METHODS FOR SECOND GENERATION HIV SURVEILLANCE IMPLEMENTATION FOR COUNTRIES OF CENTRAL AND EASTERN EUROPE (CEE) AND THE BALTIC STATES

Report on a WHO workshop

Berlin, Germany
27–29 May 2002
ABSTRACT

Second generation HIV surveillance aims to improve collection, analysis and use of data essential to AIDS and HIV control programmes for better monitoring the epidemic and for guiding the response to it. In countries with low level or concentrated HIV epidemics, such as those in many eastern European countries, surveillance of population groups at increased risk of HIV infection is emphasized. Surveillance and monitoring should cover both biomedical and social/behavioural factors. Problems of accessibility and in obtaining the participation of high-risk hard-to-reach groups in sentinel biological and behavioural surveys is a key concern of second generation surveillance. This report covers discussion of the experience of Baltic States and central European countries in conducting HIV surveillance, in particular the various approaches, methodologies and techniques used in second generation surveillance.

Keywords
HIV INFECTIONS – epidemiology
DATA COLLECTION – methods
EPIDEMIOLOGIC METHODS
EPIDEMIOLOGIC SURVEILLANCE – methods
EVALUATION STUDIES
GUIDELINES
EUROPE, EASTERN
BALTIC STATES

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<td>25</td>
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<tr>
<td>Czech Republic</td>
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<td>28</td>
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</tbody>
</table>
Introduction

Participants were welcomed to the workshop by Dr Srdan Matic, Regional Advisor, WHO Regional Office for Europe, Programme for Sexually Transmitted Infections/HIV/AIDS (SHA).

Dr Marek Beniowski, Head, Centre for AIDS Diagnostics and Therapy, Poland, was elected as workshop Chair. Dr Kuulo Kutsar, Advisor/Chief Epidemiologist, Health Protection Inspectorate, Estonia, was elected as Rapporteur.

Aims of the workshop

The aims of the workshop were:

- to exchange information and experience on current HIV surveillance, and surveillance capacity, in the participating countries;

- to familiarize participants with the significance and feasibility of biological and behavioural surveys in hard-to-reach (“hidden”) sub-populations that may be at increased risk of HIV infection;

- to familiarize participants with methods and techniques available to researchers for conducting biological HIV surveillance in vulnerable and hard-to-reach sub-populations;

- to familiarize participants with methods and techniques available to researchers for conducting studies into the social and behavioural risk factors that may be fuelling the epidemic in vulnerable and hard-to-reach sub-populations;

- to review current HIV surveillance activities in participating countries, in particular the locations and sites in the population commonly used to obtain primary and (if available) related supporting data;

- to familiarize participants with statistical survey and sampling techniques used to estimate the size and prevalence of HIV in hard-to-reach sub-populations; and

- to develop Action Plans for biological and behavioural HIV surveillance of high-risk groups in each participating country, including outlines of surveillance needs, country priorities, available local data sources, and additional resources required.

Participants were professionals with direct operational responsibility at national level for the surveillance and monitoring of the HIV epidemic in their countries. Participation came from CEE countries (Czech Republic, Hungary, Poland, Slovakia and Slovenia) and the Baltic States (Latvia, Lithuania and Estonia). The workshop sessions were introduced and facilitated by national and international experts (see Annex 1, List of Participants).

The following recommendations were agreed:

- national HIV surveillance strategies and systems should adapt to and be appropriate for the level of HIV epidemic in a country;

- HIV surveillance systems should make use of behavioural and biological data to describe and explain changes over time; and

- second generation HIV surveillance strategies should be implemented to strengthen efforts to generate the epidemiological information required to help identify the best strategy, methods and focus for appropriate action to combat the epidemic.
Background

In cooperation with the Joint United Nations Programme on HIV/AIDS (UNAIDs), WHO has developed and published guidelines on conducting second-generation surveillance of the HIV epidemic. The goals of second generation surveillance systems are described as aiming to achieve:

- better understanding of trends over time;
- better understanding of the behaviours driving the epidemic in a country;
- surveillance more focused on sub-populations at highest risk of infection;
- flexible surveillance that moves with the needs and state of the epidemic, and
- better use of surveillance data to increase understanding and to plan prevention and care.


Second generation HIV surveillance aims to strengthen HIV surveillance systems through:

- monitoring trends in behaviour and HIV infection;
- tailoring surveillance systems to the state of the epidemic in countries by:
  - focusing data collection on sub-populations who are at enhanced risk of HIV infection;
  - generating predictive models of changes in the epidemic over time by exploring the connection between data on HIV prevalence (and incidence) and the existence of behaviours that may place individuals at enhanced risk of HIV infection;
  - making use of other indicative epidemiological and biomedical information (e.g. sentinel surveillance of pregnant women, sexually transmitted infections, blood donor screenings);
- using biomedical and socio-behavioural surveillance data for *early warning* of a potential epidemic;
- using national surveillance estimates to raise public awareness and improve policy responses to mitigate the impact of the epidemic, and for strengthening health care and social support systems.

**Participant review of HIV prevalence, high-risk groups and HIV surveillance systems in CEE countries and the Baltic States**

*(The following reviews were edited only for clarity and conformity of style. They reflect the knowledge and information available to the participants from their own sources. These individual representatives are responsible for the content and accuracy of the presentations. WHO/Europe did not attempt to verify the accuracy of the reports.)*
Czech Republic

Population 10.3 million. National AIDS/HIV surveillance system existing since 1986. The system is based on HIV antibody testing, with verification of primary test results at the National AIDS Reference Laboratory. Aggregated surveillance data are submitted to the European Centre for the Epidemiologic Monitoring of HIV/AIDS (EuroHIV).

**HIV testing** is mandatory for blood, organ and sperm donors etc., and also pregnant women. Voluntary Counselling and Testing (VCT) sites for HIV numbered around 87 in 2001. Voluntary HIV-testing results from 2000–2001 can be seen in the table below:

<table>
<thead>
<tr>
<th></th>
<th>2000</th>
<th>2001</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-anonymous tests</td>
<td>7 (0.07%)</td>
<td>6 (0.07%)</td>
</tr>
<tr>
<td></td>
<td>Test: 9234</td>
<td></td>
</tr>
<tr>
<td>Unlinked non-anonymous tests</td>
<td>7 (0.09%)</td>
<td>6 (0.12%)</td>
</tr>
<tr>
<td></td>
<td>Tested: 7605</td>
<td></td>
</tr>
</tbody>
</table>

In 2000, 455 124 blood donors were tested for HIV, with 0 positive results. In 2001, 466 774 blood donors were tested, with 1 HIV-positive case (0.0002 %). In 2000, 121 201 pregnant women were routinely tested, with 5 HIV-positive cases discovered (0.004%). In 2001, 127 824 pregnant women were tested for HIV, with 4 positive cases discovered (0.003%).

**STD surveillance** includes syphilis and gonorrhoea monitoring. Syphilis incidence per 100 000 population was approx 7.0. in 1999, and 9.5 in 2000. Gonorrhoea incidence was approximately 10.0 in 1999, and 9.0 in 2000.

Estimates for the size of some at-risk sub-populations:

<table>
<thead>
<tr>
<th>Sub-population</th>
<th>Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>IDUs</td>
<td>30 000</td>
</tr>
<tr>
<td>CSWs</td>
<td>30 000</td>
</tr>
<tr>
<td>MSM</td>
<td>150 000–200 000</td>
</tr>
<tr>
<td>Prisoners</td>
<td>18 000</td>
</tr>
<tr>
<td>Migrants</td>
<td>250 000</td>
</tr>
<tr>
<td>Roma/gypsies</td>
<td>300 000</td>
</tr>
</tbody>
</table>

Results of serosurveys of some at-risk sub-populations:

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>IDUs</td>
<td>0.35%</td>
<td></td>
<td></td>
<td>0.74%</td>
</tr>
<tr>
<td>Prisoners</td>
<td>0.29%</td>
<td>0.8%</td>
<td></td>
<td>0.04%</td>
</tr>
<tr>
<td>STD clients</td>
<td>0.02%</td>
<td></td>
<td></td>
<td>0.04%</td>
</tr>
</tbody>
</table>
Total number tested HIV positive (by high-risk sub-population), April 2002:

<table>
<thead>
<tr>
<th>Sub-population</th>
<th>Number tested</th>
<th>Number positive</th>
<th>Prevalence</th>
</tr>
</thead>
<tbody>
<tr>
<td>IDU</td>
<td>13 336</td>
<td>2</td>
<td>0.01%</td>
</tr>
<tr>
<td>MSM</td>
<td>4777</td>
<td>16</td>
<td>0.33%</td>
</tr>
<tr>
<td>CSW</td>
<td>23 529</td>
<td>15</td>
<td>0.06%</td>
</tr>
<tr>
<td>Prisoners</td>
<td>71 164</td>
<td>17</td>
<td>0.02%</td>
</tr>
<tr>
<td>STDs</td>
<td>129 439</td>
<td>37</td>
<td>0.03%</td>
</tr>
<tr>
<td>Contact Tracing</td>
<td>1792</td>
<td>58</td>
<td>3.24%</td>
</tr>
</tbody>
</table>

Routes of HIV transmission:

<table>
<thead>
<tr>
<th>Route</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Homo/bisexual</td>
<td>52.6%</td>
</tr>
<tr>
<td>Heterosexual</td>
<td>29.8%</td>
</tr>
<tr>
<td>IDUs</td>
<td>3.8%</td>
</tr>
<tr>
<td>Homo/bisexual + IDU</td>
<td>1.1%</td>
</tr>
<tr>
<td>Haemophiliacs</td>
<td>3.1%</td>
</tr>
<tr>
<td>MTCT</td>
<td>0.5%</td>
</tr>
<tr>
<td>Nosocomial</td>
<td>0.4%</td>
</tr>
<tr>
<td>Blood recipients</td>
<td>2.5%</td>
</tr>
<tr>
<td>Unknown</td>
<td>6.2%</td>
</tr>
</tbody>
</table>

Total number of HIV-positive cases:
- Year 2000 – 500 cases (144 immigrants)
- Year 2001 – 551 cases (158 immigrants)

**Poland**

Population 38.6 million. National HIV/AIDS surveillance system existing since 1985. The system is based on HIV antibody testing with verification carried out at the National AIDS Reference Laboratory. Aggregated surveillance data are submitted to EuroHIV. The key national institution responsible for AIDS/HIV activities in Poland, including surveillance, is the National AIDS Centre. The main functions of the Centre are:

- monitoring the HIV/AIDS situation in Poland;
- preparing and updating the National HIV/AIDS Prevention Programme;
- coordinating prevention activities;
- implementing national HIV prevention policy;
- performing scientific research with special attention to HIV/AIDS prevention;
- publishing educational materials and training;
- coordinating responsibilities between the Ministry of Health, partner ministeries and NGOs for implementation of the HIV/AIDS prevention programme; and
- collaborating with other central and eastern European countries;
The primary objectives of the programme are:

- to educate Polish society about HIV/AIDS, with particular reference to young people;
- to implement prevention activities for HIV/AIDS risk groups;
- HIV testing;
- HIV testing of blood and blood products; and
- prevention of diseases that enhance transmission of HIV (STIs etc.).

*The National Program of Prevention of HIV Infections, Care Offered to People Living with HIV and AIDS, 1999/2003*

The secondary objective of the programme is to improve the quality and availability of care for people living with HIV/AIDS.

The current situation (by end March, 2002) is as follows:

- 7450 people living with HIV and AIDS;
- 4624 persons infected due to IDU (62%);
- 560 new cases of HIV were diagnosed in 2001;
- 564 deaths due to AIDS/HIV;
- 1137 notified AIDS cases.

The estimated number of people living with HIV/AIDS is believed to be between 15–20 000 (of whom 20% are women). The most affected age groups are: <20 years, between 20–29 years, between 30–39 years.

**Slovak Republic**

HIV/AIDS surveillance system started in 1985. The cumulative total number of reported HIV cases from 1985 to March 2002 is 103 (87 men and 16 women), with 21 deaths.

Routes of HIV transmission:

<table>
<thead>
<tr>
<th>Transmission Category</th>
<th>Number of cases</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>MSM</td>
<td>65</td>
<td>63.1%</td>
</tr>
<tr>
<td>IDU</td>
<td>2</td>
<td>1.9%</td>
</tr>
<tr>
<td>Blood transfusion</td>
<td>1</td>
<td>0.97%</td>
</tr>
<tr>
<td>heterosexual</td>
<td>26</td>
<td>25.2%</td>
</tr>
<tr>
<td>others</td>
<td>9</td>
<td>8.7%</td>
</tr>
</tbody>
</table>

A further 53 cases were notified in foreigners.
Foreign sources have been a significant mode of HIV introduction. In 1999, 6 cases of imported HIV were notified (4 foreigners and 2 indigenous). In 2000, 26 cases of imported HIV were notified (7 foreigners and 19 indigenous). In 2001, 17 cases of imported HIV were notified (9 foreigners and 8 indigenous).

HIV-infection incidence has been concentrated in three regions: Bratislava (105.1 per million population); Kosice (17.2 per million population) and Trnava (123.8 per million population).

In the period 1985 to March 2002, 78 467 persons belonging to high-risk groups were screened for HIV. Positive diagnoses are shown in the table below:

<table>
<thead>
<tr>
<th></th>
<th>Number tested</th>
<th>Positive cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>MSM</td>
<td>1396</td>
<td>18</td>
</tr>
<tr>
<td>CSW</td>
<td>1243</td>
<td>2</td>
</tr>
<tr>
<td>Prisoners</td>
<td>11016</td>
<td>3</td>
</tr>
<tr>
<td>Blood recipients</td>
<td>8968</td>
<td>1</td>
</tr>
</tbody>
</table>

Other risk groups tested included: IDUs, haemophiliacs and dialysis patients. The dominant route of HIV transmission has been homo/bisexual.

Additional screened groups include:

<table>
<thead>
<tr>
<th></th>
<th>Number tested</th>
<th>Number of HIV cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>STD patients</td>
<td>44 963</td>
<td>7</td>
</tr>
<tr>
<td>Psychiatric patients</td>
<td>3057</td>
<td>2</td>
</tr>
<tr>
<td>Other patients with non-specific diagnosis</td>
<td>335 813</td>
<td>35</td>
</tr>
<tr>
<td>Voluntary anonymous testing</td>
<td>11897</td>
<td>9</td>
</tr>
<tr>
<td>Blood donors</td>
<td>206 7051</td>
<td>3</td>
</tr>
<tr>
<td>Pregnant women</td>
<td>420 119</td>
<td>2</td>
</tr>
</tbody>
</table>
Hungary

HIV surveillance started in 1985. Testing for HIV infection is mandatory for the following groups:

- Blood donors;
- STD patients;
- CSWs;
- IDUs;
- Sexual partners of HIV-positive persons;
- Prisoners;
- Inmates of correction facilities for adolescents.

Voluntary anonymous HIV-testing has been available since 1988.

There are no signs of HIV transmission among IDUs.

Between 1985–2001, the average number of new HIV-infection cases per year was 50 (16–83), with an average of 25 AIDS cases and 15 AIDS deaths. Most HIV-positive persons are men. HIV prevalence among women is growing – 9% in 1995, 15% in 2001. 30% of HIV positives are foreigners.

The age distribution of the HIV epidemic in Hungary concentrates in the age ranges 20–29, 30–39 and 40–49.

The predominant route of HIV transmission (72%) has been homo/bisexual, followed by heterosexuals (16%), blood transfusion (6%) and undetermined (6%).

The average incidence of HIV in blood donations screened between 1986–2001 was 0.37 per 100 000 donations.

Average HIV seroprevalence among STDs was 0.05% in the period 1986–2001. The predominant route of HIV transmission among STDs is homo/bisexual (76%). Heterosexual transmission accounts for about 11%.

Important HIV *bridging* sub-populations are: migrating CSWs, bisexual men and IDUs.

Slovenia

Case reporting is undertaken for: HIV, AIDS, AIDS deaths. HIV testing includes:

- HIV prevalence monitoring;
- anonymous testing – high risk groups: IDUs, MSM, STD patients, and pregnant women;
- voluntary confidential testing – VTC clients, blood donors;
- behavioural surveillance – IDUs, MSM; and
- behavioural surveys – general population, fertility survey, GPA/WHO PPI module.
Total number of reported AIDS cases by gender and transmission category:

<table>
<thead>
<tr>
<th></th>
<th>Men (total = 82)</th>
<th>Women (total = 12)</th>
</tr>
</thead>
<tbody>
<tr>
<td>MSM</td>
<td>49</td>
<td></td>
</tr>
<tr>
<td>Heterosexual</td>
<td>11</td>
<td>8</td>
</tr>
<tr>
<td>IDU</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td>Blood recipient</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>MTCT</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Other</td>
<td>12</td>
<td>2</td>
</tr>
</tbody>
</table>

Results from anonymous testing, 2000–2001:

<table>
<thead>
<tr>
<th></th>
<th>Year 2000</th>
<th>Year 2001</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>Number</td>
</tr>
<tr>
<td></td>
<td>Tested</td>
<td>Positive</td>
</tr>
<tr>
<td>IDUs</td>
<td>130</td>
<td>1 (0.8%)</td>
</tr>
<tr>
<td>MSM</td>
<td>132</td>
<td>4 (3.0%)</td>
</tr>
<tr>
<td>STDs</td>
<td>452</td>
<td>0</td>
</tr>
<tr>
<td>Pregnant women</td>
<td>6900</td>
<td>1 (0,014%)</td>
</tr>
</tbody>
</table>

Voluntary confidential testing:
- 2000 – 960 tested, 2 HIV positive (0.2%)
- 2001 – 1054 tested, 4 HIV positive (0.4%)

Blood donor testing:
- 1999 – 96 556 tested, 1 HIV positive (0.001%)
- 2000 – 92 525 tested, 0 HIV positive
- 2001 – 64 475 tested, 0 HIV positive

Total 1 539 776 tests, 15 HIV positive (0.0001%)

Behavioural surveillance of high-risk groups – IDU indicators monitored include:
- last experience of needle sharing;
- number of sex partners in the last year;
- condom use in last sexual contact;
- condom use in last at-risk sexual contact; and
- number of non-IDU partners in the last year.
IDUs sharing injection equipment in the last month:
- 1999 – 25.8%;
- 2000 – 28.1%


<table>
<thead>
<tr>
<th></th>
<th>Men (total = 82)</th>
<th>Women (total = 12)</th>
</tr>
</thead>
<tbody>
<tr>
<td>MSM</td>
<td>49</td>
<td></td>
</tr>
<tr>
<td>Heterosexual</td>
<td>11</td>
<td>8</td>
</tr>
<tr>
<td>IDU</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td>Blood recipient</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>MTCT</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Other</td>
<td>12</td>
<td>2</td>
</tr>
</tbody>
</table>

MSM behavioural risk-factors surveillance, 2001–2001:

<table>
<thead>
<tr>
<th></th>
<th>2000 (Surveyed n = 133)</th>
<th>2001 (Surveyed n= 87)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reporting less than 10 partners in the year</td>
<td>12%</td>
<td>12%</td>
</tr>
<tr>
<td>Condom use at last sexual contact</td>
<td>71%</td>
<td>65%</td>
</tr>
<tr>
<td>Always used condom in the last year</td>
<td>53%</td>
<td>43%</td>
</tr>
<tr>
<td>Almost always used condom in the last year</td>
<td>23%</td>
<td>28%</td>
</tr>
<tr>
<td>Tested for HIV infection</td>
<td>63%</td>
<td>77%</td>
</tr>
</tbody>
</table>

General population survey 2000, STD patients’ high-risk behaviour survey (1752 interviews, age range 18–49, 67% response):

|                                | Ever injected drugs 0,5% | MSM 0,3% | Ever paid for sex (men) 2,2% | >9 sexual partners in lifetime 14,1% | >9 heterosexual partners in last 5 years 1,9% | Condom use 65% |

Syphilis incidence:
- 2000 – 0
- 2001 – 0.25
Estonia

Population 1 366 770. Surveillance system includes monitoring and surveillance of biological, behavioural and sociodemographic indicators. Biological surveillance indicators include:

- HIV prevalence and incidence;
- STD prevalence and incidence;
- TB prevalence and incidence;
- hepatitis B and C prevalence and incidence;
- number of adult and paediatric HIV infections;
- number of HIV disease cases;
- number of HIV disease death cases.

AIDS, STD and TB data are collected from hospitals, outpatient clinics, antenatal clinics, blood donation centres and prisons.

Behavioural indicators include:

- sharing of needles and/or syringes by IDUs;
- sex with non-regular partners in last year;
- condom use with non-regular partners;
- CSWs – condom use and number of clients in last week;
- MSM.

Sociodemographic indicators recorded include:

- Age;
- Sex;
- marital status;
- residency/migration status;
- education;
- socioeconomic status.

The results of surveillance in recent years show a dramatic change in the balance between the different routes of HIV transmission. In 1988–1999, the dominant route of HIV transmission was homo/bisexual (47.2%) and heterosexual (33.7%). In 2000–2001, the sharing of needles/syringes (primarily by IDUs) accounted for 90% of HIV transmissions. Most IDUs are men aged 15–19 years (23.8%) and 20–29 years (44.1%), and women aged 15–19 years (12.0%).

In 2001, HIV serological surveys of regularly screened high-risk groups indicated the following rates of prevalence:

- IDUs – 13.0%
- prisoners – 14.9%
- anonymously screened persons – 7.1%
Based on a total of 94,088 persons screened in 2001, HIV prevalence was 1.5%.

STD incidence has been high:
- syphilis – 29.9;
- gonorrhoea – 48.1;
- genital chlamydia infection – 306.3 (in 2001).

There were 8 cases of TB+HIV co-infection notified in 2000–2001.

A behavioural survey in 2001 (total persons surveyed = 2,930), covering high risk behaviour in an IDU sub-population, showed the following:
- 37.5% were sharing needles/syringes;
- 68% had 2–9 sex partners in last year;
- 46.1% never used condoms.

A concentrated HIV epidemic in IDU sub-populations was proclaimed in February 2001.

**Latvia**

Population 2,370,000. HIV screening of the general population developed between 1987–1993. The first reported HIV case was in 1987, the first AIDS case in 1990. The present epidemiological surveillance system was formally established in 1993.

The surveillance system includes the following elements:
- general practitioners (VCT);
- HIV/AIDS care centres;
- primary HIV diagnostic laboratories;
- HIV Reference Laboratory.

All reports are sent to the national AIDS Prevention Centre and HIV/AIDS Register.

Current surveillance strategy includes the following components:
- mandatory testing of blood/organ donors and pregnant women (since 1999);
- systematic testing of STDs, prisoners, IDUs, sailors and TB patients;
- case–based reporting is used;
- register is confidential.

Approximately 90,000 persons were tested for HIV each year in 2000–2001. HIV prevalence in population subgroups indicated the following:
The cumulative total of notified HIV-infection cases to 15 May 2002 was 2006, including 136 AIDS cases and 40 deaths.

In 1999, 24 new HIV-infection cases were notified, with 17 AIDS cases and 5 deaths.

In 2000 – 466 HIV cases were notified, with 24 AIDS cases and 9 deaths.

In 2001 – 807 HIV cases were notified, 42 AIDS cases and 14 deaths.

Cumulative HIV numbers by transmission category:

<table>
<thead>
<tr>
<th></th>
<th>1999</th>
<th>2000</th>
<th>2001</th>
</tr>
</thead>
<tbody>
<tr>
<td>IDU</td>
<td>200</td>
<td>500</td>
<td>1000</td>
</tr>
<tr>
<td>MSM</td>
<td>20</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>Heterosexual</td>
<td>15</td>
<td>20</td>
<td>100</td>
</tr>
</tbody>
</table>

Mother-to-child transmission (MTCT) has not been reported.

HIV screening of specific high-risk groups between 1998–2001 indicated prevalence rates as follows:

- MSMs – 5.4% (1998)
- CSWs – 7.7% (2001)
- IDUs – 11.5% (2000)

**Lithuania**

HIV/AIDS surveillance was first carried out in 1988. Reporting of laboratory–confirmed HIV-positive cases is mandatory. Testing is mandatory for the following groups:

- blood/organ donors;
- sailors;
- persons applying for a hand gun certificate;
- military personnel;
- police school students.

Unlinked anonymous testing is not carried out.

The number of confirmed HIV cases in Lithuania has continued to increase.

<table>
<thead>
<tr>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>HIV cases</td>
<td>31</td>
<td>52</td>
<td>66</td>
<td>65</td>
<td>72</td>
<td>230</td>
</tr>
</tbody>
</table>

Number of notified HIV disease cases:

<table>
<thead>
<tr>
<th>Number of notified HIV disease cases</th>
<th>1997</th>
<th>1998</th>
<th>1999</th>
<th>2000</th>
<th>2001</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>3</td>
<td>8</td>
<td>6</td>
<td>7</td>
<td>9</td>
</tr>
</tbody>
</table>

Total number of AIDS cases 1988–2001 = 45.

The dominant routes of HIV transmission are:
- IDUs – 64%
- MSM – 16%
- heterosexual – 15%
- unknown – 5%

The proportion of IDU transmissions has increased since 1997. Most HIV-positives are men, with the most dominant age groups in the ranges 20–24, 25–29, 30–34 and 35–39.

Sentinel surveillance of particular risk groups has been undertaken. Among MSM tested, 62 HIV positive diagnoses were made in 1999, 45 in 2000 and 34 in 2001.

Among CSWs, 72 tested positive in 1999, 85 in 2000, 5 in 2001

Among IDUs, 80 tested positive in 1998, 62 in 1999, 78 in 2000, 75 in 2001. (The total numbers of tested persons in these risk groups is not available).

33% of tested criminals were found to be HIV-positives; 80% of HIV-positive criminals are IDUs.

The cumulative total of notified HIV cases to January–May 2002 is 230 207 of these cases were diagnosed in a single prison. Of 1950 prison inmates tested, the prevalence rate among IDUs sharing needles/syringes was 9.8% in February 2002 and 25.1% in May 2002.
In Germany, HIV/AIDS surveillance data has been collected in a national AIDS database since 1982. Screening of blood donors for HIV infection started in 1985. Reporting of HIV positive test results has been mandatory since 1987.

Sentinel surveillance for HIV has been conducted in eastern Germany since 1991; unlinked anonymous newborn testing was carried out in the period 1993–1999; HIV seroconversion surveillance since 1997, and HIV disease clinical surveillance since 1999.

Disease surveillance for HIV is based on voluntary reporting by clinicians, private physicians and local health offices. Anonymous unique identifiers are employed, and European AIDS case definitions are used.

A new system of HIV infection case reporting was introduced in July 1998. The advantages of this new system are:

- the same unique identifier can be used in both the AIDS and HIV databases;
- reporting is voluntary (additional reporting is submitted by physicians);
- “first positive test” is precisely identified and confirmed;
- HIV positive test results are assigned to a transmission category and adjusted for reporting delay.

HIV sentinel surveillance was introduced in East Germany in 1991 at 17 sites. Since 1997, 14 sentinel sites have been in use. These include: outpatient clinics, private physicians and specialists practices, counselling and testing centres.

The total number of clients, the number of HIV tests carried out and the test results, are reported monthly. Additional behavioural data is collected for HIV-positives and STD cases.

STD surveillance is carried out for syphilis, gonorrhoea, Chlamydia trachomatis, Herpes simplex, HPV, trichomoniasis, and is used as a complementary tool to strengthen HIV surveillance. An STD sentinel survey is planned for 2002. STD reporting sites include: clinics, private physicians, gynaecologists, urologists, venerologists and local health offices. Case-based data, results of laboratory diagnostics and behavioural data are reported. Only laboratory confirmed cases of the above-mentioned STDs are reported, based on clinical/syndromic diagnosis of urethritis of unknown origin, pelvic inflammatory diseases, anogenital warts and genital Herpes simplex.

The objectives of STD surveillance are:

- the establishment of measures of absolute and relative frequency of STDs;
- demographic description;
- geographic distribution;
- rapid alert and assessment of epidemiological trends;
- identification of high-risk population groups;
• identification of risk factors;
• establishment of STD diagnostic standards (optional);
• investigation of gonococci resistance and laboratory confirmed HSV and HPV infections.

STD reporting is based on case definitions and the results of laboratory diagnostics (routine and reference). The tools of the survey are monthly questionnaire per patient (demographic data, diagnosis), voluntary patient questionnaire (route of HIV transmission, behavioural indicators). Data protection under Federal data protection laws are implemented.

Discussion focused on country experience in conducting surveillance of hard-to-reach high-risk groups, in particular the primary sites and settings used to obtain data on hard-to-reach groups.

Main sites used in IDU surveillance:
• **Estonia** – IDU surveillance is conducted through treatment and needle/syringe exchange facilities, and on prisoners through the prison medical service;
• **Latvia** – treatment centres and needle/syringe exchange sites;
• **Lithuania** – treatment and needle/syringe exchange sites;
• **Poland** – treatment sites;
• **Czech Republic** – testing sites;
• **Slovakia** – treatment sites;
• **Slovenia** – treatment and testing sites.

Main sites for MSM and CSW surveillance:
• **Estonia** – CSWs in STD clinics, MSM in NGOs and STD clinics;
• **Latvia** – CSW in STD clinics, MSM in NGOs;
• **Lithuania** – CSWs in STD clinics, MSM in meeting points;
• **Hungary** – CSWs in testing facilities, MSM in anonymous testing sites;
• **Czech Republic** – CSW in STD clinics, MSM in counselling centres and NGOs;
• **Slovakia** – CSWs and MSM in anonymous testing facilities;
• **Poland** – CSWs in gynaecologist “cabinets” and counselling centres, MSM – NGOs;
• **Slovenia** – CSWs in STD clinics. CSWs and MSM in anonymous testing centres. Indirect surveillance of CSWs, at beer and karaoke bars, massage parlors, saunas, hotels etc.

**Review of existing sources of HIV surveillance data in central and eastern Europe and the Baltic States**, Caroline Semaille, European Centre for the Epidemiological Monitoring of AIDS

Data on HIV-infection and AIDS cases in the countries of the European region are reported every 6 months to the European Centre for the Epidemiological Monitoring of AIDS (EuroHIV). The reporting covers 51 countries of the WHO European Region. Anonymous, individual data on AIDS cases are integrated into the European Non-Aggregate AIDS Data Set (ENAADS).
Anonymous, individual data on HIV–infection cases are integrated into the European HIV Infection Data Set (EHIDS).

Annual rates are calculated per million population. Population denominators for national rate calculations are based on United Nations Population Division data. No adjustments are made for under-reporting or under-diagnosis.

Data on HIV prevalence are updated once a year and compiled in the European HIV Prevalence Database which contains aggregate data on HIV prevalence in risk sub-populations (blood donors, pregnant women etc.). Prevalence estimates are based on data obtained from voluntary or mandatory HIV testing programmes and studies. Studies should record the following information: target population tested, geographic coverage, recruitment site, sampling and testing methods, the number of subjects eligible, the number tested and the number diagnosed as HIV positive.

For surveillance purposes HIV-infection cases are grouped by mode of HIV transmission, i.e.:

- persons infected heterosexually;
- homo/bisexual men;
- injecting drug users;
- undetermined/other.

Optional transmission modes include:

- blood/organ/tissue donors;
- pregnant women;
- persons with haemophilia/other coagulation disorders;
- transfusion recipients;
- persons originating from a country with a generalized HIV epidemic.

Data trends on HIV transmission in central European countries and the Baltic States show that in four countries – Czech Republic, Hungary, Slovakia and Slovenia – the dominant mode of transmission is homo/bisexual contact. In Poland and the Baltic States, the dominant mode of transmission is injecting drug use (IDU).

HIV prevalence in IDU sub-populations has increased in recent years in Estonia, Latvia and Lithuania. Trends are variable, however, and difficult to interpret. Five central European countries have so far avoided large scale epidemics. The Baltic States are presently confronted with explosive concentrated epidemics among IDUs. These epidemics need to be bought under control rapidly, not least to prevent large-scale sexual HIV transmission to the general population.

Statistical data are available at www.eurohiv.org
Methods used in estimating the prevalence of HIV in hard-to-reach high-risk groups, Rebecca McKetin, UNDP

Statistical survey techniques such as multiplier-benchmark and capture-recapture provide methods for estimating the prevalence of HIV in hard-to-reach high-risk groups.

Multiplier-benchmark is a useful method to estimate prevalence (of a disease, or in fact any attribute) in sub-populations that are essentially hidden from view. To apply the multiplier-benchmark method to estimate, for example, the number of IDUs in a population size in a given year, two numbers are required:

1. the total number of IDUs who are in methadone treatment at some point during the year in question (for example 1252); and
2. an estimate from some sample survey of the proportion of the IDUs in methadone treatment that year (for example 57%).

The first number, 1252 (the total number of IDUs in treatment that year), constitutes the fixed benchmark in the calculation. The second number, 57% (estimate of IDUs in methadone treatment in the same year), provides the multiplier in the calculation. Thus to obtain an estimate of the total total number of IDUs in the general population, the following calculation is performed:

\[ 1252 \times \frac{100}{57} = 2196 \] (the total number of IDUs in the population).

It is important that the geographical locality and time period referred to by the data are precisely specified and defined.

Capture-recapture is a method used to ascertain the size of a population in situations where numbers are not available or the subjects are difficult to locate or count. Two samples or lists are required. The first of these serves as the benchmark, the second as the multiplier. The overlap or duplication between the two lists (i.e. names of persons) becomes the basis for estimating the total size of the sub-population.

Potential data sources for capture-recapture methods include: drug treatment data, needle exchange data, HIV testing data, number of prisoners, police arrests, emergency overdose and death data.

As an example of the technique, assume the following data is available:

- List 1 (benchmark) – the total number of IDUs who are in methadone treatment = 1252
- List 2 (multiplier) – the number of IDUs who are tested for HIV = 250
- Duplicates – the number of IDUs appearing on both lists = 200.

Assuming \( n_1/N = m/n_2 \), the calculation to obtain the IDU population size estimate is:

\[ N = 1252 \times 250/200 = 1565 \]

Capture-recapture methods tend to give wide confidence intervals for estimated prevalences.
Discussion

Participants considered potential benchmark data sources in their own countries for use in estimating sub-population size:

- Drug treatment records – Czech Republic, Estonia, Latvia, Hungary, Lithuania, Poland, Slovakia, Slovenia;
- Needle/syringe exchange programmes – Czech Republic, Estonia, Hungary, Latvia, Slovakia, Slovenia;
- Emergency drug overdose – Czech Republic, Hungary, Lithuania;
- Police arrests for drug offences – Czech Republic;
- Drug related deaths – Estonia, Hungary;
- IDUs diagnosed with HIV – Czech Republic, Estonia, Lithuania, Poland;
- IDUs tested for HIV – Estonia, Lithuania, Poland, Slovakia;
- Prisons – Estonia, Hungary, Lithuania, Poland, Slovenia.

Behavioural surveys in high-risk population groups, S. Joshua Volle, Family Health International

The Behavioural Surveillance System is a monitoring and evaluation tool designed to systematically monitor trends in HIV risk behaviours over time in target risk groups. It is carried out through a series of repeated cross-sectional surveys at regular intervals.

The benefits of behavioural surveillance surveys (BSS) are:

- the provision of data on behavioural changes over time;
- serving as an early warning system;
- providing additional data for HIV/AIDS estimates and projections;
- assisting in the evaluation of HIV prevention programmes;
- providing information on when and where interventions are needed; and
- helping to explain changes in HIV prevalence.

The advantages of BSS are: relevance, efficiency, quality assurance and timeliness.

Lessons learned from using BSS:

- behavioural data on target risk groups are an essential adjunct to biomedical surveillance data in the interpretation of trends in the epidemic;
- BSS contributes to evaluation of programme level impacts when triangulated with other data, thus providing the potential for more meaningful data interpretation.

BSS sampling procedures and questionnaires are described in some detail in Family Health International’s *Survey Measurement and Sampling Guidelines for Repeated Behavioural Surveys*, Arlington, 1999.
It is recommended that BSS should not take place with simultaneous HIV seroprevalence testing, or on sentinel sites for HIV testing – responders may refuse to participate and results may not be typical of the general population.

Cross-sectional behaviour surveys in high-risk sub-populations in a low-level HIV epidemic should track indications of sexual links between high-risk sub-populations and the general population.

In a concentrated HIV epidemic, repeated cross-sectional BSS in bridging sub-populations should be carried out to focus on identifying the risk behaviours that threaten to spread HIV to the general population.

The information collected from behavioural surveillance should be used for:

- the estimation of risk behaviour levels;
- planning appropriate interventions;
- assessing the potential for spread of HIV in the general population;
- tracking trends over time;
- advocating for effective prevention and for needed resources for programming;
- estimation of the impact of HIV prevention programmes;
- development of HIV prevention policies;
- informing stakeholders and lobbying policy makers.

The plan for dissemination of information should be included as an integral part of the overall behavioural surveillance system.

**Biological surveillance of hard-to-reach high-risk population groups, Peter Ghys, UNAIDS**

The main hard-to-reach sub-populations at high risk for HIV contamination are intravenous drug users (IDUs), commercial sex workers (CSWs) and men having sex with men (MSM).

The objectives of HIV surveillance in hard-to-reach sub-populations are:

- early warning;
- response planning;
- prevention and interventions;
- monitoring trends and impact of interventions;
- estimation of HIV burden.

Methods traditionally used to monitor HIV-infection are useful in early heterosexual epidemics and less helpful in concentrated epidemics. The main sentinel sites for hard-to-reach sub-population surveillance are STD clinics (for CSWs, MSM), special clinics (for CSWs, MSM), drug treatment facilities (for IDUs), needle exchange facilities (for IDUs).
Where sentinel sites do not exist, repeated cross-sectional HIV serosurveys should be used to track HIV prevalence in high-risk sub-populations. General population-based surveillance is used if no sentinel sites are available or if biases associated with sentinel surveillance sites are large. Population-based serosurveillance requires informed consent. Population-based surveillance uses probability sampling – usually two-stage cluster sampling proportional to the size of population, or based on a sampling frame or non-probability sampling technique, e.g. snowball sampling (IDU, MSM).

Types of HIV testing are unlinked anonymous testing (if blood samples are available), voluntary confidential testing and voluntary anonymous testing. The advantages of unlinked anonymous testing are:

- anonymity is ensured;
- informed consent and counselling not required;
- the possibility exists to use data for other purposes, e.g. collected blood samples;
- minimization of participation bias;
- practical to implement.

The main limitations are:

- data on high-risk behaviour cannot be obtained;
- HIV-infected persons cannot be contacted.

Major challenges in the surveillance of hard-to-reach high-risk populations are primarily of a legal and ethical nature. HIV surveillance is often linked to illicit or stigmatized behaviour or low status, which leads to law enforcement issues, potential public fear and hostility, and even repression. For example, prevention efforts in the general population may be undermined and surveillance become logistically difficult if some high-risk groups have illegal status and are therefore hidden from official view (and services), thus making them difficult to locate and obtain their cooperation.

HIV surveillance in hard-to-reach sub-populations is essential in low-level and concentrated epidemics. Cooperation should be obtained through the use of key actors. Formative research is crucial to improve surveillance systems through helping to identify and locate high-risk sub-populations, and in helping to ensure data quality. The feasibility and costs of data gathering should be balanced. Capacity building and ownership are also important issues.

**Working groups on behavioural surveys in hard-to-reach high-risk population groups, Peter Ghys, UNAIDS**

Participants were divided into working groups based on high-risk sub-populations. Each working group was asked to select five or more behavioural/socioeconomic variables linked to HIV.

**The Working group on MSM** selected the following variables:

- age;
- HIV serological status;
• number of partners;
• type of sexual intercourse;
• frequency of condom use;
• condom use for anal sex (always/never/sometimes);
• bridging behaviour;
• drug injection in last 6 months;
• intercourse with female partner (sex worker or not);
• duration of MSM behaviour.

**The Working group on CSWs** selected following variables:
• working place;
• type of sexual intercourse;
• condom use (always/rare/never);
• number of clients (per week);
• origin of clients (local, foreigners);
• country of origin;
• STDs last year;
• duration of sex practice;
• income.

**The Working group on IDUs** selected the following variables:
• gender;
• age;
• place of residence (have place of residence, capital/urban/rural);
• needle/syringe sharing (how many times, whether shared at last injection);
• bridging behaviour (condom use in last five intercourses);
• number of sex partners in last month;
• number of non-IDU sex partners;
• whether person is addict or not;
• number of injections in last month;
• duration of drug injection practice.
Developing an Action Plan – summary of draft country Action Plans,
Dr Erina Eramova, WHO Regional Office for Europe

The working groups were divided by country and asked to develop a draft of a country HIV/AIDS Action Plan, including an assessment of HIV surveillance needs, a list of country priorities, an assessment locally available resources and a list of needs requiring assistance.


Will include second generation HIV surveillance.

HIV surveillance needs:
- implementing second generation HIV surveillance;
- strengthening of IDU and CSW sentinel serosurveillance and general population HIV screening;
- strengthening of IDU, CSW, MSM and bridging groups behavioural surveillance.

Country priorities:
- restructuring of HIV surveillance system;
- development of monitoring programmes;
- evaluation of IDU surveillance programmes; and
- optional activities – mapping of the situation, optimisation of biological, behavioural and sociodemographic surveillance.

Local resources:
- national HIV/AIDS prevention programme financed by government;
- behavioural surveillance;
- counselling;
- antiretroviral treatment (though underfunded).

Assistance needed:
- expert consultation for implementation of behavioural surveys;
- training of local staff;
- development of manuals/guidelines;
- funding for sentinel surveillance and repeated surveys.


Will include second generation HIV surveillance as an integral part of the national HIV prevention strategy.
Needs for HIV surveillance:

- cooperation with stakeholders;
- on-site sentinel surveillance;
- annual HIV prevalence surveys for IDU, CSW, STD patients and prisoners;
- BSS for IDU, CSW and youth;
- monitoring HIV epidemic trends over time;
- identification of bridging populations;
- collection of information on planning targeted interventions;
- development of HIV prevention programmes.

Country priorities:

- HIV-infection and high-risk behaviour prevalence in risk groups (IDU, CSW, MSM, prisoners and youth).

Local resources:

- government funded HIV biological surveillance;
- BSS – faculty of public health advocacy (interviewing, data collection, data analysis);
- access to target risk groups (IDU, CSW, prisoners, youth), IDU counselling centre in Riga.

Assistance needed:

- advice on the preparation of behavioural surveillance surveys.

Lithuania

The main focus of the action plan is:

- biological surveillance;
- pilot BSS;
- development of HIV prevention programme for prisons;
- strengthening MSM biological surveillance;
- additional funding.

Needs for HIV surveillance:

- annual biological survey of risk groups;
- annual behavioural survey of risk groups.

Country priorities:

- Integration of biological surveillance and behavioural surveillance of IDUs, MSM, CSWs, prisoners and the general population.
Challenges:
It is difficult to reach risk groups without targeted programmes. Local authorities do not understand the particular problems of high-risk groups and do not give support to efforts focused on these groups.

Assistance needed:
- supply of drug identification equipment;
- saliva sampling kits;
- diagnostic kits;
- needle/syringes;
- desinfectants;
- condoms;
- lubricants;
- database management expertise;
- software;
- syringe vending machines;
- technical expertise for BSS;
- Funding support for BSS.

Poland

The Action Plan will include second generation HIV surveillance but the existing system will be sustained.

Needs for HIV surveillance:
- structuring of existing activities;
- access to existing biological and behavioural data sources;
- strengthening IDU, CSW and MSM surveillance.

Country priorities:
- surveillance of IDUs, CSWs and MSM;
- assessment of the current situation;
- behavioural surveys.

Local resources:
- planning of future activities, assessment of current situation, behavioural surveys.

Assistance needed:
- expert consultation on biological and behavioural surveillance;
- assessment of the situation;
• access to publications related to the issue;
• extra funding.

**Hungary**

Action plan will include second generation HIV surveillance, consultations with stakeholders, surveys, setting up BSS and application for grants.

**Needs for HIV surveillance:**
• assessment of the epidemic situation.

**Country priorities:**
• surveillance of IDUs;
• data on age and gender;
• data collection protocols;
• estimations of sub-population size and geographical distribution;
• behavioural surveillance.

**Local resources:**
• national health programme financed by government.

**Assistance needed:**
• training of trainers;
• development of manuals.

**Czech Republic**

Action will include second generation HIV surveillance and is based on the national plan for HIV/AIDS prevention and treatment.

**Needs for HIV surveillance:**
• investigation of hidden epidemic risk factors;
• planning for next year;
• building public awareness.

**Country priorities:**
Surveillance of IDUs, CSWs, MSM, blood donors, youth, gypsies, homeless people and the general population.

**Local resources:**
Communication and cooperation at national, regional and local levels; data sources on IDUs, CSWs, MSM, donors and young people.
Assistance needed:
- building professional and financial capacity;
- technical and international cooperation.

Will include second generation HIV surveillance.

Needs for HIV surveillance:
- strengthening case reporting, revision of reporting forms and data management system;
- HIV prevalence monitoring (IDUs, MSM, STD, pregnant women, blood donors, prisoners);
- estimation of high-risk population sizes and mapping;
- STD surveillance.

Country priorities:
IDUs, MSM, CSWs, behavioural surveillance.

Local resources:
- case reporting;
- HIV prevalence monitoring;
- estimation of IDU sub-population sizes;
- IDU behavioural surveillance;
- STD surveillance.

Assistance needed:
(not available)

Slovakia
Action plan will include second generation HIV surveillance.

Needs for HIV surveillance:
- implementation of second generation HIV surveillance;
- strengthening of behavioural surveillance of risk-groups.

Country priorities:
IDUs, CSWs, MSM, youth, blood donors, STDs, gypsies, general population surveillance.

Local resources:
National HIV/AIDS programme is financed by government.
**Assistance needed:**

- expert consultation on behavioural surveillance;
- building professional and financial capacity;
- technical and international cooperation.

**Conclusions**

- HIV surveillance in countries with low-level epidemics should focus on behavioural and biological surveys to identify high-risk sub-populations and to measure HIV prevalence;
- HIV surveillance in countries with concentrated epidemics should focus on identifying the links between high-risk sub-population and the general population;
- National protocols on second generation surveillance should outline methodological approaches regarding behavioural surveys in high-risk sub-populations;
- Estimation of hard-to-reach sub-population groups is an important tool in the design and development of sentinel surveys, and in ensuring optimal coverage of preventive programmes;
- Results of biological and behavioural sentinel surveys should be used for strategic planning of preventive activities;
- There is a need for technical and financial support for implementing second generation surveillance of high-risk population groups in some European countries with low-level HIV epidemics.
Annex 1

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