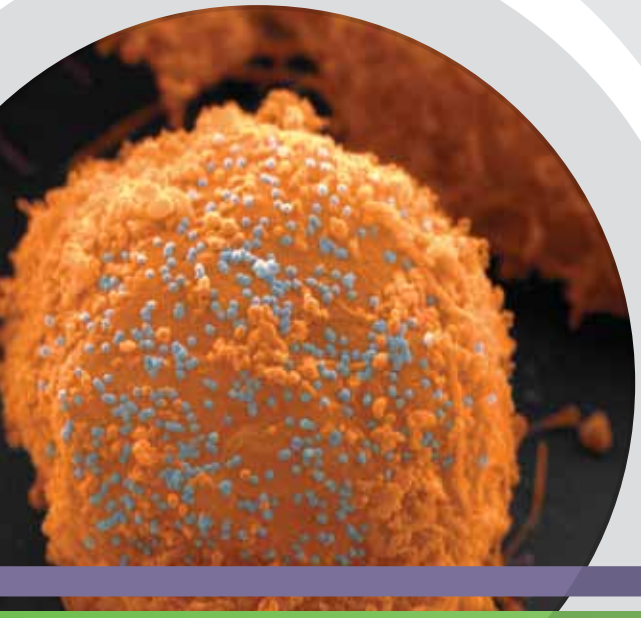

MISSION REPORT

Country mission Estonia: HIV, sexually transmitted infections and hepatitis B and C

11–13 October 2010

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This report of the European Centre for Disease Prevention and Control (ECDC) was coordinated by Mika Salminen and Marita van de Laar.

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Abbreviations

AIDS	Acquired Immune Deficiency Syndrome
ECDC	European Centre for Disease Prevention and Control
EHIF	Estonian Health Insurance Fund
EHPV	Estonian Network of People Living with HIV/AIDS
HIV	Human Immunodeficiency Virus
IDU	Injecting Drug User
IUSTI	International Union for Sexually Transmitted Diseases
MSM	Men who have sex with men
NGO	Non-governmental Organisation
NIHD	National Institute for Health Development
PCR	Polymerase chain reaction
PLWHA	People Living with HIV and AIDS
POC	Point-of-care
STI	Sexually transmitted infections
TB	Tuberculosis
WHO	World Health Organization

Executive summary

Objectives of the country visit

Following a request by the Estonian government, the European Centre for Disease Prevention and Control (ECDC) performed a follow-up country visit to Estonia covering HIV and sexually transmitted infections (STIs) between the 11th and 13th October 2010, following an earlier visit in 2007. The aim of the second country visit was to receive an update on progress made since the previous visit and to address specific issues more recently identified by the Estonian government.

The key areas identified as requiring technical support and guidance from ECDC were:

- expansion of point-of-care (POC) HIV testing in community-based settings.
- strengthening the integration of HIV and STI care.
- effective partner notification.
- improving the quality and harmonisation of HIV and STI surveillance data.
- efficient regional networking.

The visit comprised of meetings with officials at the Ministry of Social Affairs, the Health Board, the National Institute of Health Development (NIHD), volunteers working for the Estonian Network of People Living with HIV (EHPV), clinicians at the Merimetsa Infectious Diseases Centre and the Estonian Sexual Health Association, and employees and prisoners at Harku Prison near Tallinn.

Epidemiology of sexually transmitted infections and HIV

Recently, there have been shifts in the epidemiology of HIV and STIs in Estonia. The percentage of new HIV diagnoses associated with injecting drug use has fallen considerably since 2001, reflecting the increase of sexual transmission of HIV in Estonia. Trends in STIs are characterised by a rapid decline in diagnoses over the last ten years. The proportion of HIV and STI diagnoses among men who have sex with men (MSM) is unknown.

National coordination

Estonia has an established and comprehensive healthcare system, which is overseen by the Ministry of Social Affairs. Healthcare in Estonia is largely publically financed and HIV services are primarily funded by the Estonian Health Insurance Fund with a few exceptions (i.e. antiretroviral drug treatment), for which dedicated budget lines exist.

A cross-ministerial national public health strategy for HIV and AIDS was launched in 2005 and is overseen by the HIV/AIDS Committee of the Government of the Estonian Republic. The budget for the HIV/AIDS strategy declined from 200 to 160 million Estonian kroon (EEK) between 2008 and 2010.

Prevention, treatment and care

HIV and AIDS prevention, diagnosis, treatment and management are delivered through a network of actors, where the prevention sector in particular is multi-sectoral, combining both non-governmental (NGO) and governmental actors. Active NGOs exist and are supported by governmental and international grants and the professionalisation of the NGO sector is becoming visible. Care and treatment is almost exclusively delivered by infectious disease specialists, both through outpatient and inpatient services. Primary care has a very weak role in the HIV care system.

The Estonian government has specific structures in place to address the severe outbreak of HIV-infection that started in 2001, and have mainly been concentrated in populations of injecting drug users (IDU), sexual partners of the users and to some extent, sex workers. HIV antiretroviral drug treatment is available to those in need and is funded through a separate mechanism with a specific government budget line in comparison to other health care. While the government HIV responses are fairly comprehensive, some suffer from structural barriers such as legislative barriers for expanding point-of-care testing and a restriction of HIV treatment delivery and patient management to infectious disease specialists only. MSM health services are weak, and almost non-existent.

STI diagnosis, treatment and management are primarily delivered through gynaecologists, dermato-venereologists and family doctors (general practitioners). Only very few andrologists operate in Estonia. There is also a national network of young people's sexual health services established by the Estonian Sexual Health Association (ESHA), which offers a free service to those aged 25 years and under. There are no specific services for men who have sex with men.

Sexually transmitted infections management is based on guidelines developed by the International Union for Sexually Transmitted infections (IUSTI) and includes testing for HIV. However, HIV guidelines do not recommend that patients newly diagnosed with HIV are further tested for other STIs. There are no systematic guidelines for partner notification although this is the responsibility of the treating medical doctor. For patients, the decision to disclose the identity of their partners is a voluntary one.

Surveillance, monitoring and evaluation

The Estonian Health Board conducts STI and HIV surveillance, and a new electronic communicable disease registry has recently been introduced. Data are provided by family doctors, specialist doctors (both in - and out-patient settings) and laboratories, and there is a unique patient ID which allows record linkage. Notification of new diagnoses is required within 24 hours. The communicable disease registry collects comprehensive data on HIV and STI diagnoses but transmission data are poorly reported. For HIV diagnoses there are no data collected on CD4 counts or resistance.

The National Institute for Health Development (NIHD) monitors and evaluates the impact of the national HIV/AIDS strategy through prevalence surveys and behavioural surveillance of target groups including youths, injecting drug users (IDU), prisoners, sex workers, MSM and people living with HIV/AIDS (PLWHA). The institute also develops and evaluates HIV and AIDS media campaigns.

Testing and diagnosis

All large hospitals in Estonia diagnose and confirm STIs primarily through polymerase chain reaction (PCR) technologies, however there is no STI reference laboratory. This means there are negligible numbers of isolates available for monitoring resistance of gonorrhoea to antimicrobials. There is a network of primary HIV-testing laboratories, which refer to the HIV laboratory in Tallinn for confirmation testing, although there is no formal process for determining selection criteria and responsibilities of reference laboratory services.

Point-of-care (POC) HIV tests have been used in Estonia for some years, but primarily in healthcare rather than community-based settings. Currently, only registered healthcare organisations are allowed to provide POC tests and all facilities providing POC testing are required to participate in quality assurance programmes comparable to those required for laboratory-based tests. Point-of-care tests are used in low threshold and high throughput settings and are not intended to provide a final diagnosis for positive cases. As such, they should not require the same level of quality assurance as standard HIV tests which are reliant on confirmation by the reference laboratory. These restrictions may constitute barriers to expanding POC test use in community-based settings.

Good practices

Government

The Estonian government has set up an inter-ministerial HIV-AIDS coordination body to ensure that all sectors of government work towards common goals in their responses to the epidemic. This Commission is a sign of strong political commitment and can be considered as a model which could potentially be adopted by other countries with similar levels of HIV transmission.

Ministries

Ministry of Social Affairs

Several good practices were identified within the Ministry of Social Affairs, which could be used by other countries in their own benchmarking for efficiency increasing practices, rational decision making within the health field and innovative funding policies. Of these, the following are worth closer examination:

- The Ministry of Social Affairs includes a Department of Health Impact Assessment, which is a feature missing in many larger countries. Health impact assessments, if rigorously conducted, can be of great assistance for rational decision making and may be especially useful in strained economic situations or when difficult prioritisations are necessary.
- The Ministry of Social Affairs has a long-term goal of creating a national archive/database (the e-health project) for healthcare information storage on an individual level, which would be directly linked, used and updated by both health providers and used for reporting purposes. If successfully implemented, with proper checks and balances for ensuring personal data protection, this system could be of wide interest for multiple countries, and has the potential of providing substantial efficiency increases through discontinuation of multiple parallel systems. Estonia has significant experience and demonstrated success at implementing country-wide e-solutions for multiple purposes, such as parliamentary elections.

- The Ministry of Social Affairs has been successful in implementing the use of EU Structural Fund resources not only for infrastructure development, but also for training of health care personnel. As a response to a major change in the HIV/AIDS situation this should be seen as a very innovative approach, especially as the Member States have a great deal of national say on the use of the EU Structural Fund end use.

Ministry of Education and Science

- The Ministry has recently revised the general school curriculum, including health education as a separate study subject. Evidence from countries with similar approaches suggests that school health education, if comprehensive and systematic through grades, may provide primary protection against health risks among youth, especially if supported by families and other societal responses.

National Institute for Health Development (NIHD)

The NIDH has developed very strong and systematic monitoring and evaluation structures for the evaluation of health programmes and interventions. In fact, the structures in place are rather more developed than in many larger countries and have a more broad-based approach in applying multiple angles to monitoring and evaluation. Notably, the NIHD places a strong emphasis on study-based monitoring, which can be seen as a strength compared to a purely passive service provision statistics-based approach. In addition, the NIHD has progressively applied not only health indicator monitoring, but has also used multiple approaches, including both behavioural and social indicators for estimating programme impact. The monitoring and evaluation components of the NIHD could be used as a model and benchmark for well-conducted impact assessment structures throughout the European region. In addition these structures form a strong basis for development into a preventive health quality analysis and quality management system, which could be added without much further effort.

Rollout of point-of-care HIV tests

Estonia has started the process of rolling out increased use of point-of–Care HIV tests with good circumstantial and experiential evidence that these fulfil a real need, and may result in increased uptake of testing for early attachment to care. While Estonia is on the frontline of applying the POC testing their usage could be further increased.

Youth counselling centres

The NIHD and the government has actively supported private actors to provide preventive services to youth through targeted funding. This is an excellent example of the integration of a public health function in a healthcare system. While the services are mainly used by young women, they could potentially be expanded to become more attractive to the male target group.

Guaranteed access to antiretroviral treatment for all those in need

Estonia has made a commitment to provide antiretroviral treatment to all those in need of it, and has made significant efforts to reach this goal. antiretroviral treatment is available from specific government funding irrespective of an attachment to health insurance. Remaining challenges are linked to individuals' costs for supporting health services and missing incentives for treatment attachment. If solved, these could make Estonia a model case for antiretroviral treatment provision among the newer EU Member States.

Considerations

The main considerations following the visit are:

Expansion of point-of-care HIV testing in community-based settings

Consideration should be given to abandoning the requirement for strict linkage of POC testing to a medical institution, in favour of links to appropriately trained and qualified medical personnel. Consideration should also be given to revising ministerial or other regulatory guidance on quality management procedures to enable further expansion of POC HIV testing. Clearly, robust quality assurance still needs to be maintained and should include brief but specific provider training, and at least one annual sample panel for quality assurance testing. Patients must also receive accurate pre- and post-test information and be given clear pathways to confirmation testing and subsequent care.

Strengthen the integration of HIV and sexually transmitted infections care

There should be clear guidance to routinely take not only illicit drug histories but also sexual histories and offer STI screening for all those newly diagnosed with HIV. In addition, for those living with HIV who are being seen for care, regular referrals for STI screening and sexual health check-ups as part of positive prevention efforts may have value. Promotion of formal cooperative links and communication between infectious disease and STI/sexual health professions could help foster more integrated care.

Strengthen services for men who have sex with men.

There are no services in Estonia specifically targeting MSM and while there are limited data on the size of the MSM population in Estonia and their particular needs, it is likely they would benefit from tailored sexual health clinics which could be time-tabled as regular slots within existing services.

Review partner notification guidelines

The lack of standard guidelines and practice may hamper the effectiveness of partner notification for infection control. Consideration should be given to reviewing partner notification legislation and to promoting the use of standard guidelines.

Sexually transmitted infections reference services and gonococcal resistance monitoring

The rapid emergence of gonococcal resistance to antimicrobials is a recognised global phenomenon. Consideration should be given to the establishment of an STI reference service, which could maintain expertise in gonococcal culture methods and receive a regular supply of isolates for resistance testing. Such a service could also ensure better standardisation and quality assurance in STI testing. ECDC runs a project of laboratory support (Euro-GASP) which can offer support to achieve this.

Facilitate improvements in surveillance of HIV and sexually transmitted infections

Distinguishing the main transmission groups in surveillance data remains challenging and the lack of information on the proportion of diagnoses among MSM is of particular notable concern, and a sexual transmission category should be added to the surveillance. There is also no information routinely collected on CD4 counts and antiretroviral resistance in HIV patients. To help improve the quality of HIV and STI surveillance data, consideration should be given to:

- providing regular and more clinic/setting-specific feedback to providers, which would promote benchmarking of their activities against national or regional standards and between peer institutions. ECDC could offer advice on the design of such reports if requested;
- reviewing the objective basis for the 'within 24 hours' requirement to notify HIV and STI diagnoses to the communicable disease registry, before a patient sexual history has been completed. Its removal should be strongly considered or significant lengthening of the grace period towards a timeline allowing for sexual category information collection;
- perform epidemiological analyses of HIV and STI co-infections to augment evidence for HIV management guidelines and, specifically, of the need to refer patients diagnosed with HIV for STI testing and counselling;
- introducing collection of CD4 count and antiretroviral resistance in the communicable disease registry as part of contractual terms between funding and provider organisations;
- expediting integration of e-health with the communicable disease registry to help reduce the time spent by physicians in recording and reporting patient information and also to harness opportunities for improving the quality of surveillance data.

1. Objectives of the country visit

1.1 Background

In 2007, ECDC performed a first HIV and STI country visit to Estonia following a request from the Ministry of Social Affairs. The objective of that visit was to review, together with country experts, the status of HIV and STI surveillance, prevention and control, in order to:

- identify priority areas in which ECDC, within its mandate, can provide support;
- direct ECDC activities and propose actions for improvement;
- enhance the knowledge of ECDC's HIV/STI team on the HIV/STI situation in the country;
- identify good practice in HIV/STI prevention and control;
- share country experiences.

The visit resulted in an agreed recommended action list for improvement and further support from ECDC. A detailed report of the 2007 country visit was produced by ECDC and the country representatives [2]. The report highlighted examples of good practice including a high-level commitment to the national HIV and AIDS strategy, valuable surveys among risk groups which have helped focus prevention and intervention activities, needle exchange and harm reduction programmes in Tallinn and in Narva, Ida-Virumaa county, and innovative approaches to media campaigns for HIV.

The major recommendations from the report addressed ways of strengthening the public health component of the control and surveillance of HIV/AIDS and STIs, including better harmonisation of the parallel systems for HIV and STIs. It was also noted that the socio-cultural situation with respect to the Russian speaking minority is a particular problem affecting many aspects of society. Specific areas identified were the need to:

- improve effectiveness of primary prevention targeted at drug use and safe sex;
- harmonise the parallel surveillance systems for HIV and STIs;
- increase the visibility for STI services;
- increase awareness among the MSM community to avoid potential spread of HIV in this group;
- improve STI treatment in HIV patients;
- integrate HIV and STI services.

The report outlined areas where ECDC could provide support, including:

- technical support for HIV/STI surveillance;
- assisting with the review of HIV estimates (modelling);
- providing editorial assistance for publications in international journals;
- sharing good practice in surveillance, prevention, and media campaigns;
- making examples of good practice available;
- providing European guidance on HIV testing and chlamydia screening.

In 2010, discussions on a possible follow-up visit were initiated between ECDC and Estonian officials. The purpose of the follow-up visit was to review developments since 2007 and to concentrate on specific issues identified by and agreed upon between Estonia and the ECDC.

The discussions resulted in an official invitation for ECDC to visit Estonia on the 10th –15th of October (later revised to the 10th –13th) 2010.

1.2. Scope and purpose

The scope and purpose of ECDC country visits are both to improve ECDC's understanding of country structures around a specific agreed group of communicable diseases (HIV and STIs in this case), and to identify areas where ECDC could provide support to the Member State according to self-identified needs.

As the visit was a follow-up of an earlier ECDC visit, there was no need to address all aspects of HIV and STI services in as much detail as would be needed during an initial visit. Instead, the visit focused on certain specific issues which were agreed upon prior to the visit and referred to in the invitation letter. Changes in country structures since 2007 were also reviewed and discussed during the visit. The specific issues for which Estonia requested technical support and guidance from ECDC were:

- HIV testing in health care settings and community based organizations, including use of, and development of guidance for rapid testing (including quality assurance);
- strengthening the visibility of STI services and the integration of STI care for HIV-infected patients;
- partner notification (for HIV and other STIs);

- strengthening laboratory surveillance of HIV and monitoring antiretroviral treatment outcomes and resistance;
- harmonising HIV and STI surveillance;
- innovative use of tools for active second generation surveillance (surveys, prevalence studies, new sampling technologies) by strengthening passive surveillance of infectious diseases;
- efficient regional networking and utilisation of EU community public health programme funds to support national efforts.

Concentration on these issues did not preclude other issues being discussed during the visit, but the above issues were reviewed in more detail.

The agreed deliverable of the ECDC country visit is this report, which describes the visit and its main findings and provides recommendations. Within six weeks of the end of the visit, ECDC drafted the report and submitted it to the Ministry of Social Affairs for review and revision. Following agreement of the revisions, the report is submitted to the ministry to be used as required.

1.3 Team

The joint ECDC Estonian country visit team consisted of:

1. ECDC, disease specific horizontal programme for STIs, HIV and blood-borne viruses

Dr. Mika Salminen, Scientific Advice Unit, Deputy Coordinator of the disease specific programme for STIs, HIV and blood-borne viruses; Dr. Johann Fontaine, Scientific Advice Unit, Section for for STIs, HIV and blood-borne viruses and Dr. Gwenda Hughes, Health Protection Agency, UK, ECDC consultant for HIV/STI country visits. In addition, Dr. Tony Nardone, Health Protection Agency, UK supported the team through pre-mission research and background work.

2. Estonia, National Institute for Health Development

Dr Kristi Rüütel, Expert of HIV/AIDS, Department for Infectious Diseases and Drug Abuse Prevention. Dr. Rüütel was also the ECDC's official contact point in Estonia as designated by the Ministry of Social Affairs. In addition, several other Estonian country experts accompanied the team during different visits.

1.4 Organisation

The country visit was conducted in Tallinn over three days (10th–13th October 2010) and consisted of meetings with a range of institutions and organisations, and a visit to a prison in the vicinity of Tallinn. In addition to representatives from the Ministry of Social Affairs, meetings included representatives from other ministries, the National Institute for Health Development, the World Health Organization (WHO) country office, academics, service bodies and non-governmental organisations (NGOs) (Annex 1). The detailed programme of the three-day visit is in Annex 2.

The visit commenced with a meeting at the Ministry of Social Affairs, where the programme, scope and objectives of the visit were presented. At the end of the visit, a feedback session was held at the Ministry where the main findings were presented by the ECDC team leader to Ministry and National Institute of Health development representatives. The ECDC team is grateful for the time that was generously offered to the team by the many professionals met during the country visit.

2. Overview of HIV and sexually transmitted infections epidemiology in Estonia

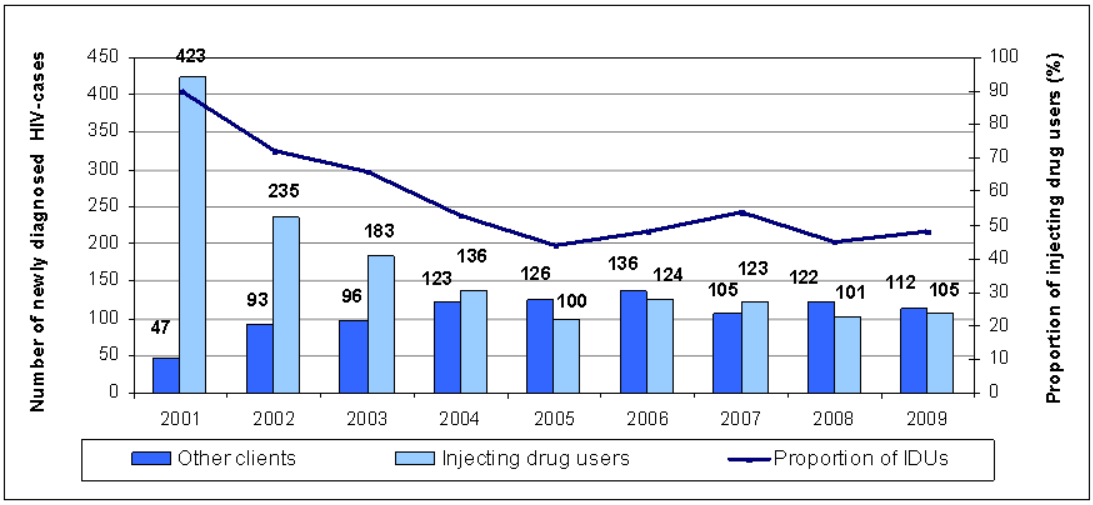
2.1 HIV and AIDS

By 2009, there had been 7 320 diagnoses of HIV infection reported in Estonia in total. The annual number of new diagnoses peaked in 2001 at 1 474 cases and has declined gradually thereafter, falling to 411 new diagnoses in 2009. The annual decline in new diagnoses occurred despite a sustained rise in numbers of HIV tests carried out between 2000 and 2009, from 84 663 to 139 471. Reported numbers of AIDS diagnoses are low, but rose from three diagnoses in 2000 to 61 diagnoses in 2008, before falling to 38 cases in 2009. The pattern is similar with AIDS-related deaths which peaked at 49 in 2006.

Since the epidemic began there has been and remains considerable geographic variation in rates of HIV diagnosis. In 2009, rates of new diagnoses were highest in Ida-Virumaa county which borders the Russian Federation in the north-east (110 per 100 000 population) and in Tallinn (38/100 000) compared with the rest of the country (9/100 000). HIV prevalence among pregnant women is also highest in Ida-Virumaa county at just over 2% in 2007 compared with about 0.5–0.6% in the rest of Estonia. This geographic variability reflects inequality in the distribution of HIV across ethnic groups in Estonia, with the Russian speaking population experiencing the highest rates of infection [9].

Prior to 2004 the spread of HIV in Estonia was primarily associated with injecting drug use (IDU). While IDU has remained an important mode of transmission, the percentage of new diagnoses associated with IDU fell sharply from 90% in 2001 to approximately 50% in 2004, and thereafter has fluctuated between 45 and 50% (figure 1). Around 40% of new HIV diagnoses in Estonia in 2009 were among women compared with around 20% in 2000, probably reflecting the increasing importance of heterosexual transmission. The proportion of new HIV diagnoses among men who have sex with men (MSM) in Estonia is unknown, but HIV risk-taking behaviour in this population may be considerable [11].

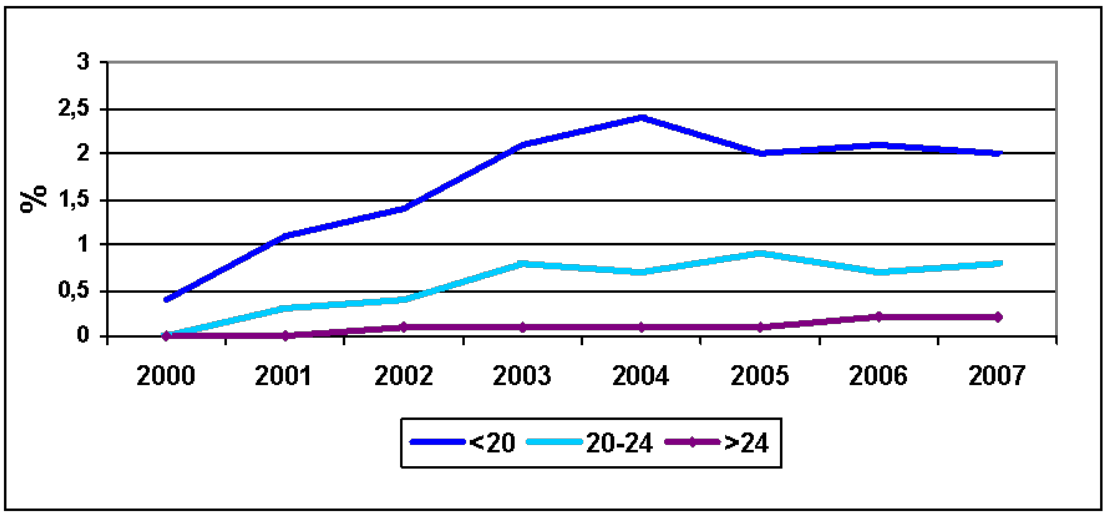
Figure 1. Newly diagnosed HIV cases in AIDS counselling centres by mode of transmission, 2001–2009



Source: National Institute for Health Development

The age distribution of new HIV diagnoses has also shifted considerably in the past ten years: In 2000, about 40.2 % of cases were aged under 20 years old, compared with only 7% in 2009, suggestive of a partly ageing cohort. However, the prevalence of HIV infection among pregnant women remains highest in those aged under 20 years at around 2% (compared with 0.8% in those aged 20 to 24 years and 0.2% in those aged 25 years and over), and young adults in Estonia remain an important target group for prevention [9] (figure 2).

Figure 2. HIV prevalence among pregnant women in Estonia by age group 2000–2007



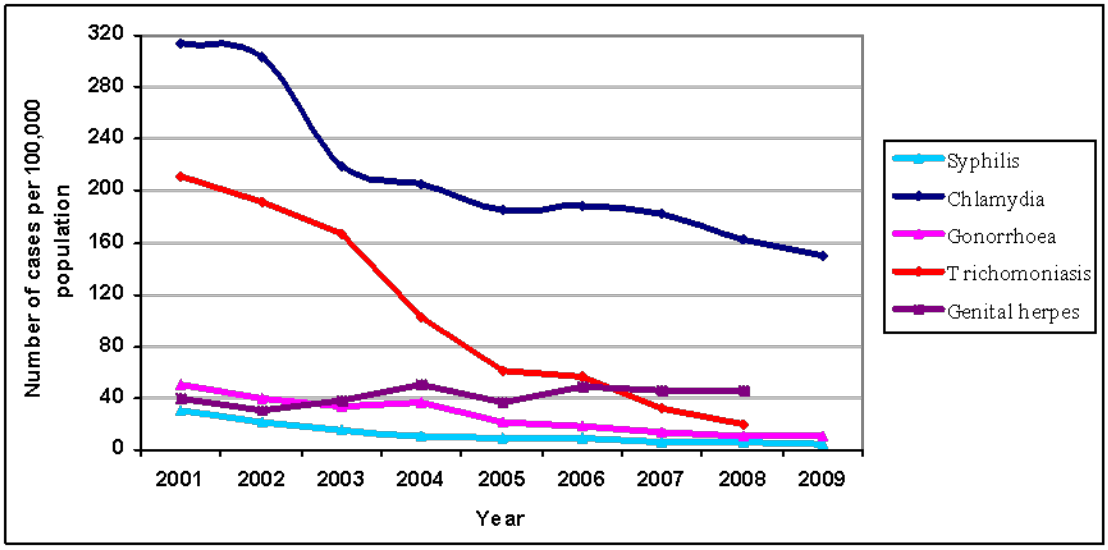
Source: Health Board

2.2 Sexually transmitted infections

With the exception of genital herpes where diagnosis rates have been stable, rates of diagnosis of other (non-HIV) STIs in Estonia have been in decline (figure 3). In the ten year period between 2000 and 2009, rates fell from 40.5 to 4.2/100 000 for syphilis, from 63.2 to 9.3/100 000 for gonorrhoea, and from 277.3 to 145.6/100 000 for genital chlamydial infection. These declines occurred in both men and women and across all age groups, although the drop in syphilis diagnoses among women was most pronounced in those aged between 20 and 29 years.

In 2009, rates of syphilis diagnosis were highest in men aged between 35 and 39 years and in women aged between 25 and 39 years.

Figure 3. Rates of diagnosis of selected STIs in Estonia, 2001–2009

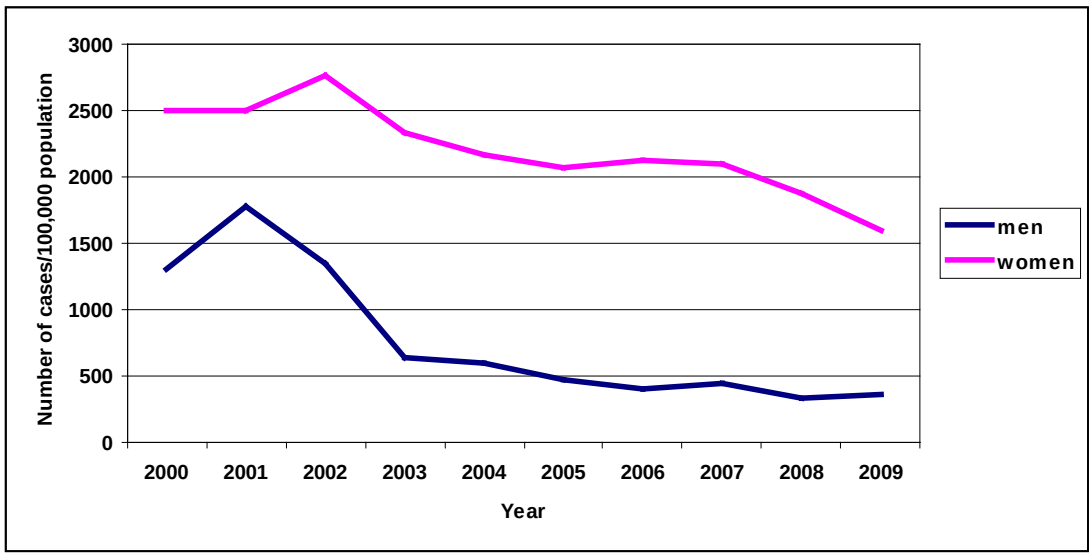


Source: Health Board

Gender ratios vary by STI but the proportion of cases acquired through sex between men is unknown. For syphilis, the female to male ratio declined between 2000 and 2009 from 1.3:1 to 0.7:1, while for gonorrhoea the female to male ratio rose over the same period from 0.6:1 to 1.3:1. There are considerably more chlamydia diagnoses among women than among men: In 2000 there were twice as many diagnoses (ratio 1.9:1) and in 2009 over four times as many diagnoses (4.4:1) among women (Figure 4). Gynaecology clinics diagnose the majority of chlamydia cases and it is likely that a large proportion of male partners are treated epidemiologically. In addition, rates of chlamydial infection are known to be highest in young adults and a significant proportion of chlamydia diagnoses in Estonia are probably made in young people's sexual health services. About 95% of those attending these services

are young women whose male partners may often be provided with epidemiological treatment. This will result in considerable underestimation of chlamydial infection in men. It has been estimated that about 5% of the 18–35 year old population in Estonia are infected with Chlamydia [12].

Figure 4. Rates of diagnosis of genital chlamydial infection in Estonia by gender, 2001–2009



3. National coordination

3.1 Organisational structure

Estonia has an established and comprehensive health system. The Ministry of Social Affairs oversees the health system and has four departments:

- Public Health, which covers health policy, health protection, environmental health and regulation;
- Health Care, which covers health services, healthcare workers and patients' rights;
- Pharmaceuticals, covering procurement; and
- E-Health, covering health registries and health legislation.

There are also two government agencies directly responsible to the Ministry of Social Affairs; the Health Board and the National Institute for Health Development (NIHD). The Health Board is responsible for providing co-ordination and advice on health care, health protection and chemical safety and was formed on the 1st January 2010 by a merger of the Health Care Board, the Health Protection Inspectorate and the Chemicals Notification Centre. All these agency functions were retained within the Health Board. The main functions of the Health Board include registration and licensing of healthcare workers, organising emergency services, monitoring and classifying medical devices, chemical safety, monitoring acute poisoning incidents, investigating adverse events, enforcement, communicable disease surveillance and control, and communicable disease and chemical laboratory services. The National Institute for Health Development is responsible for developing health plans and standards, monitoring health plan implementation, measuring quality and outcomes of services, and measuring outcomes and the impact of the national response in target groups.

The Estonian health system also includes independent public bodies (the Estonian Health Insurance Fund - EHIF), hospitals (mainly publicly owned) under private regulation, private primary care units, various nongovernmental organisations (NGOs) and professional associations. In recent years, other government ministries (e.g. education, interior, justice, and defence) have become more actively involved in the development and implementation of public health strategies, such as the national HIV and AIDS strategy.

3.2 National HIV and AIDS strategy

In 2005, a new cross-ministerial national public health strategy for HIV and AIDS was launched. It has an action plan for 2010–2012 which has identified the following key areas for action:

- Harm reduction among injecting drug users (IDUs), including counselling, needle exchange and methadone treatment;
- Prevention and education among young people (15–29 years), including life skills and sexual education, a peer-education network, educating children with special needs, and counselling through internet-based youth counselling centres;
- Prevention among commercial sex workers, including counselling and testing, and distribution of condoms;
- Prevention among men who have sex with men (MSM), including counselling and distribution of condoms;
- Prevention among prison inmates, including counselling and testing, distribution of condoms and disinfectants, and support groups for prisoners infected with HIV;
- Prevention among the general population, including media campaigns to improve knowledge and awareness of HIV and AIDS;
- Prevention of mother-to-child transmission of HIV, including counselling and testing, and the development of information materials;
- Prevention among donors and vocational training institutions
- HIV-testing and counselling at AIDS counselling centres;
- Health care and psychosocial support for people living with HIV and AIDS including monitoring and evaluation;
- Development of human and organisational resources.

Implementation of the national HIV and AIDS strategy is coordinated by the HIV/AIDS committee/commission of the Government of the Republic, with the Ministry of Social Affairs serving as the secretariat. The committee includes various stakeholder representatives including all the ministries (education, interior, justice and defence), representatives of local municipalities and counties, parliament (social committee), the bureau of the Prime Minister, a PLWHA representative, and a representative of the youth organisation union. It has four working groups on health and social care; surveillance and monitoring; prevention; and harm reduction. The HIV/AIDS committee is responsible for the implementation of the HIV strategy and although it coordinates the activities with the other ministries and NGOs involved, it does not have an operational function nor any legally-binding authority.

Besides the HIV/AIDS committee there is a Ministry of Social Affairs committee for planning and procurement of antiretroviral treatment which includes representatives of PLWHA. Antiretroviral treatment is free of charge for everybody.

There is no specific sexual health or STI strategy, although the HIV strategy includes raising awareness of prevention of HIV/AIDS and other STIs among young people, and campaigns have focused on sexual transmission of HIV.

3.3 Funding

Health care is largely publicly financed, with taxes funding about two-thirds of total health expenditure. Other public sources include state and municipal budgets while private sources fund about a quarter of total expenditure. HIV services are primarily funded by the Estonian Health Insurance Fund (EHIF) (collected centrally to balance regional income disparities), Ministry of Social Affairs, Ministry of Justice and the municipalities. The primary purchaser of health care services is the EHIF, which purchases most care for insured people (94% of the total population) except ambulance services. The Ministry of Social Affairs funds emergency services for the uninsured (through the EHIF), ambulance services (through the Health Board) and public health programmes (through the NIHD). However, some functions, such as purchasing medicines and vaccinations are exercised by the Ministry of Social Affairs departments. The Ministry of Justice receives funds from the state budget to provide health care in prisons. Municipalities use parts of their budget to finance social and health-related services at the local level, but financing practices vary. Most will cover care for the uninsured, healthcare transport and public health programmes and some will cover some of the costs of general practice and hospital services. Private health insurance is limited.

For the national HIV and AIDS strategy, each implementing government ministry develops its own budgeted annual action plan. The Ministry of Social Affairs is the main contributor. For the action plan for years 2010–2012, the strategy has been financed by each ministry as follows:

- Ministry of Social Affairs, including the Health Board, NIHD and EHIF - 151,434,474 EEK;
- Ministry of Justice - 3 770 000 EEK;
- Ministry of Interior - 2 192 000 EEK;
- Ministry of Education - 1 650 000 EEK;
- Ministry of Defence - 176 900 EEK.

The budget for the HIV/AIDS strategy has declined from 200 million in 2008 to 160 million EEK in 2010.

4. Prevention, treatment and care

4.1 HIV and AIDS

The Estonian HIV/AIDS action plan aims to facilitate provision of comprehensive access to the entire chain of prevention, treatment, care and support for all those in need in Estonia. This is aimed to be achieved by a combination of the activities of the general health and social care system, as funded by the general state budget, and a set of targeted programs which are funded by earmarked programmatic state funding. Thus services are provided through a variety of state, private and NGO actors, with both local and national coverage.

A comprehensive review of the full spectrum of HIV/AIDS services was not among the objectives of the country visit, and therefore only selected aspects of the service mix are reviewed here.

Testing

HIV testing can be accessed through several mechanisms. Tests are offered at hospital infectious disease polyclinics, in- and outpatient venues with specialist physicians, youth clinics, drug treatment centers, STD clinics and at various NGO driven services. Prisons and detention centers actively offer testing for inmates on entry. HIV testing can be provided by family doctors, but as the entire budget for laboratory tests is limited, the use is limited. At the AIDS counselling centres, testing can be anonymous, but for the confirmatory test, full identity is requested. Both laboratory-based tests and point-of-care tests have been used for screening.

Treatment

Access to HIV antiretroviral drug treatment is guaranteed for all people living with HIV and AIDS through a separate budget line from the Ministry of Social Affairs. This is a separate arrangement from the Health Fund, which is the normal method for provision of refunds for all prescription mechanisms. There is a similar arrangement for tuberculosis drugs. The government purchases the drugs separately and distributes them to the health facilities/practitioners treating HIV/AIDS patients (generally infectious disease specialists) through the health board, which is in charge of the drug stockpile and monitoring its use. Primary care physicians (family doctors etc.) do not treat HIV patients. Most infectious disease specialists treating HIV patients work at or are affiliated to hospital infectious disease clinics. The three major ones are in Tallinn (North-Estonian Medical Centre Infectious Diseases Clinic) and north-eastern Estonia (Narva Hospital and Ida-Viru Central Hospital). While treatment is free to all that are in need, discussions during the visit indicated that barriers to access nevertheless exist on both the individual and structural level. The issue of low motivation in some patient groups was mentioned in multiple discussions as a practical barrier to accessing treatment., Some injecting drug users, for example who some of the physicians met during the visit, could be perceived to be less interested in their health and more in the financial benefits they may be able to claim due to disability.

While the visit was too short to make comprehensive conclusions, the impression of the ECDC team was that part of the problem may be the suspicious attitudes of injecting drug users towards doctors and vice versa. This is a common phenomenon that can be seen in many countries, and occurs due to the widely different realities that the providers and clients live in, easily leading to the inability to fully put oneself in the other persons position. One solution to such a clash of realities is to develop services with a low threshold from a client perspective, which means that the entire package of preventive and clinical services are adapted to serve the needs of this special group, either by developing specialist services or adapting current services to client needs. While costly to set up, there may well be long-term savings through better attachment to services, improved prevention of HIV disease progression and subsequently less burden to society due to prevention of advanced disease development.

An additional potential factual barrier to accessing HIV treatment identified was the co-payment required to be paid by all clients of health-care services. While the co-payment is low (3 €/per three months for out-patients;), it may nevertheless be too high for IDUs, as their addiction forces them to prioritise their use of money. A waiver for this could be considered.

As a general observation, several of the professionals expressed that attachment to care for the IDU population remains an issue. There may still be a need to review operational organisation in a way that would address the needs of this particular population rather than the providers.

In discussions with the provider of treatment HIV/AIDS services it was identified that systematic assessment of STI risks, routine STI testing and referral to STI services in case of need is not considered essential within current national guidelines. In contrast, STI services systematically refer patients to HIV-testing. As syphilis epidemics among MSM have been common in Europe in the recent decade, there could be a benefit in including such measures in current guidelines for newly diagnosed HIV-cases as they enter care. Also, the lack of sexual health assessment leads to apparent under-reporting of transmission categories in the Estonian case-based surveillance data. In the 2009 dataset, no cases in the MSM category were reported to ECDC from Estonia.

Non-Governmental Organisation provided services

There are several NGO actors in Estonia who provide services which are funded through a variety of means, mainly government grants, but also through private and international donations.

The Estonian Network of people living with HIV (EHPV) maintains services targeted to people with HIV and those at risk for HIV infection. The organisation has facilities in three cities (Tallin, Narva, Kohtla-Järve), 15 staff and had 2 500 visits in 2009. Among services mentioned during the visit were:

- advocacy work
- counselling: peer-to-peer
- support groups
- web-services in Estonian and Russian and English
- internet support groups
- daily update
- on-line counseling
- family rooms for people living with HIV and AIDS
- a summer school
- training for social workers
- testing – including rapid point-of-care tests (in cooperation with AIDS counselling centres)
  - testing on site
  - promotion of HIV-testing through organization of 'HIV-testing days'

The visit to the site in Tallinn showed that the services provided by the EHPV fulfill an important niche which is not provided by the public health system alone. It is evident that NGO actors have an important role to play in providing prevention services that may not otherwise be available or reach the target groups. The ability to do peer-to-peer counselling removes some of the barriers that may otherwise prevent people at risk of or already living with HIV from seeking treatment or prevention services. ECDC identified a clear professionalisation process in development regarding these services. As professionalisation of the services will in the long run improve their efficiency, this process would be worthwhile to continue to support.

During the discussions several issues worth noting were identified. The organisation of 'testing days' i.e. events at central locations where rapid testing is offered during one or two days in temporary facilities and linked to media campaigns was presented. These events target the general population and receive significant attention during their organisation. While there may be a benefit in promotion of testing through such events, there are considerations which may be worthwhile to review.

As HIV is clearly attached to certain specific risks even in Estonia, the cost-effectiveness of large-scale testing events targeting the general population can be questioned. The question of whether resources should not alternatively be put into strengthening testing services targeted to the main groups at risk, i.e. IDU, sex workers and MSM could be considered. Discussions with EHPV revealed that there are still several barriers for accessing the testing services for these groups.

IDUs do not in practice have access to family doctor services if they are uninsured, and family doctors have a very small budget for tests. The practical barriers to the use of rapid tests on these sites prevent their use, even if they would be of high usefulness in settings attended by drug users, such as needle exchange and other specific IDU service sites. Several studies show that rapid testing with preliminary result communication significantly improves test uptake and knowledge of results in this population. Consideration should be given to prioritising testing in these settings and removing the practical regulatory barriers to the use of rapid tests (see section 6.3). Targeting IDUs in resources for testing may provide the best cost/benefit ratio through identification of infections and attachment to care.

Another group at risk for which there seems to be a potential gap is men who have sex with men. In most interviews and meetings conducted (with the exception of the infectious disease clinic contacts), a lack of services targeting this group was identified.

Discussions with EHPV in particular suggested that there is a high level of denial among Estonian MSM concerning the risk of HIV-infection. Specific issues that were identified were a belief among the target group that HIV is not more common among MSM than in the general population, unawareness of the true high HIV-prevalence in this group in other EU-member states and Russia, lack of linkage of HIV with other health issues, less financial support for prevention in this group and little available information on MSM and STIs in general. The European MSM Internet Survey (EMIS)[1] suggests that self-reported HIV-prevalence in Estonia is 1.7 % which is lower than the average in the EU. Although self-reported HIV-status may underestimate true prevalence, this still suggests that there is an opportunity to maintain a relatively low prevalence in Estonia among MSM if prevention is successful. Russian speaking MSM seem even less aware of HIV risks than their Estonian speaking counterparts.

[1] http://www.emis-project.eu/

It may be worth considering targeting an increased proportion of preventive services to MSM and include specific health and testing venues for this population, in both the Estonian and Russian languages. However, as MSM as a population group are likely to be diverse and traverse social categories, MSM services may be easier to integrate into the regular health and social service structures. Experiences of MSM specialised health and social services working in both public and private sectors in other countries have shown beneficial effects. In addition, cooperation with gay and lesbian organisations increases buy-in of this target group.

In contrast to the other interviewed parties, the physicians at the hospital considered MSM as the best informed group at risk. This may be a consequence of the fact that MSM visiting the hospital are those who are infected and therefore motivated to learn about HIV.

4.2 Sexually transmitted infections

The diagnosis, treatment and management of sexually transmitted infections (STIs) can be managed by any health care provider but most services are delivered through gynaecologists, dermato-venereologists and family doctors (general practitioners). Men (including MSM) would often access STI services through urologists. All levels of care are offered by all services although more complex infections may be referred for specialist management. Co-payments are required for specialist and hospital treatment comprising of a visit fee of about €3 plus inpatient costs (which have an 'upper ceiling'). Family doctors can be accessed free of charge although there is a prescription fee. Access to antibiotics through the black market is believed to be negligible but some patients may seek STI care from private providers. Waiting times for visiting family doctors are generally short for emergencies and infectious diseases would usually be treated rapidly, however, waiting times for specialist STI services are typically around one month.

A national network of young people's sexual health services was established in 1991 through the Estonian Sexual Health Association (ESHA). These services are offered through departments within larger institutions, as free services at private gynaecological practices, or as bespoke private services. Access to those up to the age of 25 years is free and about 95% of those attending are young women. There are no specific services for MSM. Youth clinics provide a broad range of services covering contraceptive counselling, STI testing and management, HIV testing and counselling, abortion counselling, gynaecological and urological examination, sexual counselling and sexual violence counselling. Some counseling services are offered by telephone or on-line through the youth counseling portal on the ESHA web site which also provides health promotion. Initially the network was funded through short-term projects but longer-term funding from the EHIF has recently been secured. Some clinics are also funded by the NIHD. Although typically focusing on HIV, some health promotion on STIs is also provided by the counselling service offered by the Estonian network of PLWHA. However, the PWLHA counselling service does not refer clients for STI testing and treatment.

Guidelines for the treatment and management of STIs are typically based on those developed by the International Union for Sexually Transmitted Infections. HIV guidelines do not discuss concomitant risk of STIs nor the need to refer patients diagnosed with HIV for STI testing. However, HIV testing is routinely offered to patients diagnosed with STIs. Adherence to some STI guidelines may be sub-optimal, for example, at least 20% of STI treatment episodes in Estonia have been considered inappropriate [13].

There are no national guidelines describing a systematic approach to partner notification (although some STI guidelines refer to the need for partner notification to be done). Partner notification is the responsibility of the medical doctor treating the patients but sexual histories may not always be routinely undertaken, partly due to the requirement for clinicians to report diagnosed cases within 24 hours. Partner-expedited therapy may also be used, resulting in considerably lower numbers of diagnoses among men than women, especially for chlamydia (see figure 3).

4.3 Healthcare in prisons

The very high infection rate of the prison population in Estonia reported in the past is declining. In September 2010 the total prison population was around 3 400 including pre-trial detainees and remand prisoners. The prison population rate is 256 per 100 000. Around 5.5 % of the prisoners are females, and around one percent of the total prison population under 18 years of age. Currently there are five prisons in Estonia, with a new prison planned.

Large numbers of the prisoners were IDUs and imprisoned for drugs-related offences. Within the prison setting, methadone services are available to IDUs but there are no needle exchange programmes. Prisoners may be given incentives to help stop injecting drug use, such as access to better facilities and vocational education programmes.

Medical care is provided in the medical department of every prison. Hospital special aid is offered by the central prison hospital. If the central hospital is unable to provide a specific treatment the detainee is transferred to a civil hospital. Treatment costs are covered through the Ministry of Justice from the state budget.

All detainees arriving in prison undergo a health check including HIV testing and chest X-rays for tuberculosis control. HIV testing is routinely offered on an opt-out basis. Participation is very high. Tests for sexually transmitted infections are offered less systematically. Intravenous drug users are often diagnosed with STIs, the most common diagnosis being chlamydia infections.

HIV infected prisoners are followed up by HIV specialists and antiretroviral treatment is provided. When inmates are released they transfer to the regular health care system. However it is the inmate's own responsibility to see an infectious disease specialist, usually the same physician who works in the prison as a consultant for HIV treatment. It was reported that follow up loss is especially high in the Tartu region.

It was acknowledged that sex between men occurs in prisons. Condoms are not freely available as was the case under the global fund financing. The policy of the Ministry of Justice regarding condom distribution has changed, and they now consider it to be inappropriate to distribute condoms except for conjugal visits of regular partners. Condoms can still be purchased directly from the prison shops. This may not be a priority for prisoners with limited wages leading to the risk of unsafe sex. Condoms could be provided when prisoners have home visits as they are at particular risk of HIV and STI when returning to their regular social and sexual networks. The currently applied condom policy in prisons is in direct contrast to the national HIV and AIDS strategy.

Opiate substitution therapy is provided to prisoners but the current policy of the Ministry of Justice does not allow needle exchange programmes. Cleaning substances like bleach are provided to prisoners to clean their cells and may be used to disinfect injecting equipment. However this use is not part of an official policy.

The prison visited was the Harku Prison for female prisoners. The prison has a maternity unit which allows children to stay with their mothers up to the age of four. The prison also has a drug free rehabilitation ward with eight places. Inmates at Harku Prison have the chance to obtain both basic and secondary education. Prisoners can work for wages, half of which were generally saved to provide a fund at release. Wages may also be used to pay off existing debts or fines.

5. Surveillance, monitoring and evaluation

5.1 The Health Board

The Ministry of Social Affairs has designated the Health Board as the public health institution responsible for communicable disease surveillance and control. The Health Board's surveillance activities cover data collection, analysis (epidemiological links, trends), risk assessments, infection control, early warning and response, epidemiological intelligence, responsibility for the communicable diseases register and communication. The Health Board provides data to the ECDC communicable surveillance system (Tessy) and WHO's communicable disease networks, and disseminates information through various monthly and annual reports (in Estonian and English) to the Ministry of Social Affairs, the National Institute for Health Development, the EpiNorth network[2] and through publications in Eurosurveillance.

5.2 The communicable diseases registry

Communicable disease surveillance in Estonia was paper-based until 1st October 2009, when a new electronic communicable disease registry (NAKIS) was introduced (although transitional arrangements for paper-based reporting are still in place, with the exception of HIV/AIDS-reporting, for which electronic reporting is mandatory). Data are provided by family doctors, specialist doctors and laboratories, and records can be de-duplicated using a unique personal ID number. By statutory regulation, notification of any new diagnoses is required within 24 hours and uses ICD10 codes. All STI and HIV diagnoses are reported to the communicable disease registry although HIV reports must be confirmed by the reference laboratory. From 2012, the intention is to enable all communicable disease diagnoses including STIs and HIV recorded in the new e-health (electronic patient record) system to be transferred electronically to the communicable disease registry. The Estonian population register is linked to, and automatically populates patient demographic information into the communicable disease register.

The communicable disease registry collects comprehensive information about STI and HIV diagnoses and there is on-going follow-up for missing and incomplete reports. However, transmission category data is missing for the majority of cases (STIs and HIV), and there are no reports of cases among MSM. For HIV diagnoses, information is collected on socio-economic status, insurance status, the reasons for testing, the date of the last negative test, source of infection, virus type and AIDS indicator diseases, but not on CD4 counts or resistance. Pregnancy status, whether the infection was acquired abroad and place of treatment are collected for syphilis diagnoses. HIV and STI diagnoses could potentially be linked using the unique patient ID to enable assessments of HIV and STI co-infections but this is not currently done. The requirement to notify STI and HIV diagnoses within 24 hours impedes the collection and reporting of sexual transmission data. Consequently, the relative importance of STI and HIV transmission through sex between men in Estonia is not well understood.

Feedback reports on local and national trends are distributed by the Health Board to data providers. Some clinicians reported they would also value clinic or laboratory specific reports so that they may better understand how their services compare nationally.

5.3 The National Institute for Health Development

The implementation and impact of the HIV/AIDS strategy is monitored and evaluated by the National Institute for Health Development through prevalence surveys and behavioural surveillance. Some recent behavioural and bio-behavioral studies have focused on target groups:

- **youths aged 1029 years**: Four random sample surveys have been carried out between 2003 and 2010. Respondents were sampled from schools and through a mail survey and were asked about sexual behaviour, suspicion of STIs, pregnancy and contraception.
- **injecting drug users**: There have been four respondent-driven surveys of IDUs between 2005 and 2010. The survey in 2007 tested respondents for HIV and collected information on recent syringes/needle sharing, injecting equipment sharing, needle exchange visits, source of syringes, and condom use. Risk behaviour among IDUs is also collected on questionnaires distributed at needle exchanges.
- **prisoners:** There have been three random sample surveys of prisoners at all prisons between 2004 and 2008 which have addressed issues around drug use and sexual behaviour.
- **sex workers** :There has been one survey of sex workers in 2006 using a 'snowball' methodology and which included testing for HIV and hepatitis. There is considerable overlap between the IDU and sex worker populations and the sex worker population has halved since 2006.

[2] http://www.epinorth.org/

- **men who have sex with men (MSM)**: There have been four internet-based surveys of MSM between 2004 and 2010 but the NIHD have found it difficult to engage MSM in respondent driven surveys. NIHD is participating in the ECDC funded internet survey of MSM in Europe being co-ordinated by the Robert Koch Institute. Preliminary analysis suggests a self-reported HIV-prevalence of 1.7 % in this group.
- **people living with HIV and AIDS**: Two surveys (in 2005 and 2008) covering all PLWHA attending three hospitals have been undertaken to date and have included a control group from the general population. These surveys have not included questions on sexual and illicit drug use behaviour but this is planned for future surveys.

The NIHD also develops and evaluates HIV and AIDS media campaigns by assessing the proportion of the target populations who have seen the campaigns and understood the messages. Qualitative studies including focus groups among youths, injecting drug users, and the assessment of methadone treatment are also carried out.

6. Testing and diagnosis

6.1 Laboratory services

All large hospital laboratories in Estonia diagnose STIs primarily using PCR technologies. The need for a STI reference laboratory to provide an up-to-date, quality assured testing and confirmation service has been highlighted [6] but currently there are no STI reference laboratories. Confirmation of STI diagnosis is typically done using PCR. There is a network of primary HIV-testing laboratories, all of which refer to the HIV laboratory in Tallinn for confirmation testing. This laboratory is the only one in the country providing confirmatory HIV testing. Reference status was given to the laboratory by a Ministry of Social Affairs executive decision, but there is no statute-based formal process for determining responsibilities and establishing objective selection criteria for clinical microbiological reference laboratories.

Each laboratory uses its own software for recording information and these systems have not yet been adapted to link to the communicable disease registry, therefore reporting from laboratories currently remains paper-based.

6.2 Point-of-care HIV tests

Rationale

ECDC has recently launched guidance on improving the uptake and effectiveness of HIV testing in Europe [3]. The guidance recognises several approaches which can be used to improve access to HIV testing thereby increasing the proportion of those infected who are aware of their infection. This is an important goal from both a personal and community perspective, as awareness of infection is necessary for accessing care early and avoidance of serious disease or death. Also, there is evidence that knowledge of personal HIV status may reduce risk-taking and exposure of partners to infection. One of the components recognised in the guidance is the use of point-of-care (POC) tests (also frequently referred to as 'rapid tests').

Point-of-care tests have been used for initial diagnosis of HIV-infection in Estonia for a number of years, and in many settings. Rapid testing is in principle intended to target specific groups. The concept is to link POC with counselling covering prevention, testing and treatment. Members of the target groups seem to have a preference for POC albeit because of the misconception that testing costs at traditional testing sites when in fact it does not.

However, the use of POC has mainly been restricted to selected health care settings, rather than targeting community settings. This may be a missed opportunity for improved test uptake especially among groups at risk but also to a certain degree in the general population.

Use of POC tests as primary screening tests requires neither laboratory facilities nor equipment and provides an opportunity to remove some of the barriers that may prevent people at risk of infection in accessing testing and learning of their infection. The main barriers associated with conventional, laboratory-based HIV testing are:

- The need for venepuncture for the primary test and therefore appropriate facilities and competent medical personnel;
- The need for a follow-up appointment for clients to collect results.

While these may seem to be trivial obstacles, studies have shown that they result in a significant percentage of clients failing to receive their results, particularly among socially vulnerable and hard to reach groups such as injecting drug users, homeless people and street sex workers [1,4]. Also, even those who do not belong to socially vulnerable groups often prefer POC testing as the waiting time is eliminated for negative and initial positive results [2]. These observations hold even in countries with highly developed healthcare systems.

The benefits of using POC tests for HIV testing include:

- ability to offer testing in community settings, in the immediate vicinity of places where potential clients congregate;
- use of finger-prick blood samples (or even oral fluid) for the screening test, eliminating the need for highly trained medical professionals to deal with potential adverse reactions during venepuncture;
- provision of information and counseling as the test is performed and results are developing;
- ability to provide final negative test results immediately following testing and without need of a follow-up appointment;
- ability to provide preliminary positive results and counselling immediately following testing;
- ability to refer all clients with preliminary positive test results to immediate verification testing and subsequent referral into care, when needed;

Taken together, these properties can result in a higher proportion of those tested who receive their results and may increase the proportion of those infected who are aware of their infection.

6.3 Confirmation pathways and reference testing

It is important to recognise that all positive POC test results should be verified using more specific confirmatory tests in accordance with WHO and European guidelines, and clients need to be rigorously counseled on the interpretation of positive POC test results. As rapid tests are designed to be highly sensitive, a proportion of all positive tests will be false positives, necessitating confirmatory testing. All POC tests used for human diagnostic screening must conform to EU requirements and have been issued a CE[3]-mark.

All sites providing POC testing must ensure appropriate referral to confirmation testing or provide facilities on site to collect samples for confirmation (which requires venepuncture blood samples to be obtained). Equally, the logistics for the clients to receive the final confirmed result need to be ensured.

6.4 Level of quality assurance required

During discussions, ECDC was informed by ministry and national institute representatives that under current national regulations in Estonia, only registered or licensed professional healthcare organisations are allowed to provide HIV testing services, including POC HIV tests. ECDC was also advised that the HIV reference laboratory requires that all facilities providing POC HIV testing services participate in quality assurance and quality control programmes comparable to those required for laboratory-based HIV tests, including external controls to be run at each test series and participation in several quality assurance/quality control rounds annually. These procedures are standard practice and appropriate for healthcare facilities obtaining blood samples by venepuncture and where large numbers of tests are performed in a laboratory setting.

However, the ECDC team also recognised that current interpretation of the regulation may constitute a barrier to expansion of POC test use, as many community settings may be excluded due to the prohibitively high costs and their inability to comply with healthcare organisation registration requirements. This constitutes a missed opportunity for improving effectiveness and uptake of HIV testing in Estonia.

6.5 Suitable scenarios for using point-of-care tests

One example of application of POC testing in Estonia which was presented to the team was the organisation of community testing days around International AIDS day in 2009. Rapid testing facilities were set up in Tallinn as a cooperative effort between the Estonian Network of people living with HIV and AIDS (PLWHA), the National Institute for Health Development (NIHD), the Estonian Business Coalition to Fight AIDS and the International AIDS Healthcare Foundation (AHF)[4]. This event was used to promote awareness of HIV testing opportunities and improving access to the test itself.

Local testing events are certainly useful for promotional purposes, and have the potential for acting as a booster if access to testing is widely available. However, localised testing events are unlikely to achieve sustained effects on uptake to levels needed to have a preventive impact on the epidemic alone. This is mainly due to an inability to reach but a fraction of the population, and even smaller fractions of those who are at higher than average risk. Therefore, the effectiveness of testing events as a sole intervention is doubtful. More focused efforts with a sufficient coverage of the affected populations may provide better long-term effectiveness.

Priority settings for use of point-of-care testing

During the visit several settings where POC tests have been used and other settings where expanded use would be useful were identified. These include at least the following settings where POC testing provides a clear benefit by increasing uptake of testing and promoting knowledge of one's own health status. In these settings, the POC test may have a crucial advantage in acceptability and the proportion of those who receive results over laboratory based testing:

HIV testing cabinets

The testing cabinets maintained by the AIDS counselling centres, which offer anonymous testing, function as an important entry point, especially for IDU's at risk, but also for any other groups that wish to access testing in an environment which is perceived as neutral and not part of the establishment. The latter has been shown in many countries to form a significant barrier to willingness to seek testing in many groups. The possibility to access walk-in services and obtain results during the same visit provides a powerful incentive to get tested.

[3] http://ec.europa.eu/enterprise/policies/single-market-goods/cemarking/

4 http://www.redribbonaward.org/index.php?option=com_content&view=article&id=86&Itemid=91&lang=en

Needle and syringe programmes

Needle and syringe services provide an opportunity to access a large proportion of IDUs, and offering access to HIV testing with a low threshold at these sites would provide an opportunity for combined prevention which has been suggested to be more effective than individual interventions alone in recent studies. The use of POC tests is especially well suited to these settings as the visit time is short. Nevertheless, offering testing is probably best suited for sufficiently large sites where a side room offering some privacy may be used for administration of the test. This should be taken into consideration when choosing the sites for services.

Tuberculosis (TB) outpatient treatment sites

While TB services were not visited or discussed in any depth during the country visit, directly observed treatment short-course (DOTS) outpatient TB services exist, which serve a population where part of the clientele have overlapping risks of HIV infection in addition to the risk of TB infection. As TB and HIV infection affect both disease progression and treatment, it is important to ensure prompt diagnosis in these populations. Point-of-care testing could be well-suited to be used at sites mainly designed for TB services.

Opiate substitution/drug treatment services

Similar to needle and syringe programme sites, opiate substitution and drug treatment services operating as outpatient sites may be very well suited for offering POC testing.

Men who have sex with men services (if any)

Preventive health services addressing the specific needs of men having sex with men have been shown to be important for prevention of health problems in this population. During the visit it became clear that such services do not exist in Estonia. It may be useful to consider targeting this group specifically in future government supported programmes. In a prevention prioritised setting, POC tests would be a suitable mode of delivering testing.

Sex worker services

Sex workers are likely to be at high risk, especially if there is an overlap with either the sex worker or client populations and IDU populations. Rapid testing technology is suitable to be used in community settings and could be added to any community services providing other preventive services to sex workers.

Other services where increased testing could be recommended and point-of-care testing may provide benefits

Increased uptake of HIV testing has been recognised as a necessity to reduce late presentation of HIV infection. The following settings are good choices for increased routine offering of regular laboratory-based testing. Benefits of POC in terms of short waiting times and opportunity to immediately discuss results could improve testing uptake for some clients who may wish to only receive an HIV test without other services. For individuals where other tests requiring blood-draw are performed, POC testing for HIV is of limited added value.

Sexually transmitted infections services

In STI services HIV-testing is already performed, but offering POC tests could increase the interest and lower the threshold for accessing the tests. As STIs significantly increase risk for HIV-transmission, people visiting STI services are likely to benefit from POC testing.

Youth health services

Although youth in general may not have a high risk of HIV-infection in the absence of other risk determinants, a proportion of IDUs and sex workers are part of the young population. Also, even though some youth may not have direct risk factors themselves, their partners may be exposed to risks. Therefore offering POC HIV tests at youth services may identify and bring treatment to individuals who might otherwise escape diagnosis.

Obstetrician/gynecological services

Obstetrician and gynecological services reach a large proportion of the female population. In general, women are not a specific group at risk for HIV infection, but younger women especially may overlap with populations at risk.

Family doctors

While family doctors have access to regular laboratory-based testing, offering POC testing in these settings could provide additional benefits for prevention. Family doctors are probably visited by population groups which differ from the most-at-risk groups, but may reach some groups who do not identify themselves as at risk. Family doctors could for example be important in addressing clients of sex workers or their partners.

6.6 Resistance monitoring in sexually transmitted diseases and HIV

The rapid emergence of gonococcal resistance to antimicrobials is of global concern [10]. Currently, the prevalence of gonococcal resistance to antimicrobials is not monitored in Estonia. The routine use of PCRs to confirm gonococcal diagnoses and the lack of any STI reference service means there are negligible gonococcal isolates available for culture and resistance testing. Treatment failures in patients diagnosed with gonorrhoea are not routinely monitored and there is evidence that treatment guidelines are not always followed [13].

Resistance to antiretroviral treatment of HIV-infection can develop rapidly under treatment, especially if compliance is less than optimal. Resistance is due to changes in the virus and can therefore also be transmitted from person to person. In Estonia, resistance monitoring is used as a tool for clinical management of treatment. As the population on treatment is likely to grow significantly in Estonia over the next ten years, it may be important to start monitoring resistance among newly identified infections. Avoiding development and the spread of multidrug resistant forms of HIV is an important objective to avoid treatment cost increases and maintaining the effectiveness of treatment in years to come. This may be especially important in integrated services where IDUs access treatment for HIV and drug dependence. Development of resistance may be used as an important quality indicator for antiretroviral treatment providing services and could be used as a national reporting indicator.

6.7 Good practice

During the visit the ECDC team identified several areas where Estonian responses to HIV/AIDS and STIS can be seen as examples which other countries could learn from and use as benchmarks. These are areas which either fulfill to a high degree a global commitment with which other countries may be struggling with, or are innovative approaches where an application of a novel way of work has clear added value. Some of these good practices are discussed below.

General governance

The Estonian government has set up an inter-ministerial HIV-AIDS coordination body to ensure that all sectors of government work towards common goals in their responses to the epidemic. This commission is a sign of strong political commitment and can be considered as a model which could potentially be adopted by other countries with similar levels of HIV transmission.

Ministries

Ministry of Social Affairs

Several good practices were identified within the Ministry of Social Affairs, which could be used by other countries for their own benchmarking for efficiency increasing practices, rational decision making within the health field and innovative funding policies. Of these, the following in particular are worth closer examination:

- The Ministry of Social Affairs includes a Department of Health impact assessment, which is a feature missing in many larger countries. Health impact assessments, if rigorously conducted, can be of great assistance for rational decision making and may be especially useful in strained economic situations or when difficult prioritisations are necessary.
- The Ministry of Social Affairs has a long-term goal of creating a national archive/database (the e-health project) for healthcare information storage on an individual level, which would be directly linked, used and updated by both health providers and used for reporting purposes. If successfully implemented with proper checks and balances for ensuring personal data protection, this system could be of wide interest for multiple countries and has the potential to provide substantial efficiency increases through discontinuation of multiple parallel systems. Estonia has significant experience and demonstrated success s in implementing country-wide e-solutions for multiple purposes in the past, such as parliamentary elections.
- The Ministry of Social Affairs has been successful in implementing the use of EU Structural Fund resources not only for infrastructure development, but also for training of health care personnel. As a response to a major change in the HIV/AIDS situation this should be seen as a very innovative approach, especially as the Member States have a great deal of national say on the end use of EU Structural Funds.

Ministry of Education

The Ministry has recently revised the general school curriculum, including health education as a separate study subject. Evidence from countries with similar approaches suggest that school health education, if comprehensive and systematic throughout grades, may provide primary protection against health risks among youth, especially if supported by families and other societal responses.

National Institute of Health Development (NIDH)

The NIDH has developed very strong and systematic monitoring and evaluation structures for the evaluation of health programmes and interventions. In fact, the structures in place are rather more developed than in many larger countries and have a more broad-based approach in applying multiple angles to monitoring and evaluation. Notably, the NIHD places a strong emphasis on study-based monitoring, which can be seen as a strength compared to a purely passive service provision statistics-based approach. In addition, the NIHD has progressively applied not only health indicator monitoring, but has used multiple approaches, including both behavioural and social indicators for estimating programme impact. The monitoring and evaluation components of the NIHD could be used as a model and a benchmark for well conducted impact assessment structures throughout the European region. In addition these structures form a strong basis for development into a preventive health quality analysis and quality management system, which could be added at minimal extra work.

Rollout of point-of-care HIV tests

Estonia has started the process of rolling out increased use of point-of-care HIV tests with good circumstantial and experiential evidence that these fulfill a real need and may result in increased uptake of testing for early attachment to care. While on the frontline of applying POC testing their usage could still be further increased.

Youth counselling centres

The NIHD and the government actively support private actors to provide preventive services to youth through targeted funding. This is an excellent example of the integration of a public health function in a healthcare system. While the services are mainly used by young women, they could potentially be expanded to become more attractive to the male target group.

Guaranteed access to antiretroviral treatment for all those in need

Estonia has made a commitment to provide antiretroviral treatment to all those in need of it and has made significant efforts to reach this goal. Antiretroviral treatment is available from specific government funding irrespective of attachment to health insurance. Remaining challenges are linked to individuals' costs for supporting health services and incentives for treatment attachment. If solved, these could make Estonia a model case for antiretroviral treatment provision among the newer EU Member States.

7. Conclusions and considerations

The National HIV and AIDS strategy, coordinated by the cross-ministerial HIV/AIDS committee of the government, demonstrates high-level commitment to the prevention of HIV-infection in Estonia, although addition of STI control coordination to the strategy would significantly strengthen its impact. The adoption of health impact assessments and the introduction of e-health, (an electronic patient health record) by the Ministry of Health; the revision of school curricula by the Ministry of Education to include health education; and significant involvement of NGOs in decision-making, offer unique opportunities for health and health service improvement. Systematic monitoring and evaluation of health programmes by the National Institute for Health Development also provides a robust quality analysis and quality management system. From the patient perspective, the rollout of POC HIV tests, the extensive network of youth counselling centres, and guaranteed access to antiretroviral treatment is helping deliver access to high quality services and healthcare for those in need.

The main ECDC suggestions for consideration by the Ministry of Social Affairs and other public health actors for this second country visit to Estonia concern ways of further enhancing the public health control of HIV and STIs by: expanding HIV testing opportunities and removing some of the barriers to testing; promoting better integration of HIV and STI service provision; better tailoring of services for men who have sex with men; strengthening contact tracing; developing an STI reference capability; and addressing weaknesses in surveillance, particularly completeness and feedback to providers. These issues are discussed in greater detail below.

Leadership, planning and service structure in HIV and STI

Professionalisation development is in process, with further support to be considered to develop future public-private partnership.

Use of rapid HIV testing in the community

Improving uptake of HIV testing is a major goal across the European Union. Rapid or point-of-care testing has been shown to have great value for accessing hard to reach populations and may be advantageous for primary care provider use. In Estonia, permission to use rapid tests is restricted by a requirement for test providers to be officially linked to a medical institution, and a requirement for a rigorous quality management system co-ordinated by the HIV reference laboratory. These restrictions may constitute barriers for use and ultimately access to treatment.

The ECDC team would advise the Ministry of Social Affairs and other appropriate regulatory institutions to reconsider the current restrictions on POC testing or work to remove the barriers in other ways, as several EU countries have done (France, Finland, the United Kingdom. etc.). In these countries, regulation of testing has been modified in such ways, that community testing has been made possible and has been scaled up significantly. This would not jeopardize patient safety nor have to affect the quality of the testing offered, for the following reasons:

1. Point-of-care testing is a low-risk procedure

As the administration of POC HIV tests does not require venepuncture but can be done on either capillary volume finger-prick blood samples, or in some tests even with oral fluid, the risks to the individual to be tested and to the personnel are very small. Also, no large-scale storage of blood samples needs to be arranged. This lessens the need for the testing facilities to be linked with healthcare. Clearly, obtaining finger-prick blood samples requires that appropriate personal protection and hygiene standards for client and tester are strictly followed, but this does not necessitate following hospital ward level hygiene requirements. An adapted standard suitable for POC testing in a variety of settings could be developed.

2. Positive point-of-care test results are intended to be provisional

Ensuring the quality and accuracy of clinical microbiological/immunological tests, including POC tests, is a necessity in any setting where they are performed. However, as rapid tests are intended to provide definitive negative results but only preliminary positive results (which must all be subject to regular confirmatory testing), it can be argued that quality assurance/quality control routines can be modified for the circumstances of use. In addition, rapid tests include internal controls which serve to ensure that the test performs in accordance with its specifications.

3. Point-of-care tests have good performance characteristics

Concerns about sensitivity and specificity of POC tests have been raised in the past. Independent evaluations and practical user experience show, that among the many tests available and CE marked for marketing in Europe, many have performance characteristics comparable to the laboratory-based standard screening enzyme immunoassay (EIA)/enzyme-linked immunosorbent assay (ELISA) tests. However, experience also shows that attainment of consistently high quality results require that those interpreting the test results are appropriately trained.

A number of practical suggestions for developing alternative requirements for ensuring high quality testing in community settings without imposing barriers to HIV test uptake can be identified:

Simplify requirements for POC testing

Consider linking POC testing to individual healthcare professionals (licensed physician/nurse/clinical laboratory specialist) to be responsible for the quality management of the testing service rather than to an entire institutional healthcare organisation.

Train test administrators

Consider designing a short mandatory training module for test administration personnel, which must be completed by all persons performing POC tests prior to starting community testing.

Tailor quality assurance/quality control programme

Consider designing a specific quality assurance/quality control programme for community testing services, with a maximum of 2–3 positive/negative control samples each to be performed on an annual basis.

Promote integration and networking

Consider whether the training and quality assurance/quality control programme could be performed by the reference laboratory and if a model of cost-sharing or national support for such programmes could be devised to prevent the additional cost becoming a barrier to the wider use of POC/rapid tests in suitable settings.

Integration of HIV and sexually transmitted infections services

A broad range of services offer STI testing and management and those diagnosed with an STI would typically be offered HIV testing. However, patients newly diagnosed with HIV at HIV testing and counselling services are not routinely assessed for sexual risk taking behaviour (either heterosexual or through sex between men) nor are they routinely referred for STI screening unless they have symptoms. Recent data indicates that sexual transmission now accounts for at least half of all new HIV diagnoses, and even those who acquired HIV infection through injecting drug use are likely to engage in risky sexual behaviour, which may place them at risk of other STIs.

The prevention of increased sexual transmission of HIV and of other STIs may warrant clear guidance providing recommendations for routinely taking sexual histories and offering STI screening to all those newly diagnosed with HIV. In addition, for those living with HIV who are being seen for care (including at NGO advice centres), regular referrals for STI screening and sexual health check-ups as part of positive prevention efforts may have value. Promotion of formal cooperative links and communication between infectious disease and STI/sexual health professions could help foster more integrated care.

Services for men who have sex with men

Across Europe, MSM are known to be at high risk of HIV and other STIs. Screening MSM for STIs usually requires a broader range of procedures, including routine swabbing and testing of the rectum and pharynx. Men who have sex with men are also likely to feel more comfortable discussing sexual practices and risk behaviour with medical professionals who specialise in caring for them. There are no services in Estonia specifically targeting MSM and while there are limited data on the size of the MSM population in Estonia and their particular needs, it is likely they would benefit from tailored sexual health clinics which could be time-tabled as regular slots within existing services.

Partner notification

For those diagnosed with an STI, partner notification is the responsibility of the medical doctor, but requirements and practices are unclear. Partner expedited therapy may often be used to treat the male partners of women diagnosed with chlamydia. The lack of standard guidelines and practice may hamper the effectiveness of partner notification for infection control. Consideration should be given to reviewing partner notification legislation and to promote the use of standard guidelines.

Sexually transmitted infections reference services and gonococcal resistance monitoring

The rapid emergence of gonococcal resistance to antimicrobials is a recognised global phenomenon. However, the absence of an STI reference service and the routine use of PCRs to confirm gonococcal diagnoses mean there are negligible gonococcal isolates available for culture and resistance testing. Consideration should be given to the

establishment of an STI reference service which could maintain expertise in gonococcal culture methods and receive a regular supply of isolates for resistance testing. Such a service could also ensure better standardisation and quality assurance in STI testing.

Reporting and surveillance of HIV and sexually transmitted infections

Trends in STIs are characterised by a rapid decline in diagnoses over the last 10 years possibly due, in part, to improvements in STI diagnostics resulting in more specific diagnoses. This, along with the discrepant gender ratio in genital chlamydial infection diagnoses, emphasises the need for careful interpretation of STI surveillance data in Estonia.

Recently, HIV and STI surveillance in Estonia has changed with the introduction of the electronic communicable disease registry. This new system offers considerable opportunities for improving the quality of surveillance data including better timeliness, record linkage (enabling de-duplication and the potential to investigate concurrent or repeat infections) and the potential to link to e-health. However, distinguishing the main transmission groups in surveillance data remains challenging and the lack of information on the proportion of diagnoses among MSM is of particular concern. There is also no information routinely collected on CD4 counts and antiretroviral resistance in HIV patients.

These limitations are probably associated with a number of factors. Physicians may not always perceive the value of reporting and consider it a burden, especially as they may have to enter duplicate information into the communicable disease registry and into the patient's e-health record. They may have concerns about protecting the highly sensitive information collected about their patients. Also, the requirement to notify HIV and STI diagnoses to the communicable disease registry within 24 hours may preclude the recording of sexual transmission data as many patients are unlikely to have given a full sexual history within this short interval.

A number of approaches may help improve the quality of HIV and STI surveillance data:

Enhancing feedback reports

While the Health Board regularly provides surveillance reports to data providers and other stakeholders, they could consider providing regular and more clinic/setting specific feedback to providers, which benchmark their activities against national or regional standards. These reports could provide an incentive to improve the quality and completion of infection notification reports as well as foster good relations between providers and the Health Board. An assessment of the training needs of data providers for collecting and recording surveillance data could also inform future developments in the communicable disease registry.

Review the requirement for 24 hour notifications

The Ministry of Health may also wish to consider reviewing the requirement to notify HIV and STI diagnoses to the communicable disease registry within 24 hours before a patient sexual history has been completed. The objective of such a short notification delay time is not clear and may be counter-productive. By introducing a longer allowed delay time the collection of transmission category information would be likely to improve.

Perform epidemiological analyses of HIV and sexually transmitted infections co-infections

The new communicable disease registry offers opportunities for linking HIV and STI diagnoses, which would enable assessments of HIV and STI co-infection. Such analyses could augment evidence for HIV management guidelines and, specifically, of the need to refer patients diagnosed with HIV for STI testing and counselling.

Introduce collection of CD4 count and antiretroviral resistance in the communicable disease registry

Consideration should be given to monitoring the public health impact of HIV treatment as part of routine surveillance. Coverage of collection and reporting of data on CD4 counts and antiretroviral resistance could also be used as public health indicators linked to contracting arrangements.

Expedite integration of e-health with the communicable disease registry

Integration of e-health with the communicable disease registry, allowing exports from clinic patient management systems to the registry, could significantly reduce the time spent by physicians in recording and reporting patient information and would offer significant opportunities for improving the quality of surveillance data.

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Appendix 1. List of participants

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Appendix 2. Programme of the country visit

11 October 2010		Programme	Planned participations	ECDC team
09.00–10.00	Kick-off meeting	Objectives and introductions. Overview of national HIV strategy and epidemiology	Merilin Mäsalu (MoSA) Liis Rooväli (MoSA) Maris Salekešin (MoSA) Aljona Kurbatova (NIHD) Kristi Rüütel (NIHD) Jarno Habicht (WHO) Annika Veimer (NIHD)	Dr Mika Salminen, Johann Fontaine Dr Gwenda Hughes
10.00–12.00	Ministry of Social Affairs, Departments of Public Health and Health Care	Service and surveillance structure. STI prevention and surveillance	Merilin Mäsalu (MoSA) Liis Rooväli (MoSA) Maris Salekešin (MoSA) Heli Paluste (MoSA) Mihkel Rääk (MoSA) Dagmar Rüütel (MoSA) Aljona Kurbatova (NIHD) Kristi Rüütel (NIHD)	Dr Mika Salminen, Johann Fontaine Dr Gwenda Hughes
13.30–15.00	Health Board	Surveillance of HIV and STIs, views on partner notification	Dr Natalia Kerbo (HB) Dr Jevgenia Epštein (HB) Merilin Mäsalu (MoSA) Kristi Rüütel (NIHD)	Dr Mika Salminen, Johann Fontaine Dr Gwenda Hughes
15.30–17.00	National Institute for Health Development, Department of Monitoring and Evaluation	Monitoring and evaluation	Aire Trummal (NIHD) Kristi Rüütel (NIHD)	Dr Mika Salminen, Johann Fontaine Dr Gwenda Hughes
19.00–20.00	ECDC team debriefing	Review of the days findings	Dr Mika Salminen, Dr Johann Fontaine Dr Gwenda Hughes	Dr Mika Salminen, Johann Fontaine Dr Gwenda Hughes
12 October 2010				
09.30–11.30	Estonian Network of People Living with HIV	HIV treatment, HIV testing	Igor Sobolev (EHPV) Kristi Rüütel (NIHD) Victoria Vinckler (EHPV) Jekaterina Voinova (EHPV)	Dr Mika Salminen, Johann Fontaine Dr Gwenda Hughes
12.00–13.30	Merimetsa infectious diseases centre	HIV testing and treatment, integration	Dr Kai Zilmer (WTCH) Dr Matti Maimets (Tartu University Clinic) Dr Valentina Ustina (WTCH) Kristi Rüütel (NIHD)	Dr Mika Salminen, Johann Fontaine Dr Gwenda Hughes
14.30–15.30	National Institute for Health Development, Department of Monitoring and Evaluation	HIV testing	Kristi Rüütel (NIHD) Aljona Kurbatova (NIHD)	Dr Mika Salminen, Johann Fontaine Dr Gwenda Hughes
16.00–18.00	Estonian Sexual Health Association	STI and HIV services for youth, partner notification	Marko Nummert (ESHA) Dr Mairi Kaha (ESHA) Kristi Rüütel (NIHD)	Dr Mika Salminen, Johann Fontaine Dr Gwenda Hughes
19.00–20.00	ECDC Team Debriefing	Review of the days findings, discussion on reporting for wrap-up meeting next day	Dr Mika Salminen, Dr Johann Fontaine Dr Gwenda Hughes	Dr Mika Salminen, Johann Fontaine Dr Gwenda Hughes

13 October 2010		Programme	Planned participants	ECDC team
10.00–12.00	Harku Prison	Testing, prevention and care in prison, HIV and STI	Maris Salekešin (MoSA) Kristi Rüütel (NIHD) Kristel Kivimets (Harku Prison)	Dr Mika Salminen, Johann Fontaine Dr Gwenda Hughes
14.00–15.00	Ministry of Social Affairs, Departments of Public Health and Health Care	Regional networking and utilisation of EU community public health programme funds	Merilin Mäsalu (MoSA) Liis Rooväli (MoSA) Maris Salekešin (MoSA) Aljona Kurbatova (NIHD) Kristi Rüütel (NIHD) Annika Veimer (NIHD)	Dr Mika Salminen, Johann Fontaine Dr Gwenda Hughes
15.00–17.00	Wrap-up meeting	Preliminary findings and actions: discussion and feedback, follow-up and reporting	Merilin Mäsalu (MoSA) Liis Rooväli (MoSA) Maris Salekešin (MoSA) Aljona Kurbatova (NIHD) Kristi Rüütel (NIHD) Annika Veimer (NIHD) Aire Trummal (NIHD)	Dr Mika Salminen, Johann Fontaine Dr Gwenda Hughes