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Sexually transmitted infections, including HIV, in the Netherlands in 2008

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RAPPORT IN HET KORT

Seksueel overdraagbare aandoeningen, waaronder hiv, in Nederland in 2008

Chlamydia, gonorroe, syfilis
Na een stabilisatie van het percentage positieve chlamydiatesten in 2007, is dit in 2008 weer toegenomen. Vooral onder jonge heteroseksuelen en bij mannen die seks hebben met mannen (MSM) komt chlamydia veel voor. Het percentage positieve gonorroe- en syfilistesten nam in 2008 verder af. Deze infecties werden het meest gediagnosticeerd bij MSM.

Hiv
In 2008 werden 393 nieuwe hivdiagnoses gesteld in de soacentra, bijna de helft van de 851 hivpositieven die dat jaar landelijk werden gediagnosticeerd en geregistreerd in de hivcentra. Het percentage bezoekers van de soacentra dat zich in 2008 op hiv liet testen nam toe tot 90%. Eind 2008 waren in totaal 15.538 personen in Nederland met hiv geregistreerd. Het aandeel MSM onder de nieuwe hivinfecties nam in 2008 verder toe.

MSM
Bij 22% van MSM werd een of meerdere soa gevonden; bij MSM die weten dat ze hivpositief zijn was dit 36%. Daarnaast wordt in deze groep sinds 2004 regelmatig lymfogranuloma venereum (LGV), een agressieve variant van chlamydia, en sinds 2007 acute hepatitis C geconstateerd.

Jongeren
Sinds 2008 houden GGD'en speciaal voor jongeren onder de 25 jaar de zogeheten Sensespreekuren. Daar kunnen zij met hun vragen over seks terecht en direct een afspraak maken voor een soa-onderzoek. In 2009 wordt het essentieel om de samenhang te intensiveren tussen maatregelen die erop gericht zijn soa's te voorkomen en te genezen.

De soacentra
De soacentra bieden zorg aan hoogrisicogroepen, waaronder jongeren, MSM en personen afkomstig uit gebieden waar soa's relatief veel voorkomen. In 2008 hebben ruim 88.000 personen zich laten testen, een toename van 13% ten opzichte van 2007.

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

ABSTRACT

Sexually transmitted infections, including HIV, in the Netherlands in 2008

Chlamydia, gonorrhoea and syphilis
Chlamydia was the most common bacterial sexual transmitted infection (STI) diagnosed in Dutch STI centres in 2008. Similar to previous years, infections were reported as occurring especially in young heterosexuals and men who have sex with men (MSM) in 2008, the proportion of positive chlamydia tests increased again both in heterosexuals and MSM, after a stabilisation in 2007. The positivity rate for gonorrhoea and syphilis continued to decrease in 2008. These infections were most frequently diagnosed in MSM.

HIV
In 2008, 393 new positive HIV cases were diagnosed in STI centres in the Netherlands. This number amounts to almost half of the total number of 851 positive HIV cases registered nationwide in 2008. The proportion of consultations with an HIV test in STI centres increased to 90%. At the end of 2008, a total of 15,538 HIV cases in care were registered in the Netherlands. The proportion of MSM among new HIV cases rose further in 2008.

MSM
In line with previous years, concurrent STIs were diagnosed very frequently among MSM visiting STI centres who had known HIV positive status in 2008 (36%). In this group of men, lymphogranuloma venereum (LGV), an aggressive type of chlamydia, has been reported frequently since 2004; this has also been the case for acute hepatitis C infections since 2007.

Young people
In 2008, parallel to additional STI care in the specialised STI centres, the public sexual healthcare (Sense) has started, aimed at young people. In 2009, intensification of the integration between prevention and cure is essential in this group.

The STI centres
The specialised STI centres in the Netherlands offer STI testing and care targeted at high risk groups, including young people, MSM and people who come from an STI endemic area. In 2008, more than 88,000 people used this service, an increase of 13% compared to 2007.

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

PREFACE

This annual report presents the national surveillance data and a review of the epidemiology of sexually transmitted infections (STI), including HIV/AIDS, in the Netherlands in 2008. The report aims to produce an overview of recent trends and current developments in the field of STI from data sources available.

We expect that this report contributes to a better understanding of the distribution and determinants of STI, including HIV, in the Netherlands, resulting in further targeting of (preventive) interventions and assessment of their effectiveness on STI transmission. The information is directed at policy makers, researchers in the field of STI and related subjects as well as others interested in STI trends 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 cooperation of 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 the following organisations for their continuing collaboration in collecting data: the STI centres (STI clinics and municipal health services), Stichting HIV Monitoring (SHM) and GGD Nederland. We also thank SOA AIDS Nederland, Rutgers Nisso Group, HIV Vereniging, Schorer Stichting, Dutch Working Party on Antibiotic Policy, Netherlands Institute for Health Services Research (NIVEL), in particular the Information Network of General Practice (LINH), Dutch Working Group on Clinical Virology, Sanquin Blood Supply Foundation, Netherlands Organization for Applied Scientific Research (TNO), as well as the other units in the Centre for Infectious Disease Control: Laboratory for Infectious Disease and Screening (LIS), the Policy, Management and Advice Unit and the Preparedness and Response Unit for their support. Furthermore, we would like to thank Han de Neeling, Daan Notermans and Tineke Herremans (all LIS) for their contribution.

Further information
Any comment or suggestion to improve the usefulness of this report is much appreciated and can be sent to soahiv@rivm.nl.

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SAMENVATTING

In 2008 werden in totaal 88.435 nieuwe soaconsulten uitgevoerd bij de soacentra, een stijging van 13% ten opzichte van 2007. De soacentra richten zich op hoogrisicogroepen door toepassing van een landelijk vastgesteld triagesysteem. Deze hoogrisicogroepen, waaronder MSM (16% in 2008), personen afkomstig uit soa/hiv endemische gebieden (14%) en jongeren tot 25 jaar (41%), worden gratis getest. In 2008 voldeed 94% van de soaconsulten aan deze gestelde criteria voor hoogrisico, of gaf aan anoniem getest te willen worden.

Bacteriële soa
In 2008 was chlamydia opnieuw de meest gediagnosticeerde bacteriële soa in de soacentra met 9.403 gerapporteerde gevallen. Na een stabilisatie van het percentage positieve chlamydiatesten in 2007, is in 2008 weer een toename te zien: bij heteroseksuelen werd 10,6% positief getest en bij MSM was dit 11,6%. De meerderheid van de chlamydia-infecties bij heteroseksuelen werd bij jongeren onder de 25 jaar gediagnosticeerd (52%). LGV, een agressieve variant van chlamydia, werd ook in 2008 alleen bij MSM gevonden. Sinds de uitbraak van LGV in 2004 wordt deze infectie nog steeds regelmatig gevonden: in 2008 werden in totaal 100 gevallen van LGV gediagnosticeerd binnen de soacentra. Het percentage positieve gonorroe- en syfilistesten nam verder af in 2008 (respectievelijk 2,2% en 0,7%). Beide infecties werden het meest gevonden bij MSM (56% van de gonorroe en 90% van de syfilis diagnoses) en dan vooral in de leeftijdsgroepen vanaf 35 jaar. Bij specifieke etnische groepen (onder andere afkomstig uit Suriname, Nederlandse Antillen en Aruba) was het percentage positieve testen voor chlamydia en gonorroe (mannen en vrouwen), en voor syfilis (alleen MSM) hoger dan bij autochtone Nederlanders, wat aangeeft dat preventie gericht op specifieke groepen essentieel is.

Virale soa
In de soacentra werden 393 nieuwe hivdiagnoses gesteld in 2008. Het percentage positieve hiv-testen nam toe voor MSM tot 3,0% en bleef stabiel bij heteroseksuele mannen en vrouwen (respectievelijk 0,2% en 0,1%). In 2008 werden 1.329 nieuwe aanmeldingen van hivpositieve personen gerapporteerd in de anonieme nationale hivregistratie bij de Stichting HIV Monitoring, waarvan er 851 gediagnosticeerd werden in 2008. Eind 2008 waren in totaal 15.538 personen met hiv in Nederland geregistreerd. Het aandeel nieuw gerapporteerde hivinfecties bij MSM nam in 2008 verder toe tot 68%, daarnaast steeg het aandeel nieuwe infecties onder 50-plussers, vooral door MSM. Bij ruim een derde (36%) van de hiv-positieve MSM die de soacentra bezochten werd één (of meerdere) soa gediagnosticeerd. Zowel op gebied van preventie als interventie zijn innovatieve methoden nodig om de continue transmissie van soa en hiv in deze hoogrisicogroep te verminderen.

Het aantal diagnoses van andere virale soa steeg in 2008 in de soacentra. Het aantal gerapporteerde diagnoses van genitale wratten, de meest gediagnosticeerde virale soa in de nationale soasurveillance, nam toe met 20% en het aantal diagnoses van genitale herpes (HSV) nam toe met 8%. Hierbij moet worden opgemerkt dat onderzoek van genitale wratten en HSV alleen op indicatie gebeurt, waardoor het aantal diagnoses niet

vergelijkbaar is met die van de besproken bacteriële soa en hiv, waarop routinematig getest wordt. Uit de verplichte aangifte van hepatitis B bleek dat het aantal acute hepatitis B-infecties in 2008 vergelijkbaar is met het aantal gerapporteerde gevallen in 2007. De stijging van gerapporteerde acute hepatitis C-gevallen die in 2007 bij MSM werd gezien, heeft zich in 2008 gestabiliseerd.

SUMMARY

In 2008, 88,435 new STI consultations were carried out in the national network of STI centres in the Netherlands, an increase of 13% compared to 2007. The STI centres target high-risk groups by patient selection based on a standardized list of criteria. High-risk groups, such as MSM (16% in 2008), persons originating from STI/HIV endemic areas (14%) and young people under 25 years of age (41%) are tested for free. In 2008, 94% of attendees fulfilled one or more of the criteria or wanted to be tested anonymously.

Bacterial STI
In 2008, chlamydia remained the most commonly diagnosed bacterial STI in the STI centres. After a stabilisation in positivity rates of chlamydia in 2007, there was an increase in 2008: in heterosexual men and women the positivity rate increased to 10.6% and in MSM this was 11.6%. The majority of chlamydia cases were diagnosed in heterosexuals younger than 25 years of age (52%). LGV, a vicious strain of chlamydia, was found in MSM only. Since the outbreak of LGV in 2004, this infection continues to be reported frequently: in 2008 there were 100 new LGV cases diagnosed in MSM. The positivity rates for gonorrhoea and syphilis continued to decrease further in 2008 (2.2% and 0.7%, respectively). Both infections were most prevalent among MSM (56% of gonorrhoea and 90% of syphilis diagnoses) especially in the age groups of 35 years and older. Specific ethnic minorities (for instance from Surinam, the Netherlands Antilles and Aruba) had higher positivity rates for chlamydia and gonorrhoea (men and women) and syphilis (only MSM) than autochthonous Dutch, pointing to the need for targeted intervention by risk profile.

Viral STI, including HIV
At the STI centres, a total of 393 new HIV cases were diagnosed in 2008. HIV positivity rates at the STI centres slightly increased to 3.0% in 2008 for MSM and remained fairly stable for heterosexual men and women (0.2% and 0.1%, respectively).

In 2008, 1,329 new HIV positive persons were recorded in the anonymous national HIV registry of the SHM; 851 of them were diagnosed in 2008. As of December 2008, a total of 15,538 HIV cases under medical care had been recorded in the Netherlands. The proportion of MSM among HIV cases reporting for care increased over time, up to 68% in 2008; in addition, the fraction of new diagnoses among persons of 50 years or older increased between 2000 and 2007, mainly due to new diagnosis among MSM.

More than one third of the HIV positive MSM consulting the STI centres (36%) were co-infected with one or more other STI. STI prevention and -intervention programmes need to adopt innovative methods specifically aimed at bringing down the transmission in this high-risk group.

The number of other viral STIs increased in the STI centres in 2008. The reported number of genital warts, the most common viral STI in the national surveillance, increased by 20% and the number of cases of genital herpes (HSV) increased by 8%. Testing on these two STIs is at present only on indication; hence the number of diagnoses is not comparable to

the bacterial STI and HIV described above, on which is screened routinely. The number of cases of acute hepatitis B in 2008 was comparable to 2007. The increase in acute hepatitis C cases in MSM in 2007 has stabilised in 2008.

LIST OF ABBREVIATIONS

ACS	Amsterdam Cohort Studies
AIDS	Acquired Immune Deficiency Syndrome
ATHENA	AIDS Therapy Evaluation in the Netherlands
CIb	Centrum Infectieziektebestrijding, Centre for Infectious Disease and Control
CSW	Commercial Sex Worker
ECDC	European Centre for Disease prevention and Control
GP	General Practitioner
GRAS	Gonococcal Resistance to Antimicrobials Surveillance programme
HAART	Highly active anti-retroviral therapy
HBV	Hepatitis B virus
HCV	Hepatitis C virus
HIV	Human Immunodeficiency virus
HPV	Human papilloma virus
HSV	Herpes simplex virus
IDU	Intravenous Drug Users
IGZ	Inspectorate of Health
LGV	Lymphogranuloma venereum
LIS	Laboratory for Infectious Disease and Screening
LINH	Landelijk Informatienetwerk Huisartsen, Information Network of General Practice
MSM	Men who have sex with men
NIVEL	Nederlands Instituut voor onderzoek van de Gezondheidszorg, Netherlands Institute for Health Services Research
RIVM	Rijksinstituut voor Volksgezondheid en Milieu, National Institute for Public Health and the Environment
SHM	Stichting HIV Monitoring, HIV Monitoring Foundation
SOAP	Online STI registration system
STI	Sexually Transmitted Infection
TNO	Nederlandse Organisatie voor toegepast-natuurwetenschappelijk onderzoek, Netherlands Organization for Applied Scientific Research

INTRODUCTION

This report describes current trends in the epidemiology of STIs, including HIV, 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 Stichting HIV Monitoring (SHM), 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 in the Thermometer (April 2009).

Outline of the report

In chapter 1 the methodology of STI surveillance in the Netherlands is described, including all data sources used for this report. In chapter 2 the characteristics of STI centre attendees are presented for 2008. Chapter 3-5 deal with bacterial STI (chlamydia, gonorrhoea and syphilis) and Chapter 6-10 focus on viral STI, including HIV, genital warts, genital herpes, hepatitis B and C. Conclusions and recommendations are described in chapter 11.

1 METHODOLOGY OF STI AND HIV SURVEILLANCE

1.1 National surveillance at STI centres

Since 1995 STIs are registered into an STI registration at the RIVM in the Netherlands. In 2003, an STI sentinel surveillance system was put in place, which reached national coverage in 2004 with inclusion of all major STI centres. Since January 2006, reporting into the national STI surveillance system is organised in eight regions, with each one STI centre that is responsible for regional coordination of STI control (Figure 1.1). In total, 29 specific STI centres, mostly within the municipal health services and some of them with different test locations, provide low threshold STI/HIV testing and care, free of charge, targeted at high risk groups and people who want to be tested anonymously. Currently, persons matching one of the following criteria: (1) presence of STI-related symptoms, (2) notified or referred for STI-test, (3) age below 25 years, (4) MSM, (5) involved in commercial sex, (6) originating from an HIV/STI endemic area or (7) three or more sexual partners in previous six months, are considered to be at increased risk for STI acquisition. Furthermore, persons who indicate they want to be tested anonymously can also make use of the STI centres to guarantee 'low threshold' STI care. All consultations and corresponding diagnoses are reported online to the CIb for surveillance purposes, facilitated by a web based application (SOAP). The unit of analysis is 'new STI consultation', and anonymised reports contain epidemiological, behavioural, clinical and microbiological data on a wide range of STI.

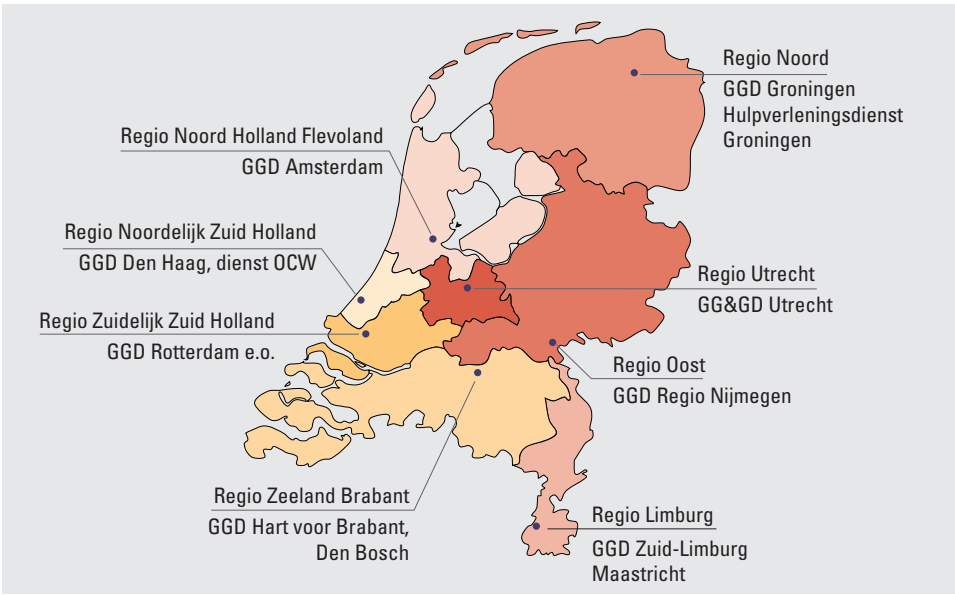


Figure 1.1 Eight regions with coordinating STI centre indicated

In this report, results of national surveillance of STI centres are presented with respect to the number and nature of new consultations and diagnoses. Trends in positivity rates by risk profile (based on demographic and behavioural indicators) in time are based on data from the STI centres in the national surveillance since 2004. Where data were not complete for a specific period or STI centre, this is indicated. We focus on the major bacterial and viral STI, including HIV infection.

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 laboratory survey of resistance of gonococci in 2002. The results demonstrated the need for a nationwide systematic surveillance of gonococcal antimicrobial resistance. Therefore, 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 patients from the STI centres.

1.3 Congenital syphilis

Since many years, RIVM offers IgM diagnostics for neonates and young infants (<1 year) who are suspected of being infected with congenital syphilis. The number of requests for congenital syphilis varied between 64 and 94 per year. In this report, results from 1997-2008 are presented.

1.4 National screening of pregnant women

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 1990) and syphilis (since 1960). Currently, preliminary nationwide data (estimations) are available for 2005-2007 (see Chapters HIV, hepatitis B, syphilis). Since 2006, the Centre for National Screening Programmes is coordinating the screening programme on infectious diseases in pregnant women. TNO recently published a process evaluation of the national programme[1] and the CIb is currently preparing an effect evaluation.

1 Procesmonitoring prenatale screening infectieziekten en erythrocytenimmunisatie 2005-2007, TNO, Leiden, 2009

Table 1.1: Number of pregnant women screened for hepatitis B, syphilis and HIV#

	Nr pregnant women		% with unknown test result*		Nr with test result	
	2006/7	2005/6	2006/7	2005/6	2006/7	2005/6
Hepatitis B	184,801	189,526	0.5	0.6	183,863	188,406
Syphilis	184,801	189,526	0.5	0.6	183,830	188,368
HIV	184,801	189,526	1.2	1.0	182,574	187,718

* Unknown test results include 'unknown', 'not provided', 'refusal', and pregnant women with both a 'positive' and 'negative' test (not interpretable)

\# Table obtained from TNO-report [1]

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.

1.5 STI surveillance in the general practice

Data on STI diagnoses in general practice were obtained from the electronic medical records database of the Netherlands 'Information Network of General Practice' (LINH) from 2002 to 2007[2]. The GP surveillance network LINH consisted in 2007 of 81 Health Centres, geographically and socially reflecting the Dutch population with 327.725 patients registered, equal to 2.0% of the population in the Netherlands. The pool of practices in the network differs from year to year as some practices leave and others join up, varying between 61 to 83 practices in from 2002-2007. Complaints and illnesses were recorded using the ICPC system. The number of STI-episodes was extrapolated to the total Dutch population, adjusting for age and gender breakdown of the Dutch population. Patients' characteristics include age, sex and urban/rural residence. For syphilis, no data was available in the database.

1.6 Anonymous HIV surveillance at STI centres

HIV surveillance among STI centre attendees is conducted since 1991 in Amsterdam and since 1994 in Rotterdam. In Amsterdam, two cross sectional studies including 1000 visitors each are conducted every year. In Rotterdam STI centre attendees are included year round.

1.7 HIV incidence data

HIV incidence data are obtained in the Amsterdam Cohort Studies (ACS) on HIV/AIDS, which started in 1984 among MSM and in 1985 among IDU. These cohorts give insight in

2 Verheij RA, Van Dijk CE, Abrahamse H, Davids R, Van den Hoogen H, Braspenning J, Van Althuis T. Landelijk Informatienetwerk Huisartsenzorg. Feiten en cijfers over huisartsenzorg in Nederland. Utrecht/Nijmegen: NIVEL/WOK, <http:/www.LINH.nl>, accessed 01-04-2009.

HIV rises in an early state in a specific population and can be supportive for prevention activities to respond effectively to the ongoing 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 SHM and financially supported by the RIVM [www.amsterdamcohortstudies.org].

1.8 National registration of HIV treatment centres

From January 2002, an anonymous HIV/AIDS reporting system for patients entering care was implemented in the Netherlands. Longitudinal data of all newly registered HIV infected individuals are collected by the SHM (www.hiv-monitoring.nl). The goal of SHM is to monitor HIV infected individuals registered in the 25 recognised HIV treatment centres (including four children's centres) in the Netherlands to study changes in the epidemic, the natural history of HIV and the effects of treatment.

All HIV infected individuals registered in this cohort are followed prospectively from the time of reporting for care. HIV infected individuals in care, who were diagnosed prior to the start of SHM, were as far as possible included in the cohort retrospectively. SHM 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 highly active anti-retroviral therapy (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 CIb 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 SHM, the national AIDS registry was ended. In this report, AIDS cases from 1999 or earlier are obtained from the AIDS registry. From 2000, AIDS cases from the SHM monitoring system were used. Data on deaths among HIV patients (including AIDS patients) were obtained through the SHM (≥ 2002 and previously from National Statistics Netherlands (www.cbs.nl) <2002).

1.9 Blood donors

Since 1985 blood donated by (new and regular) blood donors is screened for HIV, hepatitis B and C, and syphilis and positive blood is not used for blood transfusion. Volunteers are checked according to quality and safety guidelines and people who report specific risk factors for blood transmitted infections are not accepted as donors. Records are kept in the national donor register, which provides good information on the prevalence and incidence of these infections in a low-risk population. Data are reported from 1998

onwards. Prevalence and incidence were calculated with the data provided by the blood bank register (www.sanquin.nl).

1.10 Notification of hepatitis B and C

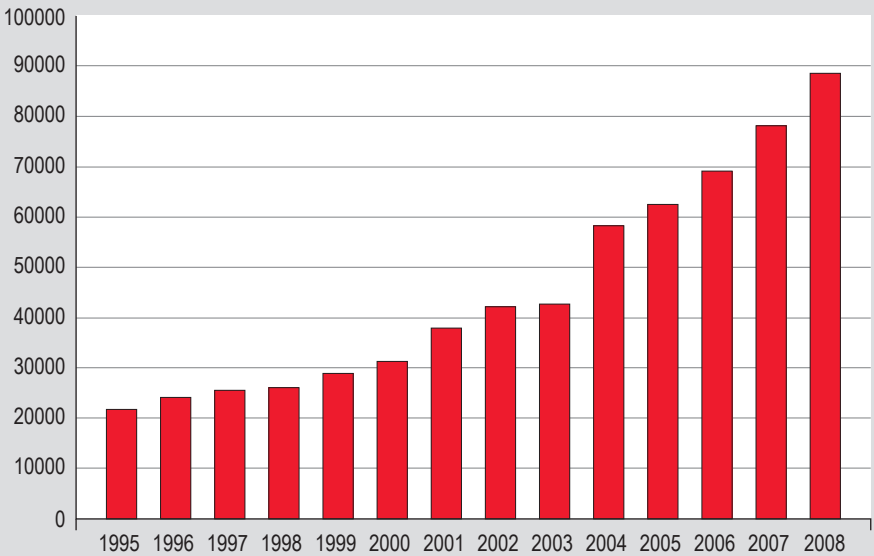
The obligatory notification of newly diagnosed acute hepatitis B virus (HBV) infections (since 1976) and hepatitis C virus (HCV) infections and chronic HBV infections (both since April 1999, but reporting of chronic HCV cases was stopped in 2005) includes epidemiological data on the occurrence of disease within specific risk groups. Since 2002, all public health services notify HBV and HCV infections by using the web based application OSIRIS.

2 STI CONSULTATIONS

2.1 Key points

- In 2008, 88,435 new consultations were registered in the national surveillance in STI centres, an increase of 13% compared with 2007. Increase was highest in MSM (25%).
- Characteristics of attendees were as follows: young age (40% under 25 years old), Dutch origin (81%), MSM (16%) and commercial sex workers (9%), 10% had a history of STI and 46% was not previously tested for HIV.
- Of the attendees, 87% had both an STI examination and an HIV test, 12% only had an STI examination (tested for chlamydia, gonorrhoea or syphilis) and 0.5% only had an HIV test. Of the 13% not tested for HIV, 20% were known HIV positives.
- Twenty-six percent reported three or more sex partners in past six months: for MSM this was 43%.
- Ninety four percent of all STI centre attendees fulfilled one or more of the criteria set as indicators of high risk or were tested for reasons of anonymity.
- In GPs, number of episodes of fear of STIs, a proxy for STI consultation, also increased steadily.

2.2 Consultations and characteristics of attendees



Footnote: 1995-2002: STI registration; 2000: STI centre Erasmus Medical Centre Rotterdam was included; 2003: Implementation of STI sentinel surveillance network; 2004-2008: National STI surveillance network.

Figure 2.1: Number of consultations in the national STI surveillance in the Netherlands, 1995-2008

Table 2.1: Number of consultations by gender and sexual preference, 2006-2008

Gender and sexual preference	2006	2007	2008 (%)
Heterosexual men	25712 (37.2)	28689 (36.8)	31770 (36.0)
MSM	9770 (14.2)	11048 (14.1)	13764 (15.6)
Women	33317 (48.3)	38210 (48.9)	42796 (48.5)
Transgenders*	2 (0.0)	29 (0.0)	34 (0.0)
Sexual preference unknown*	156 (0.2)	85 (0.1)	71 (0.1)
Total	68977	78062	88435

* Categories transgenders and 'sexual preference unknown' are disregarded in the rest of the tables

Table 2.2: Number of consultations per month

Month	Total (%)
January	7513 (8.5)
February	6858 (7.8)
March	6433 (7.3)
April	7468 (8.4)
May	6979 (7.9)
June	7704 (8.7)
July	7759 (8.8)
August	7207 (8.2)
September	7822 (8.8)
October	8017 (9.1)
November	7474 (8.5)
December	7167 (8.1)
Total	88330

Table 2.3: Number of consultations by age, gender and sexual preference

Age (years)	Heterosexual (%)	MSM (%)	Women (%)	Total (%)
≤14	10 (0.0)	1 (0.0)	81 (0.2)	92 (0.1)
15-19	1359 (4.3)	364 (2.6)	5354 (12.5)	7077 (8.0)
20-24	9362 (29.5)	1515 (11.0)	17731 (41.4)	28608 (32.4)
25-29	7645 (24.1)	1722 (12.5)	8920 (20.8)	18287 (20.7)
30-34	4345 (13.7)	1967 (14.3)	3978 (9.3)	10290 (11.7)
35-39	3034 (9.6)	2087 (15.2)	2485 (5.8)	7606 (8.6)
40-44	2406 (7.6)	2200 (16.0)	1858 (4.3)	6464 (7.3)
45-49	1633 (5.1)	1688 (12.3)	1306 (3.1)	4627 (5.2)
50-54	907 (2.9)	978 (7.1)	674 (1.6)	2559 (2.9)
>55	1069 (3.4)	1242 (9.0)	409 (1.0)	2720 (3.1)
Total	31770	13764	42796	88330

Table 2.4: Number of consultations by ethnicity, gender and sexual preference

Ethnicity	Heterosexual men (%)	MSM (%)	Women (%)	Total (%)
The Netherlands	25093 (79.0)	11211 (81.4)	35059 (81.9)	71363 (80.8)
Turkey	487 (1.5)	71 (0.5)	152 (0.4)	710 (0.8)
North Africa/ Morocco	702 (2.2)	91 (0.6)	292 (0.7)	1085 (1.2)
Surinam	1655 (5.2)	233 (1.7)	1631 (3.8)	3519 (4.0)
Netherlands Antilles	678 (2.1)	160 (1.1)	578 (1.4)	1416 (1.6)
Eastern Europe	271 (0.9)	249 (1.8)	1110 (2.6)	1630 (1.9)
Sub-Saharan Africa	802 (2.5)	75 (0.5)	672 (1.6)	1549 (1.8)
Latin America	289 (0.9)	356 (2.6)	730 (1.7)	1375 (1.6)
Europe else	534 (1.7)	266 (1.9)	1289 (3.0)	2089 (2.4)
Asia	516 (1.6)	297 (2.1)	610 (1.4)	1423 (1.6)
Unknown	31 (0.1)	10 (0.1)	53 (0.1)	94 (0.1)
Else	712 (2.2)	745 (5.4)	620 (1.4)	2077 (2.4)
Total	31770	13764	42796	88330

Table 2.5: Number of consultations by male client of CSW and sexual preference

Client of CSW	Heterosexual men (%)	MSM (%)	Total (%)
No	28382 (89.3)	13466 (97.8)	41848 (91.9)
Yes, in past 6 months	3281 (10.3)	246 (1.8)	3527 (7.8)
Unknown	107 (0.3)	52 (0.4)	159 (0.4)
Total	31770	13764	45534

Table 2.6: Number of consultations by female CSW

CSW	Female CSW (%)
No	38787 (90.6)
Yes, in past 6 months	3832 (8.9)
Unknown	177 (0.4)
Total	42796

Table 2.7: Number of consultations by injecting drug use, gender and sexual preference

Injecting drug use	Heterosexual men (%)	MSM (%)	Women (%)	Total (%)
No	31327 (98.6)	13510 (98.2)	41774 (97.6)	86611 (98.1)
Yes, ever	56 (0.1)	26 (0.2)	81 (0.2)	163 (0.2)
Yes, in past 6 months	31 (0.1)	9 (0.1)	39 (0.1)	79 (0.1)
Unknown	356 (1.1)	219 (1.6)	902 (2.1)	1477 (1.7)
Total	31770	13764	42796	88330

Table 2.8: Number of consultations by prior HIV test, gender and sexual preference

Prior HIV test	Heterosexual men (%)	MSM (%)	Women (%)	Total (%)
No	17197 (54.1)	2518 (18.3)	21264 (49.7)	40979 (46.4)
Yes, positive	36 (0.1)	2125 (15.4)	33 (0.1)	2194 (2.5)
Yes, negative	14046 (44.2)	8933 (64.9)	20571 (48.1)	43550 (49.3)
Yes, result unknown	83 (0.3)	55 (0.4)	110 (0.3)	248 (0.3)
Unknown	408 (1.3)	133 (1.0)	818 (1.9)	1359 (1.5)
Total	31770	13764	42796	88330

Table 2.9: Number of consultations by previous GO/CT/syphilis in anamnesis, gender and sexual preference

Previous GO/CT/ syphilis	Heterosexual men (%)	MSM (%)	Women (%)	Total (%)
No	28448 (89.5)	10648 (77.4)	37622 (87.9)	76718 (86.9)
Yes	2288 (7.2)	2860 (20.8)	3862 (9.0)	9010 (10.2)
Do not know	633 (2.0)	621 (1.5)	621 (1.5)	1384 (1.4)
Unknown	401 (1.3)	126 (0.1)	691 (1.6)	1218 (1.4)
Total	31770	13764	42796	88330

Table 2.10: Reported indication by gender and sexual preference

Indication	Heterosexual men (%)	MSM (%)	Women (%)	Total (%)
STI/HIV endemic area	5400 (17.0)	1532 (11.1)	5775 (13.5)	12707 (14.4)
Symptoms	8632 (27.6)	4129 (30.4)	10239 (24.3)	23000 (26.5)
Partner in risk group	6489 (20.4)	11711 (85.1)	9400 (22.0)	27600 (31.3)
Referred	1128 (3.6)	1159 (8.4)	1209 (2.8)	3496 (4.0)
Notified	3207 (10.1)	1933 (14.0)	3072 (7.2)	8212 (9.3)
Anonymous test	12351 (38.9)	4398 (32.0)	17809 (41.6)	34558 (39.1)
No indication	4252 (13.4)	0 (0.0)	4486 (10.5)	8756 (9.9)

Table 2.11: Behavioural indicators by gender and sexual preference, NA GGD Amsterdam

	Heterosexual men (%)	MSM (%)	Women (%)	Total (%)
Number of partners past 6 months				
0	377 (1.9)	104 (1.6)	528 (2.0)	1009 (1.9)
1	6471 (32.1)	1047 (16.1)	11008 (41.8)	18526 (35.0)
2	5620 (27.8)	1068 (16.5)	7582 (28.8)	14270 (26.9)
≥ 3	7713 (38.2)	4271 (65.8)	7201 (27.4)	19185 (36.2)
Condom use last sexual contact*				
Yes	4535 (28.8)	2041 (40.4)	5407 (25.6)	11983 (28.6)
No	10946 (69.4)	2823 (55.9)	15033 (71.2)	28802 (68.7)
Unknown	285 (1.8)	184 (3.6)	665 (3.2)	1134 (2.7)
Sexual contact abroad*				
Yes	1402 (9.2)	451 (9.0)	1291 (6.4)	3144 (7.8)
No	13271 (87.0)	4350 (87.8)	17802 (88.0)	35423 (87.6)
Unknown	587 (3.8)	156 (1.1)	1143 (5.6)	1886 (4.7)
Swinger*				
Yes	1210 (7.1)	530 (9.4)	1769 (7.7)	3509 (7.7)
No	15651 (92.0)	5076 (89.6)	20915 (91.3)	41642 (91.3)
Unknown	145 (0.9)	58 (1.0)	236 (1.0)	439 (1.0)

* question voluntary

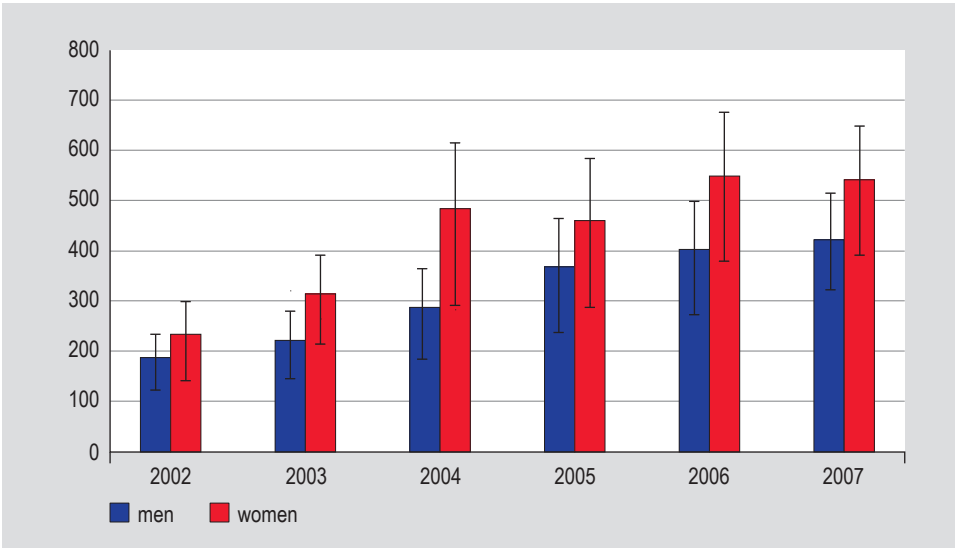


Figure 2.2: Reporting rate (number of episodes per 100,000 population) of fear of STI at GPs in the Netherlands, 2002-2007 (Source: LINH)

Table 2.12: Number of diagnoses by gender and sexual preference

Diagnosis	Heterosexual men (%)	MSM (%)	Women (%)	Total (%)
Gonorrhoea	415 (6.6)	1095 (18.7)	454 (4.9)	1964 (9.2)
Chlamydia	3350 (53.3)	1579 (27.9)	4504 (48.6)	9433 (44.1)
Syphilis: primary	15 (0.2)	188 (3.2)	7 (0.1)	210 (1.0)
“” : secondary	9 (0.1)	150 (2.6)	3 (0.0)	162 (0.8)
“” : latens recens	14 (0.2)	200 (3.4)	13 (0.1)	227 (1.1)
“” : latens tarda	41 (0.7)	71 (1.2)	37 (0.4)	149 (0.7)
“” : not specified	4 (0.1)	19 (0.3)	5 (0.1)	28 (0.1)
HIV	43 (0.7)	320 (5.5)	30 (0.3)	393 (1.8)
Genital warts	991 (15.8)	477 (8.1)	996 (10.8)	2464 (11.5)
Genital herpes: prim.: HSV1	95 (1.5)	51 (0.9)	164 (1.8)	310 (1.5)
“” : prim.: HSV2	138 (2.2)	88 (1.5)	125 (1.4)	351 (1.6)
“” : prim.: HSV unknown	15 (0.2)	7 (0.1)	22 (0.2)	44 (0.2)
“” : recurrent	20 (0.3)	5 (0.1)	9 (0.1)	34 (0.2)
Hepatitis B: infectious	94 (1.5)	59 (1.0)	65 (0.7)	218 (1.0)
Hepatitis B: recovered	638 (10.1)	985 (16.8)	626 (6.8)	2249 (10.5)
Non specified urethritis	226 (3.6)	60 (1.0)	33 (0.4)	319 (1.5)
Candidiasis	187 (3.0)	36 (0.6)	941 (10.2)	1164 (5.4)
Bacterial vaginosis	1 (0.0)	0 (0.0)	1106 (11.9)	1107 (5.2)
Trichomoniasis	5 (0.1)	0 (0.0)	123 (1.3)	128 (0.6)
Scabies	8 (0.1)	33 (0.6)	0 (0.0)	41 (0.2)
Pubic Lice	2 (0.0)	7 (0.1)	0 (0.0)	9 (0.0)
Ulcus e.c.i.	34 (0.5)	77 (1.3)	36 (0.4)	147 (0.7)
Lymphogranuloma	0 (0.0)	100 (1.7)	0 (0.0)	100 (0.5)
Proctitis	2 (0.0)	295 (5.0)	8 (0.1)	305 (1.4)
Total	6347	5902	9307	21556

BACTERIAL STI

3 CHLAMYDIA AND LYMPHOGRANULOMA VENEREUM

3.1 Key points

- Chlamydia remained the most commonly diagnosed bacterial STI: 9,403 cases were diagnosed in the STI centres in 2008 (36% in heterosexual men, 17% in MSM, 52% in women).
- The main burden of disease is carried by the young heterosexual population (52% under 25 years).
- After a stabilisation in previous years, chlamydia positivity rates increased again in 2008. Overall, the positivity rate for chlamydia was 10.8% and was highest in MSM (11.6%).
- Highest positivity rates were observed in young heterosexual men and women (20-24 years) and adult MSM (30-39 years), as well as persons from Surinam or the Netherlands Antilles and those who reported a previous STI.
- In GPs, reporting rates for chlamydia were 186 and 159 per 100,000 population for men and women, respectively, in 2007.
- Nineteen percent of the MSM with chlamydia had a co-infection with gonorrhoea; in heterosexuals this was 4%.
- Hundred new LGV cases were diagnosed in the STI centres: all MSM, 71% known HIV positive.

3.2 Characteristics, risk groups and trends

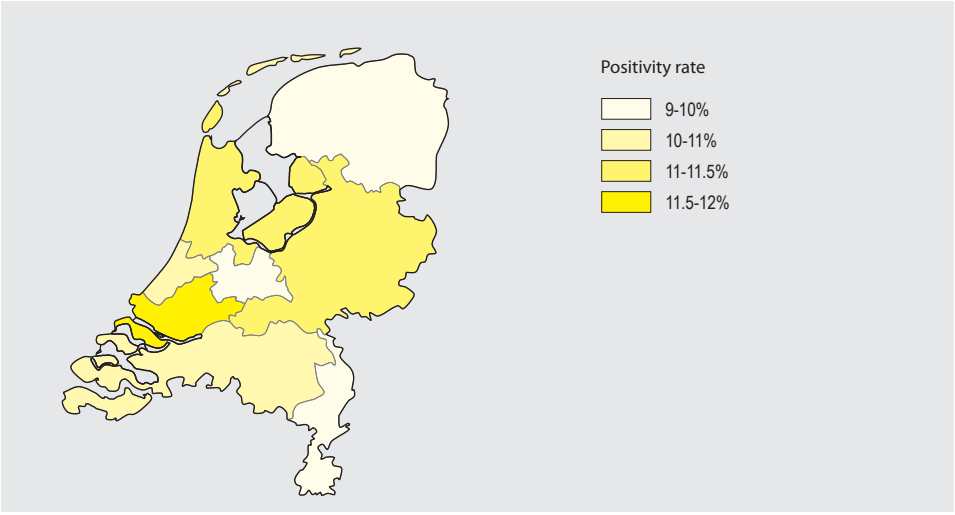


Figure 3.1: Positivity rates for chlamydia by STI centre, the Netherlands, 2008

Table 3.1: Location of chlamydia infection by gender and sexual preference

Location	Heterosexual men N (%)	MSM N (%)	Women N (%)
Urethral/cervical	3343 (99.6)	652 (36.2)	4385 (90.4)
Anorectal	2 (0.1)	1061 (58.9)	328 (6.8)
Oral	6 (0.2)	72 (4.0)	134 (2.8)
Unknown	5 (0.1)	15 (0.8)	2 (0.0)
Total	3356	1800	4849

Table 3.2: Number and percentage of positive tests of chlamydia by age, gender and sexual preference

Age (years)	Heterosexual men		MSM		Women	
	pos. tests	% pos.	pos. tests	% pos.	pos. tests	% pos.
0-14	0	0	0	0	2	2.5
15-19	198	14.6	35	9.9	902	17.0
20-24	1350	14.5	169	11.3	2275	12.9
25-29	926	12.2	198	11.6	819	9.2
30-34	398	9.2	257	13.2	240	6.1
35-39	198	6.6	273	13.2	104	4.2
40-44	135	5.7	250	11.5	75	4.1
45-49	78	4.8	189	11.3	47	3.6
50-54	39	4.3	94	9.7	29	4.4
>55	28	2.6	114	9.3	11	2.7
Total	3350	10.6	1579	11.6	4504	10.6

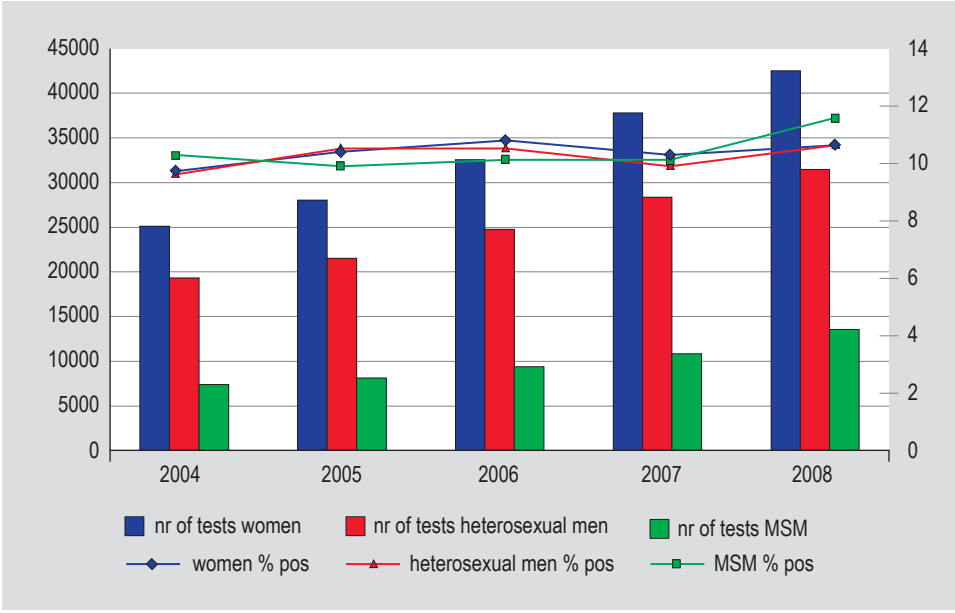


Figure 3.2: Total number and positivity rate of diagnoses of chlamydia by gender and sexual preference, STI centres, the Netherlands, 2004-2008

Table 3.3: Number and percentage of positive tests of chlamydia by demographics, gender and sexual preference

	Heterosexual men (N=3350)		MSM (N=1579)		Women (N=4504)	
	pos. tests	% pos.	pos. tests	% pos.	pos. tests	% pos.
Ethnicity						
The Netherlands	2460	9.9	1217	11.0	3631	10.4
Turkey	49	10.1	8	11.3	20	13.4
N.Africa/ Morocco	103	14.9	9	10.0	41	14.2
Sur./ Ant./ Aruba	429	18.4	74	19.0	333	15.1
Sub-Sah. Africa	88	11.0	12	16.0	75	11.3
Eastern Europe	27	10.1	33	13.3	111	10.1
Latin America	32	11.2	54	15.2	66	9.1
Asia	50	9.7	45	15.2	71	11.7
Europe other	40	7.6	19	7.2	113	8.9
Else	69	9.7	106	14.2	38	6.1
Unknown	3	10.0	2	20.0	5	10.0
Client of CSW, men						
No	3163	11.2	1556	11.7		
Yes, in past 6 months	180	5.6	20	8.2		
Unknown	7	6.9	3	6.4		
CSW, women						
No					4231	11.0
Yes, in past 6 months					259	6.8
Unknown					14	8.2
Previous HIV test						
No	1962	11.5	245	9.9	2574	12.2
Yes, positive	3	8.3	426	20.1	4	12.5
Yes, negative	1335	9.6	893	10.1	1843	9.0
Yes, result unknown	3	3.7	3	5.6	10	9.1
Unknown	47	11.7	12	9.4	73	9.1
Previous GO/ CT/syphilis in anamnesis						
Yes	402	17.7	510	17.9	549	14.3
No	2862	10.0	1042	9.9	3834	10.2
Don't know	82	13.1	16	12.6	64	10.5
Unknown	40	10.1	11	9.2	57	8.4

Table 3.4: Concurrent STI by gender and sexual preference

Concurrent STI	Heterosexual men (N=3350) (%)	MSM (N=1579) (%)	Women (N=4504) (%)
Gonorrhoea	145 (4.3)	293 (18.6)	149 (3.3)
Infectious syphilis	2 (0.1)	123 (7.8)	1 (0.0)
HIV newly diagnosed	4 (0.1)	78 (4.9)	2 (0.0)
Genital herpes	18 (0.5)	27 (1.7)	18 (0.4)
Genital warts	97 (2.9)	70 (4.4)	111 (2.5)

Table 3.5: Behavioural indicators of chlamydia cases compared to STI negatives by gender and sexual preference (NA GGD Amsterdam)

	Heterosexual men N (%)	MSM N (%)	Women N (%)
Median no. partners past 6 months (median (IQR))			
Chlamydia positives	2 (1-4)	4 (2-8)	2 (1-3)
STI negatives*	2 (1-3)	3 (2-7)	2 (1-3)
Condom use last sexual contact**			
Chlamydia positives	320 (19.2)	177 (34.9)	445 (19.2)
STI negatives*	4043 (30.1)	1642 (41.4)	4790 (26.4)
Sexual contact abroad**			
Chlamydia positives	123 (7.8)	47 (9.2)	130 (5.8)
STI negatives*	1219 (9.4)	341 (8.8)	1133 (6.5)
Swinger**			
Chlamydia positives	47 (2.7)	30 (5.2)	88 (3.6)
STI negatives*	1109 (7.6)	465 (10.5)	1557 (7.9)

* Negative for chlamydia, gonorrhoea, infectious syphilis, HIV, hepatitis B, herpes genitalis and genital warts

** Voluntary question

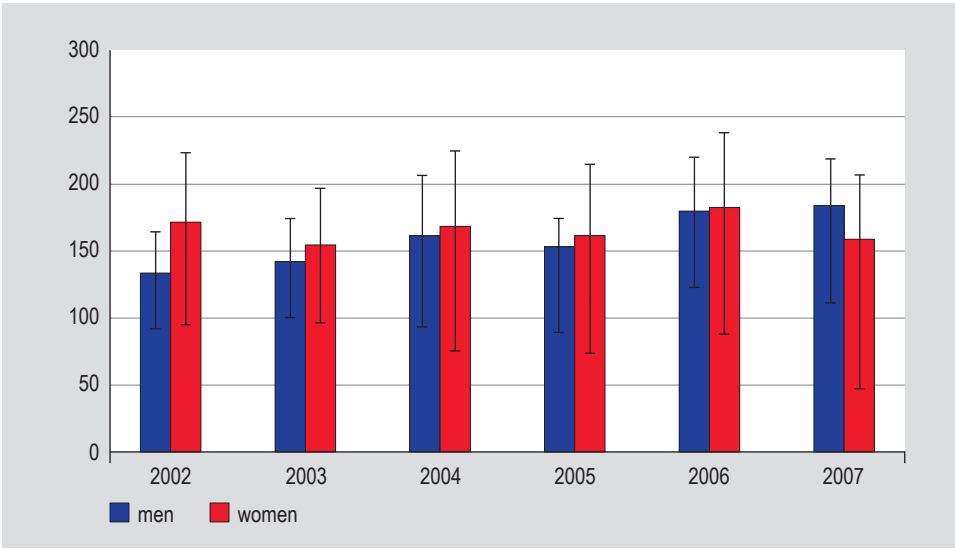


Figure 3.3: Reporting rate (number of episodes per 100,000 population) for chlamydia at GPs in the Netherlands, 2002-2007 (Source: LINH)

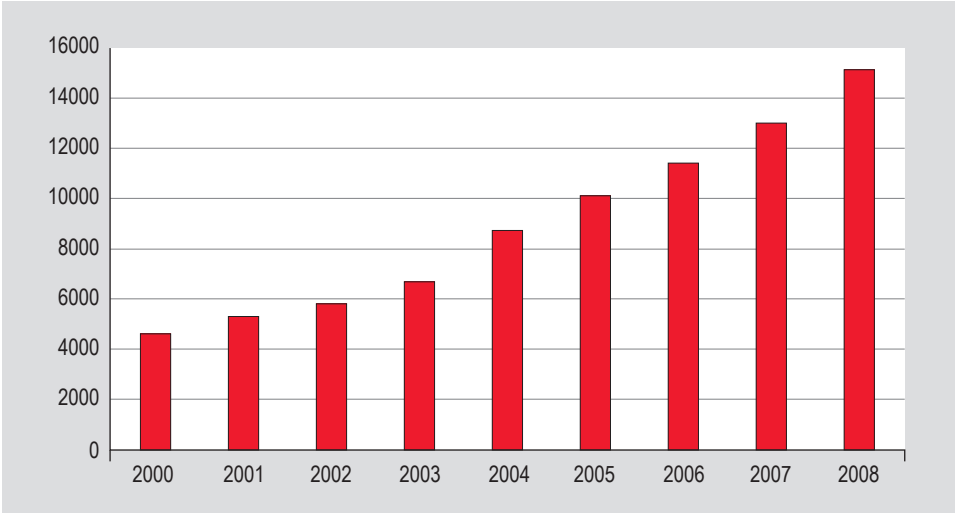


Figure 3.4: Number of positive test results for Chlamydia Trachomatis from 17 hospital- and regional laboratories, 2000-2008 (Source: weekly virological reports, 2000-2008)

3.3 Lymphogranuloma venereum

Table 3.6: Characteristics of LGV cases, 2008

	MSM (N=100)
Median age (range)	41.6 (26-63)
Dutch ethnicity	74 (74%)
Known HIV positive	71 (71%)
Anorectal infection	96 (96%)
Inguinal infection	3 (3%)
Anorectal and inguinal infection	1 (1%)
Concurrent gonorrhoea	26 (26%)
Concurrent syphilis	11 (11%)
Concurrent new HIV diagnosis	2 (2%)

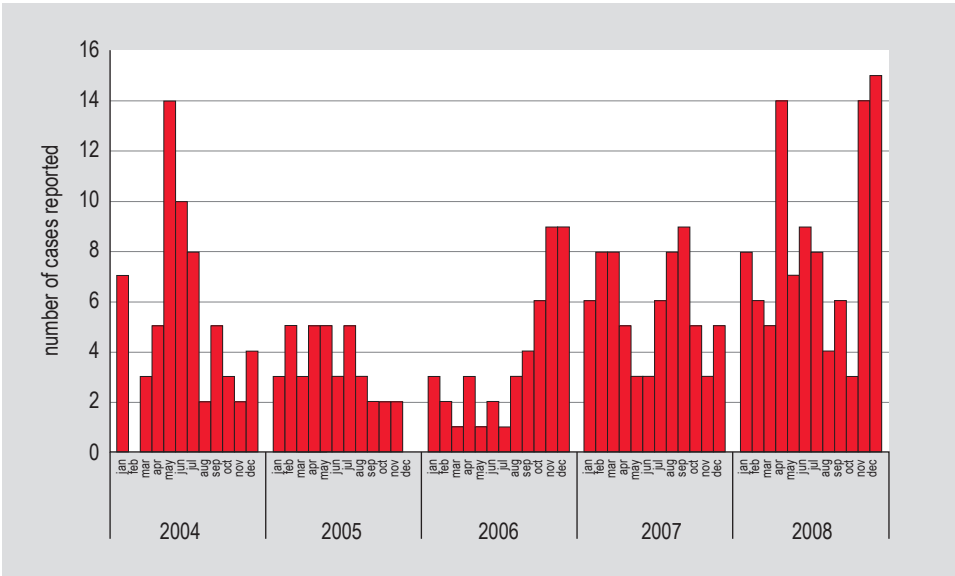


Figure 3.5: Number of cases of Lymphogranuloma venereum diagnosed per month in the STI centres, the Netherlands, 2004-2008

4 GONORRHOEA

4.1 Key points

- In 2008, 1,964 diagnoses of gonorrhoea were made in the national surveillance of STI centres in the Netherlands (21% in heterosexual men, 56% in MSM, 23% in women).
- In women, halve of the cases were among attendees younger than 25 years.
- Positivity rates for gonorrhoea have decreased since 2004. Overall, positivity rate was 2.2% in 2008.
- Positivity rates were highest among MSM (8.0%), heterosexual men and women from Surinam (4.7%) and swingers (4.5%).
- Thirty percent of the gonorrhoea cases had a chlamydia co-infection.
- Five percent of the gonorrhoea cases had a new HIV infection, 15% was already known with their HIV positivity.
- In GPs, reporting rates for gonorrhoea were 48.5 and 8.3 per 100,000 population for men and women, respectively, in 2007.
- Ciprofloxacin resistance increased up to 45% in the STI centres and 39% in a laboratory survey; increase was highest in MSM (40% in 2006 to 54% in 2008). Resistance to third generation cephalosporins was not found, although an upward shift in MIC values was observed.

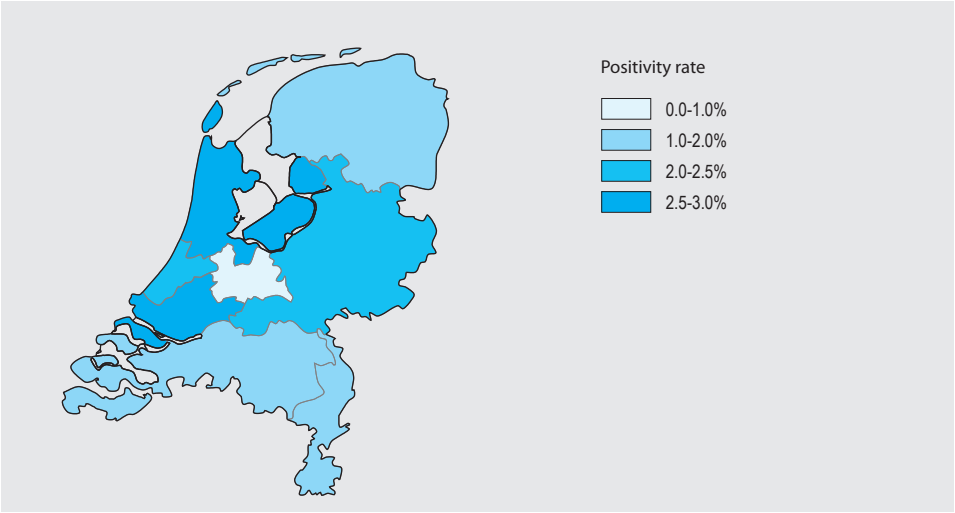


Figure 4.1: Positivity rates of gonorrhoea by STI centre, the Netherlands, 2008

4.2 Characteristics, risk groups and trends

Table 4.1: Location of gonorrhoea infection by gender and sexual preference

Location	Heterosexual men N (%)	MSM N (%)	Women N (%)
Urethral/cervical	401 (95.7)	453 (32.8)	362 (64.2)
Anorectal	0 (0.0)	577 (41.7)	81 (14.4)
Oral	17 (4.1)	353 (25.5)	121 (21.5)
Unknown	1 (0.2)	0 (0.0)	0 (0.0)
Total	419	1383	564

Table 4.2: Number and percentage of positive tests of gonorrhoea by age, gender and sexual preference

Age (years)	Heterosexual men		MSM		Women	
	pos. tests	% pos.	pos. tests	% pos.	pos. tests	% pos.
0-14	0	0.0	0	0.0	0	0.0
15-19	30	2.2	23	6.5	91	1.7
20-24	125	1.3	120	8.1	138	0.8
25-29	79	1.0	163	9.6	75	0.8
30-34	53	1.2	175	9.0	38	1.0
35-39	38	1.3	209	10.1	32	1.3
40-44	36	1.5	174	8.0	38	2.1
45-49	24	1.5	125	7.5	20	1.5
50-54	17	1.9	53	5.5	15	2.3
>55	13	1.2	53	4.3	7	1.7
Total	415	1.3	1059	8.0	454	1.1

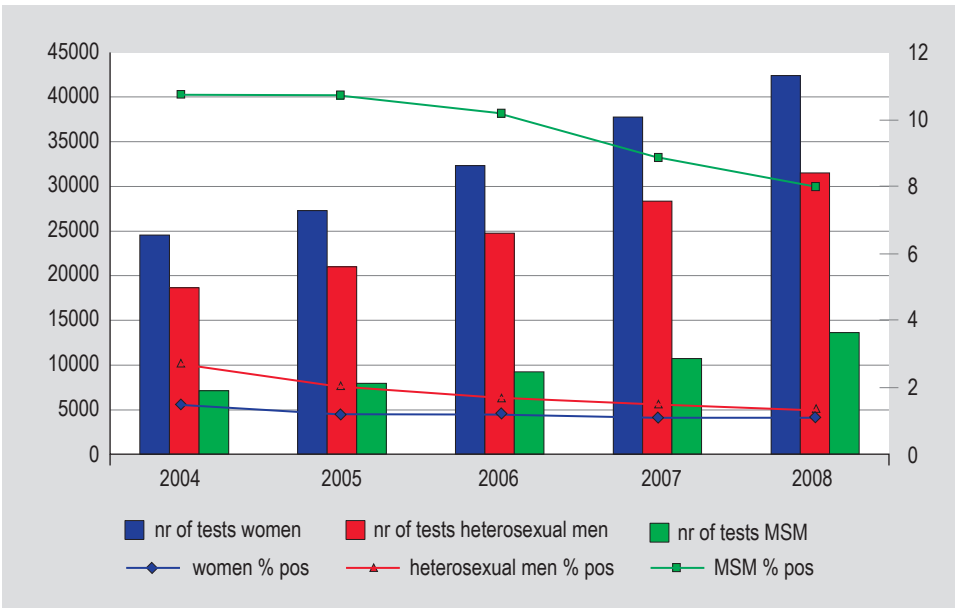


Figure 4.2: Total number and positivity rate of diagnoses of gonorrhoea by gender and sexual preference, STI centres, the Netherlands, 2004-2008

Table 4.3: Number and percentage of positive tests of gonorrhoea by demographics, gender and sexual preference

	Heterosexual men (N=415)		MSM (N=1095)		Women (N=454)	
	pos. tests	% pos.	pos. tests	% pos.	pos. tests	% pos.
Ethnicity						
The Netherlands	225	0.9	846	7.6	297	0.9
Turkey	7	1.4	8	11.3	3	2.0
N.Africa/ Morocco	21	3.0	3	3.3	3	1.0
Sur./ Ant./ Aruba	110	4.7	52	13.3	6	2.8
Sub-Sah. Africa	18	2.3	8	10.7	15	2.2
Eastern Europe	7	2.6	25	10.1	23	2.7
Latin America	2	0.7	41	11.5	9	1.2
Asia	7	1.4	33	11.1	4	0.7
Europe other	9	1.7	17	6.5	35	2.7
Else	8	1.1	62	8.3	3	0.5
Unknown	1	3.3	0	0.0	1	2.0
Client of CSW, men						
No	357	1.3	1082	8.1		
Yes, in past 6 months	55	1.7	7	2.9		
Unknown	3	2.9	6	13.0		
CSW, women						
No					368	1.0
Yes, in past 6 months					82	2.2
Unknown					4	2.3
Previous HIV test						
No	215	1.3	149	6.0	186	0.9
Yes, positive	1	2.8	286	13.5	1	3.1
Yes, negative	193	1.4	652	7.4	258	1.3
Yes, result unknown	1	1.2	4	7.4	2	1.8
Unknown	5	1.2	4	3.1	7	0.9
Previous GO/ CT/syphilis in anamnesis						
Yes	69	3.0	376	13.2	84	2.2
No	338	1.2	709	6.7	361	1.0
Don't know	2	0.3	3	2.4	3	0.5
Unknown	6	1.5	7	5.8	6	0.9

Table 4.4: Concurrent STI by gender and sexual preference

Concurrent STI	Heterosexual men (N=415) N (%)	MSM (N=1095) N (%)	Women (N=454) N (%)
Chlamydia	145 (34.9)	293 (26.8)	149 (32.8)
Infectious syphilis	0 (0.0)	63 (5.8)	0 (0.0)
HIV newly diagnosed	5 (1.2)	62 (5.7)	0 (0.0)
Genital herpes	2 (0.5)	13 (1.2)	4 (0.9)
Genital warts	7 (1.7)	32 (2.9)	15 (3.3)

Table 4.5: Behavioural indicators of gonorrhoea cases compared to STI negatives by gender and sexual preference (NA GGD Amsterdam)

	Heterosexual men N (%)	MSM N (%)	Women N (%)
Median no. partners past 6 months (median (IQR))			
Gonorrhoea positives	3 (2-5)	4 (2-10)	3 (2-6)
STI negatives*	2 (1-3)	3 (2-7)	2 (1-3)
Condom use last sexual contact**			
Gonorrhoea positives	52 (24.7)	136 (39.9)	81 (32.2)
STI negatives*	4043 (30.1)	1642 (41.4)	4790 (26.4)
Sexual contact abroad**			
Gonorrhoea positives	28 (13.2)	43 (12.7)	12 (4.9)
STI negatives*	1219 (9.4)	341 (8.8)	1133 (6.5)
Swinger**			
Gonorrhoea positives	31 (13.3)	30 (7.6)	96 (32.5)
STI negatives*	1109 (7.6)	465 (10.5)	1557 (7.9)

* Negative for chlamydia, gonorrhoea, infectious syphilis, HIV, hepatitis B, herpes genitalis and genital warts
** Voluntary question

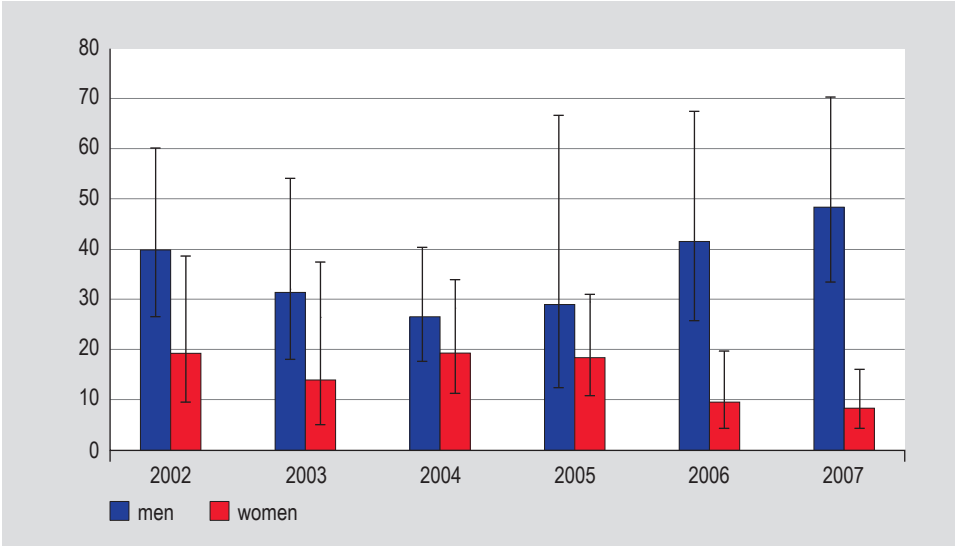


Figure 4.3: Reporting rate (number of episodes per 100,000 population) for gonorrhoea at GPs in the Netherlands, 2002-2007 (Source: LINH)

4.3 Antimicrobial resistance of gonococci in the Netherlands

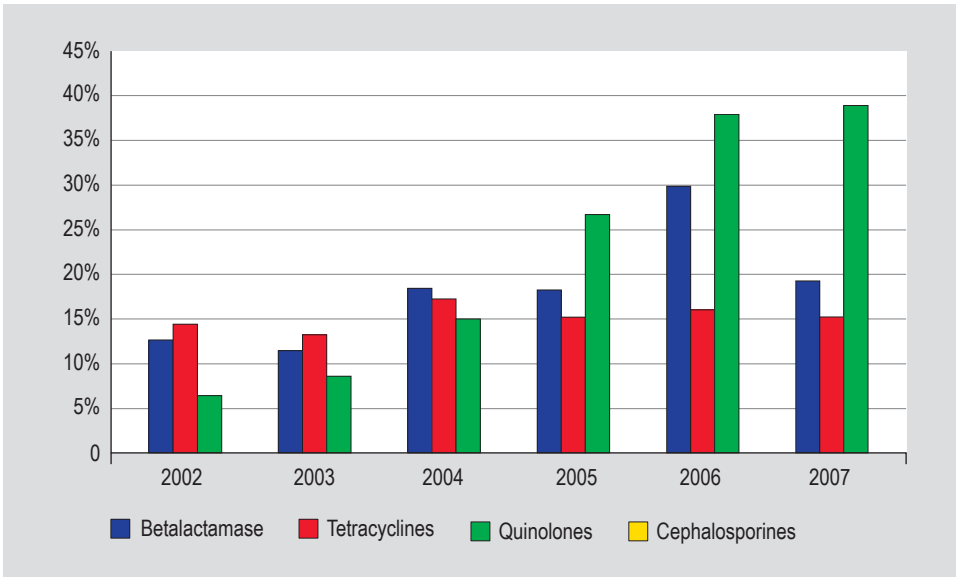


Figure 4.4: Gonococcal resistance in the Netherlands, proportion of resistant cases as reported by 22 public health laboratories, 2002-2007

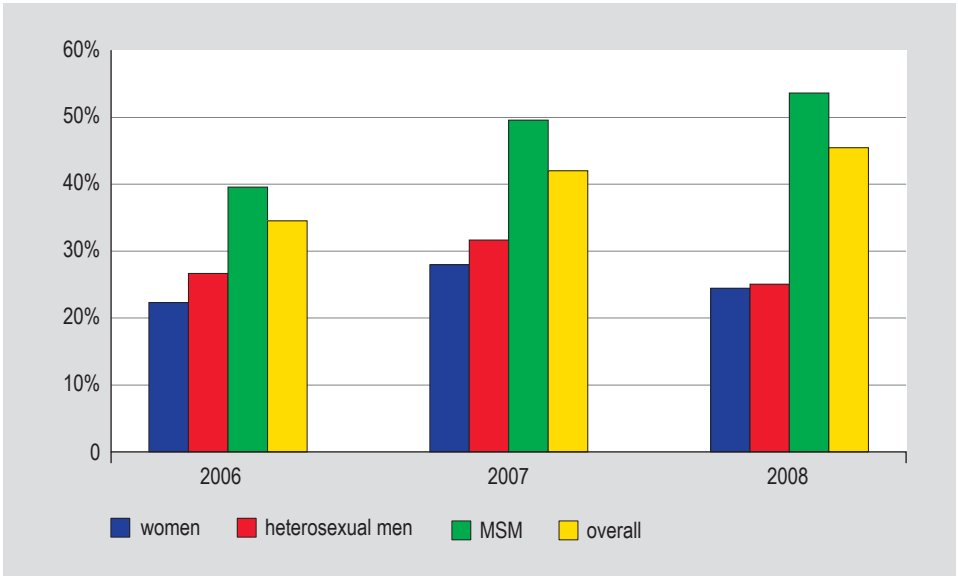


Figure 4.5: Prevalence of ciprofloxacine resistance by sexual preference and gender (Source: GRAS, STI centres, July 2006- December 2008)

5 SYPHILIS

5.1 Key points

- In 2008, 599 diagnoses of infectious syphilis were made in the STI centres in the Netherlands (6% in heterosexual men, 90% in MSM, 4% in women).
- As in previous years, the positivity rates among MSM decreased further from 4.3% (2007) to 3.9% (2008) and was highest among MSM aged over 35 years. The positivity rates among heterosexual men and women remained low.
- Forty percent of infectious syphilis cases were diagnosed in HIV positive MSM who were aware of their HIV positive status, 6% in newly diagnosed HIV cases.
- The positivity rate of infectious syphilis was much higher in HIV positive MSM (10.1%) compared to MSM who were previously tested HIV negative (2.5%).
- Preliminary data from screening of pregnant women showed a prevalence of 0.07-0.12% of syphilis in 2006-2007.
- Of all MSM with syphilis, 23% had a co-infection with chlamydia and 12% had a co-infection with gonorrhoea.

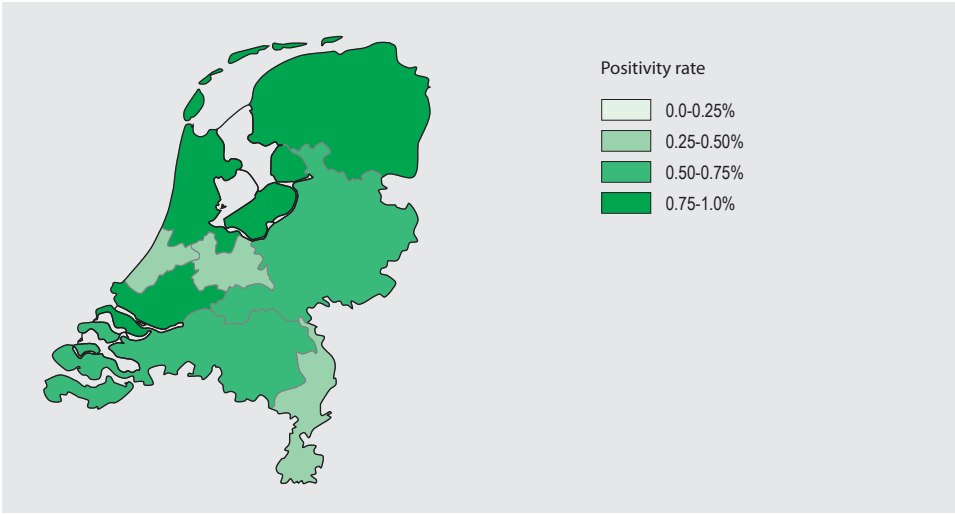


Figure 5.1: Positivity rates for infectious syphilis by STI centre, the Netherlands, 2008

5.2 Characteristics, risk groups and trends

Table 5.1: Number and percentage of positive tests of infectious syphilis by age, gender and sexual preference

Age (years)	Heterosexual men		MSM		Women	
	pos. tests	% pos.	pos. tests	% pos.	pos. tests	% pos.
0-14	0	0.0	0	0.0	0	0.0
15-19	2	0.2	7	1.9	1	0.02
20-24	3	0.03	31	2.0	5	0.03
25-29	5	0.1	48	2.8	1	0.01
30-34	5	0.1	69	3.5	7	0.2
35-39	7	0.2	116	5.6	2	0.1
40-44	5	0.2	100	4.5	5	0.3
45-49	3	0.2	80	4.7	1	0.1
50-54	4	0.4	39	4.0	0	0.0
>55	4	0.4	48	3.9	1	0.2
Total	38	0.1	538	3.9	23	0.05

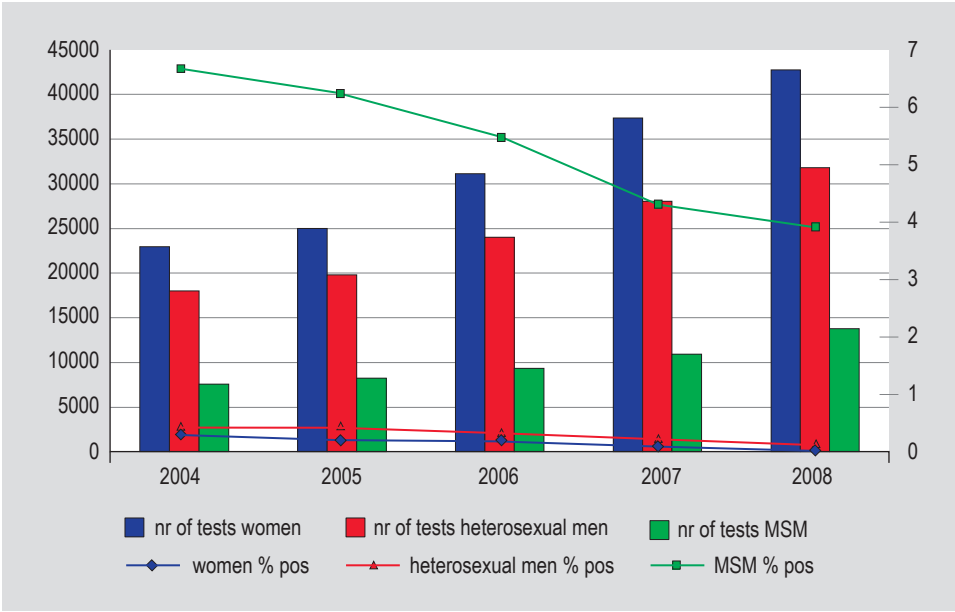


Figure 5.2: Total number and positivity rate of diagnoses of infectious syphilis by gender and sexual preference, STI centres, the Netherlands, 2004-2008

Table 5.2: Number and percentage of positive tests of infectious syphilis by demographics, gender and sexual preference

	Heterosexual men (N=38)		MSM (N=538)		Women (N=23)	
	pos. tests	% pos.	pos. tests	% pos.	pos. tests	% pos.
Ethnicity						
The Netherlands	24	0.1	420	3.8	10	0.03
Turkey	1	0.2	3	4.2	0	0.0
N.Africa/ Morocco	4	0.6	0	0.0	3	1.0
Sur./ Ant./ Aruba	3	0.1	29	7.4	1	0.05
Sub-Sah. Africa	1	0.1	5	6.7	0	0.0
Eastern Europe	1	0.4	6	2.4	4	0.4
Latin America	2	0.7	18	5.1	1	0.1
Asia	2	0.4	17	5.7	0	0.0
Europe other	0	0.0	8	3.0	4	0.3
Else	0	0.0	31	4.2	0	0.0
Unknown	0	0.0	1	10.0	0	0.0
Client of CSW, men						
No	30	0.1	528	3.9		
Yes, in past 6 months	8	0.2	5	2.0		
Unknown	0	0.0	5	9.6		
CSW, women						
No					14	0.04
Yes, in past 6 months					9	0.2
Unknown					0	0.0
Previous HIV test						
No	18	0.1	85	3.4	10	0.1
Yes, positive	0	0.0	214	10.1	0	0.0
Yes, negative	15	0.1	225	2.5	10	0.1
Yes, result unknown	0	0.0	2	3.6	0	0.0
Unknown	5	1.2	12	9.0	3	0.4
Previous GO/ CT/syphilis in anamnesis						
Yes	3	0.1	370	3.5	14	0.1
No	35	0.1	160	5.6	18	0.1
Don't know	0	0.0	2	1.5	1	0.2
Unknown	0	0.0	6	4.8	0	0.0

Table 5.3: Concurrent STI by gender and sexual preference

Concurrent STI	Heterosexual men (N=38) N (%)	MSM (N=538) N (%)	Women (N=23) N (%)
Chlamydia	2 (5.3)	123 (22.9)	1 (4.4)
Gonorrhoea	0 (0.0)	63 (11.7)	0 (0.0)
HIV newly diagnosed	1 (2.6)	32 (6.0)	1 (4.4)
Genital herpes	0 (0.0)	9 (1.7)	0 (0.0)
Genital warts	1 (2.6)	22 (4.6)	0 (0.0)

Table 5.4: Behavioural indicators of infectious syphilis cases compared to STI negatives by gender and sexual preference (NA GGD Amsterdam)

	Heterosexual men N (%)	MSM N (%)	Women N (%)
Median no. partners past 6 months (median (IQR))			
Inf. syphilis positives	2 (1-3)	3.5 (2-10)	1 (1-1)
STI negatives*	2 (1-3)	3 (2-7)	2 (1-3)
Condom use last sexual contact**			
Inf. syphilis positives	2 (9.5)	53 (29.2)	2 (25.0)
STI negatives*	4043 (30.1)	1642 (41.4)	4790 (26.4)
Sexual contact abroad**			
Inf. syphilis positives	3 (15.0)	16 (8.5)	1 (12.5
STI negatives*	1219 (9.4)	341 (8.8)	1133 (6.5)
Swinger**			
Inf. syphilis positives	0 (0.0)	2 (1.0)	0 (0.0)
STI negatives*	1109 (7.6)	465 (10.5)	1557 (7.9)

* Negative for chlamydia, gonorrhoea, infectious syphilis, HIV, hepatitis B, herpes genitalis and genital warts
** Voluntary question

5.3 Screening pregnant women

Table 5.5: Syphilis prevalence estimates pregnant women (based on test results of first blood test and confirmation test)

Nr with first positive blood test	Nr and % with confirmation test	Nr and % with a positive confirmation test	Prevalence estimate (%)*	Nr with first positive blood test	Nr and % with confirmation test	Nr and % with a positive confirmation test	Prevalence estimate (%)*
2006/7				2005/6			
312	225 (72.1)	138 (61.3)	0.07#	343	226 (65.9)	142 (62.8)	0.07#
			0.10#				0.11#
			0.12#				0.14#

* Prevalence estimated as: 1) minimal prevalence: number of confirmed positive test results divided by the total number of registered pregnant women; 2) under the assumption that pregnant women with a first positive test result without a confirmation test would be as often positive as those with a confirmation test; 3) under the assumption that all pregnant women with a first positive test result without a confirmation test would also have a positive confirmation test.

In this estimate the indeterminate test results are interpreted as negative. This could lead to a small underestimation of the prevalence.

5.4 Congenital syphilis

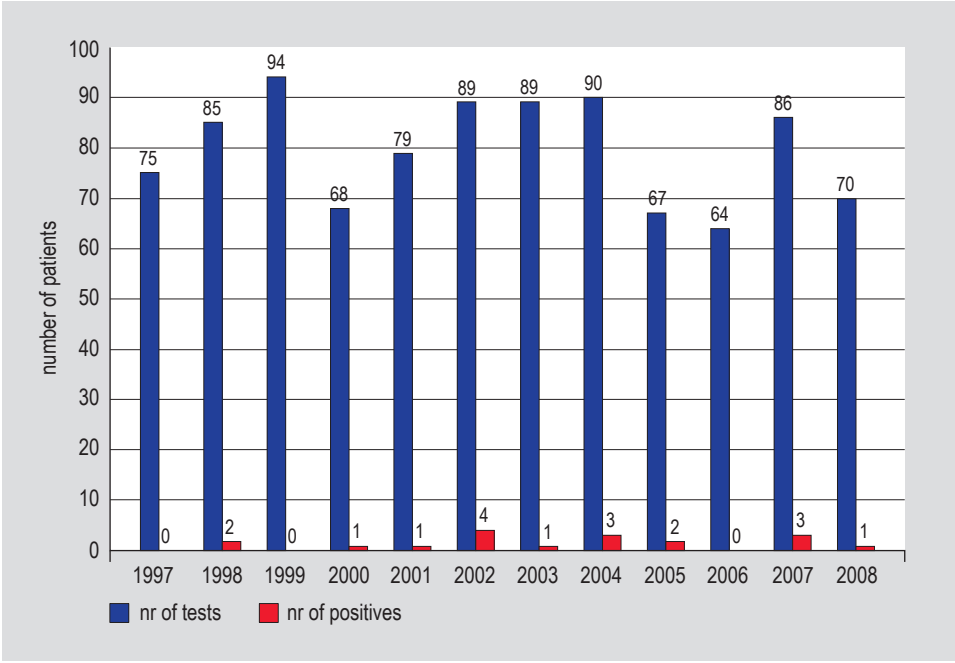


Figure 5.3: Number of tests of neonates and young infants (<1 year) suspected of being infected with congenital syphilis and the number of IgM positives, 1997-2008 (Source: CIb/LIS)

VIRAL STI

6 HIV AND AIDS

6.1 Key points - STI centres

- In 2008, 393 individuals were newly diagnosed with HIV at the STI clinics in the Netherlands, 320 HIV infections were diagnosed in MSM (81%), 43 HIV diagnoses among heterosexual men (11%) and 30 among women (8%).
- Among MSM the positivity rate was 3.0% (in 2007 2.8%), among heterosexual men 0.2% (in 2007 0.1%) and among women 0.1% (in 2007 0.1%)
- HIV test uptake has increased from 56% in 2004 to 90% in 2008 in STI clinic attendees who were not previously diagnosed with HIV.
- Among heterosexual STI clinic attendees HIV positivity rate was highest among those from Sub Sahara African origin (men 2.0%, women 2.3%).
- Among MSM, HIV positivity rate was highest among MSM aged 35-39 years (4.8%)
- Among newly diagnosed HIV positive MSM, 24% was concurrently diagnosed with chlamydia and 19% with gonorrhoea.
- In total 2,194 were STI clinic attendees who were known HIV positive at entry in the clinic (97% MSM). Of those, 20% were diagnosed with chlamydia and 13% with gonorrhoea.

6.2 Key points - HIV treatment centres (Source: SHM)

- A cumulative total of 15,538 HIV patients in care were reported to December 2008. For 313 cases the year of diagnosis was unknown (excluded from the analysis).
- In 2008, 1,329 new HIV patients were reported in care. Of these, 851 patients were newly diagnosed in 2008 (incomplete due to reporting delay).
- The proportion of MSM accounting for new HIV patients in care increased the last four years, up to 68% in 2008. The proportion of heterosexuals decreased (2008: 26%).
- The proportion of new diagnoses among persons of 50+ years increased between 2000 and 2006, mainly due to new diagnosis among MSM.
- A cumulative total of 7,777 AIDS cases and 4,794 deaths among HIV patients in care were reported up to December 2008.

6.3 STI centres

Table 6.1: Number and percentage of positive tests of new HIV diagnoses at the STI centres by age, gender and sexual preference

Age (years)	Heterosexual men		MSM		Women	
	pos. tests	% pos.	pos. tests	% pos.	pos. tests	% pos.
0-14	0	0.0	0	0.0	0	0.0
15-19	0	0.0	4	1.2	1	0.02
20-24	9	0.1	24	1.7	4	0.03
25-29	7	0.1	57	3.7	3	0.04
30-34	8	0.2	60	3.8	8	0.2
35-39	8	0.3	73	4.8	9	0.4
40-44	4	0.2	49	3.3	2	0.1
45-49	2	0.1	32	2.9	2	0.2
50-54	3	0.4	12	1.7	1	0.2
>55	2	0.2	9	1.0	0	0.0
Total	43	0.2	320	3.0	30	0.1

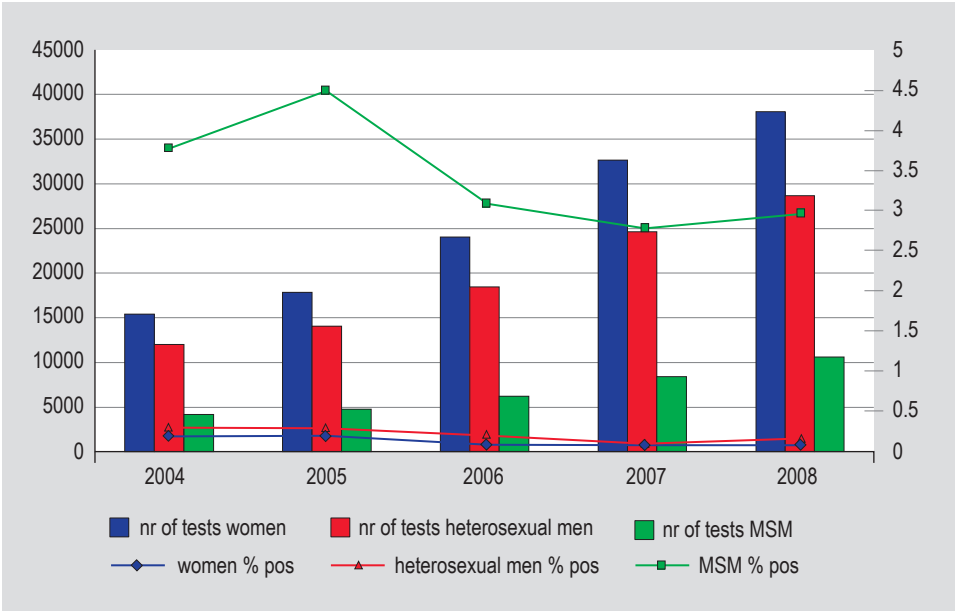


Figure 6.1: Total number and positivity rate of new HIV diagnoses by gender and sexual preference, STI centres, the Netherlands, 2004-2008

Table 6.2: Number and percentage of positive tests of new HIV diagnoses at the STI centres by demographics, gender and sexual preference

	Heterosexual men (N=43)		MSM (N=320)		Women (N=30)	
	pos. tests	% pos.	pos. tests	% pos.	pos. tests	% pos.
Ethnicity						
The Netherlands	15	0.1	231	2.7	7	0.02
Turkey	0	0.0	1	1.6	1	0.7
N.Africa/ Morocco	1	0.2	1	1.2	1	0.4
Sur./ Ant./ Aruba	7	0.3	14	5.1	5	0.2
Sub-Sah. Africa	15	2.0	3	5.0	14	2.3
Eastern Europe	2	0.8	11	5.3	0	0.0
Latin America	2	0.7	17	7.4	2	0.3
Asia	0	0.0	13	5.4	0	0.0
Europe other	1	0.2	8	3.5	0	0.0
Else	0	0.0	21	3.9	0	0.0
Unknown	0	0.0	0	0.0	0	0.0
Client of CSW, men						
No	36	0.1	317	3.1		
Yes, in past 6 months	7	0.2	2	9.9		
Unknown	0	0.0	1	2.9		
CSW, women						
No					28	0.1
Yes, in past 6 months					1	0.03
Unknown					1	0.8
Previous HIV test						
No	22	0.1	58	2.6	17	0.1
Yes, positive	0	0.0	0	0.0	0	0.0
Yes, negative	19	0.2	249	3.0	10	0.1
Yes, result unknown	0	0.0	7	14.9	1	1.0
Unknown	2	0.6	6	5.2	2	0.3
Previous GO/ CT/syphilis in anamnesis						
Yes	4	0.2	70	4.4	1	0.03
No	39	0.2	244	2.8	28	0.1
Don't know	0	0.0	1	0.8	1	0.2
Unknown	0	0.0	5	5.0	0	0.0

Table 6.3: STI diagnosed concurrently with a new HIV infection by gender and sexual preference at the STI centres

Concurrent STI	Heterosexual men (N=43) N (%)	MSM (N=320) N (%)	Women (N=30) N (%)
Chlamydia	4 (9.3)	78 (24.4)	2 (6.7)
Gonorrhoea	5 (11.6)	62 (19.4)	0 (0.0)
Infectious syphilis	1 (2.3)	32 (10.0)	1 (3.3)
Genital herpes	1 (2.3)	4 (1.3)	0 (0.0)
Genital warts	2 (4.6)	19 (5.9)	2 (6.7)

Table 6.4: Behavioural indicators of HIV cases compared to STI negatives by gender and sexual preference, (NA GGD Amsterdam)

	Heterosexual men N (%)	MSM N (%)	Women N (%)
Median no. partners past 6 months (median ±SD)			
HIV positives	1 (1-2)	4 (2-7)	1 (1-1)
STI negatives*	2 (1-3)	3 (2-7)	2 (1-3)
Condom use last sexual contact**			
HIV positives	5 (29.4)	48 (40.0)	3 (21.4)
STI negatives*	4043 (30.1)	1642 (41.4)	4790 (26.4)
Sexual contact abroad**			
HIV positives	2 (11.1)	15 (12.8)	1 (8.3)
STI negatives*	1219 (9.4)	341 (8.8)	1133 (6.5)
Swinger**			
HIV positives	1 (5.0)	1 (0.8)	1 (6.3)
STI negatives*	1109 (7.6)	465 (10.5)	1557 (7.9)

* Negative for chlamydia, gonorrhoea, infectious syphilis, HIV, hepatitis B, herpes genitalis and genital warts

** Voluntary question

Table 6.5: HIV positivity rates among STI clinic attendees and other test sites

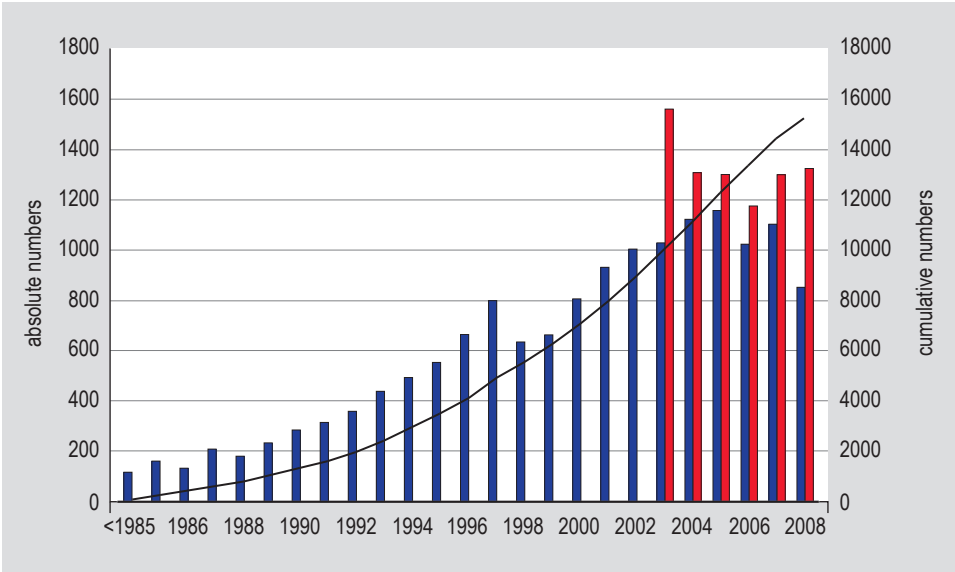
Region and source	2000	2001	2002	2003	2004	2005	2006	2007	2008
MSM									
STI clinic Amsterdam									
- Regular									
- Anonymous*	5.7 %	4.7 %	3.8 %	4.2 %	5.7 %	6.0 %	4.0 %	3.5 %	3.5 %
- Anonymous**	16.9 %	14.6 %	20.3 %	20.1 %	18.8 %#	19.4 %	21.5 %	21.9 %	29.3 %
STI clinic Rotterdam							5.1 %	1.9 %	3.5 %
- Regular	1.6 %	2.9 %	6.2 %	1.7 %	4.5 %	6.3 %	3.6 %	3.0 %	3.1 %
- Anonymous*	10.8 %	12.0 %	13.4 %	22.4 %	32.1 %	25.7 %	38.5 %	58.4 %	60.7 %
- Anonymous**							3.6 %	12.5 %	13.0 %
STI (sentinel) surveillance network	-	-	-	3.3 %	4.2 %	5.0 %	3.1 %	2.8 %	3.0 %
Heterosexual risk groups									
STI clinic Amsterdam									
- Regular, men									
- Anonymous, men*	0.3 %	0.6 %	0.5 %	0.3 %	0.2 %	0.3 %	0.3 %	0.2 %	0.2 %
- Anonymous, men**	0.9 %	0.4 %	0.4 %	1.0 %	0.5 %#	0.0 %	0.4 %	0.4 %	0.3 %
- Regular, women							0.1 %	0.4 %	0.1 %
- Anonymous, women*	0.2 %	0.3 %	0.4 %	0.3 %	0.3 %	0.4 %	0.2 %	0.3 %	0.1 %
- Anonymous, women**	0.6 %	0.3 %	0.8 %	0.5 %	0.2 %#	0.4 %	0.4 %	0.0 %	0.0 %
STI clinic Rotterdam							0.2 %	0.0 %	0.0 %
- Regular, men	0.7 %	0.4 %	0.3 %	0.5 %	1.0 %	0.3 %	0.2 %	0.1 %	0.2 %
- Anonymous, men*	0.2 %	0.8 %	0.5 %	1.0 %	0.9 %	0.4 %	0.5 %	0.6 %	10.0 %
- Anonymous, men**							0.0 %	0.0 %	0.0 %
- Regular, women	0.2 %	0.4 %	0.3 %	0.3 %	0.3 %	0.2 %	0.2 %	0.1 %	0.2 %
- Anonymous, women*	0.3 %	0.8 %	0.9 %	1.0 %	0.7 %	0.5 %	0.2 %	2.8 %	0.0 %
- Anonymous, women**							0.0 %	0.0 %	0.0 %
STI (sentinel) surveillance network									
- Men	-	-	-	0.3 %	0.3 %	0.3 %	0.2 %	0.1 %	0.2 %
- Women	-	-	-	0.3 %	0.2 %	0.2 %	0.1 %	0.1 %	0.1 %

* Known HIV infected included; ** Excluding known HIV infected STI clinic attendees

based on 1 research period

6.4 HIV treatment centres

6.4.1 All registered HIV cases



Footnote: only HIV patients with a known date of diagnosis are included (ATHENA: 1996-2001, national registration from 2002 to date (database March 2009, SHM)

Figure 6.2: Number of HIV cases (right axis: cumulative) by year of HIV diagnosis (blue bars) and year of registration (red bars)

Table 6.6: Cumulative number of HIV cases by transmission risk group and gender

Transmission risk group	Men (%)	Women (%)	Total (%)
MSM	8276 (70%)	-	8276 (54%)
Heterosexual contact	2092 (18%)	2812 (85%)	4904 (32%)
IDU	483 (4%)	182 (5%)	665 (4%)
Blood (products)	127 (1%)	71 (2%)	198 (1%)
Mother to child	91 (0.8%)	79 (2%)	170 (1%)
Needle stick injury	23 (0.2%)	6 (0.2%)	29 (0.2%)
Other/NK*	814 (7%)	169 (5%)	983 (6%)
Total	11906	3319	15225

* NK: not known

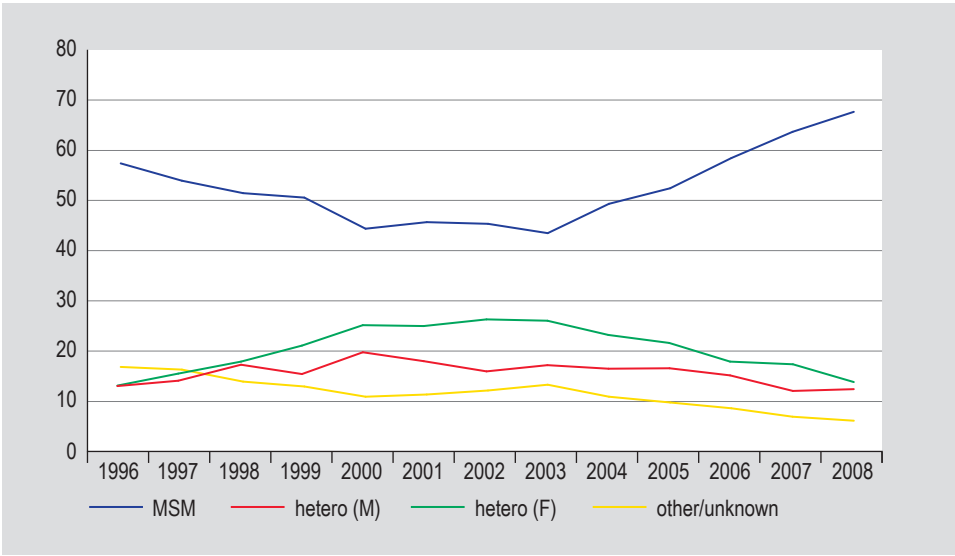


Figure 6.3: Proportion of annual HIV cases in care by transmission risk group and year of diagnosis (Source: SHM, 2008 incomplete)

Table 6.7: Cumulative number of HIV cases by age group (year of diagnosis) and gender

Age group	Men (%)	Women (%)	Total (%)
<15	119 (1%)	92 (3%)	211 (1%)
15-19	153 (1%)	223 (7%)	376 (3%)
20-24	825 (7%)	522 (16%)	1347 (9%)
25-29	1735 (15%)	760 (23%)	2495 (16%)
30-39	4740 (40%)	1132 (34%)	5872 (39%)
40-49	2925 (25%)	390 (12%)	3315 (22%)
50-59	1116 (9%)	145 (4%)	1261 (8%)
60-69	242 (2%)	49 (1%)	291 (2%)
70-79	50 (0.4%)	3 (0.01%)	53 (0.4%)
80-89	0 (0%)	2 (0.06%)	2 (0.01%)
≥ 90	0 (0%)	0 (0%)	0 (0%)
NK*	1 (0.01%)	1 (0.03%)	2 (0.01%)
Total	11906	3319	15225

* NK: not known

Table 6.8: Cumulative number of HIV cases by transmission risk group and region of origin

Region of origin	MSM (%)	Heterosexual men (%)	Heterosexual women (%)
The Netherlands	6031 (73%)	785 (38%)	677 (24%)
Western Europe	646 (8%)	81 (4%)	75 (3%)
Central Europe	99 (1%)	52 (2%)	30 (1%)
Eastern Europe	42 (0.5%)	8 (0.4%)	13 (0.5%)
Sub-Saharan Africa	108 (1%)	744 (36%)	1404 (50%)
Caribbean	241 (3%)	111 (5%)	157 (6%)
Latin America	535 (6%)	207 (10%)	255 (9%)
North America	192 (2%)	4 (0.2%)	3 (0.1%)
North Africa & Middle East	58 (0.7%)	46 (2%)	33 (1%)
Australia & Pacific	56 (0.7%)	9 (0.4%)	3 (0.1%)
South (East) Asia	227 (3%)	40 (2%)	160 (7%)
NK*	41 (0.5%)	5 (0.2%)	2 (0.1%)
Total	8276	2092	2812

* NK: not known

Table 6.9: Cumulative number of HIV cases by transmission risk group (sexual) and age group

Age group	MSM (%)	Heterosexual men (%)	Heterosexual women (%)
<15	1 (0.01%)	0 (0%)	5 (0.2%)
15-19	70 (0.9%)	42 (2%)	199 (7%)
20-24	562 (7%)	140 (7%)	453 (16%)
25-29	1262 (15%)	263 (13%)	660 (13%)
30-39	3355 (41%)	831 (40%)	992 (36%)
40-49	2095 (25%)	509 (24%)	330 (12%)
50-59	765 (9%)	227 (11%)	128 (5%)
60-69	144 (2%)	65 (3%)	41 (2%)
70-79	22 (0.3%)	15 (0.7%)	2 (0.1%)
80-89	0 (0%)	0 (0%)	2 (0.1%)
≥ 90	0 (0%)	0 (0%)	0 (0%)
NK*	0 (0%)	0 (0%)	0 (0%)
Total	8276	2092	2812

* NK: not known

Table 6.10: Cumulative number of HIV cases by transmission risk group (other) and age group

Age group	IDU	Blood (prod.)	Mother to child	Needle stick injury	Other/ NK*
<15	0 (0%)	24 (12%)	167 (98%)	0 (0%)	14 (1%)
15-19	17 (3%)	14 (7%)	1 (0.6%)	0 (0%)	33 (3%)
20-24	90 (14%)	21 (11%)	0 (0%)	2 (7%)	79 (8%)
25-29	130 (20%)	32 (16%)	0 (0%)	2 (7%)	146 (15%)
30-39	281 (42%)	62 (31%)	0 (0%)	7 (24%)	344 (35%)
40-49	132 (20%)	19 (10%)	0 (0%)	9 (31%)	221 (22%)
50-59	14 (2%)	17 (9%)	0 (0%)	5 (17%)	105 (11%)
60-69	1 (0.2%)	7 (4%)	0 (0%)	3 (10%)	30 (3%)
70-79	0 (0%)	2 (1%)	0 (0%)	1 (3%)	11 (1%)
80-89	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
≥ 90	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
NK*	0 (0%)	0 (0%)	2 (1%)	0 (0%)	0 (0%)
Total	665	189	170	29	983

* NK: not known

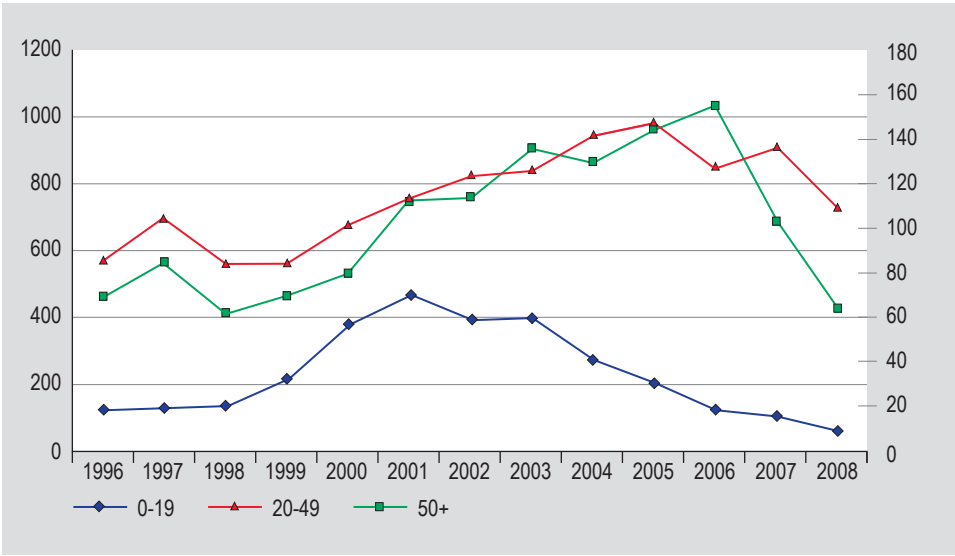


Figure 6.4: Number of HIV cases, by age group at diagnosis (left axis: 20-49, right axis: 0-19 and 50+) and year of diagnosis (Source: SHM)

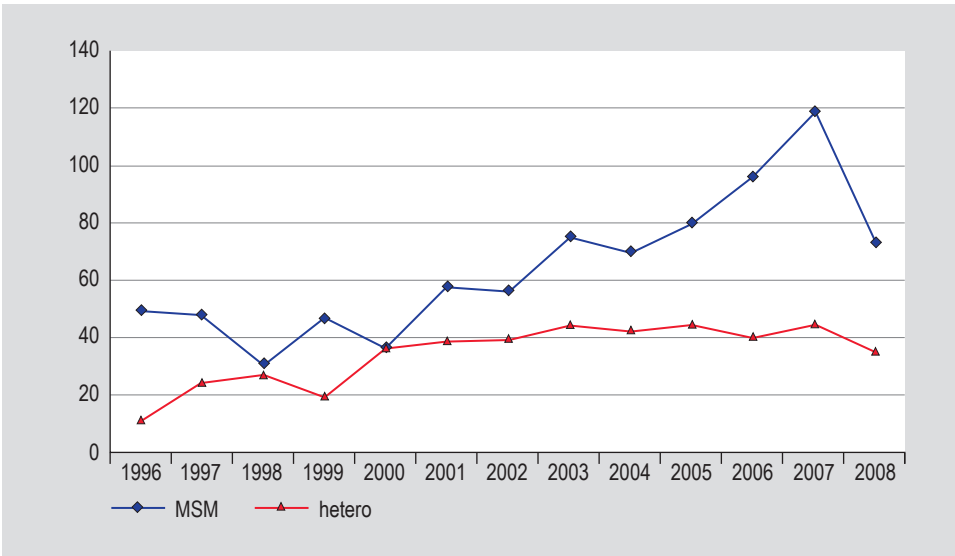


Figure 6.5: Number of HIV cases (age group 50+) by year of diagnosis (Source: SHM)

Table 6.11: Cumulative number of HIV cases by region of origin and transmission risk group

Transmission risk group	The Netherlands	Sub-Saharan Africa	Surinam	Neth. Antilles/ Aruba	Western Europe
MSM	6031 (70%)	108 (4%)	230 (34%)	204 (45%)	646 (63%)
Heterosexual contact	1462 (17%)	2148 (82%)	375 (56%)	209 (46%)	156 (15%)
IDU	418 (5%)	7 (0.3%)	21 (3%)	12 (3%)	127 (12%)
Blood (products)	92 (1%)	61 (2%)	8 (1%)	3 (1%)	7 (0.7%)
Mother to child	97 (1%)	55 (2%)	1 (0.2%)	3 (1%)	4 (0.4%)
Needle stick injury	20 (0.2%)	4 (0.2%)	0 (0%)	1 (0.2%)	2 (0.2%)
Other/NK*	450 (5%)	236 (9%)	36 (5%)	25 (5%)	81 (8%)
Total	8570	2619	671	457	1023

* NK: not known

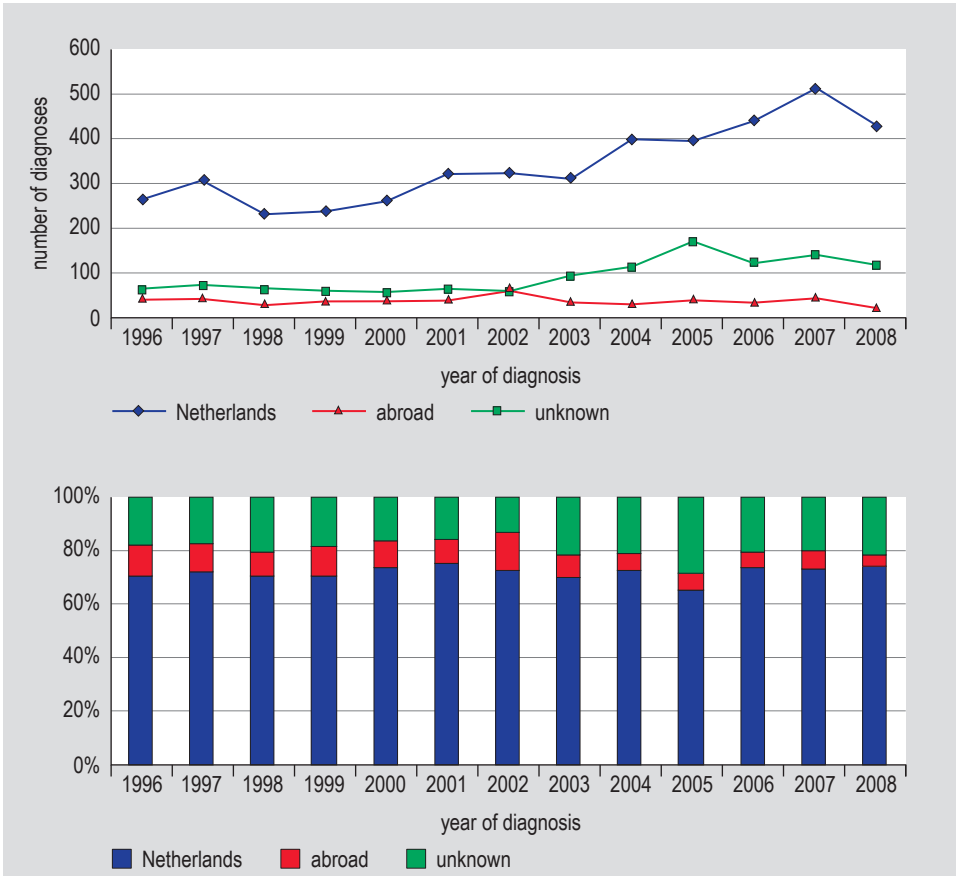


Figure 6.6: Reported country of infection of MSM by year of diagnosis

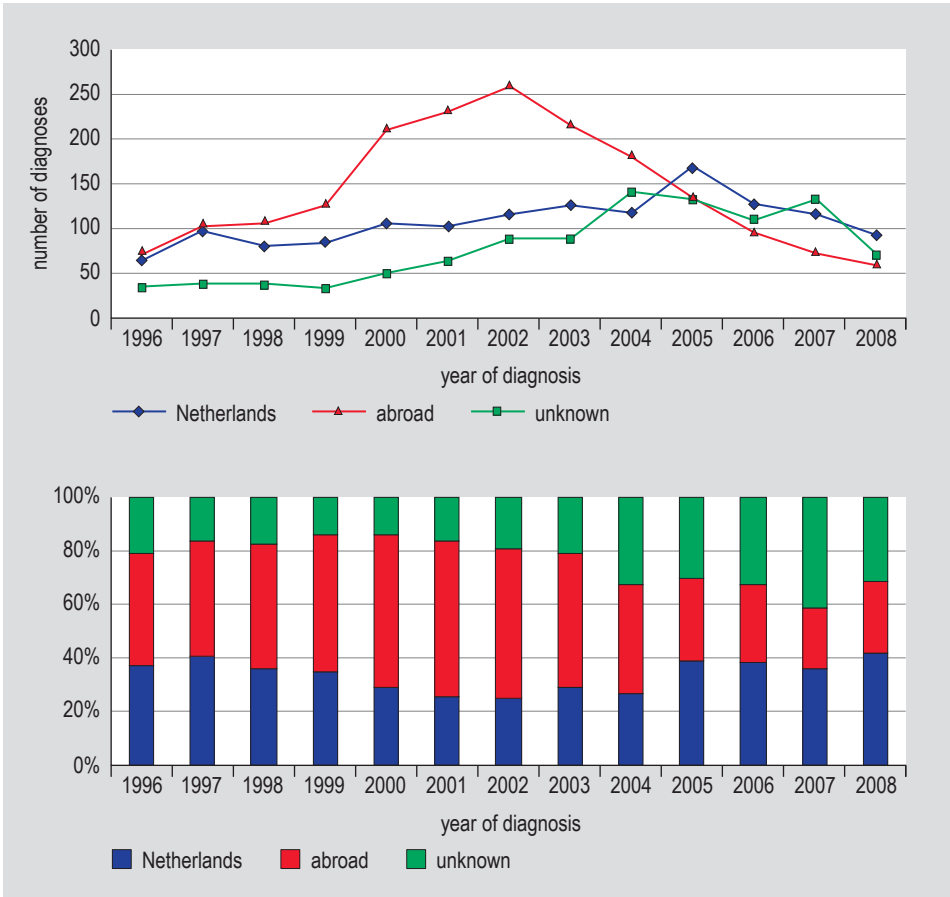
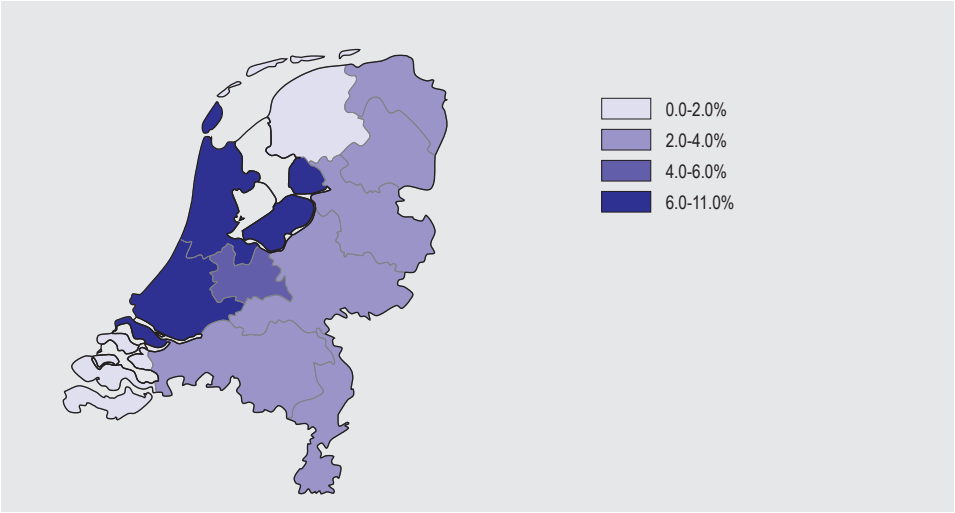


Figure 6.7: Reported country of infection of heterosexuals by year of diagnosis



Footnote: calculations based on HIV infections recorded in the various HIV treatment centres in each province

Figure 6.8: Number of new HIV diagnoses in 2008 per 100,000 inhabitants

Table 6.12: Number of HIV cases diagnosed in 2008 by gender and transmission risk group

Transmission risk group	Men (%)	Women (%)	Total (%)
MSM	577 (79%)	0 (0%)	577 (68%)
Heterosexual contact	107 (15%)	114 (93%)	221 (26%)
IDU	2 (0.3%)	0 (0%)	2 (0.3%)
Blood (products)	2 (0.3%)	2 (2%)	4 (0.5%)
Mother to child	1 (0.1%)	1 (0.8%)	1 (0.2%)
Needle stick injury	1 (0.1%)	0 (0%)	1 (0.1%)
Other/NK*	38 (5%)	6 (5%)	44 (5%)
Total	728	123	851

* NK: not known

Table 6.13: Number of HIV cases diagnosed in 2008, by age group (year of diagnosis) and gender

Age group	Men (%)	Women (%)	Total (%)
<15	1 (0.1%)	1 (0.8%)	2 (0.2%)
15-19	5 (0.7%)	2 (2%)	7 (0.8%)
20-24	39 (5%)	12 (10%)	51 (6%)
25-29	105 (14%)	27 (22%)	132 (16%)
30-39	252 (35%)	42 (34%)	294 (35%)
40-49	222 (30%)	23 (19%)	245 (29%)
50-59	78 (11%)	14 (11%)	92 (11%)
60-69	22 (3%)	2 (2%)	24 (3%)
70-79	4 (0.6%)	0 (0%)	4 (0.5%)
80-89	0 (0%)	0 (0%)	0 (0%)
≥ 90	0 (0%)	0 (0%)	0 (0%)
Total	728	123	851

Table 6.14: Number of HIV cases diagnosed in 2008, by gender and region of origin

Region of origin	Men (%)	Women (%)	Total (%)
The Netherlands	510 (70%)	30 (24%)	540 (63%)
Western Europe	36 (5%)	3 (2%)	39 (5%)
Central Europe	10 (1%)	4 (3%)	14 (2%)
Eastern Europe	9 (1%)	0 (0%)	9 (1%)
Sub-Saharan Africa	52 (7%)	49 (40%)	101 (12%)
Caribbean	21 (3%)	2 (1%)	23 (3%)
Latin America	47 (6%)	17 (4%)	64 (8%)
North America	7 (1%)	0 (0%)	7 (0.8%)
North Africa & Middle East	12 (2%)	3 (2%)	15 (2%)
Australia & New Zealand	0 (0%)	0 (0%)	0 (0%)
Oceania & Pacific	3 (0.4%)	0 (0%)	3 (0.3%)
South (East) Asia	15 (2%)	12 (8%)	27 (3%)
Total	728	123	851

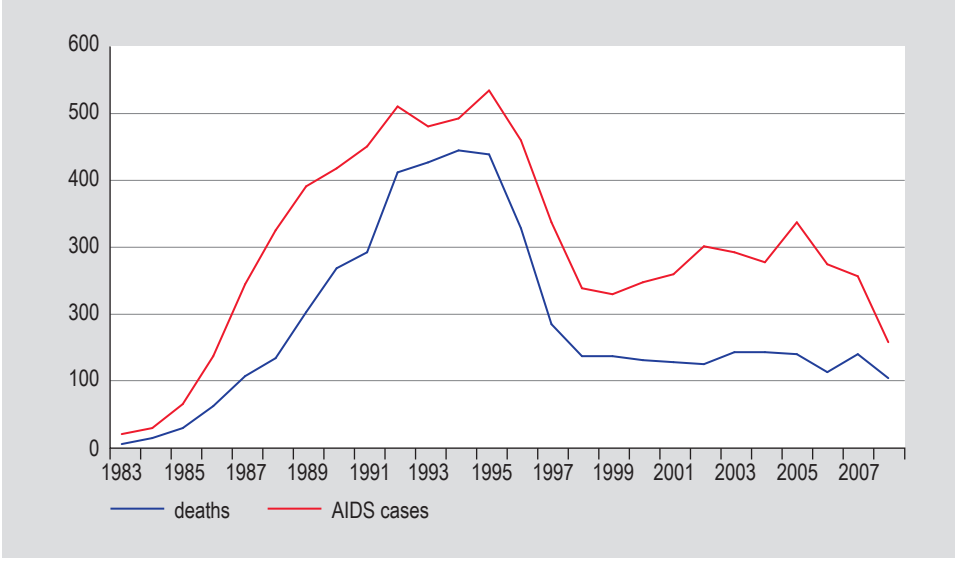
Table 6.15: Number of HIV cases diagnosed in 2008, by transmission risk group and region of origin

Region of origin	MSM (%)	Heterosexual men (%)	Heterosexual women (%)
The Netherlands	441 (76%)	46 (43%)	27 (24%)
Western Europe	33 (6%)	2 (2%)	1 (1%)
Central Europe	8 (1%)	1 (1%)	4 (4%)
Eastern Europe	8 (1%)	0 (0%)	0 (0%)
Sub-Saharan Africa	6 (1%)	38 (36%)	47 (41%)
Caribbean	18 (3%)	6 (6%)	5 (4%)
Latin America	34 (6%)	10 (9%)	15 (13%)
North America	7 (1%)	0 (0%)	0 (0%)
North Africa & Middle East	5 (1%)	3 (3%)	3 (3%)
Australia & Pacific	0 (0%)	0 (0%)	0 (0%)
South (East) Asia	12 (2%)	1 (1%)	12 (11%)
NK*	2 (0.4%)	0 (0%)	0 (0%)
Total	577	107	114

* NK: not known

Table 6.16: Number of HIV cases diagnosed in 2008, by transmission risk group (sexual) and age group

Age group	MSM (%)	Heterosexual men (%)	Heterosexual women (%)
<15	0 (0%)	0 (0%)	0 (0%)
15-19	3 (0.5%)	1 (1%)	2 (2%)
20-24	25 (4%)	11 (10%)	12 (11%)
25-29	86 (15%)	13 (12%)	25 (22%)
30-39	200 (35%)	39 (36%)	39 (34%)
40-49	190 (33%)	22 (21%)	22 (19%)
50-59	58 (10%)	14 (13%)	12 (11%)
60-69	144 (2%)	5 (5%)	2 (2%)
70-79	14 (2%)	2 (2%)	0 (0%)
80-89	1 (0.2%)	0 (0%)	0 (0%)
≥ 90	0 (0%)	0 (0%)	0 (0%)
Total	577	107	114



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, SHM ≥1999. Sources deaths: CBS <2002, SHM ≥2002)

Figure 6.9: Number of AIDS cases and deaths among HIV patients

6.4.2 AIDS cases and deaths among HIV patients

Table 6.17: Number of AIDS diagnoses and deaths among HIV patients (cumulative, per year)

Year	AIDS diagnoses (Cumulative)	AIDS diagnoses (per year)	Deaths (Cumulative)	Deaths (per year)
1983	22	22	6	6
1984	53	31	22	16
1985	118	65	52	30
1986	255	137	115	63
1987	500	245	221	106
1988	825	325	356	135
1989	1216	391	558	202
1990	1635	419	827	269
1991	2085	450	1121	294
1992	2595	510	1533	412
1993	3076	481	1960	427
1994	3570	494	2404	444
1995	4103	533	2843	439
1996	4562	459	3170	327
1997	4899	337	3354	184
1998	5137	238	3490	136
1999	5368	231	3627	137
2000	5617	249	3759	132
2001	5877	260	3887	128
2002	6178	301	4011	124
2003	6470	292	4153	142
2004	6749	279	4296	143
2005	7086	337	4437	141
2006	7361	275	4551	114
2007	7618	257	4691	140
2008	7777	159	4794	103

Source Deaths among HIV patients: <2002: Statistics Netherlands, CBS; ≥ 2002: data from SHM; < 1999: AIDS cases registered by Health Inspectorate, from 1999: data from the SHM; NA = not available

Table 6.18: Number of AIDS patients, by year of AIDS diagnosis and transmission risk group

Year of diagnosis	MSM	Hetero-sexual contact	IDU	Blood (contacts)	Mother to child	NK*/other	Total
≤ 87	424 (84%)	26 (5%)	28 (6%)	18 (4%)	3 (0.6%)	1 (0.2%)	500
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%)	12 (5%)	4 (2%)	5 (2%)	19 (8%)	231
2000	101 (41%)	104 (42%)	16 (6%)	5 (2%)	4 (2%)	19 (7%)	249
2001	104 (40%)	105 (40%)	10 (4%)	6 (2%)	6 (2%)	29 (11%)	260
2002	113 (38%)	138 (46%)	9 (3%)	5 (2%)	2 (0.7%)	34 (11%)	301
2003	118 (40%)	110 (38%)	15 (5%)	7 (2%)	6 (2%)	36 (12%)	292
2004	112 (40%)	109 (39%)	8 (3%)	3 (1%)	3 (1%)	44 (16%)	279
2005	145 (43%)	133 (39%)	18 (5%)	4 (1%)	2 (0.6%)	35 (10%)	337
2006	114 (42%)	109 (40%)	11 (4%)	3 (1%)	0 (0%)	37 (13%)	275
2007	118 (46%)	96 (37%)	10 (4%)	3 (1%)	0 (0%)	30 (12%)	257
2008	74 (47%)	59 (37%)	7 (4%)	4 (3%)	0 (0%)	15 (9%)	159
Total	4661 (60%)	1809 (23%)	684 (9%)	172 (2%)	62 (0.8%)	388 (5%)	7777

< 1999: AIDS cases registered by Health Inspectorate, from 1999 to 2008: data from the SHM
* NK: not known

Table 6.19: Number of deaths among HIV/AIDS patients by gender

	Men (%)	Women (%)	Total
2002	104 (84%)	20 (16%)	124
2003	116 (82%)	26 (18%)	142
2004	124 (87%)	19 (13%)	143
2005	119 (84%)	22 (16%)	141
2006	93 (82%)	21 (18%)	114
2007	115 (82%)	25 (18%)	140
2008	91 (84%)	17 (16%)	108

Source deaths among HIV/AIDS patients: SHM

Table 6.20: Number of deaths among HIV/AIDS patients, by transmission risk group

	MSM	Heterosexual men	Heterosexual women
2002	55	15	15
2003	56	21	13
2004	80	26	11
2005	63	26	14
2006	54	11	14
2007	76	15	16
2008	57	18	11

Source deaths among HIV/AIDS patients: SHM

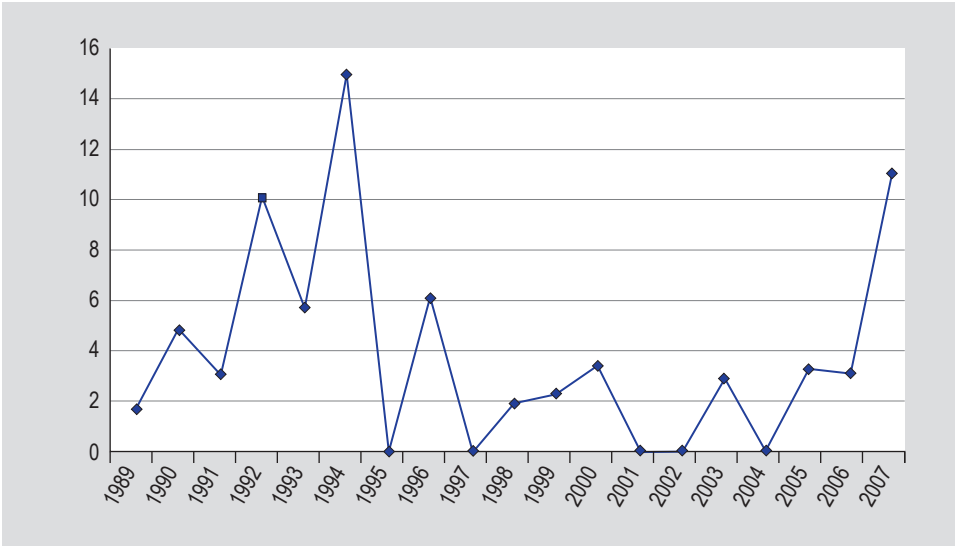
Table 6.21: Summary of HIV/AIDS figures

Cumulative number of HIV cases[1]	**15225**
Male/female	11906/3319
Route of transmission[1]	
- MSM	8276 (54%)
- Heterosexual contact	4904 (32%)
- Injecting drug use	665 (4%)
- Blood (products)	198 (1%)
- Needle stick injury	29 (0.2%)
- Mother to child transmission	170 (1%)
- Other/ NK	983 (6%)
Newly diagnosed HIV cases (2008)[1]	851
Male/female	728/123
Route of transmission	
- MSM	577 (68%)
- Heterosexual contact	221 (26%)
- Injecting drug use	2 (0.2%)
- Blood (products)	4 (0.5%)
- Needle stick injury	1 (0.1%)
- Mother to child transmission	2 (0.2%)
- Other/NK	44 (5%)
Cumulative number of AIDS cases since epidemic began[2]	7777
Newly diagnosed AIDS cases in 2008	159
Cumulative number of deaths from HIV/AIDS since epidemic began	4794
Number of deaths from HIV/AIDS in 2008[3]	103

* age at diagnosis; 1: data source: SHM (database march 2009), 2: data source AIDS cases < 2000: Health Inspectorate, data source AIDS cases ≥ 2000: SHM; 3: data source: SHM

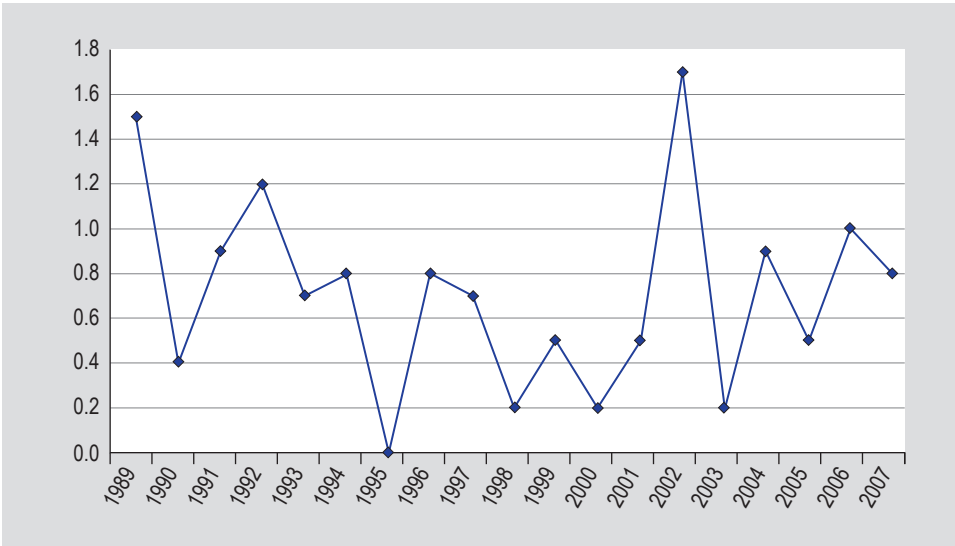
6.5 Other sources

6.5.1 Screening blood donors



Source: Sanquin Blood Supply Foundation, Amsterdam

Figure 6.10: HIV prevalence (per 100,000 donors) among new blood donors in the Netherlands, 1989-2007



Source: Sanquin Blood Supply Foundation, Amsterdam

Figure 6.11: HIV incidence (per 100,000 donor years) among regular blood donors in the Netherlands, 1989-2007

6.5.2 Screening pregnant women

National

Table 6.22: HIV prevalence estimates pregnant women (based on test results of first blood test and confirmation test)

Nr with first positive blood test	Nr and % with confirmation test	Nr and % with a positive confirmation test	Prevalence estimate (%)*	Nr with first positive blood test	Nr and % with confirmation test	Nr and % with a positive confirmation test	Prevalence estimate (%)*
2006/7				2005/6			
301	253 (84.1)	81 (32.0)	0.04 [$]	346	207 (59.8)	57 (27.5)	0.03 [$]
			0.05 [$]				0.05 [$]
			0.07 [$]				0.10 [$]

* Prevalence estimated as: 1) minimal prevalence: number of confirmed positive test results divided by the total number of registered pregnant women; 2) under the assumption that pregnant women with a first positive test result without a confirmation test would be as often positive as those with a confirmation test; 3) under the assumption that all pregnant women with a first positive test result without a confirmation test would also have a positive confirmation test.
[$] Prevalence estimates for HIV may be influenced by the relative large number of unknown test results at the first blood test (1.0 -1.2%, of whom 0.2% refused the HIV test). It is possible that the group of women who refused includes known HIV positive women.

Amsterdam

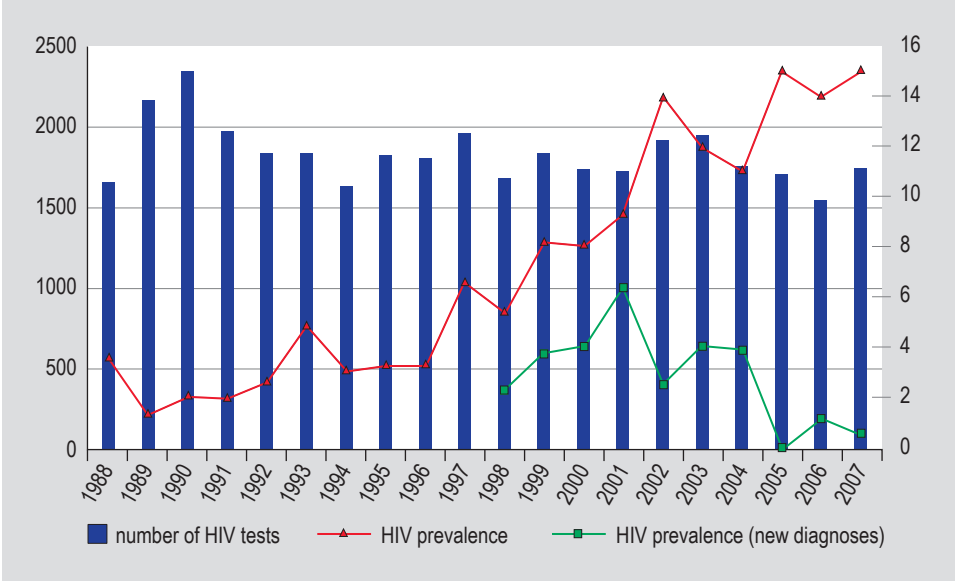


Figure 6.12: HIV prevalence (%) and number of tests among pregnant women in Amsterdam (sentinel study)

6.5.3 HIV incidence in MSM and IDU in the Amsterdam Cohort Studies

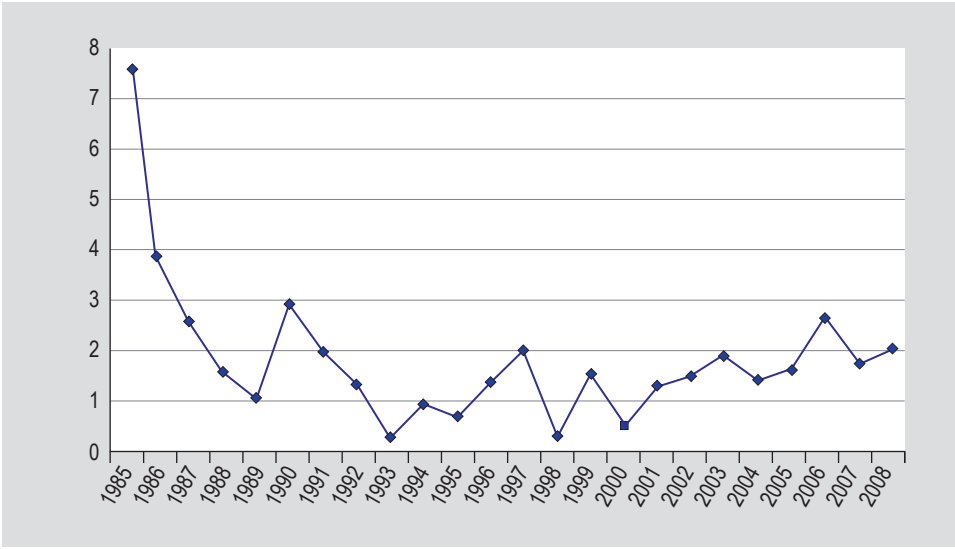


Figure 6.13: Yearly HIV incidence among MSM in Amsterdam Cohort Studies

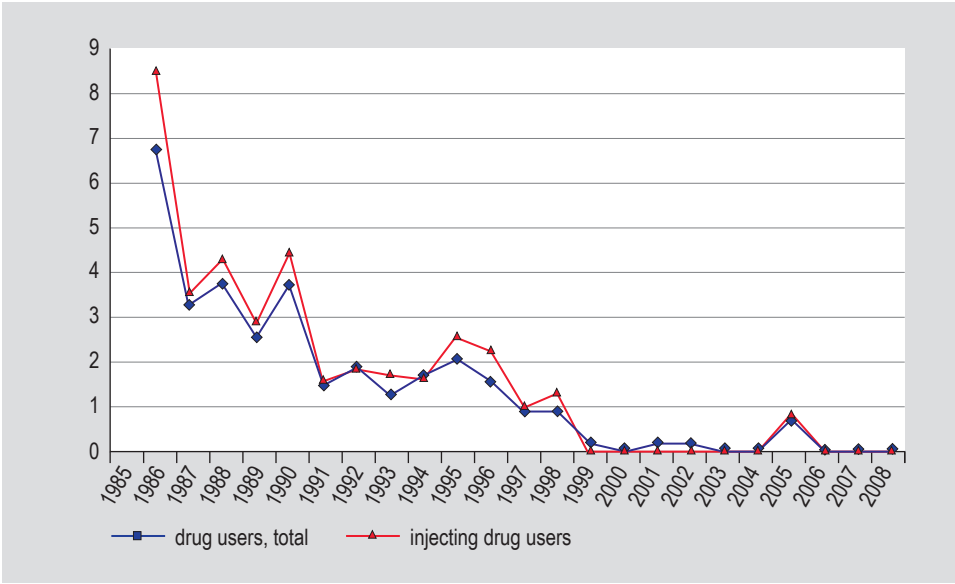


Figure 6.14: Yearly HIV incidence among IDUs (30 years or younger at entry) in Amsterdam Cohort Studies

7 GENITAL WARTS

7.1 Key points

- In 2008, 2,465 diagnoses of genital warts were reported in the national surveillance of STI centres (40% in heterosexual men, 19% in MSM, 40% in women).
- In women, 59% of the diagnoses were made in those aged younger than 25 years.
- Compared to 2007, the number of diagnoses increased with 20%.
- A co-infection with chlamydia was found in 11% of the cases with genital warts.
- In GPs, reporting rates for genital warts were 85.8 and 121.6 per 100,000 population for men and women, respectively, in 2007.

7.2 Characteristics, risk groups and trends

Table 7.1: Number of diagnoses of genital warts by age, gender and sexual preference

Age (years)	Heterosexual men (n=991) N (%)	MSM (n=477) N (%)	Women (n=996) N (%)
0-14	0 (0.0)	0 (0.0)	1 (0.1)
15-19	24 (2.4)	9 (1.9)	139 (14.0)
20-24	298 (30.1)	65 (13.6)	437 (43.9)
25-29	272 (27.5)	83 (17.4)	210 (21.1)
30-34	165 (16.7)	78 (16.4)	92 (9.2)
35-39	106 (10.7)	74 (15.5)	48 (4.8)
40-44	49 (4.9)	72 (15.1)	34 (3.4)
45-49	32 (3.2)	47 (9.9)	17 (1.7)
50-54	19 (1.9)	28 (5.9)	14 (1.4)
>= 55	26 (2.6)	21 (4.4)	4 (0.4)
Total	991	477	996

Table 7.2: Number of diagnoses of genital warts by demographics and sexual preference

	Heterosexual men (n=991) N (%)	MSM (n=477) N (%)	Women (n=996) N (%)
Ethnicity			
The Netherlands	801 (80.8)	362 (75.9)	862 (86.6)
Turkey	19 (1.9)	6 (1.3)	6 (0.6)
N.Africa/ Morocco	36 (3.6)	6 (1.3)	7 (0.7)
Sur./ Ant./ Aruba	47 (4.8)	23 (4.8)	41 (4.1)
Sub-Sah. Africa	17 (1.7)	1 (0.2)	4 (0.4)
Eastern Europe	13 (1.3)	9 (1.9)	12 (1.2)
Latin America	6 (0.6)	18 (3.8)	8 (0.8)
Asia	14 (1.4)	15 (3.1)	10 (1.0)
Europe other	7 (0.7)	5 (1.1)	27 (2.7)
Else	30 (3.0)	32 (6.7)	19 (1.9)
Unknown	1 (0.1)	0 (0.0)	0 (0.0)
Client of CSW, men			
No	904 (91.2)	475 (99.6)	
Yes, in past 6 months	86 (8.7)	2 (0.4)	
Unknown	1 (0.1)	0 (0.0)	
CSW, women			
No			938 (94.2)
Yes, in past 6 months			52 (5.2)
Unknown			6 (0.6)
Previous HIV test			
No	479 (48.3)	84 (17.6)	461 (46.3)
Yes, positive	2 (0.2)	112 (23.5)	1 (0.1)
Yes, negative	487 (49.1)	279 (58.5)	514 (5.2)
Yes, result unknown	7 (0.7)	1 (0.2)	2 (0.2)
Unknown	16 (1.6)	1 (0.2)	18 (1.8)
Previous GO/ CT/syphilis in anamnesis			
Yes	86 (8.7)	116 (24.3)	109 (10.9)
No	866 (87.4)	353 (74.0)	854 (85.7)
Don't know	25 (2.5)	6 (1.3)	22 (2.2)
Unknown	14 (1.4)	2 (0.4)	11 (1.1)

Table 7.3: Concurrent STI by gender and sexual preference

Concurrent infection	Heterosexual men (n=991) N (%)	MSM (n=477) N (%)	Women (n=996) N (%)
Gonorrhoea	7 (0.7)	32 (6.7)	15 (1.5)
Chlamydia	97 (9.8)	70 (14.7)	111 (11.1)
Infectious syphilis	1 (0.1)	22 (4.6)	0 (0.0)
HIV newly diagnosed	2 (0.2)	19 (4.0)	2 (0.2)
Herpes genitalis	7 (0.7)	12 (2.5)	6 (0.6)

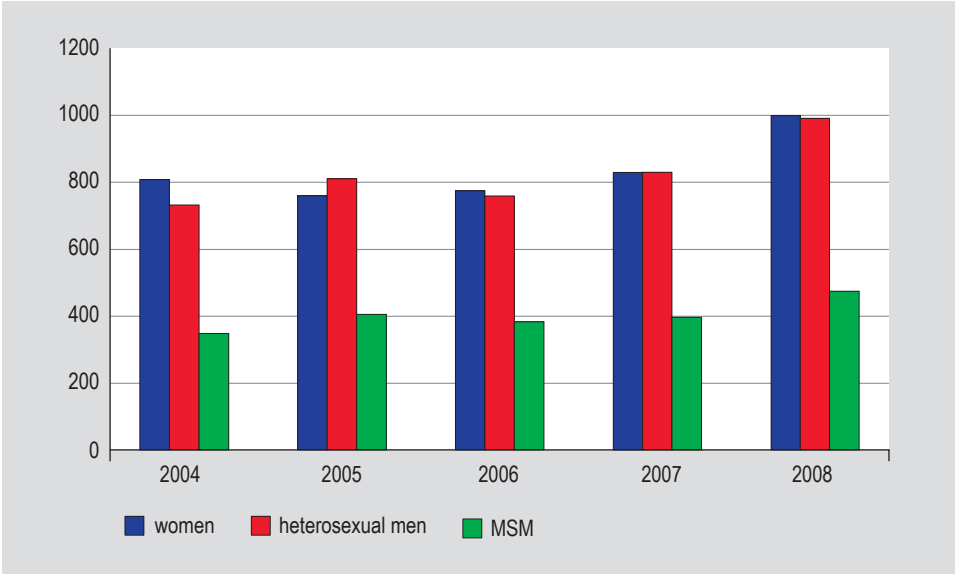


Figure 7.1: Number of new cases of genital warts by gender and sexual preference, STI centres, the Netherlands, 2004-2008

Table 7.4: Behavioural indicators of genital warts cases compared to STI negatives by gender and sexual preference (NA GGD Amsterdam)

	Heterosexual men N (%)	MSM N (%)	Women N (%)
Median no. partners past 6 months (median (IQR))			
Genital warts positives	2 (1-3)	3 (2-7)	1 (1-2)
STI negatives*	2 (1-3)	3 (2-7)	2 (1-3)
Condom use last sexual contact**			
Genital warts positives	111 (25.6)	55 (49.5)	90 (22.1)
STI negatives*	4043 (30.1)	1642 (41.4)	4790 (26.4)
Sexual contact abroad**			
Genital warts positives	23 (5.5)	7 (6.2)	17 (4.3)
STI negatives*	1219 (9.4)	341 (8.8)	1133 (6.5)
Swinger**			
Genital warts positives	19 (4.4)	6 (4.9)	30 (7.0)
STI negatives*	1109 (7.6)	465 (10.5)	1557 (7.9)

* Negative for chlamydia, gonorrhoea, infectious syphilis, HIV, hepatitis B, herpes genitalis and genital warts

** Voluntary question

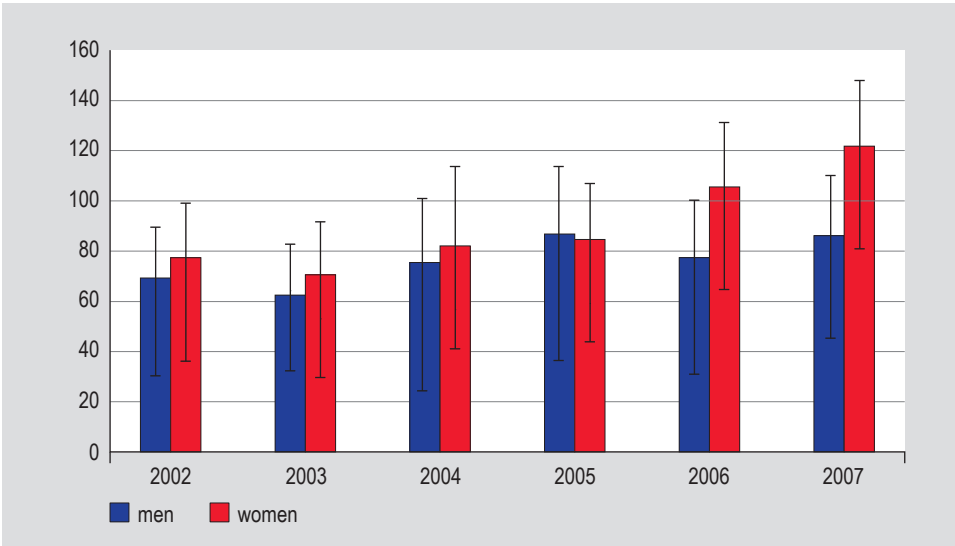


Figure 7.2: Reporting rate (number of episodes per 100,000 population) for genital warts at GPs in the Netherlands, 2002-2007 (Source: LINH)

8 GENITAL HERPES

8.1 Key points

- In 2008, 722 diagnoses of primary genital herpes were made in the national surveillance of STI centres (36% in heterosexual men, 20% in MSM, 43% in women).
- In women and heterosexual men, most diagnoses were made in those younger than 25 (49% and 30% respectively), in MSM this was highest in the age group 40-44 years (21%).
- Compared to 2007, the number of diagnoses increased with 8%.
- In GPs, reporting rates for genital herpes were 39.5 and 103.7 per 100,000 population for men and women, respectively, in 2007.

8.2 Characteristics, risk groups and trends

Table 8.1: Number of diagnoses of genital herpes by age, gender and sexual preference

Age (years)	Heterosexual men (n=263) N (%)	MSM (n=145) N (%)	Women (n=313) N (%)
14	0 (0.0)	0 (0.0)	1 (0.3)
15-19	4 (1.5)	0 (0.0)	42 (13.4)
20-24	75 (28.5)	14 (9.7)	111 (35.4)
25-29	48 (18.3)	22 (15.1)	70 (22.4)
30-34	38 (14.4)	25 (17.2)	36 (11.5)
35-39	25 (9.5)	23 (15.9)	16 (5.1)
40-44	30 (11.4)	30 (20.7)	10 (3.2)
45-49	21 (8.0)	13 (9.0)	13 (4.2)
50-54	8 (3.0)	8 (5.5)	9 (2.9)
>= 55	14 (5.3)	10 (6.9)	5 (1.6)
Total	263	145	313

Table 8.2: Number of diagnoses of genital herpes by demographics and sexual preference

	Heterosexual men (n=263)	MSM (n=145)	Women (n=313)
	N (%)	N (%)	N (%)
Ethnicity			
The Netherlands	190 (72.2)	104 (71.7)	257 (82.1)
Turkey	1 (0.4)	0 (0.0)	0 (0.0)
N.Africa/ Morocco	5 (1.9)	0 (0.0)	2 (0.6)
Sur./ Ant./ Aruba	36 (13.7)	10 (6.9)	22 (7.0)
Sub-Sah. Africa	7 (2.7)	1 (0.7)	5 (1.6)
Eastern Europe	4 (1.5)	3 (2.1)	5 (1.6)
Latin America	1 (0.4)	7 (4.8)	4 (1.3)
Asia	2 (0.8)	5 (3.5)	7 (2.2)
Europe other	5 (1.9)	3 (2.1)	4 (1.3)
Else	12 (4.6)	12 (8.3)	7 (2.2)
Client of CSW, men			
No	241 (91.6)	144 (99.3)	
Yes, in past 6 months	22 (8.4)	1 (0.7)	
Unknown	0 (0.0)	0 (0.0)	
CSW, women			
No			294 (93.9)
Yes, in past 6 months			19 (6.1)
Unknown			0 (0.0)
Previous HIV test			
No	100 (38.0)	13 (9.0)	132 (42.1)
Yes, positive	4 (1.5)	59 (40.7)	1 (0.3)
Yes, negative	152 (57.8)	73 (50.3)	176 (56.2)
Yes, result unknown	2 (0.8)	0 (0.0)	2 (0.6)
Unknown	5 (1.9)	0 (0.0)	2 (0.6)
Previous GO/ CT/ syphilis in anamnesis			
Yes	31 (11.8)	55 (37.9)	22 (7.0)
No	228 (86.7)	90 (62.1)	283 (90.4)
Don't know	4 (1.5)	0 (0.0)	4 (1.3)
Unknown	0 (0.0)	0 (0.0)	4 (1.3)

Table 8.3: Concurrent STI by gender and sexual preference

Concurrent infection	Heterosexual men (n=263) N (%)	MSM (n=145) N (%)	Women (n=313) N (%)
Gonorrhoea	2 (0.8)	13 (9.0)	4 (1.3)
Chlamydia	18 (6.8)	27 (18.6)	18 (5.8)
Infectious syphilis	0 (0.0)	9	0 (0.0)
HIV newly diagnosed	1 (0.4)	4 (2.8)	0 (0.0)
Genital warts	7 (2.7)	12 (8.3)	6 (1.9)

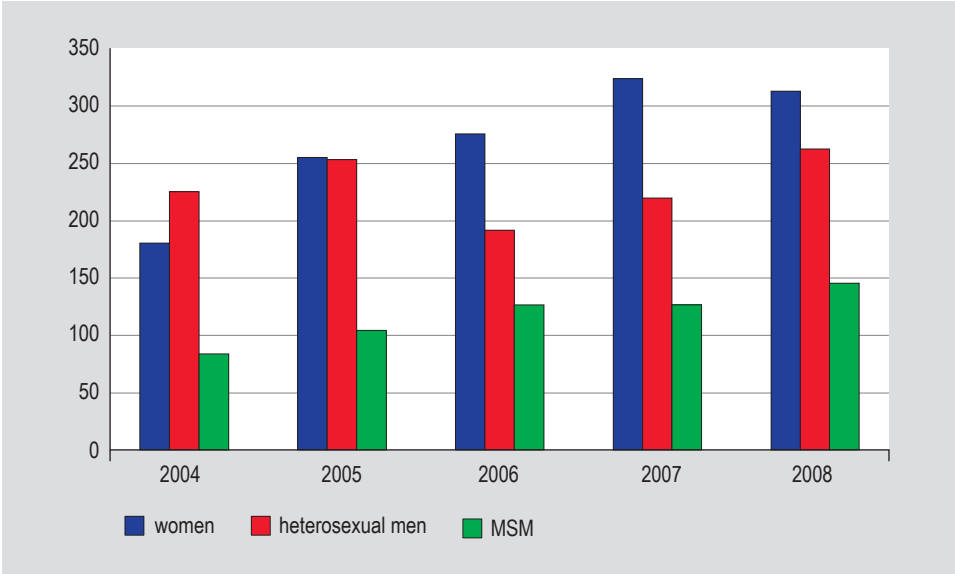


Figure 8.1: Number of new diagnoses of primary genital herpes infections by gender and sexual preference, STI centres, the Netherlands, 2004-2008

Table 8.4: Behavioural indicators of genital herpes cases compared to STI negatives by gender and sexual preference (NA GGD Amsterdam)

	Heterosexual men N (%)	MSM N (%)	Women N (%)
Median no. partners past 6 months (median (IQR))			
Genital herpes positives	2 (1-3)	4.5 (2-12)	1 (1-2)
STI negatives*	2 (1-3)	3 (2-7)	2 (1-3)
Condom use last sexual contact**			
Genital herpes positives	19 (19.9)	13 (33.3)	27 (22.9)
STI negatives*	4043 (30.1)	1642 (41.4)	4790 (26.4)
Sexual contact abroad**			
Genital herpes positives	12 (12.6)	4 (10.2)	6 (5.2)
STI negatives*	1219 (9.4)	341 (8.8)	1133 (6.5)
Swinger**			
Genital herpes positives	5 (4.7)	0 (0.0)	9 (7.1)
STI negatives*	1109 (7.6)	465 (10.5)	1557 (7.9)

* Negative for chlamydia, gonorrhoea, infectious syphilis, HIV, hepatitis B, herpes genitalis and genital warts

** Voluntary question

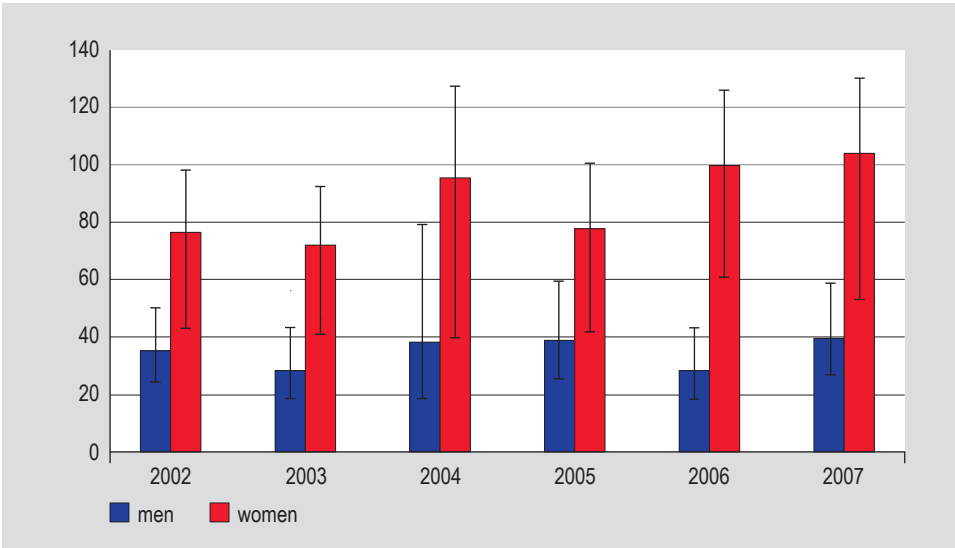


Figure 8.2: Reporting rate (number of episodes per 100,000 population) for genital herpes at GPs in the Netherlands, 2002-2007 (Source: LINH)

9 HEPATITIS B

9.1 Key points

- In 2008, the incidence of notified cases of acute HBV was 1.3 per 100,000 inhabitants and was higher in men (2.0) than in women (0.6).
- Unprotected sexual contact remained the most important risk factor for acute hepatitis B.
- The number of acute HBV notifications remained constant compared to 2007.
- In the STI centres, 218 diagnoses of infectious hepatitis B were made.
- Preliminary data from screening of pregnant women showed a prevalence of 0.34-0.36% of hepatitis B in 2006-2007.

9.2 Characteristics, risk groups and trends

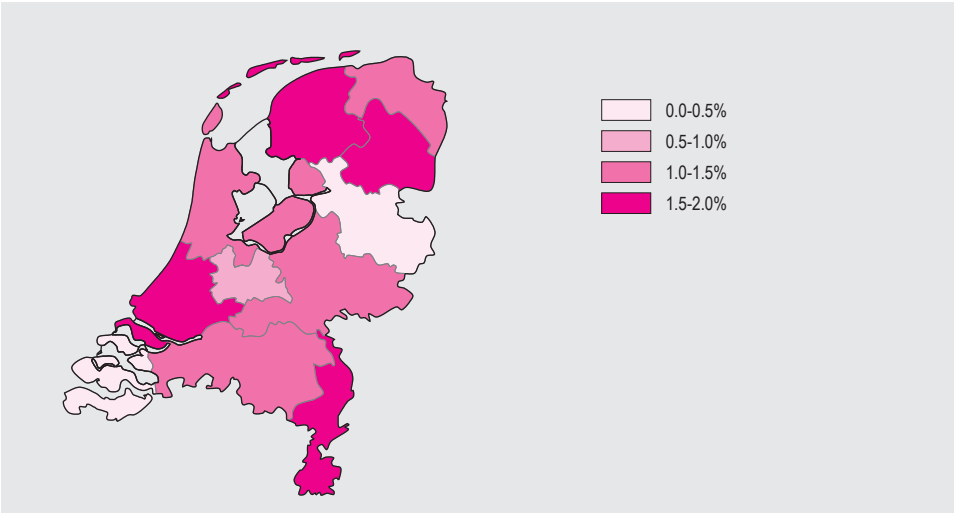


Figure 9.1: Incidence of acute hepatitis B per 100,000 inhabitants by region, 2008 (Source: RIVM-OSIRIS, notification data)

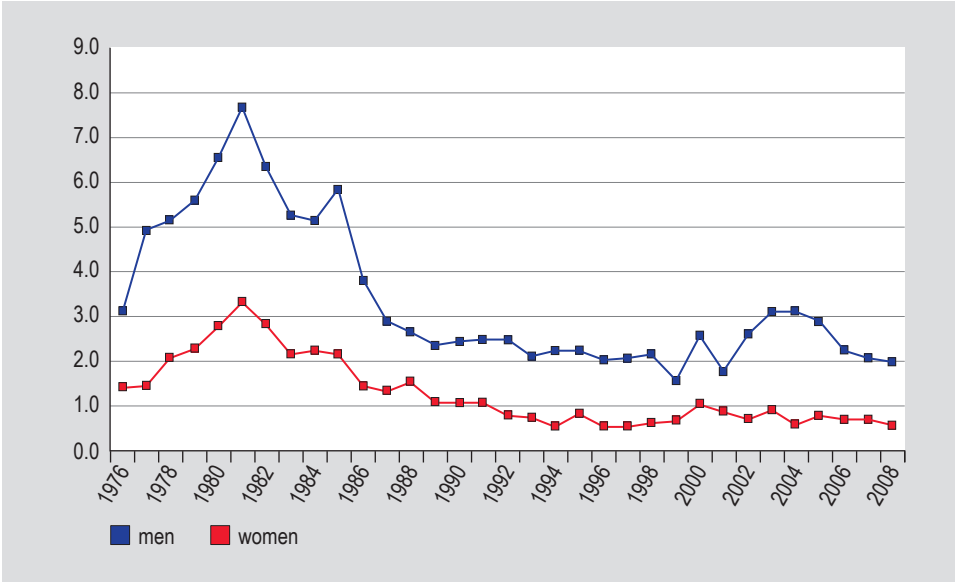


Figure 9.2: Incidence of acute hepatitis B by gender, 1976-2008 (Source: RIVM-OSIRIS notification data)

Table 9.1: Proportion of hepatitis B cases by route of transmission (two most common routes), the Netherlands, 2008 (Source: RIVM-OSIRIS, notification data)

	MSM (n=68)		Heterosexual contact (n=64)		Other (n=86)	
	N	%*	N	%*	N	%*
Infected abroad	5	7.4	13	20.3	9	10.5
Born abroad	5	7.4	18	28.1	17	19.8
Infected by casual partner	54	79.4	40	62.5	-	-
Median age (+ range)	41.5 (20-73)		33.5 (16-66)		38.5 (9-84)	

* NB: proportions per category can overlap, so percentages do not add up to 100%

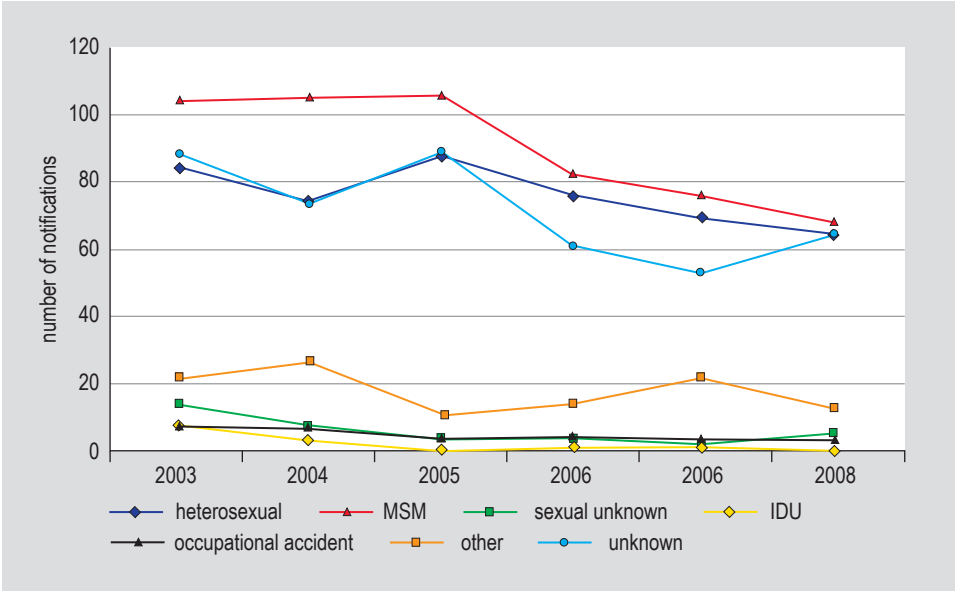


Figure 9.3: Number of infections of acute hepatitis B by route of transmission, 2003-2008. Source: RIVM-OSIRIS, notification data

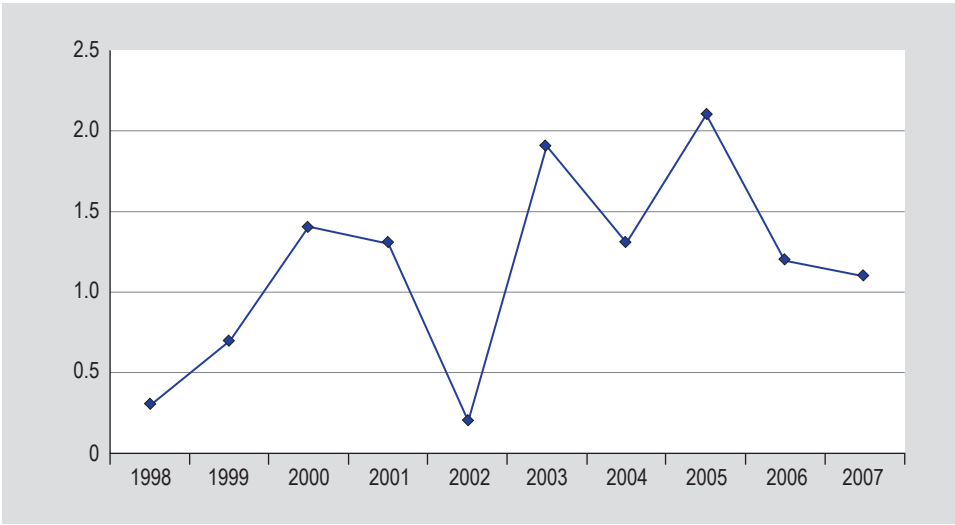


Figure 9.4: HBV incidence (per 100,000 donor years) among regular blood donors in the Netherlands (blood donor register 1998-2007) Source: Sanquin Blood Supply Foundation, Amsterdam

9.3 Screening pregnant women

Table 9.2: Hepatitis B prevalence estimates pregnant women (based on test results of first blood test and confirmation test)

Nr with first positive blood test	Nr and % with confirmation test	Nr and % with a positive confirmation test	Prevalence estimate (%)*	Nr with first positive blood test	Nr and % with confirmation test	Nr and % with a positive confirmation test	Prevalence estimate (%)*
2006/7				2005/6			
824	790 (95.9)	624 (79.0)	0.34	811	683 (84.2)	545 (79.8)	0.29
			0.35				0.34
			0.36				0.36

* Prevalence estimated as: 1) minimal prevalence: number of confirmed positive test results divided by the total number of registered pregnant women; 2) under the assumption that pregnant women with a first positive test result without a confirmation test would be as often positive as those with a confirmation test; 3) under the assumption that all pregnant women with a first positive test result without a confirmation test would also have a positive confirmation test.

9.4 Infectious hepatitis B in the STI centres

Tabel 9.3: Number of diagnoses of infectious hepatitis B by demographics and sexual preference

	Heterosexual men (n=94) N (%)	MSM (n=59) N (%)	Women (n=65) N (%)
Age			
14	0 (0.0)	0 (0.0)	0 (0.0)
15-19	5 (5.3)	0 (0.0)	7 (10.8)
20-24	15 (16.0)	1 (1.7)	20 (30.8)
25-29	24 (25.5)	8 (13.6)	9 913.9)
30-34	15 (16.0)	12 (20.3)	13 (20.0)
35-39	9 (9.6)	4 (6.8)	3 (4.6)
40-44	13 (13.8)	17 (28.8)	6 (9.2)
45-49	8 (8.5)	8 (13.6)	3 (4.6)
50-54	3 (3.2)	5 (8.5)	2 (3.1)
>= 55	2 (2.1)	4 (6.8)	2 (3.1)
Ethnicity			
The Netherlands	23 (24.5)	36 (61.0)	16 (24.6)
Turkey	6 96.4)	1 (1.7)	2 (3.1)
N.Africa/ Morocco	5 (5.3)	2 (3.4)	0 (0.0)
Sur./ Ant./ Aruba	15 (16.0)	2 (3.4)	5 (7.7)
Sub-Sah. Africa	23 (24.5)	2 (3.4)	15 (23.1)
Eastern Europe	8 (8.5)	5 (8.5)	15 (23.1)
Latin America	3 93.2)	2 (3.4)	2 (3.1)
Asia	7 (7.8)	5 (8.5)	6 (9.2)
Europe other	1 (1.1)	0 (0.0)	3 (4.6)
Else	3 (3.2)	4 (6.8)	1 (1.5)
Client of CSW, men			
No	88 (93.6)	59 (100.0)	
Yes, in past 6 months	6 (6.4)	0 (0.0)	
Unknown	0 (0.0)	0 (0.0)	
CSW, women			
No			43 (66.2)
Yes, in past 6 months			21 (32.3)
Unknown			0 (0.0)
Previous HIV test			
No	47 (50.0)	12 (20.3)	28 (43.1)
Yes, positive	0 (0.0)	24 (40.7)	0 (0.0)
Yes, negative	45 (47.9)	23 (40.0)	32 (49.2)
Yes, result unknown	0 (0.0)	0 (0.0)	2 (3.1)
Unknown	2 (2.1)	0 (0.0)	3 (4.6)
Previous GO/ CT/ syphilis in anamnesis			
Yes	5 (5.3)	14 (23.7)	2 (3.1)
No	86 (91.5)	43 (72.9)	59 (90.8)
Don't know	3 (3.2)	1 (1.7)	0 (0.0)
Unknown	0 (0.0)	1 (1.7)	4 (6.2)

10 HEPATITIS C

10.1 Key points

- In 2008, the total number of acute HCV notifications decreased with 11% compared to 2007, the number of infections in MSM was similar as in 2007.
- Unprotected sexual contact remained the most important route of transmission for acute hepatitis C (75%), especially sexual contact between men (92%).

10.2 Characteristics, risk groups and trends

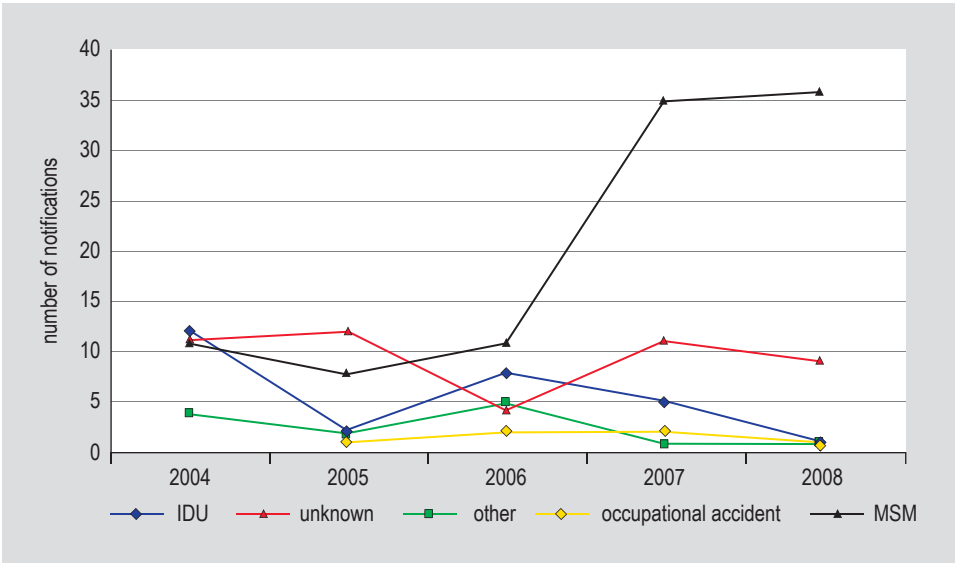


Figure 10.1: Number of infections of acute HBV by route of transmission, 2003-2007. (Source: RIVM-OSIRIS, notification data)

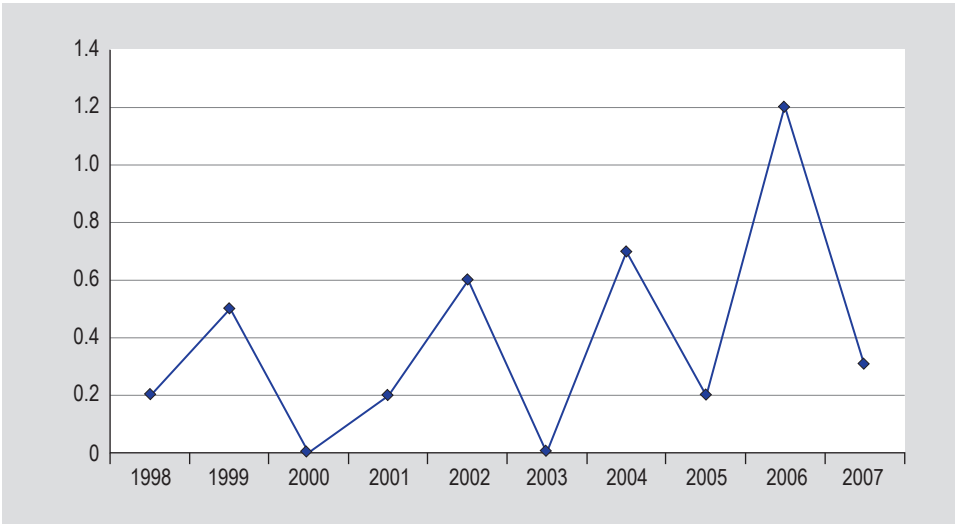


Figure 10.2: HCV incidence (per 100,000 donor years) among regular blood donors in the Netherlands (blood donor register 1998-2007)
Source: Sanquin Blood Supply Foundation, Amsterdam

11 GENERAL CONCLUSIONS AND RECOMMENDATIONS

The national network of STI centres provides STI care for high risk groups and collects data on trends and determinants which form the basis of the national STI surveillance. The absolute number of new STI consultations seen in the centres has increased steadily every year over the last decade, indicating a much needed and well appreciated tool for STI control. While providing services for a ever larger number of high risk populations, positivity rates have remained stable at an overall of 13%, suggesting a consistent successful targeting of those most at risk of being infected with transmissible STIs. Preliminary data from GP surveillance suggest that the increase in STI consultations with stable rates of diagnoses occurred not only in the STI centres, but also in the general practice. This would indicate that awareness for HIV/STI is still rising and more high-risk and infected persons report for care. It could also indicate that as of yet no significant impact on bringing down STI incidence and transmission rates is discernable, despite improved access to testing and treatment and linked investments in prevention and health education.

The ongoing high positivity rate of chlamydia, which increased again in 2008 after a stabilisation in 2007 remains a major public health concern. The main burden of chlamydia is carried by young heterosexuals. Young men were less well reached by the STI centres than young women; whether this is an effect of a later sexual debut than girls or of a lower awareness of the need of STI-testing when at risk is not known. The increasing positivity rates for chlamydia among young people underscores the need to rapidly strengthen, implement and evaluate Sense. This nationwide program was started in 2008, alongside the STI centres, and offers all young people the opportunity for free counselling and advice on a wide range of issues related to sexual health, including empowerment towards safe sex. Another option to curb the ongoing chlamydia transmission could be provided by a systematic screening. A large-scale Chlamydia Screening Implementation project has started in 2008 in Amsterdam, Rotterdam and eastern Zuid-Limburg, directed at all inhabitants from 16 to 29 years old which aims to bring down chlamydia incidence and long term sequelae. An interim evaluation of the impact of the first screening round is expected later in 2009. Furthermore, high awareness is needed to ensure no chlamydia mutant strains emerge, common to the Swedish variant which escaped detection by several of the available diagnostics, as this could lead to unchecked transmission.

Homosexual transmission once again accounted for the majority of new STI and HIV infections in 2008. MSM, and in particular the HIV positives among them, remain the group most at risk for STI in 2008. The re-emergence of LGV, emergence of sexually transmitted HCV and high numbers of concurrent STI diagnosed in this group indicate that unsafe sex practices are common among (HIV positive) MSM. Nevertheless, in this highest risk group, most STI positivity rates show a gradual decrease over time, which suggests that prevention efforts aimed at this group should be continued and supported further. Strengthening the involvement of HIV consultants in STI prevention and control should be explored, in particular to agree on the optimal approach towards implementing routine STI prevention, screening and surveillance among HIV positives. HIV positive patients currently in care should be 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 may further improve insights in the dynamics of concurrent infections in HIV positives. And although the positivity rate of gonorrhoea has further decreased, the ever rising proportion of strains resistant to ciprofloxacin, linked to an upwards shift in MIC values of the current treatment of choice, poses a major threat towards future decline. While gonorrhoea and syphilis are STIs mainly found in MSM, the high positivity rate of gonorrhoea among swingers (4.5%) suggests that gonorrhoea could again become a prevalent STI among heterosexuals as well.

Furthermore, chlamydia and other STI appear to be more prevalent in specific ethnic groups. This group is next to youth and MSM the third major risk group targeted by STI centres. Within the Chlamydia Screening Implementation, extra efforts are made in the large cities, to motivate specific ethnic groups to participate as well. At the moment, for most STIs in this high-risk group, positivity rates appear to stabilize at the moment, similar to the situation for MSM.

Continuous surveillance of behavioural data is important to provide background data to observe trends in STI. The results of the 2007 behavioural surveillance are published elsewhere.[1] 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. In 2009, linking the Dutch STI data to the ECDC TESSy surveillance will support uniform data collection and analysis across European countries.

The STI care provided by these centres is aimed at high quality specialised care with easy access for high-risk groups. Specific quality indicators have been defined by a multidisciplinary taskforce, and following consultations with several stakeholders, these have been endorsed by the CIb to act as quality control framework. In 2009, visitations to STI centres are scheduled, to enable monitoring and evaluation of quality of care at the STI centres. In 2008, 94% of STI centre attendees fulfilled one or more of the criteria set as indicators of high risk or were tested for reasons of anonymity.

The current triage through high-risk indicators and routine testing for chlamydia, gonorrhoea and syphilis in all clients and HIV and hepatitis B in specific groups was evaluated in 2008. Inclusion of HIV testing according to the opting out approach was one of the recommendations from this evaluation, in line with the policy in many other countries with a similar epidemic. Surveillance and control could be further strengthened by piloting the use of HIV incidence assays[2] geared towards identification of early HIV diagnoses which may contribute disproportionably to the ongoing epidemic. Mathematical models may be able to further support insight in the current and predicted spread of HIV and other STI in different populations.

1 IM de Boer-van der Kolk, MJW van de Laar, ELM Op de Coul. Surveillance of sexual risk behavior within the STI surveillance system. Tijdschrift voor Gezondheidswetenschappen. 2009 (1).

2 G Murphy, JV Parry. Assays for the detection of recent infections with human immunodeficiency virus type 1. Euro Surveill. 2008 Sep 4;13(36).

The STI trends presented in this report are mainly based on the self-selected population seen in the STI centres, and can therefore not necessarily be generalised towards the remainder of the population. Next to the STI/HIV surveillance in STI centres and HIV monitoring through HIV centres, other sources of information are vital to get information on the population outside the high-risk groups. GPs are the major provider of STI care to the general population (estimated to provide two third of STI care). Data from surveillance of GPs (LINH, NIVEL) are currently analyzed to get estimates of the number of STI-related consultations done by GPs and of the prevalence and incidence of the main STIs. More detailed information of testing and diagnosis by GPs are already available for men with urethritis-syndrome (2004-2007, to be published elsewhere) and will become available from the GP sentinel surveillance in 2009. On the other hand, further harmonisation of STI including HIV surveillance at the European level, where ECDC took over such tasks from ESSTI and Eurohiv, will improve understanding of international trends and their impact on the Dutch situation.

Recommendations

Strengthening surveillance of STI and HIV:

- Strengthen integrated analysis of surveillance data from STI centres with STI data from other sources, such as antenatal data, data from HIV treatment centres and GP surveillance networks.
- Link surveillance of public sexual healthcare (aanvullende seksualiteitshulpverlening) with STI surveillance (aanvullende curatieve soa-zorg) to improve integrated assessment of impact on STI prevention and cure.
- Explore using STI surveillance data with mathematical modelling to estimate population prevalence's and understand different transmission networks of (drug-resistant) STIs in high-risk groups such as ethnic minorities, MSM and HIV positives.
- Develop and implement a systematic approach towards prevention, screening and surveillance of STI among the high risk group of HIV positive MSM in collaboration with the HIV treatment centres.
- Pilot the implementation of HIV incidence assays to determine whether diagnosed HIV infections were acquired recently.
- Ensure back up diagnostics to monitor the potential emergence of new chlamydia variants which might escape detection.
- Harmonise multidisciplinary guidelines for diagnosis and treatment.

Assess and improve strategies to reduce STI transmission:

- Improve understanding of the impact of STI/HIV co-infections and STI infections at multiple locations on transmission, diagnosis and treatment.
- Assess the impact of partner notification strategies on STI/HIV transmission.
- Assess the impact of chlamydia screening on attendance and STI detection rates in STI centres.
- Explore the potential of integrating chlamydia screening into the Sense sexual health clinics.

- Explore the potential to reach high risk MSM via internet by offering tailored prevention support linked to client driven STI screening if no complaints are reported.
- Strengthening molecular typing, for instance for gonorrhoea and hepatitis B, and aim to identify molecular markers of resistance to facilitate selecting appropriate treatment.
- Promote (operational) research to identify optimal strategies to interrupt transmission among high risk groups.

APPENDIX A. NATIONAL SURVEILLANCE OF STI CENTRES

Coordinating STI centres	
GGD Amsterdam:	J.S.A.Fennema
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
V. Sigurdsson	
GGD Zuid Limburg:	C.J.P.A. Hoebe
Regional STI centres	
Erasmus MC:	W. van der Meijden
GGD Brabant Zuid-Oost	P. Tolsma
GGD Drenthe:	G. Reitsema
GGD Eemland:	R. Heman
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 Hollands Noorden	I. Bargmann
GGD Kennemerland:	E. den Heijer
GGD Noord en Midden Limburg:	C. Niesen
GGD Regio Twente:	I. Schreurs
GGD Rivierenland:	P. Cornelissen
GGD West-Brabant:	H. Driessen
GGD IJssel-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
Hulpverlening Gelderland Midden:	M. Pelgrim

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:	M. Schutte
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 Pathologische Anatomie en Medische Microbiologie Velhoven:	A. Jansz
Laboratorium Microbiologie Twente-Achterhoek Enschede:	B. Mulder
Laboratorium voor de Volksgezondheid in Friesland Leeuwarden:	J. van Zeijl
Laurentius Ziekenhuis Roermond:	F. Stals
Leiden Universitair Medisch Centrum:	A.C.M. Kroes
Medisch Centrum 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 voor de Volksgezondheid Amsterdam:	C. Signet
Streeklaboratorium voor de Volksgezondheid Haarlem:	D. Veenendaal
Streeklaboratorium voor de Volksgezondheid Deventer:	F.W. Sebens
Streeklaboratorium voor de Volksgezondheid Groningen:	B.P. Overbeek
Streeklaboratorium voor de Volksgezondheid Zeeland:	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 B. STICHTING HIV MONITORING

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

*Treating physicians (*Site coordinating physicians):*
Academisch Medisch Centrum bij de Universiteit van Amsterdam - Amsterdam: Dr. J.M. Prins*, Drs. J.C. Bos, Dr. J.K.M. Eeftinck-Schattenkerk (until Februari 27 2009), Dr. S.E. Geerlings, Dr. M.H. Godfried, Prof. dr. J.M.A. Lange, Dr. J.T.M. van der Meer, Dr. F.J.B. Nellen, Drs. D.P. Olszyna(until nov. 2008), Dr. T. van der Poll, Prof. dr. P. Reiss, Drs. S.U.C. Sankatsing, Drs. M. van der Valk, Drs. J.N. Vermeulen, Drs. S.M.E. Vrouenraets, Dr. M. van Vugt, Dr. F.W.M.N. Wit.
Academisch Ziekenhuis Maastricht - Maastricht: Dr. G. Schreij*, Dr. S. van der Geest, Dr. A. Oude Lashof, Dr. S. Lowe, Dr. A. Verbon.
Catharina Ziekenhuis - Eindhoven: Dr. B. Bravenboer*, Drs. M.J.H. Pronk
Emma Kinderziekenhuis - AMC Amsterdam: Prof. dr. T.W. Kuijpers, Drs. D. Pajkrt, Dr. H.J. Scherpbier.
Erasmus MC - Rotterdam: Dr. M.E. van der Ende*, Drs. H. Bax, Drs. M. van der Feltz, Dr. L.B.S. Gelinck,
Drs. Mendoca de Melo (until September 1, 2008), Dr. J.L. Nouwen, Dr. B.J.A. Rijnders, Dr. E.D. de Ruiter, Dr. L. Slobbe, Drs. C.A.M. Schurink, Dr. T.E.M.S. de Vries.
Erasmus MC - Sophia - Rotterdam: Dr. G. Driessen, Dr. M. van der Flier, Dr. N.G. Hartwig.
Flevoziekenhuis - Almere: Dr. J. Branger
Haga Ziekenhuis, locatie Leyenburg - Den Haag: Dr. R.H. Kauffmann*, (until August 1, 2008), Dr. E.F. Schippers (from May 1, 2008).
Isala Klinieken - Zwolle: Dr. P.H.P. Groeneveld*, Dr. M.A. Alleman.
Kennemer Gasthuis - Haarlem: Prof. dr. R.W. ten Kate*, Dr. R. Soetekouw.
Leids Universitair Medisch Centrum - Leiden: Dr. F.P. Kroon*, Dr. S.M. Arend, Drs. M.G.J. de Boer, Prof. dr. P.J. van den Broek, Prof. dr. J.T. van Dissel, Drs. C. van Nieuwkoop.
Maasstadziekenhuis - locatie Clara - Rotterdam: Dr. J.G. den Hollander*.
Medisch Centrum Alkmaar - Alkmaar: Dr. W. Bronsveld*, Drs. K. Pogány
Medisch Centrum Haaglanden -locatie Westeinde - Den Haag: Dr. R. Vriesendorp*, Dr. F.J.F. Jeurissen, Dr. E.M.S. Leyten.
Medisch Centrum Leeuwarden - Leeuwarden: Dr. D. van Houte*, Dr. M.B. Polée (until July 1, 2008), Dr. M. van Vonderen (From July 1, 2008)
Medisch Spectrum Twente - Enschede: Dr. C.H.H. ten Napel*, Dr. G.J. Kootstra.
Onze Lieve Vrouwe Gasthuis – 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.
St. Medisch Centrum Jan van Goyen - Amsterdam: Dr. A. van Eeden*, Dr. D.W.M. Verhagen.
Slotervaart Ziekenhuis - Amsterdam: Dr. J.W. Mulder*, Dr. E.C.M. van Gorp, Dr. A.T.A. Mairuhu (until December, 2008) Drs. R. Steingrover, Dr. J. Wagenaar.
St. Elisabeth Ziekenhuis - Tilburg: Dr. J.R. Juttmann*, Dr. M.E.E. van Kasteren.

St. Lucas Andreas Ziekenhuis - Amsterdam: Dr. J. Veenstra*, Dr. W.L.E. Vasme l (until January, 2008).Dr. K..D. Lettinga (From January 1, 2009)
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Universitair Medisch Centrum Groningen - Groningen: Dr. H.G. Sprenger*, Dr. S. van Assen, Dr. C.J. Stek.
Universitair Medisch Centrum Groningen - Beatrix Kliniek - Groningen: Dr. R. Doedens, Dr. E.H. Scholvinck.
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Ziekenhuis Rijnstate - Arnhem: Dr. C. Richter*, Drs. J. van der Berg, Dr. E.H. Gisolf.
Ziekenhuis Walcheren - Vlissingen: Dr. A.A. Tanis*.
St. Elisabeth Hospitaal/Stichting Rode Kruis Bloedbank - Willemstad, Curaçao: Dr. A.J. Duits, Dr. K. Winkel.

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Catharina Ziekenhuis - Eindhoven: Dr. A.F. Jansz, drs. M. Wulf.

Pharmacologists:
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Personnel Stichting HIV Monitoring Amsterdam
M. van den Akker (from April 2008)
Y.M. Bakker, data collection
R.F. Beard, registration & patient administration
R.A. van den Berg, monitor assistant (from August 2008)
Drs. D.O. Bezemer, data analysis
D. de Boer, financial controlling
I.H.M. de Boer, assistant-personell
M.J. van Broekhoven-Kruijne, data collection
C.W.A.J. Deurloo-van Wanrooy, data collection
Drs. D.N. de Gouw, communication manager (until June 2008)
Drs. L.A.J. Gras, data analysis
Drs. S. Grivell, data monitor
L.G.M. de Groot-Berndsen, data collection
Drs. M.M. Hillebregt, data monitoring
J.M. van der Heijden (from October 2008)
Drs. S.H.M. Huiberts, communication manager (from June 2008)
Drs. A.M. Kesselring, data analysis
Drs. B. Slieker, data monitoring
V. Kimmel (from October 2008)
M.M.T. Koenen, financial controlling
C.H.F. Kuiper, data collection
C.R.E. Lodewijk, data collection
Drs. H.J.M. van Noort, assistant financial controlling
B.M. Peeck, data collection OLVG Oosterpark
Y.M.C. Ruijs-Tiggelman, data collection
Drs. G.E. Scholte, executive secretary
Dr. A.I. van Sighem, data analysis
Drs. B. Slieker, data monitoring
Dr. Ir. C. Smit, data analysis
E.M. Tuyn-de Bruin, data collection
D.P. Veenenberg-Benschop, data collection
E.C.M. Verkerk, data monitoring (until September 2008)
C.A.H. Welling, monitor assistant (from March 2008)
M.A. Wiewel, monitor assistant (from August 2008)
Dr. F. de Wolf, director
Drs. S. Zaheri, data quality control
Drs. Zhang, data analysis

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