

EASTERN EUROPE AND CENTRAL ASIA

The number of people living with HIV in Eastern Europe and central Asia rose in 2006, as it had in 2005. An estimated 270 000 people [170 000–820 000] were newly infected with HIV in 2006, bringing to 1.7 million [1.2 million–2.6 million] the number of people living with HIV—a twentyfold increase in less than a decade. Although the rate of new HIV infections appears stable after the steep increases observed in 2001, an increase in the number of new HIV cases was again reported in 2005, compared to the two previous years (EuroHIV, 2006a).⁵

Almost one third of newly diagnosed HIV infections in this region are in people aged 15–24 years. The majority of young persons with HIV live in two countries: the **Russian Federation** and **Ukraine** which, together, account for approximately 90% of all people living with HIV in this region (EuroHIV, 2006a).

As the epidemics evolve, more people are developing HIV-related illnesses and are dying. Progress in expanding access to antiretroviral therapy has been slow. As of mid-2006, fewer than 24 000 people were receiving antiretroviral treatment—13% of the estimated 190 000 people who need the drugs (WHO/UNAIDS, 2006). Individuals who use non-sterile injecting drug equipment remain especially poorly served by efforts to roll-out antiretroviral therapy. Although they represent more than two thirds of HIV cases in the region, they comprise only about one

quarter of people receiving antiretroviral therapy (WHO/UNAIDS, 2006). In the context of such inadequate treatment and care coverage, the AIDS death toll in Eastern Europe and central Asia grew in 2006 to 84 000 [58 000–120 000].

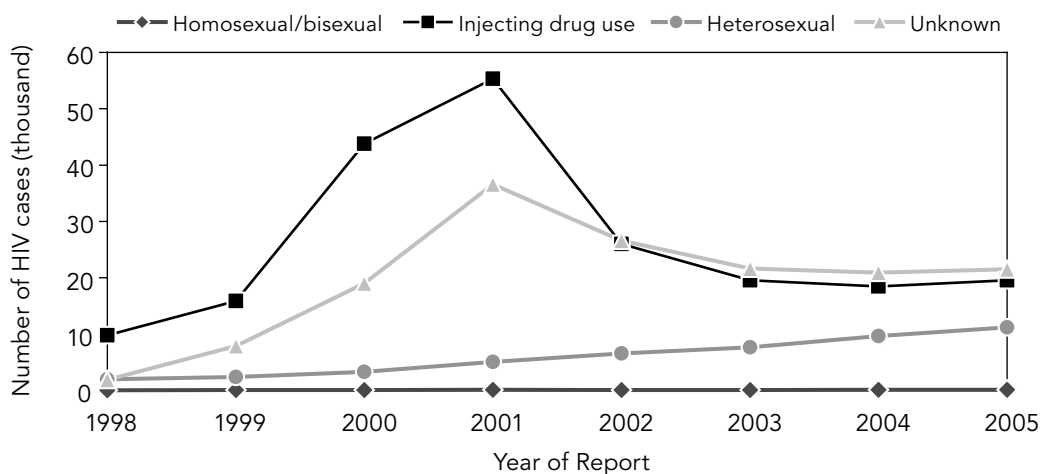
In Eastern Europe overall, using non-sterile injecting drug equipment remains the predominant mode of HIV transmission. In 2005, the use of non-sterile equipment accounted for almost two thirds (63%) of the reported HIV cases for which information on the mode of transmission was available. An increasing proportion of HIV infections (37% of reported cases in 2005), however, are estimated to be occurring during unprotected sexual intercourse (EuroHIV, 2006a). Consequently, women (many of them younger than 25 years of age) bear a growing part of the HIV burden; in 2005, they accounted for 41% of new reported HIV infections (EuroHIV, 2006a).

The Russian Federation and Ukraine account for about 90% of HIV infections in Eastern Europe and Central Asia, where the use of non-sterile injecting drug equipment remains the main mode of HIV transmission.

The HIV epidemic in the **Russian Federation** continues to grow. A little more than 35 500 new HIV cases were reported in 2005, and just

⁵ 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.

Number of newly diagnosed cases of HIV infection by transmission group by year of report for fourteen eastern European countries*, 1998–2005



*Armenia, Azerbaijan, Belarus, Georgia, Kazakhstan, Kyrgyzstan, Latvia, Lithuania, Republic of Moldova, Russian Federation, Tajikistan, Turkmenistan, Ukraine and Uzbekistan

Source: EuroHIV, 2006.

Figure 9

under 13 500 were registered in the first six months of 2006, bringing to nearly 350 000 the total number of infections documented since the epidemic began (AIDS Foundation East West, 2006). However, the official count reflects only those persons who have been in direct contact with Russia's HIV reporting system. The actual number of people estimated to be living with HIV is much higher: 940 000 (560 000–1.6 million) at the end of 2005 (UNAIDS, 2006). The majority of them are young: some 80% of people living with HIV in the Russian Federation are aged 15–30 years (Federal Service for Surveillance on Consumer Protection and Human Well-Being, 2006).

While officially reported HIV cases tend to be a poor guide to the actual *scale* of the epidemic, they can cast light on salient *trends*. The annual number of new reported HIV cases in the Russian Federation rose rapidly in the late 1990s, peaked at more than 87 000 in 2001, then declined steeply before stabilizing at 33 000–36 000 in 2003–2005 (EuroHIV, 2006a). A partial explanation for the decline in HIV diagnoses after 2001 is that fewer HIV tests have been carried out in some population groups at high risk of HIV infection, such as people who inject drugs and prisoners. In 2000–2004, 51% fewer HIV tests were done among injecting drug users

and 30% fewer were carried out among prisoners (Federal AIDS Center, 2005). In the case of injecting drug users, the decline in the number of HIV tests reflects the fact that some injecting drug user communities accessible to social and medical workers became saturated with HIV, leaving a shrinking number of users who had not yet been tested for HIV. (Once an injecting drug user tests HIV-positive, that individual is not tested again.) In addition, the overall number of drug users appears to have decreased; there were 17% fewer newly registered drug users in 2003 compared with 2002, for example (Ministry of Health and Social Development, 2004). Accordingly, the number of new HIV diagnoses among injecting drug users and prisoners—and, consequently, also the overall number of new reported HIV cases—decreased.

At the same time, routine HIV testing of injecting drug users who either had never been tested before or who had tested HIV-negative suggests that a significant decline in HIV incidence occurred among injecting drug users after 2001 (Pokrovskiy, 2006). That suggests that HIV infections in people who use non-sterile drug injecting equipment may have reached saturation levels around the turn of the century, at least in those parts of the country where HIV had spread quickly among large concentrations

of injecting drug users. As a result, the number of new HIV infections overall fell substantially. Consequently, Russia's epidemic is gradually changing. The number of new, reported HIV cases among people who use non-sterile drug injecting equipment has decreased almost fivefold in 2001–2005 (from more than 48 000 to just over 10 000) (EuroHIV, 2006a). In addition, the *proportion* of new HIV cases likely to have been linked to non-sterile injecting drug use equipment has also shrunk (from more than 90% in 2000 to 66% in 2005) (Federal Research and Methodological Center for AIDS Prevention and Control, 2005).

Russia's epidemic is hitting young people hardest: some 80% of persons with HIV are 15–30-years-old.

Meanwhile, the proportion of new HIV infections due to unprotected sex has grown. More than 40% of new reported HIV infections in 2005 were among women, a larger proportion than ever before (Pokrovskiy, 2006). A minority of those women probably acquired the virus while using non-sterile drug injecting equipment. Most, however, are believed to have been infected during unprotected sex with a drug-injecting partner. Such diffusion of HIV is especially evident in those regions which had experienced the earliest outbreaks of HIV (such as the Kaliningrad oblast, Krasnodarskiy Krai and Nizhniy Novgorod oblast). However, the trend is also visible in areas with younger epidemics (including the cities of Moscow and St Petersburg, Novgorod, Orenburg, Rostov and Volgograd). Among pregnant women in St Petersburg, for example, HIV prevalence increased from 0.02% in 1999 to 1.25% in 2002 (Khaldeeva et al., 2002). Unless effective prevention efforts are expanded—especially among injecting drug users and their sexual partners, as well as among sex workers and their clients—the Russian Federation's AIDS epidemic will continue to grow.

The exponential rise in HIV infections in the 1990s was caused primarily by increases in HIV infections among large networks of injecting drug users, many of whom subsequently transmitted the virus to sexual partners. As a result, the epidemic growth rate appears to have slowed.

However, there is a possibility that HIV prevalence levels could increase again. Firstly, in many regions, HIV in drug injecting populations has not yet reached saturation levels and there remains a danger of increased HIV incidence in such areas. Secondly, as HIV spreads into the general population and larger numbers of people acquire the virus through unprotected sex, new infections could peak again in the future (Pokrovskiy, 2006). However, both outcomes can be avoided if effective programmes can reach and enable the most vulnerable sections of the population to protect themselves against HIV infection. The Russian Federation still has a window of opportunity for achieving that. Having risen steeply between 1999 and 2002, the rate of new HIV diagnoses in pregnant women stabilized subsequently, which suggests that the spread of HIV beyond injecting drug users is not yet as strong as previously feared (Pokrovskiy, 2006).

In the meantime, using non-sterile injecting equipment remains the predominant risk factor in Russia's epidemic. Social and economic factors (including high youth unemployment, a boom in drug trafficking, and the growth of informal economies) associated with the disintegration of the former Soviet Union have fuelled rampant injecting drug use in the Russian Federation (Rhodes et al., 2006). A study in St Petersburg, for example, has found that almost two thirds (62%) of drug users are un- or underemployed (Kozlov et al., 2006).

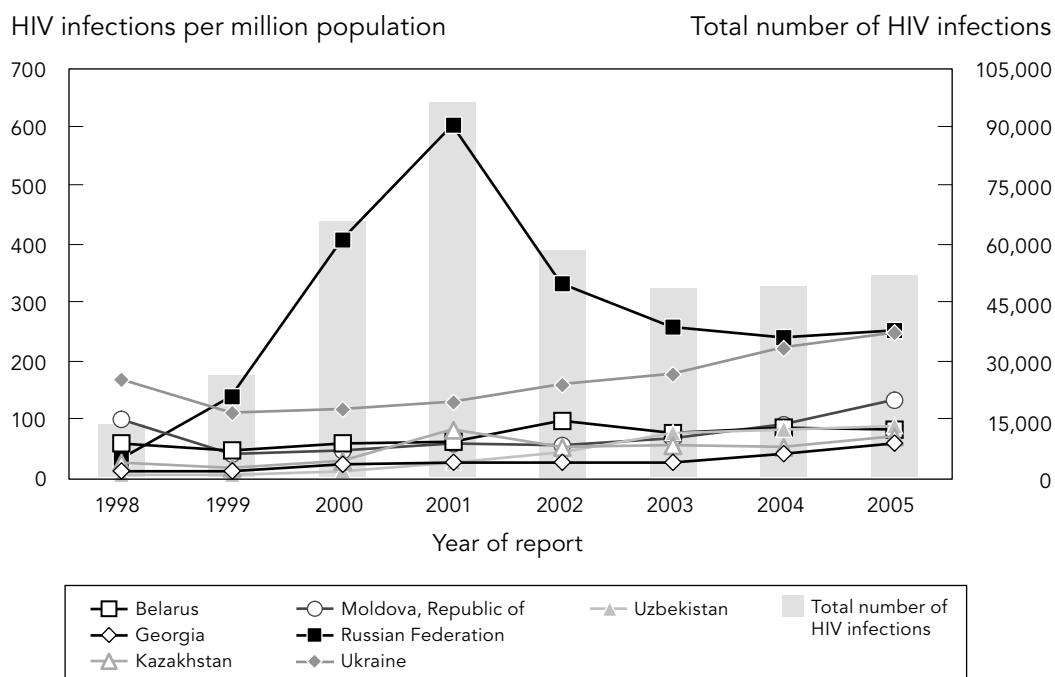
There is wide variation in HIV prevalence among injecting drug users in different regions and locales, possibly reflecting varying risk behaviour. In different studies, HIV prevalence has ranged from as low as 3% in Volgograd (Rhodes et al., 2006) and 3.5%–9% in Barnaul, to 12%–14% in Moscow (Rhodes et al., 2006); Koshkina et al., 2003), 30% in St Petersburg (Shaboltas et al., 2006), and more than 70% in Biysk (Pasteur Scientific and Research Institute of Epidemiology, 2005a). Up to two thirds of the injecting drug users testing HIV-positive in such studies were unaware that they had been infected (Rhodes et al., 2006). More recently, in St Petersburg, HIV *incidence* of 5% was found among injecting drug users, the majority of whom (79%) reported using non-sterile equipment (Kozlov et al., 2006). In some cities of Russia, more harm reduction projects are now in operation, but they are too few in number and too small in scale to significantly affect overall HIV trends.

Meanwhile, the fact that 8% of injecting drug users in Moscow and 20% in Volgograd have been found to have syphilis indicates that unprotected sex is common among many injecting drug users (Rhodes et al., 2006). In some cities, notably St Petersburg, there is a strong association between injecting drug use and sex work: one in three female injecting drug users there have reported selling sex for money or drugs (Kozlov et al., 2006). Meanwhile, the very high HIV prevalence found among sex workers in that city (48%) is largely due to the fact that the majority of sex workers also inject drugs and therefore potentially also use non-sterile equipment for injection (Smolskaya et al., 2005). High HIV infection levels of 14%–16% have also been found

sex workers in Moscow reported injecting drugs (Smolskaya et al., 2004) and HIV prevalence among them is low (3%) (AIDS Infoshare, 2005).

Given that injecting drug users and sex workers face high odds of detention or imprisonment, it is not surprising that the total number of HIV cases reported in Russia's prison system increased from 7500 in 1999 to 32 000 in 2005 (Ministry of Health and Social Development, 2006). A recent study among injecting drug users in Moscow found an increased risk of HIV infection among those who had been imprisoned (Rhodes et al., 2006). In some countries elsewhere in the world, the provision of sterile needles and syringes within prisons forms part of wider-ranging prevention programmes. Unfortunately, in this

Annual newly diagnosed HIV infections per million population by country and total number of HIV infections, Eastern Europe and Central Asia, 1998–2005



Source: EuroHIV, 2006.

Figure 10

in sex workers in Volgogradskaya Oblast, Altayskiy Kray (Pasteur Scientific and Research Institute of Epidemiology, 2005b) and in Ekaterinburg (Smolskaya et al., 2004). Unlike in St Petersburg where sex workers tend to operate independently, sex workers in Moscow tend to operate within highly organized structures where injecting drug use is actively discouraged. Fewer than 5% of

region such public health approaches to harm reduction still appear to be overshadowed by more traditional, law enforcement approaches for dealing with illegal drug use.

As in other countries in the region, the extent of HIV transmission among men who have sex with men has been poorly researched in Russia. In

one study, carried out in Tomsk and Ekaterinburg in 2003, 0% and 4.8% HIV prevalence, respectively, was found in men who have sex with men. However, 60% of the men said they had not used a condom the last time they had sex with another man (Smolskaya et al., 2004). In a recent internet-based survey, 12% of men who have sex with men said they had exchanged sex for money or gifts, but almost two thirds said they always used condoms, whether with regular or casual partners (Population Services International, 2006). Such prevalent unsafe behaviour, in a wider context of widespread injecting drug use and increased sexual transmission of HIV, could lead to a growing epidemic in this population group (EuroHIV, 2006b). Indeed, the HIV prevalence of 0.5% found during diagnostic testing of men who have sex with men in 2004 in the Russian Federation was higher than the 0.2% reported in 2000 (EuroHIV, 2006b).

Ukraine's HIV epidemic continues to grow. Annual HIV diagnoses have more than doubled since 2000, reaching 13 786 in 2005 and bringing to over 97 000 the total number of officially recorded HIV infections (Ministry of Health Ukraine, 2006a). Since that tally only includes infections among people who have been tested at government facilities, the actual number of people living with HIV in Ukraine is considerably higher—an estimated 377 000 [250 000–680 000] at the end of 2005. National adult HIV prevalence was estimated at 1.5% [0.8%–4.3%] in 2005 (Ministry of Health Ukraine et al., 2006b).

The epidemic in Ukraine is still concentrated primarily among most-at-risk populations. HIV prevalence has consistently exceeded 5% among injecting drug users, sex workers and men who have sex with men, but remains less than 1% among pregnant women in urban areas (Ministry of Health Ukraine et al., 2006b). Although increasing numbers of new, sexually transmitted HIV cases involve people who do not have a history of injecting drug use (Grund J-P et al., 2005), using non-sterile injecting drug equipment remains the major risk factor for HIV infection in this epidemic. More than 45% of new HIV infections reported in the first half of 2006 were in injecting drug users (Ministry of Health Ukraine et al., 2006a). While the proportion of injecting drug users among all new cases of HIV has decreased (by way of comparison, it

was approximately 60% in the first six months of 2001), there is no evidence that the epidemic among injecting drug users is declining. In the first half of 2006, the number of injecting drug users registered with HIV increased by 34% in comparison with 2003 (Ministry of Health Ukraine et al., 2006a).

HIV prevalence is very high among injecting drug users, and ranges from 10% in the city of Sumy to over 66% in the city of Mykolayiv (Ministry of Health Ukraine, 2006b). In the capital, Kiev, almost 49% of injecting drug users have been found to be HIV-infected (Ministry of Health Ukraine, 2006b). According to one estimate, more than half (55–60%) of all new HIV infections attributed to sexual transmission in the heavily affected regions of Donetsk and Odessa have been due to unprotected sex with an infected drug-injecting partner (Scherbinska et al., 2006).

Evidence is emerging of previously hidden epidemics in Russia and Ukraine among men who have sex with men.

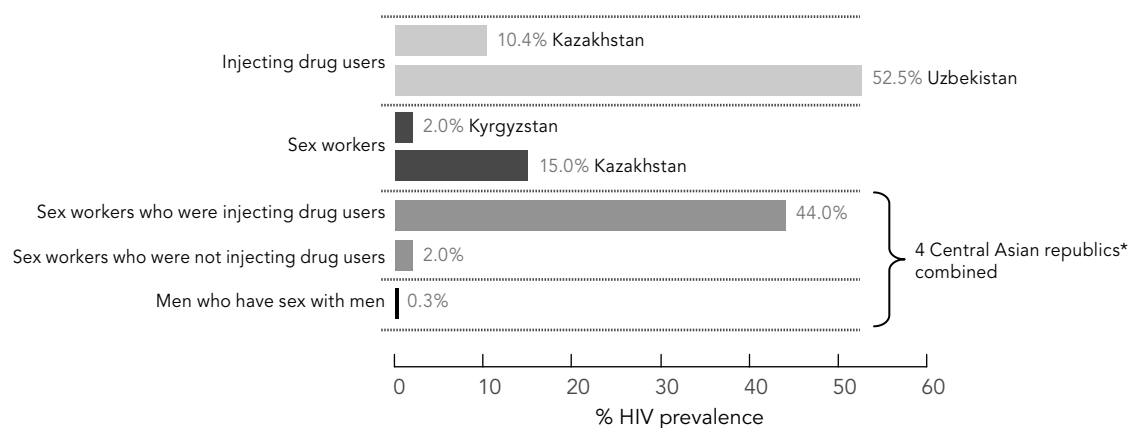
Sex work is an important contributing factor in Ukraine's HIV epidemic. In annual HIV sentinel surveillance conducted in 2005, 8% of female sex workers were found to be HIV-infected in Kiev. In several other cities, HIV prevalence was considerably higher, with at least one in four (25%–29%) female sex workers in the cities of Poltava, Odessa, Lutsk and Donetsk, and almost one in three (32%) in the city of Mykolayiv found to be HIV-infected (Ministry of Health Ukraine et al., 2006a).

Ukraine presents a vivid example of how swiftly an HIV epidemic can move beyond most-at-risk populations and into the general population. The proportion of persons infected through heterosexual transmission of HIV has increased from 14% of new cases during 1999–2003 to over 35% of new cases in the first six months of 2006 (Ministry of Health Ukraine et al., 2006a). Among the 8058 newly reported cases of HIV in the first half of 2006, 41% were women, most of them in their peak reproductive years (Ukrainian AIDS Centre, 2006). HIV prevalence among pregnant women in Ukraine is now among the highest in all of Europe: 0.31% in mid-2006,

having risen from 0.002% in 1995 (Ministry of Health Ukraine et al., 2006a). As of mid-2006, HIV prevalence among pregnant women in five heavily affected regions of Ukraine (Chernigiv, Donetsk, Odessa, Dnipropetrovsk, and Mykolayiv) exceeded 0.8% (Ukrainian AIDS Centre, 2006). The number of children born to HIV-positive mothers also continues to rise, and reached a record 1320 in the first six months of 2006 (Ministry of Health Ukraine et al., 2006a). Nevertheless, Ukraine has made significant progress in reducing the rate of mother-to-child

Two further facets of the country's epidemic also require attention. As in most countries with serious injecting drug use-related HIV epidemics, HIV is prevalent in places of incarceration. In Ukraine's penitentiary system, a little more than 4300 prisoners were registered as HIV-infected in mid-2006 (State Department for the Execution of Punishment, 2006), and 1530 prisoners who were newly reported as HIV-infected in the first six months of 2006 (Ukrainian AIDS Centre, 2006). It is estimated that the HIV prevalence among incarcerated persons has risen from 9%

HIV prevalence among injecting drug users, sex workers and men who have sex with men in Central Asia, selected studies, 2005



* Kazakhstan, Kyrgyzstan, Tajikistan and Uzbekistan

Source: [XVI International AIDS Conference abstract] – CDC Central Asia offices (Almaty & Tashkent), National and City HIV/AIDS centers.

Figure 11

transmission. By the end of 2005, more than 90% of HIV-infected pregnant women were receiving antiretroviral prophylaxis to reduce the transmission of the virus to their newborns. This has led to a threefold reduction (from 28% to 8%) in the mother-to-child transmission rate since 2001 (Ministry of Health Ukraine, 2006a; Ministry of Health Ukraine, 2006b). However, HIV diagnosis and prevention of mother-to-child transmission among women who do not access antenatal screening, as well as the timely and accurate diagnosis of HIV among newborns, remain important challenges.

in 2003 to 14% in mid-2006 (Ukrainian AIDS Centre, 2006).

Studies of the role of sex between men in Ukraine's HIV epidemic are rare. Ukraine rescinded the criminalization of homosexual intercourse in 1991, but men who have sex with men remain stigmatized in Ukrainian society. Limited HIV sentinel surveillance in this population group has revealed HIV prevalence of 28% and 9%, respectively, in the cities of Odessa and Mykolayiv (Ministry of Health Ukraine, 2006a). Efforts to strengthen HIV knowledge and preventive behaviour in prisoners and men

who have sex with men must be improved and expanded.

Although much smaller in scale, some of the epidemics elsewhere in the region are also growing. Since 2001, the rates of newly reported HIV infections have more than doubled in **Georgia** (from 20 per million to 54 in 2005) and the **Republic of Moldova** (from 55 to 127), and almost quadrupled in **Uzbekistan** (from 22 to 83) (EuroHIV, 2006a).

The biggest epidemic in Central Asia is in **Uzbekistan**, which straddles major drug-trafficking routes (Godinho et al., 2005) and where the number of reported HIV cases in Uzbekistan has more than doubled since 2001, reaching 2198 in 2005 (EuroHIV, 2006a). An estimated 31 000 [15 000–99 000] people were living there with HIV in 2005 (UNAIDS, 2006). Concentrated largely in and around the capital, Tashkent, the epidemic is being driven by increasing numbers of HIV infections among injecting drug users—which rose from 447 in 2001 to 1140 in 2005 (EuroHIV, 2006a; Todd et al., 2005; WHO, 2005). Fully 30% of injecting drug users, most of them unemployed, have tested HIV-positive in a study in Tashkent. Low rates of condom use reported by the injecting drug users highlight the danger of sexual transmission of HIV to their partners (Sanchez et al., 2006), and the likelihood that this epidemic will continue to expand.

More concerted efforts are needed to curb the spread of HIV among and beyond **Kazakhstan's** large injecting drug user population (believed to exceed 100 000 people) (Ministry of Health Kazakhstan et al., 2004). Seventeen percent of 200 injecting drug users participating in a study in Temirtau were found to be HIV positive (Ministry of Health Kazakhstan et al., 2005), and injecting drug users accounted for more than two thirds (68%) of the 964 new HIV cases reported in Kazakhstan in 2005 (one third more than the 699 reported in 2004) (EuroHIV, 2006a). It is estimated that over 1200 persons living with HIV are in penitentiaries (WHO, 2005).

Much smaller epidemics are under way in **Kyrgyzstan** and **Tajikistan**. There, too, most new HIV cases involve injecting drug users. In **Tajikistan**, the number of officially reported HIV diagnoses among injecting drug users has grown fourfold since 2001 (from 31 to 142 in

2005) (EuroHIV, 2006a). Almost 16% of injecting drug users are infected with HIV, as are more than 6% of prisoners, according to recent sentinel surveillance in two cities (Ministry of Health Tajikistan, 2006). Unlike **Tajikistan**, the epidemic in **Kyrgyzstan** currently appears to be relative stable, with 130–170 new HIV cases having been reported annually since 2001 (EuroHIV, 2006a). Very few HIV cases have been reported in Turkmenistan, and little is known about the patterns or trends of HIV transmission there (EuroHIV, 2006a).

In **Belarus**, new reported HIV cases have stayed relatively constant (at 710–780 annually) in recent years (EuroHIV, 2006a). Most newly reported HIV infections were acquired during unprotected sex, often from persons who had been infected as a result of using non-sterile drug injecting equipment (WHO, 2005). HIV infection levels as high as 34% (in Zhlobine) and 30% (in the capital, Minsk) have been found in injecting drug users (WHO, 2005). The majority of HIV cases are concentrated in Minsk, and in the Homyel region (in the south).

In Uzbekistan, which straddles major drug-trafficking routes, the number of reported HIV cases has more than doubled, and in Tajikistan they have risen fourfold, since 2001.

More than twice as many new HIV cases were reported in the **Republic of Moldova** in 2005, compared to 2002 (533, up from 209). About half of the new infections are attributable to unprotected sexual activities (EuroHIV, 2006a).

In **Georgia**, a rising trend in new HIV cases has also been observed: the 242 infections recorded in 2005 were more than double the number reported in 2002 (EuroHIV, 2006a). Among HIV cases for whom the mode of transmission is known, most are attributable to non-sterile drug injecting equipment (WHO, 2005). The same trends have been observed in **Armenia**, where a majority of injecting drug users with HIV are believed to have been infected in the Russian Federation or Ukraine. About half of the HIV cases registered by 2005 were in the capital, Yerevan (WHO, 2005).