



**ADDIS ABABA UNIVERSITY**

**SCHOOL OF PUBLIC HEALTH**

**Assessment of Health Care Workers Occupational Exposure to  
HIV and Post-Exposure Prophylaxis (PEP) in Health Centers and  
Hospitals of Addis Ababa**

**By**

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## **Acronyms and Abbreviations**

|             |                         |
|-------------|-------------------------|
| <b>AAU</b>  | Addis Ababa University  |
| <b>ART</b>  | Anti Retroviral Therapy |
| <b>BBFs</b> | Blood and Body Fluids   |

|              |   |
|--------------|---|
| <b>BBVs</b>  | Blood Borne Viruses                       |
| <b>CDC</b>   | Center for Disease Control and Prevention |
| <b>CSA</b>   | Central Statistical Agency                |
| <b>EPHA</b>  | Ethiopian Public Health Association       |
| <b>FMOH</b>  | Federal Ministry of Health                |
| <b>GP</b>    | General Practitioner                      |
| <b>HBV</b>   | Hepatitis B Virus                         |
| <b>HCWs</b>  | Health Care Workers                       |
| <b>HCV</b>   | Hepatitis C Virus                         |
| <b>NGOs</b>  | Non Governmental Organizations            |
| <b>NSIs</b>  | Needle Stick Injuries                     |
| <b>OGOs</b>  | Other Governmental Organizations          |
| <b>OPD</b>   | Out Patient Department                    |
| <b>PEP</b>   | Post-Exposure Prophylaxis                 |
| <b>PLWHA</b> | People Living With HIV/AIDS               |
| <b>PPEs</b>  | Personal Protective Equipments            |
| <b>SPH</b>   | School of Public Health                   |
| <b>VCT</b>   | Voluntary Counseling and Testing          |

## **Abstract**

**Background:** An occupational exposure that may place a worker at risk of HIV infection is a percutaneous injury, contact of mucous membrane or skin with blood or other body fluids to which universal precaution apply. Exploring the knowledge,

extent of exposures and practices of health care workers on occupational HIV risks is important.

**Objectives:** The objective of the study was to assess occurrence of occupational exposures and knowledge and practice regarding HIV post-exposure prophylaxis among health care workers in health centers and hospitals of Addis Ababa.

**Methods and Materials:** A facility based cross-sectional study, involving 372 health care workers, was conducted in Addis Ababa from March to April 2008. A pre-tested, interviewer administered, structured questionnaire was applied for data collection. Odds ratio with 95% confidence interval and logistic regression analysis were employed to measure the degree of association between factors and identify the predictors for occurrence of needle stick injuries.

**Result:** The study revealed that 38.2% of health care workers experienced at least one needle stick injury in their life time and 19% of respondents experienced needle stick injury with in the last one year. Rate of needle stick injury in the previous one year was estimated as 1.34 injuries per person. Factors associated with occurrence of injuries were being a nurse (AOR=15.39, 95%CI=3.70-18.05), having work experience for more than 10 years (AOR=2.68, 95%CI=1.30-5.54), working long hours (AOR=1.90, 95%CI=1.10-3.31), attending fewer patients per day (AOR=2.21, 95%CI=1.32-3.58), self perception of high risk HIV (AOR=2.05, 95%CI=1.10-3.82) and non-consistent use of personal protective equipments (AOR=1.67, 95%CI=1.01-2.76). Two hundred sixty four (71.0%) respondents had knowledge about HIV post-exposure prophylaxis.

**Conclusion and Recommendation:** The findings of this study indicated that occupational exposures were common among health care workers. Health facilities should make available to their system that includes a standardized written protocol and reporting unit for management of occupational exposures. Improvement of work environment and appropriate management of exposed cases, including addressing the psychosocial burden health workers face after exposure is also imperative.

**Key words:** Occupational exposure, needle stick injuries, post-exposure prophylaxis, health care workers, HIV

# 1. Background and Statement of the Problem

## 1.1. Background

Exposure to different body fluids has a potential risk of transmission of blood borne pathogens to health care workers (HCWs). The prescription of antiretroviral therapy as post-exposure prophylaxis (PEP) following significant potential exposure to HIV has become routine and it is important that individuals with risk of exposure are aware of the procedures to follow and where their first point of contact should be if an incident occurs.

An occupational exposure that may place a worker at risk of HIV infection is a percutaneous injury, contact of mucous membrane or contact of skin (especially when the skin is chapped, abraded or afflicted with dermatitis or the contact is prolonged or involving an extensive area) with blood, tissue or other body fluids to which universal precaution apply<sup>(1)</sup>.

Since the first report in 1984 of a HCW developing HIV infection after a needle stick injury (NSI), there has been a great concern about the occupational transmission of blood borne pathogens. From research findings, the estimated risk for HIV transmission after injury through a needle contaminated with HIV infected blood and after mucous membrane exposure is 0.3% and 0.1% respectively <sup>(2-7)</sup>.

The adoption of standard universal precaution and use of personal protective equipments (PPEs) led to a significant reduction in occupational exposures over the last two decades. Despite these precautions, occupational exposures still occur and are underreported. A report published by WHO also estimated that 0.5% of HCWs was exposed to HIV annually, corresponding to an expected 1000 new HIV infections from occupational exposures <sup>(6, 8)</sup>.

## 1.2. Statement of the Problem

Health care workers are facing a number of unique challenges to stay healthy in the face of the generalized HIV/AIDS epidemic. This is also becoming synergized by the occupational risk to the virus. Although exposure through occupational injuries can usually be avoided by following good working practices, HCWs should consider the implications of taking PEP. Available data from developing countries show that adherence to the “standard precaution” and documentation of occupational exposures are suboptimal and the knowledge about PEP among HCWs is poor (2, 6).

In light of the dynamics of turn of events, HCWs remain less proficient about the need for urgent assessment in the case of an exposure to HIV. This suboptimal proficiency is also more marked among auxiliary staffs working in health care settings (3). Studies addressing their knowledge and practice are also lacking in developing countries including Ethiopia (3, 6). The significantly higher HIV prevalence in these countries also increases the likelihood of HIV infection after an occupational exposure (9-11).

Health care workers practicing in poor countries like ours are more exposed to HIV following occupational exposure and less likely to use PEP than those working in developed countries and well equipped facilities (2, 5, 11). In addition, diversified clinical activities including different procedures are conducted at a health center and hospital levels in the Ethiopian context, which makes occupational exposure a concern.

This research will, therefore, try to explore existing perceptions and practices of HCWs regarding occupational HIV risks and PEP. This can help to provide

an insight to subsequent efforts to improve prevention, diagnosis, treatment and support of HIV/AIDS in relation to the occupational hazards.

## 2. Literature Review

### 2.1. Extent of Occupational Exposure to HIV

A significant risk exposure can be defined as a percutaneous injury or the contact of mucous membranes or non-intact skin with potentially infectious blood, body fluid or tissue. The risks of transmission of HIV vary with the type and severity of the exposure. A Health Protection Agency summary of published reports, looking at HIV transmission from occupational exposure to HIV, found that 22 of 6955 individuals with percutaneous exposure to HIV became infected, indicating a risk of 1 in 300 or 0.3% (3).

From previous study findings, approximately 3 million HCWs are exposed to blood borne viruses (BBVs) including HIV each year. It is estimated that 61% of these infections are due to HBV and HCV and the remaining 39% is due to HIV. World wide, 4.4 % (0.8%-18.5%) of HIV infections among HCWs may be attributable to occupational injuries. More than 90% of these infections occurred in low-income countries, most of which could have been prevented (12-14).

The Centers for Disease Control and prevention (CDC) case-control study demonstrated several factors that increased the likelihood of transmission from a percutaneous exposure to HIV. These were the occurrence of a deep injury, injury with devices that were visibly contaminated with blood, injuries where the needle had been placed directly in the source patient's vein or artery and injuries where there had been exposure to a source patient who died of the acquired immunodeficiency syndrome within 2 months after the injury (3, 15).

The risk of HCWs acquiring a blood borne pathogen after an occupational exposure depends on multiple factors (16):

- Prevalence of infection in the specific population: high prevalence of these pathogens in developing countries substantially increases the risk of occupational exposure.
- Frequency of activities capable of transmitting the infectious agent: the increased risk of occupational injuries in the developing countries due to unsafe practices like careless handling of contaminated needles, unnecessary injections on demand, reuse of inadequately sterilized needles and improper disposal of hazardous wastes.
- Nature and efficacy of transmission of exposure: percutaneous injury has increased risk of transmission compared with exposure to mucous membrane or skin.
- Virus present in the contaminated fluid and the viral load: more patients with advanced disease and high viral load in developing countries, as they cannot afford antiretroviral therapy
- Availability and efficacy of PEP: proper guidelines still do not exist in developing countries.

Results of the Duke Health and Safety Surveillance System showed that there were about 2,730 blood and body fluids (BBFs) exposures among HCWs. Difference in annual exposure rates were also observed between health professionals of different category and working experience (4, 7).

In a study done to estimate the global burden of diseases attributable to contaminated sharp injuries, 1,000 new HIV infections have occurred in the

year 2000 worldwide among HCWs due to their occupational exposure to percutaneous injuries (2).

Another study which was conducted to know the risks of HCWs in developing countries found out that HCWs in developing countries are at serious risk of infection from blood borne pathogens — particularly HIV, HBV and HCV --- because of the high prevalence of such pathogens in many poorer regions of the world (17). It was also pointed out that despite the high prevalence of blood-borne pathogens in many developing countries, documentation of infections caused by occupational exposures and appropriate preventive measures were also inadequate (1, 17, 18).

Other studies done on specific groups of health professionals indicated that occupational exposures are real risks and are attributed to some work related factors (18, 19). The study done on nurses showed that the percentage of nurses experiencing NSI during their professional time was 79.7% and the incidence of exposure to these injuries in one year was 68.4%. The factors which increased the rate of NSI among the study subjects were, age less than 24 years, less than 4 years of nursing experience, working in surgical or intensive care units and working for more than 8 hours per day (19).

Some other studies also indicated that injuries were more frequent during extended work compared with non-extended work and the extent of occupational exposure among HCWs was significant. Decreasing the work load of some specific HCWs was indicated as one measure for decreasing the occurrence of exposures (4, 20-22).

A study done in hospitals of Tigray, Ethiopia in August 2006 indicated that health care workers were at a very high risk of exposure to blood and body fluids. Needle sticks injury and mucous membrane exposure with blood and

body fluids were reported. A difference in the types of exposure was observed among the different health professionals (23).

## 2.2. Existing Knowledge and Practices

Awareness of the importance of reporting a potential exposure to HIV or other BBVs is essential for clinical and medico-legal reasons. Many HCWs have inadequate knowledge about PEP despite being at risk of different occupational exposures.

A survey of 273 junior doctors at two London teaching hospitals found that although 76% had experienced high-risk exposure to potentially infective material during their careers, only one-third had knowledge of the recommended time period for getting PEP and 20% had sought advice following the incident (3).

A survey conducted among Serbian HCWs depicted that 90% of them carried out some form of intervention with a risk of HIV infection (contact with blood or other body fluids) and 70% of them perceived there to be high professional risk of acquiring HIV infection. Dentists were found to be more concerned about this risk than other professionals. Findings from that study showed that within one year, 59% of HCWs had skin contact with patient's blood, followed by NSIs in 51%, cuts from sharp instruments in 38% and contact of eye and other mucosa with patient's blood in 34%. Exposures occurred most frequently in dentists, but the cuts from sharps occurred mainly in laboratory technicians. Seventy per cent of HCWs protected themselves regularly, using appropriate barriers (gloves, glasses and mask). Nearly 80% of respondents had not been informed about guidelines for protection against HIV and protocols of PEP or such protocols did not exist in their work environment. It

was found that perception of professional risk of acquiring HIV infection was associated with everyday practice, and was higher among HCWs who were exposed to patients' BBFs (6).

In a survey conducted among Emergency Medical Residents in USA, 56.1% reported at least one exposure to blood during their training. The frequency of this self-reported exposure increased with advancing level of training. They were frequently exposed to blood, most commonly due to puncture injuries by sharp objects but rate of exposure reporting was low, which may compromise appropriate post-exposure counseling and prophylaxis (10).

A study conducted among hospital staffs in India examined the connection between the health beliefs of HCWs (doctors, nurses and auxiliary staff) and their failure to report NSIs. The result showed that nurses had the highest rate of needle-stick injury, followed by auxiliary staff and doctors. Auxiliary staff showed the highest rate of compliance with the duty to report such injuries, while doctors showed the lowest. Perceived severity of contractible disease, the perceived efficacy of reporting injuries and overall motivation to maintain their health were the best predictors of reporting compliance (21).

A study conducted among primary HCWs in Ghana showed that twenty-one percent of staff perceived they were not at risk of exposure to BBVs although potentially exposed. Educational interventions were found to be effective to increase the knowledge of HCWs on occupational exposure and PEP (24).

Another study done in South Africa about knowledge of physicians on occupational risk of HIV infection and PEP depicted that 83.3% of the respondents did not appreciate the true occupational risk of HIV infection. 31% did not know that needle stick is the commonest mode of occupational acquisition. About 67% of the respondents were not aware that PEP should

be started within 1 hour. While 76% did not know the drugs used for PEP, 81% did not know its correct duration. It was found that overall awareness about occupational risk of HIV infection and PEP among physicians is not up to the mark (25).

A similar study done on 125 nurses to know the level of knowledge of PEP revealed that 29.6% of nurses could not list any principle of HIV PEP and the training courses on PEP principles proved to be unsatisfactory(26).

### **2.3. Evidence for HIV Post-Exposure Prophylaxis**

No large prospective randomized controlled trials have been performed to determine the efficacy of occupational PEP, and indeed the practical, medico-legal and ethical issues involved in conducting such trials make it unlikely that they will occur in the future. But animal studies provide support for the use of PEP in preventing the transmission of the simian immunodeficiency virus (SIV) in primate models, where the administration of antiretroviral medication to macaques has prevented infection after intravenous, rectal and oral inoculation of the virus (3,9).

Much of the evidence for prescribing PEP derived from a CDC case-control study of occupational exposure to HIV in HCWs. This retrospective study of 33 HCWs with occupationally acquired HIV, compared to 665 controls, demonstrated an 81% reduction in the risk of HIV infection in those who took zidovudine prophylactically for 28 days following exposure (3, 17).

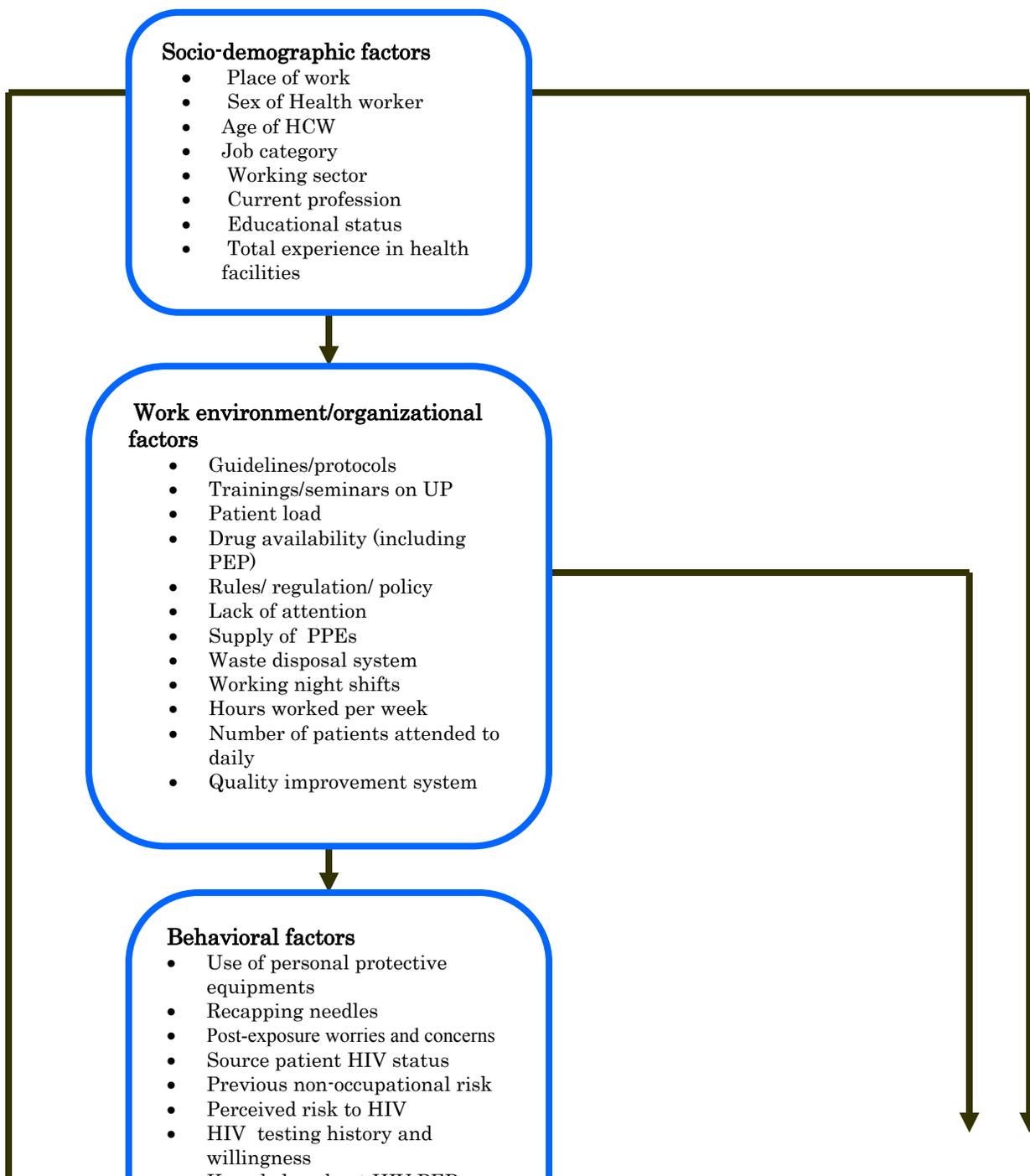
The rationale for PEP is based on some factors including, pathogenesis of HIV infection, the biological plausibility of using antiretroviral drugs and the risk benefits of PEP to exposed HCWs.

Many studies support the initiation of PEP within a few hours of exposure. However, initiating therapy after a longer interval (for example, one week) might be considered for exposures that represent an increased risk for transmission. The optimal duration of PEP is unknown but four weeks is the generally accepted course (16, 27).

In summary, the review indicated that occupational exposures to HIV are very common among health care workers in addition to the risk encountered as a result of their personal sexual behavior. This risk may also depend on their adherence to proper protocols and procedures as well as on the availability of PPEs. Knowledge of HCWs about the risks associated with NSIs, use of preventive measures and appropriate post-exposure management was also inadequate.

As shown in the following conceptual framework (**Figure 1**), occupational exposures usually occurred as a result of the interplay of many factors, which have different level and degree of influence. Different socio-demographic factors, which are indicated in the upper corner of the framework, are most likely to act through a number of other interrelated factors, including work environment and behavioral factors (indicated in the lower corner of the framework). Variables near the top of the figure influence those below them. Accordingly, socio-demographic factors may affect most other group of factors. These may include work environment factors. These factors, in turn, may affect the individual behavioral factors. Finally, all of the above group of factors may affect the risk of acquiring occupational exposures. The inter-relationships of the above group of factors are the basis for occurrence of NSIs and other exposures among HCWs. Understanding the different factors and their relationships will, therefore, help to have a better and feasible approach for occupational exposure management, at least, in our context.

**Figure 1: Conceptual Framework for the Study of HCWs Occupational Exposures to HIV and PEP**



**Needle Stick Injury or  
other Exposures  
or  
Compliance with  
UP/PEP**

### **3. Objectives**

#### **3.1. General Objective**

To assess occurrence of occupational exposures and knowledge and practice regarding HIV post-exposure prophylaxis among health care workers in health centers and hospitals of Addis Ababa.

#### **3.2. Specific Objectives**

- A. To characterize and estimate the extent of occupational exposures to HIV among health care workers.
- B. To describe factors associated with occupational exposures among health care workers
- C. To assess knowledge and practice of health care workers on HIV post-exposure prophylaxis.

## 4. Methods and Materials

### 4.1. Study Design

It was a facility based cross-sectional study employing a quantitative method complemented by in-depth interview in 23 randomly selected facilities (11 health centers and 12 hospitals) of Addis Ababa.

### 4.2. Study Area

The study was conducted in Addis Ababa, the Capital City of the Federal State and the major urban centre in the country. It is the heart of economic, social and political systems of the country. The city is set up with 10 Sub-cities and 99 kebeles. There are about 579 health facilities in the city: 33 hospitals (4 central, 5 regional, 2 NGO owned, 2 OGO owned and 22 private owned), 29 health centers (24 government owned, 5 OGO and NGO owned), 8 health stations, 36 health posts, 116 private not for profit clinics and 357 privately owned for profit clinics (30 special, 93 higher, 136 medium and 98 lower). There are about 2261 health professionals and 2100 auxiliary staffs working in these health centers and hospitals (28).

### 4.3. Study Population

#### Source Population

All health care workers (both professionals and non-technical staffs) working in the 29 health centers and 33 different hospitals in the city.

#### Study Subjects

Health care workers (both professionals and auxiliary) working in the 11 health centers and 12 hospitals in the city.

### 4.4. Sample Size

#### Quantitative Part

Sample size was determined using sample size calculation for a single proportion. The extent of occupational exposures or knowledge and practice of HIV PEP among the study subjects was not known from previous studies in the local context. Therefore, the prevalence of occupational exposures was assumed to be 50% to get maximum sample size. (The assumption was that 50% of HCWs ever had sustained at least one type of occupational exposure i.e. needle stick injury). Sampling was made from a finite population (N=4361, health professionals + auxiliary staffs), which was less than 10,000. By applying a finite population correction, the final sample size was computed by using the following formula.

$$n = \frac{no}{1 + \frac{no}{N}}, \text{ where } no = \frac{(Z\alpha/2)^2 P (1-P)}{d^2}$$

#### Where:

n= Sample Size from Finite Population

no= Sample Size from Infinite Population

N= Size of Source Population= 4361

Z= the standard score (critical value) corresponding

to 95% confidence level = 1.96

## **4.5. Sampling Procedures**

### **Quantitative Part**

All available hospitals and health centers in the city were listed with their corresponding total number of staffs. These facilities were stratified based on their ownership and level of care, comprising of 11 government and OGO owned hospitals, 24 private and NGO owned hospitals and 29 (24 government owned and 5 OGO and NGO owned) health centers. For better representation, 40% of the health centers and hospitals from each stratum were included in the sample. Accordingly, 12 hospitals (4 out of the 11 government and OGO owned, 8 out of the 24 private and NGO owned) and 11 (out of the 29) health centers were included in the study using PPS. Health centers and hospitals were then selected using SRS method from the list. Then 23 health facilities were included in the final sample.

The total number of staff (professional and non-technical) of each selected health facility was taken from the respective Sub-cities Health Department and facilities before the start of the study. Then, using population

proportional to size (PPS) technique, a sample size was determined for each 23 selected facility with a sample size proportional to each facility's total number of staff based. Health facilities that were found to have large number of staffs, based on the measure of size, were given greater probabilities. The total sample size was then the sum of sample size calculated for each facility. To identify the study subjects, a simple random sampling method was applied in each selected facility. The data collector chose both professionals and auxiliary staffs, accordingly to the given sample size of each facility, from the different units or departments. The procedure showing how sample size was taken from each selected health facility using PPS technique is indicated in **annexes I and II**.

#### ***Inclusion criteria***

- All health professionals and auxiliary staffs working in the selected health centers and hospitals who have a potential to be exposed to HIV in their day to day profession related activities. The auxiliary staffs include cleaners, laundry workers, laboratory assistants, maintenance workers etc.

#### ***Exclusion criteria***

- Those health care workers (non-technical staffs) in which their day to day activity doesn't make them to be at risk of HIV due to occupational exposure. (Administrators, secretaries, finance and personnel officers etc.)

### **Qualitative Part**

A total of six in-depth interviews were conducted for the qualitative section of the study. Accordingly, 2 HCWs from governmental hospitals, 2 from private hospitals and 2 from health centers participated in the interview. Regarding their profession, 2 nurses, 1 medical doctor, 1 laboratory technician, 1

midwife and 1 cleaner were involved in the interview. In-depth interviews were undertaken with HCWs working in different departments and among those who had previous experience of NSI. The interview was limited to six participants only as adequate information was obtained with the given amount of time and resources for the study.

Sampling was purposive with selection of good sources of information for in-depth interviews. The informants were selected depending on their work experience, specialty/level of training, working unit/department, job responsibility in the facility, previous exposure history and experience of HIV PEP intake. It included both health professionals and auxiliary staffs.

## **4.6. Data Collection Procedures**

### **A. Data Collection Instruments**

#### **Quantitative Part**

Data collection was conducted from March 17 to April 11, 2008 using structured questionnaire adapted from previous tools that were applied in different studies related to occupational exposure to HIV and PEP. The questionnaire development was done after review of relevant literatures. Questions that can address the objectives of the study were gathered and adapted. Other related questions were also carefully designed to elicit information with regard to occupational HIV exposure and PEP. The questions and statements of the questionnaire were grouped and arranged according to the particular objective that they can address.

Accordingly, redundancy, vagueness, and logical flow of the questions were looked in to. The questionnaire was grouped with five main sections: **(1)** identification of respondents, **(2)** background information/socio-demographic

characteristics, (3) health workers knowledge and perception on occupational exposure to HIV and extent of occupational exposure, (4) list of possible factors for HIV testing after occupational exposure and (5) knowledge and practice of health care workers on HIV PEP. The questionnaire was interviewer administered type, which was first prepared in English and then translated to Amharic.

### **Qualitative Part**

For this part of the study, in-depth interview guide was prepared. The guide consisted of open-ended and semi-structured questions which helped to explore new ideas from the participants.

The interviews were conducted with purposively selected HCWs and focused on eliciting information on HCWs perceptions, practices and their concerns about occupational HIV risk. They also addressed the existing practices about HIV PEP. To obtain comprehensive information, HCWs were selected from different departments and different professions. The guide consisted of three issues which mainly focused on knowledge, attitude, perceived risk of occupational exposure to HIV and post-exposure concerns. These were; (1) issues related with knowledge and perception regarding occupational exposure and risk of HIV infection among health care workers, (2) Issues related with acceptability and preference for HIV testing after occupational exposure and (3) issues related with understanding of HIV PEP.

## **B. Data Quality Assurance**

### **Quantitative Part**

The data collection format was developed in English and translated in to Amharic and later back translated to English by different individuals for accuracy of the desired results. Data collectors were 8 nurses who were

trained at diploma level. Two supervisors, who were degree holders in public health were also recruited and involved in the data collection. A two day intensive training was given to data collectors and supervisors by the principal investigator. It focused on the method of data collection, including some technical aspects about PEP for clarity. As soon as the training was completed, pretest was done in one hospital and health center in Addis Ababa from 28 HCWs, where the actual study was not conducted.

During the pretest, the questions frequently asked were documented for further consideration. Based on the pretest result, some problems, especially in the clarity, logical flow and skipping patterns were observed. Accordingly, amendment was made on the respective instruments. The supervisors and principal investigator closely followed the day to day data collection process. A team of 4 data collectors was responsible to one supervisor and there was also daily review meeting of data collectors with their supervisor. Moreover, responses were crosschecked for missing, irregularities, inconsistencies and unlikely responses based on which measures were taken. Categorization and coding of the data was also part of the data quality control.

Random sample (10% of the data) was reentered and the print out was visually compared with the original data. Computer frequencies and other techniques were used to check for missed variables, outliers or other errors during entry. Any error identified at this time was corrected by revising the original questionnaire.

### **Qualitative Part**

All the in-depth interviews were conducted by the principal investigator and an experienced colleague. Health facility heads were asked to recommend health workers who were at least familiar with the facility situation. In-depth

interviews were approximately 50 minutes long and were held in private room. Before interviews, respondents were informed of the study purpose; informed consent procedures were used and participation was voluntary. Interviews consisted of open-ended and semi-structured questions with mix of ideal and interpretive type to enhance informant's level of participation and access to informant's thoughts. Questions were asked about personal experience with occupational exposure and PEP. Those who had not experienced occupational exposures were asked about their co-worker's experience and what they would do in case of exposure to HIV. To allow flexibility and spontaneity, as new content was revealed during interviews, it was not required that the interview questions be asked in the same order or with the same wording. All interviews were tape recorded for further analysis. Moreover, no personal identifiers of the respondents were linked to the recorded interviews.

#### **4.7. Operational Definitions**

1. **Health Care Worker:** those who are involved in giving a health care service in a given health facility. It includes both health professionals and auxiliary staffs.
2. **Health Professionals:** those who are involved in giving a technical health related activity in a given health facility and have at least some level of health related professional training. It includes physicians, nurses, environmental health workers, laboratory technicians etc.
3. **Auxiliary staffs:** those who are involved in the non-technical activity of a health facility or who were considered as supportive. It includes cleaners, laundry workers, laboratory assistants etc.
4. **Occupational exposure to HIV:** Contact of a HCW to blood or other body fluids like semen, vaginal secretions, cerebro-spinal, pleural, peritoneal, pericardial and amniotic fluids which have a potential risk of transmission of HIV to HCWs and therefore PEP will be considered.

5. **HIV Post-exposure prophylaxis:** an anti-retroviral therapy, given in different forms after an occupational exposure to HIV and will be given to HCWs if there is:
- A percutaneous injury( for example, needle-stick or cut with a sharp object)
  - Contact with mucous membrane or non-intact skin( for example, skin chapped or abraded or dermatitis)
  - Prolonged contact with skin or contact that involves an extensive area of skin.
6. **Needle stick injury:** the parenteral introduction in to the body of blood or other potentially infectious material by a hollow-bore needle or sharp instrument, including, but not limited to, needles, lancets, scalpels, and contaminated broken glass used during the performance of duties (29).
7. **Knowledge about HIV PEP–** Respondents were considered to be knowledgeable about HIV PEP if they mentioned the correct responses in at least two of the three variables i.e. awareness on the presence of HIV PEP and mentioned its use correctly (Antiretroviral treatment used for HIV prevention after exposure to the virus), described its usual initiation time after exposure (drugs should be started with in 72 hours after exposure) and the usual duration to take the tablets (4 weeks).

#### 4.8. Study Variables

##### *Dependent variables*

- ◆ Occurrence of needle stick injury
- ◆ Knowledge about HIV post-exposure prophylaxis

##### *Independent variables*

◆ **Socio-demographic factors**

Place of work of respondents (hospital, health center etc.), job category (health professional, auxiliary), working sector (government, private), sex, age, current profession, educational status, total experience in health facilities.

◆ **Work environment/ organizational factors**

Ever participation in communication about work place HIV, training on infection prevention, training on reporting NSI, number of patients attended to daily, working night shifts, hours worked per week.

◆ **Behavioral factors ( factors related with infection prevention practice)**

Perceived risk to HIV, perceived professional risk to HIV and perceived level of professional risk to HIV, use of PPEs, number of previous NSIs, BBF splash, tested for HIV due to occupational exposure.

## **4.9. Data Analysis Procedures**

### **Quantitative Part**

After data collection was completed, each questionnaire was checked for completeness, missing values and unlikely responses and then manually cleaned up on such indication. The coded data was entered on to computer using Epi-Info 2000 version for its customizing and skipping advantage. Cleaning was also performed in Epi-info 2000 by preparing a cleaning format for each variable and looking for validity, consistency, completeness and other logical errors. Then the cleaned data was exported to SPSS 13.0. Recoding, transforming and recategorization of some variables were performed to compute some of the analyses.

Socio-demographic data were summarized by frequency tables and summary statistics. Proportions, percentages, tables and graphs were used for description of the data as appropriate. For statistical tests, the cut of value set was  $p < 0.05$ . Odds ratio with 95% confidence interval was used to identify the factors associated with occurrence of NSI and knowledge on HIV PEP. Cross tabulations were also made to compare frequencies and percentages on the association between the dependent variables (NSI and knowledge on HIV PEP) and the different independent variables.

One of the dependent variables, needle stick injury, was dichotomized in to at least one NSI during the entire career (coded as 1) versus no such injuries (coded as 0). The other variable, knowledge about HIV PEP, was computed by recoding and recategorizing of three variables which were assumed to determine knowledge of PEP. After that a single dependent variable was computed which was also dichotomized in to having knowledge about HIV PEP (coded as 1) versus not knowledgeable about HIV PEP (coded as 0).

In the bivariate analysis, crude odds ratio for the independent variables was estimated by all the covariates. Since crude odds ratio doesn't take in to account the effect of the confounding variable(s), a multivariate logistic regression analysis was employed based on the developed conceptual framework (considering the hierarchical relationships of the factors) to estimate the adjusted odds ratio of the independent variables by controlling for suspected confounders. Variables which reached  $p < 0.3$  were entered in to the models and analyzed at multivariate level. The final analysis was done for variables which showed a statistical significant association of  $p < 0.05$  in the last model.

## **Qualitative Part**

All interviews were transcribed in Amharic by the principal investigator and crosschecked with other colleague for quality control. The transcript was then translated in to English for further analysis. Based on the interview guide and the actual content of the transcripts, four themes were identified. These were (1) perception and knowledge regarding occupational exposure and risk of HIV infection (2) occupational exposure accidents (3) acceptability and preference for HIV testing after occupational exposure and (4) understanding HIV PEP. Analysis was accomplished based on the themes and adding the context of additional information provided by the respondents. The data was then organized and each issue was discussed independently.

#### **4.10. Ethical Considerations**

Ethical clearance was obtained from the Faculty of Research and Publication Committee (FRPC) of Faculty of Medicine, Addis Ababa University and Ethical Review Committee of Addis Ababa Administration Health Bureau. Letter was written to Sub-city Health Departments and medical directors of the respective facilities to obtain their consent. The necessary explanation about the purpose of the study and about its procedures was done. Consent was also obtained from each respondent. Those who were unwilling to participate in the study were omitted. To ensure confidentiality, anonymous interview was conducted. Names and other identifying information were not used in the study.

#### **4.11. Dissemination of Results**

The study findings will be disseminated and communicated to relevant bodies including SPH, EPHA, FMOH, Addis Ababa Health Bureau and other organizations in the form of written document, seminar and soft copy. It will also be presented at national, regional or international conferences. Finally, it will be submitted for publication to national or international peer-reviewed journals.

### **5. Result**

#### **5.1. Result of Quantitative Data**

##### **5.1.1. Socio-demographic Characteristics of the Study Population**

A total of 388 HCWs were selected to the study. Sixteen (10 males and 6 females) questionnaires, which were either filled partially or completed incorrectly, were excluded. This gave a non-response rate of 4.1%. The final analysis was done for 372(95.9%) HCWs. Respondents were selected from the 23 sampled health centers and hospitals of Addis Ababa. One hundred thirty three (35.8%) respondents were from central/ referral hospitals, 96(25.8%) from private hospitals, 80(21.5%) from health centers and 63(16.9%) were from regional hospitals.

Majority of them, 277(74.5%), were working in the government sector. Among the total respondents, 200(53.8%) were females. The age of respondents ranged from 18 to 60 years with a mean (SD) age of 31.70 (9.34) years and the median age was 28 years.

Out of the total respondents, 320(86%) were health professionals and 52(14%) were auxiliary/supportive staffs. Regarding the professional category, 140(37.6%) were nurses and 53(14.2%) were physicians (specialists, residents or general practitioners).

One hundred fifty two (40.9%) respondents attended up to 12 + 3 or 12+4 years of education, 121(32.5%) attended either 12+1 or 12+2 and 54(14.5%) attended at least 12+6 years of education. Two hundred seventy four (73.7%) respondents were Orthodox Christians followed by Protestants and Muslims. Singles took more than half of the share (54.3%).

Two hundred three (54.6%) respondents had a total experience of less than or equal to 5 year, 76(20.4%) had 6-10 years of experience and 43(11.6%) respondents worked for 21 years and above. The mean (SD) service tenured years was 8.15 (8.68) and the median service year was 5 years. The large proportion of total service year is below 10 years (69.1%). The majority, 280(75.3%), were in active professional service tenured for less than or equal to 5 year with their current professional or job title. About 75% of respondents were working in night shifts and 272(73.1%) respondents were working for 40 hours and above per week in their respective facilities.

Socio-demographic and work environment characteristics of the respondent HCWs are described in **Table 1**.

**Table 1: Socio-demographic and Work Environment Characteristics of Respondents, Addis Ababa, 2008 (n=372)**

| <b>Characteristics</b>        | <b>Frequency</b> | <b>Percent</b> |
|-------------------------------|------------------|----------------|
| <b>Working sector</b>         |                  |                |
| Government                    | 277              | 74.5           |
| Private                       | 95               | 25.5           |
| <b>Sex</b>                    |                  |                |
| Male                          | 172              | 46.2           |
| Female                        | 200              | 53.8           |
| <b>Age groups in year</b>     |                  |                |
| ≤24                           | 89               | 23.9           |
| 25-34                         | 164              | 44.1           |
| 35-44                         | 70               | 18.8           |
| ≥ 45                          | 49               | 13.1           |
| <b>Current profession</b>     |                  |                |
| Physician                     | 53               | 14.2           |
| Nurse                         | 140              | 37.6           |
| Health assistant/junior nurse | 27               | 7.3            |
| Midwife                       | 25               | 6.7            |

|  |     |      |
|--|-----|------|
| Laboratory technician                                | 50  | 13.4 |
| Cleaner  | 34  | 9.1  |
| Others (less risky health workers)                   | 43  | 11.7 |
| <b>Educational status</b>                            |     |      |
| Attended up to grade 12                              | 45  | 12.3 |
| Completed 12+1/12+2                                  | 121 | 32.5 |
| Completed 12+3/12+4                                  | 152 | 40.9 |
| Completed 12+6 and above                             | 54  | 14.5 |
| <b>Religion</b>                                      |     |      |
| Orthodox   | 274 | 73.7 |
| Protestant   | 70  | 18.8 |
| Muslim   | 20  | 5.4  |
| Others   | 8   | 2.1  |
| <b>Marital status</b>                                |     |      |
| Single   | 202 | 54.3 |
| Currently married                                    | 156 | 41.9 |
| Others   | 14  | 3.7  |
| <b>Total experience in health facilities in year</b> |     |      |
| <10  | 257 | 69.1 |
| ≥10  | 115 | 30.9 |
| <b>No. of patients attended to daily</b>             |     |      |
| <35  | 200 | 53.8 |
| ≥35  | 172 | 46.2 |
| <b>Working night shifts</b>                          |     |      |
| Yes  | 280 | 75.3 |
| No   | 92  | 24.7 |
| <b>Hours worked per week</b>                         |     |      |
| <40  | 100 | 26.9 |
| ≥40  | 272 | 73.1 |

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### 5.1.2. Perception on Professional HIV Infection Risk

Out of the total respondents, 285(76.6%) had a perceived risk of acquiring HIV infection and 275 (73.9%) respondents had perceived professional risk to HIV. One hundred fifty four (54%) respondents leveled themselves as having low risk and the remaining 131(46%) leveled themselves as high risk to HIV.

Among the respondents, 299(80.4%) were not ever involved in any issue related to work place HIV/AIDS policies in their respective facilities. The majority of them, 249(66.9%), did not take any training/seminar related to infection prevention. Only 123(33.1%) of them participated in such

trainings/seminars. Out of the total 123 HCWs who took training/seminars on infection prevention, 92(74.8%) were working in the governmental sector and the remaining 31(25.2%) were from the private sector.

### 5.1.3. Use of Personal Protective Equipments

The majority, 353(94.9%) of the respondents had ever used at least one type of personal protective equipments (PPEs) in their day to day professional activity. Two hundred forty four (65.6%) of them were always/currently using PPEs. Among respondents who always wore PPEs, 210 (86.1%) used gown. Head cover and face mask were used only by few of the respondents, 13.1% and 12.3% respectively. Examination glove was used by the majority (89.4%) of health professionals and utility glove was used by the majority (91.9%) of auxiliary staffs (Table 2).

**Table 2: Personal Protective Equipment Usage among Health Care Workers, Addis Ababa, 2008 (n=244) \***

| Characteristics | Job category                    |      |                            |      |       |      |
|-----------------|---------------------------------|------|----------------------------|------|-------|------|
|                 | Health professionals<br>(n=199) |      | Auxiliary staffs<br>(n=45) |      | Total |      |
|                 | Yes                             | %    | Yes                        | %    | Yes   | %    |
| Gown            | 175                             | 87.9 | 35                         | 77.8 | 210   | 86.1 |
|                 | 178                             | 89.4 | 8                          | 17.8 | 186   | 76.2 |

|                       |    |      |    |      |    |      |  |
|-----------------------|----|------|----|------|----|------|--|
| Examination glove     |    |      |    |      |    |      |  |
| Apron                 | 56 | 28.1 | 9  | 20   | 65 | 26.6 |  |
| Utility glove         | 5  | 2.5  | 41 | 91.9 | 46 | 18.9 |  |
| Boot/shoe             | 36 | 18.1 | 10 | 22.2 | 46 | 18.9 |  |
| Eye protection/goggle | 32 | 16.1 | 0  | 0    | 32 | 13.1 |  |
| Head cover            | 25 | 12.6 | 5  | 11.1 | 30 | 12.3 |  |
| Face mask             | 13 | 6.5  | 10 | 22.2 | 23 | 9.4  |  |

\* Percents do not add up to 100 due to multiple responses

Out of the total respondents, 128(34.4%) were using PPEs sometimes only or not at all. Unnecessity of such equipments use at all times was the main reason for non adherence of such equipment mentioned by the respondents (48.4%). Other reasons cited were unavailability of such equipment in the facility (22.7%), inadequacy of equipment (21.9%) and difficulty to work with such equipment (14.1%).

The majority of them who were working both in governmental and private facilities used gown more frequently than any other PPE. Only very few HCWs used eye protectors and face masks (**Table 3**).

**Table 3: Personal Protective Equipment usage by Working Place, Addis Ababa, 2007 (n=244) \***

| Characteristics                       | Working sector        |   |                   |   | Total |   |
|---------------------------------------|-----------------------|---|-------------------|---|-------|---|
|                                       | Government<br>(n=177) |   | Private<br>(n=67) |   | Yes   | % |
| Type of Personal Protective Equipment | Yes                   | % | Yes               | % | Yes   | % |

|                       |     |      |    |      |     |      |
|-----------------------|-----|------|----|------|-----|------|
| Gown                  | 152 | 85.9 | 58 | 86.6 | 210 | 86.1 |
| Examination Glove     | 133 | 75.1 | 53 | 79.1 | 186 | 76.2 |
| Apron                 | 50  | 28.2 | 15 | 22.4 | 65  | 26.6 |
| Utility Glove         | 33  | 18.6 | 13 | 19.4 | 46  | 18.9 |
| Boot/shoe             | 32  | 18.1 | 14 | 20.9 | 46  | 18.9 |
| Eye protection/Goggle | 23  | 13   | 9  | 13.4 | 32  | 13.1 |
| Head Cover            | 22  | 12.4 | 8  | 11.9 | 30  | 12.3 |
| Face Mask             | 19  | 10.7 | 4  | 6    | 23  | 9.4  |

\* Percents do not add up to 100 due to multiple responses

#### 5.1.4. Exposure Histories among Health Care Workers

Blood was the commonest body fluid in which HCWs were exposed during their day to day activity. Two hundred eighty seven (77.2%) respondents were exposed to blood at least once in their life time. The next commonest fluid was

urine (33.3%) followed by amniotic fluid (30.9%). Only 3(0.8%) of them were exposed to pericardial fluid (Table 4).

**Table 4: Distribution of Common Body Fluids Exposing HCWs, Addis Ababa, 2008 (n=372) \***

| Characteristics                     | Job Category                 |      |                         |      |       |      |
|-------------------------------------|------------------------------|------|-------------------------|------|-------|------|
|                                     | Health Professionals (n=320) |      | Auxiliary Staffs (n=52) |      | Total |      |
| Type of body fluids                 | Yes                          | %    | Yes                     | %    | Yes   | %    |
| Blood                               | 260                          | 81.3 | 27                      | 51.9 | 287   | 77.2 |
| Urine                               | 108                          | 33.8 | 16                      | 30.8 | 124   | 33.3 |
| Amniotic fluid                      | 106                          | 33.1 | 9                       | 7.8  | 115   | 30.9 |
| Exudative fluids from burns/lesions | 63                           | 19.7 | 1                       | 1.9  | 64    | 17.2 |
| Human breast milk                   | 28                           | 8.8  | 0                       | 0    | 28    | 7.5  |
| Peritoneal fluid                    | 28                           | 8.8  | 0                       | 0    | 28    | 7.5  |
| Pleural fluid                       | 24                           | 7.5  | 0                       | 0    | 24    | 6.5  |
| Cerebro-spinal fluid                | 20                           | 6.3  | 0                       | 0    | 20    | 5.4  |
| Seminal/vaginal fluid               | 5                            | 1.6  | 0                       | 0    | 5     | 1.3  |
| Pericardial fluid                   | 3                            | 0.9  | 0                       | 0    | 3     | 0.8  |
| Synovial fluid                      | 0                            | 0    | 0                       | 0    | 0     | 0    |

\* Percents do not add up to 100 due to multiple responses

### A. Needle Stick Injuries

Among the total respondents, 142(38.2%) ever experienced at least one NSI in their entire career. Out of those HCWs who had sustained NSI, 67(47.2%) experienced the injury only once in their work career, 29(20.4%) experienced

two times and the remaining 46(32.4%) had these injuries more than two times. Seventy one (19.1%) experienced NSI with in the last one year. Fifty four (76.1%) of them experienced the injury once and 17(23.9%) had encountered more than once with in the last one year.

Based on the last year (12 months), the rate of NSI was estimated as 1.34 injuries per person. It was calculated by summing the total number of reported NSIs in the last year, n=95, and dividing it with the persons contributed by the study population during the last one year, 71 persons.

The most common reason for sustaining the recent injury was due to recapping of needles. Forty six (32.4%) of the respondents sustained the injury during recapping of needle, 44(31%) experienced it due to sudden movement of the patient and 28(19.7%) during sharp collection. Twenty four (16.9%) injuries occurred due to other different reasons: 16 (4.3%) injuries occurred due to accidental prick during suturing, 3(0.8%) occurred because of accidental pricking by a colleague, 2(0.5%) occurred during blood drawing from patients and the remaining 3(0.8%) occurred due to other reasons.

Out of those who experienced NSIs, 131(40.9%) were health professionals and 11(21.2%) were auxiliary staffs. About 92% of the NSIs occurred in health professionals and the remaining 8% occurred in auxiliary staffs.

### **Measures Taken after Needle Stick Injuries**

Different measures were taken by the exposed HCWs. Immediate washing of the area with soap and water was the most commonly measure taken,

103(72.5%) respondents. Fifty two (36.6%) exposed HCWs took HIV testing as one measure and only 10(7.0%) sought PEP (Table 5).

**Table 5: Measures Taken by Health Care Workers after Needle Stick Injury, Addis Ababa, 2008 (n=142) \***

| Characteristics                         | Job category                 |      |                         |      |       |      |
|---|------------------------------|------|-------------------------|------|-------|------|
|   | Health professionals (n=131) |      | Auxiliary Staffs (n=11) |      | Total |      |
|   | Yes                          | %    | Yes                     | %    | Yes   | %    |
| Washed with soap and water              | 98                           | 74.8 | 5                       | 45.5 | 103   | 72.5 |
| Washed with alcohol, iodine or chlorine | 84                           | 64.1 | 7                       | 63.6 | 91    | 64.1 |
| Applied pressure to stop bleeding       | 15                           | 11.5 | 1                       | 9.1  | 16    | 11.3 |
| Squeezed to extract more blood          | 34                           | 26   | 4                       | 36.4 | 38    | 26.8 |
| Visited VCT                             | 46                           | 35.1 | 6                       | 54.5 | 52    | 36.6 |
| Sought PEP                              | 8                            | 6.1  | 2                       | 18.2 | 10    | 7    |
| Reported to head person/supervisor      | 6                            | 4.6  | 2                       | 18.2 | 8     | 5.6  |
| Nothing done                            | 3                            | 2.3  | 0                       | 0    | 3     | 2.1  |
| Took Tetanus anti-toxin                 | 1                            | 0.8  | 1                       | 9.1  | 2     | 1.4  |
| Other                                   | 1                            | 0.8  | 0                       | 0    | 1     | 0.7  |

\* Percents do not add up to 100 due to multiple responses

## B. Blood and other Body Fluid Splash

Blood and other body fluid splash in to the eye, nose and/or mouth were reported by 130(34.9%) respondents in their entire work career. Seventy (18.8%) of the respondents reported BBF exposures with in the last one year Out of those who experienced fluid splashes, 120(37.5%) were health professionals and the remaining 10(19.2%) were auxiliary staffs. About 92% of the splashes occurred among health professionals and the remaining 8% occurred in auxiliary staffs.

### **Measures Taken after Blood and Body Fluid Splash**

Respondents reported different measures after BBF splashes in to their eye, mouth and/or nose. The majority, 118(90.8%), considered immediate washing with soap and water only. Only 16(12.3%) of the exposed health workers visited VCT and none of them sought PEP (**Table 6**).

**Table 6: Measures Taken by Health Care Workers after Blood and Body**

**Fluid Flash to Eye, Mouth or Nose, Addis Ababa, 2008 (n=130) \***

| <b>Characteristics</b>                  | <b>Job category</b>                     |          |                                    |          |              |          |
|---|---|----------|------------------------------------|----------|--------------|----------|
|   | <b>Health professionals<br/>(n=120)</b> |          | <b>Auxiliary Staffs<br/>(n=10)</b> |          | <b>Total</b> |          |
| <b>Measures taken</b>                   | <b>Yes</b>                              | <b>%</b> | <b>Yes</b>                         | <b>%</b> | <b>Yes</b>   | <b>%</b> |
| Washed with Soap and water              | 109                                     | 90.8     | 9                                  | 90       | 118          | 90.8     |
| Washed with alcohol, iodine or chlorine | 37                                      | 30.8     | 1                                  | 10       | 38           | 29.2     |
| Visited VCT                             | 16                                      | 13.3     | 0                                  | 0        | 16           | 12.3     |
| Reported to head person                 | 5                                       | 4.2      | 1                                  | 10       | 6            | 4.6      |
| Nothing done                            | 2                                       | 1.7      | 0                                  | 0        | 2            | 1.5      |
| Took Tetanus anti-toxin                 | 1                                       | 0.8      | 0                                  | 1        | 1            | 0.8      |
| Sought PEP                              | 0                                       | 0        | 0                                  | 0        | 0            | 0        |
| Other                                   | 2                                       | 1.7      | 0                                  | 0        | 2            | 1.5      |

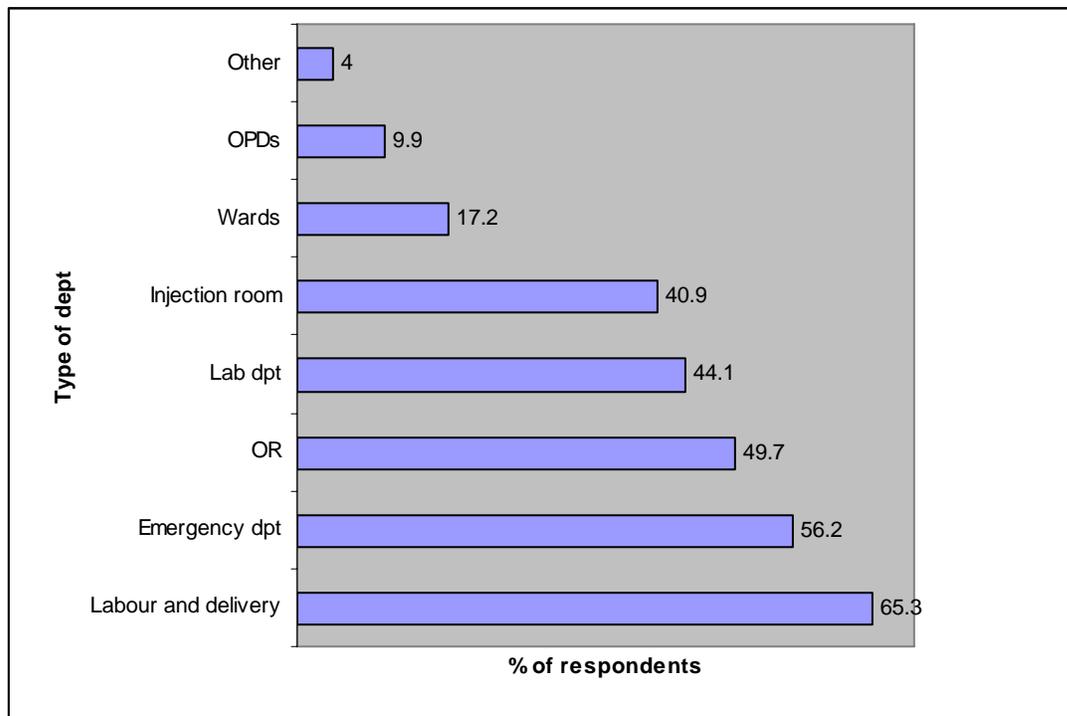
\* Percents do not add up to 100 due to multiple responses

### 5.1.5. Existing Practices Related to Occupational Exposure

Only 35(9.4%) of the respondents were trained on how to report NSIs. One hundred fifty eight (42.5%) were aware of the presence of a trained individual who is responsible for managing exposures and 106(28.5%) answered that there was no responsible body in their facilities. The majority, 328(88.2%) said that they would report NSIs immediately if they encounter in the future. Only 44(11.8%) respondents didn't agree on the importance of reporting NSIs.

Forty eight (67.6%) respondents that encountered injuries with in the last one year didn't report to any responsible body or to their facilities. They gave different reasons for not reporting the injuries. Twenty seven (56.3%) didn't give a concern for the injury, 6(12.5%) had no fear of acquiring HIV, 6(12.5%) perceived that the source patient was unlikely to be HIV positive, 5(10.4%) said that there was no one whom to be reported and 4(8.3%) didn't know the importance of reporting at that time.

Awareness of respondents on the most common exposure histories indicated that 258(69.4%) mentioned NSIs, 254(68.3%) contact with blood, 126(33.9%) contact with other body fluids and 124(33.3%) mentioned cuts from sharp instruments. Two hundred forty three (65.3%) respondents perceived that delivery room is the most risky section for exposure and 209(56.2%) described emergency room as the most risky section (**Figure 2**).



**Figure 2: Most Common Departments/units for Occupational Exposure as Perceived by Respondents, Addis Ababa, 2008.**

### 5.1.6. HIV Testing after Occupational Exposure

One hundred fifty three (41.5%) of all the respondents were ever tested for HIV at least once in their entire career. Among these, 83(22.3%) were self tested using rapid test kits. Out of all respondents who were self tested or tested, 49(30.4%) were tested once, 43(26.7%) were tested twice, 38(23.6%) were tested three times and the remaining 31(19.2%) were tested more than three times.

Ninety nine (65.1%) of them were tested within the last one year and the remaining 53(34.9%) were tested a year before and earlier. About 71% of all respondents agreed that confidentiality of HIV testing is kept at their facility, 24.7% didn't agree and the remaining 4.3% were not sure about it. Sixty seven (18.0%) of all respondents were tested for HIV either due to NSIs or BBF splashes. Of all tested, 32(47.8%) were tested at their own facility, 25(37.3%) at stand alone VCT center and 8(11.9%) by private doctor.

About 81% of all respondents replied that they could get HIV testing at their own facility immediately after exposure. The majority, 348(93.5%) of the respondents were voluntary to be tested for HIV after occupational exposure. Respondents preference for HIV testing after exposure showed that 155(44.5%) preferred own facility, 111(31.9%) preferred stand alone VCT center, 46(13.2%) preferred private doctors, 6(1.7%) preferred sending blood only to own facility and 5(1.4%) preferred informal testing by a colleague.

### **5.1.7. Factors Associated with Occurrence of Needle Stick Injuries among HCWs: Bivariate and Multivariate Analyses**

Factors associated with NSIs were assessed based on the developed conceptual framework illustrated in **Figure 1**. Logistic regression was used based on the hierarchical relationship of the factors for assessing the relative effects of socio-demographic, work environment and behavioral factors on the outcome variable (occurrence of NSI). To avoid many variables and unstable estimates in the subsequent models, only those which reached a  $p < 0.3$  starting from the bi-variate analysis were kept in the subsequent steps (30).

First, based on the results of the bivariate analysis, the effect of selected socio-demographic factors on the magnitude of NSIs was assessed. In the second step of analysis, work environment/organizational factors were included, and their effect was seen in the presence of socio-demographic factors. Finally, behavioral factors were added to see their effect in the presence of socio-demographic and work environment factors. Variables which reached a p-value of less than 0.05 in the final model were considered as having association with occurrence of NSI (**Table 7**).

**Table 7: Summary of Steps in the Analysis of the Effect of Socio-demographic, Work environment/organizational and Behavioral Factors on NSI.**

| <b>Model</b> | <b>Factors</b>  | <b>Interpretation</b>  |
|--------------|---|--|
| 1            | Socio-demographic factors                                 | Overall effect of socio-demographic factors; not adjusted for work environment and behavioral factors  |
| 2            | Socio-demographic + work environment factors              | Effect of work environment factors adjusted for confounding role of socio-demographic factors<br>Effect of socio-demographic factors represents that not mediated through work environment factors   |
| 3            | Socio-demographic + work environment + behavioral factors | Effect of behavioral factors adjusted for confounding role of socio-demographic and work environment factors<br>Effect of work environment factors represents that not mediated through behavioral factors<br>Effect of socio-demographic factors represents that not mediated through work environment nor behavioral factors |

Based on the results of the logistics regression analysis, health care workers who were working in health centers had a higher chance of getting NSI compared with those working in private hospitals. (AOR=2.32, 95%CI=1.12-4.83). However, this association didn't exist when adjusted for work environment and behavioral factors (Models 2 and 3).

Respondents working sector had also statistical significant association with chance of occurrence of NSI. Those who were working in governmental health facilities had a higher chance of getting NSI compared with those working in the private health facilities (AOR=2.17, 95%CI=1.25-3.77). But it disappeared in the subsequent analyses (Model 3).

In the bivariate analysis, respondents in the older age group had a higher chance of NSI compared with those who were younger ages. It seemed that as age increased, the chance of getting NSI also increased. A linear trend was also observed in  $\chi^2$  test analysis ( $\chi^2=29.39$ ,  $p<0.0001$ ). However, this association was not significant when adjusted with other related factors. From the professional categories, nurses had a higher chance of getting NSI when compared with other less risky HCWs (AOR=15.39, 95%CI=3.70-18.05).

Regarding work experience, HCWs with experience of 10 years or more had a higher chance of ever experiencing injuries compared with those worked for less than 10 years ( AOR=2.68, 95%CI=1.30-5.54). In line with this finding, working long hour in the health facility was also found to be associated with chance of sustaining NSI. Health care workers who worked for at least 40 hours per week had a higher chance of sustaining NSI compared with those worked for less than 40 hours (AOR=1.90, 95%CI=1.10-3.31). Those who were attending to less than 35 patients per day had a higher risk of sustaining NSI

compared with those attending more patients (AOR=2.21, 95%CI=1.32-3.58). However, assigning in night shifts had no significant association with injury occurrence.

Occupational HIV risk perception was also found to be associated with occurrence of NSI. The odds of sustaining NSI in HCWs who perceived themselves as having high level professional risk to HIV is about 2 times higher compared with those HCWs with low level perceived risk to HIV (AOR=2.05, 95%CI=1.10-3.82).

Non consistent use of PPEs had a statistical significant association with NSI. The chance of ever experiencing NSI among HCWs who were not always using PPEs was about 1.7 times higher compared with that of the users (AOR=1.67, 95%CI=1.01-2.76). In the bivariate analysis, mostly/always glove users had a higher chance of sustaining NSI when compared with the non-users. But this association was not significant in the final model.

In general, the results of the regression analysis showed that the strongest association was observed with being a nurse (AOR=15.39, 95%CI=3.70-18.05). Other factors which were associated with occurrence of NSIs were; having work experience for more than 10 years (AOR=2.68, 95%CI=1.30-5.54), working long hours (AOR=1.90, 95%CI=1.10-3.31), attending fewer patients per day (AOR=2.21, 95%CI=1.32-3.58), self perception of high risk HIV( AOR=2.05, 95%CI=1.10-3.82) and non-consistent use of PPEs( AOR=1.67, 95%CI=1.01-2.76) ( **Table 9**).

Summary of bivariate and multivariate analyses of each factor, which is stratified by the occurrence of needle stick injuries, are shown in **Tables 8 and 9**.

**Table 8: Bivariate Analysis of Factors Associated with NSI among HCWs, Addis Ababa, 2008.**

| Characteristics                  | Needle Stick Injury |           | COR(95%CI)                 |
|----------------------------------|---------------------|-----------|----------------------------|
|                                  | Yes (%)             | No (%)    |                            |
| <b>Socio-demographic factors</b> |                     |           |                            |
| <b>Place of work</b>             |                     |           |                            |
| Central/referral hospital        | 59(44.4)            | 74(55.6)  | <b>2.15(1.22-3.78) *</b>   |
| Regional hospital                | 19(30.2)            | 44(69.8)  | 1.16(0.58-2.35)            |
| Health center                    | 38(47.5)            | 42(52.5)  | <b>2.44(1.30-4.57) *</b>   |
| Private Hospital                 | 26(27.1)            | 70(72.9)  | 1.00                       |
| <b>Work sector</b>               |                     |           |                            |
| Government                       | 117(42.2)           | 160(57.8) | <b>2.05(1.22-3.43) *</b>   |
| Private                          | 25(26.3)            | 70(73.7)  | 1.00                       |
| <b>Sex of respondents</b>        |                     |           |                            |
| Male                             | 74(43.0)            | 98(57.0)  | 1.47(0.96-2.23)            |
| Female                           | 68(34.0)            | 132(66.0) | 1.00                       |
| <b>Age group in year ‡</b>       |                     |           |                            |
| ≤ 24                             | 15(16.9)            | 74(83.1)  | 1.00                       |
| 25-34                            | 62(37.8)            | 102(62.2) | <b>3.00(1.58-5.68) *</b>   |
| 35-44                            | 34(48.6)            | 36(51.4)  | <b>4.66(2.25-9.64) *</b>   |
| 45-54                            | 25(67.6)            | 12(32.4)  | <b>10.28(4.25-24.88) *</b> |
| ≥55                              | 6(50.0)             | 6(50.0)   | <b>4.93(1.40-17.40) *</b>  |
| <b>Profession</b>                |                     |           |                            |
| Physician                        | 23(43.4)            | 30(56.6)  | <b>10.22(2.80-37.24) *</b> |
| Nurse                            | 73(52.1)            | 67(47.9)  | <b>14.53(4.29-22.17) *</b> |
| HA/Junior nurse                  | 8(29.6)             | 19(70.4)  | <b>5.61(1.34-23.57) *</b>  |
| Midwife                          | 9(36.0)             | 16(64.0)  | <b>7.50(1.80-31.32) *</b>  |
| Laboratory Technician            | 17(34.0)            | 33(66.0)  | <b>6.87(1.85-25.48) *</b>  |
| Cleaner                          | 9(26.5)             | 25(73.5%) | <b>4.80(1.19-19.44) *</b>  |
| Other less risky HCWs            | 3(7.0%)             | 40(93.0%) | 1.00                       |
| <b>Educational Status</b>        |                     |           |                            |
| Attended up to grade 12          | 10(22.2)            | 35(77.8)  | 1.00                       |
| Completed 12+1/12+2              | 50(41.3)            | 71(58.7)  | <b>2.47(1.12-5.43) *</b>   |
| Attended 12+3 and above          | 82(39.8)            | 124(60.2) | <b>2.32(1.09-4.93) *</b>   |
| <b>Experience (in 10 year) ‡</b> |                     |           |                            |
| <10                              | 76(29.6)            | 181(70.4) | 1.00                       |

|     |          |          |                          |
|-----|----------|----------|--------------------------|
| ≥10 | 66(57.4) | 49(42.6) | <b>3.21(2.03-5.06) *</b> |
|-----|----------|----------|--------------------------|

| Characteristics                            | Needle Stick Injury |           | COR(95%CI)               |
|--|---------------------|-----------|--------------------------|
|  | Yes                 | No        |                          |
| <b>Work environment Factors</b>            |                     |           |                          |
| <b>No of Patients attended to daily ‡</b>  |                     |           |                          |
| <35  | 177(88.4)           | 23(11.6)  | <b>2.08(1.27-3.48) *</b> |
| ≥35  | 135(78.3)           | 37(21.7)  | <b>1.00</b>              |
| <b>Working night shifts</b>                |                     |           |                          |
| Yes  | 228(81.4)           | 52(18.6)  | 1.07(0.59-1.65)          |
| No   | 60(65.2)            | 32(34.8)  | 1.00                     |
| <b>Hours worked per week ‡</b>             |                     |           |                          |
| <40  | 76(76.0)            | 24(24.0)  | <b>1.00</b>              |
| ≥40  | 238(87.5)           | 34(12.5)  | <b>1.76(1.07-3.26) *</b> |
| <b>Participated in work place HIV/AIDS</b> |                     |           |                          |
| Yes  | 27(37.0)            | 46(63.0)  | 1.00                     |
| No   | 115(38.5)           | 184(61.5) | 1.07(0.63-1.81)          |
| <b>Trained on infection prevention</b>     |                     |           |                          |
| Yes  | 50(40.7)            | 73(59.3)  | 1.00                     |
| No   | 92(36.9)            | 157(63.1) | 1.35(0.65-2.80)          |
| <b>Trained on reporting NSIs</b>           |                     |           |                          |
| Yes  | 15(42.9)            | 20(57.1)  | 1.00                     |
| No   | 127(37.7)           | 210(62.3) | 0.81(0.40-1.63)          |
| <b>Behavioral factors</b>                  |                     |           |                          |
| <b>Perceived risk to HIV</b>               |                     |           |                          |
| Yes  | 126(44.2)           | 159(55.8) | <b>3.52(1.95-6.35) *</b> |
| No   | 16(18.4)            | 71(81.6)  | 1.00                     |
| <b>Perceived level of risk to HIV</b>      |                     |           |                          |
| High risk                                  | 67(51.1)            | 64(48.9)  | <b>1.69(1.05-2.70) *</b> |
| Low risk                                   | 59(38.3)            | 95(61.7)  | 1.00                     |
| <b>Always use of PPEs</b>                  |                     |           |                          |
| Yes  | 81(33.2)            | 163(66.8) | 1.00                     |
| No   | 61(47.7)            | 67(52.3)  | <b>1.83(1.18-2.84) *</b> |
| <b>all/ mostly use of glove</b>            |                     |           |                          |
| Yes  | 71(38.2)            | 115(61.8) | <b>2.96(1.41-6.23)*</b>  |

No 10(17.2) 48(82.8) 1.00

\* Significant association, p<0.05 at 95%CI

‡ Categories were made based on previous similar literatures

**Table 9: Multivariate Logistic Regression Analysis of Factors Associated with Needle Stick Injuries among HCWs, Addis Ababa, 2008.**

| Characteristics                             | COR(95%CI)                 | AOR(95%CI)                 |                            |                            |
|---|----------------------------|----------------------------|----------------------------|----------------------------|
|   |                            | MODEL 1                    | MODEL 2                    | FINAL MODEL                |
| <b>Model 1[Socio-demographic factors] #</b> |                            |                            |                            |                            |
| <b>Place of work</b>                        |                            |                            |                            |                            |
| Central hospital                            | <b>2.15(1.22-3.78) *</b>   | 1.43(0.74-2.76)            |                            |                            |
| Regional hospital                           | 1.16(0.58-2.35)            | 1.013(0.47-2.21)           |                            |                            |
| Health center                               | <b>2.44(1.30-4.57) *</b>   | <b>2.32(1.12-4.83) *</b>   |                            |                            |
| Private hospital                            | 1.00                       | 1.00                       |                            |                            |
| <b>Work sector</b>                          |                            |                            |                            |                            |
| Government vs. Private‡                     | <b>2.05(1.22-3.43) *</b>   | <b>2.74(1.84-3.05) *</b>   | <b>2.54(1.89-3.11) *</b>   | 2.17(0.25-3.77)            |
| <b>Sex of respondents</b>                   |                            |                            |                            |                            |
| Male vs. Female‡                            | 1.47(0.96-2.23)            |                            |                            |                            |
| <b>Age group in year ‡</b>                  |                            |                            |                            |                            |
| ≤24   | 1.00                       |                            |                            |                            |
| 25-34                                       | <b>3.00(1.58-5.68) *</b>   |                            |                            |                            |
| 35-44                                       | <b>4.66(2.25-9.64) *</b>   |                            |                            |                            |
| 45-54                                       | <b>10.28(4.25-24.88) *</b> |                            |                            |                            |
| ≥55   | <b>4.93(1.40-17.40) *</b>  |                            |                            |                            |
| <b>Profession</b>                           |                            |                            |                            |                            |
| Physician                                   | <b>10.22(2.80-37.24) *</b> | <b>11.90(2.64-53.70) *</b> |                            |                            |
| Nurse                                       | <b>14.53(4.29-22.17) *</b> | <b>15.04(3.45-23.98) *</b> | <b>14.37(3.37-19.13) *</b> | <b>15.39(3.70-18.05) *</b> |
| HA/JN                                       | <b>5.61(1.34-23.57) *</b>  | 4.31(0.83-22.42)           |                            |                            |
| Midwife                                     | <b>7.50(1.80-31.32) *</b>  | <b>6.93(1.37-35.16) *</b>  |                            |                            |
| Lab technician                              | <b>6.87(1.85-25.48) *</b>  | <b>7.73(1.71-34.97) *</b>  |                            |                            |
| Cleaner                                     | <b>4.80(1.19-19.44) *</b>  | 2.65(0.53-13.25)           |                            |                            |
| Less risky health workers                   | 1.00                       | 1.00                       | 1.00                       | 1.00                       |
| <b>Educational Status</b>                   |                            |                            |                            |                            |
| Attended up to grade 12                     | 1.00                       |                            |                            |                            |
| Completed 12+1/12+2                         | <b>2.47(1.12-5.43) *</b>   |                            |                            |                            |

|  |                          |                          |                         |                          |
|--|--------------------------|--------------------------|-------------------------|--------------------------|
| Attended 12+3 and above                          | <b>2.32(1.09-4.93) *</b> |                          |                         |                          |
| <b>Experience (in 10 year) ‡</b><br>≥10 vs. <10† | <b>3.21(2.03-5.06) *</b> | <b>3.43(2.44-6.92) *</b> | <b>3.11(2.04-5.78)*</b> | <b>2.68(1.30-5.54) *</b> |

| Characteristics  | COR(95%CI)               | AOR(95%CI) |                          |                          |
|--|--------------------------|------------|--------------------------|--------------------------|
|  |                          | MODEL 1    | MODEL 2                  | FINAL MODEL              |
| <b>Model 2[socio-demographic + work environment factors] #</b>             |                          |            |                          |                          |
| <b>No of Patients attended daily ‡</b><br><35 vs. ≥35†                     | <b>2.08(1.27-3.48) *</b> |            | <b>2.79(1.43-6.46) *</b> | <b>2.21(1.32-3.58) *</b> |
| <b>Working night shifts</b><br>Yes vs. No†                                 | 1.07(0.59-1.65)          |            |                          |                          |
| <b>Hours worked per week ‡</b><br>≥40 vs. <40†                             | <b>1.76(1.07-3.26) *</b> |            | <b>3.41(1.52-6.94) *</b> | <b>1.90(1.10-3.31) *</b> |
| <b>Participated in work place HIV/AIDS</b><br>No vs. Yes†                  | 1.07(0.63-1.81)          |            |                          |                          |
| <b>Trained on infection prevention</b><br>No vs. Yes†                      | 1.35(0.65-2.80)          |            |                          |                          |
| <b>Trained on reporting NSIs</b><br>No vs. Yes†                            | 0.81(0.40-1.63)          |            |                          |                          |
| <b>Model 3[Socio-demographic + work environment + behavioral factors]#</b> |                          |            |                          |                          |
| <b>Perceived risk to HIV</b><br>Yes vs. No†                                | <b>3.52(1.95-6.35) *</b> |            |                          |                          |
| <b>Perceived level of risk to HIV</b><br>High risk vs. Low risk†           | <b>1.69(1.05-2.70) *</b> |            |                          | <b>2.05(1.10-3.82) *</b> |
| <b>Always use of PPEs</b><br>No vs. Yes†                                   | <b>1.83(1.18-2.84) *</b> |            |                          | <b>1.67(1.01-2.76) *</b> |
| <b>Use of glove all/ most of the time</b><br>Yes vs. No†                   | <b>2.96(1.41-6.23)*</b>  |            |                          | 2.35(0.15-5.85)          |

\* Significant association,  $p < 0.05$  at 95%CI

# Only variables reached p-value less than 0.3 were kept in the subsequent analysis, and displayed in the table (in the 3 models)

† Reference group

‡ Categories were made based on previous similar literatures.

### 5.1.8. Knowledge and Practice on HIV Post-Exposure Prophylaxis

Three hundred nine (83.1%) respondents were aware of the presence of HIV PEP. All of them, who were aware of it, mentioned that PEP is a kind of antiretroviral treatment used immediately after an accidental exposure to HIV. Two hundred seven (67%) of the respondents answered its importance both for occupational and non-occupational exposures to HIV but 37% of the respondents knew only its importance in occupational exposures. Seventy four (23.9%) of them ever attended trainings related to HIV PEP. One hundred twenty four (40.1%) described that they saw guidelines related to HIV PEP in their facility and 126(40.8%) saw posted posters in their facility/department describing the availability and importance of HIV PEP. About 90% of the respondents replied that PEP is very effective or at least somewhat effective in protecting a person who had a NSI or other exposure with an HIV positive individual.

Out of the respondents who were aware of PEP, 209(67.6%) said that it was available in their facility, 14(4.5%) knew its availability in other near hospitals and 86(27.8%) didn't know its availability either in their facility or other hospitals. One hundred seventy six (84.2%) replied that they could access the PEP starter packs if they offer either in their facility or in other places and 33(15.8%) claimed that they couldn't get it in the usual working hour. Seventy three (41.5%) replied its availability during weekends, duty hour and holidays.

Respondents who mentioned the correct responses in at least two of the three variables i.e. awareness on the presence of HIV PEP and mentioned its use correctly, described its initiation time after exposure and the usual duration to take the tablets were taken as having knowledge on HIV PEP. Accordingly, 264(71.0%) respondents had knowledge about HIV PEP. Among the respondents, 10(2.7%) ever took PEP tablets in their life time.

#### **5.1.9. Factors Associated with HIV PEP Knowledge among Health Care Workers**

The odds of PEP knowledge was higher among HCWs who ever trained on universal precaution or infection prevention when compared with those who were not trained (AOR=2.26, 95%CI=1.08-4.72). Health care workers who were always using glove during procedures were also about 2.4 times higher to know about HIV PEP when compared with those who were not using glove always ( AOR=2.44, 95%CI=1.02-5.82).

Ever experience of BBF splash was found to have a statistical significant association with PEP knowledge (AOR=2.28, 95%CI=1.01-5.15). Ever tested due to occupational exposure was also significantly associated with knowledge on HIV PEP. The chance of knowledge about HIV PEP in respondents who were ever tested due to their occupational exposure was about 7.8 times higher compared with those who didn't considered HIV testing after exposure ( AOR=7.79, 95%CI=1.48-41.04)*[Table 10]*.

**Table 10: Multivariate Logistic Regression Analysis of Factors Associated with HIV PEP Knowledge among Health Care Workers, Addis Ababa, 2008\*\***

| Characteristics                           | <i>Knowledge about HIV PEP</i> |          | COR(95%CI)                | AOR(95%CI)               |
|---|--------------------------------|----------|---------------------------|--------------------------|
|   | Yes (%)                        | No (%)   |                           |                          |
| <b>Socio-demographic factors</b>          |                                |          |                           |                          |
| <i>Job category</i>                       |                                |          |                           |                          |
| Health professionals                      | 245(76.6)                      | 75(23.4) | <b>5.67(3.05-10.56) *</b> | 3.64(0.77-17.15)         |
| Auxiliary staffs                          | 19(36.5)                       | 33(63.5) | 1.00                      | 1.00                     |
| <i>Educational status</i>                 |                                |          |                           |                          |
| Attended up to grade 12                   | 18(40.0)                       | 27(60.0) | 1.00                      | 1.00                     |
| Completed 12+1/12+2                       | 85(70.2)                       | 36(29.8) | <b>3.54(1.74-7.22) *</b>  | 0.63(0.12-3.21)          |
| Completed 12+3 and above                  | 161(78.2)                      | 45(21.8) | <b>5.37(2.71-10.61) *</b> | 1.13(0.22-5.94)          |
| <b>Work environment factors</b>           |                                |          |                           |                          |
| <i>Trained on infection prevention</i>    |                                |          |                           |                          |
| Yes                                       | 99(80.5)                       | 24(19.5) | <b>2.10(1.25-3.52) *</b>  | <b>2.26(1.08-4.72) *</b> |
| No  | 165(66.3)                      | 84(33.7) | 1.00                      | 1.00                     |
| <b>Behavioral factors</b>                 |                                |          |                           |                          |
| <i>Perceived level of risk to HIV</i>     |                                |          |                           |                          |
| High risk                                 | 89(67.9)                       | 42(32.1) | 1.00                      |                          |
| Low risk                                  | 115(74.7)                      | 39(25.3) | 1.39(0.83-2.33)           |                          |
| <i>Use of glove all/ most of the time</i> |                                |          |                           |                          |
| Yes                                       | 151(81.2)                      | 35(18.8) | <b>4.95(2.63-9.33) *</b>  | <b>2.44(1.02-5.82) *</b> |
| No  | 27(46.6)                       | 31(53.4) | 1.00                      | 1.00                     |
| <i>Needle stick injury in the past</i>    |                                |          |                           |                          |
| Yes                                       | 113(79.6)                      | 29(20.4) | <b>2.04(1.25-3.33) *</b>  | 0.73(0.32-1.69)          |
| No  | 151(65.7)                      | 79(34.3) | 1.00                      | 1.00                     |
| <i>Past BBF splash</i>                    |                                |          |                           |                          |
| Yes                                       | 111(85.4)                      | 19(14.6) | <b>3.40(1.96-5.90) *</b>  | <b>2.28(1.01-5.15) *</b> |

|                                  |           |           |                           |                           |
|----------------------------------|-----------|-----------|---------------------------|---------------------------|
| No                               | 153(63.2) | 89(36.8)  | 1.00                      | 1.00                      |
| <i>Tested for HIV due to OEs</i> |           |           |                           |                           |
| Yes                              | 51(91.1)  | 5(8.9)    | <b>4.93(1.91-12.73) *</b> | <b>7.79(1.48-41.04) *</b> |
| No                               | 213(67.4) | 103(32.6) | 1.00                      | 1.00                      |

\* Significant association,  $p < 0.05$  at 95% CI

\*\* Some Variables, which were used in the analysis, are not shown in the above table. These include; *type of sector, working place, experience, number of NSIs in the past, current profession, age group, perceived risk to HIV, ever trained on reporting NSIs and ever communication about work place HIV/AIDS.*

## 5.2. Result of Qualitative Data

### 5.2.1. Perceived Occupational Exposure and Risk of HIV Infection

There was a different level of perception on risk of occupational exposure at work. It was mentioned that the occupational exposure accident was sometimes unavoidable. As they are working in a risky environment and as the HIV epidemic continues to grow, their risk becomes higher. However, it was also thought that the probability of exposure to HIV might be low. It was described that, if HCWs carefully followed the self protective procedures, the exposure risk could be minimized.

*"There are accidents every year in our hospital. I should say exposure for us is not uncommon. It is highly possible because we are facing the risk every day during our daily activities. We usually do not wear boots or duty gloves for its shortage in our hospital. We don't take care about ourselves. No body is informing us about HIV/AIDS. We are totally forgotten. Patients and the external community are better aware of HIV/AIDS than us (**a 40 year-old female cleaner from governmental hospital**)."*

Training regarding infection prevention or universal precaution was inadequate for health care workers. There was also no organized activity to be mentioned to prevent HCWs from getting HIV at work place.

*"Till now, nothing is done in this hospital; however, HCWs care for themselves at work. We don't know the HIV status of our patients unless they undergo HIV test. Therefore, we usually wear gloves and other personal devices. Otherwise, no other measure is taken by the hospital administration regarding this issue (a 36 year old midwife from private hospital)."*

### 5.2.2. Occupational Exposure Accidents

The commonest reported exposure incidents in health facilities included NSIs, exposure to blood (usually due to perforation of glove) and blood and amniotic fluid splashes. Exposure often happened during cases of emergency when the HCW didn't have enough time to prepare the appropriate protective material.

*"It was so urgent, the blood was spewing. What can you do? You can only stop the bleeding immediately (a 41 year old male nurse from health center)."*

Recapping of used needles was mentioned as a contributing factor for NSIs. Exposure incidents were also related to patient's unwillingness to cooperate with HCWs during procedures. Due to lack of awareness of patient's HIV status, HCWs were sometimes "not careful enough" when conducting medical procedures, thus contributing to the exposure. Working in the emergency room, laboratory, labour and surgery departments was considered to confer the highest risk of occupational exposure. Nurses were thought to have the higher risk of exposure than other health professionals.

*"Compared with physicians, nurses have a higher risk of exposure, because doctors are mainly responsible for doing physical examination and giving prescription while*

*nurses are the ones who touch the blood. That's the difference (a 58 year-old female nurse from governmental hospital)."*

*"Carelessness is the major problem. Most accidents happened when HCWs perform operations carelessly. If we know the patient is HIV- positive, we are much more cautious when doing operations, thus reducing the chance of occupational exposure (a 38 year-old female doctor from private hospital)."*

HCWs who encountered injuries had experienced adverse psychological feelings such as nervousness and feelings of desperation and anxiety in the hours following the accidents.

*"Of course I was so nervous. When I got stuck the needle, I really wanted to cut my finger off. I had a very strong reaction; I should say I was so desperate, very desperate....If it really happened, my heart would be broken. I dare not to think about it, it was too terrible, too terrible. I had so much pressure in those 3 months; I didn't feel relief until June 10 when I got the negative result (a 29 year-old male laboratory technician from health center)."*

Health care workers had different concerns if they got exposed. As participants explained, the first concern HCWs thought about after exposure was their family. The other main concern was whether they could get enough support from their employing institution. They were also not aware or clear of any policy for occupational infections in the country.

*"I have experienced it. I know very clearly that the thing we care about most after exposure is what to do with our family and how to explain it to them. What if your wife got infected (through you)? (a 29 year-old male laboratory technician from health center)."*

*"We are not aware of policies regarding these issues. If I report to the hospital, would they take responsibility? Will they help me? We are not protected. We have no insurance.....as far as I know there is no regulation telling us what HCWs get if they are infected **(a 36 year-old female midwife from private hospital).**"*

### **5.2.3. HIV Testing after Occupational Exposure**

There was agreement on the importance of HIV testing after occupational exposure, but they were not aware of the correct time to take the test. Preference for testing was in another facility or in stand alone VCT centers. The main concern was fear of discrimination and other co-workers influence.

*"If I want to be tested here, surely I can get it. But there is no special VCT room for staffs only and I will get the test where other people are being served. Most staffs, including me, are not willing to be tested here. There is a fear that the counselor will disclose the result if turned to be HIV-positive. I think self testing by rapid tests may be the right option **(a 36 year-old female midwife from private hospital).**"*

Societal discrimination was also another main concern that HCWs feared to be tested for HIV immediately after exposure. If HCWs got infected with HIV at work, people would nevertheless suspect the transmission route, which would be highly humiliating for them.

*"Normal, it's normal, but in other peoples' minds....will I be discriminated against? When talking about HIV, will people look down on me? **(a 38 year-old female doctor from private hospital).**"*

*"You say you are infected because of work but nobody will believe you. The community will not believe you, and the other staffs will not believe you either (a 40 year-old female cleaner from governmental hospital)."*

#### **5.2.4. Understanding HIV Post-Exposure Prophylaxis**

It was found out that HCWs were not aware of local laws or rules regarding HIV PEP. Some HCWs would perform local procedures such as washing the wound and applying disinfectant and others would take PEP medications in case of exposure, but they were very confused about which drug to take, whether it is oral or by injection and the duration the medication should be taken for. Some barriers were also identified to follow PEP guidelines. Firstly, the leaders of the facility didn't pay enough attention to occupational exposure.

*"Basically, the leaders will not ask you about that. If I report the injury, they will not say too much....they will not say how they would compensate me if I get infected. They will not promise me to treat me if I get infected....or....no definite answers (a 40 year-old female cleaner from governmental hospital)."*

Secondly, HCWs were less proficient about HIV PEP. Some HCWs knew nothing about HIV PEP. Most HCWs didn't get the opportunity to attend training on HIV PEP. There were also no guidelines or posters reminding about HIV PEP in most health facilities.

*"I wouldn't know where to report...there is no rule in our health center to regulate this; therefore, I took my own measure (a 29 year-old male laboratory technician from health center)."*

Lastly, HCWs were not sure about the availability of PEP medications. It was mentioned that HCWs were not aware of the presence of PEP drugs in their facility. It revealed the gap between PEP guidelines and the actual practices among HCWs.

## 6. Discussion

The study revealed that 38.2% of HCWs experienced at least one NSI in their entire career and 19.1% experienced injury within the last one year. Rate of NSI in the last 12 months was estimated as 1.34 injuries per person. It is consistent with previous studies done in Ethiopia (31, 32). Similar studies in other countries, like Tanzania indicated that NSIs were the commonest occupational exposures among HCWs (33). A study done in Uganda (34) showed that among the nursing staff working at national referral hospital, a high rate of NSI was observed (4.18 per person-year). In that study, a total of 57% of the nurses had experienced at least one NSI in the last one year. Only 18% had not experienced any such injury in their entire career. However, this figure was slightly higher than our study and other African studies (33, 35-37). This difference could be due to the fact that the study population in the Ugandan study included only nurses whereas our study included all categories of HCWs. Studies in other areas also indicated that the rates of NSIs be higher for nurses than for other HCW groups (19, 38-40).

A national study done in India (41) also showed that 61.9% of HCWs experienced NSIs. Similarly, a survey done in one teaching hospital of India (42) revealed that occupational exposure to BBFs in the preceding 12 months was reported by 32.7% of all respondents. Another study done in Ugandan hospital (36) also indicated that out of the total surveyed HCWs, 55% of the respondents each reported suffering at least one NSI in the previous year. In a South African study (43), the overall incidence of NSIs and mucocutaneous exposure was 62%. The above results indicated that occurrence of NSIs among HCWs was high in many developing countries, which would also be true in our case

The prevalence and rate of injury in our study was less than some of the previous studies done in African settings. Some of the earlier studies were done in hospitals and on specific professionals (only of high risks) which might have given a different picture than the current one. However, the estimated rate of NSI among HCWs in our study was consistent with WHO and CDC estimation for developing countries (2, 44).

The most common reason for sustaining NSIs in this study was due to recapping of needle. About 34% of the respondents sustained the injury during recapping and 31% of them experienced it due to sudden movement of patients. Despite the current national infection prevention recommendation not to recap needles (45), it was still a common practice.

In line with the quantitative findings, according to the interview participants, exposure incidents were usually related to recapping of needle and patient's unwillingness to cooperate with HCWs during procedures. Earlier studies also indicated that the major contributing factors for NSIs were recapping of needle (23, 31-36, 43, 46) venepuncture (4, 8, 47) and administering of injections (23, 31-33, 35, 36, 48).

The study indicated that only 9.4% of HCWs were trained on how to report injuries. About 68% of respondents who encountered NSI in the last one year didn't report to any responsible body in their facilities. This indicated that there was no clear reporting system which was set in health facilities to take immediate measures accordingly. As the in-depth participants explained, they were not aware or clear of any policy for occupational infections in the country.

The result indicated that only 36.6% of HCWs who sustained NSI and 12.3% of HCWs who experienced splashes considered HIV testing. However, the majority (93.5%) of all respondents were voluntary to be tested for HIV after occupational exposure. This revealed that HCWs may not be aware of the correct duration to be tested after exposure or they may have a concern for undergoing HIV testing after exposure despite their willingness to be tested. It was also explained by respondents of the in-depth interview. Almost all of the interviewed HCWs were not aware of the requirement by the national guideline which orders 4 HIV tests to be taken after exposure. This indicated that exposed HCWs were not practicing the correct national protocol in their respective institutions.

In our study, nurses had a higher chance of sustaining NSIs compared with other less risky HCWs (AOR=15.39, 95%CI=3.70-18.05). The finding is consistent with other earlier studies (33-35, 43, 49). Respondents of in-depth interviews also confer that nurses were thought to have higher risk of exposures than other health professionals.

Experience in health facilities was also found to be one factor for chance of sustaining NSI. Those who worked for 10 years or more had a higher chance of experiencing NSI compared with those who worked for less than 10 years (AOR=2.68, 95%CI=1.30-5.54). Earlier studies came up with different results. A study done in India (41) indicated that increasing work experience was associated with increased occurrence of NSI. The study in Ugandan hospital (34), however, showed that nurses who had been in service for less than 10 years were at a higher risk of sustaining NSI compared with those with more than 10 years of experience.

As experience in health facilities increases, the chance of getting NSI may also increase. It may also be related with stress and exhaustion. As it was also evidenced in other studies (19, 20, 35, 46), working for many years and for long hours can result in stress and emotional exhaustion, which are likely to increase the chance of human error and contribute to a tendency towards risky behaviors.

Consistent with this finding, working for long hours was found to be significantly associated with occurrence of NSI (AOR=1.90, 95%CI=1.10-3.31). It has been previously associated with recapping and poor compliance with universal precaution (21, 46, 50), but it has not been linked directly to the occurrence of NSIs. Since, only 33% of HCWs attended training on infection prevention and about 32% of exposed HCWs sustained the injury during recapping of needles, most of them may not correctly follow the infection prevention procedures. Long working hours is also an indicator of understaffing, which is a common phenomenon in developing countries like Ethiopia (51, 52).

Some what surprisingly, a higher injury rate was found among those attending to less than 35 patients per day compared with those attending to more patients. It is possible that those who were doing invasive and operative procedures, which was usually accompanied by a higher risk for NSIs, were attending to fewer patients.

Perceived professional risk to HIV in this study was found to be 73.9%. Even though the majority of them perceived that they were at risk of HIV due to their day to day professional activity, their level of self perception was different. This different level of perception was probably related to the type of service they were rendering and the unit in which they were assigned.

Previous studies done in Ethiopia found out that majority of HCWs have a high perceived risk to HIV; 84% in North Wollo (31) and 40% in the SNNPR study (32). A similar study done among Tanzanian HCWs (33) found that 89% of HCWs recognized the professional risk of acquiring HIV infection. In another experimental study, 77% of HCWs identified themselves as being at risk of exposure to BBFs (24).

HCWs who perceived themselves as having high risk to HIV had a higher chance of getting NSI compared with those who perceived themselves as having low risk (AOR=2.05, 95%CI=1.10-3.82). This may be explained by the fact that risk perception is associated with day to day clinical practice and use of additional PPEs. Those HCWs who are working in a very risky department/unit may perceive themselves as having high risk to HIV than other HCWs. In previous studies, it was also found that HCWs who were working in a very risky department had a higher chance of getting occupational exposure than those working in a less risky unit in the same facility (36). Respondents of the in-depth interview also explained that as

they were working in a very risky area, their chance of acquiring accidents became higher and sometimes may be unavoidable.

Non-consistent use of PPEs was found to be associated with chance of sustaining NSI (AOR=1.68, 95%CI=1.01-2.76). Some earlier studies (45, 49) linked consistent use of PPEs with precautions in general. Recapping of needle and non-consistent use of PPEs are factors that could be improved by training, but lack of PPEs and safe needles are common in developing countries like ours and can partly explain such risk behaviors among HCWs in the study area. Only 4.9% of surveyed HCWs attended training on reporting NSIs. Therefore, most of them depended on their skills and to the knowledge they had acquired from school.

According to the in-depth interview respondents, HCWs who encountered injuries had experienced adverse psychological feelings such as nervousness, desperation and anxiety in the hours following the accidents. They also had concerns including their families and support from the employing institution.

Research also indicated that exposure to HIV/AIDS in health care settings causes serious adverse psychological outcomes for HCWs leading to stress, burnout and dropping out of their practices (53, 54). The adverse psychological outcomes they experience likely have negative effects on the quality of care HCWs provide for PLWHAs and other patients, and thus, need to be addressed. Because the worries and concerns perceived by exposed HCWs mainly come from the fear of occupational HIV infection, an ongoing counseling and treatment for the exposed HCWs may be needed.

From the interview, it was found that societal discrimination towards AIDS patients plays an important role in the adverse psychological consequences perceived by HCWs after exposure. If HIV/AIDS was treated as other

diseases by the general population, HCWs would feel more comfortable when providing service for patients. They would also feel less stress and anxiety when exposed to HIV at work. It suggests that stigma reduction is essential to reducing the psychological burden experienced by HCWs after exposure. The study indicated that about 71% of HCWs had knowledge about HIV PEP. The odds of PEP knowledge was higher among HCWs who were ever trained on universal precaution compared with those who didn't attend training (AOR=2.255, 95%CI=1.077-4.721). This is consistent with other studies (3, 5, 9, 22, 55). In one study (24) training was found to be the crucial factor in predicting the knowledge of HCWs about HIV PEP. This finding has also great importance for planning preventive measures for occupational exposures in our set up, where arranging proper training is a more feasible target for immediate actions after occupational exposure.

Health workers who were always using glove during procedures were also about 2.4 times higher to know about HIV PEP compared with those who were not using glove (AOR=2.438, 95%CI=1.020-5.823). Earlier studies (24, 35, 55) are also in line with this finding. One study (35) indicated that use of glove while handling sharp instruments is a precautionary measure recommended and it seemed to be an indicator of risk behavior. Those who used glove are usually the ones who are working in a more risky working environment and may be of better aware of HIV PEP.

Ever experience of BBF splash was found to have a statistical significant association with PEP knowledge. Consistent with this, the chance of knowledge about HIV PEP in respondents who were ever tested due to occupational exposures was about 7.8 times higher compared with those who didn't take HIV testing after exposure. The fact that exposed HCWs worries and concerns for fear of acquiring HIV would probably made them to know

about the measures to be taken after exposure, and hence will be more aware about HIV PEP.

According to the national infection prevention guideline, PEP treatment should be initiated immediately after exposure, possibly within 1-2 hours. Despite these recommendations, only very few exposed HCWs took PEP tablets. Some of the in-depth interview respondents also reported that they were not aware of local guidelines or rules regarding HIV PEP. In consistent with this, only 23.9% of respondents ever attended training on HIV PEP. It was found that some HCWs didn't pay enough attention to know about it.

From the study findings, there seemed to be a gap between national PEP guidelines and actual practices among HCWs. Trainings may also be needed to ensure that HCWs fully understand the standard procedures of PEP so that in case of exposure they will know what to do, where to get treatment and where to report.

Among the total 372 respondents, only 124 of them reported the availability of PEP guidelines and only 126 of them reported the presence of PEP posters in their facility. Some respondents also said that the leaders of their facilities didn't pay attention to occupational exposure and some of them were not sure about the availability of PEP medications in their respective facilities.

From the above findings, it was evidenced that lack of institutional support is an important barrier for HCWs compliance with taking PEP. Because the

drugs for HIV PEP need to be started as soon as possible, health facilities should also have a better preparation.

## **7. Strength and Limitations of the Study**

### **7.1. Strength of the Study**

- ◆ The fact that the study took in to account qualitative data collection had contributed a lot especially on some issues like post exposure concerns and worries which may be difficult to address with quantitative data only.

### **7.2. Limitations of the Study**

- ◆ Social desirability bias especially in questions related to HIV testing among health care workers

- ◆ The in-depth interviews held only in six health facilities might not explain the situation found in other facilities of Addis Ababa.
- ◆ The study relied on the respondent's recollection of an event or events that may have occurred as many as several years prior to the time of the survey. The accuracy or truthfulness of the surveyed HCWs' recollection can not be verified. Therefore, findings may be prone to recall bias (for example, HCWs might not remember exactly the number of NSIs they had had in the past).

## 8. Conclusions

From the findings of the study, the following conclusions were made.

- ◆ Occupational exposures were common among health care workers in the study health facilities: about 38% of respondents ever experienced at least one NSI in their entire career and about 19% of respondents experienced NSIs with in the last one year; its rate was also estimated as 1.34 injuries per person.
- ◆ Recapping of needle was considered as the most common reason for sustaining NSIs among the exposed HCWs.
- ◆ Only 9.4% of respondents were trained on how to report NSIs and the majority of exposed health workers didn't report their injury. The most common reason given was not giving a concern for the issue.

- ◆ The study demonstrates the highest prevalence of NSIs among nurses. Other important factors which were associated with occurrence of NSI included long experience in health facilities, long working hour, attending fewer patients per day, self perception of high risk to HIV and non-consistent use of PPEs.
- ◆ HCWs who encountered injuries could experience adverse psychological feelings and have many concerns.
- ◆ About 71% of respondents had knowledge about HIV PEP and majority of them could get PEP medication in the working hour in their facility. However, only very few exposed HCWs took PEP tablets.
- ◆ Factors associated with knowledge of PEP were ever tested for HIV due to occupational exposure, attending training on universal precaution, use of glove and previous exposure history with blood and body fluids

## **9. Recommendations**

1. Put in system that encourages health care workers to wear personal protective devices through accessing and supplying standard materials to the services delivered in the health care facility as compliance to universal precaution.
2. Health facilities should make available with in their system a standardized written protocol for infection prevention and reporting unit for management of occupational exposures so that health care workers will know how and where to report.

3. Attention should be paid to reducing heavy work loads and adequate in-service trainings, including monitoring of procedures.
4. Auxiliary staffs should also be involved in in-service trainings related to infection prevention.
5. There is a need to implement a work place program that can address the psychosocial burden health workers face after exposure.
6. A mechanism should be established in order to avail PEP drugs during duty hours, weekends and holidays complemented with appropriate counseling and testing of HIV for immediate use by HCWs.
7. Similar studies that include assessment of the magnitude of HIV due to occupational exposure among HCWs are needed.

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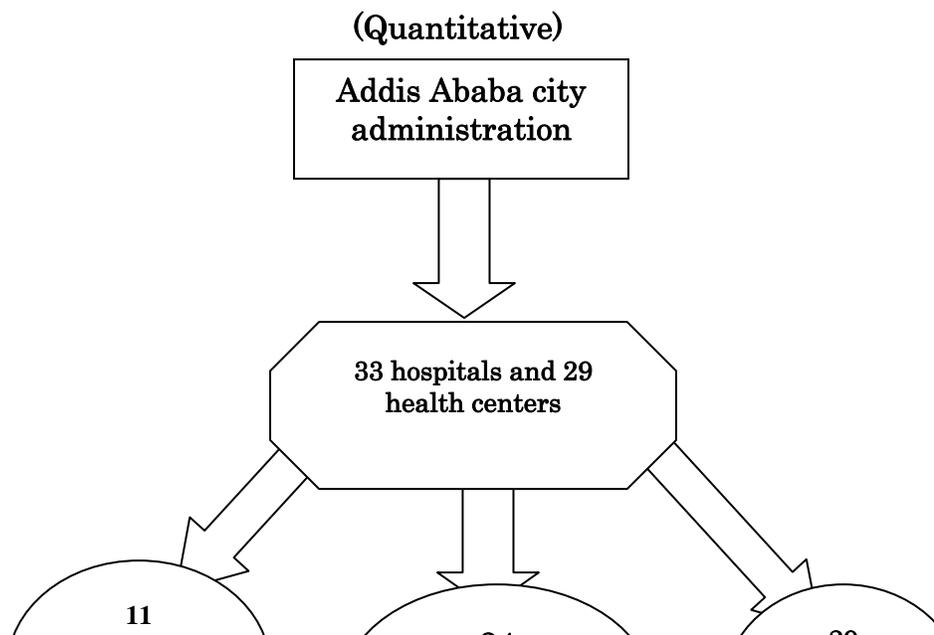
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## 11. Annexes

### 11.1. Annex I. Schematic Presentation of Sampling Procedure



PPS (40%) →

SRS →

PPS →

**11.2. Annex II. Procedure showing how Sample Size was taken from Selected Facilities**

| S.No | Name of Health Facility | Total number of staff (Health professionals + auxiliary) | Sample size taken from each facility | % out of the total sample size |
|------|-------------------------|--|--------------------------------------|--------------------------------|
| 1    | Addis Ketema HC         | 80   | 7                                    | 1.8                            |
| 2    | Arada HC                | 75   | 7                                    | 1.8                            |
| 3    | Shiro meda HC           | 66   | 7                                    | 1.8                            |
| 4    | Bella HC                | 72   | 7                                    | 1.8                            |

|    |                        |     |     |       |
|----|------------------------|-----|-----|-------|
| 5  | Kirkos HC              | 79  | 7   | 1.8   |
| 6  | Kazanchis HC           | 83  | 8   | 2.1   |
| 7  | Woreda 24 HC           | 83  | 8   | 2.1   |
| 8  | Kolfe HC               | 80  | 7   | 1.8   |
| 9  | Meshualekia HC         | 91  | 8   | 2.1   |
| 10 | Woreda 7 HC            | 78  | 7   | 1.8   |
| 11 | Woreda 25 HC           | 77  | 7   | 1.8   |
| 12 | Yekatit 12 Hosp.       | 402 | 36  | 9.3   |
| 13 | Zewditu Memorial Hosp. | 317 | 28  | 7.2   |
| 14 | Tikur Anbessa Hosp.    | 850 | 75  | 19.3  |
| 15 | St Paul Hosp.          | 658 | 58  | 15.0  |
| 16 | Addis Hosp.            | 86  | 8   | 2.1   |
| 17 | Nazirawit Hosp.        | 86  | 8   | 2.1   |
| 18 | Bethezatha Hosp.       | 193 | 17  | 4.3   |
| 19 | Tezenea Hosp.          | 125 | 11  | 2.8   |
| 20 | Betel Hosp.            | 208 | 18  | 4.6   |
| 21 | Brass Hosp.            | 158 | 14  | 3.6   |
| 22 | Hayat Hosp.            | 209 | 19  | 4.9   |
| 23 | Zenbaba Hosp.          | 202 | 16  | 4.1   |
|    | Total                  |     | 388 | 100.0 |

## 11.8. Annex VII. Participation in In-depth Interview

### Information Sheet and Consent Form

#### Information Sheet

Hello, how are you? My name is \_\_\_\_\_. My colleague besides me is \_\_\_\_\_. This is an interview to be done with you for a study that is being conducted at Addis Ababa University, School of Public Health.

**Title of the study**

The title of the study is Assessment of Health Care Workers Occupational Exposure to HIV and Post-exposure Prophylaxis in Health centers and Hospitals of Addis Ababa.

### **Purpose of the study**

The purpose of the study is to assess the extent of occupational exposures among health care workers and to assess their knowledge and practice about HIV treatment services after occupational exposure.

### **What it will mean if you decide to take part in the study**

If you agree to participate in this study, you will participate in this interview in a private place. The interview will last for about one hour and will be facilitated by me and my colleague. During the interview, you will be asked to respond questions related to health care workers knowledge and perception about HIV risk due to day to day working environment exposure and how health care workers perceive, know and practice HIV treatment services after exposure. You will also describe your previous experiences regarding these issues.

During the interview, my colleague will write down what you say. We will also tape record our session. The notes and tapes will not contain your names or other identifying information. They will just be labeled with a study number. Only members of the study team will listen to the tape.

The results will assist policy makers, planners and health service providers for making considerations regarding occupational HIV risks and post-exposure prophylaxis. It will also help to contribute in the subsequent efforts to improve prevention, diagnosis, treatment and support of HIV/AIDS in relation to the occupational hazards.

### **Risks and discomforts**

There is no possible risk associated with participating in this study. During the interview, we will ask you about any experiences you have had which

may cause you to feel embarrassed. You are free to decline answering any question that you do not wish to answer and you may leave our interview at any time you want to.

### **Confidentiality**

All information obtained will be held securely and stored on paper, tapes and computer files. No one except the interviewers will know that you took part in the study the answers that you give will be marked with a special study number only, and not your name. We will protect information about you in this research to be the best of our ability.

### **Voluntary participation**

Your participation is voluntary. You may withdraw from the interview at any time with out giving a reason and with out any penalty.

### **Questions**

If you have questions regarding this study or would like to be informed of the results after its completion, please do not hesitate to contact Ato Tadesse Alemayehu (0912 00 98 81) and/or Dr. Abera Kumie (0911 88 29 12) at School of Public Health, Addis Ababa University

### **Consent Form**

I have read the information sheet concerning this study (or have understood the verbal explanation) and I understand what will be required of me and what will happen to me if I take part in it. I also understand that any time I

may withdraw from this study without giving a reason and without my or my families' routine service utilization being affected for my refusal.

*May I continue the interview?*

1. Yes \_\_\_\_\_ Continue the interview
2. No \_\_\_\_\_ Stop the interview and thank the respondent

*Witness's signature certifying that the informed consent has been given.*

Witness's signature \_\_\_\_\_

Date \_\_\_\_\_

## **Topic Guide for In-depth Interview**

### ***Introduction***

Thank you for deciding to participate in the interview and for coming to this session. Previously (on the statement of consent form), we have discussed briefly

on the purpose of the research, how you were identified, and your part in the research study. Now I am going to have discussion with you on the relevant topic items.

Before going to the discussion, would you tell me important backgrounds such as age, educational background, position in the organization, year of experience in this position?

There is no right or wrong answers. All answers /responses/ ideas you provide are equally important and you are requested to respond honestly from your experiences and beliefs. I may interrupt and probe your ideas. Once again I would like to tell you that what we are going to discuss is very confidential and it will be used only for the research.

### **In-depth interview Guide**

*Sex* \_\_\_\_\_

*Age* \_\_\_\_\_

*Educational background/Qualification* \_\_\_\_\_

*Year of service in health facilities* \_\_\_\_\_

*Main job/position in the facility* \_\_\_\_\_

*Facility Type and name* \_\_\_\_\_

#### **1. Items/issues related with knowledge and perception regarding occupational exposure and risk of HIV infection among health care workers**

- Do you know what occupational HIV risk is? Could you please describe it?
- Do you think that you and your co-workers are at risk of HIV due to your day to day professional activities? Can you level your risk?
- Have you ever attended any pre-service or in-service training about universal precautions, infection prevention or other similar topics?
- At this facility, how do you describe the activities performed to protect health workers from occupational exposure and risk of HIV infection? What measures are in place to protect workers from getting HIV at work place?
- Do you know a trained individual responsible for managing needle stick injuries or other exposures at this facility?
- In your observation as a health care worker, what are the most common exposure histories encountered at this facility? What are the reasons for these exposures among health care workers?
- In which department/ units are these exposures more common? Among the professionals, who are more exposed to these exposures?
- Some health care workers usually do not report needle-stick injuries or other exposures. What are the reasons for this?

## **2. Issues/items related with acceptability and preference for HIV testing after occupational exposure**

- How do you see the acceptability of HIV testing by health care workers after occupational exposure?
- Could HIV counseling be done immediately after a needle stick injury or other exposure? Who provides HIV counseling immediately after a needle stick injury or other exposures?
- Do health care workers usually prefer to be tested at own facility or any other place?
- Are there any factors that influence preference and acceptability for HIV testing after occupational exposure? If there are, what are these factors?
- How would you like HIV testing for self and co-workers to be organized at this facility?

## **3. Items/issues related with understanding of HIV post-exposure prophylaxis**

- Do you know what HIV post-exposure prophylaxis is?
- Could you please describe it?
- Have you or your co-workers been trained on HIV PEP and its benefits?  
Have you seen any written guidelines/ protocols for PEP in this facility?  
Have you seen posters that remind for the importance and availability of PEP in this facility?
- When there is an encounter of needle-stick injury or other exposure at work place what is the usual practice in this health facility? Do you consider taking of post-exposure prophylaxis? What about other co-workers?
- Do workers at this facility receive post-exposure prophylaxis immediately if they encounter occupational exposure? Who prescribe it? Where it is located? At what time could staffs have access to PEP?
- If not available here, where should staffs go to get PEP?
- Are there any factors that influence preference and acceptability for PEP?
- How would you like PEP for self and co-workers to be organized?
- What in your view would be the most successful way to increase post-exposure uptake at your facility?

## 11.4. Annex III. Information Sheet and Consent Form: English Version

### Information Sheet

Hello, how are you? My name is\_\_\_\_\_. This is an interview to be done with you for a study that is being conducted at Addis Ababa University, School of Public Health. The purpose of the study is to assess knowledge and perception of health care workers on HIV infection risks due to their day to day activities and to assess their knowledge and practice about HIV treatment services after exposure. It is being conducted in health centers and hospitals of Addis Ababa. We would like to ask you some questions that are related to health care workers knowledge and perception about HIV risk due to day to day activities and how health care workers perceive, know and practice HIV treatment services after exposure.

We believe that the results of this study will assist policy makers, planners and health service providers for making considerations regarding occupational HIV risks and post-exposure prophylaxis. It will also help to contribute in the subsequent efforts to improve prevention, diagnosis, treatment and support of HIV/AIDS in relation to the occupational hazards.

You have been randomly selected to participate in this study. Your contribution has a great input for the study and I would greatly appreciate your participation. There is no possible risk associated with participating in this study. Your name will not be written in the questionnaire and please be assured that all the information you give will be kept strictly confidential. Your participation is completely voluntary. Therefore, you will not be obliged to answer any question that you do not want to and you may end this interview at any time you want to. There are also no repercussions for not participating in the interview. The interview will take about\_\_\_\_\_minutes.

If you have questions regarding this study or would like to be informed of the results after its completion, please do not hesitate to contact Ato Tadesse Alemayehu (0912 00 98 81) and/or Dr. Abera Kumie (0911 88 29 12) at School of Public Health, Addis Ababa University.

**Consent Form**

I have read the information sheet concerning this study (or have understood the verbal explanation) and I understand what will be required of me and what will happen to me if I take part in it. I also understand that any time I may withdraw from this study without giving a reason and without my or my families' routine service utilization being affected for my refusal.

Participant's signature \_\_\_\_\_

Date \_\_\_\_\_

Interviewer signature certifying that the informed consent has been given verbally.

Interview's name \_\_\_\_\_

Interview's signature \_\_\_\_\_

Date \_\_\_\_\_

May I continue the interview?

3. Yes \_\_\_\_\_ Continue the interview

4. No \_\_\_\_\_ Stop the interview and thank the respondent

**Result:** Questionnaire completed \_\_\_\_\_

Questionnaire partially completed \_\_\_\_\_

Participant refused \_\_\_\_\_

Others (please Specify) \_\_\_\_\_

**Checked by Supervisor:**

Supervisor's Name \_\_\_\_\_

Supervisor's Signature \_\_\_\_\_

Date \_\_\_\_\_

### 11.5. Annex IV. Information Sheet and Consent Form: Amharic Version

#### **የጤና ስራተኞች ከስራ ጋር የተያያዘ የኤች አይቪ መጋለጥና በድንገተኛ ሁኔታ በተከሰተ የኤች አይቪ መጋለጥ ስለሚሰጥ ህክምና የሚደረግ ጥናት**

#### **ስለጥናቱ ማስታወቂያና በጥናቱ ለማሳተፍ ፈቃደኝነት መጠየቂያ ቅጽ**

##### **ስለጥናቱ ማስታወቂያ ቅጽ**

ጤና ይስጥልኝ «የእኔ ስም \_\_\_\_\_ ይባላል። የምሰራው በአዲስ አበባ ዩኒቨርሲቲ የሕብረተሰብ ጤና ትምህርት ቤት ለሚገኝ የምርምር ቡድን ነው። የምናጠናው ጥናት የጤና ስራተኞችን ከስራ ጋር በተያያዘ የኤች አይቪ መጋለጥና በድንገተኛ ሁኔታ ለተከሰተ የኤች አይቪ መጋለጥ ስለሚሰጥ ህክምና ይመለከታል።

የጥናቱ ዋና አላማም የጤና ስራተኞች ማለትም የጤና ባለሙያዎችና ሌሎች አጋዥ ስራተኞች በስራ አጋጣሚ የኤች አይቪ መጋለጥና መያዝን አስመልክቶ ስላላቸው እውቀትና አመለካከት እንዲሁም በድንገተኛ ሁኔታ በስራ አጋጣሚ ለተከሰተ የኤች አይቪ መጋለጥ ህክምና ዕውቀትና ተሞክሮ ለመዳሰስ ነው። ጥናቱ ይሚካሄደውም አዲስ አበባ ውስጥ በሚገኙ የተመረጡ ጤና ጣቢያዎችና ሆስፒታሎች ነው።

እርስዎንም የጤና ስራተኞች በስራ አጋጣሚ ስለሚከሰት የኤች አይቪ መጋለጥና ህክምናውን አስመልክቶ ስላለ ዕውቀት ፣ አመለካከትና ተሞክሮ እንዲሁም ሌሎች ተያያዥነት ያላቸውን ጥያቄዎችን እጠይቆዎታለሁ።

የዚህ ጥናት ውጤት በፖሊሲ አስፈጻሚዎች፣ ዕቅድ አውጭዎች ፣ በጤናው ዘርፍ ስራተኞች እንዲሁም ሌሎች በሚመለከታቸው አካላት ስለስራ ቦታ ኤች አይቪ ተጋላጭነትና ስለሚሰጠው ህክምና አትክሮት እንዲሰጠው ይረዳል ብለን እናምናለን። ከዚህ በተጨማሪም ኤች አይቪ አድስን በመከላከል ረገድ በሚደረገው ጥረት ውስጥ የዚህ ጥናት ውጤት የበኩሉን አስተዋጽኦ ያበረክታል።

እርሶዎም በዚህ ጥናት እንዲሳተፉ በእጣ ተመርጠዋል። በዚህ ጥናት ላይ በመሳተፍዎ የምናገኘው መረጃ ለጥናታችን ውጤታማነት እንዲሁም የጥናቱ ውጤት በሚያበረክተው አስተዋጽኦ ላይ ከፍተኛ እገዛ ይኖረውል። ስለዚህም በዚህ ቃለ መጠይቅ ቢሳተፉ ምስጋናዬ የላቀ ነው።

በጥናቱም በመሳተፍዎ ምክንያት የሚመጣብዎት ምንም ችግር አይኖረም። በጥናቱ ውስጥም በማንኛውም ሁኔታ ስምዎ በመጠይቁ ላይ አይገለፅም። ስለሆነም እባክዎ የሚሰጡት መረጃ በሙሉ ሚስጥርነቱ የተጠበቀ እንደሚሆን እርግጠኛ ይሁኑ። በዚህ ጥናት ለመሳተፍ የእርሶዎ ፈቃድ ፍፁም

አሰራሪ ነው። በተጨማሪም ለመመለስ የማይፈልጓቸው ጥያቄዎች ካሉ ጥቂዎችን ለመመለስ በፍጹም አይገደዱም፤ እንዲሁም በጥናቱ ላለመሳተፍ ከፈለጉ በማንኛውም ሰዓት ማቋረጥ ይችላሉ።

በጥናቱ አለመሳተፍዎ በርስዎ ላይ የሚያስከትለው ወይም የሚያመጣው ምንም አይነት ጉዳት የለም። ቃለ መጠይቁም የሚወስደው ጊዜ ----- ደቂቃዎች ነው። ቃለ መጠይቁን በተመለከተ ወይንም ስለጥናቱ ሁኔታና ውጤት ማንኛውም ጥያቄ ወይም አስተያየት ቢኖሮት በሚከተሉት አድራሻዎች ማለትም፡-ታደሠ አለማየሁ (ስልክ 0912 00 98 81) ወይም ዶ/ር አበራ ቁሜ (ስልክ 0911 88 29 12) አዲስ አበባ ዩኒቨርሲቲ የሕብረተሰብ ጤና ት/ቤት ማነጋገር ይችላሉ።

**ከመጠይቁ በፊት የተጠያቂውን ስምምነት ማረጋገጫ ቅጽ**

ከላይ በመግቢያው ላይ የተጠቀሰውን መረጃ አንብቢያለሁ ወይም በቃል የተሰጠኝን ማብራሪያ ተረድቻለሁ። በዚህ መሰረት ከእኔ የሚጠበቅብኝን ድርሻ በሚገባ አውቄያለሁ እናም በዚህ ጥናት ላይ በመሳተፌ ሊከሰቱ የሚችሉትን ሁኔታዎች ተገንዝቢያለሁ። ከዚህ ጥናት በማንኛውም ሠዓት ያለምንም ቅድመ ሁኔታና ምክንያት እራሴን ከተሳታፊነት የማግለል ሙሉ መብት ፅንዳለኝ ተረድቻለሁ። ይህን ውሳኔዬን ተከትሎ በእኔም ሆነ በቤተሰቦቼ ላይ በምንፈልገው የጤና አገልግሎት ላይ ምንም አይነት አሉታዊ ተጽኖ እንደማይደርስብኝ ተረድቻለሁ።

ፊርማ ----- ቀን -----

ጥናቱን በተመለከተ የቃል ማብራሪያ የተሰጠ መሆኑን የሚያረጋግጥው የቃለ መጠይቁ አድራጊ ስምና ፊርማ

የጠያቂው ስም----- ፊርማ -----

ቀን----- ወር ----- 2000 ስድ-----

መጠይቁን እንድቀጥል ፈቃደኛ ነዎት?

- 1. አዎ ፈቃደኛ ናቸው ----- ቃለመጠይቁ ይቀጥላል
- 2. አይ ፈቃደኛ አይደሉም ----- ቃለመጠይቁን በማቆም አመስግነው ይለያዩ

ዉጤት (መጠይቁ መሞላቱን ለማረጋገጥ)

ሀ. ሙሉ በሙሉ የተሞላ----- ለ. በከፊል የተሞላ-----

ሐ. ተጠያቂው ፍቃደኛ አይደለም -----

መ. ሌላ ካለ ይገለጽ-----

በተቆጣጣሪው የተረጋገጠ (መጠይቁ መሞላቱን ለማረጋገጥ)

የተቆጣጣሪው ስም----- ፊርማ-----ቀን-----

**11.6. Annex V. Individual Quantitative Survey Questionnaire:  
English Version**

**Title:** Assessment of Health Care Workers Occupational Exposure to HIV and Post-exposure Prophylaxis in Health Centers and Hospitals of Addis Ababa.

**Identification**

|  |  |                                    |  |
|--|--|------------------------------------|--|
|  | E. Question                              | F. Response                        |  |
|  | L.<br>M. Date of Data Collection         | N.<br>O. dd / mm/ 2008<br>P. ----- |  |
|  | T.<br>U. Questionnaire Number<br>V.      | W. XXX<br>X. -----<br>-            |  |
|  | BB. Identification Number of Interviewer | CC. XX<br>DD. -----<br>----        |  |
|  | II. Name of Health Facility              | EE.<br>KK. -----                   |  |

|  |  |  |  |
|--|--|--|--|
|  | JJ.                                    | -----  |  |
|  | OO. Health Facility Code<br>PP.<br>QQ. | RR. XX<br>SS. -----<br>--  |  |
|  | WW. Type of Health Facility            | XX. Central/ specialized<br>Hospital<br>YY. Regional/Zonal<br>Hospital<br>ZZ. Private Hospital<br>AAA. Health Center<br>BBB. Other (specify) |  |
|  | KKK. Ownership of Health Facility      | LLL. Government<br>MMM. Private (profit<br>Driven)<br>NNN. FBOs<br>OOO. NGOs<br>PPP. Other (specify)<br>QQQ.                                 |  |

**Section 1. Background Information**

|  |               |                            |   |
|--|---------------|----------------------------|---|
|  | YYY. Question | ZZZ. Response              | E |
|  | DDDD. Sex     | EEEE. Male<br>FFFF. Female | I |

|  |  |   |   |
|--|--|---|---|
|  |  |   |   |
|  | KKKK. What was your age at<br>LLLL. your last birth day?                                   | NNNN. MMMM. ----- years   | P |
|  | RRRR. What is your main job?<br>SSSS. Your current technical qualification?<br>TTTT.       | UUUU. Specialist/ Resident/ GP<br>VVVV. Nurse<br>WWWW. HA/Junior nurse<br>XXXX. Midwife<br>YYYYY. Lab technician<br>ZZZZ. Pharmacist/Pharmacy Technician<br>AAAAA. Environmental Health Worker<br>BBBB. Cleaner/ porter<br>CCCCC. Laundry Personnel<br>DDDDD. Laboratory Assistant<br>EEEEE. Other(specify)<br>FFFFF. | R |
|  | TTTTT. What is your Educational status?  | UUUUU. Illiterate<br>VVVVV. Read and write<br>WWWWW. Grade 1-8<br>XXXXX. Grade 9-12<br>YYYYY. 12+1,12+2<br>ZZZZZ. 12+3 , 12+4<br>AAAAAA. 12+6 and above   | I |
|  | KKKKKK. What is your Religion?<br>LLLLLL.<br>MMMMMM.                                       | NNNNNN. Orthodox<br>OOOOOO. Catholic<br>PPPPPP. Protestant<br>QQQQQQ. Muslim<br>RRRRRR. Other (specify)<br>SSSSSS.  | Y |
|  | AAAAAAA. What is your marital status?  | BBBBBBB. Single<br>CCCCCC. Currently married<br>DDDDDD. Widowed<br>EEEEEEE. Separated<br>FFFFFFF. Divorced  | I |
|  | NNNNNNN. How long have you been working in health facilities?                              | OOOOOO. -----<br>PPPPPP. -----<br>Years   | R |
|  | TTTTTTT. For how long have you been working in health facilities with your current status? | UUUUUUU. -----<br>VVVVVVV. -----<br>Years   | X |
|  | ZZZZZZZ. On average, how many patients/clients do you attend daily?                        | AAAAAAA. --<br>-----Patient<br>BBBBBBBB. (fill 00 if he/she doesn't attend patient)   | I |

|  |   |                               |   |
|--|---|-------------------------------|---|
|  | FFFFFFFF. Have you been assigned to work in night shifts?   | GGGGGGGG. Yes<br>HHHHHHHH. No | K |
|  | MMMMMMMM. On average, how many hours do you work per week in this facility (including duty, holidays and weekends)? | NNNNNNNN. -----<br>-----Hours | P |

**Section 2. Knowledge and Perception of Health Care Workers on HIV Infection Risk and Extent of Occupational Exposure**

| SSSSSSSS. Question   | TTTTTTTTT. Response  | U                |
|--|--|------------------|
| XXXXXXXX. Do you think that you are at risk of HIV infection?  | YYYYYYYY. Yes<br>ZZZZZZZZ. No  | A<br>B →         |
| FFFFFFFF. Where you say that you are most likely to get infected with HIV, outside work or at work place?<br>GGGGGGGG. (only one response)                       | HHHHHHHH. Out side work<br>IIIIIIII. At work place<br>JJJJJJJJ. Same Risk in both places<br>KKKKKKKK. Don't Know | L<br>M<br>N<br>O |
| RRRRRRRR. How do you level your risk of HIV infection?<br>SSSSSSSS. (only one response)  | TTTTTTTTT. High risk<br>UUUUUUUU. Low risk<br>VVVVVVVV. No risk  | W<br>X<br>Y      |
| BBBBBBBB. At this facility, are written guidelines available to guide the following staff and welfare issues?<br>CCCCCCCC. (circle only one option on each list) | DDDDDDDD.<br>EEEEEEEEEE.   | F<br>G<br>H      |

|  |   |  |                      |
|--|---|--|----------------------|
|  | <p>JJJJJJJJJ. 204.1. Safe injections?</p>   | <p>KKKKKKKKKK. Yes<br/> LLLLLLLLLL. No<br/> MMMMMMMMMM. Don't Know</p>     | <p>N<br/>O<br/>P</p> |
|  | <p>RRRRRRRRR. 204.2. Universal precautions?</p>   | <p>SSSSSSSSS. Yes<br/> TTTTTTTTTT. No<br/> UUUUUUUUUU. Don't Know</p>      | <p>V<br/>W<br/>X</p> |
|  | <p>ZZZZZZZZZ. 204.3. HIV Post-exposure prophylaxis?</p>   | <p>AAAAAAAAAAA. Yes<br/> BBBBBBBBBB. No<br/> CCCCCCCCCC. Don't Know</p>    | <p>D<br/>E<br/>F</p> |
|  | <p>HHHHHHHHHH. 204.4. HIV prevention for staff?<br/> IIIIIIIII. JJJJJJJJJJ.</p>   | <p>KKKKKKKKKK. Yes<br/> LLLLLLLLLL. No<br/> MMMMMMMMMM. Don't Know</p>     | <p>N<br/>O<br/>P</p> |
|  | <p>RRRRRRRRRR. 204.5<br/> SSSSSSSSSS. Claiming compensation for<br/> TTTTTTTTTTT. HIV seroconversion at work place?</p>                       | <p>UUUUUUUUUU. Yes<br/> VVVVVVVVVV. No<br/> WWWWWWWWWW. Don't Know</p>     | <p>X<br/>Y<br/>Z</p> |
|  | <p>CCCCCCCCCCC. Have policies related to HIV at work places been communicated to staff at any time in the past?</p>                           | <p>DDDDDDDDDD. Yes<br/> EEEEEEEEEEEE. No<br/> FFFFFFFFFFFF. Don't Know</p> | <p>G<br/>H<br/>I</p> |
|  | <p>NNNNNNNNNN. Have policies related to HIV at work places been communicated to staff with in the last one year?</p>                          | <p>OOOOOOOOOO. Yes<br/> PPPPPPPPPP. No<br/> QQQQQQQQQQ. Don't Know</p>     | <p>R<br/>S<br/>T</p> |
|  | <p>WWWWWWWWWWW. Have you ever participated in any training programme about infection prevention or universal precaution?</p>                  | <p>XXXXXXXXXXXX. Yes<br/> YYYYYYYYYYYY. No</p>                             | <p>Z<br/>A</p>       |
|  | <p>EEEEEEEEEEEE. Have you participated in any training programme about infection prevention or universal precaution in the last one year?</p> | <p>FFFFFFFFFFFF. Yes<br/> GGGGGGGGGG. No</p>                               | <p>H<br/>I</p>       |

|  |   |   |   |
|--|---|---|---|
|  | <p>LLLLLLLLLLLLLL. Do you use universal precaution or wear personal protective equipments?</p>  | <p>MMMMMMMMMMMMMM. Yes, always<br/> NNNNNNNNNNNNNN. Yes, sometimes<br/> OOOOOOOOOOOOOO. No</p>  | <p>PI<br/> Q<br/> R</p>                                   |
|  | <p>WWWWWWWWWWWWW. If you wear protective equipments, which one? <del>XXXXXXXXXXXXXXXX</del>. (do not read list, circle all mentioned)</p>                                   | <p>YYYYYYYYYYYYYY. Apron<br/> ZZZZZZZZZZZZZZ. Utility glove<br/> AAAAAAAAAAAAAAAA. Examination glove<br/> BBBBBBBBBBBBBBB. Head cover<br/> CCCCCCCCCCCCCCC. Boots/shoe<br/> DDDDDDDDDDDDDDD. Eye protection/goggle<br/> EEEEEEEEEEEEEEEE. Gown<br/> FFFFFFFFFFFFFFFFF. Other(specify)<br/> GGGGGGGGGGGGGGG.</p> | <p>H<br/> I<br/> J<br/> K<br/> L<br/> M<br/> N<br/> O</p> |
|  | <p>RRRRRRRRRRRRRR. If your answer for Q.209 is 2 or 3, what are the reasons? <del>SSSSSSSSSSSSSS</del>. (do not read list, circle all mentioned)<br/> TTTTTTTTTTTTTTTT.</p> | <p>UUUUUUUUUUUUUU. Difficult to work with such equipment<br/> VVVVVVVVVVVVVVV. Not always necessary<br/> WWWWWWWWWWWWWWW. Unavailability of equipment<br/> XXXXXXXXXXXXXXXXX. Inadequacy of equipment<br/> YYYYYYYYYYYYYYY. other(specify)<br/> ZZZZZZZZZZZZZZZ.</p>  | <p>A<br/> B<br/> C<br/> D<br/> E</p>                      |
|  | <p>HHHHHHHHHHHHHHH. When did you use glove? <del>IIIIIIIIIIIIIIII</del>. (do not read list, circle all mentioned)</p>   | <p>JJJJJJJJJJJJJJJ. For all people when needed<br/> KKKKKKKKKKKKKKK. For only HIV suspected cases<br/> LLLLLLLLLLLLLLLLL. For only HIV positive cases<br/> MMMMMMMMMMMMMMMMM. Other(specify)<br/> NNNNNNNNNNNNNNNN.</p>   | <p>O<br/> P<br/> Q<br/> R</p>                             |
|  | <p>UUUUUUUUUUUUUUU. (do not read list, circle all mentioned) How do you wash soiled linen in your health facility?<br/> VVVVVVVVVVVVVVVV. If<br/> WWWWWWWWWWWWWWW</p>       | <p>XXXXXXXXXXXXXXXXX. Using laundry machine<br/> YYYYYYYYYYYYYYY. Hand washing<br/> ZZZZZZZZZZZZZZZ. Both ways<br/> AAAAAAAAAAAAAAAAA. Other(specify)<br/> BBBBBBBBBBBBBBBBB.</p>   | <p>C<br/> D<br/> E<br/> F</p>                             |

|  |   |   |             |
|--|---|---|-------------|
|  | IIIIIIIIIIIII. Have you been exposed to the following body fluids in your working environment?  | JJJJJJJJJJJJJJJ.  | K           |
|  | NNNNNNNNNNNNNNNN. 2<br>14.1. Blood  | OOOOOOOOOOOOOOOO. Yes<br>PPPPPPPPPPPPPPPP. No   | Q<br>R      |
|  | UUUUUUUUUUUUUUUU. 2<br>14.2. Amniotic fluid   | VVVVVVVVVVVVVVVVV. Yes<br>WWWWWWWWWWWWWWWW. 1<br>o  | X<br>Y      |
|  | BBBBBBBBBBBBBBBBBB. 2<br>14.3. CSF  | CCCCCCCCCCCCCCCC. Yes<br>DDDDDDDDDDDDDDDDDD. 1<br>o                                       | E<br>F      |
|  | IIIIIIIIIIIII. 214.4.<br>Human Breast Milk  | JJJJJJJJJJJJJJJJ. Yes<br>KKKKKKKKKKKKKKKKKK. 1<br>o                                       | L<br>M      |
|  | PPPPPPPPPPPPPPPPPP. 2<br>14.5. Pericardial fluid  | QQQQQQQQQQQQQQQQQQ. 1<br>es<br>RRRRRRRRRRRRRRRRRR. No                                     | S<br>T      |
|  | WWWWWWWWWWWWWWWW. 2<br>14.6. Peritoneal fluid   | XXXXXXXXXXXXXXXXXXXX. Yes<br>YYYYYYYYYYYYYYYYYYY. No                                      | Z<br>A      |
|  | DDDDDDDDDDDDDDDDDD. 2<br>14.7. Pleural fluid  | EEEEEEEEEEEEEEEEEEEE. Yes<br>FFFFFFFFFFFFFFFFFFFFF. No                                    | G<br>H      |
|  | KKKKKKKKKKKKKKKKKK. 2<br>14.8. Synovial Fluid   | LLLLLLLLLLLLLLLLLLLL. Yes<br>MMMMMMMMMMMMMMMMMMMM. 1<br>o                                 | N<br>O      |
|  | RRRRRRRRRRRRRRRRRR. 2<br>14.9. Exudative fluids from burns or skin lesions  | SSSSSSSSSSSSSSSSSS. Yes<br>TTTTTTTTTTTTTTTTTTTT. No                                       | U<br>V      |
|  | YYYYYYYYYYYYYYYYYYY. 2<br>14.10. Seminal/vaginal fluid  | ZZZZZZZZZZZZZZZZZZ. Yes<br>AAAAAAAAAAAAAAAAAAAAA. 1<br>o                                  | B<br>C      |
|  | FFFFFFFFFFFFFFFFFFFFF. 2<br>14.11. Urine  | GGGGGGGGGGGGGGGGGG. 1<br>es<br>HHHHHHHHHHHHHHHHHH. 1<br>o                                 | I<br>J      |
|  | MMMMMMMMMMMMMMMMMM. 2<br>Can a disease be transmitted through dirty needles and sharps?<br>NNNNNNNNNNNNNNNNNN. 2<br><b>Only for non-technical staffs)</b> | OOOOOOOOOOOOOOOOOO. 1<br>es<br>PPPPPPPPPPPPPPPPPP. 1<br>No<br>QQQQQQQQQQQQQQQQQQ. 1<br>DK | R<br>S<br>T |
|  | WWWWWWWWWWWWWWWWWW. 2<br>Have you ever had any needle stick or other sharp injuries?  | XXXXXXXXXXXXXXXXXXXX. Yes<br>YYYYYYYYYYYYYYYYYYY. No                                      | Z<br>A<br>B |

|  |  |   |  |
|--|--|---|--|
|  | <p>FFFFFFFFFFFFFFFFFFFFFF. If yes, how many times have you had these injuries?</p>   | <p>GGGGGGGGGGGGGGGGGGGGGG. Once<br/>         HHHHHHHHHHHHHHHHHHHHHH. Two times<br/>         IIIIIIIIIIIIIIIIIIIII. More than two times</p>  | <p>J<br/>K<br/>L</p>   |
|  | <p>OOOOOOOOOOOOOOOOOOOO. Have you encountered any needle stick or other sharp injury in the last one year?</p>   | <p>PPPPPPPPPPPPPPPPPPPPP. Yes<br/>         QQQQQQQQQQQQQQQQQQQ. No</p>  | <p>R<br/>S<br/>T</p>   |
|  | <p>XXXXXXXXXXXXXXXXXXXXX. If yes, how many times have you had these injuries?</p>  | <p>YYYYYYYYYYYYYYYYYYYY. (once<br/>         ZZZZZZZZZZZZZZZZZZZZ. Two times<br/>         AAAAAAAAAAAAAAAAAAAAAA. More than two times (specify the number)</p>   | <p>B<br/>C<br/>D</p>   |
|  | <p>GGGGGGGGGGGGGGGGGGGG. How do you sustain the recent injury?<br/>         HHHHHHHHHHHHHHHHHH (select one only)<br/>         IIIIIIIIIIIIIIIIIIIII.<br/>         JJJJJJJJJJJJJJJJJJJ.</p> | <p>KKKKKKKKKKKKKKKKKKKK. I<br/>         LLLLLLLLLLLLLLLLLLLLLL. I<br/>         MMMMMMMMMMMMMMMMMMM. I<br/>         NNNNNNNNNNNNNNNNNNNN. I<br/>         OOOOOOOOOOOOOOOOOOOO. I</p>   | <p>P<br/>Q<br/>R<br/>S</p>                                     |
|  | <p>VVVVVVVVVVVVVVVVVVVV. What did you do after you get the needle stick injury?</p>  | <p>WWWWWWWWWWWWWWWWWWW. Wash with soap and water<br/>         XXXXXXXXXXXXXXXXXXXXX. Wash with alcohol, iodine or chlorine<br/>         YYYYYYYYYYYYYYYYYYYYY. Applying pressure to stop bleeding<br/>         ZZZZZZZZZZZZZZZZZZZZ. Squeezing to extract more blood<br/>         AAAAAAAAAAAAAAAAAAAAAA. Take TAT<br/>         BBBBBBBBBBBBBBBBBBBBB. Visiting VCT<br/>         CCCCCCCCCCCCCCCCCCCCC. Seek ART<br/>         DDDDDDDDDDDDDDDDDDDDD. Report to the head person<br/>         EEEEEEEEEEEEEEEEEEEEE. I did nothing<br/>         FFFFFFFFFFFFFFFFFFFFFFFF. (</p> | <p>H<br/>I<br/>J<br/>K<br/>L<br/>M<br/>N<br/>O<br/>P<br/>Q</p> |



|  |   |  |  |
|--|---|--|--|
|  | <p>you think are the most common reasons contributing to needle stick and other sharp injuries among health care workers in this facility?</p> <p><b>HHHHHHHHHHHHHHHHHH</b><br/> <b>Do not read list, circle all mentioned)</b><br/> <b>IIIIIIIIIIIIIIIIIIIIIIII</b><br/> <b>JJJJJJJJJJJJJJJJJJJJJJJ</b><br/> <b>KKKKKKKKKKKKKKKKKKKK</b><br/> <b>LLLLLLLLLLLLLLLLLLLLLL</b><br/> <b>MMMMMMMMMMMMMMMMMM</b></p> | <p>Patients<br/> OOOOOOOOOOOOOOOOOOOOOO<br/> Multiple procedures at the same time<br/> PPPPPPPPPPPPPPPPPPPPPPPP.<br/> xposure due to rushing of time<br/> QQQQQQQQQQQQQQQQQQQQQQ<br/> s a result of recapping of needle<br/> RRRRRRRRRRRRRRRRRRRRRRRR. (C<br/> arelessness of health care workers<br/> SSSSSSSSSSSSSSSSSSSSSSSSSS. Lack<br/> of knowledge on the Risk<br/> TTTTTTTTTTTTTTTTTTTTTTTTTT.<br/> eedle or device faulty/defective<br/> UUUUUUUUUUUUUUUUUUUUUU<br/> ew/ unfamiliar procedures<br/> VVVVVVVVVVVVVVVVVVVVVVVVVV<br/> ot enough training on the issue<br/> WWWWWWWWWWWWWWWWWWVV<br/> ot following correct protocol<br/> XXXXXXXXXXXXXXXXXXXXXXXXXX<br/> ther (specify)<br/> YYYYYYYYYYYYYYYYYYYYYYYYYY'</p> | <p>B<br/>C<br/>D<br/>E<br/>F<br/>G<br/>H<br/>I<br/>J</p> |
|  | <p>UUUUUUUUUUUUUUUUUUUU</p> <p>ave you been trained on how to report a needle stick injuries or other exposures in the last one year?</p>   | <p>VVVVVVVVVVVVVVVVVVVVVVVVV<br/> es<br/> WWWWWWWWWWWWWWWWWWVV<br/> o</p>  | <p>X<br/>Y</p>   |
|  | <p>BBBBBBBBBBBBBBBBBBBB</p> <p>s there a trained individual responsible for managing needle stick injuries or other exposures at all levels in this facility?</p>   | <p>CCCCCCCCCCCCCCCCCCCCCCC<br/> es<br/> DDDDDDDDDDDDDDDDDDDDDDDD<br/> o<br/> EEEEEEEEEEEEEEEEEEEEEEEEEE<br/> on't Know</p>   | <p>F<br/>G<br/>H</p>                                     |
|  | <p>MMMMMMMMMMMMMMMMMM</p> <p>ho is responsible for these needle stick injuries or exposures?<br/> <b>NNNNNNNNNNNNNNNNNN</b><br/> <b>One response)</b><br/> <b>OOOOOOOOOOOOOOOOOO</b></p>  | <p>PPPPPPPPPPPPPPPPPPPPPPPP<br/> ART head<br/> QQQQQQQQQQQQQQQQQQQQQQ<br/> Facility counselor<br/> RRRRRRRRRRRRRRRRRRRRRRRR<br/> Matron/head nurse<br/> SSSSSSSSSSSSSSSSSSSSSSSSSS.<br/> Facility head<br/> TTTTTTTTTTTTTTTTTTTTTTTTTT<br/> amed Individual<br/> UUUUUUUUUUUUUUUUUUUUUU<br/> o one is responsible<br/> VVVVVVVVVVVVVVVVVVVVVVVVVV<br/> ther(specify)</p>   | <p>X<br/>Y<br/>Z<br/>A<br/>B<br/>C<br/>D<br/>E<br/>F</p> |





**Section 3. Factors Associated with Acceptability and Preference for HIV Testing and Treatment after Occupational Exposure**

|  | UU. Question   | VV. Response   |  |
|--|--|--|--|
|  | ZZ. Have you ever tested yourself using rapid test kits?   | AAA. Yes<br>BBB. No  |  |
|  | HHH. Have you ever been informally tested by a colleague using rapid tests   | III. Yes<br>JJJ. No →  |  |
|  | QQQ. How many times in your life time have you been tested for HIV, including informal or self testing?<br>RRR. (if never tested enter 00) | SSS. -----times<br>TTT.  |  |
|  | BBBB. When the last time you were tested or self tested?   | CCCC. Less than 12 months ago<br>DDDD. 1 to 2 yrs<br>EEEE. > 2 yrs |  |
|  | LLLL. If a co-worker want to be tested for HIV, do you think he/she can get a confidential HIV test at this facility?                      | MMMM. Yes<br>NNNN. No<br>OOOO. No HIV test at this facility        |  |
|  | VVVV. Have you ever been tested because of your occupational exposure to HIV?  | WWWW. Yes<br>XXXX. No →  |  |

|  |   |  |          |
|--|---|--|----------|
|  | <p>EEEEEE. If yes, where did you get it?</p>  | <p>FFFFF. Own facility<br/> GGGGG. Private doctor<br/> HHHHH. From stand alone VCT center<br/> IIIII. Self tested<br/> By sending blood to own facility<br/> JJJJJ. Informal by colleague<br/> KKKKK. Other (specify)</p>                  |          |
|  | <p>WWWWW. Could HIV counseling and testing be done immediately after a needle stick injury or other exposure in this health facility?</p> | <p>XXXXX. Yes<br/> YYYYY. No<br/> ZZZZZ.</p>   | <p>→</p> |
|  | <p>HHHHHH. If yes, who provides HIV counseling and testing immediately after a needle stick injury or other exposure?</p>                 | <p>IIIII. Senior nurse<br/> JJJJJ. Facility counselor<br/> KKKKKK. Other(specify)<br/> LLLLLL. -----<br/> -----</p>  |          |
|  | <p>SSSSSS. Would you be voluntary to be tested for HIV if you encounter occupational exposure?</p>  | <p>TTTTTT. Yes<br/> UUUUUU. No</p>   | <p>→</p> |
|  | <p>CCCCCC. If yes, would you prefer it to be:</p>   | <p>DDDDDD. Formal by counselor<br/> EEEEEEE. Informal by a colleague<br/> FFFFFFF. Tested by yourself</p>  |          |
|  | <p>LLLLLLL. Where do you prefer to be tested?<br/> MMMMMMM.<br/> NNNNNNN.<br/> OOOOOOO.<br/> PPPPPPP.<br/> QQQQQQQ.<br/> RRRRRRR.</p>     | <p>SSSSSSS. Own facility<br/> TTTTTTT. Private doctor<br/> UUUUUUU. Stand alone VCT center<br/> VVVVVVV. Self tested<br/> WWWWWWW. By sending blood to own facility<br/> XXXXXXXX. Informal by colleague<br/> YYYYYYY. Other (specify)</p> |          |

|            |  |   |  |
|------------|--|---|--|
|            | <p>IIIIIII. What will be the most important consideration leading to this choice?</p>  | <p>JJJJJJJ. Convenient location<br/>       KKKKKKKK. Reliable results<br/>       LLLLLLLL. Confidential services<br/>       MMMMMMMM. Could get ART or referral for ART<br/>       NNNNNNNN. Would not be known by staff or other clients<br/>       OOOOOOOO. Other/specify<br/>       PPPPPPPP.</p> |  |
|            | <p>AAAAAAAAA. In your opinion, should staffs start PEP even if they are not willing to have an HIV test after occupational exposure?</p> | <p>BBBBBBBBB. Yes<br/>       CCCCCCCC. No<br/>       DDDDDDDDD.</p>   |  |
| <p>315</p> | <p>What are the most important reasons of health care workers for not being tested after occupational exposure?</p>                      | <p>Do not feel at Risk 1<br/>       Being afraid of results 2<br/>       Do not trust results 3<br/>       Need total confidentiality 4<br/>       No where convenient time 5<br/>       Other (specify) 96</p>   |  |

**Section 4. Perception and Practice of Health Care Workers  
on HIV Post-Exposure Prophylaxis**

|  | LLLLLLLLL. Question  | MMMMMMMMM. Response  | N                |
|--|--|--|------------------|
|  | RRRRRRRRR. Do you know the presence of prophylaxis to HIV after exposure to injury or blood and other body fluids? | SSSSSSSSS. Yes<br>TTTTTTTTT. No  | U<br>V           |
|  | ZZZZZZZZZ. Could you please describe it?   | AAAAAAAAAAA. -----<br>-----<br>BBBBBBBBBBB. -----<br>-----<br>CCCCCCCCCCC. -----<br>-----                              | D<br>E<br>F      |
|  | IIIIIIIII. Have you had any refresher training on HIV Post-exposure Prophylaxis (PEP)?                             | JJJJJJJJJ. Yes<br>KKKKKKKKK. No  | L<br>M           |
|  | QQQQQQQQQ. If you have had any pre-service or in-service training on PEP, when was that?<br>RRRRRRRRR.             | SSSSSSSSS. Past 01 year<br>TTTTTTTTT. Past 2-3 year<br>UUUUUUUUU. Before 3 years                                       | V<br>W<br>X      |
|  | BBBBBBBBBBB. Have you seen any written guidelines/ protocols for PEP in this facility?<br>CCCCCCCCCCC.             | DDDDDDDDDD. Yes<br>EEEEEEEEEEE. No<br>FFFFFFFFFFF. Don't Know  | G<br>H<br>I      |
|  | LLLLLLLLLLL. Have you seen any posters that remind for the availability of PEP in this facility?                   | MMMMMMMMMMM. Yes<br>NNNNNNNNNN. No<br>OOOOOOOOOO. Don't Know   | P<br>Q<br>R      |
|  | UUUUUUUUUU. Would you say that PEP is effective or not affective in protecting a health worker, who has had a      | VVVVVVVVVVV. Very effective<br>WWWWWWWWW. Some what effective<br>XXXXXXXXXXX. Not effective<br>YYYYYYYYYYY. Don't Know | Z<br>A<br>B<br>C |

|  |  |   |                                      |
|--|--|---|--------------------------------------|
|  | needle stick injury or any other exposure with an HIV positive patient?  |   | D                                    |
|  | JJJJJJJJJJ. Is PEP available for health care workers' use in this facility?  | KKKKKKKKKKKK. Yes, available here<br>LLLLLLLLLLLL. Yes, available elsewhere<br>MMMMMMMMMMMM. No, not available here or elsewhere<br>NNNNNNNNNNNN. Don't Know  | O<br>P<br>Q<br>R                     |
|  | YYYYYYYYYYYY. If available here, can all staffs have access to this PEP during usual working hours in this facility? | ZZZZZZZZZZZZ. Yes<br>AAAAAAAAAAAAAA. No   | B<br>C                               |
|  | GGGGGGGGGGGG. If yes, where do they get it?  | HHHHHHHHHHHH. In the ART OPD<br>IIIIIIIIIII. At ART pharmacy<br>JJJJJJJJJJJ. At VCT clinic<br>KKKKKKKKKKKK. At its own special room in the facility<br>LLLLLLLLLLLL. With other drugs and supplies<br>MMMMMMMMMMMM. At the special pharmacy<br>NNNNNNNNNNNN. I don't know where to get it<br>OOOOOOOOOOOO. Other( specify)<br>PPPPPPPPPPPP. | Q<br>R<br>S<br>T<br>U<br>V<br>W<br>X |
|  | AAAAAAAAAAAAAA. Can staffs have also access to PEP during weekends and out of working hours?                         | BBBBBBBBBBBBBB. Yes<br>CCCCCCCCCCCCCC. No<br>DDDDDDDDDDDDD. Don't Know  | E<br>F<br>G                          |
|  | NNNNNNNNNNNNNN. If yes, where do they get it?  | OOOOOOOOOOOO. In the ART OPD<br>PPPPPPPPPPPPPP. At ART pharmacy   | V<br>W<br>X<br>Y                     |

|  |   |   |   |
|--|---|---|---|
|  |   | <p>QQQQQQQQQQQQQQQ. At VCT clinic</p> <p>RRRRRRRRRRRRRRR. At its own special room in the facility</p> <p>SSSSSSSSSSSSSSS. With other drugs and supplies</p> <p>TTTTTTTTTTTTTTT. At the special pharmacy</p> <p>UUUUUUUUUUUUUUU. Other( specify)</p> | <p>ZZ</p> <p>AA</p> <p>BB</p> <p>CC</p>                               |
|  | <p>FFFFFFFFFFFFFFFFF. Is there a PEP focal person in this facility?</p>   | <p>GGGGGGGGGGGGGGG. Yes</p> <p>HHHHHHHHHHHHHHH. No</p> <p>IIIIIIIIIIIIIIII. Don't Know</p>  | <p>JJ</p> <p>KK</p> <p>LL</p>   |
|  | <p>QQQQQQQQQQQQQQQ. Who is responsible for providing PEP at this facility?</p>  | <p>RRRRRRRRRRRRRRR. The VCT Counselor</p> <p>SSSSSSSSSSSSSSS. ART OPD health worker</p> <p>TTTTTTTTTTTTTTT. Pharm acy personnel</p> <p>UUUUUUUUUUUUUUU. A person in charge/named individual</p> <p>VVVVVVVVVVVVVVVV. Other( specify)</p>            | <p>WW</p> <p>XX</p> <p>YY</p> <p>ZZ</p> <p>AA</p> <p>BB</p> <p>CC</p> |
|  | <p>FFFFFFFFFFFFFFFFF. If PEP is not available here, where should staffs go to get it?</p>                                 | <p>GGGGGGGGGGGGGGG. Nearby Hospital</p> <p>HHHHHHHHHHHHHHH. With their own choice</p> <p>IIIIIIIIIIIIIIII. Other( specify)</p> <p>JJJJJJJJJJJJJJJJ. Don't Know</p>  | <p>KK</p> <p>LL</p> <p>MM</p> <p>NN</p> <p>OO</p>                     |
|  | <p>RRRRRRRRRRRRRRR. How many times have you taken PEP yourself?<br/> SSSSSSSSSSSSSSS. (Fill in OO if never taken PEP)</p> | <p>TTTTTTTTTTTTTTTTT. ----- times</p>   | <p>UU</p>   |
|  | <p>XXXXXXXXXXXXXXXXX. If you receive PEP, how long after the injury should you start the first PEP?</p>                   | <p>YYYYYYYYYYYYYYYYY. 1 hour or less</p> <p>ZZZZZZZZZZZZZZZZ. b/n 1-24 hours</p> <p>AAAAAAAAAAAAAAAAAAA. b/n 1-3 days</p> <p>BBBBBBBBBBBBBBBBBB. more than 3 days</p> <p>Don't Know</p>   | <p>CC</p> <p>DD</p> <p>EE</p> <p>FF</p> <p>GG</p>                     |

|  |  |   |  |
|--|--|---|--|
|  | <p>JJJJJJJJJJJJJJJJJJ. If you receive PEP, for how long will you take the PEP tablets?</p>   | <p>KKKKKKKKKKKKKKKKKKKK. I<br/> less than 1 week<br/> LLLLLLLLLLLLLLLLLLLL. 4<br/> weeks<br/> MMMMMMMMMMMMMMMMMMMM. More than 4 weeks<br/> NNNNNNNNNNNNNNNNNNNN.<br/> Don't Know</p>  | <p>O<br/>P<br/>Q<br/>R</p>                               |
|  | <p>UUUUUUUUUUUUUUUUUUU<br/> What do you think is the reason for health care workers who discontinued taking PEP?<br/> VVVVVVVVVVVVVVVVVVV.</p>   | <p>WWWWWWWWWWWWWWWWWW. Source patient turned to be HIV<br/> -ve<br/> XXXXXXXXXXXXXXXXXXXXX. Because of adverse effects of drugs<br/> YYYYYYYYYYYYYYYYYYYY. Because risk is low<br/> ZZZZZZZZZZZZZZZZZZZ. Others / specify/<br/> AAAAAAAAAAAAAAAAAAAAA.</p>  | <p>B<br/>C<br/>D<br/>E</p>                               |
|  | <p>HHHHHHHHHHHHHHHHHHH<br/> What in your view would be the most successful way of increasing PEP up take at this facility?<br/> IIIIIIIIIIIIIIII. (Do not read list, circle all mentioned)</p> | <p>JJJJJJJJJJJJJJJJJJJ. Have a counselor available<br/> KKKKKKKKKKKKKKKKKKKK. Have some one to report the injury<br/> LLLLLLLLLLLLLLLLLLLLL. Have PEP starter packs at the facility<br/> Allow staffs to start ART w/o an HIV test<br/> MMMMMMMMMMMMMMMMMMMMM. Provide private way to have an HIV test<br/> NNNNNNNNNNNNNNNNNNNN. Cover all costs<br/> OOOOOOOOOOOOOOOOOOO. Provide more training for staff<br/> PPPPPPPPPPPPPPPPPPP.<br/> QQQQQQQQQQQQQQQQQQQ. Other( specify)<br/> RRRRRRRRRRRRRRRRRRR.</p> | <p>S<br/>T<br/>U<br/>V<br/>W<br/>X<br/>Y<br/>Z<br/>A</p> |

**11.7. Annex VI. Individual Quantitative Survey Questionnaire:  
Amharic Version**

**የጤና ሰራተኞች ከሰራ ጋር የተያያዘ የኤች አይ.ቪ መጋለጥና በድንገተኛ ሁኔታ በተከሰተ የኤች አይ.ቪ መጋለጥ ስለሚሰጥ ህክምና የሚደረግ ጥናት**

**የመጠይቁ መለያ (Identification)**

| ተ.ቁ | ጥያቄ | መልስ | የመልስ ኮድ | ወደ ተ.ቁ. |
|-----|-----|-----|---------|---------|
|-----|-----|-----|---------|---------|

|     |                      |  |  |  |
|-----|----------------------|--|--|--|
| 001 | የመረጃው መሰብሰቢያ ቀን      | -----ቀን/ ወር/ አ.ም   |  |  |
| 002 | የመጠይቁ ቁጥር            | -----  |  |  |
| 003 | የጠያቂው ኮድ             | -----  |  |  |
| 004 | የጤና ድርጅቱ ስም          | -----  |  |  |
| 005 | የጤና ድርጅቱ ኮድ          | -----  |  |  |
| 006 | የጤና ድርጅቱ ደረጃ         | ማዕከላዊ/ስፔሻላይዝድ ሆስፒታል 1<br>የክልል/የዞን ሆስፒታል 2<br>የግል ሆስፒታል 3<br>ጤና ጣቢያ 4<br>ሌላ /ይገለፅ/ 96 |  |  |
| 007 | የጤና ድርጅቱ አይነት /ባለቤት/ | የመንግስት 1<br>የግል 2<br>የሃይማኖት ድርጅት(FBOs) 3<br>መንግስታዊ ያልሆነ ድርጅት(NGOs) 4<br>ሌላ /ይገለፅ 96  |  |  |

**ክፍል አንድ: መሰረታዊ መረጃ (Background Information)**

| ተ.ቁ | ጥያቄ          | መልስ  | የመልስ ኮድ | ወደ ተ.ቁ. |
|-----|--------------|--|---------|---------|
| 101 | ፆታ           | <div style="text-align: right;">ወንድ 1</div> <div style="text-align: right;">ሴት 2</div> |         |         |
| 102 | እድሜዎ ሰንት ነው? | -----አመት   |         |         |

|     |  |   |   |  |
|-----|--|---|---|--|
| 103 | ዋና ስራዎ ምንድን ነው?<br>የያዙት ሙያ ምንድን ነው?<br>(አንዱን ብቻ ይምረጡ)                            | ስፔሻሊስት / ሬዲደንት/ጠቅላላ ሃኪም<br>ነርስ<br>የጤና ረዳት / መለስተኛ ነርስ<br>አዋላጅ ነርስ<br>ላብራቶሪ ቴክኒሻያን<br>ፋርማሲስት / ፋርማሲ ቴክኒሻያን<br>ጤና ተቆጣጣሪ (Environmental HW)<br>የዕዳት ሰራተኛ<br>የላውንደሪ ሰራተኛ<br>የላብራቶሪ ረዳት<br>ሌላ (ይገለፅ) | 1<br>2<br>3<br>4<br>5<br>6<br>7<br>8<br>9<br>10<br>96 |  |
| 104 | የ ት/ት ደረጃዎ ምንድን ነው?  | ማንበብና መጻፍ የሚችል<br>ማንበብና መጻፍ የሚችል<br>ከ 1 — 8 ኛ ክፍል<br>ከ 9 — 12 ኛ ክፍል<br>12+ 1 / 12+ 2<br>12 +3 / 12 +4<br>12 +6 እና ከዚያ በላይ   | 1<br>2<br>3<br>4<br>5<br>6<br>7                       |  |
| 105 | ሃይማኖትዎ ምንድን ነው?<br>(አንድ መልስ ብቻ ይስጡ)  | ኦርቶዶክስ ክርስቲያን<br>ካቶሊክ<br>ፕሮቴስታንት<br>እስልምና<br>ሌላ(ይገለፅ)   | 1<br>2<br>3<br>4<br>96                                |  |
| 106 | የትዳር ሁኔታዎ እንዴት ነው?<br>(አንድ መልስ ብቻ ይስጡ)   | ፊደላዊ ያላገቡ<br>በትዳር ላይ ያሉ<br>የትዳር ንደኛ የሞቱባቸው<br>ተለያይተው ያሉ<br>የተፋቱ   | 1<br>2<br>3<br>4<br>5                                 |  |
| 107 | ከተመረቁ / ስራ ከተመደቡ ጀምሮ ያለዎት<br>የአገልግሎት ዘመን ስንት ነው?                                 | -----ዓመት  |   |  |
| 108 | አሁን በያዙት የሙያ ደረጃ ለምን ያህል ጊዜ<br>አገለገሉ?  | -----ዓመት  |   |  |
| 109 | በዚህ ጤና ድርጅት ውስጥ በቀን በአማካኝ<br>ምን ያህል በሽተኞችን ያስተናግዳሉ?                              | -----በሽተኛ<br>(ምንም የማያስተናግዱ ከሆነ 00 ይሞላ)  |   |  |
| 110 | በሚሰሩበት/በዚህ ጤና ድርጅት ውስጥ በማታ<br>ተረኝነት ተመድበው ይሰራሉ?                                  | አለ<br>የለም   | 1<br>2  |  |
| 111 | በሚሰሩበት/በዚህ ጤና ድርጅት ውስጥ<br>በላምንት በአማካኝ ምን ያህል ሰአት<br>ይሰራሉ(የበአል ቀናትና የተረኝነትን ጨምሮ)? | -----ሰአት  |   |  |

| ተ.ቁ | ጥያቄ  | መልስ   | የመልስ ኮድ           | ወደ ተ. ቁ.       |
|-----|--|---|-------------------|----------------|
| 201 | በእርስዎ አመለካከት፣ ለኤች አይቪ የመጋለጥ እድል አለኝ ብለው ያስባሉ?  | አዎ<br>አይደለም   | 1<br>2            | → 204          |
| 202 | ይበልጥ ለኤች አይቪ የሚጋለጡበት ቦታ የትኛው ነው? በስራ ቦታ ወይስ ከስራ ቦታ ውጭ? (አንድ መልስ ብቻ ይከበብ)                             | ከስራ ቦታ ውጭ<br>በስራ ቦታ<br>በሁለቱም ቦታዎች ተመሳሳይ ነው<br>አላውቅም | 1<br>2<br>3<br>88 |                |
| 203 | ለኤች አይቪ ኤድስ የመጋለጥዎን ደረጃ እንዴት ይገልፁታል?   | ከፍተኛ ተጋላጭነት<br>ዝቅተኛ ተጋላጭነት<br>ምንም ተጋላጭነት የለኝም       | 1<br>2<br>3       |                |
| 204 | በዚህ ጤና ድርጅት ውስጥ በሚከተሉት ሁኔታዎች ላይ የሚያተኩሩ ዕሑፎች /መረጃዎች ለባለሙያዎች ይገኛሉ? (የተዘረዘሩትን ካነበቡ በኋላ ትክክለኛውን ያክብቡ)    |   |                   |                |
|     | 204.1 መርፌን በጥንቃቄ መውጋት (Safe injections)?   | አለ<br>የለም<br>አላውቅም                                  | 1<br>2<br>88      |                |
|     | 204.2 ብክለት መከላከልና አጠቃላይ ጥንቃቄ (Universal precautions)?  | አለ<br>የለም<br>አላውቅም                                  | 1<br>2<br>88      |                |
|     | 204.3 ከድንገተኛ ኤች አይ ቪ መጋለጥ በኋላ ስለሚሰጥ ህክምና (HIV Post-exposure prophylaxis)?                            | አለ<br>የለም<br>አላውቅም                                  | 1<br>2<br>88      |                |
|     | 204.4. በስራ ቦታ ኤች አይቪ ኤድስን መከላከል (HIV prevention for staff)?  | አለ<br>የለም<br>አላውቅም                                  | 1<br>2<br>88      |                |
|     | 204.5. በስራ ቦታ ምክንያት በኤች አይቪ ለተያዙ የጤና ሰራተኞች ማካካሻ (compensation for HIV seroconversion at work place)? | አለ<br>የለም<br>አላውቅም                                  | 1<br>2<br>88      |                |
| 205 | በዚህ ጤና ድርጅት ውስጥ ስለ ስራ ቦታ ኤች አይቪ ኤድስ ፖሊሲ በተመለከተ ከሰራተኛው ጋር ወይይት ተደርጎ ያወቃል?                             | አዎ<br>የለም<br>አላውቅም                                  | 1<br>2<br>88      | → 207<br>→ 207 |
| 206 | ባለፈው አንድ አመት ውስጥ በዚህ ጤና ድርጅት ውስጥ ስለ ስራ ቦታ ኤች አይቪ ኤድስ ፖሊሲ በተመለከተ ከሰራተኛው ጋር ወይይት ተደርጎ ያወቃል?            | አዎ<br>የለም<br>አላውቅም                                  | 1<br>2<br>88      |                |
| 207 | ስለ ብክለት መከላከል ወይም አጠቃላይ ጥንቃቄዎች ስልጠና ተካፍለው ያውቃሉን?   | አዎ<br>የለም   | 1<br>2            | → 209          |

|     |  |   |                                       |  |
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| 208 | ስለ ብክለት መከላከል ወይም አጠቃላይ ጥንቃቄዎች ባለፈው አንድ አመት ውስጥ ስልጠና ተካፍለው ያውቃሉን?                                      | አዎ<br>የለም   | 1<br>2                                |  |
| 209 | በስራ ቦታዎ ላይ የብክለት መከላከል ስርዓትን ተግባራዊ ያደርጋሉ? በስራ ላይ እያሉ ከበሽታ አምጪ ተህዋስ፣ ከብክለት ወይም አደጋ የሚከላከሉ ቁሳቁሶችን ይለብላሉ? | አዎ ሁልጊዜ አደርጋለሁ<br>አዎ አንዳንድ ጊዜ አደርጋለሁ<br>አላደርግም  | 1<br>2 → 211<br>3 → 211               |  |
| 210 | የትኞቹን መከላከያ ለብሰው ያውቃሉ?<br>(ዝርዝርን አያንብቡ፣ የተባለውን ያክብቡ)   | አፕሮን (የፕላስቲክ)<br>የዕዳት ጓንት<br>የምርመራ ጓንት<br>የራስ ሽፋን (ሻሽ)<br>እግርን የሚሸፍን ጫማ (ቦቲ)<br>የአይን መከላከያ መነፅር<br>ጋዋን<br>ሌላ (ይገለፅ) | 1<br>2<br>3<br>4<br>5<br>6<br>7<br>96 |  |
| 211 | ለተራ ቁጥር 209 መልስዎ 2 ወይም 3 ከሆነ ለምን?  | ለብሶ መስራት አስቸጋሪ ስለሆነ<br>ሁልጊዜ አስፈላጊ ስላልሆነ<br>ጤና ድርጅታችን ውስጥ ስላለቀ<br>ጤና ድርጅታችን ውስጥ ስለሌለ<br>ሌላ (ይገለፅ)                    | 1<br>2<br>3<br>4<br>96                |  |
| 212 | የእጅ ጓንት የሚለብሱት መቼ ነው?<br>(ዝርዝርን አያንብቡ፣ የተባለውን ያክብቡ)  | ለሁሉም ህመማን ለሁሉም እንክብካቤ<br>በኤች አይ ቪ ለሚጠረጠሩ ህመማን ብቻ<br>ኤች አይ ቪ ለተገኘባቸው ብቻ<br>ሌላ (ይገለፅ )                                | 1<br>2<br>3<br>96                     |  |
| 213 | (ለድጋፍ ሰጪ የጤና ሰራተኞች) የቆሽሹ አንሳላዎች እና ጨርቆች በጤና ድርጅትዎ በምን መንገድ ይታጠባሉ?                                      | የልብስ ማዕጃ ማሽን በመጠቀም<br>በእጅ በማጠብ<br>በሁለቱም መንገድ<br>ሌላ (ይገለፅ)   | 1<br>2<br>3<br>96                     |  |
| 214 | በስራ ቦታዎ ላይ ከሚከተሉት የሰውነት ፈሳሾች ውስጥ ንክኪ ኖሮዎት ያውቃል?  |   |                                       |  |
|     | 214.1. ደም<br>(Blood)   | አዎ<br>አያውቅም   | 1<br>2                                |  |
|     | 214.2. በማዋለድ ወቅት የሚያጋጥም ፈሳሽ<br>(Amniotic fluid)  | አዎ<br>አያውቅም   | 1<br>2                                |  |
|     | 214.3. ሲኤስ ኤፍ<br>(CSF)   | አዎ<br>አያውቅም   | 1<br>2                                |  |
|     | 214.4. የጡት ፈሳሽ<br>(Breast Milk)  | አዎ<br>አያውቅም   | 1<br>2                                |  |
|     | 214.5. ፔሪ ካርዲያል ፈሳሽ<br>(Pericardial fluid)   | አዎ<br>አያውቅም   | 1<br>2                                |  |

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|  | 214.6. ፔሪ ቶኒያል ፈሳሽ<br>(Peritoneal fluid) | አዎ    | 1 |  |
|  |  | አያውቅም | 2 |  |
|  | 214.7. ፕሊውራል ፈሳሽ<br>(Pleural fluid)      | አዎ    | 1 |  |
|  |  | አያውቅም | 2 |  |

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|     | 214.8. ሳይኖቭያል ፈሳሽ<br>(Synovial fluid)                                     | አዎ   | 1                   |     |
|     |   | አያውቅም  | 2                   |     |
|     | 214.9. የቃጠሎ ወይም የሌላ ቁስል ፈሳሽ(Exudative fluids from burns or skin lesions ) | አዎ   | 1                   |     |
|     |   | አያውቅም  | 2                   |     |
|     | 214.10. ሴሚናል/ቫጅናል ፈሳሽ<br>(Seminal/ vaginal fluid)                         | አዎ   | 1                   |     |
|     |   | አያውቅም  | 2                   |     |
|     | 214.11. ሽንት<br>(Urine)  | አዎ   | 1                   |     |
|     |   | አያውቅም  | 2                   |     |
| 215 | በቆሽሽ መርፌና ስለታማ ነገሮች ኤች አይ ቪ ሊተላለፍ ይችላል ብለው ያስባሉ?<br>(ለድጋፍ ሰጭ ሰራተኞች ብቻ)    | ይተላለፋል<br>አይተላለፍም<br>አላውቅም                                     | 1<br>2<br>88        |     |
| 216 | በስራ ዘመንዎ በመርፌ ወይም በስለታማ ነገሮች አደጋ ደርሶብዎት ያውቃል?                             | አዎ<br>አልደረሰም   | 1<br>2 →            | 222 |
| 217 | አጋጥሞዎ ከነበረ ስንት ጊዜ ነው?   | አንድ ጊዜ<br>ሁለት ጊዜ<br>ከሁለት ጊዜ በላይ                                | 1<br>2<br>3         |     |
| 218 | ባለፈው አንድ አመት ውስጥ በመርፌ ወይም በስለታማ ነገር አደጋ ደርሶብዎት ያውቃል?                      | አዎ<br>አልደረሰብኝም   | 1<br>2 →            | 222 |
| 219 | አጋጥሞዎ ከነበረ ስንት ጊዜ ነው?   | አንድ ጊዜ<br>ሁለት ጊዜ<br>ከሁለት ጊዜ በላይ (ቁጥሩ ይገለፅ)                     | 1<br>2<br>3 (-----) |     |
| 220 | የቅርቡ አደጋ እንዴት ነበር የደረሰብዎት? (አንዱን ብቻ ያክብቡ)                                 | የመርፌውን ክዳን ሲያለብሱ ድንገት በሽተኛው ሲንቀሳቀስ ስለታማ ነገሮችን ሲያስወግዱ ሌላ (ይገለፅ) | 1<br>2<br>3<br>96   |     |

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|-----|--|--|---|-----|
| 221 | በስለታማ ነገሮች ከተወጡ በኋላ ምን እርምጃ ወሰዱ?<br>(ዝርዝርን አያንብቡ የተጠቀሰው ይክቡ) | <p>በሳሙና እና በውሃ ማጠብ 1</p> <p>በአልኮል በአዮዲን ወይም በበረኪና ማጠብ 2</p> <p>የሚፈሰውን ደም ለማቆም በመጫን መሞከር 3</p> <p>ደም እንዲፈስ መጭመቅ 4</p> <p>የመንጋጋ ቆልፍ መከላከያ መውሰድ 5</p> <p>የኤች አይ ቪ ምርመራ ማድረግ 6</p> <p>ለአደጋ ከተጋለጡ በኋላ የሚወሰድ መከላከያ መድሃኒት መውሰድ 7</p> <p>ለአለቃዎ ሪፖርት ማድረግ 8</p> <p>ምንም አላደረሱም 9</p> <p>ሌላ (ይገለፅ) 96</p> | 1<br>2<br>3<br>4<br>5<br>6<br>7<br>8<br>9<br>96 |     |
| 222 | በአይንዎ ወይም በአፍዎ ውስጥ ደም ወይም የሰው አካል ፈሳሽ ተረጭቶብዎት ያውቃል?          | <p>አዎ 1</p> <p>አልተረጨብኝም 2</p>  | 1<br>2  | 225 |

|     |  |  |   |  |
|-----|--|--|---|--|
| 223 | ባለፈው አንድ አመት ውስጥ በአይንዎ ወይም በአፍዎ ውስጥ ደም ወይም የሰው አካል ፈሳሽ ተረጭቶብዎት ያውቃል?   | <p>አዎ 1</p> <p>አልተረጨብኝም 2</p> <p>አላስታውስም 88</p>  | 1<br>2<br>88  |  |
| 224 | ደም ወይም የሰው አካል ፈሳሽ ከተረጨብዎ በኋላ ምን እርምጃ ወሰዱ?<br>(ዝርዝርን አያንብቡ የተጠቀሰው ይክቡ)   | <p>በሳሙና እና በውሃ ማጠብ 1</p> <p>በአልኮል በአዮዲን ወይም በበረኪና ማጠብ 2</p> <p>የመንጋጋ ቆልፍ መከላከያ መውሰድ 3</p> <p>የኤች አይ ቪ ምርመራ ማድረግ 4</p> <p>ለአደጋ ከተጋለጡ በኋላ የሚወሰድ መከላከያ መድሃኒት መውሰድ 5</p> <p>ለአለቃዎ ሪፖርት ማድረግ 6</p> <p>ምንም አላደረሱም 7</p> <p>ሌላ (ይገለፅ) 96</p>  | 1<br>2<br>3<br>4<br>5<br>6<br>7<br>96                 |  |
| 225 | የጤና ሰራተኞች ለኤች አይ ቪ በሚያጋልጡ ስለታማ ነገሮች እንዲወጡ ወይም ሌላ የሰውነት ፈሳሽ ጋር እንዲነካኩ የሚያደርጓቸው ምክንያቶች ምንድን ናቸው?<br>(ዝርዝርን አያንብቡ የተጠቀሰው ይክቡ) | <p>አስቸጋሪ በሽተኛ ሲያጋጥም 1</p> <p>ብዙ ስራ በአንድ ጊዜ ተጠጋግቶ ሲሰራ 2</p> <p>በሰዓት እጥረት ምክንያት በችኮላ ስራ ሲሰራ 3</p> <p>የመርፌ ክዳን በሚለበስበት ጊዜ 4</p> <p>የጤና ሰራተኞች በግድየለሽነት ስራ ሲሰሩ 5</p> <p>ስለ ኤች አይ ቪ መጋለጥ እውቀት አለመኖሩ 6</p> <p>የመርፌው/መሳሪያው ችግር 7</p> <p>አዳዲስ ስራዎች (procedures) 8</p> <p>በጉዳዩ ዙሪያ በቂ ስልጠና አለመኖር 9</p> <p>መመሪያ አለመከተል 10</p> <p>ሌላ (ይገለፅ) 96</p> | 1<br>2<br>3<br>4<br>5<br>6<br>7<br>8<br>9<br>10<br>96 |  |

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| 226 | በስራ ቦታ ስለሚያጋጥም የመርፌና ሌሎች ስለታም ነገሮች መውጋት እንዲሁም በሌሎች ፈሳሾች መረጫትን ሪፖርት አደራረግን አስመልክቶ ባለፈው አንድ አመት ውስጥ ስልጠና ወስደዋል? | አዎ<br>አልወሰድኩም   | 1<br>2                                 |  |
| 227 | በዚህ ጤና ድርጅት ውስጥ በመርፌ እና በስለታም ነገሮች መውጋት ወይም ደም /ሌላ ፈሳሽ መረጫት ሲያጋጥም ሪፖርት የሚደረግለት የሰለጠነ ግለሰብ አለ?                 | አዎ<br>የለም<br>አላውቅም  | 1<br>2 → 229<br>88 → 229               |  |
| 228 | የሚመለከተው ግለሰብ ማነው?   | ፀረ ኤች አይ ቪ መድሃኒት ክፍል ሀላፊ<br>የኤች አይ ቪ ምርመራ ባለሙያ(ካወ.ንስለር)<br>ሜትረን/ሃላፊ ነርስ<br>የጤና ድርጅቱ ሃላፊ<br>ለዚህ ፕሮግራም የተመደበ ግለሰብ<br>የሚመለከተው ግለሰብ የለም<br>ሌላ (ይገለፅ)<br>አላውቅም | 1<br>2<br>3<br>4<br>5<br>6<br>96<br>88 |  |

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| 229 | ለወደፊቱ በስራ አጋጣሚ ደም ወይንም ሌላ ፈሳሽ ከተረጨብዎ ወይንም በስለታም ነገሮች ከተወጡ ወዲያውኑ ሪፖርት ያደርጋሉ?                              | አዎ<br>አላደርግም   | 1<br>2 → 231                     |  |
| 230 | ሪፖርት የሚያደርጉ ከሆነ የት ነው የሚያደርጉት?<br>(አንዱን ብቻ ይምረጡ)   | ፀረ ኤች አይ ቪ መድሃኒት ክፍል<br>ድንገተኛ ክፍል<br>ለሚመለከተው ባለሙያ<br>የት ሪፖርት እንደሚደረግ አላውቅም<br>ሌላ ይገለፅ  | 1<br>2<br>3<br>4<br>96           |  |
| 231 | ባለፈው አንድ አመት ውስጥ ሪፖርት ለማድረግ ያልወሰኑበት በመርፌ ምክንያት ያጋጠመዎት አደጋ አለ?  | አዎ<br>የለም  | 1<br>2 → 233                     |  |
| 232 | ሪፖርት ያላደረጉ ከሆነ ለምን?  | ለነገሩ ትኩረት አልሰጠውም<br>ኤች አይ ቪ ይይዘኛል ብዬ አላስብም<br>በሽተኛው ኤች አይ ቪ ላይኖርበት ይችላል<br>ሌላ (ይገለፅ)   | 1<br>2<br>3<br>96                |  |
| 233 | በአርስዎ አመለካከት የጤና ሰራተኞች ለኤች አይ ቪ በሚያጋልጡ ስለታማ ነገሮች ሲወጡ/ ደም ወይንም ሌላ ፈሳሽ ሲረጨባቸው ሪፖርት የማያደርጉበት ምክንያት ምንድን ነው? | አደጋው ቀላል ከሆነ<br>Low risk patient<br>መሳሪያዎች ንፁህ ወይም አዲስ ከሆኑ<br>የኤች አይ ቪ ምርመራ ባለሙያ(ካወ.ንስለር) ከሌለ<br>ብዙ ጊዜ ስለሚወስድ<br>ምን እንደሚደረግ ባለማወቅ<br>ሌላ (ይገለፅ) | 1<br>2<br>3<br>4<br>5<br>6<br>96 |  |

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| 234 | በዚህ ጤና ድርጅት ውስጥ በጣም የተለመዱት የኤች አይ ቪ ኤድስ መጋለጥ ሁኔታዎች የትኞቹ ናቸው?                        | <p>ከደም ጋር ንክኪ መኖር</p> <p>በመርፌ መውጋት</p> <p>በስለታም ነገሮች መቆረጥ</p> <p>ሌላ ፈሳሽ ነገር በአፍ እና በአይን መረጨት</p> <p>ሌላ (ይገለፅ)</p>                                   | <p>1</p> <p>2</p> <p>3</p> <p>4</p> <p>96</p>                            |  |
| 235 | ከስራ ጋር ለኤች አይ ቪ ኤድስ መጋለጥ የሚበዛባቸው የስራ ክፍሎች የትኞቹ ናቸው?<br>(ዝርዝር አይነብብ፣ የተጠቀሰው ብቻ ይክብብ) | <p>ድንገተኛ ክፍል</p> <p>የአፕራሲዮን ክፍል</p> <p>የማዋለጃ ክፍል</p> <p>የበሽተኞች መኝታ ክፍል</p> <p>የተመላላሽ ህክምና ክፍል</p> <p>የላብራቶሪ ክፍል</p> <p>መርፌ ክፍል</p> <p>ሌላ (ይገለፅ)</p> | <p>1</p> <p>2</p> <p>3</p> <p>4</p> <p>5</p> <p>6</p> <p>7</p> <p>96</p> |  |

**ክፍል ሶስት፡ በድንገተኛ ሁኔታ ለተከሰተ የኤች አይ ቪ መጋለጥ የሚደረግ ምርመራን አስመልክቶ የሚወስኑ ሁኔታዎችን በተመለከተ**

| ተ.ቁ | ጥያቄ  | መልስ   | የመልስ ክድ     | ወደ ጥ.ቁ. |
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| 301 | ከዚህ ቀደም በፈጣን የኤች አይ ቪ መመርመሪያ (Rapid HIV Test) ራስዎን መርምረዋል?                       | አዎ<br>አይደለም   | 1<br>2      |         |
| 302 | ከዚህ ቀደም በፈጣን የኤች አይ ቪ መመርመሪያ (Rapid HIV Test) በጓደኛዎ ተመርምረዋል?                     | አዎ<br>አይደለም   | 1<br>2 →    | 305     |
| 303 | በህይወትዎ ለምን ያህል ጊዜ የኤች አይ ቪ የደም ምርመራ አድርገዋል? (አራስዎትን የመረመሩትንና በጓደኛዎ የተመረመሩትን ጨምሮ) | -----ጊዜ<br>(ፈፅሞ ካልተመረመሩ 00 ዓፉ)                                  |             |         |
| 304 | ለመጨረሻ ጊዜ የደም ምርመራ ያደረጉት መቼ ነበር?  | <p>ከአንድ ዓመት ወዲህ</p> <p>ከአንድ እስከ ሁለት ዓመት</p> <p>ከሁለት ዓመት በፊት</p> | 1<br>2<br>3 |         |

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| 305 | ረዳት ሰራተኞችህ የኤች አይ ቪ የደም ምርመራ ለማድረግ ቢያስቡ በዚህ ተቋም ውስጥ ሚስጥራዊ በሆነ መልኩ የኤች አይ ቪ የደም ምርመራ ማድረግ ይችላሉ? (አንድ መልስ ላይ ብቻ ይከበብ) | የደም ምርመራ በዚህ ተቋም ውስጥ የለም  | አዎ<br>አይቻልም<br>3                 | 1<br>2<br>3 |     |
| 306 | በድንገተኛ ሁኔታ በተከሰተ የኤች አይ ቪ መጋለጥ ምክንያት ተመርምረው ያውቃሉ?   |   | አዎ<br>አላውቅም                      | 1<br>2 →    | 308 |
| 307 | ምርመራውን ያደረጉት የት ነው?   | የራሳችን ተቋም ውስጥ በግል ሐኪም በፍቃደኝነት የተመሰረተ የኤች አይ ቪ ምርመራ ማዕከል ለእራሴ ኤች አይ ቪ ምርመራ በማድረግ ደሜን በተቋማችን ወደሚገኘው ላብራቶሪ በመላክ በጓደኛ መመርመር ሌላ (ይገለፅ) | 1<br>2<br>3<br>4<br>5<br>6<br>96 | 1<br>2      |     |
| 308 | በዚህ ጤና ድርጅት ውስጥ በመርፌ እና በስለታም ነገሮች መወጋት ወይም ደም /ሌላ ፈሳሽ መረጨት ሲያጋጥም የኤች አይ ቪ የደም ምርመራ ወዲያውኑ ይካሄዳል?                    |   | አዎ<br>አይካሄድም                     | 1<br>2 →    | 310 |

|     |   |  |              |             |     |
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| 309 | የኤች አይ ቪ የደም ምርመራ የሚካሄድ ከሆነ የሚያካሂደው ማን ነው?                        | ልምድ ያለው ባለሙያ የኤች አይ ቪ ምርመራ ባለሙያ(ካወ.ንስለር) ሌላ (ይገለፅ)                     | 1<br>2<br>96 | 1<br>2      |     |
| 310 | በድንገተኛ ሁኔታ ለ ኤች አይ ቪ በ ስራ ሁኔታ ቢጋለጡ የ ኤች አይ ቪ ምርመራ ለማድረግ ፈቃደኛ ነዎት? |  | አዎ<br>አይደለም  | 1<br>2 →    | 314 |
| 311 | ለመመርመር ፈቃደኛ ከሆኑ ምርመራው እንዴት ቢሆን ይመርጣሉ?                             | ህጋዊ በሆነ መንገድ በምርመራ ባለሙያ ሳይታወቅ በጓደኛ በኩል በፈጣን ኤች አይ ቪ መመርመሪያ ራሴን እመረምራለሁ | 1<br>2<br>3  | 1<br>2<br>3 |     |

|     |  |   |                                  |  |
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| 312 | በድንገተኛ ሁኔታ የኤች አይ ቪ መጋለጥ ቢያጋጥምም ምርመራው የት ቢሆን ይመርጣል?  | የራሳችን ተቋም ውስጥ በግል ሐኪም በፍቃደኝነት የተመሰረተ የኤች አይ ቪ ምርመራ ማዕከል ለአራሴ ኤች አይ ቪ ምርመራ በማድረግ ደሜን በተቋማችን ወደሚገኘው ላብራቶሪ በመላክ በጓደኛ መመርመር ሌላ (ይገለፅ) | 1<br>2<br>3<br>4<br>5<br>6<br>96 |  |
| 313 | ይህንን ምርጫ እንዲያደርጉ በጣም አስፈላጊ የሆነው ምክንያት ምንድን ነው?   | አመቺ ቦታ ስለሚገኝ አስተማማኝ ወጤት ሚስጥር ስለሚጠበቅ የፀረ ኤች አይ ቪ መድሃኒት ስለሚገኝ ወይም ራፊናል ስለሚሳፍ ሌላ (ይገለፅ)  | 1<br>2<br>3<br>4<br>96           |  |
| 314 | በእርስዎ አመለካከት የጤና ሰራተኞች በድንገተኛ ሁኔታ የኤች አይ ቪ መጋለጥ ቢያጋጥማቸው ና ለመመርመር ፈቃደኛ ካልሆኑ መድሃኒቱን መጀመር አለባቸው ? | አዎ የለባቸውም   | 1<br>2                           |  |
| 315 | በእርስዎ አመለካከት የጤና ሰራተኞች በስራ አጋጣሚ ለሚከሰት የኤች አይ ቪ መጋለጥ ምርመራ ላለማድረግ የሚወስኑበት ምክንያት ምንድን ነው?         | ተጋላጭነት የለንም በማለት የምርመራ ወጤት በመፍራት የኤች አይ ቪ መመርመሪያዎቹን ስለማያምናቸው ሚስጠራዊነቱ ስለሚያጠራጥራቸው አመቺ የሆነ ቦታ እና ጊዜ ስለሌለ ሌላ (ይገለፅ)                   | 1<br>2<br>3<br>4<br>5<br>96      |  |

**ክፍል አራት: በድንገተኛ ሁኔታ ለሚከሰት የኤች አይ ቪ መጋለጥ ሁኔታ ስለሚሰጥ ህክምና እውቀት እና ተሞክሮ በተመለከተ**

| ተ.ቁ | ጥያቄ   | መልስ      | የመልስ ኮድ  | ወደ ተ.ቁ-- |
|-----|---|----------|----------|----------|
| 401 | በድንገተኛ ሁኔታ በመርፌ እና በስለታም ነገሮች መወጋት ወይም ደም /ሌላ ፈሳሽ መረጨት ምክንያት የኤች አይ | አዎ አላውቅም | 1<br>2 → | መጨ.      |

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|     | ቪ. መጋለጥ ሲያጋጥም ስለሚሰጥ ህክምና ሰምተዉ ያወቃሉ?  |  |                         |                   |
|     | ሰምተዉ የሚያወቁ ከሆነ ቢያብራሩልን?  | -----<br>-----<br>-----                                |                         |                   |
| 402 | በድንገተኛ ሁኔታ ስለሚከሰት የኤች አይ ቪ መጋለጥ ህክምና ሰልጥነው ያውቃሉ?   | አዎ<br>አላውቅም  | 1<br>2 →                | 404               |
| 403 | ስልጠና ወስደው ከነበረ መቼ ነው?  | በአለፈው አንድ አመት ውስጥ<br>ከ 2 -3 ዓመት<br>ከ 3 ዓመት በፊት         | 1<br>2<br>3             |                   |
| 404 | በዚህ ጤና ድርጅት ውስጥ በድንገተኛ ሁኔታ ለተከሰተ የኤች አይ ቪ መጋለጥ ስለሚወሰድ ህክምና አጠቃቀም የሚያስረዱ የዕሑፍ መመሪያዎችን ተመልክተዋል?              | አዎ<br>የሉም<br>አላውቅም                                     | 1<br>2<br>88            |                   |
| 405 | በዚህ ጤና ድርጅት ውስጥ በድንገተኛ ሁኔታ ለሚከሰት የኤች አይ ቪ መጋለጥ ስለሚሰጥ ህክምና አስፈላጊነት የሚያሳውቁ ፖስተሮችን ተመልክተዋል?                   | አዎ<br>የሉም<br>አላውቅም                                     | 1<br>2<br>88            |                   |
| 406 | በድንገተኛ ሁኔታ ለሚከሰት የኤች አይ ቪ መጋለጥ የሚሰጠው ህክምና በሰራተኞች ላይ በስህተት የሚመጣውን የኤች አይ ቪ መተላለፍ ይቀንሳል ወይስ አይቀንስም ብለው ያስባሉ? | በጣም ይቀንሳል<br>በመጠኑ ይቀንሳል<br>ምንም አይቀንስም<br>አላውቅም         | 1<br>2<br>3<br>88       |                   |
| 407 | በዚህ ጤና ድርጅት ውስጥ ለሚገኙ የጤና ሰራተኞች በድንገተኛ ሁኔታ ለሚከሰት የኤች አይ ቪ መጋለጥ የሚያገለግል መድሃኒት አለ? (አንዱን ብቻ ያክብቡ)             | አዎ ይገኛል<br>አዎ ሌላ ቦታ ይገኛል<br>እዚህም ሆነ ሌላ ቦታ የለም<br>አላውቅም | 1<br>2 →<br>3 →<br>88 → | 414<br>415<br>415 |

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| 408 | መድሃኒቱ ካለ ሁሉም የጤና ሰራተኞች በስራ ሰአት እንደልብ ያገኙታል?   | አዎ<br>አያገኙትም   | 1<br>2 →                               | 412        |
| 409 | መድሃኒቱን በስራ ሰአት የሚያገኙት የት ነው?  | ፀረ ኤች አይ ቪ መድሃኒት ክፍል<br>የኤች አይ ቪ ምርመራ ክፍል<br>ድንገተኛ ክፍል<br>እራሱን የቻለ ክፍል አለው<br>ከሌሎች መድሃኒቶች ጋር<br>ልዩ መድሃኒት ክፍል<br>የት እንደሚገኝ አላውቅም<br>ሌላ (ይገለጽ)             | 1<br>2<br>3<br>4<br>5<br>6<br>7<br>96  |            |
| 410 | በድንገተኛ ሁኔታ ለሚከሰት የኤች አይቪ መጋለጥ የሚሰጠውን የፀረ የኤች አይ ቪ ህክምና ሁሉም የጤና ሰራተኞች ከስራ ሰአት ውጭ የሚያገኙበት ሁኔታ አለ? | አዎ<br>አያገኙትም<br>አላውቅም  | 1<br>2 →<br>88 →                       | 412<br>412 |
| 411 | መድሃኒቱን ከስራ ሰአት ውጭ የሚያገኙት የት ነው?   | ፀረ ኤች አይ ቪ መድሃኒት ክፍል<br>የኤች አይ ቪ ምርመራ ክፍል<br>ድንገተኛ ክፍል<br>እራሱን የቻለ ክፍል አለው<br>ከሌሎች መድሃኒቶች ጋር<br>ልዩ መድሃኒት ክፍል<br>የት እንደሚገኝ አላውቅም<br>ሌላ (ይገለጽ)             | 1<br>2<br>3<br>4<br>5<br>6<br>7<br>96  |            |
| 412 | በዚህ ጤና ድርጅት ውስጥ በድንገተኛ ሁኔታ ለሚከሰት የኤች አይቪ መጋለጥ የሚሰጠውን የፀረ የኤች አይ ቪ ህክምና የሚከታተል የሰለጠነ ግለሰብ አለ?    | አዎ<br>የለም<br>አላውቅም   | 1<br>2 →<br>88 →                       | 414<br>414 |
| 413 | የሚመለከተው ግለሰብ ማነው.   | ፀረ ኤች አይ ቪ መድሃኒት ክፍል ሀላፊ<br>የኤች አይ ቪ ምርመራ ባለሙያ(ካወንሰለር)<br>ሜትረን/ሃላፊ ነርስ<br>የጤና ድርጅቱ ሃላፊ<br>ለዚህ ፕሮግራም የተመደበ ግለሰብ<br>የሚመለከተው ግለሰብ የለም<br>ሌላ (ይገለጽ)<br>አላውቅም | 1<br>2<br>3<br>4<br>5<br>6<br>96<br>88 |            |
| 414 | መድሃኒቱ እዚህ የሚገኝ ከሆነ የት መሄድ አለባቸው?  | በአቅራቢያ የሚገኝ ሆስፒታል<br>በራሳቸው ምርጫ<br>ሌላ (ይገለጽ)<br>አላውቅም   | 1<br>2<br>96<br>88                     |            |
| 415 | እርስዎ በድንገተኛ ሁኔታ ለሚከሰተው የኤች አይ ቪ መጋለጥ የሚሰጠውን ህክምና  | -----ግዜ<br>(ምንም ዓይነት ህክምና ካልተወሰደ 00 ይሞላ)   |  |            |

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|  | ምን ያህል ጊዜ ወስደዋል? |  |  |  |
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|-----|--|---|---------------------------------------|--|
| 416 | በድንገተኛ ሁኔታ ለተከሰተ የኤች አይ ቪ መጋለጥ የሚወሰድ መድሃኒት ከመጋለጥ በኋላ መቼ መጀመር አለበት?   | ከአንድ ሰዓት በአነሰ ጊዜ ውስጥ<br>1 — 24 ሰዓት<br>1 — 3 ቀን ባለው ጊዜ<br>ከ 3 ቀን በኋላ<br>አላውቅም  | 1<br>2<br>3<br>4<br>88                |  |
| 417 | በድንገተኛ ሁኔታ ለተከሰተ የኤች አይ ቪ መጋለጥ የሚወሰድ መድሃኒት በአጠቃላይ ለስንት ጊዜ መወሰድ አለበት?   | ከአንድ ሳምንት በታች<br>4 ሳምንት<br>ከ 4 ሳምንት በላይ<br>አላውቅም  | 1<br>2<br>3<br>88                     |  |
| 418 | የጤና ሰራተኞች መድሃኒቱን የሚያቋርጡበት ምክንያት ምንድን ነው?   | ያጋለጣቸው በሽተኛ በምርመራ ከኤች አይ ቪ ነፃ መሆኑን ሲያውቁ<br>በመድሃኒቶቹ ተጓዳኝ ውጤት ተጋላጭነታቸው ዝቅተኛ ነው በማለት ሌላ ይገለፅ   | 1<br>2<br>3<br>96                     |  |
| 419 | በእርስዎ አመለካከት በዚህ ጤና ድርጅት ውስጥ በድንገተኛ ሁኔታ ለሚከሰት የኤች አይ ቪ መጋለጥ የሚወሰድ መድሃኒት አጠቃቀምን ለማሻሻል ምን መደረግ አለበት? (ዝርዝሩ አይነቡብ፡ የተጠቀሱት ይከበቡ) | ካውንስለር እንዲኖር ማድረግ<br>ሪፖርት እሚደረግለት ሰው በጤና ድርጅቱ መኖር<br>መድሃኒቶቹ በጤና ድርጅቱ ውስጥ መገኘት<br>መድሃኒቶቹን ለመውሰድ የኤች አይቪ ምርመራ አለመኖር<br>የኤች አይ ቪ ምርመራ ማንም ስው በማያውቅበት መልኩ እንዲደረግ ቢሆን<br>ሁሉን ወጪዎች ቢሸፈኑ<br>ጤና ሰራተኞች የተሻለ ስልጠና ቢሰጥ ሌላ (ይገለፅ) | 1<br>2<br>3<br>4<br>5<br>6<br>7<br>96 |  |

## Declaration

### 1. Declaration of the Principal Investigator

I, the undersigned, declared that this thesis is my original work in partial fulfillment of the requirements for the degree of master of public health. All

the sources of the materials used for this thesis and all people and institutions who gave support for this work are fully acknowledged.

**Name:** - Tadesse Alemayehu

**Signature:** - \_\_\_\_\_

**Place of submission:** - School of Public Health, Addis Ababa University

**Date of submission:-**

## **2. Approval of the Primary Advisor**

This thesis work has been submitted for examination with my approval as university advisor.

**Advisor's name:** - Dr. Abera Kumie

**Signature:** - \_\_\_\_\_

**Date:-**

