255. A woman should go to a health center if the baby comes in a different position. ልጁ በተለያ አቅጣጫ ከመጣ ወደ ጠፍ ጣቢያ መሄድ አለባቸዉ [CC_HCBREECH]	Agree……1 እስ ማማለ ሁ Disagree……0 አልስ ማማም Don't Know……....99 አላ ወቅም
256. A woman should go to a health center if the woman experiences seraqueen/seriqian. በደም መፍሰስ ከተጠቃች ጠፍ ጣቢያ መሄድ አለባቸዉ [CC_HCSERA]	Agree……1 እስ ማማለ ሁ Disagree……0 አልስ ማማም Don't Know……....99 አላ ወቅም

Appendix C. FLWs MaNHEP Baseline Survey: Frontline Health Workers, June-July 2010

ETHIOPIAN FRONTLINE HEALTH WORKER SURVEY

MaNHEP Project, Emory University

2010

Interviewer name_____

Definition

Frontline Health Workers (FHW) – health workers in rural Ethiopia providing maternal and newborn health services at the community level; they include Health Extension Workers (HEW), volunteer Community Health Workers (vCHW), and Traditional Birth Attendants (TBA).

Survey Consent

My name is [_____] and I am working with a team from Emory University to gather information from frontline health workers (FHW). Our work is being supported by the Gates Foundation. We are conducting a survey to gather information about how frontline health workers, including Health Extension Workers (HEW), volunteer Community Health Workers (vCHW), and Traditional Birth Attendants (TBA), communicate and work together in providing care to mothers and babies. We also want to learn your ideas regarding teamwork, confidence, and trust as well as your knowledge and practice of various clinical skills and how all of these might affect your ability to provide care to mothers and babies. Your participation in the survey is completely voluntary. You do not have to answer any questions that you are uncomfortable with and you may stop participation at any time. We anticipate that the survey will take less than 1 hour to complete. The information you give us is confidential and will not be shared with other health workers in your area. The more honest you can be in answering our questions, the more helpful the information will be in improving the care of mothers and babies in the future.

INTERVIEWER READ: "Would you like to give your consent to participate in the survey?"
Yes No

Date of interview (Day, Month, Year): [_ _ - _ _ - _ _ _ _]

Time the interview begins in military time: [_ _ _ _]

Participant's First Name: _____ [name]

Region: _____ [region]

Woreda: _____ [woreda]

Kebele: _____ [kebele]

INTERVIEWER INSTRUCTIONS:	
Do not read the category "don't know or "do not remember" that are listed in the questionnaire. Mark responses as "don't know" or "do not remember" only if this is the respondent's answer to a question. **INTERVIEWER READ**: "Now we will begin the survey. First, I will ask you questions about your background."	
Section 1: Respondent's Background	
B1 How old are you? **(WRITE NUMBER IN SPACE)**	[_ _] Don't know.....99
B2 What is your gender? **(CIRCLE RESPONSE)** **(IF MALE SKIP TO B4)**	Female..... .01 Male..... .02
B3 How many pregnancies have you had? **(WRITE NUMBER IN SPACE)**	[_ _]
B4 How many living children do you have? **(WRITE NUMBER IN SPACE)**	[_ _]
B5 What is your marital status? **(CIRCLE RESPONSE)**	Single……..…… .01 Married……..……. .02 Divorced/Widowed……...…….. 03
INTERVIEWER INSTRUCTIONS: **INTERVIEWER READ**: "Now I will ask you questions about your duties and education."	
Section 2: Respondent's Work as A FHW	

W1 What type of health worker are you? **(READ LIST)** **(ONLY ONE ANSWER IS POSSIBLE)** **(CIRCLE RESPONSE)**	Health Extension Worker.....01 Volunteer Community Health Worker Community Health Assistant.....02 Community Based Reproductive Health Assistant.....03 Community Health Promoter……...04 Traditional Birth Attendant.....05
W2 How many years of schooling have you had? **(WRITE NUMBER IN SPACE)**	[_ _]
W3 What type of education or training did you have to become a (type of health worker)? **(READ LIST)** **(CIRCLE RESPONSE)** **(IF OTHER, WRITE IN RESPONSE)**	Informal Training (Apprenticeship).....01 Formal Educational Program.....02 Both informal & formal education.....03 No training.....04 Other (**SPECIFY**:_____).....88
W4 Have you ever received a clean and safe birth training? **(CIRCLE RESPONSE)**	Yes.....01 No.....00 Don't Know.....99
W5 How many years have you worked as a (type of health worker)? **(WRITE NUMBER IN SPACE)** **(IF LESS THAN 1 YEAR, CIRCLE 88)**	[_ _] Less than one year.....88
W6 How many hours each week do you spend in your duty as a (type of health worker)? **(WRITE NUMBER IN SPACE)**	[_ _ _]
W7 Do you receive monetary payments for your work as a (type of health worker)? **(CIRCLE RESPONSE)** **(IF NO, SKIP TO W11)**	Yes.....01 No.....00 Don't Know.....99
W8 How much money do you receive for your work as a (type of	

health worker)? **(WRITE NUMBER IN SPACE)**	[_ _ _] birr
W9 When do you receive this amount? **(CIRCLE RESPONSE)**	Per week……...01 Per month……..02 Per year…….03 Other (**SPECIFY**:_____).....88
W10 Who pays you for your work as a (type of health worker)? **(READ LIST)** **(CIRCLE RESPONSE)**	Government ……..……01 Community…….……...02 Other (**SPECIFY**:_____).....88
W11 Do you give care to women in pregnancy? **(CIRCLE ANSWER) (IF NO, SKIP TO W19)**	Yes.....01 No.....00 Don't Know.....99
W12 How many women in pregnancy do you give care to a month? **(WRITE NUMBER IN SPACE)**	[_ _ _] Don't Know.....99
W13 Do you have the supplies you need to give care to women in pregnancy? **(CIRCLE ANSWER)**	Yes.....01 No.....00 Don't Know.....99
W14 What supplies do you have to give care to women in pregnancy? **(READ LIST)** **(MORE THAN 1 ANSWER IS POSSIBLE)** **(CIRCLE RESPONSE)**	Misoprostol……[W14Miso]……...…01 Gloves……[W14Gloves]……...02 Fetoscope……[W14Feto]……03 Tape Measure……[W14Tape]……...04 Charting Materials……[W14Chart]……05 Vitamins……[W14Vita]…….....07 Iron supplementation…[W14Iron]……..08 Malaria medication……[W14Malaria]…...09 Blood pressure cuff……[W14Cuff]…….10 Stethescope……[W14Steth]……11

	Adult weighing scale……[W14A_Scale]….12 Insecticide treated bed net……[W14Net]….13 Tetanus Toxiod vaccine…[W14Tetanus]…14 None of the Above……[W14NoA]…15 Other: Specify_____[W14Other]…..88
W15 Do you receive compensation from the family for giving care to a woman in pregnancy? **(CIRCLE ANSWER) (IF NO, SKIP TO W19)**	Yes.....01 No.....00 Don't Know.....99
W16 Is the compensation monetary? **(CIRCLE ANSWER) (IF NO, SKIP TO W18)**	Yes….....01 No….....00 Don't Know.....99
W17 How much money do you receive from each family? **(WRITE NUMBER IN SPACE)**	[_ _ _] birr
W18 What else do you receive as compensation for giving care to a woman in pregnancy? **(WRITE ANSWER IN SPACE)**	**SPECIFY**:_____.....88 Nothing……..00
W19 Do you deliver babies? **(CIRCLE ANSWER)** **(IF NO, SKIP TO W28)**	Yes.....01 No.....00 Don't Know.....99
W20 How many babies are born in your kebele each month? **(WRITE NUMBER IN SPACE)**	[_ _ _] Don't Know.....99
W21 How many babies do you deliver each month? **(WRITE NUMBER IN SPACE)**	[_ _ _] Don't Know.....99
W22 Do you have the supplies you need to provide care to women during labor and birth? **(CIRCLE ANSWER)**	Yes.....01 No.....00 Don't Know.....99

W23 What supplies do you have to provide care to women during labor and birth? **(READ LIST)** **(MORE THAN 1 ANSWER IS POSSIBLE)** **(CIRCLE RESPONSE)**	Clock partograph……[W23parto]……...01 Water……[W23water] ……02 Soap……[W23soap]……....03 Gloves……[W23gloves]……..04 Charting materials… [W23chart]…….05 Cord ties and cord cutting tools……[W23cord]…….06 Apron……[W23apron]……07 Container to dispose of placenta……[W23c_placenta]…….…08 Cloth to cover baby's head...[W23chead]….09 Cloth to dry and clean baby…[W23cdry]….10 Clothes to warmbaby……[W23cwarm]…...11 Timepiece……..…[W23time]……..12 Flashlight…….…[W23flash]……...13 Basin……[W23basin]…….…...14 Oxytocin……...[W23oxy]……15 Ergomethrin……..[W23ergo]……16 Bleach and three containers for disinfection process……[W23bleach]……...17 Emergency supply of sugar and salt……...[W23saltsug]…….18 Blood pressure cuff……[W23cuff]……..19 Suction device……[W23suction]…….20 Ambu Bag……[W23ambu]……..21 None of the Above……[W23NoA]…..22 Other: Specify_____[W23Other]…..88
W24 Do you receive compensation from the family for providing	Yes.....01

care to women during labor and birth? **(CIRCLE ANSWER) (IF NO, SKIP TO W28)**	No.....00 Don't Know.....99
W25 Is the compensation monetary? **(CIRCLE ANSWER)** **(IF NO, SKIP TO W27)**	Yes….....01 No….....00 Don't Know.....99
W26 How much money do you receive from each family for providing care to women during labor and birth? **(WRITE NUMBER IN SPACE)**	[_ _ _] birr
W27 What else do you receive as compensation for providing care to women during labor and birth? **(WRITE ANSWER IN SPACE)**	**SPECIFY**:_____.....88 Nothing……..00
W28 Do you give postpartum care to mothers? **(CIRCLE ANSWER) (IF NO, SKIP TO W37)**	Yes.....01 No.....00 Don't Know.....99
W29 How many mothers do you give postpartum care to each month? **(WRITE NUMBER IN SPACE)**	[_ _ _] Don't Know.....99
W30 For each woman that you care for, when are all the times you usually give postpartum care? **(MORE THAN 1 RESPONSE IS POSSIBLE)** **(CIRCLE ANSWERS)**	Immediately after birth…[W30abirth]……..01 In the first 2 days.....[W30f2day].....02 From 2 to 7 days.....[W30f27day].....03 From 7 days to 1 month...[W30f7daym].....04 Greater than 1 month.....[W30gtmonth].....05
W31 Do you have the supplies you need to give postpartum care to mothers? **(CIRCLE ANSWER)**	Yes.....01 No.....00 Don't Know.....99
W32 What supplies do you have available to give postpartum care to mothers? **(READ LIST)**	Thermometer……[W32therm]…….01 Gloves……...[W32gloves]……...02 Charting materials……[W32chart]…….03

(MORE THAN 1 ANSWER IS POSSIBLE) **(CIRCLE RESPONSE)**	Family planning methods….[W32FPlan]….04 Blood pressure cuff…….[W32cuff]...……..05 Condoms……[W32condom]……...06 Flashlight……[W32flash]……07 None of the Above……[W32NoA]…..08 Other: Specify_____[W32Other]…..88
W33 Do you receive compensation from the family for giving postpartum care to mothers? **(CIRCLE ANSWER) (IF NO, SKIP TO W37)**	Yes.....01 No.....00 Don't Know.....99
W34 Is the compensation monetary? **(CIRCLE ANSWER)** **(IF NO, SKIP TO W36)**	Yes….....01 No….....00 Don't Know.....99
W35 How much money do you receive from each family for giving postpartum care to mothers? **(WRITE NUMBER IN SPACE)**	[_ _ _]
W36 What else do you receive as compensation for giving postpartum care for mothers? **(WRITE ANSWER IN SPACE)**	**SPECIFY**:_____.....88 Nothing…….00
W37 Do you give newborn care? **(CIRCLE ANSWER)** **(IF NO, SKIP TO C1)**	Yes.....01 No.....00 Don't Know.....99
W38 How many babies do you give newborn care to each month? **(WRITE NUMBER IN SPACE)**	[_ _ _] Don't Know.....99
W39 When do you give the newborn care? **(CIRCLE ANSWER)** **(MORE THAN 1 ANSWER IS POSSIBLE)**	Immediately after birth….[W39abirth]…….01 In the first 2 days.....[W39f2day].....02 From 2 to 7 days.....[W39f27day].....03 From 7 days to 1 month...[W39f7daym].....04

	Greater than 1 month.....[W39gtmonth].....05
W40 Do you have the supplies you need to give newborn care? **(CIRCLE ANSWER)**	Yes.....01 No.....00 Don't Know.....99
W41 What supplies do you have to give newborn care? **(READ LIST)** **(MORE THAN 1 ANSWER IS POSSIBLE)** **(CIRCLE RESPONSE)**	Family Health Card……[W41FHC]…....01 Thermometer……[W41Therm]……02 Baby scale……..[W41b_scale]….03 Charting materials……[W41chart]…..….04 None of the Above……[W41NoA]…..05 Other: Specify_____[W41Other]…..88
W42 Do you receive compensation from the family for giving newborn care? **(CIRCLE ANSWER) (IF NO, SKIP TO C1)**	Yes.....01 No.....00 Don't Know.....99
W43 Is the compensation monetary? **(CIRCLE ANSWER) (IF NO, SKIP TO W45)**	Yes….....01 No….....00 Don't Know.....99
W44 How much money do you receive from each family for giving newborn care? **(WRITE NUMBER IN SPACE)**	[_ _ _]
W45 What else do you receive as compensation for giving newborn care? **(WRITE ANSWER IN SPACE)**	**SPECIFY**:_____.....88 Nothing…….00
INTERVIEWER INSTRUCTIONS: **INTERVIEWER READ**: "Now I will ask you about the challenges you face as a (Type of health worker) that make it difficult to provide good health services to the community. (Type of health workers) have said that the following problems make it difficult to provide good health services to the community."	
Section 3: Challenges	
C1 Do you agree or disagree with the following statement: " My farming duties interfere with my health duties." **(CIRCLE ANSWER)**	Agree.....……...…...01 Disagree…….…...00

C2 Do you agree or disagree with the following statement: "My household chores interfere with my health duties." **(CIRCLE ANSWER)**	Agree.....01 Disagree.....00
C3 Do you agree or disagree with the following statement: "Taking care of my children interferes with my health duties." **(CIRCLE ANSWER)**	Agree.....01 Disagree.....00
C4 Do you agree or disagree with the following statement: "I have difficulty providing health services because I don't have the materials I need." **(CIRCLE ANSWER)**	Agree.....01 Disagree.....00
C5 Do you agree or disagree with the following statement: "I have difficulty providing health services because the distance between the houses in my kebele is too great" **(CIRCLE ANSWER)**	Agree.....01 Disagree.....00

INTERVIEWER INSTRUCTIONS:

INTERVIEWER READ: "Now I will ask you questions regarding your feelings about the health duties you perform."

Section 4: Specific Confidence

SC1 Do you agree or disagree with the following statement: "I have had training to provide care to mothers and babies." **(CIRCLE ANSWER)**	Agree.....01 Disagree.....00
SC2 Do you agree or disagree with the following statement: "I have a role in a health committee in my kebele." **(CIRCLE ANSWER)**	Agree.....01 Disagree.....00
SC3 Do you agree or disagree with the following statement: "I have the knowledge, but I don't have the practical experience to attend to delivery." **(CIRCLE ANSWER)**	Agree.....01 Disagree.....00
SC4 Do you agree or disagree with the following statement: "I know when to say no for the health services I can't do." **(CIRCLE ANSWER)**	Agree.....01 Disagree.....00
SC5 Do you agree or disagree with the following statement: "I am eager to work my health activities." **(CIRCLE ANSWER)**	Agree.....01 Disagree.....00
SC6 Do you agree or disagree with the following statement: "I have	Agree.....01

too many health activities as a health worker." **(CIRCLE ANSWER)**	Disagree……..…...00
SC7 Do you agree or disagree with the following statement: "Sometimes when I perform my health duties, I have fear in my face." **(CIRCLE ANSWER)**	Agree.....……....…...01 Disagree……..…...00
SC8 Do you agree or disagree with the following statement: "I feel I have sufficient knowledge and experience to manage **serakian" (CIRCLE ANSWER)**	Agree.....……....…...01 Disagree……..…...00
SC9 Do you agree or disagree with the following statement: "I do not have enough support from a supervisor in my health tasks." **(CIRCLE ANSWER)**	Agree.....……....…...01 Disagree……..…...00
SC10 Do you agree or disagree with the following statement: "I communicate with kebele leaders about my work." **(CIRCLE ANSWER)**	Agree.....……....…...01 Disagree……..…...00
SC11 Do you agree or disagree with the following statement: "If I have the training, I can provide service which is better than what I am doing now" **(CIRCLE ANSWER)**	Agree.....……....…...01 Disagree……..…...00
SC12 Do you agree or disagree with the following statement: "I forget things from my training because it was long ago." **(CIRCLE ANSWER)**	Agree.....……....…...01 Disagree……..…...00
SC13 Do you agree or disagree with the following statement: "I am able to attend a delivery alone." **(CIRCLE ANSWER)**	Agree.....……....…...01 Disagree……..…...00
SC14 Do you agree or disagree with the following statement: "People ask for my help if there is a problem with mothers and babies." **(CIRCLE ANSWER)**	Agree.....……....…...01 Disagree……..…...00
SC15 Do you agree or disagree with the following statement: "People in the community tell me that I helped them get better." **(CIRCLE ANSWER)**	Agree.....……....…...01 Disagree……..…...00
SC16 Do you agree or disagree with the following statement: "When I face a difficult labor, I have someone who will come and help me." **(CIRCLE ANSWER)**	Agree.....……....…...01 Disagree……..…...00
SC17 Do you agree or disagree with the following statement: "If I have the training, I have the capability of becoming a nurse."	Agree.....……....…...01

(CIRCLE ANSWER)	Disagree……..…...00
SC18 Do you agree or disagree with the following statement: "I have written materials I can refer to if I need more information." **(CIRCLE ANSWER)**	Agree.....……....…...01 Disagree……..…...00
SC19 Do you agree or disagree with the following statement: "My main duty focuses on mothers and babies." **(CIRCLE ANSWER)**	Agree.....……....…...01 Disagree……..…...00
SC20 Do you agree or disagree with the following statement: "There is nothing to be done about excessive bleeding after birth because it is caused by **serakian.**" **(CIRCLE ANSWER)**	Agree.....……....…...01 Disagree……..…...00
SC21 Do you agree or disagree with the following statement: "When I need advice about a health problem, I feel there is someone I can ask." **(CIRCLE ANSWER)**	Agree.....……....…...01 Disagree……..…...00
SC22 Do you agree or disagree with the following statement: "There is little to be done to save a mother or child. If one dies during delivery it is a matter of chance." **(CIRCLE ANSWER)**	Agree.....……....…...01 Disagree……..…...00
INTERVIEWER INSTRUCTIONS: **INTERVIEWER READ**: "Now I will ask you questions about confidence, knowledge, and trust."	
Section 5: General Confidence and Trust	
G1 Which of the following incentives would make you feel more confident in providing care to mothers and babies? **(READ RESPONSES) (CIRCLE RESPONSES)** **(MORE THAN ONE ANSWER IS POSSIBLE)**	Certification……[G1Cert]……01 Uniform……[G1Uni]...…….....02 Oversight ……[G1OverS]…….....03 Regular performance evaluations…….……[G1RPE]…….....04 Other: Specify_____[G1Other]…..88
G2a Is it your duty to provide care to women in pregnancy in the kebele? **(CIRCLE RESPONSE)**	Yes.....01 No.....02 Don't Know.....99
G2b Tell me how much you agree with this statement "It is important for me to provide care to women in pregnancy." **(CIRCLE RESPONSE)**	Strongly Agree.....01 Agree.....02 Disagree.....03

	Strongly Disagree.....04 Don't Know.....99
G2c Do you have the knowledge and skills to provide care to women in pregnancy? **(CIRCLE RESPONSE)**	Yes.....01 No.....00 Don't Know.....99
G2e Please look at the ladder and point to how confident you feel in your ability to provide care to women in pregnancy. The top of the ladder means you are very confident and the bottom of the ladder means you feel very unconfident in the skill. **(CIRCLE RESPONSE)** 1 2 3 4 5 6 7 8 9 10 Very Unconfident Moderately Confident Very Confident	
G2f Whose duty is it to provide care to women in pregnancy in the kebele? **(CIRCLE ALL RESPONSES THAT APPLY)** **(IF OTHER WRITE IN RESPONSE)**	Health Extension Worker.....[G2fdutyHEW].....01 Volunteer Community Health Worker.....[G2fdutyvCHW]……..02 Traditional Birth Attendant.....[G2fdutyTBA].....03 Other: Specify_____[G2fdutyOther]…88 Don't Know ……[G2fdutyDK].....99
G2g Who has the knowledge and skills to provide care to women in pregnancy? **(CIRCLE ALL RESPONSES THAT APPLY)** **(IF OTHER PLEASE SPECIFY)**	Health Extension Worker.....[G2gknowHEW].....01 Volunteer Community Health Worker.....[G2gknowCHW]…….02 Traditional Birth Attendant.....[G2gknowTBA]……...03 Family members.....[G2gknowFM].....04 Other: Specify_____[G2gknowOther].05 No One.....[G2gknowNoOne]…...06 Don't Know ……[G2gknowDK].....99
G2h Who do you trust to provide care to women in pregnancy?	Health Extension

(CIRCLE ALL RESPONSES THAT APPLY) **(IF OTHER PLEASE SPECIFY)**	Worker.....[G2htrustHEW].....01 Volunteer Community Health Worker.....[G2htrustCHW]……..02 Traditional Birth Attendant.....[G2htrustTBA]……....03 Family members.....[G2htrustFM].....04 Other: Specify_____[G2htrustOther]….05 No One.....[G2htrustNoOne]…...06 Don't Know ……[G2htrustDK].....99
G3a Is it your duty to provide care to women in labor and birth in the kebele? **(CIRCLE RESPONSE)**	Yes.....01 No.....00 Don't Know.....99
G3b Tell me how much you agree with this statement "It is important for me provide care to women in labor and birth." **(READ LIST)** **(CIRCLE RESPONSE)**	Strongly Agree.....01 Agree.....02 Disagree.....03 Strongly Disagree.....04 Don't Know.....99
G3c Do you have the knowledge and skills to provide care to women in labor and birth? **(CIRCLE RESPONSE)**	Yes.....01 No.....00 Don't Know.....99

G3e Please look at the ladder and point to how confident you feel in your ability to provide care to women in labor and birth. The top of the ladder means you are very confident and the bottom of the ladder means you feel very unconfident in the skill. **(CIRCLE RESPONSE)**

1 2 3 4 5 6 7 8 9 10

Very Unconfident Moderately Confident Very Confident

G3f Whose duty is it to provide care to women in labor and birth in the kebele? **(CIRCLE ALL RESPONSES THAT APPLY)**	Health Extension Worker.....[G3fdutyHEW].....01 Volunteer Community Health Worker.....[G3fdutyvCHW]…..02

(IF OTHER WRITE IN RESPONSE)	Traditional Birth Attendant……....[G3fdutyTBA].....03 Other: Specify_____[G3fdutyOther]….88 Don't Know ……...[G3fdutyDK]….....99
G3g Who has the knowledge and skills to provide care to women in labor and birth? **(CIRCLE ALL RESPONSES THAT APPLY)** **(IF OTHER PLEASE SPECIFY)**	Health Extension Worker.....[G3gknowHEW].....01 Volunteer Community Health Worker.....[G3gknowCHW].....02 Traditional Birth Attendant.....[G3gknowTBA]....03 Family members.....[G3gknowFM].....04 Other: Specify_____[G3gknowOther]__05 No One.....[G3gknowNoOne] ….06 Don't Know ……[G3gknowDK].....99
G3h Who do you trust to provide care to women in labor and birth? **(CIRCLE ALL RESPONSES THAT APPLY)** **(IF OTHER PLEASE SPECIFY)**	Health Extension Worker.....[G3htrustHEW].....01 Volunteer Community Health Worker.....[G3htrustCHW].....02 Traditional Birth Attendant.....[G3htrustTBA].....03 Family members.....[G3htrustFM].....04 Other: Specify_____[G3htrustOther]..05 No One…….....[G3htrustNoOne]…...06 Don't Know ……[G3htrustDK].....99
G4a Is it your duty to provide postpartum care to women in the kebele? **(CIRCLE RESPONSE)**	Yes.....01 No.....00 Don't Know.....99
G4b Tell me how much you agree with this statement "It is important for me to provide postpartum care to women." **(READ LIST)** **(CIRCLE RESPONSE)**	Strongly Agree.....01 Agree.....02 Disagree.....03 Strongly Disagree.....04 Don't Know.....99
G4c Do you have the knowledge and skills to provide	Yes.....01

postpartum care to women? **(CIRCLE RESPONSE)**	No.....00 Don't Know.....99

G4e Please look at the ladder and point to how confident you feel in your ability to provide postpartum care to women. The top of the ladder means you are very confident and the bottom of the ladder means you feel very unconfident in the skill.
(CIRCLE RESPONSE)

1 2 3 4 5 6 7 8 9 10

Very Unconfident Moderately Confident Very Confident

G4f Whose duty is it to provide postpartum care to women in the kebele? **(MORE THAN 1 ANSWER IS POSSIBLE)** **(IF OTHER WRITE IN RESPONSE)**	Health Extension Worker.....[G4fdutyHEW.....01 Volunteer Community Health Worker.....[G4fdutyvCHW].....02 Traditional Birth Attendant.....[G4fdutyTBA].. .....03 Other: Specify_____[G4fdutyOther]__88 Don't Know ……[G4fdutyDK].....99
G4g Who has the knowledge and skills to provide postpartum care to women? **(MORE THAN 1 ANSWER IS POSSIBLE)** **(IF OTHER PLEASE SPECIFY)**	Health Extension Worker.....[G4gknowHEW].....01 Volunteer Community Health Worker.....[G4gknowCHW].....02 Traditional Birth Attendant.....[G4gknowTBA].....03 Family members.....[G4gknowFM].....04 Other: Specify_____[G4gknowOther]__05 No One…….....[G4gknowNoOne] ..06 Don't Know ……[G4gknowDK].....99
G4h Who do you trust to provide postpartum care to women? **(MORE THAN 1 ANSWER IS POSSIBLE)** **(IF OTHER PLEASE SPECIFY)**	Health Extension Worker.....[G4htrustHEW].....01 Volunteer Community Health Worker.....[G4htrustCHW].....02 Traditional Birth Attendant.....[G4htrustTBA].....03

	Family members.....[G4htrustFM].....04 Other: Specify_____[G4htrustOther]__05 No One…….....[G4htrustNoOne] ..06 Don't Know ……[G4htrustDK].....99
G5a Is it your duty to provide care to newborn babies in the kebele? **(CIRCLE RESPONSE)**	Yes.....01 No.....00 Don't Know.....99
G5b Tell me how much you agree with this statement "It is important for me to provide care to newborn babies." **(READ LIST) (CIRCLE RESPONSE)**	Strongly Agree.....01 Agree.....02 Disagree.....03 Strongly Disagree.....04 Don't Know.....99
G5c Do you have the knowledge and skills to provide care to newborn babies? **(CIRCLE RESPONSE)**	Yes.....01 No.....00 Don't Know.....99

G5e Please look at the ladder and point to how confident you feel in your ability to provide care to newborn babies. The top of the ladder means you are very confident and the bottom of the ladder means you feel very unconfident in the skill. **(CIRCLE RESPONSE)**

1 2 3 4 5 6 7 8 9 10

Very Unconfident Moderately Confident Very Confident

G5f Whose duty is it to provide care to newborn babies in the kebele? **(CIRCLE ALL RESPONSES THAT APPLY)** **(IF OTHER WRITE IN RESPONSE)**	Health Extension Worker.....[G5fdutyHEW].....01 Volunteer Community Health Worker.....[G5fdutyvCHW].....02 Traditional Birth Attendant.....[G5fdutyTBA]....03 Other: Specify_____[G5fdutyOther]__88 Don't Know ……[G5fdutyDK].....99
G5g Who has the knowledge and skills to provide care to newborn	Health Extension

babies? **(CIRCLE ALL RESPONSES THAT APPLY)** **(IF OTHER PLEASE SPECIFY)**	Worker.....[G5gknowHEW].....01 Volunteer Community Health Worker.....[G5gknowCHW].....02 Traditional Birth Attendant.....[G5gknowTBA].....03 Family members.....[G5gknowFM].....04 Other: Specify_____[G5gknowOther]..05 No One.....[G5gknowNoOne]…..06 Don't Know ……[G5gknowDK].....99
G5h Who do you trust to provide care to newborn babies? **(CIRCLE ALL RESPONSES THAT APPLY)** **(IF OTHER PLEASE SPECIFY)**	Health Extension Worker.....[G5htrustHEW].....01 Volunteer Community Health Worker.....[G5htrustCHW].....02 Traditional Birth Attendant.....[G5htrustTBA].. ....03 Family members.....[G5htrustFM].....04 Other: Specify_____[G5htrustOther]__05 No One…….....[G5htrustNoOne] ..06 Don't Know ……[G5htrustDK].....99

INTERVIEWER INSTRUCTIONS:

INTERVIEWER READ: "Now I will ask you questions about the care women and babies usually receive in your community. We would like to know whether you agree or disagree with the following statements."

Section 6: Respondent's Beliefs About Normative Care

N1 Do you agree or disagree with the following statement: "The **seng** cord should be tied both on the mother's part and the baby's part." **(CIRCLE RESPONSE)**	Agree.....……...…...01 Disagree…….…...00
N2 Do you agree or disagree with the following statement: "It is a problem that the community expects health workers to be in the health post, but they are out in the community." **(CIRCLE RESPONSE)**	Agree.....……...…...01 Disagree…….…...00
N3 Do you agree or disagree with the following statement: "A woman should have the same workload before and during her pregnancy."	Agree.....……...…...01 Disagree…….…...00

(CIRCLE RESPONSE)	
N4 Do you agree or disagree with the following statement: ”A mother should take rest only up to 10 days after the baby is born.” **(CIRCLE RESPONSE)**	Agree.....01 Disagree.....00
N5 Do you agree or disagree with the following statement: “If the **seng** has trouble detaching, it should be pulled out in the home.” **(CIRCLE RESPONSE)**	Agree.....01 Disagree.....00
N6 Do you agree or disagree with the following statement: “After birth, the baby needs to be away from the mother while she sits over the hole to detach the **seng**.” **(CIRCLE RESPONSE)**	Agree.....01 Disagree.....00
N7 Do you agree or disagree with the following statement: “A mother who has had peaceful births in the past will have only peaceful births in the future.” **(CIRCLE RESPONSE)**	Agree.....01 Disagree.....00
N8 Do you agree or disagree with the following statement: “A health worker will come to deliver a baby at nighttime.” **(CIRCLE RESPONSE)**	Agree.....01 Disagree.....00
N9 Do you agree or disagree with the following statement: “The baby should be washed immediately after birth.” **(CIRCLE RESPONSE)**	Agree.....01 Disagree.....00
N10 Do you agree or disagree with the following statement: “If the uvula has dropped, then it is best to cut the uvula.” **(CIRCLE RESPONSE)**	Agree.....01 Disagree.....00
N11 Do you agree or disagree with the following statement: “A baby should be given butter after birth.” **(CIRCLE RESPONSE)**	Agree.....01 Disagree.....00
N12 Do you agree or disagree with the following statement: “A woman should deliver in the home unless the labor is serious.” **(CIRCLE RESPONSE)**	Agree.....01 Disagree.....00
N13 Do you agree or disagree with the following statement: “When labor begins, a health worker should be called to the home.” **(CIRCLE RESPONSE)**	Agree.....01 Disagree.....00

N14 Do you agree or disagree with the following statement: "A woman should tell a health worker when she knows she is pregnant." **(CIRCLE RESPONSE)**	Agree.....01 Disagree.....00
N15 Do you agree or disagree with the following statement: "A woman and family should not prepare for a problem ahead of time because the birth may be peaceful." **(CIRCLE RESPONSE)**	Agree.....01 Disagree.....00
N16 Do you agree or disagree with the following statement: "A mother needs to breastfeed the new baby because it helps the detachment of the placenta." **(CIRCLE RESPONSE)**	Agree.....01 Disagree.....00
N17 Do you agree or disagree with the following statement: "If labor is not serious, there is no reason to call a health worker." **(CIRCLE RESPONSE)**	Agree.....01 Disagree.....00
N18 Do you agree or disagree with the following statement: "It is both women and men who could help with delivery." **(CIRCLE RESPONSE)**	Agree.....01 Disagree.....00
N19 Do you agree or disagree with the following statement: "There is no reason for a healthy pregnant woman to go for checkups by health workers." **(CIRCLE RESPONSE)**	Agree.....01 Disagree.....00
N20 Do you agree or disagree with the following statement: "Mothers should provide water or cow's milk to new babies if it is available." **(CIRCLE RESPONSE)**	Agree.....01 Disagree.....00
N21 Do you agree or disagree with the following statement: "The main duties of health extension workers are family planning and vaccination. **(CIRCLE RESPONSE)**	Agree.....01 Disagree.....00
N22 Do you agree or disagree with the following statement: "A baby's cord should be plastered with butter." **(CIRCLE RESPONSE)**	Agree.....01 Disagree.....00
N23 Do you agree or disagree with the following statement: "The first milk is unclean and should not be given to the baby." **(CIRCLE RESPONSE)**	Agree.....01 Disagree.....00
N24 Do you agree or disagree with the following statement: "It is only by chance when health workers discover that a woman is pregnant." **(CIRCLE RESPONSE)**	Agree.....01 Disagree.....00

INTERVIEWER INSTRUCTIONS: **INTERVIEWER READ**: "Now I will ask you questions about clinical skills. We would like to know how confident you are using these clinical skills."	
Section 7: Respondent's Skill-based Competence and Confidence	
S1a Have you heard of counseling a pregnant woman to create a safe birth plan? **(CIRCLE RESPONSE)** (**IF NO SKIP TO S2a)**	Yes.....01 No.....00
S1b Whose duty is it to counsel a pregnant woman to create a safe birth plan? **(CIRCLE ALL RESPONSES THAT APPLY)** **(CIRCLE RESPONSE)**	Health Extension Worker.....[S1bHEW]..01 Volunteer Community Health Worker.....[S1bvCHW].....02 Traditional Birth Attendant...[S1bTBA].....03 Family members.....[S1bFM].....04 Other:. Specify_____[S1bOther]....05 None of the above.....[S1bNoA]…..06 Don't know……[S1bDK]……...99
S1c Are you able to counsel a pregnant woman about creating a safe birth plan? **(CIRCLE RESPONSE)** **(IF NO, SKIP TO S2a)**	Yes.....01 No.....00 Don't Know.....99
S1d In the past month how many pregnant women did you counsel about creating a safe birth plan? (**WRITE NUMBER IN SPACE)**	[_ _ _]
S1e The last time you visited a women during her pregnancy, did you counsel that woman about creating a safe birth plan? **(IF NO, SKIP TO S2a)**	Yes.....01 No.....00 Don't Know.....99
S1f Did you include the following in the counseling of how to create a safe birth plan? **(READ RESPONSES) (CIRCLE RESPONSES)** **(MORE THAN 1 ANSWER IS POSSIBLE)**	Saving money……[S1fmoney]……..01 Locating transport……[S1ftransport]…….02 Preparing items for birth kit.....[S1fkit].....03 Deciding who will attend the

	birth.....[S1fwho].....04
S1g Did you feel good about your performance? **(CIRCLE RESPONSE)**	Yes.....01 No.....00 Don't Know.....99
S2a Have you heard of counseling a woman about calling for assistance when labor begins? **(CIRCLE RESPONSE) (IF NO SKIP TO S3a)**	Yes.....01 No.....00
S2b Whose duty is it to counsel a woman about calling for assistance when labor begins? **(CIRCLE ALL RESPONSES THAT APPLY)** **(CIRCLE RESPONSE)**	Health Extension Worker.....[S2bHEW]..01 Volunteer Community Health Worker.....[S2bvCHW].....02 Traditional Birth Attendant...[S2bTBA].....03 Family members.....[S2bFM].....04 Other:. Specify_____[S2bOther]..05 None of the above.....[S2bNoA]….06 Don't know……[S2bDK]……...99
S2c Are you able to counsel a woman about calling for assistance when labor begins? **(CIRCLE RESPONSE) (IF NO, SKIP TO S3a)**	Yes.....01 No.....00 Don't Know.....99
S2d In the past month how many women did you counsel about calling for assistance when labor begins? (**WRITE NUMBER IN SPACE)**	[_ _ _]
S2e The last time you visited a women during her pregnancy, did you counsel that woman about calling for assistance when labor begins? **(CIRCLE RESPONSE)** **(IF NO, SKIP TO S3a)**	Yes.....01 No.....00 Don't Know.....99
S2f Did you feel good about your performance? **(CIRCLE RESPONSE)**	Yes.....01 No.....00 Don't Know.....99
S3a Have you heard of counseling a woman about creating a clean birth	Yes.....01

environment? **(CIRCLE RESPONSE)** (**IF NO SKIP TO S4a)**	No.....00
S3b Whose duty is it to counsel a woman about creating a clean birth environment? **(CIRCLE RESPONSE)** **(CIRCLE ALL RESPONSES THAT APPLY)**	Health Extension Worker.....[S3bHEW]..01 Volunteer Community Health Worker.....[S3bvCHW].....02 Traditional Birth Attendant...[S3bTBA].....03 Family members.....[S3bFM].....04 Other: Specify_____[S3bOther]…05 None of the above.....[S3bNoA]….06 Don't know……[S3bDK]……...99
S3c Are you able to counsel a woman about creating a clean birth environment? **(CIRCLE RESPONSE)** **(IF NO, SKIP TO S4a)**	Yes.....01 No.....00 Don't Know.....99
S3d In the past month how many women did you counsel about creating a clean birth environment? (**WRITE NUMBER IN SPACE)**	[_ _ _]
S3e The last time you visited a pregnant women, did you counsel her about creating a clean birth environment? **(IF NO, SKIP TO S4a)**	Yes.....01 No.....00 Don't Know.....99
S3f Did you feel good about your performance? **(CIRCLE RESPONSE)**	Yes.....01 No.....00 Don't Know.....99
S4a Have you heard of counseling everyone present during labor and birth to wash their hands? **(CIRCLE RESPONSE) (IF NO SKIP TO S5a)**	Yes.....01 No.....00
S4b Whose duty is it to counsel everyone present during labor and birth to wash their hands? **(CIRCLE RESPONSE)**	Health Extension Worker.....[S4bHEW]..01 Volunteer Community Health Worker.....[S4bvCHW].....02

(CIRCLE ALL RESPONSES THAT APPLY)	Traditional Birth Attendant...[S4bTBA].....03 Family members.....[S4bFM].....04 Other:. Specify_____[S4bOther]…05 None of the above.....[S4bNoA]…..06 Don't know……[S4bDK]……...99
S4c Are you able to counsel everyone present during labor and birth to wash their hands? **(CIRCLE RESPONSE) (IF NO, SKIP TO S5a)**	Yes.....01 No.....00 Don't Know.....99
S4d In the past month how many times did you counsel everyone present during labor and birth to wash their hands? (**WRITE NUMBER IN SPACE)**	[_ _ _]
S4e In the past month how many times did you wash your hands before labor and delivery? (**WRITE NUMBER IN SPACE)**	[_ _ _]
S4f The last time you attended a birth, did you counsel everyone present during labor and birth to wash their hands? **(IF NO, SKIP TO S5a)**	Yes.....01 No.....00 Don't Know.....99
S4g Did you feel good about your performance? **(CIRCLE RESPONSE)**	Yes.....01 No.....00 Don't Know.....99
S5a Have you heard of encouraging a woman to change positions during labor? **(CIRCLE RESPONSE) (IF NO SKIP TO S6a)**	Yes.....01 No.....00
S5b Whose duty is it to encourage a woman to change positions during labor? **(CIRCLE RESPONSE)** **(CIRCLE ALL RESPONSES THAT APPLY)**	Health Extension Worker.....[S5bHEW]..01 Volunteer Community Health Worker.....[S5bvCHW].....02 Traditional Birth Attendant...[S5bTBA].....03 Family members.....[S5bFM].....04 Other:. Specify_____[S5bOther]..05

	None of the above.....[S5bNoA]..06 Don't know……[S5bDK]……...99
S5c Are you able to encourage a woman to change positions during labor? **(CIRCLE RESPONSE)** **(IF NO, SKIP TO S6a)**	Yes.....01 No.....00 Don't Know.....99
S5d In the past month how many women did you encourage to change positions during labor? (**WRITE NUMBER IN SPACE)**	[_ _ _]
S5e The last time you attended a delivery, did you encourage the woman to change positions during labor? **(CIRCLE RESPONSE) (IF NO, SKIP TO S6a)**	Yes.....01 No.....00 Don't Know.....99
S5f Did you feel good about your performance? **(CIRCLE RESPONSE)**	Yes.....01 No.....00 Don't Know.....99
S6a Have you heard of women being given misoprostal before delivery of the placenta to stop bleeding? **(CIRCLE RESPONSE) (IF NO SKIP TO S7a)**	Yes.....01 No.....00
S6b Whose duty is it to give a woman misoprostal before delivery of the placenta to stop bleeding? **(CIRCLE RESPONSE)** **(CIRCLE ALL RESPONSES THAT APPLY)**	Health Extension Worker.....[S6bHEW]……..01 Volunteer Community Health Worker.....[S6bvCHW]…….02 Traditional Birth Attendant...[S6bTBA].....03 Family members.....[S6bFM].....04 Other:. Specify_____[S6bOther]..05 None of the above.....[S6bNoA]....06 Don't know……[S6bDK]……...99
S6c Are you able to give a woman misoprostal before delivery of the placenta to stop bleeding?	Yes.....01 No.....00

(CIRCLE RESPONSE) (IF NO, SKIP TO S7a)	Don't Know.....99
S6d How soon after birth do you administer misoprostol? **(CIRCLE RESPONSE)**	Immediately after birth of baby...……01 Less than1 hour after birth……..…..02 1-3 hours after birth……..……03 Greater than 3 hours after birth…….....04
S6e What dose of misoprostol do you administer? (**WRITE NUMBER IN SPACE)**	[_ _ _] Don't know……99
S6f In the past month how many women did you give misoprostal? (**WRITE NUMBER IN SPACE)**	[_ _ _]
S6g The last time you attended a delivery, did you give the woman misoprostal? **(CIRCLE RESPONSE)** **(IF NO, SKIP TO S7a)**	Yes.....01 No.....00 Don't Know.....99
S6h Did you feel good about your performance? **(CIRCLE RESPONSE)**	Yes.....01 No.....00 Don't Know.....99
S7a Have you heard of safely delivering the placenta within a half an hour after birth and without force? **(CIRCLE RESPONSE)** (**IF NO SKIP TO S8a)**	Yes.....01 No.....00
S7b Whose duty is it to safely deliver the placenta? **(CIRCLE RESPONSE)** **(CIRCLE ALL RESPONSES THAT APPLY)**	Health Extension Worker.....[S7bHEW]..01 Volunteer Community Health Worker.....[S7bvCHW]……..02 Traditional Birth Attendant...[S7bTBA].....03 Family members.....[S7bFM].....04 Other:. Specify_____[S7bOther]…05 None of the above.....[S7bNoA]…..06 Don't know……[S7bDK]……...99

S7c Are you able to safely deliver the placenta? **(CIRCLE RESPONSE)** **(IF NO, SKIP TO S8a)**	Yes.....01 No.....00 Don't Know.....99
S7d In the past month how many times did you safely deliver the placenta? (**WRITE NUMBER IN SPACE)**	[_ _ _]
S7e The last time you attended a delivery, did you safely deliver the placenta? **(IF NO, SKIP TO S8a)**	Yes.....01 No.....00 Don't Know.....99
S7f Did you feel good about your performance? **(CIRCLE RESPONSE)**	Yes.....01 No.....00 Don't Know.....99
S8a Have you heard of counseling a woman about not inserting objects into the vagina during labor or after the baby is born? **(CIRCLE RESPONSE)** (**IF NO SKIP TO S9a)**	Yes.....01 No.....00
S8b Whose duty is it to counsel a woman about not inserting objects into the vagina during labor or after the baby is born? **(CIRCLE RESPONSE)** **(CIRCLE ALL RESPONSES THAT APPLY)**	Health Extension Worker.....[S8bHEW]..01 Volunteer Community Health Worker.....[S8bvCHW]……..02 Traditional Birth Attendant...[S8bTBA].....03 Family members.....[S8bFM]….....04 Other:. Specify_____[S8bOther]…05 None of the above.....[S8bNoA]…..06 Don't know……[S8bDK]……...99
S8c Are you able to counsel a women about not inserting objects into the vagina during labor or after the baby is born? **(CIRCLE RESPONSE)** **(IF NO, SKIP TO S9a)**	Yes.....01 No.....00 Don't Know.....99
S8d In the past month, how many times did you counsel a woman about not inserting objects into the vagina during labor or after the baby is born? (**WRITE NUMBER IN SPACE)**	[_ _ _]

S8e The last time you attended a delivery, did you counsel a woman about not inserting objects into the vagina during labor or after the baby is born? **(IF NO, SKIP TO S9a)**	Yes.....01 No.....00 Don't Know.....99
S8f Did you feel good about your performance? **(CIRCLE RESPONSE)**	Yes.....01 No.....00 Don't Know.....99
S9a Have you heard of rubbing the womb after delivery of the placenta to stop bleeding? **(CIRCLE RESPONSE)** **(IF NO SKIP TO S10a)**	Yes.....01 No.....00
S9b Whose duty is it to rub the womb after delivery of the placenta to stop bleeding? **(CIRCLE RESPONSE)** **(CIRCLE ALL RESPONSES THAT APPLY)**	Health Extension Worker.....[S9bHEW]..01 Volunteer Community Health Worker.....[S9bvCHW]……..02 Traditional Birth Attendant...[S9bTBA].....03 Family members.....[S9bFM].....04 Other:. Specify_____[S9bOther]...05 None of the above.....[S9bNoA]…..06 Don't know……[S9bDK]……...99
S9c Are you able to rub the womb after delivery of the placenta to stop bleeding? **(CIRCLE RESPONSE)** **(IF NO, SKIP TO S10a)**	Yes.....01 No.....00 Don't Know.....99
S9d In the past month how many times did you rub the womb after delivery of the placenta to stop bleeding? (**WRITE NUMBER IN SPACE)**	[_ _ _]
S9e The last time you attended a delivery, did you rub the womb after delivery of the placenta to stop bleeding? **(IF NO, SKIP TO S10a)**	Yes.....01 No.....00 Don't Know.....99

S9f Did you feel good about your performance? **(CIRCLE RESPONSE)**	Yes.....01 No.....00 Don't Know.....99
S10a Have you heard of keeping the baby warm and dry after birth? **(CIRCLE RESPONSE)** (**IF NO SKIP TO S11a)**	Yes.....01 No.....00
S10b Whose duty is it to keep the baby warm and dry after birth? **(CIRCLE RESPONSE)** **(CIRCLE ALL RESPONSES THAT APPLY)**	Health Extension Worker.....[S10bHEW]...……..01 Volunteer Community Health Worker.....[S10bvCHW]……..02 Traditional Birth Attendant...[S10bTBA].....03 Family members.....[S10bFM].....04 Other:. Specify_____[S10bOther]..05 None of the above.....[S10bNoA]....06 Don't know……[S10bDK]……...99
S10c Are you able to keep the baby warm and dry after birth? **(CIRCLE RESPONSE) (IF NO, SKIP TO S11a)**	Yes.....01 No.....00 Don't Know.....99
S10d In the past month how many times did you keep the baby warm and dry after birth? (**WRITE NUMBER IN SPACE)**	[_ _ _]
S10e The last time you attended a delivery, did you keep the baby warm and dry after birth? **(IF NO, SKIP TO S11a)**	Yes.....01 No.....00 Don't Know.....99
S10f Did you feel good about your performance? **(CIRCLE RESPONSE)**	Yes.....01 No.....00 Don't Know.....99
S11a Have you heard of counseling a postpartum woman to begin	Yes.....01

breastfeeding immediately after giving birth? **(CIRCLE RESPONSE)** (**IF NO SKIP TO S12a)**	No.....00
S11b Whose duty is it to counsel a postpartum woman to begin breastfeeding immediately after giving birth? **(CIRCLE RESPONSE)** **(CIRCLE ALL RESPONSES THAT APPLY)**	Health Extension Worker.....[S11bHEW]..01 Volunteer Community Health Worker.....[S11bvCHW]…….02 Traditional Birth Attendant...[S11bTBA]....03 Family members.....[S11bFM].....04 Other:. Specify_____[S11bOther]..05 None of the above.....[S11bNoA]…...06 Don't know……[S11bDK]……...99
S11c Are you able to counsel a postpartum woman to begin breastfeeding immediately after giving birth? **(CIRCLE RESPONSE)** **(IF NO, SKIP TO S12a)**	Yes.....01 No.....00 Don't Know.....99
S11d In the past month how many times did you counsel a postpartum woman to begin breastfeeding immediately after giving birth? (**WRITE NUMBER IN SPACE)**	[_ _ _]
S11e The last time you attended a delivery, did you counsel the woman to begin breastfeeding immediately after giving birth? **(IF NO, SKIP TO S12a)**	Yes..... 01 No..... 00 Don't Know.....99
S11f Did you feel good about your performance? **(CIRCLE RESPONSE)**	Yes..... 01 No..... 00 Don't Know.....99
S12a Have you heard of counseling a woman about practicing clean cord care by tying the umbilical cord, cutting the cord with a sterile instrument,	Yes..... 01 No.....

and not putting anything on the stump of the cord? **(CIRCLE RESPONSE)** (**IF NO SKIP TO S13a)**	00
S12b Whose duty is it to counsel a woman about practicing clean cord care ? **(CIRCLE RESPONSE)** **(CIRCLE ALL RESPONSES THAT APPLY)**	Health Extension Worker.....[S12bHEW]..01 Volunteer Community Health Worker.....[S12bvCHW]…….... 02 Traditional Birth Attendant...[S12bTBA]....03 Family members.....[S12bFM].....04 Other:. Specify_____[S12bOther]..05 None of the above.....[S12bNoA]…06 Don't know……[S12bDK]…….....99
S12c Are you able to counsel a women about practicing clean cord care? **(CIRCLE RESPONSE) (IF NO, SKIP TO S13a)**	Yes..... 01 No..... 00 Don't Know.....99
S12d In the past month how many times did you counsel a women about practicing clean cord care? (**WRITE NUMBER IN SPACE)**	[_ _ _]
S12e The last time you did a postpartum visit, did you counsel a women about practicing clean cord care? **(IF NO, SKIP TO S13a)**	Yes.....01 No.....00 Don't Know.....99
S12f Did you feel good about your performance? **(CIRCLE RESPONSE)**	Yes.....01 No.....00 Don't Know.....99

S13a Have you heard of a woman being checked for fever and bleeding after birth? **(CIRCLE RESPONSE)** (**IF NO SKIP TO S14a)**	Yes.....01 No.....00
S13b Whose duty is it to check a women for fever and bleeding after birth? **(CIRCLE RESPONSE)** **(CIRCLE ALL RESPONSES THAT APPLY)**	Health Extension Worker.....[S13bHEW]..01 Volunteer Community Health Worker.....[S13bvCHW]……02 Traditional Birth Attendant...[S13bTBA]....03 Family members.....[S13bFM].....04 Other:. Specify_____[S13bOther]..05 None of the above.....[S13bNoA]…..06 Don't know……[S13bDK]…….....99
S13c Are you able to check a women for fever and bleeding after birth? **(CIRCLE RESPONSE) (IF NO, SKIP TO S14a)**	Yes.....01 No.....00 Don't Know.....99
S13d In the past month how many times did you check a woman for fever and bleeding after birth? (**WRITE NUMBER IN SPACE)**	[_ _ _]
S13e The last time you did a postpartum visit, did you check a woman for fever and bleeding after birth? **(IF NO, SKIP TO S14a)**	Yes.....01 No.....00 Don't Know.....99
S13f Did you feel good about your performance? **(CIRCLE RESPONSE)**	Yes.....01 No.....00 Don't Know.....99
S14a Have you heard of counseling a postpartum woman to rest for at least 12 days? **(CIRCLE RESPONSE) (IF NO SKIP TO S15a)**	Yes.....01 No.....00
S14b Whose duty is it to counsel a postpartum woman to rest for at least 12 days? **(CIRCLE RESPONSE)**	Health Extension Worker.....[S14bHEW]..01 Volunteer Community Health Worker.....[S14bvCHW]……...02

(CIRCLE ALL RESPONSES THAT APPLY)	Traditional Birth Attendant...[S14bTBA]....03 Family members.....[S14bFM].....04 Other:. Specify_____[S14bOther]..05 None of the above.....[S14bNoA]…06 Don't know……[S14bDK]……..…...99
S14c Are you able to counsel a postpartum woman to rest for at least 12 days? **(CIRCLE RESPONSE)** **(IF NO, SKIP TO S15a)**	Yes.....01 No.....00 Don't Know.....99
S14d In the past month how many times did you counsel a postpartum woman to rest for at least 12 days? (**WRITE NUMBER IN SPACE)**	[_ _ _]
S14e The last time you did a postpartum visit, did you counsel a postpartum woman to rest for at least 12 days? **(CIRCLE RESPONSE) (IF NO, SKIP TO S15a)**	Yes.....01 No.....00 Don't Know.....99
S14f Did you feel good about your performance? **(CIRCLE RESPONSE)**	Yes.....01 No.....00 Don't Know.....99
S15a Have you heard of counseling a woman to give only breast milk for 6 months? **(CIRCLE RESPONSE) (IF NO SKIP TO S16a)**	Yes.....01 No.....00
S15b Whose duty is it to counsel a woman to give only breast milk for 6 months? **(CIRCLE RESPONSE)** **(CIRCLE ALL RESPONSES THAT APPLY)**	Health Extension Worker.....[S15bHEW]..01 Volunteer Community Health Worker.....[S15bvCHW]……02 Traditional Birth Attendant...[S15bTBA]....03 Family members.....[S15bFM].....04 Other:. Specify_____[S15bOther]..05 None of the above.....[S15bNoA]…06 Don't know……[S15bDK]……..99

S15c Are you able to counsel a woman to give only breast milk for 6 months? **(CIRCLE RESPONSE)** **(IF NO, SKIP TO S16a)**	Yes.....01 No.....00 Don't Know.....99
S15d In the past month how many times did you counsel a woman to give only breast milk for 6 months? (**WRITE NUMBER IN SPACE)**	[_ _ _]
S15e The last time you did a postpartum visit, did you counsel that woman to give only breast milk for 6 months? **(CIRCLE RESPONSE) (IF NO, SKIP TO S16a)**	Yes.....01 No.....00 Don't Know.....99
S15f Did you feel good about your performance? **(CIRCLE RESPONSE)**	Yes.....01 No.....00 Don't Know.....99
S16a Have you heard of counseling a woman on the proper position of the baby during breastfeeding? **(CIRCLE RESPONSE) (IF NO SKIP TO S17a)**	Yes.....01 No.....00
S16b Whose duty is it to counsel a woman on the proper position of the baby during breastfeeding? **(CIRCLE RESPONSE)** **(CIRCLE ALL RESPONSES THAT APPLY)**	Health Extension Worker.....[S16bHEW]..01 Volunteer Community Health Worker.....[S16bvCHW]…….02 Traditional Birth Attendant...[S16bTBA]....03 Family members.....[S16bFM].....04 Other:. Specify_____[S16bOther]..05 None of the above.....[S16bNoA]....06 Don't know……[S16bDK]…….……...99
S16c Are you able to counsel a woman on the proper position of the baby during breastfeeding? **(CIRCLE RESPONSE)** **(IF NO, SKIP TO S17a)**	Yes.....01 No.....00 Don't Know.....99
S16d In the past month how many times did you counsel a woman on the proper position of the baby during breastfeeding? (**WRITE NUMBER IN SPACE)**	[_ _ _]

S16e The last time you did a postpartum visit, did you counsel a woman on the proper position of the baby during breastfeeding? **(IF NO, SKIP TO S17a)**	Yes.....01 No.....00 Don't Know.....99
S16f Did you feel good about your performance? **(CIRCLE RESPONSE)**	Yes.....01 No.....00 Don't Know.....99
S17a Have you heard of checking the warmth of the baby? **(CIRCLE RESPONSE)** **(IF NO SKIP TO S17a)**	Yes.....01 No.....00
S17b Whose duty is it to the warmth of the baby? **(CIRCLE RESPONSE)** **(CIRCLE ALL RESPONSES THAT APPLY)**	Health Extension Worker.....[S17bHEW]..01 Volunteer Community Health Worker.....[S17bvCHW]…….02 Traditional Birth Attendant...[S17bTBA]....03 Family members.....[S17bFM].....04 Other:. Specify_____[S17bOther]..05 None of the above.....[S17bNoA]....06 Don't know……[S17bDK]……..…...99
S17c Are you able to check the warmth of the baby? **(CIRCLE RESPONSE)** **(IF NO, SKIP TO S18a)**	Yes.....01 No.....00 Don't Know.....99
S17d In the past month how many times did you check the warmth of the baby? (**WRITE NUMBER IN SPACE)**	[_ _ _]
S17e The last time you did a postpartum visit, did you check the warmth of the baby? **(IF NO, SKIP TO S18a)**	Yes.....01 No.....00 Don't Know.....99
S17f Did you feel good about your performance?	Yes.....

(CIRCLE RESPONSE)	01 No..... 00 Don't Know.....99
S18a Have you heard of the baby being checked for proper color and breathing? **(CIRCLE RESPONSE)** **(IF NO SKIP TO TW1)**	Yes..... 01 No..... 00
S18b Whose duty is it to check the baby for the proper color and breathing? **(CIRCLE RESPONSE)** **(CIRCLE ALL RESPONSES THAT APPLY)**	Health Extension Worker.....[S18bHEW]..01 Volunteer Community Health Worker.....[S18bvCHW]…… 02 Traditional Birth Attendant...[S18bTBA]....03 Family members.....[S18bFM].....04 Other:. Specify_____[S18bOther]..05 None of the above.....[S18bNoA]…06 Don't know……[S18bDK]……..99
S18c Are you able to check the baby for the proper color and breathing? **(CIRCLE RESPONSE)** **(IF NO, SKIP TO TW1)**	Yes..... 01 No..... 00 Don't Know.....99
S18d In the past month how many times did you check the baby for proper color and breathing?	[_ _ _]

(**WRITE NUMBER IN SPACE)**	
S18e The last time you did a postpartum visit, did you check the baby for proper color and breathing? **(IF NO, SKIP TO TW1)**	Yes..... 01 No..... 00 Don't Know.....99
S18f Did you feel good about your performance? **(CIRCLE RESPONSE)**	Yes..... 01 No..... 00 Don't Know.....99
INTERVIEWER INSTRUCTIONS: **INTERVIEWER READ**: "Now I will ask you a question about your health duties."	
Section 8: Respondent's Duty Prioritization	
D1 Of all the health duties that you perform in the community, which is the most important to you? **(DO NOT READ LIST) (WRITE CODE FOR CORRESPONDING AREA FROM TABLE BELOW IN SPACE)**	[_ _]
D2 Can you give me another duty that's important to you? **(DO NOT READ LIST) (WRITE CODE FOR CORRESPONDING AREA FROM TABLE BELOW IN SPACE) (DO NOT REPEAT CODE FROM D1)**	[_ _]
D3 Can you give me one more duty that's important to you? **(DO NOT READ LIST) (WRITE CODE FOR CORRESPONDING AREA FROM TABLE BELOW IN SPACE) (DO NOT REPEAT CODE FROM D1 OR D2)**	[_ _]

RESPONSE TABLES

AREAS (EXAMPLES)	**CODE**
Sanitation (hygiene protection of disease, making hole for toilet, solid/liquid waste removal, safe water supply)	**01**
Vaccination	**02**

(vaccinations for children and adults)	
Family Planning (birth spacing, pills, condoms, injections, Depo-Provera, Implanon)	**03**
Work for Mothers and Babies (antenatal care, labor and delivery, postnatal care for mother and baby, counseling pregnant women)	**04**
Nutrition (breastfeeding, counseling on nutrition in pregnancy and for mothers/babies)	**05**
ITN Provision (bed net provision, prevention of Malaria)	**06**
Fuel Efficient Stoves (building chimneys, building stoves)	**07**
Separating Livestock from the House (moving animals away from living areas)	**08**
Infectious Disease Prevention and Control (HIV/AIDS, Tuberculosis)	**09**
Mobilizing the community for health services (giving messages to the community)	**10**
OTHER: Specify _____	**11**

INTERVIEWER INSTRUCTIONS:

INTERVIEWER READ: "Now we will ask you questions about working together with other health workers to provide care to mothers and babies."

Section 9: Respondent's Thoughts about Team and Teamwork

TW1 Do you agree or disagree with the following statement: "I usually do my work as a health worker alone." **(CIRCLE RESPONSE)**	Agree.....01 Disagree.....00
TW2 Do you see yourself as part of a team in proving care to mothers	Yes.....01

and babies in your kebele? **(CIRCLE RESPONSE) (IF NO, SKIP TO TW5)**	No.....00 Don't Know.....99
TW3 Who do you consider to be part of your team in providing care to mothers and babies in your kebele? **(READ RESPONSES)** **(CIRCLE ALL THAT APPLY)**	HEW.....[TW3HEW].....01 vCHW.....[TW3vCHW].....02 TBA.....[TW3TBA].....03 Family member.....[TW3FM].....04 Nurse……[TW3Nurse]…….05 Supervisor……[TW3Super]…….06 Other: Specify_____[TW3Other]...07
TW4 How strong is your teamwork in providing care to mothers and babies? **(READ RESPONSES)** **(CIRCLE RESPONSE)**	Very strong.....01 Strong.....02 Weak.....03 Very weak.....04
TW5 In the past month how many times did you interact with an HEW? **(WRITE NUMBER IN SPACE)**	[_ _ _]
TW6 In the past month how many times did you interact with a vCHW? **(WRITE NUMBER IN SPACE)**	[_ _ _]
TW7 Do you agree or disagree with the following statement: "People call traditional birth attendants to help in delivery." **(CIRCLE RESPONSE)**	Agree.....……...…..01 Disagree……...00
TW8 In the past month how many times did you interact with a TBA? **(WRITE NUMBER IN SPACE)**	[_ _ _]
TW9 Who do you ask when you have a question about giving care to mothers and babies? **(READ RESPONSES)** **(CIRCLE ALL THAT APPLY)**	HEW.....[TW9HEW].....01 vCHW.....[TW9vCHW].....02 TBA.....[TW9TBA].....03 Family member.....[TW9FM].....04

	Nurse……[TW9Nurse]…….05 Supervisor……[TW9Super]…….06 Other: Specify_____[TW9Other]...07

INTERVIEWER INSTRUCTIONS:

INTERVIEWER READ: "Thank you very much for participating in our survey. The information you have given us will help us to make the care for mothers and babies better."

Time the interview ends: [_ _ _ _]