

**EVALUATION PROGRAM FOR TRAINING COMPONENT OF THE
NATIONAL PROGRAM FOR PREVENTION OF
MOTHER -TO -CHILD HIV TRANSMISSION IN ARMENIA**

Master of Public Health Thesis Project Utilizing
Program Evaluation Proposal Framework

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EXECUTIVE SUMMARY

The epidemic of Human Immunodeficiency Virus (HIV) is one of this century's most public health challenges. Official statistics show that 42 million people globally are living with HIV/AIDS. In Eastern Europe and Central Asia region (including Armenia) the number of people living with HIV/AIDS is 1.2 million. From the beginning of the epidemic to October 1, 2003, 240 HIV carriers were registered in Armenia. These reported cases include cases of children born from HIV-infected parents. According to official statistics over 1 600 children each day are infected through mother- to -child transmission (MTCT) in the world. The International Organizations recommend comprehensive prevention program that includes education of health care providers.

The purpose of this evaluation program is to assess the effectiveness of an educational program of health care specialists in Yerevan within the framework of the National Program on HIV/AIDS Prevention. The results of the study would be used for a future statewide education program for health care providers.

The measurable objective of the evaluation program is the mean change in knowledge score of health care specialists participating in the training of prevention of MTCT of HIV.

A quasi-experimental design is proposed. The evaluation will be implemented in district pregnant women counseling centers, delivery hospitals, and polyclinics in Yerevan.

Intervention and comparison populations consist of all obstetrician-gynecologists, pediatricians, and neonatologists of selected health care facilities in Yerevan.

The required sample size for intervention and control groups is equal to 50 for each group.

The data collection instrument will be a self-administered questionnaire.

The program is designed to take place over the time period of one-year. The overall estimated budget is about \$15,481.

1. INTRODUCTION / SPECIFIC AIMS

The epidemic of Human Immunodeficiency Virus (HIV) is one of this century's most important public health challenges [1]. According to UNAIDS (Joint United Nations Program on HIV/AIDS (Acquired Immunodeficiency Syndrome) and the World Health Organization, at the end of 2002, an estimated 42 million people globally were living with HIV, 19.2 million of them were women and 3.2 million of them were children under the age of 15 [1-3]. From 1988 to September 1, 2003, 240 HIV carriers were registered in Armenia [3]. About one percent of these registered cases are cases among children born to HIV-infected parents [3, 4]. WHO reports that at least 95% of all infants infected through mother - to - child transmission live in developing countries [3]. To prevent transmission of HIV infection through mother - to - child different international organizations recommend education of health care providers [4].

The proposed evaluation program assesses the effectiveness of an educational program of innovative approaches to HIV/AIDS prevention and care, within the framework of the National Program for Prevention of Mother-To-Child HIV transmission (MTCT) in the Republic of Armenia among obstetrician-gynecologists, pediatricians, and neonatologists in Yerevan. A quasi-experimental design is proposed. The results of the study would be used to statewide education program for health care providers in the Republic of Armenia.

The overall goal of the National Program for Prevention of Mother-To-Child HIV transmission is prevention of mother-to-child transmission of HIV in the Republic of Armenia.

2. BACKGROUND INFORMATION

Today, AIDS is a threat to the social, economic, and political well – being of the entire world population [5]. Around the world, about 70 million people have been infected with HIV since the beginning of the epidemic [2,3]. In Eastern Europe and Central Asia region, which include Armenia and other former Soviet Union countries the number of people living with HIV/AIDS is 1.2 million [2,4]. During 2002, about 5 million people became infected with HIV in the world, 250 thousand in Eastern Europe and Central Asia [2,4]. This number exceeds more than eight times the number of newly registered HIV cases in Western Europe and six times that in North America [2,4]. According to official statistics, the rate of HIV spread in Eastern Europe is the highest in the world [2,4]. The prevalence of HIV infection has grown in Eastern Europe and CIS by 1,300% during 1996-2001, while in Sub-Saharan Africa by 30%, and in Western Europe and North America by 20% [4].

Unfortunately, HIV infection is spreading rather rapidly through the CIS (Commonwealth of Independent States) [2, 5], which may affect the spread of HIV infection in Armenia. The consequences of the fall of the Soviet Union led to a high rate of unemployment, causing many men (64.5%) of working age to travel outside of Armenia in search of work [4]. According to official data, since 1980, a negative migration saldo (-7.2) is registered in Armenia, and migration is mostly directed to CIS countries [4]. Extensive travel continues to and from Russia and Ukraine, and movement to Iran and Georgia has increased in recent years [4]. According to the results of HIV/AIDS Situational Analyses in the Republic of Armenia 38.3% of migrants “lead an irregular sexual life” and 24.7% of them suffer from sexually transmitted infections during their lifetime [4].

Currently, the Russian Federation is experiencing the fastest-growing epidemic in the world [2, 5]: from 1987 to 1995 1,083 cases of HIV infection were registered [2, 4, 5]. In 2001, 6,000-10,000 HIV cases were registered every month [2, 4, 5]. As of August 2002, 201 thousand HIV infected people were registered in the Russian Federation, although the estimated number of HIV cases in the country is 1.4 million [3]. It is predicted that, in five years, the number of people living with HIV in the Russian Federation will grow to 5 million [2,5].

Ukraine remains as the worst HIV/AIDS affected country in Europe [2, 6]. According to the Ministry of Health of Ukraine, an estimated quarter million of citizens are currently infected with the HIV- approximately one percent of the adult population [6] and, in 2011 it will reach 3.9% [7]. Rapid spread of HIV infection is also apparent in Moldova, Kazakhstan, Kyrgyzstan, Uzbekistan, Azerbaijan, and Georgia [2, 4].

Almost 80% of HIV registered cases in the CIS between 1997 and 2000 were among people younger than 29 [2]. The major HIV transmission modes in CIS are through heterosexual contacts and injection drug use [2, 6]. In some cities of the Russian Federation and Ukraine up to 30% of female injection drug users are also engaged in the sex industry [2]. For example, in Donetsk, Moscow, and St. Petersburg, the prevalence of HIV infection among commercial female sex workers (FSW) is 13-17% [2]. Based on data of the Sentinel Epidemiological Surveillance, the prevalence of HIV infection among female sex workers in Armenia is in the range of 0.5-6% [4]. A survey conducted among FSWs in 2000 indicated that 4.4% of them have experience in intravenous drug usage [4].

The number of HIV/AIDS and death cases reported in the Republic of Armenia within the recent four years exceeds the number of cases registered during the whole previous period of registration [3, 4]. According to official data, from the beginning of the epidemic (1988) to October 1, 2002, 240 (228 are citizens of Armenia) HIV carriers were registered in Armenia; 78,5% (179) were male and 21.5% (49) were female [3]. These reported cases include 3 cases of HIV infection among children [3]. The first case of HIV infection and AIDS among children in Armenia was registered in January 2001 [3]. Since 1988, 33 cases of death from HIV/AIDS have been registered in the country, nine of them in 2002 [3, 4]. The majority (79.4%) of the HIV positive people belong to the age group of 20-39 years [3]. The main modes of HIV transmission in Armenia are transmission through intravenous drug use (51%) and heterosexual practices (41%) [3,4]. About one percent of registered cases are children born from HIV-infected parents [3, 4]. However, this official statistics do not present the real situation in Armenia [3, 4]. The assessment of HIV/AIDS situation show that the real number of HIV cases in the country exceeds tenfold the registered data [3, 4]. An estimated 2,000-2,400 HIV positive people are living in Armenia [3, 4]. It means that there might be unregistered cases of MTCT of HIV.

According to UNAIDS, the ratio of HIV infected children and women is rapidly growing in the world [2]. Since the beginning of the AIDS pandemic, an estimated 3 million children under 15 years of age worldwide have been infected with HIV [8]; 800 thousand of them became infected in 2002 [2]. During the same year, 610 thousand children around the world died of AIDS; a total of about 5.5 million children have died of AIDS since the beginning of the epidemic [2]. Official statistics show that almost 600,000 children are infected by mother-to-child transmission annually: over 1600 each day [8,9]. This has major implications for the management of pregnancy and birth [9].

HIV infection in pregnancy has become the most common complication of pregnancy in some developing countries [8]. In general, women are particularly susceptible to HIV infection for both biological and socio-cultural reasons [8]. Adverse pregnancy outcomes that have been reported in HIV positive women include increased rates of spontaneous early abortion, low birth weight babies and stillbirths, preterm labor, preterm rupture of membranes, other sexually transmitted diseases, bacterial pneumonia, urinary tract infection, and other infectious complications, though whether these are attributable to HIV infection is unknown [8].

According to the World Health Organization, at least 95% of all infants infected through mother - to - child transmission live in developing countries [10]. In some countries where blood products are regularly screened and clean needles are widely available, MTCT is the only source of HIV infection in young children [11, 12]. The incidence of pediatric HIV infection reflects that of HIV infection in women of childbearing age [13]. In many developing countries, HIV infection has doubled infant mortality [11]. For example, from 1990 to 1996, infant mortality in Zimbabwe increased from 30 to 60 per 1,000 [11]. Although the HIV epidemic is centred in the developing world, AIDS has also become a leading cause of death for young women in the USA [14].

According to UNAIDS, life expectancy at age 15 in countries severely affected by the AIDS/HIV epidemic will drop from 50 to below 30 years [15]. It is anticipated that by 2010, if the spread of HIV has not been controlled, AIDS will increase infant mortality by 25 percent and under-five mortality by over 100 percent in the regions mainly affected by HIV [8].

Ninety percent of children who become infected under the age of 15 years acquire HIV during pregnancy, delivery, or through breastfeeding [8, 16,17]. The risk for HIV transmission during pregnancy is estimated at 5 to 10%, during labor and delivery at 10 to 20%, and during breastfeeding at 10 to 20% [17, 18]. There are some factors associated with an increase of the risk of MTCT like viral factors (viral load, viral resistance), maternal factors, including clinical and immunological status, nutritional status and behavioral factors such as drug use and sexual practice; obstetric factors such as duration of ruptured membranes, mode of delivery and intrapartum haemorrhage; and infant factors, predominantly related to the increased risk of transmission through breastfeeding [8]. With increasing knowledge about the underlying mechanisms of MTCT of HIV infection comes an increased emphasis on the search for intervention to reduce or even prevent the risk of MTCT [8]. Successful antiretroviral therapy in some developed countries reduced the rate of MTCT to less than 2% [2]. However, the number of potential intervention strategies is under investigation [2].

Most studies suggest that in the absence of preventive measures, the risk of virus transmission from infected mother to child ranges from 15% to 25% in industrialized countries, and 25% to 35% in developing countries [10, 11,13,17]. In the absence of preventive measures for pregnant HIV positive women, around 65% of the children born to them will escape infection but face orphanhood; of those who are infected (35%) may survive longer than their mother [19].

International organizations (WHO, UNAIDS) recommend a comprehensive program to prevent mother-to-child transmission of HIV that includes primary prevention; in places where termination of pregnancy is legal, to enable HIV positive women and women at risk to

avoid unwanted pregnancy; a course of antiretroviral drug for mothers; and replacement of breastfeeding for newborn children [10,13,16]. It is also important to provide women with access to voluntary counseling and testing services, and healthcare providers with educational programs [10, 11,16]. The ideal intervention for reducing MTCT of HIV should be widely applicable in resource poor settings [8]. The minimum requirements for implementing interventions in health care services along with access to and use of appropriate antenatal care and appropriate laboratory facilities to monitor blood parameters during pregnancy include intrapartum and postpartum care by adequately trained health care providers [8].

In general, educational preparation and extended training of medical doctors have a positive effect on screening, testing, and counseling of patients at risk of developing AIDS [20]. Some studies indicate that general practitioners have widespread contact with HIV positive patients [20]. The prior studies indicate that physicians' recognition of common HIV symptoms and prevention of HIV needs improvement [21, 22, 23] and there is a need for continuing education at all levels of the health care system [24]. There are three major trends that drive the widespread need for continuing education in HIV/AIDS issues [25]. First, with the spread of HIV infection, increasing numbers of health care professionals are becoming involved in the care and treatment of HIV positive people [25]. Second, more persons with the lack of knowledge are required to have a baseline working knowledge of HIV/AIDS [25]. Third, the reluctance of many health care providers to care for people living with HIV/AIDS, along with already existing staff shortages, limits access to care and makes the provision of responsive educational programs even more important [25,26].

A survey conducted among health care providers by the National Center for HIV prevention in Yerevan in 2002 revealed insufficient knowledge on HIV/AIDS issues among medical

doctors and nurses, which may lead to late diagnosis of HIV infection, transmission of HIV within health care facilities, etc [18]. Although survey show that 83% of health care providers knew that HIV was a cause of AIDS, 42% mistakenly mentioned that AIDS was one of the symptoms of HIV infection [18]. Ninety-nine percent of medical doctors did not know that HIV infection in infants born from HIV positive women could be diagnosed only 18 months after birth [18]. Seventy-two percent of health care providers did not know that antiretroviral therapy might prevent MTCT during pregnancy and 50% of health care providers did not know that cesarean section decreases the risk MTCT of HIV infection during delivery [18]. Consequently, education of health care providers in HIV/AIDS issues is needed in Armenia.

Based on the background information, the factors that might lead to the increased rate of MTCT of HIV are present in Armenia: high estimated number of HIV cases in Armenia; high rate of migration to the HIV affected countries; increased number of intravenous drug users and prostitutes experienced in intravenous drug usage; lack of knowledge and awareness on HIV/AIDS issues among health care providers. So, effective prevention strategies to prevent MTCT of HIV are needed in Armenia.

In April 1, 2002, the Government of the Republic of Armenia ratified The National Program on HIV/AIDS Prevention that aims to reduce the spread of HIV infection in the country [27]. One of the goals of the National Program is the prevention of mother-to-child HIV transmission [27]. According to the National Program, to achieve that goal, strategies like ensuring access of pregnant women to HIV testing and counseling, and providing preventive treatment for HIV-infected pregnant women and infants born from them are suggested [27]. The first strategy includes an educational component for obstetrician-gynecologists, pediatricians, and neonatologists in Yerevan and Marzes [27].

3. RESEARCH QUESTION AND MEASURABLE OBJECTIVE

Based on the provided background information and proposed evaluation program objective the following research question is addressed:

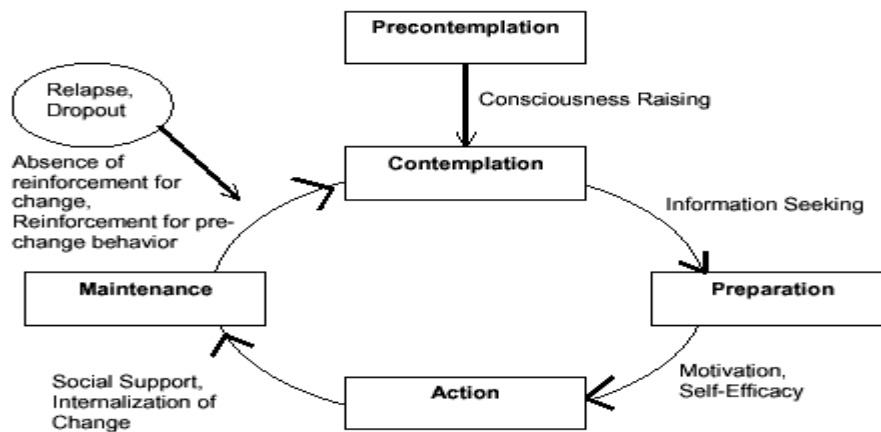
Does the training of obstetrician-gynecologists, pediatricians, and neonatologists result in reaching the 80% mean knowledge score in the prevention of mother-to-child transmission of HIV/AIDS at the end of training?

The measurable objective of the evaluation program is the change of mean knowledge score of obstetrician-gynecologists, pediatricians, and neonatologists participating in training of prevention of mother-to-child transmission of HIV/AIDS.

4. THEORETICAL FRAMEWORK

Some studies have shown that health care providers often fail to provide recommended preventive services for their patients [28]. Cohen S. J., Halvorson H. W. and Gosselink C. A. reviewed the literature and suggest an organizational construct of the readiness for change (transtheoretical) model (Figure 1) to change medical doctors' behavior [28]. The transtheoretical model suggests that behavior evolves through the following stages: recontemplation (the stage in which individuals are not intending to make a change within the next six months), contemplation (the stage in which individuals are seriously thinking about change in the next six months), preparation (the stage in which individuals are intending to change in the next month), initiation (the stage in which persons obviously modify their behavior), maintenance of change (the stage in which individuals work to maintain a new behavior) [28,29,30,31].

Figure 1: Transtheoretical Model



Transtheoretical Model (Stages of Change Model)
(DiClemente et al., 1991; Prochaska & DiClemente, 1983)

Traditional continuing medical education may affect knowledge and attitude, but rarely results in behavior change [28]. However, motivational strategies, for example practice feedback reports, can promote stage change [28]. Successful interventions directed to physicians preparing for changing behavior, frequently apply an office-system approach that targets not only physicians, but office staff as well [28].

Based on the Transtheoretical model, it is anticipated that after getting effective education health care providers in Yerevan will be able to understand the timing of, and risk for HIV of MTCT, and make appropriate decisions. They will be ready to change their attitude toward new knowledge and practices, which in future may result in a changed behaviour. Successful education will lead to using innovative approaches to HIV/AIDS prevention and care.

5. METHODS

5.1 Study design

The most prevailing design to evaluate the effectiveness of educational programs is the true experimental design or controlled trial [32]. Since, these designs require randomization,

which is costly, and the proposed evaluation program will be a pilot, it is preferable to use a quasi-experimental nonequivalent control group design [32].

The quasi-experimental nonequivalent control group design is depicted as:

$$O_1 \quad X \quad O_2$$
$$O_3 \quad O_4$$

where O_1 and O_3 are the baseline measurements in “intervention” and “control” groups respectively [32]. The O_2 and O_4 are the measurements after intervention [32]. The X represents the intervention in form of training of the target group [32].

6. SETTINGS

The evaluation program will be implemented in six health care facilities (2 district pregnant women counseling centers, 2 district delivery hospitals, and 2 district polyclinics) in Yerevan, which will be chosen based on the similarity of the size of area they cover. It is assumed that the demographic characteristics of the population they serve will be similar. Assignment of participating health care facilities to the intervention or control group will be done randomly.

6.1 Intervention population

Obstetrician-gynecologists, pediatricians, and neonatologists of the three selected health care facilities in Yerevan (1 district polyclinic, 1 delivery hospital, and 1 pregnant women counseling center).

6.2 Comparison population

Obstetrician-gynecologists, pediatricians, and neonatologists of the other three selected health care facilities in Yerevan (1 district polyclinic, 1 delivery hospital, and 1 pregnant women counseling center).

6.3 Inclusion criteria

In both intervention and control groups only the obstetrician-gynecologists, pediatricians, and neonatologists who currently work in the selected health care facilities in Yerevan will be included.

6.4 Sampling frames

The sample frame of the study will be a list of health care specialists working in the selected health care facilities in Yerevan. The sample will include all obstetrician-gynecologists, pediatricians, and neonatologists working in the selected health care facilities.

6.5 Sample size

To estimate the necessary sample size in each group, the main outcome variable of interest will be taken into consideration. The mean knowledge score will be estimated. For this purpose the standard deviation of mean knowledge score σ is needed. To calculate minimum sample size the following formula will be used:

$$n = 2(Z_{\alpha} + Z_{\beta})^2 \times \sigma^2 / d^2 \text{ [33].}$$

where: $Z_{\alpha} = 1.96$ (confidence interval of 95 %); $Z_{\beta} = 0.84$ (80% power); standard deviation of the parameter under estimation (mean knowledge score) is $\sigma = 16,8$ (based on prior studies [18]); and d is the 10 % expected difference in mean knowledge score. Consequently, a representative sample of health care providers for each group is 44,

$$n = 2 \times (1.96 + 0.84)^2 \times 16,8^2 / 10^2 = 44.$$

Since there is a possibility for dropouts during the study the sample size in each group will be increased to 50.

7. SOURCES OF DATA

The data collection instrument will be a questionnaire specially developed in cooperation with the Ministry of Health and local experts on HIV/AIDS, to measure variable regarding on knowledge of prevention of HIV mother-to-child transmission (see Appendix A for specific domains). The questionnaire will be developed based on training curricula (see Appendix B for the main topics that will be covered during two week training of obstetrician-gynecologists, pediatricians, and neonatologists).

The questionnaire completion will take approximately 15 minutes. Respondents will read statements about HIV infection pathology, modes of transmission, treatment, diagnoses, etc, and indicate whether they think the statement is true or false, or they will indicate that they “don’t know”. “Don’t know” responses, as well as missing responses, will be scored as incorrect. Each correct answer will score 1 point. So, the sum of points will represent the overall knowledge score of the responders. The questionnaire also will include questions on health care providers’ demographic characteristics, experience, and prior training in HIV/AIDS related issues.

The questionnaire will be self-administered. The reasons for choosing the self-administered questionnaire are that it provides confidentiality and anonymity, and can be administered to a large group of people at low cost. Self-administered questionnaire have some disadvantages: willingness to answer would not be controlled, cheating or asking someone else is possible, and respondents may fail to answer some of the questions.

Before administering to healthcare providers in the study group, the questionnaire will be pre-tested on several specialists similar to the main study participants. Then the final version will be developed and used for data collection. Since the time between pre- and post-test will be 3

months the same questionnaire will be used. To observe changes in knowledge it is also planned retesting participants with the same questionnaire 6 months later.

8. ANALYSIS

Since the dependent variable of the study is mean knowledge score, which is numerical (continuous), and the independent variable (participation) is measured on a nominal scale, T-test and paired-T-test will be used to observe differences in mean knowledge score between intervention and control groups as well as within intervention groups (O_1 and O_2). In this analysis, the assumptions of T-test are met. The potential confounder for analysis would be health care providers' experience as well as prior training. To assess the impact of demographic characteristics on outcome variables simple and multiple and linear regression will be used.

9. STRENGTH/LIMITATIONS OF THE STUDY DESIGN

By choosing a quasi-experimental nonequivalent control group design strong internal validity is anticipated [32]. All participants will share the same intrasession history, and thus have sources similarity other than intervention. Maturation is not a threat because changes in participants will occur in both groups equally and the time of the study is short.

Instrumentation will not be a threat to the study design, because it will be also controlled, by using fixed printed tests (pre/post test questionnaires will be the same). Since the education program will require attendance of training course, while the control condition will not, the differential attendance on pretest, training, and posttest will produce "mortality" which can introduce subtle sample biases.

The potential limitation of this study design will be due to external validity. The results of the study can be generalized only to the health care specialists working at the same departments of participating health care facilities. The study findings might not be generalized to all areas of Armenia, since the characteristics of health care specialists working in Yerevan such as educational level, access to information may differ from those of rural areas. In some regions of Armenia there is a lack of access to update information and information in general. The lack of funds makes impossible the participation of regions' health care specialists in different trainings, workshops that are organized in the capital Yerevan.

Another potential threat to the external validity of the study is the reactive effect, which may alter the behavior of study participants (Hawthorne effect). Some dropouts might be also threat on the study results. Intervention and control groups may not present the same regression toward the mean since they may differ by its "outlying" characteristics. The interaction of testing and intervention is also a threat to the study because of testing effect.

10. LOGISTICAL CONSIDERATIONS

The main concerns are connected with the development of the questionnaire, data collection, data entry, and analysis. It is essential to allocate time, human and material resources appropriately. The program is designed to take place over the time period of one year (see Figure 2). A database will be constructed by using the SPSS statistical software package.

10.1 Time Frame

Figure 2 uses a Gantt chart to show the implementation time frame for the components of the evaluation program for the training component of the National Program for Prevention of mother-to-child HIV transmission in Armenia.

Figure 2: Gantt Chart: Evaluation program for training component of the National Program for Prevention of mother-to-child HIV transmission in Armenia.

Activity	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Jan
Development of pre/posttest questionnaire	X												
Translation and pre-testing of a questionnaire	X												
Pretest of health care providers		X											
Training		X											
Data entry (double)		X	X										
Cleaning and analyses of pretest results				X									
Posttest of health care providers				X	X								
Data entry (double), data cleaning, and analysis of posttest results					X	X							
Analyses and reporting of final results							X	X					
Retest											X		
Retest Data entry and data cleaning											X	X	
Analysis of retest results											X	X	
Evaluation and reporting of results of retest												X	X
Evaluation of overall program and preparation of final report												X	X

10.2 Personnel Responsibilities

The successful implementation of the proposed program requires the involvement of the qualified staff experienced in the similar activities. The staff proposed for the program performance is presented below with their responsibilities:

The Program Manager will be responsible for the administration, study management and whole evaluation program. PM will also be responsible for, development of pre/post test questionnaires, data analysis, preparation and submission of final report to donor organization.

Program Assistant will be responsible for translation of questionnaire into Armenian and Russian, data collection, coding, and monitoring of data entry.

Data entry/analyst will do double data entry and data cleaning.

Accountant will be responsible for accounts preparation, bookkeeping, and preparation of financial statements.

10.3 Budget

The overall budget needed for implementation of the evaluation project is estimated about \$15,481 (see Appendix C for itemized budget). The mentioned amount is calculated to cover the operational activities, the stationery expenses, transportation and communication expenses, staff salary, 2 personal computers and other office equipment purchasing. There will be no expenses for office and cars rent. The values of the taxes are estimated according to the existing laws of the Republic of Armenia. Five percent of the overall budget amount will cover miscellaneous.

11. PROJECT FEASIBILITY

The proposed evaluation project is feasible due to technical, logistical, financial, as well as administrative and political considerations. Well-educated staff, including public health

specialists, analyst, who has experience of conducting in such studies, will implement the study. The implementation of the project, pre/posttest, retest, and data analysis will require one - year period. The proposed evaluation project is not very expensive. However, its implementation mostly depends on the Ministry of Health and donor agency financial support. Program Manager should be a public health specialist, has excellent managerial and administrative skills, and no less than 3 - year work experience in the relevant area.

Considering that the Government of the Republic of Armenia has ratified The National Program on HIV/AIDS Prevention that aims to reduce the spread of HIV infection in the country, health policy makers from the Ministry of Health should be interested in contributing to the program.

12. ETHICAL CONSIDERATIONS

Before conducting the study, the Ministry of Health will be informed about the proposed Evaluation Program. The key administrations of the participating health care facilities will be provided with complete information about the ongoing program and the importance of the problem. Obstetrician-gynecologists, pediatricians, and neonatologists will be excluded from the program if they are unwilling to participate. Before the pretest, participants will be informed about the goals of the study and about the anonymity of the tests' results, and that the completion of the instrument before and after training is voluntary, so that they will have an opportunity to ask questions, get answers, and to think about whether they want to be involved in the study. Before testing, health care providers will be informed that there are no direct benefits anticipated for them; however their participation is important for the program, since final results will be used for a future statewide education program for health care providers in the Republic of Armenia.

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APPENDIX A

Specific domains that are addressed in the evaluation of training on “Prevention of mother-to-child HIV transmission” among health care providers.

1. Awareness of the modes of transmission of HIV infection
2. Awareness of the difference between HIV and AIDS
3. Awareness of the risk of perinatal transmission of HIV infection in case of absence of treatment
4. Knowledge of contraceptive methods, if one of partners is HIV positive
5. Knowledge and attitude toward counseling of HIV positive pregnant women
6. Awareness of the role of spermicides in HIV transmission
7. Awareness of AIDS diagnosis in adults (time and methods)
8. Awareness of AIDS diagnosing in infants (optimum time and methods)
9. Knowledge of the risk of HIV transmission during pregnancy
10. Knowledge of the risk of HIV transmission during delivery
11. Knowledge of the risk of HIV transmission during breastfeeding
12. Awareness of the antiretroviral therapy of adults
13. Awareness of the antiretroviral therapy of children
14. Knowledge of prevention of HIV contamination in health care services

APPENDIX B

The main topics that will be covered during two week training of obstetrician-gynecologists, pediatricians, and neonatologists

1. HIV/AIDS epidemiology
2. HIV/AIDS pathogenesis
3. The difference between HIV and AIDS
4. The modes of transmission of HIV infection
5. Methods of prevention of HIV infection
6. Methods of prevention of mother-to-child transmission of HIV infection
7. Prevention of HIV transmission through blood and blood products in health facilities
8. The risk of perinatal transmission of HIV infection
9. The role of spermicides in HIV transmission
10. Methods of HIV/AIDS diagnosis (in adults, in infants)
11. HIV Treatment methodologies of HIV positive adults and children
12. Pre- and post-test counseling of HIV positive pregnant women
13. Follow-up of HIV positive pregnant women and children
14. Vaccination of children born from HIV positive mother
15. Care and feeding of HIV positive children
16. Opportunistic infection signs, symptoms and diagnosis in children
17. Treatment, and primary and secondary prevention of opportunistic infections

APPENDIX C

Figure 3: Detailed Budget: Evaluation program for training component of the National Program for Prevention of mother-to-child HIV transmission in Armenia.

<i>Item</i>	<i>Units</i>	<i>Unit Price (USD)</i>	<i>Months</i>	<i>Total</i>
Personnel Salaries				
Project Manager	1	350	12	\$4,200
Data Analyst	1	200	12	\$2,400
Accountant (part time)	0,5	200	12	\$1,200
				\$7,800
Taxes				
20% Income tax (local salaries)				\$1,560
4% Pension tax employee (local salaries)				\$312
15% Pension tax employer (local salaries)				\$1,170
Subtotal				\$3,042
Photocopies				
Pre-post test questionnaires (350 copies, 3 pages each)	1050	0.05	1	\$52
Office Supplies				
Pens, pencils, writing pads, etc	1	50	12	\$50
Capital Assets				
Computers with installed software packages	2	800	12	\$1,600
Printer	1	220	12	\$220
Subtotal				\$1,922
Operating Costs				
Office rent	1	100	12	\$1,200
Communication	1	15	12	\$180
Electricity	1	30 per month	12	\$360
Transportation [fuel]	1	20	12	\$240
Subtotal				\$1,980
Grant Subtotal				\$14,744
Miscellaneous		5% of grant subtotal		\$737
Grant Total				\$15,481