

# Education and debate

## Are trends in HIV, gonorrhoea, and syphilis worsening in western Europe?

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The prevalence of gonorrhoea and syphilis, and that of HIV infection among heterosexuals, has been increasing in many European countries since 1995. Angus Nicoll and Françoise Hamers make a case for introducing surveillance of sexually transmitted infections other than HIV at a European level

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### Introduction

As a consequence of AIDS prevention campaigns in the late 1980s and the early 1990s, the numbers of new reported diagnoses of gonorrhoea, infectious syphilis, and other sexually transmitted infections fell in several countries in western Europe.<sup>1</sup> The downward trends in gonorrhoea seen in England and Wales, France, the Netherlands, and Sweden (fig 1) were typical and paralleled reports of declining levels of sexual behaviours with a high risk of transmitting infection.<sup>2</sup> Available data indicate that the campaigns seem to have been successful in either reducing transmission of HIV or preventing it from rising as much as it did in countries that did not have early interventions.<sup>3</sup>

In Europe at the start of the 21st century, HIV remains the most serious sexually transmitted infection. An estimated 540 000 west Europeans have an infection that remains incurable and the cost of treating a single adult once discounting for time is undertaken is between £135 000 and £181 000 (US\$192 000-258 000, €204 000-273 000). Including all costs the total monetary value is such that the value of preventing a single transmission is estimated to be between £500 000 and £1m.<sup>4 5</sup> The potential to infect others is lifelong, the stigma of the infection is enduring, and HIV retains a remarkable ability to expose and exploit weaknesses in societies and healthcare systems, notably through affecting marginalised groups.<sup>4</sup>

Recently, concern has been raised in the United States over a resurgence of risky sexual behaviours and infections among men who have sex with men.<sup>6</sup> In western Europe men who have sex with men remain the group most at risk of being or becoming infected with HIV.<sup>7</sup> Adverse trends in the incidence of sexually transmitted diseases have also been reported among heterosexuals.<sup>5 8 9</sup> We examined national trends in diagnosed HIV infections, gonorrhoea, and infectious syphilis from 1995 to 2000, using published routine data and studies.

### Methods

We studied new diagnoses of HIV infection reported for 1995-2000 by the 10 west European countries

### Summary points

Trend data show that the numbers of new diagnoses of sexually acquired HIV infections increased by 20% in western Europe between 1995 and 2000

Gonorrhoea reports have increased in France, the Netherlands, Sweden, Switzerland, and the United Kingdom

The Netherlands, France, Ireland, and the United Kingdom reported outbreaks of syphilis in men having sex with men, including men already infected with HIV

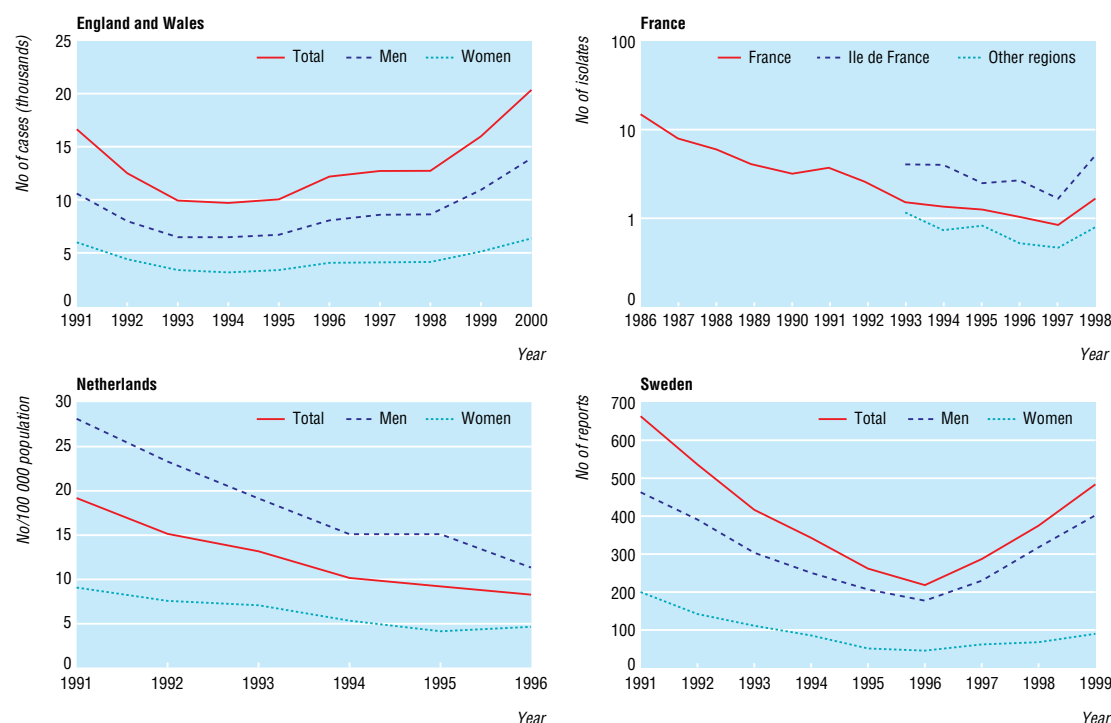
These preliminary data for several European countries imply that people may increasingly take sexual risks

HIV remains Europe's most important sexually transmitted infection, yet complacency over HIV prevention may have set in among individuals, populations, and some governments in western Europe

(Belgium, Denmark, Germany, Iceland, Ireland, Norway, Luxembourg, Sweden, Switzerland, United Kingdom) collaborating with the European Centre for the Epidemiological Monitoring of AIDS (EuroHIV).<sup>7</sup> Currently, no surveillance for sexually transmitted diseases other than HIV is routinely being undertaken in Europe. We therefore used published annual reports from national surveillance centres and performed a systematic literature search of published papers. We searched by using the appropriate MeSH terms and the "explode" function in PubMed, and grey literature identified from journal articles. We restricted our study to gonorrhoea and infectious syphilis because they are the sexually transmitted infections that most clearly reflect trends in risky sexual behaviours. Syphilis is particularly associated with sexual HIV transmission and facilitates it.<sup>10 11</sup>



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**Fig 1** Trends in gonorrhoea in England and Wales, France, the Netherlands, and Sweden  
 England and Wales: cases of gonorrhoea seen in GUM clinics, 1991-2000 (adapted from reference 9)  
 France: trends in gonococcal infections in RENAGO laboratories, 1991-9 (adapted from reference 8)  
 Netherlands: notified cases of gonorrhoea per 100 000 inhabitants, 1976- (adapted from reference 1)  
 Sweden: number of clinically reported *Neisseria gonorrhoeae* cases, 1991-99 (adapted from Smittskyddsinstitutet (Swedish Institute for Infectious Disease Control). *Smittsamma Sjukdomar 1999*. Stockholm: Smittskyddsinstitutet, 2000)

## Results

### Trends in reports of newly diagnosed HIV

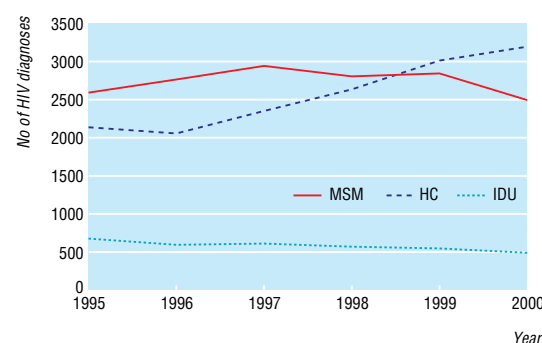
Of the 43 866 new diagnoses of HIV reported by the 10 collaborating countries for the entire 1995-2000 period, 37% (16 173) were attributed to sex between men, 35% (15 258) to sex between men and women, 8% (3409) to sharing of drug injection material, 3% (1141) to other transmission modes (transmission from mother to child (810) or through receiving blood or blood products (331)), and for 18% (7885), no risk group was reported. Overall, the number of reported diagnoses remained relatively unchanged between 1995 and 2000. Trends differed greatly, however, between risk groups. The annual number of diagnoses attributed to needle sharing among drug injectors declined by 32%, from 681 in 1995 to 460 in 2000. The number of infections contracted by sexual intercourse has not fallen: annual diagnoses attributed to sex between men have fallen by 12%, from 2762 to 2426, but diagnoses attributed to heterosexual sex have increased by 48%, from 2127 to 3156 (fig 2). As a result, the proportion of all diagnosed infections that were sexually acquired increased from 66% (4889 of 7458) to 74% (5582 of 7580) in 2000, and annual numbers of sexually acquired infections increased by 20% from 4889 to 5882. Sixty four per cent of heterosexual infections reported in 1997-2000 were diagnosed in people originating from countries outside Europe that have high prevalences of HIV.<sup>7</sup>

### Trends in gonorrhoea and infectious syphilis

The most recent published national data from west European countries are consistent with increasing

rates of gonorrhoea. In England and Wales the number of diagnoses of gonorrhoea at clinics for sexually transmitted infections rose by 102%, from 10 204 to 20 663, between 1995 and 2000, with the steepest increase (29%) between 1999 and 2000.<sup>12</sup> The rises have been widespread and have been highest among older teenagers (16-19 years), at 178% (from 1428 to 1917) for male patients and 133% (from 1868 to 2392) for female patients.

In France, laboratory reports show increasing gonorrhoea rates after 1997. The number of new diagnoses reported rose by 170% in 1998, to 128,



**Fig 2** Trends in reports of new HIV diagnoses to EuroHIV, 1995-2000, by major exposure category (Belgium, Denmark, Germany, Iceland, Ireland, Luxembourg Norway, Sweden, Switzerland, United Kingdom. MSM=men having sex with men, HC=heterosexual men and women; IDU=injecting drug user) (adapted from reference 7)

compared with 48 in 1997, in the Paris area (Île de France) and by 46%, from 78 in 1997 to 114 in 1998, for laboratories in other parts of the country, a rise of 92% overall, from 126 in 1997 to 242 in 1998.<sup>8</sup> Swedish data show a rise of 154% from 1995 to 2000 (from 258 to 655).<sup>13</sup> In a clinic for sexually transmitted diseases in Amsterdam, reported new diagnoses of gonorrhoea have increased markedly since 1998, particularly among men who have sex with men, in whom the number of cases of anorectal gonorrhoea has doubled from 94 to 186 between 1998 and 1999.<sup>14</sup> Rates of antimicrobial resistance in isolates of *Neisseria gonorrhoeae* have been increasing in Finland, Sweden, the Netherlands, and the United Kingdom, which implies that some current antibiotic treatments may not be effective in the future (fig A on bmj.com).<sup>9 13-15</sup> Where data on sexual orientation were available, notable rises in gonorrhoea were observed in Greece, the Netherlands, Sweden, Switzerland and the United Kingdom in men who have sex with men (fig B on bmj.com).<sup>9 12 15-17</sup>

Few routine data on syphilis are available in Europe. The United Kingdom is an exception,<sup>9</sup> and the incidence of infectious syphilis in England and Wales fell to an all time low in the mid-1990s, with only 132 cases diagnosed in 1995. Totals started to increase and reached 326 cases in 2000 (fig 3). This was due to multiple outbreaks, especially among men who have sex with men, some of whom already knew that they were infected with HIV.<sup>5 9 18</sup> In 1999 and 2000, the Netherlands, Ireland, France, and Norway also reported outbreaks of syphilis in men who have sex with men, including men already infected with HIV.<sup>18</sup> All or most of the new diagnoses represented local transmission rather than infections acquired abroad of previously infected men and women.<sup>9 18</sup>

### Trends in the prevalence of HIV

New cases of HIV infection continue to occur in west European populations as a result of endemic transmission and net immigration. Highly active anti-retroviral therapy (HAART) has dramatically reduced deaths from HIV, and the numbers of people living with HIV are rising substantially. The Joint United Nations Programme on AIDS (UNAIDS) estimates that new transmissions are occurring in western

Europe at a rate of around 30 000 annually.<sup>4</sup> This translates into numbers of people living with HIV increasing at around 3% per year in 2000, but this is a conservative estimate as immigrants infected with HIV have not been included.<sup>4</sup> For England and Wales, direct data on changes in the prevalence of diagnosed HIV are available through an annual survey.<sup>19</sup> According to this survey the number of people living with diagnosed HIV has been increasing by 10-15% per year since 1996. If current trends continue, the prevalence will double between 1995 and the end of 2003 (fig C on bmj.com).

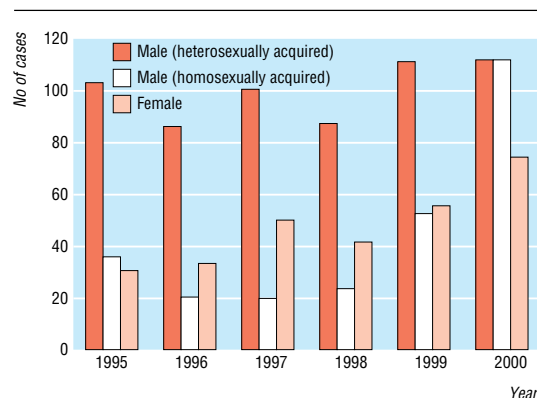
### Discussion

Trends of HIV diagnoses are difficult to interpret as they rely on people seeking or being offered HIV testing and on accurate reporting. New diagnoses may represent transmissions that took place years previously. Furthermore, the countries most affected by HIV (France, Italy, Portugal, and Spain) do not have national reporting data on HIV. Despite these caveats, the observed unchanging numbers of HIV diagnoses in homosexual men and the rising numbers in heterosexuals over 15 years after the start of the epidemic in western Europe can be consistent only with continuing sexual transmission of HIV.

This report could not be fully successful in reviewing trends in gonorrhoea and infectious syphilis in western Europe because of the lack of any coordinated or systematic surveillance in Europe for sexually transmitted infections apart from HIV. The most recent pan-European data are from a sentinel study completed in 1996 (sentinel studies are focused studies in particular locations).<sup>17</sup> This contrasts with the United States, where routine surveillance has been undertaken for many years. Some European countries collect data from specialist clinics or laboratories.<sup>9 13</sup> Countries where most sexually transmitted infections are dealt with by primary care or private doctors find it especially difficult to establish reporting. Comparisons between European countries are often meaningless as they reflect differences in healthcare and surveillance mechanisms rather than levels of infection and disease. Trend data from individual countries are more useful, and these have been the focus of this report.

Given the rising trends in multiple countries, the case for developing surveillance of sexually transmitted infections and antimicrobial resistance across Europe is strong. A surveillance system will need to capture data on sexual orientation, ethnic group, and country of birth. Because of the differences in healthcare systems and the difficulties in collecting the essential risk and demographic data, a sentinel approach is likely to be most rewarding.<sup>20</sup> But monitoring numbers of new diagnoses of newly acquired HIV infection and so called incident infections more closely will be equally important.

The rising incidences of gonorrhoea and syphilis reported after 1995 are worrying, even if they turn out to be confined to a limited list of countries. In the early 1990s, some authorities in the United Kingdom and Sweden contemplated introducing elimination programmes for indigenous gonorrhoea transmission, but the recent trends are consistent with increasing



**Fig 3** Trends in infectious (primary and secondary) syphilis seen in clinics for sexually transmitted infections by sex and male sexual orientation in England and Wales, 1995-2000

amounts of unsafe sex, perhaps representing a loss of impact of the HIV prevention campaigns of the 1980s and early 1990s.<sup>2,3</sup> The trends among men who have sex with men are the most worrying as this group has the highest prevalence of HIV, and if these men have unsafe sex this is most likely to increase HIV transmission.<sup>11</sup> The combination with outbreaks of infectious syphilis may facilitate transmission.<sup>18</sup> Some authorities have identified young homosexual men as being at particular risk because they missed the HIV prevention campaigns of the 1980s.<sup>3</sup> The data on gonorrhoea and syphilis presented here imply that increasing risk taking is a phenomenon occurring in older and younger homosexual or bisexual men.<sup>9</sup>

Surveillance alone is ineffective if it is not supported by public health action, and new tools need to be developed for responding to outbreaks of sexually transmitted infections. The rising numbers of men and women living with diagnosed HIV infection are also a cause for concern. This rise is the result of increased longevity thanks to successful treatment with highly active antiretroviral drugs combined with continuing indigenous HIV transmission. Numbers of people infected with HIV moving into Europe are also contributing, but simply stopping immigration, even if that was possible, would not halt the rising prevalence. The cost of treatment will increase across western Europe. The trends also mean that Europeans acquiring new sexual partners are increasingly likely to encounter people infected with HIV, and the impact on HIV transmission is unclear. The rate of transmission may rise, as many people infected with HIV feel well and have sex that is not necessarily safe. Some data show that numbers of men and women with diagnosed HIV infection still acquired other sexually transmitted infections, which will render them more infectious.<sup>9</sup> Equally, however, because many more HIV infected men and women are taking highly active antiretroviral drugs and their viral loads are well controlled, the overall force of infection might fall.

### Worsening sexual health

These preliminary data show that sexual health has worsened in parts of western Europe in recent years. Aside from the United Kingdom, where a sexual health strategy has been adopted,<sup>5</sup> the data imply that complacency over HIV prevention efforts has set in among many individuals and some governments. Behavioural data from the United Kingdom are consistent with this view, although equally many people, especially young people, are practising safe sex.<sup>21</sup> Since increasing numbers of people are living with HIV, levels of sexually transmitted infections that facilitate HIV transmission are rising, and sexual behaviour is getting more risky, the danger is that HIV transmission rates could increase again.<sup>3,6,11</sup> This has probably already happened in the United States.<sup>4</sup> Efforts to prevent the transmission of HIV need to be strengthened. The levels of transmission of HIV and other sexually transmitted infections are an order of magnitude higher in parts of eastern Europe and the states of the former Soviet Union.<sup>22</sup> In addition to prevention measures, consistent surveillance therefore needs to be established across Europe to monitor trends in key sexually transmitted infections, resist-

ance of *N gonorrhoeae*, and likely levels of risk of HIV transmission.

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