This literature review is made possible by the generous support of the American people through the United States Agency for International Development (USAID). The contents are the responsibility of Johns Hopkins Center for Communication Programs Ethiopia and do not necessarily reflect the views of USAID or the United States Government.
REVIEW OF LITERATURE ACROSS SIX HEALTH AREAS IN ETHIOPIA
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### List of abbreviations

<table>
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<tr>
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<th>Description</th>
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<tr>
<td>ACTs</td>
<td>Artemisinin-based combination therapy</td>
</tr>
<tr>
<td>ANC</td>
<td>Antenatal care</td>
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<tr>
<td>ARV</td>
<td>Anti-retroviral</td>
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<tr>
<td>CCP</td>
<td>Johns Hopkins Center for Communication Programs</td>
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<tr>
<td>CLTSH</td>
<td>Community led total sanitation and hygiene</td>
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<tr>
<td>DHS</td>
<td>Demographic and Health Survey</td>
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<tr>
<td>DNA</td>
<td>Deoxyribonucleic acid</td>
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<tr>
<td>DPT</td>
<td>Diphtheria, Pertussis and Tetanus vaccine</td>
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<tr>
<td>EDHS</td>
<td>Ethiopian Demographic and Health Survey</td>
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<tr>
<td>FMOH</td>
<td>Federal Ministry of Health</td>
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<tr>
<td>HAPCO</td>
<td>HIV/AIDS Prevention and Control Office</td>
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<tr>
<td>HEW</td>
<td>Health Extension Worker</td>
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<tr>
<td>HF</td>
<td>Health facility</td>
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<tr>
<td>HIV</td>
<td>Human Immunodeficiency Virus</td>
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<tr>
<td>HSTP</td>
<td>Health Sector Transformation Plan</td>
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<tr>
<td>ITN</td>
<td>Insecticide treated net</td>
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<tr>
<td>IYCF</td>
<td>Infant and young child feeding</td>
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<tr>
<td>Acronym</td>
<td>Description</td>
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<tr>
<td>INH</td>
<td>Isoniazid</td>
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<tr>
<td>LLIN</td>
<td>Long-lasting insecticide treated net</td>
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<tr>
<td>MIS</td>
<td>Malaria Indicators Survey</td>
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<tr>
<td>MTCT</td>
<td>Mother to child transmission of HIV</td>
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<tr>
<td>ODF</td>
<td>Open defecation free</td>
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<tr>
<td>PCR</td>
<td>Polymerase chain reaction</td>
</tr>
<tr>
<td>PMA 2020</td>
<td>Performance Monitoring and Accountability 2020 Project</td>
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<tr>
<td>PMTCT</td>
<td>Prevention of mother to child transmission of HIV</td>
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<tr>
<td>PNC</td>
<td>Postnatal care</td>
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<tr>
<td>RMNCH</td>
<td>Reproductive, maternal, neonatal and child health</td>
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<tr>
<td>SBCC</td>
<td>Social and behavior change communication</td>
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<tr>
<td>SNNP</td>
<td>Southern Nations, Nationalities and Peoples’ Region</td>
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<tr>
<td>TB</td>
<td>Tuberculosis</td>
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<tr>
<td>WASH</td>
<td>Water, sanitation and hygiene</td>
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<td>WHO</td>
<td>World Health Organization</td>
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Executive summary

Communication for Health is a five-year social and behavior change communication (SBCC) project in Ethiopia that began in July 2015. Funded by the United States Agency for International Development (USAID), the project is managed by the Johns Hopkins Center for Communication Programs (CCP) in partnership with John Snow, Inc. Communication for Health activities focus on Amhara, Oromia, Tigray and Southern Nations, Nationalities and Peoples’ Region (SNNP) regions, while supporting systems to improve quality, capacity and coordination of SBCC nationally. The project is designing an integrated health communication framework that will enable effective communication about high impact behaviors and practices in six inter-related health areas:

1. Reproductive, maternal, neonatal and child health (RMNCH)
2. Nutrition
3. Malaria
4. Prevention of mother to child transmission of HIV (PMTCT)
5. Tuberculosis (TB)

To inform the design of this integrated platform, Communication for Health conducted a review of 160 peer reviewed and non-peer reviewed reports, articles, and publications. This document is a synthesis of findings from the review, including recommendations concerning priority audiences, prioritization of health practices, and cross-cutting behavioral determinants.

As SBCC focuses on changing behavior as a means to improve health status, the review explores the prevalence and determinants of 18 priority health practices recommended by the FMOH across the six health areas. The review looks in particular at barriers to and opportunities for increasing uptake of these 18 practices.

The table in Appendix A summarizes findings for each recommended practice, showing the extent of uptake, barriers to adoption, opportunities for increasing adoption and priority audiences for each. The table in Appendix B summarizes the prevalence of health practices and knowledge regarding the six health areas by region.

Conclusions: Adoption of the 18 recommended health practices is low. According to the literature reviewed, adoption ranges from only 4% for properly feeding children between 6 and 23 months old to 66% for fully vaccinating children (Penta 3 vaccination). Five recommended behaviors are practiced by less than 25% of the affected population.

While Ethiopians have unique reasons for adopting and rejecting each recommended health practice, there are some barriers that cut across the practices:

- Poor understanding of the practices. For some recommended health practices, many men and women do not have enough information about how and why to implement them. This is the case with childhood immunization, family planning, TB treatment, and infant and young child feeding.
- Low risk perception or feeling of vulnerability. Some health issues are not seen as a threat, so many people do not see a need to adopt new practices aimed at preventing them. For example, malaria, tuberculosis, pre-lacteal feeding, and child birth are not seen as dangerous by many people.
- Lack of trust in the quality of health services. For practices that require interfacing with
health providers and services, such as maternal health services, many women and men are deterred by the belief, whether founded or not, that health services are poor quality.

- Gender norms. Many women are unable to adopt some recommended health practices without their husband’s consent and participation, yet their husbands are not well informed about nor positively predisposed to adopt the practices.

- Traditional norms and habits. Some women and men are comfortable with the way they and their families have done things over the years. They see no reason to change, and do not want to act differently than others in their families and communities. For example, traditional norms are strong determinants of infant feeding practices, latrine use, and where a woman gives birth.

- Lack of access to necessary services and materials. To adopt some health practices, communities and families need access to products (ie. latrines, soap, water, insecticide-treated nets) or health services that are not readily available.

Audiences: Two primary audiences are the key targets for all the recommended practices other than TB prevention, detection and treatment: 1) married women 15 – 24 years old who are mothers of children under 5 years old and may be pregnant, and 2) married men who are fathers of children under 5 years and/or have wives who are pregnant.

Priority audiences for TB prevention, detection and treatment are chronic coughers, TB patients and their families, people residing in congregate settings and people living with HIV.

Prioritization of SBCC messaging: To reduce message overload among key audience, Communication for Health should prioritize the health practices it promotes. This may be done according to three criteria: 1) those most in need of improvement; 2) those associated with improvements in other health behaviors/practices; and 3) those that are most likely to change. Table 3 summarizes nine of the 18 recommended health practices rated highest on each of these three prioritization criteria. According to this matrix, SBCC should begin by focusing on these nine health practices, with particular emphasis on promoting health facility deliveries and postnatal care. These two practices are not widely practiced, but are associated with adoption of other important health practices such as exclusive breastfeeding, complementary feeding of infants, and immunization. Health facility delivery is also a practice that is already becoming more widespread and has momentum to continue.
Table 3. Health practices by three SBCC prioritization criteria

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<tr>
<th>Health practice</th>
<th>SBCC Prioritization Criteria</th>
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<tr>
<td></td>
<td>Practices most in need of change (practiced by less than 25% of affected population)</td>
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<td>Practices associated with other recommended health practices</td>
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<td></td>
<td>Practices that have been steadily increasing</td>
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<tr>
<td>ANC attendance</td>
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<td>PNC attendance</td>
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<tr>
<td>Health facility delivery</td>
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<tr>
<td>Family planning</td>
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<tr>
<td>Complementary feeding</td>
<td></td>
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<tr>
<td>Handwashing at critical times</td>
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<tr>
<td>Latrine use</td>
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<tr>
<td>LLIN use</td>
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<tr>
<td>HIV testing for pregnant women</td>
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Communication channel access and exposure: Although access to radio and television is limited in Ethiopia, particularly in rural areas, radio is the most wide reaching media channel. Television is viewed primarily in urban areas, where it is as or more popular than listening to radio. Use of mobile phones and internet are increasing. Community events such as Idir, Dado, and community and religious gatherings also present opportunities for interpersonal communication.

Recommendations for integrated health communication: The following recommendations concerning the Communication for Health integrated communication platform arose out of this literature review.

1. **To reduce clutter and help women and men absorb messages about priority health practices,** Communication for Health should bundle communication about essential health actions according to “life stages” audiences. Many of the recommended health behaviors are closely linked and will be more relevant at different times in men’s and women’s lives. For example:

   *Unmarried adolescents and newly married young people:* Family planning, ANC, PMTCT, malaria prevention and treatment, sanitation and handwashing

   *During pregnancy:* ANC, birth preparedness, health facility delivery, PNC, PMTCT, exclusive breastfeeding, malaria prevention and treatment, maternal nutrition
Soon after birth: Exclusive breastfeeding, childhood immunization, PNC, PMTCT, family planning, malaria prevention, handwashing and children’s feces disposal

When child is 6 – 23 months: Feeding according to Infant and Young Child Feeding guidelines, childhood immunization, malaria prevention and treatment, handwashing and sanitation, family planning, TB Prevention, detection and treatment

When child is 2– 5 years: Malaria prevention and treatment, childhood nutrition, handwashing and sanitation, family planning, TB prevention, detection and treatment.

2. Create communication vehicles that allow discussion about multiple health practices and common determinants of those practices among priority audiences. These may be radio and TV series that devote episodes to different health issues; communication support tools and training in their use for health workers, HEWs, HDA leaders, and other community resource persons; telephone Talkline; and the Family Health Card.

3. Prioritize selected health practices for intensive single-issue health campaigns. TB detection and treatment is one issue that warrants an intensive campaign, as its audiences differ from the audiences for other health practices. ANC and health facility deliveries should be prioritized on the basis of their low levels of adoption and associations with increased uptake of immunization, exclusive breastfeeding and complementary feeding.

4. Communicate with married men as well as women, bearing in mind that men are usually the primary decision makers in the household and women are responsible for health during pregnancy, childbirth, and among the children.

5. Provide clear information about the desired health practices and their rationale. For many recommended health practices, the primary barrier to uptake is poor understanding about the practice.

6. Balance messaging that increases feelings of vulnerability while building efficacy. For each recommended health practice, it is important to gauge the audiences’ perceptions of personal risk if they do not adopt it; their belief in the effectiveness of the recommended practice; and whether or not they feel capable of adopting the new practice.

7. Support men and women to adopt new health practices that are not the norm in their communities by sharing experiences from others who have succeeded and providing opportunities for dialogue with others, including health workers.

8. Strengthen trust in the quality of health services and health workers by ensuring that health services are provided well, and by offering community members and health providers opportunities for dialogue with one another.
INTRODUCTION
Communication for Health is a five-year social and behavior change communication (SBCC) project in Ethiopia that began in July 2015. Funded by the United States Agency for International Development (USAID) the project is managed by the Johns Hopkins Center for Communication Programs (CCP) in partnership with John Snow, Inc. The Project’s overall vision is an Ethiopia where all families have the knowledge, desire, and ability to practice healthy behaviors at home and to seek health services when they need them. Communication for Health activities focus on Amhara, Oromia, Tigray and SNNP regions, while supporting systems to improve quality, capacity and coordination of SBCC nationally. The project has three main objectives:

**Objective 1**: Public sector health systems and coordination for SBCC strengthened;

**Objective 2**: SBCC design and implementation strengthened; and

**Objective 3**: Improved use of data for decision making in SBCC.

As an initial activity, Communication for Health is designing an integrated health communication framework that will enable the Ethiopian Federal Ministry of Health, regional health bureaus, and other stakeholders to effectively communicate about a range of priority health practices and behaviors among key audiences. The campaign will have one unifying theme to build trust among its audiences and to link and reinforce related health issues, and will promote high impact behaviors and practices in six inter-related health areas:

1. Reproductive, maternal, neonatal and child health (RMNCH)
2. Nutrition
3. Malaria
4. Prevention of mother to child transmission of HIV (PMTCT)
5. Tuberculosis

Communication for Health conducted an extensive review of peer reviewed and non-peer reviewed literature to better understand the nature of these six health issues, and to identify priority audiences, their current practices, barriers to adoption of recommended practices, and opportunities for influencing change. This document is a synthesis of findings from the review, including recommendations concerning prioritization of health practices, priority audiences, and cross-cutting behavioral determinants. The full literature review is available under separate cover.

This synthesis begins with a discussion of recommended practices and their behavioral determinants for each key of the six health areas. This is followed by a discussion of cross-cutting behavioral determinants, recommended audiences, communication channels and overall recommendations for the Communication for Health integrated campaign platform.
2 METHODOLOGY
This review covers both peer reviewed and non-peer reviewed literature, including journal articles, books, reports, and policy and strategy guidelines. Peer reviewed literature were identified using the following search engines and journals: PubMed, Hinari Research for Health, the Ethiopian Journal of Health Development, and the Ethiopian Journal of Reproductive Health. The key words reproductive, maternal, neonatal and child health; nutrition; malaria; prevention of mother to child transmission of HIV; PMTCT; HIV; AIDS; tuberculosis; TB; water, sanitation and hygiene; and WASH were cross referenced with Ethiopia, SNNPR, Tigray, Oromia, and Amhara.

Non-peer reviewed articles, reports, policy and strategy guidelines were identified using Google search on the same key words; a search of international websites for the World Health Organization, the United Nations Population Fund, the US Presidents Emergency Plan for AIDS Relief, the US President’s Malaria Initiative, and World Food Program; and through personal communication with representatives of the Federal Ministry of Health, USAID, the ENGINE Project, UNICEF, and HIV/AIDS Prevention and Control Office. Some non-peer reviewed materials were identified in the references of peer reviewed articles or other non-peer reviewed articles.

Only documents pertaining to Ethiopia or the four regions of Tigray, Amhara, SNNP, Oromia were included in this review. Exclusion criteria included documents not written in English, and those published prior to 2006.

This initial search identified a total of 160 peer reviewed and non-peer reviewed documents. A team of four people, supported by the Senior SBCC Specialist and Director of Research, Monitoring and Evaluation, read through the articles. Documents were deemed valuable if they were relevant to the study objectives, focused on any of the six health areas, included national data or data from any of the four states where Communication for Health works, used credible research methods, and had a reasonable sample size. A total of 97 documents fit these criteria. The team categorized these documents into six health areas: RMNCH, PMTCT, WASH, TB, Nutrition, and Malaria.

A team member was assigned to each health area and reviewed literature relevant to that issue. For each health area, the team summarized: magnitude of the health problem, prevalence of recommended health practices/behaviors, determinants of recommended behaviors—including knowledge, attitudes, beliefs, gender, religion, and other barriers and facilitators. Key findings for each health area were summarized on two spreadsheets (See Appendices A and B). For some recommended health practices/behaviors, there was very limited information. This was particularly true for TB prevention and detection, HIV testing during pregnancy, hand washing, latrine use, infant feeding practices, and the effects of gender and religion on health practices. The team conducted internet searches for literature on these practices and issues in Ethiopia, which yielded four additional documents.
An analysis of the determinants of health behaviors across all health areas led to the identification of cross-cutting behavioral determinants and priority audiences. The team prioritized health behaviors for SBCC intervention according to three criteria: those most in need of improvement, those associated with improvements in other health behavior/practice, and those that are most likely to change.

Communication for Health shared the initial draft literature review with health stakeholders in Addis Ababa in June, 2016. Stakeholders identified three additional documents for review. In August, 2016, reviewers from the Johns Hopkins University shared comments and identified 13 additional relevant peer reviewed articles. Communication for Health reviewed these additional 16 articles and revised the review accordingly.

### Limitations of the review

This literature review has the following major limitations:

- There was a shortage of literature regarding behavioral determinants in the context of Ethiopia for some health areas such as TB, PMTCT, WASH and nutrition; and lack of sufficient information on the effects of religion and gender on health behavior.

- There were some inconsistencies in findings concerning some health behaviors and determinants. In cases of inconsistencies, the review team prioritized findings from national studies and the most recent studies.

- Several studies were not conducted in all the regions supported by the Communication for Health Project, and many were conducted only in selected Woredas. In these situations, the locations of the studies are mentioned in this report.
3
KEY HEALTH PRACTICES AND THEIR BEHAVIORAL DETERMINANTS
This section provides a synthesis of research findings for each of 16 health practices in the six priority health areas: reproductive, maternal, neonatal and child health; nutrition; malaria; mother to child transmission of HIV; tuberculosis; and water, sanitation and hygiene. Each section presents recommendations for addressing barriers to behaviors that can be addressed through SBCC. See Appendices A and B for tables summarizing key findings.

1. Reproductive, maternal, neonatal and child health

Ethiopia has high maternal, neonatal and infant mortality, although all have been declining over the past two decades. World Bank estimates that for every 100,000 births, 353 women died of maternity-related causes in 2015 (2). According to the World Health Organization, in 2012 infant mortality was 46 per 1,000 live births, with the majority (62.7%) of deaths occurring during the first 28 days of life. That translates to 140,141 infant deaths; 87,838 of whom were less than 28 days old (3).

To address high maternal, infant and neonatal death rates, the Federal Ministry of Health recommends that pregnant women receive antenatal care from a trained provider, deliver in health facilities with assistance from skilled health workers, and receive postnatal care from a skilled health worker. It also recommends couples to practice family planning to space and time pregnancies optimally, and infants to receive full immunization against life-threatening childhood diseases before their first birthday.

Family planning

Women in Ethiopia are having fewer children than in the past. The total fertility rate declined from 5.4 children per woman in 2005 to 4.1 children per woman in 2014. Women in rural areas have twice as many children on average as women in urban areas. This reduction in fertility mirrors an increase in contraceptive prevalence over the same time period. Modern contraception use among married women increased five-fold from 6% in 2000 to 40.4% in 2014 (1) (4). A much higher proportion of married women in urban areas use modern contraceptives (55.6%) compared to their rural counterparts (37.2%) (1). Nonetheless, 25% of married women still have an unmet need of family planning (4).

Family planning users are typically married, 20 – 39 year old urban women with one or two children. Women from higher economic quintiles and those with more education are more likely to use modern contraceptives. Women with three or more children are less likely to use a modern method than those with one or two. Women 15 – 19 years of age and older than 40 are less likely to use modern contraceptives (1).

Injectables are the most widely used contraceptive method; 31% of currently married women use this method. Five percent of currently married women use implants and 3% use the hormonal pill (1). The majority of early discontinuers are pill-users (4).

Barriers to family planning use

According to PMA2014, the three most common reasons cited among non-users for not using contraceptives were: 1) belief that they were not at risk of pregnancy (23%); 2) health concerns and fear of side effects (23%); and 3) currently lactating (16%) (5). Other, smaller studies have identified opposition to family planning by husbands or women themselves as an important reason for non-use. In one study conducted in Mojo Town, Oromia in 2011, 24% of non-users gave this as their main reason for not using contraceptives (6).

Opportunities

As contraceptive use continues to increase and fertility continues to decrease, more and more women are planning to use contraceptives in
future. In 2011, more than half (56%) of currently married female nonusers intended to use family planning in the future. Only 41% percent did not. The data reflect a gradual increase in the percentage of currently married female non-users who intend to use contraceptives in the future, from 46% in 2000 to 52% in 2005 and 56% in 2011. Women with one to three children are more likely to intend to use contraceptives in future (65%) than women with no children or those with four or more (4).

Virtually all family planning users get their contraceptives from health facilities (1). With 40% of married women already using family planning methods in 2014 (1) and, based on the 2011 DHS, another 33% intending to use contraceptives in future (4), this group represents 73% of all married women. According to a study conducted in Amhara, Oromia, SNNP and Tigray in 2009, 35% of women reported that their main reason for visiting a health facility was for family planning (7). Family planning could represent a “gateway” to other RMNCH information, services and practices.

**Recommendations for SBCC about family planning**

- Focus efforts on turning intenders into users;
- Emphasize the safety of contraceptive methods;
- Accentuate the broad range of methods available for women with different reproductive plans;
- Double efforts to communicate about family planning with rural and less educated couples with unmet need;
- Position family planning as key to PMTCT, nutrition, maternal and child health;
- Make information about contraceptives available to men and encourage them to discuss family planning with their partners to help move their partners from intention to action.

**Antenatal care**

The Federal Ministry of Health recommends that all pregnant women attend antenatal care (ANC) by a skilled provider at least four times during each pregnancy, before 16 weeks of gestation. According to the 2014 mini DHS, 58% of pregnant women who gave birth in the five years preceding the survey made at least one ANC visit. However, only 18% of women made their first ANC visit before the fourth month of pregnancy. Thirty-two percent of women with a live birth in the five years before the survey made four or more ANC visits during the length of their pregnancy (1).

Antenatal care from a skilled provider is more common among women of less than 34 years than among older women. Women are also almost twice as likely to receive ANC from a skilled provider for first births (58%) than they are for subsequent births, and urban women (80%) are more than twice as likely as rural women (35%) to receive ANC from a skilled provider (1).

There is significant variation in ANC attendance by region. Tigray has the highest coverage at 68.7%, followed by Amhara (46.2%), SNNP (39%) and Oromia (32.7%) (1).

According to qualitative research conducted in 2012, the number of ANC visits attended and
their timing was influenced by when the woman first suspected she was pregnant. Most women attended ANC between two and four times during a pregnancy. Relatively few women reported that they had started going for ANC in the first trimester; most went for their first visit during the second trimester, often from the 4th month. Many of these women only attended ANC because they felt sick or were persuaded by family members.

The 2011 Ethiopian DHS included questions regarding the quality of ANC. Women who had a birth in the five years preceding the survey were asked whether they had been advised of complications or received certain screening tests during at least one of their antenatal visits. Thirty-four percent took iron tablets during their last pregnancy. Twenty-four percent reported that they were informed of signs of pregnancy complications. Seventy-one percent had their blood pressure measured; 67% had a blood sample taken; and 52% had a urine sample taken.

**Barriers to recommended ANC attendance**

Seven key barriers influence the timing and number of ANC visits a woman makes during her pregnancy: 1) poor awareness of the recommended practice, 2) low perception of the risks of pregnancy and childbearing, 3) delay in revealing pregnancy, 4) past childbirth experience, 5) workload, 6) fear of mistreatment by health workers, and 7) poor access to ANC services.

**Poor awareness of the recommended practice:** A literature review looking at cultural barriers to seeking maternal health care in Ethiopia, found that many women were not aware of the risks of pregnancy, pregnancy danger signs or when to begin ANC (9). In addition, qualitative studies in Amahara region, in Dembia and Gonder Zuria woreda, Amhara region women reported that women who previously had easy labors do not need to go for ANC because they are healthy and can ‘give birth before the neighbors start to make the coffee’ (8)(10).

**Low risk perception:** Pregnancy and childbirth are viewed as a low risk and natural process. Many also believe that illness is a punishment from God/Allah or that the outcome of pregnancy is predetermined by God/Allah, discouraging women from seeking care to prevent pregnancy complications or treat complications once they occur. In addition, it is commonly believed that visits to health facilities are only necessary for treatment of maladies. So, if a pregnant women has no visible complication, there is no need to seek medical care (13).

**Delay in revealing pregnancy:** Most women prefer to wait three or four months before confirming their pregnancy and sharing the news with others. Husbands may also discourage their wives from discussing their pregnancies as they believe it is a private matter. This delays their attendance to ANC which often means they will attend ANC less than the recommended four times (8).

**Past childbirth experience:** Women are more likely to attend ANC for their first pregnancies than subsequent pregnancies, especially if they believe their pregnancies are healthy and free of complications. Many women believe that ANC is only necessary if one is pregnant for the first time or has experienced complications in the past. In a qualitative study conducted in Dembia and Gondar Zuria woreda, Amhara region women reported that women who previously had easy labors do not need to go for ANC because they are healthy and can ‘give birth before the neighbors start to make the coffee’ (8)(10).

**Workload:** Many women were unable to find the time to go for ANC regularly due to their workload within and outside the household. Most women attending ANC also had to make arrangements to
ensure their children were cared for while they are away (8) (10) (11) (12). Women have less freedom of movement outside the household, and husbands may hesitate to send wives to health facilities alone. Some women said that they would be unable to go for ANC if they did not get permission from their husband, and that when a pregnant woman is sick, their husbands usually think it is a normal manifestation of pregnancy that does not require medical attention (8) (11) (12) (13).

Fear of mistreatment: Studies across the nine regions of Ethiopia show that many women have fears and concerns about how they will be treated when they go to a health facility. In one literature review, the women were concerned about how they would be treated, what kind of physical examinations were going to take place and who (male or female provider) was going to examine them at the health facility (13). One study revealed that many women did not attend ANC because they feared health workers would criticize them for not spacing their births; they were ashamed of getting pregnant very soon after marriage; or they did not trust health professionals (11) (12). In another qualitative study, women were nervous about exposing their bodies to health workers, especially male health service providers, or were worried that people at the health facility would make negative comments about them (10). Little is known about the actual quality of ANC service provision, so it is not known whether or not these fears are founded or not.

Access to services: Another major barrier noted in multiple studies was distance to ANC services or lack of transportation. This made it difficult for women to go for regular ANC, particularly in the later stages of pregnancy. Some women also reported that they were unable to go for ANC because they could not afford to go (13) (14).

ANC may be a gateway to other maternal and child health practices. According to one study, mothers who received ANC during pregnancy were 2.7 times more likely to deliver at health institutions than those who did not attend ANC (15).

Recommendations for SBCC concerning ANC

- Focus on increasing demand for ANC services, and improve the quality of information and counseling provided during ANC visits.
- Target married men. Men are often the first ones to know when their wives are pregnant. If they value ANC, and know about the recommended timing of visits, men can influence their wives to seek ANC early during pregnancy and for the four recommended visits.
- Increase men’s and women’s appreciation of the risks of pregnancy and childbirth, and the value of ANC. Informing men and women about the danger signs during pregnancy, and the role of ANC in preventing problems is one way of doing this.
- Address women’s fears concerning the quality of ANC services by demonstrating what to expect during routine ANC visits; through testimonies from satisfied clients; and by ensuring the quality of ANC services.
- Clearly communicate the recommended schedule for ANC visits during pregnancy, regardless of parity.
- Conduct further research on cultural barriers to ANC uptake.
Institutional deliveries

The Federal Ministry of Health (FMOH) recommends that all women deliver in health facilities, attended by skilled health providers.

The proportion of births delivered in health facilities has been increasing over the past 15 years (1). However, the vast majority of women still deliver at home with the assistance of their mothers, mothers-in-law, neighbors, older relatives or traditional birth attendants (TBA) (1) (4) (7) (8) (11) (12) (15) (16) (17) (18) (19) (20) (21). In 2014, 16% of births were delivered at a health facility–15% in a public facility and 1% in a private facility. First births were much more likely than births of order six or higher to be delivered in a health facility. Delivery in a health facility was more common among births to mothers younger than 35, births to mothers who had at least four ANC visits, and births to highly educated mothers and mothers in the highest wealth quintile. Women in urban areas were six times (59%) more likely to delivery at a health facility than rural women (10%) (1).

The percentage of births delivered in health facilities ranged from 27% in Tigray to 15% in SNPP, 13% in Oromia, and 12% in Amhara (1). A population level household survey conducted in 59 woredas in Tigray, Amhara, Oromia and SNPP regions found that 16% of deliveries were attended by doctors or registered or auxiliary nurse/midwives; 3% by HEWs; 12% by a community volunteer (TBA or TDA); and 62% by family, friends or neighbors. Six percent gave birth alone. Women in the least poor households were over six times more likely to be assisted by a skilled health worker than women in the poorest households (22).

Barriers to health facility deliveries

There are four major barriers to health facility deliveries: 1) belief that health facilities are not necessary for normal births, 2) perception that health workers are abusive and services are poor, 3) feeling more comfortable delivering at home in the presence of relatives and friends, and 4) lack of preparation for health facility deliveries.

Belief that health facilities are not necessary for normal births: Most women believe that it is only necessary for women to go to a health facility if they experience complications such as heavy bleeding, problems removing the placenta, or prolonged labor. Many do not see the benefits of health facility deliveries (11) (12). Especially in rural areas, women and men have a strong belief that God/Allah has more power to control safe delivery than service providers (17). According to the 2014 Mini-DHS, the main reasons why women did not deliver their last baby at a health facility was because it was not necessary (46%) or not customary (33%) (1).

Perception that health workers are abusive and services are poor: Many women believe that the quality of services at health facilities, particularly government facilities, are poor and fear they will be mistreated by health workers (23) (24). They cited lack of medicines and equipment, long waiting times, poor attitudes among service providers, and lack of maternity waiting rooms (25). Respondents from rural areas complained that health workers often discriminated against them, and encouraged them to visit private clinics where they would have to pay for services (8) (11) (12). Despite reports of disrespect and abuse, mothers who delivered at health facilities often reported high levels of satisfaction with the care they received and most women who want to have more children intended to deliver at the same facility again (18). The same study also observed facility-based childbirth in four public health units in Amhara and SNPP, and found that disrespect and abuse may have been normalized by both providers and clients. Abuse and disrespect of maternity clients was significantly higher in Amhara region than in SNPP (18).

More comfortable at home in the presence of relatives and friends: Giving birth is generally seen as a natural process that should happen at home.
A woman is thought of as ‘weak’ if she delivers in hospital, rather than at home. Health facilities were perceived to be a stressful and noisy environment whilst delivering at home was more peaceful with the woman’s family and friends there to support her. Women believe that if they deliver at a health facility, they will not be allowed to have family with them; they will not be allowed to deliver in a kneeling position; and they will be forced to have physical examinations in front of people they do not know (25). Many women are also concerned that they will be forced to undergo surgery if they deliver in a health facility (8). Thus, many women prefer giving birth with family members in a comfortable environment. In some instances, women were found to trust TBAs more than trained health professionals (13) (17).

**Lack of preparation for health facility delivery:** Most pregnant women and their families do not make preparations for health facility births, such as saving money or planning transportation. This is partially because they are not aware of the importance of making preparations (8). Some women reported that they had planned to deliver at a health facility but had gone into labor suddenly and were unable to get there in time (23). According to one study, many women do not know their expected date of delivery, so labor comes as a surprise to them and they have made no preparations to travel to a health facility for child birth (8). Health extension workers also suggest that because most women do not have calendars they are unaware of their due date and are mostly surprised and unprepared when they go into labor (8).

**Opportunities**

Antenatal attendance increases the likelihood that a woman will deliver at a health facility, although this is not the case for all women who attend ANC (1) (23). Women who deliver at health facilities have a better understanding of the potential dangers of pregnancy and childbirth, and are likely to learn about this during ANC (17).

Birth preparedness planning is another potential opportunity to increase health facility deliveries and improve birth outcomes. According to one study, almost three quarters of women reported that they made some preparations for their delivery while they were pregnant, and almost 40% of frontline workers cited birth preparedness as an essential component of pregnancy care. Most women focused on food preparations, but some also set aside money, identified a birth attendant or a health facility, or organized transport for travel to the health facility when labor began (21).

Husbands of pregnant women are key decision makers concerning a woman’s place of delivery (12) (11) (26). Communicating with men about the benefits of health facility deliveries, and the risks to both mother and baby of delivering at home, together with birth preparedness planning, could have a substantial positive impact on health facility deliveries.
Recommendations for maternal health SBCC

- Clearly communicate to men and women the rationale for health facility deliveries: possible complications of childbirth to woman and baby, immediate access to medical care if complications arise, and increased likelihood of survival.
- Encourage birth preparedness planning by pregnant women and their families during antenatal care, home visits, and through community events and media.
- Provide opportunities for and stimulate dialogue between health providers and families to make delivery services more comfortable and appealing.
- Improve the interpersonal communication skills of health care providers during ANC, labor and delivery.

Postnatal care

The FMOH recommends that mothers and babies receive postnatal care a total of four times: 1) within the first 24 hours of delivery, 2) 48 – 72 hours after birth, 3) seven to 14 days after delivery, and 4) six weeks after delivery.

Nationally, in 2014, only 13% of women received postnatal care within two days, as recommended. The great majority of women (82%) with a live birth in the preceding five years did not receive a postnatal checkup at all. Among women who received postnatal care, 8% were examined within 4 hours of delivery, 3% within 4-23 hours, 2% within 1-2 days, and 5% within 3-41 days of delivery (1).

In the four regions of Tigray, Amhara, Oromia and SNNP, only 8% of women had any postnatal care during the first month after birth. The postnatal care that took place was conducted predominantly by nurses or midwives (60%), followed by HEWs (40%). Postnatal care was more common among women who delivered at health facilities than those who delivered at home (22). The contribution of HEWs to the provision of postnatal care is virtually absent. Only 1% of the mothers with children 0-11 months reported receiving postnatal care from HEWs within 2 days after delivery, 4% with 2-45 days (7).

Barriers to postnatal care

Major barriers to postnatal care include: 1) cultural practices that restrict a woman’s movement after childbirth, 2) lack of awareness about postnatal care services and their benefits, 3) perception that there are few risks to the mother’s or baby’s health during the postnatal period.

Cultural practices restricting a woman’s movement after childbirth: In both Christian and Muslim populations, women should not leave the house for 40 days post-partum, and especially during the first 10 days postpartum (13). Because of this, mothers rarely contact HEWs for possible support and service. Fear of evil eye and “mich” (unexplained sickness) are thought to be common among recently delivered mothers and newborns (11) (12).

Communities support the belief that the postpartum period should be a time for the mother to regain her strength, cultivate breastmilk, and bond with the baby. It is a period of relative rest for the mother, with a reduction or absence of domestic and agricultural tasks. However, the restriction of mobility also means the mother and child cannot receive postnatal care outside the household (27).

Lack of awareness about postnatal care and its benefits: There is an overall lack of understanding
about the importance of post-partum care and when it should be sought. A 2015 study conducted in SNNP found low awareness about postnatal care, when it should be sought, and why it is beneficial. Community awareness of postnatal care was significantly lower than for ANC (11). Postpartum hemorrhage was seen by many as a way of cleansing and clearing out the bad blood from pregnancy (13).

Perception that there are few risks to the mother’s and baby’s health after a normal delivery: Many women believe that if there were no complications of any sort during delivery there is no need to be checked by the HEWs. The assumption is that there is nothing to worry about once a mother gives birth safely (11) (12) (20).

**Recommendations for SBCC about PNC**

- Focus on increasing awareness of the need for postnatal care, and when it should be sought.
- Communicate about postpartum danger signs among mothers and babies that indicate the need for medical attention. This can be done during ANC and PNC, immediately after birth for mothers who deliver in health facilities, through community dialogues and media.
- Conduct additional formative research to ascertain health worker and HEW attitudes, knowledge and practices regarding postnatal care.
- Conduct context-specific formative research on cultural barriers to postnatal care.

**Newborn and child health**

Reproductive and maternal health practices—family planning, antenatal care, assisted deliveries, and postnatal care—also protect newborn’s and children’s health. In addition to promoting these practices, the Federal Ministry of Health also recommends that all children should be fully immunized against polio, pertussis, diphtheria, tetanus, measles, hepatitis B, and Haemophilus influenza type B by the time they are 11 months old. In addition, if a newborn or child develops fever and/or diarrhea, they should receive health care within 24 hours.

According to the 2011 Demographic and Health Survey (EDHS), the national Diphtheria Pertussis and Tetanus 3 (DPT3) vaccination coverage was 36.5%. In the four regions, coverage was highest in Tigray at 73.4%, followed by Amhara at 38.4%, SNNP at 38.1% and Oromia at 26.8% (4). However, according to the 2012 National Immunization Coverage Survey, the national Pentavalent31 vaccination coverage was 66%. Both figures show that there is a need for improvement in immunization coverage. Immunization increases with educational and wealth status of mothers, and is higher in urban than rural areas (28). Mothers who attend postnatal care and who had been exposed to information about maternal and child health, including immunization, are significantly more likely to fully immunize their children (28).

Treatment seeking behavior for children and newborns is often inadequate. According to the 2011 EDHS, only 27% of children under five

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1 In 2007, the FMOH replaced DPT vaccine with Pentavalent vaccine which immunizes against five disease: diphtheria, pertussis, tetanus, hepatitis B and Haemophilus influenza type B.
who had symptoms of acute respiratory infection were taken to a health care facility or provider for advice or treatment during the two weeks before the survey. Approximately one quarter of children under five years who had fever in the two weeks before the survey were taken for treatment or advice from a health facility or provider. The proportion of children with diarrhea for whom advice or treatment were sought from a health care provider increased from 13% in 2000 to 32% in 2011 (4). According to a 2013 study in the four regions, of 36 newborns with illness, only 18 (46.2%) were taken to a health facility for treatment (19).

Neonatal tetanus can be prevented by immunizing pregnant mothers, and proper care of the newborn’s umbilical cord. The cord should be tied and cut with a sterile instrument and nothing should be applied to the cord after it is cut. In the four regions, 88% of newborn umbilical cords were cut with a new or boiled blade; however one quarter did not tie the umbilical cord. Tying the cord was least common in Amhara (55%) and Oromia (74%), and most common in SNNP and Tigray regions (96%). In some places, mothers apply butter or other substances to the cord stump (29). This practice occurs in 27% of births in the four regions. It is most common in Tigray (42%) and Amhara (35%) (7).

**Barriers to immunization**

Two main barriers prevent parents from fully immunizing their children: 1) lack of understanding about immunization, and 2) lack of access to immunization services.

*Lack of understanding about immunization:* Some parents are unaware that a child needs immunization. According to one study, only 12% of mothers were aware of the need for immunization—18% in Amhara, 8% in Oromia, 11% in SNNP, and 13% in Tigray (7). Often children are only partially immunized because mothers are unaware of the need to return for the second or third rounds (22% in Amhara, 65.5% in Oromia, 2% in SNNP, and 3% in Tigray), or do not know the time or place where immunization is offered (7% in Amhara, 20% in Oromia, 20% in SNNP, and 14% in Tigray) (7).

*Lack of access:* For many people the direct and indirect costs and lack of transportation to health facilities deter them from taking their children for immunization. When asked why they had not fully immunized their children, 22% of mothers stated that they were too busy (19% in Amhara, 30% in Oromia, 17% in SNNP, and 7% in Tigray) (7).

**Opportunities for expanding uptake of immunization**

Women who received postnatal care within two months after birth are more likely to fully immunize their children, although this is not the case for all women who receive postnatal care (28).

Immunization can be made more accessible by using existing community structures such as the Health Development Army (HDA) to mobilize parents to bring their children for immunization outreach services.

**Barriers to treatment seeking for newborns and children with fever or diarrhea**

Three major barriers prevent early treatment seeking for newborns and children with fever and diarrhea: 1) lack of awareness, 2) superstitions regarding the causes of illness, and 3) poor access.

*Lack of awareness:* Knowledge of newborn danger signs among mothers, fathers, and grandmothers is low. In one study, only 29.3% of mothers could name 3 or more danger signs out of a list of 11 (19). Most mothers recognized fever (85%), poor sucking or feeding (28%), vomiting (27%), and difficult or fast breathing (24%) as signs that a newborn requires medical attention (7). In another study, grandmothers, mothers and fathers recognized
continuous crying, inability to suck and fever as signs of illness in a newborn. Difficult or fast breathing was considered a temporary problem by many (30).

Many fathers and mothers do not know that newborns can be treated at health posts and health centers. Very few parents know that HEWs can manage newborn sepsis with antibiotics (20). According to another study, caretakers of newborns often believe that no medicine exists for newborns at the health post or health center. Some believe that newborns are too small to be given medicine, especially injections (31).

Superstitions regarding the causes of illness: “Megagna” or contact with an evil spirit or power, is believed to cause newborns to fall ill. In many communities there is a general belief that the baby may come to harm if it is seen or touched by others (evil eye). Most health workers said that families still fear that potential harm may befall their newborn, or that the local leader will be angered if they allow HEWs to assess their newborns. Family acceptance of HEWs touching the baby depends on the beliefs within the home (20). Respondents in Gede Asasa, Oromia region also said that newborn illness is caused by the evil eye or the devil and take such babies to a qalicha who may prescribe an amulet or a herbal drink. Mothers and most fathers said that they would take the baby to a health facility if such treatments did not work, but prefer to call for prayers from elders rather than taking the baby to a health facility (30).

Poor access: Many women and men complain of the lack of accessible health care that they can rush to in the case of an emergency. Therefore, they have no choice but to rely on traditional medicine as it is easily accessed and readily acceptable (32). In another study, many mothers with sick newborns who did not seek care outside of the home reported that the health facility was too far, or that it is not customary to seek care outside the home for illness (7) (19).

**Recommendations for SBCC to improve immunization and health care seeking for sick children**

- Inform new parents about the recommended immunization schedule and the reasons why full immunization is important. This can be done during ANC, PNC, and immediately after delivery for mothers who deliver in health facilities. It can also be done through community forums, home visits, Family Health Cards, and media messages.

- Health centers and health posts should inform families about the services they offer, including treatment of newborn illnesses and the times and days when immunizations are offered.

- Inform parents about the most common signs of serious problems among newborns that indicate the need for medical attention.

- Build parents’ confidence in health workers’ ability to treat illnesses among newborns and children, when parents recognize signs of serious problems and seek medical attention early.
2. Malaria

Malaria is the leading communicable disease in Ethiopia. According to the Federal Ministry of Health (FMOH), in 2009/2010 malaria accounted for up to 14% of outpatient consultations and 9% of health facility admissions. About 75% of the country is malaria endemic (defined as areas <2,000 m above sea level) with two third of the population at risk. The FMOH estimates that there are 5-10 million clinical malaria cases each year, 77% of which are caused by *P. falciparum* and 23% by *P. vivax*. Approximately 70,000 people are estimated to die of malaria each year (33).

Malaria is endemic in the Western lowlands of Tigray and Amhara, Western and Eastern lowlands of Oromia and in much of SNNP, as can be seen in Figure 1.

Malaria prevalence, admissions and deaths have been declining since 2007 (34). This is most likely due to the Federal Ministry of Health’s Strategic Plans for Malaria Prevention and Control which increased insecticide treated net coverage, indoor residual spraying, prompt parasitological diagnosis, and treatment of *P. falciparum* malaria with Artemisinin-based Combination Therapy (ACT). The World Health Organization (WHO) projects that Ethiopia will achieve reductions in malaria admission rates of between 50%-75% by 2015 (34).

The vast majority of women have heard of malaria (71%), know that fever is a symptom of malaria (76%), and know that it is caused by the bite of a mosquito (71%) (33). Knowledge about malaria is lower and malaria prevalence higher in poor households than wealthy households; prevalence also increases with family size. For a unit increase in family size, the number of persons infected with malaria in the household increased by 5.1% (35).

The Federal Ministry of Health recommends the following practices to prevent and treat malaria:

- All people residing in malaria endemic areas should sleep under insecticide treated nets, with priority given to pregnant mothers and children under five years of age.
- People experiencing fever should seek medical health care within 24 hours of fever onset.
- All Malaria should be diagnosed by parasitological diagnostic test at a health facility.
- Uncomplicated *P. falciparum* malaria should be treated with ACTs; and with Quinine if ACTs fail.
- *P. Vivax* malaria should be treated with Chloroquine.

**Insecticide treated net use**

According to the 2011 Malaria Indicator Survey, 55% of households in malaria endemic areas of the country owned at least one insecticide treated net, and 24% owned more than one. Net ownership varied by region with 74% of households owning at least one net in Amhara, 66% in Tigray, 57% in SNNP, and 44% in Oromia (33). Net ownership increased with wealth quintile (33)

In malaria endemic areas (< 2,000 m), 38.2% of under-five year old children slept under a long-lasting insecticide treated net (LLIN) the night before the 2011 MIS. Net use appeared to be higher
in children under 3 years of age than among those aged 3 or 4 years. Use varied by region from 51.2% in Amhara to 46.7% in Tigray, 42.3% in SNNP, and 26.5% in Oromia. In households that had at least one net, 65% of children under five years of age sleeping under an ITN the previous night. There was little variation in use by wealth quintile in households that owned ITNs (33).

In malaria endemic areas (<2,000 m), 34.7% of pregnant women slept under an insecticide treated net the night before the 2011 MIS. Use varied by region from 48.4% in Amhara to 45.1% in SNNP, 33.8% in Tigray, and 26.7% in Oromia. Net use was higher among pregnant women in households that owned at least one net. There were wide variations across regions from a high of 78.2% in SNNP to 42.1% in Tigray (33).

**Barriers to insecticide treated net use**

The greatest barriers to net use among under-five year olds and pregnant women are: 1) households without LLINs, 2) poor appreciation for the effectiveness of LLINs in preventing malaria, 3) characteristics of nets, and 4) seasonal trends in malaria transmission.

**Households without LLINs or with old or damaged LLINs:** As explained earlier, households that have nets are far more likely to use them (33). For most families, particularly in rural areas, LLINs are considered expensive so , they rely on free net distribution. In those households, when a net is torn, dirty or looks old, they stop sleeping under it (36) (37). In many households, they use old or damaged LLINs for other purposes (38) (39). Two studies found that nets older than six to twelve months were less likely than newer nets to used for malaria prevention (36) (37). In one qualitative study in Amhara and Oromia, many respondents stopped using their LLINs because they thought nets lost their effectiveness if they were not re-treated or if they no longer saw dead insects (36). Studies in all four regions found that families that purchased their own LLINs were more likely to use them than families that received free LLINs (36) (37); and that many families, particularly in urban areas, were willing to purchase LLINs if they are “affordable” (39). Some families do not have enough LLINs for the entire family to sleep under a net.

Particularly in rural, traditional houses, families have difficulty hanging nets. The living space is often small and used for multiple purposes, making it impractical to have a LLIN hanging from the ceiling in sleep spaces (36).

**Poor appreciation for the effectiveness or need for LLINs in malaria prevention:** While many men and women clearly value LLINs for malaria prevention, respondents in several studies gave equal or higher weight to environmental management (39) (40). Environmental management included draining stagnant water, covering spring water, cleaning their compounds, and personal hygiene. According to one respondent of a qualitative study in Oromia, “As long as our environment is not clean from mosquitos, we need to use the ITN” (40).

Other men and women did not use LLINs because they did not believe that malaria or mosquitoes were a serious problem (36) (37). This belief was clustered in some communities, where many people held these beliefs (36).

**Characteristics of nets:** The shape, color, and condition of nets influence whether or not they are used. According to several studies, nets that have holes or are older than 12 months are less likely to be used; net use decreases as nets become older (36) (37). While many Ethiopians prefer blue nets that are conical over white nets or rectangular nets, there is no evidence that net size and shape influences use (41) (42).

**Seasonal trends in malaria transmission:** Malaria transmission is seasonal and unstable, particularly in areas that are between 2,000 and 2,500 meters in elevation. In several studies, respondents have indicated that they are most likely to sleep under
LLINs when they think malaria is most likely, and when mosquito density is high (36) (38) (43). Usually, this is during and just after the “rainy season.” Because peaks in malaria transmission are difficult to predict, the Federal Ministry of Health recommends that all people living in endemic areas of the country should sleep under a LLIN year round.

**Opportunities**

In studies on factors associated with LLIN use, knowledge about malaria among women is predictive of LLIN use among children (36) (37) (44) (45). Improving women’s knowledge about malaria—its causes, symptoms, prevention and treatment—can improve net use in households that own nets.

**Recommendations for Malaria SBCC**

- Provide instructions regarding care and use of LLINs, including how to hang them in traditional and modern houses; how to wash them; how to prevent damage and repair them; and how long the insecticide will remain active without re-treatment.
- Explain why it is necessary for all people in malaria endemic areas to sleep under LLINs year-long, even when it seems that there is no risk.
- Make use of every opportunity to educate women, men, and children about malaria transmission, prevention and treatment. Emphasize that sleeping under LLINs year round is the best method of prevention.
- Encourage families to prioritize pregnant women and children under-five for LLIN use, and explain why pregnant women should be prioritized. This is particularly important in Tigray.

**Early treatment seeking**

The Federal Ministry of Health recommends that children with fever should be taken for diagnosis and treatment within the first 24 hours of fever onset, and that those who are found to have malaria on parasitological test, should be treated with ACTs for *P. Falciparum* or Chloroquine for *P. Vivax* malaria. According to the 2011 MIS, this is not always the case. Among children living in malaria endemic areas, only 51.3% of children under five years with fever were taken to a health facility within 24 hours of fever onset; 16.5% received a heel or finger prick for a malaria test; and only 32.6% were treated with anti-malaria medicines (33). Some 69% sought care from a health provider or health facility. The remaining 31% sought care from traditional providers, shops or other (33).

Treatment seeking practices varied across the four regions. The proportion of children brought to a health facility or provider within 24 hours of fever onset was highest in Oromia (59.5%), followed by SNNP (46.3%), Amhara (32.2%) and Tigray (26.5%) (33).

**Barriers to early treatment seeking**

It is unclear why so many parents delay in taking children to health providers/facilities within 24 hours of fever onset. According to a study conducted in Tigray, most women knew the symptoms of malaria, and believed that modern medicine was the best treatment. A regression analysis of factors associated with treatment seeking behaviors found
that women living less than a 60-minute walk to a health facility were significantly more likely to seek malaria treatment within 24 hours of fever onset. Women who had attended health education sessions were also significantly more likely than women who had not to seek malaria treatment within 24 hours of fever onset (39).

### Recommendations

- Conduct formative research to learn more about how families commonly diagnose and treat malaria; factors that deter or facilitate them to seek health care within 24 hours of fever onset; and their knowledge about malaria diagnosis and treatment.
- As exposure to health education is associated with early treatment seeking among women, integrate messages concerning the need for early diagnosis and treatment of fevers among under-five year olds with other child health communication.

### 3. Nutrition

Although nutritional status has improved over the past 16 years, malnutrition is still rampant in Ethiopia. Nationally, 40% of children under age five are stunted, defined as below minus two standard deviations from median height for age, while 19% are severely stunted indicating the high level of chronic malnutrition in Ethiopia. Stunting levels are above the national average in Tigray (46%), SNNP (44%) and Amhara (42%), and below the national average in Oromia (38%). Nationally, 25% of children are underweight, and 7% severely underweight. In Tigray and Amhara, the proportion of underweight children exceeds the national average at 31% in Tigray and 28% in Amhara; Oromia (23%) and SNNP (26%) are both below the national average. Nine percent of Ethiopian children are wasted, and three percent are severely wasted, defined as below minus two standard deviations from median weight for height. The level of wasting is 14% in Tigray, 9% in Amhara, and 7% in Oromia and SNNP (1).

Anemia is also a serious problem in Ethiopia. Forty-four percent of children are anemic while 22% of pregnant and 19% of lactating women are anemic (4).

Adult malnutrition is more common in males than in females. Twenty-seven percent of women are undernourished (BMI less than 18.5 kg/m²) whereas 37% of men are undernourished (4).

Mothers with low educational status are more likely to have stunted, wasted or underweight children (33). According to studies in Oromia, children are also more likely to be underweight, stunted or wasted if they: live in lowland kebeles (46); have diarrhea (46) (47) or fever (47); have underweight mothers (46), or mothers who did not receive ANC or family planning services (46); or are the fourth to sixth-born child in the family (46). Children of illiterate fathers (46) and male children (47) (46) were also more likely to be underweight. Children who were served food with the family and for whom food was not served separately were two times more likely to be wasted than those who were served food separately (46).

In some communities, stunting is considered normal. Interviews with opinion leaders in Tigray and SNNP indicated that community members perceive malnutrition as starvation due to a complete lack of food. When asked why some
children are well-built and other are not, most of the influential leaders said that it is due to the “divine order of God which we can do nothing about.” Some believed that malnutrition is the result of “evil eye.” Others thought an unfaithful husband or wife is the cause (48).

The Federal Ministry of Health recommends the following practices to improve nutrition among children:

- Pregnant and lactating women should eat a balanced diet from diverse food groups;
- Pregnant women should eat one additional meal each day, and lactating women should eat two additional meals each day for the first 6 months after childbirth;
- Mothers should initiate breastfeeding within the first hour after delivery;
- Mothers should exclusively breastfeed their babies until they have completed their sixth month of life. Exclusive breastfeeding means that the mother gives only breastmilk and nothing else to eat or drink.
- Parents should initiate complementary feeding after the child is six months old, according to Infant and Young Child Feeding (IYCF) guidelines:
  - Continue frequent, on-demand breastfeeding until the child is two years or older;
  - Increase the number of times the child is fed as the child gets older. Begin with 2 – 3 meals per day for infants six – eight months of age; increase to 3 – 4 times per day with one or two additional snacks for infants 9 – 23 months of age;
  - Feed the child with a variety of foods from each of the four food groups each day (Dairy, protein, cereals, and fruits and vegetables).

**Nutrition during pregnancy and lactation**

Women do not usually increase the number of meals they eat during pregnancy and lactation. They generally eat the same foods that other family members eat, and share meals with other family members. Many women do not think that the nutrition recommendation to “eat an extra meal” is doable, because it would mean cooking an extra meal for themselves and eating it without the family. Most consider this behavior to be selfish (49).

Pregnant and lactating women eat the same foods as their families do—those that are available in the household. This means that most do not regularly consume foods across the different food groups. Most eat primarily legumes (including pulses) and cereals (breads, pastas, etc.) – injera (made from teff) being the main stay of their diets. They rarely consume animal-source foods; eggs are the most common animal-source foods, while meat and poultry are available mainly on holidays. The amount of vegetables and fruits in the diet fluctuates based on seasonal availability. Some women avoid some foods during pregnancy, believing that they are harmful. For example, some stop eating fruits, which they believe will make their fetus “fatter” and more difficult to deliver (49).

During pregnancy, some women decrease their food intake over. Early during pregnancy, this is often because they experience nausea and aversions to certain food. Later in pregnancy, some women deliberately decrease their food intake in an effort to have a smaller fetus and an easier delivery (49).

During the first 20-40 days after birth, lactating mother usually increase her consumption of animal-source foods and consumes other foods and beverages she believes will help her regain her health and strength quickly. Following this recuperation period, lactating women revert to their normal diets, with the exception of extra efforts to consume beverages that are believed to increase breast milk production and produce thicker, more nutritious breast milk (49).
Barriers to increased food intake during pregnancy and lactation

The main barriers to increasing food intake during pregnancy and lactation are: 1) socio-cultural practices, 2) nausea, and 3) fear of experiencing difficult childbirth (49).

In most regions of Ethiopia, women are expected to eat when the rest of the family eats, and to prioritize husbands and children when preparing and serving food. Most women and men perceive the preparation of food for oneself and eating food alone as culturally inappropriate. Women are expected to share the limited family food resources with everyone in the household (49).

As mentioned earlier, many women limit the amount they eat during pregnancy. During early pregnancy, this is due to nausea and aversions to certain foods. Later during pregnancy, many women restrict their food intake in an effort to have a smaller baby that will be easier to deliver (49).

Barriers to eating a well-balanced diet during pregnancy and lactation

The biggest barriers to eating a well-balanced diet are: 1) limited access to sufficiently clear information about dietary diversity, 2) agricultural production and livestock rearing are primarily seen as a means of income generation not a source of nutritious foods for the family (49).

Most women and men know that they should eat foods from all five food groups, however, they do not understand what foods belong in each food group. Many women complain that HEWs do not clearly explain what the food groups are. As a consequence, many women try to consume a variety of carbohydrates (e.g. bread, injera, potato, macaroni) each day, thinking they are eating a diversified diet. Most pregnant and lactating women report that their ideal diet would include meat and eggs, which they believe are important for "balance" or for a "balanced" diet. Far fewer think of fruits and vegetables as ideal foods (49).

Men usually make decisions about what crops to grow and livestock to rear based on their ability to earn income. Unfortunately, what will generate the most income does not usually provide a well-balanced diet for the family. Men lack sufficient information to guide them in decision making about what foods to raise and grow, what foods to reserve for family consumption, what foods to buy, what foods to sell, and how to counsel their wives (49).

Opportunities

Women aspire to maintain their beauty, and many believe that a woman must be well-nourished to be beautiful. Men are motivated to support improved maternal diet to have an intelligent baby, who will grow up to do well in school and in life. Both men and women aspire to be more "modern," and believe the "modern" diet and way of living can lead to better health and economic outcomes (49). Communicators can define well-balanced diets as modern practices.
Recommendations

- Improve the way in which HEW and other health workers describe the food groups and which foods belong in each group when educating and counseling pregnant and lactating women.
- Strengthen the ability of agricultural extension workers to advise farmers about which crops to raise for family consumption and which to grow for income.
- Stimulate dialogue within families about culturally acceptable ways for pregnant and lactating women to eat additional food between meals.
- Motivate men and women to increase dietary intake and ensure a diversified diet among lactating and pregnant women by linking these practices to health and beauty among women, and health and improved school performance among well-nourished children.

Exclusive breastfeeding

Virtually every child in Ethiopia is breastfed, and the duration of breastfeeding is long. Ninety-five percent of children in Ethiopia breastfeed up to age 12 – 17 months and 84% breastfeed up to age 18 – 23 months are breastfed (4).

Exclusive breastfeeding is less common. According to the 2011 EDHS, only 52% of infants are exclusively breastfed for the first six months of life; 45% in Tigray, 38% in Amhara, 53% in Oromia, and 66.5% in SNNP. Pre-lacteal feeds, defined as providing any food except mother’s milk provided to a newborn before initiating breastfeeding, are common. Twenty-seven percent of newborns were given pre-lacteal feeds within the first three days of life; 26% in Tigray, 48% in Amhara, 22% in Oromia, and 10% in SNNP (4). A study conducted in Raya Kobo District in 2013 revealed that 38.8% of newborns were provided with pre-lacteal feeds (50). In addition to pre-lacteal feeds, many infants were given water, cow’s milk, or juice, and the median duration of exclusive breastfeeding was 3.1 months in Tigray, 4.6 months in Amhara, 1.8 months in Oromia, and 2.2 months in SNNP (4). Many women in all three regions dispose of colostrum, a practice which increases the likelihood of pre-lacteal feeding (4) (48) (50).

Barriers to exclusive breastfeeding

The main barriers to early initiation of exclusive breastfeeding are 1) lack of awareness about the importance of exclusive breastfeeding, 2) misconceptions related to breastfeeding and 3) traditional beliefs surrounding illness, sanitation and superstition.

Mothers who are not aware of the dangers of pre-lacteal feeds and the importance of exclusive breastfeeding are more likely to withhold colostrum and introduce pre-lacteal feeds (50). In most Ethiopian families, pregnant women are advised by their mothers-in-law, mothers or other female family members. Probably due to this, women who deliver at home are much more likely to discard colostrum and introduce pre-lacteal feeds than mothers who deliver in health facilities (8) (50). A study in Oromia in 2009 revealed that mothers who received postnatal education on breastfeeding were 2.7 times more likely to initiate breastfeeding within one hour after delivery than those who did not (51).
Misconceptions and traditional beliefs vary from community to community. Some more common beliefs include:

- Colostrum is harmful to the child and might make the child sick (48)
- Breastmilk cannot provide enough nutrients for an infant up to six months old (48)
- Encouraging breastfeeding when a child is ill will exacerbate the illness (48)
- Bottle feeding is more sanitary than using cups or hands to feed (52)
- Pre-lacteal feeding will "clear the infant's stomach" or prevent "evil eye" (50).

**Recommendations for SBCC about exclusive breastfeeding**

- Provide information for pregnant women, their mothers-in-law, and husbands about the rationale for initiating breastfeeding, avoiding pre-lacteal feeds, and exclusively breastfeeding for the first six months
- Promote exclusive breastfeeding during antenatal care, home visits to pregnant women, and community meetings of pregnant women
- Promote health facility deliveries, and encourage health providers to encourage mothers to initiate exclusive breastfeeding immediately after birth.

**Complementary feeding**

Complementary feeding practices are much more of a problem than exclusive breastfeeding. In 2011, at 6-9 months of age, only about half of children received complementary foods. Only 4% of children 6-23 months were fed in accordance with IYCF recommendations; and only 5% were fed foods from all the recommended four food groups (4)

**Barriers to complementary feeding**

Key barriers to proper complementary feeding practices are: 1) misconceptions and traditional beliefs, 2) poor availability and lack of resources to purchase diverse foods, and 3) lack of information about complementary feeding recommendations.

As with breastfeeding, misconceptions and traditional beliefs abound and vary from one community and family to another. Some more common misconceptions surrounding complementary feeding include:

- Children cannot digest meat or other animal products (52)
- Children will choke on thick porridge (52)
- Feeding a sick child extra food will cause further illness, diarrhea, and vomiting (48)
- Bottle feeding is a good way to feed a child thin gruel, and keep the food covered and clean (48)
- Foods such as kale, banana, egg, pumpkin, carrot and green vegetables are “too strong” for young children to digest (48)

Many mothers and fathers are not aware of the IYCF recommendations. Instead, they rely on the advice from family members and follow their family's traditional feeding practices (53).

Most mothers are responsible for preparing food for the family, including the children. However, they are not responsible for purchasing or growing the food that the family and the children eat. This is
usually the husband’s responsibility. Consequently, without their husband’s involvement in decisions regarding what foods to produce or buy for the child’s consumption, it is difficult for women to implement the IYCF recommendations for diversified complementary feeding (53).

**Opportunities**

Women who attend ANC, deliver at health facilities, and attend post-natal care are much more likely to exclusively breastfeed and to introduce complementary feeding according to IYCF recommendations. Likewise, women who practice family planning and have longer birth intervals are less likely to have stunted children (1).

Women who have received advice about exclusive breastfeeding and are aware of its benefits are much more likely to exclusively breastfeed (51) (54).

Most importantly, parents—both mothers and fathers—want to have healthy children. This is a strong motivation to adopt healthy child feeding practices (53).

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**Recommendations**

- Inform mothers, fathers and grandmothers about the IYCF complementary feeding recommendations and why they are important.
- Contextualize complementary feeding guidelines to local situations, share locally-appropriate recipes and demonstrate how to prepare complementary foods from a variety of food groups through live demonstrations, videos, and radio programming.
- Share testimonies from parents who have exclusively breastfed and introduced complementary foods according to IYCF recommendations with their healthy children.
- Inform mothers, fathers, and grandmothers about exclusive breastfeeding and its importance, reassuring them that breastmilk has all the nutrients an infant needs until he/she is six months old.
- Provide opportunities for mothers and fathers to speak with resource persons and health workers to dispel misconceptions and address concerns about complementary feeding and exclusive breastfeeding.
- Include counseling about exclusive breastfeeding and complementary feeding during antenatal and postnatal care.
4. Prevention of mother to child transmission of HIV

HIV prevalence has significantly decreased in Ethiopia over the past decade. An estimated 753,100 people are living with HIV in Ethiopia. With a declining national HIV prevalence, in 2011 it was estimated to be 1.5% (4) and 1.1% in 2015 (55); urban areas are more affected than rural areas, while females are twice as likely to be HIV infected as males. Antenatal care (ANC) sentinel surveillance data showed that the prevalence of new infection among pregnant women 15-24 years of age has declined from 5.6% in 2005 to 3.5% in 2007 and 2.6% in 2011 (56). HIV prevalence varies by region, as can be seen from figure 2 (55).

Figure 2. HIV Prevalence in Ethiopia by Region

New infections among children have also been steadily declining. According to HIV/AIDS Prevention and Control Office (HAPCO) estimates, the number of new HIV infections among children 0–14 years of age have decreased from 13,008 in 2011 to 2,679 in 2015 (57).

The FMOH instituted the Elimination of Mother to Child Transmission of HIV Strategy in 2013, which recommends the following practices to prevent mother to child HIV transmission:

- All pregnant women should get tested for HIV during their first antenatal visit for each pregnancy
- If a pregnant woman is HIV-positive, her husband should also get tested for HIV, and if he is positive, he will be enrolled in chronic care for HIV
- All HIV-positive pregnant and lactating mothers should begin life-long ART.
- All babies of HIV-positive pregnant women should:
  - Receive Nevirapine from birth until six weeks of age
  - Receive a PCR DNA test by six weeks of age or at the first encounter thereafter
  - If PCR is positive, receive full ART
  - If PCR is negative, get tested a second time six weeks after cessation of breastfeeding and managed accordingly.

Pregnant women need to attend ANC, deliver at health facilities, and attend postnatal care to successfully protect their babies from HIV. They also need to disclose their status to their husband and adhere to ART if they are HIV-positive.

Knowledge of PMCTC

Most men and women know that HIV can be transmitted from mother to child, and that transmission can be prevented through administration of ARVs. According to the 2011 EDHS, 77% of women and 76% of men knew that HIV can be transmitted to a baby through breastfeeding. More than four in every ten women (44%) and more than half of men (53%) knew that the risk of transmission can be reduced through the use of ARTs during pregnancy (4). Similarly, a 2012 qualitative study conducted in Gamo Goffa Zone, SNNPR, found high levels of awareness and knowledge regarding the importance of using PMTCT services to prevent maternal transmission of HIV to their children. Most men and women indicated that ANC visits, HIV testing, hospital delivery, use of ARV drugs, and avoiding breastfeeding were measures that could
prevent HIV transmission to an unborn child (58). Another study, looking at male partners’ knowledge of PMCTC, found that 45% of men knew that HIV counseling and testing of pregnant women and their male partners and provision of ARV (65.2%) could reduce mother to child transmission of HIV (56).

Knowledge of mother to child transmission varies by age, and urban/rural status. According to the 2011 EDHS, urban men and women were more likely to know about MTCT than rural men and women. Also, older men and women 40 – 49 years or age were less knowledgeable about MTCT than younger men and women (4).

**HIV testing during pregnancy**

Most pregnant women do not get tested for HIV. According to the 2011 EDHS, among women who gave birth during the 2 years before the survey, only one woman in every five (20 percent) was tested for HIV during antenatal care and received their test results, and 2% were tested but did not receive the test results. This low rate was a factor of low antenatal attendance (41%) (4) as described earlier. It also indicates that only about half of all antenatal clients received HIV testing. The Multisectoral HIV Response M&E Report for EFY 2005 (2012/2013) reports that among the women attending ANC, less than 70% were tested for HIV (59).

The proportion of pregnant women tested for HIV varies greatly by region. In the four regions, Tigray had the highest proportion tested at 46.7%, followed by Amhara (22.2%), Oromia (17.7%) and SNNP (15.4%) (4) (60).

Very few male partners of pregnant women get tested for HIV. According to one study, only 20% of antenatal clients were accompanied by their partners. Among male partners who accompanied their pregnant wives, 82.1% were tested and counseled for HIV at ANC or showed test results done elsewhere. HIV-positive pregnant mothers who knew their sero status were less likely to bring their partner to ANC than those who didn’t. However, mothers who had ever been tested together with their male partner were five times more likely to bring their husband to ANC clinic than those who have never been tested and counseled together with their male partner (61). This was corroborated by another study where only 55.1% of men with pregnant partners had been invited to attend PMTCT by ANC clinics (56).

**Barriers to HIV testing during pregnancy**

Barriers associated with ANC attendance also affect HIV testing during pregnancy, and are discussed under the section on antenatal care. An additional barrier is lack of technical competence and commitment to offer PMTCT among health workers in some facilities (62). In 2012/2013, only 64.4% of public hospitals and health centers providing ANC also offered PMTCT services (59). In addition, fear of HIV-positive results and reluctance to disclose HIV-positive test results discourage some women from bringing their husbands with them to ANC. One study in Mekelle, Northern Ethiopia, found that antenatal clients feared violence and divorce if they tested positive in front of their husbands (61).

Male partners often do not accompany their wives to ANC because they and their partners do not see the need. According to one study of male partner involvement in PMTCT, male respondents said that they do not have time to wait at ANC clinics. Some 33% stated that providers do not invite men to enter the clinic, even when accompanying their wives. Men felt excluded from the ANC session as they waited outside. In addition, half of the men said that PMTCT clinics were only for women and children—not for men (56).
ART uptake among HIV-positive pregnant women and their babies

Approximately three quarters of HIV positive pregnant women and even fewer of their HIV-exposed babies received ARVs in 2014 (59).

Barriers to ART uptake among HIV-positive pregnant women and their babies

Many of the reasons why women do not initiate ARVs for themselves or their babies have to do with health systems issues, including inadequate staffing of PMTCT services, poor integration of ARV and RMNCH services, inadequate ARV supplies and poor monitoring and referral systems that constrain tracing of clients lost to follow up (58).

Fear of stigma and partner rejection also prevents many HIV positive women from returning to PMTCT services, delivering at health facilities, and giving their newborns Nevirapine as recommended. According to a study in SNNPR, many HIV-positive pregnant women avoid returning to health facilities where they were diagnosed because they want to keep their status from close relatives and significant others who play an active role during child birth (58). According to another study in Arba Minch, focus group participants reported that HIV positive women who want to keep their status confidential avoid returning to the facilities where they were diagnosed, preferring to deliver at home where their status is unknown (62).

Recommendations for SBCC about PMTCT

- Integrate PMTCT information with RMNCH communication. Promoting ANC, health facility deliveries and PNC will increase HIV testing during pregnancy, and initiation of ARVs for HIV-positive mothers and babies.
- Encourage HIV testing and disclosure among couples, especially during pregnancy.
- Address HIV related stigma through community dialogue.
- Work with health workers to make PMTCT services more male-friendly.

5. Water, sanitation and hygiene

Ethiopia has made great improvements in access to safe drinking water and ending open defecation since 1990. The proportion of households with improved drinking water sources increased from 13% in 1990 to 57% in 2015 (63). The magnitude of increase was greatest among rural households, where households with improved drinking water sources increased from 3% in 1990 to 40% in 2015; urban households with improved drinking water sources increased from 84% to 93% over the same time period (63). The proportion of households practicing open defecation also decreased significantly from 92% in 1990 to 29% in 2015; a decrease from 100% to 34% among rural households and 39% to 6% among urban household (63).

Despite these improvements, the coverage of safe water and sanitation facilities is lower in Ethiopia than other African countries (64). An estimated 42 million Ethiopians did not have access to safe water, and open defecation was practiced by 28.3 million Ethiopians in 2015 (65).

Hand-washing is also uncommon. According to the Federal Ministry of Health, less than 20% of the population in Ethiopia washes their hands with soap at critical times (66). Other studies in communities across Ethiopia indicate that between 20% and 36% of the population wash their hands with soap at critical times (67) (68) (69) (70) (71) (72) (73). According to the PMA 2014 survey, less than 2% of the population live in homes that have a dedicated place to wash hands. Hand-washing stations were more common in urban areas than in rural areas, with 11.6% of the urban population living in homes that reportedly have a hand-washing station, versus
1.9% of the rural population. Wealth is a factor in the presence of hand-washing stations. At 11.7%, the wealthiest quintile is the only quintile in which more than 2% of the population has a dedicated place to wash hands in their home. In all settings and quintiles, the majority of hand-washing stations was observed to be near sanitation facilities. Most facilities did not have soap, but had water (74).

Poor sanitation and hygiene practices coupled with unsafe drinking water contribute greatly to childhood diarrhea and child mortality rates. Diarrhea is a major public health problem in Ethiopia. According to the Ministry of Finance and Economic Development, 20% of childhood deaths were due to diarrhea (75). Other studies attributed 30% of childhood deaths in southwest Ethiopia and 27% of childhood deaths in central Ethiopia to diarrhea (76) (77). According to a secondary analysis of the 2011 EDHS for Benishangul Gumuz, children living in households where their main drinking water source was not improved were two times more likely to have diarrhea than children from households that had improved water sources. Children living in households with no sanitation facility were six times more likely to have diarrhea than children from households with sanitation facilities. The analysis also found 60% less childhood diarrhea in households that practiced safe disposal children’s feces (77).

Poor hand-washing and sanitation practices also contribute to high rates of Trachoma in Ethiopia. In 2006, an estimated 1.2 million people had Trachomatous Trichiasis, the severest form of Trachoma, and risked blindness without immediate intervention (78). Trachoma is caused by a bacteria that lives in human feces. The bacteria is spread by flies that breed in the feces. It is also transmitted from person to person through unclean hands and face cloths (79). The World Health Organization recommends face and hand washing and environmental sanitation as preventive measures. In 2007, national prevalence of active Trachoma among children 1-9 years of age was 40.14%, with considerable regional variation. The highest prevalence was in Amhara (62.6%), Oromia (41.3%), SNNP (33.2%), and Tigray (26.5%). Trachoma was four times more common in rural than urban children (42.5% rural versus 10.7% urban), and more common in girls than boys (80) (81). Community based cross-sectional studies conducted more recently in West Showa, Amhara region and Gonji Kolella district, North West Ethiopia, found active Trachoma in 53.9% and 23% of children 1–9 years of age respectively (81) (82).

### Recommended actions to improve water, sanitation and hygiene

The Federal Ministry of Health recommends two priority actions: 1) all children and adults should wash their hands with soap or ash and water at critical times (before eating or feeding a child, before cooking, after using the latrine, after cleaning a baby’s or an adult’s bottom or disposing of feces, and before and after taking care of a sick person), and 2) all children and adults should use improved and clean latrines and avoid open defecation.

### Barriers to handwashing at critical times

Knowledge of the times when one should wash hands and the connection between hand washing and diarrhea was very high in most studies among adults and children (67) (69) (70) (73) (83). However, as described above, the actual practice of handwashing at critical times is far less. From the little behavioral research concerning handwashing, three important barriers emerged: 1) hand washing
is not a normative practice, 2) it is not considered a priority by communities or families, and 3) buying soap and building a handwashing station are considered expensive.

Handwashing is not a normative practice: Children’s handwashing behavior is greatly influenced by the behavior of their parents and peers. According to one study, children whose parents had been trained on hygiene and sanitation were significantly more likely to practice handwashing at critical times (83). Adults as well are influenced by the behavior of their family members, peers, and leaders. With only one in five adults washing their hands at critical times, there are few adult role models and little social pressure to adopt the practice.

Not prioritizing handwashing: The 2015 National WASH Sustainability Index Tool study concluded that neither schools nor communities prioritize hygiene practices (67). Plan International conducted a study in 2013 to assess factors influencing the sustainability of open defecation free status in rural communities. One of the criteria for open defecation free (ODF) status is presence of a handwashing station with soap or ash. Just 2 years after receiving ODF certification, 62% of households in Ethiopia no longer met the criterion for handwashing. The study concluded that handwashing was given lower priority than latrine use by Community Led Total Sanitation and Hygiene (CLTSH) programs, and was not a priority for the families that did not maintain the practice of handwashing (84). Interestingly, families that maintained their handwashing stations and practice were from the same economic and social classes as those who did not, so recidivism was not associated with economic factors.

Cost of soap and materials for a handwashing station: For many rural households, the costs of buying soap and materials to build a washing station are beyond their means. This was given as a reason by many of the households without washing stations in the Plan International study (84).

Opportunities

The desire to have a healthy family is a strong motivator for households to become ODF, which includes handwashing at critical times (84). Making the connection between hand washing and prevention of communicable diseases like diarrhea, respiratory tract infections and Trachoma can motivate parents to maintain washing stations and encourage the entire family to wash their hands at critical times.

Recommendations

- Conduct qualitative research to identify factors that facilitate or act as barriers to handwashing; in particular, explore normative beliefs concerning handwashing and feelings of efficacy to adopt the practice.
- Encourage community leaders and influential members of communities to adopt handwashing and promote it among their communities.
- Explain how handwashing at critical times prevents illness and protects health. Link handwashing to improved health of families.
- Work together with CLTSH partners to develop communication messaging and strategies to promote sustained handwashing among CLTSH triggered communities.
Barriers to proper latrine use

As with handwashing, the main barriers to proper latrine use are: 1) open defecation is culturally and traditionally sanctioned, 2) latrine construction and maintenance is seen as technically complicated and expensive, and 3) poorly built latrines discourage use.

Open defecation is culturally and traditionally sanctioned: Open defecation is a deep-seated traditional norm, according to the Federal Ministry of Health (66). Many people do not wish to change from open defecation to use latrines because open defecation is their tradition (67). Others feel more comfortable openly defecating, and believe it is more convenient than using a latrine (67) (84). In one study, 40% of households with latrines reported that a member of the household defecated openly, and that elders were not willing to use latrines (69).

Costs and difficulties of building and maintaining latrines: According to the ODF Sustainability Study, the most common reason cited for abandoning latrine use was the cost and technical know-how required to build and maintain a latrine. This reason was more commonly cited by women than men (84). Cost was also a reason given for not constructing latrines in the WASH Sustainability Index Assessment, as well as the lack of artisans to assist families to build latrines in many rural communities (67).

Poorly built latrines: Poorly constructed latrines without sealed covers are malodorous, attract flies, and are likely to collapse. Over the long run, poorly built latrines discourage use (85)(86). Both the ODF Sustainability Study and the WASH Sustainability Index Assessment found that people were much more likely to stop using latrines that were poorly built than those that were well constructed (67)(84). According to the 2011 EDHS, mothers/caregivers from households with improved latrines were almost twice as likely to use them for child feces disposal as those with unimproved latrines (4).

Opportunities

People who change from open defecation to sustained latrine use often do so because using a latrine offers greater privacy, security and comfort. Latrines protect them from being bothered by insects and animals, and being observed by others. Latrines are more comfortable in that one does not need to go to the bush to defecate, particularly at night or when it is raining (84). These could be good motivators for latrine use.

As with handwashing, the desire to have a healthy family is a strong motivator for households to become ODF (84). Making the connection between latrine use and prevention of communicable diseases like diarrhea, intestinal worms and Trachoma can motivate parents to maintain latrines and encourage the entire family to use them and keep them clean.

Communities with leaders who advocate for latrine construction and use, and discourage open defecation, are more likely to become and remain open defecation free. Cohesive communities that support one another to build and maintain latrines are more likely to sustain open defecation free status.
**Recommendations for SBCC to promote latrine use**

- Work closely with CLTSH partners to develop communication strategies that will improve the sustainability of latrine use.
- Consider focusing communication in communities that have already been triggered for CLTSH, with an aim of preventing families from abandoning latrine use.
- Work with leaders at all levels to model latrine use with their families; give them opportunities to share their experiences, including how latrine use has improved their lives.
- Through interpersonal communication, media and print materials, draw the link between latrine use and improved health.

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6. **Tuberculosis (TB)**

Ethiopia is one of the 22 countries in the world with the highest burden of TB. According to the 2014 Global TB Report, the prevalence of all forms of TB is estimated at 200 per 100,000 population with an annual TB mortality rate of 33 per 100,000 population. Tuberculosis was responsible for the death of an estimated 33 individuals per 100,000 population in 2014 (87).

Ethiopia is also among the high burden countries for multi-drug resistant TB and TB-HIV co-infection. Among newly diagnosed cases, 1.6% were multi-drug resistant; among retreatment cases, 12% were multi-drug resistant in 2014 (87). Ten percent of TB cases were HIV positive, but only 75% of TB patients knew their HIV status (87). Some 96% of newly diagnosed HIV-positive clients were screened for TB between 2010 and 2015; of those, 9.1% had active TB (88).

TB prevalence varies by place of residence and age. Women and men between the ages for 15-34 comprise 55% of all TB cases in Ethiopia (89). TB is more common among men and women who are pastoralists, followed by rural residents. Urban residents have the lowest prevalence of TB (90). TB prevalence may be higher and treatment success rate (TSR) lower in congregate settings like universities and prisons. A retrospective review of records at Gondar University found that the prevalence of all forms of TB per 100,000 University students ranged from 297.6 in 2009 to 404 in 2011. The treatment success rate among students in the University was lower than nationally, ranging from 58.1% in 2009 to 82.9% in 2011 (91). A study conducted in 2013 revealed that the prevalence of TB in Ethiopian prisons is 4.9%, which is much higher than that of the general population (92).

The Federal Ministry of Health recommends the following practices to control tuberculosis:

- Opening windows and ventilation to prevent the spread of TB, especially in congregate settings (eg. prisons, public transport and schools)
- Any person with a cough for more than two weeks should seek health care and be evaluated for TB
- Any person diagnosed with TB should adhere to treatment for a minimum of six months
- Isoniazid (INH) prophylaxis among people living with HIV
- TB screening at every health facility visit for people living with HIV (93).
Early treatment seeking for TB

Case detection is low in Ethiopia compared to other countries. According to the 2015 Global TB Report, only 62% of TB cases are detected. Encouragingly, 89% of detected TB cases were treated successfully in 2014 (87).

Studies regarding health-seeking behavior for TB indicate that most patients with TB symptoms delay or avoid visiting health facilities for screening and treatment (94) (95) (96). For instance, in a study in Jimma zone, 46.2% of the TB suspects did not seek help; 25.2% contacted a health institution; 26.3% went to drug vendors; and 6.1% self-medicated. The overall median delay to seek help somewhere (except visits to traditional healers) was 4 weeks (range 2–52 weeks) (97). In a study conducted in Amhara, a significant proportion (45.3%) of TB suspects self-treated rather than visiting health facilities (98). In a study in rural Amhara, although 78% of TB suspects sought care and 60% visited modern health providers, 18% sought traditional health care. The median time of first health care action after the onset of symptoms was 30 days (99). Men are more likely to postpone treatment than women.

Most people in Ethiopia are aware of TB, its symptoms, and that TB can be treated and cured. A study in Southwest Ethiopia found that 74.4% of respondents knew that a cough for more than two weeks was a symptom of TB, and 50.6% knew that coughing blood is a symptom (100). According to the 2011 EDHS, 80% of women and 89% of men knew that TB can be cured (4). Knowledge that TB can be cured was more likely the more educated a person is; and urban men and women were more likely to believe TB can be cured than rural men and women. Women in SNNP were the least likely to believe that TB can be cured (66%) (4).

Barriers to early treatment seeking

The main barriers to early treatment seeking are: 1) low perception of risk, 2) TB-associated stigma, 3) lack of knowledge regarding symptoms of TB, and 4) external constraints such as distance to health services and costs of transportation.

Low perception of TB risk: Studies in Amhara and Oromia indicate that many people do not consider TB to be very serious, and many do not consider themselves at risk of getting TB. In a study in Amhara region, only 36.5% of study participants considered pulmonary TB as very serious; and only 37.4% thought they might acquire TB at some time (99).

Stigma: Stigma also prevents some people from seeking treatment from a health facility. According to the 2011 EDHS, 26% of women and 18% of men said that if a family member had TB, they would want to keep it a secret. This attitude was more common among rural than urban men and women, and decreased with increasing education and wealth (4). In a study in Jimma zone, 51.3% of respondents said that other people would think less of them if they knew they had TB, and 39.5% said they would be embarrassed if they had TB. Thirty percent of respondents thought that other people would avoid them if they had TB and 20% thought that TB would have an effect on finding a partner for marriage, and the willingness of the partner to have sex (97). Participants also believed that TB and HIV have similar symptoms and people are afraid of TB patients because they are associated with HIV (97).

Lack of knowledge regarding symptoms of TB: While most Ethiopians are aware that a cough that lasts longer than two weeks is a symptom of TB, there are still about one quarter of Ethiopians who are not aware of this.

External constraints: According to a literature review, several studies have found that high transportation costs and long distances to health facilities cause
some people to delay seeking treatment for TB symptoms (101).

**Opportunities**

Targeting chronic coughers for screening can improve TB case detection, according to a community randomized trial conducted in Southern Ethiopia in 2008. In intervention kebeles, HEWs were trained and deployed to identify and encourage chronic coughers to get screened for TB. In control kebeles, no such action was taken. The mean case detection rate was higher in intervention kebeles compared to control kebeles (122.2% vs. 69.4%) (102). A cohort study of chronic coughers and neighborhood controls (non-chronic coughers) was also conducted in SNNP in 2012. Chronic coughers were 13.5 times more likely to develop smear-positive TB as compared to the neighborhood controls (103).

**Recommendations for SBCC concerning early treatment seeking for TB:**

- Design messages that stress the severity and dangers of TB if not treated early.
- Prioritize chronic coughers for TB screening.
- Increase the proportion of people who know the common symptoms of TB.
- Destigmatize TB by sharing personal stories of people who had TB and successfully treated it.
- Stimulate dialogue and discussion about TB to correct misconceptions and destigmatize the disease.
- Target populations in congregate settings (prisons, university dormitories, etc.) and people living with HIV for TB communication.

**Treatment adherence**

According to WHO, 11% percent of TB patients in Ethiopia have unsuccessful treatment outcomes (87). Most of them die, some default or stop taking their medicines. Three studies of unsuccessful treatment outcomes found that 30 – 35% of TB patients defaulted (104) (105) (106). According to a retrospective study in North East Ethiopia, 5.0 % of patients had unsuccessful treatment outcomes, of whom 35.3 % defaulted, 58.6 % died and 6.1 % had treatment failure (104). Another study of TB patients in two health centers in North East Ethiopia found that 56.6% were cured, 36.4% died, 13.4% defaulted, and 3.6% had treatment failure (105). A case-control study of 990 records from patients with unsuccessful treatment outcomes compared to TB patients who completed treatment or were cured had comparable results. The majority of cases with unsuccessful outcomes died (64.2%), followed by defaulters (30.3%), and those who had treatment failure (5.5%) (106).

Patients are most likely to stop taking their medications when they feel well, do not know how long they are supposed to continue taking their medication, live a long distance from a health facility, are taking re-treatment because of unsuccessful treatment in the past, or are co-infected with HIV (104) (105) (106). More educated and literate clients are more likely to adhere to their treatment (97) (100).
Barriers to treatment adherence

Key behavioral barriers to treatment adherence include poor understanding of the required treatment regime, low risk perception, poor treatment outcome expectations, and external constraints such as distance to a health facility and transportation costs.

Opportunity

According to a multi-country study that included Ethiopia, compliance with TB treatment was more likely among patients with good knowledge and who perceived their illness as serious, and who believe that treatment would alleviate the condition. Various studies in Ethiopia also indicate that risk perception, outcome expectancy, self-efficacy, and provider-patient interaction are all associated with TB treatment adherence (101).

Recommendations from SBCC concerning TB treatment adherence

- Ensure that TB patients are clearly informed how long their treatment will continue, and encouraged to continue taking their medication even after symptoms end.
- Provide testimonies of successful treatment from TB patients who completed their full course of treatment through videos, radio recordings, and during community events.
- Develop communication messages about the seriousness of TB if not completely treated.

Prevention of TB

Prevention behavior is closely associated with correct knowledge of TB transmission. While most people are aware that TB can be treated and are familiar with major symptoms of TB, far fewer know how TB is transmitted. According to the 2011 EDHS, only 55.6% of women and 65% of men knew that TB is spread through the air by coughing (1). According to the study in Jimma Zone, 50.4% of respondents thought TB is caused by “evil eye”, and 15.9% by witchcraft or Satan. Only 33.7% said TB is caused by germs (100). Similarly, in another study in Jimma Zone, most focus group discussion participants believed TB was caused by exposure to cold air. Others mentioned alcohol, khat, and exchange of drinking and eating utensils with a TB patient (97). In a study in Amhara region, inhaled droplets through coughing and sneezing were recognized as the most common source of TB by 79.9% of respondents. However, exposure to dust (65.4%), exposure to cold (62.2%) and drinking raw milk (44.8%) were also mentioned as important modes of transmission (98).

More educated, literate and wealthy people are more likely to know how TB is transmitted than others (4) (97) (100).

Preventive measures are also not well known. In one study, 69.9% of participants cited “avoiding coughing in front of people” and 63.1% cited “proper disposal of sputum” as preventive strategies (97). In another study in Amhara region, 46% of respondents said that transmission can be prevented by closing windows, and 46% said TB can be prevented by avoiding sex (98).
The FMOH recommends that all HIV-positive clients who do not have TB should take Isoniazid (INH) prophylaxis. However, only 18% of eligible HIV-positive clients were provided with INH prophylaxis during 2010 - 2015. The performance is lower than the national average in all the four priority regions at 14% in Amhara, 16% in Oromia, 6% in SNNP and 8.5% in Tigray (88).

Barriers to TB prevention

The greatest barrier is lack of understanding about how TB is transmitted, and what should be done to prevent its spread.

☑️ Recommendations for SBCC promoting TB prevention

- In addition to information about the signs of TB, and how to treat it, include information about how TB is spread and how to prevent transmission. This information is particularly important for HIV-positive clients, people living with TB patients, people living in congregate settings, and people with chronic coughs.
AUDIENCES
Many of the recommended practices have similar or overlapping audiences and will lend themselves well to integrated messaging. Common audiences are summarized in the table below.

<table>
<thead>
<tr>
<th>Priority Audiences</th>
<th>Recommended Health Practices</th>
</tr>
</thead>
</table>
| Married women 15 - 49 years of age                     | • Attend antenatal care at least 4 times, beginning in first trimester  
• All children and adults should wash their hands with soap/ash and water at critical times  
• Use improved and clean latrines and avoid open defecation |
| Husbands of 15 - 49 year old women                     | • Attend antenatal care at least 4 times, beginning in first trimester  
• All children and adults should wash their hands with soap/ash and water at critical times  
• Use improved and clean latrines and avoid open defecation |
| Pregnant women                                         | • Deliver at health facility with skilled assistance  
• Attend postnatal care  
• Sleep under LLIN  
• Initiate exclusive breastfeeding within first hour of birth and continue until child is 6 months old  
• Test for HIV and, if positive, get husband tested as well  
• HIV positive mothers start on lifelong ARVs, babies get prophylactic ARV, test baby for HIV |
| Husbands of pregnant women                             | • Deliver at health facility with skilled assistance  
• Attend postnatal care  
• Pregnant women should sleep under LLIN  
• Initiate exclusive breastfeeding within the first hour of birth and continue until the child is 6 months old  
• HIV testing for pregnant women and, if positive, husbands should test as well  
• HIV positive mothers start on lifelong ARVs, babies get prophylactic ARV, test baby for HIV |
| Women not using FP who intend to (mostly married women 15 - 24 years old) | • Use modern contraceptives to time and space births |
| Husbands of women who intend to use FP                 | • Encourage and support wife to use modern contraceptives |
| Mothers and fathers of children under 5 years          | • Seek health care within 24 hours for under-five year old with fever or diarrhea  
• Fully immunize children against 8 diseases  
• Children under five should sleep under LLIN year-round in endemic areas  
• Introduce complementary feeding when child is 6 months old according to IYCF guidelines |
### Mothers-in-law/grandmothers
- Attend ANC 4 times during pregnancy
- Health facility deliveries with skilled assistance
- Attend PNC
- Exclusive breastfeeding initiated within first hour of birth and continue until baby is 6 months old
- Introduce complementary feeding when child is 6 months old according to IYCF guidelines

### People residing in congregate settings
- Properly ventilate living spaces
- Visit a health facility for TB screening/treatment when they have symptoms of TB

### People living with HIV
- Recognize symptoms of TB and get TB screening during each facility visit for HIV chronic care

### Chronic coughers
- Visit a health facility for TB screening/treatment; keep house well ventilated to prevent transmission

### Diagnosed TB patients
- Adhere to TB medication; keep house well ventilated to prevent transmission

### Spouses of TB patients
- Support patients to adhere to TB medication; keep houses well ventilated to prevent transmission

Some of these audiences overlap: Most pregnant women and mothers of under-five year olds are married and 15 – 24 years old. Similarly, women who intend to use modern family planning methods are likely to be married and between 15 and 24 years of age.

Two primary audiences emerge from this literature review: 1) married women 15 – 24 years old who are pregnant and/or mothers of children under 5 years old, and 2) married men who are fathers of children under 5 years and/or whose wives are pregnant.

**Married women who are pregnant and/or mothers of children under 5:** Most are low-literate (38% literacy (4)), poorly educated, have limited access to media (22% listen to radio at least once a week (4)), and are financially dependent on their husbands. Most health seeking decisions are made by their husbands. They receive new information mostly through word of mouth from friends, mothers-in-law, and their husbands, or through social groups in their communities. They can also be reached through HEWs and the HDAs.

**Married men who are fathers of children under 5 and husbands of pregnant women:** These men are a bit older than their wives. They are more likely to be literate than their wives (65% (4)), and more likely to listen to the radio (38% listen to radio at least once a week) than their wives.
For TB detection and prevention, the audiences are different—chronic coughers, TB patients and their spouses. For all other recommended practices, these two audiences are key. The emphasis will vary by region and community to community, according to need and likelihood of uptake. For example, LLIN use and malaria treatment seeking practices should be promoted only in malaria endemic areas; and latrine use will be most likely in communities that already have latrines.

Health practices may be prioritized for SBCC according to the following criteria: 1.) those most in need of improvement; 2.) those associated with improvements in other health behaviors/practices; and 3.) those that are most likely to change. This section summarizes health practices according to these three criteria.

**Health practices most in need of change** include complementary feeding, postnatal care, health facility deliveries, hand washing at critical times, and HIV testing among
PRIORITIZATION OF HEALTH PRACTICES FOR SBCC
pregnant women. As seen in Table 2, each of these practices are adopted by less than a quarter of the affected population.

Table 2. Recommended health practices adopted by less than a quarter of the affected population.

<table>
<thead>
<tr>
<th>Health practice</th>
<th>Indicator of uptake</th>
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<tbody>
<tr>
<td>Complementary feeding</td>
<td>4% of children 6 – 23 months fed according to IYCF guidelines (4)</td>
</tr>
<tr>
<td>Postnatal care</td>
<td>13% of women receive PNC within 2 days of delivery (1)</td>
</tr>
<tr>
<td>Health facility deliveries</td>
<td>16% of births delivered in health facilities (1)</td>
</tr>
<tr>
<td>Handwashing at critical times</td>
<td>Less than 20% of Ethiopians wash hands with soap/ash at critical times (66)</td>
</tr>
<tr>
<td>HIV testing for pregnant women</td>
<td>20% of pregnant women tested for HIV (4)</td>
</tr>
</tbody>
</table>

Health practices associated with adoption of other health practices include ANC, PNC and health facility deliveries:

- ANC attendance increases the likelihood that a woman will deliver at a health facility (14)
- Women who attend ANC, deliver at health facilities, and attend PNC are more likely to initiate exclusive breastfeeding within one hour of birth and introduce complementary feeding according to IYCF guidelines (1)
- Women who attend PNC and receive information about immunization are more likely to fully immunize their children (28).

Health practices that have been steadily increasing over the past 15 years, and have momentum to become more pervasive include: family planning, health facility deliveries (particularly among urban women), LLIN use and latrine use.

Table 3 summarizes health practices according to the three prioritization criteria. According to this matrix, SBCC should focus on nine health practices, with particular emphasis on promoting health facility deliveries and postnatal care. These two practices are not widely practiced, but are associated with adoption of other important health practices such as exclusive breastfeeding, complementary feeding of infants, and immunization. Health facility delivery is also a practice that is already becoming more widespread and has momentum to continue.
Table 3. Health practices by three SBCC prioritization criteria

<table>
<thead>
<tr>
<th>Health practice</th>
<th>SBCC Prioritization Criteria</th>
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<tr>
<td></td>
<td>Practices most in need of change</td>
</tr>
<tr>
<td></td>
<td>Practices associated with other practices</td>
</tr>
<tr>
<td></td>
<td>Practices that have been steadily increasing</td>
</tr>
<tr>
<td>ANC attendance</td>
<td></td>
</tr>
<tr>
<td>PNC attendance</td>
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<tr>
<td>Health facility delivery</td>
<td></td>
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<tr>
<td>Family planning</td>
<td></td>
</tr>
<tr>
<td>Complementary feeding</td>
<td></td>
</tr>
<tr>
<td>Handwashing at critical times</td>
<td></td>
</tr>
<tr>
<td>Latrine use</td>
<td></td>
</tr>
<tr>
<td>LLIN use</td>
<td></td>
</tr>
<tr>
<td>HIV testing for pregnant women</td>
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</table>
6 CROSS-CUTTING BEHAVIORAL DETERMINANTS
Gender norms and perceived quality of health services greatly influence many of the recommended practices across the six health areas. SBCC that neglects these two important behavioral determinants runs the risk of failure.

7. Gender norms

According to Ethiopian customs, women play a key role in a majority of health practices Communication for Health promotes. Women are responsible for having a healthy pregnancy, safe childbirth, infant feeding, family planning, getting their children immunized, caring for children when they are ill, teaching their children to use latrines and wash their hands, and preventing transmission of HIV to their babies. Yet, women are less likely to be educated or literate, and have less access to media than men (4). Women also have household roles and responsibilities such as cleaning, collecting fire wood and water and caring for children that are traditionally designated to women (107).

Although most of the recommended practices are considered women's responsibilities, men must give their permission and financial support to adopt them. Husbands are the key decision-makers regarding whether or not their wives attend ANC, deliver at a health facility, practice family planning or take a sick child to the health facility (6) (8) (11) (20) (26) (49). The composition of complementary foods is determined by the foods that the man produces and provides (49) (53). Men decide whether or not to construct latrines and handwashing stations, purchase soap, and hang mosquito nets (84).

Men are responsible for supporting their families, providing food, shelter, and protection (107). They are supposed to be strong, and able to cope without the help of others. Consequently, most men do not utilize health facilities unless absolutely necessary (108). Yet, they are supposed to accompany their wives to the health facility for ANC, get tested for HIV, take ARVs if HIV-positive, and get screened and treated for TB. Men have greater access to the media, but have not been prioritized for health information, particularly concerning RMNCH. Thus, they often lack the knowledge they need to advise their wives on health practices or encourage her to use health services appropriately (53).

8. Health services quality

The perceived quality of health services plays an important part in the provision of PMTCT and TB services, as well as ANC and health facility deliveries. According to the research, health workers are sometimes perceived as abusive or stigmatizing by pregnant women, TB patients, and HIV-positive clients (11) (12) (18) (23) (24). Other complaints that deterred use of health facilities included long waiting periods and lack of medicines. In the case of child health services, many men and women are unaware of the services that HEWs provide (20).

Improving dialogue between health workers and community members could help to improve understanding on both sides, and could improve the community's perception of health facility quality.
7 COMMUNICATION CHANNELS—ACCESS AND EXPOSURE
The mass media in Ethiopia consist of radio and television, which remain under the control of the Ethiopian government, as well as private newspapers and magazines. Ten radio broadcast stations, eight am and two shortwave, are licensed to operate in Ethiopia. The major radio broadcasting stations include Radio Ethiopia, Radio Fana (or “Torch”) a private station, Radio Voice of One Free Ethiopia, and the Voice of the Revolution of Tigray. The single television broadcast network is Ethiopian Television, with 24 hours of broadcast and three regional stations, namely Addis TV, TV Oromia (with two live studios), and Dire TV. Radio broadcasts occur in a variety of languages. Print media, because of high poverty levels, low literacy rates, and poor distribution outside Addis Ababa, serve only a small portion of the population.

Access to radio and television is limited in Ethiopia, particularly in rural areas. According to the 2014 Mini-DHS, 33.5% of households own a radio (45.7% urban and 30.1% rural), and 11.5% of households own a television (46.8% urban and 1.6% rural) (1). The proportion of the population that listens to radio or views television regularly was assessed in the 2011 EDHS. Only 22.2% of women listened to radio at least once a week (38.1% urban and 17.2% rural), as compared to 37.9% of men (59% urban and 32.4% rural). Women were even less likely to watch television (4). Only 15.9% of women watched television at least once a week (48.3% urban and 5.7% rural), as compared to 21% of men (60.1% urban and 10.5% rural) (4). As can be seen, television is viewed primarily in urban areas, where it is as or more popular than listening to radio.

Use of mobile phones and internet are increasing. More households own mobile phones (49.3%) than radios (33.5%) or televisions (11.5%) (1). According to the 2014 Mini-DHS, 83.7% of urban households and 39.6% of rural households owned a mobile phone (1). In 2013, only 2.5% of Ethiopians accessed the internet (110).

According to a number of studies, the most common sources of health information are radio, television, friends and family members, and health workers (4) (10) (12) (70) (111). According to the 2011 EDHS, community events such as Idir, Dado, community and religious gatherings were the most common sources of family planning information at 37% of women, followed closely by radio (34% of women). Another 18% reported exposure to family planning information via television (4).
CONCLUSIONS
In total, across the six health areas the Communication for Health aims to influence through SBCC, the FMOH recommends 18 health practices, as listed in Appendix A. The majority of these practices are the responsibility of married men and women who are expecting a child and/or have children under-five years of age.

Adoption of the 18 recommended health practices is low. According to the literature reviewed, adoption ranges from only 4% for properly feeding children between 6 and 23 months old to 66% for fully vaccinating children (Penta 3 vaccination). Five recommended behaviors are practiced by less than 25% of the affected population (see Table 2).

While Ethiopians have unique reasons for adopting and rejecting each recommended health practice, there are some barriers that cut across the practices:

- Poor understanding of the practices. For some recommended health practices, many men and women do not have enough information about how and why to implement them. This is the case with childhood immunization, family planning, TB treatment, and infant and young child feeding.

- Low risk perception or feeling of vulnerability. Some health issues are not seen as a threat, so many people do not see a need to adopt new practices aimed at preventing them. For example, malaria, tuberculosis, pre-lacteal feeding, and child birth are not seen as dangerous by many people.

- Lack of trust in the quality of health services. For practices that require interfacing with health providers and services, such as maternal health services, many women and men are deterred by the belief, whether founded or not, that health services are poor quality.

- Gender norms. Many women are unable to adopt some recommended health practices without their husband’s consent and participation, yet their husbands are not well informed about nor positively predisposed to adopt the practices.

- Traditional norms and habits. Some women and men are comfortable with the way they and their families have done things over the years. They see no reason to change, and do not want to act differently than others in their families and communities. For example, traditional norms are strong determinants of infant feeding practices, latrine use, and where a woman gives birth.

- Lack of access to necessary services and materials. To adopt some health practices, communities and families need access to products (ie. latrines, soap, water, insecticide-treated nets) or health services that are not readily available.

Nine health practices, summarized in Table 3, could be prioritized for SBCC either because they are least likely to be practiced, or because they are associated with other recommended health practices or because their uptake has been steadily increasing. These practices are:

- ANC attendance
- PNC attendance
- Health facility delivery
- Family planning
- Complementary feeding
- Handwashing at critical times
- Latrine use
- LLIN use
- HIV testing for pregnant women.
RECOMMENDATIONS FOR INTEGRATED HEALTH COMMUNICATION
The following recommendations concerning the Communication for Health integrated communication platform arose out of this literature review.

1. **To reduce clutter and help women and men absorb messages about priority health practices, Communication for Health should bundle communication about essential health actions according to “life stages” audiences.** Many of the recommended health behaviors are closely linked and will be more relevant at different times in men’s and women’s lives. For example:

   - **Unmarried adolescents and newly married young people:** Promote family planning, ANC, PMTCT, malaria prevention and treatment, sanitation and handwashing.
   - **During pregnancy:** Promote ANC, birth preparedness, health facility delivery, PNC, PMTCT, exclusive breastfeeding, malaria prevention and treatment, maternal nutrition.
   - **Soon after birth:** Promote exclusive breastfeeding, childhood immunization, PNC, PMTCT, family planning, malaria prevention, handwashing and children’s feces disposal.
   - **When child is 6 – 23 months:** Promote feeding according to Infant and Young Child Feeding guidelines, childhood immunization, malaria prevention and treatment, handwashing and sanitation, family planning, TB Prevention, detection and treatment.
   - **When child is 2– 5 years:** Promote malaria prevention and treatment, childhood nutrition, handwashing and sanitation, family planning, TB prevention, detection and treatment.

2. **Create communication vehicles that allow discussion about multiple health practices and common determinants of those practices among priority audiences.** These may be radio and TV series that devote episodes to different health issues; communication support tools and training in their use for health workers, HEWs, HDA leaders, and other community resource persons; telephone Talkline; and the Family Health Card.

3. **Prioritize selected health practices for intensive single-issue health campaigns.** TB detection and treatment is one issue that warrants an intensive single-issue campaign, as its audiences differ from the audiences for other health practices. ANC and health facility deliveries should be prioritized on the basis of their low levels of adoption and associations with increased uptake of immunization, exclusive breastfeeding and complementary feeding.

4. **Communicate with married men as well as women about every recommended health practice,** bearing in mind that men are usually the primary decision makers in the household and women are responsible for health during pregnancy, childbirth, and among the children.
5. **Provide clear information about the desired health practices and their rationale.** For many recommended health practices, the primary barrier to uptake is poor understanding about the practice.

6. **Balance messaging that increases feelings of vulnerability while building efficacy.** For each recommended health practice, it is important to gauge and address the audiences’ perceptions of personal risk if they do not adopt it; their belief in the effectiveness of the recommended practice; and whether or not they feel capable of adopting the new practice.

7. **Support men and women to adopt new health practices that are not the norm** in their communities by sharing experiences from others who have succeeded and providing opportunities for dialogue with others, including health workers.

8. **Strengthen trust in the quality of health services and health workers** by ensuring that health services are provided well, and by offering community members and health providers opportunities for dialogue with one another.
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and Young Child Feeding. Millenium Communications.


<table>
<thead>
<tr>
<th>Health area</th>
<th>Recommended Health Practice</th>
<th>Indicator of uptake</th>
<th>Barriers</th>
<th>Opportunities</th>
<th>Priority audiences</th>
</tr>
</thead>
<tbody>
<tr>
<td>RMNCH</td>
<td>Family planning</td>
<td>• 40.4% mCPR (55.6% urban; 37.2% rural) (1)</td>
<td>• Health concerns/fear of side effects&lt;br&gt;• Opposition to FP by women or their husbands&lt;br&gt;• Religion&lt;br&gt;• Lack of friendly service</td>
<td>• 25% unmet need for FP (4)&lt;br&gt;• 56% of non-users intend to use in future (4)</td>
<td>• Female non-users who intend to use contraceptives in future&lt;br&gt;• Husbands of 15 – 24 year old women</td>
</tr>
<tr>
<td></td>
<td>Antenatal care: at least 4 visits beginning in the 1st trimester</td>
<td>• 58% of pregnant women made at least one ANC visit (1)&lt;br&gt;• 32% of pregnant women made at least 4 visits (1)&lt;br&gt;• 18% of pregnant women made first ANC visit before four months of gestation (1)&lt;br&gt;• Urban women (80%) more likely than rural women (35%) to go for ANC (1)</td>
<td>• Poor awareness of recommended practice (10)(12)(11)&lt;br&gt;• Low perception of pregnancy risks (13)&lt;br&gt;• Delay revealing pregnancy (8)&lt;br&gt;• Positive past pregnancy and childbirth experience (8)(10)&lt;br&gt;• Heavy workload at home (8)(10)(12)(11)&lt;br&gt;• Fear mistreatment by health workers (10)(12)(11)(13)&lt;br&gt;• Poor access to ANC (13)(14)</td>
<td>• ANC may be a gateway to other maternal and child health&lt;br&gt;• Mothers who attend ANC are 2.7 times more likely than others to deliver at a health facility (15)</td>
<td>• Rural married women 15 – 24 years old&lt;br&gt;• Husbands of 15 – 24 year old married women</td>
</tr>
<tr>
<td></td>
<td>Health facility delivery (HF)</td>
<td>• 16% of births delivered in health facilities in 2014 (1)&lt;br&gt;• Urban women (59%) more likely than rural women (10%) (1)</td>
<td>• Belief that health facilities not necessary for normal births (12)(11)(17)&lt;br&gt;• Perception that health workers are abusive and services poor (8)(12)(11)(23)(25)&lt;br&gt;• More comfortable at home (8)(13)(17)&lt;br&gt;• Lack of preparation for health facility delivery (8)(23)</td>
<td>• ANC attendance increases likelihood of HF delivery (1)(23)&lt;br&gt;• Birth preparedness planning (21)&lt;br&gt;• Husbands decide where wife will deliver (11)(12)(26)</td>
<td>• Pregnant women&lt;br&gt;• Husbands of pregnant women</td>
</tr>
<tr>
<td></td>
<td>Postnatal care:</td>
<td>• 13% of women receive PNC within 2 days of delivery (1)&lt;br&gt;• 82% received no PNC at all (1)&lt;br&gt;• 8% had any PNC in Tigray, SNNP, Oromia, and Amhara regions (22)</td>
<td>• Culture restricts women from movement after childbirth (11)(12)(13)&lt;br&gt;• Lack of awareness about PNC and its benefits (11)(13)&lt;br&gt;• Perception that there are few risks to the health of mother and baby during postnatal period after normal delivery (11)(12)(21)(20)</td>
<td>• HEWs are trained to provide PNC at home</td>
<td>• Pregnant women&lt;br&gt;• Husbands of pregnant women&lt;br&gt;• Mothers-in-law of pregnant women</td>
</tr>
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</table>
### Appendix A: Summary Table of Barriers, Opportunities and Recommended Audiences for 18 Recommended Health Practices

<table>
<thead>
<tr>
<th>Health area</th>
<th>Recommended Health Practice</th>
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<th>Opportunities</th>
<th>Priority audiences</th>
</tr>
</thead>
</table>
| Seek health care for under-five year olds within 24 hours of fever or diarrhea | Seek health care for under-five year olds within 24 hours of fever or diarrhea | • 25% of children with fever taken to health facility within 24 hours in 2011 (4)  
• 32% of children with diarrhea taken to health facility in 2011 (4) | • Lack of awareness (7)(30)(20)(31)  
• Superstitions regarding the causes of illness (20)(30)  
• Poor access to health services (7)(19)(27) | Mothers who have attended health education sessions about malaria were significantly more likely than women who had not to seek malaria treatment within 24 hours of fever onset (39) | • Mothers of children under-five (15 – 24 years old, married)  
• Fathers of children under-five |
| Fully immunize children against 8 diseases | Fully immunize children against 8 diseases | • 66% of eligible children vaccinated for Penta 3 in 2011 (28)  
• Urban children significantly more likely to be immunized than rural children (4) | • Lack of understanding about immunization schedule (7)  
• Lack of access to immunization services (7) | Mothers who attend PNC and receive information about immunization are significantly more likely to fully immunize their children (28) | • Married women 15 – 24 years of age  
• Husbands of 15 – 24 year old women |
| Malaria | Sleep under LLIN year around, with priority given to under five year olds and pregnant women | • 38% of under-5 year olds slept under ITN in 2011 (33)  
• 35% of pregnant women slept under ITN in 2011 (33)  
• 55% of households owned ITN in 2011 (33) | • Households that do not own nets (33)(36)(37)(38)(39)  
• Poor appreciation for the effectiveness of LLINs in preventing malaria (36)(37)(39)(40)  
• Seasonal trends in malaria transmission (36)(38)(43) | Knowledge about malaria—it’s causes, symptoms, prevention and treatment—among women is predictive of LLIN use (36)(37)(44)(45) | • Heads of households (usually men) in malaria endemic areas  
• Pregnant women in malaria endemic areas  
• Mothers of children under five years old in malaria endemic areas |
| | People with fever should seek diagnosis and treatment within 24 hours | • Only 51.3% of children under 5 with fever were taken to a HF within 24 hours of fever onset (33)  
• Only 16.5% of them were tested for malaria (33)  
• Only 32.6% of them were treated with anti-malaria medicine (33) | • Lives more than 60-minute walk to health facility (39)  
• Further formative research required | Mothers who have attended health education sessions about malaria were significantly more likely than women who had not to seek malaria treatment within 24 hours of fever onset (39) | • Mothers of children under five years  
• Fathers of children under 5 years |
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</tr>
</thead>
</table>
| Nutrition   | Exclusive breastfeeding initiated within the first hour after delivery and continuing until the child is 6 months old | • 95% of children breastfeed up to 12 – 17 months (4)  
• 52% of infants exclusively breastfeed for first 6 months (4)  
• Removal of colostrum and pre-lacteal feeds are common in the 4 regions (4)  
• Lack of awareness about the dangers of pre-lacteal feeds and importance of exclusive breastfeeding (50)  
• Misconceptions and traditional beliefs (48)(50)(52) |  | • Women who attend ANC, deliver at health facilities and attend PNC are more likely to initiate exclusive breastfeeding within the first hour of birth than those who deliver at home (8)(50)  
• Women who have received advice about and believe in the benefits of exclusive breastfeeding are more likely to practice it (51)(54) | • Pregnant women and mothers of infants and young children  
• Husbands of pregnant and lactating women and fathers of young children  
• Grandmothers |
|             | Initiate and continue complementary feeding after the child is 6 months old according to infant and young children feeding (IYCF) guidelines | • At 6 – 9 months, only 50% of children received complementary foods (4)  
• Only 4% of children 6 – 23 months were fed in accordance with IYCF recommendations (4)  
• Misconceptions and traditional beliefs (48)(52)  
• Poor availability and lack of resources to purchase diverse foods (53)  
• Lack of information about complementary feeding recommendations (53) |  | • Women who attend ANC, deliver at a health facility and attend PNC are much more likely to introduce complementary feeding according to IYCF recommendations (8)  
• Women who practice family planning and have longer birth intervals are less likely to have stunted children (1) | • Mothers of children under two year of age  
• Fathers of children under two year of age  
• Grandmothers of children under two year of age |
### Appendix A: Summary Table of Barriers, Opportunities and Recommended Audiences for 18 Recommended Health Practices

<table>
<thead>
<tr>
<th>Health area</th>
<th>Recommended Health Practice</th>
<th>Indicator of uptake</th>
<th>Barriers</th>
<th>Opportunities</th>
<th>Priority audiences</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prevention of Mother to Child Transmission of HIV (PMTCT)</td>
<td>HIV testing among pregnant women and, if positive, get partner tested</td>
<td>20% of pregnant women got tested for HIV in 2011 (4)</td>
<td>Low ANC attendance (1)</td>
<td>Most men and women know that HIV can be transmitted from mother to child and that it can be prevented through administration of ARVs (4)</td>
<td>Pregnant and lactating women</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Less than 70% of ANC clients received HIV testing in 2013 (59)</td>
<td>Lack of technical competence and commitment to offer PMTCT at some facilities (62)</td>
<td></td>
<td>Husbands of pregnant and lactating women</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Fear of HIV-positive result and reluctance to disclose HIV-positive results (61)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Men do not visit PMTCT clinics with wives because they do not feel welcomed (56)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Most men and women know that HIV can be transmitted from mother to child and that it can be prevented through administration of ARVs (4)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>HIV-positive mothers should start on lifelong ARVs, and their babies should receive prophylactic ARVs, get tested for HIV, and if positive receive full ART</td>
<td>75% of HIV positive pregnant women and fewer of their HIV-exposed babies received ARVs in 2014 (59)</td>
<td>Health facility issues: inadequate staffing, poor integration of ARV and RNMCH services, inadequate ARV supplies, etc. (58)</td>
<td>Promoting ANC, health facility deliveries and PNC will increase HIV testing during pregnancy and the initiation of ARVs for HIV-positive mothers.</td>
<td>Pregnant and lactating women</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Fear of stigma and partner rejection (58) (62)</td>
<td></td>
<td>Husbands of pregnant and lactating women</td>
</tr>
<tr>
<td></td>
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<td></td>
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<th>Opportunities</th>
<th>Priority audiences</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Water, sanitation and hygiene (WASH)</strong></td>
<td>All children and adults should wash their hands with soap or ash and water at critical times</td>
<td>Less than 20% of Ethiopians wash their hands with soap/ash at critical times (66)</td>
<td>• Hand washing is not a normative practice (83)</td>
<td>The desire to have a healthy family is a strong motivator for households to become open defecation free ODF, which includes handwashing at critical times (84)</td>
<td>• Heads of households (usually men)</td>
</tr>
<tr>
<td></td>
<td>All children and adults should use improved and clean latrines and avoid open defecation</td>
<td>29% of households practiced open defecation in 2015 (34% rural and 6% urban) (63)</td>
<td>• Open defecation is culturally and traditionally sanctioned (66) (67) (69)</td>
<td>People who change from open defecation to sustained latrine use often do so because using a latrine offers greater privacy, security and comfort (84). These could be good motivators for latrine use</td>
<td>• Heads of households (usually men)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>40% of households with latrines continue to openly defecate (69)</td>
<td>• Latrine construction and maintenance is seen as technically complicated and expensive (67) (84)</td>
<td>The desire to have a healthy family is a strong motivator for families to become ODF (84).</td>
<td>• Heads of households (usually men)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Poorly built latrines discourage use (4) (67) (84) (85) (86)</td>
<td>Communities with leaders who advocate for latrine construction and use, and discourage open defecation are more likely to become and remain ODF (84).</td>
<td>• Heads of households (usually men)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Community leaders in communities already triggered for CLTSH</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Heads of households (usually men) in communities already triggered for CLTSH</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Mothers in CLTSH triggered communities</td>
</tr>
<tr>
<td>Health area</td>
<td>Recommended Health Practice</td>
<td>Indicator of uptake</td>
<td>Barriers</td>
<td>Opportunities</td>
<td>Priority audiences</td>
</tr>
<tr>
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</tr>
</tbody>
</table>
| Tuberculosis (TB) | Open windows and improve ventilation to prevent the spread of TB, especially in congregate settings | • 55.6% of women and 65% of men knew that TB is spread through the air by coughing in 2011 (4)  
• The prevalence of TB in Gondar University was found to be 2 times higher than the general population (91)  
• The prevalence of TB in Ethiopian prisons is 4.9% (92) | • Poor understanding of how TB is transmitted and how it can be prevented (100) (97) (98)  
• Misconceptions about how to prevent TB (101) | Educated, literate and wealthy people are more likely to know how TB is transmitted and how to prevent it than others (1) (97) (100) | People in congregate settings  
Diagnosed TB patients and their families |
| | A person with a cough for more than 2 weeks should seek health care and be evaluated for TB | • 62% of TB cases are detected (87)  
• Median time to first health care after onset of symptoms is 30 days (99)  
• Men more likely than women to delay treatment seeking (99) | • Low perception of the severity of TB (99)  
• TB associated stigma (4) (97)  
• Lack of knowledge about TB (4) (101)  
• External constraints such as distance and cost of transport to health facilities (101) | Targeting chronic coughers for screening can improve TB case detection (102) (103) | Chronic coughers and their families |
| | People living with HIV should be screened for TB in every facility visit for chronic care | • 9.1% of HIV-positive clients tested positive for TB (112) (87)  
• 96% of newly diagnosed HIV-positive patients were screened for TB (87) (112) | • Stigma and discrimination against HIV/AIDS (97) | Health workers treating HIV clients  
HIV positives |
## Appendix A: Summary Table of Barriers, Opportunities and Recommended Audiences for 18 Recommended Health Practices

<table>
<thead>
<tr>
<th>Health area</th>
<th>Recommended Health Practice</th>
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<th>Opportunities</th>
<th>Priority audiences</th>
</tr>
</thead>
</table>
| People with TB should adhere to treatment for a minimum of 6 months | • 89% of detected TB cases are treated successfully (87)  
• 30 – 35% of unsuccessful treatment cases defaulted (104)(105)(106) | • Poor understanding of the required treatment regime (97)(100)(101)  
• Low perception of the severity of TB (100) (101)  
• Poor treatment outcome expectation (101) (104)(105)(106)  
• External constraints such as distance to health facility or transport costs (104)(105)(106) | Treatment compliance is most likely when patients have good knowledge about their treatment regime and perceive their illness as serious (101) | TB patients and their families |
### Appendix B: Regional Data for Amhara, Oromiya, SNNP and Tigray

<table>
<thead>
<tr>
<th>Health Area</th>
<th>Data Source</th>
<th>National</th>
<th>Amhara</th>
<th>Oromia</th>
<th>SNNP</th>
<th>Tigray</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>RMNCH</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total fertility rate</td>
<td></td>
<td>4.1</td>
<td>3.8</td>
<td>4.3</td>
<td>4.4</td>
<td>4.5</td>
</tr>
<tr>
<td>Knowledge of any contraceptive method among married women</td>
<td></td>
<td>97.5%</td>
<td>Not known</td>
<td>Not known</td>
<td>Not known</td>
<td>Not known</td>
</tr>
<tr>
<td>Contraceptive prevalence</td>
<td></td>
<td>42%</td>
<td>49%</td>
<td>40%</td>
<td>39%</td>
<td>30%</td>
</tr>
<tr>
<td>Modern contraceptive prevalence</td>
<td></td>
<td>40%</td>
<td>60%</td>
<td>58%</td>
<td>58%</td>
<td>54.5%</td>
</tr>
<tr>
<td>Intention to use contraception among women of 15 to 49</td>
<td></td>
<td>58%</td>
<td>60%</td>
<td>58%</td>
<td>66%</td>
<td>69%</td>
</tr>
<tr>
<td>Antenatal care coverage (at least one visit)</td>
<td></td>
<td>24%</td>
<td>30%</td>
<td>41%</td>
<td>41%</td>
<td>41%</td>
</tr>
<tr>
<td>Antenatal care coverage (4 visits)</td>
<td></td>
<td>17%</td>
<td>22%</td>
<td>41%</td>
<td>46%</td>
<td>46%</td>
</tr>
<tr>
<td>Percentage of women informed of the signs of pregnancy complications during ANC</td>
<td></td>
<td>24%</td>
<td>17%</td>
<td>16%</td>
<td>9%</td>
<td>11%</td>
</tr>
<tr>
<td>Health facility delivery</td>
<td></td>
<td>15%</td>
<td>12%</td>
<td>13%</td>
<td>11%</td>
<td>17%</td>
</tr>
<tr>
<td>Antenatal care delivery (4 visits)</td>
<td></td>
<td>32%</td>
<td>33%</td>
<td>39%</td>
<td>39%</td>
<td>39%</td>
</tr>
<tr>
<td>DPT3 immunization coverage</td>
<td></td>
<td>36.5%</td>
<td>38%</td>
<td>33%</td>
<td>33%</td>
<td>33%</td>
</tr>
<tr>
<td>Treatment seeking for ARI in under five children</td>
<td></td>
<td>27%</td>
<td>22%</td>
<td>29%</td>
<td>32%</td>
<td>34%</td>
</tr>
<tr>
<td>Knowledge of HIV transmission through breast feeding</td>
<td></td>
<td>77%</td>
<td>71%</td>
<td>80%</td>
<td>77%</td>
<td>87%</td>
</tr>
<tr>
<td>Treatment seeking for diarrhea in under five children</td>
<td></td>
<td>66%</td>
<td>27%</td>
<td>46%</td>
<td>46%</td>
<td>46%</td>
</tr>
<tr>
<td>Knowledge that MTCT can be reduced by taking ARVs</td>
<td></td>
<td>71%</td>
<td>22%</td>
<td>44%</td>
<td>43%</td>
<td>43%</td>
</tr>
<tr>
<td>HIV testing during antenatal care</td>
<td></td>
<td>21.5%</td>
<td>15%</td>
<td>8%</td>
<td>18%</td>
<td>18%</td>
</tr>
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</table>
### Appendix B: Regional Data for Amhara, Oromiya, SNNP and Tigray

<table>
<thead>
<tr>
<th>Health Area</th>
<th>Indicator/comparator</th>
<th>National</th>
<th>Amhara</th>
<th>Oromia</th>
<th>SNNP</th>
<th>Tigray</th>
<th>Data Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nutrition</td>
<td>Percentage of stunted children</td>
<td>40%</td>
<td>42%</td>
<td>38%</td>
<td>44%</td>
<td>46%</td>
<td>(1)</td>
</tr>
<tr>
<td></td>
<td>Percentage of wasted children</td>
<td>9%</td>
<td>9%</td>
<td>7%</td>
<td>7%</td>
<td>14%</td>
<td>(1)</td>
</tr>
<tr>
<td></td>
<td>Percentage of underweight children</td>
<td>25%</td>
<td>28%</td>
<td>23%</td>
<td>26%</td>
<td>31%</td>
<td>(1)</td>
</tr>
<tr>
<td></td>
<td>Exclusive breast feeding</td>
<td>52%</td>
<td>38%</td>
<td>53%</td>
<td>66.5%</td>
<td>45%</td>
<td>(4)</td>
</tr>
<tr>
<td></td>
<td>Prelacteal feeding</td>
<td>27%</td>
<td>48%</td>
<td>22%</td>
<td>10%</td>
<td>26%</td>
<td>(4)</td>
</tr>
<tr>
<td></td>
<td>Percentage who started breast feeding within 1 hour of birth</td>
<td>51.5%</td>
<td>37.5%</td>
<td>53%</td>
<td>66.5%</td>
<td>45%</td>
<td>(4)</td>
</tr>
<tr>
<td></td>
<td>Percentage of children (6-23 months) fed with the recommended four food groups</td>
<td>5%</td>
<td>2%</td>
<td>6%</td>
<td>4%</td>
<td>6%</td>
<td>(4)</td>
</tr>
<tr>
<td></td>
<td>Percentage of children (6-23 months) fed as per the recommended IYCF practices</td>
<td>4%</td>
<td>2%</td>
<td>6%</td>
<td>3%</td>
<td>4%</td>
<td>(4)</td>
</tr>
<tr>
<td>WASH</td>
<td>Households with hand washing stations</td>
<td>3.3%</td>
<td>Not known</td>
<td>Not known</td>
<td>Not known</td>
<td>Not known</td>
<td>(74)</td>
</tr>
<tr>
<td></td>
<td>Hand washing at critical times</td>
<td>Less than 20%</td>
<td>Not known</td>
<td>Not known</td>
<td>Not known</td>
<td>Not known</td>
<td>(66)</td>
</tr>
<tr>
<td></td>
<td>Households with improved water source</td>
<td>57%</td>
<td>Not known</td>
<td>Not known</td>
<td>Not known</td>
<td>Not known</td>
<td>(63)</td>
</tr>
<tr>
<td></td>
<td>Households with improved toilet</td>
<td>28%</td>
<td>Not known</td>
<td>Not known</td>
<td>Not known</td>
<td>Not known</td>
<td>(63)</td>
</tr>
<tr>
<td></td>
<td>Households practicing open defecation</td>
<td>29%</td>
<td>Not known</td>
<td>Not known</td>
<td>Not known</td>
<td>Not known</td>
<td>(63)</td>
</tr>
<tr>
<td>Health Area</td>
<td>Malaria</td>
<td>TB</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td>-------------</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>National</td>
<td>0.7%</td>
<td>75</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Amhara</td>
<td>71%</td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>Oromia</td>
<td>71%</td>
<td></td>
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</tr>
<tr>
<td>SNPP</td>
<td>78%</td>
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<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Tigray</td>
<td>72%</td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

**Malaria**

- Malaria prevalence: 0.7%, 0.5%, 2.5%, 0.6%, 0.6%
- Percentage who recognize fever as a symptom of malaria: 71%, 71%, 71%, 78%, 72%
- Percentage who report mosquito nets as a prevention method: 58%, 65%, 65.5%, 53%, 57.5%
- Percentage of children U5 who slept under LLIN in a household with at least one LLIN in areas: 60%, 65%, 65%, 65%, 69%
-Percentage of pregnant women who slept under an LLIN in households with at least one LLIN: 64.2%, 70%, 65%, 75%, 42%
- Treatment seeking for fever in under five children (same or next day): 47%, 0%, 59.5%, 46%, 26.5%

**TB**

- TB prevalence (per 100,000 pop): Not known, Not known, Not known, Not known, Not known
- Case detection rate: 60%, Not known, Not known, Not known, Not known
- MDR-TB case detection rate: 40%, Not known, Not known, Not known, Not known
- Treatment success rate: Not known, Not known, Not known, Not known, Not known
- TB screening of HIV positives: 96%, 96%, 95%, 95%, 91%
- Isoniazid prophylaxis treatment: 18%, 14%, 16%, 6%, 8.5%
- Active TB among HIV positives: 9%, 6%, 13%, 8%, 7%
- Proportion of TB patients screened for HIV: 92%, 99.6%, 98%, 97%, 73%
- HIV prevalence among TB patients: 18%, 24%, 16%, 16%, 16%
<table>
<thead>
<tr>
<th>Health Area Indicator/comparator</th>
<th>National</th>
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<th>Oromia</th>
<th>SNNP</th>
<th>Tigray</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data Source</td>
<td>Malaria</td>
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<td></td>
<td></td>
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<tr>
<td>Malaria prevalence</td>
<td>0.7%</td>
<td>2%</td>
<td>0.5%</td>
<td>2.5%</td>
<td>0.6%</td>
</tr>
<tr>
<td>Percentage who recognize fever as a symptom of malaria</td>
<td>71%</td>
<td>71%</td>
<td>71%</td>
<td>78%</td>
<td>72%</td>
</tr>
<tr>
<td>Percentage who report mosquito nets as a prevention method</td>
<td>58%</td>
<td>65%</td>
<td>65.5%</td>
<td>53%</td>
<td>57.5%</td>
</tr>
<tr>
<td>Percentage of children U5 who slept under LLIN in a household with at least one LLIN</td>
<td>60%</td>
<td>65%</td>
<td>55%</td>
<td>66.5%</td>
<td>68%</td>
</tr>
<tr>
<td>Percentage of pregnant women who slept under an LLIN in households with at least one LLIN</td>
<td>64.2%</td>
<td>70%</td>
<td>65%</td>
<td>75%</td>
<td>42%</td>
</tr>
<tr>
<td>Treatment seeking for fever in under five children (same or next day)</td>
<td>47%</td>
<td>32%</td>
<td>59.5%</td>
<td>46%</td>
<td>26.5%</td>
</tr>
<tr>
<td>TB</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TB prevalence (per 100,000 pop)</td>
<td>200</td>
<td>Not known</td>
<td>Not known</td>
<td>Not known</td>
<td>Not known</td>
</tr>
<tr>
<td>Case detection rate</td>
<td>60%</td>
<td>Not known</td>
<td>Not known</td>
<td>Not known</td>
<td>Not known</td>
</tr>
<tr>
<td>MDR-TB case detection rate</td>
<td>40%</td>
<td>Not known</td>
<td>Not known</td>
<td>Not known</td>
<td>Not known</td>
</tr>
<tr>
<td>Treatment success rate</td>
<td>89%</td>
<td>Not known</td>
<td>Not known</td>
<td>Not known</td>
<td>Not known</td>
</tr>
<tr>
<td>TB screening of HIV positives</td>
<td>96%</td>
<td>96%</td>
<td>95%</td>
<td>91%</td>
<td>97%</td>
</tr>
<tr>
<td>Isoniazid prophylaxis treatment</td>
<td>18%</td>
<td>14%</td>
<td>16%</td>
<td>6%</td>
<td>8.5%</td>
</tr>
<tr>
<td>Active TB among HIV positives</td>
<td>9%</td>
<td>6%</td>
<td>13%</td>
<td>8%</td>
<td>8%</td>
</tr>
<tr>
<td>Proportion of TB patients screened for HIV</td>
<td>92%</td>
<td>99.6%</td>
<td>98%</td>
<td>97%</td>
<td>73%</td>
</tr>
</tbody>
</table>