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North America, Western and Central Europe

AIDS epidemic update Regional Summary

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Regional Summary

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NORTH AMERICA, WESTERN AND CENTRAL EUROPE

United States of America and Canada

The **United States of America** has one of the largest HIV epidemics in the world, with an estimated 1.2 million [720 000–2.0 million] people living with HIV in 2005 (UNAIDS, 2006). Based on data from the 33 states and four dependent territories[2] with long-term, confidential name-based HIV reporting, men still account for most of the HIV or AIDS diagnoses among adults and adolescents in the **United States**: 74% in 2005, according to the most recent data. Unprotected sex between men remains the most common mode of HIV transmission. In 2005, more than half of the new diagnoses of HIV infection (53%) were among men who have sex with men. Persons exposed to HIV through heterosexual intercourse with a non-regular partner comprised just under one third (32%) of newly diagnosed HIV infections and AIDS cases, while about 18% of newly diagnosed HIV infections in 2005 occurred in injecting drug users (US Centers for Disease Control and Prevention, 2007b).

The main routes of HIV transmission differ between men and women. Most HIV infections diagnosed among men in 2005 (67%) occurred in men who have sex with men with no history of injecting drug use, 5% in men who have sex with men who were injecting drug users, and 13% among injecting drug users who did not have sex with men. An additional 15% of infections were attributed to heterosexual intercourse with a non-regular partner. The annual number of new HIV diagnoses among men who have sex with men (including those who were also injecting drug users) increased from 17 699 in 2001 to 19 620 in 2005, an increase of 11% (US Centers for Disease Control and Prevention, 2007b).

In contrast, in 2005, 80% (up from 75% in 2001) of adult and adolescent women newly diagnosed with HIV or AIDS acquired it during unprotected sex (US Centers for Disease Control and Prevention, 2007b), often with male partners who had been infected through contaminated

[1] This analysis is based chiefly on reported HIV diagnoses. A significant limitation of using annual HIV diagnoses to monitor the HIV epidemic is that this method does not represent the total incidence (because it may include infections that occurred several years earlier) and it only captures those people that have been tested for HIV. As a result, HIV trends based on reported HIV cases can be skewed by changes in the HIV testing intake or by changes in patterns of reporting. Whenever possible, this analysis alerts readers to instances where such changes have occurred.

[2] Since 2001, the following 37 areas in the United States have had laws or regulations requiring confidential name-based HIV infection reporting: Alabama, Alaska, Arizona, Arkansas, Colorado, Florida, Idaho, Indiana, Iowa, Kansas, Louisiana, Michigan, Minnesota, Mississippi, Missouri, Nebraska, Nevada, New Jersey, New Mexico, New York, North Carolina, North Dakota, Ohio, Oklahoma, South Carolina, South Dakota, Tennessee, Texas, Utah, Virginia, West Virginia, Wisconsin, Wyoming, American Samoa, Guam, the Northern Mariana Islands, and the United States Virgin Islands. Since July 1997, Florida has had confidential name-based HIV infection reporting only for new diagnoses.

injecting equipment, paid sex or sex with other men (Montgomery et al., 2003; McMahon et al., 2004; Valleroy et al., 2004). About one in five (19%) newly diagnosed HIV infections in women were due to injecting drug use (US Centers for Disease Control and Prevention, 2007b).

The proportion of women among new HIV or AIDS diagnoses increased during the 1990s and reached almost 30% in 2001. Subsequently, however, that proportion has decreased steadily, and fell to 26% in 2005 (US Centers for Disease Control and Prevention, 2007b).

Racial and ethnic minorities continue to be disproportionately affected by the HIV epidemic in the **United States**. Although African Americans represent about 13% of the population (US Census Bureau, 2006), they accounted for 48% of new HIV or AIDS diagnoses in 2005. AIDS was the fourth leading cause of death among African Americans aged 25–44 years in the **United States** in 2004 (Anderson, Mosher & Chandra, 2006; US Centers for Disease Control and Prevention, 2006). Hispanics, who comprise about 14% of the population, accounted for 18% of new diagnoses (US Centers for Disease Control and Prevention, 2007c).

The main mode of HIV transmission among African-American men is unsafe sex with other men (48% of new HIV diagnoses in 2005), whereas among African-American women it is unprotected heterosexual intercourse (74%). For both African-American men and women, about one in four (23% and 24%, respectively) new HIV cases in 2005 were attributed to injecting drug use (US Centers for Disease Control and Prevention, 2007c).

The numbers of new HIV diagnoses decreased among African-American men (by 4%) and women (by 7%) between 2001 and 2004 (US Centers for Disease Control and Prevention, 2006). These declines do not necessarily reflect trends in HIV incidence—they could result from changes in testing and surveillance practices for HIV (US Centers for Disease Control and Prevention, 2007a). However, a simultaneous decrease in gonorrhoea diagnoses among African Americans and an increase in the number of HIV tests suggests that the observed decline might in fact reflect lower HIV incidence. The decline could therefore be associated with a reduction in sexual risky behaviours (Lieb et al., 2007).

The HIV epidemics continue to disproportionately affect African Americans in the United States and Aboriginal persons in Canada.

More information has become available on the effects of wider access to effective antiretroviral therapy in the **United States**. According to a six-state study, hospital admissions involving people with HIV fell by 44% between 2000 and 2004, and the average age of persons with HIV admitted into hospital has increased (Hellinger, 2007). An earlier study found that provision of antiretroviral therapy led to a reduction in AIDS death rates by 80% between 1990 and 2003 (Crum et al., 2006). However, the substantial proportion (about one quarter) of persons living with HIV who remain unaware of the fact that they are infected (Glynn & Rhodes, 2005) limits the potential impact of such benefits. Persons unaware of their infection tend to seek treatment only after the onset of AIDS, which can reduce the effectiveness of treatment. Research in the city of San Francisco found that nearly 40% of HIV-infected people were diagnosed with AIDS less than a year after first testing HIV-positive (Schwartz et al., 2006). Another study, in the state of South Carolina, found that 41% of diagnosed HIV cases in 2001–2005 were such "late testers". In the latter study, three quarters (73%) of the "late testers" had visited health-care providers at least once before being diagnosed with HIV, but most had not displayed symptoms that would have prompted HIV testing under a risk-based testing strategy. Based on these findings, the Centers for Disease Control and Prevention in the **United States** has recommended routine, opt-out HIV screening of all patients in health-care settings[3] (US Centers for Disease Control and Prevention, 2006).

The HIV epidemic in Canada continues to evolve. After levelling off in the mid-1990s, the estimated total number of people living with HIV in **Canada** began increasing again in the

[3] "Routine opt-out screening" means that HIV screening is recommended for patients in all health-care settings after the patient is notified that testing will be performed unless the patient declines.

late 1990s, mainly due to the life-prolonging effects of antiretroviral treatment and the continuing number of new HIV infections. The number of people living with HIV increased by about 16% between 2002 and 2005. However, the annual number of newly reported HIV infections stayed about the same during that period, ranging between 2495 and 2538 (Public Health Agency of Canada, 2006).

Of the estimated 58 000 [48 000–68 000] people living with HIV in 2005, just over one half (51%) of the infections were attributed to unprotected sex between men, 17% to injecting drug use, and 27% to unprotected heterosexual intercourse. Of concern is the estimate that at least one in four Canadians living with HIV are unaware that they are infected (Boulos et al., 2006).

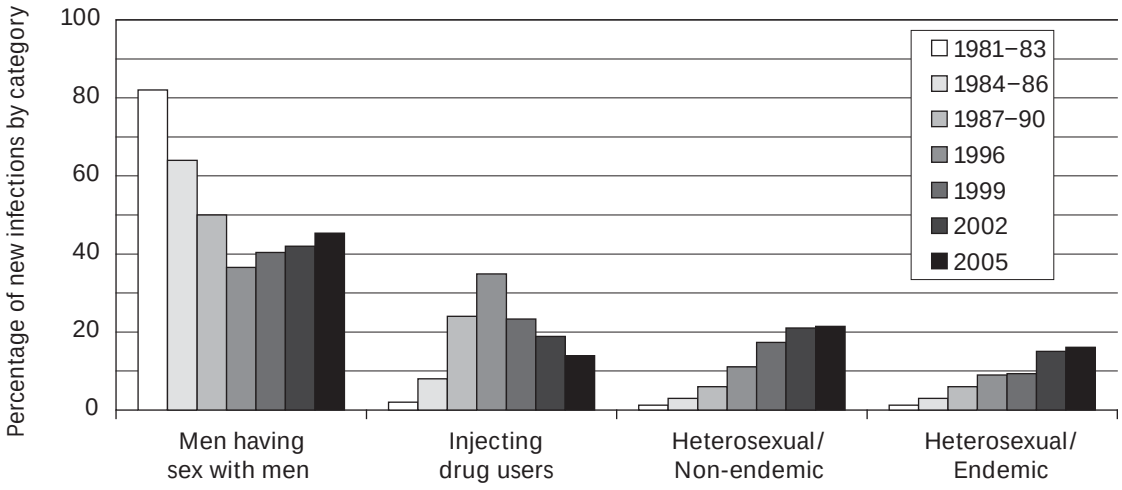
The estimated proportion of new infections attributed to unprotected sex between men decreased substantially from the early 1980s to the mid-1990s. However, that proportion has subsequently increased, amid evidence of continuing and perhaps increasing unprotected sex among men who have sex with men. Consequently, unprotected sex between men continues to account for the largest proportion of *new* HIV infections (45% in 2005 compared with 42% in 2002) (Boulos et al., 2006). This finding suggests a need to revitalize prevention programmes that reach men who have sex with men in **Canada**.

Women represent an increasing proportion of estimated new HIV infections: 27% in 2005, compared with 24% in 2002; and 12% from 1985 to 1997. Among young people in the 15–29-year-old age group, women comprised 35% of newly reported HIV infections in 2005. The epidemic is having a disproportionate impact on Aboriginal women, who accounted for 60% of reported new HIV infections among Aboriginal people in 2005 (see below) (Public Health Agency of Canada, 2006).

An estimated 37% of new HIV infections in 2005 were attributed to unprotected heterosexual intercourse. A substantial proportion of these infections were in persons born in countries where HIV is endemic (mainly sub-Saharan Africa and the Caribbean). This latter group is disproportionately affected in **Canada**'s HIV epidemic, and accounted for an estimated 16% of all new infections in 2005. The estimated incidence rate among this subpopulation is more than 12 times higher than among other Canadians (Boulos et al., 2006).

Figure 1

Estimated exposure category distributions (%) of new HIV infections in Canada, by time period



Source: Boulos D et al. (2006). Estimates of HIV prevalence and incidence in Canada, 2005. *Canada Communicable Disease Report*, 32:165–174.

The proportion of estimated new infections attributable to injecting drug use has continued to decrease, from 19% in 2002 to 14% in 2005. The possible reasons for this trend include the adoption of safer injecting practices, shifting patterns of drug use and the effects of prevention programmes. The decrease, however, appears to have occurred mainly among male injecting drug users. More than one third (35%) of newly reported HIV infections in women 15 years of age or older in 2005 were attributable to the use of contaminated injecting equipment, up from just over one quarter (27%) in 2003 (Public Health Agency of Canada, 2006). Local studies continue to report high HIV prevalence among injecting drug users. For example, in 2002, 23% of participants in needle exchange programmes in Montreal and 20% in Ottawa tested HIV-positive (Parent et al. & the SurvUDI Working Group, 2003). Similarly, in a 2003–2005 study of a safe injecting site in Vancouver, 17% of participants tested HIV-positive (Tyndall et al., 2005). Among young Aboriginal injecting drug users, HIV prevalence of 8% was found in Prince George and 17% in Vancouver in 2003–2005 (both in the province of British Columbia) (Lloyd-Smith et al., 2006).

Unprotected heterosexual intercourse is the key factor for HIV infection in women, but a combination of unsafe sex and injecting drug use appears to be placing some women at particularly high risk of exposure. A study in several areas of **Canada** found that, in 2003, about 40% of female injecting drug users were also selling sex. Almost all of those women (92%) said that they used condoms with male clients, but almost one third said that they never did so with non-regular partners, and condom use was infrequent with regular partners (Health Canada, 2004). This situation underlines the need for prevention efforts to address the combined risk of unsafe sex and injecting drug use among women (Public Health Agency of Canada, 2006).

Aboriginal persons continue to be disproportionately affected in the HIV epidemic in **Canada**. Although they comprise about 3.3% of the total Canadian population (Statistics Canada, 2003), they represent an estimated 7.5% of people living with HIV, and accounted for about 9% of estimated new infections in 2005 (Boulos et al., 2006).

In contrast to the rest of the population, more than half (53%) of new HIV infections in Aboriginal persons in 2005 were attributable to injecting drug use, one third (33%) to heterosexual intercourse and 10% to sex between men (Boulos et al., 2006). Among Aboriginal women, injecting drug use is also the main factor in HIV infection: between 1998 and 2005, almost two thirds (65%) of reported HIV infections in Aboriginal women were attributed to injecting drug use (Public Health Agency of Canada, 2006). The vulnerability of Aboriginal people to HIV infection is thought to be due to high rates of unemployment and poverty, and of substance abuse and sexually transmitted infections; it is also affected by limited access to good-quality health-care services (Public Health Agency of Canada, 2004).

In Western Europe, the majority of heterosexually transmitted HIV cases originate in countries with high prevalence in sub-Saharan Africa; within that group, more than 50% of new HIV diagnoses are in women.

Western Europe

Heterosexually acquired HIV infections, most of which were in immigrants and migrants, formed the largest proportion (42%) of new HIV infections diagnosed in Western Europe in 2006. A little under one third (29%) of newly diagnosed HIV infections were attributable to unsafe sex between men, while a diminishing proportion of diagnoses (6%) were reported in injecting drug users (EuroHIV, 2007).

In Western and Central Europe, the **United Kingdom** continues to have a large HIV epidemic, together with **France**, **Italy** and **Spain**.[4] The annual number of newly diagnosed HIV infections has more than doubled in the **United Kingdom**, from 4152 in 2001 to 8925 in 2006 (EuroHIV, 2007). The country also has one of the highest rates of new HIV diagnoses in Western and Central Europe: 149 per one million population in 2006, which is exceeded only by **Portugal**'s 205 per one million population (EuroHIV, 2007).

[4] Note that national HIV reporting only recently began in France, while HIV reporting in Italy and Spain occurs in certain regions only.

The HIV epidemic continues to be concentrated in London, which accounted for 41% of new HIV diagnoses in 2006. However, significant increases in new diagnoses have occurred in the East Midlands, Northern Ireland and Wales (Health Protection Agency, 2007).

The number of new HIV diagnoses in men who have sex with men in 2002–2006 almost doubled in Germany, and increased by three quarters in Switzerland, two thirds in Belgium and one third in the United Kingdom.

The continued increase in HIV diagnoses reported in the **United Kingdom** is due mainly to sustained levels of newly acquired infections in men who have sex with men, an increase in diagnoses among heterosexual men and women who acquired their infection in a high-prevalence country (mainly in sub-Saharan Africa and the Caribbean), and improved reporting due to increased and earlier HIV testing.

Men who have sex with men continue to be the population group most at risk of acquiring HIV *within* the **United Kingdom**. An estimated 82% of men who have sex with men diagnosed with HIV in 2006 probably acquired their infection in the **United Kingdom** (compared with 18% for heterosexual men and women) (Health Protection Agency, 2007). The number of new HIV diagnoses in men who have sex with men almost doubled between 2001 and 2006, from 1434 to 2597 (EuroHIV, 2007). However, it is unclear whether that increase reflects changing HIV *incidence* or changes in testing in this population group (Health Protection Agency, 2006; Dougan et al., 2007).

In other countries in this region, approximately one third of persons (32% in 2005) newly diagnosed with HIV are unaware of their infection (Health Protection Agency, 2006). Even larger proportions of HIV-infected men who have sex with men remain unaware of their HIV status. For example, a five-city survey in bars, clubs and saunas frequented by homosexual men found that 41% of men who tested HIV-positive had been previously undiagnosed (Williamson et al., 2006).

The number of HIV diagnoses in people who acquired their infection through unprotected heterosexual intercourse almost doubled, from 2379 in 2001 to 4514 in 2006 (EuroHIV, 2006, 2007). Here, too, increased uptake of HIV testing among people attending genitourinary clinics (which reached 82% in 2005) might have been a factor in that rising trend. Most of the HIV diagnoses attributed to unprotected heterosexual intercourse were in persons who had been infected in a high-prevalence country, mainly in sub-Saharan Africa.

As in other countries in this region, there continues to be late HIV diagnosis among African and other ethnic minority adults. Approximately 40% of persons from those population groups who tested HIV-positive in 2005 were diagnosed late, and they were considerably more likely to die within a year of their HIV diagnosis (compared with persons whose infections were detected earlier) (Health Protection Agency, 2006). Research in the Midlands and southern England suggests that stigma and fear of discrimination discourage a large proportion of Africans in the **United Kingdom** from testing for HIV (Elam et al., 2006).

Infection as a result of exposure to contaminated drug injecting equipment accounts for a small number of HIV cases (131 new diagnoses in 2006) in the **United Kingdom**'s HIV epidemic (Health Protection Agency, 2007). Nevertheless, HIV infections continue to be found among injecting drug users. Outside London, estimated prevalence among injecting drug users rose from 0.5% in 2003 to 1.2% in 2005 (Health Protection Agency, 2006).

Overall, data such as these suggest that there is scope for improvement in the **United Kingdom**'s AIDS response. For example, coverage of HIV testing could be increased and focused, and appropriate prevention programmes could be expanded among population groups that are at highest risk of HIV infection.

In Western Europe (excluding the **United Kingdom**), annual reported new HIV diagnoses almost tripled between 1999 and 2005 (from 7497 to 19 476), but declined significantly in 2006 (to 16 316). The largest number of diagnoses were reported in **France** (where routine reporting only started in 2003

and where 5750 HIV infections were newly diagnosed in 2006), **Germany** (2718) and **Portugal** (2162). In **Spain** and **Italy**, only certain regions contribute to the reporting system. Elsewhere, the number of diagnoses is smaller, and new infections in 2006 exceeded 1000 only in the **Netherlands** (1017) (EuroHIV, 2007).

HIV in this region is transmitted mainly through unsafe sex and, to a much lesser extent (except in countries such as **Portugal** and **Spain**), through the use of contaminated equipment by injecting drug users. Most heterosexually transmitted HIV cases originate in countries with high HIV prevalence; within that group, more than 50% of new HIV diagnoses are in women (EuroHIV, 2007).

Two divergent trends are evident in Western Europe. While the number of new HIV diagnoses attributed to unsafe sex between men nearly doubled between 1999 and 2006 (from 2538 to 5016), those attributed to injecting drug use declined in the same period (from 661 to 581).[5] The former trend appears to be associated with reported increases in sex with non-regular partners between men in several European countries, including **France**, **Spain**, **Switzerland** and the **United Kingdom** (Dodds et al., 2004; Balthasar, Jeannin & Dubois-Arber, 2005; Moreau-Gruet, Dubois-Arber & Jeannin, 2006).

Between 2002 and 2006, the number of HIV infections newly diagnosed in men who have sex with men almost doubled in **Germany** (where they rose by 87% to 1412), and increased by three quarters (by 77% to 237) in **Switzerland**, by two thirds (by 67% to 255) in **Belgium**, and one third (by 31% to 2597) in the **United Kingdom**. In **France**, the number of new HIV diagnoses in men who have sex with men increased by 84% to 1235 between 2003—when a new HIV reporting system was introduced—and 2006 (EuroHIV, 2007).

In **Germany**, where new HIV diagnoses increased by almost 50% between 2002 and 2006 (EuroHIV, 2007), men who have sex with men comprised about 60% of the estimated 56 000 people who were living with HIV at the end of 2006. However, 70% of new HIV diagnoses in 2006 were attributed to unsafe sex between men (Robert Koch Institut, 2006). Increased risk behaviour and rising numbers of other sexually transmitted infections together with a change towards later initiation of antiretroviral therapy might have led to an increase in new HIV infections in **Germany** in recent years (Hamouda et al., 2007).

Estonia has the highest rate of newly reported HIV diagnoses and the highest adult national HIV prevalence in Western and Central Europe.

Meanwhile, the numbers of new HIV diagnoses in injecting drug users fell in several European countries in 2002–2006, most notably in **Denmark** (by 72%), **Italy** (by 42% in 2002–2005), the **Netherlands** (by 91%), **Portugal** (by 38%), **Spain** (by 38% in 2003–2005) and **Switzerland** (by 26%) (EuroHIV, 2007). Those trends are largely attributable to the introduction of harm reduction programmes, which have been associated with a decrease in injecting drug use and a decrease in the use of contaminated needles and syringes, according to studies in the **Netherlands** and **Spain**, for example (de la Fuente et al., 2006; Lindenburg et al., 2006) (see also UNAIDS & WHO 2006).

In Central Europe, the number of newly diagnosed HIV infections in 2006 surpassed 100 in only three countries: **Poland** (750), **Turkey** (290) and Romania (180). The epidemic trends in those countries seem to differ, though, with new HIV diagnoses between 2001 and 2006 increasing in **Poland** (from 564) and **Turkey** (from 184), but declining sharply in **Romania** (from 440). Elsewhere the epidemics are comparatively small, with only **Hungary**, **Montenegro** and **Serbia** having reported a total of more than 1000 HIV infections since their respective epidemics began. Unprotected heterosexual intercourse is the main reported mode of infection in most countries in

[5] That trend does not include data from Italy, Portugal and Spain, where significant HIV epidemics among injecting drug users have been reported in the past. However, recent national data from Portugal, and regional data from Italy and Spain corroborate the decline in HIV diagnoses among injecting drug users in Western Europe (EuroHIV, 2007).

this subregion, including **Albania**, **Bosnia and Herzegovina**, **Bulgaria**, **Romania** and **Turkey**, while unsafe sex between men predominates in **Croatia**, the **Czech Republic**, **Hungary** and **Slovenia** (Hamers, 2006; Brucková et al., 2007; EuroHIV, 2007).

Overall in Central Europe, the annual reported numbers of sexually acquired HIV infections have approximately doubled since the turn of the century, while reports of HIV infections in injecting drug users have declined significantly (EuroHIV, 2007). The latter trend is especially evident in **Poland**, where the 112 newly diagnosed HIV infections in injecting drug users in 2006 were half the 223 reported in 2003 (EuroHIV, 2007). Nevertheless, the use of contaminated drug injecting equipment remains by far the most-reported mode of HIV transmission in **Poland** (Rosinska, 2006).

Injecting drug use is also the most-reported mode of HIV transmission in the three Baltic states, whose relatively small epidemics appear to have stabilized (Hamers, 2006; EuroHIV, 2007). In **Latvia**, the 299 HIV infections newly diagnosed in 2006 were considerably fewer than the 807 diagnosed in 2001, for example, and new HIV diagnoses have remained around 300–320 since 2003. In **Lithuania**, the increase in new infections diagnosed in 2002 (397) appears to have been an anomaly; since then, the number of annual new HIV diagnoses has remained at 100–135. In **Estonia**, which has the largest HIV epidemic among the Baltic states, newly diagnosed HIV infections have declined from a peak of 1474 in 2001 to 668 in 2006. Nevertheless, **Estonia** continues to have by far the highest rate of newly reported HIV diagnoses (504 per one million population) and the highest estimated adult national HIV prevalence (1.3% [0.6%–4.3%]) in all of Europe (UNAIDS, 2006; EuroHIV, 2007).

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The annual *AIDS epidemic update* reports on the latest developments in the global AIDS epidemic. This 2007 Regional summary provides the most recent estimates of the epidemic's scope and human toll and explores new trends in the epidemic's evolution in North America, Western and Central Europe.

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