



## NORTH AMERICA, WESTERN AND CENTRAL EUROPE

In these two regions, the total number of people living with HIV continues to increase, in great part due to the life-prolonging effects of antiretroviral therapy, a relatively steady number of new HIV infections each year in North America and an increase in the number of new HIV diagnoses in Western Europe since 2002<sup>6</sup>. Overall, approximately 2.1 million [1.5 million–3.0 million] people were living with HIV in 2006, including the 65 000 [52 000–98 000] who acquired HIV in the past year. In the context of widespread access to effective antiretroviral treatment, comparatively few people died of AIDS—30 000 in a range of 24 000–45 000—in 2006.

Worldwide, only seven countries are estimated to have more people living with HIV than the **United States of America (USA)**: 1.2 million [720 000–2.0 million] in 2005 (UNAIDS, 2006). Based on data from the 35 states and areas<sup>7</sup> with long-term, confidential name-based HIV reporting, the most common risk factor for HIV infection remains unsafe sex between men (accounting for about 44% of HIV or AIDS cases reported in 2001–2004), followed by unprotected heterosexual intercourse (34% of cases) and the use of non-sterile drug injecting equipment (17%) (US Centers for Disease Control and Prevention, 2006a). (However, note that the

35 states and territories do not include some of the states which have reported the largest number of AIDS cases, such as California, Illinois, Maryland and Pennsylvania.)

The proportion of women among new HIV or AIDS diagnoses has increased dramatically—from 15% before 1995 to 27% in 2004. Approximately three quarters of women newly diagnosed with HIV were infected during unprotected sex (US Centers for Disease Control and Prevention, 2006b), often with male partners who were infected when injecting drugs, or during commercial sex or sex with other men (McMahon et al., 2004; Valleroy et al., 2004; Montgomery et al., 2003). However, a significant proportion (20%) of women diagnosed with HIV in 2004 acquired HIV during unsafe injecting drug use.

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<sup>6</sup> 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 yardstick does not represent the total incidence, as it may include infections that occurred several years earlier, and it only captures those people that have been tested. 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.

<sup>7</sup> Since 2000, the following 35 areas have had laws or regulations requiring confidential name-based HIV infection reporting in the USA: 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, Guam, and the U.S. Virgin Islands. Since July 1997, Florida has had confidential name-based HIV infection reporting only for new diagnoses.

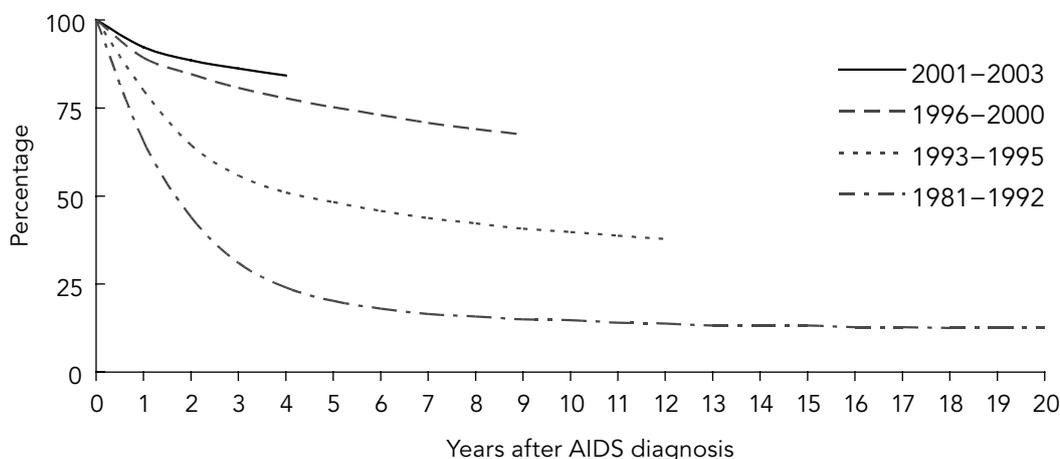
Men still account for the majority of HIV or AIDS diagnoses in the United States—about 73% in 2004. Almost two thirds (65%) of HIV infections diagnosed among men in 2004 were attributable to unsafe sex with other men (US Centers for Disease Control and Prevention, 2006b), and several studies have reported evidence of an increase in unsafe sexual behaviour in this population group (US Centers for Disease Control and Prevention, 2006c).

Racial and ethnic minorities continue to be disproportionately affected by the HIV epidemic. In 2001–2004, 50% of AIDS diagnoses were among African-Americans (who constitute only 12% of the US population) and 20% among Hispanics (14% of the US population). The rate of new HIV or AIDS diagnoses was seven times higher among African-American men than among white men in 2004 (131.6 compared with 18.7 per 100 000 persons) and 21 times higher among African-American women than among white women (67 compared with 3.2 per 100 000 persons) (US Centers for Disease Control, 2006a). One recent study has suggested that the high rates of incarceration of African-American men (approximately one in 12 of whom have been in jail or prison) could be associated with the disproportionate HIV infection rates among African-American men and women (Johnson and Raphael, 2006).

Approximately one half (49%) of African-American men diagnosed with HIV or AIDS in 2005 acquired the virus during unprotected sex with another man, while most African-American women (78%) became infected during unprotected heterosexual intercourse (US Centers for Disease Control and Prevention, 2006d). Several studies have shown that African-American men who have sex with men face significantly higher risk of HIV infection, yet report similar or less sexual risk behaviour, compared with other men (Harawa et al., 2004; Koblin et al., 2006). This indicates that other factors (possibly including the prevalence of other sexually transmitted infections) could be aggravating the risks of HIV infection in African-American men who have sex with men. Meanwhile, the use of non-sterile injecting drug equipment remains the second-leading cause of HIV infection in African-American women and the third-leading cause among African-American men (US Centers for Disease Control and Prevention, 2006c).

Provision of antiretroviral therapy has resulted in a decline in AIDS death rates of 80% between 1990 and 2003 (Crum et al., 2006). HIV treatment in the United States has become increasingly effective, with the proportion of people surviving for two years or longer after AIDS diagnosis growing from 64% in 1993–1995 to 85% in 1996–2005 (US Centers for Disease

Percentage of persons surviving through June 2005, by years after acquired immunodeficiency syndrome (AIDS) diagnosis cohorts during 1981–2003 and by year of diagnosis — United States



Source: CDC. Twenty-Five Years of HIV/AIDS — United States, 1981–2006. MMWR 2006.

Figure 12

Control and Prevention, 2006a). At least 3 million years of life have been saved as a direct result of effective treatment and care of AIDS patients (Walensky et al., 2006).

An estimated one quarter of people living with HIV do not know that they have been infected with the virus (Glynn and Rhodes, 2005), which complicates the HIV response. Persons unaware of their infection are unlikely to access appropriate treatment and care services until relatively late in the progression of AIDS disease, which limits the effectiveness of treatment. They are also less likely to take precautions to avoid transmitting HIV to others. Potentially, individuals who are unaware of their HIV-infected status may account for 54%–70% of all new sexually transmitted HIV infections in the United States of America (Marks et al., 2006).

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The latest HIV data from **Canada** highlight the need to ensure effective strategies are in place to prevent new HIV infections and to provide services for vulnerable populations, such as injecting drug users, men who have sex with men and Aboriginal people.

At the end of 2005, there were an estimated 58 000 [48 000–68 000] people living with HIV in Canada, which represents an increase of 16% over the 2002 estimate of 50 000 [41 000–59 000] (Boulos et al., 2006). In addition, it was estimated that 2300 to 4500 new infections occurred in 2005. Men who have sex with men comprised almost half (46%) of those new infections, making them the most-affected group. About 14% of the new infections were attributed to unsafe injecting drug use (less than the 19% estimated for 2002), and 37% were attributed to unprotected heterosexual intercourse. Just under half of the infections acquired via heterosexual intercourse were in persons who were born in a country where HIV is endemic (Boulos et al., 2006). There was a slightly increasing trend in new HIV infections among women: they represented 27% of new infections in 2005, compared with an estimated 24% in 2002 (Boulos et al.,

2006). Of note, one in four persons with HIV in Canada is unaware of his or her infection (Boulos et al., 2006).

Aboriginal people in Canada are disproportionately affected by many social, economic and behavioural factors, such as high rates of poverty, substance abuse and sexually transmitted infections, as well as limited access to or use of health-care services, which together appear to increase their vulnerability to HIV infection (Public Health Agency of Canada, 2006). Aboriginal people continue to be over-represented in Canada's epidemic: the overall HIV infection rate among Aboriginal persons was estimated to be almost three times higher than for non-Aboriginals. In 2005, Aboriginal persons accounted for 9% of new infections (Boulos et al., 2006), yet they comprise only 3.3% of Canada's population (Statistics Canada, 2001).

The characteristics of HIV transmission among Aboriginal persons differ from those of the general population. In the 2005 estimates, injecting drug use was the most common mode of transmission among Aboriginal persons, accounting for 53% of new infections among Aboriginal Canadians compared to 14% among all Canadians. The remaining new infections among Aboriginals were largely attributed to HIV exposure during heterosexual intercourse (33%) and sex between men (10%) (Boulos et al., 2006).

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There is a special need for targeted interventions that are specifically designed for Aboriginal youth, especially women. A larger proportion (33%) of Aboriginal persons diagnosed with HIV are younger than 30 years, compared with the general population (20%). A study among injecting drug users in Vancouver found that Aboriginal youth who inject drugs were over four times more likely to be HIV-infected at enrolment in a drug programme than were their non-Aboriginal counterparts (Miller et al., 2006). Unusually, among the Aboriginal injecting

drug users in that study, almost two thirds were female—a pattern which helps explain why two thirds (65%) of the HIV diagnoses among Aboriginal women up to December 2005 were attributed to transmission during injecting drug use (Public Health Agency of Canada, 2006).

As in many other countries, injecting drug use during incarceration appears to be common in Canada. According to a recent study among persons admitted to remand facilities in the province of Ontario, the use of non-sterile injecting equipment behind bars is common, especially among injecting drug users held in federal prison facilities. Among the latter, 6% tested HIV-positive in this study; almost half (47%) of those infected with the virus said they had shared injecting equipment while imprisoned. Such findings reiterate the need to expand prison harm reduction programmes, including needle- and syringe-exchange programmes (Calzavara et al., 2006).

Across the Atlantic, some 740 000 [580 000–970 000] people were living with HIV in western and Central Europe in 2006. Most information about the patterns and trends in the epidemics in Western Europe are derived from AIDS and HIV case reports. However, the HIV case reporting system does not cover all countries or all areas within countries. In particular, national HIV data were not reported in 2005 for Italy, Norway and Spain (EuroHIV, 2006a).

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In Western Europe, just over one third (35%) of HIV infections diagnosed in 2005 occurred during sex between men, while more than half (56%) were acquired during heterosexual intercourse. About three quarters of heterosexually acquired HIV infections were among immigrants and migrants (EuroHIV, 2006a), reinforcing the need to adapt prevention, treatment and care services so that they reach these populations.

The rate of new HIV diagnoses nearly doubled during the period 1998–2005 in Western Europe—from 42 cases per million population in 1998 to 74 per million in 2006. The largest increases have been reported in the **United Kingdom**, where HIV remains one of the principal communicable disease threats (British Medical Association, 2006). Annual, new HIV diagnoses in the United Kingdom have doubled since 2000, exceeding 7200 in 2004 and reaching 7700 in 2005 (Health Protection Agency United Kingdom, 2005). The epidemic is focused to a considerable extent in London where almost half (43%) of new diagnoses were made in 2005. However, new diagnoses have been increasing gradually in other regions since 1999, including areas where HIV infections had previously been rare (such as the East and North East, Wales and Yorkshire) (Health Protection Agency United Kingdom, 2006).

Three quarters of new HIV diagnoses in heterosexual men and women were among people originating from countries outside the UK, mainly from sub-Saharan Africa (Health Protection Agency United Kingdom, 2006). Indeed, persons infected in sub-Saharan Africa are now the group most-affected by HIV in the United Kingdom, slightly more so than men who have sex with men. 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).

Meanwhile, levels of HIV and other sexually transmitted infections remain high among men who have sex with men, who represent about one third of all new HIV diagnoses (2252 in 2005). The number of new HIV diagnoses among men who have sex with men has increased by almost 50% since 2000 (Health Protection Agency et al., 2006), underlining the need to overhaul prevention efforts targeting this population group (Elford et al., 2005).

Two other trends are worth noting. About one third of persons with HIV do not know that they have been infected (British Medical Association, 2006). They therefore are not receiving the treatment and care they may need, and are at risk of transmitting the virus to others. In addition, knowledge of HIV appears to be deteriorating. In a 2005 survey, 79% of respondents nationally (and

only 70% in London, the area with the highest HIV prevalence in the country) knew that HIV can be transmitted through unprotected sex, compared with the 91% in 2000. The percentage of people who failed to name a single way in which HIV can be transmitted rose from 6% to 8% in 2000–2005 (National AIDS Trust, 2006).

Studies among specific populations of men who have sex with men show HIV prevalence of 10%–20% in Western Europe, and several studies in France, Spain, Switzerland and the United Kingdom have reported increases in the proportion of men who have sex with men who report having recently engaged in higher-risk sex (Balthasar, Jeannin, Dubois-Arber, 2005; Moreau-Gruet, Dubois-Arber, Jeannin, 2006; Dodds et al., 2004). This underlines the need to strengthen HIV prevention and treatment programmes in this population group (EuroHIV, 2006b). Several other countries are experiencing an increase in new HIV diagnoses among men who have sex with men. Compared to 2001, the number of HIV diagnoses in this population group was three quarters higher in the **Netherlands** (75%), more than two thirds higher in **Portugal** (68%) and **Switzerland** (71%), and 40% higher in **Belgium** in 2005 (EuroHIV, 2006a). Outbreaks of other sexually transmitted infections are accompanying this trend in some countries, which points to increased sexual risk behaviours among men who have sex with men. For example, in the **Netherlands**, syphilis cases in men who have sex with men more than tripled in 2000–2004 (Van de Laar et al., 2005). In **Germany**, new HIV diagnoses in men who have sex with men more than doubled in 2001–2005 (EuroHIV, 2006a), and this population group accounted for an estimated 70% of newly diagnosed HIV infections in 2005 (Robert Koch Institut, 2005). Overall, an estimated 49 000 [29 000–81 000] people were living with HIV in Germany in 2005 (UNAIDS, 2006). The epidemics in the Scandinavian countries remain small and stable overall, although there has been an increase in HIV diagnoses among men who have sex with men in **Sweden** since 2002 (from 68 to 97 in 2005) (EuroHIV, 2006a).

The effectiveness of harm reduction programmes in reducing HIV infections among injecting drug

users is evident in several countries. In **Portugal**, for example, HIV diagnoses among injecting drug users were almost one third (31%) lower in 2005, compared with 2001 (857 versus 1247) (EuroHIV, 2006a). Harm reduction programmes have been associated with a decrease in injecting drug use, use of contaminated needles and syringes and HIV infections among injecting drug users in **Spain**. HIV prevalence among injecting drug users declined by half in Barcelona (44% to 21% between 1995 and 2001–2003) and Sevilla (44% to 22%), both cities with long-standing harm reduction programmes. In contrast, in Madrid, where such programmes were introduced only in the late 1990s, HIV prevalence among injecting drug users remained stable (37% in 1995 and 35% in 2001–2003) (de la Fuente et al., 2006). A drop in HIV infections among injecting drug users has been seen in the **Netherlands** too—from 174 new diagnoses in 2002 to 29 in 2005. Among drug users in Amsterdam, the epicentre of that country's injecting drug-related HIV epidemic, there has been a sustained decline in the use of non-sterile needles and HIV incidence. Most new HIV infections among drug users in Amsterdam are now occurring during unprotected heterosexual intercourse—a reminder that harm reduction programmes must also pay specific attention to promoting safer sex practices (Lindenburg et al., 2006).

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*Studies show HIV prevalence of 10%-20% among men who have sex with men in Western Europe, and there is evidence from several countries of increased higher-risk unprotected sex in this population group.*

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The epidemics in Central Europe remain small in comparison with the rest of Europe. Only four countries reported more than 100 new HIV diagnoses in 2005: **Poland** (where 652 people were newly diagnosed with HIV), **Turkey** (332), **Romania** (205), **Serbia and Montenegro**<sup>8</sup> (112) and **Hungary** (110) (EuroHIV, 2006a). The epidemic patterns vary considerably. Unprotected heterosexual intercourse is the main mode of infection in most countries, including **Albania**,

<sup>8</sup> At the time of compilation, these statistics were taken from the country formerly known as Serbia and Montenegro. At the time of printing, it is known as the Republic of Serbia and the Republic of Montenegro (see <http://www.un.org/Depts/Cartographic/map/profile/serbia.pdf>).

**Bosnia and Herzegovina, Bulgaria, Romania** and **Turkey**, while unsafe sex between men predominates in **Croatia, Czech Republic, Hungary** and **Slovenia**, and using non-sterile injecting drug equipment is the main risk factor for HIV infection in the epidemics in **Poland** (EuroHIV, 2006a; Rosinska, 2006).

In the Baltic, the sudden increase in the number of HIV infections diagnosed around the turn of the century appears to have abated and the HIV epidemics are now growing at a slower pace. There has been a steady decrease in the number of new HIV diagnoses in **Latvia** (from 542 to 299 in the same period) (Health Protection Inspectorate Estonia, 2006; EuroHIV, 2006a). In **Lithuania**, 110–135 new HIV infections have been diagnosed annually in the past three years (EuroHIV, 2006a). Approximately 10 000 [6100–17 000] people were living with HIV in **Latvia** in 2005, as were an estimated 3300 [1600–10 000] in **Lithuania** (UNAIDS, 2006). New reported HIV cases in **Estonia** have also decreased (from 899 in 2002 to 621 in 2005). Nevertheless, the estimated adult national HIV prevalence of 1.3% [0.6%–4.3%] in Estonia in 2005 was the second-highest in all of Europe (after Ukraine). A total of more than 5000 HIV infections have been reported since the epidemic began in Estonia, and it is estimated that the actual number of people living with HIV in 2005 was twice as high (10 000 with a range of 4800–32 000) (Health Protection Inspectorate Estonia, 2006; UNAIDS, 2006).