Bibliography on HIV/AIDS in Ethiopia and Ethiopians in the Diaspora: The 2013 Update

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This is the eleventh annual update of the bibliography on HIV/AIDS in Ethiopia, which we are pleased to present to researchers, policy makers and practitioners as the apparently only annual bibliography on HIV/AIDS in Africa. It includes, like all previous issues, published and unpublished research on HIV/AIDS and related health conditions and issues, particularly other sexually transmitted infections, tuberculosis, and socioeconomic, behavioral and cultural conditions, gender violence, sexuality, family planning, relevant policy and interventions. As in previous updates, all references are listed under eight main headings: basic biomedical research; epidemiological, behavioral, socio-economic and cultural research; impacts research; treatment, care and clinical research; prevention research; health services and health policy research; health informatics, monitoring and evaluation research; and HIV/AIDS research on Ethiopians in the Diaspora. Section 9 lists previous HIV/AIDS related bibliographies, and Section 10 lists pertinent and active websites for further references. The text preceding each list of references briefly summarizes patterns and trends and highlights key findings of the studies presenting new approaches, concepts or tools. The introduction of new topics and issues will hopefully encourage research into neglected, but relevant and promising areas of research. We want to emphasize that increasing complexity and integration of programs makes the categorization of references more difficult and recommend that readers interested in any one area of research review also other sections in this update. Finally, we would like to remind readers that, with the advent of early online publications, some of the references listed in this 2013 update could appear in print in 2014 with slightly different citation information.

We used the same methods as in previous updates to identify and catalog the references indexed in Pub Med/MEDLINE database as well as POPLINE, PsycLit, Global Health, CINHAL, Sociological Abstracts, EconLit, and Web of Science, using the search term "Ethiopia and HIV". The Ethiopian Journal of Health Development, which is not yet indexed in the Pub Med/MEDLINE database, was manually reviewed for relevant articles. This update includes relevant abstracts concerning Ethiopia presented at major international conferences, including the Abstracts of the 7th IAS Conference on HIV Pathogenesis, Treatment and Prevention, Kuala Lumpur, Malaysia(June30-July 3, 2013) and the Abstracts of the 142nd Annual Meeting and Exposition of the American Public Health Association, New Orleans, LA, USA (November 15-19, 2013). Additional online searches were made on websites of major national and regional HIV/AIDS resource centers, mostly http://www.etharc.org, and international organizations (http://www.unaids,com). We also included all relevant theses and dissertations prepared in different departments of the Addis Ababa, Gondar, Hawassa and Mekelle universities. Since we were able to include them in last year's update, abstracts from the 2013 Ethiopian Medical Association (EMA) and Ethiopian Public Health Association (EPHA) were not included in the current update.

This update includes 390 references and represents 21.7% fewer citations than last year's (498). The difference between the two updates is primarily due to inclusion of 2013 EMA and EPHA conference abstracts in last year's update. In fact, publications doubled this year compared to last year. Of the 390 citations this year, 195 (50.0%) are published articles, whereas last year there were only 84 published articles. In this year's update, 143 (36.7%) are master's theses, 24 (6.2%) are conference presentations, 18 (4.4%) are reports by different agencies and organizations, 9 (2.3%) are PhD dissertations, and 1 (0.3%) is a book chapter.

As in previous updates, we have included two graphs that depict the trend, from 1985 to 2013, in publication of articles on HIV and other infections among Ethiopians in Ethiopia and around the world. Figure 1 presents the results of the Pub Med search using the following terms: **Ethiopia AND HIV AND 2013[dp]; Ethiopia AND aids AND 2013[dp]**. The findings indicate a linear increase in published articles from 2005 through 2013. The increase in conference presentations in recent years (see the trend in the 2012 Update for International AIDS Conference abstracts) appears to continue to be followed by an increase in presentation materials becoming full-length manuscripts. It is important to note that the trend in publications may be a product of both increased productivity and the expansion of the number and origins of journals indexed in Pub Med. For example, the Ethiopian Journal of Health Sciences was indexed in Pub Med only recently permitting work done in Ethiopia to be counted in Figure 1. Other journals that publish HIV/AIDS related articles from Ethiopia (e.g., East African journals) have also been indexed in Pub Med

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recently, although it is not clear when they were first included in the database.

Similarly, Figure 2 presents trends in publications of articles on other common infections, including tuberculosis (TB) and malaria. Unlike previous updates, which included publication trends on schistosomiasis, this update includes publication trends in helminthes infections because of the growing relevance of parasitic infections in health outcomes of people living with HIV/AIDS in Ethiopia (see Section 2). For Figure 2, the Pub Med search terms were: **Ethiopia AND HIV AND 2013[dp]; Ethiopia AND aids AND 2013[dp]; Ethiopia AND malaria AND 2013[dp]; Ethiopia AND tuberculosis AND 2013[dp]; Ethiopia AND helminth AND 2013[dp]**. In 2013, there was a large increase in the number of publications concerning HIV/ AIDS, and/or tuberculosis and Ethiopia. The number of papers concerning malaria continued to increase in 2013 and remains at a steady level with 35 publications in 2011. Within the last three years, publication on helminthes appears to be increasing.

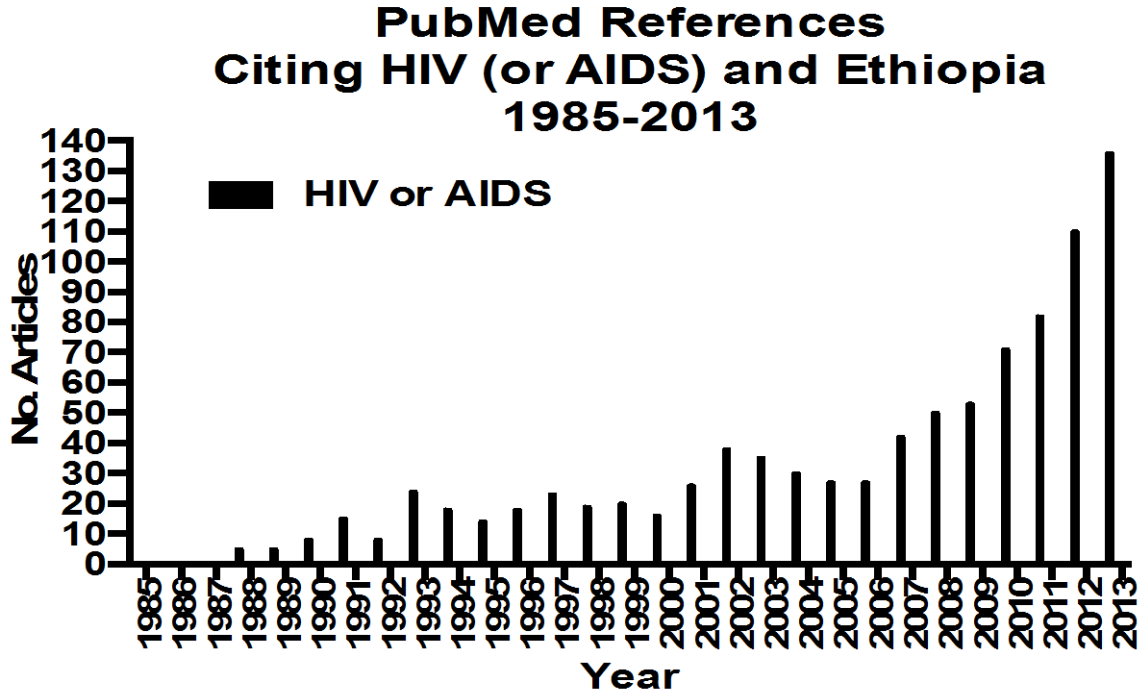

Figure 1: Publications Cited in Pub Med Concerning Ethiopia and HIV or AIDS

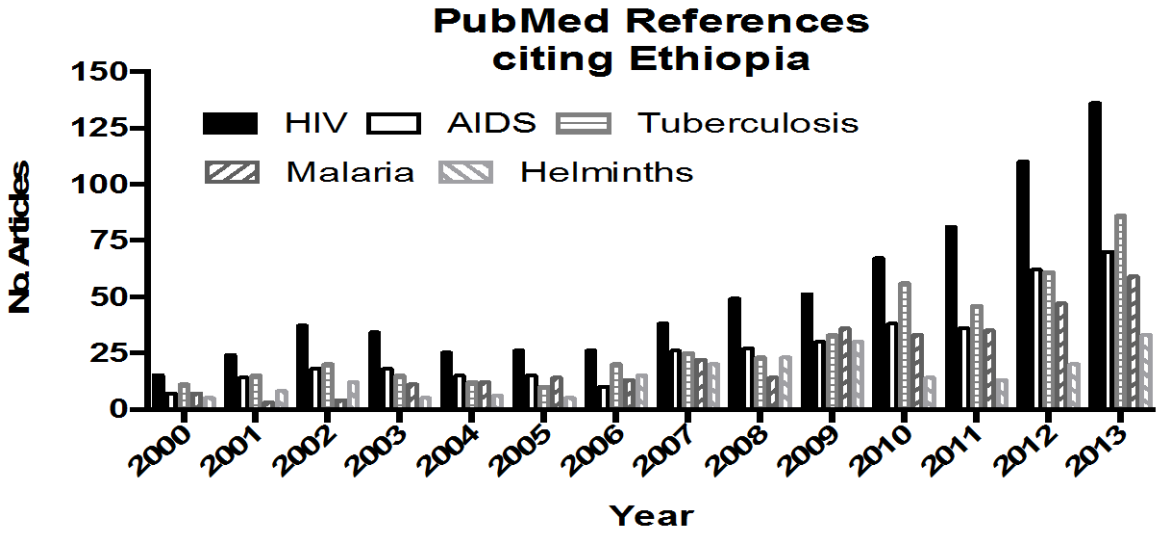

Figure 2: **Publications Cited in PubMed Concerning Ethiopia and HIV, AIDS, Tuberculosis, Malaria, and Helminths**

Section 1: Basic Biomedical Research

This section covers laboratory-based biomedical research, including studies on HIV structure, replication, and host immune responses; co-infection with other agents; development and testing of laboratory procedures; and other related laboratory studies.

This year, there are 25 references in this section (19 published articles and 6 master's theses) similar to the numbers seen in recent years. The 5 MSc and one MA theses are fewer than in 2012, but still more than in 2011. Of the four theses concerning TB, three focused on drug resistance (epidemiology (18), mathematical modeling (20), and mutation analysis (15) and one evaluated the Quantiferon whole blood assay for diagnosis of infection (1). The other two theses were on HIV (evaluation of a rapid test kit (12) and hematological changes in patients on HAART (16)). Seven of the published articles also focused on TB. Hassen Ali et al. (11) found that the frequency of hepatotoxicity induced by anti-TB medications in HIV/TB co-infected patients was greater in malnourished patients with disseminated pulmonary TB. Berhan et al. (5) conducted a meta-analysis of drug-resistant TB in sub-Saharan Africa and concluded that the greatest risk was in previously treated patients and emphasized on the importance of preventing resistance by assuring full and complete primary treatment. Garedew et al. (8, 9) published two studies concerning the molecular typing of extra pulmonary and pulmonary TB, respectively, in Debre Birhan Hospital. Extra pulmonary TB is much more common in HIV-infected than in HIV-negative patients. Almost all of the cultivable specimens (~36%) were *M. tuberculosis* (89%) and were predominantly in clusters, suggesting recent transmission. Surprisingly, given occupational and dietary exposure, *M. bovis* was not detected. Nearly 81% of the pulmonary specimens were culture positive and again ~89% were *M. tuberculosis* and in clusters. Mihret et al. (13) reported that TB patients had significantly higher plasma concentrations of certain chemokines and cytokines and lower plasma concentrations of others compared to household contacts, irrespective of the contacts' infection status as determined by the Quantiferon assay. After treatment completion, certain chemokine and cytokine levels in the TB patients significantly changed, suggesting a possible more rapid diagnostic assay for active TB that is not influenced by HIV status. In two papers studying subjects in Ethiopia and other African countries, Sutherland et al. determined that there are differential interferon-γ responses to different purified *M. tuberculosis* antigens according to disease and infection status and also to demographic status, i.e., country of origin (21). Using RNA/gene signature analysis, the authors (22) found significantly higher high-affinity IgG Fc receptor 1 (CD64) expression in active TB compared to latent infection. HIV status and geographic differences did not affect these results.

There was one article each concerning co infection with *Cryptococcus* (6), hepatitis C (24), and visceral leishmaniasis (23). The first two studies compared HIV co infected patients who were on antiretroviral treatment with those who were treatment naïve. Both co infections were associated with lower CD4+ T cell numbers. Takele et al. (23) found that arginase activity, a marker of immunosuppression, was significantly elevated in HIV+ patients co-infected with *Leishmaniadonovani* (23).

The remaining eight articles focused on HIV diagnostics (7), treatment response (3, 4), host genetic (2, 17) and pharmacogenetic differences (10) in susceptibility and treatment effects (14), and the impact of false positive diagnoses (19). Finally, there is a correction to a previous citation (25).

1. Abebe, DD (2013). Detecting *Mycobacterium* infection using whole blood interferon-γ Assay, QuantiFERON TB Gold in-Tube, among household contacts, community controls and tuberculosis patients in Addis Ababa. MSc Thesis: Aklilu Lemma Institute of Pathobiology, Addis Ababa University.
2. Aklillu, E, Odenthal-Hesse, L, Bowdrey, J, Habtewold, A, Ngaimisi, E, Yimer, G, et al. (2013). CCL3L1 copy number, HIV load, and immune reconstitution in sub-Saharan Africans. BMC Infect Dis 13: 536.
3. Andersson, E, Shao, W, Bontell, I, Cham, F, Cuong do, D, Amogne, W, et al. (2013). Evaluation of sequence ambiguities of the HIV-1 pol gene as a method to identify recent HIV-1 infection in transmitted drug resistance surveys. Infect Genet Evol 18: 125-131.
4. Berhan, A and Berhan, Y (2013). Virologic response to tipranavir-ritonavir or darunavir-ritonavir based regimens in antiretroviral therapy experienced HIV-1 patients: A meta-analysis and meta-regression of randomized controlled clinical trials. PLoS One 8(4): e60814.
5. Berhan, A, Berhan, Y and Yizengaw, D (2013). A meta-analysis of drug resistant tuberculosis in Sub-Saharan Africa: How strongly associated with previous treatment and HIV co-infection? Ethiop J Health Sci 23(3): 271-282.
6. Beyene, T, Woldeamanuel, Y, Asrat, D, Ayana, G and Boulware, DR (2013). Comparison of cryptococcal antigenemia between antiretroviral naive and antiretroviral experienced HIV positive patients at two hospitals in Ethiopia. PLoS One 8(10): e75585.
7. Fonjungo, PN, Girma, M, Melaku, Z, Mekonen, T, Tanuri, A, Haile Girogis, B, et al. (2013). Field expansion of DNA polymerase chain reaction for early infant diagnosis of HIV-1: The Ethiopian experience. Afr J Lab Med 2(1): 1-7.
8. Garedew, L, Mihret, A and Ameni, G (2013). Molecular typing of mycobacteria isolated from extrapulmonary tuberculosis patients at Debre

Birhan Referral Hospital, central Ethiopia. Scand J Infect Dis 45(7): 512-518.
9. Garedew L, Mihret A, Mamo G, Abebe T, Firdessa R, Bekele Y and Ameni, G (2013). Strain diversity of mycobacteria isolated from pulmonary tuberculosis patients at Debre Birhan Hospital, Ethiopia. Int J Tuberc Lung Dis 17(8):1076-81.
10. Habtewold, A, Amogne, W, Makonnen, E, Yimer, G, Nylen, H, Riedel, KD, et al. (2013). Pharmacogenetic and pharmacokinetic aspects of CYP3A induction by efavirenz in HIV patients. Pharmacogenomics J 13(6): 484-489.
11. Hassen Ali, A, Belachew, T, Yami, A and Ayen, WY (2013). Anti-tuberculosis drug induced hepatotoxicity among TB/HIV co-infected patients at Jimma University Hospital, Ethiopia: nested case-control study. PLoS One 8(5): e64622.
12. Mengistie, AG (2013). Performance evaluation of fourth generation HIV rapid test kit (SD Bioline HIV-1/2 Ag/Ab Combo Test). MSc Thesis: Department of Clinical Laboratory Sciences, Addis Ababa University.
13. Mihret, A, Bekele, Y, Bobosha, K, Kidd, M, Aseffa, A, Howe, R, et al. (2013). Plasma cytokines and chemokines differentiate between active disease and non-active tuberculosis infection. J Infect 66(4): 357-365.
14. Mulu, W, Gidey, B, Chernet, A, Alem, G and Abera, B (2013). Hepatotoxicity and associated risk factors in HIV-infected patients receiving antiretroviral therapy at Felege Hiwot Referral Hospital, Bahirdar, Ethiopia. Ethiop J Health Sci 23(3): 217-226.
15. Negatu, DA (2013). Analysis of retrospective data on gene mutations among isoniazid and rifampicin-resistant *Mycobacterium tuberculosis* isolates and their effect on the second-line anti-tuberculosis treatment. MSc Thesis: Aklilu Lemma Institute of Pathobiology, Addis Ababa University.
16. Nemere, MA (2013). Hematological abnormalities among HIV-infected patients taking highly active antiretroviral therapy in Zewditu Memorial Hospital, Ethiopia MSc Thesis: Aklilu Lemma Institute of Pathobiology, Addis Ababa University.
17. Ngaimisi, E, Habtewold, A, Minzi, O, Makonnen, E, Mugusi, S, Amogne, A, et al. (2013). Importance of ethnicity, CYP2B6 and ABCB1 genotype for efavirenz pharmacokinetics and treatment outcomes: a parallel-group prospective cohort study in two sub-Saharan Africa populations. PLoS One 8(7): e67946.
18. Sarhie, WD (2013). Epidemiology and drug resistance pattern of *M. tuberculosis* in northwest Ethiopia: Resource limited region. MSc Thesis: Department of Medical Microbiology, Addis Ababa University.
19. Shanks, L, Klarkowski, D and O'Brien, DP (2013). False positive HIV diagnoses in resource limited settings: operational lessons learned for HIV programs. PLoS One 8(3): e59906.
20. Sharbayata, SS (2013). Mathematical modeling and analysis of the transmission of drug-resistant TB in Ethiopa. MA Thesis: Department of Mathematics, Addis Ababa University.
21. Sutherland, JS, Lalor, MK, Black, GF, Ambrose, LR, Loxton, AG, Chegou, NN, et al. (2013). Analysis of host responses to *Mycobacterium tuberculosis* antigens in a multi-site study of subjects with different TB and HIV infection states in sub-Saharan Africa. PLoS One 8(9): e74080.
22. Sutherland, JS, Loxton, AG, Haks, MC, Kassa, D, Ambrose, L, Lee, JS, et al. (2014). Differential gene expression of activating Fcgamma receptor classifies active tuberculosis regardless of human immunodeficiency virus status or ethnicity. Clin Microbiol Infect 20(4): O230-238.
23. Takele, Y, Abebe, T, Weldegebreal, T, Hailu, A, Hailu, W, Hurissa, Z, et al. (2013). Arginase activity in the blood of patients with visceral leishmaniasis and HIV infection. PLoS Negl Trop Dis 7(1): e1977.
24. Taye, S and Lakew, M (2013). Impact of hepatitis C virus co-infection on HIV patients before and after highly active antiretroviral therapy: an immunological and clinical chemistry observation, Addis Ababa, Ethiopia. BMC Immunol 14: 23.
25. Wondimeneh, Y, Ferede, G, Yismaw, G, Muluye, D, Alem, M, Asfaw, F, et al. (2013). Correction: total lymphocyte count as surrogate marker for CD4 Cell Count in HIV-infected individuals in Gondar University Hospital, Northwest Ethiopia. AIDS Res Ther 10(1): 2.

Section 2: Epidemiological, Behavioral, Socio-Economic and Cultural Rearserch

This section includes studies on the epidemiology of HIV and other opportunistic infections, AIDS and related diseases, and risk and protective behaviors. It also covers research on the biological, psychosocial, socioeconomic, cultural, structural, and other contextual determinants of HIV transmission and prevention.

In this update, this section includes 144 references (80 published articles, 50 masters theses, 8 conference abstracts, 4 doctoral dissertations, and 2 reports), representing more than one-third of the total for the year. We have included one reference published in 2012 because it was not included in our previous update. We identified eight broad themes in topics of research reported: 1) HIV prevalence and factors associated with HIV infection; 2) opportunistic and other co-infections; 3) sexual and other risk behaviors for HIV infection; 4) awareness and knowledge about HIV/AIDS and related issues; 5) nutrition and nutritional disorders among PLWHA; 6) fertility desire and contraception use among PLWHA; 7) violence and its association with HIV; and 8) other existing and emerging research areas. The following paragraphs are intended to provide a snapshot of research in those broad topic areas.

We begin this section with a brief review of one of the most comprehensive publications on HIV/AIDS epidemiology – the final report of the 2011 Ethiopia Demographic and Health Survey (35, see also 108). The 2011 EDHS final report was published in 2012, but was not included in our previous update. The EDHS involved a survey on a systematically selected and nationally representative sample of women aged 15-49 (n = 16,515) and men aged 15-59 years (n = 14,110). Of those, 89% of women and 82% of men agreed to be tested for HIV. The results revealed HIV prevalence of 1.5% among women and men nationally. When compared to the 1.4% prevalence in 2005 EDHS, it demonstrates that HIV prevalence levels have remained stable over the years. While this was good news, the survey also revealed sizeable differences by sex, marital status, and region, implying vulnerability to HIV and availability prevention services may not be uniformly distributed among the nation's population groups and geographic regions. In addition to EDHS, this section also includes several other specific studies that covered HIV-prevalence related topics (33, 37, 48, 57, 66, 73, 80, 102, 123). Cherinet and colleagues (37) examined trends in HIV prevalence among pregnant women (n = 7,887) attending the antenatal care unit of Bishoftu Hospital from January 2006 to June 2010. The authors found a remarkable decline in HIV prevalence from 8.3% in 2006 to 4.3% in 2010. Three other studies explored HIV prevalence and associated risk factors among vulnerable populations (48, 57) and the contributions of socio-economic factors in changes in national levels of HIV over a long period of time (73). Other studies relevant to our understanding of the prevalence of HIV infection explored the determinants of horizontal or vertical HIV infection (80, 102, 123), prevalence of sero-discordant relationships (37, 66), and factors associated with late diagnosis of HIV (33).

Consistent with previous updates, the epidemiology of viral, bacterial, or parasitic infections among people living with HIV was the subject of several studies. Among the most frequently studied co-infections were HIV and intestinal parasites (6, 46, 52, 75, 95, 135, 144), HIV and TB (12, 79, 82, 79, 125), HIV and HBV or HCV (41, 62, 68, 87, 136), HIV and other sexually transmitted diseases (44, 55, 116), and HIV and other infections (10, 16, 90, 100, 122). While most of those studies examined the prevalence and determinants of co-infections, a small number of them focused on the effects one infection has on the other. This update also includes several studies focusing on the epidemiology of tuberculosis in a wide variety of settings and geographic regions in Ethiopia. These studies documented prevalence, spatial distribution, environmental and host-related determinants of TB infections (7, 9, 22, 24, 28, 29, 38, 65, 76, 81, 85, 101, 126, 139, 143), including multi-drug resistant TB (76, 139). Given that tuberculosis is the most common opportunistic infection and one of the most common causes of death for people with AIDS, the continued emphasis in understanding the epidemiology of TB is appropriate.

As in previous updates, a significant number of the studies examined sexual and other risk behaviors for HIV acquisition and spread, and the demographic and psychosocial factors associated with these risk behaviors. Sexual risk behavior studies covered such topics as sex with multiple partners, unprotected sex, and early sexual initiation (19-21, 25, 36, 45, 78, 84, 91, 99, 104, 120, 129, 133, and 142). These studies were predominantly conducted on youth in urban and school settings (19, 20, 36, 45, 56, 91, 104), although a few studies covered rural and urban adults (25, 35, 108) or focused on population groups that are understudied, including street youth (120, 133) pastoral communities (78), and miners (142). In this update, four studies presented findings about the prevalence of substance use, factors associated with substance use, or the potential contributions of substance use to HIV infection (26, 47, 83, and 130). Those studies focused on khat and alcohol use, perhaps because those are two of the most widely used and abused substances in Ethiopia. Studies on use of other drugs are limited and warrant future attention.

Several studies in this section examined the levels of knowledge or awareness of their study participants about HIV/AIDS or HIV-related topics of interest (3, 8, 17, 18, 50, 67, 71, 86, 106, 112, 128, 140, 141). According to the EDHS 2011 findings, general knowledge of AIDS is almost universal, with 97% of women and 99% of men having heard about AIDS. However, the survey revealed that only a small fraction of women (19%) and men (32%) have comprehensive knowledge, which includes knowing that both condom use and limiting sex partners to one uninfected partner are HIV prevention methods, being aware that a healthy-looking person can have HIV, and rejecting that HIV/AIDS can be transmitted through mosquito bites and by supernatural means. Another study with a smaller sample found similarly low levels of comprehensive knowledge about HIV/AIDS (106). It is important to note that two studies reported findings about levels of awareness and knowledge about HIV-related issues that received little attention in the past. In one study (18), the findings of a qualitative research about misconceptions and discord regarding both HIV prevention and treatment among a sample of HIV-positive and HIV-negative persons were presented. The authors identified misconceptions as well as potential conflicts between personal religious beliefs (e.g., holy water as a cure) and medical treatment. Another study (86) focused on knowledge, attitude and practice towards post exposure prophylaxis (PEP) for HIV among health care workers. The study revealed that 36.9% of the participants had low levels of knowledge about PEP, although the majority (75.4%) had a favorable attitude towards its use. The levels of awareness and factual knowledge about HIV treatment among the general population and PEP among healthcare workers are

important areas for further research. Other studies in this area explored knowledge and perceptions about MTCT (17, 128, 140), HPV and cervical cancer (3), and HIV and tuberculosis testing (8, 112).

HIV/AIDS and nutrition are closely linked. HIV infection affects food security and nutrition status of a household by affecting the productive members of the family. In turn, malnutrition contributes to exacerbation of HIV/AIDS disease by weakening immune functions and compromising the potential benefits of treatment. In this update, at least five studies (30, 38, 58, 70, 93) focused on the interplay between nutrition and HIV/AIDS by exploring the prevalence of and associated factors for malnutrition and nutritional disorders in PLWHA (38, 70, 93) and examining the effects of nutritional factors on adherence to ART among HIV-infected adults (30). In a country with significant food insecurity problems, further research into the relationships between malnutrition and HIV/AIDS is needed to inform the development and implementation of appropriate prevention and treatment approaches.

The largest burden of HIV/AIDS falls on young men and women of reproductive age. With effective therapies that have improved the prognosis of PLWHA and that significantly decreased HIV transmission from mothers to their children, fertility desire among HIV-positive men and women has become an increasingly important area of research. In this update, at least eight studies have directly dealt with fertility desires, pregnancy, and contraception related issues with men and women living with HIV (27, 39, 49, 77, 88, 103, 115, and 138). Fertility desire among HIV-positive men and women attending selected ART clinics was found to be generally high: 46% of women in Tigray (27), 57.9% of men and 39% of women in Oromia (49), and 43.3% of men and women in Addis Ababa. Two retrospective studies have also shown an increasing trend of pregnancy among HIV-positive women who are receiving ART (39, 115). Two master's theses examined level and predictors of contraceptive use among PLWHA (88, 138). In a similar published article, only 46% of women on ART reported using modern contraceptives and just about half of those used dual purpose methods (27). Overall, the findings of those studies suggest increasing fertility desires and the need to incorporate pregnancy-related services as integral part of HIV care and treatment services.

There has been a continued research interest in sexual, physical, and other forms of violence and its connections to poor health outcomes, including increased risk for HIV infection. In this update, ten references present findings on the measurement, prevalence, determinants, and/or health-related consequences of violence (4, 13, 43, 69, 74, 82, 94, 98, 107, and 113). Different forms of violence were investigated, including sexual harassment of female students (4), domestic violence of women by their husbands or partners (13, 113), and sexual abuse against vulnerable populations, including street girls (94) and commercial sex workers (98). In most of those studies, the victims were young girls and women. In one study, however, the prevalence of sexual abuse against male high school students in Addis Ababa was explored (69). The study revealed a life time prevalence of rape of 4.3% and sexual harassment of 68.2% and concluded that both rape and sexual harassment tend to be higher among male students who live with adults that are not their parents. Another notable study in this area examined the expectation of violence after disclosure HIV status (82). This study found that 78.5% of the participants, composed of 400 pregnant women attending ANC clinics, expected their partners to react negatively if they disclose a positive test for HIV. The expected negative reactions included withdrawal of financial support (27.0%), marital disruption (22.5%), verbal abuse (12.8%), psychological harassment (9.5%), and physical violence (6.8%). One study with HIV-positive men and women receiving ART in eastern Ethiopia found low levels of disclosure of HIV status (111). In that study, 66.3% of participants disclosed their status to their spouses, 17.0% to their siblings, 16.8% to other relatives, and the remaining 11.6% to no one. It is likely that perceived threat of violence may have contributed to lower than expected levels of disclosure. Studies on violence as a risk factor for HIV or violence as a consequence of HIV status will continue to be critical to expand our understanding of the magnitude of the problem and to promote the protection of the rights and safety of vulnerable populations, including PLWHA.

The remaining studies in this section dealt with previously covered areas including, reproductive health issues, comprising of family planning, contraceptive use, mate preferences, abortion practices, and reproductive rights (5, 14, 92, 109, 110, 131, 134, 141) HIV-related attitudes and stigma (11, 35, 59, 61, 72), and the role of cultural norms, socialization processes, and cultural institutions in HIV risk, prevention or care (51, 105, 118, 121, 127). There were also emerging research themes in this section. Three studies explored the water, sanitation or hygiene practices of PLWHA (31, 32, 34), two studies examined mental health issues among PLWHA (40, 97), and a masters thesis assessed sexual orientation of gay and lesbian in Addis Ababa (117). Each of these emerging areas deserves further research to grow the knowledge base and help translate findings into public health action

1. Abate, AA (2013). Exploring factors motivating and hindering youth participation in youth development programs in Ethiopia. Dissertation Abstracts International Section A: Humanities and Social Sciences 74(5-A(E)).
2. Abay, GK (2013). Nasal carriage of methicillin-resistant *S. aureus* associated risk factors among outpatient HIV-positive and negative people at St. Paul Hospital Millennium Medical College, Addis

Ababa. MSc Thesis: Department of Clinical Laboratory Sciences, Addis Ababa University.

3. Abdulkadir, I, Ebin, V, Enquselassie, F, Chu, L and Burke, S (2013). Level of knowledge towards human papillomavirus/cervical cancer & practice of papanicolaou test screening among female Addis Ababa University students in Ethiopia. Abstracts of the 142nd Annual Meeting and Exposition of the American Public Health Association, New Orleans, LA, USA. Abstract no. 294713.
4. Abebe, M (2013). An assessment of sexual harassment of female students: The case of Debre Markos University. MA Thesis: School of Psychology, Addis Ababa University.
5. Abraham, M (2013). The socio-cultural dynamics of reproductive rights of married women: The case of Sebeta Town. MA Thesis: Department of Sociology, Addis Ababa University.
6. Adamu, H, Wegayehu, T and Petros, B (2013). High prevalence of diarrhoegenic intestinal parasite infections among non-ART HIV patients in Fitche Hospital, Ethiopia. PLoS One 8(8): e72634.
7. Adane, Z (2013). Prevalence of smear pulmonary tuberculosis among public health facility visitors in Bahir Dar Town. MPH Thesis: Institute of Public Health, Gondar University.
8. Addis, Z, Yalew, A, Shiferaw, Y, Alemu, A, Birhan, W, Mathewose, B, et al. (2013). Knowledge, attitude and practice towards voluntary counseling and testing among university students in North West Ethiopia: a cross sectional study. BMC Public Health 13(1): 714.
9. Adula, SA (2013). Prevalence of endometrial tuberculosis among patients undergoing endometrical biopsy at Tikur Anbessa Specialized Hospital. MSc Thesis: Department of Medical Microbiology, Addis Ababa University.
10. Alemu, A, Shiferaw, Y, Addis, Z, Mathewos, B and Birhan, W (2013). Effect of malaria on HIV/AIDS transmission and progression. Parasit Vectors 6: 18.
11. Alemu, T, Biadgilign, S, Deribe, K and Escudero, HR (2013). Experience of stigma and discrimination and the implications for healthcare seeking behavior among people living with HIV/AIDS in resource-limited setting. SAHARA J10(1): 1-7.
12. Alene, KA, Nega, A and Taye, BW (2013). Incidence and predictors of tuberculosis among adult people living with human immunodeficiency virus at the University of Gondar Referral Hospital, Northwest Ethiopia. BMC Infect Dis 13: 292.
13. Allen, M and Raghallaigh, MN (2013). Domestic violence in a developing context: The perspectives of women in Northern Ethiopia. Affilia 28(3): 256-272.
14. Alvergne, A, Lawson, DW, Clarke, PM, Gurmu, E and Mace, R (2013). Fertility, parental investment, and the early adoption of modern contraception in rural Ethiopia. Am J Human Biol 25(1): 107-115.
15. Amsalu, M (2013). Assessment of exclusive breast feeding practice among HIV-positive mothers and associated factors in Addis Ababa. MPH Thesis: Institute of Public Health, Gondar University.
16. Argaw, D, Mulugeta, A, Herrero, M, Nombela, N, Teklu, T, Tefera, T, et al. (2013). Risk factors for visceral leishmaniasis among residents and migrants in Kafta-Humera, Ethiopia. PLoS Negl Trop Dis 7(11): e2543.
17. Asefa, A and Beyene, H (2013). Awareness and knowledge on timing of mother-to-child transmission of HIV among antenatal care attending women in Southern Ethiopia: A cross sectional study. Reprod Health 10: 66.
18. Asgary, R, Antony, S, Grigoryan, Z and Aronson, J (2014). Community perception, misconception, and discord regarding prevention and treatment of infection with human immunodeficiency virus in Addis Ababa, Ethiopia. Am J Trop Med Hyg 90(1): 153-159.
19. Ashenafi, A (2013). Predisposing factors for adolescent risky behaviours and implications for intervention around Bole area. MA Thesis: Department of Psychology, Addis Ababa University.
20. Atalel, E (2013). Practices of multiple concurrent sexual partnerships and its risk of infection by HIV/AIDS in Addis Ababa: A case study of four high schools. MA Thesis: Department of Geography and Environmental Studies, Addis Ababa University.
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Section 3. Impact Research

This section covers studies on the demographic, social, psychological, and economic impacts of HIV/AIDS on individuals, families, communities, institutions, or the nation.

With 26 references (13 published articles, 12 masters' theses, and 1 conference abstract), this section is three times as large as last year. The 9 studies of psychological and psychosocial impacts of HIV/AIDS and tuberculosis (4, 5, 7, 9, 12-14, 17, 18) constitute the largest group and contribute to filling a research gap that was noted in the 2012 HIV/AIDS Update. It is noteworthy that seven of those nine studies are MA theses prepared in three departments of a Social Science Faculty, reflecting the continuing contribution of social science students to urgent research topics. Deribew et al. (7) found that all quality of life indicators studied (physical, psychological, social, environmental and spiritual) improved significantly among patients in treatment after 6 months of treatment, particularly among HIV/TB co-infected patients.

Eight studies evaluated determinants of mortality, including studies of mortality from AIDS (10, 15, 19, 2 0, 23), HIV/TB co-infections (6, 21), multi-drug resistant tuberculosis (11) and mortality from all causes based on verbal autopsy (16), issues that have been addressed by earlier studies. Sileshi et al. (21) found that mortality rates were higher among HIV/TB patients not receiving ART or not receiving ART early. Getachew et al. (11) reported that the mean survival time of multidrug-resistant patients after 6, 12, 18, and 24 months was 88.5%, 85.8%, 82.7% and 80,0% respectively in a specialized TB hospital in Addis Ababa, but concluded that strengthening of existing treatment programs can further improve patient survival. Further studies on survival from multidrug resistant TB are needed, given that Ethiopia is one of the countries worldwide with the highest rates of multidrug resistance TB.

Seven of the remaining studies examined the impacts of AIDS on the population of a small town (26), mortality from tuberculosis meningitis in Ethiopia and other African countries (24), the burden of metabolic syndrome in HIV patients (24), the impact of malaria on HIV transmission and pathogenesis (1), ocular manifestations of HIV infection (3) and the role of stigma in HIV vulnerability (2) and socioeconomic impacts of ART services in Ethiopia (25). The latter study is particularly timely and urgent in view of the accelerating decline of AIDS mortality and associated increase in longevity, wellness and productivity of PLHIV on ART in Ethiopia. Tolosse (23) applied the Cox Proportional Hazard Model, a statistical survival model which can measure proportional hazards over time, to a study of TB patients (23).

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initiating antiretroviral therapy in western Ethiopia: A hospital-based retrospective cohort study. ISRN AIDS 2013: 491601.
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17. Mohamed, N (2013). The experience of HIV-positive women living with mental illness in Addis Ababa: The case of Amanuel Hospital. MA Thesis: School of Social Work, Addis Ababa University.
18. Nassir, Y (2013). Assessment of psychological problems of people living with HIV/AIDS: The case of mamani association of PLWHA, Silti Zone. MA Thesis: School of Psychology, Addis Ababa University.
19. Nuna, DK (2013). Factors affecting survival status of HIV patients following antiretroviral therapy program in Dembi Dollo Hospital, west Ethiopia. MA Thesis: Center for Population Studies, Addis Ababa University.
20. Shibru, A (2013). Prevalence of mortality and associated factors among children born to HIV-infected mothers in public hospitals in North Gondar, northwest Ethiopia. MPH Thesis: Institute of Public Health, Gondar University.
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24. Woldeamanuel, YW and Girma, B (2013). A 43-year systematic review and meta-analysis: case-fatality and risk of death among adults with tuberculous meningitis in Africa. J Neurol. 00(0): Online publication, no pagination.
25. Wong, W, Asfaw, E, Johns, B, Minior, T, Palen, JGH and Dominis, S. (2013). Patient experience and economic impact as a result of task-shifting ART services in Ethiopia. Abstracts of the 142nd Annual Meeting and Exposition of the American Public Health Association, New Orleans, LA, USA. Abstract no. 288934.
26. Yeshiwas, B (2013). Studies of people living with HIV/AIDS in Dangila. MA Thesis: Department of Sociology, Addis Ababa University.

Section 4. Health Services and Health Policy Research

This section includes reports on research and programmatic activities that aimed at expanding and improving the healthcare system, including such issues as expansion of services for people living with HIV/AIDS, health resource economics and management, healthcare staff training, and national as well as international policies, laws, and guidelines for the provision of services and the protection of people living with HIV/AIDS, women, children, and other vulnerable groups.

This section contains a total of 47 references (18 published articles, 9 maters theses, 8 conference abstracts, 10 reports, 1 PhD dissertation, and 1 report). The majority of the studies in this section deal with issues of family planning and reproductive health services both in themselves (3, 20, 24, 26, 27, 37, 38, 40, 43, 47) or as they relate to or in integration with HIV/AIDS services (15, 32, 35). Asnake and colleagues (3) showed that provision of Implanon at the community level through community health workers is effective in reaching women with the greatest need for contraception and Gebreselassie and Govindasamy (20) described the levels and trends in unmet need for family planning among adolescents and young women in Ethiopia through the analysis of the three consecutive demographic health surveys. Halperin (24) challenges the widely held assumption that a decline in fertility must be preceded by sweeping economic and educational advancement by demonstrating the successful implementation of services in Ethiopia, Africa's second most populous country. Olson and Piller (37) described how the country has become an emerging family planning success story over the last two decades. Similarly, Jacobstein, et al. (26) indicate the renewal of commitment by the international community to family planning programs through the identification of successful family planning programs in Sub-Saharan countries that include Ethiopia. Olson Jankowski and colleagues (27), through family planning market analysis, illustrate that injectables have been the most popular contraceptive methods that are in use in Ethiopia. A technical update by Pathfinder International, Ethiopia (40) describes how an Integrated Family Health Program (IFHP) helped build capacity of health program managers and implementers to conduct operations research, with the ultimate goal of strengthening systems and fostering innovation based on systematic learning, while Tafesse et al. (43) show how the lack of critical resources for the provision of quality FP services affecting important aspects of service provision such as IEC on FP. Zegeye and colleagues (47) show the importance of planned pregnancy on early antenatal visits in rural health facilities in Ethiopia, while according to Mekonnen (35), integration of family planning services with those of HIV/AIDS increases service coverage, client satisfaction, and strengthens public private partnership. A study in northwest Ethiopia (15) showed that utilization of

reproductive health services was associated with education, discussion of services, the type of sexual relationship and perception of risk. Matinhure and colleagues (32) also demonstrated that strengthening gender focus as improving the quality of ANC and PMTCT services.

Another group of articles dwells on capacity and quality of laboratory services in relation to the diagnosis and treatment follow up of HIV/AIDS cases (4, 5, 33, 34, 45). Asire et al. (4) showed the possibility of developing an algorithm for determining the eligibility of ART in resource limited settings by using total lymphocyte counts, haemoglobin and body mass index for HIV positive patients, while Atbaru (5) evaluated the performance of non-laboratory personnel in rapid HIV testing. According to studies done in Southwest Shoa Zone (33, 34), secondary laboratories could play vital role in assuring laboratory qualities at primary level health centers, and in addition, laboratory quality improvement tools can be developed to assess and monitor the quality of malaria and acid-fast bacilli (AFB) microscopy total testing processes.

Furthermore, Tekle Mariam and colleagues (45) have demonstrated that the overall degree of customers' satisfaction being high with laboratory services (including those for HIV) of government hospitals in eastern Ethiopia.

There are also articles in this category that raise the need for still more resources to address the problem of HIV/AIDS as they discuss the inputs form the Global Fund, other international partnerships as well as local financing initiatives (11, 12, 14, 18, 25, 30). While Fan and colleagues (14) reviewed budget data in 20 of the Global Fund supported countries, Bowser et al. (11) have criticized the narrow disease focus and lack of coordination with national governments of the Global Fund investments. On the other hand, Burke and O'Malley (12) have systematically reviewed the positive impact of microfinance schemes on women's health outcomes. Ford et al. (18) have questioned the equitability of the pricing of anti-retroviral drugs, showing that prices for these drugs were significantly higher in upper-middle income countries outside Africa. Hargreaves (25) discussed the role of the lack of structural approaches in resource allocation in influencing the pattern and scale up of HIV epidemics and in constraining the delivery and effectiveness of HIV control efforts. A report by Kates et al. (30) maps the complex network of international assistance aimed at addressing the global impact of HIV/AIDS.

The importance of training and capacity building in human resources for health, including health extension and other forms of community health workers in HIV/AIDS and reproductive health programs is the topic of several articles in this section (10, 13, 16, 17, 29, 36, 44, 46). Bogale and colleagues (10) showed how health extension workers provide accurate information for generating demand for voluntary medical male circumcision in an ethnically diverse community with longstanding myths in Gambella. A MPH thesis from Gondar University (13) discusses the pattern of compliance with standard precaution among health workers in public hospitals in northern Ethiopia. A World Bank publication (16) reviews the current HRH situation in Ethiopia with summary of the evidence and relevant policy options on population use of selected health services, while Fonjungo et al. (17) assess the existing pre-service education in five medical laboratory schools, showing that strengthening pre-service laboratory education is feasible in resource-limited settings as it provides a valuable source of competent laboratory technologists to relieve an overstretched health care system. A technical report of John Snow Inc (29) shows the effort of a project by USAID to integrate pre-service training activities as a sustainable and cost effective solution to build more competent health workforce at the local level. A systematic literature review by Mwai et al. (36) describes how CHWs can clearly contribute to HIV services delivery and strengthen human resource capacity in sub-Saharan Africa. Teklehaimanot and Teklehaimanot (44) described strategies, human resource developments, service delivery modalities, progress in service coverage, and the challenges in the implementation of the health extension program in Ethiopia, while Tilaye (46) assessed the pattern of needle stick injury and associated factors among health workers in public hospitals in Addis Ababa.

Patterns of service provision as well as opportunities and challenges of VCT programs are discussed in some of the articles in this section (7, 19, 22, 42). Three MA theses from the Addis Ababa University (7, 19, 42) and one MPH thesis from Mekelle University (22) assessed perceived psychological impact of counselors who work with HIV/AIDS patients as well as the quality of counseling, adherence to VCT protocols by counselors, practices, challenges and factors affecting HIV voluntary counseling and testing in public hospitals and health centers.

Several studies covered strategies for strengthening and managing health systems, health policy, and integration of HIV/AIDS services with provision of other health services (6, 8, 9, 21, 23, 28, 31, 39, 41). According to a review by Balabanova and et al. (6), improvements in health can still be achieved in countries with relatively few resources, though strategic investment is necessary to address new challenges such as complex chronic diseases and growing population expectations. One MSc thesis from the Addis Ababa University (8) describes the pattern of supply chain management of HIV/AIDS related commodities in Addis Ababa, while a PhD dissertation (28) from the same university makes a critical discourse analysis of representations of

HIV/AIDS in Ethiopia's policies and newspapers. Girma (21) discusses about improving access to PMTCT and ART services in health centers in Hawassa and Haile Amlak (23) emphasizes the importance of initiating school health programs for enhancing the efficiency of other investments in child health. A technical brief by Pathfinder International, Ethiopia (39) discusses implementation experience in four African countries, providing recommendations for future efforts to more holistically advance improved PMTCT outcomes in resource-limited settings, while Tadesse (41) reviews the implementation of a rights-based approach to HIV prevention, care, support and treatment in Ethiopia; and Kebede (31) discusses the need for psychological counseling services and mode of provision to clients under antiretroviral therapy in public hospitals in Addis Ababa.

Finally, a couple of articles discuss the prospect of achieving MDGs in Ethiopia with particular reference to achievements in HIV/AIDS related activities (1, 2).

1. Accorsi, S and Medimond (2013). Special session "Countdown to 2015 in Ethiopia" Countdown to 2015: Challenges and perspectives in achieving the Millennium Development Goals in Ethiopia. Articles from the 13th World Congress on Public Health (pp. 7-12). Bologna, Italy, Medimond SRL.
2. Asnake, M (2013). MDG achievements and beyond 2015: The Ethiopia case. Abstracts of the 142nd Annual Meeting and Exposition of the American Public Health Association, New Orleans, LA, USA. Abstract no.
3. Asnake, M, Henry, EG, Tilahun, Y and Oliveras, E (2013). Addressing unmet need for long-acting family planning in Ethiopia: Uptake of single-rod progestogen contraceptive implants (Implanon) and characteristics of users. Int J Gynecol Obstet123 Suppl 1: e29-e32.
4. Asrie, F, Gelaw, B, Alem, M, Moges, F and Awoke, T (2013). Determination of eligibility to antiretroviral therapy in resource limited settings using total lymphocyte counts, hemoglobin and body mass index among HIV positive patients. Ethiop J Health Dev 27(1): 48-54.
5. Atbaru, MG (2013). Evaluation of the performance of non-laboratory personnel in rapid HIV testing: A non-inferential trial. MSc Thesis: Department of Clinical Laboratory Sciences, Addis Ababa University.
6. Balabanova, D, Mills, A, Conteh, L, Akkazieva, B, Banteyerga, H, Dash, U, et al. (2013). Good health at low cost 25 years on: Lessons for the future of health systems strengthening. Lancet 381(9883): 2118-2133.
7. Belay, Y (2013). A perceived psychological impact of counsellors who work with HIV/AIDS patients: A case of selected public hospitals. MA Thesis: Department of Geography and Environmental Education, Addis Ababa University.
8. Berhanemeskal, E (2013). Supply chain management of HIV/AIDS related commodities in Addis Ababa, Ethiopia. MSc Thesis: School of Pharmacy, Addis Ababa University.
9. Bhatia, A (2013). Measuring organizational development: Art or science. Abstracts of the 142nd Annual Meeting and Exposition of the American Public Health Association, New Orleans, LA, USA. Abstract no. 294764.
10. Bogale, T, Shume, A, Daniel, E, Bol, J, Curran, K, Adamu, T, et al. (2013). Health extension workers and locally comprehensible materials attracting more men to circumcision services in Gambella, Ethiopia. Abstracts of the 7th IAS Conference on HIV Pathogenesis, Treatment and Prevention, Kuala Lumpur, Malaysia. Abstract no. TUPE394.
11. Bowser, D, Sparkes, SP, Mitchell, A, Bossert, TJ, Barnighausen, T, Gedik, G, et al. (2013). Global Fund investments in human resources for health: Innovation and missed opportunities for health systems strengthening. Health Policy Plan, 00(0): czt080 (Online version).
12. Burke, J and O'Malley, T (2013). Microfinance and women's health: What is currently known and what still needs to be examined? Abstracts of the 142nd Annual Meeting and Exposition of the American Public Health Association, New Orleans, LA, USA. Abstract no. 282170.
13. Endale, D (2013). Compliance with standard precautions among health care workers in selected government hospitals of Amhara and Tigray.MPH Thesis: Institute of Public Health, Gondar University.
14. Fan, V, Duran, D, Silverman, R and Glassman, A (2013). HIV / AIDS intervention packages in five countries: A review of budget data, Washington, D.C., Center for Global Development.
15. Feleke, SA, Koye, DN, Demssie, AF and Mengesha, ZB (2013). Reproductive health service utilization and associated factors among adolescents (15-19 years old) in Gondar town, Northwest Ethiopia. BMC Health Serv Res 13(1): 294.
16. Feysa, B, Herbst, C, Lemma, W and Soucat, A (2013). The health workforce in Ethiopia: Adressing the remaining challenges. Washington DC, World Bank.
17. Fonjungo, PN, Kebede, Y, Arneson, W, Tefera, D, Yimer, K, Kinde, S, et al. (2013). Pre-service laboratory education strengthening enhances sustainable laboratory workforce in Ethiopia. Hum Resour Health 11: 56.
18. Ford, N, Ananworanich, J, Ruxrungtham, K, Simmons, B and Hill, A (2013). Is the pricing of anti-retrovirals equitable? Analysis of antiretroviral drug prices in 20 low- and middle-income countries. Abstracts of the 7th IAS Conference on HIV Pathogenesis, Treatment and Prevention, Kuala Lumpur, Malaysia. Abstract no. WELBD05.

19. Gebre Egzabher (2013). Practices and challenges in HIV voluntary counseling and testing services in Addis Ababa health centers. MA Thesis: School of Psychology, Addis Ababa University.
20. Gebreselassie, T and Govindasamy, P (2013). Levels and trends in unmet need for family planning among adolescents and young women in Ethiopia. Further analysis of the 2000, 2005, and 2011 Demographic and Health Surveys. Calverton, Maryland, ICF International and MEASURE DHS.
21. Girma, A (2013). Improving access to PMTCT and ART services in Hawassa Health Center,Ethiopia. Abstracts of the 142nd Annual Meeting and Exposition of the American Public Health Association, New Orleans, LA, USA. Abstract no. 285258.
22. Godif, M (2013). Assessing service utilization and factors associated with HIV counseling and testing in Ethiopia. MSc Thesis: Department of Biostatistics and Health Informatics, Mekelle University.
23. Haileamlak, A (2013). The need for initiation of school health programs in Ethiopia. Ethiop J Health Sci 23(1): vi.
24. Halperin, DT (2013). Scaling up of family planning in low-income countries: Lessons from Ethiopia. Lancet 383(9924): 1264-1267.
25. Hargreaves, JR (2013?). Incorporating a structural approach within combination HIV prevention: An organizational framework. Arlington, VA., USAID's AIDS Support and Technical Assistance Resources, AIDSTAR-One, Task Order 1, and London: UKaid's STRIVE Research Consortium.
26. Jacobstein, R, Curtis, C, Spieler, J and Radloff, S (2013). Meeting the need for modern contraception: Effective solutions to a pressing global challenge. Int J GynecolObstet 121(Suppl 1): S9–S15.
27. Jankowski, K, Negatu, W, Bock, A and Olson, N (2013). Ethiopia. Family planning market analysis: Using evidence on demand and use for contraception to plan for a total market approach in Ethiopia, Arlington, VA, JSI and DELIVER.
28. Jebessa, KG (2013). Critical discourse analysis of the representations of HIV/AIDS in Ethiopia's policies and newspapers. PhD Thesis: Department of Foreign Languages and Literature, Addis Ababa University.
29. John Snow Inc (2013). Pre-service training: Saving lives by developing local capacity in supply chain management (SCM). Arlington, VA, JSI and DELIVER.
30. Kates, J, Michaud, J, Wexler, A and Valentine, A (2013). Mapping the donor landscape in global health: HIV / AIDS. Menlo Park, California, Henry J. Kaiser Family Foundation.
31. Kebede, L (2013). The need for psychological counseling services and mode of provision to clients under antiretroviral therapy in case of public hospitals, Addis Ababa. MA Thesis: Department of Geography and Environmental Education, Addis Ababa University.
32. Matinhure, N, Mohammed, B, Gebre, M, Belete, D and Zegeye, Z (2013). Strengthening the gender focus to improve ANC/PMTCT service quality in Ethiopia. Abstracts of the 7th IAS Conference on HIV Pathogenesis, Treatment and Prevention, Kuala Lumpur, Malaysia. Abstract no. WEPDD0104.
33. Manyazewal, T, Paterniti, AD, Redfield, RR and Marinucci, F (2013). Role of secondary level laboratories in strengthening quality at primary level health facilities' laboratories: an innovative approach to ensure accurate HIV, tuberculosis, and malaria test results in resource-limited settings. Diagn Microbiol Infect Dis 75(1): 55-59.
34. Marinucci, F, Manyazewal, T, Paterniti, AD, Medina-Moreno, S, Wattleworth, M, Hagembe, J, et al. (2013). Impact of horizontal approach in vertical program: Continuous quality improvement of malaria and tuberculosis diagnostic services at primary-level medical laboratories in the context of HIV care and treatment program in Ethiopia. Am J Trop Med Hyg 88(3): 547-551.
35. Mekonnen, D (2013). Integration of family planning with HIV/AIDS in private health sectors in Ethiopia. Abstracts of the 142nd Annual Meeting and Exposition of the American Public Health Association, New Orleans, LA, USA. Abstract no. 291303.
36. Mwai, GW, Mburu, G, Torpey, K, Ford, N and Seeley, J (2013). Role and outcomes of community health workers in HIV care in sub-Saharan Africa: A systematic review. J Int AIDS Soc 16: 18586.
37. Olson, DJ and Piller, A (2013). Ethiopia: An emerging family planning success story. Stud Fam Plann 44(4): 445-459.
38. Pathfinder International (2013). Introducing operations research to large-scale program implementation in Ethiopia, Addis Ababa, Ethiopia. Pathfinder International.
39. Pathfinder International (2013). Strengthening community and health systems for quality PMTCT: Applications in Kenya, South Africa, and Ethiopia. Watertown, Massachusetts, Pathfinder International.
40. Pathfinder International (2013). The Technical Advisory Committee: Providing stewardship to health programs in Ethiopia. Watertown, Massachusetts, Pathfinder International.
41. Tadesse, MA (2013). A rights-based approach to HIV prevention, care, support and treatment: A review of its implementation in Ethiopia. Dissertation Abstracts International Section A: Humanities and Social Sciences 74(5-A(E)).
42. Tadesse, T (2013). Quality of counselling and adherence to the protocol by the VCT counselors in VCT centers in Addis Ababa. MA Thesis: Department of Geography and Environmental Education, Addis Ababa University.
43. Tafese, F, Woldie, M and Megerssa, B (2013). Quality of family planning services in primary health

centers of Jimma Zone, Southwest Ethiopia. Ethiop J Health Sci 23(3): 245-254.
44. Teklehaimanot, HD and Teklehaimanot, A (2013). Human resource development for a community-based health extension program: A case study from Ethiopia. Hum Resour Health 11: 39.
45. Teklemariam, Z, Mekonnen, A, Kedir, H and Kabew, G (2013). Clients and clinician satisfaction with laboratory services at selected government hospitals in eastern Ethiopia. BMC Res Notes 6: 15.
46. Telaye, M (2013). Assessment of needle stick injury and associated factors among health care workers in a public hospital, Addis Ababa. MPH Thesis: Institute of Public Health, Gondar University.
47. Zegeye, AM, Bitew, BD and Koye, DN (2013). Prevalence and determinants of early antenatal care visit among pregnant women attending antenatal care in Debre Berhan Health Institutions, Central Ethiopia. Afr J Reprod Health 17(4): 130-136.

Section 5. Prevention Research

This section includes reports on research and programmatic activities that are aimed at provision of prevention services targeted at HIV/AIDS and related opportunistic infections. Included in this section are studies on information and behavioral change communication, provision of voluntary testing and counseling and mother-to-child transmission prevention services, community mobilization, and other risk-reduction efforts against HIV/AIDS.

With 46 references (16 published articles, 22 masters theses, 3 PhD dissertations, 3 conference abstracts, and 2 reports), this section has 9 fewer references than the 2012 Update. The three most frequently researched prevention issues in this Update are information/ Education/ communication (11 references), HIV testing (10 references), and prevention of mother-to-child transmission (PMTCT) (6 references), indicating a response to the persisting problem of lack of communication between sexual partners and at the community level and the failure of many PLWHA to get tested and counseled. Nine studies assessed the need for and impact of various information and communication media on sexual behavior (3, 10, 14, 35-38, 44, 46). This included a first study of information-seeking behavior among construction workers (36), and another study examined broader prevention behavior of daily laborers (27), occupation groups that had not been covered in previous research. Both, Etsub and Moyer (14) provide new insights into the difficulty of implementing culturally appropriate HIV interventions among the Afar pastoralists. They concluded that Afar perceptions of HIV and intervention programs over the years must be understood to increase their awareness and cooperation with interventions. In another first study, Zewdie (46) pointed out the need for and difficulties in achieving better ART adherence. Two studies examined provider-initiated HIV counseling and testing among TB patients (20, 45). One of them found a very high test acceptance rate (99.9%) among patients, which again argues for early testing of co-infected TB patients to hasten the initiation of TB prophylaxis and ART.

Eight of the counseling and testing studies were on VCT (1, 2, 19, 28, 30, 31, 39, 40) and two on provider-initiated counseling and testing (20, 45). One study examining the role of HIV disclosure in utilizing PMTCT services found that women who had disclosed their status were nearly five times more likely to participate in these programs than women who had not disclosed (34). These findings indicate the importance of disclosure among partners in increasing the low utilization of PMTCT services in Ethiopia and also call for a study on the role of disclosure by males on PMTCT services. The study by Tesso (38) addressed the understudied issue of communication about sexual and reproductive health and young people's sexual behavior (38). Lifson et al. (30) found that 45% of 558 adults in the general population had never been tested for HIV. The fact that the non-tested persons were mostly rural residents persons unaware of ART or who feared social stigma if found infected indicates that the objective of universally testing and treating all infections will be difficult to achieve in the near future. Health care workers have the highest HIV test rates in Ethiopia. Kebede et al. (28) found that 94.4% of 288 health care workers in different health facilities had been tested, 70.5% by themselves, mainly for confidentiality reasons, indicating that self-testing is a viable approach to achieving high ART coverage among health care workers..

Six studies focused on PMTCT of HIV (4, 5, 13, 16, 24, 29). Damte and Damte (16) added to the growing literature on PMTCT by reporting that four times as many women with formal education than illiterates and two and-a-half times as many women who had the power to make their own decision than those who depended on their husbands' decision utilized PMTCT services. Mother-support groups also promote the utilization of PMTCT. Assefa et al. (5) reported that HIV-exposed infants of mothers enrolled in these peer support and mentoring groups used at health centers and hospitals had 57% lower odds of testing positive than those mothers who were not enrolled. Kurkie and Sisay (29) described the new approach Option B+ in controlling MTCT transmission which provides all HIV-positive pregnant or breastfeeding women with AR T for life, regardless of their CD4 counts or clinical stage. Three studies focused on breastfeeding practices and their implications for HIV transmission (6, 22, 23). Unfortunately contents of these theses were not available to us for further discussion.

Of the remaining studies, 5 examined the use of condoms (7, 25, 41, 43) only four references sited), including other contraceptives (11). Gebre Selassie, Deyessa and Tesfaye (25) found that a high proportion (37%) of sexually active students in a small rural town had never used a

condom and 68% had no intention to use a condom during their next sexual encounter. Those results were similar to other studies of contraceptive use and point out the need for information, education and communication (IEC) programs integrated with condom distribution. An evaluation of the application of the Theory of Planned Behavior in predicting condom use intention of PLWHA was also reported (7). Three studies assessed the potential for and achievements in community participation (14, 17, 26) and1 study identified factors in the persistence of home delivery in Mekelle City (8).

1. Abamecha, F, Godesso, A and Girma, E (2013). Intention to voluntary HIV counseling and testing (VCT) among health professionals in Jimma zone, Ethiopia: The Theory of Planned Behavior (TPB) perspective. BMC Public Health 13: 140.
2. Abamecha, F, Godesso, A and Girma, E (2013). Predicting intention to use voluntary HIV counseling and testing services among health professionals in Jimma, Ethiopia, using the Theory of Planned Behavior. J Multidiscip Health 6: 399-407.
3. Abetu, GA (2013). An analysis of the impact of behaviour change communication messages on gender vulnerability to HIV/AIDS in rural areas: Spouses in focus. PhD Thesis: Department of Foreign Languages and Literature, Addis Ababa University.
4. Adugna, F (2013). Factors influencing utilization of PMTCT service and referral linkage among HIV-positive pregnant women before delivery in Hawassa public health facilities. MPH Thesis: School of Public Health, Addis Ababa University.
5. Assefa, T, Abreha, M, Godefay, H and Konings, E (2013). Vertical transmission of HIV less than half among mothers belonging to mother-support groups (MSG) compared to non-member mothers at health centers in Tigray, Ethiopia. Abstracts of the 7th IAS Conference on HIV Pathogenesis, Treatment and Prevention, Kuala Lumpur, Malaysia. Abstract no. MOPE108.
6. Assefa, M (2013). Survival and morbidity of breastfeeding versus formula feeding infants and young children of HIV-infected women who are on PMTCT follow-up in selected hospitals in Addis Ababa: A retrospective cohort study. MPH Thesis: School of Public Health, Addis Ababa University.
7. Assefa, N and Haidar, J (2013). The utility of Theory of Planned Behavior in predicting consistent condom use intention of HIV patients on ART in North Shoa Zone facilities, Ethiopia 2011. Ethiop J Health Dev 27(1): 40-47.
8. Bazezew, H (2013). Determinants of home delivery among HIV-positive mothers who are enrolled in PMTCT programmes in Mekele Town, Ethiopia. MPH Thesis: School of Public Health, Addis Ababa University.
9. Bekalu, MA and Eggermont, S (2013). Determinants of HIV/AIDS-related information needs and media use: Beyond individual-level factors. Health Commun 28(6): 624-636.
10. Bekalu, MA and Eggermont, S (2013). HIV/AIDS-related information needs of urban and rural residents of northwest Ethiopia: Alerting the rural populace and meeting the progressive needs of the urban populace. Information Development 29(4): 323-332.
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Section 6. Treatment, care, and Clinical Research

This section includes studies on the characteristics and clinical course of HIV infection and opportunistic infections, treatment to AIDS and opportunistic infections, effects and outcomes associated with treatment, clinical and non-clinical care and supportive services provided to people living with HIV/AIDS.

This section covers a total of 69 studies (28 published articles, 38 masters theses, 1 conference abstract, 1 PhD dissertation, and 1 report) that focused on a wide range of treatment and care issues associated with HIV and TB. The bulk of the studies were on levels and factors associated with adherence to treatment (1, 3, 7, 11, 15-17, 20, 21, 42, 44-46, 50, 52, 58). Several studies focused on opportunistic infections in connection to HIV and ART (8, 13, 19, 25, 28, 32, 39, 43, 61, 64, 65). Those studies touched on a range of issues both among children as well as adults. Another set of studies focused on the clinical aspects of TB including incidence, treatments and drug resistances (2, 4, 10, 41, 56, 60, 66, 67, 69). There are seven studies (6, 34, 35, 47, 55, 59, 62) on nutritional status and factors associated with HIV among those on ART and ready-to-use therapeutic feeding. There are six studies (5, 12, 22, 23, 37, 48) that shaded light on the role of family, kin-groups and the community in caring for orphans and people living with HIV. Five papers (18, 30, 33, 38, 54) focused on treatment outcomes and survival of PLWHA and on antiretroviral therapy. There are four papers (14, 24, 26, 68) focusing on drug regimen and drug reactions in connection to ART. Furthermore, there are three papers (29, 53, 57) focusing on the role of ART for people living with HIV. The remaining papers cover wide range of areas: pediatric HIV (9, 36), depression among those on ART (27), palliative care (31), psycho-therapy (49) deworming in suppressing HIV-1 subtype C (51) and hepatitis C – HIV co-infection (63).

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Section 7. Health Informatics Monitoring, and Evaluation Research

This section includes research concerning monitoring and evaluation of HIV/AIDS programs and the development and use of quantitative and qualitative assessment, analytic and communication methods. It covers the systematic application of information, computer science, and technology for HIV/AIDS prevention, care, research and evaluation.

This section includes 28 references (16 published articles, 6 masters theses, 3 conference abstracts, and 3 reports), slightly more than half as many as in the 2012 Update. Studies included assessments and application of tools and programs and data mining in a considerable number of areas. Two studies estimated the impact of large-scale interventions on the HIV/TB epidemic. Using demographic and AIDS impact models, Curry et al. (5) estimated that scaling up the Ethiopian Millennium Rural Initiative could save 34,908 lives in the four major regions of Ethiopia over a 5 year intervention period. Lima et al. (13) found that the relative risk of developing TB was significantly lower in the 12 PEPFAR focus countries, including Ethiopia, which receive the greatest contributions from this program. These results indicate that high levels of HIV investments have a broader effect on TB and other opportunistic infections.

Three studies focused on methods for the identification of vulnerable groups or evaluation of programs intended to care for these groups. Erulkar et al. (7) evaluated the social support program of an institution for vulnerable, poor adolescent girls, one of a few such programs in Sub-Saharan Africa that have been rigorously evaluated. They found that girls enrolled in the program had significantly stronger social safety nets, HIV knowledge and prevention capabilities than those in the control group. Muriuki et al. (17) identified a number of shortcomings of a community-based care program for vulnerable children on a needs assessment basis, including failure to meet the needs of more than half of all children and the provision of unnecessary services. Wirtz et al. (28) used qualitative research to guide the development of a screening tool to identify and assist females experiencing gender based violence in refugee camps, an area that remains understudied. Rape, sexual coercion, other sexual violence, abduction and physical violence were commonly committed against women, few of whom reported these violations because of stigma and other barriers. The authors recommended that routine monitoring of gender-based violence by experienced service staff may help to identify and refer survivors to the appropriate services.

Other three studies developed guidelines and management information systems. Tadeg and Mekonnen (24), examining the ART pharmacy reports of 285 health facilities over a 3-year period, and found that many patients received drugs that were no longer recommended by the new treatment guidelines, particularly stavudine (34% of all patients) and D4T (18% of new patients). After the investigators communicated those results to policy makers and major stake holders, the Ministry of Health issued a supplementary guideline. In Wukro Hospital, the implementation of the Health Commodity Management Information System (HCMIS) software by the Tigray Regional Health Bureau greatly enhanced the management of drugs. The Ministry of Health is currently expanding the implementation of this program in nearly 400 hospitals and larger health centers throughout the country (11). Wannaw and Azim (27) described the scale-up of the Health Management

Information System and Monitoring and Evaluation strategy, which will have an electronic health management information system. These two systems can potentially improve the management and use of resources for timely decision making.

Four studies developed, validated or evaluated several clinical and preventive tools, all in areas of research that have received little attention. Rudolf et al. (20) modified a simple clinical score (TB score II) for monitoring of unsuccessfully treated TB patients. Abebe et al. (2) evaluated the 2007 WHO guidelines for diagnosis of smear-negative TB to determine their suitability in the Ethiopian context. Results show that the WHO diagnostic algorithm may reduce diagnostic delay and thus morbidity and mortality from TB. One study constructed a condom use self-efficacy scale applicable to Ethiopia. Although the scale is valid, reliable and replicable, the authors recommended that further studies are needed to develop a suitable scale that uses the local vernacular (22). Skevington et al. (23) carried out the first independent systematic evaluation of the Stepping Stones HIV/AIDS prevention intervention in Ethiopia and 7 other developing countries. They found disparate patterns of condom use, communication of HIV information to partners, decreasing alcohol misuse and multiple partners. The authors called for further studies of different cultures and older adults that should use high quality biomedical and quality of life parameters to ensure reliable study outcomes.

Two of the remaining studies addressed information and communication issues. Bekalu and Eggermont (4) found major HIV/AIDS knowledge gaps due to major disparities in mass media use that are changing over time. They attributed the widening gap between urban and rural residents to the preparation and broadcasting of mass media information campaigns from towns, which puts rural populations at a disadvantage. The authors recommended the development of socio-ecological models which guide communication interventions in how to narrow the urban/rural knowledge gap. Harlan et al. (10) used Network-Mapping and conventional interviewing methods to leverage networks and resources to increase uptake of evidence and best practices in family planning and reproductive health. Improvements in these areas may help to reduce Ethiopia's high fertility rate and maternal mortality. Three studies evaluated the cost-effectiveness of STD/HIV-related interventions. Kim et al. (12), modeling the cost-effectiveness of cervical cancer prevention in 48 Sub-Saharan countries, estimated that more than half of all disability-adjusted life years (DALYs) were in 8 countries, including Ethiopia. They concluded that human papilloma virus (HPV) vaccination for adolescent girls may be cost-effective, but further studies will be required in Ethiopia to inform policy makers about the affordability, acceptability, and feasibility of cervical cancer prevention. Curry et al. (5) modeled the cost-effectiveness of the Ethiopian Millennium Rural Initiative in (EMRI) mortality prevention. They concluded that the cost-effectiveness of EMRI increased markedly if its achievements are sustained for 5 years. Olsen et al. (18) evaluated the WHO quality of life instrument related to HIV (WHOQOL-HIV) instrument for use in Ethiopia. They found that WHOQOL-HIV does not capture relevant parameters, including family responsibilities, disease disclosure, and exclusion from common resources, basic needs, food security, and job opportunities. These results indicate that WHOQOL-HIV, which takes an individualist perspective, needs to be modified to consider the social context of patients. Abdella et al. (1) used the safe abortion care (SAC) model to study 8,911 women seeking treatment in 335 health facilities nation-wide. They found that 48% of women treated for obstetric problems had abortion complications, that the number of facilities providing basic and comprehensive abortion care were far below recommended levels, but that the use of appropriate abortion technology and the availability of post-abortion contraception were quite satisfactory, especially in private facilities.

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3. Alemu, G (2013). Assessment of the effects of Mother Support Group/Mom-to-Mom Program in enhancing the health of mothers living with HIV/AIDS. MPH Thesis: Institute of Public Health, Gondar University.
4. Bekalu, MA and Eggermont, S (2013). Media use and HIV/AIDS knowledge: A knowledge gap perspective. Health Promot Int 00(0): dat030 (Online publication).
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8. Gidey, T (2013). Human immunodeficiency virus

(HIV) test predictive modelling and its determinants for people with age above fourteen years in Ethiopia using data mining techniques: EDHS 2011. MSc Thesis: Department of Biostatistics and Health Informatics, Mekelle University.
9. GlobalData Inc. (2013). PATH - Pharmaceuticals & Healthcare - Deals and Alliances Profile. London, Global Data Ltd.
10. Harlan, SV, Sullivan, TM and Hailegiorgis, SE (2013). Mapping networks to improve knowledge exchange among family planning and reproductive health organizations in Ethiopia. Knowledge Manag for Dev J9(2): 137-157.
11. John Snow Inc (2013). Empowered with real-time logistics data, health facilities improve access to medicines: Success story. Arlington, Virginia, JSI and DELIVER.
12. Kim, JJ, Campos, NG, O'Shea, M, Diaz, M and Mutyaba, I (2013). Model-based impact and cost-effectiveness of cervical cancer prevention in sub-Saharan Africa. Vaccine 31: F60-F72.
13. Lima, V, Williams, B, Phillips, P and Montaner, J (2013). Potential impact of the U.S. President's Emergency Plan for AIDS Relief (PEPFAR) on the tuberculosis (TB)/HIV co-epidemic in selected Sub-Sahara African countries. Abstracts of the 7th IAS Conference on HIV Pathogenesis, Treatment and Prevention, Kuala Lumpur, Malaysia. Abstract no. WEPE469.
14. Marru, HM (2013). Laboratory quality management system assessment of level II laboratories providing CD4 testing and microscopy services in Addis Ababa, Ethiopia. MSc Thesis: Aklilu Lemma Institute of Pathobiology, Addis Ababa University.
15. Mebrahtu, A, Kahsu, T, Godefay, H and Konings, E (2013). Vertical transmission of HIV less than half among mothers belonging to mother-support groups (MSG) compared to non-member mothers at health centers in Tigray, Ethiopia. Abstracts of the 142nd Annual Meeting and Exposition of the American Public Health Association, New Orleans, LA, USA. Abstract no. 280639.
16. Mohamed, AB (2013). Process evaluation of prevention of mother-to-child transmission of HIV service implementation and factors that affect its utilization in selected health institutions in Harari Region, eastern Ethiopia. MPH Thesis: Department of Public Health, Haramaya University.
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18. Olsen, M, Jensen, NK, Tesfaye, M and Holm, L (2013). Conceptual equivalence of WHOQOL-HIV among people living with HIV in Ethiopia. Qual Life Res 22(2): 361-367.
19. Rogers, BL, Coates, J, Passarelli, S, Bontrager, E, Suri, D, Ghosh, S, et al. (2013). Early intervention and reduction of patient default improve cost effectiveness of a supplementary feeding intervention for HIV plus malnourished patients in Ethiopia. FASEB J 27: 619.5.
20. Rudolf, F, Lemvik, G, Abate, E, Verkuilen, J, Schon, T, Gomes, BF, et al. (2013). TB score II: Refining and validating a simple clinical score for treatment monitoring of patients with pulmonary tuberculosis. Scand J Infect Dis 45(11): 825-836.
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23. Skevington, SM, Sovetkina, EC and Gillison, FB (2013). A systematic review to quantitatively evaluate 'Stepping Stones': Aparticipatory community-based HIV/AIDS prevention intervention. AIDS Behav 17(3): 1025-1039.
24. Tadeg, H and Mekonnen, N (2013). Dispensing-based information system at ART pharmacies and its potential for enforcing treatment guidelines in resource-limited settings: the Ethiopian experience. Abstracts of the 7th IAS Conference on HIV Pathogenesis, Treatment and Prevention, Kuala Lumpur, Malaysia. Abstract no. WEPE635.
25. Titiyos, A (2013). Assessment of extent of contact tracing for multi-drug resistant tuberculosis in St. Peter Tuberculosis Specialized Hospital, Addis Ababa, Ethiopia. MPH Thesis: School of public Health, Addis Ababa University.
26. Tulu, AT (2013). Performance of clinical and immunological criteria among HIV/AIDS patients who had viral load testing in EHNRI from June 2010 - May 2012: Implications on patient monitoring. MSc Thesis: Department Clinical Laboratory Sciences, Addis Ababa University.
27. Wannaw, F and Azim, T (2013). Technical Report on Electronic Health Management Information System (eHMIS), Chapel Hill, North Carolina, University of North Carolina at Chapel Hill, Carolina Population Center, MEASURE Evaluation.
28. Wirtz, AL, Glass, N, Pham, K, Aberra, A, Rubenstein, LL, Singh, S, et al. (2013). Development of a screening tool to identify female survivors of gender-based violence in a humanitarian setting: Qualitative evidence from research among refugees in Ethiopia. Confl Health 7(1):13.

Section 8. Diaspora Research

This section includes studies on HIV/AIDS among Ethiopians in the Diaspora and of Ethiopian health professionals in the Diaspora contributing to HIV/AIDS interventions in Ethiopia.

This section includes 5 published articles, four of which were epidemiological studies carried out in Israel and one was a study from Saudi Arabia. Mor et al. (3) reported that the HIV prevalence in the general population of Ethiopian-born Israeli citizens was 3.6%, but 6.3% among injection drug users (IDU) and 13.2% among men who have sex with men (MSM). Most of the immigrants from countries with generalized HIV epidemics were Ethiopians, only 12.1% of all HIV cases were heterosexuals, and the annual number of HIV/AIDS cases among MSM quadrupled between 2000 and 2010. No information is available on HIV rates among the Falasha at their arrival in Israel in the 1990s. Rotschild et al. (4) provides initial information on the linkage between smoking, HIV and cardiovascular risk in Ethiopian patients. Cardiovascular risk in HIV-infected Ethiopians was only half that of non-Ethiopians and the prevalence of smoking only one-third. Those results invite follow-up studies of these relationships in Ethiopia, where smoking has been on the increase among youth. Finally, Shahar and colleagues (5) compared the bone mineral density of HIV infected Israeli women of Ethiopian and Caucasian origins. They found higher levels of vitamin D deficiency among Ethiopian Israelis compared to Caucasian Israelis and concluded that this may contribute to their lower bone mineral density.

1. Alswaidi, EM, Memish, ZA, Al-Hakeem, RF and Atlam, SA (2013). Saudi Arabian expatriate worker fitness-screening programme: A review of 14 years of data. East Mediterr Health J 19(7): 664-670.
2. Mor, Z, Grayeb, E, Beany, A and Grotto, I (2013). Increasing trend of HIV/AIDS among Arab and Jewish male persons in Israel, 1986-2010. HIV Med 14(5): 316-320.
3. Mor, Z, Weinstein, R, Grotto, I, Levin, Y and Chemtob, D (2013). Thirty years of HIV in Israel: Current epidemiology and future challenges. BMJ Open 3(7): e003078.
4. Rotshild, V,Olshain Pops,K and Mayaan, S (2013). [Assessing cardiovascular riskfactors among patients living with HIV/AIDS - survey of patients treated at the Hadassah AIDSs Center, Hadassah Ein Kerem, Jerusalem]. Harefuah 152(4): 211-215, 247.
5. Shahar, E, Segal, E, Rozen, GS, Shen-Orr, Z, Hassoun, G, Kedem, E, et al. (2013). Vitamin D status in young HIV infected women of various ethnic origins: Incidence of vitamin D deficiency and possible impact on bone density. Clin Nutr 32(1): 83-87.

Section 9. previous bibliographies

This section lists the previous year's update and potentially other bibliographies that were published during 2013**. Other** 10 bibliographies were published between 2003 and 2012 in this journal.

1. Converse PJ, Haile Mariam D, Mulatu MS, Mekonnen W, Kloos H (2013). Bibliography on HIV/AIDS in Ethiopia and Ethiopians in the Diaspora: The 2012 Update. Ethiop J Health Dev 27(2):156-186.

Section 10. Selected Websites Featuring HIV/AIDS in Ethiopia

1. Federal HIV/AIDS Prevention and Control Office of Ethiopia: http://hapco.gov.et
2. Center for International Health of the University of Bergen, Norway (also access to the Ethiopian Journal of Health Development): http://ejhd.uib.no
3. Ethiopian AIDS Resources Center: http://www.etharc.org
4. Family Health International: http://www.fhi360.org/countries/ethiopia
5. Christian Relief and Development Association: www.crdaethiopia.org
6. Johns Hopkins University Center for Clinical Global Health Education: http://main.ccghe.net/CCG/country/ethiopia
7. People to People Organization: http://www.peoplepeople.org
8. Save the Children: http://www.savethechildren.org/site/c.8rKLIXMGIpI4E/b.6234245/k.A159/HIVAids_Programs.htm?msource=weilpres0511#Ethiopia
9. United Nations Children's Fund (UNICEF): http://www.unicef.org/ethiopia/hiv_aids_464.html
10. United Nations Development Program (UNDP): http://www.undp.org/content/undp/en/home/ourwork/hiv-aids/Projects-initiatives/hiv-epidemic-ethiopia-case-study-transformational-change/
11. United Nations Joint Program on AIDS (UNAIDS): http://www.unaids.org/en/Regionscountries/Countries/Ethiopia
12. United States Agency for International Development: http://www.usaid.gov/ethiopia/global-health
13. United States Centers for Disease Control and Prevention (CDC): http://www.cdc.gov/globalaids/Global-HIV-AIDS-at-CDC/countries/Ethiopia/
14. AIDS Portal: http://www.aidsportal.org/web/guest/ethiopia
15. University of California, San Francisco HIV In Site: http://hivinsite.ucsf.edu/global?page=cr09-et-00
16. The International Technical Training and Education Center on HIV (I-TECH) of the University of Washington: http://www.go2itech.org/itech?page=co-03-00
17. The International Center for AIDS Care and Treatment Programs (ICAP) at Columbia University's Mailman School of Public Health: http://icap.columbia.edu/where-we-work/ethiopia
18. World Health Organization: http://www.who.int/countries/eth/en/
19. Management Sciences for Health's Ethiopia Network for HIV/AIDS Treatment, Care and Support (ENHAT-CS) Project:

http://www.msh.org/our-work/projects/ethiopia-network-for-hivaids-treatment-care-support.
20. The Twinning Center: http://www.Twinningagainstaids.org/ethiopia.html
21. Ethiopian Public Health Association: http://www.etpha.org/
22. Ethiopian Medical Association: http://www.emaethiopia.org/