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## HIV/AIDS in Europe: epidemiological situation in 2006 and a new framework for surveillance

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The European dedicated surveillance network EuroHIV (formerly the European Centre for the Epidemiological Monitoring of AIDS) has been carrying out surveillance based on AIDS case reporting since 1984 [1] and HIV case reporting since 1999 [2] in the World Health Organization European Region. From January 2008, the HIV/AIDS surveillance will be conducted jointly by the European Centre for Disease Prevention and Control (ECDC) and the WHO Regional Office for Europe (WHO EURO) in collaboration with all relevant partners. HIV/AIDS remains a major public health issue in Europe, with an estimated 740,000 individuals living with HIV in Western and Central Europe and 1.7 million in Eastern Europe and Central Asia [3]. The nature of the epidemic and its implications for public health policies vary in different regions and countries in Europe. In advance of World Aids Day on 1 December, this article presents the 2006 HIV/AIDS case reporting data and describes the main outlines for the future of HIV/AIDS surveillance in Europe.

### Methods

Standardised HIV/AIDS surveillance data are collected annually from national correspondents in the 53 countries of the WHO European Region by the EuroHIV project. In 2006, 50 of the 53 countries reported newly diagnosed cases of HIV infection in either aggregate or individual format and 50 countries reported individual and anonymous AIDS cases. No national HIV data were available for Italy, Spain or Monaco, and AIDS data for 2006 were not reported by Azerbaijan, Monaco or Uzbekistan. The probable route of transmission was not reported for any HIV cases in Austria or for adult cases of HIV in Estonia. Furthermore, data on HIV cases infected through mother-to-child transmission are not available for the Russian Federation or Ukraine.

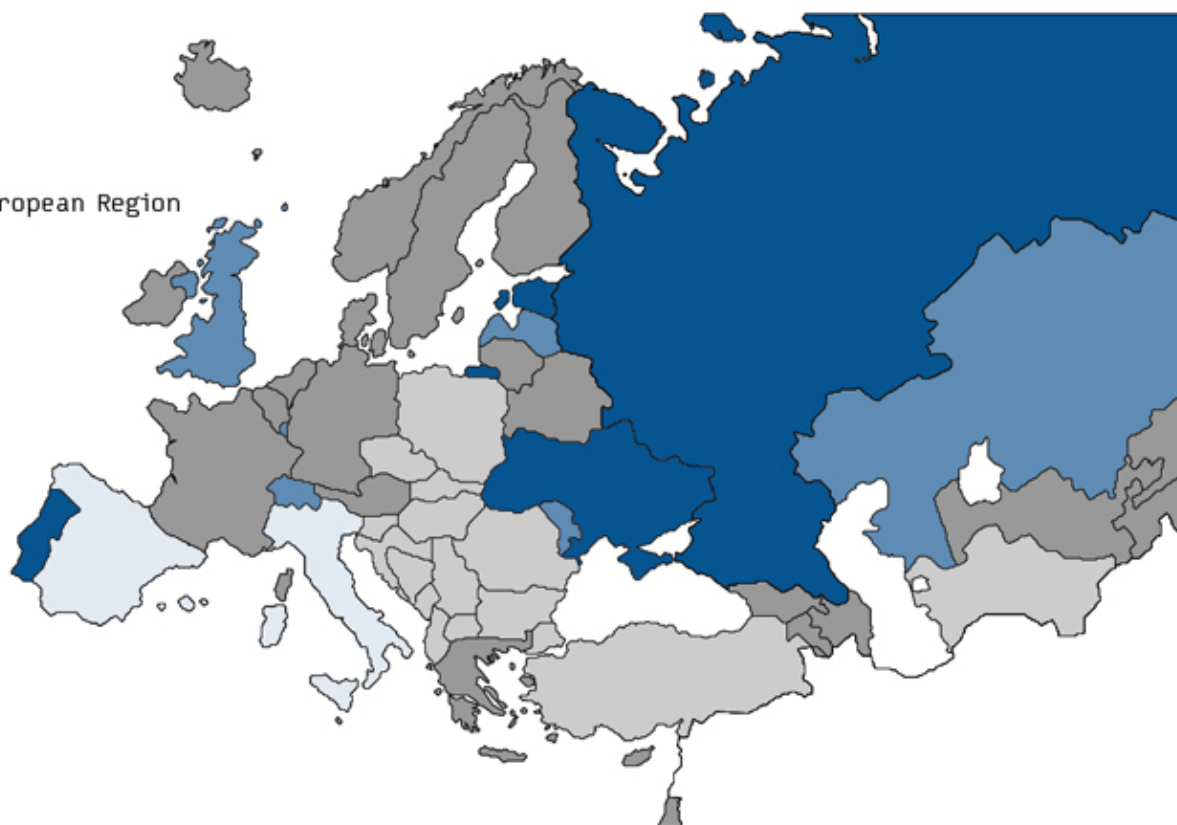
### Epidemiology in Europe

In 2006, 86,912 newly diagnosed cases of HIV infection were reported in Europe. Four countries reported rates of more than 200 new HIV diagnoses per million population: Estonia (504), Ukraine (288), Russian Federation (275) and Portugal (205) (Figure).

## FIGURE

### National rates (per million population) of newly diagnosed cases of HIV reported in 2006 in the WHO European Region

Cases per million



Below, more detailed data are presented for the three sub-regions in Europe: West (23 countries), Centre (15 countries) and East (15 countries)\*.

#### East

In 2006, the largest number of newly diagnosed HIV cases was reported in the East - 59,866 (incidence 210.8 per million population). It is much lower than the epidemic peak observed in 2001 (98,526) but higher than observed in recent years. In this region, over a quarter (27%) of newly diagnosed cases of HIV in 2006 was among young people aged 15-24 years and 41% in females (Table 1). Information on the probable mode of transmission was missing for 40% (24,177) of the newly diagnosed cases. Injecting drug use (IDU) was reported as the probable route of HIV transmission in two thirds of the remaining cases of HIV (22,185; 62%). Over a third of cases (37%) were reported to have acquired HIV infection by heterosexual contact, and the number of new cases has continued to increase from year to year, with an 18% increase observed in 2006 (13,200) compared to 2005 (11,202). The number of cases reported among men who have sex with men (MSM) has remained low (199; <1%), as have other routes of transmission (155; <1%).

#### West

In the West, 25,241 newly diagnosed HIV cases were reported in 2006 (82.5 per million population). The mode of transmission was not reported for over a fifth of cases (5,332 cases, 21%). Of the remaining cases, the predominant mode of transmission was heterosexual contact (10,722; 54%) of which a large proportion were among persons originating from countries with generalised epidemics. Over one third (7,410; 37%) of the newly diagnosed HIV cases were among MSM. In the 13 countries of the West region that have consistently reported HIV data, the number of new HIV diagnoses among MSM has nearly doubled, from 2,538 in 1999 to 5,016 in 2006. The number of cases reported among IDU remains low (1,487; 8%) and 1% of cases were reported with other modes of transmission.

#### Central

In central Europe, the number of new HIV diagnoses has remained low, with 1,805 newly diagnosed cases (9.4 per million population) reported in 2006. No probable mode of transmission was reported for over one third (711; 39%) of cases. Of the remaining cases, the most common route of transmission was heterosexual contact (572; 52%), one quarter were MSM (295; 27%) and 16% IDU (177).

## TABLE

### Characteristics of newly diagnosed cases of HIV reported in 2006 in the WHO European Region, by area

	West*	Centre	East
Number of HIV cases	25,241	1,805	59,866
Rate (per million population)	82.5	9.4	210.8
Percentage of cases:			
Aged 15-24 years old	10%	17%	27%
Female	35%	26%	41%
Number of cases among**:			
IDU	1,487	177	22,185
MSM	7,410	295	199
Heterosexual	10,722	572	13,200
Other	290	50	155
Unknown	5,332	711	24,127

\* No national data available for Italy, Monaco and Spain regarding totals;

\*\* Some countries do not provide data on route of transmission – see methods section

#### AIDS

Since the introduction of highly active antiretroviral therapy (HAART), the incidence of AIDS has declined in the West, from the peak of 66.5 cases per million population in 1994 to 15.9 in 2006. Similarly, recent declines in AIDS incidence have been reported in central Europe, and the incidence remains low (<3 per million). In contrast, in the East, the incidence of AIDS has increased since the late 1990s from negligible levels (1.6 cases per million in 1998) to 25 per million in 2006.

#### Discussion

The number of newly diagnosed cases of HIV infection is still increasing in Europe [4]. This could be due to an increase in testing rates among HIV infected persons, an increase in the number of persons becoming infected in Europe, an increase in the number of persons with HIV infection migrating to Europe, or a combination of these factors. Innovative and appropriate prevention interventions targeted at populations at risk are urgently needed. In the East, prevention and care programmes among IDU, including harm reduction measures, must be intensified with an increasing emphasis on controlling and preventing further heterosexual transmission [5]. In the West, prevention and care programmes need to be targeted at heterosexuals, especially migrant communities, while interventions in other groups, such as IDU, need to be maintained. Despite continued health promotion campaigns among MSM, the number of newly diagnosed HIV cases has increased since 2001 concomitantly to the rise of other sexually transmitted infections [6], underlining the need for inventive and better-targeted prevention in this community.

Appropriate and timely surveillance data is essential to support and develop policies for the prevention and control of the HIV epidemic in Europe. From January 2008 onwards, ECDC and WHO EURO will work together to ensure the coordination of a high quality of HIV/AIDS standardised case reporting data, covering all 53 countries in the European Region. The national HIV/AIDS surveillance correspondents will be requested to send their data to one database, to which they will have full access. In order to ensure a smooth transition, only a few changes will be made in the first year of the data collection.

The new framework for HIV/AIDS case reporting was presented in September 2007 during the EuroHIV annual meeting held in Stockholm, Sweden. Beyond HIV/AIDS case reporting, it was agreed that the exchanges and the collaboration between the participating countries that EuroHIV had built up and developed for many years need to be maintained. A coordination group of national experts for HIV/AIDS will be established in early 2008, which will help and support ECDC, WHO EURO, in future HIV/AIDS surveillance work and prevention programmes. The ECDC and WHO EURO will also collaborate with other international partners, such as EMCDDA.

Likewise, the annual meetings, which represent a unique opportunity for the national correspondents to meet and to exchange information, will be maintained. At the last EuroHIV meeting, future objectives of HIV/AIDS surveillance were discussed, and the national correspondents have stressed the need to improve the quality and the completeness of the data. Furthermore, continuing the monitoring of HIV prevalence data in selected populations, developing behavioural surveillance and monitoring late diagnosis were also mentioned as priorities for the future of HIV/AIDS surveillance.

EuroHIV has been a well established and recognized network that for many years has provided extremely useful data to map HIV infection and AIDS in Europe. ECDC and WHO EURO will now work jointly to continue and improve surveillance of HIV/AIDS in Europe in order to support successful prevention and control measures.

\* The three sub-regions of Europe used in the EuroHIV data

- West, 23 countries: Andorra, Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Israel, Italy, Luxembourg, Malta, Monaco, Netherlands, Norway, Portugal, San Marino, Spain, Sweden, Switzerland, United Kingdom;

- *Centre, 15 countries: Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Cyprus, Czech Republic, Hungary, Former Yugoslav Republic of Macedonia, Montenegro, Poland, Romania, Serbia, Slovakia, Slovenia, Turkey;*
- *East, 15 countries of the former Soviet Union: Armenia, Azerbaijan, Belarus, Estonia, Georgia, Kazakhstan, Kyrgyzstan, Latvia, Lithuania, Republic of Moldova, Russian Federation, Tajikistan, Turkmenistan, Ukraine, Uzbekistan.*

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### Chikungunya in north-eastern Italy: a summing up of the outbreak

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#### Laboratory results

The first outbreak of autochthonously transmitted Chikungunya virus (CHIKV) in Europe, which recently occurred in the province of Ravenna in north-eastern Italy [1,2], has been completely controlled: the last case onset occurred on 28 September in the town of Rimini, and in October no cases were confirmed. Of the 334 suspected or probable CHIKV cases involved in the outbreak, samples were examined of 281 and 204 were laboratory-confirmed by PCR, Hemagglutination-inhibition or both. Reasonably, the number of laboratory-confirmed cases most likely constitutes an underestimate of the extent of the outbreak, since blood or serum samples were not available for all of the individuals who fulfilled the clinical and/or epidemiological criteria of the case-definition.

#### Geographical distribution of cases

Most cases were reported among persons living in or visiting the initially affected villages of Castiglione di Cervia and Castiglione di Ravenna. Four smaller clusters of local transmission were also detected in four towns in the same region (i.e., Cervia, Cesena, Ravenna, and Rimini) which are located 9 to 49 km from the initially affected villages. For at least three of the four clusters, population movement (i.e., persons who visited the area that was primarily affected or persons from the primarily affected area who visited one of the four towns) can be reasonably assumed to have been the main determinant of local transmission. However, if this was the case, the question arises as to why no previous outbreaks of CHIKV occurred in other Italian regions in 2005-2006 (after the epidemic in Reunion), when at least 30 infected travellers returned to locations infested by mosquito vector populations [3]; the same question arises for several hundred cases reported among travellers returning from affected areas to a number of European countries in the same period [3,4,5]. Possible explanations include: i) high concentration of vectors in the affected towns; ii) highly viremic persons exposing themselves to aggressive *Aedes albopictus* populations as a consequence of the structures of houses and/or behavioural factors (e.g., spending time outdoors in houses' surroundings).

Overall, the epidemic in Italy can be said to be the result of the combined effect of the globalisation of vectors and humans, which occurred through a two-step process: i) the introduction and adaptation of the vector *Ae. albopictus* to a new environment (i.e., a temperate climate); and ii) the introduction of CHIKV in a previously infection-free country, with totally susceptible subjects, as the result of population movement (i.e., travelling human hosts, acting as a sort of Trojan Horse). However, the epidemic was limited in space and time, with a marked decay rate since the adoption of appropriate control measures (albeit they were taken at different times in different locations). In addition, there is probably a time-limited capacity of the vector to sustain infection transmission beyond the hot season in a country with a temperate climate.

What did we learn from the Italian epidemic?