

The emerging and re-emerging human immunodeficiency virus epidemics in Europe

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Abstract

We provide a summary of the current status of the human immunodeficiency virus (HIV) epidemic, including data on the transmission of drug-resistant virus in the European Region of the WHO. The review was conducted by searching the reports of the European Centre for Disease Prevention and Control and the United Nations General Assembly Special Session country reports to identify the number of HIV cases reported in 2002–2011, the number of HIV tests performed, and the results of the most recent HIV surveys in at-risk groups. In the West, a 5-year linear trend analysis suggests an increase in the number of reported HIV cases in Belgium, Greece, and Iceland, and a decline in The Netherlands, Ireland, Portugal, Switzerland, and the UK. In the Centre, the number of reported cases increased in Bulgaria and Turkey, and in the East, the number of reported cases increased in Armenia, Georgia, and Ukraine. Estonia and Latvia reported a significant downward trend. HIV transmission in men who have sex with men (MSM) and heterosexual transmission accounted for, respectively, 40% and 38% of newly reported HIV cases in the West in 2011, whereas the epidemic in the Centre is predominantly concentrated in MSM. Although injection drug use remains the key driving force of the epidemic in the East, there is increasing evidence of sexual transmission from the core groups of injection drug users, and increasing spread within MSM. The pattern of transmitted drug resistance (TDR) is heterogeneous across Europe; a significant number of clusters of TDR have been recently observed in several European countries.

Keywords: Epidemic, Europe, HIV, HIV tests, trend

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Introduction

Human immunodeficiency virus (HIV) infection is one of the major public health issues in Europe. According to the Joint United Nations Programme on HIV/AIDS (UNAIDS), in 2011 900 000 (830 000–1 000 000) adults and children were living with HIV in the countries of western and central Europe, and 1 400 000 (1 100 000–1 800 000) in the countries of eastern Europe and Central Asia [1]. In 2011, an estimated 30 000 (21 000–40 000) new HIV infections occurred in western and central Europe, and 7000 (6100–7500) people died of AIDS. In the same year, it was estimated that there were 140 000 (91 000–210 000) new HIV infections in East and Central Asia, and 92 000 (63 000–120 000) deaths from AIDS.

According to the data of the European Centre for Disease Prevention and Control (ECDC), 53 974 HIV cases were reported in the European Region of the WHO (WHO EURO) (West—Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Malta, The Netherlands, Portugal, Spain, Sweden, the UK, Iceland, Norway, Andorra, Israel, Monaco, San Marino, and Switzerland; East—Armenia, Azerbaijan, Belarus, Estonia, Georgia, Kazakhstan, Kyrgyzstan, Latvia, Lithuania, Republic of Moldova, Russian Federation, Tajikistan, Turkmenistan, Ukraine, and Uzbekistan; Centre—Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Cyprus, Czech Republic, Hungary, the Former Yugoslav Republic of Macedonia, Montenegro, Poland, Romania, Serbia, Slovakia, Slovenia, Turkey) in 2011 [2]. Of these, 48.5% were reported

in the West, 45.9% in the East, and 5.6% in the Centre. In addition, 67 317 HIV cases were reported in the Russian Federation in 2011. In a decade (comparing the year 2011 with the year 2002), the absolute number of reported HIV cases increased by 89.4%, suggesting a changing pattern of the HIV epidemic across the Region [2,3].

The main modes of HIV transmission vary substantially across the Region. The dominant reported mode of transmission in the East in 2011 was heterosexual (56.7%), whereas, in the West and the Centre, transmission resulting from male-to-male sex predominated (40.1% and 27.3%, respectively) [2]. Notable differences exist across the Region with respect to the male-to-female ratio of the reported HIV cases; in 2011, the ratios were 1.3 : 1 in the East, 2.9 : 1 in the West, and 4.3 : 1 in the Centre.

There are also substantial regional differences in HIV-related morbidity: whereas the rates of reported AIDS cases were 1.0/100 000 and 0.4/100 000 in 2011 in the West and Centre, respectively, the rate was as high as 5.7/100 000 in the East [2].

The aim of this article is to present the recent changes in the HIV epidemics in Europe, with a particular focus on the countries where significant increases and/or a high number of new HIV diagnoses have been reported or where decreases in the reported HIV cases have been recorded since 2002. We also briefly review recent data on the transmission of drug-resistant HIV in Europe.

Methods

We reviewed the reports of the ECDC (for the period 2007–2011) and the reports of the European Centre for the Epidemiological Monitoring of AIDS (for the period 2002–2006) to identify the number of reported cases of HIV in the period 2002–2011 and the number of HIV tests performed per 1000 population. The data on HIV testing had to be sought for the years 2000 and 2001, as a number of countries did not report this data for the year 2002.

Linear regression was performed with STATA V.11.0 to calculate the trend in the reported new HIV diagnoses in a 10-year period (from 2002 to 2011) and in a 5-year period (2007–2011) [4]. The United Nations General Assembly Special Session (UNGASS) country reports on HIV and Global AIDS Response Country Progress reports were reviewed to find the most recent data on HIV prevalence from cross-sectional surveys. The literature review was also conducted with PubMed. The terms included were those relating to HIV infection, resistance to antiretrovirals, and the selected countries. The search included MESH terms and text words

to enhance the retrieval of relevant studies. The language was limited to English, and we searched for manuscripts published since the year 2007.

The summaries of the HIV epidemic are provided for the following countries according to the WHO EURO classification of the European Region: West—Belgium, Greece, Portugal, the UK, Switzerland, France, Spain, Italy, and Germany; Centre—Albania, Bulgaria, Cyprus, Czech Republic, Slovenia, and Turkey; East—Estonia, Latvia, Lithuania, Azerbaijan, Armenia, Georgia, Moldova, Russian Federation, and Ukraine. The countries of Central Asia were not included in the narrative review.

HIV Surveillance Data

Figs 1–3 show the number of newly reported HIV cases per 100 000 population in the period 2002–2011 by region. There was a significant increase in the number of reported HIV cases in the Centre in both the 5-year period (2007–2011) and the 10-year period (2002–2011). In the West, there was a declining trend in the past 5 years; in the East, there was a significant increase in the past 10 years.

West: Continuing High HIV Transmission in Men Who Have Sex with Men (MSM)

Western European countries are considered to have a long-lasting, mature HIV epidemic; however, there has been little overall evidence of a reversal of the epidemic. In 2002, the rate of newly reported infections in the West was 6.5 per 100 000 inhabitants, whereas 10 years later the rate was the same (Fig. 1). Of 26 204 new infections reported in 2011, 74.4% were in males [2]. In 2011, 3905 AIDS cases and 955 deaths from AIDS were reported (Table 1). The most common AIDS indicator disease in 2011 was *Pneumocystis pneumonia* (diagnosed in 27.2% of AIDS cases), followed by oesophageal candidiasis and Kaposi's sarcoma.

The overall average rate of HIV infection in the West in 2011 was 4.1 times higher than that in the Centre [2]. As in other regions, there was considerable variation in the rates of HIV infection between countries and within countries. Sexual transmission was the main mode of transmission: sex between men accounted for 40.1% and sex between men and women for 37.9% of new infections in 2011 [2]. Several countries had a rate of reported infections in 2011 that was considerably higher than the average for the region (per 100 000 inhabitants: Belgium, 10.7; UK, 10.0, Portugal, 8.5; and Spain, 8.4). A formal 5-year and 10-year linear trend analysis of the rate of

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