Sexually transmitted infections in the Netherlands in 2006

SEXUALLY TRANSMITTED INFECTIONS IN THE NETHERLANDS IN 2006

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RAPPORT IN HET KORT

Seksueel overdraagbare aandoeningen in Nederland in 2006
De landelijk dekkende soa-centra waar voor hoogrisicogroepen een laagdrempelige aanvullende curatieve soazorg wordt geboden, vormen de basis van de nationale soa surveillance. Ook in 2006 was chlamydia de meest gediagnosticeerde bacteriële soa in de soa-centra. Het percentage positieve testen bij heteroseksuele mannen en bij mannen die seks hebben met mannen (MSM) stabiliseerde in 2006. Chlamydia werd het meest gediagnosticeerd bij heteroseksuele jongeren. Het aantal gonorroe- en syfilis-diagnoses nam verder af in 2006. Beide infecties werden het meest gediagnosticeerd bij MSM. Daarnaast nam vanaf juli 2006 het aantal LGV-diagnoses onder MSM weer toe wat aangeeft dat continue alertheid hiervoor nodig blijkt. In juni 2007 waren in totaal 13.086 personen met hiv in Nederland geregistreerd. In 2006 zijn 871 nieuwe hiv-infecties gerapporteerd in de nationale hiv-registratie bij de Stichting HIV Monitoring. Het aandeel van MSM onder nieuw gerapporteerde hiv-infecties nam in 2006 verder toe. In de soa-centra werden soa vaak gediagnosticeerd bij hiv-positieve MSM. Zowel in preventie als interventie zijn innovatieve methoden nodig om de continue soa- en hiv-transmissie in deze hoogrisicogroep te verminderen.

Ook onder bepaalde etnische groepen in Nederland (onder andere afkomstig uit Suriname, Nederlandse Antillen en Aruba) komt relatief vaker chlamydia, gonorroe en syfilis (alleen heteroseksuele mannen) voor dan onder autochtone Nederlanders, wat aangeeft dat preventie gericht op specifieke groepen essentieel is. De meerderheid van de heteroseksuelen met hiv rapporteerde de hiv-infectie te hebben opgelopen in het land van herkomst. Migratie blijft daarom een belangrijke risicofactor, ondanks een dalend aandeel in de nieuw gerapporteerde hiv-infecties.

In 2006 nam het percentage ciprofloxacineresistente gonokokken verder toe tot 38% (onder MSM 45%). Tot nu toe is er geen resistentie aangetoond tegen cefalosporines, de huidige eerste keus behandeling. Waakzaamheid blijft geboden.

Trefwoorden: hiv/aids, soa, surveillance, trends, Nederland

CONTENTS

ABSTRACT

Sexually Transmitted Infections, including HIV, in the Netherlands in 2006
The nationally covered low threshold STI centres offering STI care targeted at high risk groups, provide surveillance data to monitor national trends in STI, including HIV. In 2006, chlamydia remained the most commonly diagnosed bacterial STI in the Netherlands in the STI centres, in spite of stabilizing trends in MSM and heterosexual men. The majority of chlamydia diagnoses were made in young heterosexuals. The decreasing trend in diagnoses of gonorrhoea (in heterosexuals) and syphilis continued further in 2006. Both infections were most prevalent among MSM. Additionally, a new increase in LGV diagnoses was observed among MSM, indicating that continued awareness is needed. As of June 2007, a cumulative total of 13,086 HIV cases, under medical care, had been recorded in the Netherlands. In 2006, 871 new cases were recorded in the national HIV registry of the HMF. The proportion of MSM among HIV cases reporting for care increased again in 2006. Concurrent STI were often diagnosed among HIV positive MSM visiting STI centres. Continuing STI and HIV transmission in this high risk group warrants intensified and innovative interventions.

As in previous years, specific ethnic minorities (for instance from Surinam, the Netherlands Antilles and Aruba) had higher positivity rates for genital chlamydial infection, gonorrhoea and syphilis (heterosexual men) than autochthonous Dutch, indicating the need for targeted intervention by risk profile. Furthermore, the majority of HIV infected heterosexuals entering in care, reported to have acquired their infection abroad.

In 2006, the percentage of ciprofloxacin resistance in gonococci further increased up to 38% (among MSM 45%). So far, resistance to cephalosporins, current recommended first line therapy, has not yet been recorded. Alertness remains indicated.

Key words: HIV/AIDS, STI, surveillance, trends, the Netherlands

PREFACE

This report presents the annual surveillance data and a review of the epidemiology of sexually transmitted infections (STI) , including HIV/AIDS, in the Netherlands.

In this report, we have aimed to produce an overview of recent trends and current developments in the field of STI from the available sources.

We hope that this report will contribute to a better understanding of the distribution and determinants of STI, including HIV, in the Netherlands and also to improved effectiveness of prevention measures. The information is made accessible for policy makers, researchers in the STI field and anyone with an interest in STI in the Netherlands. More information on STI and HIV in the Netherlands is available at www.soahiv.nl and www.hiv-monitoring.nl. A copy of this report can also be downloaded in PDF format from www.soahiv.nl.

Acknowledgements

We gratefully acknowledge the collaboration with physicians, public health doctors and nurses, microbiologists, epidemiologists, dermatologists, behavioural scientists, prevention workers and other professionals working in the field of STI and HIV. We would like to thank organisations for their continuing collaboration: STI centres (STI clinics and municipal health services), HIV Monitoring Foundation (HMF), medical microbiological laboratories, SOA AIDS Nederland, GGD Nederland, Rutgers Nisso group, NIGZ, HIV Vereniging and Schorer.

Further information

Any comment or suggestions that would improve the usefulness of this report are appreciated and should be sent to soahiv@rivm.nl.

SAMENVATTING

In januari 2006 is in Nederland de nationale soa-surveillance via de regionale soa-centra officieel ingevoerd en daarmee is de surveillance van soa in het soa-peilstation vervangen. In 2006 werden in totaal 68,977 nieuwe soa-consulten uitgevoerd bij de soa-centra, een toename van 10% ten opzichte van 2005.

Bacteriële soa

Ook in 2006 was chlamydia de meest gediagnosticeerde bacteriële soa in de soa-centra. Het percentage positieve chlamydia-testen steeg licht bij vrouwen. Over de lange termijn is een stijgende trend in het absolute aantal testen en diagnoses van chlamydia te zien, echter bij heteroseksuele mannen en bij mannen die seks hebben met mannen (MSM) stabiliseerde het percentage positieve chlamydia-testen in 2006. Chlamydia werd het meest gediagnosticeerd bij heteroseksuele jongeren onder de 25 jaar, die ook het hoogste percentage positieve testen hadden. Het aantal gonorroe en syfilis-diagnoses nam verder af in 2006. Beide infecties werden het meest gediagnosticeerd bij MSM (54% van gonorroe-diagnoses en 80% van syfilis-diagnoses) en het percentage positieve testen nam toe met de leeftijd. Bij bijna de helft van de hiv-positieve MSM soa-centrumbezoekers (46%), werd een soa gediagnosticeerd. De epidemie van lymfogranuloma venereum (LGV), die in 2005 over zijn hoogtepunt heen leek, had weer een opleving in 2006. Vanaf juli 2006 nam het aantal LGV-diagnoses onder MSM weer toe, wat aangeeft dat continue alertheid nodig is. Bepaalde etnische groepen (onder andere afkomstig uit Suriname, Nederlandse Antillen en Aruba) hadden relatief vaker een positieve testuitslag voor chlamydia, gonorroe en syfilis (alleen heteroseksuele mannen) dan autochtone Nederlanders, wat aangeeft dat preventie gericht op specifieke groepen essentieel is. In 2006 nam het percentage ciprofloxacineresistente gonokokken verder toe tot 38% (onder MSM 45%). Tot nu toe is er geen resistentie aangetoond tegen cefalosporines, de huidige eerste keus behandeling.

Virale soa

In de soa-centra werden 256 nieuwe hiv-diagnoses gesteld in 2006. Het percentage positieve hiv-testen nam enigszins af voor MSM tot 3,1% en bleef stabiel bij heteroseksuelen (0,2% bij heteroseksuele mannen en 0,1% bij heteroseksuele vrouwen). Tot juni 2007, waren in totaal 13.086 personen met hiv in Nederland geregistreerd. In 2006 werden 871 nieuwe hiv infecties gerapporteerd in de nationale hiv registratie bij de Stichting HIV Monitoring. Het aandeel nieuw gerapporteerde hiv infecties bij MSM nam in 2006 verder toe tot 59%. Ook werd een toenemende mediane leeftijd bij diagnose waargenomen. Zowel in preventie als interventie zijn innovatieve methoden nodig om de continue soa- en hiv-transmissie in deze hoogrisicogroep te verminderen.

De meerderheid van de heteroseksuelen met hiv rapporteerde de hiv-infectie te hebben opgelopen in het land van herkomst: overwegend in sub-Sahara Afrika, maar ook in Latijns Amerika. Migratie blijft een belangrijke factor, ondanks een dalend aandeel in de nieuw gerapporteerde hiv-infecties. Anonieme hiv-surveys onder Antillianen in Rotterdam laten een stijging zien in de hiv-prevalentie tussen 2002 en 2006. Echter, deze stijging werd niet gezien in andere steden waarin een hiv-survey is uitgevoerd.

Uit de hiv-screening onder zwangere vrouwen in Amsterdam bleek bovendien dat de meerderheid van de hiv-infecties werd vastgesteld in allochtone vrouwen in 2006, net als in andere jaren.

De diagnoses van andere virale soa namen in 2006 licht af in de soa-centra. Het aantal diagnoses van genitale wratten – de meest gediagnosticeerde soa in de nationale soa-surveillance – nam af met 10% en het aantal diagnoses van genitale herpes nam af met 5%. Het aantal gevallen van acute hepatitis B verminderde met 20% in de aangifte. Genotype A was het meest voorkomende genotype in de acute hepatitis B-gevallen, net als in 2004 en 2005.

SUMMARY

Since January 2006, national surveillance of STI centres has been officially implemented and replaced the STI sentinel surveillance system. In 2006, a total of 68,977 consultations were carried out in the STI clinics nationally, a 10% increase compared to 2005.

Bacterial STI
In 2006, chlamydia remained the most commonly diagnosed bacterial STI in the Netherlands in the STI centres. Positivity rates of chlamydia slightly increased in heterosexual women. In the long run, a rising trend is seen of absolute numbers of chlamydia diagnoses, though the increasing trend in positivity rates stabilized in heterosexual men and MSM. The majority of chlamydia diagnoses were made in heterosexuals, younger than 25 years of age, who also had the highest positivity rate of genital chlamydial infection. The decreasing trend in diagnoses of gonorrhoea (in heterosexuals) and syphilis continued further in 2006. Both infections were most prevalent among MSM (54% of gonorrhoea and 80% of syphilis cases) while positivity rates increased with age. Of HIV positive MSM clinic attendees, 46% were diagnosed with a concurrent STI. The epidemic of LGV, which declined in 2005, re-emerged in 2006. Since August 2006, a new increase in LGV diagnoses was observed among MSM, indicating that ongoing awareness is needed. Specific ethnic minorities (for instance from Surinam, the Netherlands Antilles and Aruba) had higher positivity rates for genital chlamydial infection, gonorrhoea and syphilis (heterosexual men) than autochthonous Dutch, pointing to the need for targeted intervention by risk profile.

In 2006, the percentage of ciprofloxacin resistance in gonococci further increased up to 38% (among MSM 45%). So far, resistance to cephalosporins, current recommended first line therapy, has not yet been recorded.

Viral STI, including HIV
At the STI centres, a total of 256 new HIV cases were diagnosed in 2006. HIV positivity rates at the STI centres slightly decreased to 3.1% in 2006 for MSM and remained fairly stable for heterosexuals (0.2% in heterosexual men and 0.1% in women).

As of June 2007, a cumulative total of 13,086 HIV cases, under medical care, had been recorded in the Netherlands. In 2006, 871 new cases were recorded in the national HIV registry of the HMF. The proportion of MSM among HIV cases reporting for care increased over time, up to 59% in 2006 while an increasing trend in median age of diagnoses is seen among MSM. Continuing HIV transmission in this high risk group warrants intensified and innovative interventions.

The majority of heterosexuals reported to have acquired their infection in the country of origin: mainly in sub-Saharan Africa and to a lesser extent in Latin America. However, immigration thus remains an important contributor, albeit potentially decreasing in the Dutch HIV epidemic. Anonymous unlinked HIV surveys showed increasing prevalence rates among Antillean migrants in Rotterdam between 2002 and 2006, but this was not confirmed in other cities surveyed. In the HIV screening of pregnant women

in Amsterdam, the majority of HIV infections in 2006 were in non-Dutch women, as in other years.

Diagnoses of other viral STI in the STI centres decreased to some extent in 2006. The number of diagnosed genital warts - the most common viral STI in the national surveillance of STI centres – decreased with 10% in 2006 and the number of diagnoses with genital herpes decreased with 5%. Acute hepatitis B notifications decreased with 20% in 2006. As well as in 2004 and 2005, genotype A was the most common genotype in acute HBV infections.

INTRODUCTION

This report describes current STI, including HIV, trends in the Netherlands. It is prepared by the Centre for Infectious Disease Control (CIb) at the National Institute for Public Health and the Environment (RIVM). The CIb collaborates with various partners in the field of STI to collect data for surveillance and to generate insights into trends and determinants: the STI centres, the HIV Monitoring Foundation (HMF), public health laboratories and other health care providers.

Available data on STI from surveys, national registries and cohort studies are compiled in this report and provide an overview of the current status of STI, including HIV, in the Netherlands. Preliminary data have been presented at the annual expert meeting on the surveillance of STI and HIV in June 2007.

Outline of the report

In *Chapter 1* the Methodology of STI surveillance in the Netherlands is described, including all sources of data used for this report. In *Chapter 2* the characteristics of STI clinic attendees are described for 2006. *Chapter 3* deals with bacterial STI (chlamydia, gonorrhoea and syphilis) in the national surveillance of STI and *Chapter 4* focuses on viral STI, including HIV, hepatitis B, genital warts and genital herpes. In *Chapter 5* an overview is given of specific high risk groups in the Netherlands. Conclusions and recommendations are described in *Chapter 6*.

1 METHODOLOGY OF STI AND HIV SURVEILLANCE

1.1 National surveillance at STI centres

Since January 2006, national surveillance at STI centres has been officially implemented and replaced the STI sentinel surveillance system in place since 2003 which provided data on STI consultations for approximately 70% of the STI centres. Since January 2006, eight regions provide nationwide coverage of low threshold STI clinics offering STI including HIV testing, free of charge, targeted at high risk groups and persons who want to be tested anonymously. Each region has one STI centre that is responsible for regional coordination of STI control *(figure 1.1)*. All consultations and corresponding diagnoses are reported to the Centre for Infectious Disease Control for surveillance purposes. The unit of reporting is 'new STI consultation', in which laboratory testing and/or medical examination is carried out. The reporting of consultations is facilitated by a web based application (SOAP). Individual anonymised reports contain epidemiological, clinical data and test results on a wide range of STI.

In this report, the results of the first year of the national surveillance of STI centres are presented with respect to the number and nature of new consultations and diagnoses. Trends are based on the 70% of centres also participating in the sentinel network established in 2003. Where data were not complete for a specific period or centre, this is indicated. We focus on the major bacterial and viral STI, including HIV infection.

Behavioural surveillance

In 2006 a set of key indicators was added to the STI surveillance as a pilot.[1] These includes: the number of partners in the last six months, condom use in last sexual intercourse

Figure 1.1 Eight regions with coordinating STI centre indicated

and sexual contacts abroad in the last three months. It was optional to answer these questions. In addition, other questions like previous HIV test and previous diagnosis of STI were analysed to support behavioural surveillance.

1.2 Antimicrobial resistance of gonococci in the Netherlands

In 1999, the surveillance of antibiotic resistance of gonococci at national level was discontinued and since then insight in gonococcal susceptibility patterns has been limited. Concern for increasing resistance to quinolones at (inter)national level led to a RIVM survey of resistance of gonococci in 2002. The results demonstrated the need for a nationwide surveillance of gonococcal antimicrobial resistance.[2-5] In 2006, the Gonococcal Resistance to Antimicrobials Surveillance programme (GRAS) has been implemented in the Netherlands. This surveillance consists of systematically collected data on gonorrhoea and resistance patterns linked with epidemiological data. Participants are STI clinics and associated laboratories that identify the majority of STI in high risk populations.

1.3 National HIV screening

Nationwide HIV serosurveillance in the Netherlands is in place among blood donors and among pregnant women. Blood donors and pregnant women are often studied to identify HIV trends in populations at low and moderate risk of HIV infection. Blood donors have been screened on HIV since the first HIV test became available in 1985 (www.sanquin.nl). Standard HIV screening is offered to all pregnant women since January 2004 (opting out method). The test is offered in the first trimester of pregnancy as part of the prenatal screening that includes also hepatitis B (since 1976) and syphilis (since 1960).[6] Nationwide data are yet not available for analyses. Since 2006, the Centre for National Screening Programmes (CVB) is coordinating the screening programme on infectious diseases in pregnant women. The Centre for Infectious Disease Control is currently preparing an evaluation of this programme. In Amsterdam, pregnant women have been tested for HIV from 1988 onwards in a sentinel surveillance study in two hospitals and an abortion clinic. Since 2003, all pregnant women in Amsterdam are screened for HIV and these data are described.[7]

1.4 Anonymous HIV surveillance at STI clinics

HIV surveillance among STI clinic attendees is conducted since 1991 in Amsterdam and since 1994 in Rotterdam. In Amsterdam, two cross sectional studies including 1,000 visitors each are conducted every year. In Rotterdam, visitors are included during the whole year (opting-out principle). Since 1997, HIV testing is promoted at all STI clinics in the Netherlands as part of an active HIV testing policy that was implemented following the accessibility of Highly Active Anti Retroviral Therapy (HAART).

1.5 HIV incidence data

HIV incidence data are obtained from the Amsterdam Cohort Studies (ACS) on HIV/AIDS, which started in 1984 among MSM and in 1985 among IDU. These cohorts give insight in HIV rises in an early state and are needed for prevention activities to respond effectively to the HIV epidemic. From 1995 and 1998, special recruitment started among young (< 30 years) MSM and IDU, respectively. However, since April 2006 participation is open again for MSM of all ages with at least one sexual partner in the preceding six months. The ACS, a collaboration between the Amsterdam Health Service, the Academic Medical Centre of the University of Amsterdam, the Sanquin Blood Supply Foundation and the University Medical Centre Utrecht, are part of the Netherlands HIV Monitoring Foundation and financially supported by the Netherlands Institute for Public Health and the Environment [www.amsterdamcohortstudies.org].

1.6 HIV/AIDS registry

From January 2002, a HIV/AIDS reporting system for patients entering care was implemented in the Netherlands. Longitudinal data and all newly registered HIV infected individuals are collected by the HIV Monitoring Foundation (HMF, www.hiv-monitoring.nl). The goal of HMF is to monitor HIV infected individuals seen in HIV treatment centres (including 4 children's centres) in the Netherlands to study changes in the epidemic, the natural history of HIV and the effects of treatment.

In the HIV/AIDS registry in the Netherlands registered individuals form a cohort that is followed prospectively from the time of reporting for care. HIV infected individuals in care, who were diagnosed prior to the start of HMF, were as far as possible included in the cohort retrospectively. HMF largely follows the organisational structure that had been established for monitoring HIV in the ATHENA project, a clinical study following HIV infected individuals who are treated with HAART. The HIV cases diagnosed before 1996 only include persons who survived up to the start of the ATHENA project in 1996. The epidemiological data on newly reported HIV infections, as well as trends in new AIDS diagnoses after 2000, are reported in collaboration with the Centre for Infectious Disease Control at the RIVM.

Between 1987 and 2002, AIDS cases were reported on a voluntary basis to the Inspectorate of Health (national AIDS registry, IGZ). With the start of the HIV/AIDS monitoring system in 2002 by HMF, the national AIDS registry was ended. In this report, AIDS cases from 1999 or earlier are obtained from the AIDS registry. After 2000, AIDS cases from the HMF monitoring system were used. Data on deaths among HIV patients (including AIDS patients) were obtained through the HMF (2002 and previously from National Statistics Netherlands [www.cbs.nl]).

1.7 Anonymous unlinked HIV Surveys

Between 1994 and 2003, 16 HIV surveys among Injecting Drug Users (IDU) were carried out in 9 areas. In 2002, further anonymous unlinked HIV surveys were initiated among migrant populations from HIV endemic areas (sub-Saharan Africa, Surinam, and the Netherlands Antilles), commercial sex workers (CSW), and their clients. The objectives of the HIV surveys were: (1) to assess the prevalence of HIV infection and the status of risk behaviour and (2) to monitor trends in the prevalence over time in repeated surveys and (3) to assess the potential for further spread to the general population. Between 2002 and 2006, HIV surveys were conducted in four cities in collaboration with municipal health services and local organisations for CSW, IDU and migrant populations. In 2007, the anonymous unlinked surveys were evaluated which led to the conclusion not to initiate new anonymous unlinked HIV surveys the next years, unless regular surveillance sources point to specific STI/HIV problems in certain (risk)groups needing more in depth data. Moreover, possibilities to add information on ethnic minority groups in the national HIV screening among pregnant women will be explored, as this may offer an opportunity to monitor HIV prevalence among heterosexuals of different ethnicities living in the Netherlands.

1.8 Notification of hepatitis B

The compulsory notification of newly diagnosed acute hepatitis B virus infections (since 1976) and chronic HBV infections (since April 1999) includes epidemiological data on the occurrence of disease within specific risk groups. Since 2002, all public health services notify HBV cases by using the web based application Osiris.

1.9 Molecular epidemiology of acute HBV

In 2004, a study was initiated to evaluate the success of the HBV vaccination among high risk groups, in collaboration with the Municipal Health Services of Amsterdam and Rotterdam. Trends in HBV infections are studied and additionally blood samples are collected from all newly diagnosed acute HBV patients for genotypic analysis, to get more insight in the transmission networks within and between HBV risk groups in the Netherlands, and in the effectiveness of the vaccination campaign.

1.10 Enhanced surveillance of lymphogranuloma venereum

In December 2003, a cluster of lymphogranuloma venereum (LGV) cases was reported in Rotterdam among predominantly HIV infected MSM.[8] The RIVM started an enhanced surveillance of LGV to assess the size and nature of this outbreak. The enhanced surveillance of LGV was evaluated in 2007 and was discontinued in July 2007.[9] Regular surveillance of LGV is maintained by the national surveillance at STI centres.

2 STI CLINIC ATTENDEES

2.1 Key points

- In 2006, 68,977 new consultations were registered in the national surveillance of STI centres.
- In 2006, the number of consultations increased by 10% compared with 2005.
- Characteristics of clinic attendees were as follows: young age (40% below 25 years), Dutch origin (81%), MSM (27%) and commercial sex workers (9%), 17% had a history of STI and 57% was not previously tested for HIV.

2.2 STI consultations

In 2006, 68,977 new consultations (increase of 10% compared to 2005) were registered within the national surveillance of STI centres; 35,638 (52%) among men, 33,317 (48%) among women and 20 (0.0%) among transsexuals *(table A.1)*. Of these consultations, 35% were reported by the STI clinic in Amsterdam. Of the attendees, 29 percent only had an STI examination, 69% had both an STI examination and an HIV test (2004: 52%; 2005: 56%) and 2% only had an HIV test *(figure 2.1)*.

The most commonly reported reason for STI consultation *(table A.10*, NA Amsterdam) was risk behaviour (29% of all reported reasons), followed by symptoms (19%) and a new sexual relationship (13%). Other reasons for consultations were uncertainty, anxiety or concern (12%), (periodic) screening (6%), risk behaviour of partner and partner has symptoms (5%), notification by (ex)partner or social worker (5%), HIV test (4%), hepatitis B vaccination (2%), condom failure (2%) or else (1%).

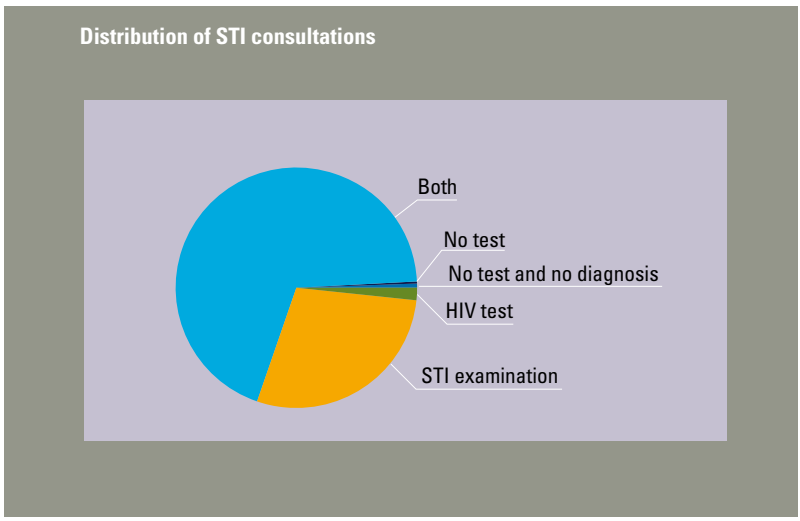
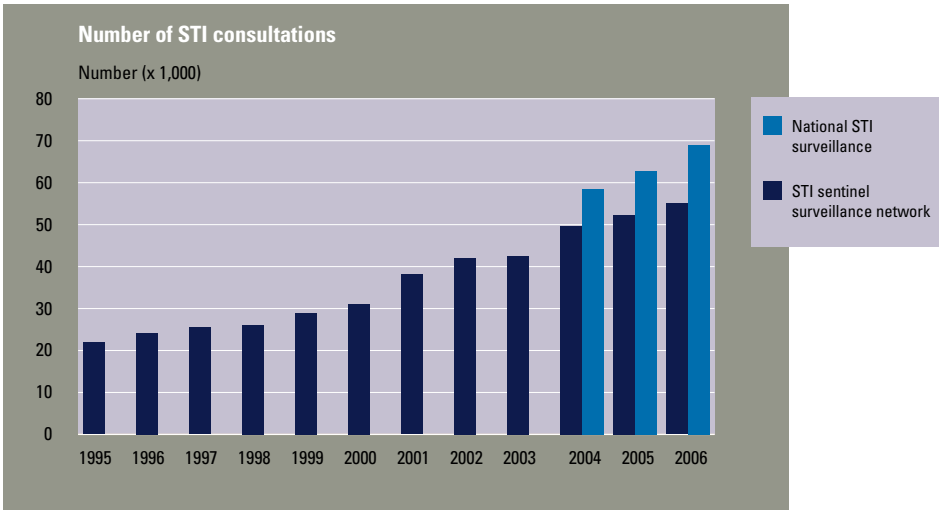


Figure 2.1: Distribution of consultations, national surveillance STI centres, the Netherlands, 2006



Footnote: 1995-2002: STI registration; 2000: STI clinic of Erasmus Medical Centre Rotterdam was included; 2003: Implementation of STI sentinel surveillance network

Figure 2.2: Number of consultations in the STI registration (STI clinics and municipal health services) and the STI sentinel surveillance network (in dark blue), 1995-2006 and number of STI consultations in national STI surveillance, the Netherlands, 2004-2006 (in turquoise)

STI clinic attendees were generally of young age: 40% were younger than 25 years of age. The age distribution differed by sex with the highest peak among 20-24 years and 25-29 years (23% and 21% respectively) for men (followed by 30-34 years: 15%) and among 20-24 years (41%) for women (followed by 25-29 years: 22% and 15-19 years: 13%) *(table A.3)*. About 81% of the clinic attendees were of Dutch origin (2005: 78%); for women this was 82% and for men 79%. Other groups originated from Surinam (5%), sub-Saharan Africa (2%), Asia (2%), Eastern Europe (2%), other European countries (2%), the Netherlands Antilles (2%), Latin America (2%), Morocco and other North African countries (1%), Turkey (1%) and other (3%) *(table A.4)*. A total of 165 different foreign countries of origin were reported in the STI surveillance centres (NA Amsterdam).

Over the past years the number of consultations has risen continuously *(figure 2.2)*. In January 2006, the surveillance system has changed from an STI sentinel surveillance network to a surveillance network of all STI centres in 8 regions in the Netherlands. In addition, the financing system for STI consultations has changed. The resultant change in data collection and coverage may limit proper comparison of data with other years (see Chapter 1 on Methodology).

2.3 Characteristics of attendees

Of all male attendees, 27% (n = 9,770) reported sex with men *(table A.5)* and 6% (n = 1,980) reported visiting CSW the past 6 months *(table A.6)*. Of all female attendees, 4.5% reported sex with women (n = 1,501) and 9% (n = 2,855) worked as a CSW the past 6 months. Recent

injecting drug use (past 6 months, NA Amsterdam) was reported by 0.2% of the attendees (n = 90) but these data were missing for 3% *(table A.7)*. On average 17% (n = 7,665) of the attendees (NA Amsterdam) reported a history of STI (gonorrhoea, infectious syphilis or genital chlamydial infection); 18% of all men and 16% of all women.

Of the attendees, 57% (n = 39,516) were never tested for HIV antibodies before. Thirty one percent (n = 21,409) previously tested HIV negative (32% men, 30% women) and 1.3% (n = 871, 2005: 1.0%) previously tested HIV positive (2.4% men, 0.1% women) *(table A.8)*. Seventy two percent of the attendees who were never tested for HIV were tested on HIV in the current consultation.

2.4 Behavioural surveillance in STI centres

Sexual behaviour among STI clinic attendees

The response rate to the optional questions ranged from 84% to 87% per question. The median number of partners was 2 (mean = 5) for both men and women. Twenty three percent of the attendees used condoms in their last sexual encounter: 26% of men and 20% of women. Nine percent of men and 6% of women had sexual contacts abroad in the last 6 months. Most reported countries for men were Thailand, Germany and Spain and for women Turkey, Spain and Netherlands Antilles. Thirty seven percent had a former HIV-test. Among men 2% and among women 0.1% had a former positive HIV-test. Seventeen percent had an STI before, 16% of women and 18% of men.

3 BACTERIAL STI

3.1 Chlamydia and lymphogranuloma venereum

3.1.1 Key points

- Genital chlamydia infection remained the most commonly diagnosed bacterial STI: 7,085 cases were seen in the national surveillance STI centres and 2,954 in the laboratory surveillance.
- The rising trend in chlamydia positivity rates stabilized in heterosexual men and MSM in 2006 but the increase in women continued to some extent.
- The main burden of disease is carried by the young heterosexual population.
- Risk groups are teenage girls (15-19 years), young heterosexual men (15-24 years) and adult MSM (30-39 years), men and women from Surinam and the Netherlands Antilles and men from Morocco/N-Africa.
- Chlamydia cases are more likely to be HIV-positive and to have co-infections with gonorrhoea and syphilis than persons testing negative for chlamydia.

3.1.2 Recent trends chlamydia

Genital chlamydia, a bacterial sexually transmitted infection caused by *Chlamydia trachomatis*, remained the most common bacterial STI in STI centres in the Netherlands. In 2006, 7,085 genital chlamydia infections were diagnosed (3,567 in men and 3,518 in women) in the regional STI centres *(table A.11a)*, representing 45% of all positive STI diagnoses. Chlamydia was tested in 97% of persons visiting the STI-centres; the overall positivity rate was 11%.

Gender, sexual preference and age group
Reported chlamydia cases are concentrated in the younger age groups in both sexes. The major part of chlamydia cases (53%) in 2006 was reported from the population under 25 years old *(table A.12)*. Cases were equally divided over the sexes. In men, 27% of cases were reported in MSM and in women, 3% in women who have sex with women (WSW).

The positivity rate in women was 11% overall, higher among heterosexual women (11.0%) than among WSW (7.9%). In men, 10% of chlamydia-tests were positive, similar in heterosexual men and MSM (10.5% and 10.1%, respectively).

The highest positivity rate was seen in teenage girls under 20 years of age (18% in 15-19 years old). For heterosexual men the positivity rates were higher in teenagers as well as in young adolescents, i.e. both under and over 20 years old (15% positivity in 15-24 years old). In older age groups, chlamydia rates were clearly higher in MSM than in heterosexual men (11% in 30-39 years old; see *figure 3.1)*

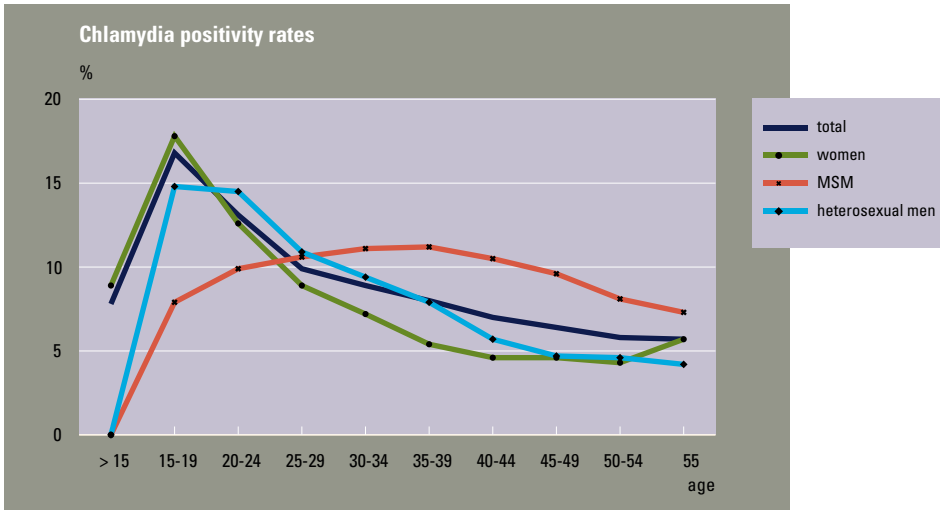


Figure 3.1: Positivity rate of chlamydia tests by gender/sexual preference and age category, national surveillance STI centres, the Netherlands, 2006

Location of infection

In women, 91% of positive diagnoses were found in urethral/cervical samples and 7% in anorectal. In heterosexual men, 99% of positive results were in urethral samples; in MSM, 55% were anorectal and 41% urethral. Oral chlamydia infections were seen in 2.4% of female diagnoses, 0.5% of those in heterosexual male and 2.7% of diagnoses among MSM *(table A.11b)*.

Regional pattern

The eight regional centres of the national STI surveillance reported positivity rates in the range of 8.9% to 11.4% *(figure 3.2)*. The diagnoses were fairly unevenly distributed across the Netherlands (range: 345 to 2,986 cases reported per STI centre). Case load tended to be higher in clinics located in highly urbanised areas.

Trends in time

Compared to 2005, the number of diagnoses increased with 10%. This rise was quite similar in men and women: 10% versus 11%. The rise in the number of cases reported was higher than the rise in the number of consultations (5%) and chlamydia tests performed (6%). A small increase in positivity rate was reported in women. However, the increasing trend in heterosexual men and MSM levelled off in 2006 (see *figure 3.3)*.

Risk groups

STI clinic attendees of specific ethnic groups had more often a genital chlamydial infection than autochthonous Dutch. About 70% of the diagnoses in men were made in Dutch men and 82% in Dutch women; most diagnoses among non-Dutch were from persons originating from Surinam and the Netherlands Antilles/Aruba (16% in men and 9% in women; *table A.13)*. The positivity rate in heterosexual men was higher among these groups (16% and 24%) as well as among Moroccan/N-African men (15%) as compared to the rate in Dutch men (10%). In women the positivity rate was also higher among

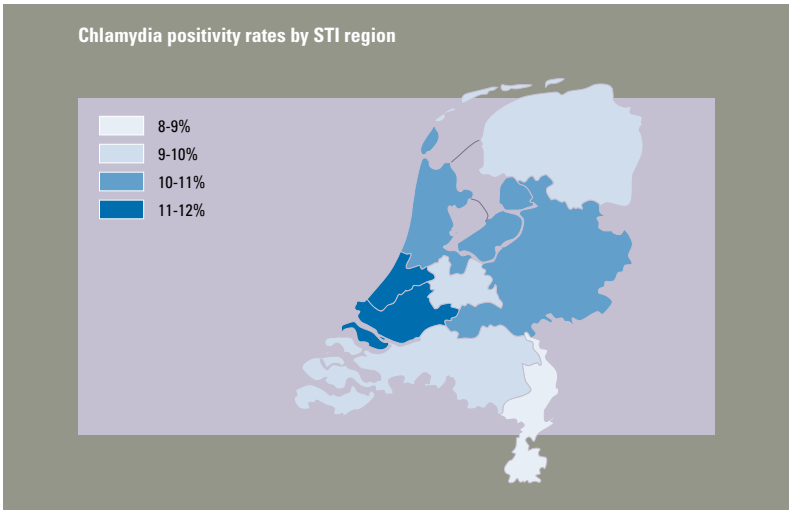


Figure 3.2: Positivity rates for genital chlamydial infection by STI region, the Netherlands, 2006

women from Surinam and the Netherlands Antilles/Aruba (16% and 17%, respectively) than in Dutch women (11%). Reported condom use at last sexual contact was lower for chlamydia positives compared to chlamydia negatives (18% vs. 24%, $p < 0.0001$).

Persons visiting the clinic indicating they were working as a CSW or had visited a CSW in the past 6 months did not show a higher infection rate with chlamydia. Among men, 2.4% of the chlamydial infections were diagnosed in men who had recent contact with CSW (positivity rate 5.2% in 1,172 chlamydia tests in this group). In women 6.3% of the

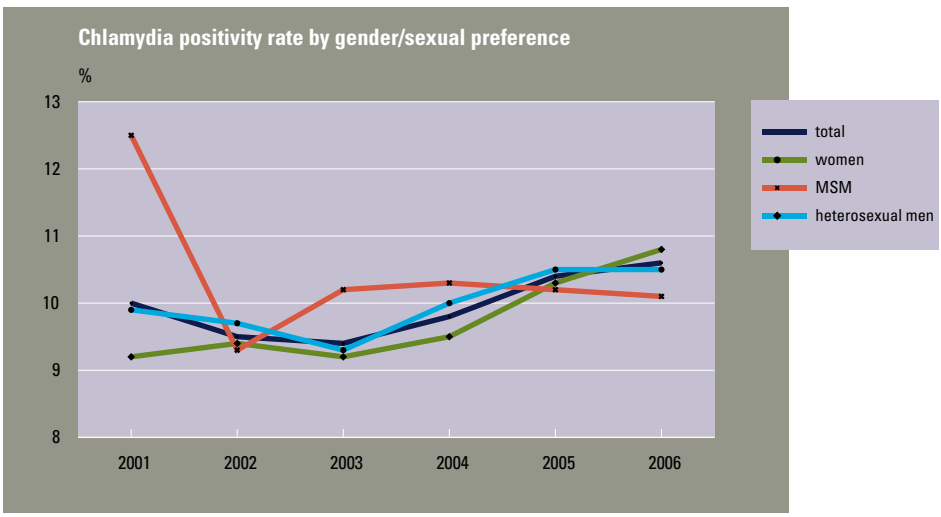


Figure 3.3: Positivity rates of diagnoses of genital chlamydial infection by gender/sexual preference, STI sentinel surveillance sites, the Netherlands, 2001-2006

chlamydial infections were diagnosed in CSW (8.2% positive 1,860 chlamydia tests in CSW, see also *table A.15)*.

Co-infections

In 2% (n = 149) of the cases of chlamydial infection the diagnosis was made in individuals who were HIV positive (known HIV infected, total n = 871). Of the individuals diagnosed with chlamydial infection, 62% were never tested for HIV before *(table A.17)*. Among chlamydia cases, 42 persons were found to have a new HIV-infection, which represents 16% of all new HIV-infections found in the STI surveillance system in 2006.

Of the reported chlamydia cases, 7% also had an infection with gonorrhoea and 1.2% had a syphilis co-infection. This is higher than in the whole population tested (1.7% gonorrhoea and 0.3% syphilis). A history of gonorrhoea, infectious syphilis or chlamydial infection was reported by 21% of the individuals with genital chlamydial infection: 24% for men and 18% for women *(table A.18)*.

3.1.3 Laboratory surveillance

Within the laboratory surveillance of the ISIS project, the surveillance diagnosis of genital chlamydial infection is defined as follows: culture positive or PCR positive or hybridisation test (including Genprobe) positive. All test results are counted only once per individual and an individual can only be counted as positive once in 60 days. The data presented here are from nine laboratories reporting data continuously for the period 2002 to 2006 and one additional laboratory which was connected from 2003. Together these laboratories covered nearly 5% of the Dutch population.

Table 3.1: Number of tests and positive results for chlamydial infections reported from sentinel laboratories from 2002 to 2006, the Netherlands (Source: RIVM-ISIS)

	2002	2003	2004	2005	2006
Number of tests	16,417	24,475	35,898	36,969	40,530
Positive test result	1,081	1,632	2,362	2,811	2,954
Percentage positive (%)	6.6	6.7	6.6	7.6	7.3

* In 2003 one large laboratory was connected

NB Calculations are based on the full retrospective inclusion of the database of laboratories participating in 2006. Therefore, due to changes in participation, the numbers presented here may differ from those presented before.

Table 3.2: Number of tests and positive results for chlamydia infections reported from laboratories for different patient venues from 2002 to 2006, the Netherlands (Source: RIVM-ISIS)

	Hospital inpatient	Hospital outpatient	GP	PHS (GGD)	Total
Number of tests	31,393	41,270		8,526	154,289
Positive test result	822	3,710	4,727	794	10,840
Percentage positive (%)	2,6	9,0	8,0	9,3	7,0

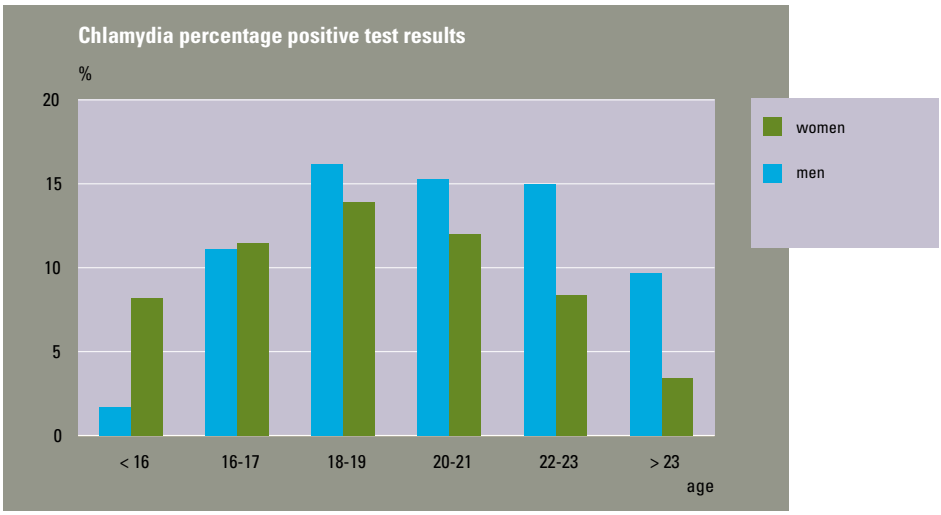


Figure 3.4: Percentage of positive test results for chlamydia trachomatis by age and sex the Netherlands, 2006 (Source: RIVM-ISIS laboratory surveillance)

From 2002 to 2006, 154,298 tests to diagnose infection with chlamydia trachomatis were carried out of which 10,840 were positive (7.0%). The number of cases reported increased yearly *(table 3.1)*. In 2006, 2,954 positive cases were reported, with a positivity rate of 7.3%; in women the positivity rate was 5.8% and in men 11.0%.

The origin of the sample, i.e. the health provider/organisation requesting the laboratory for a test, is recorded in ISIS. The majority of patients were seen in the hospital, either inpatient or outpatient, at the GP *(table 3.2)* and some at Public Health Services (PHS-GGD) not connected to the STI surveillance system. The positivity rates vary according to the origin: higher in PHS and outpatient clinic, followed by GP, low in hospitalized patients.

The positivity rate in this population is higher among men than women (10% versus 6%), which is different from the national surveillance STI centres, but the cases show a similar age distribution as in the STI surveillance: the peak positivity for women and men is at the age of 18-19 years *(figure 3.4)*. In the laboratory data information on sexual preference is not available.

3.1.4 Lymphogranuloma venereum

Lymphogranuloma venereum, LGV, is caused by specific subtypes of *Chlamydia trachomatis* (serovars L1, L2 and L3). In 2004 an outbreak occurred among MSM who were predominantly HIV-positive. Since then, surveillance for LGV intensified.[9]

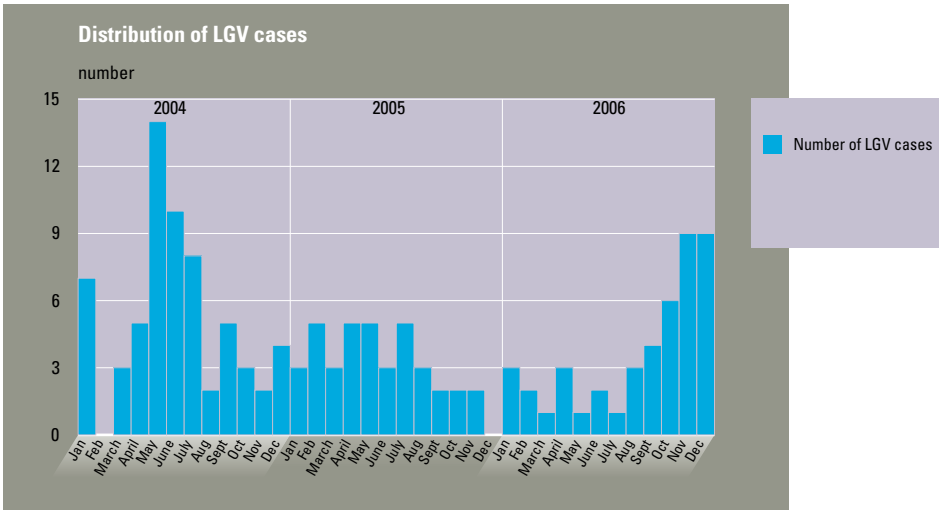


Figure 3.5: Number of cases of Lymphogranuloma venereum diagnosed per month, the Netherlands, 2004-2006

The total number of LGV cases reported in 2006 was 43. During the first period of 2006, the number of cases of LGV was low in comparison to the previous years, but from August a clear increase in the number of cases was seen (see *figure 3.5)*.

The majority of the cases (70%) were reported by the STI centre in Amsterdam. The patients showed a similar profile as in the beginning of the outbreak[10]: all cases were in MSM, 49% were HIV positive, 77% were of Dutch origin and the mean age was 42 years (range 27-65). Concurrent STI were frequently diagnosed: 23% (10/43) had gonorrhoea, 12% had infectious syphilis. The LGV infections were all anorectal.

More recently, up to August 2007 about 5-6 cases per month continue to be reported. In March 2007 one LGV-case was found in a 'swinger', a man with a steady female partner who also had sex with men. This incident showed that LGV could become a generalized infection if transmission into the heterosexual community occurs via this group of swingers. Therefore, active (regular) surveillance for LGV is required.

3.1.5 Discussion

Chlamydia positivity rates continued to rise to a small extent in women. In heterosexual men and MSM the increasing trend stabilized in 2006. Since August 2006, the prevalence of LGV rose again. The main burden of chlamydia infection is carried by the young heterosexual population. Girls under 20 years old are disproportionately affected by chlamydia. Among heterosexual men the population under 25 years is most at risk, whereas in MSM, it is the 30+age groups that seem to be more involved in the transmission. It is above all the urban STI centres that report high numbers of chlamydia. Positivity rates were higher in migrant groups of Surinam/The Netherlands Antilles and Morocco/N-Africa.

The data from the laboratory surveillance showed somewhat lower positivity rates for ambulant patients in the hospital and from GP practices. The positivity among men in this population is higher than among women. Women might be more regularly tested for check-ups (pregnancy) and for control or out of concern, whereas men might come primarily when symptomatic. Direct comparison of data from the laboratory surveillance and from the STI surveillance is not possible, because the patient population at these venues differs: STI centres receive more persons from high risk groups such as MSM and CSW than GP's or Outpatient Departments do. For a comparison of STI-rates in both the specialised STI- and general health care, we would need more information on the sexual health-seeking behaviour of the population (i.e.: who is going where with STI-problems?).

Genital chlamydia is the most commonly reported bacterial STI, despite the lack of symptoms in the vast majority of people infected (especially women). The possible consequences of untreated infection in women are of great concern. These include pelvic inflammatory disease (PID), which can lead to pelvic pain, ectopic pregnancy and infertility.[11,12] Chlamydia-infected attendees are more likely to have other concurrent STI and they are at a higher risk to get an HIV-infection[13], as was also shown in the STI surveillance data presented here. It is necessary to reduce the apparent progress in chlamydia transmission in the young heterosexual population. Systematic screening could be a way to timely diagnose both symptomatic and asymptomatic cases.[14] In 2008 and 2009 a large-scale population-based chlamydia screening intervention will take place in Amsterdam, Rotterdam and part of south Limburg. The Public Health Services will invite all people between 16 and 29 years old to be tested for chlamydia. Testkits will be delivered at home, communication is via the internet. Positive cases will get a referral letter to see their GP for treatment. Depending on the effectiveness and the feasibility (evaluated by the RIVM), the intervention may thereafter be applied in other regions of the country.

In other European countries genital chlamydia infection is also the most commonly reported bacterial STI. Increasing trends have been observed since the mid-1990s. In the UK and Northern Ireland rates have tripled since 1990, whereas in Sweden, Denmark and Norway the rates have clearly increased since the mid-90's.[15] Also in the US the incidence of chlamydia is high.[16]

In 2006, a Chlamydia trachomatis variant was reported from Sweden, with a specific mutation (base pair deletion) in the target area of several commercially available PCR tests to diagnose urogenital chlamydia infections, such as the COBAS Amplicor system (Roche Molecular Systems, Branchburg, NJ), which is frequently used in the Netherlands. Due to the deletion, those tests could not detect infections caused by this Swedish chlamydia variant.[17] At the STI clinic in Amsterdam, a comparative study in 2006, involving several *C. trachomatis* PCR procedures found no cases of infections with the Swedish chlamydia variant among 515 visitors who tested positive for chlamydia.[18] Further comparative studies in 2007 did not detect the Swedish *C. trachomatis* variant in the Netherlands.[19]

3.2 Gonorrhoea

3.2.1 Key points

- In 2006, 1,757 diagnoses of gonorrhoea were made in the national surveillance of STI centres in the Netherlands (men: 79%, women: 21%).
- In women, most diagnoses were among cases younger than 25 years.
- Most diagnoses were in cases from the Netherlands followed by cases from Surinam, the Netherlands Antilles or Aruba.
- 952 diagnoses of gonorrhoea were made in MSM, accounting for 69% of cases in men.
- In a survey among public health laboratories, an increase of ciprofloxacin resistance was reported from 6.6% in 2002 to 38.0% in 2006.
- First results from the nationwide surveillance of gonococcal antimicrobial resistance (GRAS) showed a prevalence of ciprofloxacin resistance of 45% in MSM.

3.2.2 Recent trends gonorrhoea

In 2006, 1,757 diagnoses of gonorrhoea were made (1,384 in men and 373 in women) in all STI centres *(table A.11a)*, representing 11% of all positive STI diagnoses. Gonorrhoea was tested in 97% of all visitors of the STI centres, with an overall positivity rate of 2.6% (the percentage of positive tests to the total number of gonorrhoea tests).

Gender, sexual preference and age group
In women, most diagnoses were found among cases aged 20-24 (35%) and 15-19 (24%). In the older age groups the number of infections was lower. In men, most diagnoses were

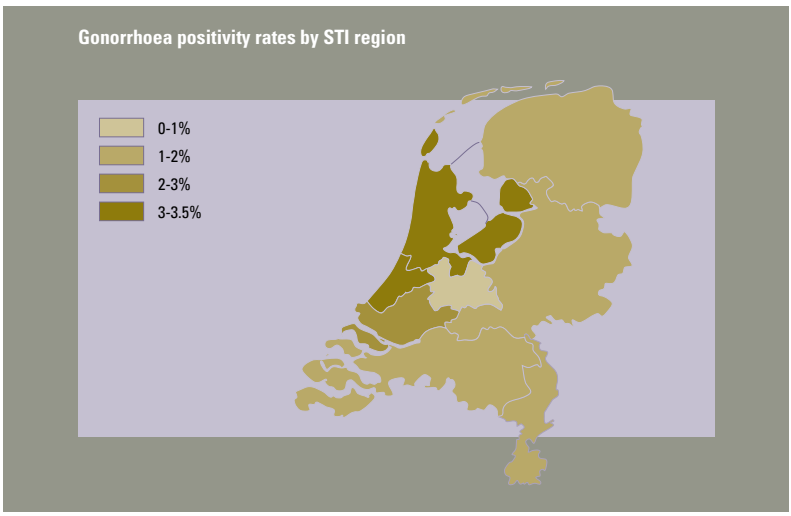


Figure 3.6: Positivity rates of gonorrhoea by region, STI surveillance network, the Netherlands, 2006

made in men aged 35-39 years (19%) and 40-44 (15%) *(table A.12)*. Of all diagnoses in men, 69% (n = 952) were made in MSM and 31% (n = 429) in heterosexual men *(table A.14)*. Positivity rates were much higher among MSM (10.2%) than among heterosexual men (1.7%) and women (1.2%). The highest positivity rate was found in MSM aged 35-39 years (12.4%). In heterosexual men, the highest percentages were found in the age groups 15-19 years and > 55 years: 3.2% and 2.6% respectively. In women the highest percentages were found in age groups < 15, 15-19 and in the older age group of 50-54 years, all 2.1% *(table A.19)*.

Location of infection

In women, most infections were urethral/cervical (72%). Anorectal infections and/or oral infections were found in 14% of the women. In heterosexual men, 98% of the infections were urethral and 2% oral. In MSM, anorectal as well as urethral infections were diagnosed most frequently (both 42%). Oral infections were diagnosed in 14% of the MSM *(table A.11c)*.

Regional pattern

The 8 regional centres in the national STI surveillance reported positivity rates for gonorrhoea in the range of 0.9% to 3.5% *(figure 3.6)*.

Trends in time

The number of gonorrhoea tests increased with 39% from 2003 to 2006. However, positivity rates in women decreased from 1.5% in 2003 to 1.1% in 2006. In heterosexual men there was also a decrease: from 3% in 2003 to 1.8% in 2006. In MSM the positivity rates remained fairly stable from 2003 to 2006 *(figure 3.7)*.

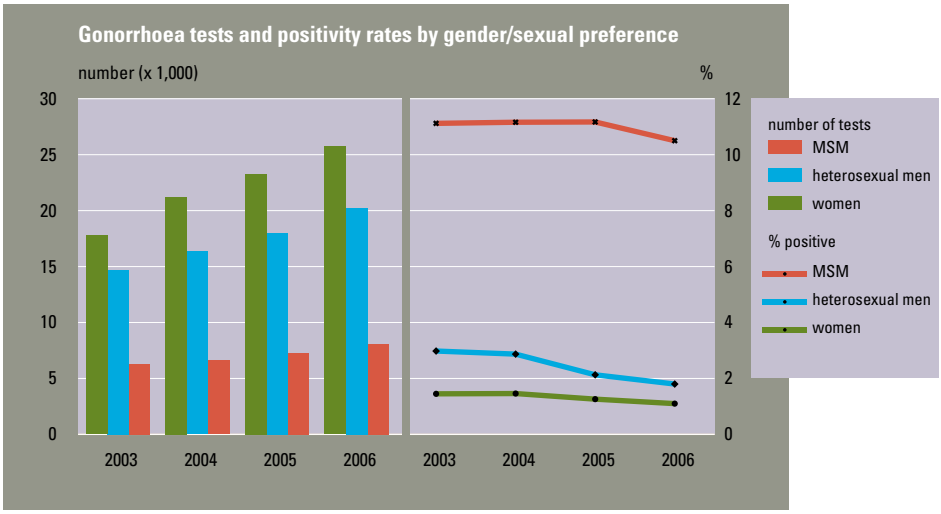


Figure 3.7: Number of gonorrhoea tests and positivity rates by gender/sexual preference, STI sentinel surveillance sites, the Netherlands, 2003- 2006

Risk groups

About 70% of the diagnoses in men were made in Dutch men, 66% in Dutch women *(table A.13)*. The mean positivity rate among Dutch cases was 2.3%. Among migrant populations, most diagnoses were made in cases from Surinam, the Netherlands Antilles and Aruba (13%, positivity rate 5.5%). Positivity rates were also high in cases from North Africa/Morocco and Asia (both 4.1%).

In men, 3% of the infections were diagnosed in patients who had recent (past 6 months) contact with CSW, whereas for women 16% were diagnosed in CSW *(table A.15)*. Positivity rate among CSW was 2.1% compared to 1.0% among non CSW. The positivity rate among heterosexual men who recently visited a CSW was 2.3% compared to 1.7% in heterosexual men not reporting CSW visits. In 10% (n = 174) of the gonorrhoea cases the diagnosis was made in individuals who reported a prior positive HIV test (i.e. known HIV infected). Forty-six percent of the individuals diagnosed with gonorrhoea were never previously tested for HIV and 38% had a prior negative HIV test result *(table A.17)*. The reported median number of partners was 3 for individuals diagnosed with gonorrhoea and 2 for gonorrhoea negatives ($p = 0.001$). Gonorrhoea positives more often had sexual contacts abroad then gonorrhoea negatives (12% vs. 8%, $p < 0.0001$). Most reported countries were Belgium, Spain and Germany.

Co-infections

Of the reported gonorrhoea cases, 29% also had an infection with chlamydia and 3.4% had a syphilis co-infection. Two percent (n = 41) of the cases with a gonorrhoea infection also had a new HIV infection. A history of gonorrhoea, infectious syphilis or genital chlamydial infection was reported by 47% of the men with gonorrhoea and by 25% of the women *(table A.18,* NA Amsterdam). Gonorrhoea positives more often reported a former STI diagnosis than gonorrhoea negatives (40% vs. 17%, $p < 0.0001$).

3.2.3 Antimicrobial resistance of gonococci in the Netherlands

Complete data on the number of diagnosis and results of antimicrobial susceptibility testing for 2002-2006 were provided by 23 laboratories. A remarkable increase in resistance to quinolones (recommended first line therapy until September 2003[20]) was observed: from 6.6% (2002) to 26.4% in 2005[21], up to 38.0% in 2006 *(figure 3.8)*. Resistance to cephalosporins, current first line therapy, has not yet been confirmed.

Gonococcal resistance to antimicrobials surveillance

In June 2006, the Gonococcal Resistance to Antimicrobials Surveillance programme (GRAS) was implemented in the first STI clinic and at the end of 2006, GRAS was implemented in four regional STI clinics, and 177 isolates were tested for antimicrobial susceptibility so far. Preliminary results show a prevalence of resistance to ciprofloxacin of 38%, tetracycline of 33% and penicillin of 14% *(figure 3.9)*. Resistance to cephalosporins was not found. Ciprofloxacin resistance was much higher in MSM (45%) compared to heterosexual men (29%) and women (20%)[22].

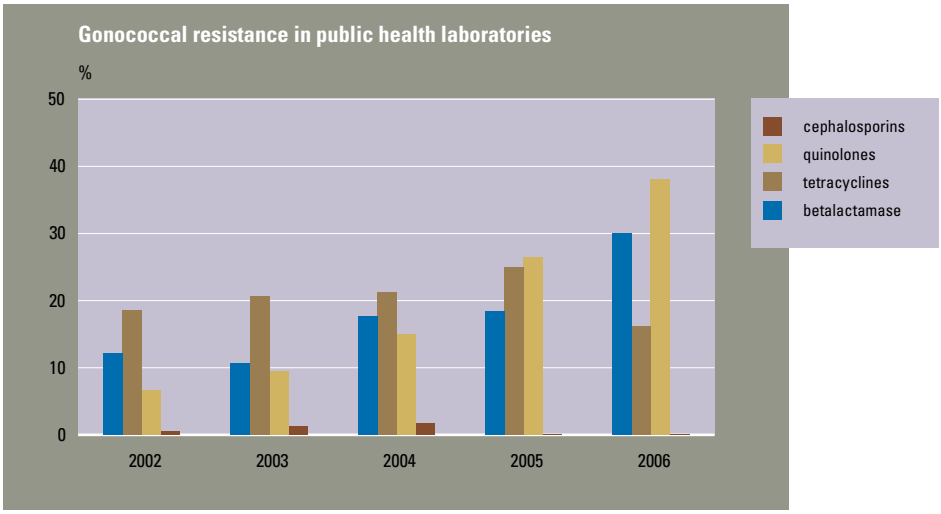


Figure 3.8: Gonococcal resistance in the Netherlands as reported by public health laboratories, 2002-2006

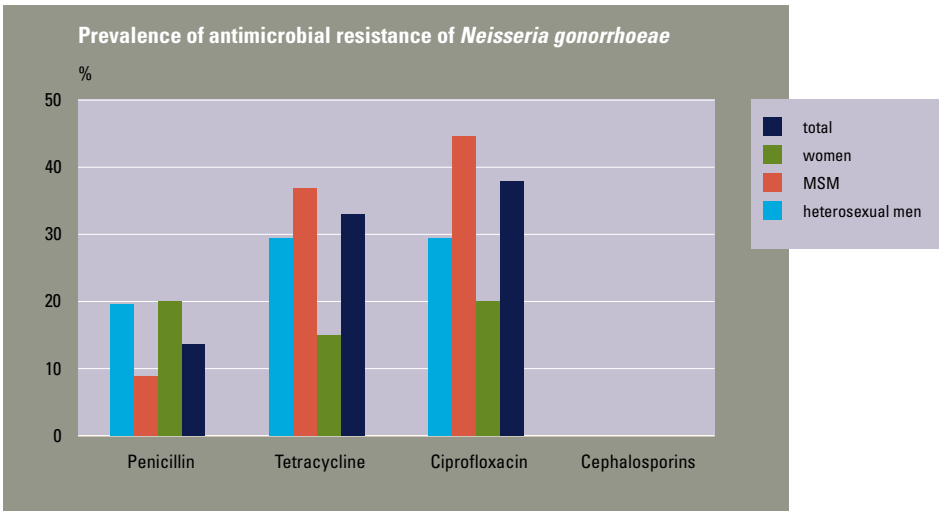


Figure 3.9: Prevalence of antimicrobial resistance of Neisseria gonorrhoeae in the Netherlands in 2006 by gender and sexual preference, n = 177

3.2.4 Discussion

Compared to genital chlamydial infection, gonorrhoea is an infection with a transmission pattern more concentrated among MSM and individuals with a history of STI. Positivity rates remained fairly stable since 2003 for heterosexual men, women and for MSM.

In 2006, the percentage of ciprofloxacin resistance in gonococci, as studied in a survey among public health laboratories, had further increased to 38%. First results from GRAS

also showed an overall prevalence ciprofloxacin resistance of 38%, with the highest prevalence found in MSM. This increasing trend is consistent with recent data on gonococcal quinolone resistance from other European countries and indicates a potential European and worldwide public health problem.[2, 23-26] Therefore, guidelines have been changed and most countries do no longer recommend the use of fluoroquinolones for the treatment of gonococcal infections.[27-29] Continuous monitoring of the emergence and spread of antibiotic resistance in *Neisseria gonorrhoeae* is needed to enable physicians and public health workers to evaluate prevention and control programs including treatment regimens.

3.3 Syphilis

3.3.1 Key points

- In 2006, 639 diagnoses of infectious syphilis were made in the national surveillance STI centres in the Netherlands (men: 92%, women: 8%).
- Diagnoses of syphilis decreased by 7% between 2005 and 2006. This contrasts the increase in syphilis diagnoses from 2000 to 2004, seen mostly in MSM and in heterosexual men.
- Syphilis cases were concentrated in men who have sex with men
- In the heterosexual community, risk groups are CSW and migrant groups from The Netherlands Antilles (men).
- HIV and syphilis co-infections were frequently seen.
- Positivity rates increased with age in all groups.

3.3.2 Recent trends syphilis

Infectious syphilis includes the earlier stages of syphilis infection: primary (lues I) and secondary syphilis (lues II), and early latent (< 1 year) stages or lues latens recens. In 2006, 642 diagnoses of infectious syphilis were made in the regional STI centres (*table 11a)*. Infectious or early syphilis represented 82% of all syphilis diagnoses (n = 783) in 2006: 37% lues I (n = 290), 16% lues II (n = 127) and 29% lues latens recens (n = 225), while late syphilis or lues latens tarda represented 10% (n = 77) of the diagnoses (8% not specified). Of all visitors, 93.5% was tested for syphilis. The positivity rate was 1.0%.

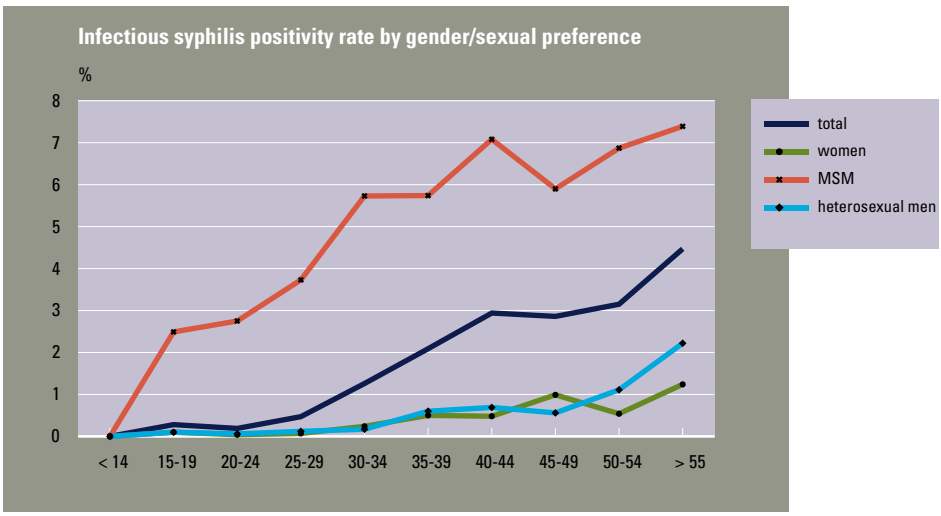


Figure 3.10: Positivity rate of infectious syphilis by age and gender/sexual preference, STI sentinel surveillance network, the Netherlands, 2006

Gender, sexual preference and age groups

Men accounted for 92% of all syphilis cases in 2006. The distribution of cases of infectious syphilis was 1:12 in women versus men (49 versus 593 cases). The large part of cases is reported in MSM (513 cases, 87% of cases reported in men, and 80% of all cases). The positivity rate was much higher in MSM (5.5%) than in heterosexual men (0.3%) and women (0.2% both in heterosexual women as in WSW).

The age distribution for syphilis is rather different from that for other bacterial STI. In men 54% and in women 38% of the cases were seen in the group above 40 years old, although people in this age group are less frequent visitors of the STI centres. Syphilis positivity rates clearly increase with age (see *figure 3.10)* and the difference in positivity rate between heterosexual men and women and MSM is very obvious throughout the different age groups.

Regional pattern

The syphilis positivity rate by STI centre ranges from 0.4% to 1.7% *(figure 3.11)*.

Trends in time

From 2000 to 2004, the total number of diagnoses of infectious syphilis doubled, but since 2005 the number started to decrease again (see *figure 3.12)*. From 2005 to 2006 the number of cases decreased by 7%, mainly due to a decrease in the cases seen in MSM. The contribution of MSM in the number of syphilis cases rose from about 50% to 80% in the six-year period, while in heterosexuals the contribution of men increased as well: the M/F ratio changed from 0.8:1 to 1.5:1.

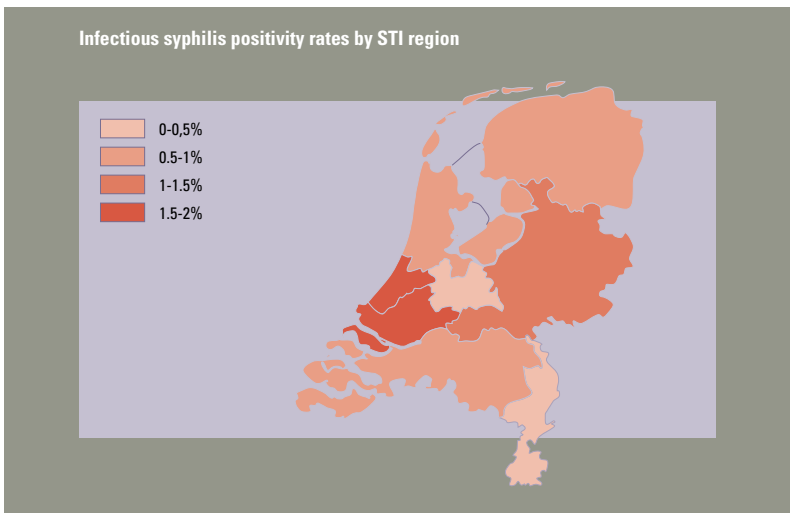


Figure 3.11: Positivity rates of infectious syphilis by region, national surveillance STI centres, the Netherlands, 2006

Risk groups

Men who gave as (one of the) reason(s) to visit the clinic physical complaints or symptoms were more likely to be diagnosed with infectious syphilis than others, especially among MSM (positivity MSM with/without symptoms 12% versus 4.3%, heterosexual men 0.5% versus 0.3%). One third of MSM with syphilis reported to have symptoms. Of other reported reasons to visit the STI clinic, 'notification in case of positive partners', 'patient or partner HIV positive', and 'child wish or pregnancy' were related to higher positivity rates.

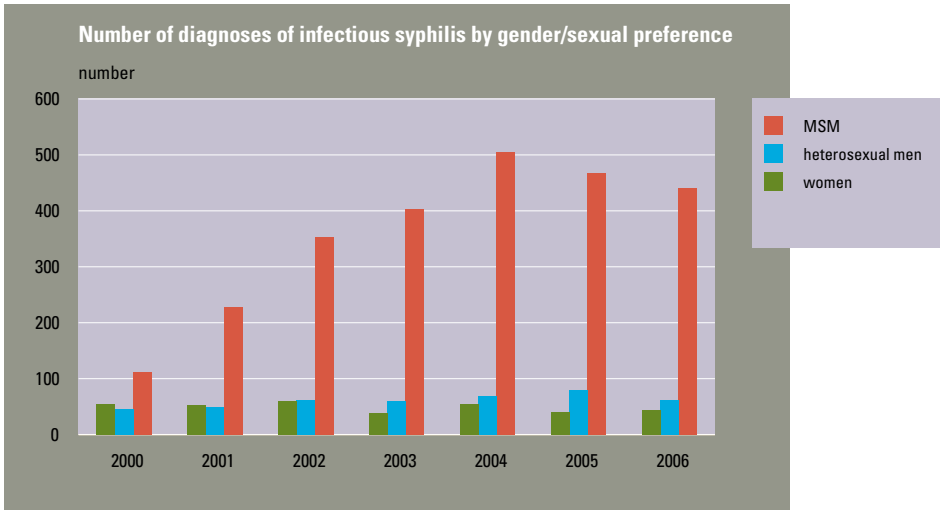
For women, 29% of the syphilis cases were diagnosed in CSW. In heterosexual men, 2% of the infections were diagnosed in men who had recent (past 6 months) contact with CSW *(table A.15)*.

In men, 77% of the syphilis cases were Dutch, in women 57% were Dutch (*table A.13a-b)*. The positivity rate in men was higher in men from the Netherlands Antilles, both in heterosexual men (1.2%) as in MSM (12.7%). The positivity rate in MSM from other Western European countries was also higher (11%) than average.

Co-infections

Twenty three percent of cases diagnosed with infectious syphilis were HIV-positive. In 19% these were individuals who reported a prior positive HIV test (n = 121; see *table A.17)*. The remaining 4% (n = 23) were newly diagnosed HIV-infections, representing 9% of all new HIV-infections reported in the STI surveillance system in 2006.

Thirteen percent of syphilis cases were also diagnosed with chlamydia and 9% with gonorrhoea. A history of infectious syphilis, gonorrhoea or genital chlamydia infec-



Footnote: 2000-2002 STI registration; 2003 Implementation of STI sentinel surveillance network

Figure 3.12: Number of diagnoses of infectious syphilis by sex and sexual preference, in the STI sentinel surveillance network, the Netherlands, 2000-2006

tion was reported by 50% of the individuals diagnosed with syphilis: 51% for men and 35% for women. This percentage was higher than in persons with gonorrhoea (41%) or chlamydia infections (21%) (see *table A.18a-b)*.

3.3.3 Discussion

The previous rise of syphilis cases reported in the Netherlands seems to have attenuated. After a period of low prevalence, a number of outbreaks occurred in different cities in the Netherlands from 2000 to 2004.[30] The number of cases reported from the STI clinics increased during this period, mainly due to an increase in cases in MSM. This trend has discontinued in 2005 and 2006.

Syphilis is tested in the major part of visitors in the STI centres; tests are found to be positive in 1% of the patients. Cases seem to be concentrated in a specific group of STI-patients: transmission is clearly much higher in the MSM community than in the heterosexual community. Co-infections, including HIV, are common among persons diagnosed with syphilis and half of them reported a history of STI. Apart from MSM, high-risk groups are CSW and specific migrant groups. The chance to be diagnosed with syphilis increases with age in all groups. The proportion of women diagnosed with infectious syphilis in the STI surveillance system is relatively low.

Primary and secondary syphilis infections may go unnoticed because of the unspecific character of the symptoms. However, untreated cases can develop serious complications and can be fatal. Education about safe sex practices and contact tracing of partners of diagnosed infectious syphilis cases remains vital. From other studies it is known that attitudes to safe and unsafe practices have changed, e.g. suggesting that oral sex may be perceived as being less risky than anal sex, and condoms are not always used even when the subject is aware that they have an STI, including HIV.[31, 32]

Next to testing routinely for syphilis in the STI clinics, it may be worthwhile to concentrate on case finding in specific risk-groups. The number of cases reported now seems to have stabilized, however in other countries outbreaks are still reported. The characteristics of these outbreaks were white ethnicity, MSM, older age group (above 35 years), concurrent HIV infection, and high rate of partner change.[33-38]

However, more recently increasing positivity rates abroad in the heterosexual community have been reported as well.[32, 39, 40] For that reason, awareness of syphilis transmission needs to be maintained. Surveillance of the ongoing syphilis screening among pregnant women will give better insight in the prevalence among the heterosexual population in the Netherlands.

4 VIRAL STI

4.1 HIV and AIDS

4.1.1 Key points

- In 2006, 256 individuals were newly diagnosed with HIV in the national surveillance of STI centres (men: 88%, women: 12%), 193 HIV infections were diagnosed in MSM, accounting for 86% of the cases in men.
- HIV positivity rates at STI centres in 2006 were 3.1 % (MSM), 0.2% (heterosexual men) and 0.1% (women).
- Of STI clinic attendees, who were known HIV positive, 45% were diagnosed with a concurrent STI.
- In 2006, 871 new HIV cases were recorded in the national registration of HIV treatment centres (2.4 new diagnoses/day) (source: HMF).
- The proportion of MSM accounting for new HIV cases reporting into care, increased over time, up to 59% in 2006. The proportion of heterosexuals decreased (2006: 33%).
- A cumulative total of 13086 HIV patients, 7,321 Aids cases and 4,563 deaths among HIV patients in care were reported up to June 2007.

4.1.2 STI centres

Of all individuals who came for an STI consultation in 2006, 71% was tested on HIV antibodies. Of all attendees, 57% had no prior HIV test (women: 59%, men: 56%). In 2006, 256 individuals were newly diagnosed with HIV (225 men and 31 women). Seventy-five percent (n = 193) of all HIV infections were diagnosed among MSM. Among men, 53% were aged 25-39 years. Most diagnoses in women were made among women aged 20-29 years (45%) *(table A.12b)*.

Of the new HIV diagnoses in men, 86% were seen in MSM *(table A.14)*, 66% in Dutch men, 9% in men from sub-Saharan Africa, and 6% in men from Surinam, the Netherlands Antilles and Aruba. In women, 23% were Dutch and 42% from sub-Saharan Africa *(table A.13)*. Thirty-five percent (n = 89) of all HIV infections were found among individuals who were never tested for HIV, 53% had a prior negative HIV test. *(table A.17)*. A history of STI was reported by 27% of the men with HIV and none of the women with HIV *(table A.18)*. Compared to 2005, the number of newly diagnosed HIV infections decreased slightly with 7%.

Rates of positive HIV test results (the percentage of positive tests to the total number of HIV tests) were higher in MSM (3.1%) than in heterosexual men (0.2%) and women (0.1%). The highest rate was found in MSM aged 35-39 (6.7%; *table A.19)*. The positivity rate in MSM decreased for the first time after three years (2006: 3.1%, 2005: 5.0%). In heterosexuals it did not change significantly over the last four years *(figure 4.1)*.

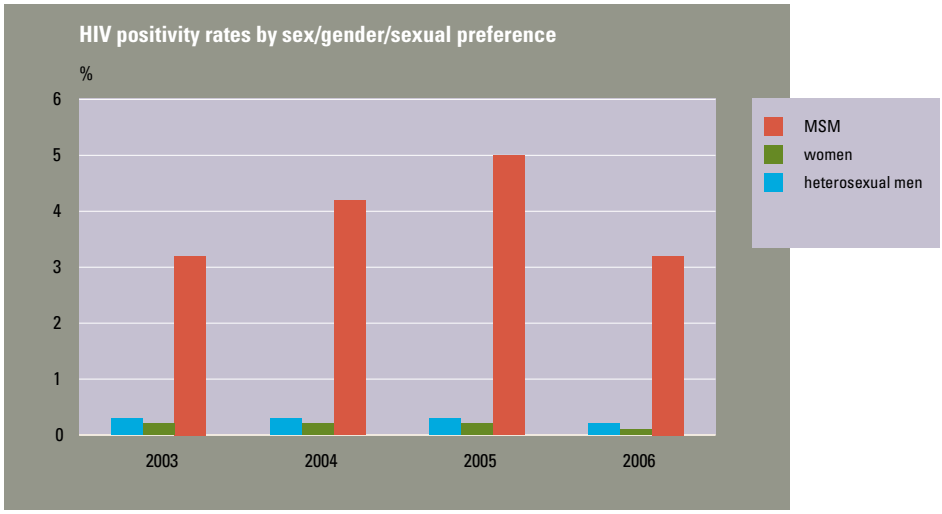


Figure 4.1: Rates of positive HIV test results by sex and sexual preference, STI sentinel surveillance network, the Netherlands, 2003-2006

Concurrent STI

Among the STI clinic attendees, 1.3% had a prior positive HIV test (n = 871); of whom 97% were men (n = 843) and 3% women (n = 28). Of the 9,770 MSM clinic attendees, 816 (8.4%) were known HIV positive. A concurrent STI was diagnosed in 46% of HIV positive MSM, in 41% (n = 9) of heterosexual male HIV positives and in 29% (n = 8) of female HIV positives. In addition, in 84 of MSM clinic attendees a simultaneous HIV-infection and a concurrent STI were diagnosed. Infectious syphilis, gonorrhoea and chlamydia were the most common diagnosed concurrent STI (see *table 4.1).*

Know HIV positive STI clinic attendees reported a higher median number of partners compared to other attendees (4 versus 2, $p < 0.0001$). They more often reported condom use at last sexual contact compared to others (35% vs. 28%, $p < 0.0001$). Of them, 11% reported sexual contacts abroad in the previous three months and 75% reported a former STI.

Table 4.1: Concurrent STI diagnosed in known HIV infected individuals in 2006 (% of total known HIV infected individuals, N=866)*

Diagnosis	MSM N = 816	%	heterosexual men N = 22	%	women N = 28	%	total * N = 866*	%
Gonorrhoea	172	21	2	9	0	0	174	20
Chlamydia	145	18	2	9	2	7	149	17
Infectious syphilis	117	14	1	5	2	7	120	14
Genital warts	47	6	4	18	2	7	53	6
Genital herpes	20	2	0	0	2	7	22	3
*Concurrent STI***	377	46%	9		8		394	45%

* 5 clients did not report their sex or sexual preference

** At least one concurrent STI diagnosed

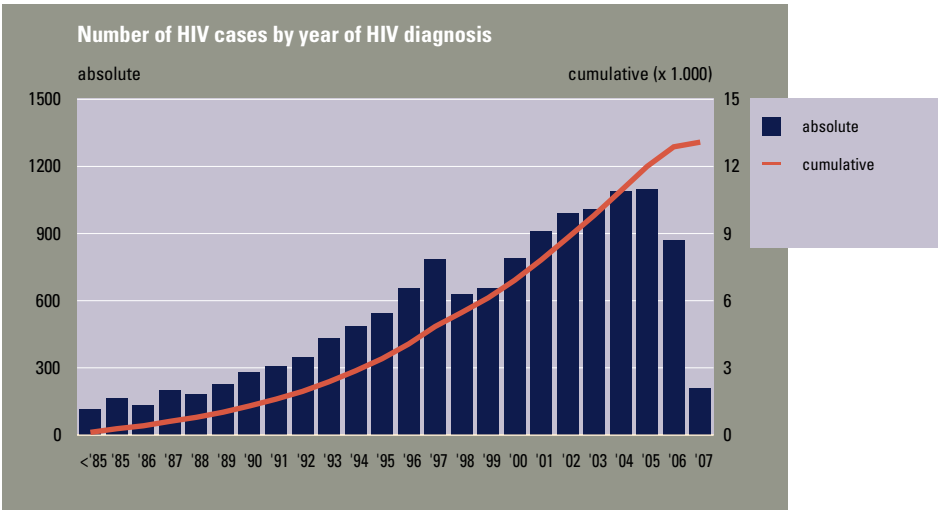
Comparison between specific test sites

STI clinic attendees are, in general, at increased risk of HIV infection. HIV testing is recommended whenever a person is examined for or diagnosed with an STI. *Table 4.2* shows trends in HIV positive test results obtained from surveys at STI clinics in Amsterdam and Rotterdam, the STI sentinel surveillance network and Checkpoint, a one-hour HIV testing facility in Amsterdam that started in 2002 and focuses on MSM.[41] (www.hivnet.org) Among MSM, HIV prevalence rates varied between 3.1-38.5%. HIV prevalence in the anonymous surveys was higher than that in regular HIV tests by name. In the anonymous surveys among MSM, an increase of HIV prevalence was observed over time. The increase, however, is mainly caused by known HIV positive MSM attending the STI clinic. The prevalence among MSM in regular tests seemed to have slightly decreased. At Checkpoint, the HIV prevalence among MSM was 6.5% in 2006, which is higher than the prevalence at the regular screening at the STI clinic in Amsterdam and Rotterdam (4.0% and 3.6%, respectively). HIV prevalences among heterosexual visitors of STI clinics and other test sites were stable (0.2-0.5%) over time.

Table 4.2: HIV prevalence (%) among STI clinic attendees and other test sites in the Netherlands, 1999-2006

Region and source	1999	2000	2001	2002	2003	2004	2005	2006
MSM								
STI clinic Amsterdam								
- Regular	4.3	5.7	4.7	3.8	4.2	5.7	6.0	4.0
- Anonymous*	12.7	16.9	14.6	20.3	20.1	18.8#	19.4	21.5
STI clinic Rotterdam								
- Regular	4.3	1.6	2.9	6.2	1.7	4.5	6.3	3.6
- Anonymous*	7.2	10.8	12.0	13.4	22.4	32.1	25.7	38.5
STI sentinel surveillance network	-	-	-	-	3.3	4.2	5.0	3.1
Checkpoint	-	-	-	6.8	4.8	4.6	5.7	6.5
Heterosexual risk groups								
STI clinic Amsterdam								
- Regular, men	0.2	0.3	0.6	0.5	0.3	0.2	0.3	0.3
- Anonymous, men*	0.3	0.9	0.4	0.4	1.0	0.5#	0.0	0.4
- Regular, women	0.5	0.2	0.3	0.4	0.3	0.3	0.4	0.2
- Anonymous, women*	0.7	0.6	0.3	0.8	0.5	0.2#	0.4	0.4
STI clinic Rotterdam								
- Regular, men	0.6	0.7	0.4	0.3	0.5	1.0	0.3	0.2
- Anonymous, men*	0.2	0.2	0.8	0.5	1.0	0.9	0.4	0.5
- Regular, women	0	0.2	0.4	0.3	0.3	0.3	0.2	0.2
- Anonymous, women*	0.5	0.3	0.8	0.9	1.0	0.7	0.5	0.2
STI sentinel surveillance network								
- Men	-	-	-	-	0.3	0.3	0.3	0.2
- Women	-	-	-	-	0.3	0.2	0.2	0.1
Checkpoint								
- Men	-	-	-	0.8	0.3	0.4	0.7	1.2
- Women	-	-	-	1.1	1.0	0.5	0.0	0.0

* Known HIV infected included, # based on 1 research period



Footnote: only HIV patients with a known date of diagnosis are included (ATHENA: 1996-2001, national registration from 2002 to date, 2007: patients registered by June 1st

Figure 4.2: Number of HIV cases (right axis: cumulative), by year of HIV diagnosis, the Netherlands, 1985-2007

4.1.3 HIV treatment centres

In June 2007, a cumulative total of 13,086 HIV cases with a known year of diagnosis had been registered by HIV treatment centres in the national database of the HIV Monitoring Foundation (HMF) [www.hiv-monitoring.nl].[42] For 178 cases the year of diagnosis was unknown (excluded from the analysis) *(figure 4.2)*.

In 2006, 871 new cases of HIV were diagnosed. Of all registered cases, 10,130 (77%) were men and 2,956 (23%) were women. Of all individuals, 98.7% were infected with HIV-1, 0.6% with HIV-2 and 0.7% with HIV-1 and HIV-2.

Geographical differences

Forty two percent of all HIV infected individuals were seen in treatment centres in Amsterdam *(table B.1)*. Rates of HIV infections per 100,000 inhabitants in 2006 are shown for each province in *figure 4.3*. The province of 'Noord-Holland' has the highest HIV rate (11.2/100,000), followed by the provinces Utrecht (6.6/100,000) and 'Zuid-Holland' (5.8/100,000). The number of HIV diagnoses in Amsterdam remained fairly stable around 350 diagnoses per year the last six years. The number of HIV diagnoses out of Amsterdam increased between 2000 and 2004 (in particular in Utrecht and Rotterdam between 2003 and 2004) but seems to have levelled off in 2005 and 2006 (2006 still incomplete, *figure 4.3)*.

Transmission risk groups

In 2004 and 2005, the number of HIV cases in the HIV registry increased among MSM (up to 572). In 2006, 516 HIV infections among MSM were recorded, but this number may further increase due to the reporting delay *(figure 4.4)*. The total number of HIV cases

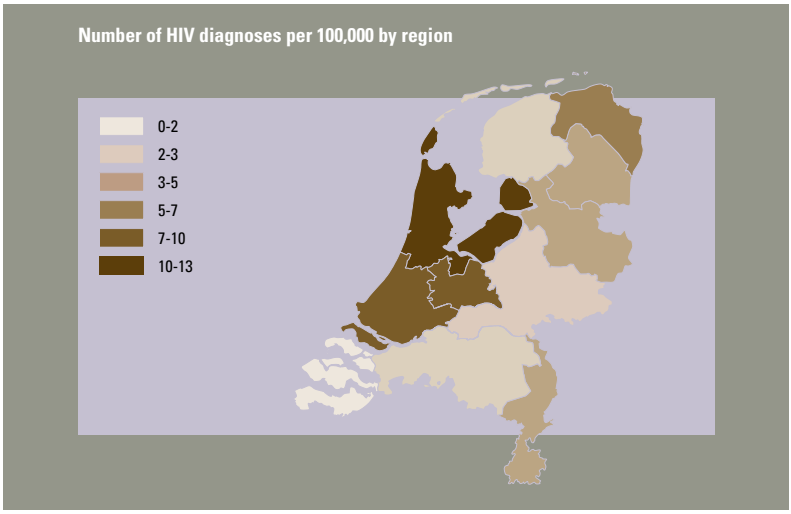
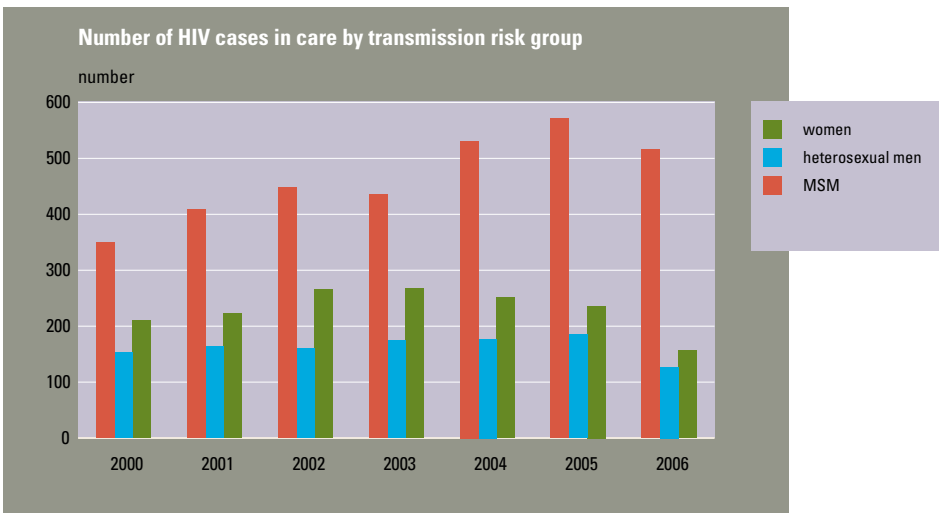


Figure 4.3: Number of HIV diagnoses in 2006 per 100,000 inhabitants in the Netherlands; calculations based on HIV infections recorded in the various HIV treatment centres in each province

among heterosexual men remained relatively stable since 2000. The total number of cases among heterosexual women decreased slightly after 2002 (2006 still incomplete).

Only five percent of the total HIV infections were recorded in IDUs. Mother-to-child transmission and risk through blood (products) both accounted for 1% of the all registered infections *(table B.2)*. In 7% of the HIV cases the transmission risk group was unknown.



Footnote: only HIV patients with a known date of diagnosis are included (ATHENA: 1996-2001, national HMF registration from 2002 to date; MSM: men having sex with men)

Figure 4.4: Number of HIV cases in care, by year of HIV diagnosis and transmission risk group, the Netherlands, 2000-2006

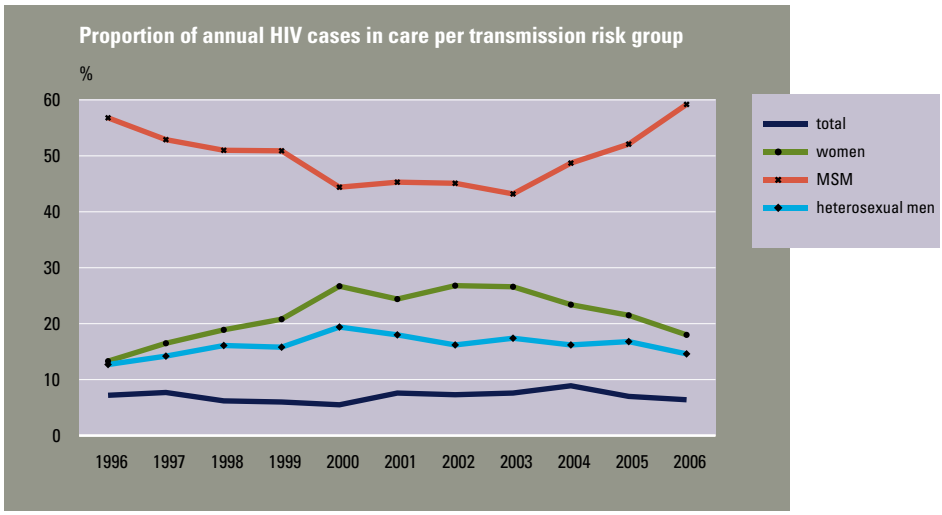


Figure 4.5: Proportion of annual HIV cases in care per transmission risk group in the Netherlands, 1996-2006, by year of diagnosis (Source: HMF)

The relative contribution of each risk group to the annual number of diagnoses changed over time *(figure 4.5)*. The proportion of MSM declined from 58% of the new diagnoses in 1996 to 44% in 2001-2003, and increased thereafter to 59% in 2006. The proportion of heterosexuals increased from 23% in 1996 to 44% in 2000-2003 (particularly among women), and declined again to 33% in 2006 (chi-sq, $P < 0.0001$).

Region of origin

Overall, more than half (56%) of the HIV infected individuals registered at a HTC, originated from the Netherlands. The largest non-Dutch group consisted of sub-Saharan Africans (SSA), 18% of the HIV cases. The second largest non-Dutch group (11%) comprised individuals from the Caribbean and Latin America, predominantly Surinamese, Antilleans and Arubans (68%). Most HIV infected men originated from the Netherlands (64%), whereas the largest non-Dutch group among women were those from sub-Saharan Africa (45%) *(figure 4.6)*.

The majority of MSM originated from the Netherlands (73%) *(table B.4)*. Other frequently reported regions were Western Europe (8%), Latin America (6%), the Caribbean (3%) and South (East) Asia (3%). Most IDUs were from the Netherlands (65%), other Western European countries (17%), and Latin America (4%). The majority of the heterosexuals originated from sub-Saharan Africa (44%) and the Netherlands (30%) *(table B.4)*.

The proportion of Dutch HIV infected individuals gradually decreased from 63% in 1996 to 46% in 2002. After 2002, the proportion of Dutch individuals continued to increase again up to 60% in 2006.

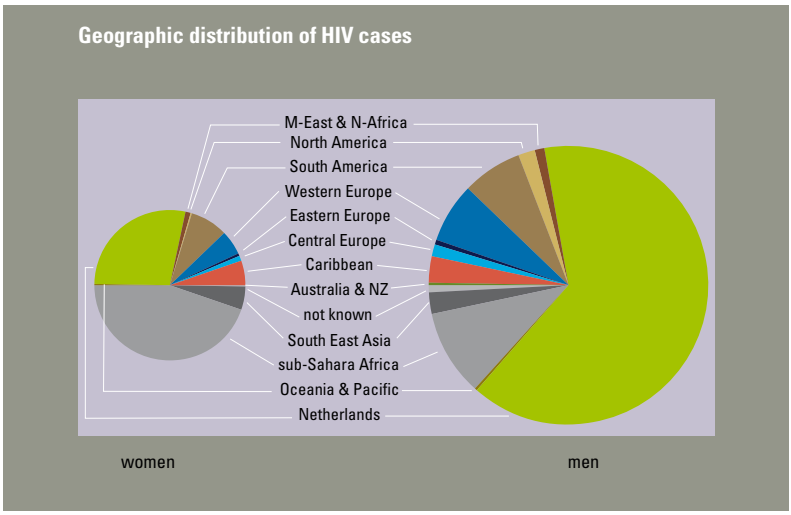


Figure 4.6: Geographic distribution of HIV cases in the Netherlands in 2006, by sex (men: right, women: left)

Most HIV infected individuals were between 25 and 49 years of age at reporting to care (77%). Men had a median age of 36 years, whereas women were younger: 30 years. In general, non-Dutch individuals were younger than Dutch *(table B.7)*.

Seventy percent of the Dutch heterosexual men, for whom the country of infection was known, reported to have acquired the infection in the Netherlands. Another country frequently reported as country of infection was Thailand (11%, n = 57). Of the Dutch heterosexual women, for whom the country of infection was known, 88% reported the Netherlands as most likely country of infection and 12% reported risk abroad. Most Dutch MSM (96%, n = 3,824) reported the Netherlands as the most likely country of infection. Other reported countries of infection were the United States (n = 24), Thailand (n = 23) and Spain (n = 20).

4.1.4 New HIV diagnoses in 2006

Of the 871 new HIV cases reported in 2006 in the HIV registry, 705 (81%) were male and 166 (19%) were female. Of the new cases, 92% were infected sexually: 33% through heterosexual contact and 59% through MSM. Of all men, 73% acquired the infection through sex with men. Of all women, 95% acquired the infection through heterosexual contact. Of all heterosexual cases, 55% were female. Injecting drug use accounted for 1% (n = 8) of the new diagnoses and risk through blood (products) for 0.3% (n = 3). For 6%, the transmission route was undetermined *(table B.12)*. In 2006, 33% of the cases were registered in Amsterdam and 37% in Rotterdam, The Hague and Utrecht *(table B.11)*.

Of the cases, 60% came from the Netherlands, 15% from sub-Saharan Africa, 11% from Latin America and the Caribbean *(table B.13)*. The median age at diagnosis in 2006 was

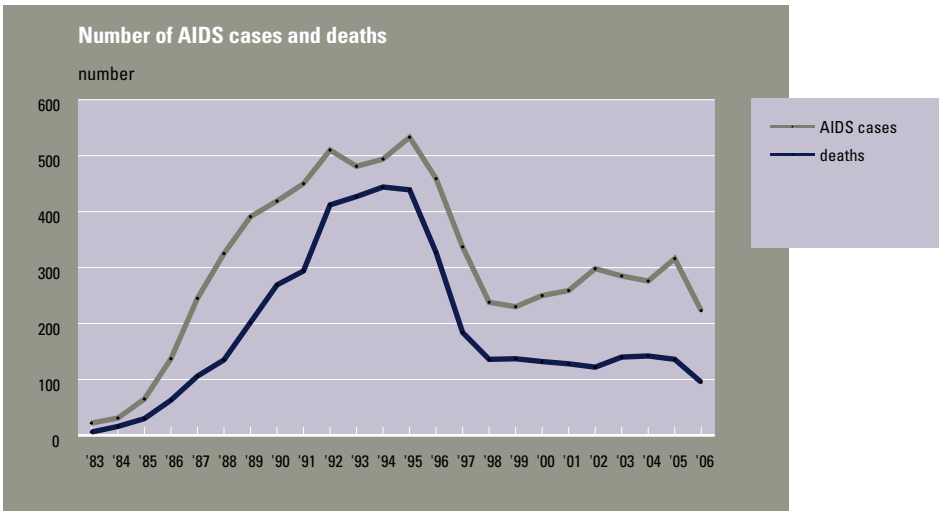
38 years and differed per risk group: the median age in MSM was 40 years, in heterosexuals 36 years and in IDUs 37 years *(table B.16)*. Thirteen cases (1%) were identified among young people (0-19 years).

4.1.5 AIDS cases and deaths among HIV patients

By the end of 2006, a cumulative total of 7,278 AIDS cases was registered in the Netherlands *(table B.17-18)*. The number of new AIDS cases peaked in 1995, and declined sharply over the subsequent four years, as the result of the introduction of HAART *(figure 4.7)*. Since 1999, the rate of decline had slowed and the curve stabilised around 300 cases per year.

The proportion of MSM among reported AIDS cases increased from 39% in 2004 to 45% in 2006. Conversely, the proportion of AIDS cases among heterosexuals decreased from 40% in 2004 to 37% in 2005. The median age at AIDS diagnosis in 2005 was 42 years; men were older than women, respectively 43 and 37 years. On average, Dutch individuals were older at AIDS diagnosis than individuals of African origin: 46 and 38 years *(table B.19)*.

The number of deaths among HIV patients showed a similar trend. Between 1983 and 2006, a cumulative total of 4,524 HIV infected individuals were known to have died of which 95 died in 2006. HAART had a major effect on the number of deaths and, as a consequence, the number of people living with HIV increased. The registered number of HIV- patients alive is over 11,000. ,



Footnote: the low value in 1999 is caused by the change in data sources of AIDS cases (sources AIDS cases: AIDS registration Health Inspectorate <1999, HMF ≥1999. Sources deaths: CBS <2002, HMF ≥2002)

Figure 4.7: Number of AIDS cases and deaths among HIV patients, the Netherlands, 1983-2006

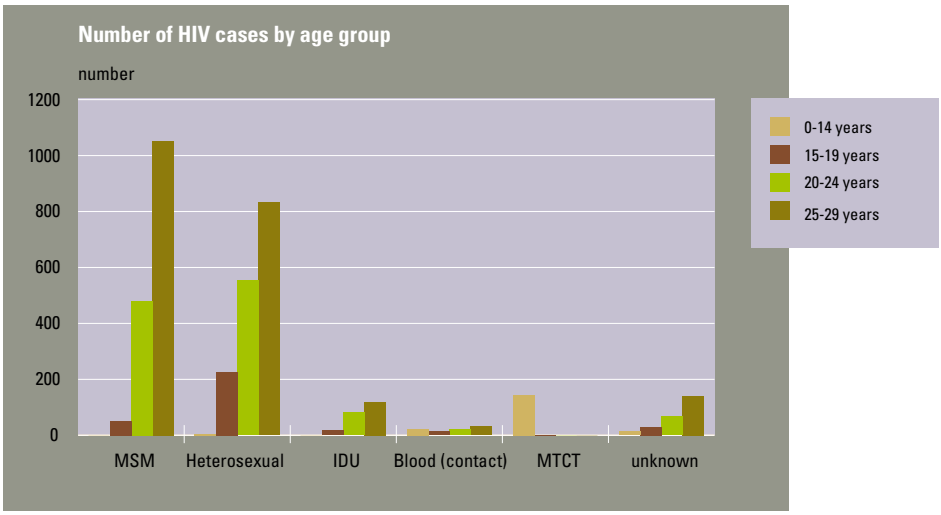
4.1.6 Focus on risk groups

Young people

Of all registered HIV cases, 183 were children between 0-14 years at diagnosis (1%), 339 (3%) were teenagers between 15-19 years at diagnosis, 1,194 (9%) were young adults (20-24 years) and 2,177 (17%) were individuals aged 25-29 years at diagnosis. The distribution of the transmission risk groups differed per age group *(figure 4.8)*. Fifty eight percent of the children < 15 years were Dutch and 31% were from sub-Saharan Africa. Of teenagers aged 15-19, 55% were from sub-Saharan Africa. Young adults (20-29 years) were from the Netherlands (39%), sub-Saharan Africa (29%) and Latin America/Caribbean (14%).

Men who have sex with men

The majority of HIV infected MSM was Dutch (73%) *(table B.4)*. The absolute number of Dutch MSM increased after 1999 from 233 to 390 in 2006 *(figure 4.9)*. The number of MSM from Latin America/Caribbean also showed a slightly increasing trend, despite some fluctuations *(figure 4.9)*. For 73% of the MSM, the country of infection was known. The majority of the MSM (89%) were infected in the Netherlands; 96% among Dutch MSM and 61% among non-Dutch. MSM were, on average, younger at HIV diagnosis than heterosexual men *(table 4.3)*. Over time, age at HIV diagnosis has increased considerably *(figure Appendix B.05)*. For Dutch MSM, the age increased from 32 in 1987 to 40 years in 2006. For non-Dutch MSM, the age increased from 28 in 1987 to 36 in 2006 *(figure Appendix B.05)*.



Footnote: MTCT=mother to child transmission, blood(contact): blood(products/needle stick injury)

Figure 4.8: Number of HIV infected individuals, by age group and transmission risk group, the Netherlands

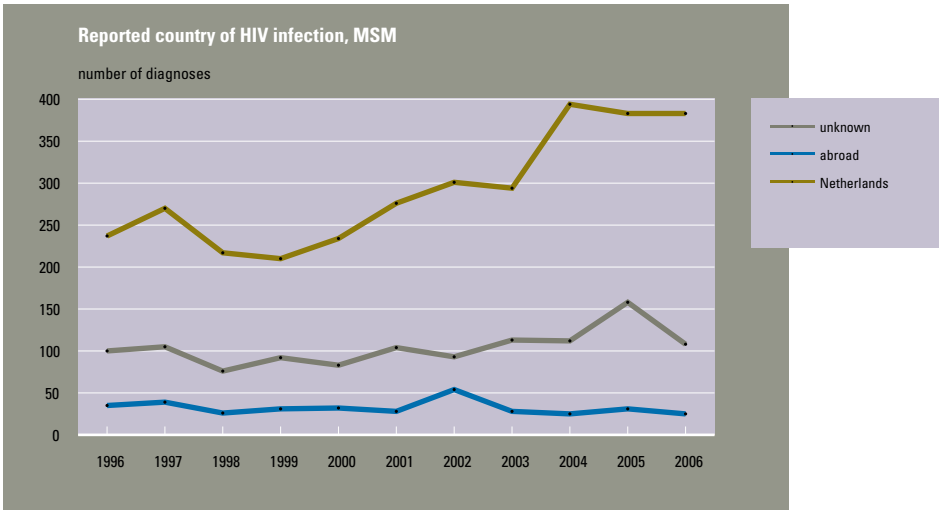


Figure 4.9: Reported country of infection of MSM, by year of diagnosis, the Netherlands, 1996-2005

Table 4.3: Median age (years) at HIV diagnoses of MSM population, by region of origin

Region of origin	Total (age/IQR)
The Netherlands	37.7 (31.7-44.8)
Western Europe	33.3 (28.6-40.1)
Sub-Saharan Africa	32.8 (27.5-38.5)
Caribbean	31.4 (26.9-37.2)
Latin America	32.0 (27.1-37.8)
South (East) Asia	34.4 (28.6-40.6)

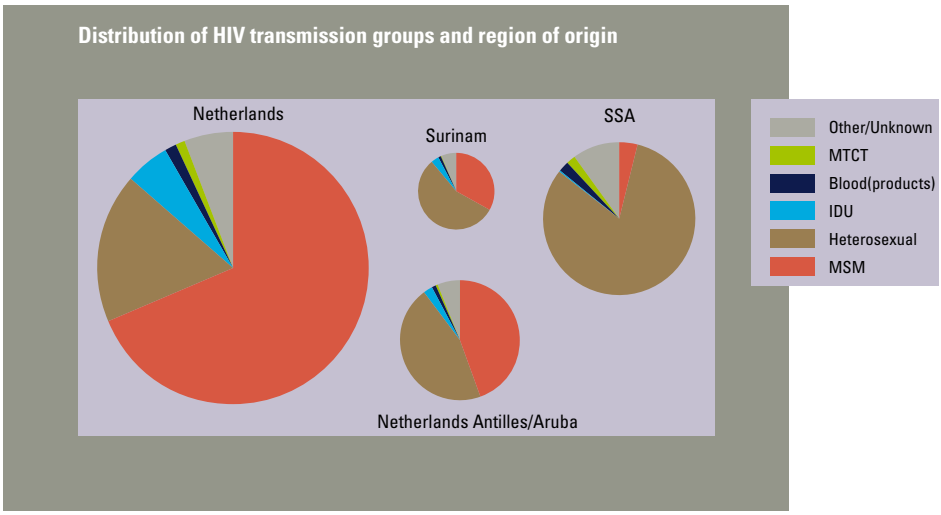
Footnote: IQR= interquartile range

Migrant populations

Of all registered HIV patients, 43% were born abroad. The majority (41%) of the migrants originated from sub-Saharan Africa, 20% from Latin America/Caribbean, 15% from Western Europe and 7% from South (East) Asia. *Figure 4.10* shows the distribution of transmission risk groups among HIV patients for different regions of origin. The largest risk group among the Dutch population was MSM (69%), while MSM only accounted for 4% of the infections among sub-Saharan Africans. The proportions of MSM among individuals from Surinam and the Netherlands Antilles were 33% and 41%, respectively.

Seventy-seven percent of the individuals from sub-Saharan Africa, for whom the country of infection is known (70%), were infected in SSA. Among Surinamese individuals (country of infection known: 61%), only 23% were infected in Surinam and 75% in the Netherlands. Thirty five percent of the individuals from the Netherlands Antilles/Aruba were infected in their region of origin. Most people from Turkey and Morocco reported to be infected in the Netherlands.

For HIV patients from Surinam or the Netherlands Antilles, the country of infection differed between risk groups: MSM from Surinam or the Antilles and heterosexuals from



Footnote MTCT: mother to child transmission; IDU: injecting drug use; MSM: men having sex with men

Figure 4.10: HIV infected individuals, by transmission risk group and region of origin, the Netherlands

Surinam more often acquired the infection in the Netherlands; whereas heterosexuals from the Antilles and Aruba more often became infected in the country of origin.

Age at diagnosis

Among heterosexual women, African women were the youngest at diagnosis (median age: 28.9 years, *table 4.4)*. Dutch and West European women were the oldest: 32 and 33 years. Among heterosexual men, Asian men were the oldest (42 years), and African the youngest (34 years). The median age at diagnosis showed no clear trend over time between 2000-2006 for heterosexuals from sub-Saharan Africa, Latin America/Caribbean and the Netherlands *(figure Appendix B.04)*. The median age of MSM clearly increased over time, from 32 years in 1987 to 40 years in 2006 for Dutch men and from 28 years to 36 years in 2006 for non-Dutch MSM *(figure Appendix B.05)*.

Table 4.4: Median age (years) of HIV diagnosis of heterosexual population in the Netherlands, by region of origin and sex

Region of origin	Male (age/IQR)	Female (age/IQR)	Total (age/IQR)
The Netherlands	40.6 (33.4-49.3)	32.4 (26.2-42.3)	36.8 (29.3-46.4)
Western Europe	35.9 (32.3-46.9)	32.7 (28.9-40.5)	35.1 (29.8-42.9)
Sub-Saharan Africa	33.7 (28.2-38.6)	28.9 (24.2-34.2)	30.6 (25.1-35.9)
Caribbean	36.6 (31.7-43.8)	31.3 (24.4-39.3)	33.6 (26.9-41.1)
Latin America	37.7 (32.1-46.6)	30.9 (26.3-38.0)	34.3 (28.6-41.8)
South (East) Asia	41.7 (36.2-48.8)	31.3 (27.8-35.0)	32.5 (28.2-39.7)

Footnote: IQR= interquartile range

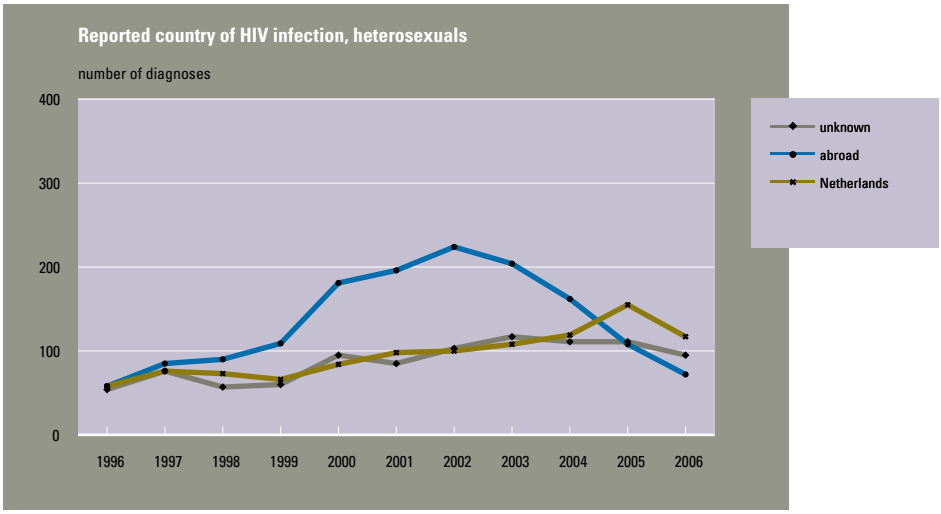


Figure 4.11: Reported country of infection of heterosexuals, by year of diagnosis, the Netherlands, 1996-2006

4.1.7 Anonymous unlinked HIV surveys

Sub-Saharan Africans, Surinamese and Antilleans form relatively large migrant populations in the Netherlands. To obtain more insight in risk behaviour, 'intercultural mixing' (sexual contact between various ethnic groups), and the potential to further spread of HIV, anonymous unlinked surveys were conducted among these populations between 2002 and 2006 [43-45]. In 2006, a repeated survey was carried out in Rotterdam.[46] In this survey the HIV prevalence among Antillean migrants increased compared to the first survey in 2002. Results are summarized in *table 4.5*.

Table 4.5: HIV prevalence and risk behaviour amongst migrants

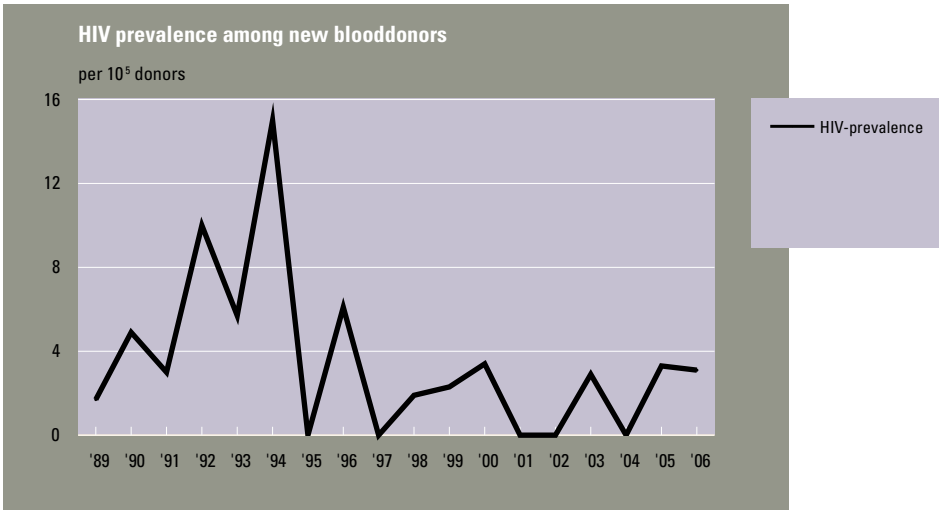
	Region	Year of survey	HIV prevalence (%)	Condom use[1] steady partner (%)	Condom use[1] casual partner (%)	Condom use[1] casual partner in country of origin (%)
Surinamese	Rotterdam	2002/2003	0.0	9	43	77
	Amsterdam	2003/2004	0.7 [0.1-2.5]	15	53	65
	The Hague	2005	0.7 [0.2-2.0]	12	46	73
	Rotterdam	2006	0.8 [0.2-2.1]	11	54	72
Antilleans/	Rotterdam	2002/2003	0.0	9	36	26
Arubans	Amsterdam	2003/2004	0.0	9	44	67
	The Hague	2005	0.6 [0.1-2.1]	12	53	73
	Rotterdam	2006	0.8-3.2	4	55	68
Cape Verdeans	Rotterdam	2002/2003	1.0 [0.1-3.8]	12	51	81
	Rotterdam	2006	0.7 [0.1-2.3]	8	59	77
Ghanaian	Amsterdam	2003/2004	0.6 [0-3.1]	26	57	42
	The Hague	2005	1.8 [0.6-4.3]	12	71	75

[1] Condom use: last 6 months always used condoms

4.1.8 National HIV screening

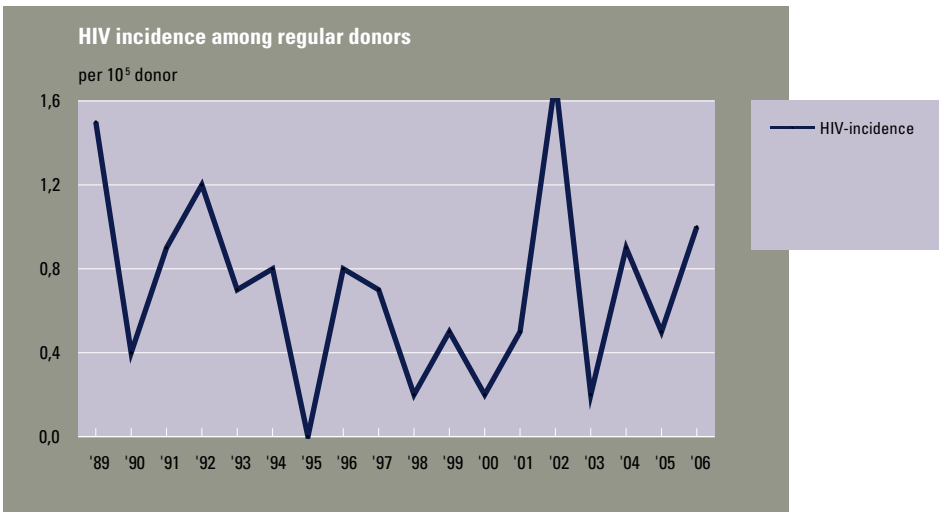
Blood donors

In 2005, 439,131 blood donors were registered in the Netherlands [47]. In total, five HIV infections were found, four in repeat donors and one in a new donor. The overall prevalence and incidence of HIV antibodies was low: new donors: 3.1 per 10^5 donors (prevalence), regular donors: 1.0 per 10^5 donor years (incidence). Prevalence of HIV increased until 1994 and levelled off to a stabile low prevalence thereafter *(figure 4.12 and 4.13)*.



Source: Stichting Sanquin Bloedvoorziening, Amsterdam

Figure 4.12: HIV prevalence (per 100,000 donors) among new blood donors in the Netherlands 1989-2006



Source: Stichting Sanquin Bloedvoorziening, Amsterdam

Figure 4.13: HIV incidence (per 100,000 donor years) among regular blood donors in the Netherlands, 1989-2006

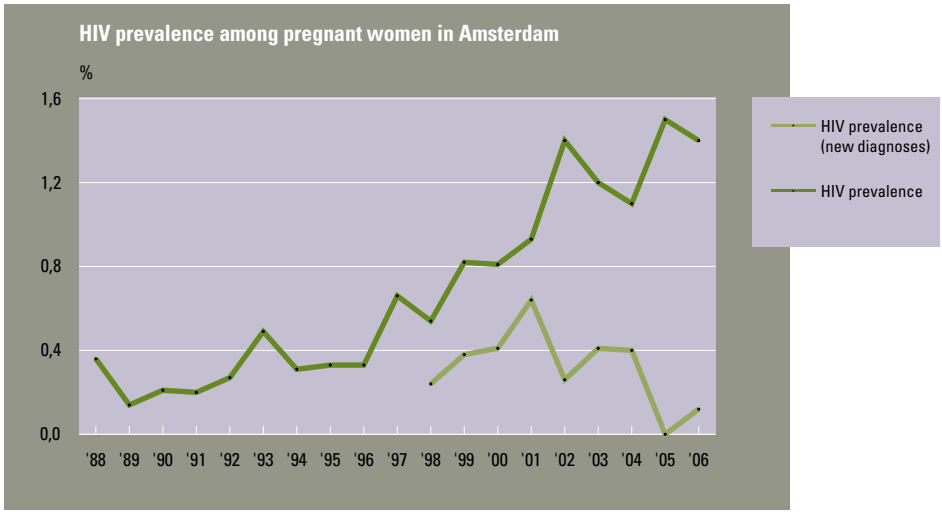


Figure 4.14: HIV prevalence (%) among pregnant women in Amsterdam (sentinel study), 1998-2006

Pregnant women

In 2006, 14,385 women were offered an HIV test in Amsterdam (4 persons refused). The total HIV prevalence was 0.17% (24/14,381). Of these 24 women, 21 knew their HIV positive status and 22 had a non-Dutch origin (15 sub-Saharan Africa, 5 Surinam/Antilles, and 1 Belgium).[48]

Since 1988, pregnant women in Amsterdam are tested for HIV in a sentinel surveillance study.[48] Until 2002, HIV prevalence was slightly increasing; the last few years mainly due to an increase of known HIV positive women becoming pregnant *(figure 4.14)*. In 2006 HIV prevalence in this sentinel surveillance was 1.4% (22/1,541) which is comparable to 2005 (1.5%, 26/1,701).

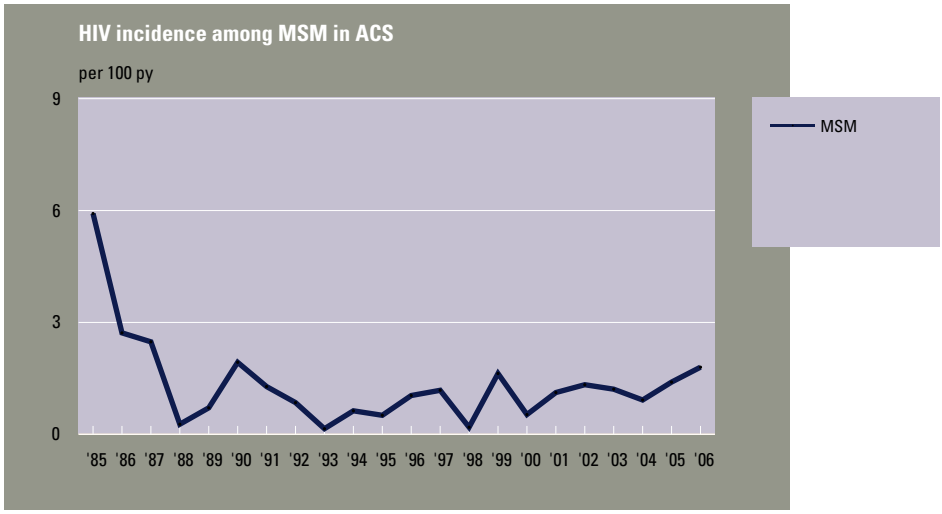
4.1.9 HIV incidence MSM and drug users

MSM

The HIV incidence among MSM in the ACS in 2006 was estimated at 1.8 per 100 person-years (PY). The last decade, the HIV incidence is relatively stable in the range of 0-2 per 100 PY *(figure 4.15)*.[49]

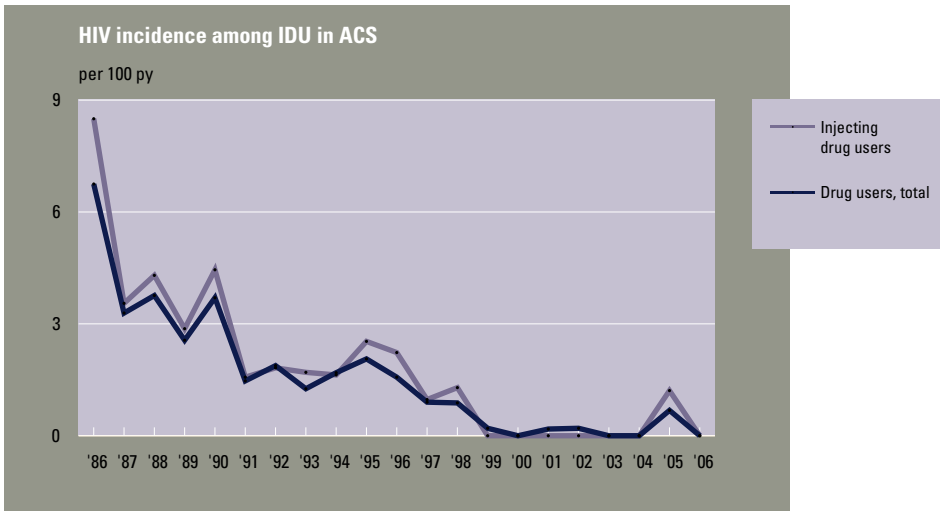
Drug users

The first enrolment of IDUs in the ACS took place between 1985-1990. From 1998, recruitment was focused on young drug users (≤ 30 years). No HIV infections were found among IDUs from 1999 until 2004, in 2005 two IDUs were tested positive (incidence 1.2 per 100 PY). In 2006, no HIV infections were found among non-injecting and injecting drug users *(figure 4.16)*.[49]



Source: Overview of the Amsterdam Cohort Studies among homosexual men and drug users, Health Service, Amsterdam, February 2007

Figure 4.15: Yearly HIV incidence among MSM in Amsterdam Cohort Studies, 1985-2006



Source: Overview of the Amsterdam Cohort Studies among homosexual men and drug users, Health Service, Amsterdam, February 2007

Figure 4.16: Yearly HIV incidence among IDUs (30 years or younger at entry) in Amsterdam Cohort Studies, 1986-2006

4.1.10 Discussion

In 2006, 871 new HIV cases were reported. The increase of the proportion of new reported HIV cases among MSM in the national HIV registration of the HMF continued in 2006. This group is mainly Dutch and the majority acquired their HIV infection in the Netherlands. In the national registration of STI centres the number of new HIV diagnoses

(as well as the HIV positivity rate) among MSM have stabilised for the first time in four years. Though, concurrent STI were often diagnosed in known HIV infected MSM who were consulting a STI centre, indicating continuing risk behaviour. Since no distinction can be made between recent or longstanding infections among the new HIV diagnoses the transmission patterns of HIV in MSM are difficult to entangle at this moment.

In contrast to the MSM population, the majority of the heterosexuals acquired the HIV infection abroad; in sub-Saharan Africa and to a lesser extent in Latin America and the Caribbean. Migration thus still plays an important role in the Dutch HIV epidemic. Anonymous unlinked HIV surveys showed increasing prevalence rates among Antillean migrants in Rotterdam between 2002 and 2006.

The quality of the surveillance systems for both STI and HIV/AIDS in the Netherlands has improved considerably the past few years. Nevertheless, expansion of surveillance activities in some areas is needed. One of the major limitations of the current system is that most data do not represent recent HIV infections, apart from the ACS and one study among MSM in Amsterdam. Recently, a research collaboration started between EuroHIV, the Health Protection Agency in London and six countries including the Netherlands (RIVM and GGD Amsterdam) in which various assays for the detection of recent HIV infections are being validated. The first results of this study are expected in the beginning of 2008, which will provide more insight in recent and prevalent infections among newly diagnosed HIV infected MSM in Amsterdam. On the basis of this study, broader implementation of these assays will be considered.

The past ten years, in addition to the regular HIV surveillance system, several specific HIV prevalence surveys have been carried out among drug users, commercial sex workers and migrant populations. Although important data has been collected by these specific surveys, an evaluation was done in 2007 to study the added value and to examine future surveillance among high risk groups. On the basis of this evaluation, it was concluded that further surveys are indicated only when changes in the epidemiology are observed in the regular registration systems that will have consequences for policy. The regular surveillance will be further reinforced by the continuation of the active testing policy in combination with the implementation of the opting out approach. Moreover, it is recommended to collect information on ethnicity in the national screening among pregnant women, to monitor HIV prevalence among different ethnic groups living in the Netherlands. It will be examined to what extent data from the national HIV screening among pregnant women can contribute to the insight in the HIV (as well as syphilis and hepatitis B) epidemiology in the general heterosexual population.

In 2008, we intend to start a new collaboration with the HMF and STI centres to study the time-interval between a positive HIV test and the start of HIV treatment. By using modelling, virological and behavioural data, we will study the impact of a delayed registration and treatment on HIV transmission in the Netherlands.

4.2 Hepatitis B

4.2.1 Key points

- In 2006, the incidence of notified cases of acute HBV was 1.5 per 100,000 inhabitants and was higher in men (2.3) than in women (0.7).
- Unprotected sexual contact was the most important risk factor for acute hepatitis B.
- The number of acute HBV notifications decreased with 20% compared to 2005.
- Genotype A was most common in the Netherlands in acute HBV patients.

4.2.2 Recent trends hepatitis B

In 2006, 240 cases of acute hepatitis B were diagnosed in the Netherlands, 182 men (76%) and 58 women (24%). a decrease of 20% compared to 2005 (2005: 299 cases, 2004: 293 cases).[50]

Gender, sexual preference and age group
The incidence rate for acute HBV in 2006 was 1.5 per 100,000 and was higher in men (2.3) than in women (0.7) *(figure 4.17)*. The median age at diagnosis for men was 41 years (range: 12-79) and for women 31 years (range: 15-69).

Sexual contacts, heterosexual as well as homo- or bisexual contacts, were the most reported routes of transmission. At time of diagnosis, infected MSM were on average 5 years older than heterosexually infected persons *(table 4.6)*. Among MSM, 78% acquired the infection through a casual partner, among heterosexuals this was 55%. Heterosexual men reported more often to be infected by a casual partner (76%) than women did (38%).

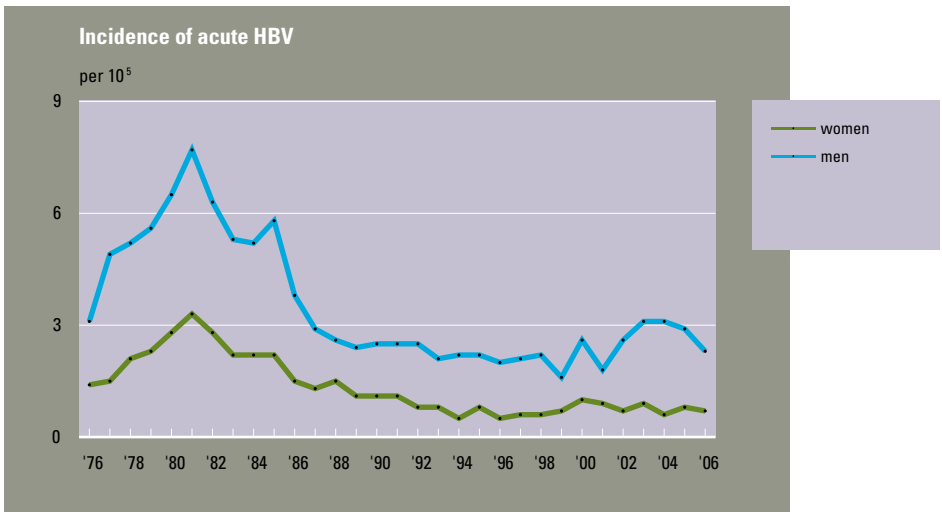


Figure 4.17: Incidence of acute HBV by gender, the Netherlands, 1976-2006. (Source: RIVM-Osiris, notification data)

Table 4.6: Differences in characteristics by most common route of transmission, the Netherlands, 2006 (Source: RIVM-Osiris, notification data).

	MSM (n=76)		heterosexual contact (n=76)		total	
	N	%	N	%	N	%
Infected abroad	5	7%	16	21%	46	19%
Born abroad	11	14%	18	24%	50	21%
Infected by casual partner	59	78%	42	55%	105	66%
Median age (range)	40 (21-73)		35 (15-64)		40	

Regional pattern

The incidence of acute HBV is unevenly distributed across the Netherlands, (range: 0.0-3.9 per 100,000), see *figure 4.18.*[50]

Risk groups

Of the acute HBV cases, 79% (n = 190) was born in the Netherlands, 18% (n = 42) was born abroad and in 3% the country of birth was unknown. Of the cases born abroad, 12% came from HBV high endemic regions (HBsAg prevalence ≥ 8%), 67% from intermediate endemic regions (HBsAg 2-7%) and 21% from low endemic regions (HBsAg ≤ 1%). Eighty-one percent of all acute HBV cases reported to be infected in the Netherlands, 13% reported an infection abroad and in 7% of the cases the country of infection was unknown.

HBV in the national surveillance of STI centres

In 2006, 70 diagnoses of HBV were registered in the STI sentinel surveillance network; 13 of those (19%) were acute and 57 (81%) were chronic. In addition, 575 individuals appeared to have markers of recovered HBV infection.

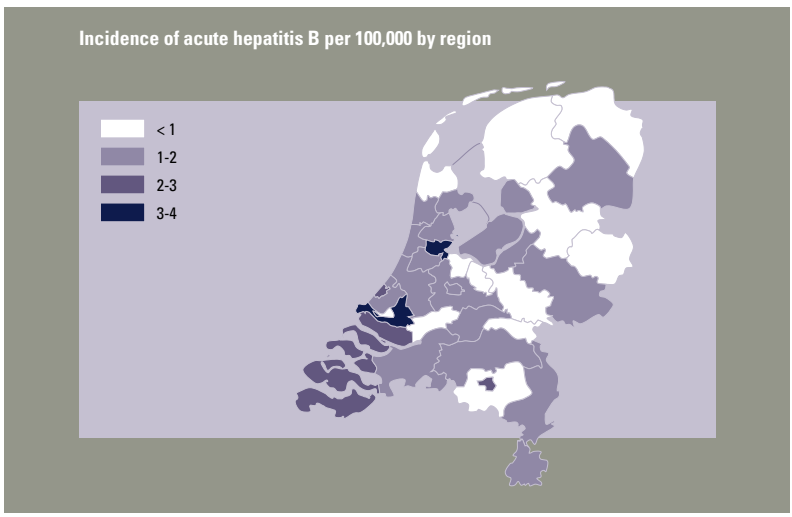


Figure 4.18: Incidence of acute hepatitis B per 100,000 inhabitants by region the Netherlands, 2006 (Source: RIVM-Osiris, notification data)

4.2.3 Vaccination policy of HBV

The Netherlands is a low endemic country with a higher prevalence of HBV in specific risk groups and import of infection. To increase HBV protection, a vaccination programme was started in 2002 targeted at MSM, hard drug users, sex workers, and heterosexuals with multiple sex partners, in addition to individuals working in medical professions, pregnant women, newborns with migrant parents (HBV highly endemic regions), and children with Down syndrome. The vaccination programme for behavioural risk groups is co-ordinated by The Netherlands Association for Community Health Services (GGD Nederland).

From 2002 up to January 2007, approximately 66,000 persons received a first HBV vaccination, 46,000 also received a second one, and 31,000 persons were fully vaccinated.[51] Also, about 5,000 persons appeared to be immune for an HBV infection and 400 persons were chronic carriers.

4.2.4 Molecular epidemiology of acute HBV

In 2006, 240 acute cases were notified, and the genotypes of 110 have been determined up till now. As well as in 2004 and 2005, genotype A was the most common genotype (69%), followed by genotype D (17%, *figure 4.19)*. Since 2004, the proportion of acute HBV cases with genotype A is increasing, while genotype D has decreased compared to 2005 *(figure 4.19)*. Of all infections with genotype A in 2006, 43% were acquired by sexual contact between MSM and 24% by heterosexual contact, comparable to 2005. Within genotype D, most patients were infected by heterosexual contact (44%). Patients with genotype B, C, D en E reported more often to be infected abroad or via a partner from abroad compared to patients with genotype A.

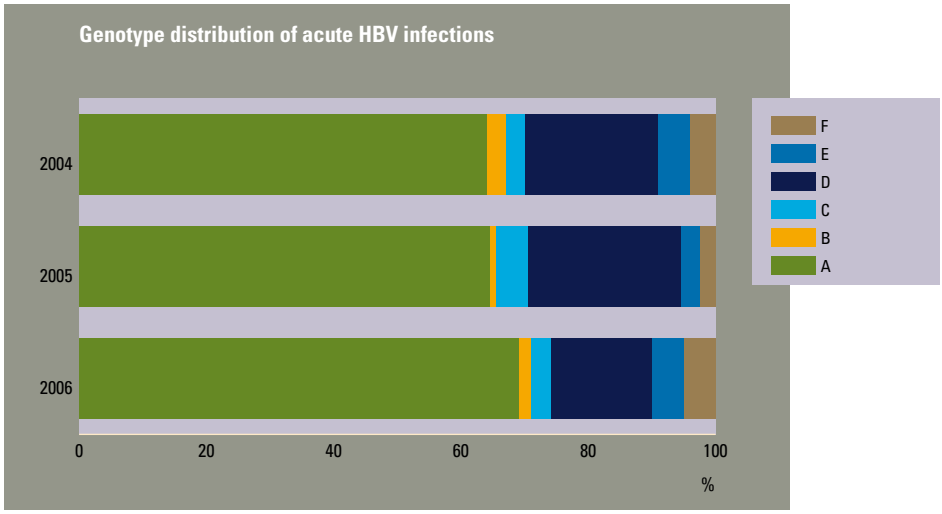


Figure 4.19: Genotype distribution of acute case of HBV infection, the Netherlands, 2004-2006

4.2.5 Discussion

In 2006, the incidence of acute HBV in the Netherlands was 1.5 per 100,000, which is a decrease compared to the previous 3 years. In men, the incidence decreased from 3.1 in 2003-2004 to 2.3 in 2006, while in women the incidence remained stable. Compared with 2005, the number of notifications of acute hepatitis B infection decreased with 20%, mainly due to a decrease in transmissions among MSM (-25%). Possibly this decrease is due to the vaccination campaign, targeted at high-risk groups, including MSM.

From 2004-2006 there are no significant changes in genotype distribution in the Netherlands. Genotype A is still the most common genotype in the Netherlands (69%), mainly found in MSM (42%). Due to the active approach of this group, one would expect a decrease of genotype A as a result of the vaccination campaign longer follow up might be needed to see impact in the future. During an expert meeting in March 2007, evidence was reviewed to guide the future vaccination campaign. Main conclusions from this meeting were that MSM remain the most important high-risk group for HBV, whilst CSW and (injecting) hard drug users and heterosexuals contribute little to HBV transmission. The HBV vaccination campaign will be enhanced for MSM, continued for CSW and hard drug users and discontinued for heterosexual people with a high rate of partner change.[52]

4.3 Genital warts

4.3.1 Key points

- In 2006, 1,924 diagnoses of genital warts were made in the national surveillance of STI centres (men: 59%, women: 40%).
- Genital warts are the most prevalent viral STI diagnosed in the Netherlands; however, compared to 2005, the number of diagnoses has decreased.

4.3.2 Recent trends genital warts

Genital warts, a viral STI caused by Human Papillomavirus, were the most frequently diagnosed viral STI in all STI centres. In 2006, 1,924 diagnoses of genital warts were made (1,149 in men and 775 in women). Of all Genital warts infections, 78% were diagnosed in Dutch men, 85% in Dutch women *(table A.13a-b)*.

Most diagnoses were made among women and men aged 20-24 years (men 25%, women 42%). In the older age groups the number of infections is lower. A history of gonorrhoea, infectious syphilis or chlamydial infection was reported for 15% of the women and for 20% of the men diagnosed with genital warts. The number of diagnoses of genital warts has decreased by 10% in 2006 (in men 11%, in women 7%).

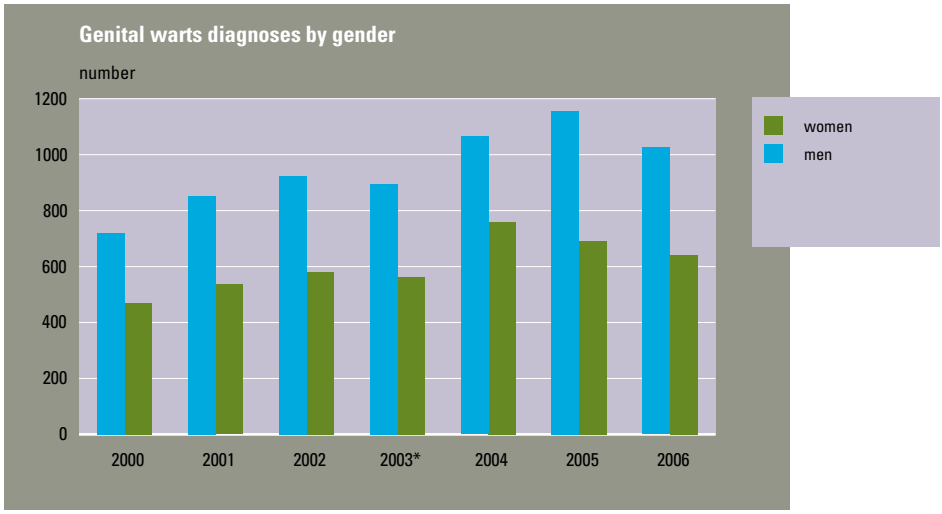


Figure 4.20: Number of new diagnoses of genital warts by gender, the STI sentinel surveillance network, the Netherlands, 2000-2006

4.3.3 Discussion

Human Papilloma viruses are the most common sexually transmitted viral agents. Genital warts are the most prevalent viral STI diagnosed in the Netherlands commonly caused by HPV type 6 or 11, although the number of diagnoses has decreased in 2006. Persistent HPV infection might eventually lead to cervical cancer. About 20 different genotypes are able to cause cervical cancer, and the most prominent, so-called High-Risk genotypes are HPV-16 (app. 55% of cervical cancer cases), HPV-18 (app. 11%), HPV-45 (app. 4%) and HPV-31 (app. 3%).[53] Effective HPV vaccines have been developed (Merck (Gardasil): HPV-6, -11, -16, -18 and GSK (Cervarix): HPV-16 and -18) and are FDA approved and also available in the Netherlands. In December 2007, an advice from the Dutch Health Council to the Ministry of Health is expected on whether or not to include the HPV vaccine in the National Immunisation Programme.

4.4 Genital herpes

4.4.1 Key points

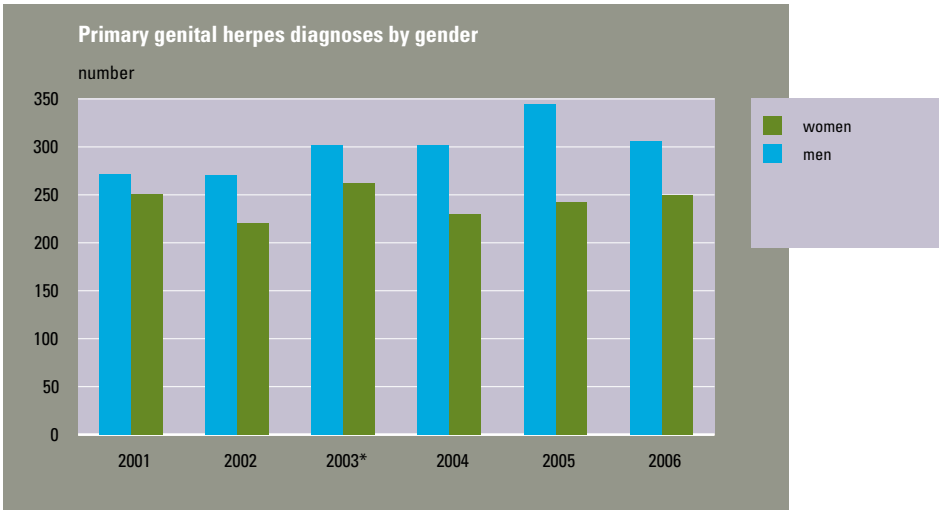
- In 2006, 593 diagnoses of genital herpes were made in the national surveillance of STI centres (men: 54%, women: 46%).
- Diagnoses of genital herpes decreased with 5% compared to 2005.
- 40% of the diagnoses in men were made in MSM.

4.4.2 Recent trends genital herpes

In 2006, 593 diagnoses of primary genital herpes were made (318 in men and 275 in women) in all STI centres, representing 4% of all positive STI diagnoses. Of all diagnoses, HSV type 1 accounts for 40% (n = 226), HSV type 2 for 50% (n = 296) and HSV type 1 or 2 for 11% (n = 57). In addition, 43 patients with a recurrent genital herpes infection were diagnosed.

Gender, sexual preference and age group

Among men, most diagnoses of genital herpes were made in men aged 30-34 years (22%); in women most diagnoses were made in women aged 20-24 years (36%). In the older age groups the number of infections is lower *(table A.12)*. Of all diagnoses in men, 60% (n = 192) were made in heterosexual men and 40% (n = 126) in MSM *(table A.14)*.



Footnote: 2000-2002 STI registration; 2003 Implementation of STI sentinel surveillance network*

Figure 4.21: Number of new diagnoses of primary genital herpes infections by gender in the STI sentinel surveillance network, the Netherlands, 2001-2006

Trends in time
From 2001-2005 there was an increase in primary herpes infections of 12%, but in 2006 the total number of infections decreased with 5% compared to 2005: 11% in men and in women there was a slightly increase of 3% *(figure 4.21)*.

Risk groups
About 68% of the diagnoses in were made in Dutch men, 75% in Dutch women *(table A.13)*. Among non-Dutch, the highest percentage of diagnosis was made in men and women from Surinam and the Antilles (11% and 7% respectively).

In men, 3% of the infections were diagnosed in patients who had recent (past 6 months) contact with CSW, whereas for women 7% were diagnosed in CSW *(table A.15)*. In 4% (n = 22) of the cases of genital herpes the diagnosis was made in individuals who reported a prior positive HIV test (known HIV positives) A history of gonorrhoea, infectious syphilis or genital chlamydial infection was reported by 24% of the men with genital herpes and by 11% of the women *(table A.18,* NA Amsterdam).

4.4.3 Discussion

Diagnoses of genital herpes, mainly caused by HSV-2, slightly decreased with 5% in 2006. At national population level, results from a seroprevalence study performed in 1995-1996 showed an overall HSV-1 prevalence of 60%. For HSV-2, the overall prevalence was 8.4%.[54] In 2006, a new seroprevalence study has been performed in the Netherlands, but results are not available yet.

Vaccines against herpes simplex virus are being developed. The National Institutes of Health (NIH) in the United States is currently in the midst of phase III trials of a vaccine against HSV-2, called Herpevac.[55-57] The vaccine has only been shown to be effective for women who have never been exposed to HSV-1. Overall, the vaccine is approximately 48% effective in preventing HSV-2 seropositivity and about 78% effective in preventing symptomatic HSV-2. As vaccine development is still in a preliminary phase, it is too early to discuss availability in the Netherlands. Since preventing acquisition of HSV-2 might have a reducing effect on HIV acquisition, vaccine development against HSV might be of particular importance for HIV epidemic areas.

5 FOCUS ON SPECIFIC GROUPS

5.1 MSM

In spite of decreasing trends in gonorrhoea and syphilis, MSM still account for the highest burden of STI, including HIV, in 2006. In addition, the proportion of MSM in new HIV cases recorded at the HIV registry continued to increase to 59% in 2006. Positivity rates of most STI increased with rising age among MSM. Eight percent of MSM clinic attendees were known HIV-positive. Of them, 46% had a concurrent STI diagnosed, indicating continuing risk behaviour. In the behavioural surveillance data, the median number of partners in the last six months among MSM was 3, which was significantly different from heterosexual men (median = 2, $p < 0.0001$). 32% of MSM used a condom in their last sexual encounter (24% among heterosexual men, $p < 0.0001$). Of MSM, 9% had sexual contacts abroad in the last three months; most reported countries were Germany, Spain and Belgium.

5.2 Young people

In the young heterosexual population, chlamydia is the most frequently diagnosed bacterial STI. Girls under 20 years old are disproportionately affected by chlamydia. Among heterosexual men the population under 25 years is most at risk. Especially high chlamydia positivity rates are found in young people from Surinam/Antillean origin. It is necessary to reduce the apparent ongoing chlamydia transmission in the young heterosexual population. Systematic screening could be a way to timely diagnose both symptomatic and asymptomatic cases.[14] In 2008 and 2009 a large scale chlamydia, population-based screening intervention will take place in three regions in the Netherlands specifically aimed at young people aged between 16 and 29 years old. Gonorrhoea and syphilis were most often diagnosed in older age groups, especially in MSM. However, in heterosexual men, the highest positivity rate was seen among men aged 15-19.

Of the new reported HIV cases in 2006 in the HIV registry, 2 (0.2%) were in children between 0-14 years due to Mother-to-Child transmission. In teenagers between 15-19 years, 11 (1.3%) new HIV cases were reported; 3 by heterosexual transmission and four in young MSM. Young adults (20-24 years) accounted for 64 (7.3%) of all new HIV cases (42% MSM, 53% heterosexuals, 2% IDU and 3% unknown transmission group).

5.3 Ethnic minority populations

Ethnic minorities from Surinam, the Netherlands Antilles and Aruba, had higher positivity rates for genital chlamydia, gonorrhoea and syphilis than autochthonous Dutch. The proportion of new HIV cases among heterosexuals decreased over time to 33% in 2006. Of them, the majority were not originated in the Netherlands. Of new HIV cases

Table 5.1: Sexual behaviour among ethnic groups

	Median partners	% condom use	% sex abroad	Previous HIV-test (%)	Previous positive HIV-test (%)	Previous STI (%)
Netherlands	2	22,6	7,3	35,4	0,9	16,1
Turkish	2	23,5	9,0	33,7	0,6	20,4
Moroccan	2	24,3	7,6	30,5	0,5	15,7
Surinamese	2	26,2	5,0	44,0	0,8	34,9
Antilleans	2	24,1	5,6	46,5	1,0	35,1
East Europeans	2	28,1	9,8	60,9	0,4	23,3
Africans	2	22,6	9,8	46,9	1,1	19,1
Latin Americans	2	29,9	8,1	56,6	2,0	18,3
*Other Europeans**	2	33,0	14,5	57,0	1,3	17,4
Asians	2	20,9	11,4	37,5	1,4	18,4

* other Europeans=Patients from European countries except Eastern Europe and the Netherlands

in 2006, 40% was born abroad. The majority of these migrants originated from sub-Saharan Africa.

Behavioural data in ethnic groups showed similar median number of partners in the previous six months for all groups, including autochthonous Dutch. Condom use with last partner ranged from 21% (among Asians and 22% in Dutch) to 33% (among Europeans excluding East) per ethnic group *(table 5.1)*. Between 6% and 15% of clinic attendees per ethnic group, reported sexual contact abroad in previous 3 months in which the country of origin the mostly reported. Most of the Africans had a former HIV-test (61%) and least of the Moroccans (31%). Of Surinamese and Antillean 35% had a previous positive STI diagnosis ($p < 0.0001$).

No significant differences are reported in condom use at most recent sexual contact and median number of partners in the previous six months between autochthonous Dutch and other ethnicities. Previous positive STI diagnoses was significantly higher among Surinamese and Antillean migrants. Moreover, higher positivity rates of certain STI are found in specific ethnic groups, pointing to the need for targeted intervention by risk profile.

5.4 Pregnant women

In the HIV screening of pregnant women, the majority of infections were in women of non-Dutch origin. The overall prevalence of HIV was 0.17% in pregnant women in Amsterdam. In 2008, it will be examined to what extent data from the national screening of infectious diseases among pregnant women can contribute to the insight in the HIV, as well as syphilis and hepatitis B, epidemiology in the general heterosexual population.

5.5 Injecting drug users

Injecting drug use accounted for 5% of all registered HIV cases. This proportion has decreased since 1991 to 1% in 2006. In the Amsterdam Cohort Studies, no HIV infections were found among non-injecting and injecting hard drug users in 2006. These results indicate that IDU currently play a minor role in the current Dutch HIV epidemic, however the burden of HIV is high within the group of IDU. Of all STI clinic attendees, 0.5% reported to have (ever) injected drugs. Of them, 10% were diagnosed with a STI.

5.6 CSW and clients

Persons visiting the clinic indicating they were working as a CSW or had visited a CSW in the past six months did not show a higher infection rate with chlamydia. However, positivity rates of gonorrhoea were higher in CSW than in women not working in commercial sex. And heterosexual men who had visited a CSW also had higher gonorrhoea positivity rates than heterosexual men not reporting CSW visits. Sixteen percent of gonorrhoea cases and 29% of syphilis cases in women were diagnosed in CSW. Among men, 2% of the chlamydial infections, 3% of gonorrhoea and 2% of infectious syphilis were diagnosed in men who had recent contact with CSW. The median number of partners in the previous six months among CSW was 40 (mean = 107) and three among male clients of CSW. Thirty nine percent of both CSW and their clients used condoms in their last sexual encounter. Four percent of CSW and 23% of clients of CSW had sexual contact abroad in the last three months. Most reported countries of clients of CSW were Thailand, Germany and Brazil. The majority of CSW reported a previous HIV test (69%) and 41% of clients of CSW had had a former HIV-test; 0.1% of CSW and 0.2% of clients of CSW had a previous positive HIV-test. One in four (24%) of CSW and 19% of clients of CSW reported a previous positive STI diagnosis, indicating high risk sexual behaviour.

6 GENERAL CONCLUSIONS AND RECOMMENDATIONS

The nationwide low threshold STI centres provide STI care for high risk groups. The absolute number of new STI consultations seen in these centres still increases every year and in 2006, 13% of all attendees were diagnosed with an STI. Next to analysing trends in absolute numbers and positivitiy rates, it will be essential to evaluate the effectiveness of the current policy of targeting high risk groups[58] and to adapt and refine where indicated. Furthermore, specific quality indicators need to be agreed upon to enable monitoring and evaluation of quality of care at the STI centres.

A major concern remains the ongoing high postivity rate of Chlamydia among high-risk and low-risk populations. The main burden of chlamydia, the most commonly diagnosed bacterial STI, is carried by young heterosexuals. In addition chlamydia, amongst other bacterial STI, was more prevalent in specific ethnic groups. Both risk groups are specifically targeted by STI centres, where for most groups positivity rates appear to stabilize although not (yet) for young heterosexual women. Developing STI surveillance among general practitioners may complement insights in the occurrence of chlamydia and other STI among groups not targeted by or not (optimally) reached by the targeted policy of STI centres.

Despite decreasing trends in STI, MSM, and in particular HIV-positive MSM, remain in 2006 the group most at risk for STI. The re-emergence of LGV, (sexual transmission of HCV[59, 60]) and the regular diagnosis of concurrent STI in this group, indicates that unsafe sex practices are still common among MSM. This indicates a clear need to maintain awareness and to explore elaborating on current interventions targeted at MSM. Moreover, this also indicates a need to implement routine STI screening (and surveillance) among HIV positive MSM. HIV positive patients currently in care are screened serologically on syphilis, HBV and HCV, but no systematic comprehensive clinical screening is in place yet. Integrated analysis of STI screening data of all hiv-positives will improve insights in the prevalence and risks of concurrent infections in HIV positives.

At present no distinction can be made between recent or longstanding HIV infections among the new HIV diagnoses, therefore the transmission patterns are difficult to entangle at this moment. Evaluating HIV incidence assays is ongoing, and if a suitable test would be identified, this could add data to improve our knowledge on HIV transmission events. Furthermore, the regular surveillance can be further reinforced by the continuation of the active testing policy on HIV in combination with the implementation of the opting out approach. It will be examined to what extent data from the national antenatal HIV screening can contribute to insights in the HIV – as well as syphilis and HBV – epidemiology in the general heterosexual population.

In 2006, the percentage of ciprofloxacin resistance in gonococci further increased. Resistance to cephalosporins, currently recommended first line therapy could not be confirmed so far. Continuous assessment of the emergence and spread of antibiotic resistance for bacterial STI, in particular for gonorrhoea, is needed to enable physicians and public health workers to evaluate prevention and control programs including

treatment regimens. Strengthening the molecular typing of gonorrhoea may improve insight in the transmission networks and risk factors, as molecular typing of hepatitis B is complementing the evaluation of the effect of the HBV vaccination campaign for high risk groups.

Continuous surveillance of behavioural data is important to provide background data to observe trends in STI. The behavioural indicators in the STI surveillance system will be modified based on analysis and expert opinions. In future, more information on type of sexual partners may be included. With respect to travelling, behavioural data showed that a part of STI clinic attendees reported sexual contacts abroad. In addition, the majority of HIV positive heterosexuals in care, reported to have acquired their HIV infection abroad. Migration and travelling play an important role in the occurrence of STI and awareness of international trends will be essential to put Dutch behavioural data into perspective of future risks.

Finally, the development of home-based tests for STI and HIV may have impact on (risk) behaviour, albeit at the moment still difficult to predict in which way. Although these tests are not widely used, they will become more available in the coming years, therefore careful evaluation is needed to asses how such tests will affect risk behaviour, and treatment seeking.

Recommendations

Strengthening surveillance of STI and HIV by:

- Evaluating and refining current policy of targeting high risk groups in STI centres;
- Optimising use of complementary data, such as antenatal data, data from HIV treatment centres, specific research studies and behavioural data;
- Developing surveillance among general practitioners.

Intensify insights into transmission routes and risks by:

- Evaluating potential use of validated HIV incidence assays;
- Strengthening molecular typing, for instance for gonorrhoea and HBV;
- Analysing antibiotic resistance, in particular resistance of gonorrhoea.

Support and evaluate targeted STI interventions among the following high risk groups

- People living with HIV/AIDS (PLWHA);
- Men having sex with men;
- Young heterosexuals;
- Ethnic minority groups.

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APPENDIX A
TABLES AND FIGURES STI SURVEILLANCE

Table A.1: Number of consultations by sex

	Total (%)
Men	35638(51.7)
Women	33317(48.3)
*Transsexuals**	20(0.0)
Unknown	2 (0.0)
Total	68977

* Transsexuals are disregarded in the rest of the tables

Table A.2: Number of consultations per month

Month	Total (%)
January	5993(8.7)
February	5253(7.6)
March	5977(8.7)
April	4888(7.1)
May	5147(7.5)
June	5565(8.1)
July	5319(7.7)
August	6279(9.7)
September	6000(8.7)
October	6602(9.6)
November	6460(9.4)
December	5472(7.9)
Unknown	22(0.0)
Total	68955

Table A.3: Number of consultations by sex and age

Age (years)	Men (%)	Women (%)	Total (%)
≤ 14	9(0.0)	55(0.2)	64(0.1)
15-19	1347(3.8)	4195(12.6)	5542(8.0)
20-24	8340(23.4)	13712(41.2)	22052(32.0)
25-29	7490(21.0)	7347(22.1)	14837(21.5)
30-34	5188(14.6)	3119(9.4)	8307(12.0)
35-39	4638(13.0)	1980(5.9)	6618(9.6)
40-44	3509(9.8)	1355(4.1)	4864(7.1)
45-49	2284(6.4)	879(2.6)	3163(4.6)
50-54	1287(3.6)	406(1.2)	1693(2.5)
>_55	1546(4.3)	269(0.8)	1815(2.6)
Total	35638	33317	68955

Table A.4: Number of consultations by sex and ethnicity

Ethnicity	Men (%)	Women (%)	Total (%)
The Netherlands	28248(79.3)	27352(82.1)	55600(80.6)
Turkey	445(1.2)	114(0.3)	559(0.8)
Northern Africa/ Morocco	593(1.7)	242 (0.7)	835(1.2)
Surinam	1754(4.9)	1468 (4.4)	3222(4.7)
The Netherlands Antilles	628(1.8)	447(1.3)	1075(1.6)
Eastern Europe	343(1.0)	766(2.3)	1109(1.6)
Sub-Saharan Africa	735(2.1)	503(1.5)	1238(1.8)
Latin America	511(1.4)	577(1.7)	1088(1.6)
Europe else	461(1.3)	731(2.2)	1192(1.7)
Asia	606(1.7)	452(1.4)	1058(1.5)
Unknown	143(0.4)	105(0.3)	248(0.4)
Else	1171(3.3)	560(1.7)	1731(2.5)
Total	35638	33317	68955

Table A.5: Number of consultations for men by sexual preference

Sexual preference	Total (%)
Heterosexual	25712(72.1)
Homo/bisexual	9770(27.4)
Unknown	156(0.4)
Total	35638

Table A.6: Number of consultations by client of CSW (M) or CSW (F)

Sex worker (or client)	Male client (%)	Female CSW (%)
No	33134(93.0)	30095(90.3)
Yes, in past 6 months	1980(5.6)	2855(8.6)
Unknown	524(1.5)	367(1.1)
Total	35638	33317

Table A.7: Number of consultations by sex and injecting drug use (GGD Amsterdam is missing)

Injecting drug use	Men (%)	Women (%)	Total (%)
No	21323(96.6)	22221(97.0)	43544(96.8)
Yes, ever	74(0.3)	73(0.3)	147(0.3)
Yes, in past 6 months	50(0.2)	40(0.2)	90(0.2)
Unknown	619(2.8)	581(2.5)	1200(2.7)
Total	22066	22915	44981

Table A.8: Number of consultations by sex and prior HIV test

Prior HIV test	Men (%)	Women (%)	Total (%)
No	19811(55.6)	19705(59.1)	39516(57.3)
Yes, positive	843(2.4)	28(0.1)	871(1.3)
Yes, negative	11376(31.9)	10033(30.1)	21409(31.0)
Yes, result unknown	124(0.3)	131(0.4)	255(0.4)
Unknown	3484(9.8)	3420(10.3)	6904(10.0)
Total	35638	33317	68955

Table A.9: Number of consultations by sex and previous GO/CT/Lues in anamnesis (GGD Amsterdam is missing)

Previous GO/CT/Lues	Men (%)	Women (%)	Total (%)
Yes	4006(18.2)	3659(16.0)	7665(17.0)
No	17106(77.5)	18463(80.6)	35569(79.1)
Do not know	525(2.4)	365(1.6)	890(2.0)
Unknown	429(1.9)	428(1.9)	857(1.9)
Total	22066	22915	44981

Table A.10: Reported reasons for consultation (GGD Amsterdam is missing)

Reason	Men (%)	Women (%)	Total (%)
Symptoms	6478(19.4)	6288(17.8)	12766(18.6)
New relationship	4393(13.1)	4387(12.4)	8780(12.8)
Risk behaviour	9925(29.7)	9972(28.3)	19897(29.0)
Risk behaviour partner	1256(3.8)	2403(6.8)	3659(5.3)
Partner HIV positive	106(0.3)	21(0.1)	127(0.2)
Notification	2190(6.6)	1498(4.2)	3688(5.4)
Periodic screening	1468(4.4)	2300(6.5)	3768(5.5)
HBV vaccination	888(2.7)	729(2.1)	1617(2.4)
Only information	13(0.0)	6(0.0)	19(0.0)
Other	331(1.0)	264(0.7)	595(0.9)
HIV test	1648(4.9)	1403(4.0)	3051(4.4)
Uncertainty, anxiety, concern	3718(11.1)	4570(13.0)	8288(12.1)
Condom failure	613(1.8)	872(2.5)	1485(2.2)
Sexual violence	31(0.1)	318(0.9)	349(0.5)
Non HIV declaration or visa	148(0.4)	17(0.0)	165(0.2)
Child wish or pregnancy	204(0.6)	206(0.6)	410(0.6)
Needle stick or bite incident	19(0.1)	15(0.0)	34(0.0)
Total consultations	33429	35269	68698

Table A.11a: Number of diagnoses by sex

Diagnosis	Men (%)	Women (%)	Total (%)
Gonorrhoea	1384(16.0)	373(5.1)	1757(11.0)
Chlamydia	3567(41.2)	3518(48.5)	7085(44.5)
Syphilis: primary	273(3.1)	17(0.2)	290(1.8)
“” : secondary	120(1.4)	7(0.1)	127(0.8)
“” : latens recens	200(2.3)	25(0.3)	225(1.4)
“” : latens tarda	45(0.5)	32(0.4)	77(0.5)
“” : not specified	50(0.6)	14(0.2)	64(0.4)
HIV +	225(2.6)	31(0.4)	256(1.6)
Genital warts	1149(13.3)	775(10.7)	1924(12.1)
Genital herpes: prim.: HSV type 1	111(1.3)	125(1.7)	236(1.5)
“” : prim.: HSV type 2	180(2.1)	116(1.6)	296(1.9)
“” : prim.: HSV type unknown	29(0.3)	35(0.5)	64(0.4)
“” : recurrent	23(0.3)	18(0.2)	41(0.3)
Hepatitis B: acute	10(0.1)	3(0.0)	13(0.1)
Hepatitis B: chronic	43(0.5)	14(0.2)	57(0.4)
Hepatitis B: recovered	384(4.4)	191(2.6)	575(3.6)
Non specified Uretritis	204(2.4)	13(0.2)	217(1.4)
Candidiasis	171(2.0)	826(11.4)	997(6.3)
Bacterial Vaginosis/gardnerella	4(0.0)	926(12.8)	930(5.8)
Trichomoniasis	14(0.2)	131(1.8)	145(0.9)
Scabies	44(0.5)	3(0.0)	47(0.3)
Pubic Lice	15(0.2)	0(0.0)	15(0.1)
Ulcus e.c.i.	197(2.3)	64(0.9)	261(1.6)
Lymphogranuloma venereum	43(0.5)	0(0.0)	43(0.3)
Proctitis	182(2.1)	3(0.0)	185(1.2)
Total	8667(100.0)	7260(100.0)	15927(100.0)

Table A.11b: Location of chlamydial infection by sex and sexual preference

Location	Men hetero (%)	MSM (%)	Women (%)	Total (%)
Urethral/cervical	2605(99.2)	442(41.9)	3426(90.9)	6473(86.9)
Anorectal	0(0.0)	576(54.6)	247(6.5)	823(11.0)
Oral	14(0.5)	29(2.7)	90(2.4)	133(1.8)
Unknown	6(0.2)	8(0.8)	8(0.2)	22(0.3)
Total	2625(100.0)	1055(100.0)	3771(100.0)	7451(100.0)

Table A.11c: Location of gonorrhoea by sex and sexual preference

Location	Men hetero (%)	MSM (%)	Women (%)	Total (%)
Urethral/cervical	424(97.9)	495(42.3)	326(71.8)	1245(60.5)
Anorectal	0(0.0)	487(41.6)	65(14.3)	552(26.8)
Oral	8(1.8)	186(15.9)	63(13.9)	257(12.5)
Unknown	1(0.2)	3(0.3)	0(0.0)	4(0.2)
Total	433(100.0)	1171(100.0)	454(100.0)	2058(100.0)

Table A.12a: Diagnoses by age in years, men

Diagnosis	≤14(%)	15-19 (%)	20-24(%)	25-29(%)	30-34(%)	35-39(%)	40-44(%)	45-49(%)	50-54(%)	>55(%)	Total
Gonorrhoea	0(0.0)	50(3.6)	195(14.1)	233(16.8)	195(14.1)	258(18.6)	203(14.7)	135(9.8)	55(4.0)	60(4.3)	1384
Chlamydia	0(0.0)	178(5.0)	1135(31.8)	786(22.0)	490(13.7)	399(11.2)	264(7.4)	156(4.4)	76(2.1)	83(2.3)	3567
*Inf. syphilis**	0(0.0)	6(1.0)	29(4.9)	56(9.5)	84(14.2)	110(18.6)	122(20.7)	69(11.7)	45(7.6)	69(11.7)	590
HIV+	0(0.0)	1(0.4)	20(9.0)	34(15.2)	34(15.2)	51(22.9)	37(16.6)	26(11.7)	8(3.6)	12(5.4)	223
Genital warts	1(0.1)	16(1.4)	283(24.6)	265(23.1)	176(15.3)	178(15.5)	86(7.5)	69(6.0)	38(3.3)	37(3.2)	1149
Genital herpes	0(0.0)	6(1.9)	59(18.6)	48(15.1)	70(22.2)	47(14.8)	39(12.3)	17(5.3)	10(3.1)	22(6.9)	318

* Infectious syphilis includes Lues I, Lues II and Lues latens recens

Table A.12b: Diagnoses by age in years, women

Diagnosis	≤14(%)	15-19 (%)	20-24(%)	25-29(%)	30-34(%)	35-39(%)	40-44(%)	45-49(%)	50-54(%)	>55(%)	Total
Gonorrhoea	1(0.3)	88(23.6)	132(35.4)	61(16.4)	24(6.4)	25(6.7)	23(6.2)	8(2.1)	8(2.1)	3(0.8)	373
Chlamydia	4(0.1)	729(20.7)	1703(48.4)	633(18.0)	217(6.2)	103(2.9)	59(1.7)	38(1.1)	16(0.5)	16(0.5)	3518
*Inf. syphilis**	0(0.0)	4(8.2)	5(10.2)	5(10.2)	7(14.3)	9(18.4)	6(12.2)	8(16.3)	2(4.1)	3(6.1)	49
HIV+	0(0.0)	1(3.2)	7(22.6)	7(22.6)	5(16.1)	4(12.9)	2(6.5)	1(3.2)	1(3.2)	3(9.7)	31
Genital warts	2(0.3)	83(10.7)	323(41.7)	181(23.4)	72(9.3)	55(7.1)	34(4.4)	12(1.5)	9(1.2)	4(0.5)	775
Genital herpes	0(0.0)	48(17.5)	99(36.0)	56(20.4)	30(10.9)	17(6.2)	9(3.3)	8(2.9)	5(1.8)	3(1.1)	275

* Infectious syphilis includes Lues I, Lues II and Lues latens recens

Table A.13a: Diagnoses by ethnicity, men

Diganosis	The Netherlands (%)	Turkey (%)	N. Africa/ Moroccan (%)	Sur./Ant./ Aruba (%)	Sub-Sah. Africa (%)	Eastern Europe (%)	Latin America (%)	Asia (%)	Europe other (%)	Else (%)	Unknown (%)	Total
Gonorrhoea	974(70.4)	14(1.0)	26(1.9)	168(10.9)	22(1.6)	18(1.3)	29(2.1)	37(2.7)	21(2.1)	70(5.1)	5(0.4)	1384
Chlamydia	2631(73.8)	52(1.5)	83(2.3)	413(11.6)	91(2.6)	36(1.0)	51(1.4)	59(1.7)	32(0.9)	110(3.1)	9(0.3)	3567
*Inf. syphilis**	455(77.1)	2(0.3)	6(1.0)	39(6.6)	6(1.0)	3(0.5)	18(3.1)	17(2.9)	14(2.4)	27(4.6)	3(0.5)	590
HIV+	147(65.9)	1(0.4)	2(0.9)	14(6.3)	19(8.5)	6(2.7)	12(5.4)	8(3.6)	4(1.8)	9(4.0)	1(0.4)	223
Genital warts	896(78.0)	26(2.3)	29(2.5)	85(7.4)	13(1.1)	12(1.0)	15(1.3)	22(1.9)	15(1.3)	30(2.6)	6(0.5)	1149
Genital herpes	217(68.2)	2(0.6)	2(0.6)	35(11.0)	10(3.1)	6(1.9)	12(3.8)	4(1.3)	2(0.6)	27(8.5)	1(0.3)	318

* Infectious syphilis includes Lues I, Lues II and Lues latens recens

Table A.13b: Diagnoses by ethnicity, women

Diganosis	The Netherlands (%)	Turkey (%)	N. Africa/ Moroccan (%)	Sur./Ant./ Aruba (%)	Sub-Sah. Africa (%)	Eastern Europe (%)	Latin America (%)	Asia (%)	Europe other (%)	Else (%)	Unknown (%)	Total
Gonorrhoea	245(65.7)	1(0.3)	7(1.9)	65(17.4)	4(1.1)	17(4.6)	6(1.6)	5(1.3)	20(5.4)	3(0.8)	0(0.0)	373
Chlamydia	2845(80.9)	16(0.5)	24(0.7)	306(8.7)	41(1.2)	73(2.1)	49(1.4)	48(1.4)	67(1.9)	40(1.1)	9(0.3)	3518
*Inf. syphilis**	28(57.1)	0(0.0)	2(4.1)	8(16.3)	2(4.1)	2(4.1)	1(2.0)	1(2.0)	4(8.2)	1(2.0)	0(0.0)	49
HIV+	7(22.6)	1(3.2)	1(3.2)	6(19.3)	13(41.9)	1(3.2)	1(3.2)	0(0.0)	0(0.0)	1(3.2)	0(0.0)	31
Genital warts	657(84.8)	9(1.2)	6(0.8)	37(4.7)	12(1.5)	8(1.0)	13(1.7)	7(0.9)	10(1.3)	14(1.8)	2(0.3)	775
Genital herpes	207(75.3)	0(0.0)	3(1.1)	18(6.6)	5(1.8)	12(4.4)	6(2.2)	4(1.5)	4(1.5)	14(5.1)	2(0.7)	275

* Infectious syphilis includes Lues I, Lues II and Lues latens recens

Table A.14: Diagnoses by sexual preference, men

Diagnosis	Heterosexual (%)	MSM (%)	Unknown (%)	Total
Gonorrhoea	429(31.0)	952(68.8)	3(0.2)	1384
Chlamydia	2614(73.3)	946(26.5)	7(0.2)	3567
*Inf. syphilis**	75(12.7)	510(86.5)	5(0.8)	590
HIV+	32(14.3)	191(85.6)	0(0.0)	223
Genital warts	761(66.2)	381(33.2)	7(0.6)	1149
Genital herpes	192(60.4)	126(39.6)	0(0.0)	318

* Infectious syphilis includes Lues I, Lues II and Lues latens recens

Table A.15a: Diagnoses by client of CSW, men

Diagnosis	No	Yes, in past 6 months	Unknown	Total
Gonorrhoea	1319(95.3)	46(3.3)	19(1.4)	1384
Chlamydia	3434(96.3)	87(2.4)	46(1.3)	3567
*Inf. syphilis**	565(95.8)	13(2.2)	12(2.0)	590
HIV+	220(98.7)	2(0.9)	1(0.4)	223
Genital warts	1094(95.2)	34(3.0)	21(1.8)	1149
Genital herpes	305(95.9)	10(3.1)	3(0.9)	318

* Infectious syphilis includes Lues I, Lues II and Lues latens recens

Table A.15b: Diagnoses by CSW, women

Diagnosis	No	Yes, in past 6 months	Unknown	Total
Gonorrhoea	304(81.5)	59(15.8)	10(2.7)	373
Chlamydia	3265(92.8)	222(6.3)	31(0.9)	3518
*Inf. syphilis**	35(71.4)	14(28.6)	0(0.0)	49
HIV+	29(93.5)	2(6.5)	0(0.0)	31
Genital warts	726(93.7)	39(5.0)	10(1.3)	775
Genital herpes	253(92.0)	18(6.5)	4(1.5)	275

* Infectious syphilis includes Lues I, Lues II and Lues latens recens

Table A.16: Diagnoses by injecting drug use (GGD Amsterdam is missing)

Diagnosis	No	Yes, ever	Yes, in past 6 months	Unknown	Total
Gonorrhoea	844(95.5)	3(0.3)	1(0.1)	36(4.1)	884
Chlamydia	4482(97.2)	9(0.2)	2(0.0)	116(2.5)	4609
*Inf. syphilis**	388(96.0)	4(1.0)	0(0.0)	12(3.0)	404
HIV+	124(98.4)	1(0.8)	1(0.8)	0(0.0)	126
Genital warts	1200(96.4)	2(0.2)	1(0.1)	42(3.4)	1245
Genital herpes	216(96.4)	0(0.0)	0(0.0)	8(3.6)	224

* Infectious syphilis includes Lues I, Lues II and Lues latens recens

Table A.17: Diagnoses by previous HIV test

Diagnosis	No	Yes, positive	Yes, negative	Yes, result unknown	Unknown	Total
Gonorrhoea	803(45.7)	174(9.9)	658(37.5)	3(0.2)	119(6.8)	1757
Chlamydia	4424(62.4)	149(2.1)	1975(27.9)	20(0.3)	517(7.3)	7085
*Inf. syphilis**	210(32.9)	121(18.9)	271(42.4)	3(0.5)	34(5.3)	639
HIV+	89(35.0)	0(0.0)	135(53.1)	5(2.0)	25(9.8)	254
Genital warts	1007(52.3)	53(2.8)	727(37.8)	7(0.4)	130(6.8)	1924
Genital herpes	347(58.5)	22(3.7)	177(29.8)	1(0.2)	46(7.8)	593

* Infectious syphilis includes Lues I, Lues II and Lues latens recens

Table A.18a: Diagnoses by previous GO/CT/Lues in anamnesis, men (GGD Amsterdam is missing)

Diagnosis	Yes	No	Don't know	Unknown	Total
Gonorrhoea	299(47.0)	320(50.3)	7(1.1)	10(1.6)	636
Chlamydia	518(24.0)	1574(72.9)	26(1.2)	41(1.9)	2159
*Inf. syphilis**	188(50.8)	167(45.1)	2(0.5)	13(3.5)	370
HIV+	61(54.0)	47(41.6)	3(2.7)	2(1.8)	113
Genital warts	131(19.6)	517(77.3)	10(1.5)	11(1.6)	669
Genital herpes	22(23.9)	68(21.4)	1(1.1)	1(1.1)	92

* Infectious syphilis includes Lues I, Lues II and Lues latens recens

Table A.18b: Diagnoses by previous GO/CT/Lues in anamnesis, women (GGD Amsterdam is missing)

Diagnosis	Yes	No	Don't know	Unknown	Total
Gonorrhoea	62(25.0)	177(71.4)	3(1.2)	6(2.4)	248
Chlamydia	443(18.1)	1937(79.1)	39(1.6)	31(1.3)	2450
*Inf. syphilis**	12(35.3)	20(58.8)	1(2.9)	1(2.9)	34
HIV+	0(0.0)	10(76.9)	1(7.7)	2(15.4)	13
Genital warts	87(15.1)	469(81.4)	10(1.7)	10(1.7)	576
Genital herpes	14(10.6)	110(83.3)	3(2.3)	5(3.8)	132

* Infectious syphilis includes Lues I, Lues II and Lues latens recens

Table A.19a: Number of tests and percentage of positive tests by age, heterosexual men

	HIV		Gonorrhoea		Chlamydia		Inf. syphilis	
Age	Tests	% pos.	Tests	% pos.	Tests	% pos.	Tests	% pos.
≤ 14	3	0	5	0	5	0	4	0
15-19	750	0	1101	3.2	1099	14.8	1035	0.1
20-24	5275	0.2	7183	1.6	7190	14.5	6922	0.1
25-29	4543	0.1	5856	1.4	5854	10.9	5668	0.1
30-34	2758	0.1	3613	1.7	3613	9.4	3506	0.2
35-39	2082	0.5	2747	2.0	2746	7.9	2649	0.6
40-44	1315	0.2	1801	2.0	1800	5.7	1742	0.7
45-49	766	0.7	1100	1.8	1102	4.7	1070	0.6
50-54	462	0.2	646	0.9	647	4.6	632	1.1
> 55	506	0.4	741	2.6	742	4.2	717	2.2
Total	18460	0.2	24793	1.7	24798	10.5	23945	0.3

* Infectious syphilis includes Lues I, Lues II and Lues latens recens

Table A.19b: Number of tests and percentage of positive tests by age, MSM

	HIV		Gonorrhoea		Chlamydia		Inf. syphilis	
Age	Tests	% pos.	Tests	% pos.	Tests	% pos.	Tests	% pos.
≤ 14	1	0	1	0	1	0	1	0
15-19	161	0.6	190	7.9	189	7.9	201	2.5
20-24	806	1.9	942	8.7	943	9.9	942	2.7
25-29	1050	2.9	1345	11.2	1345	10.6	1338	3.7
30-34	895	3.6	1336	10.0	1337	11.1	1342	5.7
35-39	1003	4.1	1631	12.4	1632	11.2	1617	5.8
40-44	907	3.7	1542	10.8	1543	10.5	1536	7.1
45-49	604	3.5	1068	10.7	1070	9.6	1050	5.9
50-54	334	2.1	566	8.7	566	8.1	552	6.9
> 55	456	2.2	714	5.6	714	7.3	715	7.3
Total	6217	3.1	9335	10.2	9340	10.1	9294	5.5

* Infectious syphilis includes Lues I, Lues II and Lues latens recens

Table A.19c: Number of tests and percentage of positive tests by age, women

	HIV		Gonorrhoea		Chlamydia		Inf. syphilis	
Age	Tests	% pos.	Tests	% pos.	Tests	% pos.	Tests	% pos.
≤ 14	29	0	48	2.1	48	8.3	44	0
15-19	2625	0.0	4111	2.1	4116	17.7	3869	0.1
20-24	9690	0.1	13454	1.0	13493	12.6	12882	0
25-29	5558	0.1	7146	0.9	7164	8.8	6880	0.1
30-34	2381	0.2	2999	0.8	3002	7.2	2892	0.2
35-39	1489	0.3	1905	1.3	1905	5.4	1817	0.5
40-44	984	0.2	1297	1.8	1299	4.5	1261	0.5
45-49	660	0.2	833	1.0	832	4.6	812	1.0
50-54	305	0.3	378	2.1	377	4.2	370	0.5
> 55	193	1.6	248	1.2	247	6.5	244	1.2
Total	23914	0.1	32419	1.2	32483	10.8	31071	0.2

* Infectious syphilis includes Lues I, Lues II and Lues latens recens

Table A.20a: Diagnoses in young heterosexual men

Diagnosis	16-17 (%)	18-19 (%)	20-21 (%)	22-24 (%)	Total
Gonorrhoea	3(12.5)	31(16.1)	27(5.7)	86(8.8)	147
Chlamydia	19(79.2)	143(74.1)	359(75.9)	680(69.5)	1201
*Inf. syphilis**	0(0.0)	1(0.5)	1(0.2)	3(0.3)	5
HIV+	0(0.0)	0(0.0)	1(0.2)	4(0.4)	5
Genital warts	2(8.3)	14(7.3)	60(12.7)	179(18.3)	255
Genital herpes	0(0.0)	4(2.1)	22(4.7)	26(2.7)	52
Total	24	193	470	978	1665

* Infectious syphilis includes Lues I, Lues II and Lues latens recens

Table A.20b: Diagnoses in young MSM

Diagnosis	16-17 (%)	18-19 (%)	20-21 (%)	22-24 (%)	Total
Gonorrhoea	1(20.0)	13(40.6)	20(25.3)	62(32.8)	96
Chlamydia	3(60.0)	12(37.5)	34(43.0)	59(31.2)	108
*Inf. syphilis**	1(20.0)	4(12.5)	6(7.6)	19(10.1)	30
HIV+	0(0.0)	1(3.1)	1(1.3)	14(7.4)	16
Genital warts	0(0.0)	0(0.0)	15(19.0)	27(14.3)	42
Genital herpes	0(0.0)	2(6.3)	3(3.8)	8(4.2)	13
Total	5	32	79	189	305

* Infectious syphilis includes Lues I, Lues II and Lues latens recens

Table A.20c: Diagnoses in young women

Diagnosis	16-17 (%)	18-19 (%)	20-21 (%)	22-24 (%)	Total
Gonorrhoea	24(12.1)	60(8.2)	60(5.8)	72(5.8)	216
Chlamydia	145(72.9)	566(77.6)	772(75.2)	931(74.8)	2414
*Inf. syphilis**	1(0.5)	3(0.4)	3(0.3)	2(0.2)	9
HIV+	1(0.5)	0(0.0)	3(0.3)	4(0.3)	*8*
Genital warts	15(7.5)	65(8.9)	142(13.8)	181(14.5)	403
Genital herpes	12(6.1)	35(4.8)	47(4.6)	52(4.2)	146
Total	198	729	1027	1242	3196

* Infectious syphilis includes Lues I, Lues II and Lues latens recens

Table A.21a: Ethnicity in young men (< 25) by STI

Ethnicity	Gonorrhoea (%)	Chlamydia (%)	Genital warts (%)	Genital herpes (%)
The Netherlands	143(58.4)	918(69.9)	218(72.7)	41(63.1)
Turkey	1(0.4)	11(0.8)	6(2.0)	1(1.5)
Northern Africa	6(2.4)	42(3.2)	8(2.7)	2(3.1)
Surinam/Neth. Antilles	63(25.8)	208(15.8)	36(12.0)	13(20.0)
Eastern Europe	5(2.0)	15(1.1)	4(1.3)	2(3.1)
Sub-Saharian Africa	5(2.0)	52(4.0)	4(1.3)	0(0.0)
Latin America	3(1.2)	16(1.2)	2(0.7)	1(1.5)
Europe else	4(1.6)	8(0.6)	6(2.0)	2(3.1)
Asia	7(2.9)	25(1.9)	9(3.0)	0(0.0)
Unknown	2(0.8)	3(0.2)	3(1.0)	0(0.0)
Else	6(2.4)	15(1.1)	4(1.3)	3(4.6)
Total	245	1313	300	65

Table A.21b: Ethnicity in young women (< 25) by STI

Ethnicity	Gonorrhoea (%)	Chlamydia (%)	Genital warts (%)	Genital herpes (%)
The Netherlands	133(60.2)	1996(81.9)	350(85.8)	112(76.2)
Turkey	0(0.0)	11(0.5)	6(1.5)	0(0)
Northern Africa	2(0.9)	13(0.5)	2(1.5)	3(2.0)
Surinam/Neth. Antilles	53(24.0)	218(9.0)	23(5.7)	13(8.9)
Eastern Europe	13(5.9)	38(1.6)	3(0.7)	5(3.4)
Sub-Saharian Africa	1(0.5)	31(1.3)	6(1.5)	3(2.0)
Latin America	4(1.8)	29(1.2)	3(0.7)	2(1.4)
Europe else	10(4.5)	46(1.9)	5(1.2)	4(2.7)
Asia	4(1.8)	26(1.1)	6(1.5)	1(0.7)
Unknown	0(0.0)	6(0.2)	0(0.0)	1(0.7)
Else	1(0.5)	22(0.9)	4(1.0)	3(2.0)
Total	221	2436	408	147

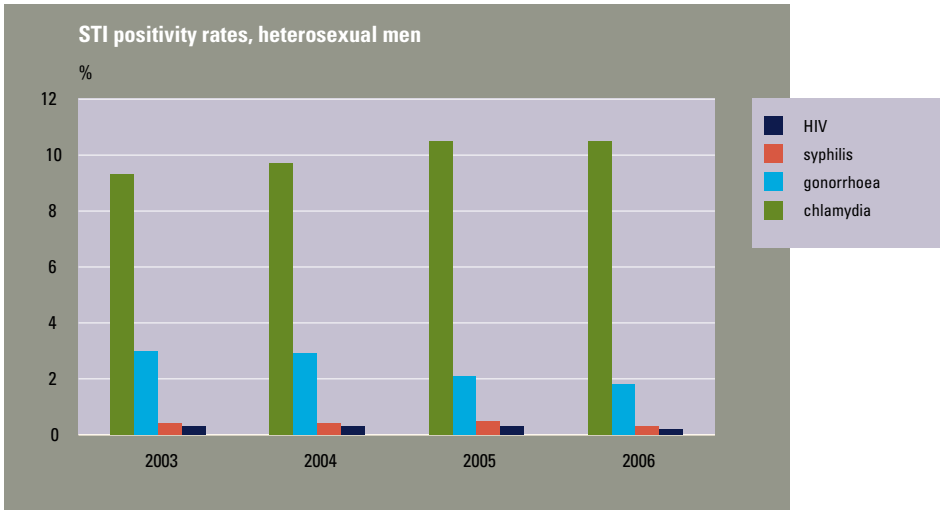

Figure A.1 Percentages of positive test results in heterosexual men, STI sentinel surveillance network, 2003-2006

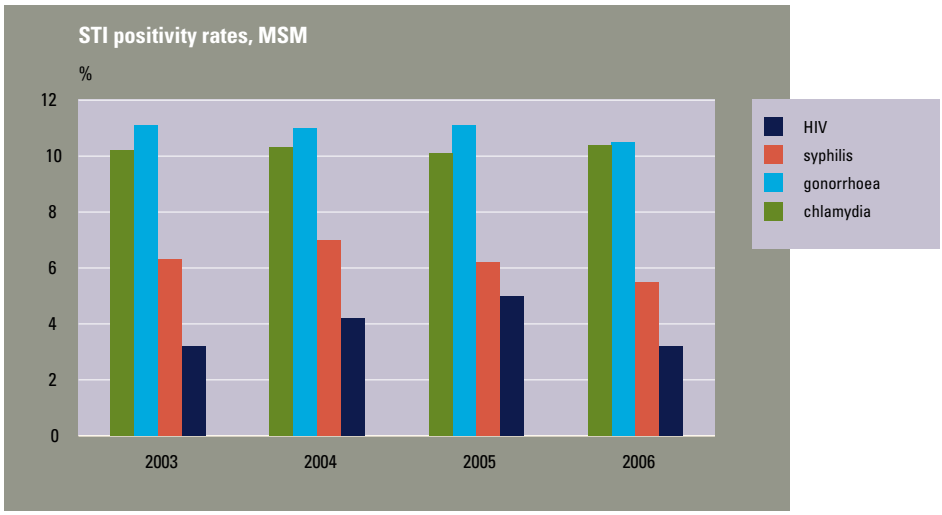

Figure A.2 Percentages of positive test results in MSM, STI sentinel surveillance network, 2003-2006

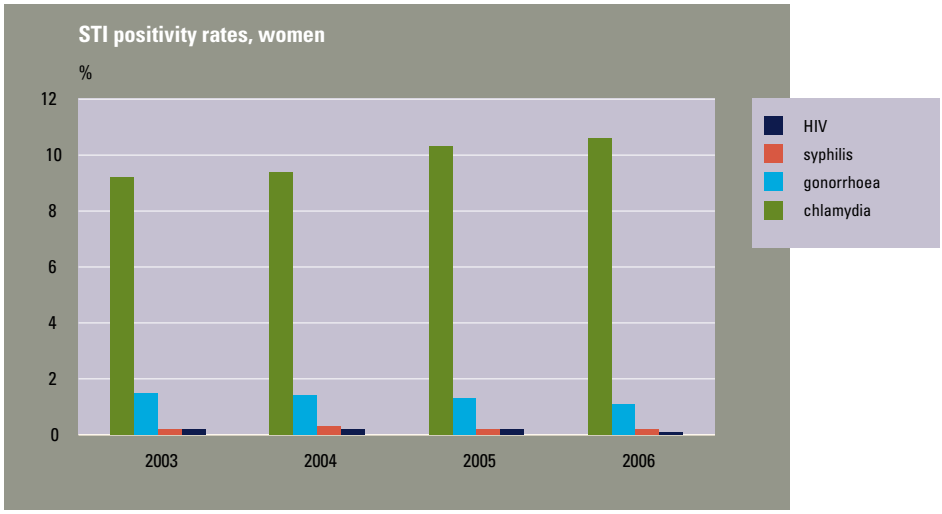

Figure A.3 Percentages of positive test results in women, STI sentinel surveillance network, 2003-2006

APPENDIX B
TABLES AND FIGURES HIV AND AIDS SURVEILLANCE

HIV cases (total population)

Table B.1: Number of HIV cases, by region and sex

Region	Men	(%)	Women	(%)	Total	(%)
Amsterdam	4507	(44%)	968	(33%)	5475	(42%)
North	619	(6%)	218	(7%)	837	(6%)
East	825	(8%)	230	(8%)	1055	(8%)
South	968	(10%)	385	(13%)	1353	(10%)
West	3211	(32%)	1155	(39%)	4366	(33%)
Total	10130		2956		13086	

Table B.2: Number of HIV cases, by sex and transmission risk group

Transmission risk group	Men	(%)	Women	(%)	Total	(%)
MSM	6889	(68%)	0	(0%)	6889	(53%)
Heterosexual contact	1822	(18%)	2504	(85%)	4326	(33%)
IDU	451	(4%)	166	(6%)	617	(5%)
Blood (products)	116	(1%)	61	(2%)	177	(1%)
Mother to child	78	(1%)	69	(2%)	147	(1%)
Needle stick injury	21	(0.2%)	7	(0.2%)	28	(0.2%)
Other/NK	753	(7%)	149	(5%)	902	(7%)
Total	10130		2956		13086	

NK: not known

Table B.3: Number of HIV cases, by sex and region of origin

Region of origin	Men	(%)	Women	(%)	Total	(%)
The Netherlands	6508	(64%)	830	(28%)	7338	(56%)
Western Europe	700	(7%)	157	(5%)	857	(7%)
Central Europe	150	(1%)	33	(1%)	183	(1%)
Eastern Europe	54	(0.5%)	16	(0.5%)	70	(0.5%)
Sub-Saharan Africa	991	(10%)	1321	(45%)	2312	(18%)
Caribbean	327	(3%)	156	(5%)	483	(4%)
Latin America	700	(7%)	243	(8%)	943	(7%)
North America	184	(2%)	8	(0.3%)	192	(1%)
North Africa & Middle East	121	(1%)	32	(1%)	153	(1%)
Australia & New Zealand	29	(0.3%)	1	(0.03%)	30	(0.2%)
Oceania & Pacific	32	(0.3%)	5	(0.2%)	37	(0.3%)
South (East) Asia	271	(3%)	149	(5%)	420	(3%)
NK	63	(0.6%)	5	(0.2%)	68	(0.5%)
Total	10130		2956		13086	

NK: not known

Table B.4: Number of HIV cases, by transmission risk group and region of origin

Region of origin	MSM	(%)	Hetero-sexual contact	(%)	IDU	(%)
The Netherlands	5049	(73%)	1292	(30%)	401	(65%)
Western Europe	528	(8%)	136	(3%)	107	(17%)
Central Europe	77	(1%)	70	(2%)	11	(2%)
Eastern Europe	29	(0.4%)	19	(0.4%)	14	(2%)
Sub-Saharan Africa	92	(1%)	1889	(44%)	7	(1%)
Caribbean	191	(3%)	243	(6%)	11	(2%)
Latin America	443	(6%)	405	(9%)	23	(4%)
North America	160	(2%)	7	(0.2%)	6	(1%)
North Africa & Middle East	43	(0.6%)	66	(2%)	17	(3%)
Australia & Pacific	21	(0.3%)	2	(0.1%)	1	(0.2%)
South (East) Asia	191	(3%)	180	(4%)	13	(2%)
NK	41	(0.6%)	8	(0.2%)	6	(1%)
Total	6889		4326		617	

NK: not known

MSM: men having sex with men; IDU: injecting drug user

Table B.5: Number of HIV cases, by age group and sex

Age group	Men	(%)	Women	(%)	Total	(%)
<15	101	(1%)	82	(3%)	183	(1%)
15-19	127	(1%)	212	(7%)	339	(3%)
20-24	710	(7%)	484	(16%)	1194	(9%)
25-29	1488	(15%)	689	(23%)	2177	(17%)
30-39	4109	(41%)	1007	(34%)	5116	(39%)
40-49	2438	(24%)	325	(11%)	2763	(21%)
≥ 50	1156	(11%)	156	(5%)	1312	(10%)
NK	1	(0.01%)	1	(0.03%)	2	(0%)
Total	10130		2956		13086	

NK: not known

Table B.6: Number of HIV cases, by transmission risk group and age group

Age	MSM	(%)	Heterosexual contact	(%)	IDU	(%)	Blood (prod.)	(%)	Mother to child	(%)	Needle stick injury	(%)	Other/ NK	(%)	Total	(%)
<15	0	(0%)	4	(0.1%)	0	(0%)	22	(12%)	144	(98%)	0	(0%)	13	(1%)	183	(1%)
15-19	52	(0.8%)	226	(5%)	17	(3%)	14	(8%)	1	(0.7%)	0	(0%)	29	(3%)	339	(3%)
20-24	481	(7%)	544	(13%)	82	(13%)	18	(10%)	0	(0%)	2	(7%)	67	(7%)	1194	(9%)
25-29	1015	(15%)	832	(19%)	120	(19%)	29	(16%)	0	(0%)	2	(7%)	141	(16%)	2177	(17%)
30-39	2856	(42%)	1602	(37%)	267	(43%)	57	(32%)	0	(0%)	8	(29%)	326	(36%)	5116	(39%)
40-49	1697	(25%)	717	(17%)	120	(19%)	16	(9%)	0	(0%)	7	(25%)	206	(23%)	2763	(21%)
≥ 50	750	(11%)	401	(9%)	11	(2%)	21	(12%)	0	(0%)	9	(32%)	120	(13%)	1312	(10%)
NK	0	(0%)	0	(0%)	0	(0%)	0	(0%)	2	(1%)	0	(0%)	0	(0%)	0	(0%)
Total	6889		4326		617		177		147		28		902		13086	

NK: not known

Table B.7: Median age (years) of HIV cases, by region of origin and sex

Region of origin	Male	(age/IQR)	Female	(age/IQR)	Total	(age/IQR)
The Netherlands	37.8	31.5-45.2)	31.5	25.1-41.2)	37.3	30.8-44.9)
Western Europe	33.7	28.8-40.5)	30.3	26.3-35.6)	33.0	28.2-40.0)
Sub-Saharan Africa	33.3	27.3-38.4)	28.7	23.8-34.2)	30.6	24.8-36.3)
Caribbean	33.2	28.5-39.9)	31.3	24.1-39.4)	32.6	26.9-39.6)
Latin America	34.0	28.4-40.2)	30.9	26.3-38.0)	33.3	27.8-39.8)
South (East) Asia	36.2	29.5-43.3)	31.3	27.7-34.9)	33.3	28.6-40.4)

IQR: interquartile range

Table B.8: Number of HIV cases, by region and transmission risk group

Transmission risk group	Amsterdam	(%)	North	(%)	East	(%)	South	(%)	West	(%)	Total	(%)
MSM	3408	(49%)	383	(6%)	552	(8%)	611	(9%)	1935	(28%)	6889	(53%)
Heterosexual contact	1318	(30%)	361	(8%)	380	(9%)	554	(13%)	1713	(40%)	4326	(34%)
IDU	290	(47%)	34	(6%)	35	(6%)	97	(16%)	161	(26%)	617	(5%)
Blood (products)	47	(27%)	9	(5%)	10	(6%)	11	(6%)	100	(57%)	177	(1%)
Mother to child	48	(33%)	7	(5%)	0	(0%)	1	(0.7%)	91	(62%)	147	(1%)
Needle stick injury	15	(54%)	0	(0%)	6	(21%)	1	(4%)	6	(21%)	28	(0.2%)
Other/NK	349	(39%)	32	(5%)	72	(8%)	78	(9%)	360	(40%)	902	(7%)
Total	5475		837		1055		1353		4366		13086	

NK: not known

Table B.9: Number of HIV cases, by year of diagnosis and transmission risk group

	≤ 1998		1999		2000		2001		2002		2003		2004		2005		2006	
MSM	3179	(58%)	333	(51%)	349	(44%)	408	(45%)	448	(45%)	435	(43%)	531	(49%)	572	(52%)	516	(59%)
Heterosexual contact	1262	(23%)	239	(37%)	363	(46%)	386	(42%)	425	(43%)	443	(44%)	432	(40%)	421	(38%)	284	(33%)
IDU	497	(9%)	21	(3%)	14	(2%)	18	(2%)	13	(1%)	21	(2%)	11	(1%)	14	(1%)	8	(0.9%)
Blood (products)	121	(2%)	9	(1%)	6	(0.8%)	9	(1%)	11	(1%)	9	(0.9%)	4	(0.4%)	4	(0.4%)	3	(0.3%)
Mother to child	53	(1%)	10	(1%)	11	(1%)	19	(2%)	14	(1%)	19	(1%)	19	(2%)	7	(0.6%)	2	(0.2%)
Needle stick injury	7	(0.2%)	3	(0.5%)	1	(0.1%)	1	(0.1%)	5	(0.5%)	2	(0.2%)	3	(0.3%)	4	(0.4%)	4	(0.4%)
Other/NK	352	(6%)	39	(6%)	43	(5%)	69	(8%)	72	(7%)	77	(8%)	97	(9%)	77	(7%)	56	(6%)
Total	5471		654		787		910		988		1006		1090		1099		871	

NK: not known

Table B.10: Number of HIV cases, by region of origin and transmission risk group

Transmission risk group	The Neth-erlands	(%)	Sub- Saharan Africa	(%)	Surinam	(%)	Neth. Antilles/ Aruba	(%)	Western Europe	(%)
MSM	5049	(69%)	92	(4%)	193	(33%)	158	(41%)	528	(62%)
Heterosexual contact	1292	(18%)	1889	(82%)	325	(56%)	190	(49%)	136	(16%)
IDU	401	(5%)	7	(0.3%)	20	(3%)	11	(3%)	107	(12%)
Blood (products)	87	(1%)	52	(2%)	6	(1%)	2	(0.5%)	5	(0.6%)
Mother to child	91	(1%)	42	(2%)	1	(0.2%)	1	(0.3%)	3	(0.4%)
Needle stick injury	19	(0.3%)	4	(0.2%)	0	(0%)	1	(0.3%)	2	(0.2%)
Other/NK	399	(5%)	226	(10%)	36	(6%)	27	(7%)	76	(9%)
Total	7338		2312		581		390		857	

NK: not known

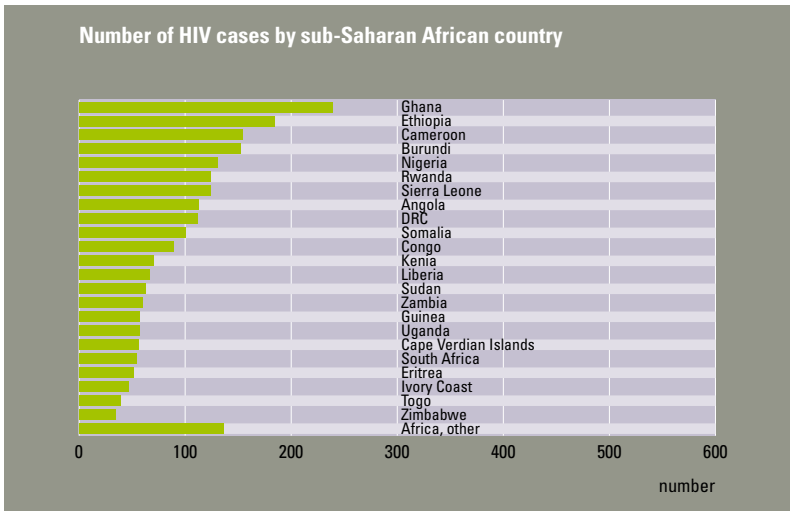

Figure B.1: Number of HIV cases, by sub-Saharan African Country

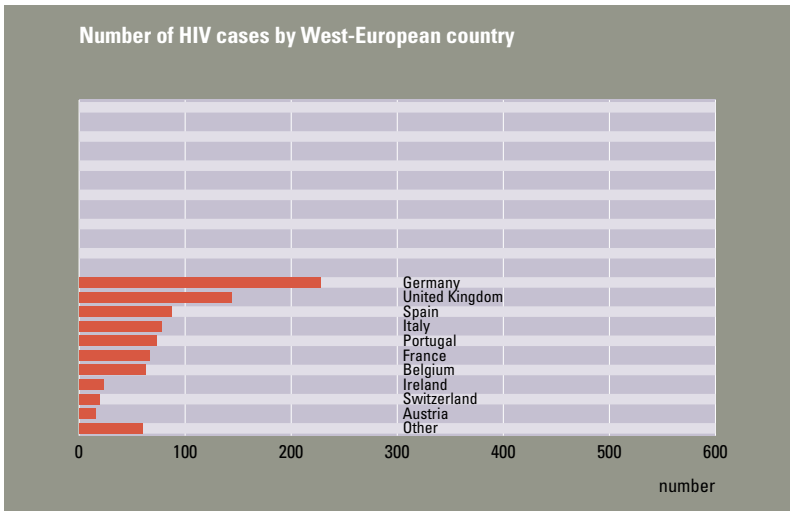

Figure B.2: Number of HIV cases by West-European country

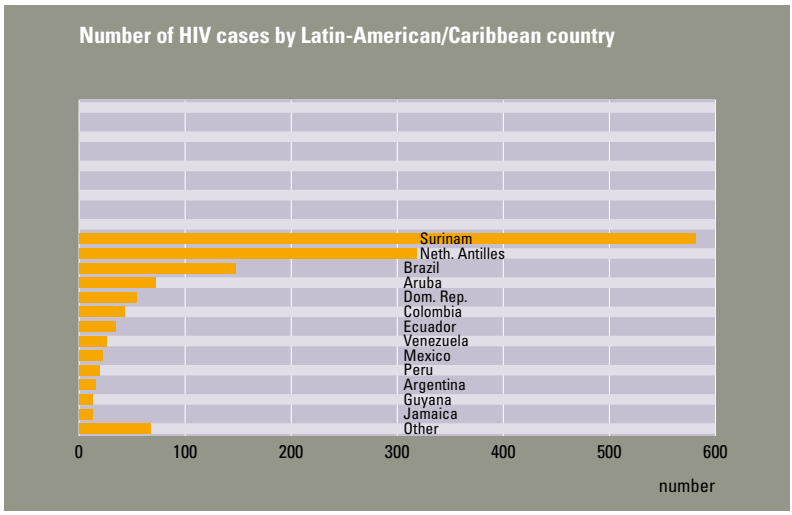

Figure B.3: Number of HIV cases, by Latin American/Caribbean country

HIV cases diagnosed in 2006

Table B.11: Number of HIV cases diagnosed in 2006, by region and sex

Region	Men	(%)	Women	(%)	Total	(%)
Amsterdam	248	(35%)	43	(26%)	291	(33%)
North	58	(8%)	14	(8%)	72	(8%)
East	75	(11%)	6	(4%)	81	(9%)
South	74	(11%)	31	(19%)	105	(12%)
West	250	(35%)	72	(43%)	322	(37%)
Total	705		166		871	

Table B.12: Number of HIV cases diagnosed in 2006, by sex and transmission risk group

Transmission risk group	Men	(%)	Women	(%)	Total	(%)
MSM	516	(73%)	0	(0%)	516	(59%)
Heterosexual contact	127	(18%)	157	(95%)	284	(33%)
IDU	5	(0.7%)	3	(2%)	8	(1%)
Blood (products)	0	(0%)	3	(2%)	3	(0.3%)
Mother to child	2	(0.3%)	0	(0%)	2	(0.2%)
Needle stick injury	2	(0.3%)	0	(0%)	2	(0.2%)
Other/NK	53	(8%)	3	(2%)	56	(8%)
Total	705		166		871	

NK: not known

Table B.13: Number of HIV cases diagnosed in 2006, by sex and region of origin

Region of origin	Men	(%)	Women	(%)	Total	(%)
The Netherlands	476	(68%)	44	(27%)	520	(60%)
Western Europe	33	(5%)	3	(2%)	36	(4%)
Central Europe	11	(2%)	1	(0.6%)	12	(1%)
Eastern Europe	8	(1%)	0	(0%)	8	(0.9%)
Sub-Saharan Africa	57	(8%)	76	(46%)	133	(15%)
Caribbean	22	(3%)	12	(7%)	34	(4%)
Latin America	51	(7%)	13	(8%)	64	(7%)
North America	7	(1%)	0	(0%)	7	(0.8%)
North Africa & Middle East	11	(2%)	3	(2%)	14	(2%)
Australia & New Zealand	1	(0.1%)	0	(0%)	1	(0.1%)
Oceania & Pacific	6	(0.1%)	0	(0%)	6	(0.7%)
South (East) Asia	22	(3%)	14	(8%)	36	(4%)
Total	705		166		871	

Table B.14: Number of HIV cases diagnosed in 2006, by transmission risk group and region of origin

Region of origin	MSM	(%)	Heterosexual men	(%)	Heterosexual women	(%)
The Netherlands	390	(76%)	55	(43%)	12	(8%)
Western Europe	29	(6%)	2	(2%)	2	(1%)
Central Europe	4	(0.8%)	4	(3%)	1	(0.6%)
Eastern Europe	6	(1%)	1	(0.8%)	0	(0%)
Sub-Saharan Africa	8	(2%)	37	(29%)	73	(47%)
Caribbean	13	(3%)	7	(6%)	12	(8%)
Latin America	36	(7%)	12	(9%)	12	(8%)
North America	7	(1%)	0	(0%)	0	(0%)
North Africa & Middle East	6	(1%)	3	(2%)	2	(1%)
Australia & Pacific	5	(1%)	1	(0.8%)	0	(0%)
South (East) Asia	12	(2%)	5	(4%)	13	(8%)
Total	516		127		157	

Footnote: MSM: men having sex with men

Table B.15: Number of HIV cases diagnosed in 2006, by transmission risk group and age group

Age	MSM	(%)	Hetero-sexual contact	(%)	IDU	(%)	Blood (prod.)	(%)	Mother to child	(%)	Needle stick injury	(%)	NK	(%)	Total	(%)
<15	0	(0%)	0	(0%)	0	(0%)	0	(0%)	2	(100%)	0	(0%)	0	(0%)	2	(0.2%)
15-19	4	(0.5%)	7	(3%)	0	(0%)	0	(0%)	0	(0%)	0	(0%)	0	(0%)	11	(2%)
20-24	27	(5%)	34	(12%)	1	(13%)	0	(0%)	0	(0%)	0	(0%)	2	(4%)	64	(7%)
25-29	71	(14%)	38	(13%)	2	(25%)	0	(0%)	0	(0%)	0	(0%)	5	(9%)	116	(13%)
30-39	164	(32%)	110	(39%)	3	(37%)	2	(67%)	0	(0%)	0	(0%)	18	(32%)	297	(34%)
40-49	162	(31%)	58	(20%)	2	(25%)	1	(33%)	0	(0%)	2	(100%)	15	(27%)	240	(28%)
≥50	88	(17%)	37	(13%)	0	(0%)	0	(0%)	0	(0%)	0	(0%)	16	(29%)	128	(13%)
Total	516		284		8		3		2		2		56		871	

NK: not known

Table B.16: Number of HIV cases diagnosed in 2006, by age group and sex

Age	Men	(%)	Women	(%)	Total	(%)
< 15	2	(0.3%)	0	(0%)	2	(0.2%)
15-19	5	(0.7%)	6	(3%)	11	(1%)
20-24	36	(5%)	28	(17%)	64	(7%)
25-29	89	(13%)	27	(16%)	116	(13%)
30-39	230	(33%)	67	(40%)	297	(34%)
40-49	216	(31%)	24	(15%)	240	(28%)
≥ 50	127	(18%)	14	(8%)	141	(16%)
Total	705		166		871	

Table B.16: Median age (years) of HIV cases diagnosed in 2006, by region of origin and sex

Region of origin	Men	(age/IQR)	Women	(age/IQR)	Total	(age/IQR)
The Netherlands	41.1	(34.4-48.0)	35.5	(25.7-46.4)	40.5	(33.8-47.9)
Western Europe	35.0	(29.1-41.8)	29.8	(22.6-30.1)	33.2	(29.0-41.4)
Sub-Saharan Africa	37.7	(31.5-41.8)	31.8	(26.9-35.9)	34.2	(28.0-39.2)
Caribbean	33.6	(26.5-37.7)	35.2	(25.2-53.8)	34.0	(26.5-39.4)
Latin America	40.2	(32.9-48.5)	28.6	(23.3-37.8)	38.0	(30.4-43.5)
South (East) Asia	39.7	(28.5-45.6)	31.5	(29.4-38.8)	37.4	(30.4-43.2)

IQR: interquartile range

AIDS cases and deaths among HIV patients

Table B.17: Number of AIDS diagnoses and deaths among HIV patients (cumulative, per year)

Year	AIDS diagnoses (cumulative)	AIDS diagnoses (year)	Deaths (cumulative)	Deaths (year)
≤ 1987	504	504	223	223
1988	829	325	358	135
1989	1220	391	560	202
1990	1639	419	829	269
1991	2089	450	1123	294
1992	2599	510	1535	412
1993	3080	481	1962	427
1994	3574	494	2406	444
1995	4107	533	2845	439
1996	4566	459	3172	327
1997	4903	337	3356	184
1998	5141	238	3492	136
1999	5371	230	3629	137
2000	5621	250	3761	132
2001	5880	259	3889	128
2002	6178	298	4011	122
2003	6463	285	4151	140
2004	6739	276	4293	142
2005	7055	316	4429	136
2006	7278	223	4524	95
*2007**	7321	43	4563	39

Source Deaths among HIV patients: <2002: Statistics Netherlands, CBS; ≥ 2002: data from HMF

< 1999: AIDS cases registered by Health Inspectorate, from 1999: data from the HMF

* first 5 months of 2007; NA = not available

Table B.18: Number of AIDS patients, by year of AIDS diagnosis and transmission risk group

Year of diagnosis	MSM		Heterosexual contact		IDU		Blood (contacts)		Mother to child		NK/other		Total
≤87	424	(84%)	26	(5%)	28	(6%)	18	(4%)	3	(0.6%)	5	(1%)	504
1988	250	(77%)	18	(6%)	39	(12%)	13	(4%)	2	(0.6%)	3	(0.9%)	325
1989	305	(78%)	33	(8%)	36	(9%)	11	(3%)	1	(0.3%)	5	(1%)	391
1990	318	(76%)	34	(8%)	42	(10%)	17	(4%)	3	(0.7%)	5	(1%)	419
1991	335	(74%)	46	(10%)	43	(10%)	19	(4%)	2	(0.4%)	5	(1%)	450
1992	376	(74%)	51	(10%)	60	(12%)	12	(2%)	2	(0.4%)	9	(2%)	510
1993	317	(66%)	80	(17%)	61	(13%)	8	(2%)	3	(0.6%)	12	(2%)	481
1994	314	(64%)	94	(19%)	65	(13%)	14	(3%)	2	(0.4%)	5	(1%)	494
1995	314	(59%)	116	(22%)	74	(14%)	7	(1%)	9	(2%)	13	(2%)	533
1996	299	(65%)	95	(21%)	50	(11%)	5	(1%)	2	(0.4%)	8	(2%)	459
1997	174	(52%)	104	(31%)	43	(13%)	3	(1%)	2	(0.6%)	11	(3%)	337
1998	116	(49%)	78	(33%)	27	(11%)	1	(0.4%)	3	(1%)	13	(5%)	238
1999	120	(52%)	71	(31%)	10	(4%)	5	(2%)	4	(2%)	20	(9%)	230
2000	102	(41%)	103	(41%)	16	(6%)	4	(2%)	4	(2%)	21	(8%)	250
2001	102	(39%)	106	(41%)	9	(3%)	5	(2%)	6	(2%)	31	(12%)	259
2002	114	(38%)	137	(46%)	8	(3%)	4	(2%)	2	(0.7%)	33	(11%)	298
2003	115	(40%)	108	(38%)	12	(4%)	7	(2%)	6	(2%)	37	(13%)	285
2004	107	(39%)	110	(40%)	7	(3%)	3	(1%)	3	(1%)	46	(17%)	276
2005	140	(44%)	123	(39%)	20	(6%)	3	(1%)	1	(0.3%)	29	(9%)	316
2006	100	(45%)	83	(37%)	9	(4%)	0	(0%)	0	(0%)	31	(14%)	223
Total	4442		1616		659		159		60		342		7278

< 2000: AIDS cases registered by Health Inspectorate, after 2000: data from the HMF

* 2006 data are incomplete, reported up to June

Table B.19: Median age (years) of AIDS patients at AIDS diagnosis, by region of origin and sex

Region of origin	Men	(age/IQR)	Women	(age/IQR)	Total	(age/IQR)
The Netherlands	42.0	(36.0-49.8)	37.2	(31.2-45.6)	41.5	(35.5-49.3)
Western Europe	40.7	(34.3-46.0)	37.6	(33.4-43.7)	40.3	(34.2-45.8)
Sub-Saharan Africa	34.6	(28.5-39.4)	31.7	(26.4-36.2)	33.0	(27.4-38.3)
Caribbean	37.0	(32.5-44.5)	38.7	(34.1-45.6)	37.6	(32.8-44.8)
Latin America	38.0	(33.8-43.4)	34.3	(29.0-43.0)	37.6	(32.6-43.1)
South (East) Asia	39.8	(33.3-47.6)	32.5	(27.9-35.9)	35.7	(31.3-43.0)

IQR: interquartile range

Table B.20: Number of deaths among HIV/AIDS patients, by sex

Year	Men	(%)	Women	(%)	Total
2002	103	(84%)	19	(16%)	122
2003	114	(81%)	26	(19%)	140
2004	124	(87%)	18	(13%)	142
2005	116	(85%)	20	(15%)	136
2006	78	(82%)	17	(18%)	95

Source deaths among HIV/AIDS patients: HIV Monitoring foundation

*Table B.21: Number of death among HIV/AIDS patients **, by year of death, age group* and sex*

Age	2002		2003		2004		2005		2006	
	M	F	M	F	M	F	M	F	M	F
<20 = <2	0 (0%)	0 (0%)	1 (1%)	2 (8%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	1 (1%)	0 (0%)
20-25 = 3	2 (2%)	2 (10%)	0 (0%)	1 (4%)	1 (1%)	0 (0%)	0 (0%)	1 (5%)	1 (1%)	0 (0%)
25-30 = 4	3 (3%)	2 (11%)	3 (3%)	1 (4%)	6 (5%)	0 (0%)	1 (5%)	2 (10%)	1 (1%)	0 (0%)
30-35 = 5	6 (6%)	4 (21%)	9 (8%)	1 (4%)	16 (13%)	3 (17%)	9 (8%)	6 (30%)	3 (4%)	2 (12%)
35-40 = 6	7 (7%)	5 (26%)	12 (11%)	2 (8%)	13 (10%)	2 (11%)	14 (12%)	1 (5%)	6 (8%)	2 (12%)
40-45 = 7	7 (12%)	0 (0%)	11 (10%)	3 (12%)	13 (10%)	3 (17%)	16 (14%)	1 (5%)	3 (4%)	2 (12%)
45-50 = 8	9 (8%)	0 (0%)	8 (7%)	0 (0%)	15 (12%)	0 (0%)	14 (12%)	1 (5%)	6 (12%)	0 (0%)
50-55 = 9	5 (5%)	0 (0%)	11 (10%)	2 (8%)	10 (8%)	2 (11%)	7 (6%)	0 (0%)	6 (8%)	0 (0%)
55-60 = 10	7 (7%)	0 (0%)	9 (8%)	0 (0%)	7 (6%)	0 (0%)	8 (7%)	0 (0%)	2 (3%)	1 (6%)
> 65 = 11	5 (5%)	1 (5%)	6 (5%)	2 (8%)	2 (2%)	1 (6%)	6 (5%)	2 (10%)	9 (12%)	0 (0%)
NK = 99	52 (50%)	5 (26%)	44 (39%)	12 (46%)	41 (33%)	7 (39%)	41 (34%)	6 (30%)	40 (51%)	10 (59%)
Total	103	19	114	26	124	18	116	20	78	17

* age group at time of death,

** includes all causes of deaths

Source: HIV Monitoring Foundation

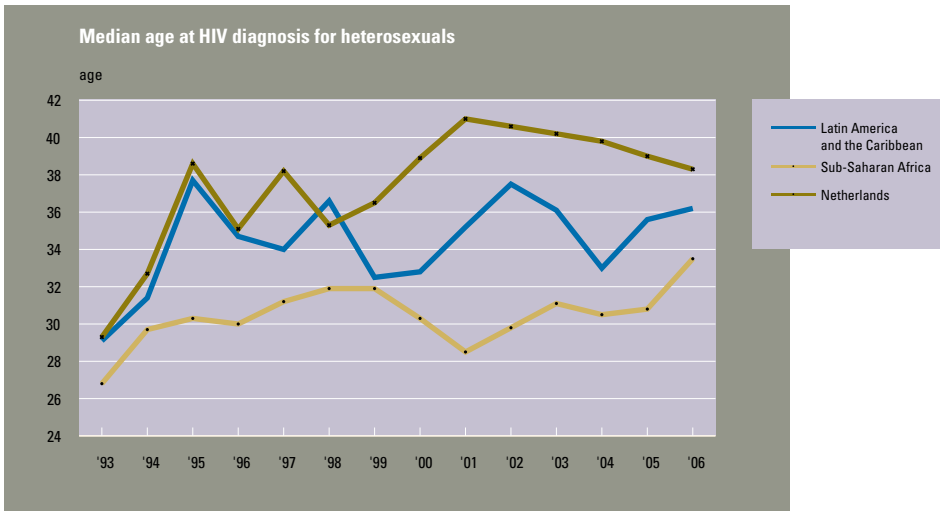

Figure B.4: Median age (at diagnosis) of heterosexual population over time, by geographic region; NL= Netherlands, SSA= sub-Saharan Africa, Lat/Car= Latin America and the Caribbean

Table B.22: Number of HIV cases, by transmission risk group and known country of infection

Transmission risk group	Total number	Country of infection known	(%)	Infected in the Netherlands	(%)
MSM	6889	5026	(73%)	4476	(89%)
- Dutch	5049	3965	(79%)	3824	(96%)
- Non-Dutch	1799	1047	(58%)	639	(61%)
Heterosexual contact	4326	3120	(72%)	1358	(43%)
- Dutch	1292	1034	(80%)	816	(79%)
- Non-Dutch	3026	2085	(69%)	542	(26%)
IDU	617	508	(82%)	443	(87%)
- Dutch	401	357	(89%)	352	(99%)
- Non-Dutch	210	150	(71%)	90	(60%)
Blood (products)	177	167	(94%)	79	(47%)
- Dutch	87	80	(92%)	67	(84%)
- Non-Dutch	89	86	(97%)	11	(13%)

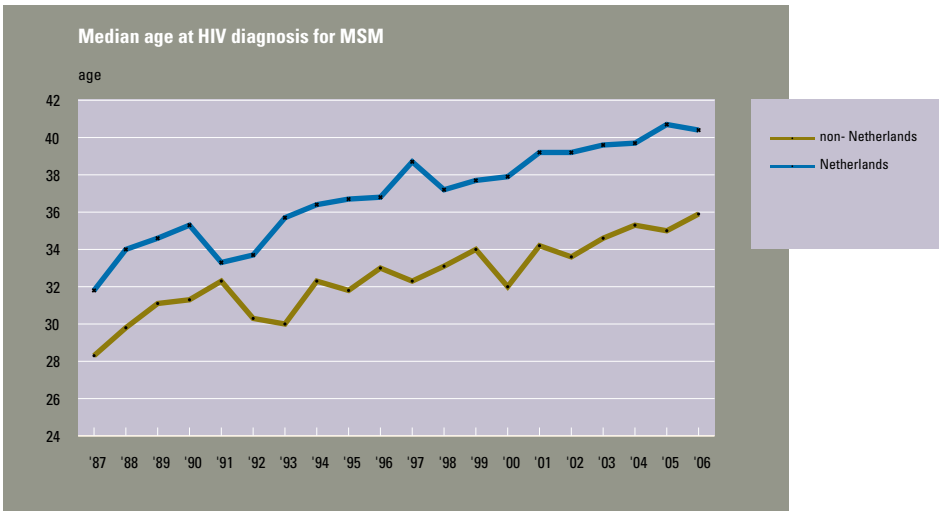

Figure B.5: Median age (at diagnosis) of MSM population over time, by ethnicity (Dutch/non-Dutch)

Table B.23: Summary of HIV/AIDS figures, June 2007

Cumulative number of HIV cases [1]	13086	
Male/female	10130/2956	
Route of transmission 1		
MSM	6889	(53%)
Heterosexual contact	4326	(33%)
Injecting drug use	617	(5%)
Blood (products)	177	(1%)
Needle stick injury	28	(0.2%)
Mother to child transmission	147	(1%)
Other/ NK	902	(7%)
Newly diagnosed HIV cases (2006) [1]	871	
Male/female	705/166	
Route of transmission		
MSM	516	(59%)
Heterosexual contact	284	(33%)
Injecting drug use	8	(1%)
Blood (products)	3	(0.3%)
Needle stick injury	2	(0.2%)
Mother to child transmission	2	(0.2%)
Other/NK	56	(8%)
Estimated number of adults (15-49 yr) living with HIV/AIDS in 2005	18.000	
Cumulative number of AIDS cases since epidemic began [2]	7321	
Newly diagnosed AIDS cases in 2006	223	
Cumulative number of deaths from HIV/AIDS since epidemic began	4563	
Cumulative number of deaths from HIV/AIDS in 2006 [3]	95	

* age at diagnosis; 1: data source: HMF, 2: data source AIDS cases < 2000: Health Inspectorate, data source AIDS cases ≥ 2000: HMF

[3] data source: HMF

APPENDIX C
NATIONAL SURVEILLANCE OF STI CENTRES

Coordinating STI centres	
GGD Amsterdam	J.S.A.Fennema
	H. Thiesbrummel
GGD Den Haag	P. van Leeuwen
GGD Groningen	F. de Groot
GGD Hart voor Brabant	J.C.A.M. van de Sande
	H. van Kruchten
	M. Overmars
GGD Nijmegen	A. van Daal
	J. van Baars
	C. Vullings
GGD Rotterdam	E. van der Veen
	O. de Zwart
	H. Götz
GGD Utrecht	M. Langevoort
	C. Schout
	V. Sigurdsson
GGD Zuid Limburg	C.J.P.A. Hoebe
Regional STI centres	
Erasmus MC	W. van der Meijden
GGD Amstelland-de Meerlanden	M. Siebbeles
GGD Drenthe	G. Reitsema
GGD Eemland	R. Heman
GGD Eindhoven	R. Daemen
GGD Flevoland	H. Fortuin
GGD Fryslan	A. Strikwerda
GGD Gelre IJssel	H. Bos
GGD Gooi en Vechtstreek	R. Stumpel
GGD Hollands-Midden (Gouda)	K. Visser
GGD Hollands-Midden (Leiden)	B. Rump
GGD Kennemerland	E. den Heijer
GGD Kop van Noord-Holland	R. Hossen
GGD Midden-Nederland	J. Ludding
GGD Nieuwe Waterweg Noord	M. Trompenaars
GGD Noord en Midden Limburg	C. Niesen
GGD Noord-Kennemerland	F.A.N. Slijkerman Megelink
GGD regio Noord Veluwe	M. Hosseinia
GGD Rivierenland	P. Cornelissen
GGD Twente	I. Schreurs
GGD West-Brabant	H. Driessen
GGD West-Friesland	A. Olijhoek
GGD Yssel-vecht	H. Bruins
GGD Zaanstreek-Waterland	P. Degenaar

GGD Zeeland	F. Jacobs
GGD Zuid-Holland Zuid	H. van den Kerkhof
GGD Zuid-Hollandse Eilanden	A. van Heukelum
GGD Zuidoost Brabant	P. Tolsma
Hulpverlening Gelderland Midden	S. Feenstra

Laboratories

Academisch Ziekenhuis Maastricht	E. Stobberingh
Albert Schweitzer Ziekenhuis Dordrecht	I. Frenay
Alysis zorggroep Arnhem	C. van Meerendonk
Amphia Ziekenhuis Breda	P. van Keulen
Atrium Medisch Centrum Heerlen	J.H.T. Wagenvoort
Canisius Wilhelmina Ziekenhuis Nijmegen	T. Simons
Centraal Bacteriologisch en Serologisch laboratorium Hilversum	C.P. Timmerman
Diagnostisch Centrum Eindhoven	L. Harms
Erasmus MC Rotterdam	H.G.M. Niesters
Erasmus MC Rotterdam	W. Borsje
GGD Amsterdam	C. Signet
Gelre Ziekenhuizen Apeldoorn	F.G.C. Heilman
Groene Hart Ziekenhuis Gouda	F.C. van der Geest
Isala klinieken Zwolle	P. van de Goor
Jeroen Bosch Ziekenhuis 's Hertogenbosch	P. Schneeberger
Laboratoria voor de Pathologische Anatomie en Medische Microbiologie Velhoven	A. Jansz
Laboratorium Microbiologie Twente-Achterhoek Enschede	J. Spaargaren
Laboratorium voor de Volksgezondheid in Friesland Leeuwarden	J. van Zeijl
Laurentius Ziekenhuis Roermond	F. Stals
Leiden Universitair Medisch Centrum	A.C.M. Kroes
MC Haaglanden Den Haag	C.J. Jansen
Meander Medisch Centrum Amersfoort	H. Schreuder
Medisch Centrum Alkmaar	J. Sloos
Ruwaard van Putten Ziekenhuis Spijkenisse	H. van Ingen
Slingeland Ziekenhuis Doetinchem	R. Bosboom
Streeklaboratorium Haarlem	F. Lamie
Streeklaboratorium Haarlem	D. Veenendaal
Streeklaboratorium van de Volksgezondheid Deventer	F.W. Sebens
Streeklaboratorium voor de Volksgezondheid Groningen	B.P. Overbeek
Streeklaboratorium Zeeland Goes	L. Sabbe
Universitair Medisch Centrum Utrecht	J.V. van Marken
VieCuri Venlo	T. Trienekens
Vlietland Ziekenhuis Schiedam	B. Moffie
Zaans Medisch Centrum Zaandam	C. Fijen
Zeeuws-Vlaanderen, Ziekenhuis Terneuzen	W. Westphaal

APPENDIX D
HIV MONITORING FOUNDATION

Within the framework of the HIV Monitoring Foundation, a substantial number of professionals are participating:

Treating physicians (*Site coordinating physicians)

Dr. W. Bronsveld*, Drs. M.E. Hillebrand-Haverkort, Medisch Centrum Alkmaar
Dr. J.M. Prins*, Dr. J. Branger, Dr. J.K.M. Eeftinck Schattenkerk, Dr. M.H. Godfried, Drs. E.D. Kerver, Prof.dr. J.M.A. Lange, Dr. K.D. Lettinga, Dr. J.T.M. van der Meer, Drs. F.J.B. Nellen, Drs. D.P. Olszyna, Dr. T. van der Poll, Prof dr. P. Reiss, Drs. Th.A. Ruys, Drs. R. Steingrover, Drs. J.N. Vermeulen, Drs. S.M.E. Vrouenraets, Drs. M. van der Valk, Dr. M. van Vugt, Dr. F.W.M.N. Wit, Academisch Medisch Centrum bij de Universiteit van Amsterdam
Prof. dr. T.W. Kuijpers, Drs. D. Pajkrt, Dr. H.J. Scherpbier, Emma Kinderziekenhuis- AMC, Amsterdam
Dr. A. van Eeden, St. Medisch Centrum Jan van Goyen, Amsterdam
Prof. dr. K. Brinkman*, Drs. G.E.L. van den Berk, Dr. W.L. Blok, Dr. P.H.J. Frissen, Drs. W.E.M. Schouten, Onze Lieve Vrouwe Gasthuis, Amsterdam
Dr. J.W. Mulder*, Dr. E.C.M. van Gorp, Dr. J. Wagenaar, Slotervaart Ziekenhuis, Amsterdam
Dr. J. Veenstra*, Dr. W.L.E. Vasmel, St. Lucas Andreas Ziekenhuis, Amsterdam
Prof. Dr. S.A. Danner*, Dr. M.A. Van Agtmael, Drs. W.F.W. Bierman, Drs. F.A.P. Claessen, Dr. R.M. Perenboom, Drs. A. Rijkeboer, Dr. M.G.A. van Vonderen, VU Medisch Centrum, Amsterdam
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Dr. C.H.H. ten Napel*, Dr. G.J. Kootstra Medisch Spectrum Twente, Enschede
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Dr. F.P. Kroon*, Prof. dr. P.J. van den Broek, Prof. dr. J.T. van Dissel, Dr. E.F. Schippers, Leids Universitair Medisch Centrum, Leiden
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Dr. P.P. Koopmans*, Drs. C. Bleeker, Dr. R. Van Crevel, Prof. dr. R. de Groot, Drs. H.J.M. ter Hofstede, Dr. M. Keuter, Dr. A.J.A.M. van der Ven, Universitair Medisch Centrum St. Radboud, Nijmegen
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Drs. Zhang, data analysis (from February 2006)
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Drs. B. Slieker, data monitoring