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### The HIV Epidemic Among Men Who Have Sex with Men in Central and Eastern Europe

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## The HIV Epidemic Among Men Who Have Sex with Men in Central and Eastern Europe

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**ABSTRACT.** This article summarizes the epidemiology of HIV among men who have sex with men (MSM) in 27 central and eastern European countries. For each country, the summary includes general information about the extent of the HIV epidemic, particularly among MSM; a brief overview of recent HIV-related biobehavioral studies conducted in the MSM population; and information on the current stigmatization of MSM. Reports of deeply rooted stigmatization of MSM in almost all 27 countries point to it as a serious obstacle in this population's access to proper treatment and care for STIs, including HIV.

**KEYWORDS.** Men who have sex with men, HIV/AIDS, stigmatization, surveillance, Central Europe, Eastern Europe

We originally prepared these country summaries to supplement a report reviewing the epidemiology of HIV among men who have sex with men (MSM) in Central and Eastern Europe (Bozicevic, Voncina, Zigrovic, Munz, & Lazarus, in press). Our goal was to assess the response to the epidemic in this population and provide an overview of the available evidence on the stigmatization these men confront.

The chief reason it is necessary to investigate the HIV epidemic more closely among MSM is the continuing omission of MSM as a risk group in many of these countries, due to stigma

of both people living with HIV and gay men, and a refusal to often even acknowledge homosexuality (Roehr, 2008). As similar reviews have found in other regions, HIV cases among MSM are often underreported, and even though homosexual transmission is responsible for more HIV cases than other modalities in many countries, prevention measures often do not target MSM specifically (Bozicevic et al., in press; Caceres, 2002).

Here, we present the summarized findings for each country. We include general information on the size of each national HIV epidemic,

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particularly the portion attributed to homosexual transmission; recent HIV-related biobehavioral (psychosocial, behavioral, and biological processes) studies of the MSM population; and current MSM stigmatization levels.

## METHODS

We consulted both English and local language publications for each of the 27 Central and Eastern European countries written since 2000 (or earlier when no later studies were available). We also asked in-country consultants to identify other relevant data sources for their country, such as HIV, STI, and behavioral surveillance surveys, research studies carried out among MSM, abstracts, and conference reports. In-country consultants submitted detailed reports covering the epidemiology of HIV and STIs in their countries, an overview of existing data on HIV, STI, and HIV-related behavior, as well as information on evidence of the response to HIV epidemics among MSM and documented stigma and discrimination against this population. They were also asked to assess strengths and weaknesses of existing surveillance mechanisms and response. To obtain comparable reports, all in-country consultants were sent a template of a country report and a list of 17 biological and behavioral indicators with specific timeframes. If these data were not available, they were asked to provide existing data and state the timeframe for each indicator. We carried out an additional literature search using Pubmed, looking for related reports published after the year 2000.

## FINDINGS

### *Albania*

Albania has a population of around 3.6 million (United Nations & Albania Institute of Statistics, 2004). A total of 255 cases of HIV were officially registered from 1993 to 2007. Sex between men accounts for 10% of HIV transmission in the country.

Two surveys have been carried out among Albanian MSM thus far. In 2005, Family Health International partnered with the Albanian In-

stitute of Public Health (2006) to conduct a bio-behavioral respondent-driven sampling survey on 200 MSM in the capital, Tirana. They found that 1% tested positive for HIV, 18% for hepatitis B, and 1% for syphilis. However, the number of HIV-positive respondents was too small to generate a confident prevalence estimate for all Albanian MSM. Only 16% of the surveyed MSM reported using condoms during every act of sexual intercourse during the preceding 6 months. Forty percent of the MSM reported a history of commercial sexual activity.

In 2004, the Albanian Institute of Public Opinion and UNICEF implemented a rapid assessment and response study among young MSM in three Albanian cities. In this study, one-third of the participants reported never using a condom, and 39% reported occasional use. This study also addressed the issue of social stigmatization. Young MSM reported facing significant prejudice, discrimination, rejection, and aggression. Moreover, they reported being reluctant to contact public health services about STIs for fear of their sexual orientation being discovered, consulting the services only when their symptoms were severe.

### *Armenia*

Armenia has a population of around 3.2 million (Armenian National Statistical Service, 2008). A total of 558 cases of HIV have been registered between 1988 and March 2008, including 109 in 2007. MSM accounted for a minor part of HIV transmission, just 1.7% (National Centre for AIDS Prevention of the Ministry of Health, 2008). The National Centre for AIDS Prevention collaborated with various NGOs to conduct three bio-behavioral surveys among MSM in 2002, 2005, and 2007 in Yerevan (the capital) and several national regions (Armenia National Center for AIDS Prevention, 2007; Grigoryan, et al., 2006; Grigoryan, Mkrtchyan, & Davidyants, 2002). Sample sizes ranged from 50 in 2002 and 2005 to 100 in 2007, and the surveys used respondent-driven sampling. Between surveys, substantial improvements were observed in HIV prevention and HIV-related behavior. Although only 38% of participants displayed adequate knowledge of HIV transmission in 2002, that percentage rose to 74% in 2007. Condom

use during most recent oral intercourse increased from 15% in 2005 to 35% in 2007 and during most recent anal intercourse from 60% in 2005 to 84% in 2007. The proportion of MSM having nonregular sexual partners during the year preceding the survey declined from 91% in 2005 to 74% in 2007. Similarly, condom use during the last sexual encounter with a nonregular partner increased from 55% in 2005 to 81% in 2007. No participants tested positive prior to the 2007 study, when two did. Homosexuality ceased to be a criminal offence in 2003, but Armenian MSM remain stigmatized, and homophobic attitudes are widespread. Some MSM avoid health-care institutions due to fears that their sexual orientation will be disclosed and they will be subject to discrimination and the loss of employment, friends, and relatives (Education in the Name of Health, personal communication, June 2008).

### **Belarus**

Belarus has a population of around 9.7 million. A total of 8,737 cases of HIV have been registered in the period from 1987 through the end of 2007. Of these, only 33 have ever identified themselves as MSM (Belarus HIV/AIDS Prevention Department, 2007).

The Republican Centre for AIDS Prevention conducted various biological and behavioral surveys among MSM and other risk groups between 2002 and 2007. The sampling methodology used was snowball sampling, with sample sizes varying from 123 to 519. All these surveys had similar findings. Between 62% and 67% of participants reported condom use during most recent anal intercourse, between 53% and 55% reported having been tested for HIV, and between 56% and 63% displayed adequate knowledge of HIV transmission.

Homosexuality was decriminalized in Belarus in 1994. Nonetheless, homophobia remains widespread, and harassment of MSM occurs in all parts of society (United States Bureau of Democracy, Human Rights, and Labor, 2006).

### **Bosnia and Herzegovina**

Bosnia and Herzegovina has a population of approximately 3.9 million (Bosnia and

Herzegovina Population Reference Bureau, 2004). A total of 134 cases of HIV have been officially reported from 1986 through the end of 2007; MSM accounted for 19% of the cases (European Centre for the Epidemiological Monitoring of AIDS [EuroHIV], 2007).

For MSM, there are very limited data on the prevalence of HIV and STIs, as well as on the frequency of HIV risk behaviors. Two studies were conducted in 2002 and 2005 by UNICEF, in collaboration with local NGOs. The 2005 study that included research on sexual behaviors of commercial sex workers and men having sex with men—"Young people selling sex in Bosnia and Herzegovina: research on sexual behaviors amongst men having sex with men"—surveyed 146 MSM in four Bosnian cities. Sampling methodology was nonrandom, and it included all MSM found at the site. A total of 48% of the participants reported being tested at least once for HIV, and 20% reported always using condoms during intercourse. The study also found that the knowledge of HIV transmission among participants was very poor (Sapienza, 2005).

Two regional entities govern the country. Homosexuality was decriminalized in the first, the Federation of Bosnia and Herzegovina, in 1995 and in the second, the Republic of Srpska, in 1998 (Organization Q, 2005). However, MSM throughout the country continue to suffer from gaps in legal protection and deeply rooted prejudices in a variety of social realms (International Helsinki Federation for Human Rights, 2005).

### **Bulgaria**

Bulgaria has a population of around 7.7 million (Bulgarian National Statistical Institute, 2008). A total of 814 cases of HIV have been officially registered from 1986 to 2007, inclusive. MSM-related transmission accounts for 8% of these cases.

Studies have found that the main determinants of the risk for the spread of HIV and other STIs among Bulgarian MSM include perceptions of little personal risk due to misconceptions about HIV/STI transmission, a rejection of condom use, and negative attitudes towards condoms' reliability. HIV/STI risk behaviors frequently

observed in the population include having multiple sexual partners, unprotected sexual intercourse, group sex, and use of oil-based and household products as lubricants (Amirkhanian et al., 2005; Amirkhanian, Kelly, Kabakchieva, McAuliffe, & Vassileva, 2003; Kelly et al., 2004; Longfield, Smith, Astatke, McPeak, & Ayers, 2004).

The first bio-behavioral survey among MSM was carried out in 2006. A total of 199 participants were included, selected using a take-all approach. None of the participants tested positive for HIV, but 5% tested positive for hepatitis C, 7% for hepatitis B, and 9% for syphilis. Twenty-nine percent reported being tested for HIV in the 12 months preceding the survey and knowing their test results; 46% reported using a condom during their last anal intercourse (Bulgarian Central Second Generation HIV Sentinel Surveillance Unit, personal communication, June 2008; Bulgarian National Committee for Prevention of AIDS and STIs, 2008).

Bulgaria legally decriminalized homosexuality in 1986. However, its MSM population has remained stigmatized. In September 2007, a national survey of the general population reported that 80% of the survey participants expressed negative attitudes towards homosexuals, with as much as 58% expressing extremely negative attitudes (“ОКОЛО 80%” [“Around 80%”], 2007).

### **Croatia**

Croatia has a population of around 4.4 million (Croatia Central Bureau for Statistics, 2007). A total of 608 cases of HIV have been officially registered in the period from 1985 to 2006; of these, 41.8% of all registered cases are among MSM, making homosexual transmission the dominant transmission mode (Croatian Institute for Public Health, 2007).

The only representative bio-behavioral population based survey among MSM was carried out in 2006 by the Zagreb World Health Organization (WHO) Collaborating Centre for Capacity Building in HIV Surveillance in collaboration with the Zagreb University Hospital for Infectious Diseases, the NGO Iskorak, and UNDP Croatia. The sampling technique used was

respondent driven sampling (RDS), and 360 participants were recruited. HIV prevalence was found to be 4.5%. Of these MSM, 9.0% had chlamydial infections, and 13.2% had a gonococcal infection.

Unprotected intercourse—as measured by inconsistent or no condom use with casual partners in the previous 12 months—was much more frequent during oral than anal sex (88.9% vs. 45.5%). During their most recent anal intercourse with a casual partner, 75.4% of participants reported using a condom.

Protection of MSM against discrimination has been guaranteed in Croatia since 2003 by several legislative instruments: the Labour Code, the Gender Equality Law, and the Penal Code. In addition, the Same Sex Partnership Act grants same sex partners who cohabit for 3 years the same rights as unmarried cohabiting opposite sex partners. These rights include inheritance and financial support. As of 2006, the Penal Code also includes a clause on hate crime related to sexual orientation. Despite this, the extent of stigmatization of MSM in Croatia appears to be considerable. According to the 2006 RDS survey, 20% of the participants had experienced physical violence because of their sexual orientation at least once in their life, and 46% had been exposed to mockery on at least one occasion.

### **Cyprus (Republic of)**

Cyprus has a population of around 779,000 (Republic of Cyprus Statistical Service, 2006). A total of 547 cases of HIV have been registered from 1986 to June 2007 (Republic of Cyprus Ministry of Health, 2008). MSM accounted for 80% of all registered cases. MSM remain well hidden in this island nation because of its strong religious traditions. Cyprus has not implemented an HIV surveillance program that specifically targets MSM, nor are there any studies available on the prevalence of HIV/STIs and HIV-related behavior in this population. Similarly, HIV prevention programs do not focus on MSM. Until 1998, homosexuality was considered a criminal offence punishable by imprisonment. The decriminalization of homosexuality, prompted by pressure from the European Court of

Human Rights, has not significantly diminished the deeply rooted social and religious stigmatization and rejection of this group (Phellas, 2002).

### **Czech Republic**

The Czech Republic has a population of around 10.3 million (Czech Statistical Office, 2007). A total of 1,042 cases of HIV have been registered in the period from 1985 to end of 2007. The dominant mode of HIV transmission is homosexual, accounting for 54% of all registered cases. The number of registered cases has been on the rise in the last 3 of these years, peaking in 2007 at 122, of which 76 (62%) were MSM (Státní zdravotní ústav, 2008). Three behavioral surveys were carried out among MSM from 1989 to 2003, all using nonrepresentative sampling methodologies.

The most recent behavioral survey was implemented in 2003 on a sample of 774 MSM, using an online questionnaire. Four participants reported being HIV positive; 25% knew that the MSM population bears the greatest HIV burden in the Czech Republic. Behavioral indicators measured activities during the 12 months preceding the survey. Less than a quarter of participants reported having only one sexual partner during this time period; 14% reported having more than 10. Around one fifth reported also having sex with women. Seventy percent had had anal sex with men, among which 56% were unprotected. Three percent of participants admitted to having had unprotected anal sex with more than five partners during the previous year. Around 60% had had at least one casual partner, and 50% of them did not use a condom at least on one occasion.

Homosexuality was decriminalized in Czechoslovakia in 1961, and the Czech Republic adopted the Same Sex Registered Partnership Act in 2006 (Procházka, Janík, & Hromada, 2003). A survey implemented in 2002 and 2003 by the International Lesbian and Gay Association of Europe analyzed personal experiences of discrimination in a convenience sample of 86 lesbians and 181 homosexual men. Two-thirds of the respondents reported having experienced some form of discrimination.

### **Estonia**

Estonia has a population of around 1.4 million (Statistical Office of Estonia, 2008). It has the second highest estimated prevalence of HIV in Europe (over 1% of the adult population) and, since 2001, the highest reported HIV incidence in the WHO European Region (UNAIDS & WHO, 2008). A total of 6,364 cases of HIV were officially registered in the period from 1988 to 2007. The majority of all HIV infections are among injecting drug users (IDUs), 83% by the end of 2006. The mode of transmission is, however, reported for less than one-third of the infected (Estonia Health Protection Inspectorate, 2008).

As Estonia does not implement an HIV surveillance program targeted specifically at MSM, very little is known about the prevalence of HIV, STIs, and HIV-related behaviors in this population. The National Institute of Health Development carried out three among MSM; two behavioral surveys conducted over the Internet in 2004–2005, and a small-scale RDS bio-behavioral survey in the Tallinn and Harju County in 2007.

Results were published cumulatively for both Internet surveys, which attracted 544 participants. A little over a half of them reported always using a condom during anal sex with casual male partners in the preceding 6 months; one-fifth reported having sexual intercourse with a female partner in the same period. Half of the participants reported never having been tested for HIV (Lõhmus & Trummal, 2005).

With only 59 participants, the 2007 RDS study did not attract enough MSM to allow its results to be generalized. No participant tested positive for syphilis or hepatitis B, and one tested positive for HIV. The participants showed a good overall knowledge of HIV transmission. A little over one-third reported ever having sexual intercourse with a female partner, though none in the 6 months preceding the survey. Consistent condom use during anal sex with casual partners in the previous 6 months was reported by 42% of the participants; 35% reported never having tested for HIV (Trummal, Johnston, & Lõhmus, 2007).

Homosexuality was decriminalized in 1991. Tolerance towards MSM is increasing, particularly in more urban areas and among youth.

### **Georgia**

Georgia has a population of around 4.6 million (Georgia Department of Statistics, 2008). A total of 1523 HIV cases have been registered in the period from 1989 to February 2008, of which MSM account for 2.9% (Georgia Infectious Diseases, AIDS and Clinical Immunology Research Centre, 2008).

Georgia has not implemented a surveillance program that specifically targets MSM. Therefore, not much is known about the prevalence of HIV/STIs or HIV-related behavior in this population. Three studies focusing on HIV and other STIs among MSM were undertaken in 2004, 2005, and 2007. The results of the 2007 study have not yet been published, and the samples from the other two were quite small, limiting the possibility of generalizing from their findings.

The 2005 study was a bio-behavioral survey carried out in Tbilisi by the NGO Tanadgoma, working with the National Infectious Diseases, AIDS and Clinical Immunology Research Centre. Although it was an RDS study, it only looked at 70 MSM. Four percent of participants tested positive for HIV and 27% for syphilis. Eleven percent of the respondents reported commercial sexual activity. Around 50% of the respondents reported using condoms during intercourse with occasional male partners and 27% during intercourse with regular male partners.

The same two organizations partnered again on the 2007 study. They have only published the preliminary results, which state that 3.6% of the participating MSM tested positive for HIV.

Homosexuality is one of the most taboo issues in Georgia, making MSM a deeply hidden population. A 2006 survey of the general population found that 81% of the respondents would not be friends with a homosexual, and 71% reported not wanting to work with a one (Quinn, 2007).

### **Hungary**

Hungary has a population of around 10.1 million (Hungarian Central Statistical Office, 2006).

A total of 1,485 cases of HIV were recorded from 1985 to the end of 2007, of which MSM accounted for 67.5%. Recent years have shown increases in the incidence of HIV among MSM, with 59 being diagnosed with HIV in 2007, the highest number since the epidemic began (Hungarian National Center for Epidemiology, 2008). Hungary does not implement a surveillance program dedicated specifically to MSM; consequently, little is known on the prevalence of HIV and STIs or HIV-related behavior in this population.

In 2001, the Public Health Department of the Semmelweis University implemented a behavioral survey in Budapest on 469 MSM, sampled with a take-all approach. The results showed that 50% of the men had had unprotected anal intercourse during the 3 months preceding the survey, 17% had exchanged sex for money, and 26% had had female partners in the past year; of those with female partners, only 23% used a condom during heterosexual intercourse.

Although homosexual activity is not a criminal offense in Hungary, and although there are continuous efforts to combat prejudice towards MSM, the level of stigmatization they experience remains high.

### **Kazakhstan**

Kazakhstan has a population of about 15.5 million (Kazakhstan Agency of Statistics, n.d.). The number of registered HIV cases reached 10,180 in May 2008 (Kazakhstan Republican AIDS Center, n.d.). Only approximately 0.3% of all registered cases are attributed to homosexual transmission (Kazakhstan Republican AIDS Center, 2008).

MSM have been included in second-generation sentinel surveillance surveys, conducted annually since 2003. A series of rapid assessments conducted among a small sample of MSM in 2005 showed that in most of Kazakhstan, only 1–2% of MSM use condoms consistently and correctly (Usenko & Skakunov, 2005). However, a higher percentage of consistent condom use—almost 50%—was reported in one city, Karaganda. National MSM awareness of HIV risk was low; more than 85% of the participants stated that they believed HIV was



not a real problem for the MSM community in Kazakhstan.

Legislation criminalizing homosexuality was abolished in 1997 (Republic of Kazakhstan, 1997). Tolerance towards MSM has been increasing throughout the country; however, occasional instances have been registered of hostility from members of both the general population and the police (Republic of Kazakhstan, 2001).

### ***Kyrgyzstan***

Kyrgyzstan has a population of 5.2 million (Kyrgyz National Statistics Committee, 2007). There has been a total of 1,499 registered HIV cases. In 2007, the first and only case of HIV was officially registered among MSM (Kyrgyz Republic, 2008). However, this datum should be used with extreme caution, as it points to a lack of recognition of MSM activity in the country.

The National AIDS Centre has been performing annual prevalence surveys of HIV, STIs, and HIV-related behavior among MSM since 2004, within the framework of its epidemiological sentinel surveillance program. Survey samples are small, however—100 individuals annually—and not representative of the entire MSM population, relying as they do on convenience and snowball sampling techniques. In 2007–2008, the program introduced RDS, but study results are not yet publicly available. Although decriminalized since 1998, homosexuality in the Kyrgyzstan continues to be strongly stigmatized.

### ***Latvia***

Latvia has a population of around 2.3 million (Latvian Central Statistical Bureau, 2008). The country has one of the highest HIV infection rates in the European Union, with a total of 3,981 HIV cases reported in the period from 1987 to the end of 2007. MSM accounted for 1% of all registered cases in 2001. This figure increased to 5% in 2006 and 2007.

Very little is known about the prevalence of HIV, STIs, and HIV-related behaviors among MSM in Latvia. Two bio-behavioral studies have been conducted among MSM in Riga, both using nonrepresentative sampling methods.

In 1997, the AIDS Prevention Centre surveyed 206 MSM in health centers and gay clubs

in the capital Riga. Two percent tested positive for HIV, 8% for syphilis, and 4% for hepatitis C. Sixty-two percent of the respondents reported having had unprotected sex with multiple partners in the past (Ferdats, Dievberna, Upmace, & Eglite, 1998).

In 1998, the Latvian Association for Safe Sex conducted a survey on 242 MSM in gay clubs in Riga and Liepaja (1998). Five percent of the participants tested positive for HIV. The stigma associated with MSM in Latvia is comparable to that in other countries of the region.

### ***Macedonia (Former Yugoslav Republic of)***

Macedonia has a population of around 2 million (Macedonia State Statistical Office, 2005). A cumulative total of 102 HIV cases have been reported in the period from 1987 to the end of 2007. Sixteen of these were reported among MSM (Macedonia National AIDS Commission, 2008).

As of 2005, the Institute for Health Protection has been implementing an annual surveillance program targeted at populations most at risk of acquiring HIV in the capital, Skopje, and five other cities. From 2005 to 2007, the numbers of MSM who agreed to be tested were very small, varying from 14 to 37, and resulted from convenience sampling. Only one participant tested positive for HIV, in 2006. Sample sizes in the behavioral component of the program were more useful, varying from 189 to 207. The survey results indicate that although HIV-related knowledge and testing rates are on the increase among MSM, but also that a substantial proportion of MSM engage in high-risk sexual behavior, characterized by multiple partners and inconsistent condom use.

In Macedonia, the issue of lesbian, gay, bisexual, and transgender (LGBT) rights remains controversial. The Macedonian Labour Act is the only statute that explicitly prohibits discrimination on the base of sexual orientation (National Assembly of Macedonia, 2005). In 2005, two NGOs, Equality for Gays and Lesbians (EGAL) and Macedonian Association for Free Sexual Orientation (MASSO) used convenience sampling to survey 114 LGBT individuals (71% men). Thirteen percent reported experiencing

psychological and/or physical harassment due to their sexual orientation. This relatively low percentage is believed to be connected with the fact that 41% of the participants had never disclosed their sexual orientation, 36% had done so only carefully, and only 8% had been positively accepted by those around them (Equality for Gays and Lesbians & Macedonian Association for Free Sexual Orientation Research Group, 2008).

### ***Republic of Moldova***

The Republic of Moldova has a population of around 3.6 million (Moldovan National Bureau of Statistics, 2008). A total of 4,313 cases of HIV have been officially registered in the period from 1987 to end of 2007, more than one-third of them in 2006 and 2007. Only 14 Moldovans with HIV have described themselves as MSM (Moldovan National Scientific and Practical Centre of Preventive Medicine & Moldovan AIDS Centre, 2007).

The most recent bio-behavioral survey of MSM was conducted in 2007. Of the 94 participants, 4.8% tested positive for HIV, 6.5% for syphilis, and 3.6% for hepatitis C. They averaged 3.8 male partners in the previous 6 months. Only 15% reported using a condom the last time they had oral sex with a male partner, yet 48% reported using a condom during their last anal sex. Around 19% reported having anal intercourse with a male partner at least once for money during the last 6 months; 47% reported having anal sex with an occasional partner during the same time. A total of 62% of the respondents reported having been tested for HIV at some time, 38% during the previous 12 months (Moldovan National Centre of Health Management, 2008).

Although homosexuality was decriminalized in 1995, Moldovan legislation still does not adequately protect individuals from discrimination based on sexual orientation, and intolerance towards the LGBT population is widespread.

### ***Poland***

Poland has a population of around 38.1 million (Poland Central Statistical Office, 2007). A total of 11,259 cases of HIV have been reported from 1985 to the end of 2007. In the period

2002–2006, 12.6% of all new HIV cases were registered as MSM-related. However, the mode of transmission is unknown for 53.3% of the reported cases—which means that well over half of the cases with known transmission routes were transmitted homosexually (Poland National Institute of Public Health, 2008).

Very few data are available on the prevalence of HIV, STIs, and HIV-related behaviors among Polish MSM. The most recent data, from the 216 HIV cases detected in voluntary counseling and testing (VCT) centers in 2005, attributes 77 cases (36%) to MSM (ARC Rynek i Opinia & National AIDS Centre, 2006).

In 2004, the National AIDS Centre, the VCT centers, and several NGOs conducted the only survey to specifically target MSM, in 17 sites across the country. The researchers collected data on HIV-related behaviors and administered tests for HIV and other STIs. Using RDS methodology, the sample size reached 404. Five percent of the MSM tested positive for HIV; 57% reported that they had previously been tested for HIV (Izdebski, 2004). The stigma associated with homosexual activity remains deeply rooted in Polish society, and the legal protections against discrimination remain insufficient.

### ***Romania***

Romania has a population of around 21.5 million (Romanian National Institute for Statistics, 2008). A cumulative total of 15,085 cases of HIV were reported from 1985 to the end of 2007. Only 162 of these cases had been registered among MSM, 14 in 2007 (Streinu-Cercel et al., 2008). Romania does not implement a surveillance program specifically targeting MSM; consequently, little is known about the prevalence of HIV and STIs in this population. Several studies, all implemented by NGOs on nonrepresentative samples, provide limited information on the HIV-related behavior of MSM.

In 2005, Population Services International Romania conducted an Internet survey of 426 MSM. Among participants in stable relationships, 45.7% reported using condoms consistently with their regular partners. Among those who reported having only casual partners, 54.2% used condoms consistently during sex. Twenty

percent of the respondents reported engaging in commercial sex activity. Almost half the respondents, or 47%, had been tested for HIV at some point, and 2% reported being HIV positive (Davis & Lipovsek, 2006).

Stigmatization of MSM is widespread. According to a survey of the general population conducted in 2007 by the Romanian Institute for Public Policies, LGBT are one of the most disapproved of and rejected minorities. Punishment of homosexuality through the law was supported by 46% of the respondents, 60% would not accept gay colleagues, and almost 60% reported not accepting homosexual people as friends (Romanian Institute for Public Policies, 2007).

### **Russian Federation**

The Russian Federation has a population of around 142 million (Russian Federal State Statistics Service, 2008). By the end of 2006, it had cumulatively registered 373,259 HIV cases. In 2006, 39,652 new HIV cases were reported, more than ever before, showing a clear rise in the epidemic. Although the initial cases of HIV in the Russian Federation occurred among MSM, they no longer account for a large proportion of the reported total or of new cases (WHO Regional Office for Europe, 2008). However, less than half (43%) of the newly reported HIV cases have an identified route of transmission, and underreporting of homosexual transmission due to stigma should be kept in mind.

Several bio-behavioral studies among MSM have been conducted since the early 1990s, covering 13 of the 89 Russian regions. The two most up-to-date and representative studies were carried out in 2006 (St. Petersburg and Moscow) and in 2007 (Perm and Krasnoyarsk). The 2006 study used time-location sampling, collecting 551 participants in the two cities. Four percent tested positive for HIV in St. Petersburg and 1% in Moscow. Participants reported a significant amount of risky behavior (WHO Regional Office for Europe, 2007).

The 2007 survey attracted 506 participants using RDS methodology. In Krasnoyarsk, 1% tested positive for HIV, 68% reported using a condom during their most recent act of anal intercourse, and 17% reported having a commer-

cial male sex partner (either buying or selling) in the previous 3 months. In addition, 26% reported being tested for HIV in the previous year and knowing their HIV status. In Perm, 2% tested positive for HIV, 52% reported using a condom during last anal intercourse, and 12% reported having a commercial male sex partner in the 3 months preceding the survey. However, only 5% of the Perm MSM reported being tested for HIV in the previous 12 months and knowing the results (Population Services International Research Division—Russia, 2007).

Various surveys conducted by the Russian Public Opinion Research Center (2005) from the 1990s to the present indicate that homophobic attitudes are on the wane. Nevertheless, they do persist in every realm of Russian society.

### **Serbia**

Serbia has a population of approximately 7.5 million (Serbian Statistical Office, 2002). A total of 2200 HIV cases were reported from 1984 to the end of 2007. Although MSM account for 15% of all the cases ever reported, the proportion of MSM among the newly infected has greatly increased: In 2005 they accounted for 39%, in 2006 for 52%, and in 2007 for 42.2% of all new cases (Serbian National AIDS Commission, Ministry of Health, & Institute of Public Health, 2008).

With financing from the Global Fund to Fight AIDS, Tuberculosis and Malaria, Serbia initiated a systematic biennial surveillance program targeting MSM in 2007, though it has not made any data available on the prevalence of HIV or other STIs in this population. According to VCT data, 9.0% of the 412 MSM who were tested for HIV in 2006 were positive, and 10.2% of 422 MSM tested positive in 2007 (Serbian Republican AIDS Commission, Ministry of Health, & Institute of Public Health, 2008).

Stigmatization of LGBT individuals is widespread in Serbia, particularly in the less developed parts of the country. An Internet study implemented by an LGBT NGO, Labris (2006), in 2005, found that 70% of respondents had experienced physical or psychological violence due to their sexual preference (17% physical),

but only 10% of the respondents had reported the incidents to the police.

### **Slovakia**

Slovakia has a population of around 5.4 million. A total of 305 cases of HIV were officially registered from 1986 to the end of September 2007. The epidemic is largely concentrated among MSM, who account for 61% of all registered cases. Slovakia does not implement a surveillance program that targets MSM specifically, so very little is known about the prevalence of HIV, other STIs, or HIV-related behaviors among MSM. The only two studies in this field were both undertaken in the 1990s and are characterized by limited methodologies and small samples. MSM remain stigmatized in Slovakia. A study performed in 2005 on a convenience sample of 251 LGBT found evidence of discrimination in almost all aspects of everyday life (Siposova, Jojard, & Daucikova, 2005).

### **Slovenia**

Slovenia has a population of around two million (Slovenian Statistical Office, 2008). A total of 320 HIV cases have been reported in the period from 1986 to end of 2006. The epidemic is largely concentrated among MSM, who account for 57% of all reported cases until 2006 (Klavs, Bergant, Kustec, & Kastelic, 2006). Since 1996, the Institute of Public Health of the Republic of Slovenia has implemented a program called Unlinked Anonymous Monitoring of HIV Prevalence in High and Low Risk Groups in Slovenia. Part of this program monitors HIV prevalence among MSM using annual small-scale one-day surveys in an MSM community setting in Ljubljana. The surveys utilize convenience consecutive sampling, which further limits the interpretation of the data. In 2006, the program reported that 56% of the surveyed MSM reported using a condom during anal sex in the year preceding the survey (Klavs & Poljak, 2003).

Two published studies (Velikonja, 2001) have analyzed the level of stigma and discrimination that gays and lesbians experience in Slovenia. Both studies indicate that discrimination most often takes the form of psychological violence. Public opinion surveys performed from 1990

to 2004 found that approximately one-half of the participants did not want a homosexual as a neighbor (Svab & Kuhar, 2005).

### **Tajikistan**

Tajikistan has a population of around 7.3 million. A total of 1,049 cases of HIV have been officially registered from 1991 through 2007, a third of them (339) in 2007 (EuroHIV, 2007). The proportion of these cases among MSM is unknown. UNAIDS estimates the actual number of Tajikistanis living with HIV to be between 2,400 and 16,000 (UNAIDS, n.d.). Very little is known about the prevalence of HIV, other STIs, or HIV-related behavior among MSM in the country. Systematic bio-behavioral surveillance programs have been carried out among IDUs and sex workers, but not among MSM.

Three surveys of MSM have been conducted in Dushanbe, all led by an NGO, the Centre for Legal Support of Youth, using nonrepresentative sampling methodologies and small samples. Studies in 2004 and 2005 reported low awareness and knowledge of HIV and other STIs. The 2007 study surveyed 100 MSM, with financial support from the Global Fund and UNAIDS. Although no participant tested positive for HIV, 30% reported having been tested for it before, and 95% said they knew where they could get tested. Although homosexuality is not illegal in Tajikistan, the stigma associated with it is quite high, and MSM remain deeply underground.

### **Turkey**

Turkey has a population of around 70.6 million (Turkish Statistical Institute, 2007). A total of 2,920 cases of HIV were officially registered in the period from 1985 to 2007. MSM account for 8% of these registered cases (Altan, 2008). The only bio-behavioral study conducted among risk groups investigated commercial sex workers, IDUs, and MSM in three cities (Ankara, Istanbul, and Izmir) in 2007. The study was funded by the European Commission and carried out by ICON-Institute GmbH, the Institute of Public Health at Hacettepe University, and the Antwerp Royal Tropical Institute. Using snowball sampling, the study recruited only 166 MSM. Of these, 29.5% declared always and 2.4% never

using condoms during anal sex with a male partner, and almost half of the participants—44.6%—refused to answer the question. A total of 35.5% reported having had sexual relations with women in the prior 12 months. Testing revealed that 1.8% had HIV, 3.6% hepatitis B, 10.8% syphilis, 3.0% gonorrhea, and 1.8% chlamydia (Ministry of Health of Turkey, 2007). Although not regarded as a criminal offence, homosexuality bears a heavy stigma in Turkey. Although discrimination against MSM is not legally sanctioned, it occurs in all social realms.

### ***Turkmenistan***

Turkmenistan has a population of around 6.3 million (Turkmenistan Statistical Office, 2004). Almost nothing is known about the HIV epidemic in Turkmenistan, as there exists no credible published data on the incidence and prevalence of HIV there. According to UNAIDS, Turkmen authorities reported a cumulative total of just 2 HIV cases by the end of 2004, both contracted abroad. Not a single case has been reported since. UNAIDS estimates the actual number of people living with HIV in the country to be between 500 and 1000 (UNAIDS & World Health Organization, 2008).

HIV prevention programs do not target MSM specifically. There are six HIV prevention centers in the country that offer free anonymous testing and information hotlines. All blood donors are routinely tested for HIV, as are all registered drug users, pregnant women, people who have STIs, tuberculosis, or viral hepatitis, and anyone exhibiting possible HIV-related symptoms.

Male homosexual intercourse is considered illegal in Turkmenistan and is punishable by up to 2 years of imprisonment (Republic of Turkmenistan, 1997). As a consequence, the MSM population remains hidden, and very little is known about them.

### ***Ukraine***

Ukraine has a population of around 46.2 million (State Statistics Committee of Ukraine, 2008). From 1987 to the end of 2006, Ukrainian authorities reported a cumulative total of 91,057 HIV cases, excluding mother-to-child transmission (EuroHIV, 2007). As the reporting system does not differentiate between homosexual and

heterosexual transmission, the number of MSM cases is unknown. Ukraine does not conduct systematic surveillance of MSM, so there are only limited data on the prevalence of HIV, other STIs, and HIV-related behavior in this population.

In 2002, Gay Alliance, based in Kiev, carried out a behavioral survey of 227 MSM. The mean number of sexual partners that participants had had in the preceding 6 months was 5.3. A total of 56.1% reported never having used a condom or using it only occasionally, while 47% said they had never been tested for HIV (Fillipov, 2005).

In 2007, International HIV/AIDS Alliance in Ukraine conducted a bio-behavioral survey in 12 cities using RDS (or a variant) that involved interviewing 1,764 MSM and testing 361 of them for HIV. The median HIV prevalence of the 12 cities was 9% (Balakiryeva et al., 2008).

Ukraine was the first former Soviet republic to decriminalize homosexuality, in 1991, but MSM still must contend with a great deal of stigma and prejudice in all realms of society.

### ***Uzbekistan***

Uzbekistan has around 27.7 million people. A total of 10,015 cases of HIV have been officially registered in the period from 1987 through the end of 2006 (EuroHIV, 2007). MSM account for 0.5% of all official cases (National AIDS Centre for the Ministry of Public Health of Republic of Uzbekistan, 2008).

In 2005, the United States Centers for Disease Control and Prevention Central Asia Regional office carried out a bio-behavioral survey on 102 MSM in Tashkent. Eleven percent of the participants tested positive for HIV, and 8% tested positive for syphilis. During the previous 6 months, 38% of the participants reported having had intercourse with women; 39% reported using condoms during intercourse with casual male partners, and 58% with female partners (though not necessarily during the last six months; Murril & Zhussupov, 2006).

MSM in Uzbekistan are heavily stigmatized, and homosexuality is a criminal offence punishable by up to 3 years' imprisonment (Republic of Uzbekistan, 1994). MSM are also frequently subjected to violence by law enforcement officers.

TABLE 1. Cumulative Number of HIV Cases Reported in the Reporting Period and the Proportion Attributed to MSM Transmission. Number of Representative Surveys Carried Out Among MSM

Country	Reporting Period	HIV Infections Newly Diagnosed among MSM, as a Percentage of the Cumulative Total Reported	Cumulative Number of HIV Cases Reported	Number of Surveys among MSM Carried Out so Far
Albania	1992–2007	10	255	2
Armenia	1988–2007	1.7	558	3
Belarus	1987–2007	0.4	8 737	3
Bosnia and Herzegovina	1989–2007	19	134	2
Bulgaria	1987–2007	8	814	2
Croatia	1985–2006	41.8	608	1
Cyprus	1986–2007	80	547	0
Czech Republic	1985–2007	54	1042	3
Estonia	1988–2007	No figure	6364	3
Georgia	1989–2007	2.9	1 523	3
Hungary	1986–2007	67.5	1 485	1
Kazakhstan	1987–2008 (May)	0.3	10180	5
Kyrgyzstan	1987–2007	1 case	1 499	Annual since 2004
Latvia	1987–2007	5	3 981	2
Poland	1985–2006	12.6	11 259	1
Republic of Moldova	1987–2007	0.3	4 313	3
Romania	1985–2007	0.01	15 085	1
Russian Federation	1987–2006	0.3	373 259	Several (exact number not specified)
Serbia	1985–2007	15	2 200	1
Slovakia	1986–2007	61	305	2
Slovenia	1986–2006	57	320	Annual since 1996
The former Yugoslav Republic of Macedonia	1987–2007	15.7	102	3
Tajikistan	1991–2007	No figure	1049	3
Turkey	1985–2006	8	2 920	1
Turkmenistan	2004	No figure	2	0
Ukraine	1987–2006	0.3	91 057	2
Uzbekistan	1987–2006	0.5	10 015	1

## DISCUSSION

To provide a better understanding of the HIV epidemic among MSM in Central and Eastern Europe, we reviewed the existing data on related studies carried out among this population. Most countries have only recently started a comprehensive HIV surveillance program that includes MSM. Even though most of the studies found used small and unrepresentative samples and had limited geographical coverage, which presents a problem when interpreting data obtained in this region, some valuable insights into the epidemic can be gained from this information.

As shown in Table 1, the highest proportion of documented MSM transmission occurs in Cyprus (80%). MSM also represent close to or higher than 50% of all HIV cases reported in national HIV case reporting systems in several countries of central Europe (Croatia, the Czech Republic, Hungary, Slovenia, and Slovakia), although in the east, this proportion is much smaller, which is, in some cases, probably due to underreporting of transmission among MSM or a lack of data related to transmission routes. Such underreporting is often mentioned in the country reports and partially explained by the existing stigmatization of this population. For example, no data on MSM cases were

reported in Tajikistan and Turkmenistan, two countries where homosexual activity is illegal or has only recently been decriminalized.

Some countries, such as Poland, have more than 50% of cases reported with unknown transmission routes, among which a significant part can be attributable to MSM, and Ukraine usually does not distinguish between homosexual and heterosexual transmission.

At the same time, reported cases of HIV among MSM is rapidly increasing in the east, with the most worrying figures coming from Ukraine, where median HIV prevalence among MSM in the biggest cities is as high as 9%. It is particularly worrying that, at the same time, probably because of underreporting due to existing stigma, almost none of the HIV transmission is attributed to MSM.

Extensive reports of existing stigmatization against the MSM population in the countries included in this study point to a continued need for significant improvements in this area. The existing stigma leads to underreporting of MSM-related transmission and significantly limits their access to needed health services and prevention programs. For example, homosexual behavior is still a criminal offense punishable by imprisonment in Turkmenistan and Uzbekistan, and in most countries surveyed it was decriminalized in the only in the 1990s or later. MSM report being exposed to physical and, even more frequently, psychological violence (Croatia, Georgia, Serbia, Uzbekistan). Research on attitudes towards MSM in the general population found very strong negative attitudes in some of the countries (Bulgaria, Romania). Only the Estonian country report mentions that significant improvements can be observed in this matter and that the level of stigma against MSM is decreasing. On the brighter side, most reports mention growing numbers of NGOs working actively with this population and increasing visibility and awareness of this issue among both MSM and the general public.

Research into HIV-related behavior among MSM points to two important points. It can be observed that they frequently engage in commercial sex (40% in the Albanian study, 17% in Krasnoyarsk, Russia) and that sex with female partners is also frequent (e.g., 35.5% in Turkey).

These findings point to a need for targeted prevention measures.

Many country reports pointed out a lack of funding for activities targeting prevention among MSM. The epidemic in this group, even though well established and growing in some countries (Croatia, Estonia, Latvia, Moldova, Serbia, Ukraine, some cities in Russia), still remains hidden.

## CONCLUSION

The information gathered here from 27 countries of Central and Eastern Europe points to a growing and changing HIV epidemic among MSM, one that calls for extensive, targeted interventions. We found that a much higher proportion of HIV cases in Central Europe are attributed to homosexual transmission than in Eastern Europe, although this proportion is on the rise in Eastern Europe, especially if one accounts for the frequent underreporting of transmission among MSM in this region. The fact that some countries have only recently established comprehensive HIV surveillance presents an additional challenge in assessing the situation. Finally, reports of the deeply rooted stigmatization of MSM in almost all of the countries we examined indicates that it is a major factor in this population's vulnerability, significantly constraining their access to proper care and treatment for HIV and other STIs.

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