




# Literature Review on Barriers to Utilization of Health Extension Services: Draft Report

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## Background

Ethiopia was one of 12 low-income countries to achieve the MDG target to reduce child mortality by two-thirds between 1990 and 2015. The child mortality rate has fallen from 205 deaths among children under five per 1,000 live births to 50/1,000. Despite this remarkable achievement, there are still 184,000 under five deaths per year in Ethiopia.[1] The majority of these deaths are caused by pneumonia (17%), diarrhea (8%), and neonatal causes (47%), with malnutrition as an important underlying factor.[2] Ethiopia has also reduced maternal mortality from 1,250 maternal deaths per 100,000 live births in 1990 to 353 deaths/100,000 in 2015. However, the country still has the fourth highest number of annual maternal deaths in the world (11,000).[3]

To improve access to life-saving healthcare, Ethiopia has scaled up integrated community case management of common childhood illnesses (iCCM), and is currently implementing community-based newborn care (CBNC) in selected areas, within the Health Extension Program. With the iCCM and CBNC initiatives, Health Extension Workers (HEWs) are able to manage the major causes of child and newborn death at the community level.

Evaluations of the scale-up of iCCM showed that the strength of program implementation (training, supervision, supply of commodities) was strong and the quality of care provided by HEWs were relatively high.[4,5] However, routine data and independent evaluations have consistently shown that utilization of iCCM services is very low, particularly for children under two months of age.[4,6] Household surveys also show low care seeking for childhood illnesses. The 2011 Ethiopia Demographic and Health Survey (EDHS) found that care seeking for under five children in rural areas for pneumonia, diarrhea, and fever were 25%, 29%, and 22%, respectively[7] and children who are taken for care are often taken only after delays. Utilization of HEWs for sick children did seem to increase after the introduction of iCCM[4] and iCCM utilization rates increased after sustained implementation over time.[6] Overall care seeking increased after sustained implementation of iCCM, especially care seeking from HEWs,[8] although care seeking from HEWs still remained relatively rare.[8,9] A study with intervention (iCCM plus program supports) and comparison areas (pre-existing community case management of diarrhea, malaria, and malnutrition) found similar increases in care seeking in intervention and comparison areas.[9]

Given the large investments in iCCM and CBNC, and the importance of increasing community utilization of these services, the Bill and Melinda Gates Foundation is supporting the Federal Ministry of Health (FMOH), UNICEF, and PATH to implement interventions to increase utilization. The first step of this project is to review the existing literature to understand the evidence on barriers to utilization of HEW services and the effectiveness of previous interventions to increase utilization in Ethiopia. This report provides a concise summary of the findings of the literature review.

## Methods

The literature review provides a summary of articles and reports from published literature and grey literature. The PubMed database was searched for relevant published articles. Additionally, all partners working on iCCM and CBNC in Ethiopia were asked to submit relevant literature

from their organizations. The literature obtained from this search yielded 28 published articles and 29 reports from grey literature related to Ethiopia.

Summaries of reviewed papers were produced with the most relevant information. These summaries were then coded to highlight important findings. The codes were then analyzed to identify commonly occurring themes throughout the papers. The themes were divided into four sections: demand-side barriers to utilization, supply-side barriers to utilization, potential solutions to demand-side barriers, and potential solutions to supply-side barriers.

## Results

### Demand-side barriers to utilization

#### *Knowledge and beliefs about childhood illness*

A lack of knowledge about signs and symptoms of childhood illnesses and about danger signs were an important factor limiting care seeking. Qualitative and quantitative studies in Amhara, Oromia, SNNP, and Tigray found incomplete knowledge of signs of childhood illnesses and danger signs.[10-14] This lack of knowledge means that caregivers do not always recognize when a child needs care or may delay in seeking care.

In some cases traditional beliefs discourage caregivers from seeking formal care, in favor of traditional solutions.[15,16] This can be because of traditional beliefs of causes of illness, such as supernatural forces or sensitivity to sun, wind, or cold.[10-12,16-19] There is also a high value placed on traditional ceremonies, which can be performed with home care, but are not part of facility-based care.[16] These traditional beliefs were especially strong among older generations.[19]

Traditional beliefs are particularly important in the case of newborn children and infants. Many communities believe that newborns should not be taken out of the house for any reason and that the child should be secluded from anybody outside the immediate family for the one to three months after birth.[5,17,18] It is believed that the child will become ill if he/she leaves the home or is seen by outsiders[20] or that young children are too fragile to withstand medicines.[11,17] Many also believe that the fate of young children is only in God's hands, and there is nothing to be done to help the child.[19,20] Mothers in these communities also face social stigma if they take their newborns out of the home.[11]

#### *Lack of awareness of services*

A major reason for not using HEW services was a lack of awareness of the services offered, or of the benefits of services, among communities.[15,16,20,21] A survey in Amhara, Oromia, SNNP, and Tigray in December 2012 found that 60% of caregivers were aware of iCCM services at the health post. Of those who knew about iCCM services, 80% knew about malaria treatment, 64% knew about diarrhea treatment, 55% knew about ARI treatment, and only 9% knew about malnutrition services. Additionally, only 46% had heard of the Health Development Army (HDA) in their locality.[15] In other studies in Oromia and SNNP in 2014, awareness of HDA was mixed.[16,20] One survey in Oromia in 2013 found that only 43% of caregivers interviewed were aware of the availability of treatments for childhood illness at the health post.[21] Lack of awareness of services was also the top reason given by HEWs for low utilization.[22] A qualitative

study among community members also found that caregivers did not know about availability of treatments, especially for pneumonia. Some people thought HEWs only refer patients to health facilities. Lack of awareness of services for newborns, which are relatively new, was especially pronounced.[11,12,17]

***Preference for home-based or traditional care***

In several qualitative studies in Oromia and SNNP, respondents expressed a preference for home-based care, local drug shops, traditional care, or religious intervention as the first response to childhood illness.[11,12,16,17,20,23] This preference was especially strong when the illness was perceived as not severe[23] or when household funds were low.[11,17] This was supported by quantitative household surveys in Oromia and SNNP that also found a preference for informal treatment.[11,21] Reasons for the preference for traditional care are that these services are more accessible and caregivers may trust community members more than health workers who are not from the community.[24]

***Distance and lack of transportation***

Despite the fact that the goal of community-based service provision is to increase access by reducing distances to health care providers, distance remains a major barrier for many people. Distance from health posts and lack of transportation were cited as barriers in several studies. In qualitative research in Amhara, Oromia, SNNP, and Tigray, respondents said people from distant communities had a hard time reaching health posts due to long distances and a lack of transportation, including a lack of ambulances.[11,13,16,20,23,25] Furthermore, when HEWs in Oromia were asked what they thought were the common reasons caregivers did not seek care from them, 23% reported that distance was a problem for caregivers.[22] These qualitative data were supported by quantitative household data from SNNP that showed distance and lack of transportation to be important barriers[10] and from Oromia, where reported household distance to the nearest health post was significantly associated with use of health post services.[21] Another study in Amhara, SNNP, and Tigray found that distance to the health post and not having a road for vehicular access to the health post were associated with utilization of health post services.[8] Qualitative research in Oromia and SNNP on use of maternal and postnatal services also found distance and lack of transportation to be key barriers.[16,20]

***Cost of care seeking***

Several qualitative studies in Amhara, Oromia, SNNP, and Tigray found that cost of care seeking, whether real or perceived, prevented people from remote communities from going to health posts.[11,13,16,18,20,23,25,26] Likewise, 16% of respondents in a household survey on iCCM in the same four regions cited lack of money as a reason for not seeking care.[15] Although services at health posts are free, the cost of referrals to a health center was an important concern for caregivers.[10]

***Need to obtain husband's permission to seek care***

In the 2011 EDHS, one-third of rural mother's reported that they needed to obtain permission to seek care for their children.[7] In qualitative studies in Amhara, Oromia, SNNP, and Tigray, mothers listed the need to consult with their husbands to obtain permission to seek care for sick children as an important barrier.[10-13,16,17,20,26,27] Even if permission was obtained, delays in seeking care were often created by having to wait for the husband to arrive at home. The main issue of concern for husbands was the potential expense associated with travel and healthcare, and men were the ones who were decision-makers regarding household expenditures.[10,17] In

addition to husbands, grandmothers also had influence on the decision over whether to seek formal care.[12,28]

***Opposition of traditional or religious leaders***

In qualitative research in Amhara, Oromia, SNNP, and Tigray, respondents reported opposition to formal care seeking by religious and traditional leaders in the community.[11,13,16,23] In Oromia, religious leaders sometimes discourage community members from going to the health post because of the family planning services offered there.[23]

## Supply-side barriers to utilization

***Inconsistent availability of services at health posts***

A frequent barrier of utilization of health post services was the inconsistency of availability of services. In qualitative research, community members in Oromia and SNNP complained about the limited opening hours of health posts (closed at night and on weekends) and the frequent absence of HEWs from health posts during working hours.[10,17,23,29] This is supported by quantitative data as well. In Oromia, 21% of caregivers cited the health post being closed as a reason for not using services.[21] Another survey in Amhara, Oromia, SNNP, and Tigray found that only 52% of health posts received pregnant women during non-working hours.[13]

Even HEWs in Oromia reported that health posts were open only 23 hours per week on average, about half of the hours the health post is supposed to be open. HEWs also cited that the health post is not always open as one of the top reasons for low utilization.[4]

HEWs seem to be away from the health posts for different reasons. They are often called away for trainings, other government work, or other activities,[5,30] and sometimes they may be away for personal reasons. HEWs reported that it is difficult for them to provide care during off-hours because they do not have their chart booklet, patient register, diagnostic tools, or drugs with them at home.[10] Furthermore, some HEWs do not live in the same community as the health post, and those HEWs are more difficult to contact when care is needed.[17]

In addition to the inconsistency of availability of services at the health post, HEWs rarely provide clinical care in the community through home visits.[16,22] In fact, data from Amhara, Oromia, SNNP, and Tigray show that HEWs spend relatively little time providing clinical care in any setting. HEWs spent only 14-16% of their time providing curative services.[30,31] Most of their time was spent on health promotion and disease prevention activities or waiting for patients at the health post.[13,30,31]

***Drug stockouts***

In qualitative and quantitative research, caregivers in Amhara, Oromia, SNNP, and Tigray mentioned lack of drugs at the health post as a key reason preventing utilization.[5,10,13,21,23,29] In a survey in Oromia, 20% of caregivers said they did not use the health post because they thought drugs were not available.[21]

## Potential solutions to demand-side barriers

***Knowledge and beliefs about childhood illness & Lack of awareness of services***

In the early scale-up of iCCM, priority was given to the essential program components of training, supervision, and supplying commodities to HEWs. Given gaps in knowledge regarding the causes of childhood illness and regarding the availability of treatments at health posts, it is clear that a campaign to educate and mobilize community members will be necessary. The need for transmission of information about the availability of services was highlighted by respondents in several studies.[16,20,23]

The reviewed literature provided information and suggestions that may be useful in designing a community education and mobilization campaign. Respondents reported that HEWs, HDA, and radio were considered credible sources of information.[16,20] Radio is the most commonly accessed form of media (41% nationally), but access to any mass media is low among rural communities (32% of women and 46% of men). Therefore, it may be advisable to transmit information by radio, but this must be complemented with other methods. Only 60% of rural men and 29% of rural women are literate,[7] so methods of communication that require literacy, such as written messages on posters and pamphlets, may not be useful.

HEW home visits were reportedly valuable for increasing awareness and use of services[20] and mothers who received a household visit from an HEW were more likely to seek care.[32] Furthermore, mothers who had received training from HEWs and been designated as "model households" more likely to seek care from the HEW.[32-34] Thus, to the extent possible, using HEWs to explain and promote services directly to households would likely be effective. Given the restrictions on HEWs' time, it may be difficult for HEWs to visit all households in their catchment area. Using the HDA to make contact at the household level may be more feasible. There were mixed results in the literature on the presence and visibility of the HDA in communities, but this initiative clearly presents a strong platform through which to provide health education, promote use of services, and mobilize communities.[20]

HEW services can also be discussed and promoted during pregnant woman conferences, vaccination campaigns, and other community meetings.[16,20] Study respondents also suggested using satisfied customers to promote services.[10] Regardless of the methods, special effort should be made to target distant communities that do not frequently use the health posts.[10,35]

***Distance and lack of transportation & Cost of care seeking***

Distance is possibly the most difficult barrier to address without adding more health posts, building roads, or providing more ambulances, all of which would be prohibitively expensive. Study respondent did suggest a few alternative solutions. These suggestions included creation and maintenance of foot paths to the health post, paying local youths with motorbikes to transport patients, or creating local groups of men who can carry sick people to the health post.[20,35] There were also suggestions to subsidize the cost of transportation and opportunity costs for the poorest people[10] and training private providers in distant communities in iCCM.[10]

***Need to obtain husband's permission to seek care***

The literature review showed that husbands and other people besides a child's mother can play an important role in making decisions on care seeking. Study respondents suggested that information should be targeted not only at mothers, but also at husbands, grandparents, and other community members.[35]

***Opposition of traditional or religious leaders & Preference for home-based or traditional care***
Both HEWs and community members highlighted the importance of engaging various community leaders to promote utilization of HEW services.[10,13,20,30,35,36] These community members include traditional community leaders, traditional healers, religious leaders, and kebele councils. Through meetings and ongoing discussion with these leaders, their concerns and misgivings about the HEW services and formal healthcare can be discussed and addressed. Meeting with and engaging traditional and religious leaders can convince them of the benefits of formal care, which will remove a major barrier to care seeking and can potentially create influential community mobilizers. Furthermore, coordination with traditional and religious healers can promote multi-faceted treatment regimens that allow for traditional/religious practices to be combined with formal medical care.[10,13,20] This integration of traditional ceremonies may also make medical care more acceptable to community members.[16,25] In one example in Oromia, coordination with and training of religious and community leaders led to the adoption of community by-laws promoting assisted delivery in health facilities.[20]

There seemed to be a divide between the younger and older generations in terms of belief in biomedical causes of illness versus supernatural causes. Younger girls and women had higher knowledge of causes of illness and belief in need for medical care, so they could be recruited as community mobilizers.[19]

## Potential solutions to supply-side barriers

***Inconsistent availability of services at health posts***
Closed health posts and inaccessible HEWs came out in the literature as a key barrier to utilization. Respondents highlighted the need to ensure consistent availability of HEWs at the health post during opening hours and extending the hours of the health post so that services would be available at night and on weekends.[35] Achieving this will require that one HEW is always in the health post during working hours. The other HEW could then be carrying out health promotion or other activities in the communities. If HEWs must be called away for other activities, they should not leave at the same time, so that one of them continues to provide services in the health post. To ensure for emergency care at night and on weekends, one HEW could be designated as on-call. The HEW on call could be at home or in the immediate area and would have to keep a supply of essential diagnostics, drugs, job aids, and patient register in their home in case patients showed up during off-hours. HEWs could alternate on-call responsibilities so that they would still have an opportunity to travel outside of the community when they are not on-call. The key to ensuring availability of services will be improved accountability mechanisms to ensure health posts are open and services are available during working hours. Random spot checks by supervisors or empowering community members to report missing HEWs could be effective measures to increase accountability.

The results of studies of how HEWs use their time showed that the majority of their time is spent on health promotion and prevention activities, with little time spent providing clinical

services. Considering the large population and large geographic areas served by one health post, having HEWs spend a large amount of time on health promotion at the community level may not be very efficient. With the establishment of the HDA, a division of labor that allows HEWs to focus more on clinical activities and HDAs to focus on health promotion and community mobilization may be more practical and effective. The HDA are also well placed to conduct home visits for active case finding as well as health education. With a strong link and frequent communication between the HDA and HEWs, the HDA could detect cases in the community and refer them to the health post. In special cases when a patient cannot travel to the health post, an HEW could go to the community to provide care in the home. HDA or community groups can also identify pregnant women and other at-risk people and put them in contact with HEWs.[36]

***Drug stockouts***

As mentioned above, survey assessments of availability of commodities have shown relatively high to moderate levels of drug availability.[4,10] However, these do not necessarily reflect the reality of drug availability over time. Therefore, it is difficult to determine the extent to which perceptions of lack of drug availability reflect the reality. It is likely that the perception of lack of availability of drugs is at least partly related to the pre-iCCM period when health posts often lacked essential commodities.[4] Nevertheless, it is critical to continue to focus on this issue to ensure a consistent supply of drugs at health posts at all times.[10] Maintaining supplies of essential commodities must continually remain the top priority for the FMOH and implementing partners. Furthermore, the accountability measures mentioned above for availability of HEWs would also serve to ensure drug supplies. Continued regular supervision will play an important role in ensuring adequate supplies. Furthermore, mobilizing the community to demand drugs and empowering them to report stockouts could provide an additional layer of supervision and accountability.[10]

## Evaluation of interventions to increase utilization

Reviewers looked for literature that evaluated interventions specifically designed to increase utilization of HEWs in Ethiopia. Only two such papers were found. Both papers were from the Maternal and Newborn Health in Ethiopia Partnership (MaNHEP) project of Emory University.

The first paper evaluated the effect of family meetings carried out in the homes of pregnant women by HEWs, community volunteers, and traditional birth attendants on the number of maternal and newborn health interventions received in 51 kebeles of Amhara and Oromia. In addition to mothers, husbands, mothers-in-law, and other family caregivers were also invited to participate in the meetings. Meetings used adult learning strategies with discussion, negotiation, and role-playing and the content addressed local knowledge and practices. The researchers found that at endline, women who did not participate in meetings received 76% of interventions, compared with 89% who did participate ($p<0.001$). Additionally, there was a positive dose-response relationship between number of meetings and interventions received (4 percentage points for each additional meeting attended, $p<0.001$). The effect of meeting attendance was stronger for women who attended meetings with family members (husbands and mothers-in-law).[37]

The second paper from the MaNHEP project assessed the use of mobile videos for community behavior change on maternal and newborn health practices. The videos were produced for each region's local context and in the local languages. The videos compared pregnancy and birth

experiences in two fictional families. One family attended family meetings and received appropriate interventions. The other family did not. The videos were shown in communities at school compounds, farmers' training centers, kebele administration buildings, and open spaces. Local teams composed of community volunteers, kebele administrators, HEWs, health center and woreda health office coaches, and MaNHEP staff organized and conducted the shows and the follow-up session. The evaluation consisted of qualitative focus group discussions with participants and an endline survey. They found that attendance was high and one-third of survey respondents had seen the video. People who attended the videos had higher recall of key messages than people who did not attend ($p<0.001$). Qualitative respondents said the videos represented their community dynamics well. The outcome of use of services/interventions was not measured.[27]

## Global review of interventions to increase CHW utilization

A further literature review was conducted to assess interventions used to increase CHW utilization outside of Ethiopia. A Pubmed search identified 13 papers describing interventions implemented to increase CHW utilization globally. Via a similar coding and thematic analysis method, the two most successful intervention themes were found to be: increasing caregiver knowledge of disease and removing financial barriers.

As discovered in the Ethiopia literature review, a major barrier to care seeking globally was the lack of caregiver knowledge of signs, symptoms, and danger signs of childhood illness.[38,39] Interventions that were based around increasing caregiver's knowledge were the most prominent in the literature. Examples of such interventions that were found to have a positive effect on care seeking included health promotion and community engagement by CHWs,[38] community awareness sessions,[40,41] educational workshops for caregivers,[42] and education during household visits.[43]

Financial constraints are also a significant barrier to healthcare utilization.[39] Voucher systems to reduce the cost of care[44] and conditional cash transfers[45] were both found to have a positive effect on health care utilization of new mothers.

Additionally, this review also brought forth some insights into the role of male CHWs. Male CHWs in India were found to have a positive effect on male community member health behavior and engagement with health services via targeting outreach to men.[46] While further research is required, this study reveals the potential benefits male educators could have on impacting the behaviors of male caregivers.

Regarding the issue of making CHWs more accountable to communities, one study found that the community's ability to complete report cards (via text message survey) assessing their providers had the potential to improve provider accountability and care-seeking.[47] This highlights a potential monitoring role for caregivers to increase ownership and utilization of a program.

## References


1. IGME. Levels and Trends in Child Mortality. New York: UN Inter-agency Group for Child Mortality Estimation, 2015.
2. Countdown to 2015: Fulfilling the Health Agenda for Women and Children. Geneva: UNICEF and WHO, 2015.
3. Trends in Maternal Mortality: 1990 to 2015. Geneva: World Health Organization, 2015.
4. Miller NP, Amouzou A, Tafesse M, et al. Integrated community case management of childhood illness in ethiopia: implementation strength and quality of care. *The American journal of tropical medicine and hygiene* 2014; **91**(2): 424-34.
5. Doherty T, Loveday M, Duduzile N, et al. Report on the Summative External Evaluation of the Catalytic Initiative (CI)/ Integrated Health Systems Strengthening (IHSS) Programme in Ethiopia: Medical Research Council, University of the Western Cape and Save the Children, USA, 2014.
6. Tadesse Y, Eniyew A, Mengistu B, Eniyew A, Marsh D. Utilization of integrated community case management services in three regions in Ethiopia after two years of implementation. *Ethiopian Medical Journal* 2014; **52**(3): 47-55.
7. Central Statistical Agency [Ethiopia] and ICF International. Ethiopia Demographic and Health Survey 2011. Addis Ababa, Ethiopia and Calverton, Maryland, USA: Central Statistical Agency and ICF International, 2012.
8. Ashenafi A, Karim AM, Ameha A, Erbo A, Getachew N, Betemariam W. Effect of the health extension program and other accessibility factors on care-seeking behaviors for common childhood illnesses in rural Ethiopia. *Ethiop Med J* 2014; **52 Suppl 3**: 57-64.
9. Amouzou A. Independent Evaluation of the Integrated Community Case Management of Common Childhood Illnesses in Oromia Region, Ethiopia. Baltimore: Institute for International Programs, Johns Hopkins Bloomberg School of Public Health, 2014.
10. Tefera W, Tesfaye H, Bekele A, Kayessa E, Waltensperger KZ, Marsh DR. Factors influencing the low utilization of curative child health services in Shebedino District, Sidama Zone, Ethiopia. *Ethiop Med J* 2014; **52 Suppl 3**: 109-17.
11. Tefera W, Tesfaye H, Kayessa E, Waltensperger KZ, Tadesse Y, Marsh DR. Illness recognition, home care, and care-seeking for sick infants less than two months of age in Shebedino District, Sidama Zone, Ethiopia. *Ethiop Med J* 2014; **52 Suppl 3**: 157-61.
12. Amare Y, Degefie T, Mulligan B. Newborn Care Seeking Practices in Central and Southern Ethiopia and Implications for Community Based Programming. Addis Ababa: Save the Children.
13. Baseline Evaluation of Maternal and Newborn Health Care Services in 25 Selected Woredas. Addis Ababa: Ethiopia Health and Nutrition Research Institute, 2013.
14. Callaghan-Koru JA, Seifu A, Tholandi M, et al. Newborn care practices at home and in health facilities in 4 regions of Ethiopia. *BMC Pediatr* 2013; **13**: 198.
15. Integrated Community Case Management (iCCM) Survey in Amhara, SNNP, and Tigray Regions. Addis Ababa: The Last Ten Kilometers Project (L10K), 2013.
16. Rapid Assessment of Determinants, Factors and Opportunities to Early Pregnancy Identification, Focused Antenatal Care, Skilled Birth Attendance and Postnatal Care Service Utilization in Gurage and Sidama Zones of SNNPR. Addis Ababa: Save the Children, 2015.
17. Factors Influencing Care and Treatment for Newborn Illness: Save the Children, 2013.
18. Warren C. Care of the newborn: Community perceptions and health seeking behavior. *Ethiop J Health Dev* 2010; **24**(1): 110-4.

19. Sisay MM, Yirgu R, Gobezayehu AG, Sibley LM. A qualitative study of attitudes and values surrounding stillbirth and neonatal mortality among grandmothers, mothers, and unmarried girls in rural Amhara and Oromiya regions, Ethiopia: unheard souls in the backyard. *Journal of midwifery & women's health* 2014; **59 Suppl 1**: S110-7.
20. Rapid Assessment on Barriers to Early Pregnancy Identification, Focused Antenatal Care, Skilled Birth Attendance and Postnatal Care Service Utilization in East Shewa Zone, Oromia Region. Addis Ababa: Save the Children, 2015.
21. Shaw B, Amouzou A, Miller NP, et al. Determinants of Utilization of Health Extension Workers in the Context of Scale-Up of Integrated Community Case Management of Childhood Illnesses in Ethiopia. *The American journal of tropical medicine and hygiene* 2015.
22. Miller NP, Amouzou A, Bryce J, Victora CG, Hazel E, Black RE. Assessment of iCCM implementation strength and quality of care in Oromia, Ethiopia. Baltimore, USA and Addis Ababa, Ethiopia: Institute for International Programs, Johns Hopkins Bloomberg School of Public Health, 2013.
23. Shaw B, Amouzou A, Miller NP, Tafesse M, Bryce J, Surkan PJ. Access to integrated community case management of childhood illnesses services in rural Ethiopia: a qualitative study of the perspectives and experiences of caregivers. *Health policy and planning* 2015.
24. Geldsetzer P, Williams TC, Kirolos A, et al. The recognition of and care seeking behaviour for childhood illness in developing countries: a systematic review. *PloS one* 2014; **9**(4): e93427.
25. Banteyerga H. Boosting Maternal Health Care Seeking Behavior in Rural Low Income Communities: A Case Study of West Gojam and South Wollo Zones in Amhara, Ethiopia. *AM J Health Res* 2014.
26. Prevalence of childhood illness and mothers'/caregivers' care seeking behavior in Bahir Dar, Ethiopia: A descriptive community based cross sectional study. Bahir Dar: Bahir Dar University, 2013.
27. Desta BF, Mohammed H, Barry D, Frew AH, Hepburn K, Claypoole C. Use of mobile video show for community behavior change on maternal and newborn health in rural Ethiopia. *Journal of midwifery & women's health* 2014; **59 Suppl 1**: S65-72.
28. Degefie T, Amare Y, Mulligan B. Local understandings of care during delivery and postnatal period to inform home based package of newborn care interventions in rural Ethiopia: a qualitative study. *BMC Int Health Hum Rights* 2014; **14**: 17.
29. Factors in the Operating Environment Influencing Community-Based Newborn Care. Addis Ababa: Save the Children, 2013.
30. Health Extension Workers Time Motion Study Complemented by In-depth Interviews within Primary Health Care Units in Ethiopia. Addis Ababa, Ethiopia, Boston, Massachusetts, and New Haven, Connecticut: Ethiopian Federal Ministry of Health, Harvard T.H. Chan School of Public
Health, Yale Global Health Leadership Institute, JSI Research & Training Institute, Inc., 2015.
31. Mangham-Jefferies L, Mathewos B, Russell J, Bekele A. How do health extension workers in Ethiopia allocate their time? *Hum Resour Health* 2014; **12**: 61.
32. Yitayal M, Berhane Y, Worku A, Kebede Y. Health extension program factors, frequency of household visits and being model households, improved utilization of basic health services in Ethiopia. *BMC Health Serv Res* 2014; **14**: 156.
33. Gelaw YA, Biks GA, Alene KA. Effect of residence on mothers' health care seeking behavior for common childhood illness in Northwest Ethiopia: a community based comparative cross--sectional study. *BMC Res Notes* 2014; **7**: 705.

34. Kelbessa Z, Baraki N, Egata G. Level of health extension service utilization and associated factors among community in Abuna Gindeberet District, West Shoa Zone, Oromia Regional State, Ethiopia. *BMC Health Serv Res* 2014; **14**: 324.
35. Shaw B. Qualitative Assessment of the Factors Limiting Care-Seeking for Diarrhea, Malaria and Pneumonia among Children in Oromia Region, Ethiopia. Baltimore: Institute for International Programs, Johns Hopkins Bloomberg School of Public Health, 2013.
36. Shrestha R. Improving Community Support for Health Extension Workers in Ethiopia. Washington, D.C.: USAID Health Care Improvement Project, 2014.
37. Barry D, Frew AH, Mohammed H, et al. The effect of community maternal and newborn health family meetings on type of birth attendant and completeness of maternal and newborn care received during birth and the early postnatal period in rural Ethiopia. *Journal of midwifery & women's health* 2014; **59 Suppl 1**: S44-54.
38. Sharkey AB, Martin S, Cerveau T, Wetzler E, Berzal R. Demand generation and social mobilisation for integrated community case mangement (iCCM) and child health: Lessons learned from successful programmes in Niger and Mozambique. *Journal of Global Health* 2014; 4 (2): 1-14.
39. Bedford KJA, Sharkey AB. Local Barriers and Solutions to Improve Care-Seeking for Childhood Pneumonia, Diarrhoea, and Malaria in Kenya, Nigeria and Niger: A Qualitative Study. *PLoS ONE* 2014*;* 9(6): e100038.
40. Sadruddin S, Khan IU, Bari A, Khan A, Ahmad I, Qazi SA. Effect of community mobilization on appropriate care seeking for pneumonia in Haripur, Pakistan. *Journal of Global Health* 2014; 5(1): 010405.
41. Fujino Y, Sasaki S, Igarashi K, Tanabe N, Muleya C, Tambatamba B, Suzuki H. Improvement in Mothers' Immediate Care-Seeking Behaviors for Children's Danger Signs through a Community-Based Intervention in Lusada, Zambia. *The Tohoku Journal of Experimental Medicine* 2009; 217:73-85.
42. Matsumoto-Takahashi ELA, Tongol-Rivera P, Villacorte EA, Angluben RU, Jimba M, Kano S. Patient Knowledge on Malaria Symptoms Is a Key to Promoting Universal Access of Patients to Effective Malaria Treatment in Palawan, the Philippines. *PLoS ONE* 2015; 10(6): e0127858.
43. The Evaluation of the effectiveness of care groups in expanding population coverage of Key child survival interventions and reducing under-5 mortality: a comparative analyis using the lives saved tool (LiST). *BMC Public Health* 2015; 15:835.
44. Agha S. Changes in the proportion of facility-based deliveries and related maternal health services among the poor in rural Jhang, Pakistan: results from a demand-side financing intervention. *International Journal for Equity in Health* 2011; 10:57.
45. Gopalan S, Durairaj V. Addresssing maternal healthcare through demand side financial incentives: experience of Janani Suraksha Yojana program in India. *BMC Health Services Research* 2012; 12:319.
46. Fotso J, Higgins-Steele A, Mohanty S. Male engagement as a stratefy to improve utilization and community-based delivery of maternal, newborn and child health services: evidence from an intervention in Odisha, India. *BMC Health Services Research* 2015; 15(Suppl 1):S5.