

Identifying HIV/AIDS, Sexually Transmitted
Infections and Tuberculosis Research Gaps and
Priority Setting Agenda in Ethiopia

Ethiopian Public Health Association

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Foreword

[EPHA President]

Acknowledgements

The work identification of HIV/AIDS/STI and tuberculosis research gap and priority setting agenda in Ethiopia presented in this report was undertaken over a period of three months by a group of consultants commissioned by the Ethiopian Public Health Association (EPHA).

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Abbreviations and acronyms

AAU	Addis Ababa University
AFGH	Armed Forces General Hospital
AHRI	Armauer Hanson Research Institute
AIDS	Acquired Immune Deficiency Syndrome
AIDSCAP	AIDS Control and Prevention project
ALERT	All African Leprosy Eradication Rehabilitation and Training center
AMREF	African Medical Research Foundation
ANC	Antenatal Clinics
APLWHA	Association of People Living with HIV/AIDS
ART	Anti-Retroviral Treatment
BCC	Behaviour Change Communication
CDC	Centers for Disease Control and Prevention
CRDA	Christian Relief and Development Association
CSW	Commercial Sex Worker
DOTS	Directly Observed Treatment, Short course
ECPAST	EHNRI-CDC Programme for AIDS, STI and TB
EHNRI	Ethiopian Health and Research Institute
EMSAP	Ethiopian Multi-sectoral HIV/AIDS Project
ENARP	Ethio-Netherlands AIDS Research Project
EPHA	Ethiopian Public Health Association
ESTC	Ethiopian Science and Technology Commission
FGD	Focus Group Discussion
FHI	Family Health International
GAP	Global AIDS Programme
HAPCO	HIV/AIDS Prevention and Control Office
HIV	Human Immunodeficiency Virus
IEC	Information, Education and Communication
ILO	International Labour Organisation
IPB	Institute of Pathobiology
IPT	Isoniazid Preventive Therapy
KAP	Knowledge Attitude and Practice
MOH	Ministry of Health
MTB	Micobacterium Tuberculosis
MTCT	Mother-to-Child Transmission
NACS	National AIDS Council Secretariat
NECC	National Ethical Clearance Committee
NGO	Non Governmental Organizations
OIs	Opportunistic Infections
OSSA	Organization for Social Service for AIDS
PEP	Post Exposure Prophylaxis
PEPFAR	President Bush's Emergency Plan For AIDS Research
PLWHA	People Living with HIV/AIDS
PMTCT	Prevention of Mother-to-Child Transmission
PYO	Per Years of Observations
R&D	Research and Development

STD	Sexually Transmitted Diseases
STIs	Sexually Transmitted Infections
TB	Tuberculosis
UNAIDS	United Nations Joint Programme on HIV/AIDS
UNICEF	United Nation International Children Education Fund
UP	Universal Precaution
USAID	United States Agency for International Development
VCT	Voluntary Counselling and Testing (for HIV)
WB	World Bank
WHO	World Health Organization

Executive Summary

HIV/AIDS, STIs and TB have become among the major causes of human sufferings in Ethiopia. Recent estimate suggest that there are approximately 2.2 million Ethiopians infected with HIV. Major determinants for the rapid spread of the HIV/AIDS epidemic in Ethiopia include behavioural factors such as unprotected sexual intercourse and multiple sexual partners. The underlying causes include socio-economic factors such as poverty (associated with unemployment, commercial sex work), ignorance (lack of awareness and/or due to misconceptions), gender inequality, cultural barriers (silence, stigma and discrimination, denial, promiscuity, abduction, rape and female genital mutilation, taboo), war and displacement. Several researches have been carried out in Ethiopia with respect to the above infections/diseases. The researches have added greatly to the available information on several issues regarding the three infections. Nevertheless, the researches had had little impact to influence the growing HIV/AIDS/STI and TB epidemics in the country. Moreover, coordination and integration between institutions undertaking researches in these areas were not adequately addressed. There is also a huge discrepancy between the magnitude of HIV/AIDS, STIs and TB burden in Ethiopia and the research conducted related to these diseases. This will require a lot of more work on disease burden, prioritising research agenda and resource allocation by national and international agencies and organizations.

This is the context in which the present assessment was undertaken. Its goal is to contribute to the setting of National HIV/AIDS/STI/TB Research Agenda for prioritising research needs, developing new and improved interventions, monitoring their impact, and implementing national strategies to decrease the burden of HIV/AIDS/STI and TB.

The present assessment reports information on data from review of the existing literature on HIV/AIDS/STIs and TB-related research in Ethiopia. The assessment also included a

comprehensive review, focus group discussions and key informant interviews, and individualized questionnaire assessment with relevant bodies involved in research on the above three infections/diseases. It focused on few selected organizations in which the assessing team conducted special key informant interviews on HIV/AIDS/STIs and TB-related research.

Based on the above, this assessment identified what has been done in the past as well as currently undergoing research activities related to HIV/AIDS/STIs and TB.

Overall, several studies have been conducted throughout the last two decades in the areas of HIV/AIDS, STIs and TB in Ethiopia. The researches have added greatly to the available information on several issues regarding the three infections, albeit their limitations.

In the area of HIV/AIDS, several key and relevant researches have been done. Of the overall previous researches done and currently being underway 15% address IEC/BCC issues, 3% condom promotion and distribution, 3% VCT, 4% management of STIs, 2% blood safety and universal precautions, 0.6% PMTCT, 26% care and support of PLWHA and only 0.6% issues related to legislation and human rights. The majority, almost 47%, focus on issues related to surveillance and research

There has been very little research undertaken related to STIs in Ethiopia and most of those research conducted previously are outdated. With the exception of Addis Ababa, there has been no systematic STI surveillance in the country. Of the overall STIs related research done previously or currently underway, majority (44%) are related to studies on prevalence of STIs, including socio-epidemiological surveys and sentinel surveillance. Studies on risk factors for STIs comprised 11% and those involving socio-economic research were 4.3%, KAP studies were 7%, validation of syndromic management of STIs were 7%, surveillance of drug resistance of *Neisseriae gonorrhoea* were 10%, assessment of diagnostics tools for STIs were 1%, STI/HIV interactions were 14%, clinical research were 8% and other various activities were 9%. Table 2. Distribution of previously undertaken and currently pursued researches on STIs in Ethiopia

Few Institutions have been conducting TB research. Of all studies related to TB research conducted or currently pursued in Ethiopia, the majority focus in clinical research and TB diagnostics [including development of rapid assay for identification of resistant MTB], representing 20% and 31%, respectively. Studies on prevalence, including surveillance, of TB comprise 19% and drug-research studies, including surveillance of drug resistant MTB

and adherence issues of anti-TB treatments in DOTs account for 13% of all studies. TB/HIV co-infection studies represent 9% and sociodemographic aspects, including community-based studies account for 4%. Studies on KAP were 1%, TB lymphadenitis including the aetiological identification of MTB associated with TB-lymphadenitis were 3%, TB vaccine were 3%, and others 9%.

Although several studies have been conducted in Ethiopia the last two decades, the assessment found out that there still remain major gaps of research in the three diseases. including challenges and obstacles to undertaking research related to the above diseases. The identified research gaps are presented and several relevant research issues on HIV/STI/TB, which should be given priority in the future are recommended.

Policy -makers at the federal or regional level could use information derived from this assessment. Moreover, this information can be used to relate HIV/AIDS, STIs and TB-related research priorities for funding from both National or international sources.

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Appendix 1 Research gaps:

1. Research Gaps on HIV/AIDS

IEC/BCC:

- Strategies for BCC
- Determinants of BCC
- KAP more on BCC rather than IEC
- Evaluation of impacts of previous works
- Cause of BCC should be done in an in-depth manner
 - ❖ Study standardized message for IEC,
 - ❖ Identify misconceptions that co-circulate in the community and others,
 - ❖ The role of positive traditions like gudefecha, madego, kirstinal leje and extended family in keeping children at family circle and for community based care and support.
 - ❖ Research to understand high-risk behaviour
 - ❖ Research into the effectiveness of interventions in changing high-risk behaviour, especially role of positive traditional practices
 - ❖ Test impact of targeted and standard IEC materials on behaviour change among specific groups.
 - ❖ Impact of IEC/BCC on health-seeking behaviours for prevention, care and support.
 - ❖ Impact of BCC programs on reduction of stigma and discrimination.
 - ❖ Participation of adolescents and young people in prevention, care and support.
 - ❖ Quality of IEC materials produced by media

Condom promotion and distribution:

- Barriers to condom use
- General Population attitudes on condom
 - ❖ Proper utilization of condom
 - ❖ Studies on misconceptions, cultural/religious influences on resistance to condom use
 - ❖ Promotion of female condoms among specific groups, such as CSWs
 - ❖ Monitor effective demand and utilization of condoms
 - ❖ Willingness to pay and use of condoms
 - ❖ Impact of condom use on STI prevalence

Voluntary counselling and testing services:

- Strength of the available VCT program
- Model VCT program with comprehensive continuum of care
- Impact of VCT on stigma and discrimination
- Impact of VCT on behavioural change and risk reduction
- Research on demand for VCT
- Incentives for attending VCT
- Evaluation of existing counselling techniques
- Integration of VCT in various health services

- Developing quality control tools for evaluating VCT, including training.
- Evaluation of rapid HIV testing kits for VCT.
- Quality control of HIV-testing algorithms for VCT services.
- Impact of rapid HIV testing algorithms in scaling-up VCT services.
- Assessment of socio-demographic characteristics of VCT clients
- Impact of VCT on behaviour change, including risk reduction.
- Impact of VCT on seeking access to care among PLWHA.
- Issues related to couples counselling, esp. disclosure of HIV status to partners.
- Having model VCT centers with comprehensive continuum of care (including, STI/HIV/AIDS/TB care) is vital, ,
- The counseling model currently applied is taken from Western Europe and North America that can not be totally applied in the Ethiopian culture. Hence a model that accommodates the culture of this country has to be further studied,
 - Determinat factors of care seeking. Which one is important? Is it cost, stigma and waiting time and others?,

Management of sexually transmitted diseases:

- Effectiveness of syndromic STD management on reducing HIV transmission.
- Prevalence of HIV among STI patients

Blood safety and universal precautions:

- Quality control of blood safety, especially in rural areas.
- Quality of blood products
- Risk of blood-borne infections other than HIV, such as hepatitis viruses
- Practices in health facilities where there is no a blood bank
- Assessment of KAP of health workers on UP
- Assessment of availability of supplies in health facilities important for UP
 - ❖ Safety/quality of blood supply, including other blood borne infections, such as hepatitis -B and -C viruses.
 - ❖ PEP for health workers, including epidemiological studies on the risks of transmission after occupational accidents, acceptability of HIV testing and treatments by HCW, side effects of treatments and viral resistance.
 - ❖ Assessment of other modes of HIV transmission, especially due to infected needles.
 - ❖ Blood safety screening Hepatitis B and C,
 - ❖ Care during surgery

Prevention of mother-to-child transmission of HIV infection:

- Assess various models of scaling-up PMTCT activities, including integration with other services.
- Assess drug resistance issues.
- Acceptability
- Overall ANC attendance
 - ❖ Surveillance of drug resistance of HIV on pregnant mothers,
 - ❖ How applicable is treatment given for pregnant mothers,
 - ❖ Assess a service delivery model by integrating with care and support,
 - ❖ Acceptability of VCT for PMTCT, treatments, adherence,
 - ❖ Appearance of viral resistance
 - ❖ Impact of breast feeding on risk of transmission
 - ❖ New drugs/regimens for PMTCT,
 - ❖ Supplementary interventions, nutritional or micronutrients

- ❖ Different feeding options, including their impacts in infant morbidity/mortality
- ❖ Various models of PMTCT plus.
- ❖ Attitude of professionals towards PMTCT services
- ❖ Integration of PMTCT, for e.g. with ANC services.

Care and support of people living with HIV/AIDS (PLWHA):

- Role of community, including home-based care issues and studies/best practices on sustainability of such activities. In addition, the role of positive traditions (gudifecha, madego, kristna lig and extended family) in taking care of orphaned childrens, role of Edirs.
- Assessment of resources required.
- Burden of OIs among PLWHA, including their prophylaxis and treatments.
- Assess access to ARVs, including availability and affordability.
- Effectiveness of ARV treatment
- Developing and evaluating simple markers for monitoring ART
- Evaluate points of entry for ARV treatment (referral system)
 - ❖ Community mobilization on care and support
 - ❖ Assessment of demands of PLWHA.
 - ❖ Assessment of continuum of care....from institutional to home-based cares, two-way referral systems, HBC, CBC..etc
 - ❖ Community-based care, esp. role of Edirs in Ethiopia
 - ❖ Role of PLWHA on care and support
 - ❖ Developing/evaluating diagnostic and treatment algorithms for OIs.
 - ❖ Developing and evaluating simple markers (clinical algorithms and/or biological markers) for initiation & monitoring ART
 - ❖ Simplified therapeutic regimens, paediatric formulations & therapeutic strategies (dosages).
 - ❖ Improving adherence, comparing various models of DOTs, psychosocial follow-up, HBC, involving CBOs, etc...
 - ❖ Side-effects of drugs, role of other underlying infections on ARVs toxicity, such us hepatitis
 - ❖ Interactions of ARVs with other medicines, including traditional medicines
 - ❖ Surveillance of anti-retroviral drug resistance at National level, drug resistance monitoring in treatment failures including evaluation of its risk factors, incidence of resistant variants among the patients treated.
 - ❖ Addressing nutritional problems, role of intestinal parasites
 - ❖ Scaling-up ART and integration into the health care systems
 - ❖ Care and support is relatively new area and standard as well as the extent of sources should be explored further,
 - ❖ At community level home based care,
 - ❖ Assess practical care and support mechanisms to avoid dependency .

Legislation of human rights:

- Assessment of current status of law in dealing with Stigma and discrimination
 - ❖ what do we have in the area of legislation and human rights in relation to PLWHA ?
 - ❖ Magnitude of stigma and discrimination.

Surveillance and research:

- Evaluation of the existing sentinel surveillance system, including coverage, representativeness and quality of the current surveillance system.
- Inclusion of second generation surveillance, including BSS.
- Surveillance based on incidence data.
- Role of harmful traditional practices on HIV transmission.
- Role of inheritance marriage for HIV transmission.
- Biological determinants/risk factors for HIV transmission
- Impact of HIV epidemic on social/economic issues.
- Microbicides research determining its effect on the incidence of HIV, including

STIs

- HIV in workplace and its economic impact.
- Role of traditional medicine in the treatment of HIV/AIDS, incl. OIs, STIs and

Others research gaps related to HIV:

- ❖ ART availability, and affordability,
- ❖ Establishment of database on research activities conducted locally and preferably else where ,
- ❖ Conveying regular workshops/seminars to update the knowledge of interested individuals on development in the field (MOH),
- ❖ Extensive study regarding ARV use and response of therapy.,
- ❖ Studies should concentrate in rural areas because many studies are done in urban area setting and are not a representative for the country.
- ❖ HIV and its effect in different age groups of the population
- ❖ Immunological factors in Ethiopians favoring HIV/AIDS ,
- ❖ A strong disease control programs in HIV/AIDS, STI and TB ,
- ❖ Developing suitable control measures for Ethiopian situation for STI , In the area of stigma and discrimination
- ❖ Simple laboratory markers for monitoring and evaluation of HIV/AIDS treatment
Finding the cause why behavioral change is not coming with the available work done,
- ❖ Showing the public the magnitude of positive HIV cases in the country, Integrating the system of education , VCT, RX and finding the facilities of the system,
- ❖ Identify carefully the bibliography to document past experience and compile the end line survey to see impacts

- ❖ There are no enough research work on HIV/AIDS/STD among young people in schools. Their needs to protect themselves against the epidemic is not well assessed. Priority is not given to young people and children in schools
- ❖ Impact of HIV/AIDS by segments.
- ❖ Results achieved inters of combating HIV/AIDS in the country
- ❖ Legislative & human rights /BCC related agehelp
- Studies should be intervention oriented
- Mother to child transmission rate is not determined hence needs focus.

- MTCT behavioural aspects should be studied. How much is it accepted, Relation to breast feeding, Mother to child relationship.
- How much are we prepared on ARV. Drug management
- Establishment of an up-to-date data base on research activities Linking Service with Research
- Impact of intervention programs
 - ❖ Opinion survey on VCT,

2. STIs research gaps:

Under this area the respondents have a feeling that operational research should be initiated on the effect of STI reduction on HIV or the effect of HIV intervention on STI reduction. Health care seeking behavior of STI patients, especially where they get the treatment (pharmacy, health facility, private sectors) should be further studied. The syndromic and resistance pattern of antibiotics has also been identified as a research gap in this area. Overall, STI research gaps identified include:

- Determinant factors for health care-seeking behaviour.
- Evaluation/validation of STD syndromic management algorithm
- Assessment of hard-to-reach and target groups, including CSWs, refugees, street children
- Evaluation of rapid diagnostics for STD
- Current drug resistance patterns, especially of gonococci.
- Effect of HIV intervention on STI prevalence and vice versa.
- Role of NGOs and private sector on STI control & prevention programmes.
 - ❖ The effect of HIV control intervention on other STI prevalence,
 - ❖ Etiology based diagnosis and management of STIs,
 - ❖ STI etiology and behavioral study ,
 - ❖ Assess resistance pattern,
 - ❖ Focus on hard to reach areas like refugees , street children and others
 - ❖ Effectiveness and impact of health education,
 - ❖ Burden of the disease,
 - ❖ Strengthening primary health care units,
 - ❖ Prevalence and incidence of STD ,
 - ❖ Continuation and expansion of surveillance of STIs in order to determine disease burden.
 - ❖ Assessment of rapid diagnostic tools for identification of STIs.
 - ❖ Operational research in order to improve syndromic diagnosis and treatment algorithm
 - ❖ the role of concomitant HIV infection on effectiveness of syndromic STI treatment and pattern of drug resistance.
 - ❖ Impact of STI treatment on HIV incidence and viceversa.
 - ❖ Operational research to assess strategies to increase coverage of effective STI treatment through involvement of private health sector, informal health providers, and promotion of appropriate treatment seeking behaviour
 - ❖ Operational research trials of interventions: mass treatment alone or combined with improved syndromic treatment, trials of interventions targeted at high-risk groups (e.g. periodic presumptive treatment of CSWs), trials of interventions to protect adolescents and young people against STIs, trials of the effects of episodic or suppressive herpes treatment on HIV-1 transmission, evaluation of the HSV2 vaccines, including their effects on the incidence of HIV infection.
 - ❖ Focus on the control and eradication, not only treatment of STI ,

❖ **Rate of behavioral change, Key factors in behavioral change,**

3. TB research gaps:

Some of the research gaps identified in the are of TB are:-

- TB disease burden
- Prevalence of TB, including among HIV patients and in health care workers.
- Drug resistance pattern
- Adherence issues of anti-TB treatment in DOTs
- Role of community in TB care/treatment, including DOTs expansion.
- Etiologies of TB lymphadenitis
- Relevance of smear microscopy in HIV positives
- Prophylaxis for TB
- Developing/evaluating rapid diagnostics for TB, including drug-resistant isolates
- ❖ Magnitude of TB, risk condition
- ❖ KAP on preventive measures,
- ❖ Regular education with a good methodology about the cause of the disease, mode of transmission etc
- ❖ Disease burden, factors affecting transmission ,preventive Medicine, rate of transmission, risk groups,
- ❖ Well organized epidemiological data to control the distribution of disease in relation to HIV,
- ❖ Continuation and expansion of surveillance of TB in order to determine disease burden, including surveillance of drug resistant MTB
- ❖ TB diagnostics: development of rapid test for identification of drug-resistant MTB,rapid diagnosis of latent TB,rapid diagnosis of active TB, improved diagnostic accuracy for smear-negative TB, diagnostic test capable of distinguishing recent from long standing TB infection to help measure directly the rate of TB transmission in adults and monitor trends in transmission rates in communities and health-care settings ,improving QC on TB diagnosis, especially smear microscopy, ,the aetiological identification of MTB associated with TB-lymphadenitis, including the role of *M. bovis* in TB in pastoral community.
- ❖ TB treatment issues: Feasibility study of implementing community involvement on DOTs, such as home-based DOTs,operational research to assess strategies to increase coverage of effective DOTs through development of public-private partnership, adherence issues of anti-TB treatment in DOTs, Drugs effective against latent TB
- ❖ Socioeconomic aspects of TB and TB/HIV:perceptions, causes of stigma among TB patients, especially assessing the role of ,being treated for TB as a cause of stigma for being labeled also as infected with HIV.
- ❖ ARV/TB treatment issues: drug toxicity of anti-TB drugs among HIV patients,interaction of anti-TB & ARVs, developing algorithms when to start ARVs in the presence of TB co-infection,impact of ARVs on secondary incidence of TB,TB appearing under ARV treatment as immune reconstitution syndrome
- ❖ TB/HIV interactions; Impact of HIV positivity on smear-negative TB, Prevalence of active TB in VCT clients, , value of chest X-ray in TB prevention programm for PLWHA,Role of co-trimoxazole prophylaxis in reducing morbidity/mortality due to TB or other OIs prevalent among PLWHA and resistance of organisms to the antibiotic
- ❖ Role of nutrition on TB, supplemental intervention on MDR TB •

- ❖ Development/evaluation of TB vaccines with the aim of improving already existing and/or new vaccines, including the development/analysis of assays of immune protection markers
- ❖ Networking of Regional labs
- ❖ Prevalence of TB co-infection with HIV
- ❖ effective drugs for those HIV positive cases,
- ❖ Effectiveness of DOTS program,
- ❖ TB and HIV association treatment outcome,
- ❖ Knowledge about causation and prevention method, AFB positivity rate,
- ❖ Importance of ESR, diffusion, resistance pattern,

4. Other gaps (Challenges and obstacles):

The most important challenges or obstacles to undertaking research were:

- Inadequate health research information system
- Lack of commitment and awareness by policy makers for research:
- Lack of utilization of research results by policy makers, due to failure to recognize the research out-puts or failure to implement them.
- Lack of dissemination of research results to other researchers, policy-makers and end-users.
- Lack of National Research Networking and coordination
 - Operational and organizational problems, e.g. there have been no or very little collaboration between HIV and TB activities even at the MoH level.
 - Impact of decentralization on networking/coordination, lack of accountability, high turn-over of staff
 - Lack of research unit at MoH
- Lack of appreciation of previous efforts done...or failure in recognizing them and trying to duplicate similar issues.
- Lack of “Need-Driven Research Agendas”
Many research programs or activities that have been undertaken in Ethiopia were donor/sponsor-driven rather than need-driven to address national priorities.
- Capacity:
Shortage of staff, brain drain, lack of incentives, low salaries
- Lack of health systems research, including lack of effective use of national capacities and access to timely expert support, including those from NGOs, private sector and others.
- Lengthy and cumbersome Ethical clearance from National Ethical Clearance Committee (NECC)
- Lack of clear national policy and strategy on HIV/AIDS, STIs and TB priority research agenda.

Appendix 2

Summary Table on Disease problem and Recommended Priority Research Agenda

Disease	Gaps/Problems identified	Research priority settings
HIV/AIDS	IEC/BCC related work not systematic, addressed only KAP studies, not coordinated	<ul style="list-style-type: none"> - Research to understand high-risk behaviour & its associated networks - Research to find the best approach to IEC and preventive aspects - Address widely recognized high-risk groups (CSWs, truck drivers, MSP) and adolescents. - Impact of IEC/BCC on health-seeking behaviours for prevention, care and support. - Impact of BCC programs on reduction of stigma and discrimination. - Quality of IEC materials produced by media
	Misconceptions and access to condom use and its promotion	<ul style="list-style-type: none"> - Studies on misconceptions, cultural/religious influences on resistance to condom use - Promotion of female condoms among specific groups, such as CSWs - Monitor effective demand and utilization of condoms - Willingness to pay and use of condoms
	VCT inadequate coverage, quality control, impact of VCT	<ul style="list-style-type: none"> - Integration of VCT to general health services - Evaluation of tools for VCT, including training. - Evaluation & Quality control of rapid HIV testing algorithms. - Issues related to scaling-up VCT services. - Assessment of socio-demographic characteristics of VCT clients - Impact of VCT on behaviour change, including risk reduction. - Impact of VCT on seeking access to care among PLWHA. - Issues related to couples counselling, esp. disclosure of HIV status to partners
	Blood Safety & Universal Precaution issues related to PEP of health care workers, quality control of blood safety	<ul style="list-style-type: none"> - Safety/quality of blood supply, including other blood borne infections, such as hepatitis B and – C viruses. - PEP for health workers; epidemiological studies on risks of transmission after occupational accidents; acceptability of HIV testing and treatments by HCWs ; side effects of treatments and viral resistance. - Attitude of health professionals towards universal precautions. - Assessment of other modes of HIV transmission, esp. due to infected needles.

	<p>PMTCT issues not adequately adressed</p>	<ul style="list-style-type: none"> - Acceptability of VCT for PMTCT, treatments, adherence, - Appearance of viral resistance - Impact of breast feeding on risk of tramsmission - New drugs/regimens for PMTCT, - Supplementary interventions, nutritional or micronutrients - Different feeding options & impacts in infant morbidity/mortality - Various models of PMTCT plus. - Attitude of professionals towards PMTCT services - Integration of PMTCT, for e.g. with ANC services.
	<p>Care and support issues not well addressed</p>	<ul style="list-style-type: none"> - Assessment of demant of PLWHA. - Assessment of continuum of care - Models of refferal sytems - Community-based care, esp. role of “Eders” in Ethiopia - Role of APLWHA on care and support - Developing/evaluating diagnostic and treatment algorithms for OIs. - Developing and evaluating simple markers for ART monitoring. - Simplified therapeutic regimens - Improving adherence - Side-effects of drugs - Interactions of ARVs with other medicines - Surveillance of anti-retroviral drug resistance - Addressing nutritional problems - Scaling-up ART
	<p>Legislation of human rights issues</p>	<ul style="list-style-type: none"> - Magnitude of stigma and discrimination. - Role of APLWHA in reducing HIV transmission to the community.
	<p>Surveillance and Research: Lack of information on disease burden, especially rural area, second generation surveillence.</p>	<ul style="list-style-type: none"> - Continuation and expansion of surveillance, including second generation sentinel surveillance and expansion esp. to rural areas. - Quality control of sentinel surveillance activities - Microbicides research determining its effect on the incidence of HIV, including STIs - HIV in workplace and its economic impact of HIV/AIDS epidemic. - Role of harmful traditional practices in HIV transmission
<p>STIs</p>		
	<p>Disease burden Diagnosis</p>	<p>Expansion of surveillence Assessment of rapid diagnostic tools</p>

	TB/HIV interactions	- Impact of HIV positivity on smear-negative TB
	Nutritional interventions	- Prevalence of active TB in VCT clients Role of nutrition on TB, supplemental intervention on MDR TB
	Coordination	Networking of Regional labs
OTHER ISSUES		
	Lack of commitment and awareness by policy makers for research, including lack of utilization of research results by policy makers, due to failure to recognize the research out-puts or failure to implement them	Advocacy
	Lack of dissemination of research results to other researchers, policy-makers and end-users.	Dissemination of research findings in timely manner
	Lack of National Research Networking and coordination - Operational and organizational problems, e.g. there have been no or very little collaboration between HIV and TB activities even at the MoH level - Impact of decentralization on networking/coordination, lack of accountability, high turn-over of staff	Encourage networking, coordination
	Lack of research unit at MoH Lack of appreciation of previous efforts done...or failure in recognizing them and trying to duplicate similar issues.	Carrying-on previously done work, avoiding duplication of works, networking and coordination
	Donor/sponsor- driven rather than	Need -driven national priorities. Lack of "Need -Driven Research Agendas"
	Capacity: Shortage of staff, brain drain, lack of incentives, low salaries, lack of well trained people in clinical epidemiology	Capacity building, improve working conditions, encourage incentives, including training
	Health systems research, including lack of effective use of national capacities and access to timely expert support	Improve health systems capacity through capacity building
	Lengthy and cumbersome Ethical clearance from National Ethical Clearance Committee (NECC)	Capacity building
	Lack of clear national policy and strategy on HIV/AIDS, STIs and TB priority research agenda.	Setting of National policy and strategy, including setting of priority research agenda.

Appendix 3

Questionnaires

Appendix 3.1 Identification of HIV/AIDS/STI and TB Research Gap and Priority Setting Agenda Study – Individual (Researcher) Questionnaires (Q1)

1. Address:
 - 1.1 Region _____ 1.2 Zone _____ 1.3 Woreda _____
 - 1.4 House No _____ 1.5 Telephone : Off. _____ Resid _____
 - 1.6 Name of Institution _____
2. Identification :
 - 2.1 Sex _____ 2.2 Age _____
 - 2.3 Educational Level _____ 2.4 Occupation _____
 - 2.5 Marital status _____ 2.6 Position in the institute _____
 - 2.7 Profession _____ 2.8 Year of Service _____
 - 2.9 Years of Service In HIV/AIDS/STI/TB Research _____
3. Experience on HIV/AIDS/STI/TB:
 - 3.1 List of Studies conducted on HIV/AIDS/STI/TB
 - 3.1.1 Can you give us list of studies conducted on HIV/AIDS
 - a) On Information, Education and Communication (IEC) and Behavioral Change Communication (BCC)
 - b) Condom Promotion and Distribution
 - c) Voluntary Counseling and Testing Service (VCT)
 - d) Management of Sexually Transmitted Infection
 - e) Blood Safety
 - f) Universal Precautions
 - g) Prevention of Mother to Child Transmission
 - h) Care and Support
 - i) Legislation and Human rights
 - j) Surveillance and Research
 - k) Others (ARVT, OVC, Orphan and vulnerable children to HIV/AIDS)
 - 3.1.2 Can you give us list of studies conducted on STI in the area of :
 - a) Public Health
 - b) Epidemiological
 - c) Biomedical
 - d) Clinical
 - e) Behavioral
 - f) Laboratory
 - g) Others
 - 3.1.3 Can you give us list of studies conducted on TB in the area of
 - ◆ Public Health
 - ◆ Epidemiological
 - ◆ Biomedical
 - ◆ Clinical
 - ◆ Behavioral
 - ◆ Laboratory
 - ◆ Others
 - 3.2. List of publication on HIV/AIDS/STI/TB

- 3.2.1 Would you provide us with a list of publication research conducted by your self, your organization and other organizations (hint where to find them) on HIV/AIDS on: Change
- a) Information, Education and Communication (IEC) and Behavioral Communication (BCC)
 - b) Condom Promotion and Distribution
 - c) Voluntary Counseling and Testing Service (VCT)
 - d) Management of Sexually Transmitted Infection
 - e) Blood Safety
 - f) Universal Precautions
 - g) Prevention of Mother to Child Transmission
 - h) Care and Support
 - i) Legislation and Human rights
 - l) Surveillance and Research
 - m) Others (ARVT, OVC, Orphan and vulnerable children to HIV/AIDS)
- 3.2.2 Would you provide us with a list of publications of research conducted by your self, your organization and other organization (hint where to find them) on STI in the area of :
- ◆ Public Health
 - ◆ Epidemiological
 - ◆ Biomedical
 - ◆ Clinical
 - ◆ Behavioral
 - ◆ Laboratory
 - ◆ Others
- 3.2.2 Would you provide us with a list of publications of research conducted by yourself, your organization and other organization (hint where to find them) on TB in the area of :
- ◆ Public Health
 - ◆ Epidemiological
 - ◆ Biomedical
 - ◆ Clinical
 - ◆ Behavioral
 - ◆ Laboratory
 - ◆ Others
- 3.3. List of unpublished research work on HIV/AIDS/STI/TB
- 3.3.1 Please provide with the list of unpublished research work conducted by your self, your organization and other organization (hint where to find them) on HIV/AIDS on:
- ◆ Information, Education and Communication (IEC) and Behavioral Change Communication (BCC)
 - ◆ Condom Promotion and Distribution
 - ◆ Voluntary Counseling and Testing Service (VCT)
 - ◆ Management of Sexually Transmitted Infection
 - ◆ Blood Safety
 - ◆ Universal Precautions
 - ◆ Prevention of Mother to Child Transmission
 - ◆ Care and Support
 - ◆ Legislation and Human rights
 - ◆ Surveillance and Research
 - ◆ Others (ARVT, OVC, Orphan and vulnerable children to HIV/AIDS)
- 3.3.2 Please provide us with the list of unpublished research work conducted by your self, your organization and other organization (hint where to find them) on STI in the area of :

- ◆ Public Health
- ◆ Epidemiological
- ◆ Biomedical
- ◆ Clinical
- ◆ Behavioral
- ◆ Laboratory
- ◆ Others

3.3.3 Please provide us with the list of unpublished research work conducted by your self, your organization and other organization (hint where to find them) on TB in the area of :

- ◆ Public Health
- ◆ Epidemiological
- ◆ Biomedical
- ◆ Clinical
- ◆ Behavioral
- ◆ Laboratory
- ◆ Others

4. Opinion on unnecessary duplication, research gaps and priority.

4.1 Have you come across research work on HIV/AIDS/STI/TB conducted in your organization that is duplicated elsewhere?

- 1) Yes 2) No

4.2 If Yes, Can you list that research area and the organization(s)?

4.3 Which area of HIV/AIDS/STI/TB do you think are under covered or given less attention? So, what do you think is the research gap concerning

a) HIV/AIDS on

- ◆ Information, Education and Communication (IEC) and Behavioral Change Communication (BCC)
- ◆ Condom Promotion and Distribution
- ◆ Voluntary Counseling and Testing Service (VCT)
- ◆ Management of Sexually Transmitted Infection
- ◆ Blood Safety
- ◆ Universal Precautions
- ◆ Prevention of Mother to Child Transmission
- ◆ Care and Support
- ◆ Legislation and Human rights
- ◆ Surveillance and Research
- ◆ Others (ARVT, OVC, Orphan and vulnerable children to HIV/AIDS)

b) STI on:

- ◆ Public Health
- ◆ Epidemiological
- ◆ Biomedical
- ◆ Clinical
- ◆ Behavioral
- ◆ Laboratory
- ◆ Others

c) TB

- ◆ Epidemiological

- ◆ Biomedical
- ◆ Clinical
- ◆ Behavioral
- ◆ Laboratory
- ◆ Others

4.4 What are the priority areas that you fell to be conducted in the future concerning :

a) HIV/AIDS on

- ◆ Information, Education and Communication (IEC) and Behavioral Change Communication (BCC)
- ◆ Condom Promotion and Distribution
- ◆ Voluntary Counseling and Testing Service (VCT)
- ◆ Management of Sexually Transmitted Infection
- ◆ Blood Safety
- ◆ Universal Precautions
- ◆ Prevention of Mother to Child Transmission
- ◆ Care and Support
- ◆ Legislation and Human rights
- ◆ Surveillance and Research
- ◆ Others (ARVT, OVC, Orphan and vulnerable children to HIV/AIDS)

b) STI on:

- ◆ Public Health
- ◆ Epidemiological
- ◆ Biomedical
- ◆ Clinical
- ◆ Behavioral
- ◆ Laboratory
- ◆ Others

c) TB on:

- ◆ Public Health
- ◆ Epidemiological
- ◆ Biomedical
- ◆ Clinical
- ◆ Behavioral
- ◆ Laboratory
- ◆ Others

4.5 What strategies must be used or what must be done to full fill the gap and to conduct the identified priorities on HIV/AIDS/STI/TB in the future?

5. Others:

5.1 What do you suggest to strengthen EPHA's collaboration with local and international organizations in the fight against HIV/AIDS/STI/TB?

5.2 Do you have the interest and the plan to continue in HIV/AIDS/STI/TB research

5.3 Any Other issue

Appendix 3.2 Identification of HIV/AIDS/STI and TB Research Gap and Priority Setting Agenda Study – Institutional Questionnaires (Q2)

1. Address: Region _____ Zone _____ Woreda _____ Telephone : _____ E-mail: _____ Name of Institution _____
2. Identification : Name of the respondent: _____
2.1 Sex _____ 2.2 Age _____
2.3 Educational Level _____ 2.4 Occupation _____
2.5 Marital status _____ 2.6 Position in the institute _____
2.7 Profession _____ 2.8 Year of Service _____
2.9 Years of Service in HIV/AIDS/STI/TB _____
3. Mission and Objectives of the Organization:
3.1 What is the mission of the organization?
3.2 What are the Objectives of the organization?
4. Experience on HIV/AIDS/STI/TB study :
4.1 What is the experience of the organization on the study of
d) HIV/AIDS on
◆ Information, Education and Communication (IEC) and Behavioral Change Communication (BCC)
◆ Condom Promotion and Distribution
◆ Voluntary Counseling and Testing Service (VCT)
◆ Management of Sexually Transmitted Infection
◆ Blood Safety
◆ Universal Precautions
◆ Prevention of Mother to Child Transmission
◆ Care and Support
◆ Legislation and Human rights
◆ Surveillance and Research
◆ Others (ARVT, OVC, Orphan and vulnerable children to HIV/AIDS)
e) STI on:
◆ Public Health
◆ Epidemiological
◆ Biomedical
◆ Clinical
◆ Behavioral
◆ Laboratory
◆ Others
f) TB on
◆ Public Health
◆ Epidemiological
◆ Biomedical
◆ Clinical
◆ Behavioral

- ◆ Laboratory
- ◆ Others

4.2 Is there unpublished documents related to HIV/AIDS/STI/TB in your organization? Please list the title and means of accessing the document

4.3. Opinion on unnecessary duplication, research gaps and priority.

4.3.1 Please list unnecessary duplication research work on HIV/AIDS/STI/TB conducted by your organization, if you feel any.

4.3.2 What was supposed to be done in the past concerning HIV/AIDS/STI/TB in the research area in your organization if all constraints were solved?

4.3.3 What are the actual and potential resources devoted for research, cost implications, organizational arrangements and policy frameworks?

4.3.4 What are the research problems associated with capacity including resources, organization, expertise?

4.3.5 What do you think is the research gap concerning HIV/AIDS/STI/TB by your organization and other institutions?

4.3.6 What are the priority areas that you think which needs to be conducted in the future in your organization and by others? What must be done to fill the gaps and the priority areas?

4.3.7 What are the resource requirements to fill the gap and the priority areas?

4.3.8 Please list potential researchers in your organization who can participate on the gap of the above-mentioned research and priority areas.

5.0 Any Other issue?

Appendix 3.3 Identification of HIV/AIDS/STI and TB Research Gap and Priority Setting Agenda Study – Focus Discussion Group points to consider (Q3)

1. What are the experiences of professionals on HIV/AIDS/STI/TB on your organization?
 2. What are the experiences of different organizations on HIV/AIDS/STI/TB?
 3. What has been done on HIV/AIDS/STI/TB research in the past 15-20 years in the area of epidemiological, clinical, behavioral, IEC, laboratory, others?
 4. Was there unnecessary duplication in research efforts in the above areas?
 5. What were supposed to be done in the past in the area of HIV/AIDS/STI/TB research by different institutions?
 6. What are the major gaps on HIV/AIDS/STI/TB research in the country?
 7. What are the priority areas and what must be done in the future? What will be its cost implications?
 8. Any other issues.
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Appendix 3.4 Identification of HIV/AIDS/STI and TB Research Gap and Priority Setting Agenda Study – Health Providers Questionnaires (Q4)

1. Address: Region _____ Zone _____ 3 Woreda
Telephone : _____ E-mail _____ Name of Institution _____.

2. Identification : Name of the respondent: _____.

2.1 Sex _____ 2.2 Age _____.

2.3 Educational Level _____ 2.4 Occupation _____.

2.5 Marital status _____ 2.6 Position in the institute _____.

2.7 Profession _____ 2.8 Year of Service _____.

2.9 Years of Service in HIV/AIDS/STI/TB _____.

3. Previous experience::

3.1 What is your experience on the application of previously conducted research out put in the area of :

a) HIV/AIDS

b) STI

c) TB

3.2 Do you know the concept of " Evidence Based Care"? 1) Yes 2) No

3.3 If yes, please share us your past experience .

3.4 Have you participated on any research work related to HIV/AIDS/STI/TB in the past ?
1) Yes 2) No If Yes please complete Q2

3.5 Have you involved on Monitoring and evaluation work on HIV/AIDS/STI/TB?
1) Yes 2) No If Yes share your experience

4) Future expectation

4.1 What is your expectation from research institutions/researchers to be conducted in improving health service delivery in the area of HIV/AIDS on :

- ◆ Information, Education and Communication (IEC) and Behavioral Change Communication (BCC)
- ◆ Condom Promotion and Distribution
- ◆ Voluntary Counseling and Testing Service (VCT)
- ◆ Management of Sexually Transmitted Infection
- ◆ Blood Safety
- ◆ Universal Precautions
- ◆ Prevention of Mother to Child Transmission
- ◆ Care and Support
- ◆ Legislation and Human rights
- ◆ Surveillance and Research
- ◆ Others (ARVT, OVC, Orphan and vulnerable children to HIV/AIDS)

4.2 What is your expectation from research institutions/researchers to be conducted in

improving health service delivery in the area of STI on :

- ◆ Public Health
- ◆ Epidemiological
- ◆ Biomedical
- ◆ Clinical
- ◆ Behavioral
- ◆ Laboratory
- ◆ Others study

4.3 What is your expectation from research institutions/researchers to be conducted in improving health service delivery in the area of TB on :

- ◆ Public Health
- ◆ Epidemiological
- ◆ Biomedical
- ◆ Clinical
- ◆ Behavioral
- ◆ Laboratory

Others study

Appendix 4: Database of research reference materials

Appendix 4.1 Published research works

4.1.1 HIV/AIDS related Published research works

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Appendix 5. Lists of Organizations and Institutions (alphabetical) Involved in the assessment

*Regional Health Buroaus participated were: Addis Ababa, Amhara, Harari, Gambbella, Tigray, Beni-Shangul,

Organization/Institution	Involved in:		
	Focus Group Discussions (no. participated)	Key Informant Interviews	Individual Questionnaire (no. participate)
Addis Ababa University, Faculty of Medicine		v	v (2)
Addis Ababa University, Faculty of Social Sciences			v (1)
Action AID Ethiopia		v	v (2)
Association for Promotion of Indigineous Knowledge		v	v (1)
Armauer Hansen Research Institute	v	v	v (1)
Armed Forces General Hospital			v (1)
Bethzatha Medical Center	v	v	v (3)
CDC-Ethiopia	v	v	v (2)
Confederation of the Ethiopian Trade Unions(CETU)		v	v (1)
Christian Relief & Development Administration		v	v (1)
Ethiopian Health & Nutrition Research Institute (EHNRI)	v (5)	v	v (5)
Ethiopian Red Cross Society – National Center for Blood Transfusion		v	v (1)
Ethiopian Road Authority			v (1)
Ethiopian Science and Technology Commission		v	
Family Health International-Ethiopia		v	
Gondar University College			v (1)
HIV/AIDS Prevention & Control Office (HAPCO)		v	v (1)
ISAPSO		v	v (1)
Inter African Committee (IAC)		v	v (2)
Jimma University, Faculty of Medicine			v (3)
Ministry of Agriculture		v	v (1)
Ministry of Culture & Youth		v	v (1)
Ministry of Education		v	v (1)
Ministry of Health	v (2)	v	v (3)
Ministry of Labour & Social Affairs		v	v (1)
Ministry of Trade & Industry			v (1)
Mission of Mary		v	v (3)
National Committee on Traditional Practice		v	v (3)
OSSA		v	v (1)
PACT- Ethiopia		v	v (1)
Pathfinder International- Ethiopia		v	v (1)
Police Forces General Hospital			v (1)
Regional Health Buiureau's*			v (8)
St. Paul's Specialized Referral Hospital	v	v	v (1)
The World Bank		v	v (1)
Tikur Anbessa Specialized Referral Hospital		v	
UNICEF		v	v (2)
WHO	v	v	v (1)
Total number	12	30	61

SNNPs and Oromia.

Appendix 6. Database of resource persons/researchers

Institution Address	Name of Researchers	Affiliation
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EHNRI P O Box 1242 Addis Ababa Tel: 75 15 22 E-mail: ehnri@telecom.net.et	Aberra Geyid, BSc, MSc, PhD	STI
	Almaz Abebe, BSc, MSc, PhD	HIV, STI
	Asamenew Girma, MD	STI
	Aster Tsegaye, BSc, MSc	HIV
	Amare Degene, MSc	HIV, STI, TB (epidem.)
	Ambaye Degefa, BSc, MSc	HIV (social)
	Amha Kebede, BSc, MSc	HIV (OIs)
	Belete Tegbaru, BSc, MSc	HIV, TB
	Dawit Wolday, MD, PhD	HIV, STI, TB
	Desta Kassa, BSc, MSc	HIV
	Eshetu Lema, BSc, MSc, PhD	TB, TB/HIV
	Eyob Getachew, BSc, MSc	TB, TB/HIV
	Hailu Meles, BSc, MSc	HIV, STI
	Mekdes Gebeyehu, BSc, MSc	TB, TB/HIV
	Melaku Adal, BSc, MSc	HIV/STI
	Tekolla Endeshaw, BSc, MSc	HIV (OIs)
	Tsehaynesh Messele, BSc, MSc, PhD	HIV, TB
	Worknesh Ayele, BSc, MSc	HIV
	Yared Mekonnen, BSc, MSc, PhD	HIV (Epidemiology)
AHRI P O Box Addis Ababa Tel: E-mail: ahri@telecom.net.et Addis Ababa University- Faculty of Medicine P O Box: Addis Ababa Tel: E-mail:	Abraham Aseffa, MD, PhD	TB
	Howard Engers, MD, PhD	TB
	Demissew Beyene, BSc, MSc	TB
	Peridda	TB
	Dawit Woldemaskel, BSc, MSc	TB
	Daniel Fekade, MD	HIV, OIs
	Teshale Seboxa, MD, MSc	HIV, OIs
	Zenebe Melaku, MD	HIV, OIs
	Abubaker Bedri, MD	HIV (Pediatrics)
	Berhanu Gudeta, MD	HIV (Pediatrics)
	Sileshi Lulseged , MD (Prof.)	HIV (Pediatrics)
	Addulhamid Isaac, MD	HIV (PMTCT)
	Getachew Aderaye, MD	TB, TB/HIV
Yemtubezinash W/Amanuel, MD, PhD	HIV, OIs	
Yemane Berhane, MD, PhD, (Prof.)	HIV, TB	
Damen Hailemariam, MD, PhD	HIV, STI	
Ministry of Health, Disease Control & Prevention Department P O Box: 1234 Addis Ababa Tel: 52 70 33 E-mail: moh@telecom.net.et	Afewerk Kassa, MD, MPH	HIV, STI
	Asegid Woldu, MD, MPH	HIV (surveillance), STI
	Abebe Shume, MSc	STI
Jimma University P O Box: Jimma Tel: E-mail:	Solomon Gebressellassie, MD, MSc	HIV (OIs), STI

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HIV/AIDS Prevention and Control Office P O Box: Addis Ababa Tel: E-mail: aids@telecom.net.et	Berhanu Demeke, MD, MPH Teklu Belay	HIV, STI, TB HIV, STI (advocacy)
CDC-Ethiopia P O Box: Addis Ababa Tel: E-mail:	Tadesse Wuhib, MD, MPH Hailu Negassa, MD, MPH Shabir Ismail, MD, MPH Yohannes Mengistu, MSc, PhD Tekeste Kebede, MD	HIV, STI, TB HIV, STI, TB HIV (surveillance) HIV, STI, TB (lab.) HIV, STI (counselling)
CRDA P O Box: Addis Ababa Tel: E-mail:	Agonafer Tekalegne, MD, MPH	HIV
St. Paul Specialized Referral Hospital P O Box: Addis Ababa Tel: 750125 E-mail:	Gezahegne Tilahun, MD	HIV, STI, TB
Tikur Anbessa Specialized Referral Hospital P O Box: Addis Ababa Tel: 750125 E-mail:	Zeru G/Mariam, MD	HIV, STI (women)
Oromia Regional Health Bureau P O Box: Tel: 511908 E-mail:	Refissa Bekele	HIV, STI, TB
SNNP Regional Health Buiro P O Box: Awassa Tel: (06) 201645 E-mail:	Lopiso Erso	HIV, STI, TB

BeniSahngul Regional Health Buiro P O Box: Beni-Shangul Tel: () 750212 E-mail:	Tsedale Addissu	HIV, STI, TB
Amhara Regional Health Buiro P O Box: Bahir Dar Tel: (08) 206615 E-mail:	Awoke Tassew, MD	HIV, STI, TB
Tigray Regional Health Buiro P O Box: Mekelle Tel: (04) 400986 E-mail:	Yohannes, MD	HIV, STI, TB
Gambella Regional Health Buiro P O Box: Gambella Tel: () 510019 E-mail:	Tesfaye Dinku	HIV, STI, TB
Harari Regional Health Buiro P O Box: Harar Tel: (06) 660389 E-mail:	Solomon Worku	HIV, STI, TB
WHO-Ethiopia P O Box Addis Ababa Tel: E-mail	Endalamaw Aberra, MD, MPH	HIV, STI, TB
Bethzatha Medical Center P O Box Addis Ababa Tel: E-mail	Mulugeta Ermias, MD, MPH	HIV (VCT), STI, TB

