

# Surveillance and outbreak reports

## HIV INFECTIONS AND STI CO-INFECTIONS IN MEN WHO HAVE SEX WITH MEN IN BELGIUM: SUSTAINED INCREASE IN HIV DIAGNOSES

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Belgium is currently experiencing an upward trend in the number of new HIV diagnoses characterised by a continuous increase in the number of cases among men who have sex with men (MSM). Based on surveillance data, in the past decade the yearly number of newly diagnosed HIV cases in MSM increased more than threefold, from 101 cases diagnosed in 1999 to 332 cases in 2008. During this period, the majority of new HIV infections in MSM were diagnosed among Belgians citizens (72%), followed by other European nationalities (13%). The increase in HIV diagnoses does not reflect an increase in HIV testing since the number of tests performed nationwide remained remarkably stable over time. The steady increase in the number of newly diagnosed HIV cases among MSM, and the high proportion of MSM among HIV-positive patients co-infected with other sexually transmitted infections (STI) (95.6% in 2008) indicate increases in unsafe sex practices in this group. Development of behavioural surveillance and more qualitative research on reasons for unsafe sex are needed in order to develop more effective prevention strategies.

### Introduction

Re-emergence of the HIV epidemic and continuous high notification rates of newly diagnosed HIV cases in men who have sex with men (MSM) have been observed in many Western European countries. [1-7] Diagnoses of concurrent other sexually transmitted infections (STI) have also increased substantially. In this paper, based on surveillance data collected by the Unit of Epidemiology at the Scientific Institute of Public Health in Brussels, we describe the trends and epidemiological features of HIV and STI among MSM in Belgium.

### Methods

#### HIV infection

The total number of screening tests was provided by the National Institute for Sickness and Invalidity Insurance (INAMI-RIZIV) based on reimbursement figures. HIV testing is widely available and used in Belgium. People may seek HIV testing from their general practitioner, a hospital or a family planning centre.

All serums with positive screening test results are submitted for confirmation to one of the seven AIDS Reference Laboratories. For each confirmed test, a form is sent to the patient's clinician. Based on biology results and information collected at the consultation, the clinician provides data on age, sex, nationality, residence, sexual orientation, probable mode of HIV transmission and CD4 count at the time of HIV diagnosis. Data are validated for duplicate recording

and included in a HIV database maintained at the Scientific Institute of Public Health in Brussels since 1985. In 1990, HIV and AIDS databases were integrated.

#### Sexually transmitted infections

Data on co-infections of HIV and other STI in MSM were collected from the Belgian AIDS Reference Centres. These centres are specialised in STI/HIV counselling and treatment. Seven of the nine medical Centres participate since the beginning of 2007 in the ongoing surveillance of STI. The reported STI included chlamydia, gonorrhoea, syphilis, lymphogranuloma venereum (LGV), hepatitis B virus infection (HBV) and sexually acquired hepatitis C virus infection (HCV). In the surveillance system, only recent, active syphilis infections have to be reported; no information on stage of disease is collected. For hepatitis B and C, only acute infections have to be reported. In order to minimise the workload for the voluntarily participating physicians, no information on the laboratory testing results is collected.

#### Statistical methods

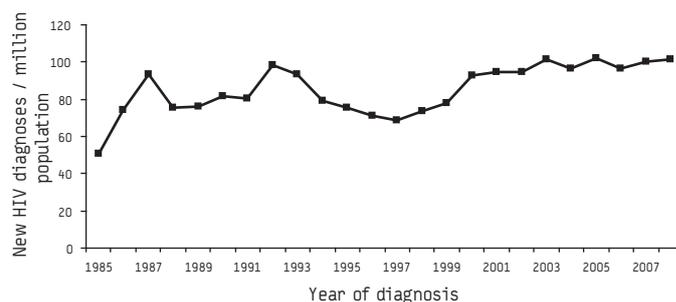
Stata 10 (Statacorp, College Station, Texas, US) was used for analysis and proceeding. Logistic regression was used to analyse factors for late HIV diagnosis.

### Results

#### HIV infection

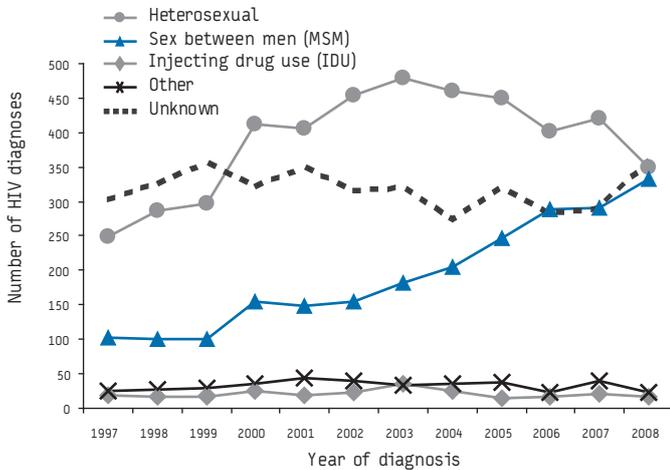
In 2008, there were 1,079 persons newly diagnosed with HIV in Belgium. This is the highest number ever reported. During the

**FIGURE 1**  
Newly diagnosed HIV infections per million population in Belgium, 1985-2008



**FIGURE 2**

**Newly diagnosed HIV cases per mode of transmission, Belgium, 1997-2008**



period 2003-2008, a plateau was observed; the rate of newly diagnosed cases of HIV infection fluctuated between 96 and 102 per million population (Figure 1). Before this plateau phase, the rate of newly diagnosed cases had increased by 47%, from 69 per million in 1997 to 101 per million in 2003.

In the past decade, the yearly number of new HIV diagnoses in MSM increased by 228%, from 101 cases diagnosed in 1999 to 332 cases in 2008 (Figure 2). The proportion of MSM among all newly diagnosed HIV cases for whom the probable transmission mode was known increased from 23% in 1999 to 46% in 2008. During the same period, the trend in new HIV diagnoses in heterosexuals was reversed: in a first phase the yearly number of new diagnoses increased by 61%, from 298 cases diagnosed in 1999 to 480 cases in 2003; in a second phase, this number decreased by 27% to 350 cases diagnosed in 2008 (Figure 2).

In 2008, almost half of HIV diagnoses were in MSM (46%), even if heterosexual transmission remained the predominant reported mode of infection (48%). Only 2% of patients were infected by intravenous drug use. Transmission mode data were available for approximately 70% of new diagnoses.

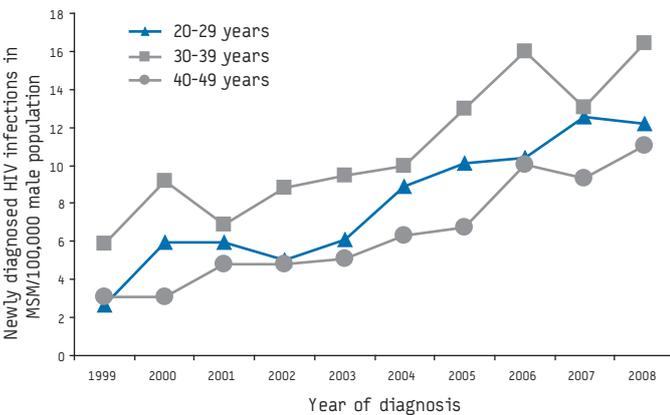
During the period 1999-2008, increasing rates of newly diagnosed HIV cases in MSM per 100,000 male population were observed among all age groups: the rate in age group 20-29 years increased by a factor 4.5, and the rates in age groups 30-39 years and 40-49 years by factors 2.8 and 3.5 respectively (Figure 3). The median age of MSM at time of diagnosis remained constant. For the period 1999-2008, the median age was 37 years.

The majority of new HIV infections in MSM were diagnosed among Belgians citizens (72%), followed by other European nationalities (13%). Among new diagnoses in heterosexuals, 59% were patients from sub-Saharan Africa, and 27% were of Belgian nationality (Figure 4).

Surveillance data suggest that HIV testing behaviour evolved in MSM and that significant improvement was made regarding early HIV diagnosis during the last years. A steady and significant increase of CD4 count at HIV diagnosis was observed between 2001

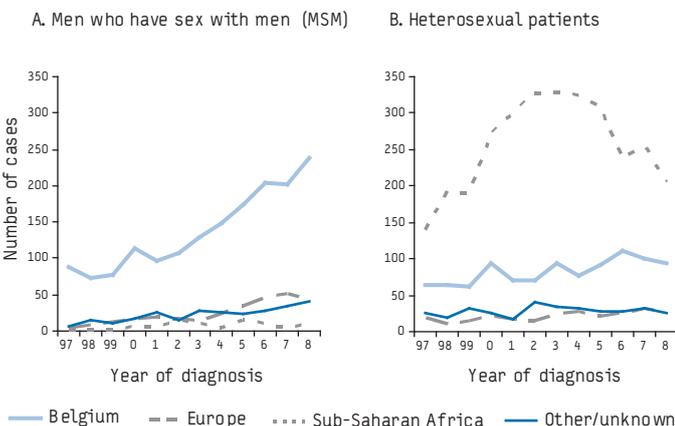
**FIGURE 3**

**Newly diagnosed HIV infections in men who have sex with men (MSM) per 100,000 population in the respective male age groups in Belgium, 1999-2008**



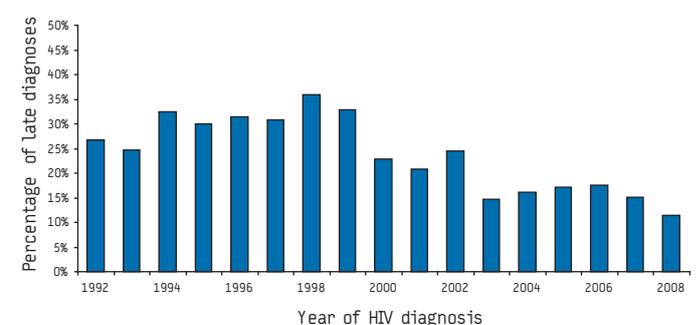
**FIGURE 4**

**Nationality of newly diagnosed HIV cases in Belgium, 1997-2008**



**FIGURE 5**

**Proportion of late HIV diagnoses among men who have sex with men (MSM) in Belgium, 1992-2008**



Late diagnosis defined as CD4 < 200mm<sup>3</sup> at HIV diagnosis or AIDS diagnosed within three months of the HIV

and 2008, suggesting that HIV infections were diagnosed earlier in recent years. The mean CD4 count at HIV diagnosis among MSM was 526 in 2008 versus 395 in 2001 ( $p < 0.001$ ).

Furthermore, the proportion of late HIV diagnoses (defined as CD4 cell count  $< 200$  per  $\text{mm}^3$  at diagnosis or AIDS diagnosed within three months) among MSM significantly decreased over time (Figure 5). In a multivariate analysis controlling for time of diagnosis and nationality, older age was independently associated with late HIV diagnosis ( $p < 0.001$ ).

#### HIV testing

An average of 56 HIV tests per 1000 population are performed nationwide yearly, excluding tests related to blood donations. The number of tests performed remained remarkably stable over time, varying between 51 and 57 HIV screening tests per 1,000 individuals per year during the period 1997-2008.

#### Sexually transmitted infections

For 2008, seven of the nine AIDS Reference Centres reported 267 episodes of STI diagnosed in 241 MSM living with HIV. MSM represented 95.6% of all HIV-positive patients reported with a new STI episode in these centres for 2008 (Table). In 215 cases, patients were aware of their HIV status at the time of the STI consultation. In 26 cases (10.8%), HIV infection was diagnosed at the STI consultation.

Among 162 syphilis diagnoses, 67 (41.4%) were reported as re-infections. In 26 patients (10.8%), two STI other than HIV were diagnosed at the same time. Syphilis was associated with chlamydia in eight cases, with LGV in six cases, with HCV in three cases and with gonorrhoea in one case. Gonorrhoea was associated with chlamydia in five cases and with LGV in three cases.

#### Discussion

After years of steady decrease, from 1997, a reverse has been observed in the number of newly diagnosed HIV infections in Belgium [7].

In 2008, the number of reported new HIV diagnoses among MSM was higher than ever since the beginning of the epidemic, including among young MSM. The increasing trend in Belgian MSM was continuous from 1999 until 2008, while the numbers reported in heterosexuals of sub-Saharan origin seem to decrease in recent years.

**TABLE**

#### Sexually transmitted infections (STI) diagnosed in HIV-positive men who have sex with men (MSM) in Belgium, 2008

STI diagnoses	Number of episodes
Syphilis	162
Chlamydia	29
Gonorrhoea	29
Lymphogranuloma venereum (LGV)	31
Hepatitis C (HCV)	14
Hepatitis B (HBV)	2
Total*	267

\*Total number of STI episodes diagnosed in 241 MSM living with HIV

Changes in HIV testing may influence trends in HIV diagnoses [8]. In Belgium however, the increase in HIV diagnoses does not reflect an increase in HIV testing since the number of tests performed nationwide has remained remarkably stable over time. On the other hand, increasing trends may partially reflect changes in the targeting of most at-risk groups during the period 1997-2008, as suggested by the fact that MSM are diagnosed earlier in recent years. Testing promotion campaigns focused on MSM have been launched in recent years.

The steady increasing trend in newly diagnosed HIV infections among MSM, and the high rate of co-infections with other STI are worrying [9-10]. In 2008, in 11% of HIV-positive MSM co-infected with STI reported by the participating AIDS Reference Centres, HIV seropositivity was discovered following the STI consultation. This finding underlines the importance of offering an HIV test to patients presenting with a STI.

These observations corroborate recent studies indicating increasing prevalence of sexual risk behaviour among MSM, including those who are aware of their HIV-positive status. A survey in the French Community of Belgium carried out in 2004 and 2005 among 942 MSM pointed out that although the majority of the respondents mentioned a high level of protection during anal intercourse, a quarter of respondents had at least one unprotected anal intercourse in the last year with a partner whose status was unknown or different from their own [11]. Moreover, HIV-positive men and men who were not sure about their HIV status, were found to be more likely to admit unprotected anal intercourses [11]. In the Flemish Community of Belgium, 1,793 MSM completed an internet questionnaire in 2007; this study found a higher rate of STI infections among HIV-positive MSM compared to HIV-negative MSM. The characteristics associated with sexual risk behaviour in this study were drug use, lower educational level, lower score on mental health, less social support, more sensation seeking and more sex partners [9].

It is essential to adapt and to reinforce prevention interventions aimed at risk groups. The survey conducted in the French Community showed that knowledge of ways of transmission and treatment of HIV among respondents was good, nevertheless many engaged in high-risk sexual practices. Hence, while providing information on HIV and STI remains necessary, it is not sufficient and has to be combined with other preventive interventions. Development of behavioural surveillance and more qualitative research on reasons why people practise unsafe sex are needed in order to develop more effective prevention strategies.

#### Acknowledgements

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