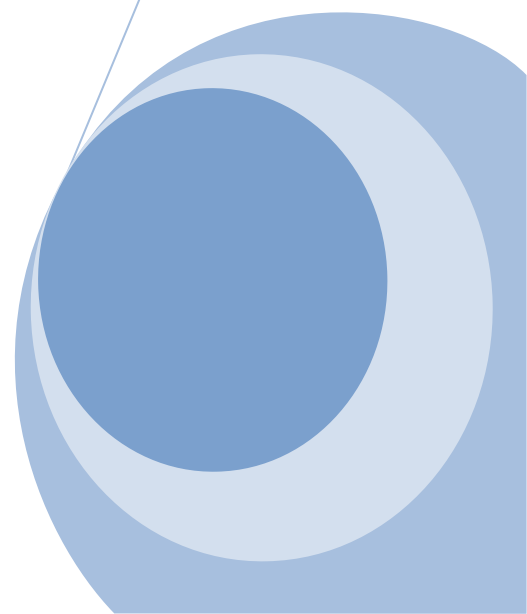


HIV in Estonia

Situation, prevention, treatment, and care

Narrative report for GARPR 2015

**National Institute for Health Development
Tallinn, Estonia 2015**



Contents

Introduction.....	1
General country information.....	1
HIV surveillance	1
HIV testing and screening.....	2
HIV and associated infections epidemiology	3
Sexually transmitted infections.....	7
Viral hepatitis.....	8
Tuberculosis.....	8
Structures and strategies related to HIV prevention treatment and care.....	10
National HIV and AIDS Strategy for 2006–2015.....	10
Financing and organization of health care	11
HIV prevention among risk groups and general population.....	13
HIV prevention among people who inject drugs	13
HIV prevention among young people and general population	14
HIV prevention among sex workers	15
HIV prevention in prisons.....	15
HIV prevention among men who have sex with men.....	15
HIV prevention in defence forces	16
Health care and social support for people living with HIV	17
Health care services	17
Psychosocial support.....	18
Prevention of mother to child transmission of HIV	18
Prevention and treatment of tuberculosis.....	18
Overall progress and challenges for the future	20
References.....	21

Abbreviations

AIDS	acquired immunodeficiency syndrome
ART	antiretroviral treatment
ARV	antiretroviral
DOTS	directly observed treatment, short course
EHIF	Estonian Health Insurance Fund
HAV	hepatitis A virus
HB	Health Board
HBsAg	hepatitis B surface antibody
HBV	hepatitis B virus
HCT	HIV counselling and testing
HCV	hepatitis C virus
HIV	human immunodeficiency virus
MDR-TB	multidrug-resistant tuberculosis
MoER	Ministry of Education and Research
MoJ	Ministry of Justice
MoSA	Ministry of Social Affairs
MSM	men who have sex with men
NGO	nongovernmental organization
NIHD	National Institute for Health Development
NHP	National Health Plan
NSP	needle and syringe exchange programme
OST	opioid substitution therapy
PEP	post-exposure prophylaxis
PLHIV	people living with HIV
PWID	people who inject drugs
RDS	respondent driven sampling
RL	National HIV Reference Laboratory
STI	sexually transmitted infection
SW	sex worker
TB	tuberculosis
HCT	HIV counselling and testing
WHO	World Health Organization

Introduction

The first HIV case in Estonia was diagnosed in 1988, and since then a total of 8,993 HIV cases had been reported. Even though the rate of newly diagnosed cases of HIV has decreased over the last decade (from 46 cases in 2005 to 23 per 100,000 in 2014), there has been no major change in the last few years (24 cases per 100,000 in 2012 and 25 cases in 2013) [1]. The following report provides an overview of HIV situation, prevention, treatment and care in Estonia, with a focus on 2014.

General country information

Estonia is situated in the Baltic region in northern Europe. It is bordered to the north by the Gulf of Finland, to the west by the Baltic Sea, to the south by Latvia, and to the east by Lake Peipsi and the Russian Federation. The territory of Estonia covers 45,227 km² and the population is 1.32 million (2014 data). The official language is Estonian. Country is divided into 15 counties. The capital and largest city is Tallinn, with a population of 411,000. The next most populous county is Ida-Virumaa (in the north-east) with 149,000 inhabitants.

HIV surveillance

In Estonia, HIV case data are collected through a passive surveillance system, web-based communicable diseases information system operated by the Health Board (HB). The basis is the Governmental regulation number 134 (Ref number RT I 2009, 41, 279) which lists 58 notifiable communicable diseases, including HIV (Z21), AIDS (B20-B24), viral hepatitis (B15–B19), and major STIs (syphilis, sexually transmitted Chlamydia, and gonorrhea). Both doctors who diagnose HIV infection and laboratories are required to report directly to the Health Board.

Until the end of 2008 anonymously diagnosed HIV cases were also included in national reporting, which may have caused some double reporting. From 2000–2008 approximately 30% of new cases were diagnosed anonymously in anonymous HIV counselling and testing (HCT) sites (previously called anonymous AIDS counselling centres). Since January 2009 no preliminarily positive cases without personal data are confirmed or included in the total number of HIV cases.

Other key institutions responsible for surveillance include the National HIV Reference Laboratory (RL) (data on HIV testing), National Institute for Health Development (NIHD) (HIV bio-behavioural surveillance among HIV risk groups and general population, monitoring its National Health Plan activities, national TB and mortality registries, etc.), Estonian Health Insurance Fund (EHIF) and Ministry of Social Affairs (MoSA) (health services for PLHIV), and the Ministry of Justice (MoJ) (HIV prevention and care in prisons).

HIV testing and screening

Biological surveillance of HIV in Estonia started in 1987. Surveillance is performed by primary diagnostic groups (33 regular screening measurement laboratories) that are located in all bigger health care institutions and national HIV-reference laboratory located in Tallinn.

HIV testing is voluntary and it may be performed only upon the person's informed consent (as in case of all health care services). Any doctor in Estonia (either a general practitioner or a specialist) can recommend HIV testing based on clinical indications, risk assessment or the patient's request. The MoSA has developed guidance for provider initiated testing and counselling in 2012 [2]. The main groups for whom HIV testing is recommended include pregnant women, prisoners, people with HIV associated conditions and infections (STIs, TB, hepatitis, lymphomas, etc), people who have had occupational exposure or a history of injecting drugs or engaging in risky sexual behaviour (including having sex partners who have had multiple sex partners or sex partners who have injected drugs, etc). In HIV epidemic regions (capital city Tallinn and North-Eastern Estonia) HIV testing is recommended to all patients aged 16–49 years. The only groups for whom HIV screening is mandatory are blood and organ donors.

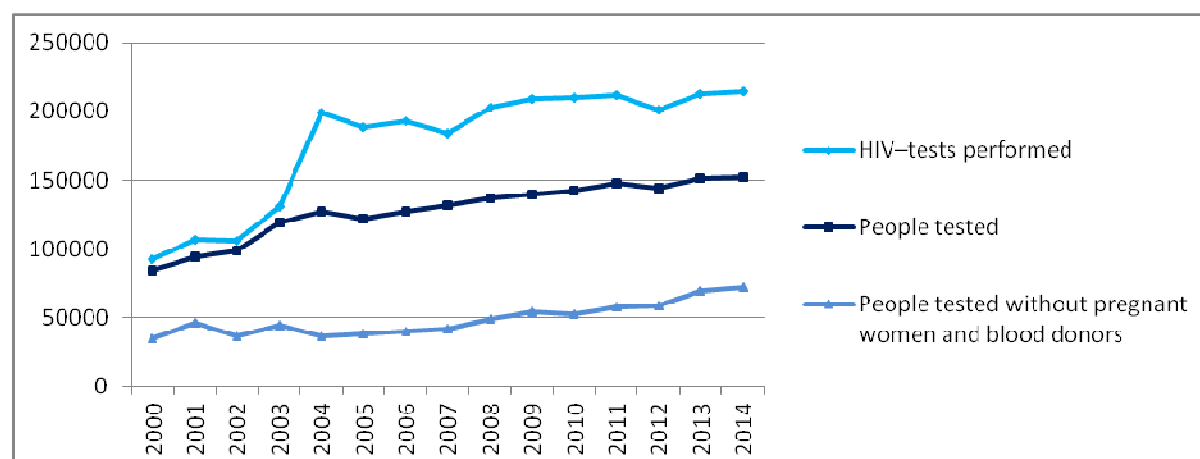
HIV testing is provided only in health care institutions (including family medical centres and prison health services). Non-medical personnel are not allowed to perform HIV testing, but they can be involved in counselling. Blood drawing and rapid testing can only be performed by medical personnel: nurses, midwives, laboratory specialists or doctors. HIV testing is confidential and the patient's oral informed consent is sufficient. Rapid tests are very rarely used in general health care institutions; they are available in the anonymous HIV testing sites and youth counselling centres.

In case of an indication for testing, a general practitioner or a specialist provides HTC to patients with health insurance without a fee. People who are not insured can take advantage of other free testing options. Those aged 19–24 years can take an HIV test at a youth counselling centre, and a network of anonymous HCT sites operates in eight cities; in HCT sites, anyone aged 16 or older can receive free and anonymous HIV, hepatitis B and C counselling and testing. There are also a few special clinics in capital city Tallinn and North-Eastern Estonia that offer anonymous and free of charge HIV and STI testing for people who inject drugs, their sexual partners, and sex workers.

The number of people tested and the number of HIV tests has increased since the early 2000s in all regions as well as among routinely screened groups (e.g. pregnant women, TB patients, prisoners) and high-risk groups (injecting drug users, sex workers) (Figure 1). In 2014, almost 152,000 people were tested for HIV (11.6% of the total population; a total of 116 persons per 1,000 population; 55 persons per 1,000 population excluding tests for blood donors and pregnant women) and the total number of tests was more than 212,000 [1].

According to Health Behaviour study among Estonian Adult Population, 6% of males and 9% of females aged 16–64 had tested for HIV in the last 12 months [3]. Testing rates were the highest among 25–34 years old — 8% for males and 21% for females. According to the study on Estonian men's attitudes and behaviours conducted in 2014, one third of men had tested for HIV in lifetime [4]. Testing rates were the highest among 25–34 and 35–44 years old (37% and 39%, respectively). Testing rates were higher among Russian speaking men compared to Estonian speaking men.

Fig. 1. Number of HIV-tests performed and number of people tested, 2000–2014 (Health Board, National HIV Reference Laboratory, Statistics Estonia)



Among some risk groups HIV testing rates are quite high and have increased over the years, but among some, relatively low. For example, among people who inject drugs (PWID) up to 94% have tested for HIV ever during lifetime, and up to 93% of those who are HIV-infected are aware of this (Table 1). Among men who have sex with men (MSM) in 2010 60% had tested for HIV ever during lifetime and 32% during the last 12 months [5]. In 2013, the respective percentages were 70% and 37% [6]. In a study conducted among sex workers (SW) in capital city Tallinn in 2006, 66% had tested for HIV ever during lifetime and 57% during the last 12 months [7]. In 2010, the respective percentages were 93% and 69% [8].

Table 1. HIV-testing and knowledge of the positive serostatus among people who inject drugs in three towns in Estonia

	Tallinn		Kohtla-Järve *		Narva *	
	2007 [9]	2013 [10]	2007 [9]	2012 [11]	2010 [12]	2014 [13]
Percentage HIV-tested ever during lifetime	85%	94%	76%	90%	81%	87%
Percentage aware of their HIV-infection among those tested HIV-positive in the study	63%	88%	67%	84%	76%	93%

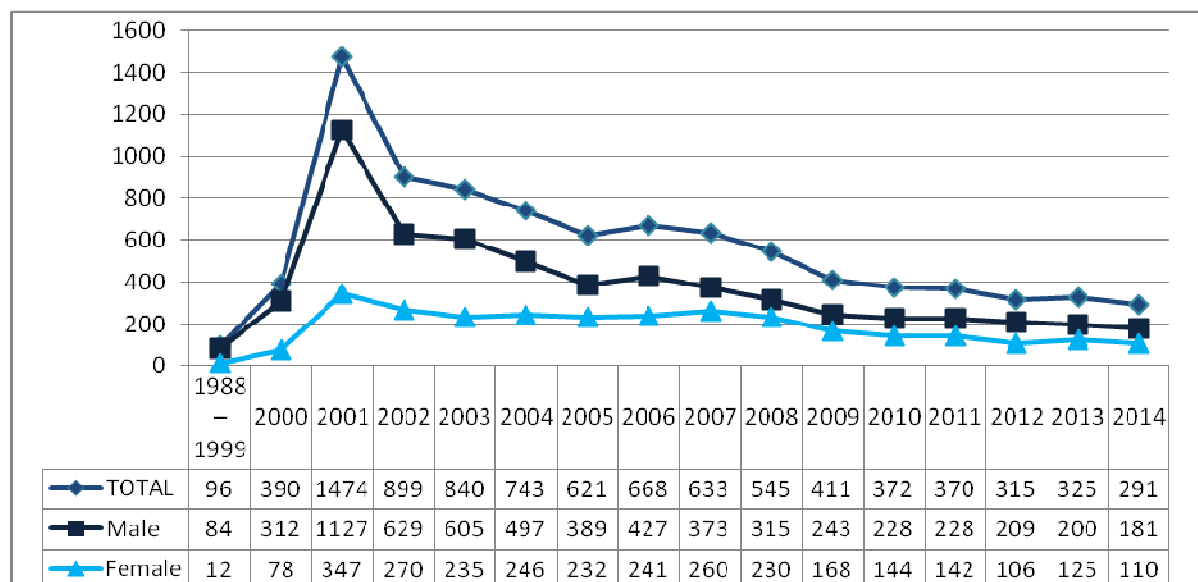
* Located in Ida-Virumaa county (north-east)

HIV and associated infections epidemiology

The first HIV case in Estonia was registered in 1988. At the end of 1999, a total of 96 HIV cases had been reported, most of them infected through homo- or heterosexual intercourse. In 2000, the number of newly diagnosed HIV cases began to increase sharply; there were 390 new cases in 2000 and 1,474 in 2001. The number of newly registered cases has been

decreasing since 2002 — in 2014, 291 new cases were registered (Fig. 2). By the end of 2014, a total of 8,993 HIV cases had been reported [1].

Fig. 2. Newly diagnosed HIV cases by gender, 1988–2014 (n) (Health Board)



Since 2002 the number of newly diagnosed HIV cases has decreased both among men and women. The incidence rate among 15–49 year olds per 100,000 population has also decreased, especially among men (Fig. 3). The trend is also supported by low numbers of HIV cases among blood donors. Since 2004, approximately 10 HIV cases per year have been diagnosed among blood donors (four cases in 2013 and four cases in 2014), which is approximately 0.02% of all donors. Thus HIV prevalence among blood donors in the same regions in 1997–2014 has been stable and low.

Majority of HIV cases in Estonia have been diagnosed in capital city Tallinn and North-Eastern Estonia (Ida-Virumaa county), two regions with the highest prevalence of injecting drug use [14, 15]. In 2014, 34 HIV cases per 100,000 population were diagnosed in Tallinn, 82 cases per 100,000 in Ida-Virumaa county, and 4 cases per 100,000 population in the rest of Estonia (Fig. 4).

Fig. 3. Newly diagnosed HIV-cases according to gender among 15–49 year old people, per 100,000 population, 2000–2014 (n) (Health Board, Statistics Estonia)

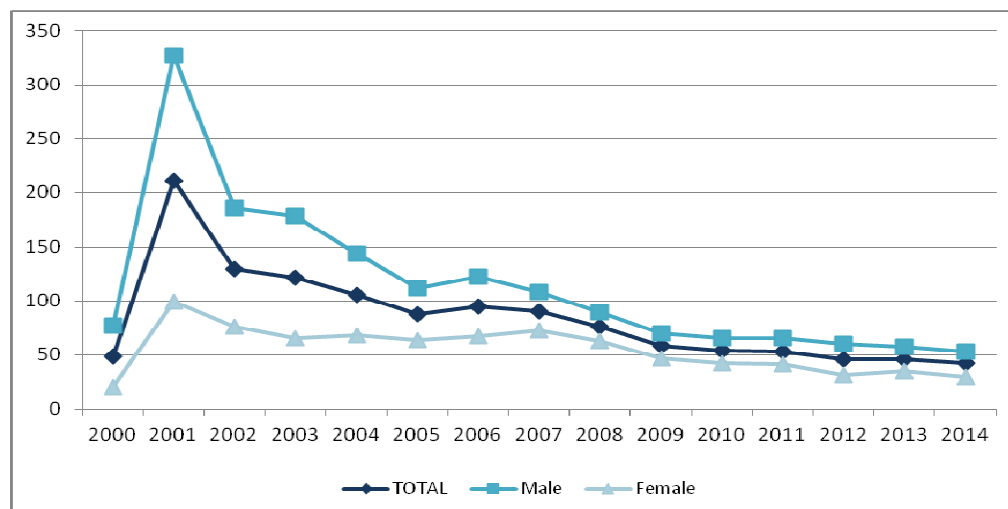
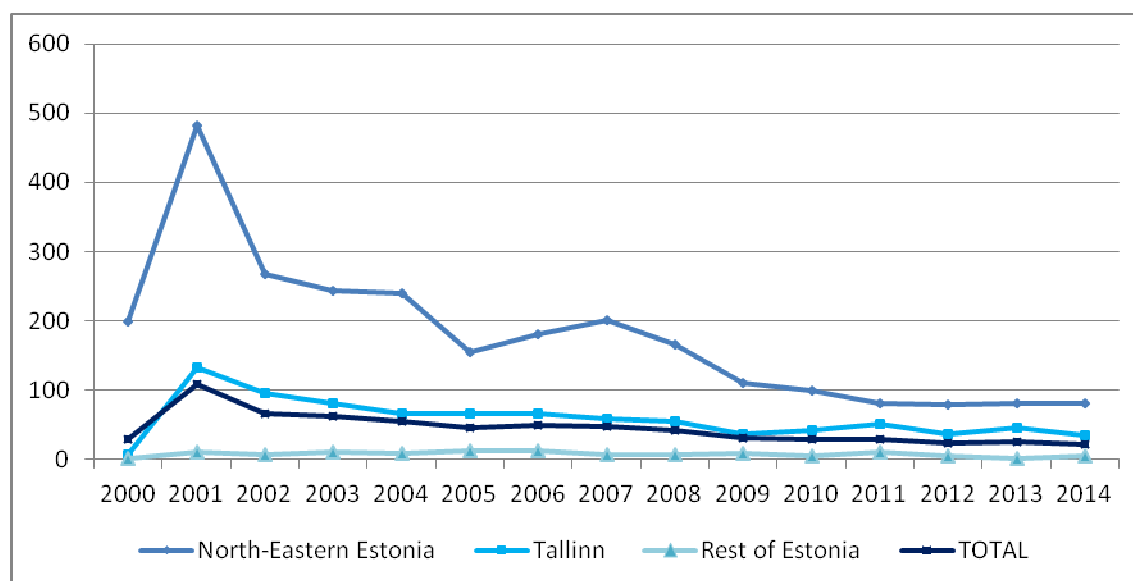


Fig. 4. Newly diagnosed HIV cases per 100,000 population according to regions, 2000–2014 (Health Board, Statistics Estonia)



More than two thirds of all HIV cases have been diagnosed among men. The proportion of men was especially high in 2000–2001, but in recent years, the proportion of women has increased in all age groups (Fig. 5). The absolute number of HIV cases among women was quite stable in 2002–2008, decreased in 2009–2012 and has increased again since 2013 (especially among women aged 30-years and older) (Fig. 6).

Fig. 5. Registered new HIV cases by age groups among men, 2000–2014 (n) (Health Board)

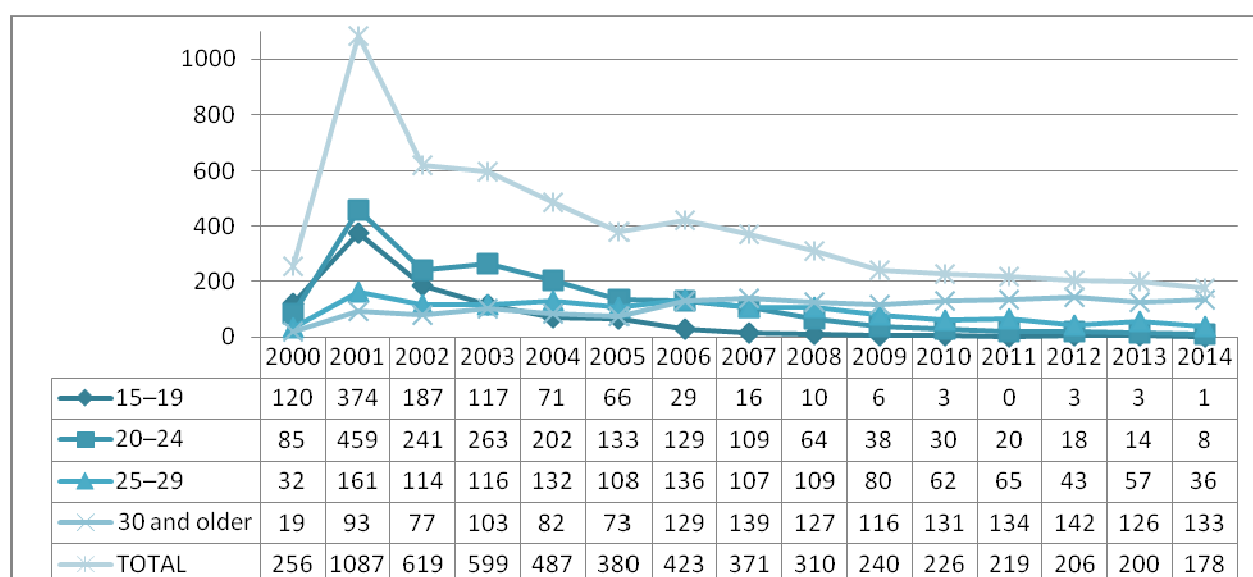
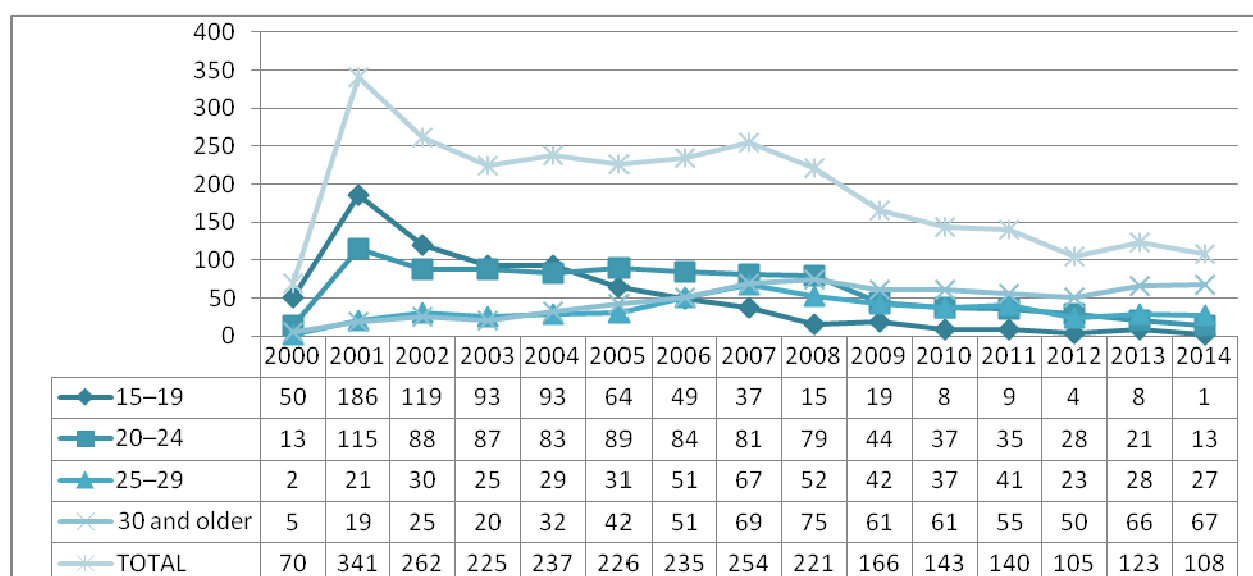


Fig. 6. Registered new HIV cases by age groups among women, 2000–2014 (n) (Health Board)



The mean age of newly diagnosed HIV cases has increased (31.6 years in 2010, 35.8 years in 2014). In 2014, the mean age of newly diagnosed HIV cases among men was 35.8 years and among women 35.9 years [1].

The proportion of cases older than 29-years has increased, but the absolute numbers have been quite stable in 2006–2014. In the early years of the epidemic (2000–2001), 78% of the new cases were diagnosed among 15–24-years old, but in 2014 the percentage of cases in this age group was 8% [1].

In a study conducted in 2012 among defence force conscripts (n=584, comprising 18.6% of the total 2012 conscripted forces) none was infected with HIV. Even though it was

a convenience sample of young men who had undergone thorough health check-up, the findings from this study support the declining HIV trend among 18–24-year old men [16].

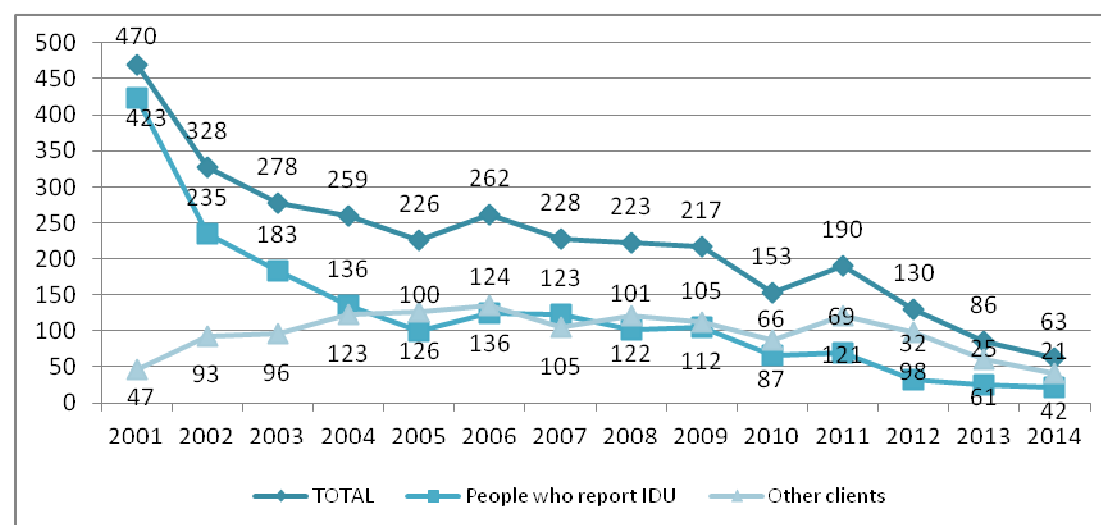
Especially positive is the decrease of cases among children and youth. In 2013, 11 cases and in 2014 two cases were diagnosed among 15–19 year olds (in comparison — in 2001, 560 cases were diagnosed in this age group).

The rate of mother-to-child transmission of HIV has been low over the years. Altogether 48 children have been infected through MTCT (two in 2014) — 0.5% of all HIV cases [1].

Data on HIV transmission routes are limited and based on anonymous HCT sites' data until 2009. According to HCT sites' data, HIV spread mainly sexually (both hetero- and homosexually) until 1999, and mostly through sharing infected injecting equipment since 2000. There has been an increase of heterosexual transmission in the last years, but there are no data on the risk factors of partners of people who have been infected sexually (thus it is not known how many of them are sexual partners of PWID, for example). HCT sites' data are presented in Fig. 7. Only a few cases have been diagnosed among MSM in recent years (two in 2014) [17].

Since 2009, data on HIV transmission routes is also collected by the Health Board. According to the Health Board, percentage of PWID among new HIV cases was 17% in 2010, 18% in 2011, 22% in 2012, 20% in 2013, and 18% in 2014.

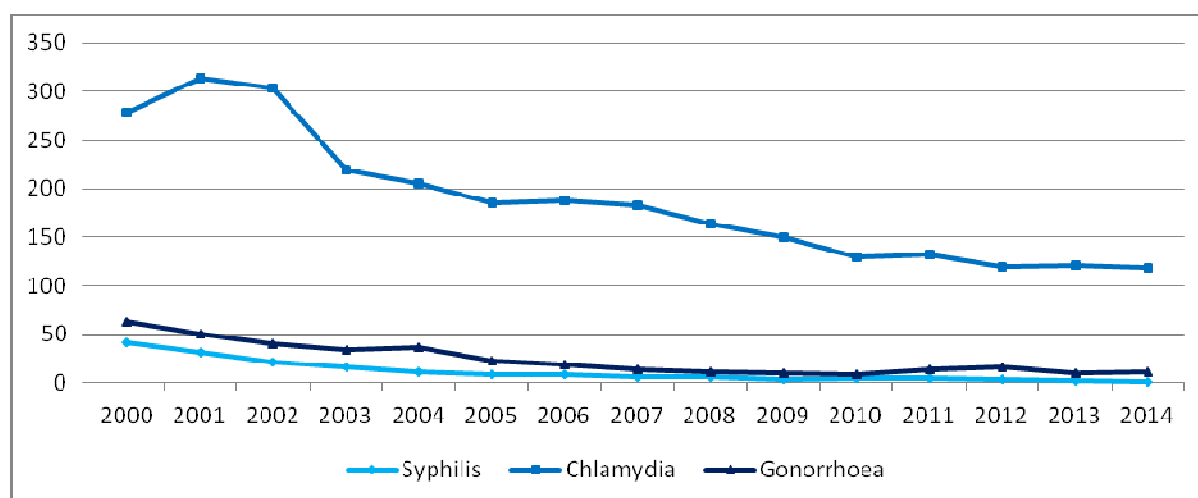
Fig. 7. Newly diagnosed HIV cases in anonymous HCT sites by IDU status, 2001–2014 (NIHD)



Sexually transmitted infections

In general, the rate of major STIs in Estonia has decreased in recent years (Fig. 8). The incidence has been highest among 20–29 years old, and higher among women compared to men [1].

Fig. 8. Incidence rates of selected STIs per 100,000 population, 2000–2014 (n)
(Health Board)



Viral hepatitis

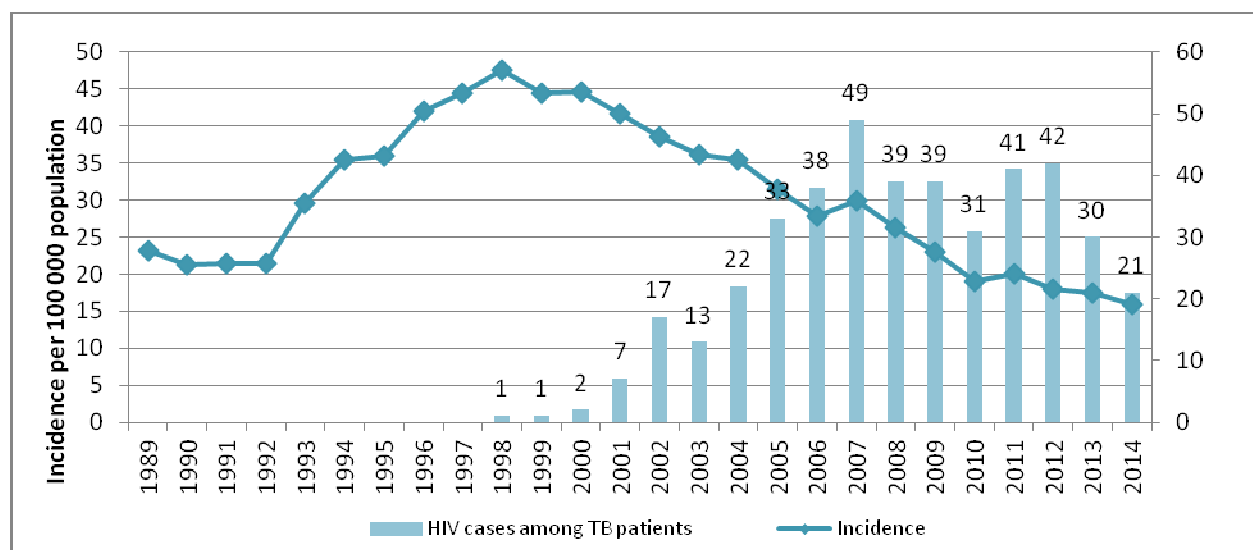
The overall rates of acute hepatitis B and C have been relatively stable. The incidence rate of acute hepatitis B has decreased from 1.2 per 100,000 population (n=16) in 2011 to 0.6 per 100,000 population (n=8) in 2014. The incidence rate of acute hepatitis C has increased from 1.3 per 100,000 population (n=17) in 2011 to 1.6 per 100,000 population (n=20) in 2014 [1].

HCV antibody prevalence among PWID ranges from 61 to 94% and HBsAg prevalence from 3 to 22% [9–13].

Tuberculosis

The incidence of TB was 16.6 cases per 100,000 population in 2014 (Fig. 9). A total of 246 TB cases were reported in 2014: 206 incident cases, 30 relapses and 10 re-treatment cases. The percentage of HIV-infected TB patients was 9.2% in 2014 (n=21). In total, 423 HIV-infected TB cases have been diagnosed since the first case in 2000 [18].

Fig. 9. TB incidence per 100,000 population and HIV-infected TB cases by year, 1989–2014 (National TB Registry)



Structures and strategies related to HIV prevention treatment and care

HIV-prevention activities in Estonia started more than 20 years ago. At the end of 1980s, biological surveillance of HIV-infection started and the first anonymous AIDS counselling centres were opened. On the basis of the prevention strategy developed by the Estonian Association "Anti AIDS", the first National Programme for AIDS Prevention for 1992–1996 was developed and adopted in 1992. The second National Programme for HIV/AIDS Prevention — "National Action Plan for HIV/AIDS and other Sexually Transmitted Diseases Prevention" was implemented in 1997–2001. The third national programme was adopted for 2002–2006. All these three programmes were financed from the state budget and coordinated by the Ministry of Social Affairs (formerly Ministry of Health Care).

Due to the growing HIV-epidemic, a need emerged for a new strategy that would better involve other governmental organizations, private sector and civil society. In 2005 a new national HIV and AIDS Strategy was developed for the years 2006–2015 and adopted with a government regulation on December 01, 2005. With the regulation, the Government also created a high-level multisectorial Governmental HIV and AIDS Committee as an advisory body to the Government for the central coordination of the implementation of the new strategy. The committee includes various stakeholder representatives — the representatives of all the ministries that need to plan activities in their field (Ministry of Social Affairs, Ministry of Education and Research, Ministry of Justice, Ministry of Defence, Ministry of the Interior, Office of the Minister for Population and Ethnic Affairs), the representatives of local municipalities, counties, the Parliament (Social Committee), the bureau of Prime Minister, the representatives of the four thematic working groups, PLHIV, and a representative of the youth organizations' union. The thematic working groups are open to all specialists and organizations operating in the field of HIV, both state and non-governmental. Thus, they serve as a forum where all the important issues are discussed. The working groups review the annual action plans and present their proposals to the Committee. The Committee reviews the proposals of the working groups and approves the national Action Plan for the following year and the Government of the Republic adopts the document. The Ministry of Social Affairs is now serving as the Secretariat to the new committee. Each implementing ministry develops its own annual Action Plan with a budget, which is presented to the Committee for approval.

One of the main current development document of the field in Estonia is the National Health Plan 2009–2020 (NHP) which aims at setting a national policy framework for addressing current and future challenges to the population's good health. NHP assembles a large number of strategic documents and development plans of different domains that previously existed independently, including the National HIV and AIDS Strategy. From 2013, National Drug Prevention Strategy until 2012 and National Tuberculosis Prevention Strategy for 2008–2012 also form a part of the NHP.

National HIV and AIDS Strategy for 2006–2015

The general goal of the National HIV and AIDS Strategy for 2006–2015 (hereinafter referred to as the Strategy) is to achieve a constant decline tendency of HIV spread in Estonia.

The strategic objectives set by the Strategy are the following:

1. HIV-spread has a constant decline tendency.
2. The number of injecting drug users has decreased and the spread of HIV among them has a constant declining tendency.
3. The incidence of HIV among young people aged 15–29 has constantly decreased.
4. The spread of HIV infection among sex workers has not increased and the spread of sexually transmitted infections has decreased.
5. The knowledge of the population of the ways of HIV transmission and their skills to assess their infection risk have increased and negative attitudes towards PLHIV have decreased.
6. No spread of HIV infection has occurred in detention institutions.
7. Vertical transmission of HIV infection has decreased.
8. The spread of HIV infection among MSM has not increased.
9. The STI spread among the population has decreased.
10. No HIV infections have occurred in the course of vocational work.
11. Availability of HIV testing and counselling service has increased.
12. Safety of the transfused donor blood and transplanted organs and tissues to the recipient is ensured.
13. Quality of life of people living with HIV and AIDS has improved.
14. Evidence-based planning in the field of HIV has enlarged.

To achieve these goals and objectives the so-called “Three Ones” principle is being implemented:

- One agreed HIV/AIDS action framework that provides the basis for coordinating the work of all partners;
- One national AIDS coordinating authority, with a broad based multi-sector mandate;
- One agreed country-level monitoring and evaluation system.

The priorities of the Strategy include:

- Harm reduction services for PWID;
- Young people;
- HIV-related specific health care and social support services for PLHIV.

The main indicators of the Strategy are:

- The number of newly diagnosed HIV-cases per 100,000 population (the goal for 2015 — 20 cases; the rate in 2014 — 23 cases).
- The proportion of HIV infected pregnant women among all pregnant women (the goal for 2015 — less than 1%; the percentage in 2014 — data yet not available as of March 31, 2015).

Financing and organization of health care

In Estonia, health care and social affairs are coordinated by the Ministry of Social Affairs. The core purchaser of health care services is the Estonian Health Insurance Fund (EHIF), which operates under the MoSA and purchases most of the services for insured people (94% of the total population). The main exceptions are emergency care, which is covered directly by the MoSA (from the state budget), and health care in prisons, which is coordinated and financed by the Ministry of Justice (from the state budget).

The EHIF pools funds transferred from the Estonian Tax and Customs Board (earmarked payroll social tax). Estonian health insurance is a social insurance, which relies on the principle of solidarity: the EHIF covers the cost of health services required in case of illness, regardless of the amount of social tax paid by the person concerned. The vast majority of the population, including children and the elderly, are covered by the compulsory health insurance scheme. Uninsured people, who represent about 6% of the population, mainly include low-income men who have either been unemployed for a long time or work in the informal sector. Private health insurance is very limited in Estonia.

Primary care services are provided to everyone insured by EHIF through general practitioners. Specialist care is provided by local and regional hospitals, which offer both inpatient and outpatient specialist services. A family physician's referral is required to visit a medical specialist. However, a referral is not needed to visit a psychiatrist, gynaecologist, dermatovenerologist, ophthalmologist, pulmonologist (for TB treatment), infectious disease specialist (for HIV treatment) or in case of trauma.

Health services related to TB and HIV treatment are financed from the EHIF and the state budget (National Health Plan) and are free of charge for all patients, including those who do not have health insurance. For example, ARV and TB medication is procured and purchased directly by the Ministry of Social Affairs.

HIV prevention among risk groups and general population

HIV prevention among people who inject drugs

Injecting drug use began to increase during the 1990s [19, 20]. The first reports describing an outbreak and the size of the PWID population came from field reports and expert opinions. In 2005, it was estimated (using the capture-recapture method in three different national databases) that there were almost 14,000 PWID in Estonia, with a prevalence of 2.4% among 15–44-year-olds [14]. In 2005–2009 there appears to be a decline in the number of PWID [15] and the population size is estimated to be around 9,000. PWID are mostly confined to two regions — capital city Tallinn (including its surrounding county Harjumaa), and North-Eastern Estonia (Ida-Virumaa county) [14, 15].

According to cross-sectional bio-behavioural studies and data from needle and syringe exchange programs (NSP) conducted since 2005 most PWID in Tallinn and North-Eastern Estonia were young Russian-speaking men [9–13, 21]. The percentage of IDUs older than 30 has increased over the years and the mean duration of injecting drugs has increased. Risk behaviours (sharing of syringes and other injecting equipment) have decreased.

The high HIV prevalence among PWID has remained stable (around 50% in Tallinn and 60% in North-Eastern Estonia). Prevalence rates among men and women are not statistically different, and have increased in correlation with the duration of injecting drug use [9–13, 21].

Harm reduction programs, testing and substitution treatment for PWID

Needle and syringe exchange programmes in Estonia were launched in 1997. Services are mostly provided in Tallinn and its surrounding areas and in North-Eastern Estonia (nine organizations). Altogether there are 14 stationary and 22 out-reach NSPs. In 2014, about 6,300 clients visited NSPs. NSPs distributed almost 2.1 million free syringes (approximately 230 syringes per PWID per year) and more than 313,000 free condoms in 2014 [22]. HIV testing is not routinely offered in NSPs, clients are referred to anonymous HCT sites.

In addition to needle and syringe exchange, opioid substitution therapy (OST) is provided to PWID (seven organizations in nine locations, mostly in capital city Tallinn and North-Eastern Estonia). OST services were first initiated in 1999. In 2014, the number of clients on OST was 919 [23].

There are two clinics in North-Eastern Estonia which provided STI and HIV counselling and testing mainly for PWID and their sexual partners (close to 1,000 clients in 2014) [24].

These activities are supported from the National Health Plan.

Naloxone pilot program

In September 2013, the take home naloxone pilot program was launched in Estonia by NIHD. The main purpose of the program is to reduce the number of fatal drug related overdoses among PWID in Estonia. The program educates PWID and people close to them to recognize the overdose and administer naloxone to the person who has overdosed, and give first aid until the ambulance arrives.

The provision of the service is carried out in cooperation with the health care providers and organizations providing harm reduction services. Naloxone programs are implemented in Harju and Ida-Virumaa Counties, where the problem of injecting drug use is most acute.

Service description

A health care provider educates and disseminates a pre-filled naloxone syringe to PWID and their relatives after they have completed the training. Naloxone can only be prescribed by a physician registered in register of health care professionals and the pre-filled syringes are only available in pharmacies authorized by the NIHD. Naloxone is not given anonymously.

Harm reduction services advise and motivate clients to participate in the training, prepare training groups and provide premises for training if needed. In case the training takes place at the harm reduction site, health care worker (from OST or infectious diseases clinic) comes to the site to conduct the training.

The knowledge acquired during the training is the following: drugs and their effects; how overdose occurs; giving first aid to a person with overdose (specific steps); how to use pre-filled naloxone syringes; the safe use of needles; infectious diseases transmitted through injection; what to do with the used syringe.

The drug used in the program in Estonia is the PRENOXAD INJECTION (naloxone hydrochloride 1mg/1ml solution for injection) and contains 2 ml naloxone hydrochloride 1 mg/ml.

The inclusion criteria:

- Person of at least 16 years of age with the risk of opioid overdose
- Relative named by the person with overdose risk
- Clients of the opioid substitution therapy
- Outreach workers at the harm reduction sites

In total, 733 participants received training and 729 naloxone syringe kits were disseminated during the period of September 2013–December 2014. 169 repeated prescriptions were reported. Most of the syringes were distributed to people who use drugs.

In 2015 it is planned in collaboration with the Ministry of Justice to expand the program to prisons and to provide training and disseminate naloxone kits to the prisoners with prior history of opioid use before their release.

HIV prevention among young people and general population

There has been a trend towards younger age at first sexual intercourse, and increased usage of condoms and reliable contraceptive methods. The abortion rate among 15–19-year-olds has declined by 61%. Analysis shows considerable improvements in sexual health indicators of the youth, and indicates that these run parallel to the development of school-based sexual education and youth counselling centres [25].

Ministry of Education and Research is responsible for information and education for young people in schools. Topics of HIV and safe sex are included in the school curriculum. There have been continuous trainings for teachers and study materials have been prepared on sexual education. NIHD is responsible for methodological materials for teachers and youth workers, programs for young people with special needs and high-risk youth. In collaboration with several NGOs education programs are implemented.

Youth counselling centres

Estonian Association of Sexual Health coordinates the work of youth counselling centres (financed by EHIF and through the state budget). These centres provide STI and HIV counselling, diagnostics, and treatment, also counselling on safe sex, family planning issues for young people up to 24 years of age. There are 18 youth counselling centres in Estonia, at least one in every county. Services are free of charge for all clients.

Media campaigns

Every year in past four years at least one media campaign targeting young people and general population has been launched. There have been two main focuses – promotion of condom use and HIV testing. Awareness raising events are organised annually on the Remembrance Day of AIDS Victims on the third Sunday in May, and the World AIDS Day on December 1.

HIV prevention among sex workers

Sex workers in Estonia work mainly in the capital city Tallinn. They work in apartments, brothels, in the streets, night clubs, etc. It is difficult to estimate how many women are involved in prostitution in Estonia. Based on expert opinions, their number may reach up to 3000. In the 2006 study in Tallinn HIV-prevalence among a group of SW (n=191) was 7%, in the 2011 study (n=227) — 6% [7, 8].

One NGO in Tallinn provides counselling and social support for SWs (including syringe exchange for those who inject drugs), and one sexual health clinic provides anonymous and free of charge STI and HIV counselling and testing. In 2014, close to 100 SW received STI and HIV testing [26]. There are two clinics in North-Eastern Estonia which provide STI and HIV counselling and testing mainly for PWID and their sexual partners, but they are also targeting local SW. These activities are supported from the National Health Plan.

HIV prevention in prisons

The Ministry of Justice is responsible for administrating health care and social services in prisons. All people who are arrested or found guilty for the first time are recommended to take HIV-test. HIV-test is voluntary and confidential. Testing is free of charge for prisoners. HIV-positive prisoners are in a prison pursuant to the general procedure. Depending on the state of his/her health he/she will be assigned further examinations and treatment. Prisons have the responsibility to organize regular trainings for detainees and prison staff regarding the prevention of the HIV infection spread. Condoms are also distributed to prisoners in prison health units and long-term meeting rooms (free of charge). Substitution treatment with methadone is available in all prisons and it is also possible to start the treatment in prisons.

HIV prevention among men who have sex with men

It is estimated that there are up to 9,000 homo- and bisexual men in Estonia [27]. Sexual risk behaviours are common, for example half of the MSM do not use condom consistently in casual relationships, and this has not changed in the last 10 years [5, 6, 28–30]. HIV

prevalence among MSM is estimated to be 2–4% and it has been stable in the last years [6, 31, 32].

Since 2012, STI and blood-borne infections testing for MSM (free of charge and anonymous) is available in six larger cities across the country. Men who want to test only for STIs which can be detected from urine, rectal and pharyngeal samples (gonorrhoea, trichomoniasis, mycoplasmosis, Chlamydia and LGV), can do so by ordering and receiving the sample collection kit by regular mail and receiving the results through the Internet (special web-site called “Test at home” — www.testikodus.ee). In 2014, 181 men were tested. According to the preliminary results, 18 cases of Chlamydia, nine cases of gonorrhoea, nine cases of mycoplasmosis, 15 cases of trichomoniasis, and five cases of syphilis were diagnosed. Two men were positive for HCV antibodies and one for HBsAg [33]. This project was supported by NIHD through Estonian Research Council grant.

The publication of information materials and distribution of condoms in gay-oriented bars and clubs has also been supported from the National Health Plan. Estonian Network of People Living with HIV (EHPV) and NIHD organize HIV rapid testing events in gay-oriented bars and clubs. Approximately 10% of MSM report that the last place they got tested for HIV was a gay-oriented bar and club, so this approach has turned out to be quite successful in recent years [6].

HIV prevention in defence forces

There is no obligation to test persons eligible to be drafted in the Estonian Defence Forces for HIV. It is possible for all members of the Defence Forces to take a voluntary test in AIDS counselling rooms. Data on how many have taken the test are not collected. There is also no obligation in the Estonian Defence Forces to test members of the Defence Forces who go on international military missions for HIV-infection. HIV-test is taken only when members of the Defence Forces are going to study abroad.

A conscript who has been found to be infected with HIV is released from compulsory military service. When HIV-infection is discovered in a regular member of the Defence Forces, his/her further military service is decided on an individual basis. Further medical examination and treatment of a person with HIV-infection/AIDS will take place in civil network. There is no corresponding plan for their treatment in the Defence Forces.

Health care and social support for people living with HIV

Health care services

Health services related to HIV infection, including antiretroviral treatment (ART), are provided in the specialised departments of both inpatient and outpatient infectious disease (including HIV) facilities. TB and STI services are provided by separate specialists (pulmonologists and dermatovenerologists, respectively). Infectious disease departments are part of the general, central and regional hospitals located in five larger cities. All these services are also available in all prisons through cooperation with local hospitals.

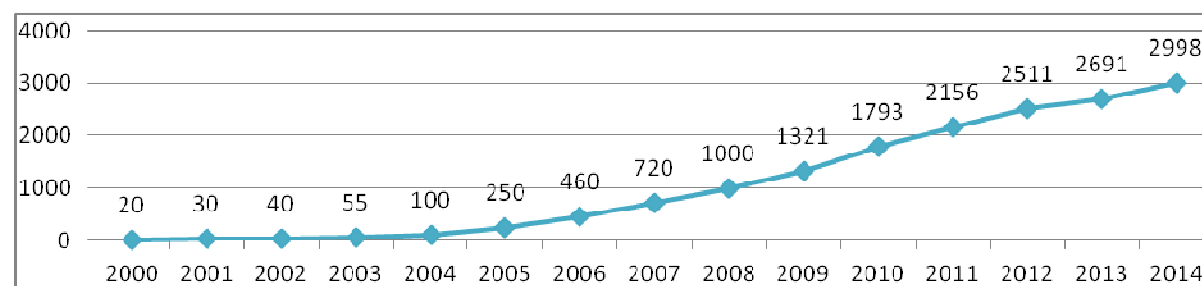
Patients who test positive for HIV are referred to an infectious disease doctor for health monitoring, treatment, counselling and contact tracing. No official referral is required (as opposed to appointments with other specialists, for which a general practitioner's referral is necessary). HIV-related health care services including ART are free of charge for all patients. Patients on ART usually have to visit the hospital once a month to get a month's supply of ARV medication. Patients who are not receiving ART yet usually visit the hospital once or twice a year for regular medical check-ups. The Estonian Society for Infectious Diseases has developed guidance for HIV patient management and antiretroviral treatment monitoring. In the hospitals there are social workers who provide social counselling for PLHIV. In the largest infectious disease department in capital city Tallinn, there is also a combined directly observed substitution treatment and ART program for PWID, where patients receive daily their ARV medicines and methadone.

By December 31, 2014, the total number of PLHIV in HIV care was 5,513 [34]. The number of PLHIV in HIV care in the three largest infectious diseases departments was:

- 2,471 in Tallinn (32% women; 55% on ART).
- 960 in Narva, North-Eastern Estonia (40% women; 52% on ART),
- 1,183 in Kohtla-Järve, also North-Eastern Estonia (42% women, 59% on ART).

Besides that, 528 PLHIV received care in three prisons. In general, the number of people on ART has increased slowly but steadily over the years (Fig. 9). 2,998 people were on treatment at the end of 2014. In 2012, 450 people started ART, 41% of them were PWID, 47% had CD4 count lower than 200 cells/ml. In 2013, 380 people started ART, 44% of them were PWID and 37% had CD4 count lower than 200 cells/ml. In 2014, 445 people started ART, 43% of them had CD4 count lower than 200 cells/ml, the proportion of PWID unknown [34].

Fig.10. Number of PLHIV on ARV treatment, 2000–2014 (Ministry of Social Affairs)



Psychosocial support

Several NGOs provide counselling for PLHIV and their close ones (social, psychological and legal issues, adherence to treatment, HIV prevention, etc). All these services are provided anonymously and free of charge, and are supported through NIHD. Besides that condoms and informational materials free of charge are distributed.

The social benefits and social support services provided by the national and local governments are meant for all people in need of assistance and there are no special terms or benefits for PLHIV.

Prevention of mother to child transmission of HIV

The number of HIV-positive pregnant women in Estonia has remained stable in past years (around 120–150 cases per year) and the number of mother-to-child transmission cases is low.

All women who register their pregnancies are recommended already during their first visit to take the HIV-infection test in addition to other tests, also a second test is taken during the 30th week of pregnancy. The corresponding test is also recommended to all women who decide to have an abortion. Regulation of the Ministry of Social Affairs No 118 from 31 October 2003 establishes that each pregnant woman shall be tested for syphilis and HIV-infection in course of registering the pregnancy.

All pregnant women in Estonia are covered by health insurance from the 12th pregnancy week and thus are guaranteed all health services free of charge (including prophylactic ART from women and newborns). Besides that, women receive free of charge breast milk substitute until the child is one year old.

Recent study among HIV-infected women in Tallinn revealed that in general, women were content with HIV related services as well as with the health and social services related to pregnancy, childbirth, and childhood. The main problem areas were considered to be the fee for a doctor's visit, the availability of ART only in one location, and long queues to gynaecologist's reception. Reasons for delay in starting with ART were doubts concerning the efficiency of the therapy and fear of side effects. Some women do not consistently use contraceptives for different reasons. Above all, lack of psychological help free of charge, both during and after pregnancy was missed [35].

Prevention and treatment of tuberculosis

Health services related to TB diagnostics and treatment are financed from the EHIF and the state budget and are free of charge for all patients, including those who do not have health insurance. Pulmonologists see patients with suspected TB in outpatient settings in 11 cities. A general practitioner's referral is not needed if a person suspects he or she has TB. TB treatment (inpatient) services are provided in five cities. One site also has a special department for involuntary treatment. DOTS is mostly provided in collaboration with county pulmonologists and general practitioners, and is financed from the state budget. DOTS has been implemented in Estonia since 2000, offering 100% coverage.

All TB patients are routinely offered HIV testing (opt-out approach, recommendations from the professional society of pulmonologists) [36]. HIV tests are often performed early in the diagnostic process, even before a TB diagnosis has been confirmed.

Data from the TB Registry reveal a high coverage of HIV testing for TB patients: in 2012–2014, the HIV test result was known for more than 90% of the patients [18].

TB diagnosis and treatment services for PLHIV are provided similarly to the services intended for all other patients. PLHIV are recommended to undergo TB screening (chest X-ray) once a year, in case of symptoms indicating TB, or contact with a person known to have TB. No data are routinely collected on the TB screening of PLHIV.

NIHD implemented European Union Public Health Programme project called TUBIDU in 2011–2014, which main aim was to contribute to the prevention of the PWID- and HIV-related TB epidemic in the project area (<http://www.tai.ee/en/tubidu/project-description>). The strategic objectives included empowering the public health system and civil society and enhancing collaboration between various stakeholders in the field in order to tackle TB. In the framework of the project many trainings were organized for NGOs, information materials produced and TB prevention guidance for community based organizations issued.

Overall progress and challenges for the future

Overall progress:

- The coverage of needle and syringe exchange programs has increased considerably and is considered quite high. Geographical coverage with the services has improved, the number of people attending the services and the number of syringes distributed has constantly increased since 2003. The percentage of PWID who share syringes has decreased. Sharing other injecting equipment is still more problematic.
- Take-home naloxone programme was launched in 2013.
- HIV-testing has been scaled up. The number of sites providing anonymous HIV testing has increased and the geographical coverage has been improved. The number of people tested in health care settings has increased.
- Access to free of charge STI services among risk groups and general population youth has improved. In the last five years government has supported free of charge STI services in youth counselling centres (for youth without health insurance), and STI centres for injecting drug users and their sexual partners.
- OST is provided in all prisons and there is a possibility to start OST in prison. OST is also provided in two major detention centres which allows to ensure continuity of care in community and prison setting.
- The number of people on ART has increased and government support for HIV-related health care services for all PLHIV has been continuous.
- HIV testing rates at TB clinics are high and all people eligible are provided with treatment.

Immediate key issues include:

- Integration of harm reduction, health and social care services for PWID and other groups; linking the services with the prison and detention system, ensuring the continuum of care.
- Increasing the adherence to clinical treatment programs among PLHIV, especially those injecting drugs.
- Providing sexual health, and family planning services and health related counselling (e.g. nutrition) for PLHIV.
- Ensuring an appropriate range of easily accessible services for PWID and their sexual partners (for example appropriate injecting-related equipment, other than needles and syringes; sexual health services; HIV- and hepatitis testing in all syringe exchange programs) and improving the geographical coverage of services.
- Lack of proper prevention activities in all prisons (limited access to condoms and no access to clean injection equipment).
- Lack of appropriate prevention activities for MSM (there are limited interventions targeting MSM).
- Developing special programs and systematic approach for HIV prevention for out-of school youth.
- Providing HIV prevention services for SW in other regions besides the capital city.
- Further scaling up of HIV testing for hard to reach populations and general population, especially in health care settings (provider initiated testing).
- Strengthening data collection and availability related to biological surveillance of HIV.

References

1. Health Board [Terviseamet] [web site]. Tallinn, Health Board, 2014 (http://www.terviseamet.ee/fileadmin/dok/Nakkushaigused/HIV/hiv_2014.pdf).
2. Ministry of Social Affairs. Guidelines for HIV testing and referral of HIV-positive people to treatment. Tallinn, Estonia 2012.
3. Tekkel M, Veidemann T. Health Behavior among Estonian Adult Population, 2010. Tallinn, National Institute for Health Development, 2011 (<http://www.tai.ee/et/terviseandmed/uuringud/download/144>).
4. Themas A, Ainsaar M, Soo K, Sammul M, Uusküla A, Tarum H, jt. Eesti meeste hoiakute ja käitumise uuring: tervis, haridus, tööhõive, ränne ja pereloom. 2014. Lõppraport. Tartu: Tartu Ülikool 2015
5. Lõhmus L, Murd M, Trummal A. Üle-euroopalise meestega seksivate meeste uuringu Eesti andmete kokkuvõte 2010. Tervise Arengu Instituut, Tallinn 2012. (<http://www.tai.ee/et/terviseandmed/uuringud/download/191>)
6. Rüütel K, Lõhmus L. Meeste tervise heaks: seire ja tervisedendus Internetis. 2013. aasta meestega seksivate meeste Internetiuuringu kokkuvõte. Tallinn, Tervise Arengu Instituut, 2014.
7. Trummal A, Fischer K, Raudne R. HIV-nakkuse levimus ning riskikäitumine prostitutsiooni kaasatud naiste hulgas Tallinnas. Tallinn, Tervise Arengu Instituut, 2006 (<http://www.tai.ee/et/terviseandmed/uuringud/download/55>).
8. Lõhmus L, Trummal A. HIV-nakkuse, teiste infektsioonide ning riskikäitumise levimus prostitutsiooni kaasatud naiste hulgas Tallinnas, 2011. Tervise Arengu Instituut, Tallinn 2012. (<http://www.tai.ee/et/terviseandmed/uuringud/download/201>)
9. Lõhmus L, jt. HIV-nakkuse ja teiste infektsioonide ning riskikäitumise levimus Tallinna ja Kohtla-Järve süstivate narkomaanide seas, 2007. Tallinn, Tervise Arengu Instituut, 2008 (<http://www.tai.ee/et/terviseandmed/uuringud/download/93>).
10. Vorobjov S. HIVi levimuse ja riskikäitumise uuring Tallinna süstivate narkomaanide seas, 2013. Tallinn, Tervise Arengu Instituut 2014. (<http://www.tai.ee/et/terviseandmed/uuringud/download/301>)
11. Vorobjov S, jt. HIV-levimus Kohtla-Järve süstivate narkomaanide seas, 2012. Tallinn, Tervise Arengu Instituut 2014 (<http://www.tai.ee/et/terviseandmed/uuringud/download/289>)
12. Lõhmus L, jt. HIV-nakkuse, hepatiitide ning riskikäitumise levimus süstivate narkomaanide seas Narvas 2010. Tallinn, Tervise Arengu Instituut, 2011 (<http://www.tai.ee/et/terviseandmed/uuringud/download/162>)
13. Vorobjov S. HIVi levimuse ja riskikäitumise uuring Narva süstivate narkomaanide seas 2014. Tallinn, Tervise Arengu Instituut, 2015 (<http://www.tai.ee/et/terviseandmed/uuringud/download/318>)
14. Uusküla A, et al. Estimating injection drug use prevalence using statewide administrative data sources: Estonia, 2004. *Addiction Research and Theory* 2007;4:411–424.
15. Uusküla A, et al. A decline in the prevalence of injecting drug users in Estonia, 2005–2009. *Int J Drug Policy* 2014;24:312–8. doi: 10.1016/j.drugpo.2012.11.002
16. Rüütel K, Parker RD. STI prevalence and knowledge, attitudes, behavior and perception of STIs among conscripts. Study report. National Institute for Health Development, Tallinn 2013. (<http://www.tai.ee/et/terviseandmed/uuringud/download/217>)

17. Programmatic data from AIDS Counselling Centres, 2004–2012. Tallinn, National Institute for Health Development.
18. National Tuberculosis Registry
19. Ustina V, jt. Epidemiology of HIV in Estonia. *AIDS Research and Human Retroviruses*, 2001, 17:81–85.
20. Uusküla A, jt. The role of injection drug use in the emergence of human immunodeficiency virus infection in Estonia. *International Journal of Infectious Diseases*, 2002, 6:23–27.
21. Uusküla A et al. HIV levimuse ja riskikäitumise uuring Eesti kahe linna (Tallinna ja Kohtla-Järve) süstivate narkomaanide seas [HIV and risk behaviour among injecting drug users in two cities (Tallinn and Kohtla-Järve) in Estonia]. Tallinn, National Institute for Health Development, 2005
(<http://www.tai.ee/et/terviseandmed/uuringud/download/32>)
22. Programmatic data from syringe exchange programs, 2004–2013. Tallinn, National Institute for Health Development.
23. Programmatic data from substitution treatment programs, 2004–2013. Tallinn, National Institute for Health Development.
24. Programmatic data from STI services for people who inject drugs and their sexual partners, 2014. Tallinn, National Institute for Health Development
(<http://www.tai.ee/et/terviseandmed/uuringud/download/317>)
25. Haldre K, Part K, Ketting E. Youth sexual health improvement in Estonia, 1990-2009: the role of sexuality education and youth-friendly services. *Eur J Contracept Reprod Health Care* 2012;17:351–62. doi: 10.3109/13625187.2012.696751.
26. Programmatic data from STI services for sex workers, 2012–2014. Tallinn, National Institute for Health Development.
27. Marcus U, Hickson F, Weatherburn P, Schmidt AJ and the EMIS Network. Estimating the size of the MSM populations for 38 European countries by calculating the survey-surveillance discrepancies (SSD) between self-reported new HIV diagnoses from the European MSM internet survey (EMIS) and surveillance reported HIV diagnoses among MSM in 2009. *BMC Public Health* 2013, 13:919.
28. Lõhmus L, Trummal A. HIV/AIDS-iga seotud teadmised ja käitumine gay-internetilehekülgi külastavate meeste seas. Tallinn, Tervise Arengu Instituut, 2004
(<http://www.tai.ee/et/terviseandmed/uuringud/download/21>).
29. Lõhmus L, Trummal A. HIV/AIDS-iga seotud teadmised ja käitumine gay-internetilehekülgi külastavate MSM-ide seas. Tallinn, Tervise Arengu Instituut, 2006
(<http://www.tai.ee/et/terviseandmed/uuringud/download/52>).
30. Lõhmus L, Trummal A. HIV/AIDS-iga seotud teadmised ja käitumine gay-internetilehekülgi külastavate MSM-ide seas. Tallinn, Tervise Arengu Instituut, 2008
(<http://www.tai.ee/et/terviseandmed/uuringud/download/229>).
31. Trummal A, Johnston LG, Lõhmus L. HIV prevalence and risk behaviours among men having sex with men in Tallinn: pilot study using respondent driven sampling. Tallinn, National Institute for Health Development, 2007
(<http://www.tai.ee/et/terviseandmed/uuringud/download/75>).
32. Tripathi A, Rüütel K, Parker RD. HIV risk behaviour knowledge, substance use and unprotected sex in men who have sex with men in Tallinn, Estonia. *Euro Surveillance*, 2009, 14(48):pii=1942
33. “Health Promotion in the Internet: for men’s health.” Project report 2014. National Institute for Health Development, unpublished data.
34. Programmatic data from infectious diseases departments, 2012–2014. Ministry of Social Affairs.

35. Rüütel K, Lemsalu L. Prevention of Mother-to-child transmission of HIV in Estonia. Report of a Qualitative Study, Tallinn 2013. National Institute for Health Development, 2014 (<http://www.tai.ee/et/terviseandmed/uuringud/download/274>).
36. Vink K. Guidelines for diagnosis, treatment and follow-up of tuberculosis. Tartu: Tartu University Clinic; 2004 (http://www.tai.ee/failid/TB_ravijuhis.pdf).