ECONOMIC ANALYSIS OF YOUTH FRIENDLY HEALTH SERVICES PROGRAM IN THE REPUBLIC OF MOLDOVA

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PREFACE

This report presents an economic analysis of the Youth Friendly Health Services (YFHS) program in the Republic of Moldova. It documents cost analysis of the YFHS program in four well performing Youth Friendly Health Centers (YFHC) in Moldova in 2011. Next, the report presents a budget forecast for scaling up outreach services for vulnerable and at risk young people 2013 - 2017. Furthermore, it provides an advice for a future impact assessment of the YFHS program and presents a threshold analysis on what would be the required impact level for the program to become cost saving. Finally, some core sexual health and behavior data from a 2012 youth survey are compared with comparable data of a 2003 survey. The data present an overview of sexual health risks of adolescents that could be reduced by prevention activities of the YFHCs.

The research was commissioned by the United Nations Children's Fund (UNICEF) in the framework of the project “Healthy Generation – Scaling up of youth friendly health services in the Republic of Moldova” and was implemented by Qalys Health Economics, in close collaboration with the Youth Friendly Health Services (YFHS) program – through inception and dissemination workshops, and numerous individual contacts between researchers. The study was conducted over a period of eight months between June 2012 and February 2013.

The authors would like to thank **Dr. Galina Lesco** and **Mr. Andrei Luchian** for their support and research inputs during the study period. We would also like to thank Dr. Victoria Ciubotaru (National Mother and Child Centre) and Dr. Angela Capcelea (UNICEF Moldova) for their support in statistical and epidemiological data research; administrations and teams of 4 involved YFHCs (Neovita Chisinău, Atis Bălți, Salve Edinet, Tineri Pentru Tineri Cimislia) for data collected through the costing and time use survey; representatives of the MoH, National Health Insurance Company for they organizational support in data collection and all the persons who participated in the workshops in Chisinău. We hope that our analysis of the economic aspects of the YFHC program will contribute to the decision-making and implementation process in Moldova and in other countries planning to implement a similar program.

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ACRONYMS

AIDS	Acquired Immune Deficiency Syndrome
EVA	Especially Vulnerable Adolescents
FDC	Family Doctors Centre, a host institution of an YFHC
FSPMHI	Finance Services of Public Medical Health Institutions for YFHCs
FTE	Full-time Equivalent
Hb	Hemoglobin
HIV	Human Immunodeficiency Virus
IDA	International Development Association
IDU	Injection Drug Users
IEC	Information, Education and Communication
M&E	Monitoring and Evaluation
MARYP	Most At Risk Young People
MDL	Moldovan Leu
MoE	Ministry of Education
MoH	Ministry of Health
NCRHMG	National Centre of Reproductive Health and Medical Genetics
NHIC	National Health Insurance Company
PMHI	Public Medical Health Institutions for YFHC
SDC	Swiss Development Cooperation
SRH	Sexual and Reproductive Health
STI	Sexually Transmitted Infection
SW	Sex Workers
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNFPA	United Nations Population Fund
UNICEF	United Nations Children's Fund
VCCT	Voluntary Confidential Counseling and Testing
WHO	World Health Organization
YFHC	Youth Friendly Health Centre
YFHS	Youth Friendly Health Service

EXECUTIVE SUMMARY

This report presents an economic analysis of Youth Friendly Health Services (YFHS) program in the Republic of Moldova. The research was commissioned by the United Nations Children's Fund (UNICEF) and implemented by Qalys Health Economics, in close collaboration with the YFHS program. The report documents cost analysis of the YFHS program in four well performing Youth Friendly Health Centers (YFHC) in 2011. Next, it presents a budget forecast for scaling up outreach services for vulnerable and at risk young people 2013 - 2017. Moreover, the report provides an advice for a future impact assessment of the YFHS program. Finally, it presents a threshold analysis on what would be the required impact level for the YFHS program to become cost saving.

Cost analysis of youth friendly health services program in 2011

The result of cost analyses can be used to support program planning and for acquiring appropriate financing for the YFHS program. The total 2011 cost of all services provided by the four YFHCs amounted to MDL 1,928,000 (USD 165,000). 58% of the costs were financed by the National Health Insurance Company (NHIC), 13% by the Swiss Development Cooperation (SDC) and 12% by UNICEF. Salary costs were by far the largest cost category (47%). Health care consultation costs were: a STI consultation MDL 59 (USD 5.1), an HIV consultation MDL 117 (USD 10.0) and early pregnancy and contraception consultation MDL 61 (USD 5.2). Information, education and communication (IEC) activities had the lowest cost MDL 30 (USD 2.6). The total cost of implementing good quality YFHSs in all 28 YFHCs in Moldova were extrapolated to be MDL 9.1 million (USD 777,000), which is approximately 300,000 (USD 26,000) per YFHC (excluding Neovita YFHC).

A time survey was used as one of the inputs for the cost analysis. The time use survey was carried out to monitor time use of 28 salaried employees during a period of two weeks in September 2012. The results indicate that almost half of staff time was spent on organizational and methodological work. The actual face to face contacts took about 40-45% of their time. Most client contacts were with individual clients, followed by groups (educational work), and far less with couples and families. In terms of problems presented, almost three quarters were sexual and reproductive health (SRH) related.

Outreach program budget forecast 2013 – 2017

The Ministry of Health is planning to implement an outreach program for vulnerable and at risk young people in Moldova. A budget forecast of outreach services was carried out to support the planning for a five-year period 2013 – 2017. Three scenarios were developed for this purpose: 1) a standard, 2) a pessimistic and 3) an optimistic scenario. These budget calculations were based on a plan to deliver good quality outreach services. In the standard scenario the outreach services would be implemented in three new raioane per year, covering 15 raioane in 2017. The cumulative five-year budget in scenario 1 would be MLD 10.1 million (USD 865,000). In the second scenario (pessimistic) we assumed that the outreach program would also be introduced in three new raioane per year, but would cover only 50% of the target population set in the first scenario. The cumulative total budget for the five-year period in scenario 2 would be MDL 6.1 million (USD 520,000), which 40% lower than the scenario one. In the optimistic scenario 3 the outreach services would be implemented in five new raioane per year, covering 25 raioane by 2017. The cumulative total budget for the five-year period in scenario 3 would be MDL 15.7 million (USD 1,343,000). Compared to scenario 1 this would represent a 1.65 times higher program coverage (persons reached) while the budget would increase 1.56 times. Therefore the results suggest that higher coverage of outreach services could potentially provide better value for money than a smaller scale intervention.

Advice on future possibilities for impact assessment of YFHCs in Moldova
Stakeholders are advised to start preparing data collection for impact assessment of YFHSs in the near future. Short term possibilities for this comprise: 1) immediate introduction of impact indicators in the existing monitoring system; 2) measurement of patient satisfaction immediately after consulting an YFHS; 3) implementation of pre- and post-intervention impact measurements during group education activities. In addition for long-term impact assessment the possibilities for: 4) client follow-up evaluation research, and 5) long term trend analyses, using national and regional indicators, should be explored.

Threshold analysis of YFHSs program
A threshold analysis was carried out to estimate what would be the required impact level for the YFHS program to become cost saving in the four well performing YFHCs. The results indicate >1,454 STIs would needed to be averted in order for the STI component to become cost saving. The number of averted unwanted pregnancies required for the early pregnancy and contraceptive services to be cost saving were estimated to be >449. Most importantly, only 3 new HIV infections would be required to be prevented in a year for the HIV services to become cost saving in the four YFHCs. This is low because the life-time treatment costs of a HIV+ patient were estimated to be MDL 147,000, (USD 12,500, discounted) in Moldova. The result of the threshold analysis suggest that, *together* the three SRH components (STIs, early pregnancies & contraceptives and HIV) are *potentially cost saving*. The question: "Whether or not the impact of the four YFHCs actually reach the threshold levels?", cannot be answered here, because this requires: i) impact assessment of the YFHSs program, and ii) comparison with an area where the YFHS do not exist.

Developments in adolescent SRH indicators
National vital data indicate that the teenage birth rate has slowly declined since 2002. The STI incidence has basically stayed at a high level of around one infection per 1,000 adolescents (syphilis and gonorrhea only). The HIV incidence has also remained stable. What the impact of the newly created YFHSs has been in this respect is difficult to assess, because these low barrier services may have encouraged more adolescents to seek diagnosis and treatment, which may have obscured an actual downward trend in these infections.

A comparison of adolescent survey data in 2003 and 2012 shows that there has been some increase in sexual activity among adolescents (from 21.2% to 24.8%). About 38% of sexually active adolescents did have sexual contacts with a casual partner (both in 2003 and 2012). However, there has been a clear trend towards more consistent condom use (up to 53% in 2012), which could have been the result of safe sex information and education efforts. On the negative side, there is a tendency of decreasing use of modern, reliable contraceptive methods, which could indicate that those methods have become less accessible (high prices).

1 INTRODUCTION

Moldovan young people continue to face various issues related to their sexual and reproductive health (STIs and HIV, unwanted pregnancies and abortions). The development of Youth Friendly Health Services (YFHS) in Moldova has been supported by several international donor agencies and has led to the establishment of 28 Youth Friendly Health Centers (YFHCs) in early 2013. The YFHCs provide integrated services for adolescents by using multidisciplinary teams and the range of services include: Sexual and reproductive health services, general health services, IEC activities, counseling, referrals, and outreach work.

At the time of writing this report the National Health Insurance Company (NHIC) is the largest financier of the YFHCs program. However, the imbursements are not sufficient to cover the costs of the current YFHSs. More information on the actual costs of delivering the YFHSs is needed. Moreover, the NHIC financing is mainly focused on health care services. Consequently, many informational and educational activities remain under funded. Chapter 3 assesses the cost of YFHSs in four well performing Youth Friendly Health Centers (YFHC). The costing results can be used to support negotiations to acquire appropriate compensation levels for all the YFHSs.

YFHSs are given a high priority in the health policies and youth strategy in Moldova. There is a need to introduce and scale up outreach services for at risk adolescents. To facilitate program planning, chapter 5 presents a five-year budget forecast for scaling up the outreach services. Furthermore, there is limited availability of evidence on the impact of YFHSs. Chapter 6 provides an advice for a future impact assessment of the YFHS program. Finally, chapter 7 presents a threshold analysis on what would be the required impact level for the YFHS program to become cost saving.

Moreover, the Republic of Moldova is affected by an economic crisis and it is likely that financing of the YFHS program will require significant political negotiations and lobbying. The costing analysis will help the Government to identify and implement appropriate financing in order to extend YFHS services.

2 YFHS PROGRAM IN THE REPUBLIC OF MOLDOVA

Young people aged 10-24 years represent more than a quarter of the total population, of which 15.3% are adolescents aged 10-19 years. Moldovan young people continue to face various issues related to their health and development: sexual health issues (STIs and HIV, unwanted pregnancies and abortions), substance use (excessive alcohol consumption, smoking, illicit drug use), mental health and suicides. In addition to health issues, young people are affected by high levels of unemployment, lack of non-formal development opportunities, criminality and the pressure of migration. Given that Moldova is seriously affected by the economic crisis, the social vulnerability is likely to affect even more young people in the nearest future.

To effectively solve the above problems, the Government has given priority to the health and development of adolescents and youth in a number of strategic policy documents such as the National Health Policy for 2007-2021, Strategy for Youth for 2009-2013 and the National Strategy on Reproductive Health for the period 2005-2015. The basic objectives in the area of youth health and development of these strategic documents are aimed to increase access to information and qualitative health services, such as youth friendly health services.

Moldova embarked on the road of reforming its health system that targets youth after the Inter-Agency Group (UNFPA, WHO and UNICEF) adopted the YFHS Concept in 2001. The first steps taken in 2001-2003 were to establish 3 pilot YFHCs and, in parallel to advocating for a policy development on YFHCs, capacity building for service providers within existing services, and for the development of national norms and standards for quality YFS.

The National Concept of Youth Friendly Health Services is the cornerstone of the YFHS approach in Moldova and it has been enacted at the end of 2005. It defines Youth Friendly Services in Moldova, makes a distinction between services provided in a youth-friendly manner compared to the services in the general health care system, sets working principles and components of YFHS, outlines the model of implementation of YFHS and its integration into the existing health system, sets the minimum and extended packages of YFHS and the coordination mechanism, as well as defines the responsibilities at national and local levels and sets an M&E framework.

A next step, in 2005, was the creation of the network of youth-friendly health centers, supported by the International Development Association (IDA), the World Bank, and the Swiss Agency for Development and Cooperation. This included the establishment of ten new centers, including capacity building of service providers from these centers in the area of adolescent health care. In 2007, the centers were integrated in the state healthcare system as functional units of primary public medical institutions. They provided integrated services by using multidisciplinary teams and the range of services included medical consultations regarding general and reproductive health, counseling, including psychological and with the purpose of reducing risks, referrals to various services and preventive activities through informational and outreach work.

A major success was that the health insurance fund took over financial support for the YFHCs in 2008. At the moment YFHS are covered by National Health Insurance Company (NHIC) based on global budgets, focusing mostly on health services. Yet financial allocations are not sufficient to cover all current needs of YFHCs, and are not sufficient for meeting the needs of the most vulnerable young people (outreach services, prevention and education activities etc.) .

To increase young people's access to quality health services in 2006 began a process of developing quality standards for health services for young people, and this was supported in technically by UNICEF Moldova and the WHO Regional Office for Europe. The final version of these standards was

approved in 2009 by the Ministry of Health. This document aims to present the principles of organization of existing health services and youth-friendly health services to address effectively the health and development of young people in the health system and to present practical methods and tools to ensure service organization in a youth-friendly manner. A baseline evaluation (2009) of the YFHCs showed a total compliance of 60% to the YFHS quality standards.

In 2011, supported by Swiss Cooperation Office, UNICEF and WHO, the MoH initiated a process of YFHS scaling up at the national level, based on WHO systemic approach to improve quality of health services for adolescents.[1] This process involved vertical scaling up actions - improving regulatory basis for YFHS, revision of Medical University Curricula in the area of adolescent health care, improving M&E system and financing mechanisms of YFHS and horizontal scaling up actions – creation of YFHC in each district of Republic of Moldova, capacity building of health care providers from YFHC and primary health care services. As a result of this process, in 2012, 28 public medical institutions at the primary health care level (from 25 districts and 3 from 2 Moldavian municipalities) were contracted by NHIC for services offered by YFHC subunits (until 2011 there were only 12 YFHC) and about 70,000 young people during the year 2012 have benefited from these services. In January 2013, the number of contracted YFHCs by NHIC raised to 38 (3 municipal and 35 district YFHCs), that can offer access to these services to young people from all territories of Republic of Moldova. These first results of the YFHS scaling up process will be followed by actions to assure sustainable, qualitative and effective services by the YFHC network – now only a few of these centers serve as *models of excellence* for such kind of services in the country and will likely serve as referral centers when youth-friendly approaches are integrated into the primary health care network.

At the national level, the Program of YFHS is coordinated by the MoH (Department of Primary Health Care) in cooperation with the M&E unit of National Mother and Child Centre and YFHC Neovita (acting as a national resource center in this field). At the moment referral patterns are established between the YFHCs and educational institutions, NGOs and specialized health institutions, although not formalized yet in normative documents.

[1] Conceptual framework of scaling up YFHS in Republic of Moldova. WHO, HFY, MOH, 2010. Chisinău, Moldova.

3 COST ANALYSIS OF YOUTH FRIENDLY HEALTH SERVICES PROGRAM IN 2011

3.1.1 OBJECTIVES OF COST ANALYSIS

The overall objective of this study is to assist the Government of Moldova in its efforts to improve health of its youth. Immediate objectives of the cost analysis are:

- To develop research methodology and to define data requirements for assessing costs of the YFHS program in Moldova.
- To determine the cost of good quality sexual, mental and general health components of the YFHS program in Moldova.
- To document the methodology, results of the study, and to transfer knowledge to policy-makers and program managers in Moldova.
- To expand the global evidence base related to the cost of good quality youth friendly health services.

3.2 METHODOLOGY OF COST ANALYSIS

This section provides a detailed description of the methodology used to assess costs of the YFHS program.

3.2.1 SELECTION OF WELL PERFORMING YFHCS

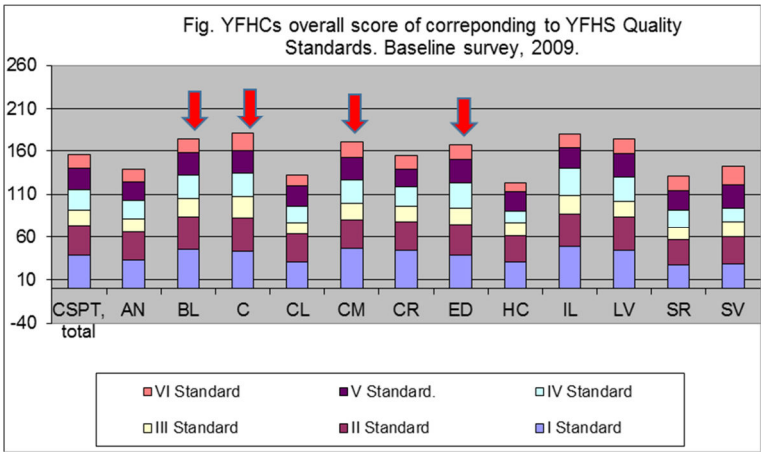
The implementation of the YFHS program varies between the YFHCs. The objective of the cost analysis was to evaluate costs of good quality YFHSs. Therefore four well performing centers were selected out of 28 YFHCs, which were contracted by NHIC in 2012, in Moldavia (some of those were being created at the time of writing this report). In this way the cost analysis presents resources needed for implementation of a good quality YFHS program.

The selection of the centers was based on the following criteria; i) the center has been operational for more than 3 years, ii) it provides an extended YFHS package[1], and iii) it meets the quality standards of YFHS, iv) it obtained a high score in a baseline evaluation of YFHS Quality Standards in 2009[2] (Figure 3-1).

[1] Ministry of Health of the Republic of Moldova, 2009, Quality Standards of Youth Friendly Health Services in the Republic of Moldova, Chisinău 2009.

[2] UNICEF, 2009, Quality of YFHS. Baseline Evaluation Report, Chisinău 2009

FIGURE 3-1: YFHCS OVERALL YFHS QUALITY STANDARD SCORES, BASELINE SURVEY 2009



Moreover, to ensure that the sample is representative for the program, two urban and two rural centers were selected. Table 3-1 summarizes characteristics of the selected centers.

TABLE 3-1: SELECTED WELL PERFORMING YFHCS

YFHC	Location	Urban / rural	Catchment population (10 – 24 years)
Neovita	Chisinău - the capital and the largest city	Urban	35,000
Atis	Bălți - third largest city	Urban	27,000
Salve	Edinet - smaller town in the North district with many villages in the catchment area	Rural	16,000
Tineri Pentru Tineri	Cimislia - smaller town in the South district with many villages in the catchment area	Rural	15,000

MAP 3-1: LOCATIONS OF THE SELECTED YFHCS IN MOLDOVA

3.2.2 DEFINITION OF GOOD QUALITY YOUTH FRIENDLY HEALTH SERVICES

According to the YFHS Quality Standards in the Republic Moldavia document1, YFHC should follow the below requirements to assure good quality of services:

I. To address by the activities the priority problems for YFHS::
   1. STI / HIV,
   2. Unwanted pregnancies and unsafe abortions,
   3. Alcohol and drug abuse,
   4. Psycho-emotional disorders,
   5. Violence,
   6. Nutritional disorders, and
   7. Puberty development disorders.

II. To focus the activity on the target population for YFHS:
   1. Young people of 10-24 years old. At the same time, the YFHS will pay particular attention to categories of young people, who are more subject to certain health and development risks.

III. To correspond to 6 quality standards created for youth friendly health services:

   1. Young people know when and where they can request healthcare.
   2. Young people have easy access to health services they need and when they need them.
   3. Healthcare providers observe young people's confidentiality and intimacy.

4. Health services mobilize the community to promote the youth friendly health services.
5. Healthcare providers offer effective and comprehensive services in line with the real needs of young people.
6. All young people have equal access to healthcare.

These standards have subsequently been worked out in detailed quality criteria for resources, processes, and outcomes of YFHSs. Furthermore, required actions to ensure implementation of these standards have been defined. As a result of this, a comprehensive overview of activities to be implemented by the YFHSs has been defined.

IV. To offer an extended package of YFHS - Information; Counseling; Medical services, psycho-correction social support; Referral and Organizational- methodological activities

For the purpose of this report it is useful to mention the extended package of services (*types of services)* that YFHCs are required to deliver by a multi-discipline team of consultants:

1. **Information** (individual or in group) on:

   - Prevention of STI / HIV through informational hours, trainings, individual discussions, media releases, distribution of materials etc.
   - Conception, contraception, and early pregnancy care.
   - Consequences of substance use, signs of addiction.
   - Recognize signs of stress and other signs of psycho-emotional disorders. Provide messages to build a positive attitude towards oneself.
   - The types and consequences of violence, laws and regulations.
   - Principles of healthy nutrition during adolescence, promoting silhouettes "model" without signs of malnutrition among adolescents.
   - Peculiarities of physical and psycho-emotional development during adolescence.

2. **Counseling:**

   - Confidential HIV and STIs pre-, post-test counseling
   - Contraception counseling, pre-abortion and post-abortion counseling
   - Motivational counseling for substance abuse
   - Stress coping counseling.
   - Integrated counseling (with inclusion of a lawyer, social worker etc.) people involved in violence - the victim and perpetrator.
   - Motivational counseling for healthy eating of pre-adolescents, adolescents and parents.
   - Motivational counseling of healthy life style (physical activity, rest etc.). Counseling (integrated) individuals and parents on questions related to the personal development of adolescents

3. **Medical Services, psycho-correction social support**

   - Distribution of condoms, syringe exchange, express STI testing, test collection, treatment (optional).
   - HIV testing; diagnosis, treatment, prevention of opportunistic infections in HIV-infected.

- Offering contraceptives, including emergency contraception, pregnancy testing. Offering various types of contraception, safe abortion services
- Identifying signs of drug use, the overdose.
- Identifying signs of psycho-emotional disorders, psychosomatic status of adolescents. Psychological testing, psychotherapy.
- Identifying signs of violence. Pregnancy test, HIV/STI tests and treatment, psycho-therapeutic sessions in case of sexual violence.
- Testing of Hb, Fe, I, indicating Fe preparations and I. Psychological testing and identifying nutritional disorders (bulimia, anorexia and etc.). Psychotherapy, individual adjustment of alimentation regiment in case of nutrition disorders.
- Identifying peculiarities of physical and psycho-emotional development of adolescents, morphometry, assessing the development of secondary sexual signs after Tanner. Hormone testing, karyotype, radiography of the skull base, the skeleton hand etc., Psychological testing, and psycho-therapeutic correction of pubertal disorders.

4. **Referral**

- for laboratory testing and para-clinical examinations,
- for higher level specialists consultation – psychiatric, nutritional, endocrinologist, infectionist etc.
- for hospital care – gynecological, urological, narcological departments, perinatal centers etc.
- for social support organizations
- for legal support organizations and medico-legal expertize
- for harm reduction programs
- for rehabilitation services (after violence etc.)
- for mental health services etc.

5. Organizational-methodological activities

- Organizes and performs advocacy activities for adolescent health and YFHS (roundtables, mass media emissions, meetings etc.).
- Elaboration and distribution of the informational materials about the adolescent health problems and promotional materials of youth-friendly health services (billboards, posters, calendars, etc.).
- Elaboration and implementation of educational and training programs related to adolescent health and development for pre-adolescent and adolescent parents, teachers, health workers, social workers and other professionals involved in working with adolescents;
- Elaboration and implementation of educational and training programs for young volunteers. Organized volunteering at the Center, particularly focusing on the "peer to peer" involving adolescents and young people from vulnerable groups;
- Provide collaborative learning sessions for professionals and volunteers in key areas of activity of the Centre.
- Acting as the referral institution for family doctors in health and development issues of adolescents and youth.
- Performing periodic evaluations of beneficiaries needs assessment and client satisfactions evaluations

Corresponding of YFHC to these quality requirements are monitored using the set of YFHS quality indicators and periodic evaluation using a set of YFHS quality evaluations tools.

3.2.3 SCOPE OF COST ANALYSIS

The scope of cost analysis is:

i. Sexual and reproductive health (SRH) services provided by the selected four well performing YFHCs in 2011. These SRH services were: STI, HIV, early pregnancy and contraception.

ii. General health and mental health services (non-SRH services) provided in the selected four well performing YFHCs in 2011.

The analysis provides decision makers and program managers with a comprehensive overview of the total budget, funding sources, the main expense categories and cost per service delivered. The costing results can be used to support program planning and for negotiations to acquire appropriate financing for the YFHSs.

3.2.4 PERSPECTIVE AND TIME HORIZON OF COST ANALYSIS

The cost analysis was carried out from a program perspective (healthcare provider's perspective). This means that all the costs related to delivering the YFHS program in the selected centers were included in the analyses. The costs of YFHCs covered by the National Health Insurance Company (NHIC) and the Family Doctor Centers (FDC, host institutions) were included in the analysis. Moreover, financial and material support provided by local authorities and international donors were included as well. Unpaid voluntary work and beneficiaries' out-of-pocket payments (e.g. drug costs in a pharmacy) were excluded. The time horizon of the cost analysis was one year. The costing was conducted for year 2011, which was the closest complete financial year at the time of conducting this study. All costs are at 2011 prices. The costing was done with an Excel model. The results are presented in 2011 Moldovan leu (MDL) and 2011 USD. Costs in MDL were translated to US$ at a rate of 11.72[1].

3.2.5 DATA SOURCES

3.2.5.1 FINANCIAL INFORMATION

The costs analyses were based on records of: i) Finance Services of Public Medical Health Institutions for YFHCs (FSPMHI), ii) NHIC, iii) National Centre of Reproductive Health and Medical Genetics (NCRHMG), iv) Health for Youth Association (the main implementation agency of the "Healthy Generation" project, and v) information received from UNICEF and other donors.

3.2.5.2 TIME USE SURVEY OF PERSONNEL OF YFHCS

Personnel salaries are a large part of the budget of the YFHS program. One of the objectives of this study was to calculate costs per service type (like STI treatment) in the YFHCs. To be able to do this, one needs to know how the personnel spend their working time at the centers. A special time use form was developed and tested for this purpose. The survey was used to monitor time use of 28 salaried employees during a period of two weeks in September 2012. They self-reported their time

[1] Exchange rate on 31 December 2011: 1 USD = 11.7164 Lei.
http://www.currency.me.uk/convert/usd/mdl (accessed 27 October 2012)

use during the survey period. It was assumed that: i) the two-week monitoring period in September is representative for the average workload during the year, and ii) time use of personnel in September 2012 was similar in 2011 (the year of the cost analysis). In addition to inputs for the cost analysis, the results provide interesting insights in the operations of the YFHCs. The data collected during the time use survey were statistically analyzed by using SPSS program. The results of the survey are described in chapter 4 and the survey form can be found in Appendix 10.1.

3.2.5.3 SERVICES PROVIDED AND PERSONS REACHED

The number of services provided and the number of persons reached are important inputs for cost analysis. The time use survey was as a source of the number of services provided and beneficiaries reached. To ensure consistency of the inputs the survey results were compared with program reporting 2011 (Report form nr. 49).

3.2.6 STRUCTURE OF RESULTS OF COST ANALYSIS

The results of cost analysis are presented in the following way: 1) total costs per YFHC and an extrapolated budget for 28 YFHCs, 2) costs per expense category, and 3) cost per financing source. Then more detailed costing was carried out on: 4) per health care service type and per person reached, 5) per opening hour, and finally 6) training costs per staff member.

3.2.6.1 COST PER YFHC

We present the total implementation cost of a good quality YFHS program in the four YFHCs and costs of each of the centers in 2011. At the time of writing this report there were 28 YFHCs in Moldova. Not all of them are meeting the quality standard criteria for YFHSs. We extrapolated average budget of three smaller centers: Atis, Salve and Tineri Pentru Tineri, to estimate costs of delivering good quality YFHSs in all 28 YFHCs of Moldova. Neovita center is a flag ship of the program and has a much higher budget. Therefore Neovita was excluded from the extrapolation.

3.2.6.2 COST PER EXPENSE CATEGORY

Next, we present the total costs of the selected YFHCs in five standardized expense categories: 1) salaries, 2) medical supplies, 3) information materials, 4) personnel training, and 5) operations. **Salary costs** relate to gross salaries of the personnel of the YFHCs and program-related portion of salaries of financial and monitoring and evaluation (M&E) personnel. Salary information was based on payroll records of finance services of Public Medical Health Institutions for YFHC (PMHI). **Medical supplies** include costs of: tests (smears, pregnancy tests etc.), medicines for emergency care and medical materials used in the centers, distributed condoms and contraceptives. These costs were based on records of NCRHMG, NHIC and information received from donors on value of their condom and contraceptive donations. Contraceptives were received as a material donation from UNPFA. The actual procurement costs of UNPFA were used for costing. The bulk procurement prices of UNFPA were lower than if the YHFS program would purchase the contraceptives by themselves. Patients purchase their medicines by themselves from pharmacies. The costs of investigations and tests performed in other medical institutions to clarify diagnostic, treatment of referred patients at the other institutions and patients' out-of-pocket costs were excluded from the analysis. **Information materials** category covers procurement / production costs of informational materials, brochures and leaflets. These costs were based on financial records of the centers and value of UNICEF's information material donations. **Training costs** relate to training and capacity building of personnel of the four centers. There were several trainings in 2011 and cost information of these trainings were received from the organizers, including the YFHS program, UNICEF, United Nations Population Fund

(UNFPA) and Swiss Development Cooperation agency (SDC). **Operation costs** include computers, office supplies and -furniture, facilities and maintenance of the centers and transportation costs. These costs were based on financial records of the centers and their host institutions, NHIC and NHIC and Health for Youth Association. Useful life time of computers, furniture and building repairs were assumed to be five years. Annualized portion of these costs were used for the cost analysis. The centers operate inside buildings of the host institutions (FDCs). Therefore, facilities and maintenance cost were allocated by using space (m^2) as a proxy.

3.2.6.3 FINANCING SOURCES

Then we provide an overview of financing sources of the four YFHCs in 2011. The total costs of the four YFHCs are split per financing source. The financing sources include: NHIC, external donors (UNICEF, SDC and other), FDC and local authorities and other sources. Both financial and material supports were taken into account.

3.2.6.4 COST PER HEALTH CARE SERVICE

Services
The YFHCs provide a range of health care and informational services. The health services were grouped into five main categories. SRH services were: 1) STI, 2) HIV, and 3) early pregnancy and contraception. Other non-SRH services were: 4) general health services, and 5) mental health services. In addition, informational and educational services were categorized as IEC activities.

STI services include testing, diagnostics, treatment and follow up consultations, that include at all steps: information, motivational counseling for safe sexual behavior and condom distribution. **HIV** services are information, offering or referrals to specialized clinics for voluntary confidential counseling and testing (VCCT), condom distribution, in case of HIV+ referral for treatment, social and peer support. At the time of conducting this study the YFHCs did not carry out VCCT themselves. However, there is a plan to start providing rapid VCCT services in the YFHCs in the near future. **Early pregnancy and contraception** services were grouped together. These cover information, contraceptive counseling and contraceptives distribution (condoms, COC, etc.); pregnancy diagnostic (tests, examination, USG), offering or referral for safe abortion or antenatal care, social support. Currently only Neovita YFHC has permission to offer safe abortion services, for other centers abortions are conducted elsewhere. **Other SRH** services cover a range of services (e.g. puberty disorders, genital inflammatory disorders, ovarian dysfunctions, genital tumors and cervix pathology consultations, etc.). **General health** services include consultations related to e.g. skin problems, prophylactic checks, nutrition disorders, urinary pathology, and healthy lifestyle promotion. **Mental health** services include psycho-emotional, violence related and substance abuse information, counseling and referral.

Number of services
The time survey results were used as a source of the number of services delivered in the four YFHCs. Technically this was not an optimal choice, because the cost information and the number of services delivered should be from the same period. The costing data is from 2011 and the survey was carried out in 2012. However, we needed to choose the 2012 survey data, because there were considerable differences between the reporting of 2011 (Report form nr. 49) and the time use survey results. Operationally the four centers have remained almost unchanged between 2011 and 2012, with the exception of the VCCT services for which adjustments were made. Therefore, operational changes would not explain the differences. There seemed to be issues with the validity of service data recorded in the Report form nr. 49, due to e.g. missing approved registers, cumulative record keeping method and non-capture of informational and educational activities. Moreover, the number

of services is likely to have been recorded more accurately during the time use survey. With regards to the IEC activities, the time use survey period was not representative for the entire year, because additional trainings were organized in the centers. During the survey period IEC activities reached approximately four times more persons than normally. Therefore, an adjustment needed to be made for cost per IEC activity calculations. The number of IEC activities were reduced four fold, to the level reported in the form 49 for 2011. Average time required for delivering each health care service type and IEC activities were also obtained from the time use survey (paragraph 4.1.5).

Allocation of the budget
The budget per service was calculated as follows: 1) The salary costs were divided into: medical service-, IEC activity- and overhead salaries. The distribution was based on the result of the time use survey. 2) The medical service and IEC salary costs were allocated to each service type according to % working hours used. 3) The remaining overhead salary costs were divided between medical services and IEC activities in accordance with the number of working hours. 4) Personnel training costs were handled in the same way as the salary costs. 5) All medical supply costs were allocated to medical services. Additional costs for rapid HIV tests were added for HIV services, because the tests were not used in 2011. 6) Information material and operation costs were split between medical services and IEC by using number of services delivered in 2011. Finally, the cost per service was calculated by dividing the allocated budget by the number of services delivered.

3.2.6.5 COST PER PERSON REACHED

Most of the time more than one consultation is needed to deal with a patient's problem, for example 1) information, risk assessment, referral for tests and examination, 2) final diagnostic, treatment prescription, counseling for safe sexual behavior, and motivational counseling to maintain safe behavior, and 3) check-up after treatment. Therefore, in theory the cost per person reached would be calculated from service combinations provided for each patient. However, in practice it was not possible to obtain the type and number of services provided for each patient from the current medical reporting system of the YHFS program. Moreover, the time use survey period was too short to capture the service combinations per patient. In order to estimate the costs per person reached, we divided the services to two groups: health care services and IEC activities. Next, the following assumptions were made: 1) for all the health care services there were on average two consultations per patient, and 2) for IEC services one activity per person. These assumptions were based on expert opinions of employees of the YFHS program.

3.2.6.6 COST PER OPENING HOUR

Information on weekly opening hours of the four YFHCs was received from program personnel. Annual opening hours were calculated on the basis of 50 working weeks per year. Two weeks were deducted for public holidays. The 'cost per one opening hour" was calculated by dividing the total costs (paragraph 3.3.1) by the sum of the yearly opening hours of the four centers.

3.2.6.7 TRAINING COSTS PER STAFF MEMBER

Trainings and capacity buildings were given to salaried employees and volunteers in 2011. Therefore, both groups were included in training costs calculations. The total training costs in the four YFHCs in 2011 were divided by the total number of staff members (employees + volunteers) to calculate 'training costs per staff member'.

3.3 RESULTS OF COST ANALYSES

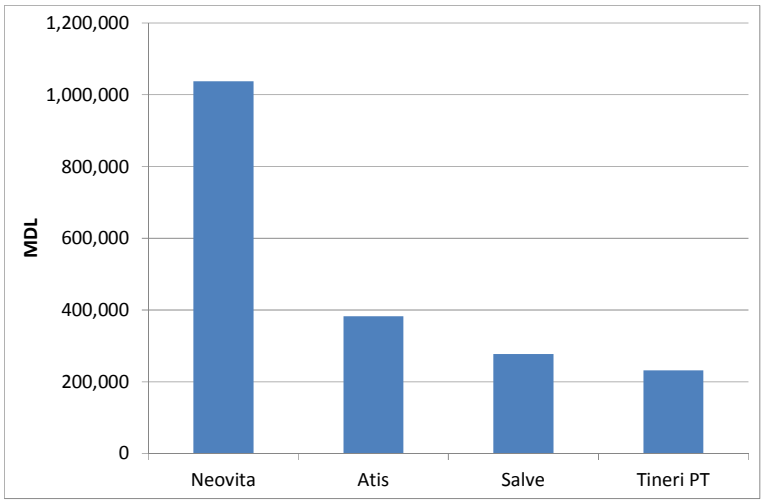
This section reports on the results of the cost analysis of the four YFHCs in 2011. *Please note that all the costing results represent the selected four YFHCs, not the entire YFHS program.*

3.3.1 TOTAL COSTS IN 2011

"How much the YFHS program cost in the four YFHCs in 2011?"

In 2011 total annual costs of delivering good quality YFHSs in the selected four YFHCs were MDL 1,928,000 (USD 165,000). Figure 3-2 shows the total costs per center. Neovita, the largest center, had annual cost of MDL 1,038,000 (USD 97,000). Costs of Atis center were MDL 383,000 (USD 32,000). This was followed by the smaller rural centers Salve: MDL 277,000 (USD 24,000) and Tineri Pentru Tineri: MDL 232,000 (USD 20,000).

FIGURE 3-2: ANNUAL COST OF YFHS PROGRAM IN THE FOUR CENTERS IN 2011.



"How much good quality YFHSs program would cost at the country level?"

Average annual budget of the three smaller centers; Atis, Salve and Tineri Pentru Tineri, was approximately MDL 300,000 (USD 26,000). There are 27 YFHCs + Neovita. The total costs of implementation of good quality YFHSs in all the YFHCs in Moldova would be MDL 9.1 million (USD 777,000)[1].

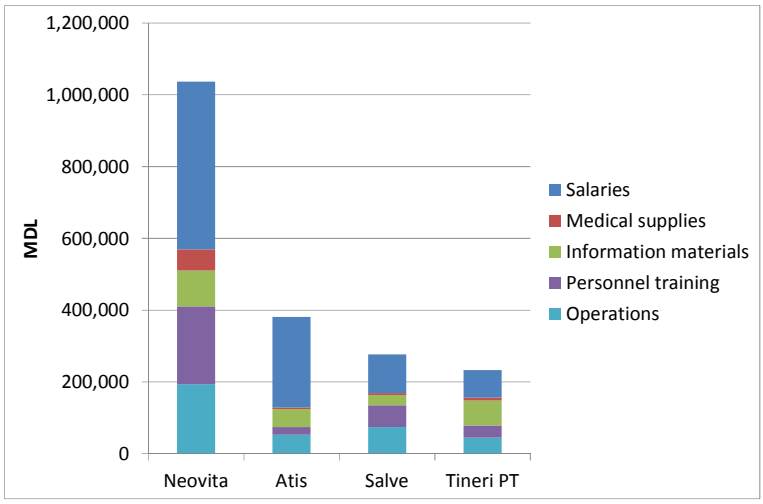
[1] Calculations: 27 * MDL 300,000 + MLD 1,000,000 (Neovita) = MDL 9,100,000 (USD 777,000)

3.3.2 COST ANALYSIS PER EXPENSE CATEGORY

"On what the funds were spent?"

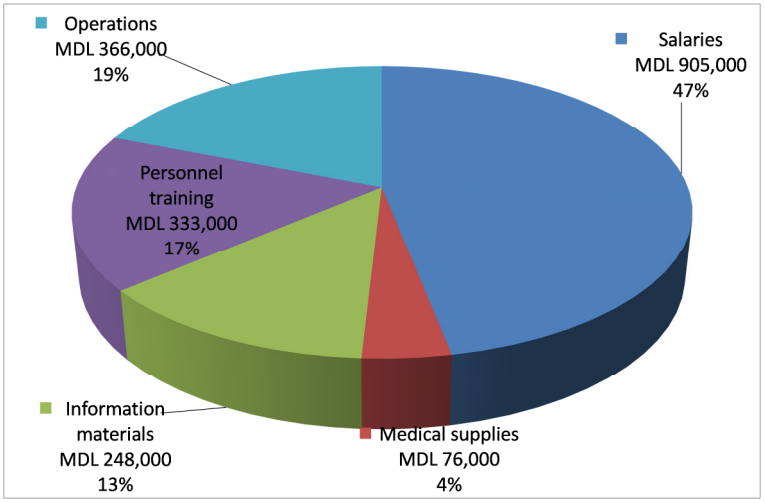
Figure 3-3 gives an overview of expense categories per center in 2011. Salary costs were driven by the number of personnel (full-time equivalents) working in a center. In the larger centers, Neovita and Atis, there were more medical and support personnel. Consequently the salary costs were higher. Moreover, in Atis center the relative portion of salary costs (66%) was higher than in other centers. The main reason for this is that Atis center received less external support for its operations than the other centers. Personnel training costs were also linked to the number of employees, with the exception of Atis center where less was spent on personnel trainings in 2011. The majority of medical supplies were used in Neovita center. This is because the center provides a broader service package and is larger than the other centers. Similar portions of the costs were spent on information materials across the four centers. In addition Tineri Pentru Tineri center received external support for information materials in 2011. Operation costs were highest in Neovita center. In addition to regular operation costs, this also included purchases of office computers and furniture. Operation costs in Salve center were higher due to renovation work carried out in 2011.

FIGURE 3-3: ANNUAL COSTS AND EXPENSE CATEGORIES PER YFHC IN 2011.



A breakdown of total cost of the four YFHCs in 2011 is shown in Figure 3-4. Personnel salary costs were by far the largest cost category, with 47% (MDL 905,000, USD 77,000). The second largest group was operation costs: 19% (MDL 366,000, USD 31,000). Third were personnel training costs 17% (MDL 333,000, USD 28,000). Together the two personnel related categories; salaries and personnel training, cover 64% of the total costs. Information materials are the fourth cost category and accounted for 13% (MDL 248,000, USD 21,000). Medical supplies were the smallest group: 4% (MDL 76,000, USD 7,000).

FIGURE 3-4: BREAKDOWN OF TOTAL COST OF THE FOUR YFHCS IN 2011.

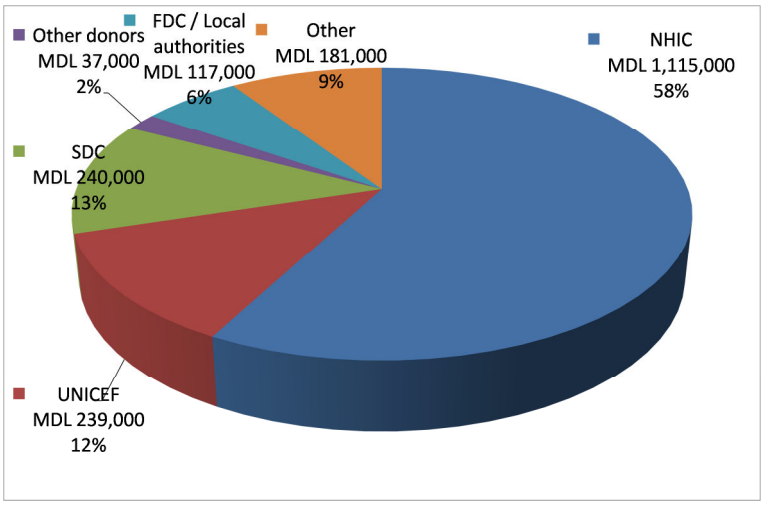


3.3.3 FINANCING SOURCES

"How the four YFHCs were financed?"

Figure 3-5 provides an overview of financing sources of the four YFHCs in 2011. The total annual costs were MDL 1,928,000 (USD 165,000) in 2011. The NHIC was the largest financier of the YFHS program in the four YFHC in 2011. 58% of the costs (MDL 1,115,000, USD 95,000) were covered by the NHIC. Support from UNICEF accounted for 12% (MDL 239,000, USD 20,400) and from Swiss Development Cooperation (SDC) for 13% (MDL 240,000, USD 20,400). The sum of other donors was 2% (MDL 37,000, USD 3,000). Contributions from FDC and local authorities were 6% (MDL 117,000, USD 10,000) and other sources 9% (MDL 181,000, USD 15,500).

FIGURE 3-5: FINANCING SOURCES OF THE FOUR YFHCS IN 2011.



Please note that this presents the funding of the four centers, not the entire YFHS program.

3.3.4 COST PER HEALTH CARE SERVICE

"How much does delivering each service cost?"

Table 3-1 summarizes the calculation of cost per health care service and IEC activity. The costs in 2011 column shows the budget allocated for each service type. The services column has the number of services provided according to the time use survey. (The survey results are presented in chapter 4 below). The last column shows the cost per service.

A STI consultation cost MDL 59 (USD 5.1). An HIV consultation cost on average MDL 117 (USD 10.0). This is higher, because rapid HIV tests were added to the 2011 budget. Patient contacts related to early pregnancy and contraception were MDL 61 (USD 5.2). Other SRH services were MDL 46 (USD 3.9). Mental health services were the most expensive MDL 123 (USD 10.5). This is due to longer duration of the consultations. IEC activities had the lowest cost MDL 30 (USD 2.6). The cost is lower because these services are provided to groups. An average group size was 20 persons. Other services in this table are individual consultations.

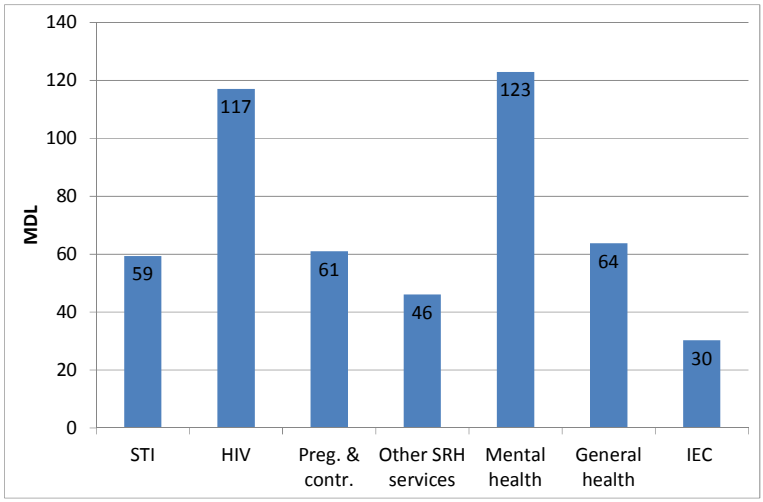
TABLE 3-2: COSTS, NUMBER OF SERVICES AND COST PER SERVICE IN 2011.

Health care service	Costs	Services	Cost per service
STI	MDL 343,000	5,780	MDL 59
HIV	MDL 302,000	2,580	MDL 117
Early pregnancy & contraception	MDL 274,000	4,500	MDL 61
Other SRH	MDL 128,000	2,780	MDL 46
Mental health	MDL 209,000	1,700	MDL 123
General health	MDL 201,000	3,150	MDL 64
IEC activities	MDL 600,000	20,000[†]	MDL 30[††]

[†]Source Report from nr. 49, 2011.
[††]Cost per person reached, not cost per IEC event

Figure 3-2 illustrates the cost of delivering the services in the four YFHCs in 2011. Finally, these calculations depend on how the budget was allocated to each service type and selection of the source of the number of services delivered (see paragraph 3.3.4 above). Therefore, the costs per service should be interpreted with caution.

FIGURE 3-6: COST PER SERVICE IN 2011.



3.3.5 COST PER PERSON REACHED

"How much does reaching one person cost?"

The allocated budget for all the health care services provide by the 4 YFHCs was MDL 1.45 million (USD 124,000) in 2011. In total there were 20,500 health care consultations. It was assumed that on average there were two consultations per patient. Therefore, the average cost of providing YFHS (health care services only) to one person would cost MDL 142 (USD 12.2). For IEC activities the budget was calculated to be MDL 600,000 (USD 51,000). In total 20,000 persons were reached by these services in 2011. Therefore the average cost of providing IEC services to one person would be MDL 30 (USD 2.6). These calculations rely on assumptions on the budget allocations, number of services delivered and contacts per person. Therefore, the cost per person reached should be interpreted as estimations.

3.3.6 COST PER OPENING HOUR

"What is the cost of one opening hour of YFHC?"

Weekly opening times of the four YFHCs are shown in Table 3-3. The operating hours varied depending on the program setting and location of the YFHCs. In all the centers the opening hours were kept the same round the year, also during school summer holidays. In total the four centers were estimated to be open for 7,500 hours per year. The total annual costs were MDL 1,928,000 (USD 165,000) in 2011. Therefore, average cost of one opening hour was MDL 257 (USD 22).

TABLE 3-3: WEEKLY OPENING TIMES OF THE YFHCS

YFHC	Opening times	Weekly opening hours
Neovita - Chisinău	Monday - Friday: 8.00 - 19.00 Saturday: 9.00 - 13.00	59 hours
Atis - Bălți	Monday - Friday: 9.00 - 17.00	40 hours
Salve - Edinet	Monday - Friday: 10.00 - 18.00 Saturday: 11.00 - 14.00	43 hours
Tineri Pentru Tineri - Cimislia	Monday - Friday: 16.00 - 17.00[†] Saturday: 9.00 - 12.00	8 hours

[†]It is possible to access some of services at reproductive health office of the FDC on Monday - Friday 8.00 - 12.00. These hours were not accounted as opening times of the Tineri Pentru Tineri YFHC.

3.3.7 TRAINING COSTS PER STAFF MEMBER

"How much was spent on trainings per staff member?"

The total personnel training costs in the four YFHCs were MDL 333,000 (USD 28,000) in the 2011. The centers had 125 staff members (34 salaried employees and 91 volunteers) in the same year. Consequently, the training costs per one staff member were MDL 2,660 (USD 224) in 2011.

3.3.8 LIMITATIONS OF COST ANALYSIS

The cost analysis has some limitations. Firstly, the cost analysis was done in four well performing YFHCs. Therefore the results do not represent the entire YFHS program. Secondly, division of expenses that are shared between the host institutions (FDC) and the YHFCs required allocation decisions, which in turn may influence the total costs. Third, personnel salaries are the largest part of the total budget. Therefore, the results are sensitive to variation of the number of employees in the YFHCs and their salaries. Fourth, the cost analyses per health care service type should be interpreted as estimations, because consultations often include combinations of the services (e.g. STI and early pregnancy). The reported number of services delivered may be inaccurate, because personnel may report the multiple services in different ways. In practice it was not possible to precisely separate how many resources were used on each of the services. Moreover, allocation methods of overhead costs to each service type influence the costs per service. Fifth, cost analyses per person reached should be interpreted as estimations, because it was not possible to obtain the type and number of services provided for each patient from the current medical reporting system of the YHFS program. The time use survey period was too short to capture the service combinations per patient.

4 TIME USE SURVEY

4.1 RESULTS OF TIME USE SURVEY

This chapter presents the results of time use survey among personnel in the four YHFCs in September 2012.

4.1.1 PARTICIPANTS

An overview of the participants of the time use survey is given in Table 4-1. In total, time use of 27 personnel was monitored. In addition one personnel member with two different functions filled in 2 sets of time use forms. This brings the total number of respondents to 28. Three personnel members (10%) were on annual leave and two were on leave during half of the two weeks (half of 6.7%). This means that 13% of personnel was on leave during the study period, which is probably close to the average percentage of personnel who are on leave during or absent during a year. Therefore, the results are likely to be representative for time use of personnel members during an average 2-weeks period.

TABLE 4-1: RESPONSE OF STUDY PARTICIPANTS

YFHC	Total personnel	Eligible personnel*	Participants		Absent	Filled questionnaires
			2 weeks	1 week†		
Neovita, Chisinău	13	11	9	2	0	12††
Atis, Bălți	9	8	7	0	1	7
Salve, Edinet	7	6	4	0	2	4
Tineri, Cimislia	5	5	5	0	0	5
Total	34	30	25	2	3	28

* Only cleaning and laboratory personnel were not eligible
† 2 persons participated in the study for only 1 week due to annual leave
†† 1 person filled in 2 questionnaires, as a gynecologist and as a chief of YFHC

4.1.2 WORKING HOURS PER PERSONNEL CATEGORY

The number of hours worked per personnel category is presented in Table 4-2. The first and second columns indicate the different specialists, and the numbers of them working in the four centers. Because not all specialists work full time in a center, the number of hours worked there is less than the maximum of about 2 (weeks) x 40 hours. For example, the four gynecologists together worked 107 hours, which is 27 per gynecologist, or 13 hours per week. Similarly, the two urologists together worked 36 hours in these two weeks, which is 9 hours per urologist per week. The fourth column (% hours) indicates the share each category of specialists takes in the total time spent by all specialists together. This shows that psychologists are roughly responsible for a quarter of the time spent in the centers. They are followed by nurses, who take 21% of the time spent, receptionists (13%), and so on. Medical specialists are responsible for a rather small percentage of the total time spent (just under 20%). The fifth column indicates the number of activities time was spent on, and column 6 indicates the percentage of all activities that the different categories of specialists were responsible for. For every single activity (for example a counseling session or an outreach activity) the number of minutes has been indicated on the time use form. In this way time use for 1,240 activities in total was monitored. Finally, the last column indicates the mean duration of every activity per specialization.

This column shows that the average duration of activities is almost one and a half hours for chiefs and for psychologists. The length of an activity of a medical specialist is much shorter: half an hour or slightly more on average. Social assistants and nurses spent about one hour per activity.

TABLE 4-2: WORKING HOURS AND NUMBER OF ACTIVITIES BY CATEGORY OF SPECIALISTS, DURING TWO WEEKS.

Specialists	Specialists	Hours	% hours	Activities	% activities	Mean minutes
Gynecologists	4	107	9%	204	17%	31
Venereologists	4	82	7%	129	10%	38
Psychologists	6	285	25%	189	15%	88
Social assistants	4	149	13%	154	12%	58
Urologists	2	36	3%	75	6%	29
Nurses	5	240	21%	248	20%	58
Chiefs	2	94	8%	63	5%	90
Receptionists	2	153	13%	178	14%	52
Total	29	1,146	100%	1,240	100%	56

4.1.3 TIME USE PER ACTIVITY TYPE

The next Table 4-3 provides an overview of time use in terms of type of activity. During the two weeks a total of 1,240 activities were monitored. An activity can be, for example a counseling session, an information hour in a school, or work on an information leaflet. Almost half of the total time spent (and 36% of all activities) is “organizational and methodical”. According to the “YFHS Quality Standards” document, this includes a wide range of different activities:

- Advocacy work
- Preparation and distribution of information materials
- Preparation and implementation of training and other learning programs
- Acting as a referral point for family doctors
- Monitoring and evaluation work.

A total of 727 activities (59%) is directly client-related. If answering phone calls is also included this amounts to 756 (61%), and those activities take almost half (49%) of total personnel time. Administrative and other activities consume 4% of total personnel time. The average amount of time used for the three main activities is for consultation / counseling: 33 minutes per session; information / education (most of it being outreach work): 59 minutes; organizational / methodical: 74 minutes.

TABLE 4-3: WORKING HOURS AND NUMBER OF ACTIVITIES BY TYPE OF ACTIVITY, DURING TWO WEEKS

Type of activity	Hours	% hours	Nr of activities	% activities	Mean minutes
Consultative / counseling	252	22%	458	37%	33
Informational / educational	257	22%	262	21%	59
Organizational / methodological	550	48%	446	36%	74
Preparing conditions for doctor consultation	33	3%	33	3%	59
Other	55	5%	41	3%	225
Total	1,146	100%	1,240	100%	55

4.1.4 NUMBER OF PERSONS REACHED PER ACTIVITY TYPE

Table 4-4 provides an indication of the number of persons reached by client type. It shows that 654 out of 1,240 activities (53%) were related to contacts with clients, in most cases single clients (44% of all activities); and in far fewer cases with couples (5%) or with families (4%). Because a couple represents two individuals and in most cases a "family" is also two persons (often a mother with her daughter), the total number of clients with whom there was a face-to-face contact has been 764. This type of work took 34% of the total personnel time. The category of working in or with groups is difficult to interpret, because this does not only include work with clients or target groups, but also work in groups with colleagues or other professionals.

Based on data not included in this table, we concluded that there have been about 80 outreach activities, most of those being with groups of adolescents. This means that around 60% of work with groups has been at a professional level, and not with clients. Work with info materials is also not client related. All in all, this means that maybe some 40-45% of personnel time is directly client contact related (i.e. individual, couple, family and part of "group").

TABLE 4-4: WORKING HOURS AND NUMBER OF ACTIVITIES BY CLIENT CONTACT, DURING TWO WEEKS

Type of client	Hours	% hours	Activities	% activities	Mean minutes
Individual	328	29%		44%	36
Couple	27	2%	56	5%	29
Individual + family	31	3%	54	4%	34
Group	285	25%	189	15%	91
Non-client facing activities	475	41%	397	32%	72
Total	1,146	100%	1,240	100%	56

4.1.5 TIME PER SERVICE

Table 4-5 presents an overview of the health care services for which clients attend an YFHC. These were calculated from reason for visits answers of the questionnaire. The health care services have been summarized to the following categories: STIs, HIV, early pregnancy & contraception and other SRH services, mental health services, general health services and not client related. This table includes service provided to individual patients, couples and individual + family member(s).

Together all SRH related issues account for 67% of the visits and take 56% of total personnel's working time. Average length of a SRH related service is 21 minutes. Most of the SRH visits are STI related (21% of working time). This is followed by early pregnancy and contraception (17% of working time) and HIV related (11% of working time). Other SRH services account for 8% of working hours. Mental health (13%) and general health visits (12%) take a much smaller share of total personnel working time. Because the basis for this table were all activities personnel members have been involved in it includes a category that is not related to client contacts. Those "not client related" activities (see the second last for rows in the table) took 19% of personnel working time. This category included administration, training activities, staff meetings and working with volunteers.

TABLE 4-5: HEALTH CARE SERVICES AND WORKING HOURS, DURING TWO WEEKS

Health care services	Hours	% hours	Activities	% activities	Mean minutes
STI	81	21%	231	25%	21
HIV	41	11%	103	11%	24
Early pregnancy & contraception	65	17%	180	19%	22
Other SRH services	30	8%	111	12%	16
All SRH services	217	56%	625	67%	21
Mental health problems	49	13%	68	7%	43
General health services	47	12%	126	14%	23
Not client related	73	19%	110	12%	40
Total	387	100%	929	100%	189

Table 4-6 shows the number of IEC activities during the two weeks. This table includes IEC activities services provided to groups. 60% of the IEC working was related to client facing IEC activities and 40% to administration, training activities, staff meetings and working with volunteers. The two week sample on IEC activities may not be representative for the entire year, because training courses for school groups were organized in the centers during the survey period. There were approximately four times more IEC client contacts than normally.

TABLE 4-6: IEC ACTIVITIES AND WORKING HOURS, DURING TWO WEEKS

IEC activities	Hours	% hours	Activities	% activities	Mean minutes
IEC	170	60%	171	64%	60
Not client related	115	40%	98	36%	70
Total	285	100%	269	100%	64

4.1.6 TIME USE PER INTERVENTION TYPE

Table 4-7 presents the time spent by all personnel members by type of intervention. This table includes service provided to individual patients, couples and individual + family member(s). The table should be interpreted with care, because the different categories probably have been interpreted in different ways. For example, "information" may mean that information has actually been provided to a client of group of clients, but it may also mean that information materials have been prepared. This table includes service provided to individual patients, couples and individual + family member(s).

TABLE 4-7: WORKING HOURS AND NUMBER OF HEALTH CARE SERVICES BY TYPE OF INTERVENTION, DURING TWO WEEKS

Type of intervention	Hours	% hours	Activities	Mean time minutes
Information	129	33%	494	16
Counseling	111	29%	342	19
Examination	70	18%	297	14
Treatment	9	2%	49	11
Referral to other	1	0%	4	10
Provision of supplies	10	3%	96	6
Educational program	33	9%	105	19
Other	24	6%	31	46
Social support	0	0%	1	12
Total	386	100%	1,419	16

TABLE 4-8: WORKING HOURS AND NUMBER OF IEC ACTIVITIES BY TYPE OF INTERVENTION, DURING TWO WEEKS

Type of intervention	Hours	% hours	Activities	Mean time minutes
Information	159	56%	130	73
Counseling	9	3%	12	43
Educational program	65	23%	60	65
Other	51	18%	70	44
Work on info materials	1	0%	1	87
Total	285	100%	273	63

4.1.7 TIME SPENT OUTSIDE OF THE CENTERS

Table 7 presents an overview of the time spent by all YFHC personnel in and outside the center. The table indicates that personnel members spend one quarter of their time on work outside the center. Activities outside the center are of longer duration (106 minutes per activity) than inside the center (48 minutes).

TABLE 4-9: TIME SPENT BY ALL PERSONNEL IN AND OUTSIDE THE YFHS CENTER.

Place of activity	Hours	% hours	Activities	% activities	Mean minutes
Activities in YFHC	860	75%	1,078	87%	48
Activities outside YFHC	286	25%	162	13%	106
Total	1,146	100%	1,240	100%	55.5

4.1.8 ACTIVITIES AND TIME SPENT OUTSIDE OF THE CENTERS

Time spent outside the center per category of service provider is presented in Table 4-10. Most activities outside the center are implemented by the psychologists and the social assistants, who are together responsible for almost 80% of the time spent outside. In terms of the number of activities both categories of service providers together are responsible for 72% of outdoor activities. The mean duration of an outdoor activity of the psychologists is more than two and a half hours. On the other hand, medical specialists (i.e. gynecologists, venereologists and urologists) perform only 10% of outdoor activities.

TABLE 4-10: TIME SPENT OUTSIDE THE CENTER BY CATEGORY OF SERVICE PROVIDER.

Service providers	Hours	% hours	Activities	% activities	Mean minutes
Gynecologist	14	5%	3	2%	270
Venereologists	9	3%	7	4%	77
Psychologist	153	54%	58	36%	158
Social assistant	75	26%	59	36%	76
Urologist	3	1%	6	4%	30
Nurse	9	3%	5	3%	40
Chief	20	7%	11	7%	106
Receptionist	4	2%	13	8%	20
Total	286	100%	162	100%	106

The types of activities outside the centers are presented in Table 4-11. Information and education activities take almost half (together 49%) of the work outside the centers, and about 38% of the activities there. If counseling is added, slightly more than half of the time used outside the centers is spent on contacts with target groups, which can be defined as “outreach work”. This means that about 13% of total personnel time (i.e. slightly more than half of the 25% spent outside centers) is used for real outreach work. Unfortunately, the overview includes a large category of “other” activities (40% of time), most of which is probably for meetings with other institutions, but this might also include some outreach work.

Because the total number of activities outside the centers during the two weeks studied has been 162, it can be concluded that about 80 of those have been outreach activities with target groups. The total amount of personnel time needed for this during two weeks has been 137 hours.

TABLE 4-11: TIME SPENT OUTSIDE THE CENTER BY TYPE ACTIVITY.

Type of activity	Hours	% hours	Activities	% activities
Information	110	38%	62	30%
Counseling	7	3%	4	2%
Provision of supplies	4	1%	2	1%
Educational program	30	11%	17	8%
Other	113	40%	64	31%
Methodical and organizational	2	1%	1	1%
Working with documents	97	34%	55	27%
Total	286	100%	162	100%

5 OUTREACH PROGRAM BUDGET FORECAST 2013 – 2017

In addition to the challenges faced when working with young people, especially vulnerable adolescents (EVA), due to the social or health status, often are discriminated and stigmatized. The behaviors MARYP engage in (injecting drug use, selling sex and homosexuality) are illegal in many countries and they may be prosecuted, harassed and stigmatized. As a result, EVA and MARYP can be particularly hard to reach and shun contact with authorities, including health services. In this context it is necessary for outreach workers to make contact in the places where EVA and MARYP live, or where they congregate, such as at railway or bus stations, or in particular bars, parks or streets.

When working with EVA and MARYP, it is important to adopt an outreach approach and take HIV prevention information and services to where they are, rather than expecting them to come to the health facility. It is also important to address the vulnerabilities that they face, for example, sexual abuse and violence, lack of skills, in order to reach them, or for them to feel that the services offered are meaningful to them.

Outreach aims to reach people who are not reached by existing health or information services. Outreach is also intended to prevent other health and social consequences of HIV risk behavior. Outreach means reaching out by an organization to target members within a defined community or population and often involving peers from the target community with services, information, supplies or commodities.

In the actual YFHS program there exist some elements of outreach activities, not yet well focused and structured and not being financed. The Ministry of Health is planning to implement an outreach program for EVA and MARYP in the Republic of Moldova. The outreach program would be an additional component of the existing YFHS program and require additional human (outreach workers, nurses, counselors and volunteers) and financial resources (for medical supplies, transportation, informational materials and staff trainings).

5.1 OUTREACH BUDGET FORECAST

The Ministry of Health is planning to implement an outreach program for at risk adolescents in Moldova. We carried out a budget forecast of outreach services for a five year period 2013 – 2017 to support the planning. The objective was to demonstrate financial implications of scaling up outreach services. The budget calculations were based on a plan to deliver good quality outreach services. Therefore the results presented in this report reflect an optimal situation. The purpose of the study was not to address practical challenges of expansion of the outreach services.

This part provides answers to the following questions:

1) How much funds would be required for scaling up the outreach services in 2013 - 2017?
2) What are likely budget impacts of reaching different coverage levels?
3) What would the annual costs of implementing the outreach services per a person reached be?

The outreach program would be an additional component of the existing YFHS program.

5.1.1 OBJECTIVES OF BUDGET FORECAST

The overall objective of the study is to assist the Government of Moldova in its efforts to improve health of its youth.

Immediate objectives of the outreach program budget forecast part of the study were:

- To determine the cost of good quality outreach services for at risk adolescents in Moldova and to conduct financial scenario analyses of scaling up these services.
- To document the methodology, results of the study, and to transfer knowledge to policy-makers and program managers in Moldova.
- To expand the global evidence base related to the costs of scaling up outreach services for at risk adolescents.

5.2 METHODS OUTREACH BUDGETING

The outreach budgeting forecast was carried out from health care provider's perspective and computed with an Excel model. The forecast was based on MoH's and UNICEF's concept plan on the type of outreach services and risk groups. The outreach services would be additional components to the existing YFHS program. Therefore, the results of YFHS program costing (Chapter 3 above) were used as a main source of cost inputs (e.g. salaries, information materials). The next paragraphs will describe: i) how the outreach program could be rolled out, ii) what the target groups would be, and iii) which services are planned to be provided.

5.2.1 SCALE-UP SCENARIOS

Three alternative outreach service scale-up scenarios were made for the period 2013–2017. The objective of the scenarios was to demonstrate and compare how different coverage levels would influence the program budget.

In the **first scenario** the outreach services were assumed to be implemented in three new raioane (districts) each year. The outreach services would be operating from the existing YFHCs. In 2013 the first three raioane would be: Chisinău, Bălți, and Cimislia. The order in which the remaining raioane would be introduced is not known yet. Therefore we used a model rural raion with a population of 90,000 for budgeting calculations for 2014 – 2017.

In the **second scenario** (pessimistic) we assumed the outreach program would also be introduced in three new raioane per year, but would cover only 50% of the target population set in the first scenario. This could be caused for example by personnel shortages or logistic challenges.

In the **third scenario** (optimistic) we assumed that the outreach program would be introduced in five new raioane each year (instead of three in the first scenario) and have the same coverage in each raion as in the scenario 1.

5.2.2 TARGET GROUPS

The outreach interventions provide services to the following target groups.

Especially vulnerable adolescents (EVA):

1. Adolescents from families with serious medico-social problems (alcoholic parents, TBs, HIV, violence)
2. Adolescents living without parental supervision
3. Adolescents with special needs (disability, retardation)
4. Street children.

Most-at-risk young persons (MARYP):

5. Injection drug users (IDU)
6. Sex workers (SW)
7. Men who have sex with men (MSM)

Exact target group sizes are difficult to quantify before an intervention mapping has been carried out. Therefore for budgeting purposes we estimated the number of persons reached in each target group per year. We based the estimations on: i) expert opinions of personnel working in the YFHS program, and ii) proxies derived from population demographics (age groups 15-19 and 20-24 years) of the catchment area of each of the YFHCs. Moreover, it was assumed that 30% of the persons reached annually would be new and 70% would be follow-up contacts.

5.2.3 OUTREACH SERVICES

Introduction of outreach services in each raion would start with identification of vulnerable and risk groups (EVA/MARYP) and mapping of services that are already available for these groups. To make the scale up scenarios more realistic the outreach services would be introduced in a stepwise manner.

In the first year the following interventions would be started:

1. Health education and promotion of YFHSs
2. Condom distribution
3. Referral services.

In the second year:

4. VCCT and motivational counseling for safe health behavior
5. Express testing services for HIV, STIs (syphilis, gonorrhea, chlamydia and trichomoniasis), pregnancy and hemoglobin (Hb).

In the third year:

6. Optional harm reduction programs.

In the following year implementation of the services would be continued on the same scale.

It is needed to take into consideration that as in general YFHS program, outreach services for EVA and MARYP will be offered in a comprehensive way – during one activity more interventions can be offered together – for example information and condom distribution, motivational counseling and referral etc.

In general the main contents of the outreach program are:

1. Health education and promotion of YFHSs - all members of target groups will be contacted at least 2 times per year and informed about relevant health risks and its prevention, informed about available health services in the places where EVA and MARYP live, or where they congregate. Information will be supported by distribution of corresponding leaflets.
2. Condom distribution – is planned as complementary to the motivational counseling or VCCT services, not as separate action – by 5 condoms during one counseling session for sexually active EVA and by 20 condoms during the one counseling session for MARYP.
3. Referral services – also as complimentary, during the informational activities and counseling. Beneficiaries will be referred firstly for YFHC in-reach services offered by center specialists, and also for other services and institutions according to local referral framework.
4. VCCT and motivational counseling for safe sexual behavior is planned to offer at least one VCCT service per year for sexually active EVA and 2 services per year for MARYP, for EVA involved in risky health behaviors to offer at least 2 motivational counseling sessions per year.
5. Express testing services for HIV, STIs (syphilis, gonorrhea, chlamydia and trichomoniasis), pregnancy and hemoglobin (Hb) – will be performed after risk assessment during the first counseling session, also as a complimentary part for this session.
6. Optional harm reduction programs. These services depend on the local needs and may include for example needle exchange, distribution of hygienic materials and drug replacement therapy services. Can be offered for MARYP as complementary part to informational, counseling activities or as separate service.

5.2.4 COST INPUTS

The outreach services would operate in and from the existing YFHCs. The results of the YFHS program costing (paragraph 3 above) were used as the main cost input source for the outreach budget forecast. We report the results in the same expense categories as used in the YFHS program costing: 1) salaries, 2) medical supplies, 3) information materials, 4) personnel training, and 5) operations.

Average salaries of the four YFHCs were used as salary inputs for each outreach personnel group (outreach workers, nurses and VCCT counselors). Volunteers are an important part of the outreach program. Nevertheless, they do not receive a salary for their work.

The costs of medical supplies for outreach services include: Rapid tests for HIV, STIs, pregnancy and Hb. Condoms were also included in this category. Unit costs of the medical supplies were based on the 2012 prices in Moldova.

Distribution of information materials is a part of the outreach program. Many of the information materials are the same as in the YFHS program. The same portion of the budget was used for outreach information materials as in the YFHS program. The same amount was assumed to be spent on training of an outreach employee as for an YFHS program employee.

Operation costs include computers, office supplies and -furniture, facilities and maintenance of the centers and transportation costs. Outreach activities would be based in the existing YFHCs and would therefore not cause additional space or maintenance costs. On the other hand the outreach personnel are expected to require additional computers and office supplies. The same portion of the budget was used for these items as in the YFHCs program. Due to the nature of outreach services it was assumed that a three times higher portion of the costs would be spend on transport than in the current YFHS program.

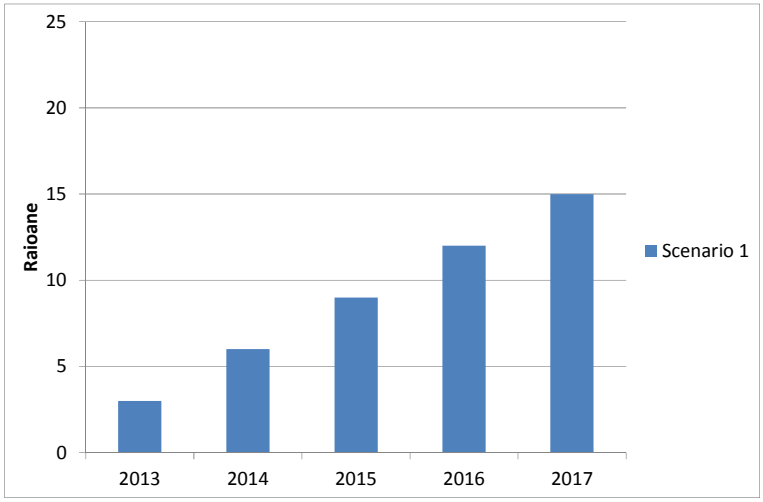
5.3 RESULTS

Outreach budget forecast results are first presented on the program level and then on a model raion level. Next, results of the pessimistic and optimistic scenarios 2 and 3 are compared with scenario 1 on the program level.

5.3.1 SCENARIO 1: THREE NEW RAIOANE PER YEAR

In the first scenario the outreach services would be implemented in three new raioane in each year. 15 raioane would be implementing the outreach program by 2017 (Figure 5-1).

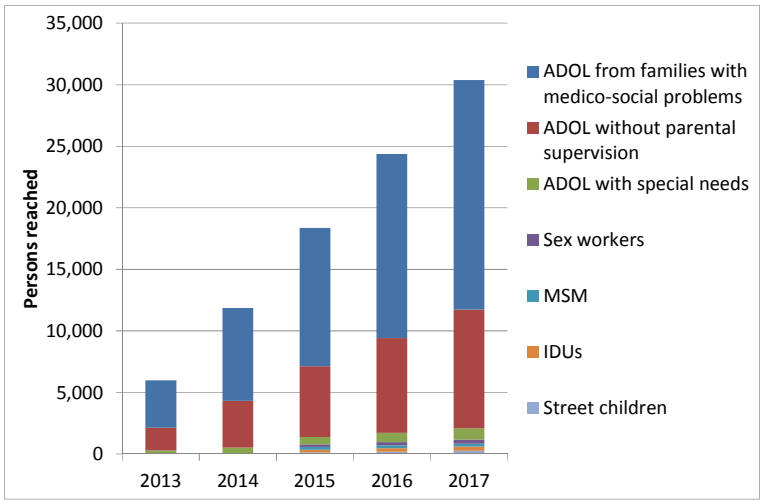
FIGURE 5-1: NUMBER OF RAIOANE IMPLEMENTING THE OUTREACH PROGRAM IN SCENARIO 1 IN 2013 – 2017.



5.3.1.1 TARGET GROUPS

Figure 5-2 illustrates the annual number of persons reached in each target group. The annual number of persons reached would increase from 6,000 in 2013 to 30,000 in 2017. Understandably the increase pace is linked with the number of new raioane introducing the outreach services. During the five year period adolescents from families with serious medico-social problems are the largest target group (62%, 56,000 persons reached). Adolescents living without parental supervision are the second largest group (32%, 29,000 persons reached). Adolescents with special needs account for 3% of the contacts (3,000 persons reached). Sex workers and MSM have both 850 persons reached (0.9%). IDUs and street children are the smallest groups; both were estimated to have 650 persons reached (0.7%). The numbers of persons reached in the four smallest groups is lower also because implementation of these services begins only in the third year.

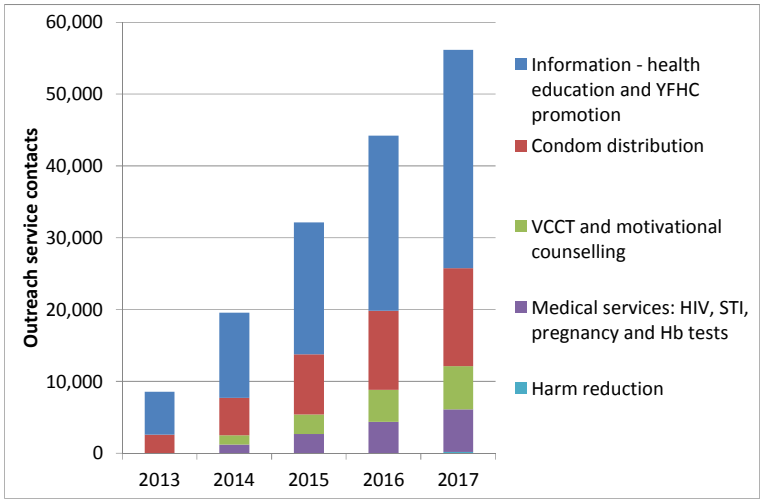
FIGURE 5-2: ANNUAL NUMBER OF PERSONS REACHED IN EACH TARGET GROUP IN SCENARIO 1 IN 2013 - 2017.



5.3.1.2 SERVICES

Grouping very different types of outreach services under a category "services" is arbitrary, e.g. condom distribution vs. HIV testing. For illustration purposes only the services were grouped as "contact with beneficiaries". Figure 5-3 shows annual contacts with beneficiaries per outreach service type. The total number of contacts would increase from 8,600 contacts in 2013 to 56,000 in 2017. During the five year period health education and promotion of YFHSs would have the largest number of contacts (91.000, 57%). Condom distribution would reach 41,000 (25%) recipients. VCCT and motivational counseling would be carried out 15,000 times (9%). Medical services; express testing for HIV, STIs, pregnancy and Hb, would have 14,000 contacts (9%). Harm reduction services would have 200 contacts (0.1%). The number of harm reduction contacts is low, because these services would be implemented last in the third year.

FIGURE 5-3: ANNUAL BENEFICIARY CONTACTS PER OUTREACH SERVICE TYPE IN SCENARIO 1 IN 2013 – 2017.



5.3.1.3 HUMAN RESOURCE REQUIREMENTS

Table 5-1 provides an overview of human resources required for scaling up the outreach services in scenario 1. For budgeting purposes we used full-time equivalents (FTE), because this is the most useful measurement unit for salary calculations. Clearly, different persons would be carrying out the (part-time) work at the different locations.

The number of personnel increases gradually when new locations and services are introduced. 22 FTE outreach workers, 10 FTE nurses and 10 FTE VCCT counselors would be needed by 2017. Even though volunteers do not receive a salary, we included them in the human resource calculations. Volunteers would carry out a large part of the outreach activities. We estimated that 266 volunteers (approximately 18 volunteers per raion) would be needed to implement the program in 2017.

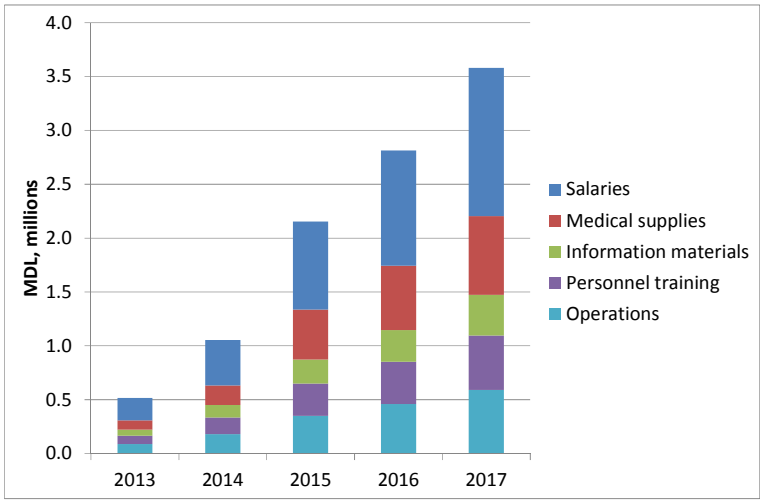
TABLE 5-1: HUMAN RESOURCES REQUIRED (FULL-TIME EQUIVALENTS) FOR SCALING UP OUTREACH PROGRAM 2013 – 2017.

Employee	2013	2014	2015	2016	2017
Outreach workers	4	8	14	18	22
Nurses	1	3	6	8	10
VCCT counselors	1	2	5	7	10
Volunteers	38	81	165	215	266

5.3.1.4 FINANCIAL REQUIREMENTS

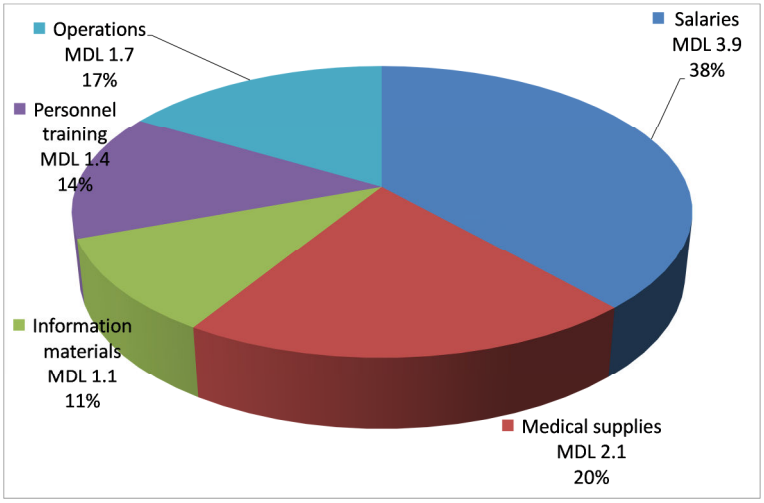
Finally the scale-up pace, target groups and outreach services were used to forecast outreach budget for the period 2013 – 2017. In the first scenario the required budget would increase seven fold from MDL 530,000 (USD 45,000) in 2013 to MDL 3,580,000 (USD 306,000) in 2017 (Figure 5-4). The cumulative total budget for the five year scale-up period would be MLD 10,130,000 (USD 865,000).

FIGURE 5-4: TOTAL ANNUAL OUTREACH BUDGET IN SCENARIO 1 IN 2013-2017.



A breakdown of total budget for the period 2013-2017 is shown in Figure 5-5. Personnel salaries would be the largest cost category 38% (MDL 3.9 million, USD 331,000). Medical material costs are the second largest group and would account for 20% (MDL 2.1 million, USD 177,000). The main cost drivers in this category are: condoms, HIV and STI rapid tests. Third, operation costs would be 17% (MDL 1.7 million, USD 143,000). Fourth, personnel trainings would require 14% (MDL 1.4 million, USD 123,000). Finally information materials would account for 11% (MDL 1.1 million, USD 91,000).

FIGURE 5-5: BREAKDOWN OF TOTAL OUTREACH BUDGET IN SCENARIO 1 IN 2013 - 2017 (MDL MILLIONS).



5.3.1.5 OUTREACH BUDGET FOR A RURAL RAION AND COST PER PERSON REACHED

This paragraph presents a one-year outreach budget for a rural model raion. The raion provides all the outreach services to the target populations (see 5.2.2 and 5.2.3 above). The model raion has a total population of 90,000 inhabitants, of which 15,000 are 15 - 24 years old. 2,000 persons would be reached during this year. A breakdown per target population is given in Table 5-2.

The total annual budget for the outreach services in this raion would be MLD 220,000 (USD 19,000). Table 5-2 provides estimated costs per person reached in each of the target groups. The results demonstrate the cost of reaching one person during a year, not the cost per one service. The same person may have several contacts with the outreach program during the year. Program personnel's working time (FTE) were used as a proxy for calculation of the cost per person reached. Please note that these estimations are based on a plan of scaling up outreach services, not on actual implementation. Therefore the cost per person reached should be interpreted with caution.

The results suggest that, reaching an adolescent from a family with serious medico-social problems would cost MDL 63 (USD 5.4). Contacting an adolescent living without parental supervision would require MDL 86 (USD 7.3). The cost per person reached increases, as the target groups get smaller. Reaching an adolescent with special needs would cost MDL 570 (USD 48.7).

TABLE 5-2: NUMBER PERSONS REACHED BY THE OUTREACH SERVICES IN ONE YEAR AND COST PER PERSON REACHED IN A RURAL RAION.

Target group	Persons reached	MDL / person reached
ADOL from families with medico-social problems	1,235	63
ADOL without parental supervision	650	86
ADOL with special needs	50	570

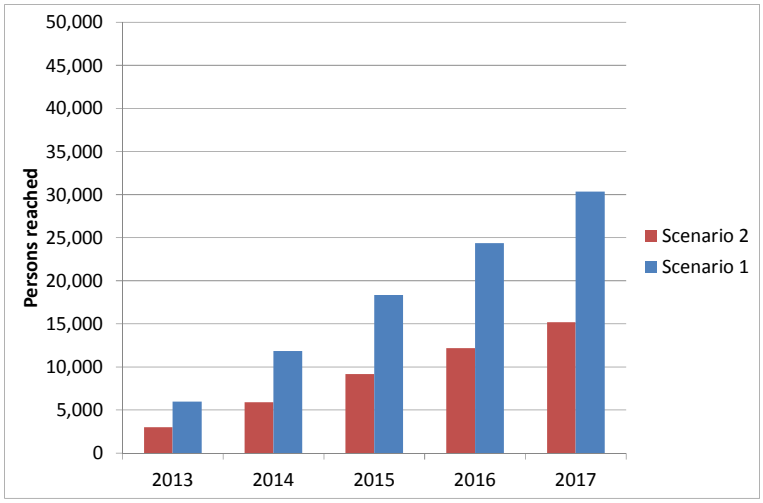
Please note that these costs are estimations and should therefore be interpreted with caution.

Providing outreach services for sex workers, MSM, IDUs and street children is important. Yet, we refrained from estimating costs of reaching persons in these risk groups, because these calculations are subject the considerable uncertainty. Firstly, relatively small variations in the number of persons reached in these groups may change the cost of one person reached considerably. Secondly, at the time of writing this report the content and how outreach services would be delivered to these groups are unclear. Once the implementation plans are clearer, a similar costing on persons reached in these risk groups could be carried out.

5.3.2 SCENARIO 2: THREE NEW RAIOANE PER YEAR, WITH 50% COVERAGE

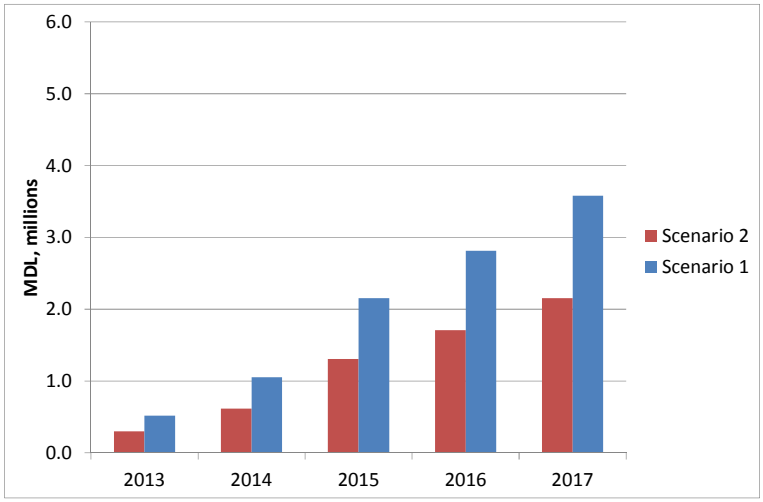
In the pessimistic scenario 2 the outreach program would be also introduced in three new raioane per year, but to cover only 50% of the target population set in the first scenario. Figure 5-6 illustrates the annual number of persons reached in all the target groups in both scenarios.

FIGURE 5-6: ANNUAL NUMBER OF PERSONS REACHED IN SCENARIOS 1 AND 2.



The cumulative total budget for the five-year period in scenario 2 would be MDL 6.1 million (USD 520,000) in comparison to scenario 1 MDL 10.1 million (USD 865,000) (Figure 5-7). This represents a 40% decline in the total budget. The result shows that 50% lower in the program coverage would reduce cost by 40%. This suggests that it could be less cost-effective to provide the outreach services on a lower scale.

FIGURE 5-7: ANNUAL BUDGETS IN SCENARIOS 1 AND 2.



5.3.3 SCENARIO 3: FIVE NEW RAIOANE PER YEAR

In the optimistic scenario 3 the outreach services would be implemented in five new raioane per year. 25 raioane would be implementing the outreach program by 2017 (Figure 5-8), in comparison to 15 raioane in scenario 1.

FIGURE 5-8: NUMBER OF RAIOANE IMPLEMENTING THE OUTREACH PROGRAM IN SCENARIOS 1 AND 3 IN 2013 – 2017.

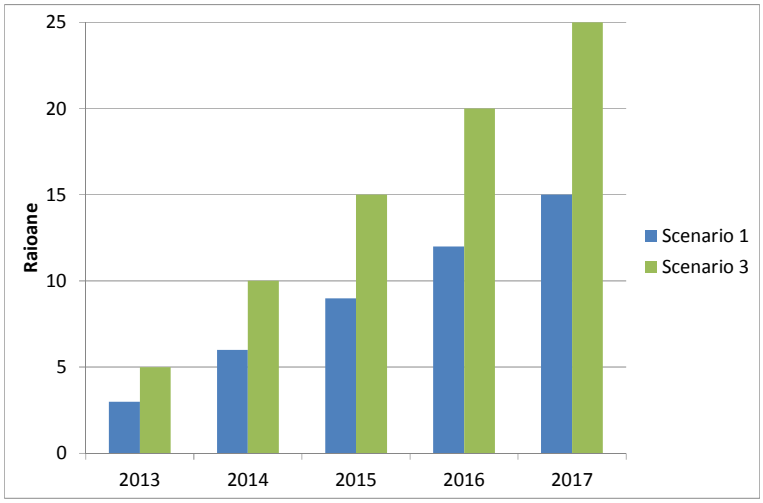
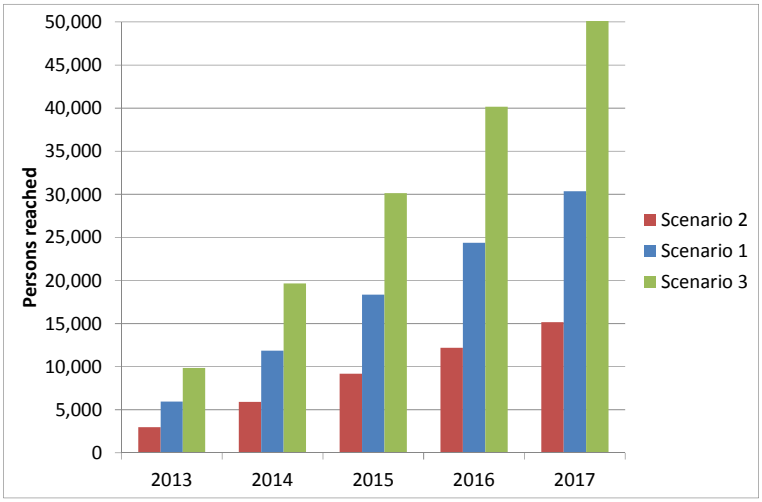


Figure 5-9 illustrates the annual number of persons reached in all the target groups in the three scenarios. The faster scale up pace would increase the cumulative number of persons reached by 1.65 times, from scenario 1 (91,000 persons reached) to scenario 3 (150,000 persons reached). The cumulative increase from scenario 2 to scenario 3 would be 3.3 fold.

FIGURE 5-9: ANNUAL NUMBER PERSONS REACHED IN SCENARIOS 1, 2 AND 3.



The cumulative total budget for the five-year period in scenario 3 would be MDL 15.7 million (USD 1,343,000) (Figure 5-10). In comparison with scenario 1 the result shows that increasing program coverage (persons reached) 1.65 times would increase the total budget by 1.56 times. Similarly, against scenario 2 this represents a 3.3 fold increase in program coverage, yet only 2.6 times increase in the program budget. Therefore the results suggest that higher coverage of outreach services could provide better value for money than smaller scale interventions.

FIGURE 5-10: ANNUAL BUDGETS IN SCENARIOS 1, 2 AND 3.

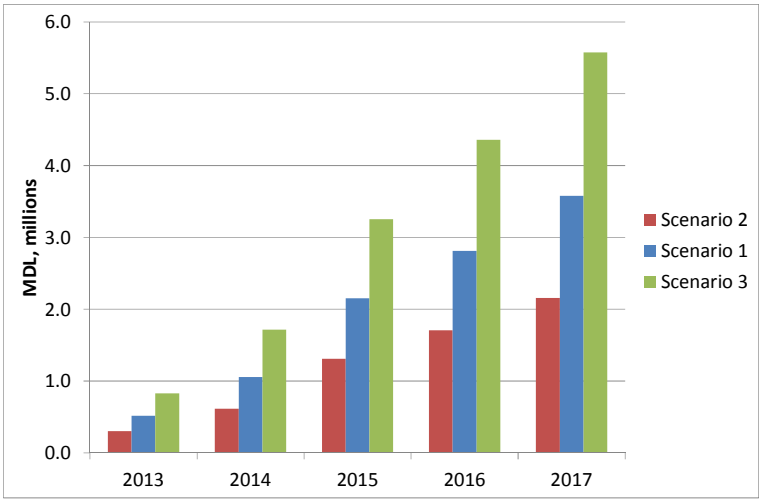


Table 5-3 summarizes the three budget forecast scenarios. It shows the cumulative total budgets and cumulative number of persons reached in each scenario 2013 - 2017. Moreover, is shows % of change from the scenario 1.

TABLE 5-3: CUMULATIVE COSTS AND CUMULATIVE NUMBER OF PERSONS REACHED IN THE THREE BUDGET FORECAST SCENARIOS 2013 – 2017.

Scenario	Cumulative costs 2013-2017 MDL, million	% of scenario 1	Cumulative persons reached 2013-2017	% of scenario 1
Scenario 2	6.0	60%	45,000	50%
Scenario 1	10.0	100%	91,000	100%
Scenario 3	16.0	156%	150,000	165%

5.3.4 LIMITATIONS OF OUTREACH BUDGET FORECAST

The budget forecasts have some limitations. Firstly, it is based on a plan to implement the outreach program, not on actual implementation data. Therefore secondary data sources (e.g. costing of YFHS program) had to be used as cost inputs. Second, exact sizes of target populations are not known. Third, in absence of a large scale outreach program the numbers of persons reached and services delivered had to be based on expert opinions. Therefore, especially the cost per person reached should be interpreted with caution. Fourth, the results are sensitive to variation of the number of employees required for delivering the outreach services and their salaries. Fifth, there can be considerable variations in service delivery and needs of the target groups between the raioane. Therefore extrapolation of the model raion result to the country level may cause misleading results.

6 ADVICE ON FUTURE POSSIBILITIES FOR IMPACT ASSESSMENT OF YFHCS IN MOLDOVA

For assessing the impact of services delivered by the YFHCs, the first step needed is a description of the types of services provided and the number of people reached by each of those services. The second step consists of theoretically assessing the potential impact of each of those services. For example, it is expected that distribution of contraceptives among adolescents will ultimately reduce the number of unwanted adolescent pregnancies and abortions. The third step is choosing and using data collection methods for impact assessment. Finally, the fourth step consists of analyzing, reporting and drawing conclusions from the data that have been collected.

6.1 OBJECTIVES OF IMPACT ASSESSMENT ADVICE

The overall objective of the study is to assist the Government of Moldova in its efforts to improve health of its youth. Immediate objectives of the impact assessment advice part of study were:

- To describe theoretical framework for assessing impacts of YFHS programs.
- To describe potential impacts of YFHS in Moldova.
- To provide practical suggestions for future impact evaluation of the YFHS program in Moldova.
- To transfer knowledge to policy-makers and program managers in Moldova.

6.2 THE PACKAGE OF SERVICES OF YFHCS

The YFHCs, extended package of services, according to YFHS Quality standards, should address seven main priority health problems of youth trough the information, counseling, medical services and referral. One of the main issues addressed by YFHC is youth SRH and this part of the report will use example of SHR interventions to measure impact of YFHS.

The YFHCs essentially deliver four kinds of SRH services:

1. Advice and counseling on SRH issues for individuals, couples and families
2. Distribution of preventive devices (condoms and [other] contraceptives)
3. Diagnosis and treatment of sexual and reproductive ill-health (like STIs and unwanted pregnancy)
4. SRH information and education for groups (through working with groups, media activities and distribution of educational materials)

Those services all aim at reducing currently existing and preventing future sexual ill-health of individuals and of the population at large.

6.3 POTENTIAL (THEORETICAL) IMPACT OF SERVICES DELIVERED

The expected impact is dependent on the type of SRH problem and on the service delivered. Per type of service delivered, the following impact is usually expected:

1. Some of the problems dealt with during advice or counseling result from inability to handle a certain situation or condition. Those include for example conflicts between parents and children related to sexual relations and behavior, anxiety about a physical condition during puberty and adolescence, like breast growth or the menstrual cycle, or questions about side effects of contraception. The expected impact is in this case "improved ability to handle a condition" (reduced anxiety or conflict, improved understanding, etc.). This category is important because it may require a substantial share of service delivery time, but it is very difficult to evaluate in terms of impact, because it is hardly or not "tangible". Other issues dealt with during advice and counseling may be more tangible, like for example advice on safe sex practices or contraceptive methods. In those cases the expected impact will be reduced risk of STI infection or unwanted pregnancy.

2. The expected impact of contraceptive distribution is simply reduced risk of unwanted pregnancy.

3. The impact of diagnosis and treatment of a sexual ill-health condition, like an STI, is primarily improvement of the medical condition of the patient, either by curing the disease, or, in the case of HIV infection, by reducing the physical consequences of an infection. But it may also have an impact in terms of "secondary prevention". An effectively treated STI minimizes the risk of STI transmission to sexual partners, and it even reduces the risk of HIV infection in the person treated. This means that the theoretical impact can also be reduced future sexual health risks. There is also the possibility of diagnosis without treatment. For example a client may come for counseling after having had unprotected sexual intercourse, and ask for an STI- or pregnancy test. If the test is negative, there is no need for treatment. The impact of the intervention is in this case reduced anxiety or relief in the client.

4. Population-wide sexual health information and education efforts may be expected to have a wide range of impact, depending on target groups, topics dealt with and methods used. This impact may be "tangible" (improved safe sex behavior and contraceptive use, resulting in reduced incidence of STIs and HIV infections, and reduction in the number of unwanted pregnancies and abortions), or rather "intangible" (for example a more satisfactory sexual relationships, or reduced incidence of sexual abuse).

In summary, the expected impact of interventions and activities of YFHCs can be of three different types:

1. Improved social and psychological sexual well-being,
2. Improved medical sexual health condition,
3. Reduced sexual ill-health in the future through improved preventive behavior, and reduced vulnerability.

It should be stressed that 1. and 2. can in most cases be assessed immediately, whereas 3. can only be assessed after a certain period of time, which might be several years.

6.4 MEASURING THE IMPACT OF INTERVENTIONS AND EDUCATIONAL EFFORTS

As mentioned above, for measuring impact it is first of all necessary to monitor and describe in detail the types and numbers of interventions and other activities listed under “the package of services”. That is the input side of the equation.

When it comes to impact, a distinction should be made between immediate and more long-term impact, the latter one usually being more important.

6.4.1 IMMEDIATE IMPACT

This is measured immediately after an intervention among clients or a target group concerned. To measure improved social and psychological sexual well-being (see above, type 1), a standardized questionnaire should be filled in after the intervention that measures client’s satisfaction with the intervention. In case of a medical intervention (like STI treatment) the impact can be measured in terms of improvement of the medical condition (like effective cure of an STI). The immediate impact of an information and education intervention is measured in terms of changes in knowledge, attitudes and intention to adopt less risky behavior. Because this is about changes, there is a need to measure this (using questionnaires) before and after the intervention. Actual behavior change cannot be measured immediately. There is no need to measure immediate impact on a continuous basis. Instead, it is sufficient to do this type of research in a representative sample of people that have been subjected to a certain intervention.

6.4.2 LONGER-TERM IMPACT

Assessment of longer-term impact of SRH interventions is much more complicated than measuring immediate impact because:

1. It may be difficult to find the persons that have initially been subjected to the intervention and to get their cooperation after a relatively long period.
2. Depending on the kind of impact, it can take a long period, even several years, before it becomes measurable. For example, the relative risk of being infected with an STI is very low; there should be a sexual contact with someone who is infected, and that may take several years.
3. Because the risk of being infected with HIV is even much smaller, very large numbers of respondents (in fact several thousands) have to be followed up for several years in order to find just a few positive cases. That makes such research extremely expensive.
4. There is almost always a need for a comparable control group, in order to find out that a reduction in the incidence of some condition (like unwanted pregnancy) in the group that has been reached (i.e. intervention group) is significantly higher than in the control group.

Because of the difficulties mentioned under 2, 3 and 4, researchers tend to focus on improvements in knowledge, attitudes (and sometimes prevention skills) and on behavioral intentions. These behavioral intentions (for example “intention to always use a condom”) are used as an approximation of actual behavior. Although actual behavior is of course more meaningful and a stronger indicator, this is done in this way because there may not yet be actual behavior. For example, if a sexual education lesson is given for a group of 15 year old pupils in a school class, most of them are not yet sexually active. In this case, the question “do you use condoms?” is still irrelevant. But you can ask the question “when you start having sex, do you intend to always use a condom?”.

Apart from evaluating the impact of interventions through interviews with YFHC clients and among target groups of information and education efforts, it is also possible to evaluate on the basis of population-wide data. However, it should immediately be stressed that this is usually less convincing for several reasons. The basic thinking behind this method is that if new and strong efforts are made in an entire country or region to improve and strengthen adolescent preventive behavior (for example use of contraception), this can be expected to become visible in downward trends in adolescent birth and abortion rates in that country or region. This method is considered less convincing because it is usually very difficult to directly link those downward trends to the prevention efforts; other factors could also have played an important role. Furthermore, this possible effect will only become visible after some years. This method has been applied in a study in Estonia, where efforts and trends during two decades have been linked (Haldre, Part & Ketting, 2012).

6.5 PRACTICAL SUGGESTIONS FOR IMPACT EVALUATION

The Moldovan YFHCs reach their target groups in two different ways:

1. Individual clients (or couples/families) attending the YFHCs, and
2. Outreach activities of different types.

Most interventions under 1. will focus on immediately solving a problem, and only some of them will aim at preventing problems in the future. All interventions under 2. (and some under 1.) aim at preventing problems in the future.

Evaluating the impact of interventions aiming at immediately solving a problem can be done in two ways.

6.5.1 IMPACT EVALUATION OF IN-SERVICE CURATIVE INTERVENTIONS

1. Monitoring interventions

Monitoring is not really research; it is keeping track of what an organization does. In the YFHCs, monitoring of interventions can partly be used for impact assessment, and it also provides a basis and starting point for impact research. A monitoring system is used continuously (whereas research is only done periodically).

The current “Report 49” does not provide a sufficient basis for impact assessment. Currently, a visit may be recorded in more than one category, e.g. STI, pregnancy and contraception. This “double counting” complicates monitoring of the number of clients, visits and services delivered.

Monitoring for assessing the impact of services provided will include, apart from documenting a few client characteristics (age, sex, etc.), questions on 1. reason for visit (problem presented); 2. discipline of service provider; 3. session time; 4. type of services provided (like diagnosis, medication prescribed or given, treatment, referral, etc.); 5. is the problem solved? 6. follow-up or referral arrangements. The “Form 49” does not capture all these aspects. This information will be also very useful for management of the YFHCs program.

For impact assessment there is a need to do various analyses on the data collected, in which results of the 6 categories of data are linked. This provides insight in for example who responds to questions related to contraception?; how long does a contraceptive counseling session take?; is a physical examination done in this case? ; etc. There is no need for control groups, but it may be useful to systematically compare the monitoring results of different centers and discuss those.

Recommendation 1:

- Improve the monitoring system to better meet requirements for future impact assessment
- Agree on how data should be recorded and train personnel on this.

2. Measuring client satisfaction

Develop a questionnaire in which clients are asked to what extent the problems they have presented have been adequately dealt with in their own view. Questions to be included normally are: client characteristics; reasons for visiting the YFHC; type of problem presented; type of intervention provided (or not provided); client's evaluation of the intervention. It may be useful to also include a question on how the visit has influenced a client's future (SRH) behavioral intentions. The questionnaire should be handed out and filled in by the client at the end of the intervention; it should be short, not taking more than 5 minutes to fill in; clients should be explained that cooperation is very important for improving the services; and it should be anonymous. Depending on how specific the assessment should be, a few hundred of those written interviews are usually sufficient for an adequate assessment. Beware that larger numbers will be needed for an assessment of interventions that are relatively rare. There is no pressing need for a control group.

Recommendation 2:

- Develop client satisfaction questionnaire
- The questionnaire should be filled in anonymously at the end of the intervention
- Use this questionnaire during two weeks, at different points in time

6.5.2 IMPACT EVALUATION OF INFORMATION / EDUCATION INTERVENTIONS

Impact research on information and education efforts is more complex, time consuming, and costly. Information and education activities (sometimes called "behavioral change interventions") are partly carried out with clients that attend YFHCs, but probably many more people are reached through outreach activities. There are essentially three methods to assess the impact of these activities.

1. Follow-up research of clients or target groups reached by preventive efforts

This type of research consists of filling in of a questionnaire by a group of people that are being reached by an information/education activity, and by repeating it in the same group at one or more points in time in the future. The first questionnaire is filled in just before the educational activity, and the follow-up can take place after for example 6 months, a year, or two years (or at all those occasions). The later the follow-up takes place the more useful the information collected tends to be, but also the more difficult it gets to implement the follow-up. It gets more useful as time goes by because after a longer period, a more long-term impact is measured. Apart from that, a longer follow-up period also increases the chance that certain events have taken place that you are particularly interested in, such as unintended pregnancy. At the same time, it becomes more difficult to implement follow-up research after a longer period because, as time goes by, it becomes more difficult to find the initial participants (who tend to be rather mobile), and get their cooperation for the follow-up. In practice, it is hardly possible to do follow-up research after more than two years for that reason.

In this type of research it is definitely needed to use a control group that is comparable to the research group. This is particularly necessary in research on sexual issues among adolescents, because as they get older they tend to become more (regularly) sexually active. The control group is needed to find out if in that group preventive behavior is significantly less developed than in the research group.

The needed size of the research and control groups is dependent on the frequency of the behaviors and events that are being studied. For example, if the impact of a preventive effort among 15 year old school youths is studied, one should be aware that maybe only 20% of them are already sexually active, and one year later, during follow-up this may be 40%. That means that the group that should use (and will use) condoms, or another contraceptive method, is still small. As a result, the size of the research and control groups should be increased 2.5- to 5-fold in order to have a sufficient number of (non-) contraceptive users to allow for finding significant differences between both groups. The number of respondents that will, for example, have experienced an STI will even be much smaller, and so such events will only rarely be found. The range of questions that can be meaningfully answered by all respondents is limited, and usually only includes questions on knowledge, attitudes and behavioral (future) intentions (instead of actual behavior). If the research intends to only measure impact on that level, some 250-500 respondents in both groups is usually sufficient. If the intention is to also measure impact in terms of unintended pregnancy, the number of respondents should be increased by a factor proportional to the chance that this event will occur. So, if that chance would be one in 10, the size of the groups would have to be increased 10-fold. Because this is usually hardly possible, in practice some proxy of the chance of getting pregnant is used, like, in this case, effectiveness of contraceptive use (reliability of contraceptive method plus effectiveness of use).

Proper selection of respondents is another challenge. If respondents are attending clients of an YFHC, there is a fair chance that most of them are already sexually active (because that is the main underlying reason for attending). Putting together a control group that is comparable to this group is difficult, because the research group is a rather specific selection. A possible solution to this is using a much larger ad-random selected control group (for example some school classes) with the same age and sex distribution, and then afterwards using part of that group as controls. The method for selecting those respondents from this larger group is called “matching”, which means that for every respondent in the research group a comparable respondent from that large control group is chosen, based on a few characteristics that should be similar (age, sex, socio-economic status, and sexual activity and experience).

After the initial interview the respondents should be made available for follow-up research, by asking them for their permission and way of contacting them. Because the subject may be rather sensitive for respondents this creates another challenge, for which practical solutions have to be found. Fortunately, most adolescents have personal mobile phones nowadays, and therefore using their mobile numbers provides a good contact entry point. However, one should be aware that such numbers may change in the future.

Of course, there are more considerations and points of attention that should be taken into account, but it would be too much detail to discuss all of those here.

Recommendation 3:

- Develop and test a questionnaire that includes variables that are relevant for cost-effectiveness modeling
- Collect base-line data before doing interventions
- Enroll 250-500 respondents from YFHSs
- Follow up the same persons after the intervention (using mobile phones for contact entry)
- Select and enroll a comparable control group
- Train personnel + someone responsible for data collection / analysis
- Repeat interviews after specified periods of time

2. Including YFHC use in a survey among adolescents

If a few questions on YFHC attendance, or on having been reached by YFHC educational activities, are included in a national representative survey among adolescents, that also includes various questions on knowledge, attitudes and behavior regarding sexuality and prevention, there is, in principle a possibility to use those data for impact evaluation. A necessary condition is that a substantial number of respondents have received such information/education through YFHCs; depending on the size of the sample this should be at least a quarter of respondents. This would allow for systematic comparisons between those that have been reached and those who have not. However, it should be stressed that this is only a second best option, if no other alternative exists. The main reason is that it will be difficult to exclude the possibility of spurious correlations. In other words, it cannot be excluded that an unknown third factor (like high preventive motivation) explains both having been subjected to such information/ education and safe sexual behavior. In that case information/ education received from the YFHC would not be the cause of better safe sex behavior; the correlation is spurious.

3. Trend analyses

If the educational activities of the YFHCs have a substantial influence on preventive behavior, this should in the end become visible in improved national or regional sexual health indicators, in particular in STI and HIV rates, and in adolescent pregnancy and abortion rates. However, it should be kept in mind that those rates are not only determined by safe sex behavior, but also by the percentages of young people that have sexual relations and by the frequency of sexual intercourse. Those variables may very well change over time. Therefore, it is necessary to complement the analyses of national or regional trends in sexual health indicators with (survey) data indicating changes in sexual behavior over time. In the case of Moldova, where some regions do have an YFHC and others don't, it is in principle possible to make comparative analyses of such trends in these two groups of regions. If the YFHCs would have a reducing impact on the indicators mentioned, the regions without an YFHC should show no improvement in those indicators, or at least a slower improvement, than the regions with an YFHC. Of course, a precondition for these analyses is that there is no regional variation in the reliability and completeness of the indicator data.

Recommendation 4:

- Review what kind of standard SRH epidemiological data is available
- Relate these existing data to regions with and without a YFHS
- Review existence and contents of national/regional representative surveys on sexual and preventive behavior
- Analyze SRH trends and compare those from regions with and without an YFHS; take developments in sexual behavior into account in those analyses.

Finally, it should be mentioned that the scientific credibility is in general much better for prospective studies than for retrospective ones. This means that follow-up research with a control group is the preferred method of impact evaluation.

7 THRESHOLD ANALYSIS OF YFHS PROGRAM

This chapter reports a threshold analysis of the selected four YFHCs of the YFHS program. The analysis focuses on three SRH outcomes: STIs, unwanted pregnancies and HIV infections. The cost of the SRH components are compared with cost savings resulting from averted treatments, that would be needed if these outcomes would not have been prevented. Finally, calculations are made on how many SRH outcomes would be required to be averted by the YFHS program in order to be cost saving.

7.1 OBJECTIVES OF THRESHOLD ANALYSIS

The overall objective of the study is to assist the Government of Moldova in its efforts to improve sexual and reproductive health of its youth. Immediate objectives of the threshold analysis are:

- To carry out an exploratory threshold analysis of good quality SRH components of the YFHS program in Moldova.
- To document the methodology, results of the study, and to transfer knowledge to policy-makers and program managers in Moldova.
- To expand the global evidence base related to potential impacts of Youth Friendly Health Services.

7.2 METHODS

This chapter describes methods of the threshold analysis. Please note that the costs and required impacts reflect only the selected four YFHCs, not the entire YFHS program.

7.2.1 SCOPE OF THRESHOLD ANALYSIS

The scope of the threshold analysis was limited to SRH services and related IEC activities provided by the four YFHCs. The SRH outcomes are: STIs, unwanted pregnancies and HIV infections. Other non-SRH services (general- and mental health services) were excluded from the analysis.

7.2.2 PERSPECTIVE AND TIME HORIZON OF THRESHOLD ANALYSIS

The threshold analysis was carried out from a program perspective (healthcare provider's perspective). This means that all the costs related to: i) delivering the SRH services and ii) cost saving resulting from averted treatment costs (consequences of successfully delivering the services), were included in the analyses. The time horizon of the program cost analysis was one year: 2011, which was the closest complete financial year at the time of conducting this study. The time horizon for cost saving was limited to clinically relevant periods. The budget forecasts were conducted with a specially designed Excel scale-up model. All costs are at 2011 prices. The results are presented in 2011 Moldovan leu (MDL) and 2011 USD. Costs in MDL were translated to US$ at a rate of 11.72[1]. Future costs were discounted by 3.5% annually.

[1] Exchange rate on 31 December 2011: 1 USD = 11.7164 Leu.

7.2.3 DATA SOURCES

The threshold analysis is an extension of the costing study. All costing inputs related to delivery of the YFHSs are from chapter 3. Cost analysis of youth friendly health services program in 2011. Sources of the cost saving calculations are given in the subsequent paragraphs.

7.2.4 STI PREVENTION AND TREATMENT

Different STIs were grouped as a "generic STI" in the threshold analysis. This was done because in the YFHS program costing the costs were analyzed on health care service group level (in this case STI services), not per treated disease. The STI costs included testing, diagnostics and follow up consultations in the four centers, and cost of IEC services related to STI prevention as well. A typical STIs treatment has 3 consultations and cost MDL 178 (USD 15.2) in the YFHCs. Moreover, treatment costs of syphilis and gonorrhea are covered by the NHIC and were therefore included in the analysis (MDL 2,850, USD 220). 0.05% of STI patients had syphilis or gonorrhea in the four YFHCs in 2011. Patient's out-of-pocket drug costs were excluded from the analysis. Weighted average cost of a STI was calculated from these expenses and probabilities.

The following assumptions were made to estimate cost savings resulting from treatment of STIs in the YFHCs: 1) Moldovan adolescents, who have casual sexual partners (i.e. 38% of all sexually active adolescents), have on average 3.5 casual sex partners per year, 2) condoms are used in 52.8% of these intercourses[1], and 3) that an STI infected adolescent would infected on average 1.9 partners in a year (calculations based points 1 and 2).

7.2.5 UNWANTED PREGNANCIES

Early pregnancy and contraception services were categorized as unwanted pregnancy related. These services cover consultations and testing of pregnancy, and consultations for prescription and sometimes distribution of contraceptives. Abortions are conducted elsewhere. The consequences of an unwanted pregnancy were divided into: 1) abortions (34%), and 2) deliveries (66%). Abortion costs were limited to medical abortions (MDL 450, USD 38), because 95% of the girls, who decide to have an abortion, choose for a medical abortion in Moldova. Delivery costs include: i) normal delivery (90%, MDL 1,654, USD 141), ii) delivery with complication (10%, MDL 3,827, USD 327), iii) ANC co-payment (MDL 350, USD 30) for all deliveries. Importantly, not all births are unwanted. Therefore, it was assumed that 50% of births would be unwanted. Weighted average cost of an unwanted pregnancy was calculated from these expenses and probabilities.

Obviously, unwanted pregnancies have other consequences, like having unwanted babies. However, it is very difficult to measure these in monetary terms and therefore we needed to exclude these from the analysis.

[1] Health for Youth Association, 2013, Adolescent Health and Development. Preliminary report, HFY, Chisinău

7.2.6 HIV PREVENTION AND VCCT

HIV related services included IEC HIV prevention activities and VCCT in the centers (including an additional budget for rapid HIV tests). UNAIDS report on Assessment of Expenses for Antiretroviral Therapy for People Living with HIV and AIDS[1] was used as a source for life-time treatment cost of patients on first line of ARV. The expected remaining life time of HIV infected persons was assumed to be 21.5 years[2]. The life-time treatment costs were discounted with 3.5% annually to present the value of costs, as recommend by National Institute for Health and Clinical Excellence[3].

7.3 RESULTS OF THRESHOLD ANALYSIS

Please note that the results here are not an impact study, but an estimation of the impacts required for the YFHS program to be cost saving in the four selected YFHCs.

The total costs allocated to STI consultations and STI related information and education activities were MDL 498,000 (USD 42,000) in 2011. The cost consequences of delayed treatment of STIs were estimated to be MDL 342 (USD 29). This means that in order to the STI components to become cost saving >1,454 STI infections would needed to be averted by the program in the four centers in one year.

The total costs allocated to early pregnancies and contraceptives were MDL 399,000 (USD 34,000). The average cost consequences of unwanted pregnancies (100% of abortions and 50% of deliveries) was estimated to be MDL 887 (USD 76). The number of averted unwanted pregnancies (ending in a medical abortion or an unintended birth) required for the early pregnancy and contraceptive services to become cost saving were estimated to be 449.

MDL 380,000 (USD 32,000) was allocated to HIV components (information and education activities and VCCT) in 2011. Discounted (3.5%) life-time treatment costs of HIV patients on first line ART in Moldova were estimated to be MDL 147,000 (USD 12,500). Undiscounted life-time treatment costs were MDL 200,000 (USD 17,000). Based on this, the YFHS program would need to result 3 or more averted HIV infections in one year in order it to become cost saving.

FIGURE 7-1: COST, COST SAVING AND REQUIRED IMPACT LEVEL PER SRH OUTCOME IN 4 YFHCS.

SRH outcome	Allocated costs in 2011	Cost savings	Number of averted cases required to make the intervention cost saving
STI	MDL 498,000	†MDL 342	1,454
Unwanted pregnancy	MDL 399,000	††MDL 887	449
HIV	MDL 380,000	†††MDL 147,000	3

† Weighed cost of STI consultations, including syphilis or gonorrhea treatment. Excluding patients' out-of-pocket drug costs.

[1] UNAIDS Moldova, 2012, Report on assessment of expenses for antiretroviral therapy for people living with HIV and AIDS

[2] Chuang, CY et al, 2007, Life expectancy of patients with newly-diagnosed HIV infection in the era of highly active antiretroviral therapy. Oxford Journals, QJM: An International Journal of Medicine, 100 (2): 97-105. doi: 10.1093/qjmed/hcl141

[3] National Institute for Health and Clinical Excellence, 2008, Guide to the methods of technology appraisal

†† Weighed cost of medical abortions, normal deliveries, deliveries with complications and ANC co-payments.
††† Discounted life time treatment cost of an HIV+ patient on first line ART, with expected life time of 21.5 years

7.4 LIMITATIONS OF THRESHOLD ANALYSIS

The threshold analysis has some limitations. Firstly, the analysis covers four well performing YFHCs. Therefore the results do not represent the entire YFHS program. Second, consultations often include combinations of the SRH services (e.g. early pregnancy and STI). The costs are influenced by how the costs are allocated to each SRH service group. Third, the largest cost savings are resulting from averted HIV infections. Therefore, the results are sensitive to variations of the HIV treatment costs and expected life time with HIV. Fourth, some consequences of unwanted pregnancies could not be measured in monetary terms. Therefore the results should be interpreted accordingly.

8 DEVELOPMENTS IN ADOLESCENT SRH INDICATORS

This chapter presents a brief overview of trends in available adolescent sexual and reproductive health indicators during the past decade in Moldova.

TABLE 8-1: TEENAGE PREGNANCIES 2002 - 2011

Year	Births 15-19w		Abortions 15-19w	
	Number	Per 1000 15-19w	Number*	Per 1000 15-19w
2002	5 436	30.2	1746	9.2
2003	5 258	29.2	1875	10.0
2004	5 217	29.2	1615	9.0
2005	5 057	29.0	1585	9.0
2006	4 882	28.7	1428	8.1
2007	4 291	26.0	1428	9.1
2008	4 081	26.0	1353	9.1
2009	4 033	27.2	1518	10.1
2010	3 791	26.7	1361	10.0
2011	3 448	25.6	1777	13.6

*includes very small numbers among <15y women
Source: Ministry of Health of the Republic of Moldova
Note: Since 2001 information is presented without the data on districts from the left side of the river Nistru and municipality Bender

The number of teenage births has declined considerably during this period, but this was mainly due to the declining numbers of adolescents in the total population of Moldova. As a result, the teenage birth rate per 1,000 women 15-19 declined rather slightly, from 30.2 to 25.6. The teenage abortion rate remained basically stable until 2010, and increased markedly in 2011. Experts are of the opinion that this increase is mainly the result of improvements in the reporting system of abortions. The pregnancy rate, which is the sum of the birth and abortion rate, declined only marginally between 2002 and 2011, from 39.4 to 39.2 per 1000, but this very small decline is thought to be at least partly the result of under-reporting of abortions before 2011. In reality, the decline has probably been stronger.

Table 8-2 and Table 8-3 present overviews of trends in two sexually transmitted infections among adolescents: syphilis and gonorrhea.

TABLE 8-2: REPORTED SYPHILIS INFECTIONS AMONG ADOLESCENTS 15-19Y PER 100,000; 2002-2011

Year	Male		Female		Both sexes	
	15-17y	18-19y	15-17y	18-19y	15-17y	18-19y
2002	35.7	140.1	70.8	253.0	53.0	193.1
2003	36.6	138.3	64.5	178.3	50.4	158.5
2004	29.8	98.6	74.1	117.7	51.6	108.0
2005	37.9	155.1	82.7	171.2	59.9	163.0
2006	23.1	138.4	75.9	163.1	38.8	150.6
2007	40.0	132.9	71.9	220.6	55.7	176.1
2008	28.8	135.1	107.8	199.5	67.6	166.7
2009	25.5	139.4	85.5	220.5	54.9	179.3
2010	35.6	112.3	114.6	212.1	74.3	161.4
2011	26.2	125.5	119.8	193.4	72.1	158.6

Source: Ministry of Health of the Republic of Moldova
Note: Since 2001 information is presented without the data on districts from the left side of the river Nistru and municipality Bender

Syphilis infections are still high among adolescents in Moldova, and there is no clear indication that the rate of this STI is declining. Among younger female adolescents the trend is even an increasing one, while it is more or stable among young males. Among older adolescents the trend is fluctuating, but basically staying at the same high level. The data indicates that syphilis is much more prominent among young females than among young males. This probably reflects the tendency that girls generally start having sexual relations at a younger age than their male peers. Research data on adolescent sexual behavior (UNICEF 2005) seem to indicate the opposite, but this is likely to be the result of the tendency among boys to exaggerate their sexual experience and among girls to under-report it.

It should be emphasized that the rates indicated in Table 2 and 3 represent relatively small absolute numbers of infections. A rate of 100 among 15-17 year olds represents about 80 infections, and among 18-19 year olds this is around 65.

TABLE 8-3: REPORTED GONORRHOEA INFECTIONS AMONG ADOLESCENTS 15-19Y PER 100,000; 2002-2011

Year	Male		Female		Both sexes	
	15-17y	18-19y	15-17y	18-19y	15-17y	18-19y
2002	42.8	146.9	24.8	68.9	34.0	106.8
2003	59.0	176.2	32.2	62.7	45.9	120.6
2004	66.1	199.8	30.8	43.8	48.7	122.9
2005	70.1	308.7	32.3	85.6	51.5	199.0
2006	59.3	229.8	33.3	92.6	46.5	162.2
2007	47.4	197.3	31.6	72.1	39.6	135.6
2008	58.6	199.7	24.1	74.6	41.7	138.3
2009	50.9	218.4	26.1	47.9	43.7	124.5
2010	38.0	162.8	19.1	43.8	28.7	104.3
2011	51.0	177.7	28.6	24.6	40.0	102.6

Source: Ministry of Health of the Republic of Moldova
Note: Since 2001 information is presented without the data on districts from the left side of the river Nistru and municipality Bender

Reported gonorrhea infections show a different trend than syphilis infections. There has been an increasing trend till the middle of the past decade, followed by a gradual decline. Infection rates among 15-17 and 18-19 year olds both culminated in 2005, and then started to decline. Male adolescents show much higher gonorrhea infection rates than their female counterparts. Among young males the rates tend to be double the rate among females and among 18-19 year olds this rate is almost four times higher than among females. It is possible that this is caused by the fact that infections among females often remain unnoticed, while males more often have visible physical symptoms.

The incidence of HIV infections in 15-24 year old young people has increased from 2002 onwards, from 9.0 to 21.2 per 100,000 in 2007. After that the infection rate remained more or less stable at around 20. This rate per 100,000 corresponds to about 125 new HIV infections in this entire age group.

In summary, it can be concluded that the teenage pregnancy rate seems to be declining, but very slowly. The rate of syphilis infections is more or less stable, but increasing among young adolescent females, and the gonorrhea infection rate has initially tended to increase, but has declined in recent years. Finally, the HIV infection rate is stable, after an increase up to 2007.

It is difficult to use these indicators for drawing conclusions on the potential impact of the establishment of youth-friendly health services, and therefore they should be handled very carefully. These centers have a potential positive effect on the risk of teenage pregnancy and STI infection. But on the other hand they might, because of their low barrier, also encourage young people to have themselves tested for STIs, which might have an upward effect on the numbers of STIs detected. In this way the indicators might as well be indicators of health seeking behavior, and not only sexual health indicators. Furthermore, teenage pregnancy and STI rates are not only influenced by safe sex behavior, but also by the proportion of adolescents that is sexually active.

8.1 SEXUAL AND PREVENTIVE BEHAVIOR OF ADOLESCENTS 2003-2012

The risk of sexual ill health of adolescents is largely determined by their sexual and preventive behavior. In 2005 UNICEF[1] published the results of a representative survey among young people 10-24 years, which included a chapter on sexuality. Data collection took place in 2003. This survey was repeated in 2012[2]. This last survey applied the same methodology but focused only on adolescents (10-19 years old). The combined results of both surveys give an impression of the changes in adolescent sexual knowledge, attitudes and behavior. To make the results of both surveys comparable the age group 10-19 years was selected from the 2003 survey. A summary of the main findings on their sexual and preventive behavior is presented here.

The table below presents the results of both surveys in terms of ever having had sexual contacts.

TABLE 8-4: PERCENTAGE OF ADOLESCENTS WHO EVER HAD SEXUAL INTERCOURSE

Age and sex	2003	2012
Total 10-19 years	21.2%	24.8%
10-14 years	4.0	3.2
15-19 years	28.1	36

[1] UNICEF, Health for Youth Association (2005), Young people health and development. UNICEF, HFY, Chisinău
[2] Health for Youth Association (2013), Adolescent Health and Development. Preliminary report, HFY, Chisinău

Girls	12.1	13.6
Boys	33.3	36.5

In 2003, one in five adolescent respondents (21.2%) reported that they were sexually experienced, and this increased to 24.8% in 2012. In both years the *reported* experience among boys was 3 times that of girls. This result should be handled with great caution, because young boys tend to exaggerate their experience and girls tend to under-report it. This is particularly so in countries with a "double standard", that is where boys are admired for their sexual experience and girls are frowned upon for it. In reality, girls should even report a somewhat higher percentage than boys because girls tend to have slightly older boyfriends and, vice versa, boys usually have slightly younger girlfriends. And therefore girls are in reality a bit more experienced than boys of the same age. It should be kept in mind that in a representative survey the answers of boys and girls regarding behavior should be more or less the same, because they mostly have these contacts with each other!

Sexual experience always increases with age. In 2003 and 2012 respectively, the reported percentages of sexually experienced adolescents by age group were: 10-14: 4.0% and 3.2%; and 15-19: 28% and 36%. These results indicate that adolescents are not starting to have sex at younger ages, but on the other hand, in the age group 15-19 more of them start being sexually active. It should be added that these percentages are low for European standards. In most European countries about half of 15-19 year olds have sexual experience, against just 36% in Moldova.

The calculated average age at first sexual intercourse among adolescents was 15.3 years in 2003. However, this is not the real average age, because it was measured in the entire age group 10-19 years, and this artificially lowers the average age. This is because adolescents who do not yet have sexual experience, but who will have it in the future at a later age are not taken into account. As a result, for example, the average age of first intercourse among young people under 15 years can only be lower than 15. But the vast majority of this group will have their first sexual experience in the future, when they are (much) older. Therefore a better indicator of average age is obtained by looking at the eldest age group: among 15-19 year old, this average age was 15,5years in 2003, and this did not changed significantly (15.7 years in 2012). Still, this age group is far too young to calculate age at first sex, because (in 2012) almost two thirds of them never had sex, and so, they will start having sex at a later age. Probably the real average age at first sex is about 18 year. At about that age half of the adolescents ever had sex.

Table 8-5 shows that there is a tendency for both boys and girls to start having sex at a slightly later age. Particularly boys report later ages.

TABLE 8-5: AVERAGE AGE AT FIRST SEXUAL INTERCOURSE, YEARS

Age and sex	2003	2012
Total 10-19 years	15.31	15.62
10-14 years	12.2	13.44
15-19 years	15.5	15.72
Girls	16.34	16.48
Boys	14.82	15.24

The risk of STI and HIV infection is partly dependent on the stability of the sexual relationship; casual contacts carry a higher risk. In 2003, 59% of respondents answered that their sexual contacts in the past year had been with a stable partner, and this decreased to 44% in 2012 (Table 3). This decrease was stronger among boys than among girls. Girls tend to report much more often to have a stable relationship than boys. This is probably the result of differences between boys and girls in the interpretation of the term "stable relationship". Girls tend to define a relationship as "stable" *because* it is a sexual relationship, and boys tend to do this less. Girls rarely admit that they have sex in a casual contact, which partly explains the big difference in percentages (9% for girls and 49% for boys in 2012). In urban areas relationships tend to be more stable than in rural areas, but in the latter far fewer young people have sexual experience anyway.

TABLE 8-6: EXPERIENCE OF STABLE AND CASUAL SEXUAL RELATIONSHIP AMONG ADOLESCENTS

Age and sex	% of sexually active adolescents in stable relationship during last year		% of sexually active adolescents who had a causal relationship during last year	
	2003	2012	2003	2012
Total 10-19 years	59%	44%	39%	38%
10-14 years	31	24	41	28
15-19 years	61	45	39	38
Girls	70	62	20	9
Boys	54	37	49	49

In 2003, a minority of adolescents (47%) reported that they had used a condom during the very first sexual contact. In 2012, this percentage had increased to 61%. This indicates a positive tendency in this behavior. The fact that girls report more condom use at first sex than boys is likely to be the result of over-reporting of sexual experience by boys. Many of the "sexual contacts" without condom use reported by boys are probably fantasies, because it is highly unlikely that girls would over-report condom use.

Condom use in the last year is indicated in the next table.

TABLE 8-7: CONSISTENT CONDOM USE IN THE PAST YEAR, 2003 AND 2012

Age and sex	2003	2012
Total 10-19 years	35.0%	52.8%
10-14 years	21.4	60
15-19 years	35.7	52.5
Girls	16.9	35.8
Boys	43.7	59.5

There has also been a remarkable increase in condom use, from 35% to 52.8%, in the year preceding the surveys in 2003 and 2012. This increase is found in both younger and older adolescents, and also among both boys and girls. This indicates safe sex information and education is having a significant positive impact.

Most young people do use a method of contraception. Only 5.6% in 2003 and 9.0% in 2012 did not use any method recently (Table 5). However, this result should be interpreted with great caution. First, because it does not mean that contraception was used during every contact. And secondly, the substantial percentage that does not know or remember (11.1% in 2012) is worrying.

TABLE 8-8: CURRENT CONTRACEPTIVE USE BY METHOD* AMONG SEXUALLY ACTIVE ADOLESCENTS, 2003 AND 2012.

Contraceptive method	2003	2012
Condoms	68.2%	69.3%
Oral contraception	17.4	8.8
Coitus interruptus	27.5	13.8
IUD	2.8	1.0
Periodic abstinence	6.6	7.6
No use	5.6	9.0
Don't know/don't remember	10.3	11.1

* More than one answer possible

Not knowing if contraception was used can mean that it was not known if the partner used a method. But it could also be the result of the tendency among boys to over-report sexual experience (they say they don't remember, because in fact they did not have sex). There has been a significant decline in use of modern, reliable methods. Oral contraception or an IUD was used by 20.2% in 2003 and by only 9.8% in 2012. This indicates that more adolescents are facing barriers in obtaining these methods. At the same time use of unreliable methods, coitus interruptus (or withdrawal) and periodic abstinence has also decreased, which is a positive development.

In 2003 21.8% of adolescents reported to have had symptoms of genital infections, and those who were sexually active reported this two times more often than those who were inexperienced. The comparable percentage in 2012 was 14%.

TABLE 8-9: EVER HAVING HAD SYMPTOMS OF GENITAL INFECTIONS, 2003 AND 2012

Age and sex	% of sexual active adolescents with symptoms of genital infections		% of respondents with such symptoms seeking treatment	
	2003	2012	2003	2012
Total 10-19 years	21.8%	14%	30%	32%
10-14 years	7	12	23	19
15-19 years	23	14.1	31	35.6
Girls	45	33.3	30	38
Boys	11	6.5	31	14

In 2012 fewer adolescents had experienced symptoms of genital infections (14%), than 9 years earlier (21.8%). This could be the result of the increase in condom use between both years. This positive tendency appears both among younger and older adolescents and among boys and girls. Boys experience such symptoms far less often than girls, which could be the result of the fact that infections are often a-symptomatic among boys, but this could also be caused by misinterpretations of signs by girls. Only about a third of adolescents in both years seek treatment when they experience symptoms of genital infections. The tendency to seek treatment is different for girls (more often seeking treatment) than for boys (less often). This result is confirmed by data from reproductive health services, which indicate that only some 10% of clients served are male. Also in YFHSs males are underrepresented (35%), but fortunately this percentage is much higher than in general health services.

9 CONCLUSIONS

The aims of this study were:

- To develop research methodology and to define data requirements for assessing costs of the YFHS program in Moldova.
- To determine the cost of good quality sexual health components of the YFHS program in Moldova.
- To determine the cost of good quality outreach services for vulnerable and at risk young people in Moldova and to conduct financial scenario analyses of scaling up these services.
- To describe the theoretical framework for assessing potential impacts of YFHS programs.
- To provide practical suggestions for future impact evaluation of the YFHS program in Moldova.
- To carry out an exploratory threshold analysis on good quality SRH components of the YFHS program in Moldova.
- To document the methodology, results of the study, and to transfer knowledge to policy-makers and program managers in Moldova.
- To expand the global evidence base related to the cost of good quality youth friendly health services.

9.1 DISCUSSION OF COST ANALYSIS

The cost analysis assesses the cost of YFHSs in four well performing YFHCs in 2011. We deliberately did this in order to estimate costs that best reflect the resources needed to deliver good quality YFHSs in Moldavia. The analysis provides decision makers and program managers with a comprehensive overview of the total budget, funding sources, the main expense categories and cost per service delivered. The costing results can be used to support program planning and for negotiations to acquire appropriate financing for the YFHS. Please note that all the costing results represent the selected four well performing YFHCs in 2011, not the entire YFHS program.

"How much the YFHS program cost in the four YFHCs in 2011?"

In 2011 total annual costs of delivering good quality YFHSs in the selected four YFHCs were MDL 1,928,000 (USD 165,000). Neovita, the largest center, had annual cost of MDL 1,038,000 (USD 97,000). Costs of Atis center were MDL 383,000 (USD 32,000). This was followed by the smaller rural centers Salve: MDL 277,000 (USD 24,000) and Tineri Pentru Tineri: MDL 232,000 (USD 20,000).

"How much good quality YFHSs program would cost at the country level?"

Average budget of the three smaller centers; Atis, Salve and Tineri Pentru Tineri, was approximately MDL 300,000 (USD 26,000). There are 27 YFHCs + Neovita. The total costs of implementation of good quality YFHSs in all the YFHCs in Moldova was extrapolated to be MDL 9.1 million (USD 777,000).

"On what the funds were spent?"

YFHSs are labor intensive. Personnel salary costs were the largest cost category, with 47% (MDL 905,000, USD 77,000). Together the two personnel related categories; salaries and personnel training, cover 64% of the total budget. The second largest group was operation costs: 19% (MDL 366,000, USD 31,000). Third were personnel training costs 17% (MDL 333,000, USD 28,000). Information materials are the fourth cost category and accounted for 13% (MDL 248,000, USD 21,000). Interestingly, medical supplies were the smallest group: 4% (MDL 76,000, USD 7,000). This is because patients purchase their medicines by themselves from pharmacies. These out-of-pocket costs were excluded from the analysis.

"How the four YFHCs were financed?"

The NHIC was the largest financier of the YFHS program in the four YFHCs in 2011. However, the imbursements were not sufficient to cover the costs of the current YFHSs. 58% of the budget of the four centers (MDL 1,115,000, USD 95,000) was covered by the NHIC. Support from UNICEF accounted for 12% (MDL 239,000, USD 20,400) and from Swiss Development Cooperation (SDC) for 13% (MDL 240,000, USD 20,400). The sum of other donors was 2% (MDL 37,000, USD 3,000). Contributions from FDC and local authorities were: 6% (MDL 276,000, USD 23,600) and other sources 9% (MDL 181,000, USD 15,500).

"How much does delivering each service cost?"

A STI consultation costs MDL 59 (USD 5.1). An HIV consultation costs on average MDL 117 (USD 10.0). This is higher, because express HIV tests were added to the 2011 budget. Patient contacts related to early pregnancy and contraception were MDL 61 (USD 5.2). Other SRH services were MDL 46 (USD 3.9). Mental health services were the most expensive MDL 123 (USD 10.5). This is due to longer duration of the consultations. IEC activities had the lowest cost MDL 30 (USD 2.6). The cost is lower because these services are provided to groups. The imbursement system of NHIC is mainly focused on health care services. Consequently, many informational and educational activities remain under funded. These costing results can be used to support negotiations to acquire appropriate compensation levels for all the YFHSs.

"How much does reaching one person cost?"

The average cost of providing health care services to one person were MDL 142 (USD 12.2) and for IEC activities MDL 30 (USD 2.6). These calculations rely on assumptions on the budget allocations, number of services delivered and contacts per person. Therefore, the costs per person reached should be interpreted as estimations.

"What is the cost of one opening hour of YFHC?"

In total the four centers were estimated to be open for 7,500 hours in 2011. An average cost of one opening hour was MDL 257 (USD 22).

9.2 DISCUSSION OF TIME USE SURVEY

- In terms of time spent by the four YFHCs, psychologists, nurses, receptionists and social assistants (in that order) do most of the work in the YFHCs. The share of medical specialists is relatively small (20%).
- Depending on the definition used, about 60% of the time of staff is client-related. But actual face to face contacts take about 40-45% of their time. This is relatively little, but it should be kept in mind that these are data for *centers with an extended package of services*. Those centers have important other functions like organizing and implementing training courses and developing information and education materials.
- In the two weeks studied there have been about 764 client contacts in the four centers
- Almost three quarters (73%) of client contacts are related to SRH issues.
- Most outreach activities (80%) are performed by psychologists and social assistants.
- About half of the work done outside the centers seems to be real outreach work.

9.3 DISCUSSION OF OUTREACH BUDGET FORECAST

The budget forecast was carried out to support MoH with planning of the outreach program for vulnerable and at risk young people in Moldova. The objective was to demonstrate financial implications of scaling up the outreach services. The budget calculations were based on a plan to deliver good quality outreach services. Therefore the results presented in this report reflect an optimal situation. The budget forecast of outreach services was done for a five year period 2013 – 2017. Three alternative scale-up scenarios were to demonstrate and compare how different coverage levels would influence the program budget.

In scenario 1 the outreach services would be implemented in three new raioane per year, covering 15 raioane in 2017. The cumulative five-year budget in scenario 1 would be MLD 10,130,000 (USD 865,000). Outreach services are labor intensive. Personnel salaries would be the largest cost category: 38% (MDL 3.9 million, USD 331,000). Together two personnel related categories, salaries (38%) and personnel training (14%), would cover 52% of the total budget. Medical materials are the second largest cost group 20% (MDL 2.1 million, USD 177,000). The main costs are condoms, HIV and STI rapid tests. In a typical rural raion (population 90,000, of which 15,000 15 - 24 years old) the outreach program would reach 2,000 persons per year and the annual budget would be MLD 220,000 (USD 19,000).

In the pessimistic scenario 2 the outreach program would be also introduced in three new raioane per year, but would cover only 50% of the target population in scenario 1. The cumulative five-year budget would be MDL 6.1 million (USD 520,000). This represents a 40% decline from scenario 1. Therefore the result shows that 50% lower in the program coverage would reduce cost by 40%. This suggests that it could be less cost-effective to provide the outreach services on a lower scale.

In the optimistic scenario 3 the outreach services would be implemented in five new raioane per year, covering 15 raioane in 2017. The cumulative number of persons reached would be 150,000 and the cumulative costs would be MDL 15.7 million (USD 1,343,000). In comparison to scenario 1 the faster scale up pace (scenario 3) would increase the cumulative number of persons reached by 1.65 times and the total budget by 1.56 times. Similarly, against scenario 2 this represents a 3.3 fold increase in program coverage, yet only 2.6 times increase in the program budget. Therefore the results indicate that higher coverage of outreach services could potentially provide better value for money than smaller scale interventions.

The main cost drivers of the outreach budget are: i) the number of new raioane introducing the program each year, ii) number of program personnel and iii) their salaries.

Finally, the results suggest that, reaching an adolescent from a family with serious medico-social problems would cost MDL 63 (USD 5.4). Contacting an adolescent living without parental supervision would require MDL 86 (USD 7.3). Reaching an adolescent with special needs would cost MDL 570 (USD 48.7).

9.4 DISCUSSION OF ADVICE ON FUTURE POSSIBILITIES FOR IMPACT ASSESSMENT OF YFHCS IN MOLDOVA

Because data availability for impact assessment of YFHSs in Moldova is currently insufficient, stakeholders are advised to start preparing data collection for impact assessment in the near future. Short term possibilities for this comprise: 1) immediate introduction of impact indicators in the existing monitoring system; 2) measurement of patient satisfaction immediately after consulting an YFHS; 3) implementation of pre- and post-intervention impact measurements during group education activities. In addition for long-term impact assessment the possibilities for: 4) client follow-up evaluation research, and 5) long term trend analyses, using national and regional indicators, should be explored.

9.5 DISCUSSION OF THRESHOLD ANALYSIS

The threshold analysis covers four YFHCs. The results indicate that relatively large number of STIs (>1,454) would needed to be averted in order for the STI component to become cost saving. This is because the costs of STI treatments are relatively low and that long term consequences are limited.

The number of averted unwanted pregnancies (100% of abortions and 50% of deliveries) required for the early pregnancy and contraceptive services to be cost saving were estimated to be >449. This is driven by the cost of carrying pregnancy to term and delivery assistance, which are approximately five times higher than a medical abortion.

Most importantly, only 3 new HIV infections would be required to be averted in a year for the HIV services to become cost saving in the four YFHCs. The number is low because the long term cost consequences of new HIV infections are substantial. The life-time treatment costs of HIV patients on first line ART in Moldova were estimated to be MDL 147,000, (USD 12,500, discounted).

SRH consultations are often a combination of services (e.g. STI consultation and HIV testing). In practice it is difficult to separate which resources have been used for which SRH outcome. Therefore, the results of threshold analysis should be interpreted as a whole.

The result of the threshold analysis suggest that, together the three SRH components (STIs, early pregnancies & contraceptives and HIV) are *potentially* cost saving. This is because of high cost savings resulting from averted HIV infections are likely to off-set the outlays caused by STIs and unwanted pregnancies.

The question whether or not the impact of the YFHS program actually reach the threshold levels cannot be answered here, because this requires: i) impact assessment of the YFHSs program, and ii) comparison with the incidence of infections and unwanted pregnancies in a comparable area where the YFHS do not exist. Finally, more research is needed to access impacts of the YFHS program. We hope that this report is a stepping stone in that process.

9.6 DISCUSSION OF SEXUAL AND PREVENTIVE BEHAVIOR

- The results indicate very big differences between boys and girls in sexual experience and related issues. These differences should not be taken at face value, because they usually indicate a so called “double standard”, which causes a tendency for girls to under-report and for boys to over-report their sexual experience.
- The percentage of adolescents that is sexually active has slightly increased in the past decade, but there is no trend toward starting sexual relationships at younger ages.
- There has been no increase in sexual contacts in casual relationships. Boys report such contacts much more often girls.
- There has been a significant increase in condom use among adolescents, both at first sex and during most recent sexual contacts. This condom use is also increasingly consistent (used during every sexual contact). This could be the result of safer sex information and education efforts.
- Use of reliable, modern contraceptive methods (oral contraception or IUD) has decreased significantly since 2003. It seems like these methods have become less accessible for adolescents, which could be related to their price.
- In 2012 fewer adolescents have ever experienced signs of genital infections, compared to 2003. This could be the result of increasing condom use. However, it is worrying that only one third of adolescents (both in 2003 and 2012) attend a medical service in such cases, and particularly boys are very hesitant to attend them.

10 APPENDIXES

10.1 DAILY TIME USAGE FORM FOR PERSONNEL OF YFHCS

Start date : day ……, month…… End date: : day ……, month……
YFHC (city): : ……
Name : ……..
Function code number : …….. (fill in applicable code **A** number given at the bottom)
Number of hours working for YFHC per week: ……

Number minutes spent	**B.** Type of activity (see code list; fill in number)	**C.** Type of client(s) (see code list; fill in number)	**D.** Reason for visit (see code list; fill in number)	**E.** Service provided (see code list; fill in number)

A Function codes:
1 = Gynecologist
2 = Venerologist / dermatologist
3 = Pediatrician
4 = Psychologist/therapist
5 = Social assistant
6 = Urologist / andrologist
7 = Narcologist
8 = General practitioner
9 = Midwife / nurse
10 = Other function(please fill in)

B Type of activity codes:
1 = Client(s) contact in YFHC
2 = Client(s) contact outside YFHC
3 = Staff meeting
4 = Staff training/study
5 = Administrative work
6 = Other (please fill in)

C Type of client(s) codes
1 = Individual
2 = Couple
3 = Individual + family member(s)
4 = Group

D Reason for visit codes
1 = STI infection
2 = HIV infection
3 = Early pregnancy
4 = Nutrition disorders
5 = Puberty disorders
6 = Psycho-emotional etc.
7 = Violence related
8 = Contraception
9 = Other (please fill in)

E Service provided
1 = Information
2 = Examination /testing
3 = Treatment
4 = Rehabilitation
5 = Referral to other
6 = Provision of supplies
7 = Other (please fill in)