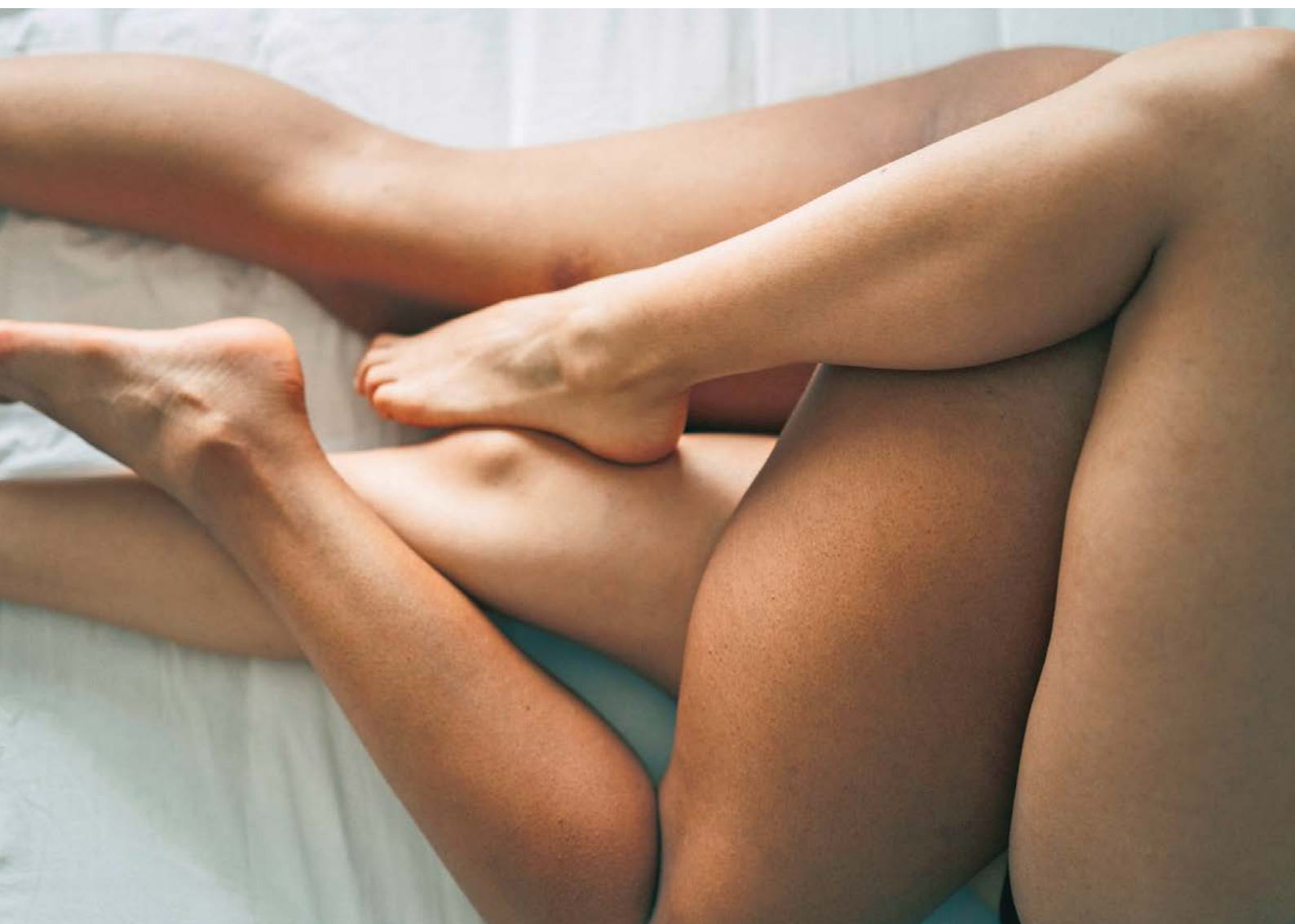




National Institute for Public Health
and the Environment
Ministry of Health, Welfare and Sport

Sexually transmitted infections in the Netherlands in 2022

RIVM report 2023-0161



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Synopsis

Sexually transmitted infections in the Netherlands in 2022

In 2022, the number of people tested at a Sexual Health Centre (SHC) for a sexually transmitted infection (STI) was higher compared to 2021. The percentage with an STI (21 per cent) was higher compared to 2021. Persons who were notified of an STI by a partner and persons with symptoms had an STI most often.

SHCs offer free STI testing to people at high risk of acquiring an STI. Since August 2019, SHCs have also provided care to men who have sex with men (MSM) who receive a drug to prevent HIV (Pre-Exposure Prophylaxis, PrEP). This group is tested for STIs every three months (MSM – PrEP pilot). This overview shows how many tests and diagnoses the SHCs have registered per STI. In 2022, there were a total of 164,715 consultations.

Chlamydia

There were 24,684 chlamydia diagnoses in 2022, an increase of 21 per cent compared to 2021 (20,465). The percentage of women with chlamydia was higher in 2022 than in 2021, rising from 16.2 to 17.9 per cent. The percentages of heterosexual men and MSM with chlamydia fell slightly to 21.2 and 10.9 percent respectively. Among MSM-PrEP pilot participants, this percentage decreased from 10 per cent in 2021 to 9.4 per cent in 2022.

Gonorrhoea

The number of gonorrhoea diagnoses (10,600) was higher than in 2021 (7,964), an increase of 33 per cent. The percentages of women and heterosexual men with gonorrhoea increased in 2022, after a slight decrease in 2021, to 2.3 and 2.4 per cent respectively. This is the highest percentage among women since 2013. The increase was mainly seen in the second half of 2022. The percentage among MSM rose from 12.4 per cent in 2021 to 12.8 per cent in 2022. Among MSM-PrEP pilot participants, the percentage increased from 9.2 per cent in 2021 to 9.8 per cent in 2022. No antibiotic resistance to the current 'first choice' antibiotic for gonorrhoea (ceftriaxone) was reported.

Syphilis

In 2022, the number of syphilis diagnoses (1,574) was higher than in 2021 (1,398). The percentage of MSM with syphilis was 2.3 per cent in 2022, a slight decrease compared to 2021 (2.6 per cent). Among MSM-PrEP pilot participants, this percentage was stable at 1.7 per cent in 2022. The number of diagnoses among women and heterosexual men remained low in 2022, at 34 for both groups.

HIV

In 2022, 144 people received an HIV diagnosis, a slight increase compared to 2021 (138). Of these diagnoses, 103 were among MSM and 10 among PrEP pilot participants. The remaining number of diagnoses was 11 for women and 8 for heterosexual men. The number of people with HIV who came to an HIV treatment centre for the first time in 2022 ('in care') was 997. This was an increase of 26 per cent compared to 2021 (794).

PrEP

Among national PrEP pilot participants, 12,195 persons (97 percent MSM) had a first PrEP consultation, of whom 2,413 in 2022. On 31 December 2022, the PrEP pilot programme had an estimated 8,558 participants. In 2022, the percentage of participants with an STI was 18.1 percent.

Mpox

The first cases of mpox (previously known as monkeypox) in the Netherlands were reported in May 2022. A total of 1,259 mpox infections were reported to RIVM that year, 92 per cent of which were among MSM.

Keywords: STI, chlamydia, gonorrhoea, syphilis, HIV, AIDS, PrEP, mpox, antibiotic resistance, young people, MSM, monitoring, Sexual Health Centre

Publiekssamenvatting

Seksueel overdraagbare aandoeningen in Nederland in 2022

In 2022 hebben meer mensen zich bij een Centrum voor Seksuele Gezondheid (CSG) laten testen op seksueel overdraagbare aandoeningen (soa) dan in 2021. Het percentage dat een soa had (21 procent) was hoger dan in 2021. Mensen die via een partner een melding ontvingen voor een soa of zelf klachten hadden, hadden het vaakst een soa.

Bij CSG's kunnen mensen met een grotere kans op soa, zich gratis laten testen. Sinds augustus 2019 bieden deze centra ook zorg aan mannen die seks hebben met mannen (MSM) die een geneesmiddel krijgen dat hiv voorkomt (Pre-Expositie Profylaxe, PrEP). Deze groep wordt elke drie maanden getest op soa (MSM-PrEP pilot). In dit overzicht staat per soa aangegeven hoeveel testen en diagnoses er bij de CSG's zijn geregistreerd. In 2022 waren er in totaal 164.715 consulten.

Chlamydia

In 2022 waren er 24.684 chlamydia-diagnoses, een stijging van 21 procent in vergelijking met 2021 (20.465). Het percentage vrouwen met chlamydia was in 2022 hoger dan in 2021: het steeg van 16,2 naar 17,9 procent. De percentages heteroseksuele mannen en MSM met chlamydia zijn licht gedaald naar respectievelijk 21,2 en 10,9 procent. Onder MSM-PrEP pilot is dit percentage gedaald van 10 procent in 2021 naar 9,4 procent in 2022.

Gonorrhoe

Het aantal diagnoses gonorrhoe (10.600) was hoger dan in 2021 (7.964), een stijging van 33 procent. De percentages vrouwen en heteroseksuele mannen met gonorrhoe zijn in 2022, na een lichte daling in 2021, sterk toegenomen naar respectievelijk 2,3 en 2,4 procent. Dit is het hoogste percentage onder vrouwen sinds 2013; de toename was vooral in de tweede helft van 2022 te zien. Het percentage onder MSM steeg van 12,4 procent in 2021 naar 12,8 procent in 2022. Onder MSM-PrEP pilot steeg het percentage van 9,2 procent in 2021 naar 9,8 procent in 2022. Er is geen antibioticaresistentie tegen het huidige 'eerste keus' antibioticum voor gonorrhoe (ceftriaxon) gemeld.

Syfilis

In 2022 was het aantal syfilis-diagnoses (1.574) hoger dan in 2021 (1.398). Het percentage MSM met syfilis was 2,3 procent in 2022, een lichte daling in vergelijking met 2021 (2,6 procent). Onder MSM-PrEP pilot was dit percentage stabiel op 1,7 procent in 2022. Het aantal diagnoses onder vrouwen en heteroseksuele mannen bleef in 2022 laag, voor beide groepen was dit 34.

Hiv

In 2022 kregen 144 personen een hiv-diagnose, iets meer dan in 2021 (138). Hiervan waren 103 diagnoses bij MSM en 10 diagnoses bij deelnemers aan de PrEP pilot. Het aantal diagnoses bij vrouwen was 11 en bij heteroseksuele mannen 8. Het aantal mensen met hiv dat in 2022 voor het eerst naar een hiv-behandelcentra kwam ('in zorg') was 997. Dat was 26 procent meer dan in 2021 (794).

PrEP

In de nationale PrEP pilot hebben 12.195 personen (97 procent MSM) een eerste PrEP-consult gehad, van wie 2.413 in 2022. Op 31 december 2022 had het PrEP pilot-programma naar schatting 8.558 deelnemers. Het percentage deelnemers met een soa was in 2022 18,1 procent.

Mpox

In mei 2022 zijn in Nederland de eerste gevallen van mpox (eerder bekend als apenpokken) gemeld. In totaal zijn dat jaar bij het RIVM 1.259 mpox-infecties gemeld, waarvan 92 procent onder MSM.

Kernwoorden: soa, chlamydia, gonorrhoe, syfilis, hiv, aids, PrEP, mpox, antibioticaresistentie, jongeren, MSM, monitoring, centrum seksuele gezondheid

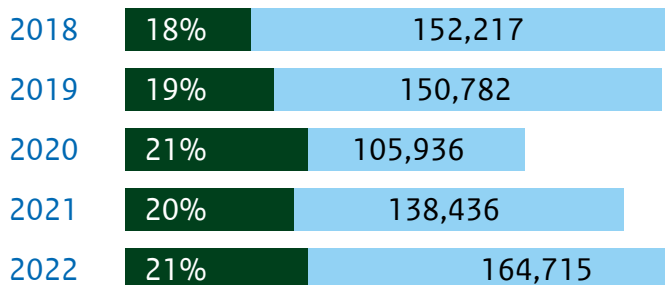
Surveillance of STI in the Netherlands 2022



*SHC: Sexual Health Centre.
Targeted at high-risk groups for STI



Number of SHC-consultations*



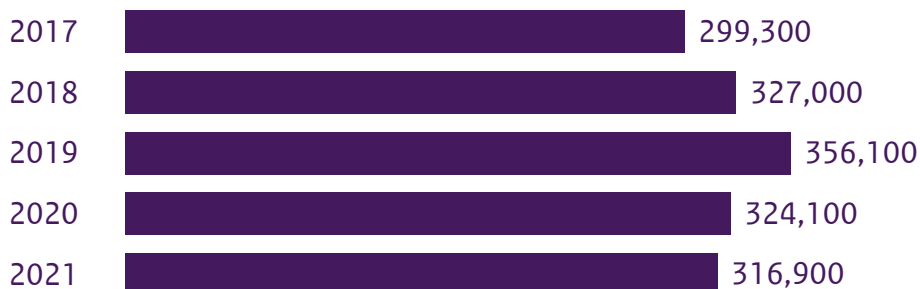
In 2022:

Women: **20%**
 Heterosexual men: **23%**
 MSM – ASG: **23%**
 MSM – PrEP pilot: **18%**

percentage with one or more STI



Number of GP consultations



Chlamydia

SHC: **24,684**

GP: **39,600**

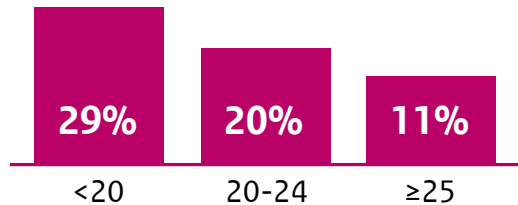
Of diagnoses



Women & Heterosexual men <25 year



% women & heterosexual men with chlamydia decreases with age



% with chlamydia

Women: **18%**

Heterosexual men: **21%**

MSM – ASG: **11%**

MSM – PrEP pilot: **9%**



% among notified attendees: **35%**

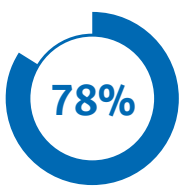
LGV among MSM: 469
74% hiv-negative

Gonorrhoea

CSG: **10,600**

GP: **12,700**

Of diagnoses



MSM



% with gonorrhoea

MSM – ASG: **13%** MSM – PrEP pilot: **10%**

Known HIV+: **18%**

With symptoms:

- MSM – ASG: **23%**

- MSM – PrEP pilot: **28%**

Women: **2.3%** Heterosexual men: **2.4%**



% among notified: **30%**

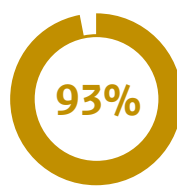


No resistance to ceftriaxone

Syphilis

SHC: **1,574**

Of diagnoses



MSM



% with syphilis

MSM – ASG: **2.3%** MSM – PrEP pilot: **1.7%**

Known HIV+: **6.7%**

% with syphilis increases with age among MSM – ASG

Age Group	%
<25	1.4%
25-39	1.9%
40+	2.5%

Women: **0.1%** Heterosexual men: **0.3%**



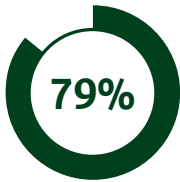
% among notified

MSM – ASG: **13%** MSM – PrEP pilot: **9%**

HIV

SHC: **144**

Of diagnoses



MSM



% with HIV

MSM – ASG: **0.3%**

Gender-diverse persons: **0.8%**



% among notified

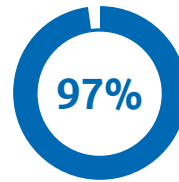
MSM: **3.2%**

PrEP pilot

n= **8,558**

HIV prevention drug

Of participants



MSM



At start

Median age: **33**

PrEP indication unprotected sex: **68%**



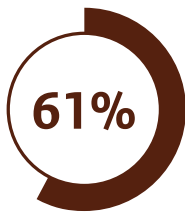
55% daily PrEP use

Genital warts

GP: **47,500**

SHC: **782**

Of diagnoses



men



Genital herpes

GP: **27,300**

SHC: **596**

Of diagnoses

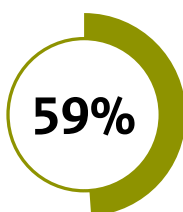


women



Acute hepatitis B

GP, hospital and SHC: **76**

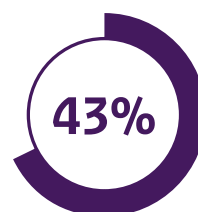


Transmission route
Sexual contact



Acute hepatitis C

GP, hospital and SHC: **28**



Transmission route
sexual contact MSM



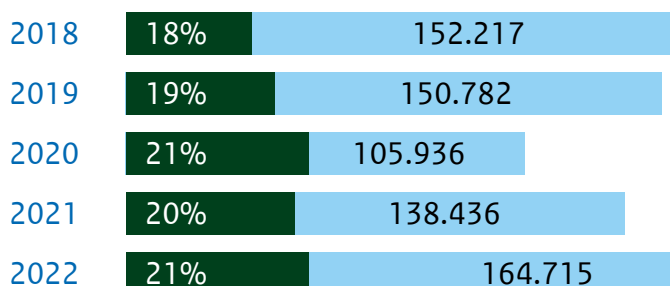
Surveillance van soa in Nederland 2022



* CSG: Centrum voor Seksuele Gezondheid. Bedoeld voor groepen die een hoog risico lopen op soa.



Aantal CSG-consulteren*



In 2022:

Vrouwen: **20%**

Heteromannen: **23%**

MSM – ASG: **23%**

MSM – PrEP pilot: **18%**

percentage met één of meer soa



Aantal huisartsconsulten



Chlamydia

CSG: 24.684

Huisarts: 39.600

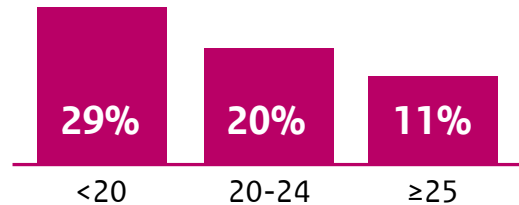
van de diagnoses



**Vrouwen
& Hetero
mannen
<25 jaar**



% vrouwen en heteromannen met chlamydia neemt af met leeftijd



% met chlamydia

Vrouwen: **18%**

Heteromannen: **21%**

MSM – ASG: **11%**

MSM – PrEP pilot: **9%**



% onder
gewaarschuwde
bezoekers: **35%**

LGV bij MSM: **469**

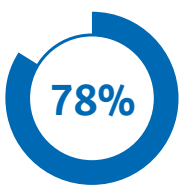
74% hiv-negatief

Gonorrhoe

CSG: 10.600

Huisarts: 12.700

van de diagnoses



MSM



% met gonorrhoe

MSM – ASG: **13%** MSM – PrEP pilot: **10%**

Bekend HIV+: **18%**

Met klachten:

- MSM – ASG: **23%**

- MSM – PrEP pilot: **28%**

Vrouwen: **2,3%** Heteromannen: **2,4%**



% onder gewaarschuwde: **30%**

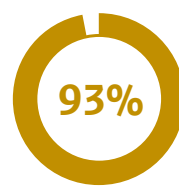


Geen resistentie tegen ceftriaxon

Syfilis

CSG: 1.574

van de diagnoses



MSM

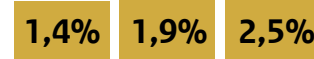


% met syfilis

MSM – ASG: **2,3%** MSM – PrEP pilot: **1,7%**

Bekend HIV+: **6,7%**

% met syfilis
neemt toe met
leeftijd onder
MSM – ASG



Vrouwen: **0,1%** Heteromannen: **0,3%**



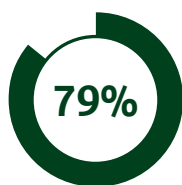
% onder gewaarschuwde

MSM – ASG: **13%** MSM – PrEP pilot: **9%**

Hiv

CSG: **144**

van de diagnoses



MSM



% met hiv

MSM – ASG: **0,3%**

Gender-diverse personen: **0,8%**



% onder gewaarschuwde

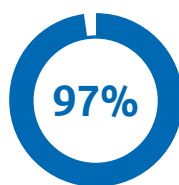
MSM: **3,2%**

PrEP pilot

n= **8.558**

Hiv-preventiepil

van de deelnemers



MSM



Bij start

Mediane leeftijd: **33**

PrEP indicatie onbeschermd seks: **68%**

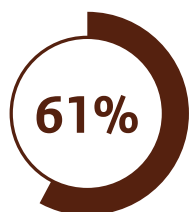


55% dagelijks PrEP gebruik

Genitale wratten

Huisarts: **47.500** CSG: **782**

van de diagnoses



mannen



Genitale herpes

Huisarts: **27.300** CSG: **596**

van de diagnoses

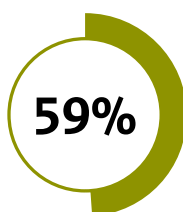


vrouwen



Acute hepatitis B

Huisarts, ziekenhuis en CSG: **76**

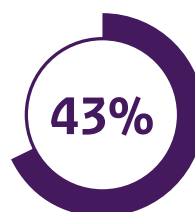


Transmissieroute
seksueel contact



Acute hepatitis C

Huisarts, ziekenhuis en CSG: **28**



Transmissieroute
seksueel contact MSM



Preface

This annual report provides an overview of the epidemiology of sexually transmitted infections (STIs), including HIV, in the Netherlands in 2022. The data presented are derived from the national STI surveillance database as well as other data sources registering STI and HIV in the Netherlands. These sources include the general practitioners, the antenatal screening programme, HIV treatment centres, and notification data. We present a summary of recent trends ('key points') for each STI, followed by tables and figures relating to STIs analysed in relation to a range of relevant characteristics. Finally, an overview of the main conclusions and recommendations is given. We hope this report will contribute to further awareness of the distribution and causes of STI, including HIV, in the Netherlands, supporting the development and targeting of (preventive) interventions, and enabling assessment of the effectiveness of control activities on STI transmission. The information aims to support policy makers and researchers in the STI field and related subjects, as well as others interested in STI trends in the Netherlands. More information on STI and HIV trends in the Netherlands is available at www.rivm.nl/soa and www.hiv-monitoring.nl. This report can be downloaded in PDF format from www.rivm.nl/soa.

Acknowledgements

We gratefully acknowledge the cooperation of a large number 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 support and continuous collaboration in data collection: the Sexual

Health Centres (STI clinics and public health services) and stichting hiv monitoring (SHM, HIV Monitoring Foundation). We also thank Soa Aids Nederland, Rutgers, HIV association, Netherlands Institute for Health Services Research (Nivel), general practitioners participating in the Nivel Primary Care Database (Nivel-PCD), the Dutch Working Group on Clinical Virology from the Dutch Society for Clinical Microbiology (NVMM) and all participating laboratories providing the virological data from the weekly Sentinel Surveillance system, as well as the other units at the Centre for Infectious Diseases Research, Diagnostics and Laboratory Surveillance (CIb/IDS), and finally, the National Coordination Centre for Communicable Disease Control (CIb/LCI). Special thanks goes to Silke David, policy advisor and programme leader STI, HIV and sexual health at the RIVM. Furthermore, we would like to thank Kitty van der Ploeg from TNO, and Frithjofna Abbink, Alexander Ernst, and Marlies van Lent (RIVM) for the data on pregnant women (Praeventis), Eric Doppenberg (RIVM) for data on congenital syphilis, Yvette Weesie, and Joost Vanhommerig for Nivel-PCD data and analysis, Thijs van de Laar and Ed Slot from Sanquin for the blood donor data, and Yvonne ten Have and Annemarie Meiberg (RIVM) for the HBV vaccination programme data. We thank Jeffrey Koole from the Public Health Service of Amsterdam (GGD Amsterdam) for HIV incidence data from the Amsterdam Cohort Studies (ACS) on HIV/AIDS. Finally, we thank Britt de Wit, Manon Haverkate and Tom Woudenberg (CIb/EPI), and Marieke Hiemstra (VPZ) for their contributions.

Comments

Please send any comments or suggestions to soap@rivm.nl.

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Summary

In 2022, a total of 164,715 STI and PrEP consultations took place at Dutch Sexual Health Centres (SHCs); more than the number of consultations in 2021 (+19%) and in 2019 (+9%). Since mid-2019, SHCs have provided Pre-Exposure Prophylaxis (PrEP) to individuals at high risk of acquiring HIV as part of the national PrEP pilot programme. By December 31, 2022, 12,195 individuals (97% men who have sex with men, MSM) had received a first PrEP consultation in the national PrEP pilot programme, of which 2,413 individuals had their first consultation in 2022. Due to the three-monthly test interval for MSM in the PrEP pilot and the differences in reasons for visiting the SHC, a distinction was made throughout the report between two types of MSM consultations as these two groups are not directly comparable. Firstly, within the regulation 'Additional Sexual Healthcare' (MSM – ASG) and secondly, MSM consultations in the national PrEP pilot programme (MSM – PrEP pilot). The impact of the COVID-19 pandemic and the national PrEP pilot programme on the number of consultations and STI positivity needs to be taken into account when interpreting trend data, as this may influence trends.

The number of consultations in 2022 increased by 17% among women, 20% among heterosexual men, 20% among MSM – ASG, and by 22% among MSM – PrEP pilot compared to 2021. Of all SHC consultations in 2022, 38% were among women (62,883 consultations), 17% among heterosexual men (27,947 consultations), 27% among MSM – ASG (44,318 consultations), and 17% among MSM – PrEP pilot (27,892 consultations). At 1,675 consultations (1%), the client was a gender-diverse person, of which 13% identified as trans men, 54% as trans women, and 33% as other gender-diverse persons. Gender-diverse persons are only included in the total number of diagnoses and excluded from further breakdowns, as the number of gender-diverse persons is relatively low.

The percentage of consultations with one or more positive STI tests (chlamydia, gonorrhoea, infectious syphilis, HIV or infectious hepatitis B) was 21.0% in 2022. STI positivity among women increased from 17.2% in 2021 to 19.5% in 2022. Among heterosexual men, this percentage remained stable at 22.6% in 2021 and 22.9% in 2022. The positivity among MSM – ASG decreased from 23.5% in 2021 to 22.6% in 2022. Among MSM – PrEP pilot, the positivity was 17.7% in 2021 and 18.1% in 2022. The STI positivity was highest among consultations in persons with symptoms in MSM – ASG (37.0%) and MSM – PrEP pilot (42.9%). Among

women and heterosexual men, STI positivity was highest in consultations with persons notified of an STI, 37.2% and 33.0% respectively.

Among women and heterosexual men tested at SHCs in 2022, the percentage with multiple consultations was 17% (15% in 2021) and 11% (10% in 2021), respectively. Among MSM – ASG, the percentage with multiple consultations was 29% (28% in 2021). Of all MSM – PrEP pilot who were seen at the SHC in 2022, 84% had multiple consultations (9,365 persons with 27,892 consultations). Of the unique persons tested among MSM – PrEP pilot, 39.8% had at least one or more STI diagnoses in 2022.

The total number of STI-related episodes registered with a general practitioner in 2021 (2022 data not yet available), based on a sample of 316 general practices (GPs) extrapolated to the Dutch population aged 15-64, was estimated at 316,900 (including 137,700 STI diagnoses and 179,200 'fear of STI' episodes). This is a decrease of 2% compared with 2020 (324,100 episodes). The number of STI-related episodes per 1,000 inhabitants decreased in persons aged 15-24 years old (44.3 in 2020 and 42.5 in 2021) and decreased slightly in persons aged 25-64 years old (25.1 in 2020 and 24.7 in 2021).

Bacterial STI

In 2022, chlamydia was diagnosed 24,684 times at SHCs, which was higher compared with 2021 (20,465). Chlamydia is the most commonly reported STI among women, heterosexual men and MSM – PrEP pilot. Chlamydia positivity among women and heterosexual men remained stable between 2016 and 2019; around 15% in women and 18% in heterosexual men, after which it increased to around 16% in women and 21% in heterosexual men because of the downscaling of STI care as a result of the COVID-19 pandemic. In 2022, positivity increased further to 17.9% in women. Among heterosexual men, it remained high at 21.2%. Chlamydia positivity decreased or remained stable among women and heterosexual men aged 25 years or older, but increased among women and heterosexual men younger than 25 years of age. Among MSM – ASG, chlamydia positivity was stable at around 10% between 2016 and 2018 and increased to around 12% during the COVID-19 pandemic. Positivity decreased back to 10.9% in 2022. The chlamydia positivity in MSM – PrEP pilot decreased from 11.7% in 2019 to around 10% during the COVID-19 pandemic and 9.4% in 2022. The highest

positivity was found in consultations in persons notified of chlamydia (40.1% in women, 37.2% in heterosexual men, 23.4% in MSM – ASG, and 31.2% MSM – PrEP pilot) and heterosexual men reporting symptoms (27.9%). The number of lymphogranuloma venereum (LGV, an infection caused by an invasive strain of chlamydia) diagnoses increased from 210 in 2021 to 469 in 2022. The percentage of HIV-negative MSM (ASG & PrEP pilot) among LGV positives increased from 37% in 2015 to 74% in 2022. The estimated number of chlamydia episodes reported at GPs decreased from 43,300 in 2020 to 39,600 in 2021. Compared with 2020, the estimated number of chlamydia episodes among men decreased by 6% to 17,100 diagnoses in 2021. Among women the estimated number of episodes decreased by 10% to 22,500 diagnoses in 2021. In 2021, reporting rates of chlamydia episodes per 1,000 inhabitants aged 15–64 decreased in both people under and over 25 years of age (to 8.2 and 2.4, respectively) compared with 2020.

The number of gonorrhoea diagnoses at SHCs increased by 33% in 2022 (10,600 diagnoses) compared with 2021. Gonorrhoea positivity increased among women and heterosexual men between 2016 and 2020 and then decreased to 1.5% among women and to 1.8% among heterosexual men in 2021. In 2022, gonorrhoea positivity among women and heterosexual men increased to 2.3% and 2.4% respectively. This is the highest gonorrhoea positivity among women since 2013. The increase was mostly seen in the second half of 2022. The positivity among MSM – ASG was around 11% between 2015 and 2019. Positivity increased to around 13% during the COVID-19 pandemic and remained stable at 12.7% in 2022. Among MSM – PrEP pilot, the gonorrhoea positivity decreased from 10.7% in 2019 to 9.2% in 2021 and then increased again to 9.8% in 2022. The highest gonorrhoea positivity was seen in consultations among persons who were notified for gonorrhoea (34.4% in women, 14.6% in heterosexual men, 31.4% in MSM – ASG, 34.3% in MSM – PrEP pilot). Antimicrobial resistance to ceftriaxone, the first-choice antibiotic for gonorrhoea treatment, has not been reported among SHC visitors. Resistance to ciprofloxacin has been above 50% since 2019 and was 61.5% in 2022. Resistance to cefotaxime was the same as in 2021, at 0.1%. Resistance to azithromycin has been increasing since 2016, up to 26.6% in 2022. The number of estimated gonorrhoea episodes at GPs decreased from 14,100 in 2020 to 12,700 in 2021. In 2021, reporting rates of gonorrhoea episodes per 1,000 inhabitants aged 15–64 decreased to 1.6 in people under 25 years of age and were stable at 1.0 in people aged over 25, compared with 2020.

In 2022, 1,574 infectious syphilis infections were diagnosed at SHCs, which is more than in 2021 (1,398). Of all syphilis infections in 2022, 63% were diagnosed among MSM – ASG and 30% among MSM – PrEP pilot. Women and heterosexual men are not routinely tested for syphilis; a syphilis test was done in 38% of STI consultations among women and heterosexual men in 2022. Among women, 22,810 tests and 34 diagnoses were reported in 2022 (positivity 0.15%, 0.11% in 2021). Among heterosexual men 11,816 tests and 34 diagnoses were reported (positivity 0.29%, down from 0.34% in 2021). In 2022, infectious syphilis positivity MSM – ASG (2.3%) was slightly lower compared with 2021 (2.6%). Among MSM – PrEP pilot, infectious syphilis positivity in 2022 was comparable with 2021 (1.7%). In 2022, positivity was higher in known HIV-positive MSM (6.6%) than in HIV-negative MSM – ASG who did not use PrEP recently (1.5%) and HIV-negative MSM – ASG who recently used PrEP (2.7%). The highest positivity in 2022 was found among persons notified of syphilis (12.6% in MSM – ASG and 9.4% in MSM – PrEP pilot). An estimate of the number of syphilis episodes at GPs is not available due to the small number of cases.

Viral STI

At SHCs, 144 new HIV infections were diagnosed in 2022, which is a slight increase compared with 2021 (138). Of the 144 new diagnoses, 72% were in MSM – ASG, 8% in gender-diverse persons, 8% in women, 7% in MSM – PrEP pilot, and 6% in heterosexual men. There were 10 new HIV infections diagnosed in MSM – PrEP pilot consultations. Four of these were PrEP start consultations and 6 were PrEP follow-up consultations. The HIV positivity among MSM – ASG decreased from 1.4% in 2013 to 0.3% in 2022. The positivity among women (0.05% in 2022), heterosexual men (0.07% in 2022) and MSM – PrEP pilot (0.04% in 2022) is stable and low. HIV-positivity among gender-diverse persons was 0.8% in 2022. In 2022, 997 HIV-positive persons were newly registered in care at HIV treatment centres according to stichting hiv monitoring (SHM) (2021: 794). Of these, 344 people were diagnosed in 2022 (325 in 2021), though this number can still increase due to reporting delays. The proportion of heterosexuals (men and women) among new HIV diagnoses increased: 31% in 2022 compared with 26% in 2021. The proportion of new HIV diagnoses among MSM in 2022 (57%) was lower compared with 2021 (62%). The proportion of HIV-positive individuals with other/unknown transmission risk was 9% in 2022 and 12% in 2021. Of HIV-positive MSM diagnosed and entering care in 2022, the majority was diagnosed in hospitals (21% in 2022, compared with 27% in 2021) and

at SHCs (43% in 2022, 37% in 2021). Overall, 53% of newly diagnosed patients in 2022 (56% in 2021) presented late for care (CD4 <350/mm³ or AIDS). This percentage was lower for MSM (44%) than it was for women and heterosexual men (70%). In 2021, an estimated 94% of those living with HIV in the Netherlands had been diagnosed and linked to care. Of these, 94% had also started treatment and 96% of those had a suppressed viral load.

Most cases of genital warts and genital herpes are registered at GPs. In 2021, an estimated 47,500 diagnoses of genital warts (45,400 in 2020) and 27,300 diagnoses of genital herpes (27,500 in 2020) were diagnosed. At GPs, genital warts were more often reported in men (61% of all cases) than in women, while genital herpes was more often diagnosed in women (74% of all cases). In 2022, the number of diagnoses of genital warts and genital herpes in SHCs was 787 and 601, respectively (812 and 482 in 2021).

The number of acute hepatitis B cases reported in the registration of notifiable diseases in 2022 (76) was higher than in 2021 (70). Condomless sexual contact was the most frequently reported transmission route (59%). The number of acute hepatitis C cases reported in 2022 (28) was lower compared with 2021 (31). The main reported transmission route for acute hepatitis C was condomless sexual contact between men (43%).

The mpox outbreak (formerly known as monkeypox) in the Netherlands started in May 2022, with a peak in the number of newly reported mpox cases in July 2022. In 2022, a total of 1,259 mpox infections were reported to the RIVM, of which 92% were among MSM. Sexual contact was the most reported transmission route for mpox infections (83%) in 2022.

Conclusion

For the first time since the COVID-19 pandemic the number of consultations at SHCs in 2022 reached beyond the pre-COVID-19 levels, indicating that STI care at SHCs is recovered. In 21% of all consultations one or more STI was diagnosed, an increase compared to earlier years. An increasing STI positivity has been seen among women and heterosexual men of all ages since 2019. The increase was most notable in adolescents. The COVID-19 pandemic had an impact on the estimated number of STI-related episodes at general practices. The estimated number of episodes of fear of STI as well as the number of STI episodes slightly decreased in 2021 compared with 2020, mainly among those aged 25 years or less. People at risk of STIs were able to find their way to GPs during the pandemic, although to a lesser extent. The global outbreak of mpox in 2022 showed that continuous monitoring and surveillance of STI and sexual health remain important as well as the prevention testing and treatment of STI.

Samenvatting

In 2022 hebben er in totaal 164.715 soa en PrEP consulten plaatsgevonden bij de Centra Seksuele Gezondheid (CSG's); meer dan het aantal consulten in 2021 (+19%) en in 2019 (+9%). Medio 2019 is er een nationaal Pre-Expositie Profylaxe (PrEP) pilot programma gestart bij de CSG's voor personen die een hoog risico lopen op een hiv-infectie. Op 31 december 2022 hadden 12.195 personen (97% MSM) hun eerste PrEP consult gehad binnen dit programma, waarvan 2.413 personen in 2022. Vanwege het drie-maandelijke test interval bij MSM in de PrEP pilot en verschillen in redenen voor een consult bij de CSG, wordt er in dit rapport onderscheid gemaakt tussen consulten in MSM binnen de 'Aanvullende Seksuele Gezondheidszorg' (ASG) regeling en consulten in MSM in het nationale PrEP pilot programma, omdat deze twee groepen niet goed met elkaar te vergelijken zijn. Bij de interpretatie van trends moet rekening worden gehouden met de impact van de COVID-19-pandemie en de nationale PrEP pilot op het aantal consulten en soa vindpercentages, aangezien dit trends kan beïnvloeden.

In 2022 nam het aantal consulten bij de CSG's toe met 17% onder vrouwen, 20% onder heteroseksuele mannen, 20% onder MSM – ASG en met 22% onder MSM – PrEP pilot ten opzichte van 2021. Van alle consulten bij het CSG was 38% bij vrouwen (62.883 consulten), 17% bij heteroseksuele mannen (27.947 consulten), 27% bij MSM – ASG (44.318 consulten) en 17% bij MSM – PrEP pilot (27.892 consulten). Er waren 1.675 soa-consulten (1%) bij genderdiverse personen, waarvan 13% trans mannen, 54% trans vrouwen en 33% andere gender-diverse personen. Gender-diverse personen worden alleen meegenomen in de totaalaantallen diagnoses en worden uitgesloten van verdere uitsplitsingen, omdat het aantal genderdiverse personen relatief laag is.

Het percentage consulten met één of meer positieve soa-testen (chlamydia, gonorrhoe, infectieuze syfilis, hiv of infectieuze hepatitis B) was 21,0% in 2022. Het soa-vindpercentage onder vrouwen steeg van 17,2% in 2021 naar 19,5% in 2022. Onder heteroseksuele mannen bleef dit percentage stabiel met 22,6% in 2021 en 22,9% in 2022. Het vindpercentage onder MSM – ASG nam af van 23,5% in 2021 naar 22,6% in 2022. Onder MSM – PrEP pilot was het vindpercentage 17,7% in 2021 en 18,1% in 2022. Het soa-vindpercentage onder MSM – ASG en MSM – PrEP pilot was het hoogst in consulten in personen met symptomen, respectievelijk 37,0% en 42,9%. Onder vrouwen en heteroseksuele mannen was het soa-vindpercentage het

hoogst in consulten in personen met een partnernotificatie, respectievelijk 37,2% en 33,0%.

Van alle vrouwen en heteroseksuele mannen die zich in 2022 bij CSG's lieten testen hadden respectievelijk 17% (15% in 2021) en 11% (10% in 2021) meerdere consulten. Onder MSM – ASG had 29% van de personen meer dan één consult (28% in 2021). Van alle MSM – PrEP pilot die in 2022 bij de CSG's zijn gezien, heeft 84% meerdere consulten gehad (9.365 personen met 27.892 consulten). Van alle unieke personen getest onder MSM – PrEP pilot had 39,8% één of meer soa-diagnoses in 2022.

Het totale aantal soa-gerelateerde episodes dat in 2021 (2022 is nog niet beschikbaar) bij de huisarts werd geregistreerd, gebaseerd op een selectie van 316 huisartsenpraktijken geëxtrapoleerd naar de Nederlandse populatie (leeftijd 15-64), is naar schatting 316.900 (137.700 soa-diagnoses en 179.200 'angst voor soa' episodes). Dit is een afname van 2% ten opzichte van 2020 (324.100 episodes). Het aantal soa-gerelateerde episodes per 1.000 inwoners daalde onder personen met leeftijd 15-24 jaar (44,3 in 2020 en 42,5 in 2021) en daalde licht onder personen met leeftijd 25-64 jaar (25,1 in 2020 en 24,7 in 2021).

Bacteriële soa

In 2022 zijn er 24.684 chlamydia-diagnoses gesteld bij de CSG's, wat hoger was dan in 2021 (20.465). Chlamydia is de meest gerapporteerde soa onder vrouwen, heteroseksuele mannen en MSM – PrEP pilot. Het chlamydia-vindpercentage onder vrouwen en heteroseksuele mannen bleef stabiel tussen 2016 en 2019; rond 15% bij vrouwen en 18% bij heteroseksuele mannen, waarna het toenam tot rond 16% en 21%, respectievelijk, als gevolg van het afschalen van zorg vanwege de COVID-19-pandemie. In 2022 nam het vindpercentage verder toe naar 17,9% bij vrouwen. Onder heteroseksuele mannen bleef het hoog met 21,2%. Het vindpercentage daalde of bleef stabiel bij vrouwen en heteroseksuele mannen van 25 of ouder, maar nam toe bij vrouwen en heteroseksuele mannen jonger dan 25 jaar. Onder MSM – ASG was het vindpercentage tussen 2016 en 2018 stabiel rond de 10% en nam toe tot rond 12% tijdens de COVID-19-pandemie. Het vindpercentage nam in 2022 af tot 10,9%. Het chlamydia-vindpercentage bij MSM – PrEP pilot nam af van 11,7% in 2019 naar rond 10% tijdens de COVID-19-pandemie en naar 9,4% in 2022. Het hoogste vindpercentage werd in 2022 gevonden in consulten bij

personen die waren gewaarschuwd voor chlamydia (40,1% in vrouwen, 37,2% in heteroseksuele mannen, 23,4% in MSM – ASG en 31,2% in MSM – PrEP pilot) en onder heteroseksuele mannen met symptomen (27,9% in 2022). Het aantal lymfogranuloma venereum (LGV, een infectie met een invasieve chlamydia variant) diagnoses steeg van 210 in 2021 naar 469 in 2022. Het percentage hiv-negatieve MSM (ASG en PrEP pilot) onder LGV-diagnoses nam toe van 37% in 2015 naar 74% in 2022. Het geschatte aantal chlamydia episodes gerapporteerd door huisartsen nam af van 43.300 in 2020 naar 39.600 in 2021. In vergelijking met 2020 nam het geschatte aantal episodes onder mannen met 6% af tot 17.100 in 2021. Onder vrouwen nam het geschatte aantal episodes af met 10% tot 22.500 in 2021. In 2021 nam het geschatte aantal chlamydia-episodes per 1.000 inwoners (leeftijd 15-64) af bij zowel mensen onder als vanaf 25 jaar (naar respectievelijk 8,2 en 2,4) ten opzichte van 2020.

Het aantal gonorrhoe-diagnoses bij de CSG's is in 2022 met 33% toegenomen tot 10.600 diagnoses, ten opzichte van 2021. Het gonorrhoe-vindpercentage nam onder vrouwen en heteroseksuele mannen toe tussen 2016 en 2020 en nam weer af tot respectievelijk 1,5% en 1,8% in 2021. In 2022 nam het gonorrhoe-vindpercentage onder vrouwen en heteroseksuele mannen toe naar respectievelijk 2,3% en 2,4%. Dit is het hoogste vindpercentage onder vrouwen sinds 2013. Deze toename was vooral te zien in de tweede helft van 2022. Onder MSM – ASG was het vindpercentage tussen 2015 en 2019 rond de 11%. Het gonorrhoe-vindpercentage nam toe naar rond 13% gedurende de COVID-19-pandemie en bleef stabiel op 12,7% in 2022. Onder MSM – PrEP pilot nam het vindpercentage af van 10,7% in 2019 naar 9,2% in 2021 en nam weer toe tot 9,8% in 2022. Het hoogste vindpercentage werd in 2022 gevonden in consulten bij personen die waren gewaarschuwd voor gonorrhoe (34,4% in vrouwen, 14,6% in heteroseksuele mannen, 31,4% in MSM – ASG, 34,3% in MSM – PrEP pilot). Antibioticaresistentie tegen ceftriaxon, het huidige eerste keus antibioticum voor de behandeling van gonorrhoe, is niet gerapporteerd bij CSG-bezoekers. Resistentie tegen ciprofloxacine ligt sinds 2019 boven de 50% en was 61,5% in 2022. Resistentie tegen cefotaxim was met 0,1% hetzelfde als in 2021. Resistentie tegen azitromycine is in de afgelopen jaren toegenomen en was 26,6% in 2022. Het geschatte aantal gonorrhoe-episodes bij huisartsen nam af van 14.100 in 2020 naar 12.700 in 2021. In vergelijking met 2020, nam in 2021 het geschatte aantal gonorrhoe-episodes per 1.000 inwoners (leeftijd 15-64) af naar 1,6 onder mensen jonger dan 25 en was stabiel op 1,0 onder mensen ouder dan 25.

In 2022 werden er 1.574 infectieuze syfilis infecties gediagnosticeerd bij de CSG's, dit is meer dan in 2021 (1.398). Van alle syfilis infecties in 2022 werd 63% vastgesteld onder MSM – ASG en 30% onder MSM – PrEP pilot. Vrouwen en heteroseksuele mannen worden niet standaard getest op syfilis, er werd bij 38% van de consulten in deze groepen op syfilis getest. Onder vrouwen werden 22.810 testen en 34 diagnoses gerapporteerd in 2022 (vindpercentage 0,15%; 0,11% in 2021). Onder heteroseksuele mannen werden 11.816 testen en 35 diagnoses gerapporteerd in 2022 (vindpercentage 0,29%; 0,34% in 2021). In 2022 nam het syfilis-vindpercentage onder MSM – ASG (2,3%) licht af in vergelijking met 2021 (2,6%). Onder MSM – PrEP pilot was het syfilis vindpercentage stabiel op 1,7% in 2021 en 2022. In 2022 was het vindpercentage onder bekend hiv-positieve MSM hoger (6,6%) dan onder hiv-negatieve MSM – ASG die niet recent PrEP gebruikten (1,5%) en onder hiv-negatieve MSM – ASG die wel recent PrEP gebruikten (2,7%). Het vindpercentage was in 2022 het hoogst in consulten bij mensen die waren gewaarschuwd voor syfilis (12,6% in MSM – ASG en 9,4% in MSM – PrEP pilot). Een schatting van het aantal syfilis infecties bij de huisartsen is niet beschikbaar vanwege het lage aantal gevallen.

Virale soa

Bij de CSG's werden in 2022 144 nieuwe hiv-infecties gevonden, een lichte toename van in vergelijking met 2021 (138). Van de 144 nieuwe diagnoses waren er 72% in MSM – ASG, 8% in genderdiverse personen, 8% in vrouwen, 7% in MSM – PrEP pilot en 6% in heteroseksuele mannen. Er zijn 10 nieuwe hiv-infecties gediagnosticeerd in PrEP pilot-consulten, vier hiervan in PrEP start-consulten en zes in PrEP follow-up-consulten. Het hiv-vindpercentage onder MSM – ASG daalde van 1,4% in 2013 naar 0,3% in 2022. Het vindpercentage onder vrouwen (0,05% in 2022), heteroseksuele mannen (0,07% in 2022) en MSM – PrEP pilot (0,04% in 2022) is stabiel laag. In 2022 zijn 997 nieuwe hiv-patiënten aangemeld voor zorg bij hiv-behandelcentra volgens stichting hiv monitoring (SHM) (794 in 2021). Van hen waren 344 personen ook gediagnosticeerd in 2022 (dit was 325 in 2021), dit aantal kan nog oplopen door rapportagevertraging. Het aandeel heteroseksuelen (mannen en vrouwen) onder de nieuwe hiv-diagnoses steeg: 31% van de nieuwe hiv-diagnoses in 2022 vergeleken met 26% in 2021. Het aandeel van nieuwe hv-diagnoses onder MSM was in 2022 (57%) lager dan in 2021 (62%). Het aandeel hiv-positieve personen met andere/ onbekende overdrachtsrisico was 9% in 2022 (12% in 2021). De meerderheid van de MSM met hiv-diagnose die in 2022 in zorg kwamen kreeg deze diagnose in het ziekenhuis

(21% in 2022, lager dan 27% in 2021) en bij de CSG's (43% in 2022, 37% in 2021). Van de nieuw gediagnosticeerde patiënten in 2022 kwam 53% (56% in 2021) laat in zorg (CD4 < 350/mm³ of aids). Dit percentage was lager voor MSM (44%) dan voor vrouwen en heteroseksuele mannen (70%). Geschat wordt dat in 2021 94% van alle personen met hiv in Nederland gediagnosticeerd en in zorg was. Van hen was 94% ook gestart met behandeling, en daarvan had 96% een onderdrukte virale lading.

Voor genitale wratten en genitale herpes wordt veruit het grootste deel van de diagnoses gesteld bij de huisarts. In 2021 waren er naar schatting 47.500 diagnoses van genitale wratten (45.400 in 2020) en 27.300 diagnoses van genitale herpes (27.500 in 2020). Huisartsen rapporteerden genitale wratten vaker bij mannen (61% van alle gevallen) dan bij vrouwen, terwijl genitale herpes vaker bij vrouwen werd gezien (74% van alle gevallen). In 2022 was het aantal diagnoses van genitale wratten en genitale herpes bij de CSG's 787 en 601 respectievelijk (812 en 482 in 2021).

Het aantal acute hepatitis B infecties in de aangiftecijfers in 2022 (76) was hoger dan in 2021 (70). Seksueel contact zonder condoom was de meest gerapporteerde transmissieroute (59%). Het aantal acute hepatitis C gevallen in 2022 (28) was lager dan in 2021 (31). De belangrijkste transmissieroute van acute hepatitis C was onbeschermd seksueel contact tussen mannen (43%).

De mpox-uitbraak (voorheen bekend als apenpokken) begon in Nederland in mei 2022, met het hoogste aantal nieuwe mpox diagnoses in juli 2022. In totaal werden 1.259 mpox infecties in 2022 gerapporteerd aan het RIVM, waarvan 92% in MSM. De meest voorkomende transmissieroute voor mpox infecties was in 2022 seksueel contact (83%).

Conclusie

Voor het eerst sinds de COVID-19-pandemie lag het aantal consulten bij de CSG's boven het pre-pandemieniveau, wat aangeeft dat de soa-zorg bij de CSG's hersteld is. In 21% van de consulten werden één of meerdere soa vastgesteld, een stijging ten opzichte van voorgaande jaren. Sinds 2019 is er een toename te zien in de soa-vindpercentages onder vrouwen en heteroseksuele mannen van alle leeftijden. Dit was vooral te zien onder jongeren. De COVID-19-pandemie heeft een impact gehad op het geschatte aantal soa-gerelateerde episodes bij de huisarts. Zowel het aantal 'angst voor soa' episodes als het aantal soa-episodes nam licht af in 2021 ten opzichte van 2020, vooral onder personen jonger dan 25. Personen met een risico op soa wisten tijdens de pandemie de weg naar de huisarts te vinden, zij het in mindere mate. De wereldwijde uitbraak van mpox in 2022 laat zien dat continue monitoring en surveillance van soa en seksuele gezondheid belangrijk blijven, evenals preventief testen en behandeling van soa.

Introduction

This report summarises current trends in the epidemiology of Sexually Transmitted Infections (STIs), including human immunodeficiency virus (HIV), in the Netherlands. The Centre for Infectious Disease Control (CIb) at the National Institute for Public Health and the Environment (RIVM) initialised this report. The CIb collaborated with various partners in the field of STI to collect data for surveillance and to generate insights into trends and determinants. These include Sexual Health Centres (SHCs), stichting hiv monitoring (SHM, HIV Monitoring Foundation), public health laboratories, general practitioners (GPs) participating in the Nivel Primary Care Database, and other health care providers.

The data that are systematically collected by the nationwide network of SHCs under the responsibility of the Public Health Services (PHSs) are the backbone of the Dutch STI surveillance and STI trends and risk factors. Other available STI data from surveys, screening programmes, national

registries, cohort studies, and other surveillance systems are included where possible. Together, they provide an overview of the status of STI/HIV in the Netherlands.

Outline of the report

Chapter 1 describes the methodology of each data source used for STI surveillance in the Netherlands. In Chapter 2, the characteristics of the SHC attendees, data from sexual health consultations among young people (Sense), and data from consultations among MSM in the national PrEP pilot in 2022 are presented. In addition, data from the national Health Survey/Lifestyle Monitor and data from GPs are shown for 2021. Chapters 3-5 present data on bacterial STI (chlamydia, gonorrhoea and syphilis) and Chapters 6-11 focus on viral STI (HIV, genital warts, genital herpes, hepatitis B, hepatitis C and mpox). Conclusions and recommendations are presented in chapter 12.

1 Methodology of STI and HIV surveillance

The tables and figures in this report are based on a variety of data sources and present an up-to-date overview of the STI/HIV epidemic in the Netherlands. This overview is based on the systematic surveillance conducted among high-risk groups embodied in the nationwide system of Sexual Health Centres (SHCs). Data from general practitioners (GPs), who perform the bulk of STI consultations, were extrapolated from the Nivel Primary Care Database. We included data from the HIV treatment centres (stichting hiv monitoring) to gain insights into trends among HIV-positive individuals in care. Other additional data sources include the national Health Survey, weekly virological laboratory reports, the Gonococcal Resistance to Antimicrobials Surveillance (GRAS) programme, antenatal screening, the data on hepatitis B and C notifications, the hepatitis B vaccination programme for risk groups, the mpox vaccination programme, and the blood donor registry.

1.1 National surveillance at Sexual Health Centres

From 1995 onwards, STI diagnoses have been registered in an STI database at the RIVM in the Netherlands. In 2003, an STI sentinel surveillance system was implemented, which achieved national coverage in 2004. Since 2006, reporting to the national STI surveillance system has been organised in eight regions. One of the SHCs in each region is responsible for the coordination of STI surveillance (Figure 1.1). In total, 24 SHCs, mostly within the Public Health Services (PHSs), provide low-threshold, free-of-charge STI/HIV testing and care targeting high-risk groups, which falls under the regulation 'Additional Sexual Healthcare' or ASG (in Dutch). Inclusion criteria are those who: (1) report STI related symptoms, (2) are notified of STI exposure, (3) are men who have sex with men (MSM), (4) have a region of origin included in triage,¹ (5) report a partner from these regions of origin or who is MSM, (6) are under the age of 25, (7) report performing sex work, (8) are a victim of sexual violence, or (9) received an STI diagnosis in the past year. Since 2015, because of financial restrictions, SHCs have more strongly prioritised populations at highest risk of STIs, e.g., clients who are notified of or report symptoms related to STIs.

This change should be taken into account when interpreting trends, as it can lead to higher STI positivity.

Until 2011, attendees were routinely tested for chlamydia, gonorrhoea and syphilis, with an opt-out policy for HIV testing. Between 2012 and 2014, attendees under 25 with no other indication criteria were tested for chlamydia only. If the chlamydia test result was positive, further testing for gonorrhoea, syphilis and HIV took place. From 2015 onwards, attendees under 25 were tested for chlamydia and gonorrhoea, and additionally for syphilis, HIV and/or Hepatitis B Virus (HBV) if indicated. In short, indications for additional STI testing are those who: (1) are notified of syphilis, HIV, LGV, HBV or HCV infection, (2) have symptoms related to syphilis or HIV, (3) have reported performing sex work, (4) are clients of sex work, (5) are MSM, (6) have a region of origin included in triage¹, (7) have a partner from STI/HIV endemic areas or who is MSM, or (8) are victims of sexual violence. The testing policy for attendees over 25 years of age did not change: routine testing for chlamydia, gonorrhoea and syphilis, and an opt-out policy for HIV testing². The changes in testing policy need to be taken into account when interpreting trend data, as they may influence these trends. Hepatitis B and C, genital herpes, trichomonas, and LGV are tested on an indication-basis only.

All consultations executed at SHCs and corresponding diagnoses are reported online to the RIVM for surveillance purposes, a process facilitated by a web-based application (SOAP). The unit of analysis is a 'new STI consultation' and reports contain epidemiological, behavioural, clinical, and microbiological data on a wide range of STIs. In 2014, an identification number was added to the data collection which allows the identification of clients who were tested repeatedly at the same clinic. We discuss the number of repeated visits and STI positivity by number of consultations in Chapter 2. Region of origin is based on the client's and the client's parents' country of birth, according to the classification of Statistics Netherlands³. The classification distinguishes between born in the Netherlands, migrants, and children of migrants. Migrants are persons who are born abroad. Children of migrants are persons who are born in the Netherlands and have at least one parent who is born abroad.

¹ Region of origin as indicated by triage include Turkey, Africa, Latin America including Suriname and the former Netherlands Antilles, Asia, and Eastern Europe.

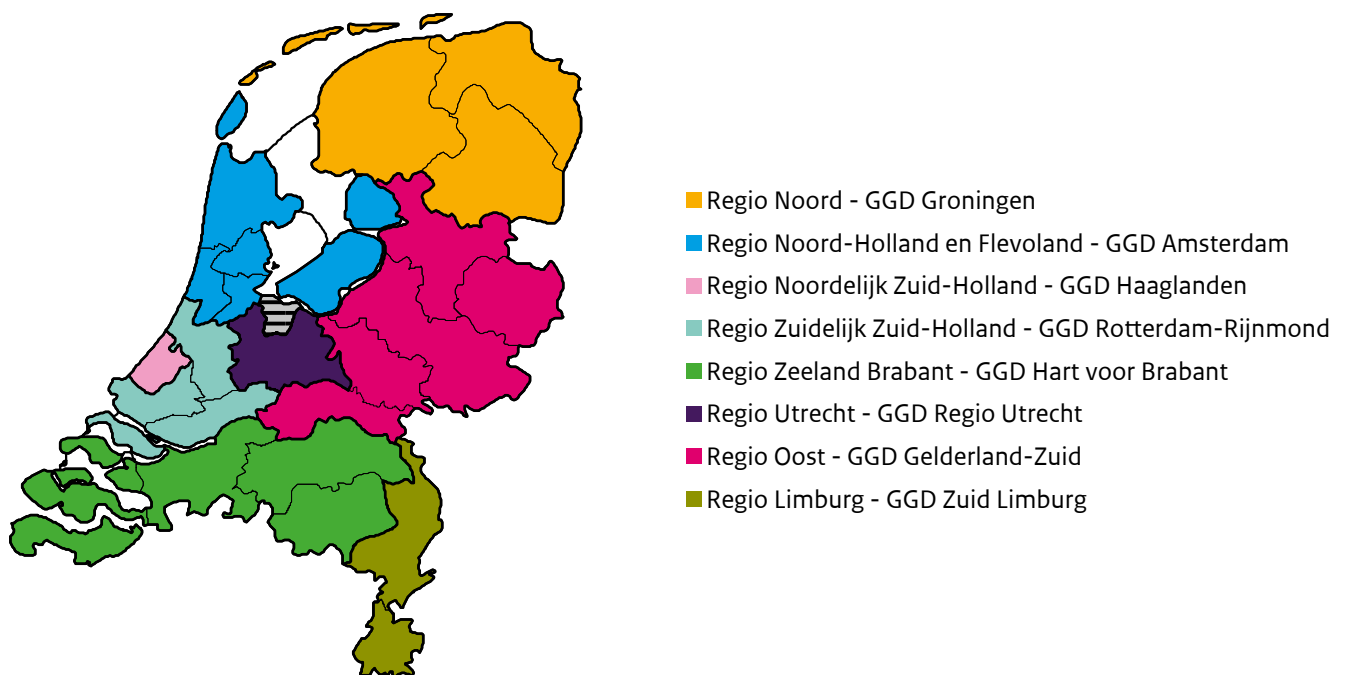
² See Draaiboek: <https://lci.rivm.nl/draaiboeken/consult-seksuele-gezondheid>

³ Statistics Netherlands: <https://www.cbs.nl/nl-nl/longread/statistische-trends/2022/nieuwe-indeling-bevolking-naar-herkomst>

Since August 2019, a national Pre-Exposure Prophylaxis (PrEP) pilot programme has been implemented in the Netherlands at SHCs. SHCs provide PrEP for HIV to high-risk groups. Before PrEP is provided, eligibility criteria are checked and STI testing is performed. During consultations, STI and HIV test results are discussed and, if HIV-negative, PrEP tablets are provided. During three-monthly follow-up consultations, STI and HIV tests are conducted⁴. MSM in the PrEP pilot programme visit the SHC more frequently and for different reasons than MSM who are not in the PrEP pilot. Thus the number of consultations and STI positivity are not directly comparable between MSM in the PrEP pilot programme and MSM who had a regular STI (ASG) consultation. Therefore, consultations of MSM in this report are divided into (1) consultations that fall within the ASG regulation (MSM – ASG) and (2) consultations that fall within the national PrEP pilot (MSM – PrEP pilot). It should be noted that MSM in the PrEP pilot occasionally visit SHCs for an STI/HIV test between PrEP follow-up consultations. These consultations fall within the ASG regulation. In addition, ASG consultations include Testlab consultations at the SHC. Testlab is an online service for MSM and is part of the MANtotMAN project. For women and heterosexual men, only ASG consultations are shown in this report unless specified otherwise, as the number of PrEP consultations in these groups are low.

In this report, the results of national surveillance of SHCs are presented with respect to the number and nature of new consultations and diagnoses. We focus on the major bacterial and viral STIs, including HIV infection. Trends in positivity by risk profile (based on demographic and behavioural indicators) are based on data taken from SHCs under national surveillance from 2013 to 2022. In May 2018, the General Data Protection Regulation (GDPR; AVG in Dutch) was implemented in the Netherlands. Initially, the interpretation of the GDPR resulted in a switch from opting-out to opting-in: all SHC attendees had to give consent to share their consultation data with RIVM for surveillance purposes since May 2018. The switch led to high numbers of non-consenting attendees in some regions, thus jeopardizing the interpretability of data and the continuation of regional and national STI/HIV surveillance, and therefore STI and HIV control - a task of general interest. For this reason, SHCs switched back to opting-out from July 2019 onwards. Between May 2018 and December 2019, aggregated data of non-registered consultations were obtained from SHCs on total chlamydia, LGV, gonorrhoea, syphilis, and HIV tests and diagnoses. Data was stratified by sex and sexual contact. Aggregated data of non-registered consultations were added to registered consultations to calculate the total number of consultations and the positivity of chlamydia, LGV,

Figure 1.1 Eight regions with coordinating SHC indicated



Footnote: GGD Gooi & Vechtstreek (grey striped region) does not have an SHC, persons from this area can be tested at an SHC in surrounding regions.

⁴ See Draaiboek: <https://ci.rivm.nl/draaiboeken/consult-seksuele-gezondheid>

gonorrhoea, syphilis, and HIV by sex and sexual contact. Demographic and behavioural indicators were not available for non-registered consultations. Therefore, all tables and figures regarding positivity by risk profiles are based on registered consultations only. We indicated where aggregated data of non-registered consultations have been included to registered consultations.

The Netherlands has experienced several waves of the COVID-19 pandemic in 2020 and 2021. In 2020, and to a lesser extent during 2021, sexual health care at SHCs was downscaled. This included a stricter prioritisation of clients with (severe) STI-related symptoms, clients that received STI notification (for syphilis, HIV, hepatitis and gonorrhoea with symptoms) and victims of sexual violence. Also, PrEP clients were allowed medication and essential PrEP care (i.e., creatinine, HIV and STI tests). This resulted in a lower number of consultations and higher positivity in 2020 and 2021. Positivity rates from 2020 and 2021 should therefore be interpreted with caution. In 2022, SHCs resumed their regular prioritisation. Thus, numbers of consultations and positivity rates from 2022 are comparable to those of 2019 and earlier.

1.2 Sense

To improve primary prevention and promote sexual health among young people (<25 years), SHCs offer free, anonymous consultations (Sense consultations) on a broad range of subjects relating to sexual health, including (problems with) sexual intercourse, unwanted pregnancy, birth control, STI, homosexuality, sexual violence, or “loverboys”. Data on the number and demographics of Sense consultation visitors are presented. From 2014 onwards, demographic information and the subject of Sense consultations are reported in the national STI/HIV surveillance system. However, results are difficult to interpret as the registration of Sense consultations is not uniform across SHCs.

1.3 Sexual health in the Health Survey/Lifestyle Monitor

From 2014, data on different lifestyle aspects in a representative sample of the Dutch population have been collected in the national Health Survey (Health Survey/Lifestyle Monitor), by Statistics Netherlands (CBS) in collaboration with RIVM, Rutgers, and Soa Aids Nederland (2021). Surveyed lifestyle themes include substance use, physical activity, nutrition, accidents, and sexual health. A standard set of indicators is collected for each of these topics annually⁵. The 2021 sexual health data were collected for a total of 3,542 women, 3,164 heterosexual men, and 158 MSM between the ages of 16 and 85. We present a selection of the 2021 results in this report in order to describe the characteristics related to sexual health and STI healthcare of the general population in the Netherlands. Data were weighted for demographic characteristics to correct for differences between the sample and the Dutch population.

1.4 STI in general practice

Data on STI incidence reported by GPs are obtained through the primary care network maintained at the Netherlands Institute for Health Services Research (Nivel), which is based on electronic health records in a network of GPs, the Nivel Primary Care Database (Nivel-PCD)⁶. The network uses data routinely collected from GPs to monitor health and the utilisation of health services in GP in a representative sample of approximately 10% of the Dutch population. All symptoms and diagnoses are recorded using the International Classification of Primary Care (ICPC-1) codes⁷. From 2010 onwards, the network of GPs gradually expanded from 120 practices to over 500 practices. Data on the incidence of STI episodes in the population covered by this network from 2011 to 2021 are included in this report. This is restricted to data from GPs with good quality morbidity data, which consisted of 372 practices in 2014, 416 in 2015, 350 in 2016, 367 in 2017, 323 in 2018, 404 in 2019, 314 in 2020, and 316 in 2021. Incidence rates were calculated based on the number of episodes of illness per 1,000 population aged 15-64⁸. Annual estimates of the

⁵ Health Survey/Lifestyle Monitor, Statistics Netherlands (CBS) in collaboration with National Institute for Public Health and the Environment (RIVM), Rutgers and Soa Aids Nederland, 2021.

⁶ Heins, M., Bes, J., Weesie, Y., Davids, R., Winckers, M., Korteweg, L., Leeuw, E. de, Urbanus, T., Dijk, L. van, Korevaar, J., Hasselaar, J., Hek, K. [Zorg door de huisarts-Nivel Zorgregistraties Eerste Lijn: Jaarcijfers 2021 en trendcijfers 2017-2021](#). [Internet]. 2022 [Geraadpleegd op 27-03-2023].

⁷ Lamberts H, Wood MR. ICPC: International Classification of Primary Care. Oxford: Oxford University Press, 1987.

⁸ Nielen MMJ, Spronk I, Davids R, Korevaar JC, Poos R, Hoeymans N, Opstelten W, van der Sande MAB, Biermans MCJ, Schellevis FG, Verheij RA. Estimating Morbidity Rates Based on Routine Electronic Health Records in Primary Care: Observational Study. *JMIR Med Inform*. 2019 Jul 26;7(3):e11929. doi: 10.2196/11929. PMID: 31350839

total number of episodes at GPs in the Netherlands were made by extrapolating the reporting rates at these practices to the total number of Dutch residents aged 15-64, as obtained from Statistics Netherlands (CBS) and reported by sex and age group (15-25 years and 25-64 years). For syphilis and HIV, the number of incident cases reported was too small for reliable incidence estimates. For HIV, the total number of episodes and the prevalence rates are based on the entire Dutch population (all ages), the reported prevalence rates are based on estimates from Nivel-PCD. HIV is defined as a 'chronic, non-reversible morbidity', which remains prevalent as long as the patient is registered in the network. HIV prevalence estimates in 2011 to 2021 have been standardised for urbanisation in this report.

For chlamydia, which does not have a main ICPC code, we used the 'chlamydia-related' ICPC codes in combination with prescription and laboratory data. The chlamydia-related ICPC codes include vaginitis (X84), cervicitis (X85) and Pelvic Inflammatory Disease (PID) (X74) in women, and orchitis/epididymitis (Y74) and other genital diseases (Y99) in men⁹.

The percentage of chlamydia episodes was estimated for each chlamydia-related ICPC main code. The chlamydia incidence rate was calculated by combining these percentages with the incidence rates of the separate chlamydia-related ICPC codes. The percentage of chlamydia episodes per ICPC were based on the proportion of the chlamydia-related ICPC codes with:

- an appropriate chlamydia-related prescription, i.e. azithromycin or doxycycline, at GPs with good quality morbidity and prescription data (315 practices in 2021)
- or: a positive chlamydia laboratory result. The number of chlamydia infections based on a positive laboratory result was extrapolated to all GPs with good quality morbidity and prescription data, because only some of the GPs have sufficient laboratory reports (269 practices in 2021).

1.5 Laboratory surveillance

National laboratory surveillance data are not available for STIs, except for data taken from the weekly virological reports. These include the total number of *Chlamydia trachomatis* positive tests from up to 21 participating laboratories (19 in 2022). The coverage of these laboratories and its representativeness of the Dutch population are not precisely known, but the laboratories are spread over the whole country and the coverage is sufficient to provide accurate and timely trends for (virological) infections and chlamydia¹⁰. There is an overlap between laboratories reporting in this system and the laboratories connected to SHCs.

1.6 Antimicrobial resistance of gonococci

Concerns about increasing resistance to quinolones at the (inter)national level led to an RIVM laboratory survey of gonococci resistance in 2002¹¹. Because the results demonstrated the need for systematic nationwide surveillance of gonococcal antimicrobial resistance, the Gonococcal Resistance to Antimicrobials Surveillance (GRAS) was implemented in the Netherlands in 2006. This survey consists of the systematic collection of data on gonorrhoea and resistance patterns, linked with epidemiological data. Gonorrhoea is usually diagnosed using Polymerase Chain Reaction (PCR). Within GRAS, additional culture and susceptibility testing of isolates is performed using E-tests. Resistance levels are calculated through breakpoints for resistance by the European Committee on Antimicrobial Susceptibility Testing (EUCAST)¹².

⁹ Van den Broek IVF, Verheij RA, van Dijk CE, Koedijk FDH, van der Sande MAB, van Bergen JEAM. Trends in sexually transmitted infections in the Netherlands, combining surveillance data from general practices and sexually transmitted infection centres. *BMC Family Practice*, 2010, 11:39.

¹⁰ See website: <https://www.rivm.nl/virologische-weekstaten>

¹¹ Van Loo IH, Spaargaren J, van de Laar MJW. Resistance of Gonococci in the Netherlands; Results of a survey of Medical Microbiology Laboratories. *Ned Tijdschr Geneeskd*. 2005;149(22):1217-1222. [Dutch].

¹² The European Committee on Antimicrobial Susceptibility Testing. Breakpoint tables for interpretation of MICs and zone diameters. Version 13.0, 2023. https://www.eucast.org/clinical_breakpoints

1.7 Antenatal screening

In the Netherlands, pregnant women are screened for syphilis, HBV and HIV. The blood sample is collected at the first midwife appointment (<13th week of the pregnancy). It is collected according to the opting-out principle, whereby pregnant women undergo the test after being provided with information unless they explicitly state they do not wish to participate. Almost all pregnant women in the Netherlands participate in this infectious disease screening programme (0.07% refused HIV tests and 0.00% refused hepatitis B and syphilis testing in 2020)¹³. The screening programme is coordinated by the Centre for Population Screening at the RIVM.

1.8 Congenital syphilis

The RIVM-IDS (Centre for Infectious Diseases Research, Diagnostics and Screening) offers Immunoglobulin M (IgM) diagnostics for neonates and young infants (<1 year) who may have been exposed to syphilis. This report presents national results from 2013-2022.

1.9 National registration of individuals registered at HIV treatment centres

In January 2002, an HIV reporting system for individuals entering care was implemented in the Netherlands. Pseudonymised longitudinal data of almost all newly registered HIV-positive individuals are collected by the HIV Monitoring Foundation (SHM). The goal of SHM is to monitor HIV-positive individuals registered at one of the 24 recognised HIV treatment centres and four children's HIV centres in the Netherlands, in order to study changes in the epidemic, the effects of treatment, and the quality of HIV care. All HIV-positive individuals registered in this national cohort are followed prospectively from the time of reporting in care. HIV-positive individuals in care who were diagnosed prior to the start of SHM were included

in the cohort retrospectively. HIV cases diagnosed before 1996 mainly include people who survived up to the start of the AIDS Therapy Evaluation in the Netherlands (ATHENA) national observational HIV cohort¹⁴ in 1996, the predecessor of SHM. The epidemiological data on newly reported HIV infections as well as trends in new AIDS diagnoses after 2000 are reported in collaboration with the Clb at the RIVM¹⁵. The number of people living with HIV in the Netherlands in 2021 was estimated by using the European Centre for Disease Prevention and Control (ECDC) HIV Modelling Tool¹⁶.

1.10 HIV incidence data

HIV incidence data are obtained from the Amsterdam Cohort Studies (ACS) on HIV/AIDS and blood donations. In 1984, the Amsterdam Cohort Studies on HIV and AIDS started registering MSM. The original aim was to investigate the epidemiology, psychosocial determinants, natural history, and pathogenesis of HIV-1 infection and AIDS, as well as to evaluate the effect of interventions in HIV-negative and HIV-positive MSM. In the past decade, the epidemiology and natural history of blood-borne and sexually transmitted infections other than HIV have also been included. The collaborating institutes within the ACS framework are the Sanquin Blood Supply Foundation, the PHS of Amsterdam (GGD Amsterdam), the Amsterdam University Medical Centre (Amsterdam UMC), the Jan van Goyen Medical Centre, the DC klinieken Amsterdam, and stichting hiv monitoring (SHM).

1.11 Notification of hepatitis B and C

The mandatory notification includes epidemiological data on newly diagnosed acute and chronic hepatitis B virus (HBV) and hepatitis C (HCV) infections, of which the notification of chronic HCV infections became mandatory in 2019. Since 2002, all PHSs have given notifications of HBV and HCV infections using the web-based application OSIRIS.

¹³ Van der Ploeg CPB, Oomen P, van Lent M. PSIE Procesmonitor 2020. Belangrijkste resultaten Prenatale Screening Infectieziekten en Erytrocytenimmunisatie (PSIE) over 2020. TNO/RIVM 2021.

¹⁴ Boender TS, Smit C, Sighem A, et al. AIDS Therapy Evaluation in the Netherlands (ATHENA) national observational HIV cohort: cohort profile. *BMJ Open* 2018;8:e022516. doi:10.1136/bmjopen-2018-022516.

¹⁵ van Sighem A.I., Boender T.S., Wit F.W.N.M., Smit C., Matser A., Reiss P. HIV Monitoring Report 2021, Human Immunodeficiency Virus (HIV) Infection in the Netherlands. Amsterdam: Stichting hiv monitoring, 2021. Available online at www.hiv-monitoring.nl

¹⁶ European Centre for Disease Prevention and Control. HIV estimates accuracy tool [Internet, software application]. Stockholm: ECDC; 2018. Available from: <https://ecdc.europa.eu/en/publications-data/hiv-estimates-accuracy-tool>

1.12 Hepatitis B vaccination programme for risk groups

Being a low-endemic country, the Netherlands adopted a vaccination programme targeted at behavioural high-risk groups. The programme offers free vaccination for MSM and persons that reported performing sex work. Heterosexuals with an STI indication were also considered a risk group until October 2007, as were drug users until January 2012. PHSs and SHCs offer complimentary vaccination according to the six-month schedule. Participants are tested serologically for markers of previous or current HBV infection during their consultation for a first vaccination. Data are collected from the registration system specifically developed for the vaccination programme. Although universal childhood vaccination was adopted in 2011, the current targeted risk group vaccination programme needs to be continued in the coming years.

1.13 Blood donors

From 1985 onwards, blood donated by (new and regular) blood donors has been screened for HIV, hepatitis B and C, and syphilis. Volunteers are screened 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 registry of Sanquin, which provides representative information on the prevalence and incidence of these infections in a low-risk population. Data from the 2013-2022 period are reported.

1.14 Mpox

Data on mpox cases are reported by the PHSs to the RIVM through the web-based application Osiris. Outbreak control measures for mpox included isolation of cases, quarantine and post-exposure prophylaxis (PEP) vaccination with Imvanex for high-risk contacts, and PrEP vaccination with Imvanex for MSM and transgender persons with high-risk behaviour (e.g. HIV-PrEP users, living with HIV, or have multiple sexual contacts). National data on PEP vaccinations are unavailable. But data on PrEP vaccinations that started on July 25, 2022, and the number of MSM and transgender persons invited for this vaccination are reported to the RIVM through iMPeX/Osiris.

2 Sexual health, STI and Sense consultations

2.1 Key points

2.1.1 Sexual Health Centres

- In this report, consultations of MSM are divided into consultations that fall within the regulation 'Additional Sexual Healthcare' (MSM – ASG) and consultations that fall within the national PrEP pilot programme (MSM – PrEP pilot). Due to the three-monthly testing interval for MSM – PrEP pilot, MSM – ASG and MSM – PrEP pilot are not directly comparable. Additional information can be found in 1.1 *National surveillance at Sexual Health Centres*.
- The impact of the COVID-19 pandemic and the national PrEP pilot programme on the number of consultations and STI positivity need to be taken into account when interpreting trend data, as this may influence trends.

Consultations

- In 2022, the total number of consultations at SHCs was 164,715.
- Of all SHC consultations, 38% concerned women (n=62,883), 17% heterosexual men (n=27,947), 27% MSM – ASG (n=44,318), 17% MSM – PrEP pilot (n=27,892) and 1% gender-diverse persons (n=1,675).
- Of gender-diverse persons, 213 (13%) identified as trans men, 906 (54%) as trans women, and 556 (33%) as other gender-diverse person. Due to the low number of gender-diverse persons, this category is excluded in the rest of the analyses, and characteristics of gender-diverse persons will be shown separately.
- The number of consultations increased by 19% compared with 2021, and by 55% compared with 2020, and was also higher compared with 2019 (+9%) before COVID-19. The number of consultations increased by 17% among women, 20% among heterosexual men, 20% among MSM – ASG, and by 22% among MSM – PrEP pilot compared with 2021.
- In 2022, 8,868, 3,533 and 614 Sense consultations were registered among women, men and gender-diverse persons respectively. The registration of Sense consultations is not uniform across SHCs.
- In 33,698 consultations (21%) one or more STI was diagnosed at SHCs (36% women, 19% heterosexual men, 30% MSM – ASG, and 15% MSM – PrEP pilot) in 2022. The number of consultations in which one or more STI was diagnosed increased by 23% compared with 2021, by 54% compared with 2020, and by 41% compared with 2019.
- STI positivity increased from 13.2% among women and 13.9% among heterosexual men in 2013 to 19.5% and 22.9% in 2022 respectively. Among MSM – ASG, STI positivity was stable at around 20% from 2013-2019, and increased to 22.6% in 2022. STI positivity among MSM – PrEP pilot decreased from 19.7% in 2019 to 18.1% in 2022.
- STI positivity was highest among persons with symptoms in MSM – ASG (37.0%) and MSM – PrEP pilot (42.9%). Among women and heterosexual men, STI positivity was highest in persons notified of an STI, 37.2% and 33.0% respectively.
- STI positivity was high among heterosexual men and MSM – ASG who had a gonorrhoea/chlamydia/syphilis infection in the past year, low level of education, or were aged below 25 years, and among MSM – ASG and MSM – PrEP pilot who reported sex work.
- An increasing STI positivity has been seen among women and heterosexual men of all ages since 2019. This was most notable in adolescents (30.0% among girls and 33.1% among boys aged under 19 years).
- Among gender-diverse persons tested at SHCs, 40% of trans men reported STI symptoms (21% trans women and 27% other gender-diverse persons), and 24% of trans men had had a positive STI test in the past year (22% trans women and 16% other gender-diverse persons). Of trans women, 52% reported sex work in the past 6 months (8% trans men and 14% other gender-diverse persons), and 21% were living with HIV (1% trans men and 5% other gender-diverse persons). Of gender-diverse persons, 58% reported a high level of education (48% trans men, 28% trans women).
- Among MSM – ASG, 31% reported having group sex, and 25% reported using drugs in relation to sex in the preceding 6 months. Of MSM – PrEP pilot, 40% reported having group sex, and 39% reported using drugs in relation to sex in the preceding 6 months. STI positivity was higher in MSM who reported having group sex (30%, MSM – ASG and 22%, MSM – PrEP pilot) and

using drugs in relation to sex (30%, MSM – ASG and 23% MSM – PrEP pilot).

- Over half of SHC consultations were in persons with a high education level and this proportion increased somewhat over time, from around 55% in 2014-2017 to 63% in 2022.
- The number of consultations among women who reported sex work (N=4,103) increased by 25% compared with 2021, but was lower compared with 2019 (-10%) before COVID-19. STI positivity among women who reported sex work decreased from 13.1% in 2021 to 11.5% in 2022 but is higher than the STI positivity of 9.6% in 2019.

Repeat testing

- Among women and heterosexual men tested at SHCs in 2022, the percentage with multiple consultations was 17% (15% in 2021; 11% in 2020) and 11% (10% in 2021; 7% in 2020), respectively. Among MSM – ASG, this percentage was 29% (28% in 2021; 38% in 2020).
- In total, 28,642 consultations with at least one STI diagnosis were completed among 106,600 individuals, and 3,763 individuals had two or more consultations with at least one STI diagnosis in 2022.
- Of all 30,766 unique persons tested among MSM – ASG, 27.6% had at least one or more STI diagnoses in 2022, and of all 9,365 unique persons tested among MSM – PrEP pilot, 39.8% had at least one or more STI diagnoses in 2022.

2.1.2 Regional comparisons

- In 2022, the number of STI consultations per 1,000 inhabitants between the ages of 15 and 65 years ranged from 2.4 in Drenthe to 14.6 in Zuid Limburg and 43.9 in Amsterdam.
- STI positivity differed between regions, ranging between 16.9% and 25.3% in women, 18.9% and 27.6% in heterosexual men, 21.3% and 26.8% in MSM – ASG, and 16.6% and 20.9% in MSM – PrEP pilot.
- Variation between the regions was seen in sex and sexual preference, as well as in age, education level, and proportions of those who were notified of STI/HIV exposure or reported STI-related symptoms.

2.1.3 General practice

- The estimated number of episodes of fear of STI at GPs has been increasing from approximately 174,100 in 2017 to 212,600 in 2019, but decreased to 179,200 in 2021. For both men and women this decrease was mainly seen among those aged 25-64 years old.
- The number of STI positive episodes was lower in 2021 (137,700) than the number of STI positive episodes in 2020

(141,600). Among both men and women this decrease was seen mainly among those aged 15-24 years old.

- The reporting rate for STI-related episodes at GPs was 52.9 and 24.8 per 1,000 population for women aged 15-24 and women aged 25-64 respectively, and 32.0 and 24.6 per 1,000 population for men aged 15-24 and men aged 25-64 respectively, in 2021.

2.1.4 Health Survey

- In 2021, 3,542 women, 3,164 heterosexual men, and 158 MSM participated in the national Health Survey.
- Among women between the ages of 16 and 29, 11% reported having been tested for an STI in the previous year, and 5% were tested for HIV. For heterosexual men in the 16-29 age group, these percentages were 5% for STI tests and 2% for HIV tests.
- Higher percentages of testing were seen among MSM in the 16-44 age group, with 23% testing for STI and 22% for HIV in the past year. The percentage of survey participants reporting STI and HIV tests was lower in older than in younger age groups.

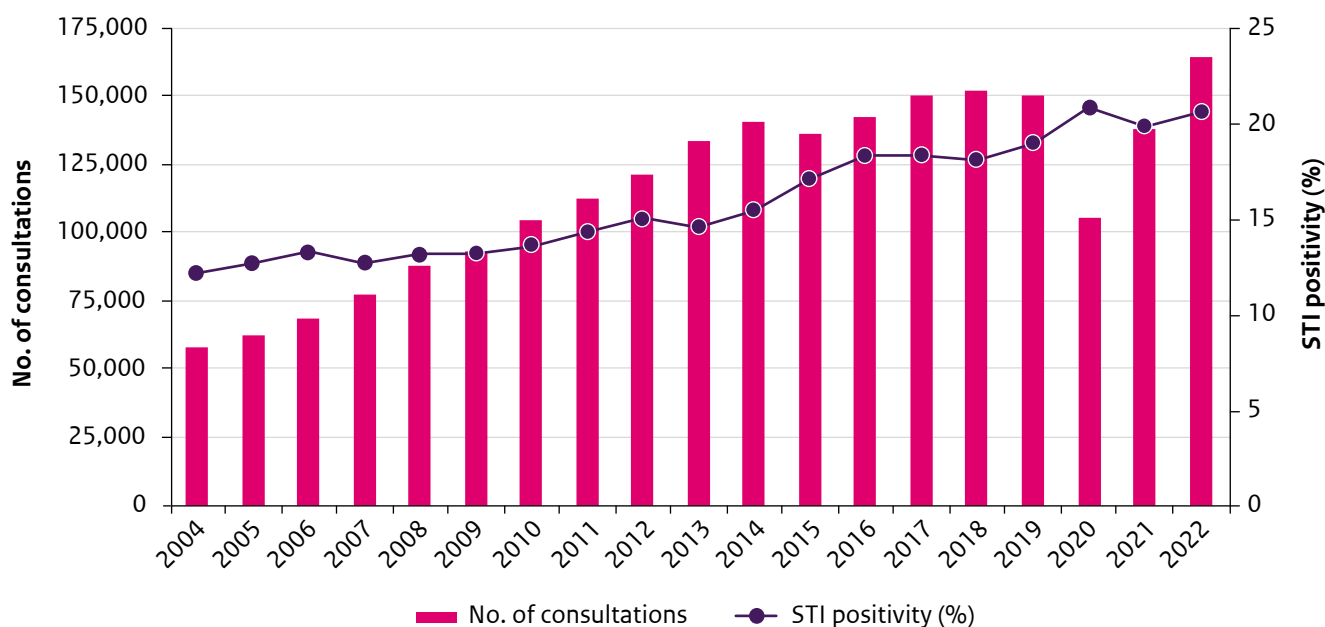
2.1.5 PrEP consultations

- Since August 2019, SHCs have been providing PrEP care to individuals at high risk of acquiring HIV, via a national PrEP pilot programme. An estimated 8,558 individuals participated in the SHC national PrEP pilot on December 31st, 2022. Unless otherwise specified, figures presented below pertain to the entire duration of the programme.
- Between July 2019 and 31 December 2022, 12,195 individuals (of whom 97% were MSM) had had a first PrEP consultation; 2,413 individuals (of whom 95% were MSM) joined the pilot programme in 2022. Those who joined in 2022 were somewhat less likely to report previous PrEP use in the past year than those who joined before 2022 (34% in 2022 vs 42% over the entire duration of the programme).
- Among 10,211 participants whose first PrEP pilot consultation was a 'start' consultation, the most frequently reported indication for PrEP pilot participation was condomless anal sex with a partner with an unknown HIV status (68%).
- A total of 1,141 individuals discontinued participation in the PrEP pilot programme, the majority of discontinuation occurred in 2022 (n=519, 46%). Of the 1,141 individuals who discontinued participation, 12% (n=134) continued PrEP via another provider and 48% (n=551) stopped using PrEP, with reduced risk being the most frequently cited reason for stopping PrEP use (68%). For a further 456 individuals (40%) who discontinued PrEP pilot participation, no information on continuation of PrEP use was available.

- Since the start of the PrEP pilot programme, 42 participants were diagnosed with HIV; 35 diagnoses were in MSM and 7 in gender-diverse persons. Twenty-nine of the diagnoses were made at the first PrEP pilot consultation and 13 in the 3rd-11th PrEP pilot consultation. Of these 13 individuals, all reported recent PrEP use (n=3 daily use, n=10 event-driven use). In 2022, 15 participants were diagnosed with HIV, 11 diagnoses were in MSM (10 in PrEP pilot consultations and 1 in an ASG consultation) and 4 in gender-diverse persons.
- In addition to those discontinuing PrEP pilot participation, 4,015 individuals were lost to follow-up. Just under half of all loss to follow-up occurred directly after the first consultation (n=1,851; 46%).
- A total of 70,554 PrEP pilot consultations have been completed; 85% of PrEP consultations were 3-monthly follow-up consultations, with a median of 13 weeks in between consultations. In 96% of follow-up consultations, participants reported PrEP use in the past three months. Daily PrEP use was most common (55% of consultations), followed by event-driven use (40%), and a combination of both (4%).
- In addition to PrEP pilot consultations, there were 8,738 ASG consultations (regular STI or Testlab consultations) in pilot programme participants over the duration of the programme so far. In 2022, there were 3,490 ASG consultations in pilot programme participants (8% of all MSM – ASG consultations).
- STI positivity remained relatively stable at around 18% over the course of PrEP pilot programme consultations. In unique persons tested in 2022, 39.8% of MSM participating in the pilot had at least one positive STI test (Table 2.10).

2.2 Consultations and characteristics of Sexual Health Centre attendees

Figure 2.1 Number of consultations and STI positivity in the national STI surveillance in the Netherlands, 2004-2022



Footnote 1: STI include chlamydia, gonorrhoea, infectious syphilis, HIV and infectious hepatitis B.

Footnote 2: The STI positivity was calculated based on all consultations registered in SOAP, and aggregated data of non-registered consultations were included for 2018 and 2019.

Footnote 3: Consultations with MSM that fall within the regulation 'Additional Sexual Healthcare' (MSM – ASG), and consultations with MSM that fall within the national PrEP pilot (MSM – PrEP pilot) are reported separately from the rest of the tables and figures.

Footnote 4: Consultations with trans men, trans women, other gender-diverse persons, and unknown are excluded in the rest of the figures and tables.

Table 2.1a Number of ASG consultations by sex and type of sexual contact, 2018-2022

Sex and type of sexual contact	2018	2019	2020	2021	2022
	n (%)	n (%)	n (%)	n (%)	n (%)
Women	68,710 (45.1)	54,522 (44.5)	42,238 (46.3)	53,941 (46.9)	62,883 (46.2)
Heterosexual men	33,041 (21.7)	24,706 (20.2)	18,018 (19.8)	23,198 (20.2)	27,947 (20.5)
MSM	49,873 (32.8)	42,905 (35.0)	30,400 (33.3)	37,067 (32.2)	44,318 (32.6)
Gender-diverse persons*	484 (0.3)	423 (0.3)	472 (0.5)	788 (0.7)	997 (0.7)
Unknown*	109 (0.1)	12 (0.0)	50 (0.1)	0 (0.0)	0 (0.0)
Total	152,217	122,568	91,178	114,994	136,145

Footnote: Available aggregated data of non-registered consultations included for 2018 and 2019.

* Categories gender-diverse persons and unknown are excluded in the rest of the tables.

Table 2.1b Number of ASG consultations of gender-diverse persons by gender, 2020-2022

Gender	2020	2021	2022
	n (%)	n (%)	n (%)
Trans men	79 (16.7)	148 (18.8)	157 (15.7)
Trans women	280 (59.3)	380 (48.2)	454 (45.5)
Other gender-diverse persons	113 (23.9)	260 (33.0)	386 (38.7)
Total	472	788	997

Footnote: Trans men, trans women, and other gender-diverse persons are excluded in the rest of the tables.

Table 2.1c Number of PrEP pilot consultations by sex and type of sexual contact, 2019-2022

Sex and type of sexual contact	2019	2020	2021	2022
	n (%)	n (%)	n (%)	n (%)
Women	6 (0.2)	27 (0.2)	37 (0.2)	38 (0.1)
Heterosexual men	0 (0.0)	1 (0.0)	3 (0.0)	0 (0.0)
MSM	3,614 (97.8)	14,534 (98.1)	22,928 (97.8)	27,892 (97.5)
Gender-diverse persons*	67 (1.8)	248 (1.7)	474 (2.0)	678 (2.4)
Unknown*	9 (0.2)	0 (0.0)	0 (0.0)	0 (0.0)
Total	3,696	14,810	23,442	28,608

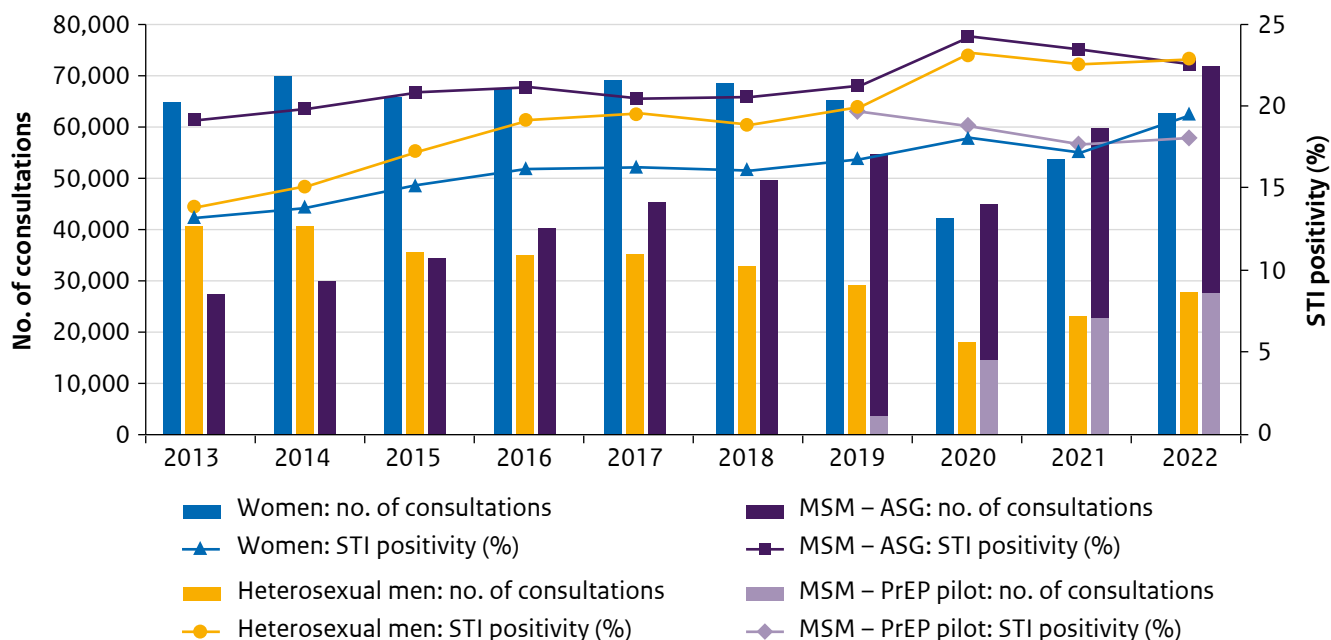
* Categories gender-diverse persons and unknown are excluded in the rest of the tables.

Table 2.1d Number of PrEP pilot consultations of gender-diverse persons by gender, 2020-2022

Gender	2020	2021	2022
	n (%)	n (%)	n (%)
Trans men	24 (9.7)	63 (13.3)	56 (8.3)
Trans women	162 (65.3)	308 (65.0)	452 (66.7)
Other gender-diverse persons	62 (25.0)	103 (21.7)	170 (25.1)
Total	248	474	678

Footnote: Trans men, trans women, and other gender-diverse persons are excluded in the rest of the tables.

Figure 2.2 Number of consultations and STI positivity by sex and type of sexual contact, 2013-2022



Footnote 1: STI include: chlamydia, gonorrhoea, infectious syphilis, HIV and infectious hepatitis B.

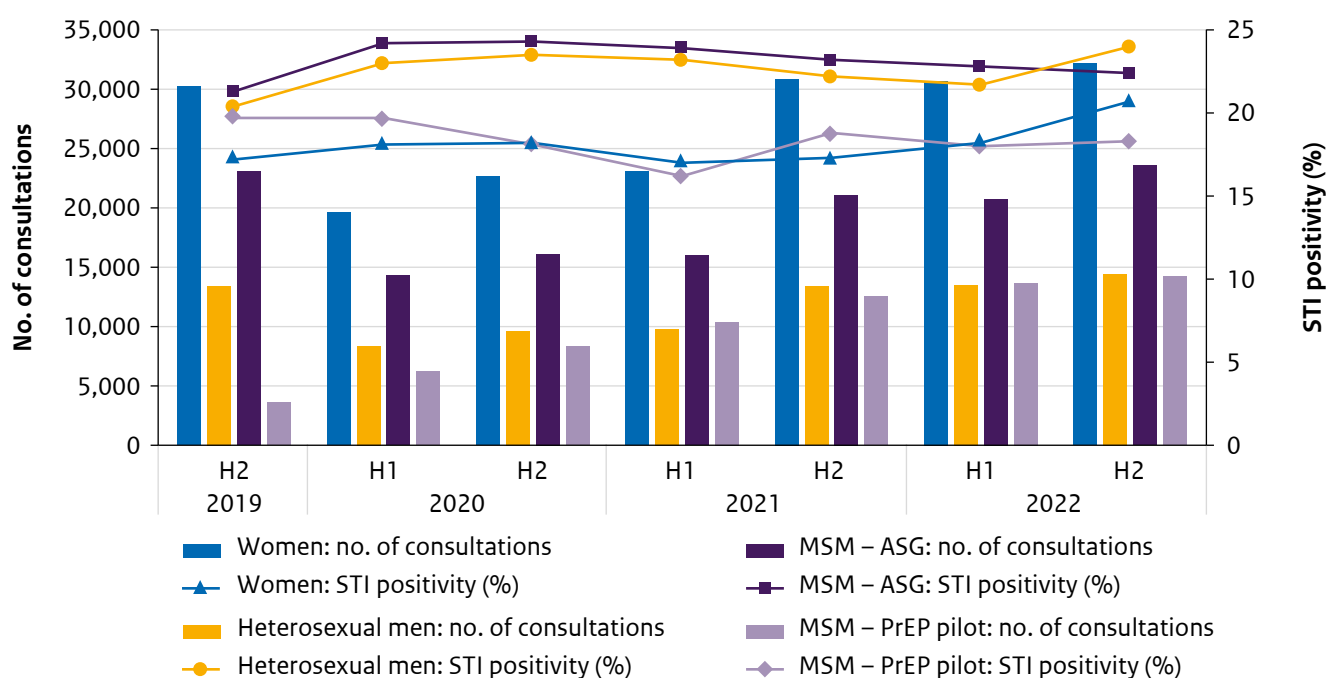
Footnote 2: Aggregated data of non-registered consultations are included in the number of consultations for 2018 and 2019. The STI positivity in 2019 was calculated based on consultations registered in SOAP only; for 2018 aggregated numbers of non-registered consultations were also included.

Footnote 3: Trends in the number of consultations and/or positivity in MSM over time may change due to the distinction between ASG and PrEP pilot consultations.

Furthermore, due to the three-monthly testing interval for MSM – PrEP pilot, MSM – ASG and MSM – PrEP pilot are not directly comparable.

Footnote 4: MSM in the PrEP pilot occasionally visit SHCs for an STI/HIV test between PrEP follow-up consultations. These consultations fall within the ASG regulation.

Figure 2.3 Half-yearly number of consultations and STI positivity, mid 2019 to 2022

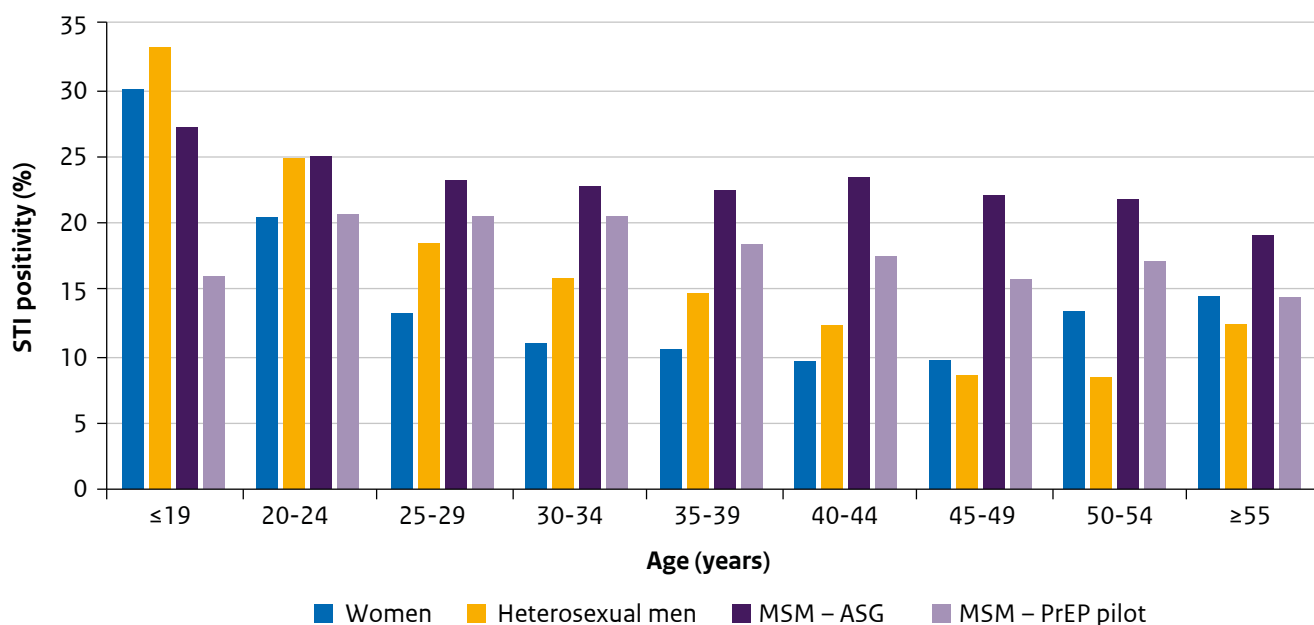


Footnote: H1=January-June, H2=July-December

Table 2.2 Number of consultations by age, sex and type of sexual contact, 2022

Age (years)	Women	Heterosexual men	MSM – ASG	MSM – PrEP pilot
	n (%)	n (%)	n (%)	n (%)
≤19	7,603 (12.1)	2,426 (8.7)	792 (1.8)	113 (0.4)
20-24	39,787 (63.3)	16,819 (60.2)	6,390 (14.4)	2,280 (8.2)
25-29	8,834 (14.1)	5,060 (18.1)	8,707 (19.6)	4,369 (15.7)
30-34	2,654 (4.2)	1,679 (6.0)	8,063 (18.2)	5,033 (18.0)
35-39	1,371 (2.2)	869 (3.1)	5,404 (12.2)	3,787 (13.6)
40-44	885 (1.4)	408 (1.5)	3,835 (8.7)	3,117 (11.2)
45-49	636 (1.0)	270 (1.0)	2,956 (6.7)	2,594 (9.3)
50-54	548 (0.9)	180 (0.6)	2,822 (6.4)	2,462 (8.8)
≥55	526 (0.8)	236 (0.8)	5,347 (12.1)	4,137 (14.8)
Total	62,845	27,947	44,318	27,892

Figure 2.4 STI positivity by age, sex and type of sexual contact, 2022



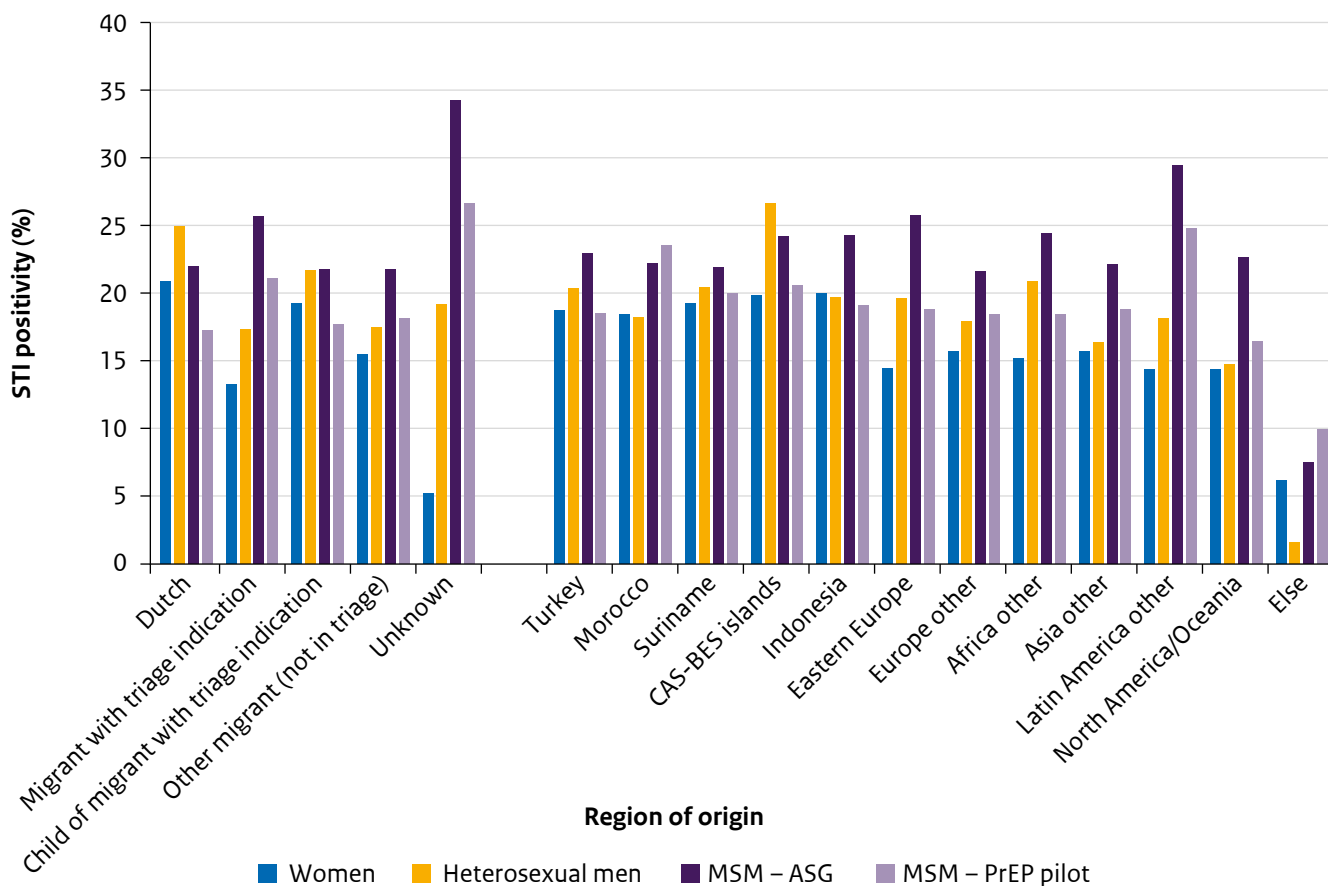
Footnote: STI include: chlamydia, gonorrhoea, infectious syphilis, HIV and infectious hepatitis B.

Table 2.3 Number of consultations by region of origin, sex and type of sexual contact, 2022

Region of origin	Women	Heterosexual men	MSM – ASG	MSM – PrEP pilot
	n (%)	n (%)	n (%)	n (%)
The Netherlands	44,317 (70.5)	17,681 (63.3)	26,308 (59.4)	16,732 (60.0)
Turkey	784 (1.2)	740 (2.6)	898 (2.0)	548 (2.0)
Migrant	148 (18.9)	140 (18.9)	338 (37.6)	239 (43.6)
Child of a migrant	636 (81.1)	600 (81.1)	560 (62.4)	309 (56.4)
Morocco	851 (1.4)	1,009 (3.6)	639 (1.4)	295 (1.1)
Migrant	80 (9.4)	128 (12.7)	187 (29.3)	111 (37.6)
Child of a migrant	771 (90.6)	881 (87.3)	452 (70.7)	184 (62.4)
Suriname	2,571 (4.1)	1,872 (6.7)	1,285 (2.9)	784 (2.8)
Migrant	357 (13.9)	362 (19.3)	462 (36.0)	326 (41.6)
Child of a migrant	2,212 (86.0)	1,509 (80.6)	823 (64.0)	458 (58.4)
CAS-BES islands	1,335 (2.1)	899 (3.2)	1,067 (2.4)	596 (2.1)
Migrant	508 (38.1)	462 (51.4)	782 (73.3)	480 (80.5)
Child of a migrant	826 (61.9)	437 (48.6)	285 (26.7)	116 (19.5)
Indonesia	443 (0.7)	148 (0.5)	775 (1.7)	531 (1.9)
Migrant	62 (14.0)	13 (8.8)	251 (32.4)	174 (32.8)
Child of a migrant	381 (86.0)	135 (91.2)	523 (67.5)	357 (67.2)
Eastern Europe	2,298 (3.7)	631 (2.3)	2,195 (5.0)	1,174 (4.2)
Migrant	1,663 (72.4)	385 (61.0)	2,027 (92.3)	1,095 (93.3)
Child of a migrant	633 (27.5)	246 (39.0)	168 (7.7)	79 (6.7)
Europe other	3,976 (6.3)	1,646 (5.9)	4,439 (10.0)	2,552 (9.1)
Migrant	2,402 (60.4)	990 (60.1)	3,676 (82.8)	2,030 (79.5)
Child of a migrant	1,574 (39.6)	656 (39.9)	762 (17.2)	522 (20.5)
Africa other	1,716 (2.7)	1,366 (4.9)	978 (2.2)	573 (2.1)
Migrant	559 (32.6)	523 (38.3)	691 (70.7)	463 (80.8)
Child of a migrant	1,157 (67.4)	843 (61.7)	287 (29.3)	110 (19.2)
Asia other	2,097 (3.3)	1,103 (3.9)	2,764 (6.2)	2,224 (8.0)
Migrant	1,060 (50.5)	611 (55.4)	2,240 (81.0)	1,847 (83.0)
Child of a migrant	1,035 (49.4)	491 (44.5)	524 (19.0)	377 (17.0)
Latin America other	1,639 (2.6)	548 (2.0)	2,134 (4.8)	1,390 (5.0)
Migrant	1,107 (67.5)	297 (54.2)	1,946 (91.2)	1,299 (93.5)
Child of a migrant	530 (32.3)	250 (45.6)	188 (8.8)	91 (6.5)
North America/Oceania	769 (1.2)	286 (1.0)	793 (1.8)	459 (1.6)
Migrant	434 (56.4)	157 (54.9)	704 (88.8)	386 (84.1)
Child of a migrant	335 (43.6)	129 (45.1)	89 (11.2)	73 (15.9)
Unknown	49 (0.1)	18 (0.1)	43 (0.1)	34 (0.1)
Total	62,845	27,947	44,318	27,892

Footnote: The numbers of migrant and child of a migrant for each region do not always add up to 100%. The generation of the remaining group is unknown.

Figure 2.5 STI positivity by region of origin (left side: aggregated data; right side: specified per region of origin with triage indication), sex and type of sexual contact, 2022



Footnote 1: STI includes: chlamydia, gonorrhoea, infectious syphilis, HIV and infectious hepatitis B.

Footnote 2: Region of origin with triage indication include Turkey, Morocco, Suriname, CAS-BES islands, Indonesia, Eastern Europe, Africa other, Latin America other, and Asia other.

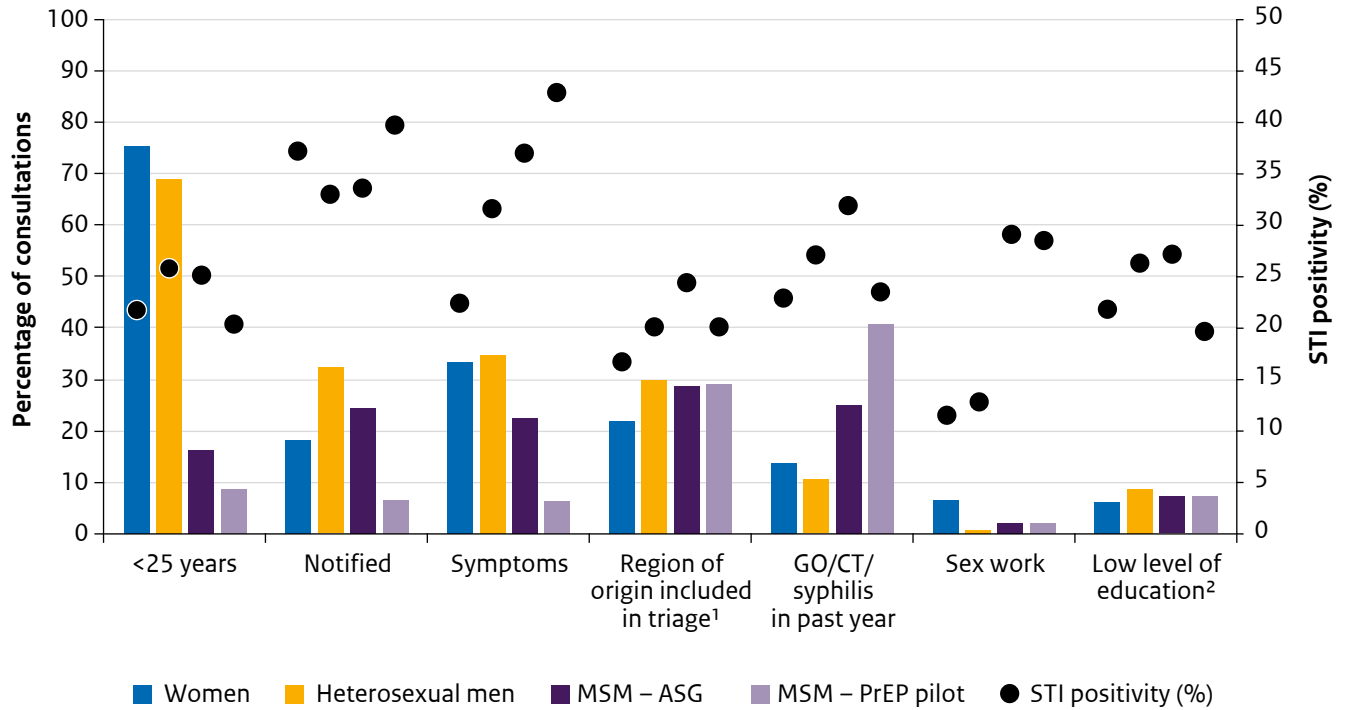
Table 2.4 Reported triage indication by sex and type of sexual contact, 2022

	Women n (%)	Heterosexual men n (%)	MSM – ASG n (%)	MSM – PrEP pilot n (%)
Notified				
No	51,281 (81.6)	18,880 (67.6)	33,407 (75.4)	26,057 (93.4)
Yes	11,461 (18.2)	9,029 (32.3)	10,809 (24.4)	1,818 (6.5)
Unknown	103 (0.2)	38 (0.1)	102 (0.2)	17 (0.1)
Symptoms				
No	40,924 (65.1)	17,745 (63.5)	33,733 (76.1)	26,024 (93.3)
Yes	21,005 (33.4)	9,700 (34.7)	9,968 (22.5)	1,796 (6.4)
Unknown	916 (1.5)	502 (1.8)	617 (1.4)	72 (0.3)
Region of origin included in triage¹				
No	49,111 (78.1)	19,631 (70.2)	31,583 (71.3)	19,777 (70.9)
Yes	13,734 (21.9)	8,316 (29.8)	12,735 (28.7)	8,115 (29.1)
Age				
<25	15,455 (24.6)	8,702 (31.1)	37,136 (83.8)	25,499 (91.4)
≥25	47,390 (75.4)	19,245 (68.9)	7,182 (16.2)	2,393 (8.6)
Partner in risk group²				
No	46,486 (74.0)	20,659 (73.9)	27,091 (61.1)	17,769 (63.7)
Yes	15,291 (24.3)	7,044 (25.2)	16,361 (36.9)	9,386 (33.7)
Unknown	1,068 (1.7)	244 (0.9)	866 (2.0)	737 (2.6)
Sex work				
No	58,436 (93.0)	27,647 (98.9)	43,054 (97.1)	26,841 (96.2)
Yes, in past 6 months	4,103 (6.5)	180 (0.6)	890 (2.0)	586 (2.1)
Unknown	306 (0.5)	120 (0.4)	374 (0.8)	465 (1.7)
Gonorrhoea/chlamydia/syphilis in past year				
Not tested	36,630 (58.3)	20,000 (71.6)	15,877 (35.8)	2,438 (8.7)
Tested, negative	16,903 (26.9)	4,668 (16.7)	16,056 (36.2)	13,155 (47.2)
Tested, positive	8,604 (13.7)	2,945 (10.5)	11,061 (25.0)	11,358 (40.7)
Tested, unknown	52 (0.1)	32 (0.1)	167 (0.4)	182 (0.7)
Unknown	656 (1.0)	302 (1.1)	1,157 (2.6)	759 (2.7)
Victim of sexual violence				
No	60,786 (96.7)	27,863 (99.7)	43,774 (98.8)	27,413 (98.3)
Yes	2,021 (3.2)	73 (0.3)	346 (0.8)	77 (0.3)
Unknown	38 (0.1)	11 (0.0)	198 (0.4)	401 (1.4)
At least one indication (including MSM)				
No	1,959 (3.1)	859 (3.1)	0 (0.0)	2 (0.0)
Yes	60,886 (96.9)	27,088 (96.9)	44,318 (100.0)	27,890 (100.0)

¹ Region of origin with triage indication include Turkey, Morocco, Suriname, CAS-BES islands, Indonesia, Eastern Europe, Africa other, Latin America other, and Asia other.

² For heterosexual men and MSM: partner originating from a region of origin with triage indication. For women: partner originating from a region of origin with triage indication or a male partner who had sex with men.

Figure 2.6 Characteristics and STI positivity by sex and type of sexual contact, 2022



1 Region of origin with triage indication include Turkey, Morocco, Suriname, CAS-BES islands, Indonesia, Eastern Europe, Africa other, Latin America other, and Asia other.
 2 Low level of education: no education, elementary school, lbo, mavo, vmbo, mbo-1.

Table 2.5 Number of consultations by demographics, (sexual) behavioural characteristics, sex and type of sexual contact, 2022

	Women	Heterosexual men	MSM – ASG	MSM – PrEP pilot
	n (%)	n (%)	n (%)	n (%)
Educational level¹				
High	39,771 (63.3)	15,861 (56.8)	29,177 (65.8)	18,285 (65.6)
Medium	16,361 (26.0)	8,615 (30.8)	9,204 (20.8)	6,040 (21.7)
Low	3,802 (6.0)	2,409 (8.6)	3,183 (7.2)	1,996 (7.2)
Unknown	2,911 (4.6)	1,062 (3.8)	2,754 (6.2)	1,571 (5.6)
Number of partners in past 6 months				
0 partners	490 (0.8)	220 (0.8)	479 (1.1)	314 (1.1)
1 partner	15,111 (24.0)	5,301 (19.0)	3,569 (8.1)	1,616 (5.8)
2 partners	15,210 (24.2)	5,785 (20.7)	4,966 (11.2)	2,327 (8.3)
3 or more partners	31,985 (50.9)	16,638 (59.5)	35,300 (79.7)	23,630 (84.7)
Unknown	49 (0.1)	3 (0.0)	4 (0.0)	5 (0.0)

Table 2.5 (continued) Number of consultations by demographics, (sexual) behavioural characteristics, sex and type of sexual contact, 2022

	Women	Heterosexual men	MSM – ASG	MSM – PrEP pilot
	n (%)	n (%)	n (%)	n (%)
Receptive anal sex, in past 6 months				
No receptive anal sex	47,534 (75.6)		12,527 (28.3)	4,646 (16.7)
Yes, consistently with a condom	1,441 (2.3)		5,641 (12.7)	1,306 (4.7)
Yes, not consistently with a condom	3,137 (5.0)		13,670 (30.8)	9,102 (32.6)
Yes, never with a condom	9,662 (15.4)		11,850 (26.7)	12,616 (45.2)
Unknown	1,065 (1.7)		626 (1.4)	218 (0.8)
Insertive anal sex, in past 6 months				
No insertive anal sex		23,757 (85.0)	9,544 (21.5)	3,857 (13.8)
Yes, consistently with a condom		519 (1.9)	6,309 (14.2)	1,284 (4.6)
Yes, not consistently with a condom		891 (3.2)	14,781 (33.4)	9,278 (33.3)
Yes, never with a condom		1,994 (7.1)	13,147 (29.7)	13,256 (47.5)
Unknown		781 (2.8)	534 (1.2)	216 (0.8)
Vaginal sex, in past 6 months²				
No vaginal sex	589 (0.9)	352 (1.3)	905 (11.9)	378 (24.0)
Yes, consistently with a condom	4,146 (6.6)	1,662 (6.0)	975 (12.8)	235 (14.9)
Yes, not consistently with a condom	22,951 (36.5)	12,192 (43.8)	2,015 (26.5)	303 (19.2)
Yes, never with a condom	34,172 (54.4)	13,281 (47.7)	2,572 (33.8)	628 (39.8)
Unknown	981 (1.6)	355 (1.3)	1,144 (15.0)	33 (2.1)
Receptive oral sex, in past 6 months				
No receptive oral sex	6,250 (9.9)		2,449 (5.5)	612 (2.2)
Yes, consistently with a condom	1,043 (1.7)		301 (0.7)	82 (0.3)
Yes, not consistently with a condom	4,822 (7.7)		4,140 (9.3)	1,023 (3.7)
Yes, never with a condom	49,101 (78.1)		36,780 (83.0)	25,935 (93.0)
Unknown	1,624 (2.6)		641 (1.4)	234 (0.8)
Client of sex work				
No	40,695 (64.8)	26,472 (94.7)	42,594 (96.1)	27,193 (97.5)
Yes, in past 6 months	175 (0.3)	1,272 (4.6)	1,206 (2.7)	319 (1.1)
Unknown	21,975 (35.0)	203 (0.7)	518 (1.2)	380 (1.4)
Previous HIV test				
No	45,749 (72.8)	21,620 (77.4)	6,085 (13.7)	541 (1.9)
Yes, positive	28 (0.0)	16 (0.1)	4,528 (10.2)	0 (0.0)
Yes, negative	16,250 (25.9)	5,826 (20.8)	33,391 (75.3)	27,328 (98.0)
Yes, result unknown	81 (0.1)	39 (0.1)	66 (0.1)	14 (0.1)
Unknown	737 (1.2)	446 (1.6)	248 (0.6)	9 (0.0)

¹ Low: no education, elementary school, lbo, mavo, vmbo, mbo-1; medium: mbo-2-4, havo, vwo; high: university of applied sciences, university.

² For MSM: numbers are reported for men who had sex with both men and women (N=9,188). Men who had sex with men only are excluded.

Table 2.6 Number of ASG consultations in gender-diverse persons by reported triage indication, demographics, and gender, 2022

	Trans men	Trans women	Other gender-diverse persons
	n (%)	n (%)	n (%)
Notified			
No	128 (81.5)	395 (87.0)	303 (78.5)
Yes	28 (17.8)	59 (13.0)	83 (21.5)
Unknown	1 (0.6)	0 (0.0)	0 (0.0)
Symptoms			
No	93 (59.2)	356 (78.4)	272 (70.5)
Yes	62 (39.5)	93 (20.5)	105 (27.2)
Unknown	2 (1.3)	5 (1.1)	9 (2.3)
Educational level*			
High	76 (48.4)	125 (27.5)	223 (57.8)
Medium	47 (29.9)	78 (17.2)	86 (22.3)
Low	14 (8.9)	56 (12.3)	35 (9.1)
Unknown	20 (12.7)	195 (43.0)	42 (10.9)
Sex worker			
No	143 (91.1)	211 (46.5)	327 (84.7)
Yes, in past 6 months	13 (8.3)	237 (52.2)	53 (13.7)
Unknown	1 (0.6)	6 (1.3)	6 (1.6)
Gonorrhoea/chlamydia/syphilis in past year			
Not tested	81 (51.6)	176 (38.8)	201 (52.1)
Tested, negative	32 (20.4)	160 (35.2)	118 (30.6)
Tested, positive	37 (23.6)	99 (21.8)	60 (15.5)
Unknown	7 (4.5)	19 (4.2)	7 (1.8)
Known HIV-positive			
No	155 (98.7)	360 (79.3)	368 (95.3)
Yes	2 (1.3)	94 (20.7)	18 (4.7)

Footnote: Triage indications and demographics not shown for PrEP consultations among gender-diverse persons in 2022 (n=56 in trans men, n=452 in trans women, and n=170 in other gender-diverse persons).

* Low: no education, elementary school, lbo, mavo, vmbo, mbo-1; medium: mbo-2-4, havo, vwo; high: university of applied sciences, university

Table 2.7 Number of consultations and percentage of positive tests among MSM by (sexual) behavioural characteristics, 2022

	MSM – ASG		MSM – PrEP pilot	
	n (%)	% STI	n (%)	% STI
Total number of consultations	44,318 (100.0)	22.6	27,982 (100.0)	18.1
Anal sex in past 6 months				
No	3,494 (7.9)	11.1	665 (2.4)	8.3
Receptive anal sex only	5,997 (13.5)	21.3	3,189 (11.4)	16.5
Insertive anal sex only	9,026 (20.4)	17.1	3,980 (14.3)	11.9
Both insertive and receptive	25,128 (56.7)	26.6	19,822 (71.1)	20.1
Unknown	673 (1.5)	18.3	236 (0.8)	10.2
Group sex				
No	28,863 (65.1)	19.8	16,354 (58.6)	15.5
Yes	13,589 (30.7)	29.5	11,077 (39.7)	22.1
Unknown	1,866 (4.2)	16.1	456 (1.6)	16.2
Sex with HIV-positive MSM¹				
No	8,890 (20.1)	21.0	6,304 (22.6)	16.7
Yes	1,344 (3.0)	27.9	1,722 (6.2)	20.8
Don't know	7,065 (15.9)	22.4	3,800 (13.6)	18.4
Missing	27,019 (61.0)	22.9	16,066 (57.6)	18.3
Drug use in relation to sex, in past 6 months²				
No	32,567 (73.5)	19.9	16,753 (60.1)	15.0
Yes	11,209 (25.3)	30.2	10,915 (39.1)	22.9
Unknown	542 (1.2)	25.1	224 (0.8)	17.9
Injected/slammed drugs in past 6 months¹				
No	8,840 (19.9)	29.8	8,272 (29.7)	22.2
Yes	347 (0.8)	38.3	382 (1.4)	31.2
Missing	35,131 (79.3)	20.6	19,238 (69.0)	16.1
Drugs type				
Alcohol	14,403 (32.5)	23.9	7,808 (27.9)	19.9
Erection stimulants	3,733 (8.4)	29.2	3,952 (14.1)	21.2
Cocaine	3,335 (7.5)	27.6	2,451 (8.8)	23.4
XTC/MDMA	5,624 (12.7)	29.6	5,551 (19.8)	21.8
Speed	1,511 (3.4)	31.1	1,325 (4.7)	25.9
Heroin	9 (0.0)	22.2	10 (0.0)	20.0
Crystal Meth	541 (1.2)	38.4	502 (1.8)	29.3
Mephedrone	376 (0.8)	33.8	324 (1.2)	25.9
3-MMC	3,330 (7.5)	38.3	3,643 (13.0)	28.1
4-MEC	114 (0.3)	35.1	94 (0.3)	19.1
4-FA	74 (0.2)	32.4	48 (0.2)	27.1
GHB/GBL	4,541 (10.2)	35.5	5,702 (20.4)	25.3
Ketamine	2,102 (4.7)	31.7	2,096 (7.5)	24.7
Poppers	6,883 (15.5)	29.2	5,700 (20.4)	22.1
Cannabis/hashish	4,547 (10.3)	25.8	2,895 (10.3)	20.7
Other	515 (1.0)	25.0	491 (1.2)	22.6

¹ Voluntary to ask and register in SOAP.

² Included drugs are cocaine, XTC/MDMA/Speed, Heroin, Crystal Meth, Mephedrone, 3-MMC, 4-MEC, 4-FA, GHB/GBL and ketamine.

Footnote: STI include: chlamydia, gonorrhoea, infectious syphilis, HIV and infectious hepatitis B.

Table 2.8 Number of consultations and STI positivity by age, level of education, sex and type of sexual contact, 2022

Education level	Age group				Total n (% positivity)
	≤19 n (% positivity)	20-24 n (% positivity)	25-34 n (% positivity)	≥35 n (% positivity)	
Women					
Low	975 (30.3)	1,660 (22.6)	624 (15.9)	543 (10.9)	3,802 (21.8)
Medium	3,743 (30.2)	9,084 (23.5)	2,424 (15.8)	1,109 (12.4)	16,361 (23.1)
High	2,705 (30.1)	28,336 (19.2)	7,502 (11.7)	1,228 (11.5)	39,771 (18.3)
Heterosexual men					
Low	380 (37.6)	1,169 (27.1)	545 (25.1)	315 (11.7)	2,409 (26.3)
Medium	1,263 (31.6)	4,960 (27.4)	1,877 (20.3)	515 (14.2)	8,615 (25.7)
High	723 (34.0)	10,332 (23.1)	3,949 (15.4)	857 (11.2)	15,861 (21.0)
MSM – ASG					
Low	81 (25.9)	352 (28.4)	935 (29.7)	1,815 (25.7)	3,183 (27.2)
Medium	417 (25.7)	1,636 (28.4)	3,035 (25.4)	4,116 (23.2)	9,204 (24.9)
High	263 (27.0)	4,150 (23.1)	11,871 (21.3)	12,891 (19.9)	29,177 (21.0)
MSM – PrEP pilot					
Low	156 (28.2)	220 (21.8)	493 (22.3)	1,282 (16.8)	2,151 (19.4)
Medium	666 (21.6)	979 (21.6)	1,752 (19.9)	4,116 (23.2)	9,204 (24.9)
High	1,439 (18.3)	2,926 (19.1)	6,074 (18.8)	12,891 (19.9)	18,864 (17.3)

Footnote: Low level of education: no education, elementary school, lbo, mavo, vmbo, mbo-1; medium level of education: mbo 2-4, havo, vwo; high level of education: university of applied sciences, university.

Table 2.9a Number of ‘big five’ STI diagnoses and STI positivity by sex and type of sexual contact, 2022

Diagnosis	Women	Heterosexual men	MSM – ASG	MSM – PrEP pilot
	n (% positivity)	n (% positivity)	n (% positivity)	n (% positivity)
Chlamydia	11,213 (17.9)	5,910 (21.2)	4,793 (10.9)	2,589 (9.4)
Gonorrhoea	1,458 (2.3)	666 (2.4)	5,617 (12.8)	2,686 (9.8)
Syphilis, infectious*	34 (0.1)	34 (0.3)	995 (2.3)	472 (1.7)
HIV	11 (0.0)	8 (0.1)	105 (0.3)	10 (0.0)
Hepatitis B, infectious	0 (0.0)	17 (0.5)	16 (0.1)	0 (0.0)

* Infectious syphilis includes primary infection, secondary infection and latens recens.

Footnote 1: ‘Big five’ STI includes chlamydia, gonorrhoea, syphilis, HIV and hepatitis B.

Footnote 2: Among MSM participating in the PrEP pilot, 15 new HIV infections were diagnosed (1 in an ASG consultation, 8 in PrEP start consultations, and 6 in PrEP follow-up consultations).

Table 2.9b Number of other STI diagnoses and positivity (in case of laboratory-confirmed diagnoses) by sex and type of sexual contact, 2021

	Women	Heterosexual men	MSM – ASG	MSM – PrEP pilot
	n (%)	n (%)	n (%)	n (%)
Laboratory-confirmed diagnoses				
Syphilis, non-infectious or not specified				
latens tarda	11 (0.0)	8 (0.1)	115 (0.3)	8 (0.0)
not specified	17 (0.1)	10 (0.1)	140 (0.3)	21 (0.1)
Hepatitis B, recovered	103 (1.6)	93 (2.8)	316 (2.9)	55 (1.4)
Hepatitis C	3 (0.6)	5 (1.6)	35 (1.1)	36 (0.2)
Any LGV			312 (9.2)	157 (8.1)
Rectal LGV			306 (9.0)	157 (8.1)
Urogenital LGV			3 (0.1)	0 (0.0)
Oral LGV			0 (0.0)	0 (0.0)
LGV ulcer			6 (0.2)	2 (0.1)
Other syndromes / clinical diagnoses				
Trichomoniasis ¹	64	11	6	1
Genital herpes				
primary: HSV1 ²	138	51	64	16
primary: HSV2 ²	95	67	112	17
primary: HSV unknown	12	4	1	0
recurrent	4	4	10	4
Genital warts	286	301	161	33
Urethritis	1	455	453	76
Proctitis	4	1	123	29
Candidiasis	432	58	19	1
Bacterial vaginosis	986			
Scabies	18	57	42	9
Pubic Lice	0	0	1	1
PID	40			
Epididymitis		7	14	4
Mycoplasma genitalium	46	42	31	9
Ulcus e.c.i.	18	16	44	14

¹ Trichomoniasis tests are usually performed on clinical indication (e.g. women with bacterial vaginosis), and in persons notified for trichomoniasis.

² Laboratory-confirmed.

2.3 Repeated testing at the Sexual Health Centres

Table 2.10 Total number of tests, STI diagnoses and STI positivity on consultation and person level among MSM-ASG and MSM-PrEP pilot, 2022

	MSM – ASG			MSM – PrEP pilot		
	Positive (N)	Tests (N)	Positivity (%)	Positive (N)	Tests (N)	Positivity (%)
One or more STI						
Consultations	10,010	44,318	22.6	5,056	27,892	18.1
Persons	8,506	30,766	27.6	3,729	9,365	39.8
Chlamydia						
Consultations	4,793	44,037	10.9	2,589	27,422	9.4
Persons	4,422	30,601	14.5	2,170	9,283	23.4
Gonorrhoea						
Consultations	5,617	44,048	12.8	2,686	27,423	9.8
Persons	4,951	30,606	16.2	2,214	9,284	23.8
Infectious syphilis						
Consultations	995	43,428	2.3	472	27,547	1.7
Persons	975	30,309	3.2	462	9,296	5.0
HIV						
Consultations	105	38,606	0.3	10	27,685	0.0
Persons	105	27,543	0.4	10	9,333	0.1

Footnote 1: Consultation level depicts all registered STI consultations with an STI diagnosis and STI test. Person level depicts the total number of unique persons with an STI diagnosis (at least once) and the number of unique persons tested (at least once) for each STI in 2022. Positivity is calculated as N diagnoses/N tests for both levels.

Footnote 2: Of the 10 new HIV infections among MSM – PrEP pilot, 60% reported PrEP use in the past 3 months.

Table 2.11 Number and percentage of clients visiting the SHC repeatedly and positivity at each visit by sex and type of sexual contact, 2022

No. of consultation	Women		Heterosexual men		MSM – ASG	
	n (%)	STI	n (%)	STI	n (%)	STI
1 st	51,207 (100)	19.5	24,627 (100)	23.0	30,766 (100)	21.9
2 nd	8,606 (16.8)	19.7	2,682 (10.9)	23.1	9,031 (29.4)	23.4
3 rd	2,077 (4.1)	18.7	459 (1.9)	19.8	2,862 (9.3)	23.9
4 th	626 (1.2)	15.0	125 (0.5)	16.0	1,057 (3.4)	27.5

Footnote: Number of visits reach up to 14 in MSM – ASG, 15 in women and 10 in heterosexual men. 5th-11th consultation not shown because of low numbers.

Table 2.12 Characteristics of clients at each consultation by sex and type of sexual contact, 2022

	Women n (%)	Heterosexual men n (%)	MSM – ASG n (%)
Notified for STI/HIV			
1 st	9,736 (19.0)	8,044 (32.7)	7,640 (24.8)
2 nd	1,458 (16.9)	850 (31.7)	2,189 (24.2)
3 rd	200 (9.6)	103 (22.4)	635 (22.2)
STI-related symptoms			
1 st	17,925 (35.0)	8,543 (34.7)	7,099 (23.1)
2 nd	2,529 (29.4)	970 (36.2)	1,958 (21.7)
3 rd	435 (20.9)	151 (32.9)	592 (20.7)
Region of origin with triage indication¹			
1 st	11,058 (21.6)	7,105 (28.9)	8,609 (28.0)
2 nd	1,977 (23.0)	918 (34.2)	2,613 (28.9)
3 rd	482 (23.2)	200 (43.6)	894 (31.2)
Age <25 years			
1 st	38,477 (75.1)	16,814 (68.3)	5,477 (17.8)
2 nd	6,585 (76.5)	1,959 (73.0)	1,257 (13.9)
3 rd	1,569 (75.5)	330 (71.9)	316 (11.0)
Partner in risk group²			
1 st	12,338 (24.1)	6,121 (24.9)	10,924 (35.5)
2 nd	2,210 (25.7)	711 (26.5)	3,456 (38.3)
3 rd	526 (25.3)	157 (34.2)	1,211 (42.3)
Sex work			
1 st	2,771 (5.4)	126 (0.5)	595 (1.9)
2 nd	867 (10.1)	35 (1.3)	178 (2.0)
3 rd	319 (15.4)	11 (2.4)	72 (2.5)
Gonorrhoea/chlamydia/syphilis in past year			
1 st	4,539 (8.9)	1,734 (7.0)	5,308 (17.3)
2 nd	2,666 (31.0)	912 (34.0)	3,238 (35.9)
3 rd	874 (42.1)	210 (45.8)	1,444 (50.5)
≥3 sexual contacts in the past 6 months			
1 st	24,919 (48.7)	14,364 (58.3)	23,759 (77.2)
2 nd	5,151 (59.9)	1,834 (68.4)	7,543 (83.5)
3 rd	1,310 (63.1)	324 (70.6)	2,523 (88.2)
Client of sex work			
1 st	123 (0.2)	1,122 (4.6)	896 (2.9)
2 nd	31 (0.4)	127 (4.7)	193 (2.1)
3 rd	14 (0.7)	18 (3.9)	76 (2.7)

Table 2.12 (continued) Characteristics of clients at each consultation by sex and type of sexual contact, 2022

	Women	Heterosexual men	MSM – ASG
	n (%)	n (%)	n (%)
Known HIV-positive			
1 st	20 (0.0)	15 (0.1)	2,608 (8.5)
2 nd	5 (0.1)	0 (0.0)	1,107 (12.3)
3 rd	1 (0.0)	1 (0.2)	469 (16.4)
Low level of education³			
1 st	3,037 (5.9)	2,114 (8.6)	2,258 (7.3)
2 nd	550 (6.4)	237 (8.8)	618 (6.8)
3 rd	150 (7.2)	48 (10.5)	199 (7.0)

Footnote: Number of visits reach up to 14 in MSM – ASG, 15 in women and 10 in heterosexual men. 4th-11th consultation shown because of low numbers.

1 Region of origin with triage indication include Turkey, Morocco, Suriname, CAS-BES islands, Indonesia, Eastern Europe, Africa other, Latin America other, and Asia other.

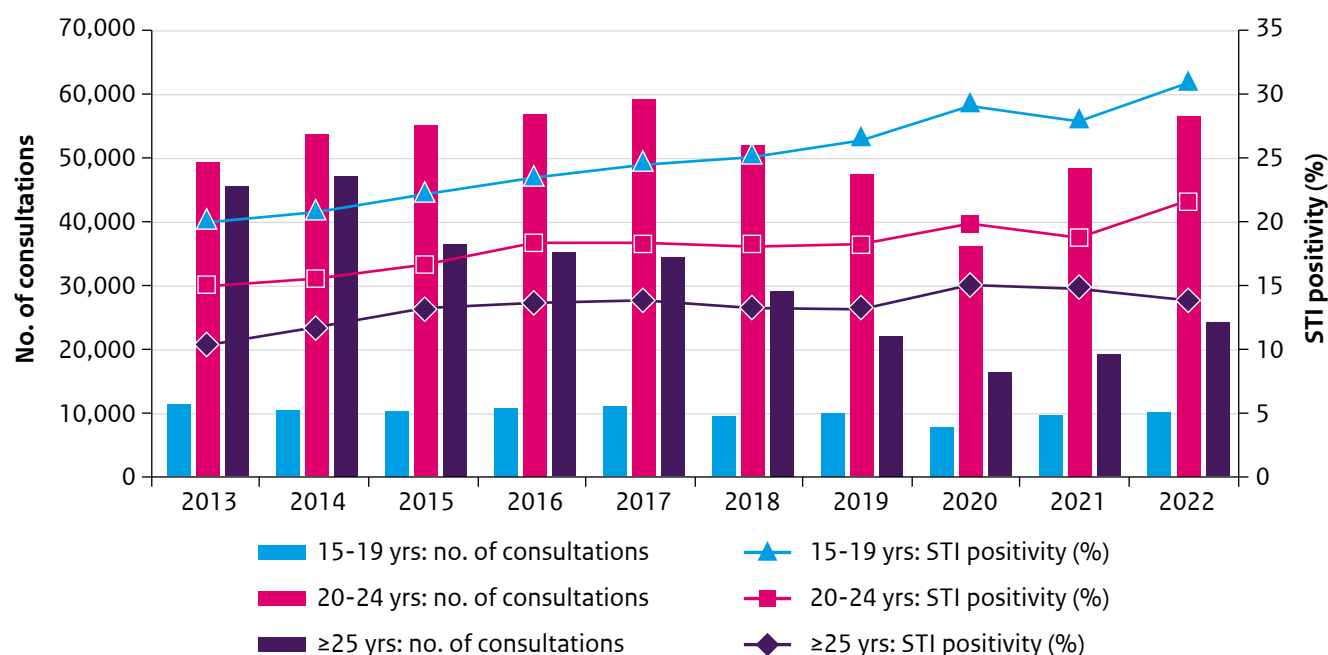
2 For heterosexual men and MSM – ASG: partner originating from a region of origin with triage indication. For women: partner originating from a region of origin with triage indication or a male partner who had sex with men.

3 Low level of education: no education, elementary school, lbo, mavo, vmbo, mbo-1.

2.4 Trends in Sexual Health Centre consultations

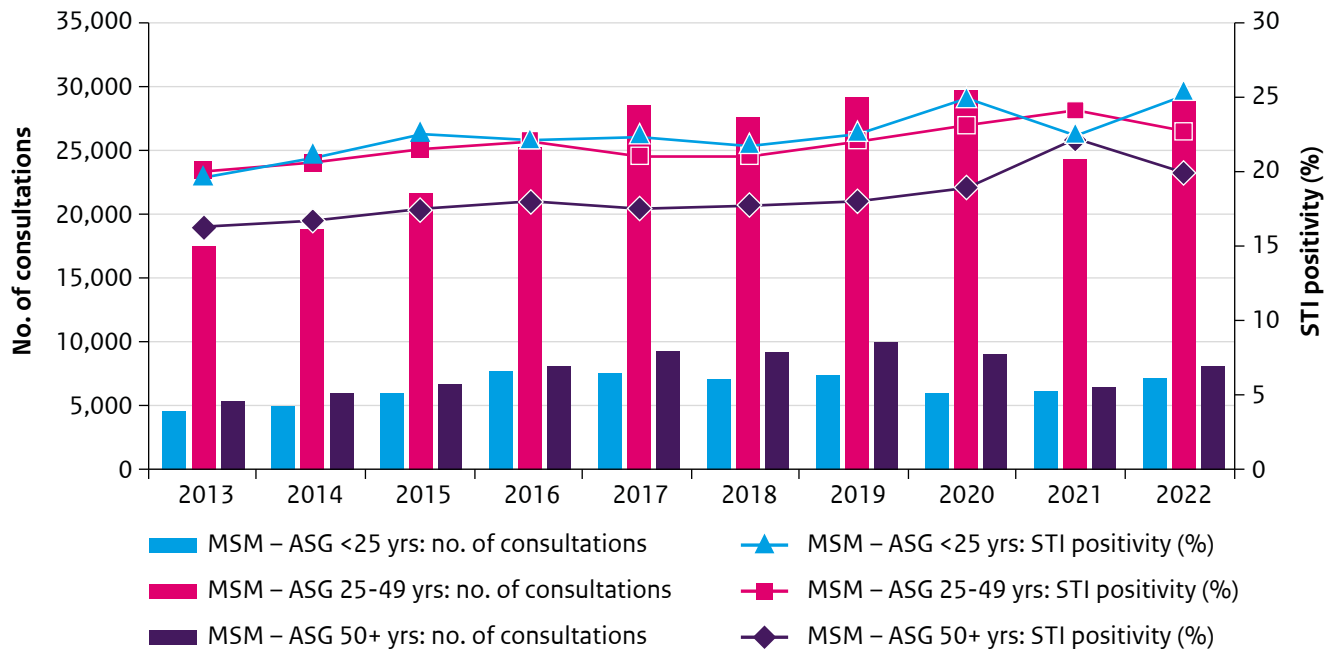
2.4.1 Trends in specific risk groups

Figure 2.7 Number of consultations and STI positivity among women and heterosexual men by age group, 2013-2022



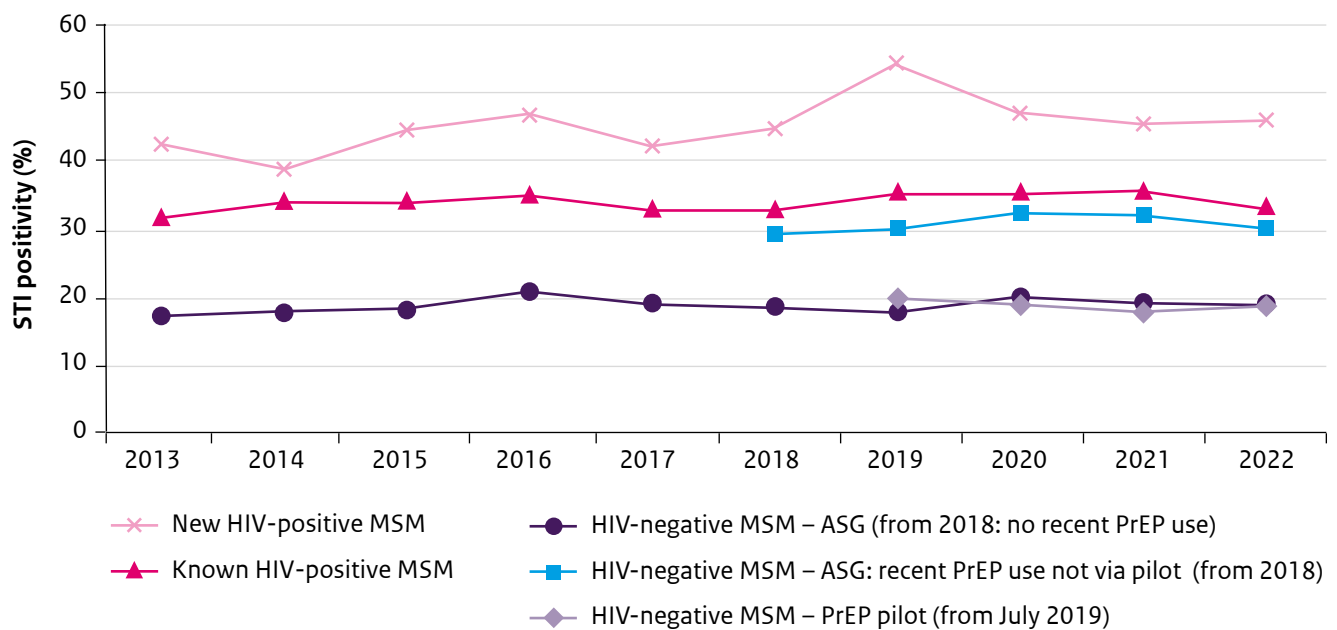
Footnote: STI include: chlamydia, gonorrhoea, infectious syphilis, HIV and infectious hepatitis B.

Figure 2.8 Number of consultations and STI positivity among MSM – ASG by age group, 2013-2022



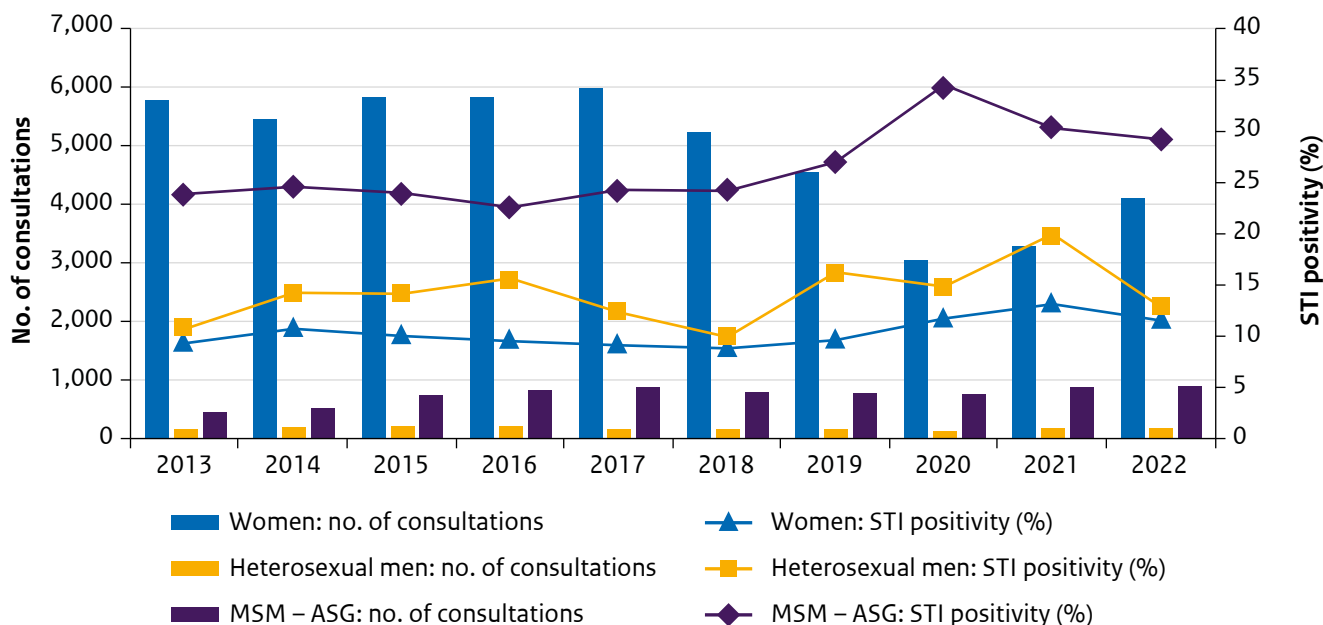
Footnote: STI include: chlamydia, gonorrhoea, infectious syphilis, HIV and infectious hepatitis B.

Figure 2.9 Number of consultations and STI positivity among MSM by HIV status, 2013-2022



Footnote: STI include: chlamydia, gonorrhoea, infectious syphilis and infectious hepatitis B.

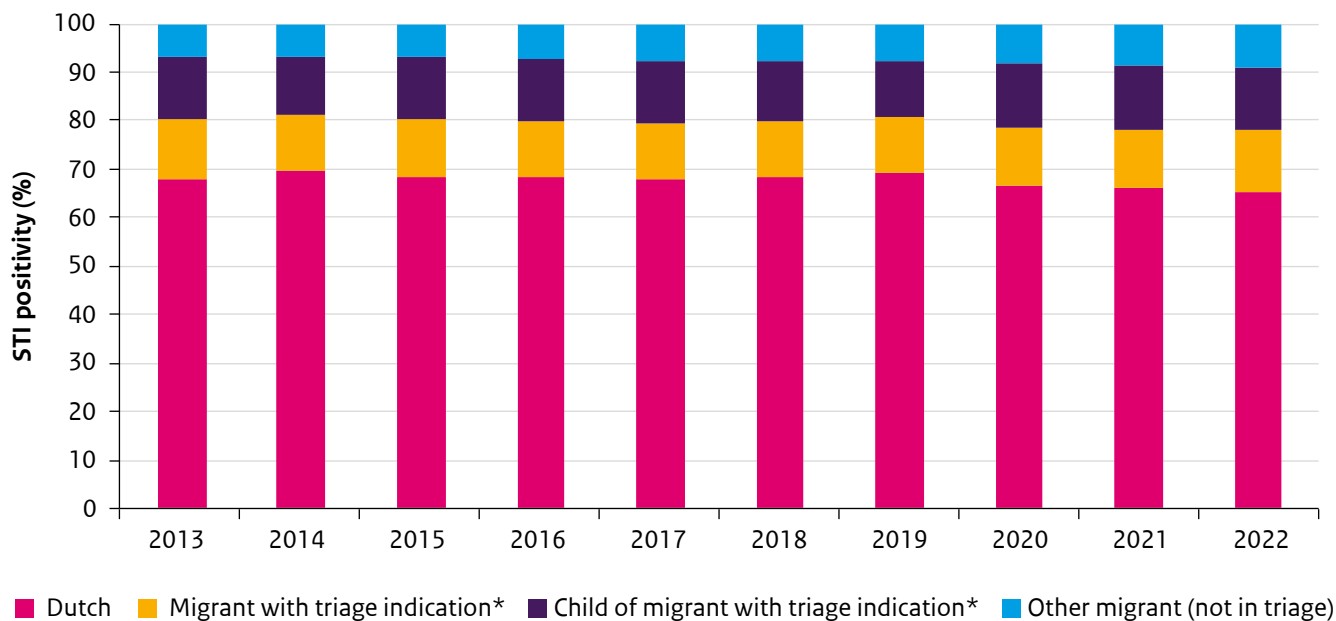
Figure 2.10 Number of consultations and STI positivity among clients who reported sex work in the past six months by sex and type of sexual contact, 2013-2022



Footnote 1: STI include: chlamydia, gonorrhoea, infectious syphilis HIV, and infectious hepatitis B.

Footnote 2: In 2022, 2.1% of MSM-PrEP consultations (n/N=586/27,892) were among clients who reported sex work in the past six months. STI positivity was 28.5% (n/N=167/586).

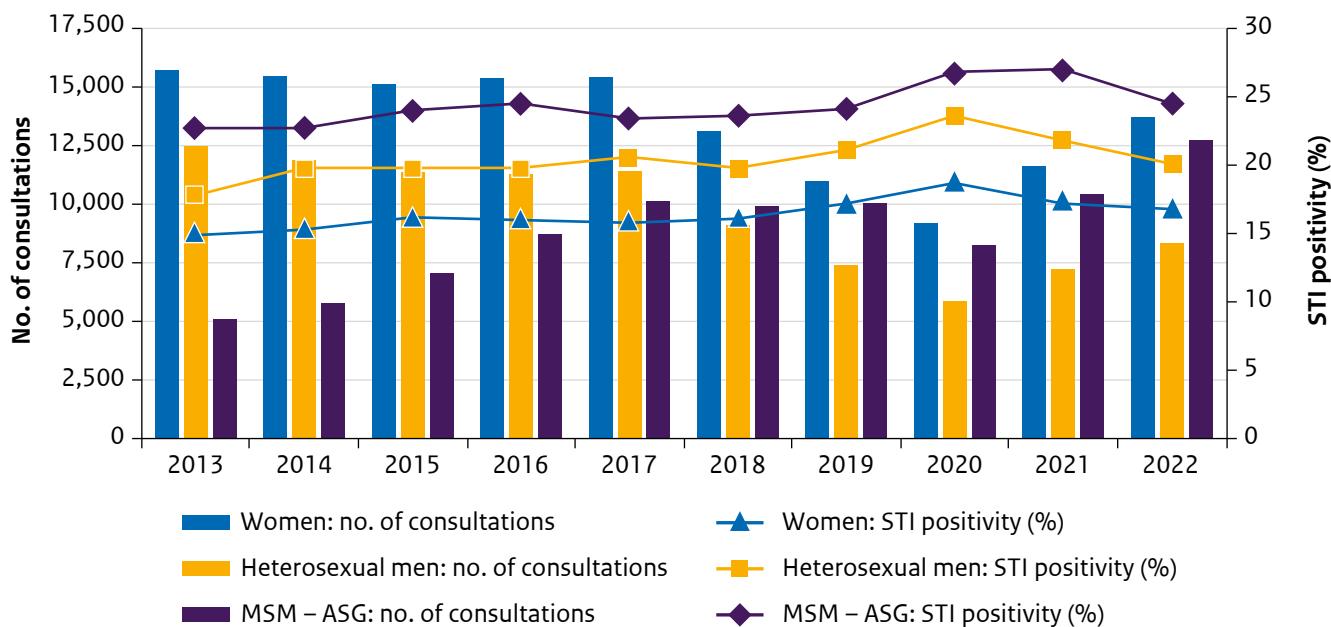
Figure 2.11 Distribution of region of origin of all ASG consultations, 2013-2022



Footnote: STI include: chlamydia, gonorrhoea, infectious syphilis and infectious hepatitis B.

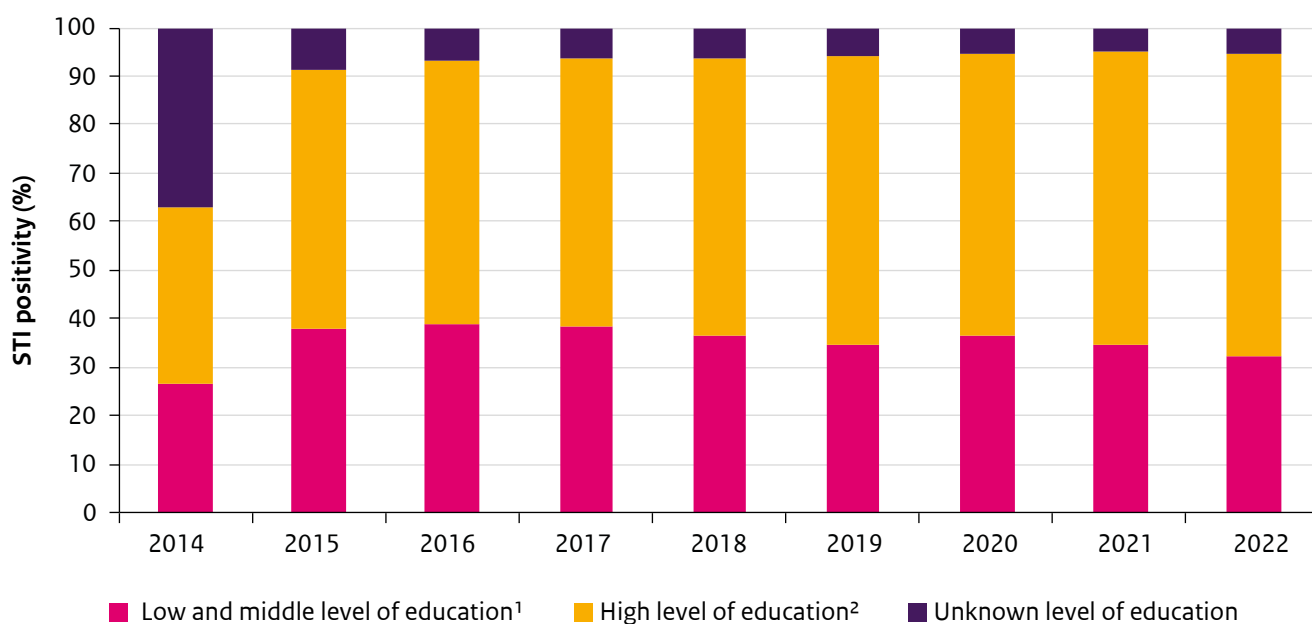
* Region of origin with triage indication include Turkey, Morocco, Suriname, CAS-BES islands, Indonesia, Eastern Europe, Africa other, Latin America other, and Asia other.

Figure 2.12 Number of consultations and STI positivity among clients from a region with triage indication by sex and type of sexual contact, 2013-2022



Footnote: Region of origin with triage indication include Turkey, Morocco, Suriname, CAS-BES islands, Indonesia, Eastern Europe, Africa other, Latin America other, and Asia other.

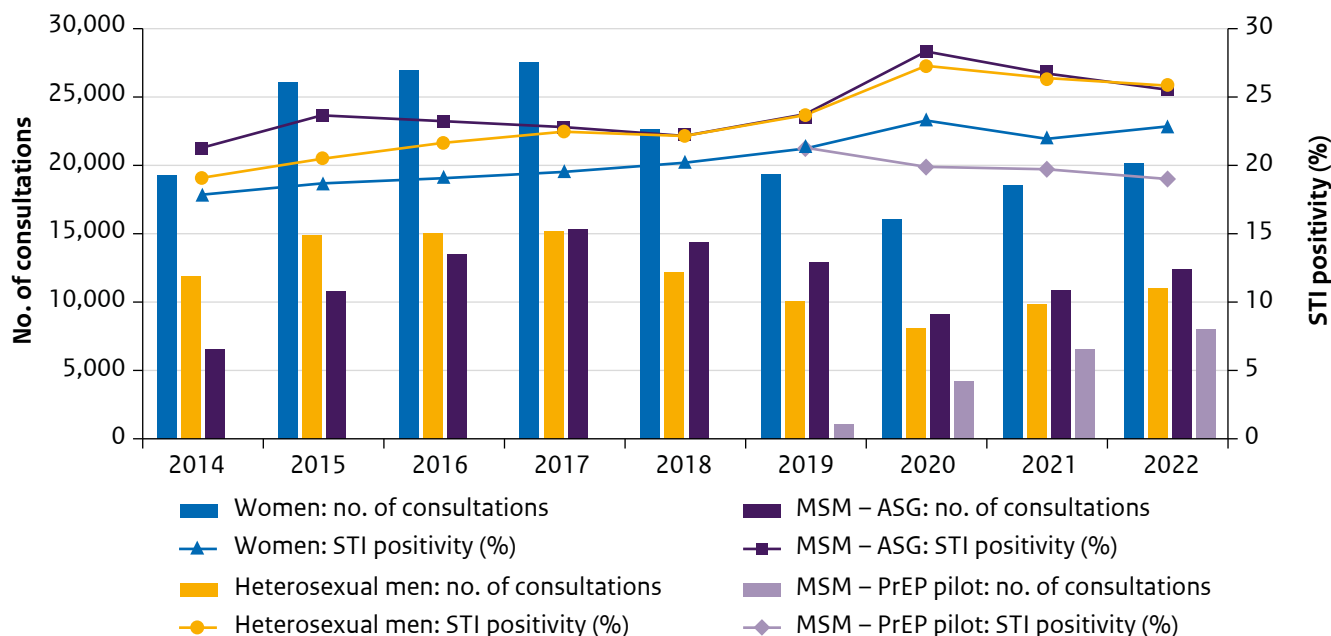
Figure 2.13 Distribution of level of education of all ASG consultations, 2014-2022



1 No education, elementary school, lbo, mavo, vmbo, mbo-1-4, havo, vwo.

2 University of applied sciences, university.

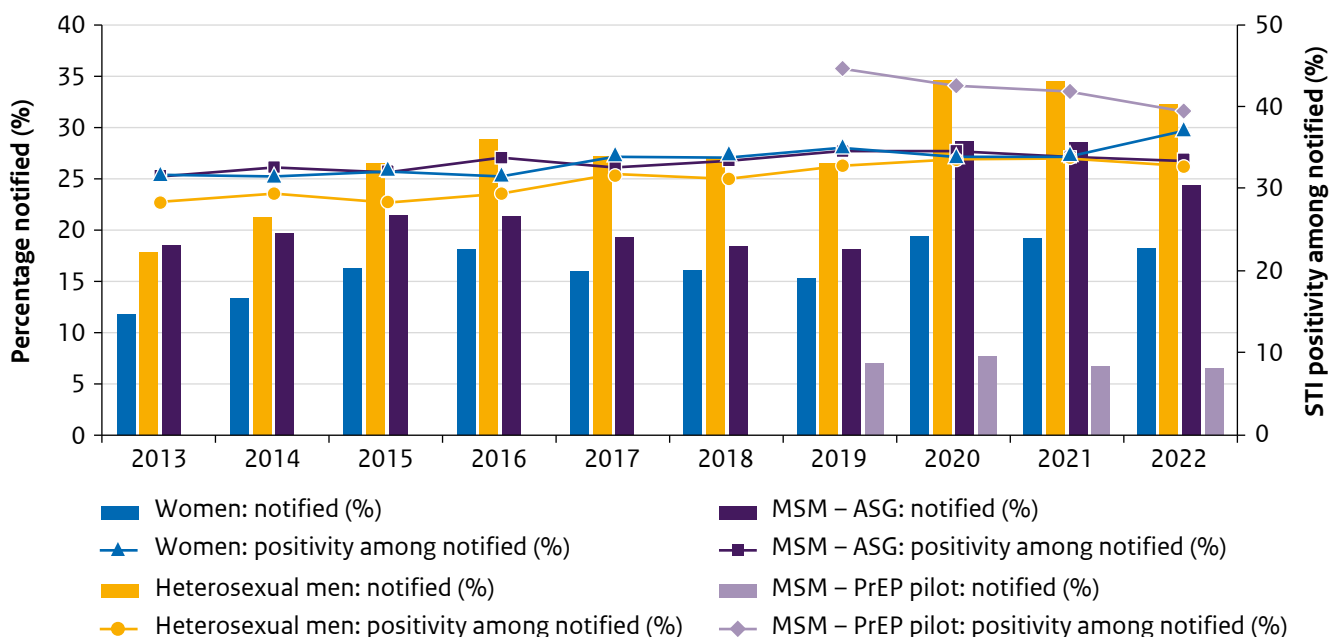
Figure 2.14 Number of consultations and STI positivity among clients with a low or middle level of education by sex and type of sexual contact, 2014-2022



Footnote: low/middle education includes: no education, elementary school, lbo, mavo, vmbo, mbo-1-4, havo, vwo.

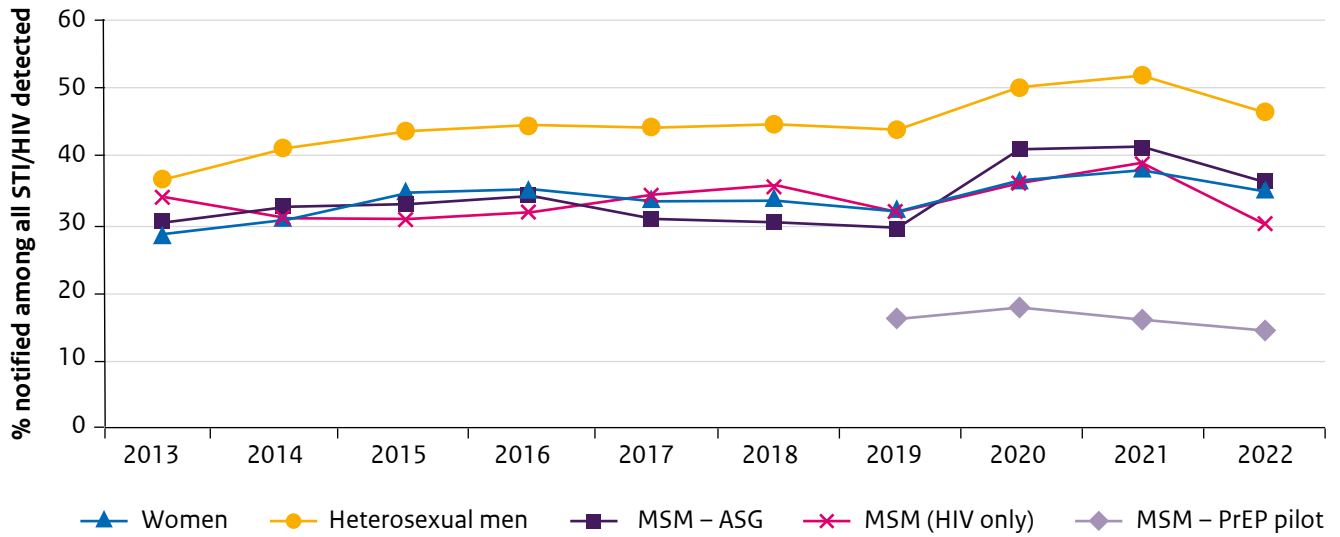
2.4.2 Partner notification trends

Figure 2.15 Percentage of SHC clients who reported being notified for potential risk of exposure to STI and STI positivity among notified clients by sex and type of sexual contact, 2013-2022



Footnote: STI includes chlamydia, gonorrhoea, infectious syphilis, HIV and infectious hepatitis B.

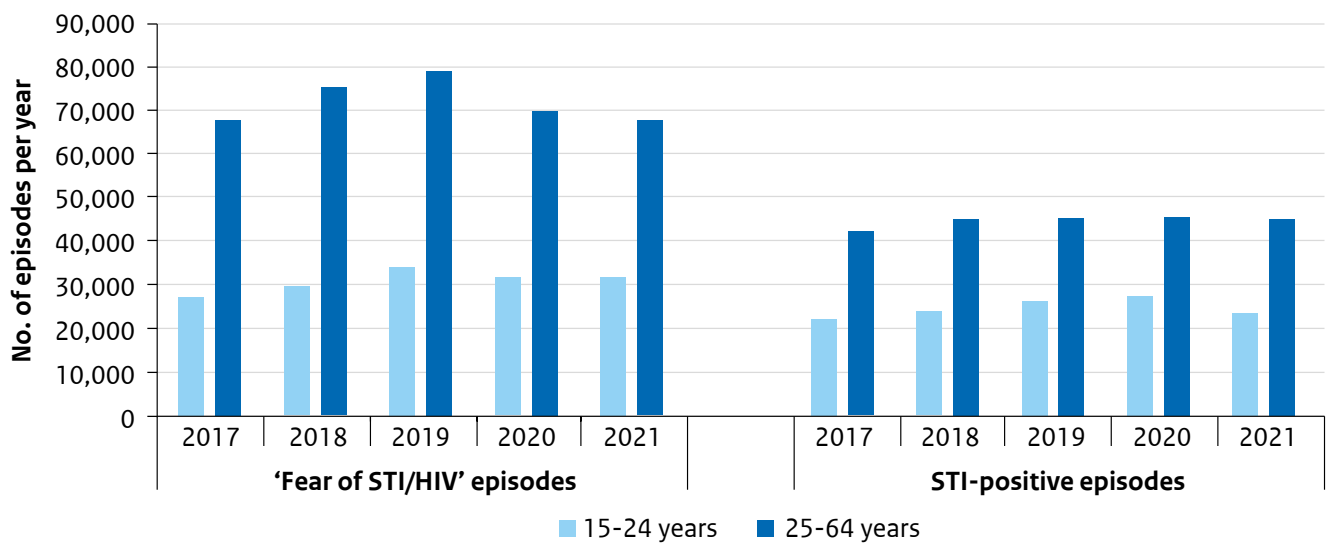
Figure 2.16 Percentage of STI detected through partner notification among women, heterosexual men, MSM – ASG, MSM – PrEP pilot and percentage of HIV detected through partner notification among MSM, 2013-2022



Footnote: STI includes chlamydia, gonorrhoea, infectious syphilis, HIV and infectious hepatitis B.

2.5 General practice

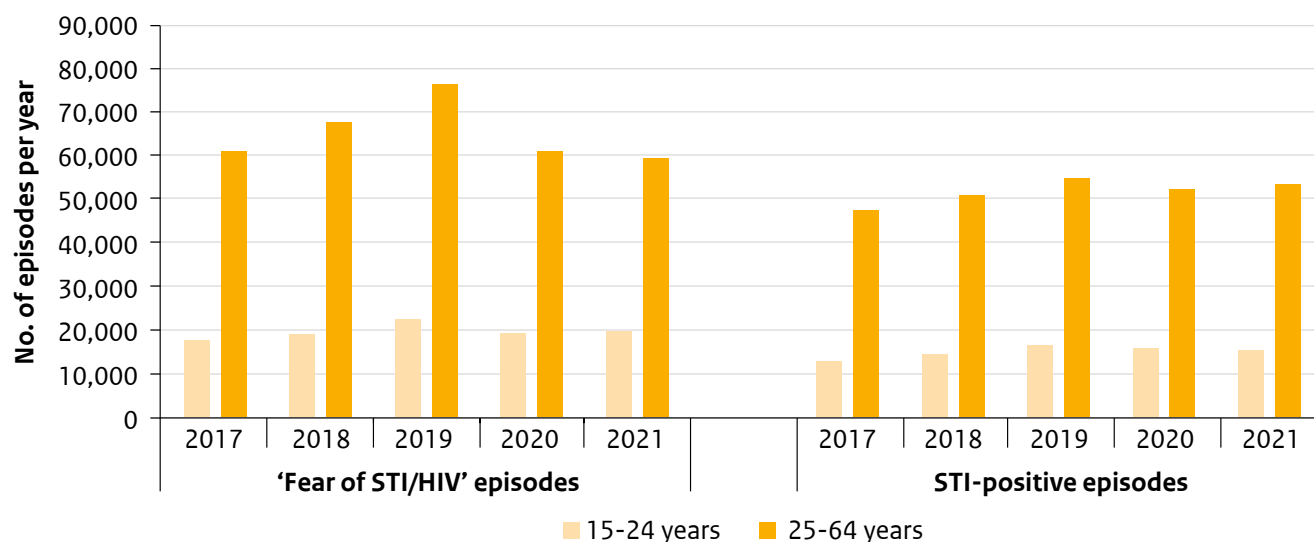
Figure 2.17a Estimated annual number of episodes of fear of STI/HIV and positive STI diagnoses among women in general practice by age-group, based on extrapolation from general practices in Nivel-PCD, 2017-2021



Footnote 1: Diagnoses included are chlamydia, gonorrhoea, syphilis, HIV, trichomonas, genital herpes, genital warts, non-specific urethritis.

Footnote 2: About 50% of the total Dutch population consists of persons aged 25-64 years and about 10% consists of persons aged 15-24 years.

Figure 2.17b Estimated annual number of episodes of fear of STI/HIV and positive STI diagnoses among men in general practice by age-group, based on extrapolation from general practices in Nivel-PCD, 2017-2021



Footnote 1: Diagnoses included are chlamydia, gonorrhoea, syphilis, HIV, trichomonas, genital herpes, genital warts, non-specific urethritis.

Footnote 2: About 50% of the total Dutch population consists of persons aged 25-64 years and about 10% consists of persons aged 15-24 years.

Table 2.13 Annual reporting rate (number of STI-related episodes per 1,000 persons of 15-64 years of age) of STI-diagnoses and fear of STI/HIV at general practices in the Netherlands by sex and age group, based on general practices in Nivel-PCD, 2017-2021

	Women n/1,000			Men n/1,000			Total n/1,000		
	All	15-24	25-64	All	15-24	25-64	All	15-24	25-64
2017	28.8	48.1	24.5	24.8	28.4	24.0	26.8	38.2	24.3
2018	31.3	51.7	26.7	27.1	31.0	26.2	29.2	41.4	26.5
2019	33.1	57.9	27.6	30.2	35.8	28.9	31.7	46.9	28.2
2020	31.0	56.4	25.4	26.2	32.1	24.8	28.6	44.3	25.1
2021	30.0	52.9	24.8	26.0	32.0	24.6	28.0	42.5	24.7

Footnote: Diagnoses included are chlamydia, gonorrhoea, syphilis, HIV, trichomonas, genital herpes, genital warts, non-specific urethritis.

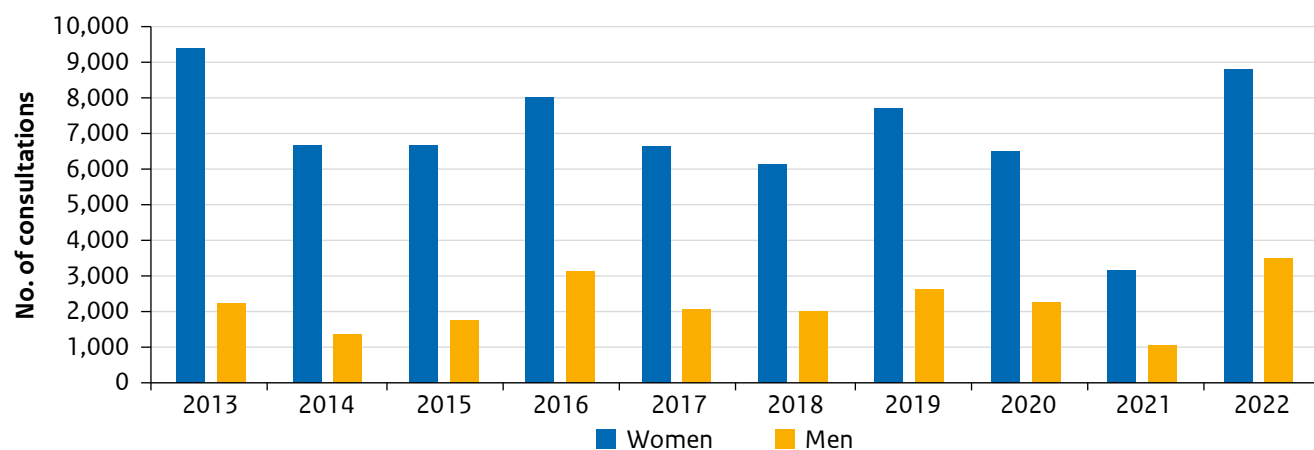
2.6 Sense

Table 2.14 Number of Sense consultations by age and sex, 2022

Age (years)	Women	Men
	n (%)	n (%)
≤14	100 (1.1)	8 (0.2)
15-19	2,708 (30.5)	706 (20.0)
20-24	4,804 (54.2)	1811 (51.3)
≥25	1,256 (14.2)	1008 (28.5)
Total	8,868	3,533

Footnote: Consultations with gender-diverse persons (n=614) were excluded from the analyses.

Figure 2.18 Number of Sense consultations by gender, 2013-2022



Footnote: Consultations with gender-diverse persons (n=614) were excluded from the analyses.

Table 2.15 Number of Sense consultations by region of origin and sex, 2022

Country of birth	Women	Men
	n (%)	n (%)
The Netherlands	4,647 (52.4)	1,839 (52.1)
Turkey	190 (2.1)	111 (3.1)
Morocco	199 (2.2)	110 (3.1)
Suriname	568 (6.4)	222 (6.3)
CAS-BES islands	286 (3.2)	113 (3.2)
Indonesia	61 (0.7)	34 (1.0)
Eastern Europe	452 (5.1)	162 (4.6)
Europe other	615 (6.9)	284 (8.0)
Africa other	442 (5.0)	201 (5.7)
Asia other	406 (4.6)	209 (5.9)
Latin America other	366 (4.1)	170 (4.8)
North-America/Oceania	117 (1.3)	51 (1.4)
Unknown	519 (5.9)	27 (0.8)
Total	8,868	3,533

Footnote: Consultations with gender-diverse persons (n=614) were excluded from the analyses.

Table 2.16 Subjects discussed during Sense consultations by sex, 2022

Subjects	Women	Men
	n (%)	n (%)
STI	514 (5.3)	725 (19.6)
Sexuality	3,187 (33.0)	2,456 (66.4)
Birth control	3,515 (36.4)	12 (0.3)
Unwanted sexual behaviour/sexual violence	1,301 (13.5)	186 (5.0)
Unintended pregnancy	630 (6.5)	10 (0.3)
Else	516 (5.3)	309 (8.4)
Total	9,663	3,698

Footnote 1: Consultations with gender-diverse persons (n=621) were excluded from the analyses.

Footnote 2: Numbers do not add up to total number of consultations, as for some consultations multiple topics were registered.

Table 2.17 Sexuality topics discussed during Sense consultations by sex, 2022

Questions/problems related to:	Women	Men
	n (%)	n (%)
Human body	321 (9.9)	127 (5.1)
Sexual dysfunction	826 (25.5)	537 (21.5)
Sexual orientation	31 (1.0)	166 (6.6)
Gender identity	2 (0.1)	6 (0.2)
Sexual behaviour/sex techniques	1,552 (47.9)	1,292 (51.6)
Unknown/other	508 (15.7)	375 (15.0)
Total	3,240	2,503

Footnote 1: Consultations with gender-diverse persons (n=95) were excluded from the analyses.

Footnote 2: Numbers do not add up to total number of sexuality topics in Table 2.14, as for some consultations multiple sexuality topics were registered.

2.7 Sexual Health in the Health Survey

Table 2.18 Characteristics of respondents to the national Health Survey 2021, by sex and sexual orientation

	Women	Heterosexual men	Men attracted to men*
	n %	n %	n %
Total	3,542 (51.6)	3,164 (46.1)	158 (2.3)
Age group			
16-29 years	613 (17.3)	496 (15.7)	
30-44 years	749 (21.1)	637 (20.1)	
45-59 years	897 (25.3)	774 (24.5)	
60 years and older	1,283 (36.2)	1,257 (39.7)	
Region of origin			
Dutch	2,830 (79.9)	2,590 (81.9)	
Non-Dutch Western	394 (11.1)	339 (10.7)	
Western	318 (9.0)	235 (7.4)	
Urbanisation			
(Highly) urbanised areas	1,897 (53.6)	1,666 (52.7)	
Moderately urbanised area	538 (15.2)	477 (15.1)	
Less/non-urbanised areas	1,107 (31.3)	1,021 (32.3)	

Source: Health Survey/Lifestyle Monitor, CBS in collaboration with RIVM, Rutgers and Soa Aids Nederland, 2021

* The questionnaire scored respondents' sexual attraction as own sex, opposite sex or both; we included men attracted to men or men attracted to both sexes in the category 'Men attracted to men'. No subcategories are shown for 'Men attracted to men' due to low numbers in most subcategories (n≤50).

Table 2.19 Weighted prevalence of sexual behaviour characteristics of respondents to the national Health Survey 2021, by sex and sexual orientation

	Women	Heterosexual men	Men attracted to men ¹
	%	%	%
Two or more sex partners in the past 12 months	4.8	7.4	25.8
16-29 years	13.2	17.8	
30-44 years	6.0	9.5	
45-59 years	1.7	3.8	
60 years and older	0.2	1.0	
Last sexual contact with a casual partner	3.4	5.6	18.1
16-29 years	9.1	13.0	
30-44 years	4.2	6.5	
45-59 years	2.1	3.3	
60 years and older	0.3	1.5	
Last sexual contact with a steady partner	54.5	61.5	49.1
16-29 years	56.6	45.7	
30-44 years	74.6	78.2	
45-59 years	64.6	73.1	
60 years and older	31.6	49.8	
Condom use at last sexual contact if contact was casual²	32.0	53.8	

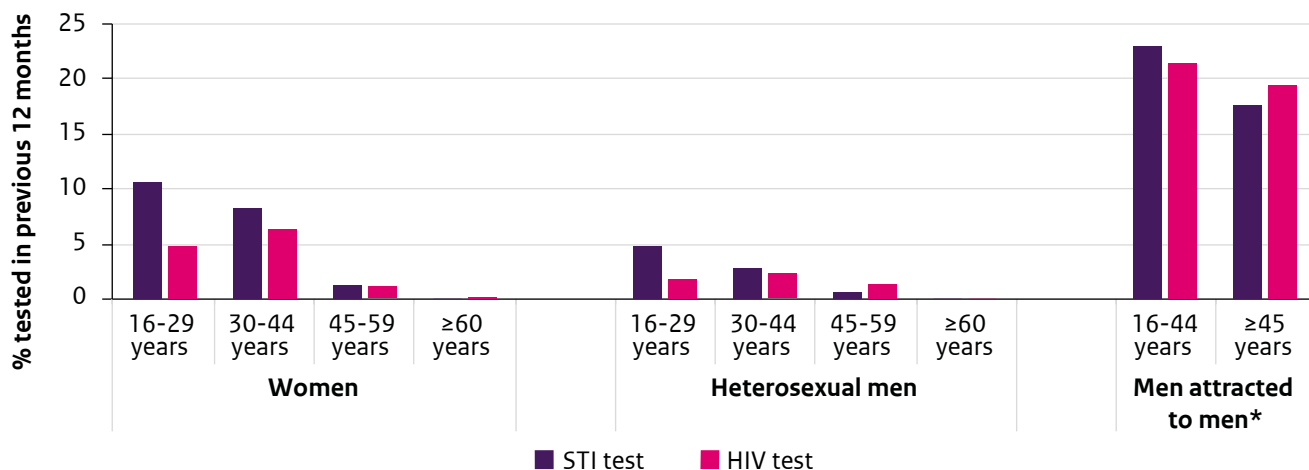
Source: Health Survey/Lifestyle Monitor, CBS in collaboration with RIVM, Rutgers and Soa Aids Nederland, 2021.

¹ The questionnaire scored respondents' sexual attraction as own sex, opposite sex or both; we included men attracted to men or men attracted to both sexes in the category 'Men attracted to men'. No subcategories are shown for 'Men attracted to men' due to low numbers (n≤50).

² No subcategories are shown for the characteristic 'Condom use at last sexual contact if contact was casual' due to low numbers in women and heterosexual men. No percentage is shown for men attracted to men due to low numbers.

Footnote: Respondents were weighted for demographic characteristics to correct for differences between the sample and the total Dutch population.

Figure 2.19 Weighted percentage tested for STI and HIV in the previous year in the Health Survey 2021, by age group, sex and sexual orientation

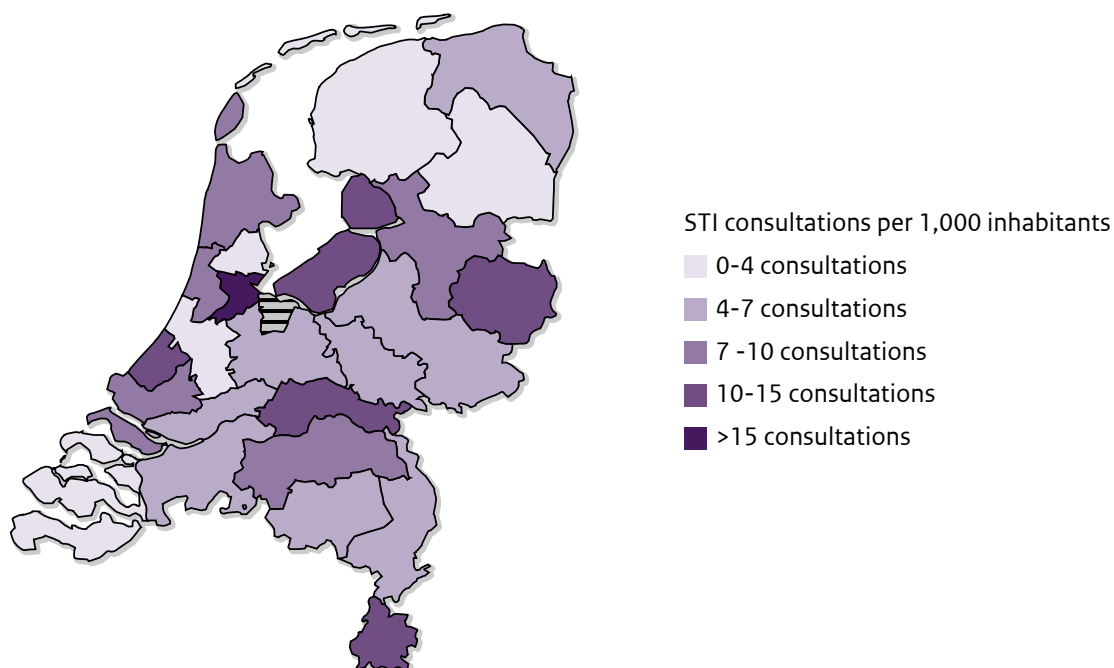


Source: Health Survey/Lifestyle Monitor, CBS in collaboration with RIVM, Rutgers and Soa Aids Nederland, 2021.

* The questionnaire scored respondents' sexual attraction as own sex, opposite sex or both; we included men attracted to men or men attracted to both sexes in the category 'Men attracted to men'. Larger subcategories are shown for 'Men attracted to men' due to low numbers (50 ≥ n ≤ 100). 16-44 years: n=90, STI test: 23.3% (95% confidence interval (CI) 15.3-32.5%) and n=92, HIV test: 21.7% (95%CI 14.3-31.0%), ≥45 years: n=73, STI test: 17.8% (95%CI 10.4-27.7%) and n=71, HIV test: 19.7% (95%CI 11.8-30.1%).
Footnote: Respondents were weighted for demographic characteristics to correct for differences between the sample and the Dutch population.

2.8 Consultations and characteristics of Sexual Health Centre attendees by region

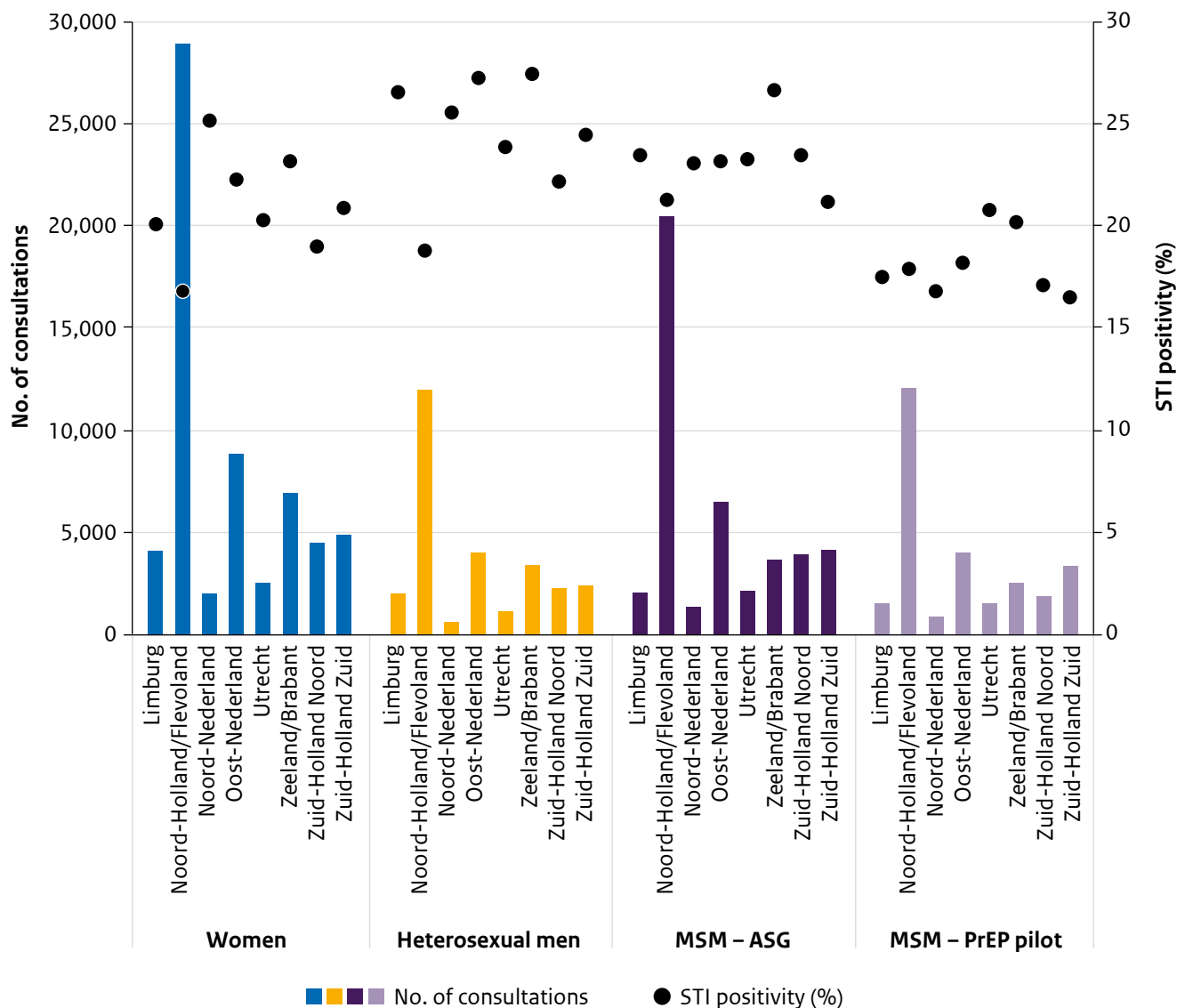
Figure 2.20 Number of persons with at least one SHC consultation per 1,000 inhabitants 15-65 years of age by region, 2022



Footnote 1: GGD Amsterdam = 43,9 per 1,000 inhabitants.

Footnote 2: GGD Gooi & Vechtstreek (grey striped region) does not have an SHC, persons from this area can be tested at an SHC in surrounding regions.

Figure 2.21 Number of consultations and STI positivity by region, sex and type of sexual contact, 2022



Footnote: STI include: chlamydia, gonorrhoea, infectious syphilis, HIV and infectious hepatitis B.

Figure 2.22 Distribution of all SHC consultations by sex, type of sexual contact, and region, 2022

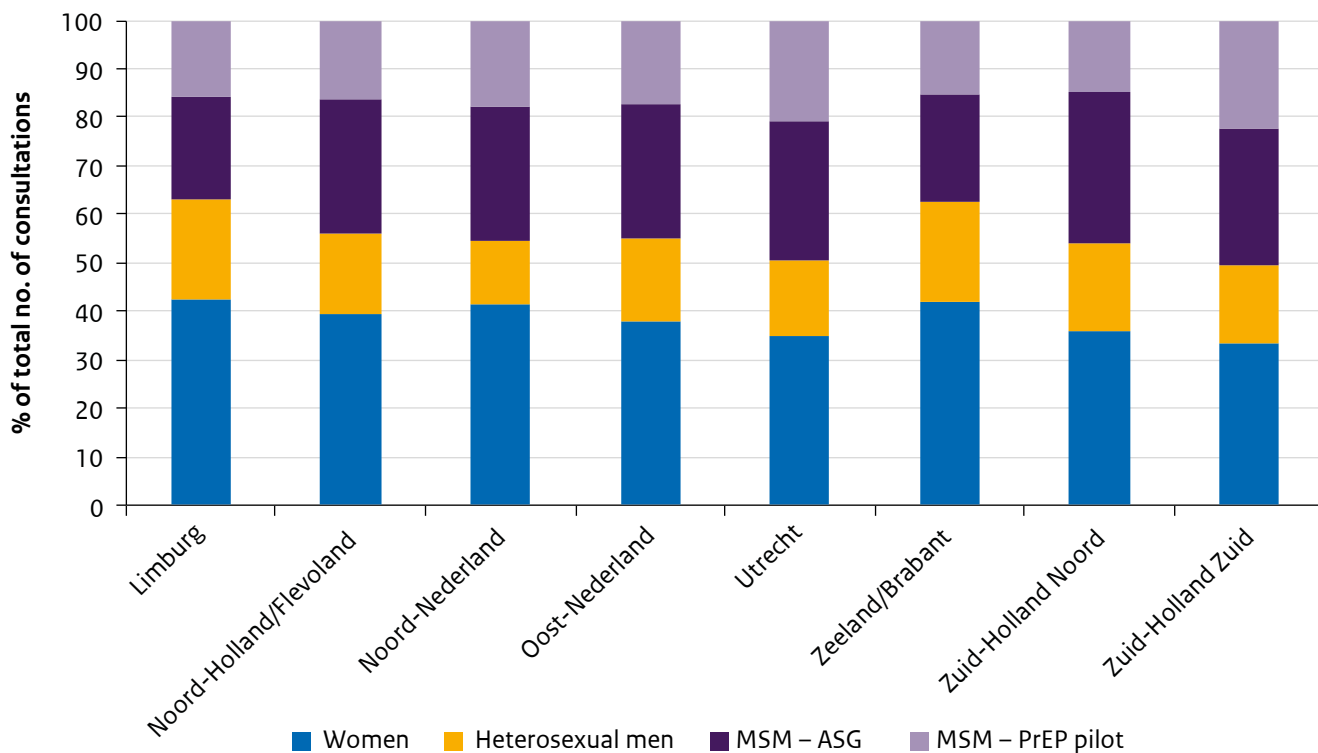


Figure 2.23a Distribution of age of all ASG consultations among women and heterosexual men by region, 2022

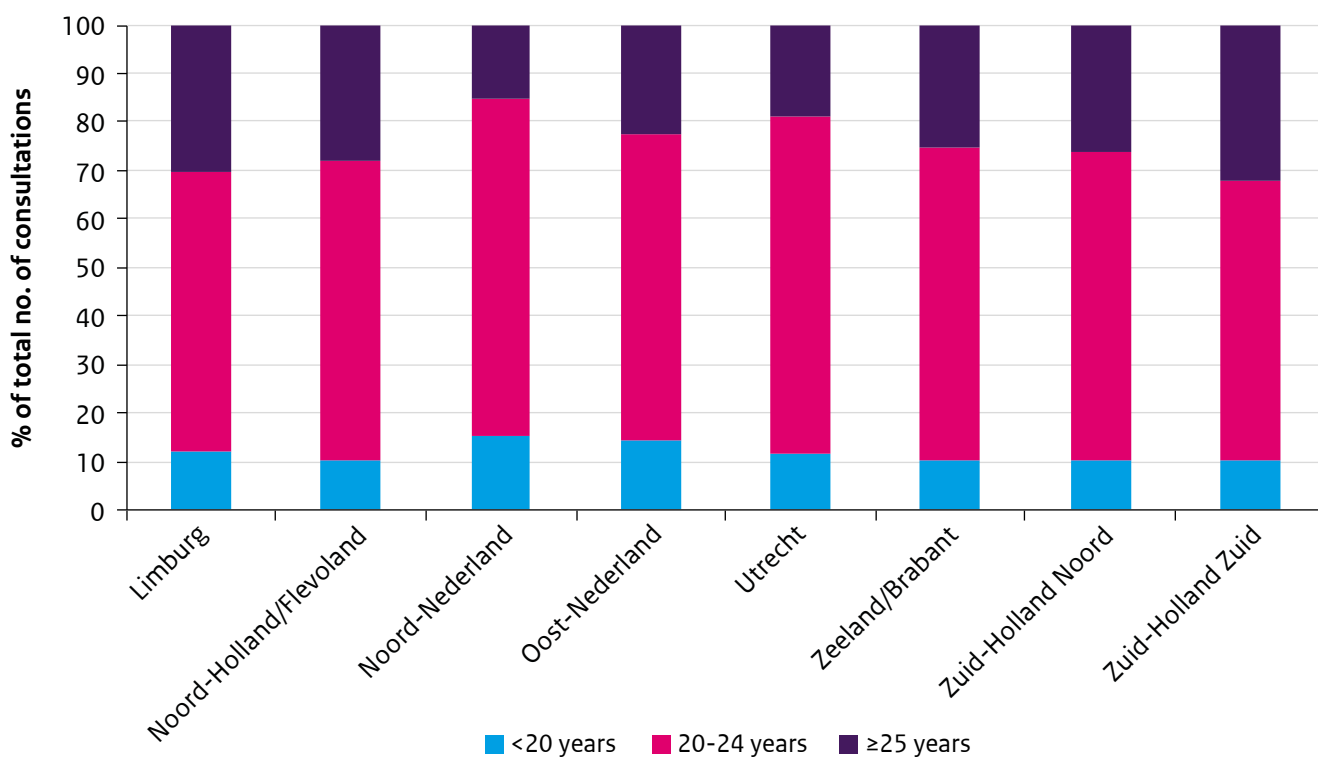


Figure 2.23b Proportion with STI symptoms and/or notification of all ASG consultations among women and heterosexual men aged ≥25 years by region, 2022

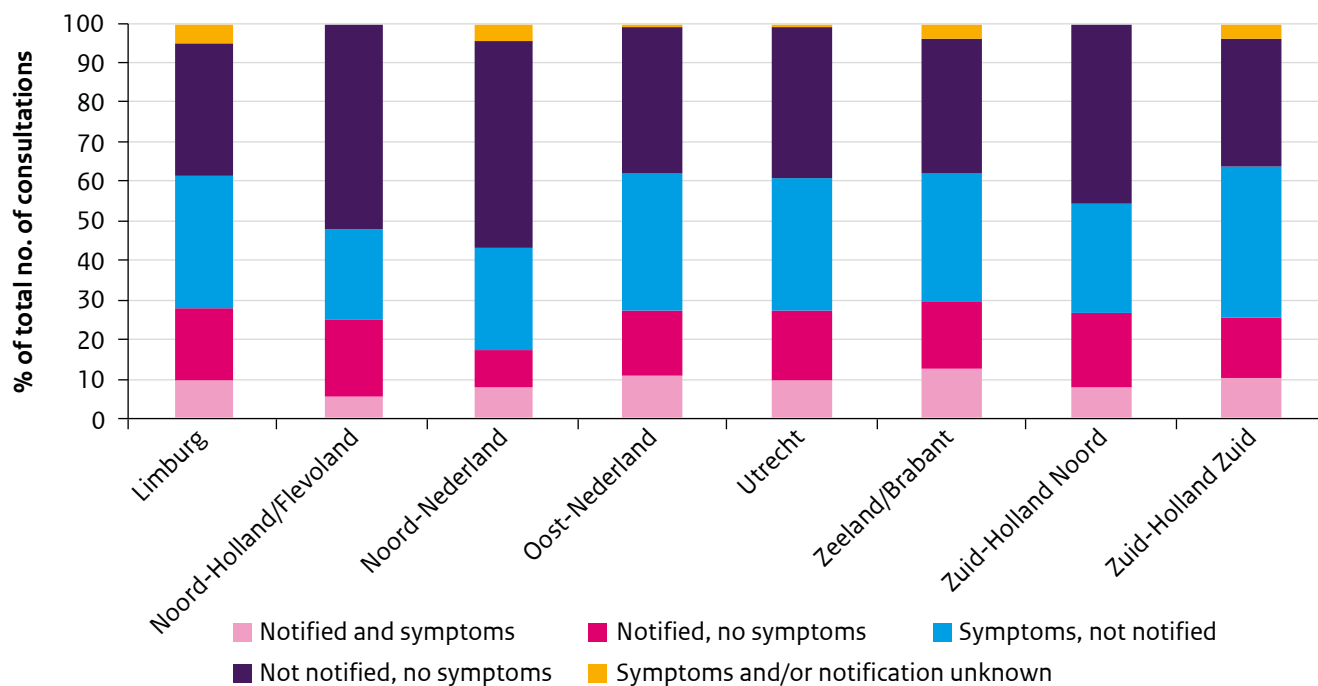
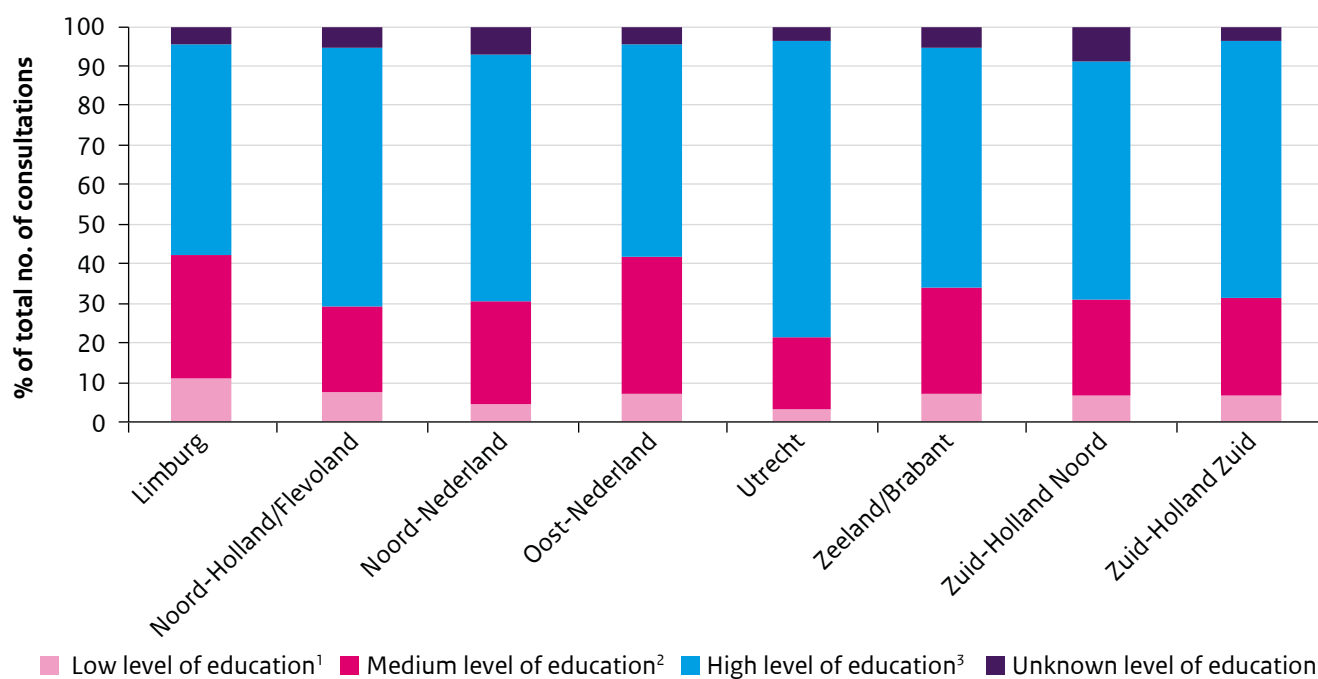


Figure 2.24 Distribution of level of education of all ASG consultations in women, heterosexual men, and MSM – ASG by region, 2022



1 No education, elementary school, lbo, mavo, vmbo, mbo-1.

2 Havo, vwo, mbo 2-4.

3 University of applied sciences, university.

2.9 PrEP consultations at Sexual Health Centres

Table 2.20 Characteristics of individuals at first PrEP consultation in the national PrEP pilot at the Sexual Health Centres, July 2019 - December 2022

	Total in pilot		2022	
	n individuals	%	n individuals	%
Total number of individuals with a first PrEP consultation¹	12,195	100.0	2,413	19.8
Number of individuals with n PrEP consultations				
2 nd consultation	10,102	82.8	2,369	
3 rd consultation	8,817	72.3	2,576	
4 th consultation	7,707	63.2	2,600	
5 th consultation	6,695	54.9	2,476	
6 th consultation	5,745	47.1	2,393	
7 th consultation	4,817	39.5	2,342	
8 th consultation	4,032	33.1	2,270	
9 th consultation	3,337	27.4	2,417	
10 th consultation	2,675	21.9	2,365	
11 th consultation	1,995	16.4	1,952	
12 th consultation	1,404	11.5	1,402	
13 th consultation	740	6.1	740	
14 th consultation	250	2.1	250	
15 th consultation	41	0.3	41	
16 th consultation	2	0.0	2	
Sex and sexual contact at first PrEP consultation				
Men who have sex with men	11,803	96.8	2,286	94.7
Women	29	0.2	5	0.2
Men who have sex exclusively with women	0	0.0	0	0.0
Genderdiverse	361	3.0	122	5.1
Men, sex of sex partners unknown	2	0.0	0	0.0
Median age at first PrEP consultation (IQR)	33 (27-44)		31 (26-40)	
Region of origin at first PrEP consultation				
Dutch	6,944	56.9	1,264	52.4
Migrant with triage indication	1,918	15.7	708	29.3
Child of migrant with triage indication	962	7.9	194	8.0
Other migrant (not in triage)	1,336	11.0	240	9.9
Unknown	35	0.3	7	0.3

Table 2.20 (continued) Characteristics of individuals at first PrEP consultation in the national PrEP pilot at the Sexual Health Centres, July 2019 - December 2022

	Total in pilot		2022	
	n individuals	%	n individuals	%
Educational level at first PrEP consultation¹				
High	7,401	60.7	1,486	61.6
Medium	2,664	21.8	510	21.1
Low	948	7.8	184	7.6
Unknown	1,182	9.7	233	9.7
Previously tested for HIV at first PrEP consultation				
No	653	5.4	218	9.0
Yes	11,521	94.5	2,191	90.8
Unknown	21	0.2	4	0.2
Type of first consultation				
Start consultation	10,211	83.7	2,150	89.1
3-monthly follow-up consultation ³	1,984	16.3	263	10.9
PrEP indications at start consultation, all in the preceding 6 months⁴				
Rectal STI diagnosis	2,131	17.5	419	17.4
Unprotected sex with partner with unknown HIV-status	8,322	68.2	1,687	69.9
PEP	455	3.7	105	4.4
Other ⁵	1,328	10.9	366	15.2
Missing for 3-monthly follow-up consultations	1,984	16.3	263	10.9
PrEP use in the past year at first PrEP consultation				
No, not in past year	7,093	58.2	1,601	66.3
Yes, but 4-12 months previously	424	3.5	83	3.4
Yes, in the past 3 months	4,678	38.4	729	30.2
Previous PrEP prescriber at first PrEP consultation⁶				
SHC	791	15.5	140	17.2
General practitioner	1,251	24.5	144	17.7
HIV practitioner	206	4.0	14	1.7
Other physician	238	4.7	62	7.6
PrEP study	261	5.1	2	0.2
Informal routes	352	6.9	97	11.9
Other	378	7.4	126	15.5
Missing	1,964	38.5	256	31.5

1 Percentage of total number of individuals with a first PrEP consultation between July 2019 and December 2022.

2 Low: no education, elementary school, lbo, mavo, vmbo, mbo-1; medium: mbo-2-4, havo, vwo; high: university of applied sciences, university.

3 Includes persons who started using PrEP via SHC, study, or other health care providers.

4 PrEP indications are registered for start consultations only. An individual can have more than one indication for PrEP, therefore the total PrEP indications can be higher than the number start consultations.

5 Main other reasons included for example fear for HIV, not wanting to go to GP or GP does not prescribe PrEP, financial reasons, being vulnerable (including migrants, younger than 25 years of age, sex work, or transgender persons) and wanting optimal protection against HIV.

6 Percentage was calculated among those who used PrEP in the past year.

Table 2.21 Characteristics of individuals not continuing participation in the national PrEP pilot at the Sexual Health Centres, July 2019 - December 2022

	Total in pilot		2022	
	n individuals	%	n individuals	%
Total number of persons participating in the SHC national PrEP pilot on December 31st 2022¹	8,558			
Number of persons who reported discontinuation of SHC national PrEP pilot	1,141	100.0	519	100.0
Stopped using PrEP	551	48.3	215	41.4
Stopped using PrEP via SHC, but continues via other health care provider	134	11.7	48	9.2
Discontinued PrEP program participation, no further information available	456	40.0	256	49.3
Reasons for discontinuation²				
Renal impairment	27	4.9	6	2.8
Drug interactions	4	0.7	1	0.5
Therapy compliance (medical)	2	0.4	1	0.5
HIV diagnosis	42	7.6	15	7.0
Reduced risk	376	68.2	161	74.9
Side effects	52	9.4	17	7.9
Therapy compliance (client)	8	1.5	3	1.4
Logistics	15	2.7	4	1.9
Unknown	2	0.4	0	0.0
Other ³	39	7.1	17	7.9
Number of persons lost to follow-up⁴	4,015			
After first consultation	1,851	46.1		
After >1 consultations	2,164	53.9		

¹ Calculated as the number of persons with a PrEP consultation (in which they did not report discontinuation) in the seven months before 31 December 2022.

² Only registered for persons who stopped using PrEP.

³ Other reasons include e.g. financial reasons or other health related issues.

⁴ Those lost to follow-up are either registered as such by the SHC or have no PrEP consultation registered within 7 months after the last consultation.

Table 2.22 Characteristics of consultations among persons participating in the national PrEP pilot at the Sexual Health Centres, July 2019 - December 2022

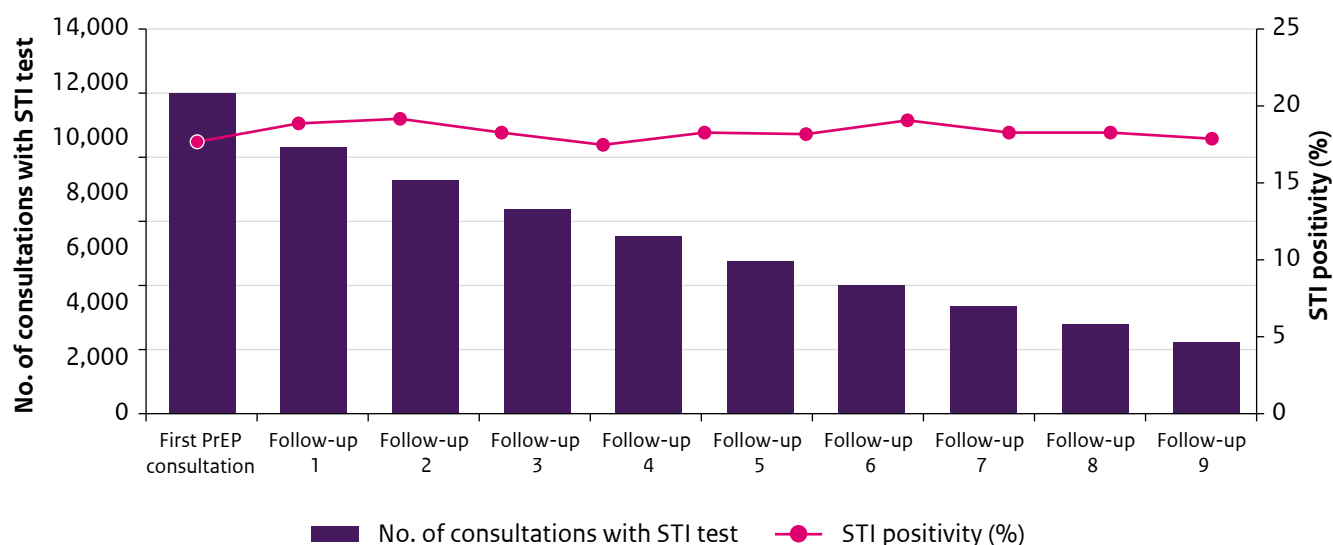
	n	%
No. of consultations since participation in the PrEP pilot		
Total	79,294	100.0
Start consultations with a 1-month check-in consultation ¹	5,432	6.9
Start consultations without a 1-month check-in consultation ^{1,2}	5,351	6.7
3-monthly follow-up consultation	59,771	75.4
Regular STI consultations since PrEP start	7,167	9.0
Testlab	1,571	2.0
Median time in weeks (IQR) between PrEP follow-up consultations	13 (13-14)	
PrEP use in the past 3 months at follow-up consultations³		
Daily	30,871	55.4
Event-Driven	22,486	40.3
Both	2,393	4.3
Missing	7	0.0

1 Due to registration of multiple start consultations for some individuals or registration of start consultations after a first follow-up consultation, the total number of start consultations is higher than at first PrEP consultation in Table 2.20.

2 One month check-in consultations may not be carried out for clients who were using PrEP in the 3 months prior to the start consultation.

3 Percentage calculated using the number of 3-month follow-up consultations, that were not a persons' first PrEP consultation, in which recent PrEP use was reported as denominator (n=55,757).

Figure 2.25 Number of PrEP consultations with an STI test and STI positivity by PrEP consultation number among MSM participating in the national PrEP pilot at the Sexual Health Centres, July 2019 - December 2022



Footnote 1: STI include: chlamydia, gonorrhoea, infectious syphilis, HIV and infectious hepatitis B.

Footnote 2: Data up to the 10th consultation are shown. The maximum number of consultations recorded within one person was 16.

Footnote 3: MSM in the PrEP pilot occasionally visit the SHC for an STI/HIV test between PrEP follow-up consultations. These consultations fall within the ASG regulation and are not included in this figure.

BACTERIAL STI

3 Chlamydia, including Lymphogranuloma venereum

3.1 Key points

3.1.1 Sexual Health Centres

- In this report, consultations of MSM are divided into consultations that fall within the regulation 'Additional Sexual Healthcare' (MSM – ASG) and consultations that fall within the national PrEP pilot programme (MSM – PrEP pilot). Due to the three-monthly testing interval for MSM – PrEP pilot, MSM – ASG and MSM – PrEP pilot are not directly comparable. Additional information can be found in *1.1 National surveillance at Sexual Health Centres*.
- The impact of the COVID-19 pandemic and the national PrEP pilot programme on the number of consultations and STI positivity need to be taken into account when interpreting trend data, as this may influence trends.
- In 2022, 24,684 chlamydia infections were diagnosed at SHCs (45% women, 24% heterosexual men, 19% MSM – ASG, 10% MSM – PrEP pilot, and 1% gender-diverse persons). This was an increase of 20% compared with 2021.
- Chlamydia positivity among gender-diverse persons was 10.9% (179/1,644). As the number of gender-diverse persons was relatively low, they are not shown in tables and figures and will be excluded hereafter.
- The 24,505 resulting chlamydia diagnoses (women, heterosexual men, MSM – ASG, MSM – PrEP pilot) were made among 22,685 individuals, and 1,786 persons (8%) had more than one chlamydia diagnosis in 2022.
- The number of chlamydia tests increased by 19% compared with 2021. The number of tests increased by 16% among women (2022: 62,690; 2021: 53,828), 20% among heterosexual men (2022: 27,858; 2021: 23,126), 19% among MSM – ASG (2022: 44,037; 2021: 36,865), and by 24% among MSM – PrEP pilot (2022: 27,422; 2021: 22,052).
- In 2022, chlamydia positivity among heterosexual men and MSM – ASG was slightly lower compared with 2021. For women, chlamydia positivity in 2022 was higher compared with 2021. In 2022, chlamydia positivity was 17.9% in women, 21.2% in heterosexual men, and 10.9% in MSM – ASG.
- Chlamydia positivity among MSM – PrEP pilot decreased from 11.7% in 2019 to 9.4% in 2022. Of all unique persons tested among MSM – PrEP pilot in 2022, 23.4% tested positive for chlamydia in at least one consultation (table 2.9).
- The highest positivity was found in persons notified of chlamydia (40.1% in women, 37.2% in heterosexual men, 23.4% in MSM – ASG, and 31.2% MSM – PrEP pilot), and among men reporting symptoms. Other groups with high positivity were women and heterosexual men younger than 25 years, persons having three or more partners in the past 6 months and women and heterosexual men originating from the Netherlands.
- Chlamydia positivity decreased or remained stable among women and heterosexual men aged 25 years or older, but increased among women and heterosexual men younger than 25 years old.
- The trend in chlamydia positivity among MSM – ASG who recently used PrEP remained relatively stable around 14.5% from 2018-2021, then decreased to 13.5% in 2022. The positivity among MSM – ASG who did not use PrEP in the past three months increased from 9.0% in 2019 to 10.5% in 2021, then decreased to 9.4% in 2022. The positivity among HIV-positive MSM fluctuated between 2018-2022 and was 15.9% in 2022.
- Among MSM who were diagnosed with chlamydia, 23.9% (MSM – ASG) and 21.9% (MSM – PrEP pilot) were co-infected with gonorrhoea, 4.0% of MSM – ASG and 2.5% of MSM – PrEP pilot with syphilis, and 0.5% of MSM – ASG and 0.1% of MSM – PrEP pilot were also newly diagnosed with HIV.
- Among MSM – PrEP pilot, chlamydia positivity decreased with each follow-up consultation up to the tenth consultation, from 10.1% to 8.7%.

3.1.2 General practice

- The estimated number of episodes of chlamydia at GPs has been increasing between 2017 and 2019 among men. In 2020 and 2021, the number of chlamydia episodes decreased by approximately 6.5% per year among men to 17,000 episodes in 2021.
- For women, the estimated number of episodes of chlamydia at GPs has been increasing between 2017 and 2020, but decreased in 2021 by 10% compared to 2020 to 22,500 episodes.
- The reporting rate for chlamydia at GPs was 3.5 episodes per 1,000 individuals aged 15-64. This was 4.0 per 1,000 individuals for women and 3.0 per 1,000 for men.

3.1.3 Lymphogranuloma venereum at Sexual Health Centres

- The number of lymphogranuloma venereum (LGV) diagnoses increased in 2022 to 469, compared with 210 in 2021, 258 in 2020 and 419 in 2019.
- The percentage of HIV-negative MSM (ASG & PrEP pilot) among LGV positives increased from 37% in 2015 to 74% in 2022.

- The rectal LGV positivity among HIV-positive MSM tested for rectal chlamydia increased to 2.7% in 2022 compared with 1.4% in 2021 and 2.0% in 2020. Among HIV-negative MSM, the LGV positivity also increased in 2022 compared with 2021 but was still relatively low (0.3% to 0.5% among MSM – ASG and 0.3 to 0.6% among MSM – PrEP pilot).
- For 57% of MSM diagnosed with LGV, no STI symptoms were reported.
- In 2022, there were no LGV diagnoses among women or heterosexual men.

3.2 Sexual Health Centres: characteristics, risk groups and trends

Figure 3.1 Number of chlamydia tests and chlamydia positivity by region, sex and type of sexual contact, 2022

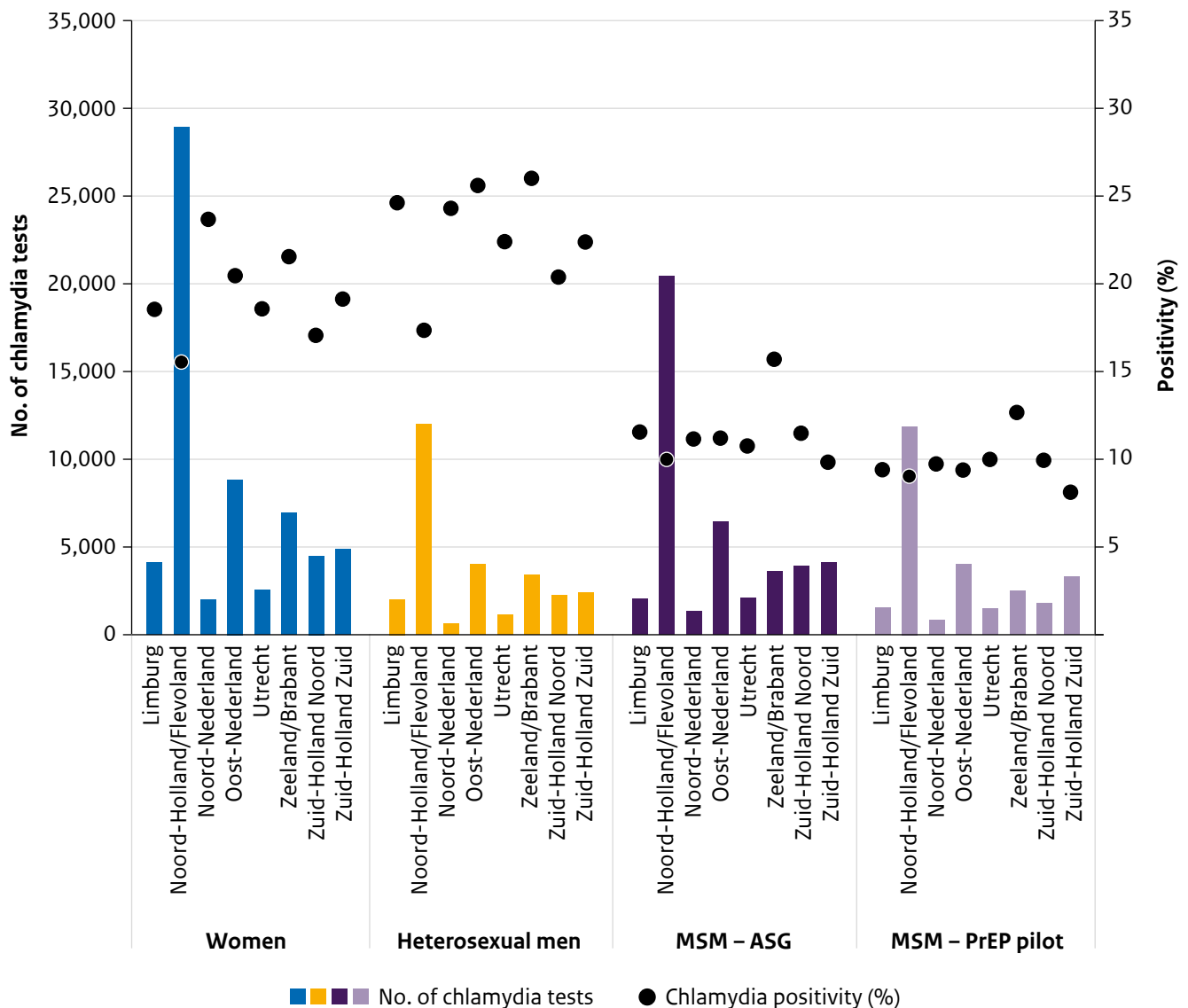
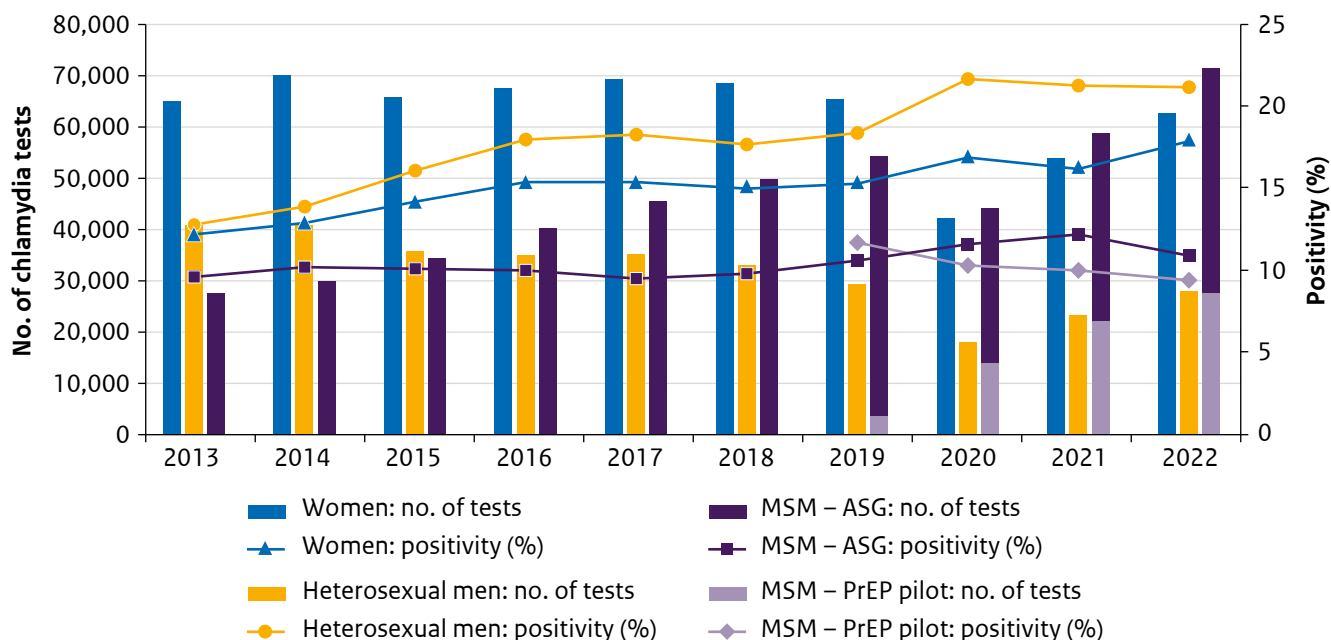


Figure 3.2 Number of chlamydia tests and chlamydia positivity by sex and type of sexual contact, 2013-2022

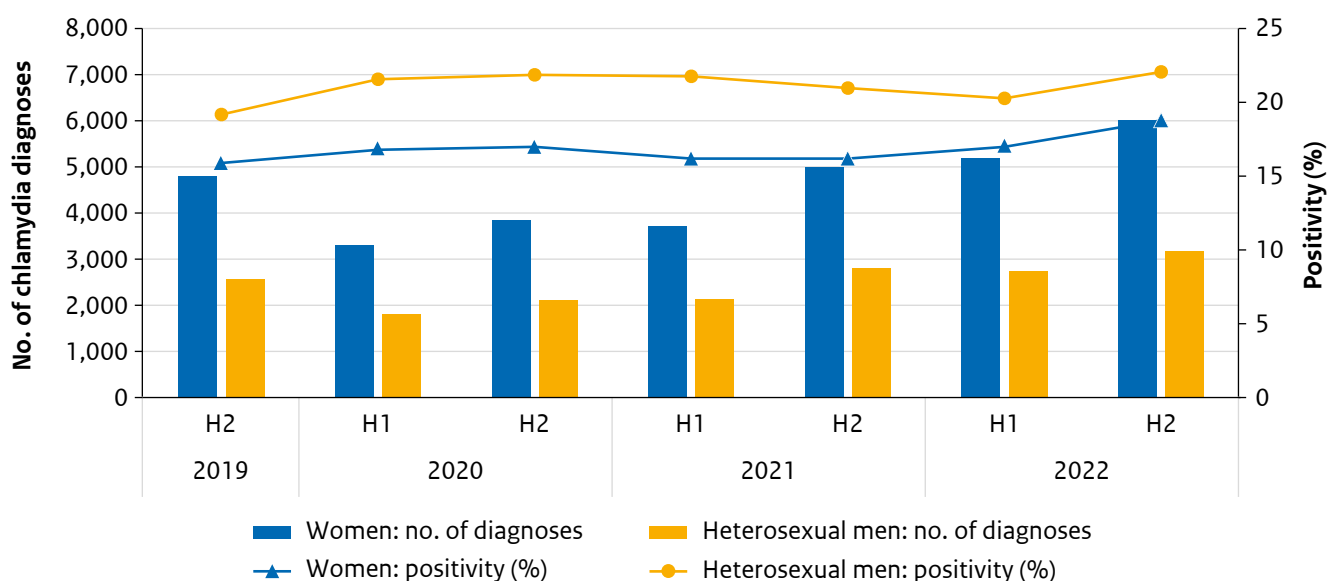


Footnote 1: Aggregated data of non-registered consultations included for 2018 and 2019.

Footnote 2: Trends in the number of tests and/or positivity in MSM over time may change due to the distinction between ASG and PrEP pilot consultations. Furthermore, due to the three-monthly testing interval for MSM - PrEP pilot, MSM - ASG and MSM - PrEP pilot are not directly comparable.

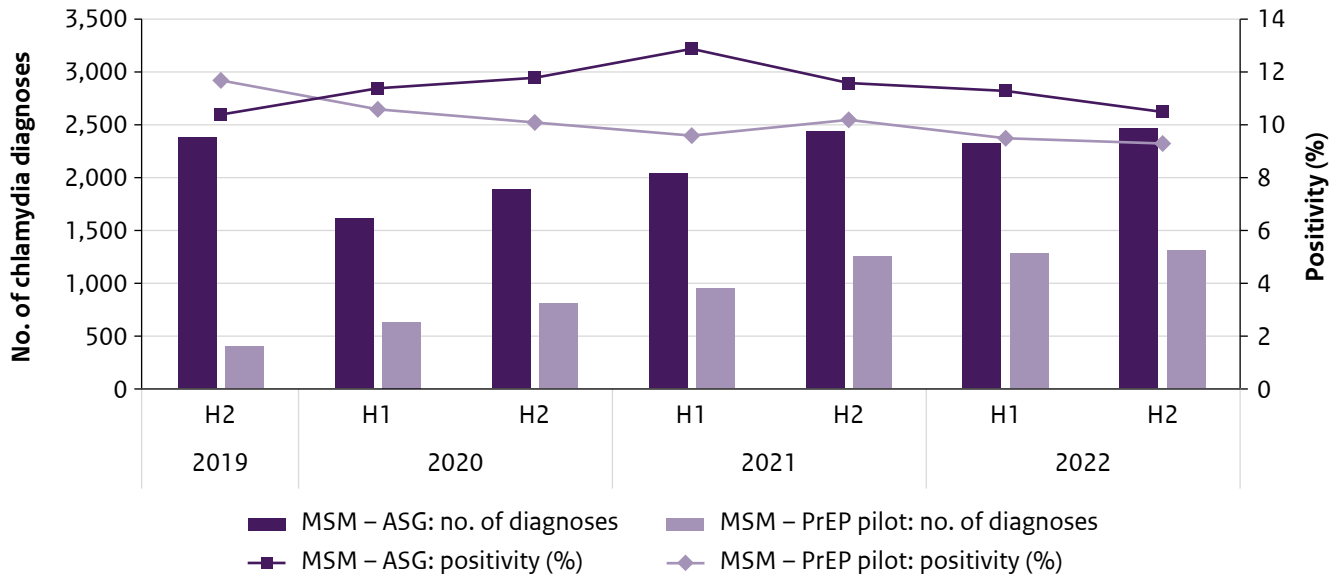
Footnote 3: MSM in the PrEP pilot occasionally visit SHCs for an STI/HIV test between PrEP follow-up consultations. These consultations fall within the ASG regulation.

Figure 3.3a Half-yearly number of chlamydia diagnoses and chlamydia positivity in women and heterosexual men, mid 2019 to 2022



Footnote: H1=January-June, H2=July-December

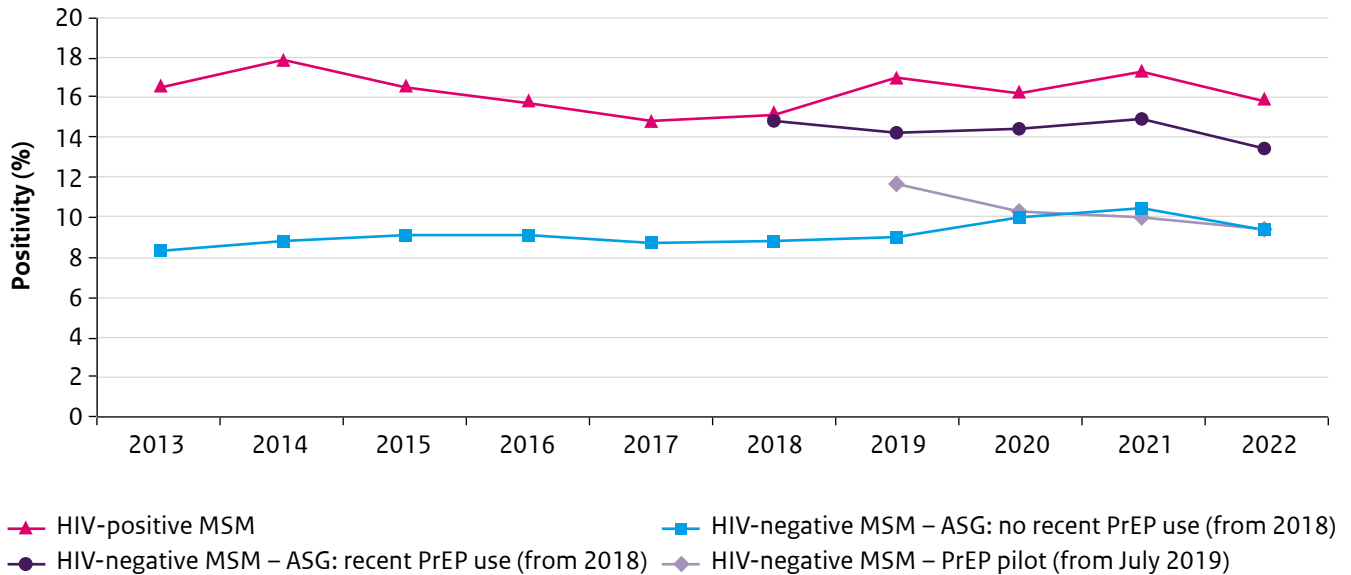
Figure 3.3b Half-yearly number of chlamydia diagnoses and chlamydia positivity in MSM, mid 2019 to 2022



Footnote 1: MSM in the PrEP pilot occasionally visit SHCs for an STI/HIV test between PrEP follow-up consultations. These consultations fall within the ASG regulation.

Footnote 2: H1=January-June, H2=July-December

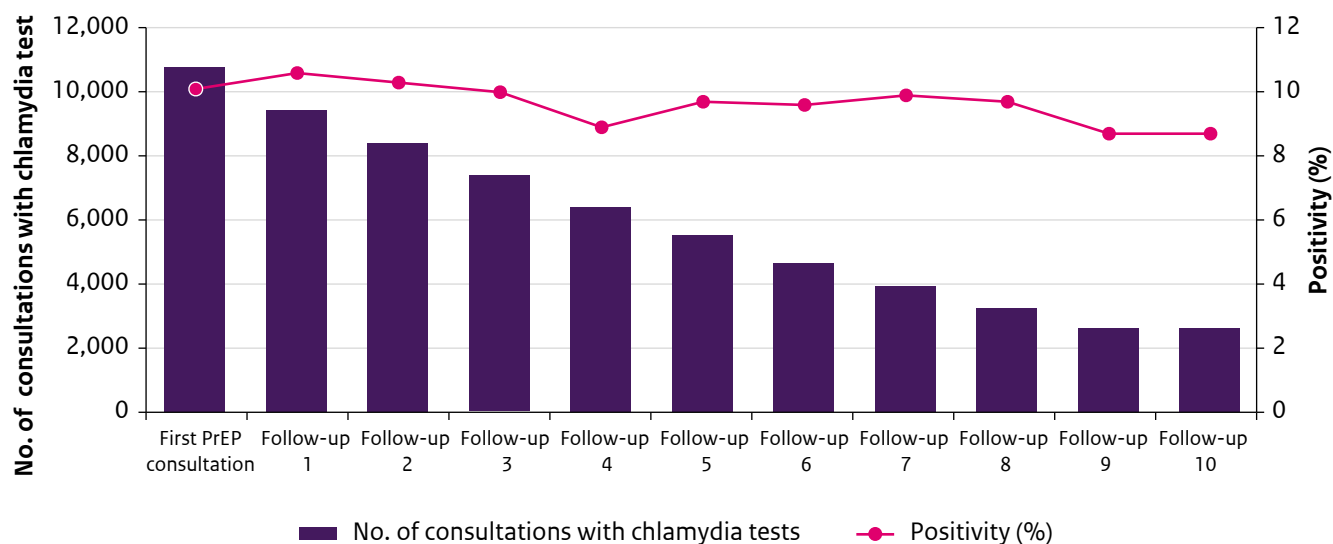
Figure 3.4 Trends in chlamydia positivity in MSM by HIV-status and PrEP use, 2013-2022



Footnote 1: Information on PrEP use has been collected since 2018. In 2018, recent PrEP use was defined as use in the past 6 months. Since 2019, recent PrEP use has been defined as use in the past 3 months.

Footnote 2: MSM in the PrEP pilot occasionally visit SHCs for an STI/HIV test between PrEP follow-up consultations. These consultations fall within the ASG regulation.

Figure 3.5 Number of consultations with chlamydia test and chlamydia positivity by PrEP consultation number among MSM participating in the national PrEP pilot at the Sexual Health Centres, July 2019 - December 2022



Footnote 1: Data up to the 10th consultation are shown. The maximum number of consultations recorded within one person was 16.

Footnote 2: MSM in the PrEP pilot occasionally visit SHCs for an STI/HIV test between PrEP follow-up consultations. These consultations fall within the ASG regulation.

Table 3.1 Number of chlamydia diagnoses and chlamydia tests by age, sex and type of sexual contact, 2022

Age (years)	Women		Heterosexual men		MSM – ASG		MSM – PrEP pilot	
	n positive/N	%	n positive/N	%	n positive/N	%	n positive/N	%
≤19	2,131/7,579	28.1	755/2,418	31.2	82/787	10.4	7/106	6.6
20-24	7,573/39,712	19.1	3,931/16,780	23.4	737/6,355	11.6	227/2,196	10.3
25-29	1,000/8,812	11.3	857/5,046	17.0	959/8,670	11.1	436/4,275	10.2
30-34	224/2,646	8.5	201/1,668	12.1	863/8,000	10.8	496/4,963	10.0
35-39	104/1,362	7.6	90/865	10.4	584/5,368	10.9	323/3,733	8.7
40-44	46/878	5.2	35/404	8.7	411/3,815	10.8	294/3,077	9.6
45-49	36/629	5.7	17/268	6.3	327/2,936	11.1	214/2,560	8.4
50-54	47/548	8.6	9/180	5.0	313/2,797	11.2	263/2,428	10.8
≥55	52/523	9.9	15/229	6.6	517/5,307	9.7	329/4,084	8.1
Total	11,213/62,690	17.9	5,910/27,858	21.2	4,793/44,037	10.9	2,589/27,422	9.4

Figure 3.6 Trends in chlamydia positivity in women and heterosexual men by age group, 2013-2022

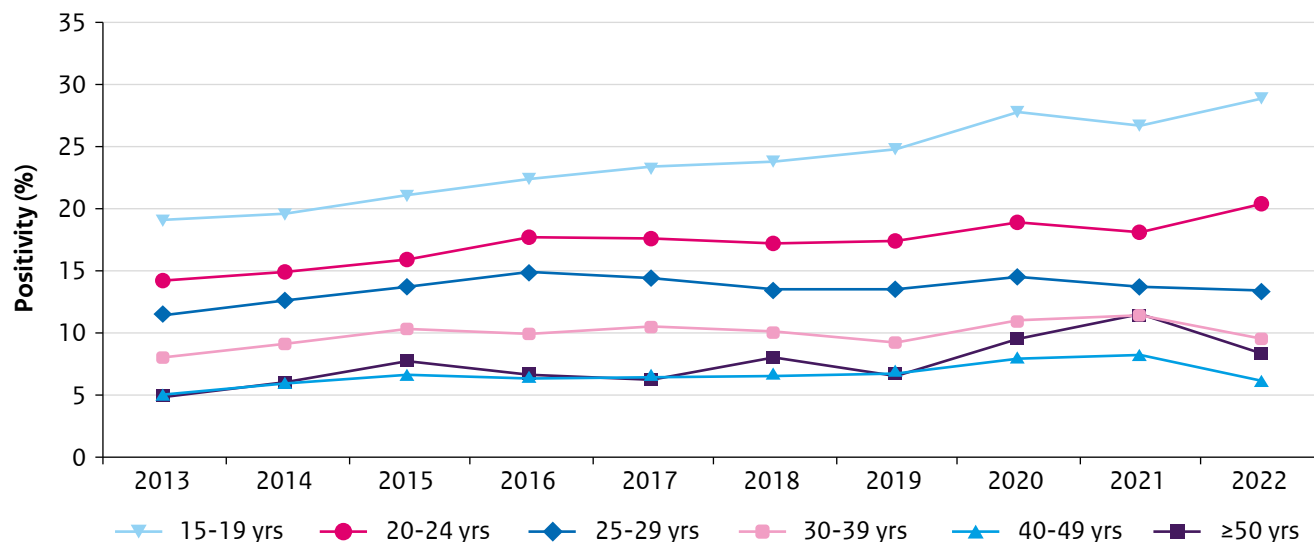


Table 3.2 Number of chlamydia diagnoses and chlamydia tests by region of origin, sex and type of sexual contact, 2022

Region of origin	Women		Heterosexual men		MSM – ASG		MSM – PrEP pilot	
	n positive/N	%	n positive/N	%	n positive/N	%	n positive/N	%
The Netherlands	8,526/44,218	19.3	4,170/17,630	23.7	2,809/26,123	10.8	1,531/16,476	9.3
Turkey	124/780	15.9	123/735	16.7	93/894	10.4	37/534	6.9
Morocco	136/847	16.1	147/1,007	14.6	77/636	12.1	30/289	10.4
Suriname	438/2,561	17.1	326/1,866	17.5	142/1,280	11.1	83/756	11.0
CAS-BES islands	232/1,333	17.4	201/893	22.5	110/1,058	10.4	62/586	10.6
Indonesia	82/443	18.5	26/148	17.6	95/773	12.3	42/524	8.0
Eastern Europe	281/2,293	12.3	111/628	17.7	263/2,184	12.0	82/1,153	7.1
Europe other	571/3,967	14.4	278/1,643	16.9	409/4,421	9.3	218/2,518	8.7
Africa other	226/1,711	13.2	247/1,362	18.1	108/971	11.1	54/557	9.7
Asia other	297/2,092	14.2	149/1,097	13.6	303/2,747	11.0	224/2,179	10.3
Latin America other	197/1,637	12.0	89/546	16.3	290/2,124	13.7	182/1,365	13.3
North-America/Oceania	102/768	13.3	39/285	13.7	85/790	10.8	43/454	9.5
Unknown	1/40	2.5	4/18	22.2	9/36	25.0	1/31	3.2
Total	11,213/62,690	17.9	5,910/27,858	21.2	4,793/44,037	10.9	2,589/27,422	9.4

Table 3.3a Number of chlamydia diagnoses and chlamydia tests by triage indication, sex and type of sexual contact, 2022

	Women		Heterosexual men		MSM – ASG		MSM – PrEP pilot	
	n positive/N	%	n positive/N	%	n positive/N	%	n positive/N	%
Notified								
Not notified	7,294/51,162	14.3	3,036/18,813	16.1	3,014/33,235	9.1	2,223/25,608	8.7
Notified for chlamydia	3,485/8,700	40.1	2,629/7,073	37.2	1,030/4,396	23.4	219/702	31.2
Notified for other STI/HIV	119/960	12.4	64/800	8.0	610/5,257	11.6	126/969	13.0
Unknown	315/1,868	16.9	181/1,172	15.4	139/1,149	12.1	21/143	14.7
Symptoms								
No	6,775/40,833	16.6	3,112/17,707	17.6	3,180/33,583	9.5	2,261/25,577	8.8
Yes	4,265/20,952	20.4	2,691/9,654	27.9	1,550/9,875	15.7	317/1,777	17.8
Unknown	173/905	19.1	107/497	21.5	63/579	10.9	11/68	16.2
Region of origin included in triage¹								
No	9,199/48,953	18.8	4,487/19,558	22.9	3,303/31,334	10.5	1,792/19,448	9.2
Yes	2,013/13,688	14.7	1,419/8,279	17.1	1,481/12,666	11.7	796/7,943	10.0
Migrant	607/5,529	11.0	375/2,901	12.9	1,063/8,871	12.0	625/5,905	10.6
Child of a migrant	1,406/8,159	17.2	1,044/5,378	19.4	418/3,795	11.0	171/2,038	8.4
Age								
<25	9,704/47,291	20.5	4,686/19,198	24.4	819/7,142	11.5	234/2,302	10.2
≥25	1,509/15,398	9.8	1,224/8,660	14.1	3,974/36,895	10.8	2,355/25,120	9.4
Partner in risk group²								
No	8,994/46,399	19.4	4,865/20,599	23.6	2,843/26,922	10.6	1,577/17,481	9.0
Yes	2,088/15,255	13.7	998/7,020	14.2	1,853/16,306	11.4	936/9,238	10.1
Unknown	131/1,036	12.6	47/239	19.7	97/809	12.0	76/703	10.8
Sex work								
No	10,850/58,301	18.6	5,868/27,567	21.3	4,639/42,823	10.8	2,458/26,443	9.3
Yes, in past 6 months	314/4,095	7.7	16/178	9.0	115/884	13.0	90/566	15.9
Unknown	49/294	16.7	26/113	23.0	39/330	11.8	41/413	9.9
Gonorrhoea/chlamydia/syphilis in past year								
Not tested	6,865/36,569	18.8	4,318/19,961	21.6	1,629/15,797	10.3	228/2,387	9.6
Tested, negative	2,479/16,862	14.7	807/4,645	17.4	1,361/15,987	8.5	932/12,970	7.2
Tested, positive	1,770/8,574	20.6	726/2,928	24.8	1,647/10,985	15.0	1,349/11,193	12.1
Tested, unknown	6/50	12.0	5/30	16.7	27/161	16.8	16/179	8.9
Unknown	93/635	14.6	54/294	18.4	129/1,107	11.7	64/693	9.2

¹ Region of origin with triage indication include Turkey, Morocco, Suriname, CAS-BES islands, Indonesia, Eastern Europe, Africa other, Latin America other, and Asia other.

² For heterosexual men and MSM: partner originating from a region of origin as indicated by triage criteria. For women: partner originating from a region of origin as indicated by triage criteria or a male partner who had sex with men

Table 3.3b Number of chlamydia diagnoses and chlamydia tests by demographics, (sexual) behavioural characteristics, sex and type of sexual contact, 2022

	Women		Heterosexual men		MSM – ASG		MSM – PrEP pilot	
	n positive/N	%	n positive/N	%	n positive/N	%	n positive/N	%
Educational level¹								
High	6,777/39,702	17.1	3,180/15,831	20.1	2,880/29,040	9.9	1,567/17,990	8.7
Medium	3,453/16,312	21.2	2,017/8,583	23.5	1,130/9,141	12.4	600/5,942	10.1
Low	707/3,792	18.6	550/2,397	22.9	421/3,157	13.3	225/1,955	11.5
Unknown	276/2,884	9.6	163/1,047	15.6	362/2,699	13.4	197/1,535	12.8
Number of partners in past 6 months								
0 partners	40/475	8.4	16/216	7.4	36/450	8.0	9/240	3.8
1 partner	2,199/15,054	14.6	950/5,272	18.0	260/3,516	7.4	55/1,565	3.5
2 partners	2,782/15,175	18.3	1,155/5,767	20.0	426/4,940	8.6	138/2,287	6.0
3 or more partners	6,190/31,937	19.4	3,789/16,601	22.8	4,070/35,128	11.6	2,387/23,330	10.2
Unknown	2/49	4.1	0/2	0.0	1/3	33.3	0/0	
Receptive anal sex, in past 6 months								
No receptive anal sex	8,435/47,440	17.8			866/12,463	6.9	241/4,557	5.3
Yes, consistently with a condom	175/1,440	12.2			357/5,625	6.3	81/1,285	6.3
Yes, not consistently with a condom	586/3,131	18.7			1,908/13,615	14.0	1,006/8,940	11.3
Yes, never with a condom	1,894/9,639	19.6			1,611/11,771	13.7	1,253/12,476	10.0
Unknown	123/1,040	11.8			51/563	9.1	8/164	4.9
Insertive anal sex, in past 6 months								
No insertive anal sex			5,103/23,697	21.5	834/9,495	8.8	297/3,766	7.9
Yes, consistently with a condom			80/516	15.5	412/6,287	6.6	82/1,264	6.5
Yes, not consistently with a condom			143/886	16.1	1,842/14,713	12.5	943/9,124	10.3
Yes, never with a condom			386/1,984	19.5	1,659/13,067	12.7	1,258/13,110	9.6
Unknown			198/775	25.5	46/475	9.7	9/158	5.7
Vaginal sex, in past 6 months²								
No vaginal sex	43/588	7.3	43/349	12.3	86/898	9.6	42/369	11.4
Yes, consistently with a condom	362/4,140	8.7	132/1,656	8.0	94/970	9.7	30/230	13.0
Yes, not consistently with a condom	4,070/22,915	17.8	2,554/12,166	21.0	230/2,011	11.4	35/295	11.9
Yes, never with a condom	6,616/34,086	19.4	3,097/13,238	23.4	283/2,558	11.1	66/617	10.7
Unknown	122/961	12.7	84/449	18.7	94/1,177	8.0	2/34	5.9

Table 3.3b (continued) Number of chlamydia diagnoses and chlamydia tests by demographics, (sexual) behavioural characteristics, sex and type of sexual contact, 2022

	Women		Heterosexual men		MSM – ASG		MSM – PrEP pilot	
	n positive/N	%	n positive/N	%	n positive/N	%	n positive/N	%
Receptive oral sex, in past 6 months								
No receptive oral sex	1,158/6,230	18.6			197/2,434	8.1	42/580	7.2
Yes, consistently with a condom	83/1,043	8.0			18/300	6.0	6/82	7.3
Yes, not consistently with a condom	730/4,812	15.2			445/4,123	10.8	114/1,010	11.3
Yes, never with a condom	8,997/49,006	18.4			4,076/36,596	11.1	2,415/25,567	9.4
Unknown	245/1,599	15.3			57/584	9.8	12/183	6.6
Client of sex work								
No	7,967/40,570	19.6	5,760/26,407	21.8	4,610/42,365	10.9	2,523/26,792	9.4
Yes, in past 6 months	21/173	12.1	110/1,259	8.7	132/1,204	11.0	34/313	10.9
Unknown	3,225/21,947	14.7	40/192	20.8	51/468	10.9	32/317	10.1
Previous HIV test								
No	9,173/45,656	20.1	4,993/21,565	23.2	677/6,038	11.2	57/510	11.2
Yes, positive	2/28	7.1	1/14	7.1	707/4,509	15.7	0/0	
Yes, negative	1,902/16,202	11.7	802/5,807	13.8	3,383/33,217	10.2	2,530/26,891	9.4
Yes, result unknown	7/80	8.8	5/39	12.8	8/66	12.1	1/14	7.1
Unknown	129/724	17.8	109/433	25.2	18/207	8.7	1/7	14.3
Drug use, in past 6 months^{3,4}								
No					3,127/32,390	9.7	1,327/16,428	8.1
Yes, in past 6 months					1,612/11,164	14.4	1,238/10,789	11.5
Unknown					54/483	11.2	24/205	11.7
Group sex, in past 6 months⁴								
No					2,728/28,700	9.5	1,325/16,038	8.3
Yes, in past 6 months					1,922/13,538	14.2	1,219/10,951	11.1
Unknown					143/1,799	7.9	45/428	10.5

Table 3.3b (continued) Number of chlamydia diagnoses and chlamydia tests by demographics, (sexual) behavioural characteristics, sex and type of sexual contact, 2022

	Women		Heterosexual men		MSM – ASG		MSM – PrEP pilot	
	n positive/N	%	n positive/N	%	n positive/N	%	n positive/N	%
Prep use, in past 3 months^{4,5}								
No					2,831/30,240	9.4	166/2,143	7.7
Yes					1,255/9,288	13.5	2,423/25,279	9.6
via SHC					549/3,911	14.0	25/163	15.3
via GP					541/4,338	12.5	6/121	5.0
via HIV practitioner					3/31	9.7	1/13	7.7
via other physician					103/841	12.2	4/49	8.2
via PrEP study					11/52	21.2	0/2	0.0
via informal routes					62/363	17.1	9/77	11.7
other					48/312	15.4	14/113	12.4
Known HIV-positive, not eligible					707/4,505	15.7		

1 Low level of education: no education, elementary school, lbo, mavo, vmbo, mbo-1; medium level of education: mbo2-4, havo, vwo; high level of education: university of applied sciences, university.

2 For MSM: numbers are reported of men who had sex with both men and women (N ASG=7,614, N PrEP pilot=1,545). Men who had sex with men only are excluded.

3 Included drugs are cocaine, XTC/MDMA/Speed, Heroin, Crystal Meth, Mephedrone, 3-MMC, 4-MEC, 4-FA, GHB/GBL and ketamine.

4 Data not obligatory to collect for heterosexual men and women; results are therefore not shown.

5 Persons can receive PrEP through more than one provider.

Table 3.4 Concurrent STI by sex and type of sexual contact among persons diagnosed with chlamydia, 2022

Concurrent infection	Women	Heterosexual men	MSM – ASG	MSM – PrEP pilot
	(N=11,213) n (%)	(N=5,910) n (%)	(N=4,793) n (%)	(N=2,589) n (%)
Gonorrhoea	476 (4.2)	231 (3.9)	1147 (23.9)	567 (21.9)
Syphilis, infectious	3 (0.0)	1 (0.0)	194 (4.0)	65 (2.5)
HIV newly diagnosed	1 (0.0)	0 (0.0)	26 (0.5)	3 (0.1)
Other STI*	94 (0.8)	48 (0.8)	48 (1.0)	17 (0.7)

* Other STI includes genital herpes, genital warts, hepatitis B (infectious), and hepatitis C. SHCs check for genital herpes and genital warts on indication only. In addition, clients are not routinely tested on hepatitis C.

Table 3.5 Number of chlamydia tests and chlamydia positivity by anatomic location, sex and type of sexual contact, 2015-2022

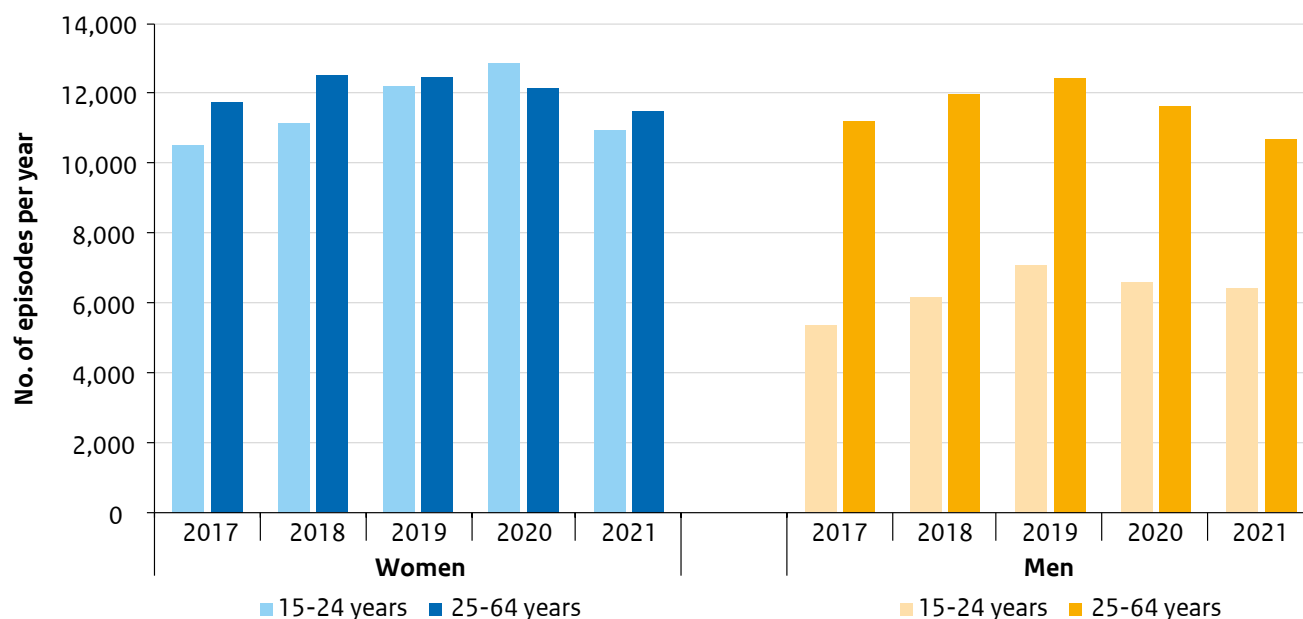
	2015	2016	2017	2018	2019	2020	2021	2022
Women								
Urogenital								
N tested	65,809	67,483	69,204	60,990	54,538	42,134	53,785	62,627
Positivity (%)	13.4	14.5	14.5	14.4	14.7	15.8	14.9	16.5
Anorectal								
N tested	17,866	21,224	23,155	21,960	19,629	16,381	20,650	24,849
Positivity (%)	13.3	13.4	12.9	12.3	13.5	14.7	13.9	15.7
Oral								
N tested	22,278	23,292	24,367	20,920	19,546	15,239	18,690	22,590
Positivity (%)	2.7	2.6	2.6	2.4	2.7	4.6	5.4	5.5
MSM – ASG								
Urogenital								
N tested	33,523	40,115	45,324	43,765	42,821	30,167	36,769	43,885
Positivity (%)	3.4	3.3	3.2	3.1	3.4	3.6	3.7	3.3
Anorectal								
N tested	31,975	38,496	43,861	42,499	41,947	29,695	36,100	43,037
Positivity (%)	7.7	7.7	7.1	7.5	8.2	8.7	9.3	8.2
Oral								
N tested	30,424	36,589	41,296	41,572	41,849	29,885	36,424	43,539
Positivity (%)	1.3	1.1	1.1	1.1	1.2	1.6	1.9	1.8
MSM – PrEP pilot								
Urogenital								
N tested					3,369	13,853	22,023	27,381
Positivity (%)					2.6	2.6	2.3	2.0
Anorectal								
N tested					3,353	13,814	21,946	27,274
Positivity (%)					9.7	8.3	8.0	7.5
Oral								
N tested					3,349	13,848	22,017	27,384
Positivity (%)					1.2	1.3	1.4	1.4

Footnote 1: Heterosexual men are usually only tested urogenital, while women are tested on indication for anorectal or oral chlamydia; indications vary by region. MSM are usually tested in all three locations. In 2022, 303 oral chlamydia tests (2.6% positive) and 221 anorectal chlamydia tests (8.1% positive) were done in heterosexual men. This was comparable to the past years.

Footnote 2: Please note that people can test positive at multiple locations.

3.3 General practice

Figure 3.7 Estimated annual number of chlamydia episodes in general practice by sex and age group, based on extrapolation from general practices in Nivel-PCD, 2017-2021



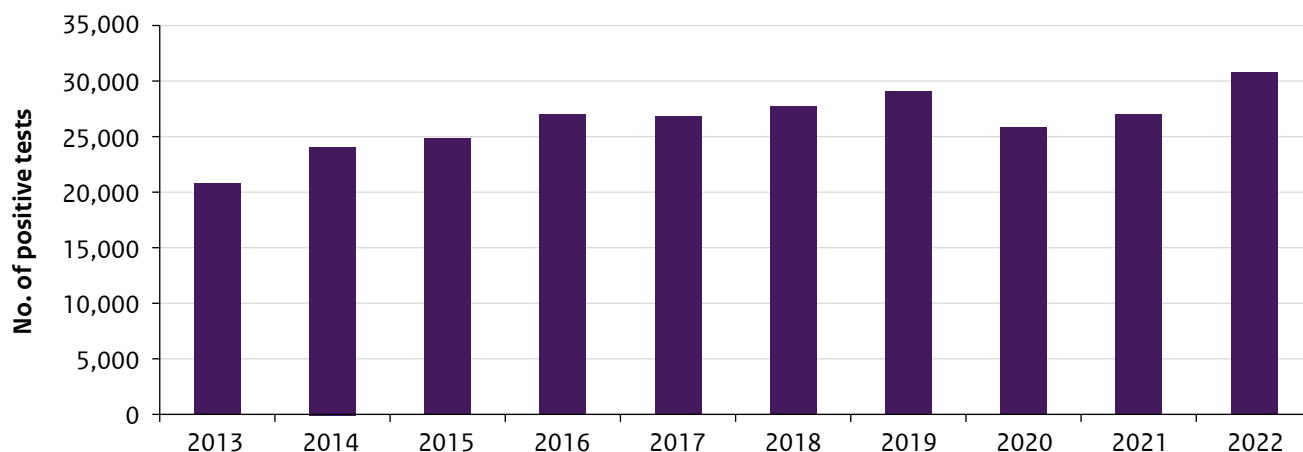
Footnote: About 50% of the total Dutch population consists of persons aged 25-64 years and about 10% consists of persons aged 15-24 years.

Table 3.6 Annual reporting rate (number of episodes per 1,000 persons of 15-64 years of age) of chlamydia in general practices in the Netherlands by sex and age group, based on general practices in Nivel-PCD, 2017-2021

	Women n/1,000			Men n/1,000			Total n/1,000		
	All	15-24	25-64	All	15-24	25-64	All	15-24	25-64
2017	4.0	10.2	2.6	3.0	5.0	2.5	3.5	7.6	2.5
2018	4.2	10.8	2.8	3.2	5.7	2.6	3.7	8.2	2.7
2019	4.4	11.7	2.7	3.5	6.5	2.7	3.9	9.1	2.7
2020	4.4	12.3	2.7	3.2	6.1	2.5	3.8	9.2	2.6
2021	4.0	10.5	2.5	3.0	5.9	2.3	3.5	8.2	2.4

3.4 Laboratory surveillance

Figure 3.8 Number of positive tests for Chlamydia trachomatis from up to 21 medical microbiology laboratories, 2013-2022

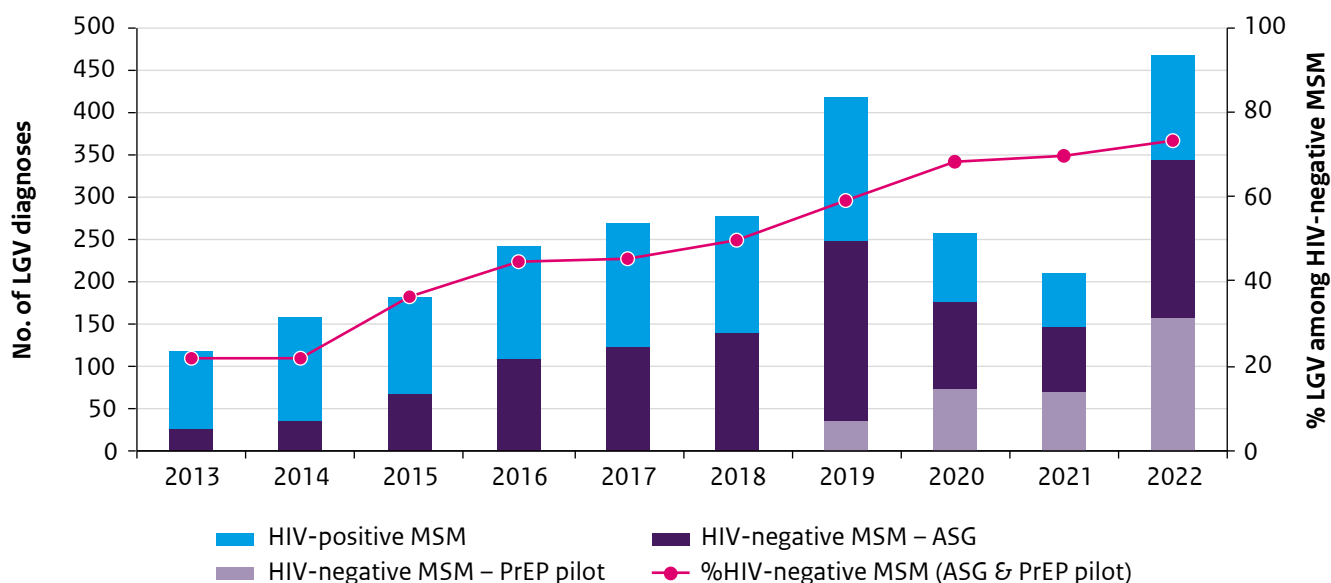


Source: 'Virologische weekstaten'

Footnote: 19 medical microbiology laboratories in 2022.

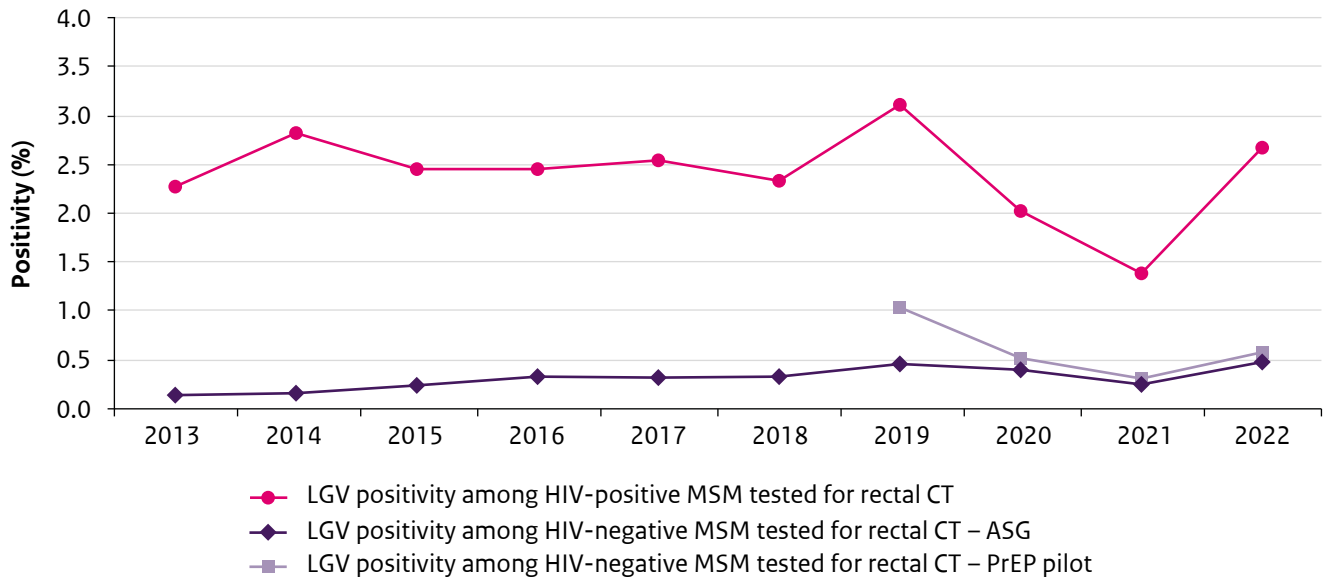
3.5 Lymphogranuloma venereum at Sexual Health Centres

Figure 3.9 Total number of LGV diagnoses among MSM by HIV status, 2013-2022



Footnote: Aggregated data of non-registered consultations included for 2018 and 2019.

Figure 3.10 Rectal LGV positivity by HIV status among MSM tested for rectal chlamydia infection, 2013-2022



Footnote: Aggregated data of non-registered consultations included for 2018.

4 Gonorrhoea

4.1 Key points

4.1.1 Sexual Health Centres

- In this report, consultations of MSM are divided into consultations that fall within the regulation 'Additional Sexual Healthcare' (MSM – ASG) and consultations that fall within the national PrEP pilot programme (MSM – PrEP pilot). Due to the three-monthly testing interval for MSM – PrEP pilot, MSM – ASG and MSM – PrEP pilot are not directly comparable. Additional information can be found in 1.1 *National surveillance at Sexual Health Centres*.
- The impact of the COVID-19 pandemic and the national PrEP pilot programme on the number of consultations and STI positivity need to be taken into account when interpreting trend data, as this may influence trends.
- In 2022, 10,600 gonorrhoea infections were diagnosed at SHCs (14% women, 6% heterosexual men, 53% MSM – ASG, 25% MSM – PrEP pilot, and 2% gender-diverse persons).
- Gonorrhoea-positivity among gender-diverse persons was 10.5% (173/1,645). As the number of gender-diverse persons was relatively low, they are not shown in tables and figures and will be excluded hereafter.
- The 10,427 diagnoses among women, heterosexual men, MSM – ASG and MSM – PrEP pilot were an increase of 33% compared with 2021. The number of diagnoses increased by 76% among women (2022: 1,458; 2021: 831), by 58% among heterosexual men (2022: 666; 2021: 421), by 23% among MSM – ASG (2022: 5,617; 2021: 4,558), and by 32% among MSM – PrEP pilot (2022: 2,686; 2021: 2,032).
- The 10,427 gonorrhoea diagnoses were made among 8,877 individuals, and 1,212 persons (11.6%) had more than one gonorrhoea diagnosis in 2022.
- The number of gonorrhoea tests increased by 19% in total in 2022 compared with 2021. The number of tests increased by 17% among women (2022: 62,691; 2021: 53,802), by 21% among heterosexual men (2022: 27,866; 2021: 23,124), by 19% among MSM – ASG (2022: 44,048; 2021: 36,900) and by 25% among MSM – PrEP pilot (2022: 27,423; 2021: 22,050).
- Gonorrhoea positivity among women and heterosexual men increased between 2016 and 2020, but decreased in 2021 to 1.5% in women and 1.8% in heterosexual men, similar to the level in 2017. In 2022, positivity greatly increased to 2.3% in women and 2.4% in heterosexual

men, the highest it has been since 2013 among women and similar to the positivity in 2019 for heterosexual men. This increase was mostly seen in the second half of 2022.

- Positivity among MSM – ASG increased slightly from 12.4% in 2021 to 12.8% in 2022.
- Among MSM – PrEP pilot the positivity increased from 9.2% in 2021 to 9.8% in 2022. Of all unique persons tested among MSM – PrEP pilot in 2022, 23.8% was gonorrhoea positive in at least one consultation (table 2.10).
- High gonorrhoea positivity was seen among persons who were notified for gonorrhoea (34.4% in women, 14.6% in heterosexual men, 31.4% in MSM – ASG, 34.3% in MSM – PrEP pilot). Other groups with relatively high positivity were men who reported symptoms, persons with low education level, sex workers, MSM living with HIV, and MSM reporting group sex or drug use in the past six months.
- Gonorrhoea positivity among women and heterosexual men increased in almost all age groups compared with 2021, but increased the most among heterosexuals under 25 years old. Among MSM – ASG, positivity increased only among men below 30 years old and increased the most among men aged 15-19.
- Among women and heterosexual men diagnosed with gonorrhoea, 33% had a chlamydia co-infection. Among MSM (both ASG and PrEP pilot) diagnosed with gonorrhoea, 21% also had chlamydia and 3% infectious syphilis.

4.1.2 General practice

- In 2021, the estimated number of gonorrhoea episodes at GPs was slightly lower than in 2020, with around 4,200 episodes in women and 8,500 in men. The estimated number of episodes was stable since 2019 for women and men aged 25-64 but decreased among both women and men aged 15-24 between 2019 and 2021.
- In 2021, the reporting rate for gonorrhoea at GPs was 1.1 episodes per 1,000 individuals. This was 0.8 per 1,000 individuals for women, and 1.5 per 1,000 individuals for men.

4.1.3 Antimicrobial resistance of gonococci in the Netherlands

- In 2022, 16 out of 24 SHCs reported susceptibility testing results in the Gonococcal Resistance to Antimicrobials Surveillance (GRAS) programme. Together, these SHCs represent 86% of diagnosed gonorrhoea cases.

- Within participating SHCs, culture was performed for 75% of gonorrhoea patients. Due to negative or failed cultures, susceptibility testing results were available for 39% of patients (n=3,585). This percentage has been stable around 39% since 2016.
- Antimicrobial resistance to ceftriaxone, the first-choice treatment in the Netherlands, was not reported. Since 2018, there has been an increase in isolates with slightly

- reduced susceptibility to ceftriaxone (MIC >0.002 and ≤0.016 mg/L), but not in isolates with higher MIC values.
- Resistance to ciprofloxacin has been above 50% since 2019 and was 61.5% in 2022. Resistance to cefotaxime was the same as in 2021, with 0.1%. Resistance to azithromycin has been increasing since 2016, up to 26.6% in 2022.

4.2 Sexual Health Centres: characteristics, risk groups and trends

Figure 4.1 Number of gonorrhoea tests and gonorrhoea positivity by region, sex and type of sexual contact, 2022

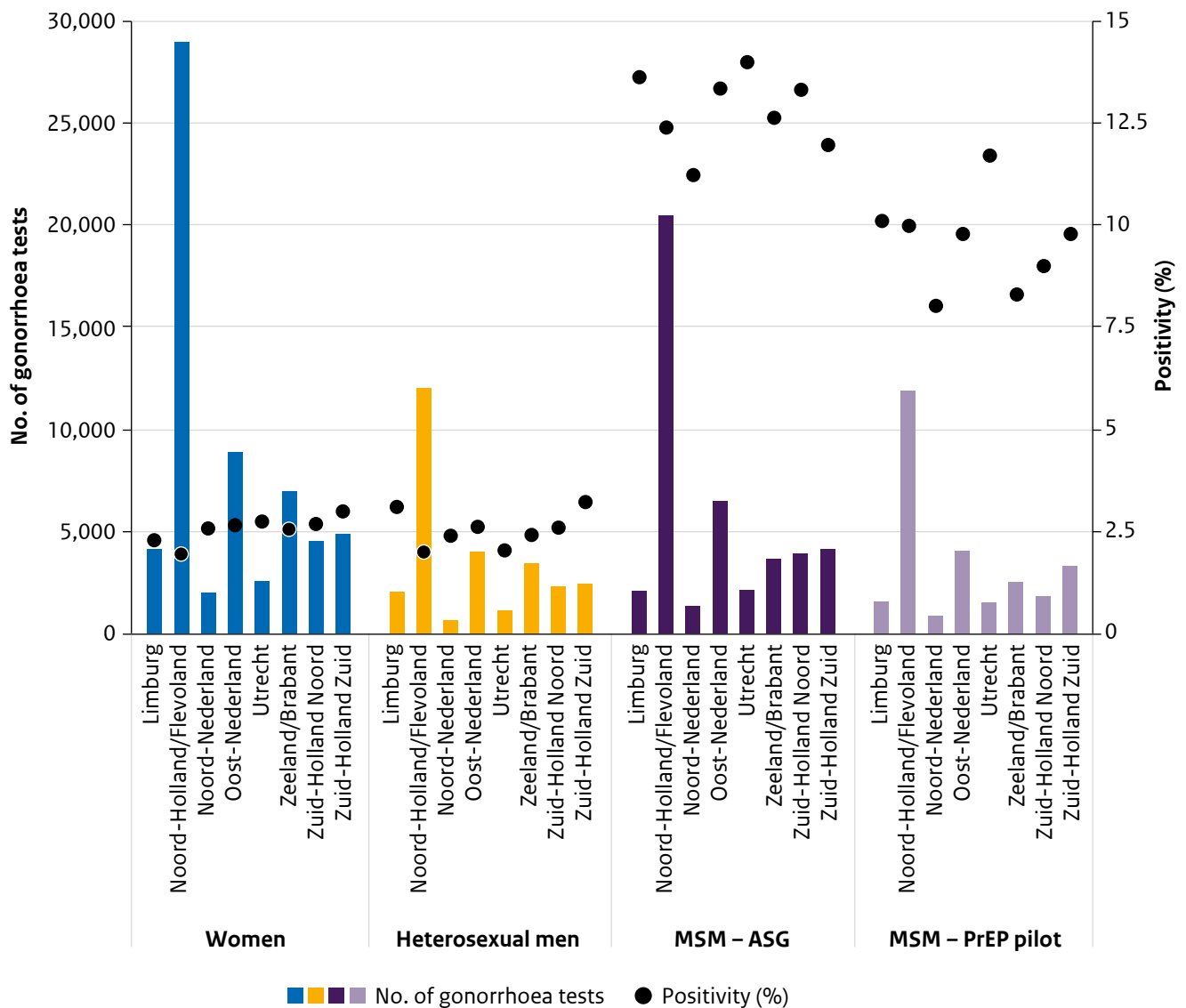
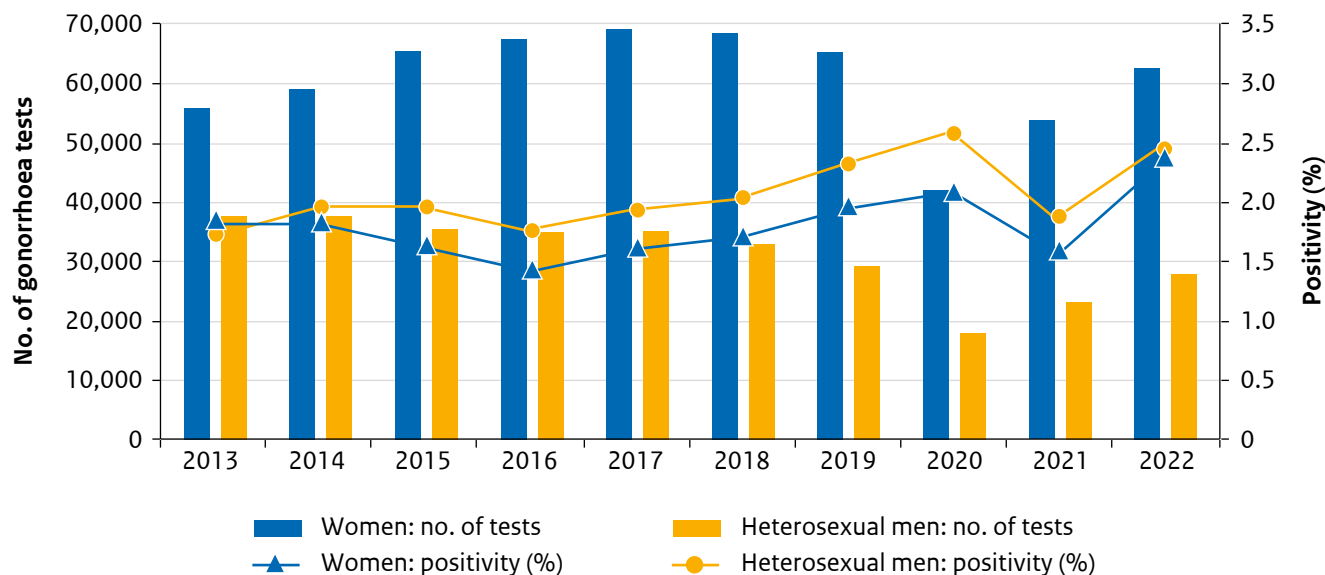


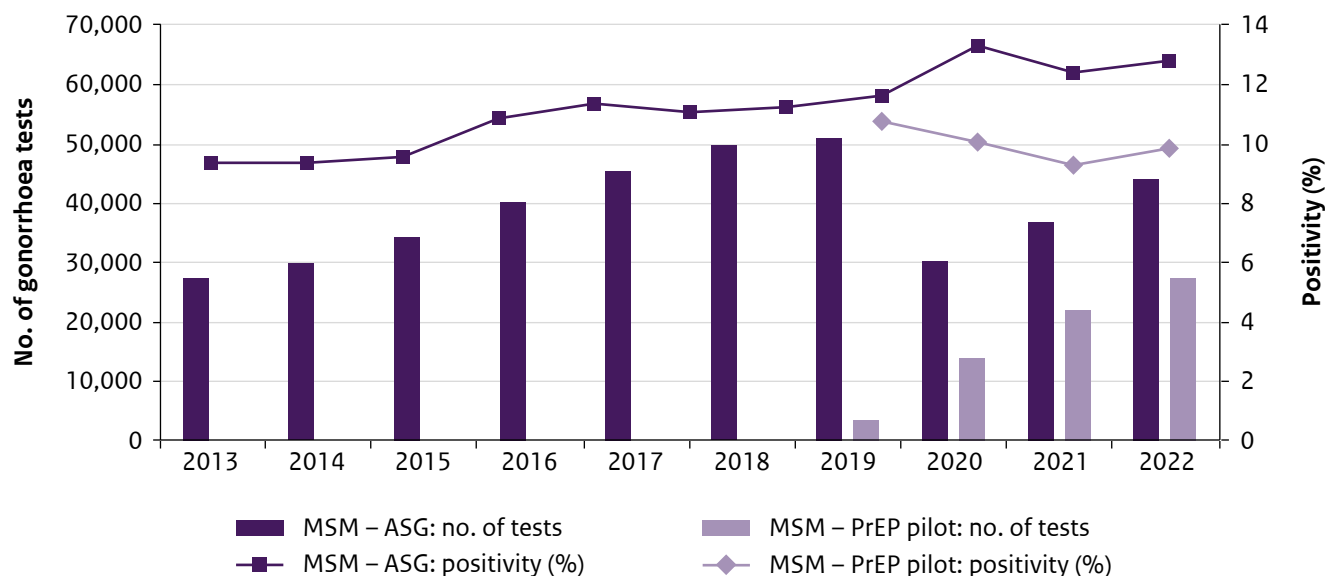
Figure 4.2a Number of gonorrhoea tests and gonorrhoea positivity in women and heterosexual men, 2013-2022



Footnote 1: Between 2012 and 2015, attendees below the age of 25 years and with no further risk factors were only tested for chlamydia. Since 2015, attendees below the age of 25 years and with no further risk factors were tested for chlamydia and gonorrhoea.

Footnote 2: Aggregated data of non-registered consultations included for 2018 and 2019.

Figure 4.2b Number of gonorrhoea tests and gonorrhoea positivity in MSM, 2013-2022

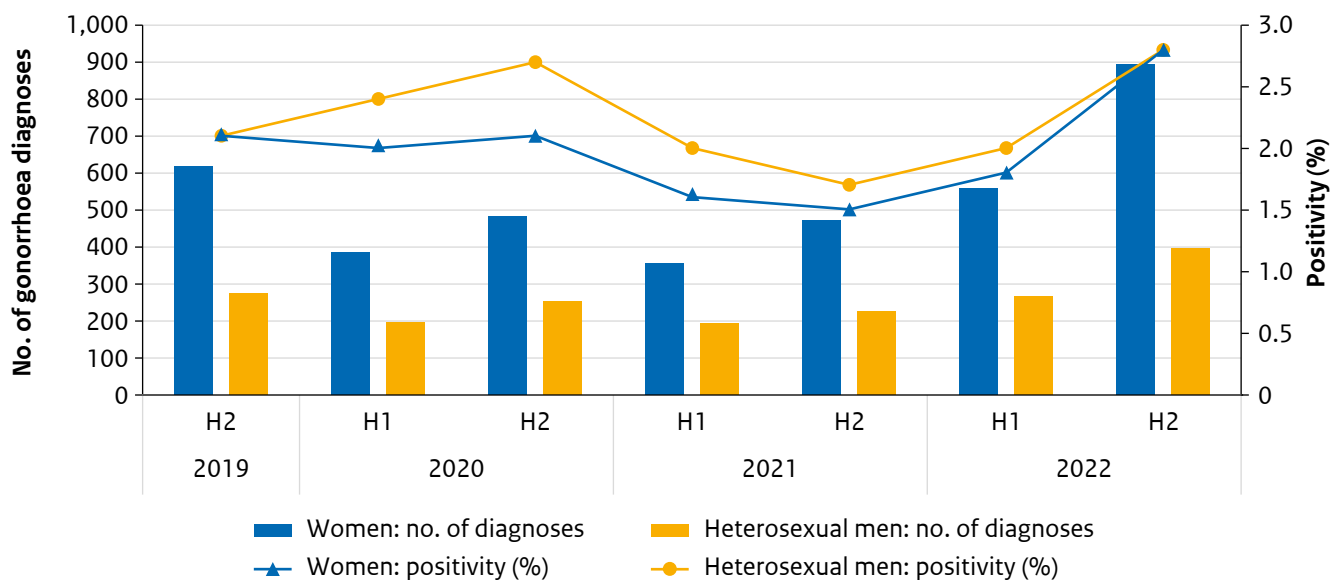


Footnote 1: Aggregated data of non-registered consultations included for 2018 and 2019.

Footnote 2: Trends in the number of tests and/or positivity in MSM over time may change due to the distinction between ASG and PrEP pilot consultations. Furthermore, due to the three-monthly testing interval for MSM – PrEP pilot, MSM – ASG and MSM – PrEP pilot are not directly comparable.

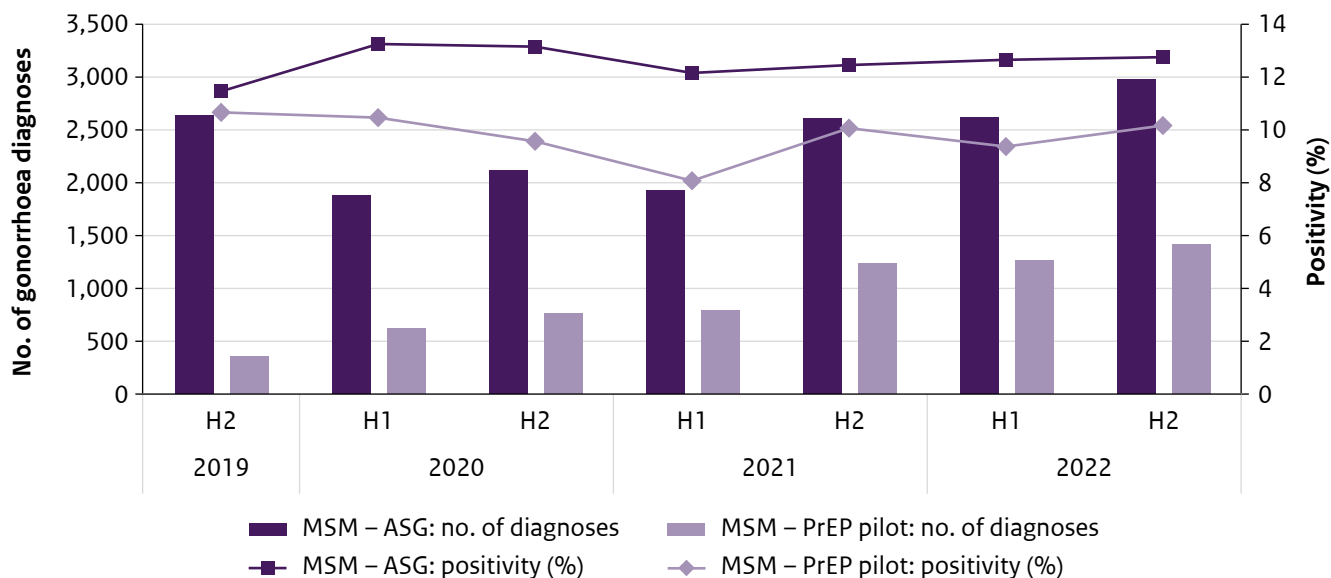
Footnote 3: MSM in the PrEP pilot occasionally visit the SHC for an STI/HIV test between PrEP follow-up consultations. These consultations fall within the ASG regulation.

Figure 4.3a Half-yearly number of gonorrhoea diagnoses and gonorrhoea positivity in women and heterosexual men, mid 2019 to 2022



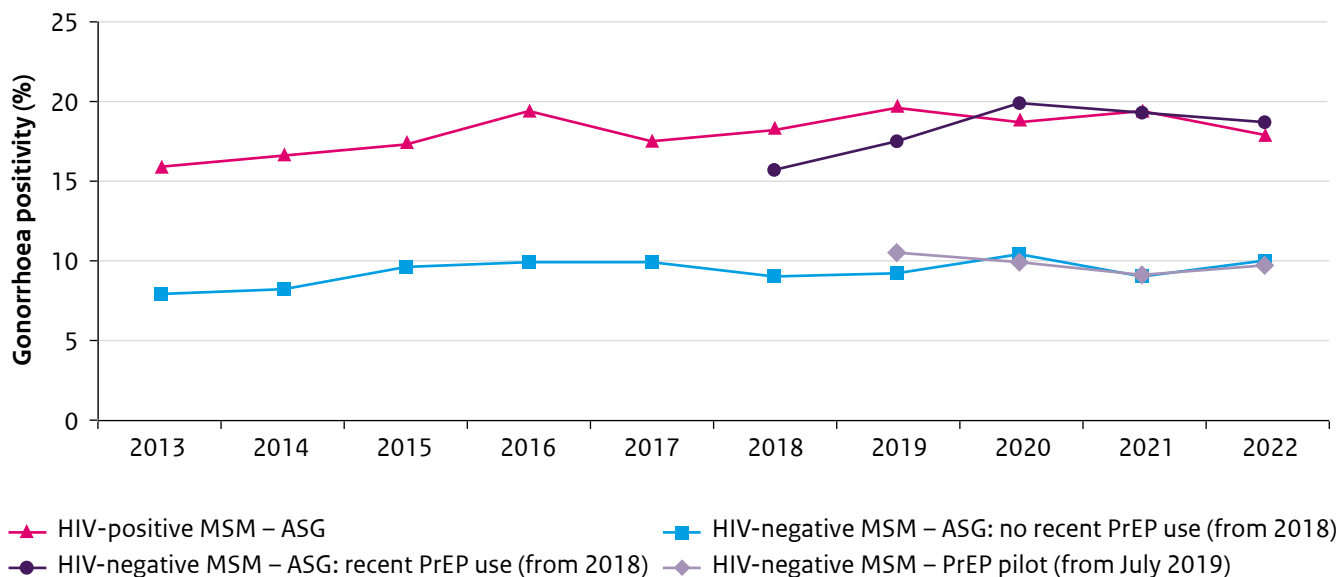
Footnote: H1=January-June, H2=July-December.

Figure 4.3b Half-yearly number of gonorrhoea diagnoses and gonorrhoea positivity in MSM, mid 2019 to 2022



Footnote 1: MSM in the PrEP pilot occasionally visit SHCs for an STI/HIV test between PrEP follow-up consultations. These consultations fall within the ASG regulation.
Footnote 2: H1=January-June, H2=July-December.

Figure 4.4 Trends in gonorrhoea positivity in MSM by HIV-status and PrEP use, 2013-2022

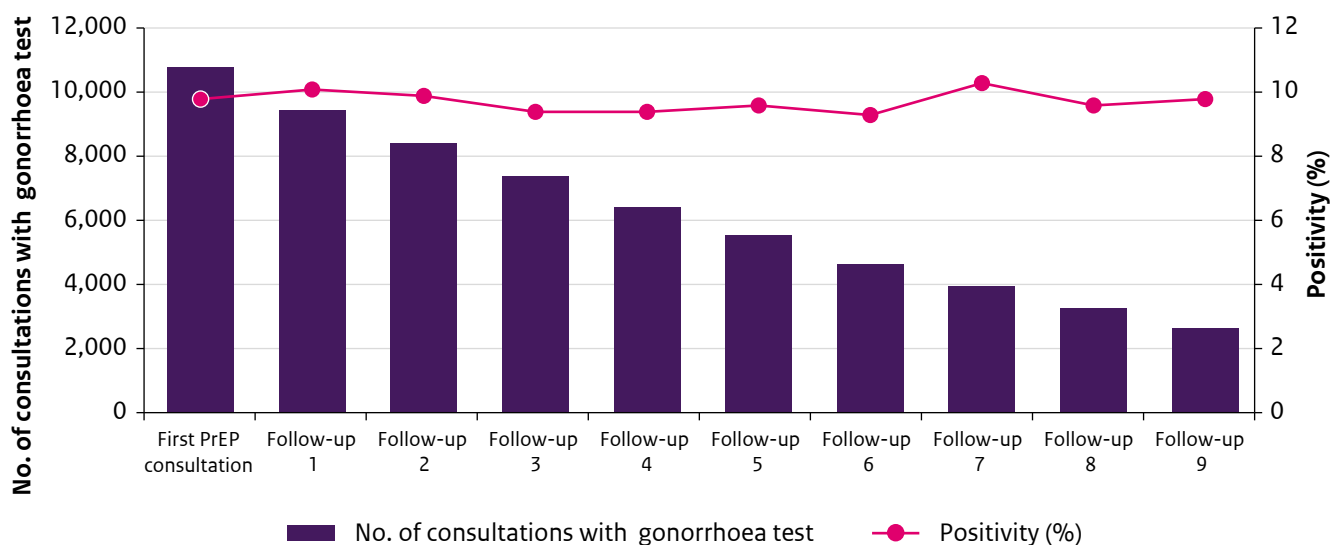


Footnote 1: Information on PrEP use has been collected since 2018. In 2018, recent PrEP use was defined as use in the past 6 months. Since 2019, recent PrEP use has been defined as use in the past 3 months.

Footnote 2: Trends in gonorrhoea positivity in MSM over time may change due to the distinction between ASG and PrEP pilot consultations. Furthermore, due to the three-monthly testing interval for MSM – PrEP pilot, MSM – ASG and MSM – PrEP pilot are not directly comparable.

Footnote 3: MSM in the PrEP pilot occasionally visit the SHC for an STI/HIV test between PrEP follow-up consultations. These consultations fall within the ASG regulation.

Figure 4.5 Number of consultations with a gonorrhoea test and gonorrhoea positivity by PrEP consultation number among MSM participating in the national PrEP pilot at Sexual Health Centres, July 2019 - December 2022



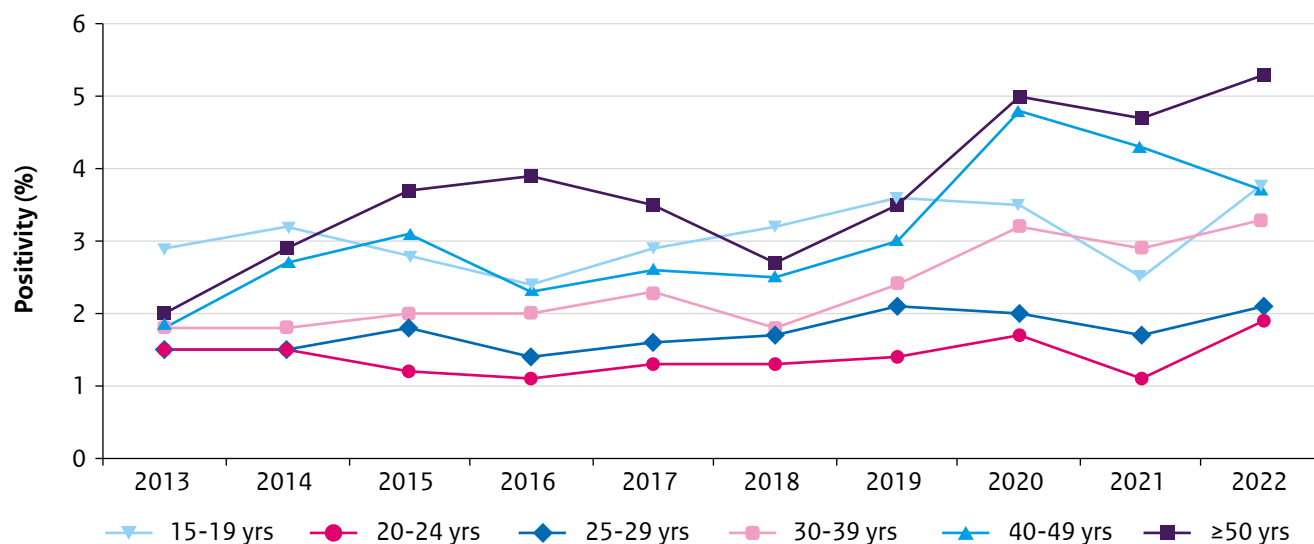
Footnote 1: Data up to the 10th consultation are shown. The maximum number of consultations within one person recorded was 16.

Footnote 2: MSM in the PrEP pilot occasionally visit the SHC for an STI/HIV test between PrEP follow-up consultations. These consultations fall within the ASG regulation.

Table 4.1 Number of gonorrhoea diagnoses and gonorrhoea tests by age, sex and type of sexual contact, 2022

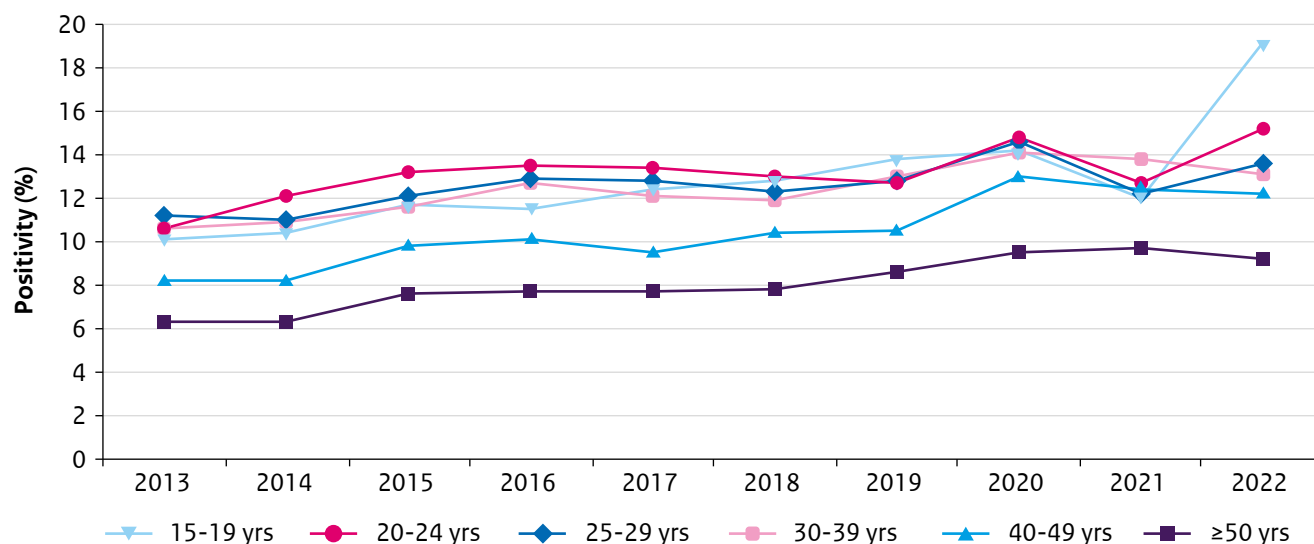
Age (years)	Women		Heterosexual men		MSM – ASG		MSM – PrEP pilot	
	n positive/N	%	n positive/N	%	n positive/N	%	n positive/N	%
≤19	278/7,580	3.7	102/2,419	4.2	151/787	19.2	15/106	14.2
20-24	743/39,708	1.9	337/16,785	2.0	967/6,363	15.2	281/2,198	12.8
25-29	198/8,815	2.2	88/5,047	1.7	1,182/8,673	13.6	526/4,273	12.3
30-34	76/2,645	2.9	64/1,669	3.8	1,064/8,003	13.3	573/4,964	11.5
35-39	44/1,363	3.2	35/865	4.0	685/5,371	12.8	388/3,733	10.4
40-44	39/878	4.4	11/404	2.7	507/3,812	13.3	283/3,077	9.2
45-49	23/630	3.7	7/268	2.6	313/2,936	10.7	206/2,561	8.0
50-54	28/548	5.1	6/180	3.3	286/2,793	10.2	169/2,428	7.0
≥55	29/523	5.5	16/229	7.0	461/5,308	8.7	245/4,083	6.0
Total	1,458/62,691	2.3	666/27,866	2.4	5,617/44,048	12.8	2,686/27,423	9.8

Figure 4.6a Trends in gonorrhoea positivity in women and heterosexual men by age group, 2013-2022



Footnote: Between 2012 and 2015, attendees below the age of 25 years and with no further risk factors were only tested for chlamydia. Since 2015, attendees below the age of 25 years and with no further risk factors were tested for chlamydia and gonorrhoea.

Figure 4.6b Trends in gonorrhoea positivity in MSM – ASG by age group, 2013-2022



Footnote: In this figure, only MSM – ASG consultations are included.

Table 4.2 Number of gonorrhoea diagnoses and gonorrhoea tests by region of origin, sex and type of sexual contact, 2022

Region of origin	Women		Heterosexual men		MSM – ASG		MSM – PrEP pilot	
	n positive/N	%	n positive/N	%	n positive/N	%	n positive/N	%
The Netherlands	963/44,220	2.2	321/17,636	1.8	3,169/26,128	12.1	1,460/16,481	8.9
Turkey	32/780	4.1	33/736	4.5	131/896	14.6	65/533	12.2
Morocco	28/846	3.3	48/1,007	4.8	78/636	12.3	44/289	15.2
Suriname	89/2,560	3.5	79/1,866	4.2	149/1,280	11.6	75/756	9.9
CAS-BES islands	51/1,333	3.8	58/894	6.5	147/1,061	13.9	62/585	10.6
Indonesia	9/443	2.0	3/147	2.0	104/774	13.4	56/524	10.7
Eastern Europe	63/2,293	2.7	11/628	1.8	322/2,185	14.7	141/1,153	12.2
Europe other	79/3,967	2.0	24/1,643	1.5	571/4,422	12.9	277/2,517	11.0
Africa other	39/1,711	2.3	40/1,362	2.9	133/970	13.7	59/557	10.6
Asia other	48/2,093	2.3	32/1,097	2.9	327/2,746	11.9	216/2,179	9.9
Latin America other	42/1,637	2.6	14/547	2.6	373/2,124	17.6	189/1,364	13.9
North-America/ Oceania	13/768	1.7	3/285	1.1	107/790	13.5	35/454	7.7
Unknown	2/40	5.0	0/18	0.0	6/36	16.7	7/31	22.6
Total	1,458/62,691	2.3	666/27,866	2.4	5,617/44,048	12.8	2,686/27,423	9.8

Table 4.3a Number of gonorrhoea diagnoses and gonorrhoea tests by triage indication, sex and type of sexual contact, 2022

	Women		Heterosexual men		MSM – ASG		MSM – PrEP pilot	
	n positive/N	%	n positive/N	%	n positive/N	%	n positive/N	%
Notified								
Not notified	914/51,154	1.8	486/18,818	2.6	3,523/33,243	10.6	2,240/25,609	8.7
Notified for gonorrhoea	304/885	34.4	105/717	14.6	1,499/4,776	31.4	295/860	34.3
Notified for other STI/HIV	186/8,786	2.1	59/7,158	0.8	412/4,880	8.4	125/811	15.4
Unknown	54/1,866	2.9	16/1,173	1.4	183/1,149	15.9	26/143	18.2
Symptoms								
No	785/40,824	1.9	145/17,707	0.8	3,281/33,590	9.8	2,175/25,580	8.5
Yes	656/20,962	3.1	514/9,661	5.3	2,278/9,879	23.1	498/1,775	28.1
Unknown	17/905	1.9	7/498	1.4	58/579	10.0	13/68	19.1
Region of origin included in triage¹								
No	1,055/48,955	2.2	348/19,564	1.8	3,847/31,340	12.3	1,772/19,452	9.1
Yes	401/13,687	2.9	318/8,281	3.8	1,763/12,671	13.9	907/7,940	11.4
Migrant	154/5,530	2.8	121/2,902	4.2	1,312/8,876	14.8	704/5,902	11.9
Child of a migrant	247/8,157	3.0	197/5,379	3.7	451/3,795	11.9	203/2,038	10.0
Age								
<25	1,021/47,288	2.2	439/19,204	2.3	1,118/7,150	15.6	296/2,304	12.8
≥25	437/15,403	2.8	227/8,662	2.6	4,499/36,898	12.2	2,390/25,119	9.5
Partner in risk group²								
No	903/46,394	1.9	461/20,603	2.2	3,291/26,930	12.2	1,538/17,480	8.8
Yes	518/15,258	3.4	194/7,023	2.8	2,215/16,309	13.6	1,079/9,239	11.7
Unknown	37/1,039	3.6	11/240	4.6	111/809	13.7	69/704	9.8
Sex work								
No	1,259/58,301	2.2	651/27,574	2.4	5,420/42,831	12.7	2,556/26,444	9.7
Yes, in past 6 months	193/4,096	4.7	9/179	5.0	150/886	16.9	91/566	16.1
Unknown	6/294	2.0	6/113	5.3	47/331	14.2	39/413	9.4
Gonorrhoea/chlamydia/syphilis in past year								
Not tested	762/36,565	2.1	449/19,962	2.2	1,598/15,807	10.1	225/2,387	9.4
Tested, negative	392/16,863	2.3	110/4,646	2.4	1,697/15,984	10.6	884/12,972	6.8
Tested, positive	285/8,577	3.3	95/2,931	3.2	2,157/10,986	19.6	1,497/11,192	13.4
Tested, unknown	1/51	2.0	1/31	3.2	29/162	17.9	17/179	9.5
Unknown	18/635	2.8	11/296	3.7	136/1,109	12.3	63/693	9.1

¹ Region of origin with triage indication include Turkey, Morocco, Suriname, CAS-BES islands, Indonesia, Eastern Europe, Africa other, Latin America other, and Asia other.

² For heterosexual men and MSM: partner originating from a region of origin as indicated by triage criteria. For women: partner originating from a region of origin as indicated by triage criteria or a male partner who had sex with men.

Table 4.3b Number of gonorrhoea diagnoses and gonorrhoea tests by demographics, (sexual) behavioural characteristics, sex and type of sexual contact, 2022

	Women		Heterosexual men		MSM – ASG		MSM – PrEP pilot	
	n positive/N	%	n positive/N	%	n positive/N	%	n positive/N	%
Educational level¹								
High	669/39,699	1.7	199/15,833	1.3	3,500/29,050	12.0	1,714/17,991	9.5
Medium	510/16,314	3.1	290/8,585	3.4	1,250/9,140	13.7	596/5,941	10.0
Low	187/3,793	4.9	123/2,398	5.1	470/3,157	14.9	189/1,956	9.7
Unknown	92/2,885	3.2	54/1,050	5.1	397/2,701	14.7	187/1,535	12.2
Number of partners in past 6 months								
0 partners	9/477	1.9	2/217	0.9	39/451	8.6	18/240	7.5
1 partner	264/15,057	1.8	129/5,275	2.4	292/3,519	8.3	59/1,565	3.8
2 partners	287/15,173	1.9	140/5,769	2.4	539/4,941	10.9	135/2,291	5.9
3 or more partners	897/31,935	2.8	395/16,603	2.4	4,746/35,134	13.5	2,474/23,327	10.6
Unknown	1/49	2.0	0/2	0.0	1/3	33.3	0/0	
Receptive anal sex, in past 6 months								
No receptive anal sex	1,003/47,436	2.1			1,071/12,470	8.6	281/4,557	6.2
Yes, consistently with a condom	41/1,440	2.8			478/5,623	8.5	103/1,285	8.0
Yes, not consistently with a condom	106/3,133	3.4			2,061/13,621	15.1	1,044/8,941	11.7
Yes, never with a condom	291/9,645	3.0			1,947/11,770	16.5	1,247/12,476	10.0
Unknown	17/1,037	1.6			60/564	10.6	11/164	6.7
Insertive anal sex, in past 6 months								
No insertive anal sex			552/23,702	2.3	855/9,500	9.0	310/3,767	8.2
Yes, consistently with a condom			9/516	1.7	495/6,288	7.9	90/1,264	7.1
Yes, not consistently with a condom			25/887	2.8	2,170/14,720	14.7	1,023/9,125	11.2
Yes, never with a condom			53/1,984	2.7	2,049/13,064	15.7	1,251/13,109	9.5
Unknown			27/777	3.5	48/476	10.1	12/158	7.6
Vaginal sex, in past 6 months²								
No vaginal sex	4/588	0.7	9/349	2.6	99/898	11.0	30/370	8.1
Yes, consistently with a condom	103/4,139	2.5	32/1,657	1.9	90/971	9.3	28/230	12.2
Yes, not consistently with a condom	520/22,910	2.3	254/12,168	2.1	153/2,011	7.6	30/295	10.2
Yes, never with a condom	816/34,093	2.4	360/13,243	2.7	250/2,559	9.8	50/617	8.1
Unknown	15/961	1.6	11/449	2.4	75/1,175	6.4	9/34	26.5

Table 4.3b (continued) Number of gonorrhoea diagnoses and gonorrhoea tests by demographics, (sexual) behavioural characteristics, sex and type of sexual contact, 2022

	Women		Heterosexual men		MSM – ASG		MSM – PrEP pilot	
	n positive/N	%	n positive/N	%	n positive/N	%	n positive/N	%
Receptive oral sex, in past 6 months								
No receptive oral sex	132/6,230	2.1			188/2,437	7.7	48/581	8.3
Yes, consistently with a condom	32/1,043	3.1			28/300	9.3	10/82	12.2
Yes, not consistently with a condom	119/4,813	2.5			465/4,124	11.3	130/1,009	12.9
Yes, never with a condom	1,155/49,008	2.4			4,868/36,603	13.3	2,486/25,568	9.7
Unknown	20/1,597	1.3			68/584	11.6	12/183	6.6
Client of sex work								
No	1,011/40,572	2.5	624/26,414	2.4	5,440/42,375	12.8	2,624/26,793	9.8
Yes, in past 6 months	11/173	6.4	35/1,260	2.8	108/1,204	9.0	32/313	10.2
Unknown	436/21,946	2.0	7/192	3.6	69/469	14.7	30/317	9.5
Previous HIV test								
No	962/45,653	2.1	497/21,570	2.3	660/6,042	10.9	55/510	10.8
Yes, positive	1/28	3.6	1/14	7.1	810/4,510	18.0	0/0	
Yes, negative	470/16,206	2.9	145/5,808	2.5	4,114/33,221	12.4	2,628/26,892	9.8
Yes, result unknown	3/81	3.7	2/39	5.1	10/66	15.2	3/14	21.4
Unknown	22/723	3.0	21/435	4.8	23/209	11.0	0/7	0.0
Drug use in relation to sex, in past 6 months^{3,4}								
No					3,528/32,396	10.9	1,263/16,430	7.7
Yes, in past 6 months					2,010/11,168	18.0	1,402/10,788	13.0
Unknown					79/484	16.3	21/205	10.2
Group sex, in past 6 months⁴								
No					3,096/28,712	10.8	1,282/16,041	8.0
Yes, in past 6 months					2,366/13,535	17.5	1,367/10,949	12.5
Unknown					155/1,801	8.6	37/433	8.5

Table 4.3b (continued) Number of gonorrhoea diagnoses and gonorrhoea tests by demographics, (sexual) behavioural characteristics, sex and type of sexual contact, 2022

	Women		Heterosexual men		MSM – ASG		MSM – PrEP pilot	
	n positive/N	%	n positive/N	%	n positive/N	%	n positive/N	%
Prep use, in past 3 months^{4,5}								
No					3,060/30,249	10.1	168/2,145	7.8
Yes					1,747/9,289	18.8	2,518/25,278	10.0
via SHC					950/3,910	24.3		
via general practitioner					602/4,338	13.9		
via HIV practitioner					2/31	6.5		
via other physician					142/841	16.9		
via PrEP study					11/52	21.2		
via informal routes					77/364	21.2		
other					73/313	23.3		
Known HIV-positive, not eligible					810/4,510	18.0		

1 Low level of education: no education, elementary school, lbo, mavo, vmbo, mbo-1; medium level of education: mbo2-4, havo, vwo; high level of education: university of applied sciences, university.

2 For MSM: numbers are reported for men who had sex with both men and women (N ASG=7,614, N PrEP pilot=1,546). Men who had sex with men only are excluded.

3 Included drugs are cocaine, XTC/MDMA/Speed, Heroin, Crystal Meth, Mephedrone, 3-MMC, 4-MEC, 4-FA, GHB/GBL and ketamine.

4 Data not obligatory to collect for heterosexual men and women; results are therefore not shown.

5 Persons can receive PrEP through more than one provider.

Table 4.4 Concurrent STI by sex and type of sexual contact among persons diagnosed with gonorrhoea, 2022

Concurrent infection	Women	Heterosexual men	MSM – ASG	MSM – PrEP pilot
	(N=1,458) n (%)	(N=666) n (%)	(N=5,617) n (%)	(N=2,686) n (%)
Chlamydia	476 (32.6)	231 (34.7)	1147 (20.4)	567 (21.1)
Syphilis, infectious	2 (0.1)	2 (0.3)	179 (3.2)	88 (3.3)
HIV newly diagnosed	1 (0.1)	2 (0.3)	28 (0.5)	3 (0.1)
Other STI*	14 (1.0)	6 (0.9)	53 (0.9)	17 (0.6)

* Other STI includes genital herpes, genital warts, hepatitis B (infectious), and hepatitis C. SHCs check for genital herpes and genital warts on indication only. In addition, clients are not routinely tested on hepatitis C.

Table 4.5 Number of gonorrhoea tests and gonorrhoea positivity by anatomic location, sex and type of sexual contact, 2014-2022

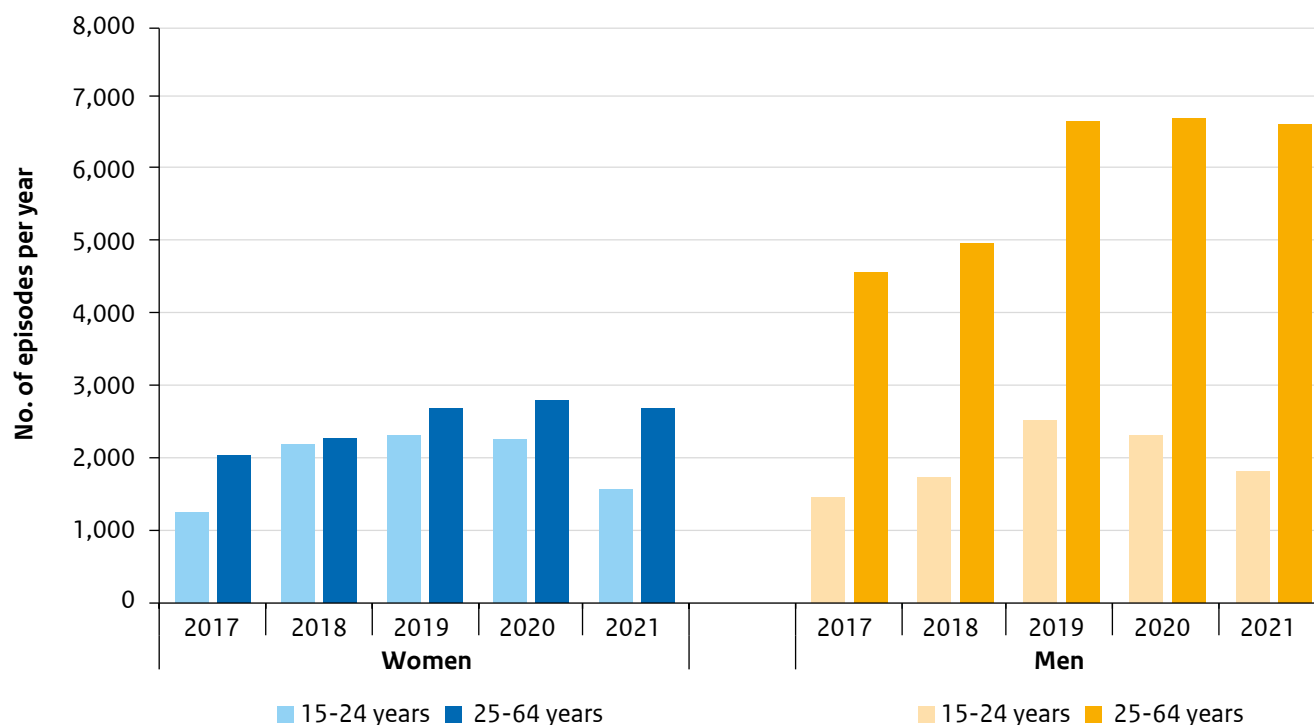
	2014	2015	2016	2017	2018	2019	2020	2021	2022
Women									
Urogenital									
N tested	59,073	65,512	67,473	69,204	60,958	54,487	42,083	53,752	62,616
Positivity (%)	1.4	1.2	1.1	1.3	1.3	1.5	1.6	1.2	1.8
Anorectal									
N tested	16,193	17,849	21,194	23,140	21,930	19,563	16,334	20,608	24,828
Positivity (%)	1.5	1.5	1.2	1.3	1.5	1.7	1.8	1.4	2.0
Oral									
N tested	24,439	22,454	23,469	24,569	21,128	19,597	15,231	18,682	22,601
Positivity (%)	1.4	1.5	1.3	1.4	1.4	1.8	2.0	1.7	2.6
MSM – ASG									
Urogenital									
N tested	28,288	33,530	40,129	45,341	43,767	42,819	3,0167	36,775	43,887
Positivity (%)	2.8	2.9	2.9	2.8	2.7	2.7	3.6	3.4	3.2
Anorectal									
N tested	26,353	31,985	38,511	43,873	42,458	41,913	29,680	36,102	43,018
Positivity (%)	6.5	7.1	7.7	7.6	7.7	8.0	9.3	8.7	8.4
Oral									
N tested	27,488	32,932	39,416	44,754	43,262	42,406	29,910	36,441	43,530
Positivity (%)	5.3	6.0	5.9	5.8	5.7	6.0	7.8	7.4	8.2
MSM – PrEP pilot									
Urogenital									
N tested						3,370	13,849	22,019	27,374
Positivity (%)						1.3	1.4	1.2	1.1
Anorectal									
N tested						3,350	13,805	21,946	27,260
Positivity (%)						7.3	7.0	6.1	6.4
Oral									
N tested						3,354	13,844	22,013	27,379
Positivity (%)						5.5	5.6	5.5	6.0

Footnote 1: Heterosexual men are usually only tested urogenitally, while women are tested on indication for anorectal or oral gonorrhoea; indications vary by region. MSM are usually tested in all three locations. In 2022, 303 oral gonorrhoea tests (5.0% positive) and 216 anorectal gonorrhoea tests (5.1% positive) were reported in heterosexual men. This was comparable to the past years.

Footnote 2: Please note that people can have positive tests at multiple locations.

4.3 General practice

Figure 4.7 Estimated annual number of gonorrhoea episodes in general practice by sex and age group, based on extrapolation from general practices in Nivel-PCD, 2017-2021



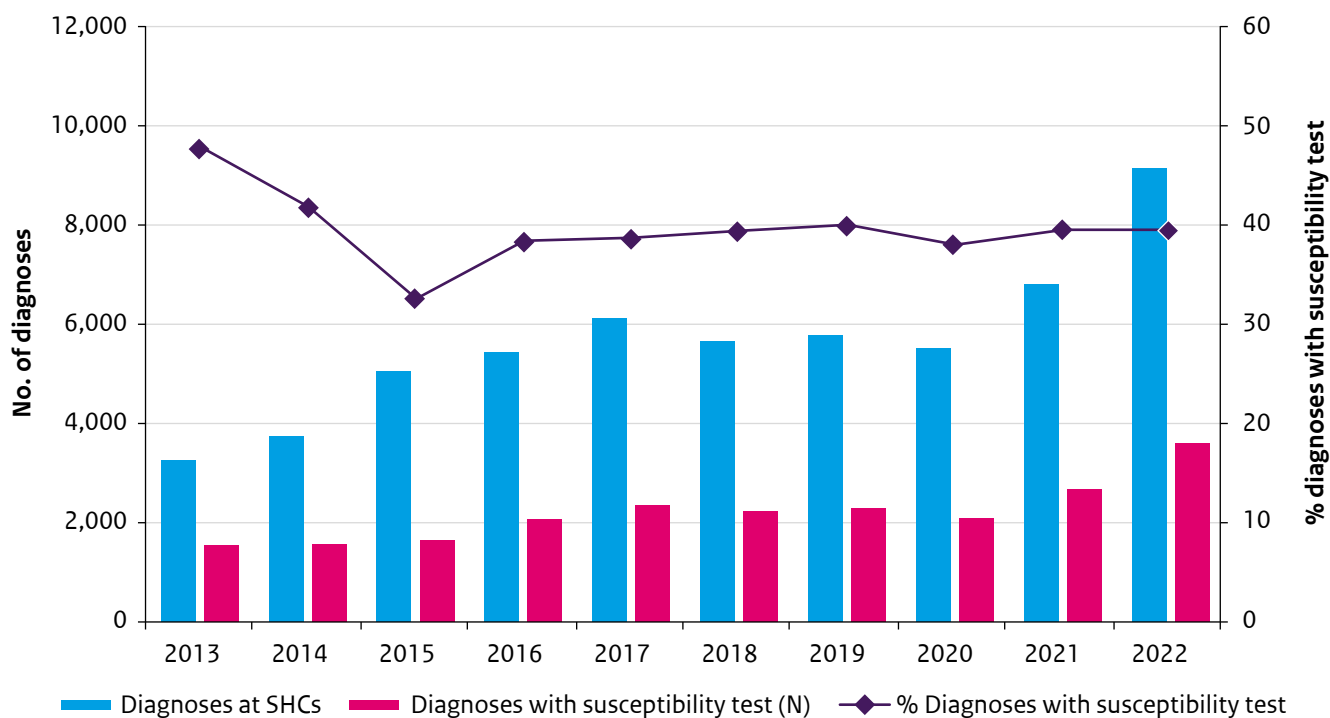
Footnote: About 50% of the total Dutch population consists of persons aged 25-64 years and about 10% consists of persons aged 15-24 years.

Table 4.6 Annual reporting rate (number of episodes per 1,000 persons of 15-64 years of age) of gonorrhoea in general practices in the Netherlands by sex and age group, based on general practices in Nivel-PCD, 2017-2021

	Women n/1,000			Men n/1,000			Total n/1,000		
	All	15-24	25-64	All	15-24	25-64	All	15-24	25-64
2017	0.6	1.2	0.5	1.1	1.4	1.0	0.8	1.3	0.7
2018	0.8	2.1	0.5	1.2	1.6	1.1	1.0	1.9	0.8
2019	0.9	2.2	0.6	1.6	2.3	1.5	1.3	2.3	1.0
2020	0.9	2.2	0.6	1.6	2.1	1.5	1.2	2.1	1.0
2021	0.8	1.5	0.6	1.5	1.7	1.4	1.1	1.6	1.0

4.4 Antimicrobial resistance of gonococci in the Netherlands

Figure 4.8 Number of gonorrhoea diagnoses and number and percentage of diagnoses including an antimicrobial susceptibility test at SHCs participating in GRAS, 2013-2022



Footnote: In less than half of all gonorrhoea diagnoses at SHCs antimicrobial susceptibility was measured by culture. This can partially be explained by negative cultures, making measurement of resistance levels impossible. Furthermore, the STI register data show that gonorrhoea diagnoses are sometimes only confirmed by PCR, not by culture.

Figure 4.9 Number of diagnoses, performed cultures and susceptibility testing results reported in GRAS, 2022

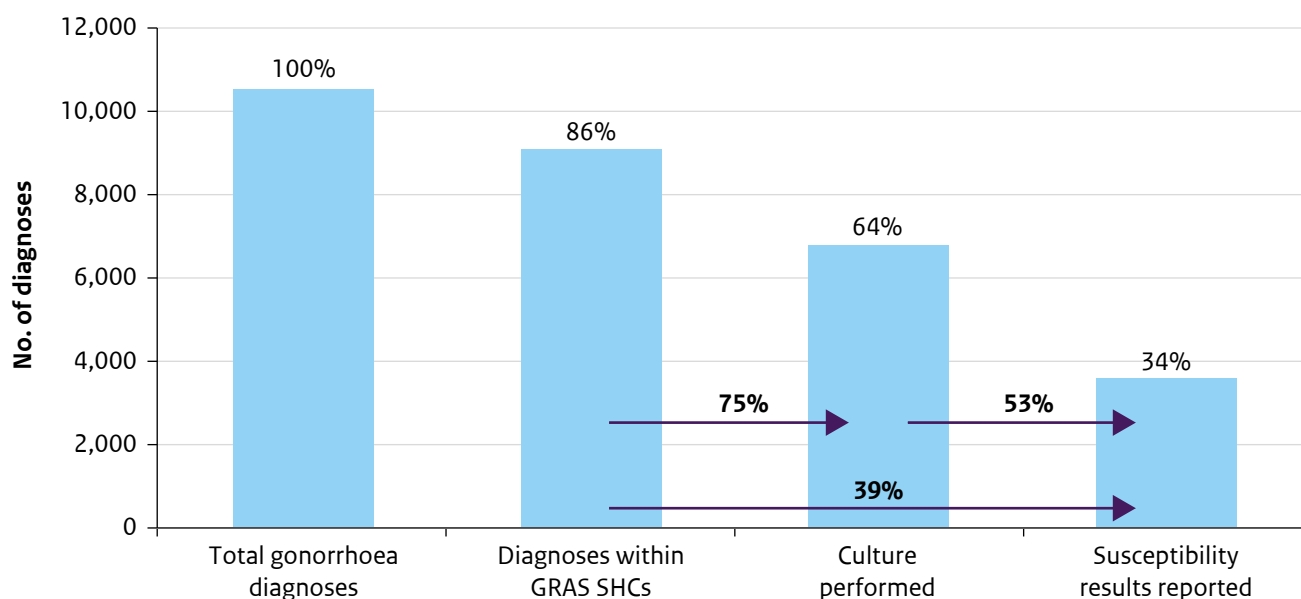


Figure 4.10 Percentage of performed cultures - negative, positive and failed - per anatomical location of gonorrhoea infection, 2022

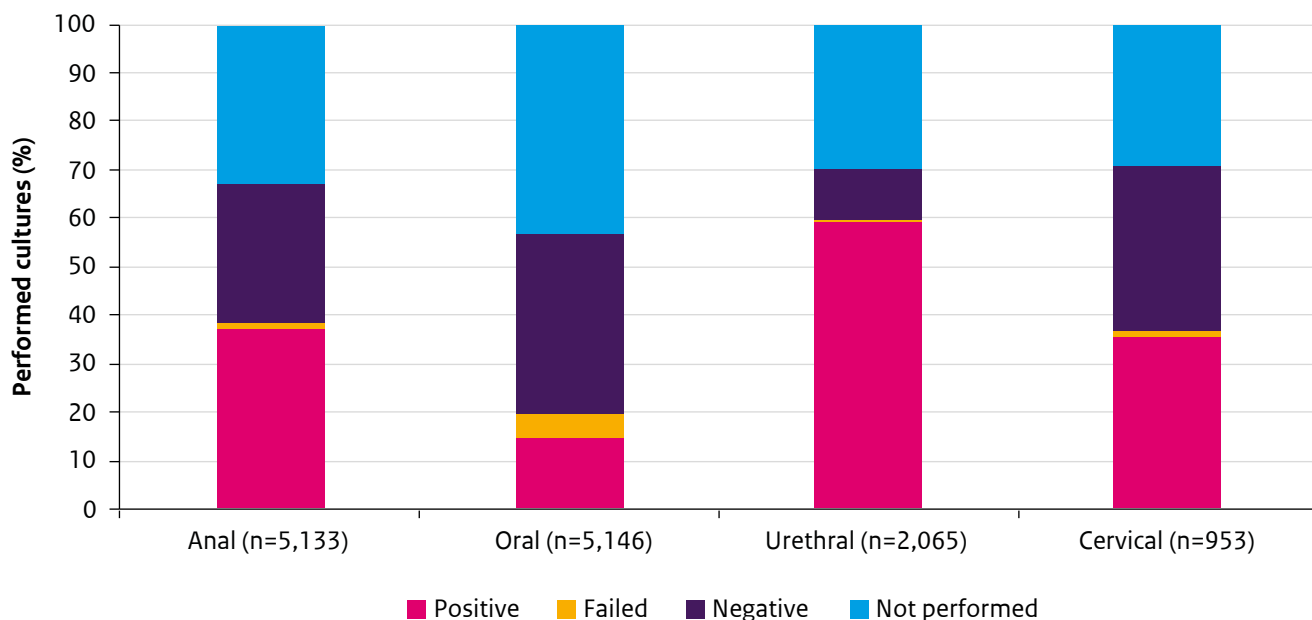
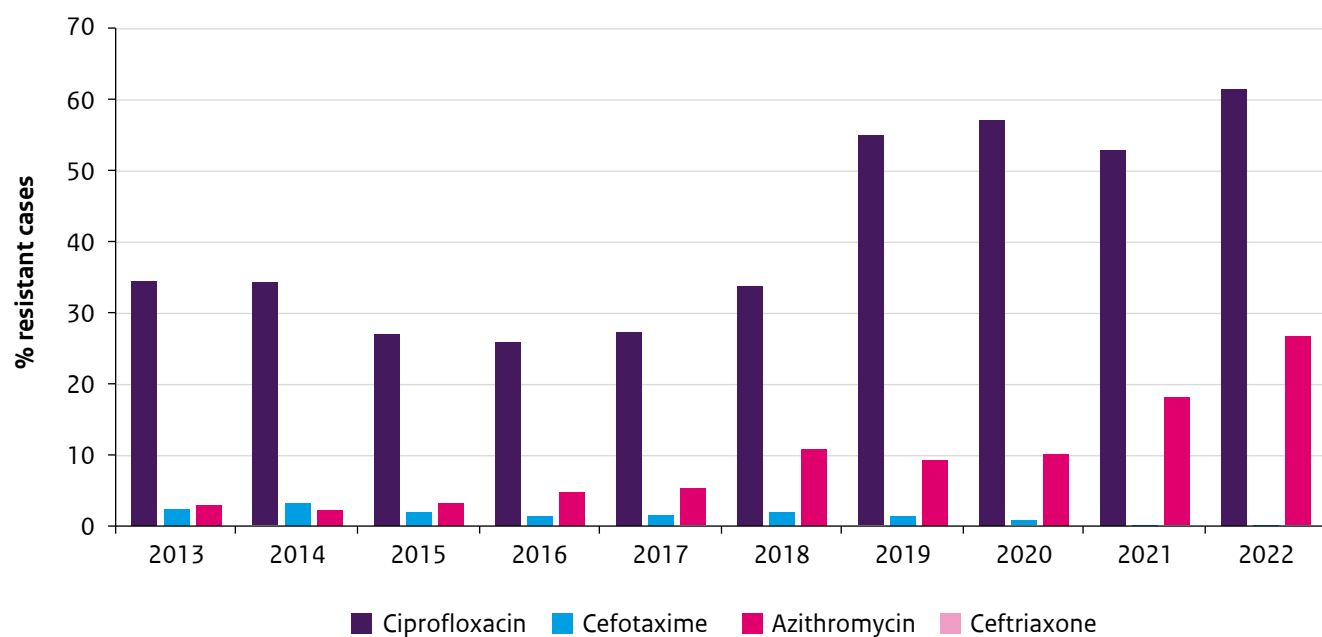
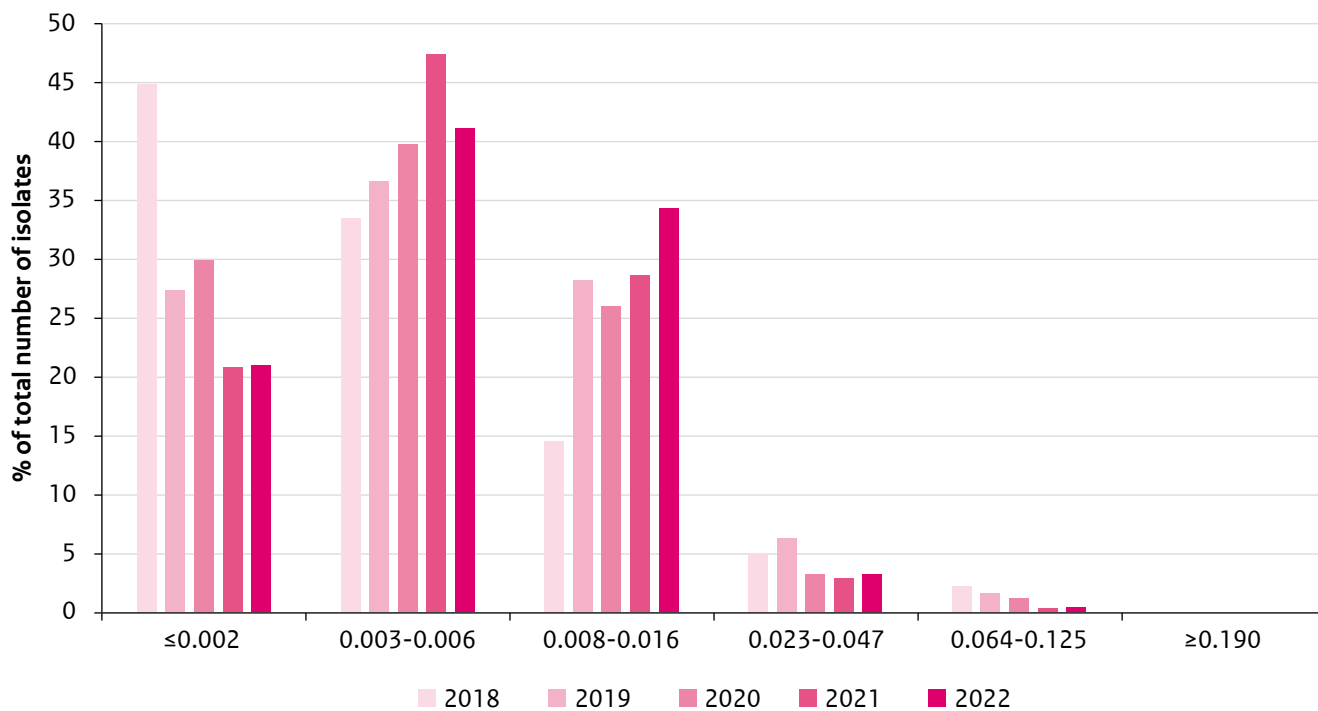


Figure 4.11 Gonococcal resistance (following EUCAST breakpoints) in the Netherlands, proportion of resistant cases, 2013-2022



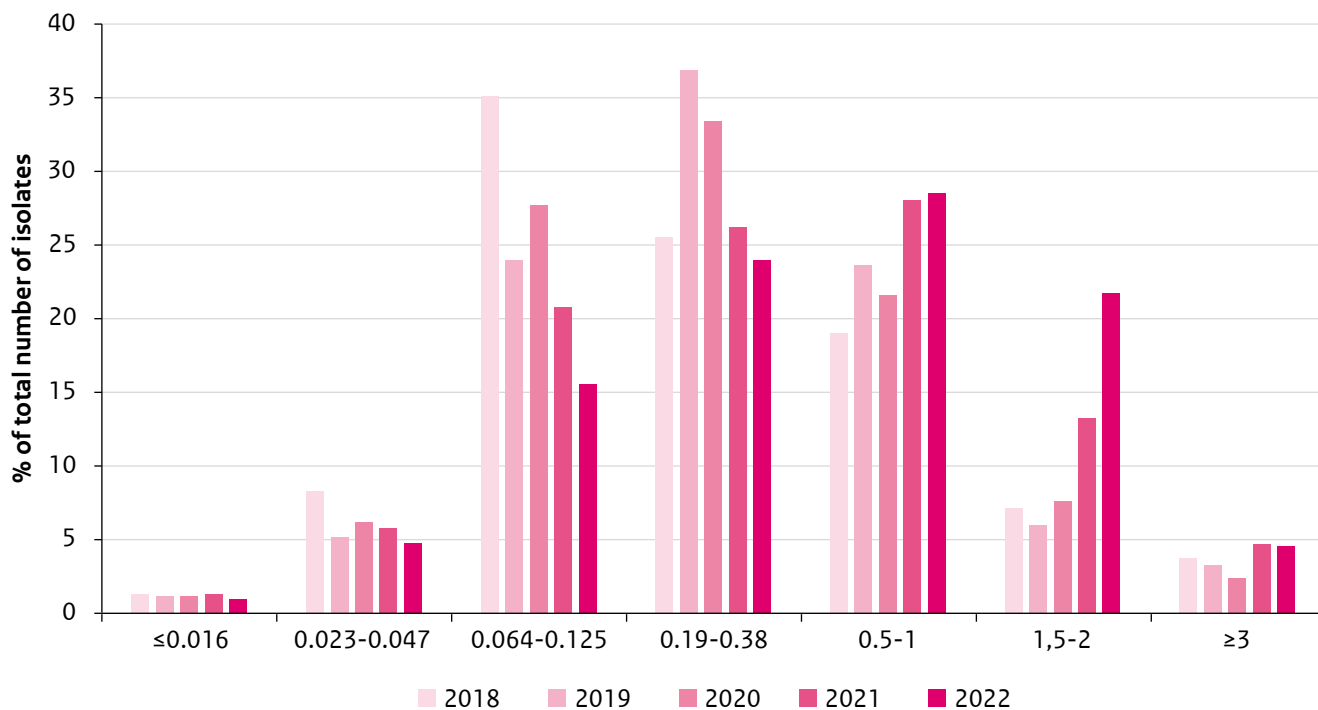
Footnote: No resistance to ceftriaxone has been reported yet.

Figure 4.12a MIC (= minimum inhibitory concentration) distribution for ceftriaxone, 2018-2022



Footnote: Following EUCAST breakpoints, an MIC of >0.125 mg/L is considered resistant.

Figure 4.12b MIC (= minimum inhibitory concentration) distribution for azithromycin, 2018-2022



Footnote: Following EUCAST breakpoints, no clinical breakpoint for azithromycin is available. An MIC of >1.0 mg/L is considered the epidemiological cut-off value for resistance.

5 Syphilis

5.1 Key points

5.1.1 Sexual Health Centres

- In this report, consultations of MSM are divided into consultations that fall within the regulation 'Additional Sexual Healthcare' (MSM – ASG) and consultations that fall within the national PrEP pilot programme (MSM – PrEP pilot). Due to the three-monthly testing interval for MSM – PrEP pilot, MSM – ASG and MSM – PrEP pilot are not directly comparable. Additional information can be found in 1.1 *National surveillance at Sexual Health Centres*.
- The impact of the COVID-19 pandemic and the national PrEP pilot programme on the number of consultations and STI positivity need to be taken into account when interpreting trend data, as this may influence trends.
- In 2022, 1,925 syphilis infections were diagnosed at SHCs. Of these 1,574 (82%) were infectious syphilis. Between 2013 and 2022, the percentage of infectious syphilis diagnoses among women and heterosexual men increased from 39% to 60%. Among MSM, the percentage of infectious syphilis diagnoses was higher and stable around 83% (2022: 84%).
- Of infectious syphilis diagnoses, 34 (2%) were among women, 34 (2%) among heterosexual men, 995 (63%) among MSM – ASG, 472 (30%) among MSM – PrEP pilot, and 39 (2%) among gender-diverse persons.
- Infectious syphilis-positivity among gender-diverse persons was 2.4% (39/1,607). As the number of gender-diverse persons was relatively low, they are not shown in tables and figures and will be excluded hereafter.
- The 1,535 resulting infectious syphilis diagnoses (women, heterosexual men, MSM – ASG, MSM – PrEP pilot) were made among 1,494 individuals; 41 persons (3%) had more than one syphilis diagnosis in 2022 of which 40 persons were MSM.
- Heterosexuals are not routinely tested for syphilis. In 2022 a syphilis test was done at 38% of all STI consultations among women and heterosexual men.
- In 2022 there were 22,810 tests among women, 11,816 among heterosexual men, 43,428 among MSM – ASG, and 27,547 among MSM – PrEP pilot. This was an increase of 19-24% compared to 2021.
- In 2022, infectious syphilis positivity among heterosexual men (0.29%) and MSM – ASG (2.3%) was slightly lower compared with 2021 (0.34% and 2.6% respectively). Positivity among heterosexual men increased from 0.26%

in 2019 to 0.45% in 2020 and is now approximately equal again compared to 2019. The infectious syphilis positivity among women increased slightly in 2022 (0.15%) compared with 2021 (0.11%), but also compared with 2019 (0.07%).

- Among MSM – PrEP pilot, infectious syphilis positivity in 2022 was comparable with 2021 (1.7%). Among all unique persons tested among MSM – PrEP pilot in 2022, 5.0% tested positive for infectious syphilis in at least one consultation (table 2.10).
- Between 2013 and 2022, infectious syphilis positivity among HIV-positive MSM – ASG fluctuated between 5.8% and 6.7%. Among HIV-negative MSM – ASG who did not report recent PrEP use, positivity was stable around 2%. In MSM – ASG who reported recent PrEP use, infectious syphilis positivity decreased slightly from 4.1% in 2018 to 2.7% in 2022. Between 2019 and 2022, infectious syphilis positivity among MSM – PrEP pilot was stable around 2%.
- Among MSM – PrEP pilot, infectious syphilis positivity was stable at 1.5% to 1.9% from start to the fifth PrEP consultation.
- The highest positivity was found among MSM notified of syphilis exposure (12.6% in MSM – ASG, and 9.4% MSM – PrEP pilot). Other groups with high positivity were MSM with symptoms (5.5% in MSM – ASG and 5.9% MSM – PrEP pilot) and MSM – ASG who are HIV-positive (6.6%).
- Among MSM who were diagnosed with infectious syphilis, 20% MSM – ASG and 14% MSM – PrEP pilot were co-infected with chlamydia and 18% of MSM – ASG and 19% of MSM – PrEP pilot with gonorrhoea.

5.1.2 Congenital syphilis

- The number of infections of congenital syphilis found in neonates has remained very low, at 0 to 3 per year since 2013 (0 in 2022).

5.1.3 Blood donors

- Between 2013 and 2022, the syphilis incidence among regular blood donors varied, but showed a slight increase from 1.3 per 100,000 donor years in 2013 to 3.8 per 100,000 donor years in 2022. Among new blood donors, syphilis prevalence varied between 17 and 45 per 100,000 new donors over the same time period, with a prevalence of 31.3 per 100,000 new donors in 2022.

5.2 Sexual Health Centres: characteristics, risk groups and trends

Figure 5.1 Number of syphilis diagnoses and percentage of infectious diagnoses by sex and type of sexual contact, 2013-2022

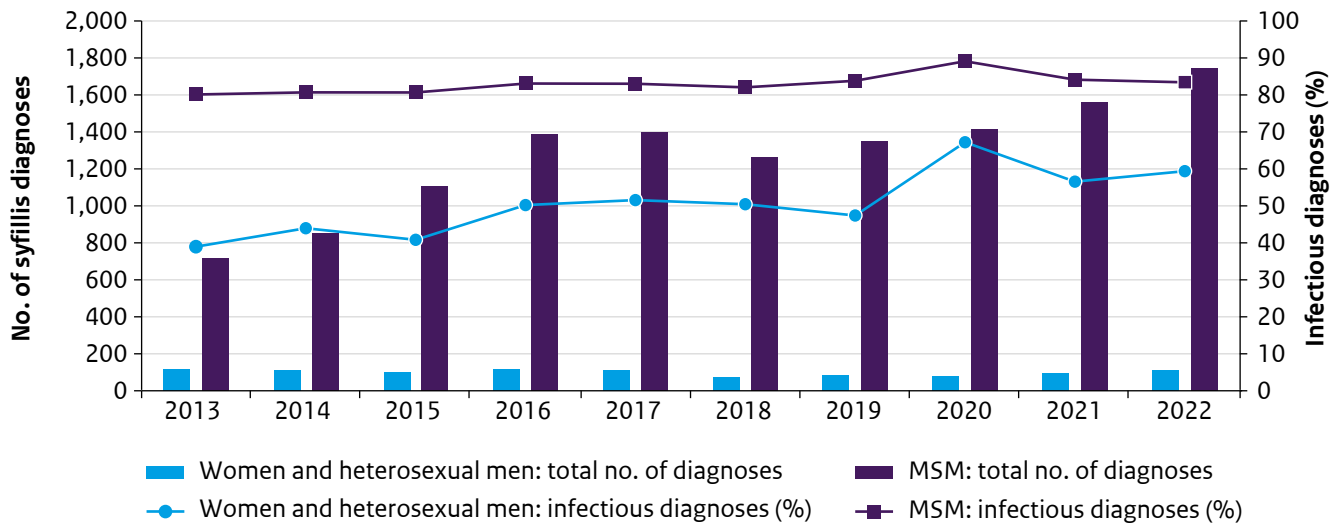


Figure 5.2 Number of syphilis tests and infectious syphilis positivity by region, sex and type of sexual contact, 2022

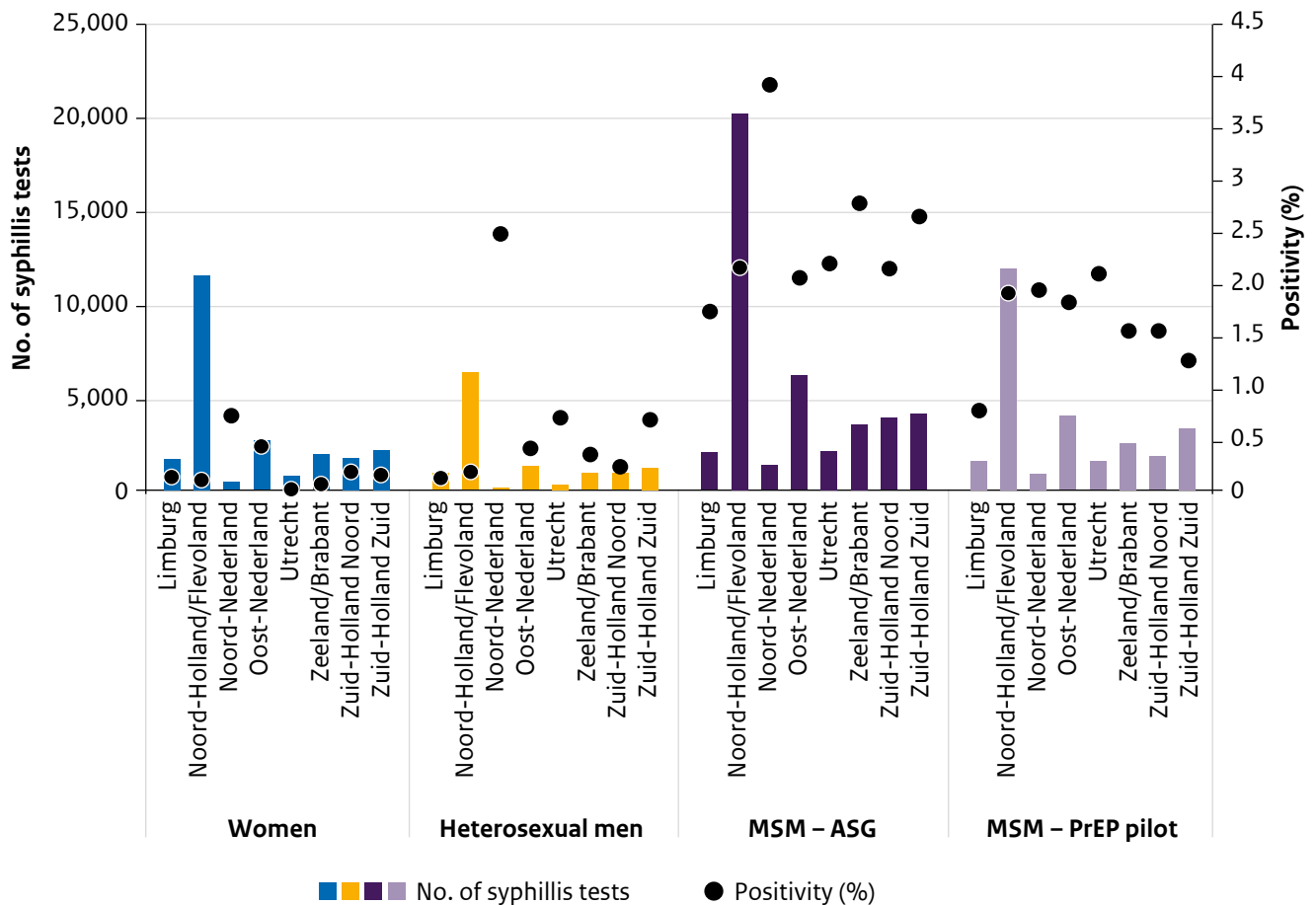
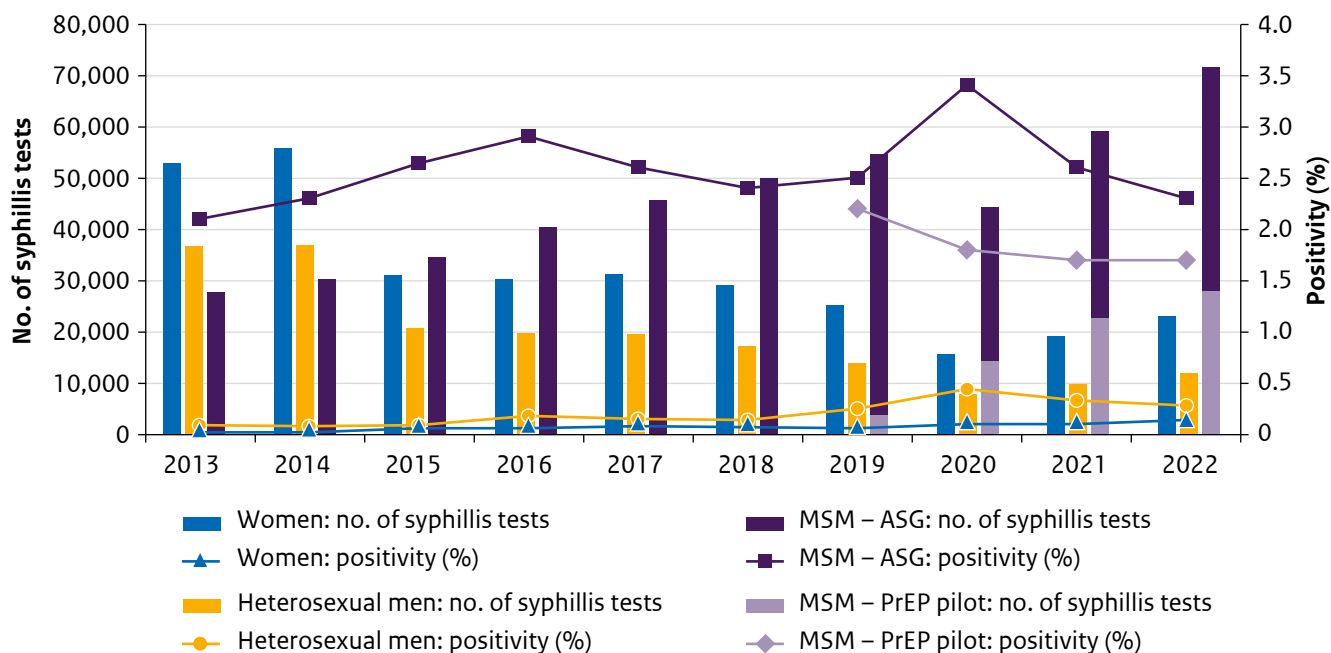


Figure 5.3 Number of syphilis tests and infectious syphilis positivity by sex and type of sexual contact, 2013-2022

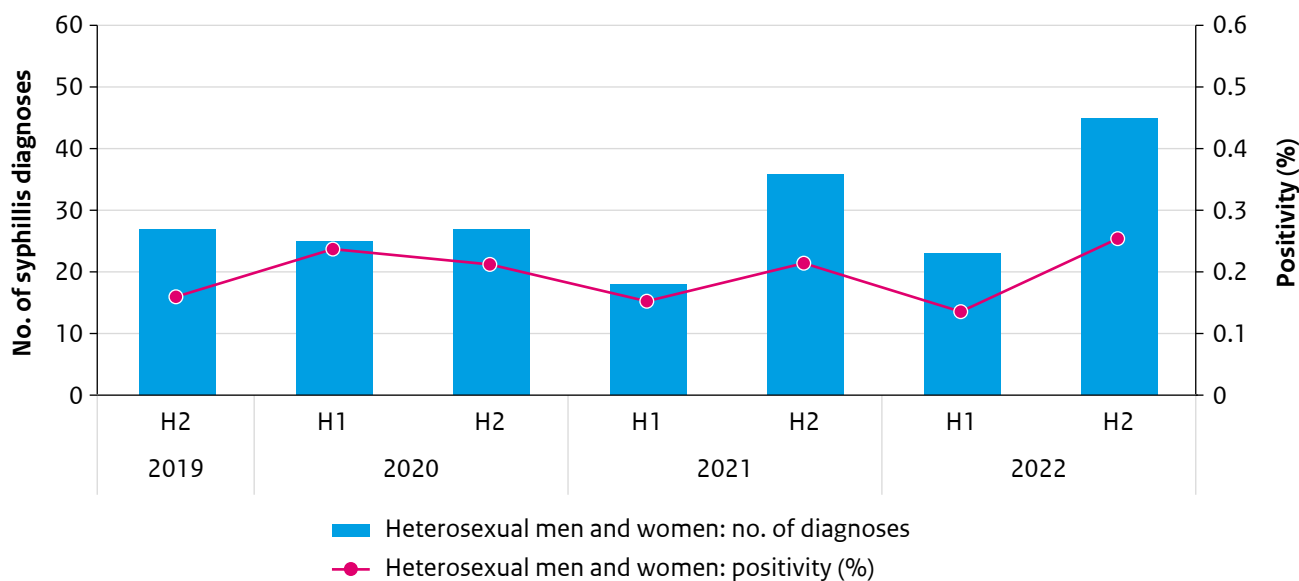


Footnote 1: Aggregated data of non-registered consultations included for 2018 and 2019.

Footnote 2: Trends in the number of consultations and/or positivity in MSM over time may change due to the distinction between ASG and PrEP pilot consultations. Furthermore, due to the three-monthly testing interval for MSM - PrEP pilot, MSM - ASG and MSM - PrEP pilot are not directly comparable.

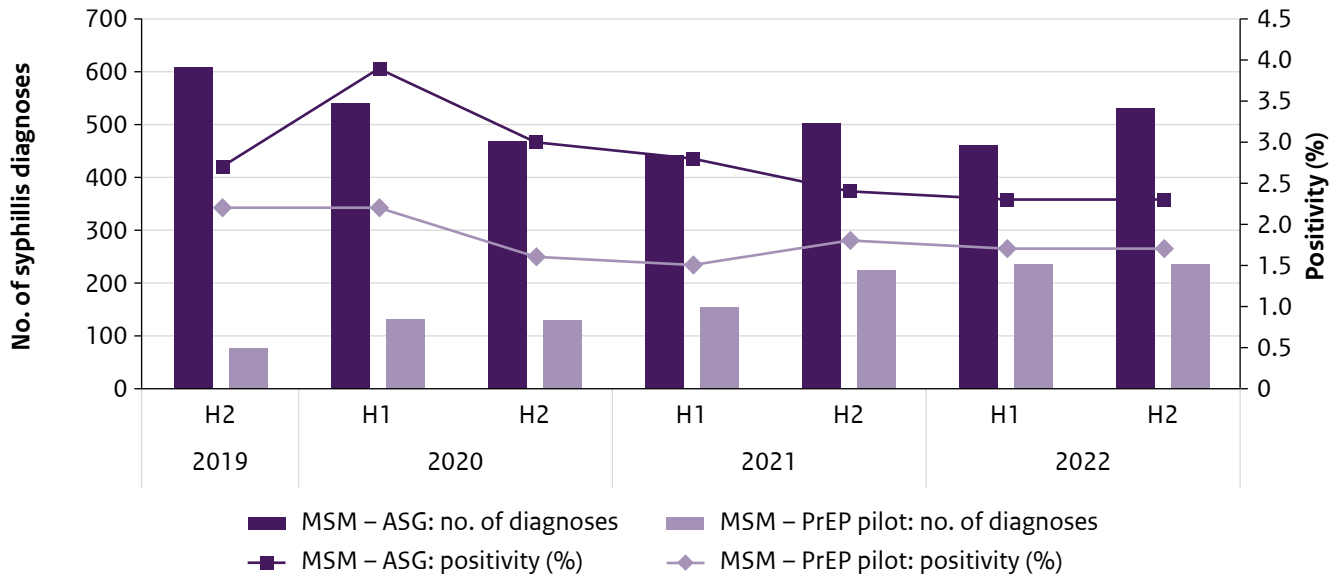
Footnote 3: MSM in the PrEP pilot occasionally visit the SHC for an STI/HIV test between PrEP follow-up consultations. These consultations fall within the ASG regulation.

Figure 5.4a Half-yearly number of infectious syphilis diagnoses and infectious syphilis positivity in heterosexual men and women, mid 2019 to 2022



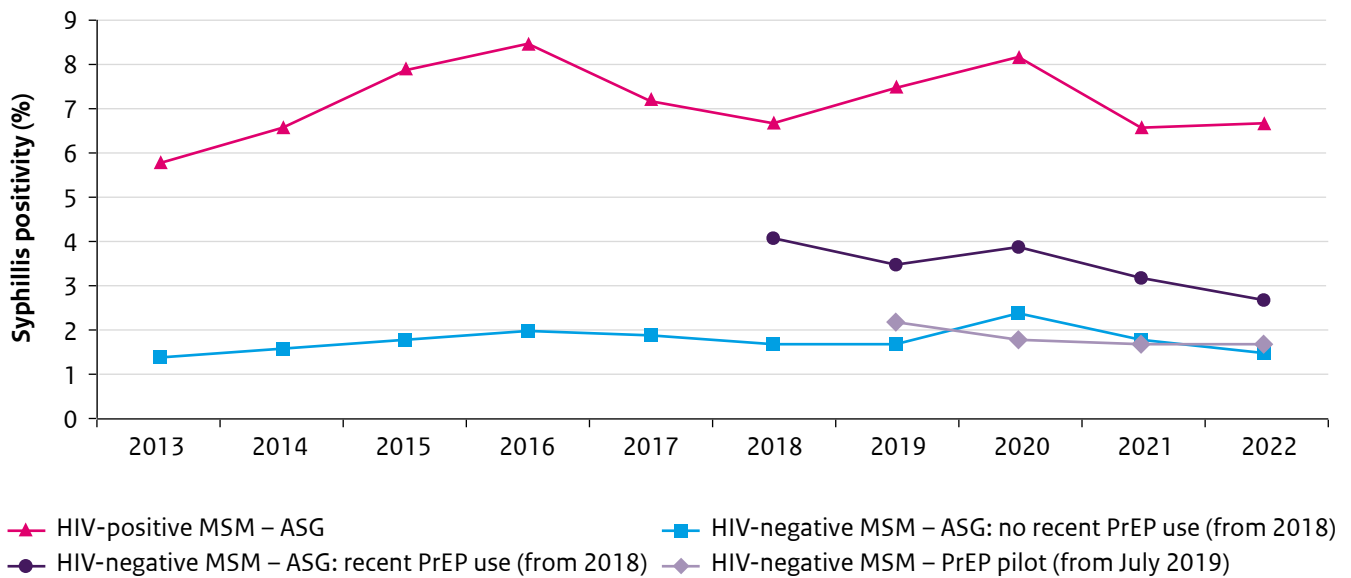
Footnote: H1=January-June, H2=July-December.

Figure 5.4b Half-yearly number of infectious syphilis diagnoses and infectious syphilis positivity in MSM, mid 2019 to 2022



Footnote: H1=January-June, H2=July-December.

Figure 5.5 Trends in infectious syphilis positivity in MSM by HIV-status and PrEP use, 2013-2022

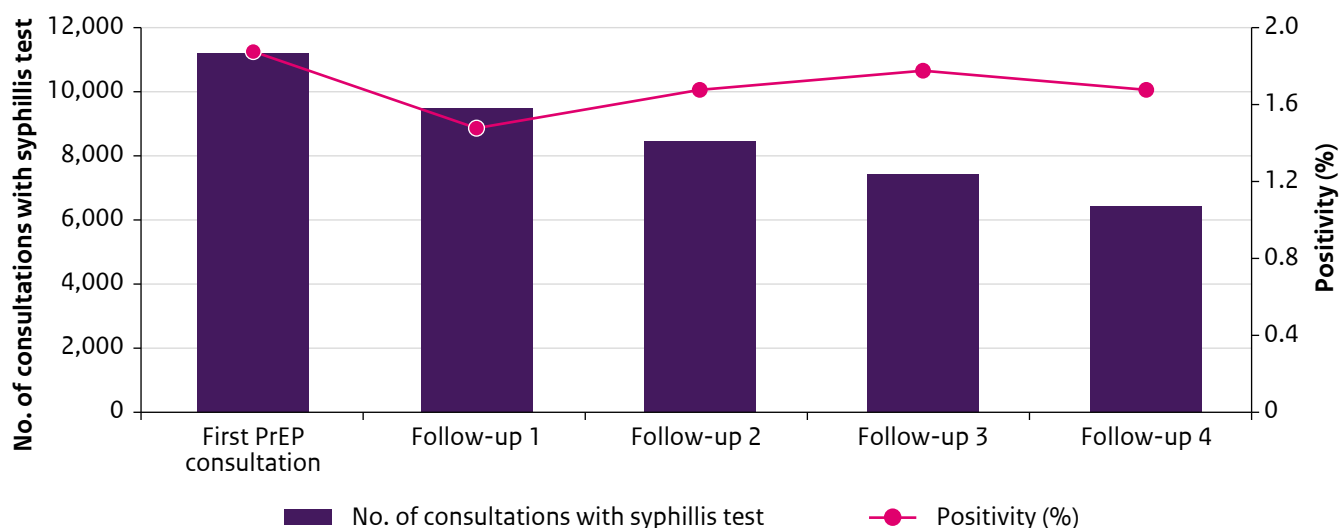


Footnote 1: Information on PrEP use has been collected since 2018. In 2018, recent PrEP use was defined as use in the past 6 months. Since 2019, recent PrEP use has been defined as use in the past 3 months.

Footnote 2: Trends in syphilis positivity in MSM over time may change due to the distinction between ASG and PrEP pilot consultations. Furthermore, due to the three-monthly testing interval for MSM – PrEP pilot, MSM – ASG and MSM – PrEP pilot are not directly comparable.

Footnote 3: MSM in the PrEP pilot occasionally visit the SHC for an STI/HIV test between PrEP follow-up consultations. These consultations fall within the ASG regulation.

Figure 5.6 Number of PrEP consultations with syphilis test and infectious syphilis positivity by PrEP consultation number among MSM participating in the national PrEP pilot at the Sexual Health Centres, July 2019 - December 2022



Footnote 1: Data up to the 5th consultation are shown. The maximum number of consultations within one person recorded was 16.

Footnote 2: MSM in the PrEP pilot occasionally visit the SHC for an STI/HIV test between PrEP follow-up consultations. These consultations fall within the ASG regulation.

Table 5.1 Number of infectious syphilis diagnoses and syphilis tests among MSM by age, 2022

Age (years)	MSM – ASG		MSM – PrEP pilot	
	n positive/N	Positivity (%)	n positive/N	Positivity (%)
≤19	8/767	1.0	0/106	0.0
20-24	100/6,264	1.6	27/2,224	1.2
25-29	134/8,569	1.6	71/4,310	1.6
30-34	179/7,928	2.3	86/4,977	1.7
35-39	122/5,295	2.3	66/3,743	1.8
40-44	110/3,741	2.9	50/3,085	1.6
45-49	85/2,876	3.0	50/2,570	1.9
50-54	89/2,743	3.2	38/2,434	1.6
≥55	168/5,243	3.2	84/4,098	2.0
Total	995/43,426	2.3	472/27,547	1.7

Table 5.2 Number of infectious syphilis diagnoses and syphilis tests among MSM by region of origin, 2022

Region of origin	MSM – ASG		MSM – PrEP pilot	
	n positive/N	Positivity (%)	n positive/N	Positivity (%)
The Netherlands	524/25,651	2.0	249/16,547	1.5
Turkey	19/872	2.2	9/537	1.7
Morocco	10/634	1.6	5/292	1.7
Suriname	31/1,275	2.4	20/762	2.6
CAS-BES islands	44/1,051	4.2	15/588	2.6
Indonesia	13/765	1.7	12/527	2.3
Eastern Europe	68/2,173	3.1	22/1,154	1.9
Europe other	98/4,390	2.2	40/2,525	1.6
Africa other	22/963	2.3	13/558	2.3
Asia other	68/2,730	2.5	41/2,199	1.9
Latin America other	84/2,100	4.0	40/1,369	2.9
North-America/Oceania	12/782	1.5	4/457	0.9
Unknown	2/42	4.8	2/32	6.3
Total	995/43,428	2.3	472/27,547	1.7

Table 5.3a Number of infectious syphilis diagnoses and syphilis tests among MSM by triage indication, 2022

	MSM – ASG		MSM – PrEP pilot	
	n positive/N	Positivity (%)	n positive/N	Positivity (%)
Notified				
Not notified	650/32,909	2.0	412/25,729	1.6
Notified for syphilis	187/1,487	12.6	28/298	9.4
Notified for other STI/HIV	136/7,874	1.7	26/1,376	1.9
Unknown	22/1,158	1.9	6/144	4.2
Symptoms				
No	458/33,249	1.4	365/25,705	1.4
Yes	525/9,601	5.5	105/1,775	5.9
Unknown	12/578	2.1	2/67	3.0
Region of origin included in triage¹				
No	634/30,823	2.1	293/19,529	1.5
Yes	359/12,562	2.9	177/7,986	2.2
Migrant	283/8,808	3.2	140/5,935	2.4
Child of a migrant	76/3,754	2.0	37/2,051	1.8
Unknown	2/43	4.7	2/32	6.3
Age				
<25	108/7,031	1.5	27/2,330	1.2
≥25	887/36,395	2.4	445/25,217	1.8
Partner in risk group²				
No	585/26,415	2.2	279/17,565	1.6
Yes	378/16,206	2.3	179/9,275	1.9
Unknown	32/807	4.0	14/707	2.0
Sex work				
No	936/42,221	2.2	450/26,562	1.7
Yes, in past 6 months	36/869	4.1	18/569	3.2
Unknown	23/338	6.8	4/416	1.0
Gonorrhoea/chlamydia/syphilis in past year				
Not tested	277/15,659	1.8	33/2,398	1.4
Tested, negative	326/15,781	2.1	165/13,028	1.3
Tested, positive	357/10,719	3.3	258/11,247	2.3
Tested, unknown	6/157	3.8	7/178	3.9
Unknown	29/1,112	2.6	9/696	1.3

¹ Region of origin as indicated by triage criteria include Turkey, Morocco, Suriname, CAS-BES islands, Indonesia, Eastern Europe, Africa other, Latin America other, and Asia other.

² Partner originating from a region of origin as indicated by triage criteria.

Table 5.3b Number of infectious syphilis diagnoses and syphilis tests among MSM by demographics and (sexual) behavioural characteristics, 2022

	MSM – ASG		MSM – PrEP pilot	
	n positive/N	Positivity (%)	n positive/N	Positivity (%)
Educational level¹				
High	542/28,701	1.9	274/18,082	1.5
Medium	257/8,950	2.9	124/5,962	2.1
Low	111/3,103	3.6	37/1,965	1.9
Unknown	85/2,674	3.2	37/1,538	2.4
Number of partners in past 6 months				
0 partners	12/443	2.7	4/274	1.5
1 partner	73/3,473	2.1	19/1,582	1.2
2 partners	93/4,854	1.9	27/2,292	1.2
3 or more partners	816/34,654	2.4	422/23,399	1.8
Unknown	1/4	25.0	0/0	
Receptive anal sex, in past 6 months				
No receptive anal sex	162/12,300	1.3	50/4,582	1.1
Yes, consistently with a condom	49/5,591	0.9	15/1,290	1.2
Yes, not consistently with a condom	376/13,459	2.8	187/9,000	2.1
Yes, never with a condom	392/11,508	3.4	218/12,493	1.7
Unknown	16/570	2.8	2/182	1.1
Insertive anal sex, in past 6 months				
No insertive anal sex	179/9,384	1.9	42/3,804	1.1
Yes, consistently with a condom	63/6,237	1.0	15/1,267	1.2
Yes, not consistently with a condom	354/14,552	2.4	187/9,173	2.0
Yes, never with a condom	382/12,775	3.0	225/13,127	1.7
Unknown	17/480	3.5	3/176	1.7
Vaginal sex, in past 6 months²				
No vaginal sex	20/870	2.3	6/372	1.6
Yes, consistently with a condom	18/955	1.9	7/228	3.1
Yes, not consistently with a condom	24/1,979	1.2	9/299	3.0
Yes, never with a condom	33/2,515	1.3	10/617	1.6
Unknown	10/1,174	0.9	1/35	2.9
Receptive oral sex, in past 6 months				
No receptive oral sex	29/2,392	1.2	8/602	1.3
Yes, consistently with a condom	8/292	2.7	2/82	2.4
Yes, not consistently with a condom	77/4,051	1.9	30/1,009	3.0
Yes, never with a condom	858/36,103	2.4	428/25,654	1.7
Unknown	23/590	3.9	4/200	2.0

Table 5.3b (continued) Number of infectious syphilis diagnoses and syphilis tests among MSM by demographics and (sexual) behavioural characteristics, 2022

	MSM – ASG		MSM – PrEP pilot	
	n positive/N	Positivity (%)	n positive/N	Positivity (%)
Client of sex work				
No	940/41,753	2.3	454/26,912	1.7
Yes, in past 6 months	24/1,200	2.0	9/313	2.9
Unknown	31/475	6.5	9/322	2.8
Previous HIV test				
No	87/5,946	1.5	8/515	1.6
Yes, positive	294/4,429	6.6	0/0	
Yes, negative	606/32,756	1.9	464/27,010	1.7
Yes, result unknown	2/65	3.1	0/14	0.0
Unknown	6/232	2.6	0/8	0.0
Drug use in relation to sex, in past 6 months³				
No	619/32,007	1.9	223/16,521	1.3
Yes, in past 6 months	356/10,943	3.3	247/10,822	2.3
Unknown	20/478	4.2	2/204	1.0
Group sex, in past 6 months				
No	534/28,339	1.9	229/16,124	1.4
Yes, in past 6 months	425/13,288	3.2	236/10,986	2.1
Unknown	36/1,801	2.0	7/437	1.6
Prep use, in past 3 months⁴				
No	460/29,999	1.5	38/2,209	1.7
Yes	241/9,000	2.7	434/25,338	1.7
via SHC	123/3,656	3.4		
via general practitioner	97/4,315	2.2		
via HIV practitioner	3/30	10.0		
via other physician	22/838	2.6		
via PrEP study	1/49	2.0		
via informal routes	2/362	0.6		
other	9/308	2.9		
Known HIV-positive, not eligible	294/4,425	6.6		

1 Low level of education: no education, elementary school, lbo, mavo, vmbo, mbo-1; medium level of education: mbo2-4, havo, vwo; high level of education: university of applied sciences, university.

2 For MSM: numbers are reported for men who had sex with both men and women (N ASG= 7,493, N PrEP pilot= 1,551). Men who had sex with men only are excluded.

3 Included drugs are cocaine, XTC/MDMA/Speed, Heroin, Crystal Meth, Mephedrone, 3-MMC, 4-MEC, 4-FA, GHB/GBL and ketamine.

4 Persons can receive PrEP through more than one provider.

Table 5.4 Concurrent STI among MSM diagnosed with infectious syphilis, 2022

Concurrent infection	MSM – ASG	MSM – PrEP pilot
	(N=995) n (%)	(N=472) n (%)
Chlamydia	194 (19.5)	65 (13.8)
Gonorrhoea	179 (18.0)	88 (18.6)
HIV newly diagnosed	7 (0.7)	1 (0.2)
Other STI*	19 (1.9)	7 (1.5)

* Other STI includes genital herpes, genital warts, hepatitis B (infectious), and hepatitis C. SHCs check for genital herpes and genital warts on indication only. In addition, clients are not routinely tested on hepatitis C.

5.3 Antenatal screening

Table 5.5 Syphilis prevalence estimates in pregnant women, based on test results of antenatal screening, 2013-2021

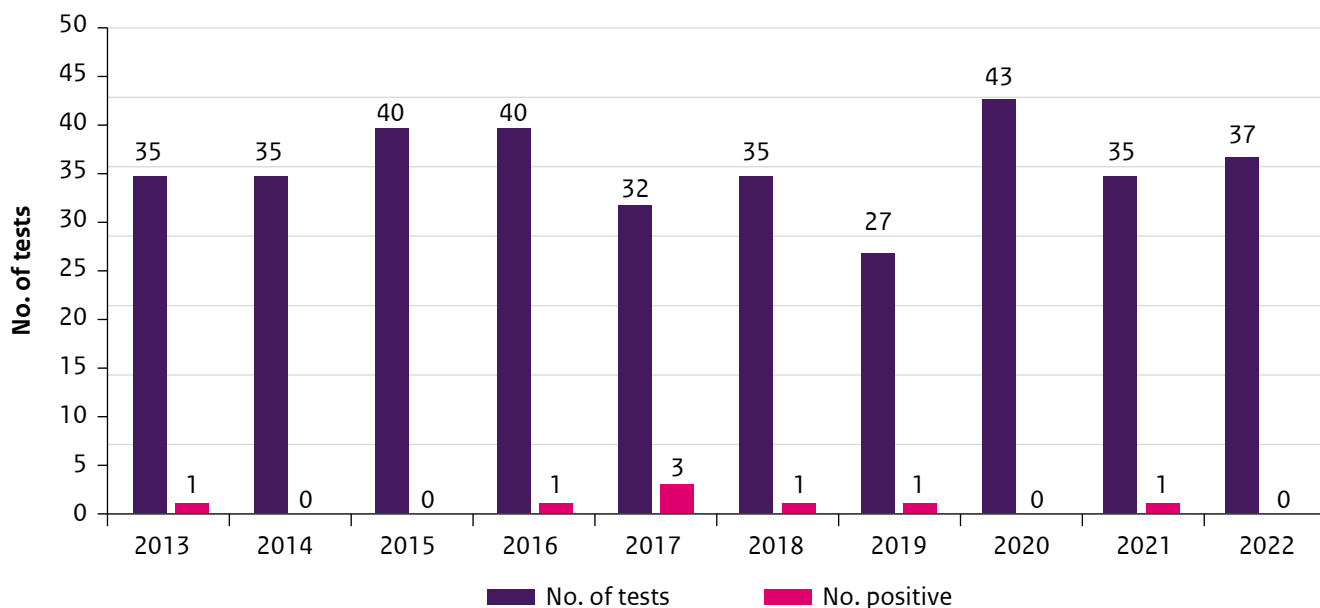
Year	n positive/N women screened	Prevalence estimate
2013	135/176,070	0.08
2014	97/174,610	0.06
2015	98/176,219	0.06
2016	36/172,785	0.02
2017	25/170,453	0.01
2018	18/171,228	0.01
2019	12/171,480	0.01
2020	21/176,218	0.01
2021	24/176,460	0.01

Sources: C.P.B. van der Ploeg (TNO), A. Ernst (RIVM), M. van Lent (RIVM). Prenatale Screening Infectieziekten en Erytrocytenimmunisatie (PSIE). Procesmonitor 2021. TNO/RIVM 2023; and earlier monitors.

Footnote: Improvements in registration in 2016 and 2017 resulted in fewer confirmed positive test results than in previous years.

5.4 Congenital syphilis

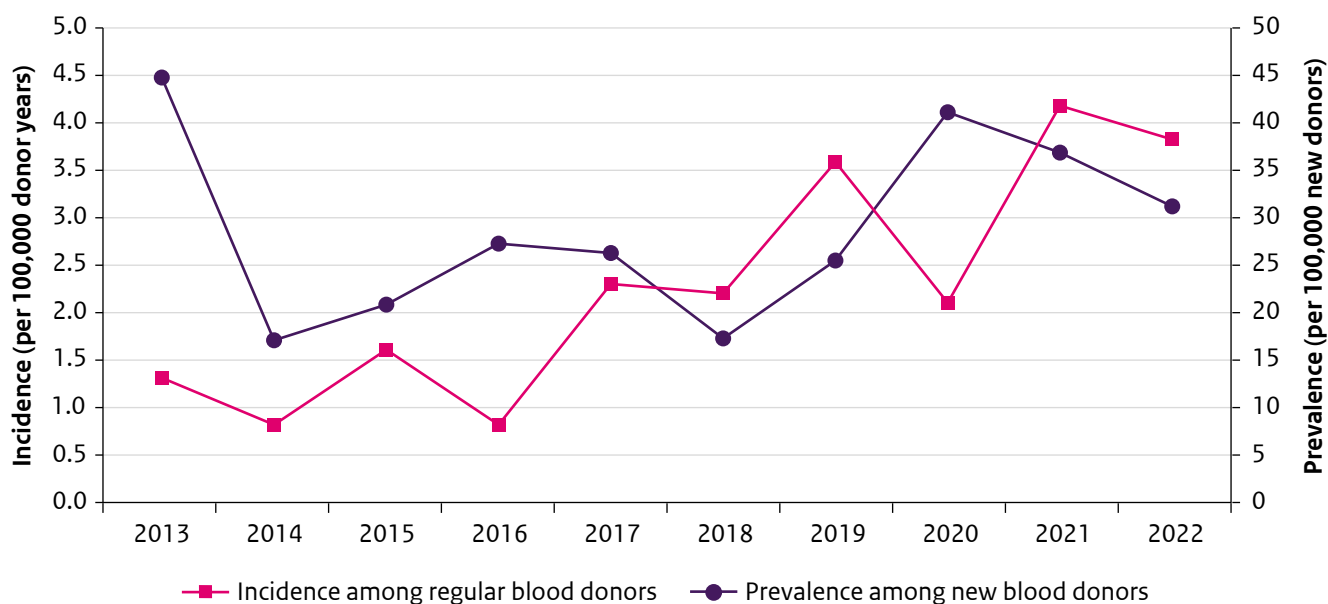
Figure 5.7 Number of tests among neonates and young infants (<1 year) suspected of being infected with congenital syphilis and the number of IgM positives, 2013-2022



Source: RIVM/Cib/IDS

5.5 Blood donors

Figure 5.8 Incidence and prevalence of syphilis among blood- and plasma donors in the Netherlands, 2013-2022 (incidence per 100,000 donor years and prevalence per 100,000 new donors)



Source: Sanquin

VIRAL STI

6 HIV and AIDS

6.1 Key points

6.1.1 Sexual Health Centres

- In this report, consultations of MSM are divided into consultations that fall within the regulation 'Additional Sexual Healthcare' (MSM – ASG) and consultations that fall within the national PrEP pilot programme (MSM – PrEP pilot). Due to the three-monthly testing interval for MSM – PrEP pilot, MSM – ASG and MSM – PrEP pilot are not directly comparable. Additional information can be found in 1.1 *National surveillance at Sexual Health Centres*.
- The impact of the COVID-19 pandemic and the national PrEP pilot programme on the number of consultations and STI positivity need to be taken into account when interpreting trend data, as this may influence trends.
- In 2022, 144 new HIV infections were diagnosed at SHCs. This was an increase of 3% compared with 2021 (138), but 20% lower compared with 2019 (174).
- Of the 144 new diagnoses, 72% were in MSM – ASG, 8% in gender-diverse persons, 8% in women, 7% in MSM – PrEP pilot, and 6% in heterosexual men.
- HIV-positivity among gender-diverse persons was 0.8% (12/1,510). The number of gender-diverse persons was relatively low, they are not shown in tables and figures and will be excluded hereafter.
- The total number of HIV tests in women, heterosexual men, and MSM in 2022 (n=100,729) was 22% higher than in 2021 and 16% higher than in 2019. The number of HIV tests in 2022 among women (22,740), heterosexual men (11,747), and MSM – ASG (38,557) decreased with 12% compared with 2019. The number of tests among MSM – PrEP pilot (27,685) increased with 673% between 2019 and 2022, due to increasing numbers of participants in the PrEP pilot. Compared to 2021, the number of tests in 2022 increased by 21% among women, 22% among heterosexual men, 21% among MSM – ASG, and by 23% among MSM – PrEP pilot.
- The highest positivity was found among MSM – ASG (0.3%, versus 0.05% among women, 0.07% among heterosexual men, and 0.04% among MSM – PrEP pilot), and positivity among MSM – ASG has been decreasing in the past years (1.5% in 2013).
- Among MSM – ASG, a high positivity was seen for those who were notified of HIV by a partner (3.2%) and those originating from Africa (1.2%), Eastern Europe (0.8%) or the CAS-BES Islands (0.8%).

- There were 10 new HIV infections diagnosed in MSM – PrEP pilot consultations. Four of these concerned a PrEP start consultation, and 6 a PrEP follow-up consultation. Of the 6 diagnoses in follow-up consultations (all in MSM), 5 reported event-driven PrEP use in the past 3 months and 1 reported daily PrEP use.

6.1.2 HIV treatment centres

- In total, 22,052 HIV-positive individuals were reported to be in clinical care as of December 2022.
- In 2022, 997 HIV-positive individuals were newly registered in care (794 in 2021). Of these, 344 were diagnosed in 2022 (325 in 2021) (2022 data are incomplete, since some individuals who were registered in care in 2022 are not yet registered in the dataset).
- The proportion of heterosexuals (men and women) increased: 31% in 2022 compared with 26% in 2021. The proportion of MSM among new HIV diagnoses in 2022 (57%) was lower compared with 2021 (62%). This decrease among MSM might be explained by an increase in the use of HIV-PrEP in the Netherlands. The proportion of HIV-positive individuals with other/unknown transmission risk was 9% in 2022 (2021: 12%).
- Of HIV-positive MSM diagnosed and entering care in 2022, the majority was diagnosed in hospitals (21% in 2022, lower compared with 27% in 2021) and at SHCs (43% in 2022, 37% in 2021). In 2022, the majority of heterosexual men (57%) was diagnosed in hospitals (58% in 2021) and by GPs (30% in 2022, 28% in 2021). The majority (49%) of women were diagnosed in hospitals (slightly higher compared with 2021, 43%) and by GPs (27% in 2022, 29% in 2021).
- Of HIV-positive individuals diagnosed in 2022, 53% presented late (CD4 < 350/mm³, or AIDS-defining event regardless of CD4 count), a small decline compared with 2021 (56%). This trend was also seen among MSM (44% versus 50% in 2021). Among heterosexual men this proportion declined from 77% in 2021 to 70% in 2022. Among women, the proportion of late presenters was slightly higher in 2022 (56%) compared with 2021 (50%).
- Of HIV-positive individuals diagnosed in 2022, 25% had a newly acquired HIV infection (<6 months), which was higher than in 2021 (19%). Among MSM, heterosexual men, and women these proportions were respectively 28%, 14% and 8%. For 2021 these proportions were 22%, 9% and 4% respectively.

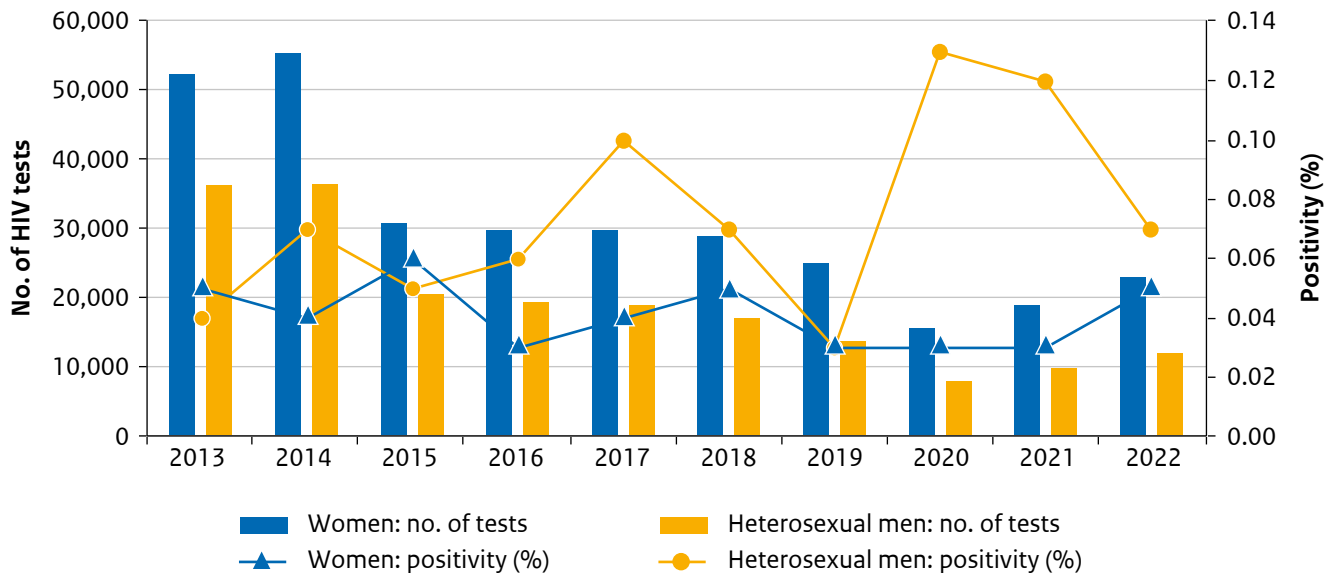
- In 2021, approximately 94% of people living with HIV were estimated to have been diagnosed and linked to care. Of these people, 94% had started combination antiretroviral therapy (cART). Of those who started cART, 96% had a suppressed viral load. Among MSM, these proportions were 96%, 96%, and 97% respectively.

6.1.3 General practice

- At GPs, an estimated number of 24,400 prevalent HIV cases were reported in 2021: a reporting rate of 1.4 per 1,000 population. Prevalence rates were higher among men than women (2.2 versus 0.6/1,000).

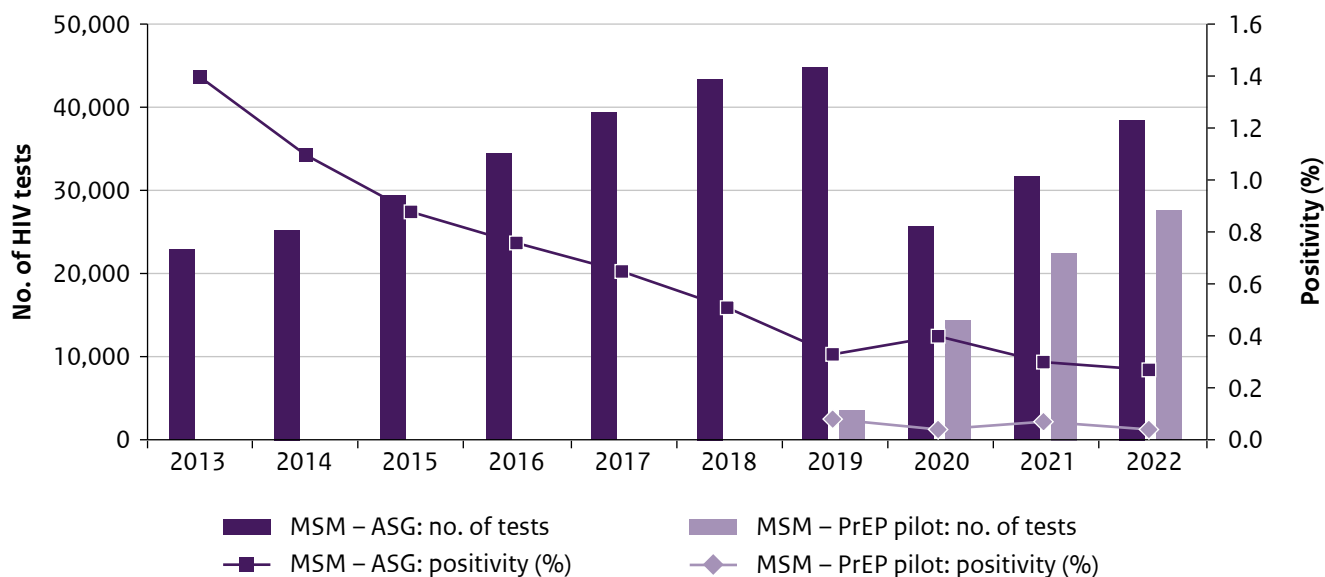
6.2 Sexual Health Centres: characteristics, risk groups and trends

Figure 6.1a Number of HIV tests and HIV positivity rates among heterosexual men and women, 2013-2022



Footnote: Aggregated data of non-registered consultations included for 2018 and 2019.

Figure 6.1b Number of HIV tests and HIV positivity rates among MSM, 2013-2022



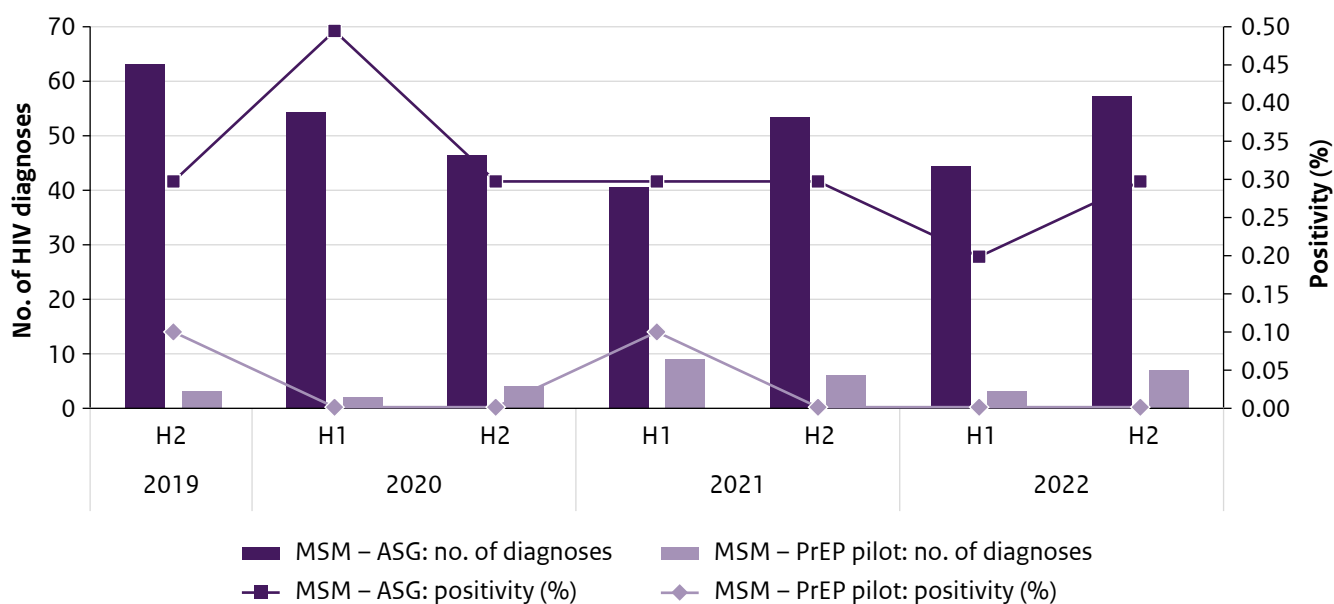
Footnote 1: Aggregated data of non-registered consultations included for 2018 and 2019.

Footnote 2: Trends in the number of tests and/or positivity in MSM over time may change due to the distinction between ASG and PrEP pilot consultations. Furthermore, due to the three-monthly testing interval for MSM - PrEP pilot, MSM - ASG and MSM - PrEP pilot are not directly comparable.

Footnote 3: MSM in the PrEP pilot occasionally visit the SHC for an STI/HIV test between PrEP follow-up consultations. These consultations fall within the ASG regulation.

Footnote 4: In 2022 there were 9 new HIV infections diagnosed among MSM who reported PrEP use in the past 3 months. Two received PrEP via their GP/other physician or an informal route. The remaining 7 individuals participated in the PrEP pilot program (of whom 6 were diagnosed in a PrEP pilot consultation and 1 in an ASG consultation).

Figure 6.2 Half-yearly number of HIV diagnoses and HIV positivity, mid 2019 to 2022



Footnote 1: MSM in the PrEP pilot occasionally visit the SHC for an STI/HIV test between PrEP follow-up consultations. These consultations fall within the ASG regulation.

Footnote 2: H1=January-June, H2=July-December.

Table 6.1 Number of HIV diagnoses among MSM – ASG tested for HIV by age, 2022

Age (years)	MSM – ASG	
	n positive/N	%
≤19	1/765	0.13
20-24	13/6,168	0.21
25-29	30/8,120	0.37
30-34	17/7,149	0.24
35-39	9/4,569	0.20
40-44	11/3,128	0.35
45-49	8/2,323	0.34
50-54	5/2,164	0.23
≥55	9/4,169	0.22
Total	103/38,555	0.27

Footnote: In addition, 11 women, 8 heterosexual men, 10 MSM – PrEP pilot, and 12 gender-diverse persons were newly diagnosed with HIV.

Table 6.2 Number of HIV diagnoses and HIV tests among MSM – ASG by region of origin, 2022

Region of origin	MSM – ASG	
	n positive/N	%
The Netherlands	38/23,208	0.2
Turkey	4/806	0.5
Morocco	1/572	0.2
Suriname	3/1,085	0.3
CAS-BES islands	7/865	0.8
Indonesia	1/654	0.2
Eastern Europe	15/1,855	0.8
Europe other	8/3,965	0.2
Africa other	10/860	1.2
Asia other	8/2,423	0.3
Latin America other	8/1,529	0.5
North-America/Oceania	0/705	0.0
Unknown	0/30	0.0
Total	103/38,557	0.3

Table 6.3a Number of HIV diagnoses among MSM – ASG tested for HIV by triage indication, 2022

	MSM – ASG	
	n positive/N	%
Notified		
Not notified	69/29,530	0.2
Notified for HIV	10/316	3.2
Notified for other STI/HIV	19/7,718	0.2
Unknown	5/993	0.5
Symptoms		
No	61/29,784	0.2
Yes	39/8,259	0.5
Unknown	3/514	0.6
Region of origin included in triage¹		
No	46/27,878	0.2
Yes	57/10,649	0.5
First generation	53/7,189	0.7
Second generation	4/3,459	0.1
Age		
<25	14/6,933	0.2
≥25	89/31,624	0.3
Partner in risk group²		
No	52/23,743	0.2
Yes	46/14,167	0.3
Unknown	5/647	0.8
Sex work		
No	98/37,576	0.3
Yes, in past 6 months	2/735	0.3
Unknown	3/246	1.2
Gonorrhoea/chlamydia/syphilis in past year		
Not tested	56/14,606	0.4
Tested, negative	28/14,244	0.2
Tested, positive	15/8,616	0.2
Tested, unknown	0/118	0.0
Unknown	4/973	0.4

¹ Region of origin as indicated by triage criteria include Turkey, Morocco, Suriname, CAS-BES islands, Indonesia, Eastern Europe, Africa other, Latin America, and Asia other.

² Partner originating from a region of origin as indicated by triage criteria.

Table 6.3b Number of HIV diagnoses among MSM – ASG tested for HIV by demographics and (sexual) behavioural characteristics, 2022

	MSM – ASG	
	n positive/N	%
Educational level¹		
High	45/25,930	0.2
Medium	27/7,847	0.3
Low	18/2,559	0.7
Unknown	13/2,221	0.6
Number of partners in past 6 months		
0 partners	1/378	0.3
1 partner	17/3,192	0.5
2 partners	11/4,400	0.3
3 or more partners	74/30,584	0.2
Unknown	0/3	0.0
Receptive anal sex, in past 6 months		
No receptive anal sex	15/11,737	0.1
Yes, consistently with a condom	15/5,332	0.3
Yes, not consistently with a condom	40/11,572	0.3
Yes, never with a condom	31/9,454	0.3
Unknown	2/462	0.4
Insertive anal sex, in past 6 months		
No insertive anal sex	24/8,694	0.3
Yes, consistently with a condom	11/5,969	0.2
Yes, not consistently with a condom	36/12,824	0.3
Yes, never with a condom	30/10,687	0.3
Unknown	3/383	0.8
Vaginal sex, in past 6 months²		
No vaginal sex	3/834	0.4
Yes, consistently with a condom	2/924	0.2
Yes, not consistently with a condom	4/1,933	0.2
Yes, never with a condom	11/2,441	0.5
Unknown	4/478	0.8
Receptive oral sex, in past 6 months		
No receptive oral sex	8/2,242	0.4
Yes, consistently with a condom	1/257	0.4
Yes, not consistently with a condom	8/3,516	0.2
Yes, never with a condom	81/32,057	0.3
Unknown	4/38,550	0.0
Client of sex work		
No	97/37,127	0.3
Yes, in past 6 months	3/1,075	0.3
Unknown	3/355	0.8

Table 6.3b (continued) Number of HIV diagnoses among MSM – ASG tested for HIV by demographics and (sexual) behavioural characteristics, 2022

	MSM – ASG	
	n positive/N	%
Previous HIV test		
No	26/5,909	0.4
Yes, positive		
Yes, negative	70/32,380	0.2
Yes, result unknown	1/61	1.6
Unknown	2/203	1.0
Drug use in relation to sex, in past 6 months³		
No	73/29,150	0.3
Yes, in past 6 months	27/9,042	0.3
Unknown	3/365	0.8
Group sex, in past 6 months		
No	69/25,963	0.3
Yes, in past 6 months	29/11,035	0.3
Unknown	5/1,559	0.3
PrEP use, in past 3 months⁴		
No	96/29,770	0.3
Yes	3/8,783	0.0
via SHC	1/3,508	0.0
via general practitioner	2/4,262	0.0
via HIV practitioner	0/28	0.0
via other physician	1/832	0.1
via PrEP study	0/47	0.0
via informal routes	0/357	0.0
other	0/307	0.0
Unknown	4/4	100.0

Abbreviations: NA: not applicable

Footnote: MSM in the PrEP pilot occasionally visit the SHC for an STI/HIV test between PrEP follow-up consultations. These consultations fall within the ASG regulation.

1 Low level of education: no education, elementary school, lbo, mavo, vmbo, mbo-1; medium level of education: mbo2-4, havo, vwo; high level of education: university of applied sciences, university.

2 Numbers are shown for men who had sex with both men and women (N=7,329). Men who had sex with men only are excluded.

3 Included drugs are cocaine, XTC/MDMA/Speed, Heroin, Crystal Meth, Mephedrone, 3-MMC, 4-MEC, 4-FA, GHB/GBL and ketamine.

4 Persons can receive PrEP through more than one provider.

Table 6.4 Concurrent STI among MSM – ASG newly diagnosed with HIV, 2022

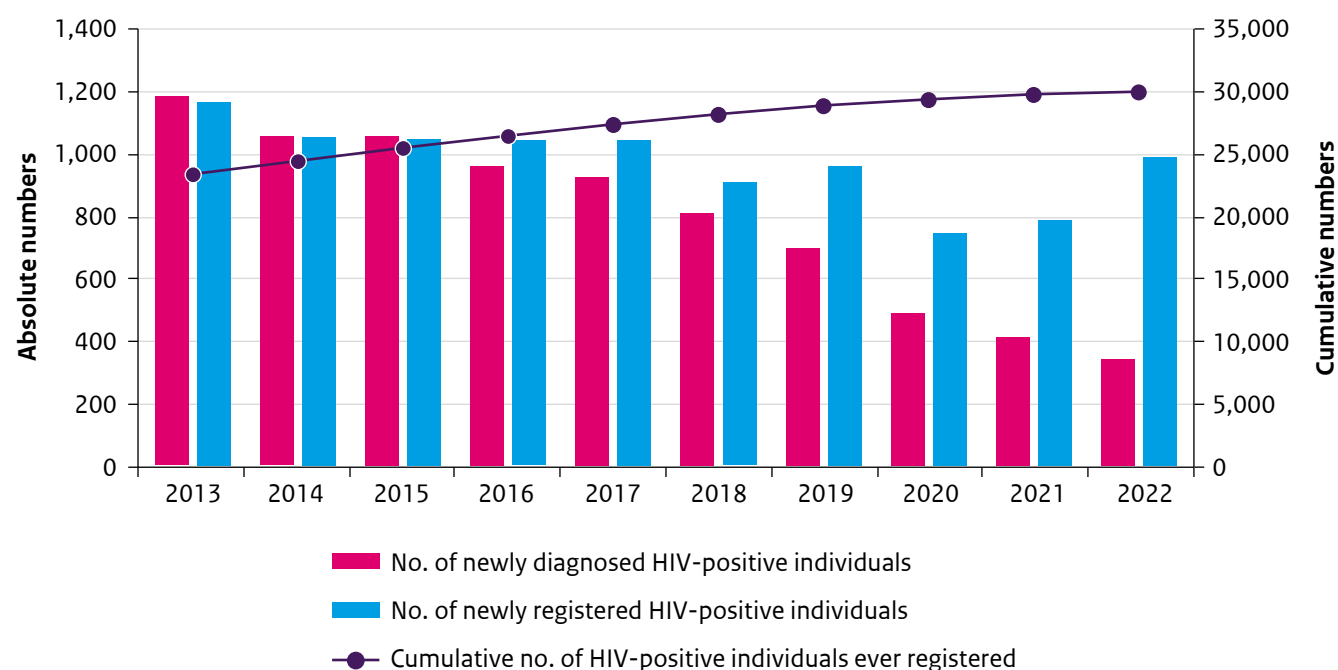
Concurrent infection	MSM – ASG
	(N=103) n (%)
Chlamydia	26 (25.2)
Gonorrhoea	28 (27.2)
Syphilis, infectious	7 (6.8)
Other STI*	3 (2.9)

* Other STI includes genital herpes, genital warts, hepatitis B (infectious), and hepatitis C. SHCs check for genital herpes and genital warts on indication only. In addition, clients are not routinely tested for hepatitis C.

6.3 HIV treatment centres

6.3.1 Newly diagnosed HIV cases in care in 2022

Figure 6.3 Number of newly diagnosed HIV-positive individuals and newly registered HIV-positive individuals by year, 2013-2022



Source: Stichting hiv monitoring, 2022 incomplete

Table 6.5 Number of newly diagnosed HIV-positive individuals and number of HIV-positive individuals in care by sex and main reported transmission risk group, as of December 31, 2022

Transmission risk group	Women		Men		Total	
	n (%)	Total in care (%)	n (%)	Total in care (%)	n (%)	Total in care (%)
MSM			197 (69.4)	13,854 (77.5)	197 (57.3)	13,854 (62.8)
Heterosexual contact	55 (91.7)	3,624 (87.0)	53 (18.7)	2,626 (14.7)	108 (31.4)	6,250 (28.3)
Injecting drug use	0 (0.0)	83 (2.0)	4 (1.4)	215 (1.2)	4 (1.2)	298 (1.4)
Blood or blood products	1 (1.7)	99 (2.4)	2 (0.7)	170 (1.0)	3 (0.9)	269 (1.2)
Mother to child	0 (0.0)	170 (4.1)	0 (0.0)	156 (0.9)	0 (0.0)	326 (1.5)
Other/unknown	4 (6.7)	189 (4.5)	28 (9.9)	866 (4.8)	32 (9.3)	1,055 (4.8)
Total	60	4,165	284	17,887	344	22,052

Source: Stichting hiv monitoring, 2022 incomplete

Table 6.6a Number of newly diagnosed HIV-positive individuals, by age and main transmission category, as of December 31, 2022

Age (years)	Women	Heterosexual men	MSM	Other/unknown*
	n (%)	n (%)	n (%)	n (%)
0-14	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
15-19	1 (1.8)	0 (0.0)	2 (1.0)	0 (0.0)
20-24	12 (21.8)	0 (0.0)	21 (10.7)	0 (0.0)
25-29	6 (10.9)	4 (7.5)	34 (17.3)	6 (15.4)
30-39	14 (25.5)	17 (32.1)	56 (28.4)	10 (25.6)
40-49	10 (18.2)	15 (28.3)	28 (14.2)	8 (20.5)
50-59	10 (18.2)	10 (18.9)	35 (17.8)	5 (12.8)
60-69	2 (3.6)	4 (7.5)	18 (9.1)	7 (17.9)
70-79	0 (0.0)	3 (5.7)	2 (1.0)	2 (5.1)
≥80	0 (0.0)	0 (0.0)	1 (0.5)	1 (2.6)
Total	55	53	197	39

* Injecting drug use, blood and blood contacts, mother-to-child transmission, other, unknown.

Source: Stichting hiv monitoring, 2022 incomplete

Table 6.6b Number of HIV-positive individuals in care, by age at diagnosis and main transmission category, as of December 31, 2022

Age (years)	Women	Heterosexual men	MSM	Other/unknown*
	Total in care (%)	Total in care (%)	Total in care (%)	Total in care (%)
0-14	5 (0.1)	0 (0.0)	7 (0.1)	354 (18.2)
15-19	167 (4.6)	30 (1.1)	246 (1.8)	48 (2.5)
20-24	518 (14.3)	182 (6.9)	1,345 (9.7)	174 (8.9)
25-29	774 (21.4)	321 (12.2)	2,302 (16.6)	257 (13.2)
30-39	1,220 (33.7)	906 (34.5)	4,698 (33.9)	514 (26.4)
40-49	531 (14.7)	701 (26.7)	3,347 (24.2)	309 (15.9)
50-59	287 (7.9)	348 (13.3)	1,467 (10.6)	172 (8.8)
60-69	81 (2.2)	114 (4.3)	368 (2.7)	70 (3.6)
70-79	18 (0.5)	19 (0.7)	54 (0.4)	14 (0.7)
≥80	0 (0.0)	1 (0.0)	1 (0.0)	1 (0.1)
Unknown	23 (0.6)	4 (0.2)	19 (0.1)	35 (1.8)
Total	3,624	2,626	13,854	1,948

* Injecting drug use, blood and blood contacts, mother-to-child transmission, other, unknown.

Source: Stichting hiv monitoring, 2022 incomplete

Table 6.7a Number of newly diagnosed HIV-positive individuals in 2022 by region of origin and main transmission category, as of December 31, 2022

Region of origin	Women	Heterosexual men	MSM	Other/unknown*
	n (%)	n (%)	n (%)	n (%)
The Netherlands	20 (36.4)	25 (47.2)	108 (54.8)	22 (56.4)
Europe, other	9 (16.4)	12 (22.6)	35 (17.8)	9 (23.1)
Caribbean & Latin America	4 (7.3)	4 (7.5)	26 (13.2)	2 (5.1)
Sub-Saharan Africa	20 (36.4)	9 (17.0)	8 (4.1)	2 (5.1)
Other	2 (3.6)	3 (5.7)	19 (9.6)	4 (10.3)
Unknown	0 (0.0)	0 (0.0)	1 (0.5)	0 (0.0)
Total	55	53	197	39

* Injecting drug use, blood and blood contacts, mother-to-child transmission, other, unknown.

Source: Stichting hiv monitoring, 2022 incomplete

Table 6.7b Number of newly diagnosed HIV-positive individuals in care in 2022 by region of origin and main transmission category, as of December 31, 2022

Region of origin	Women	Heterosexual men	MSM	Other/unknown*
	Total in care (%)	Total in care (%)	Total in care (%)	Total in care (%)
The Netherlands	1,048 (28.9)	1,215 (46.3)	9,246 (66.7)	806 (41.4)
Europe, other	242 (6.7)	213 (8.1)	1,542 (11.1)	359 (18.4)
Caribbean & Latin America	542 (15.0)	363 (13.8)	1,746 (12.6)	156 (8.0)
Sub-Saharan Africa	1,476 (40.7)	668 (25.4)	218 (1.6)	426 (21.9)
Other	304 (8.4)	152 (5.8)	1,022 (7.4)	189 (9.7)
Unknown	12 (0.3)	15 (0.6)	80 (0.6)	12 (0.6)
Total	3,624	2,626	13,854	1,948

* Injecting drug use, blood and blood contacts, mother-to-child transmission, other, unknown.

Source: Stichting hiv monitoring, 2022 incomplete

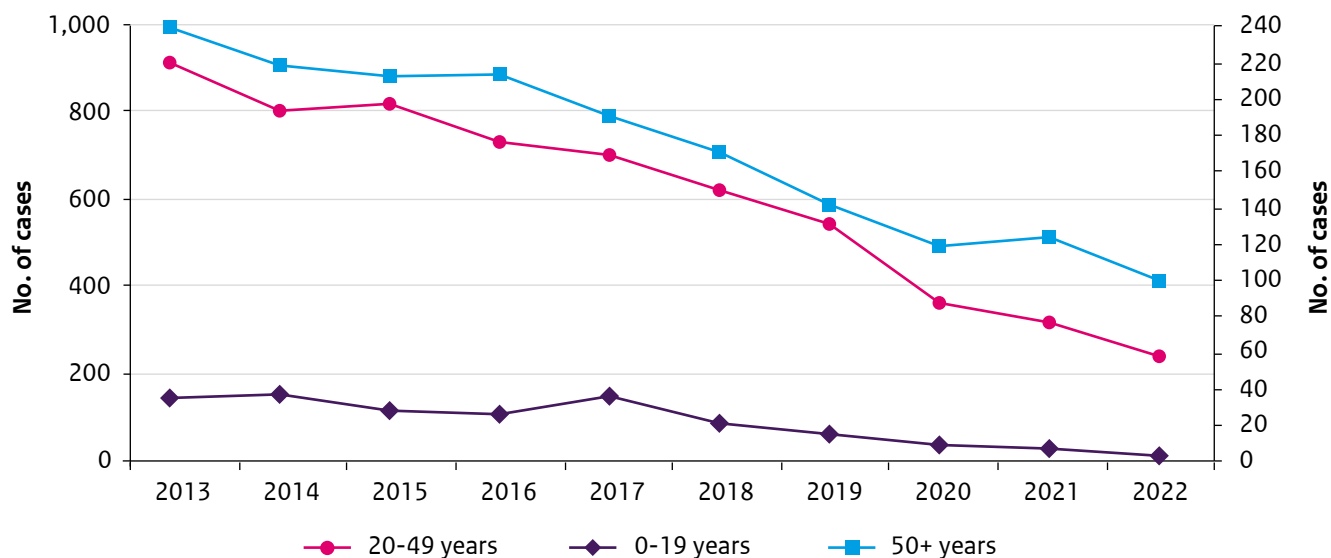
Table 6.8 Number of newly diagnosed HIV-positive individuals, by test location and main transmission category, as of December 31, 2022

Test location	Women	Heterosexual men	MSM	Other/unknown*
	n (%)	n (%)	n (%)	n (%)
PHS/SHC	5 (9.1)	6 (11.3)	84 (42.6)	4 (10.3)
Hospital	27 (49.1)	30 (56.6)	42 (21.3)	26 (66.7)
General practitioner	15 (27.3)	16 (30.2)	63 (32.0)	5 (12.8)
Pregnancy screening	5 (9.1)			0 (0.0)
Other/unknown	3 (5.5)	1 (1.9)	8 (4.1)	4 (10.3)
Total	55	53	197	39

* Injecting drug use, blood and blood contacts, mother-to-child transmission, other, unknown.

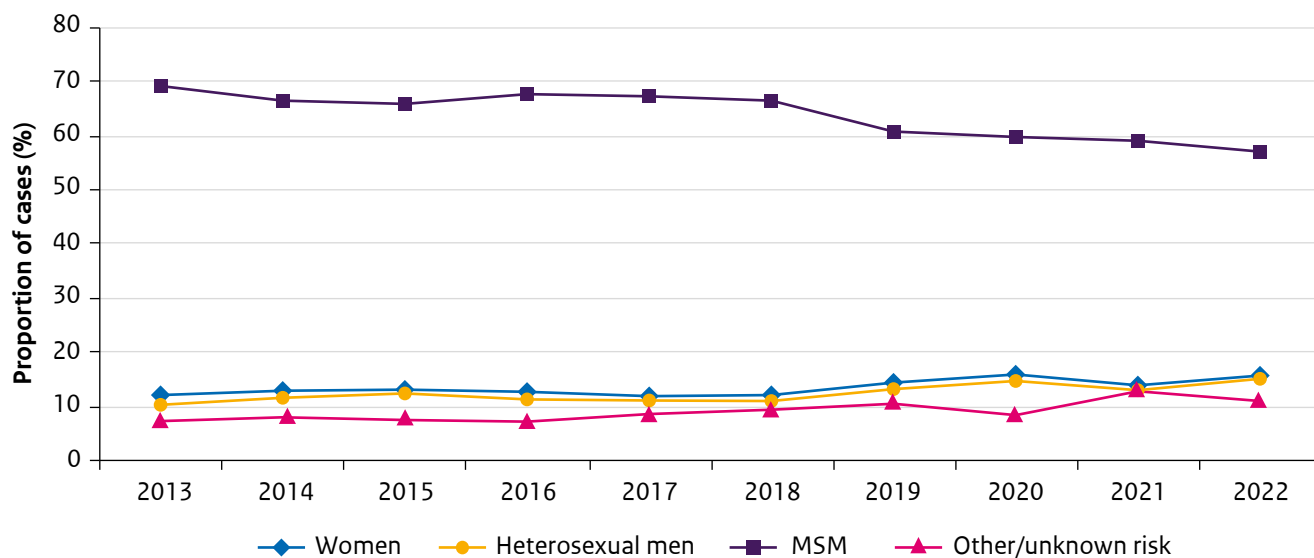
Source: Stichting hiv monitoring, 2022 incomplete

Figure 6.4 Number of newly diagnosed HIV-positive individuals by age group (left axis: 20-49 years, right axis: 0-19 and 50+ years) and year of diagnosis, 2013-2022



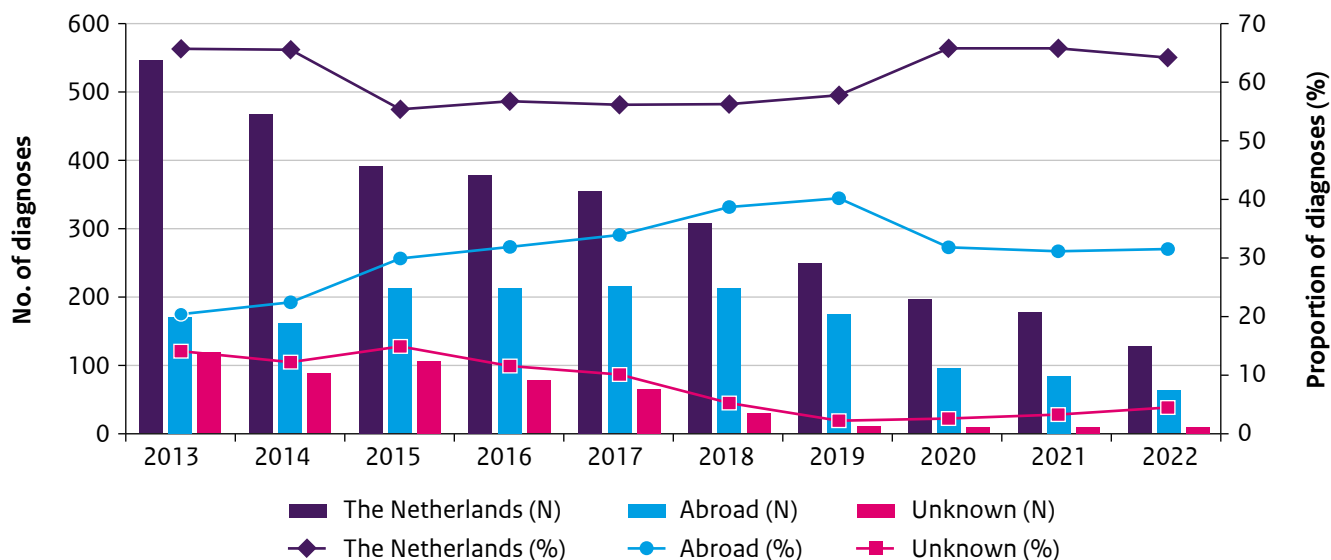
Source: Stichting hiv monitoring, 2022 incomplete

Figure 6.5 Proportion of newly diagnosed HIV-positive individuals by main transmission group and year of diagnosis, 2013-2022



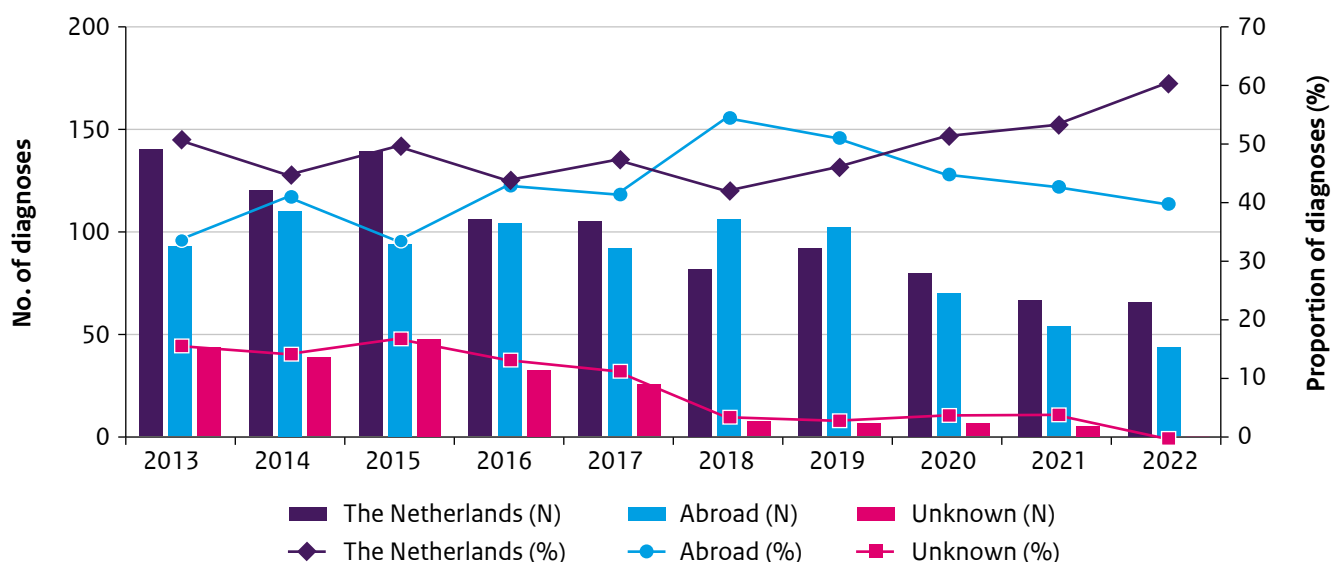
Source: Stichting hiv monitoring, 2022 incomplete

Figure 6.6a Reported country of acquiring the HIV infection of newly diagnosed HIV-positive MSM by year of diagnosis, 2013-2022



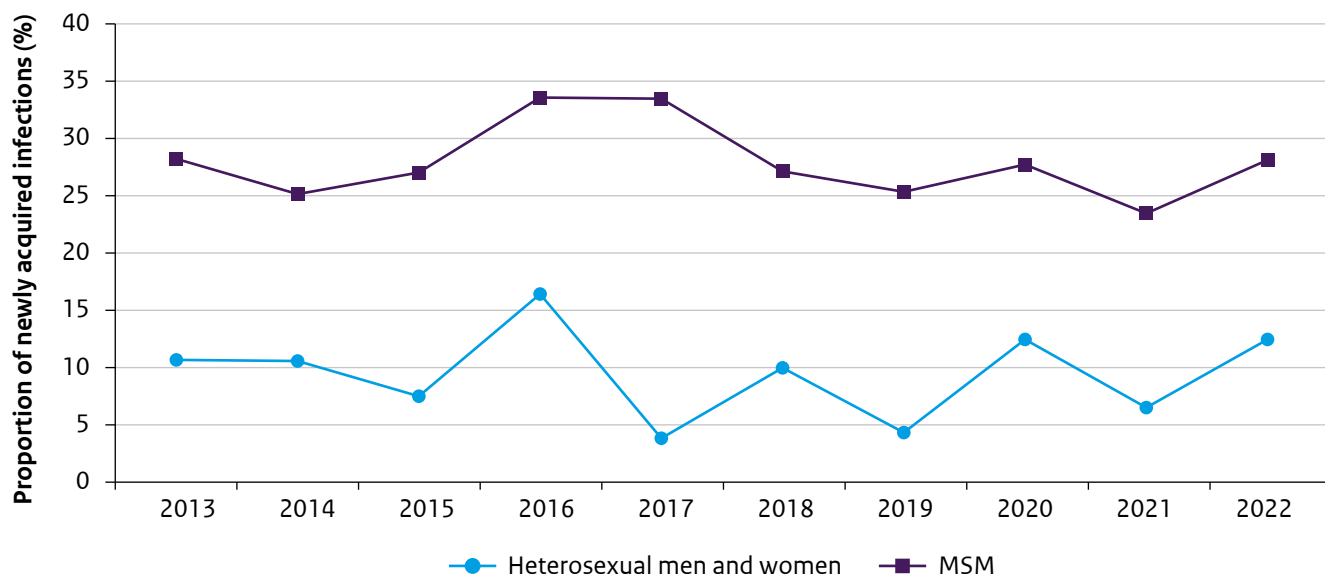
Source: Stichting hiv monitoring, 2022 incomplete

Figure 6.6b Reported country of acquiring the HIV infection among newly diagnosed HIV-positive heterosexual men and women by year of diagnosis, 2013-2022



Source: Stichting hiv monitoring, 2022 incomplete

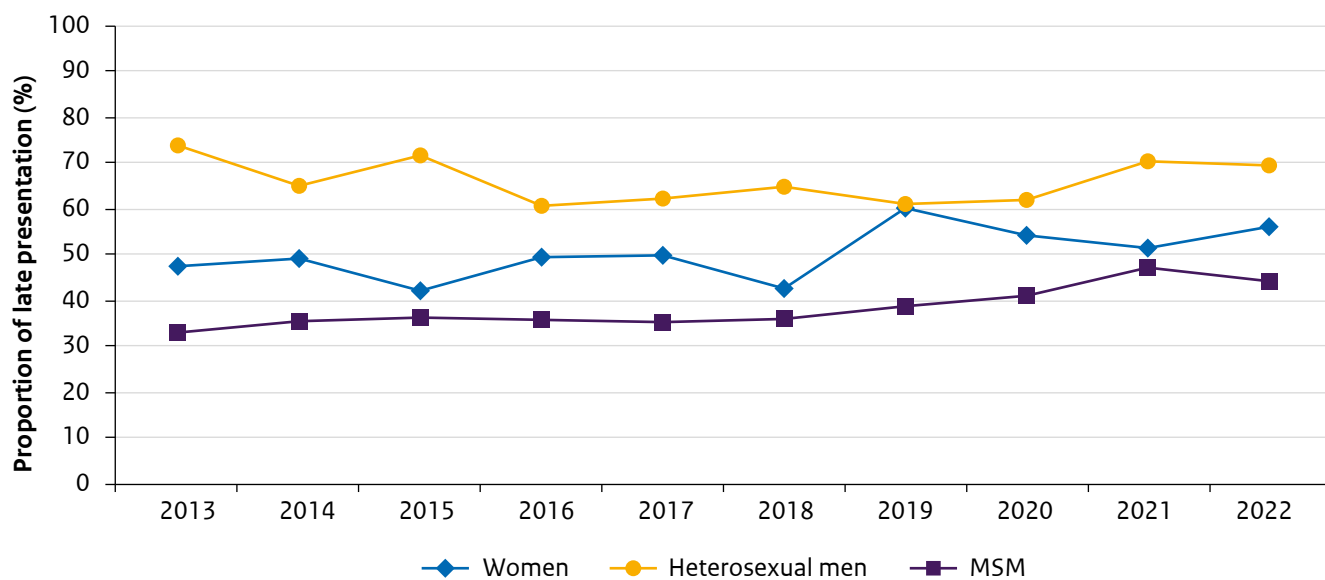
Figure 6.7 Proportion of newly acquired HIV infections (< 6 months*) by transmission risk group, 2013-2022



Source: Stichting hiv monitoring, 2022 incomplete

* Based on history of HIV-negative test result before HIV-diagnosis.

Figure 6.8 Proportion of late presentation (CD4 count <350/mm³ or AIDS at diagnosis) by transmission risk group, 2013-2022



Source: Stichting hiv monitoring, 2022 incomplete

6.3.2 AIDS patients and deaths among HIV-positive individuals

Table 6.9 Number of AIDS patients by year of AIDS diagnosis and transmission risk group, 2013-2022

Year of diagnosis	Women	Heterosexual men	MSM	Other/unknown*
	n (%)	n (%)	n (%)	n (%)
2013	40 (14.8)	50 (18.5)	144 (53.1)	37 (13.7)
2014	30 (13.8)	49 (22.5)	107 (49.1)	32 (14.7)
2015	36 (14.3)	51 (20.3)	124 (49.4)	40 (15.9)
2016	39 (18.3)	42 (19.7)	99 (46.5)	33 (15.5)
2017	33 (15.9)	43 (20.8)	97 (46.9)	34 (16.4)
2018	25 (13.7)	32 (17.5)	90 (49.2)	36 (19.7)
2019	24 (14.3)	30 (17.9)	82 (48.8)	32 (19.0)
2020	27 (17.6)	32 (20.9)	70 (45.8)	24 (15.7)
2021	18 (13.5)	20 (15.0)	73 (54.9)	22 (16.5)
2022	12 (14.5)	18 (21.7)	31 (37.3)	22 (26.5)

Source: Stichting hiv monitoring, 2022 incomplete

* Injecting drug use, blood and blood contacts, mother-to-child transmission, other, unknown.

Table 6.10 Number of deaths among people with HIV/AIDS by year of death and transmission risk group, 2013-2022

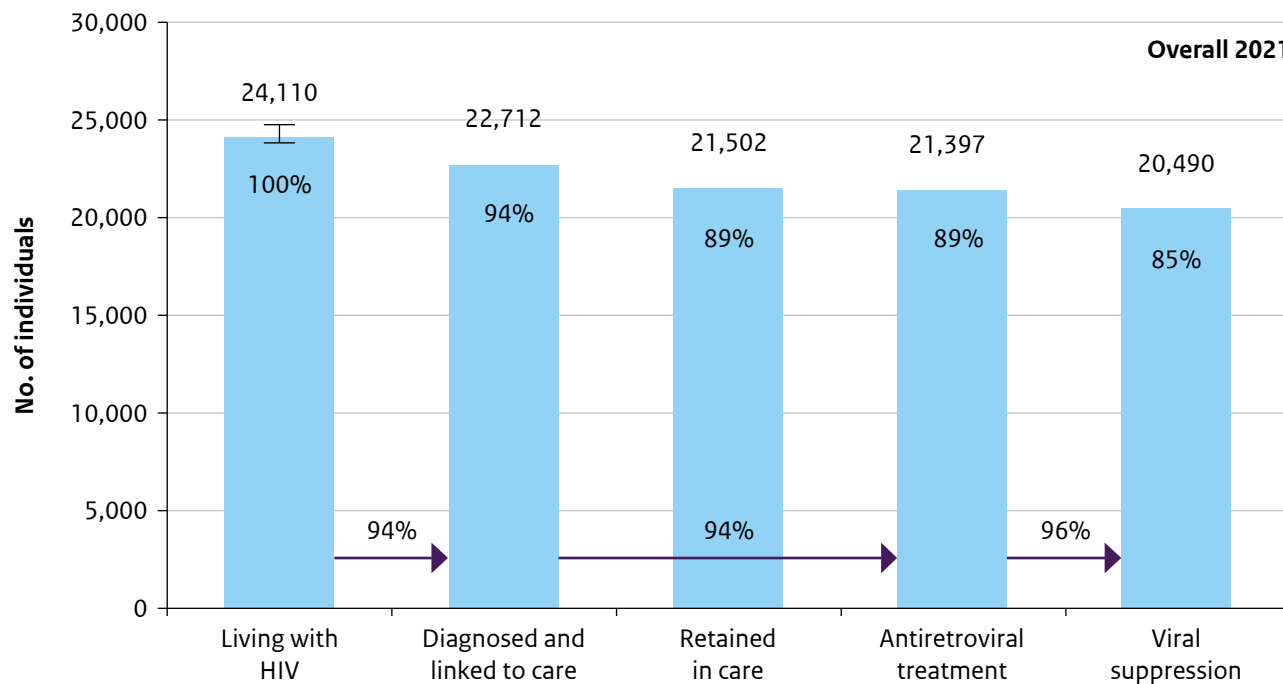
Year of death	Women	Heterosexual men	MSM	Other/unknown*
	n (%)	n (%)	n (%)	n (%)
2013	12 (8.0)	31 (20.7)	80 (53.3)	27 (18.0)
2014	19 (11.5)	26 (15.8)	88 (53.3)	32 (19.4)
2015	20 (12.4)	38 (23.6)	76 (47.2)	27 (16.8)
2016	20 (10.5)	35 (18.3)	96 (50.3)	40 (20.9)
2017	9 (5.4)	33 (19.6)	91 (54.2)	35 (20.8)
2018	13 (7.4)	22 (12.6)	106 (60.6)	34 (19.4)
2019	18 (10.1)	26 (14.6)	103 (57.9)	31 (17.4)
2020	25 (12.6)	34 (17.1)	119 (59.8)	21 (10.6)
2021	36 (15.8)	34 (14.9)	127 (55.7)	31 (13.6)
2022	8 (5.6)	28 (19.4)	90 (62.5)	18 (12.5)

Source: Stichting hiv monitoring, 2022 incomplete

* Injecting drug use, blood and blood contacts, mother-to-child transmission, other, unknown.

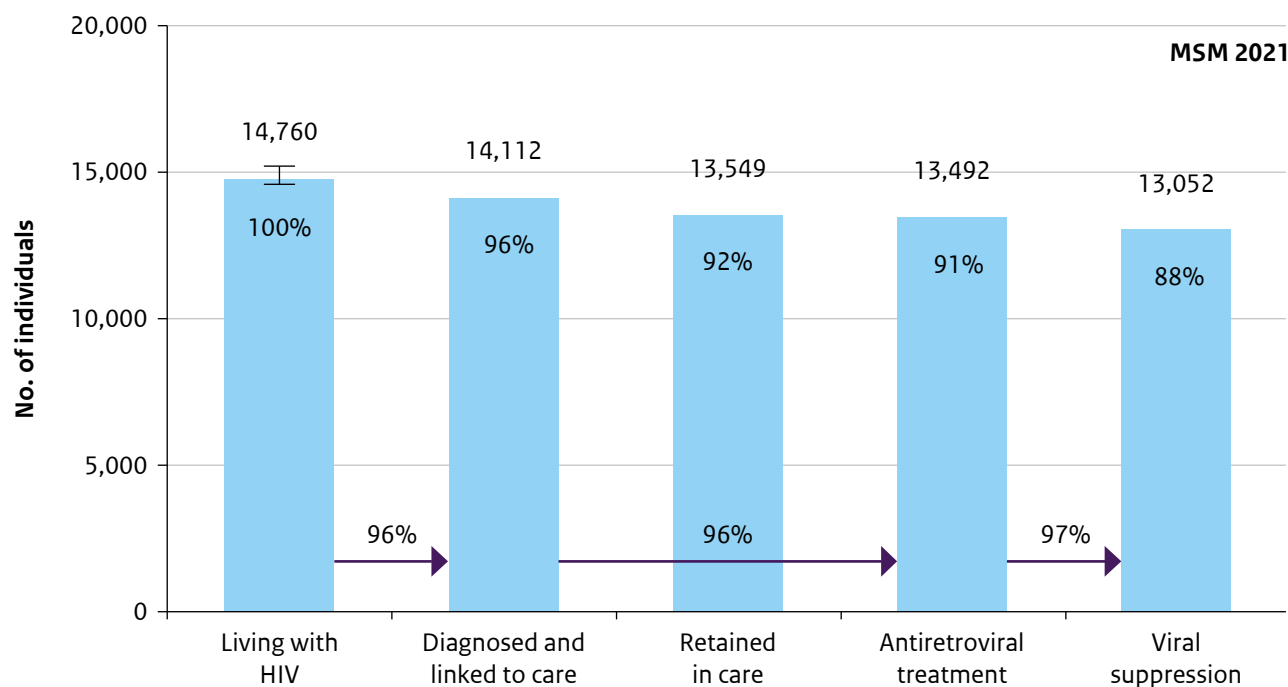
Footnote: All-cause mortality, not only caused by HIV/AIDS.

Figure 6.9a Continuum of care for HIV in 2021, total population, Stichting hiv monitoring



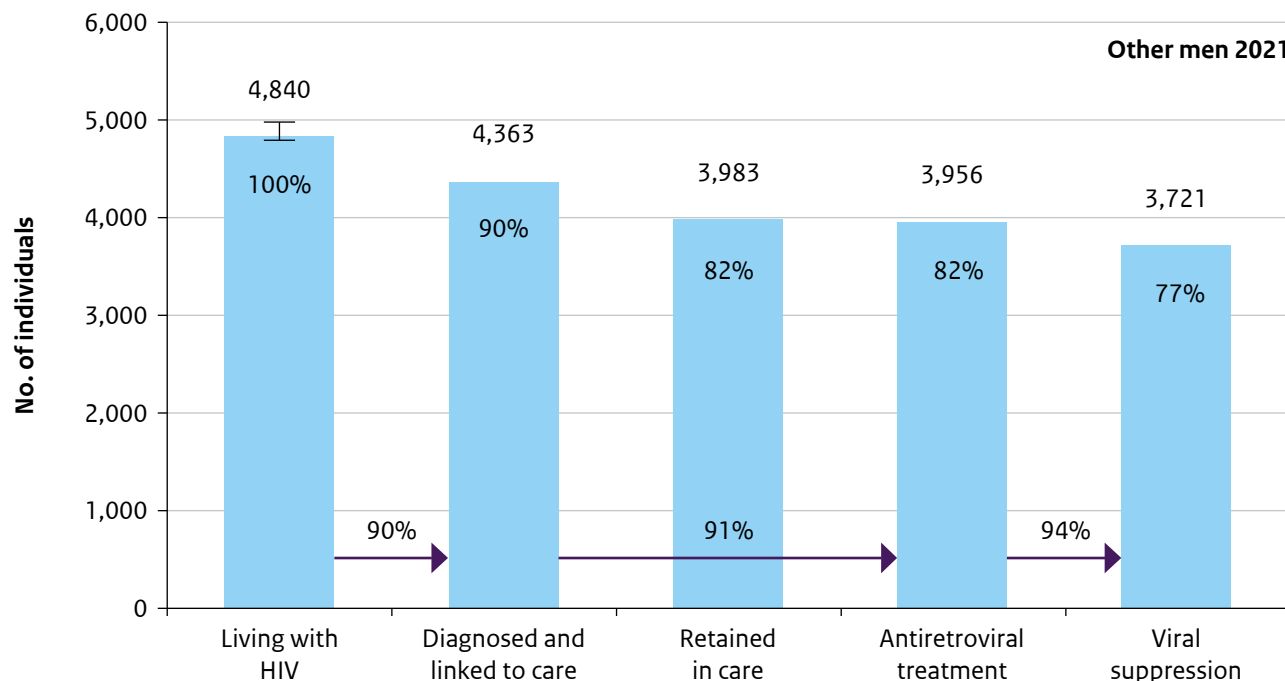
Source: Stichting hiv monitoring, Monitoring Report 2022 SHM: Monitoring of Human Immunodeficiency Virus (HIV) Infection in the Netherlands.
For details: www.hiv-monitoring.nl

Figure 6.9b Continuum of care for HIV in 2021, MSM, Stichting hiv monitoring



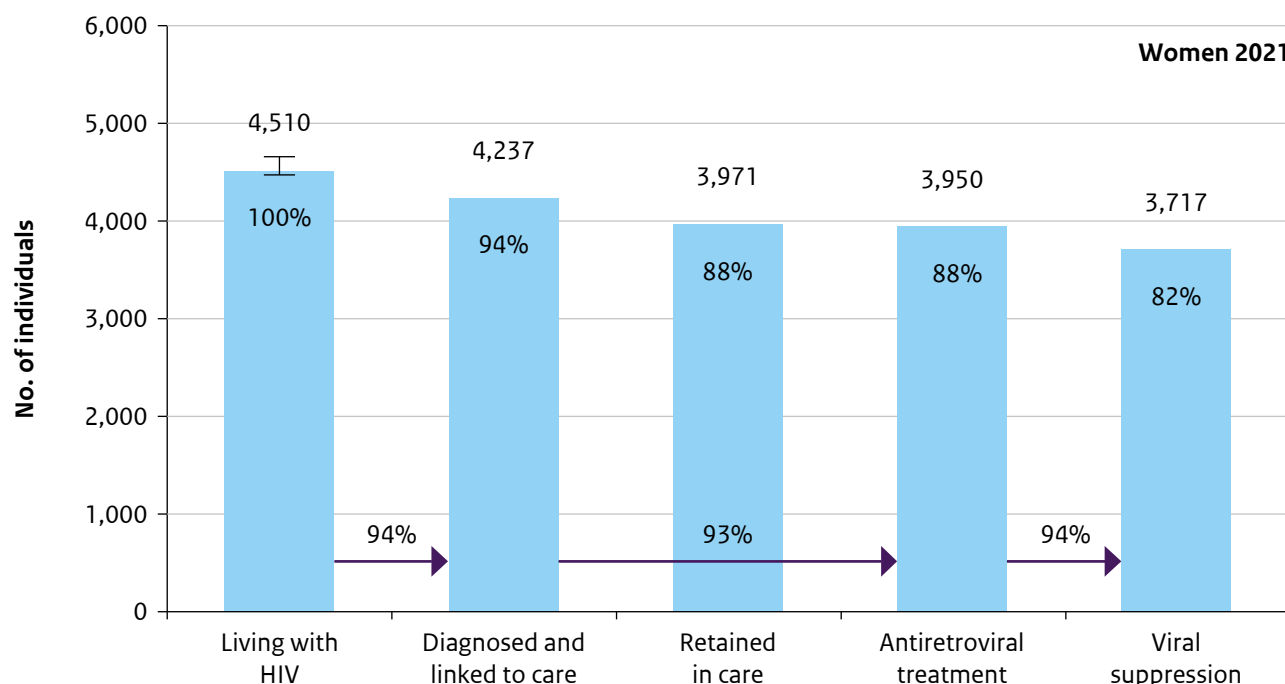
Source: Stichting hiv monitoring, Monitoring Report 2022 SHM: Monitoring of Human Immunodeficiency Virus (HIV) Infection in the Netherlands.
For details: www.hiv-monitoring.nl

Figure 6.9c Continuum of care for HIV in 2021, other men, Stichting hiv monitoring



Source: Stichting hiv monitoring, Monitoring Report 2022 SHM: Monitoring of Human Immunodeficiency Virus (HIV) Infection in the Netherlands.
 For details: www.hiv-monitoring.nl

Figure 6.9d Continuum of care for HIV in 2021, women, Stichting hiv monitoring



Source: Stichting hiv monitoring, Monitoring Report 2022 SHM: Monitoring of Human Immunodeficiency Virus (HIV) Infection in the Netherlands.
 For details: www.hiv-monitoring.nl

6.4 Other sources

6.4.1 Antenatal screening

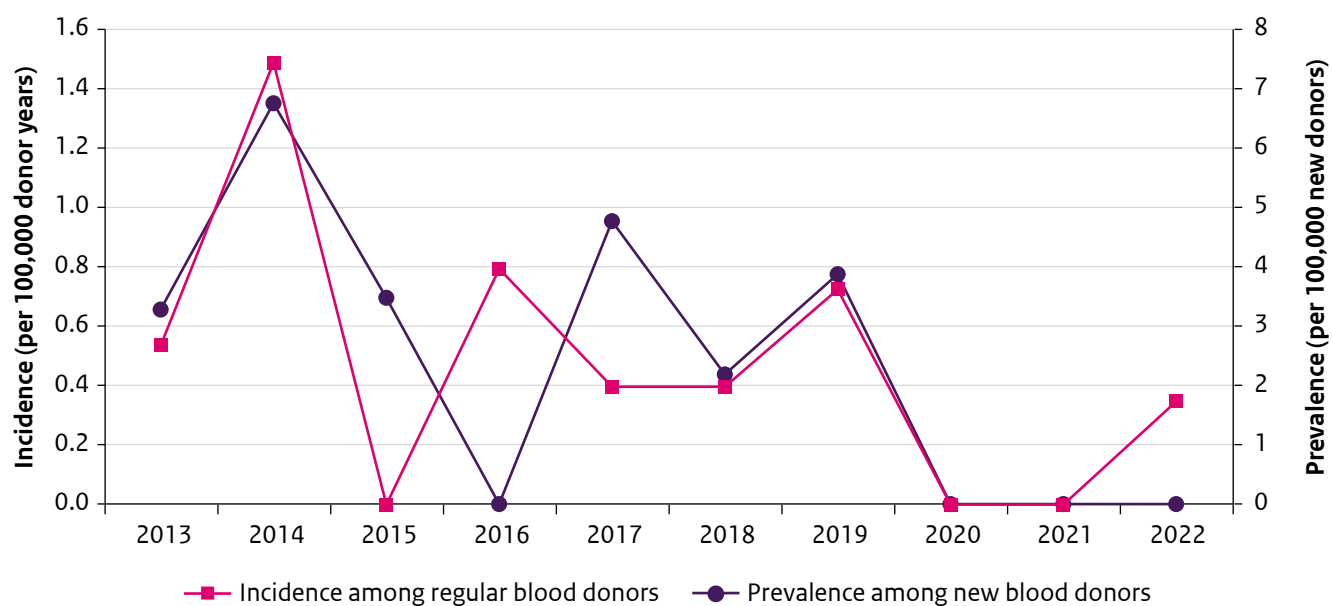
Table 6.11 HIV prevalence estimates in pregnant women, based on test results of antenatal screening, 2015-2021

Year	No. of women screened	Confirmed positive test results	Prevalence estimate
2015	174,566	105	0.06
2016	176,103	88	0.05
2017	172,694	112	0.07
2018	170,390	91	0.05
2019	171,149	96	0.06
2020	176,103	89	0.05
2021	176,400	86	0.05

Sources: C.P.B. van der Ploeg (TNO), A. Ernst (RIVM), M. van Lent (RIVM). *Prenatale Screening Infectieziekten en Erytrocytenimmunisatie (PSIE)*. Procesmonitor 2021. TNO/RIVM 2023; and earlier monitors.

6.4.2 Blood donors

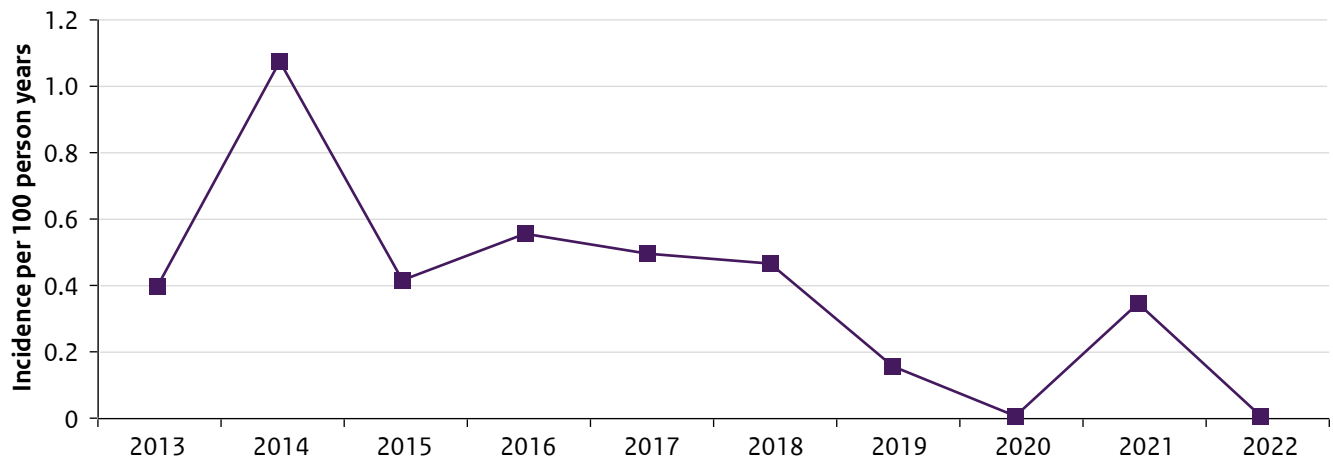
Figure 6.10 HIV incidence among regular blood donors and prevalence among new blood donors (incidence per 100,000 donor years and prevalence per 100,000 new donors) in the Netherlands, 2013-2022



Source: Sanquin

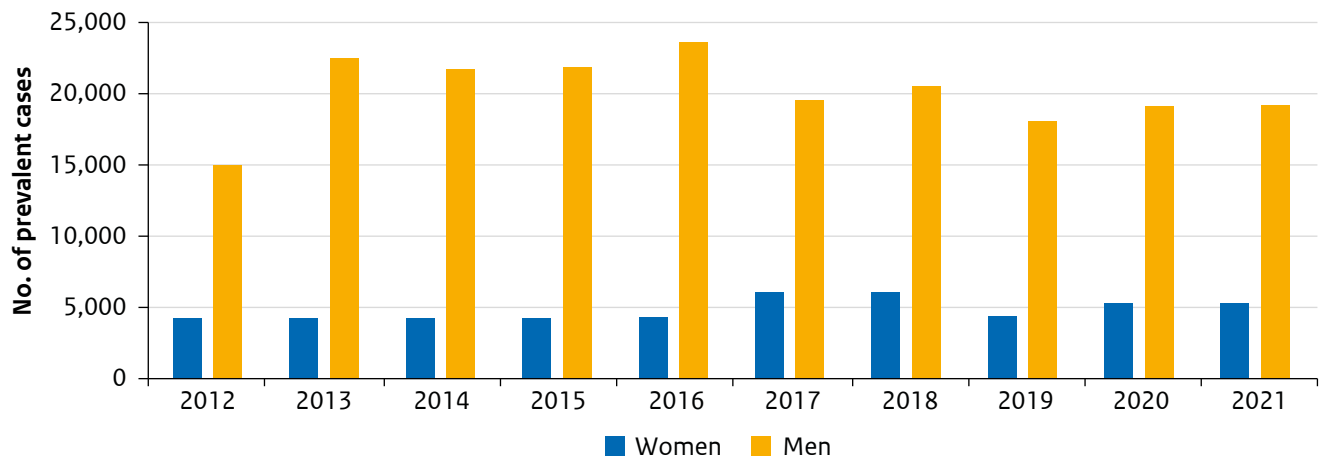
6.4.3 Amsterdam Cohort Studies

Figure 6.11 Yearly HIV incidence among MSM in the Amsterdam Cohort Studies, 2013-2022



6.5 General practice

Figure 6.12 Estimated number of prevalent HIV-cases at general practices by sex, based on extrapolation from general practices in Nivel-Primary Care Database, 2012-2021



Footnote: HIV prevalence estimates have been standardised for urbanisation in this in this report.

Table 6.12 Estimated prevalence of HIV (rate per 1,000 population) at general practices by sex, based on extrapolation from general practices in Nivel-Primary Care Database, 2012-2021

	Women	Men	Total
	n/1,000	n/1,000	n/1,000
2012	0.5	1.8	1.2
2013	0.5	2.7	1.6
2014	0.5	2.6	1.6
2015	0.5	2.6	1.5
2016	0.5	2.8	1.7
2017	0.7	2.3	1.5
2018	0.7	2.4	1.5
2019	0.5	2.1	1.3
2020	0.6	2.2	1.4
2021	0.6	2.2	1.4

Footnote: HIV prevalence estimates in 2012 to 2021 have been standardised for urbanisation in this report.

7 Genital warts

7.1 Key points

7.1.1 Sexual Health Centres

- In this report, consultations of MSM are divided into consultations that fall within the regulation 'Additional Sexual Healthcare' (MSM – ASG) and consultations that fall within the national PrEP pilot programme (MSM – PrEP pilot). Due to the three-monthly testing interval for MSM – PrEP pilot, MSM – ASG and MSM – PrEP pilot are not directly comparable. Additional information can be found in 1.1 *National surveillance at Sexual Health Centres*.
- The impact of the COVID-19 pandemic and the national PrEP pilot programme on the number of consultations and STI positivity need to be taken into account when interpreting trend data, as this may influence trends.
- The number of genital warts diagnoses at SHCs in the Netherlands was 787 in 2022, of which 36% were among women, 38% among heterosexual men, 20% among MSM – ASG, 4% among MSM – PrEP pilot, and 1% among gender-diverse persons. As the number of gender-diverse persons was relatively low, they are not shown in tables and figures and will be excluded hereafter.
- In 2022, the number of genital warts diagnoses among persons aged <25 years was 474 (48% among women,

40% among heterosexual men, 9% among MSM – ASG, and 3% among MSM – PrEP pilot), and 308 among persons aged ≥25 years (19% among women, 36% among heterosexual men, 38% among MSM – ASG and 7% among MSM – PrEP pilot).

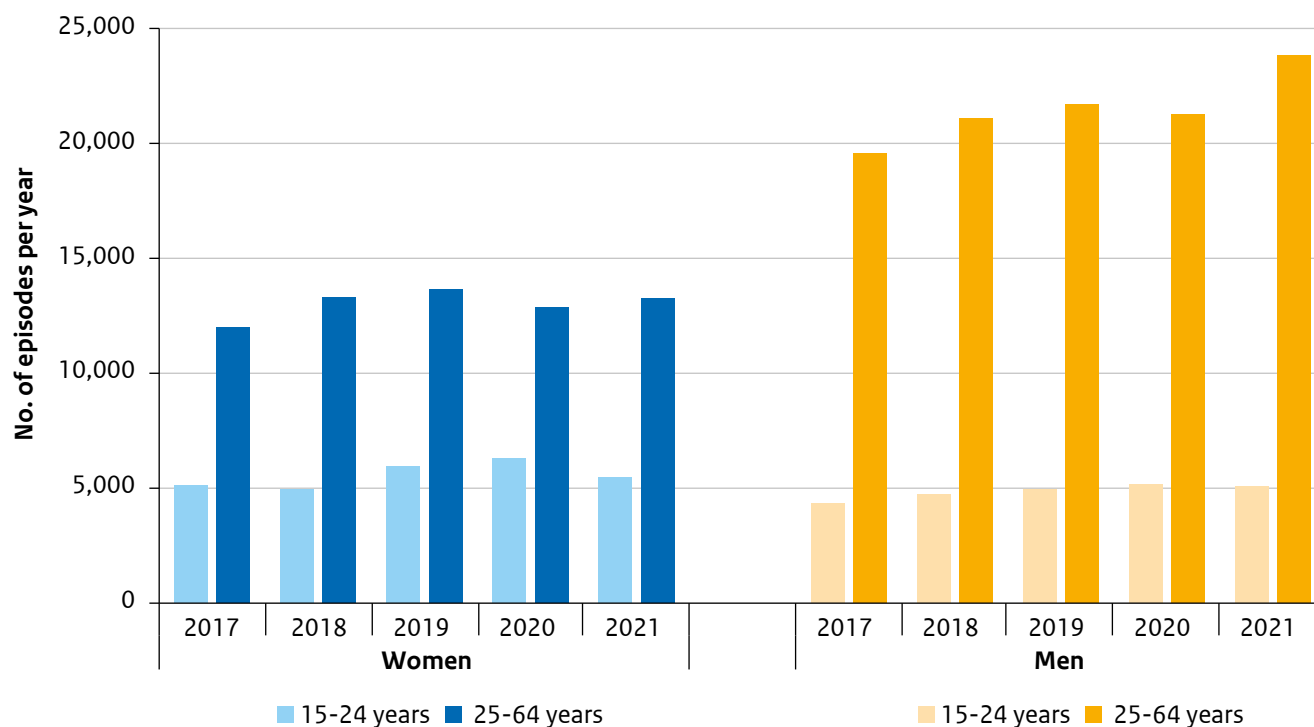
- Of all diagnoses at SHCs, 562 of the diagnosed persons were not from a region of origin as indicated by triage criteria (43% among women, 35% among heterosexual men, 18% among MSM – ASG, and 4% among MSM – PrEP pilot), whereas 218 were persons with a region of origin as indicated by triage criteria (21% among women, 47% among heterosexual men, 28% among MSM – ASG, and 5% among MSM – PrEP pilot).

7.1.2 General practice

- At GPs, the number of genital warts episodes, estimated with Nivel-PCD data, was 47,500 in 2021 (45,400 in 2020).
- In 2021, the reporting rate for genital warts at general practices was 4.2 episodes per 1,000 aged 15-64. This was 3.3 per 1,000 population for women and 5.1 per 1,000 for men.
- The reporting rate was higher among men aged 25-64 years (5.2 per 1,000), than among men aged 15-24 years (4.6 per 1,000). Among women aged 25-64 years, the rate was lower than among women aged 15-24 years (2.9 vs 5.2 per 1,000).

7.2 General practice

Figure 7.1 Estimated annual number of episodes of genital warts at general practices by sex and age group, based on extrapolation from general practices in Nivel-PCD, 2017-2021



Footnote: About 50% of the total Dutch population consists of persons aged 25-64 years and about 10% consists of persons aged 15-24 years.

Table 7.1 Annual reporting rate (number of episodes per 1,000 persons of 15-64 years of age) of genital warts at general practices in the Netherlands by sex and age group, based on general practices in Nivel-PCD, 2017-2021

	Women n/1,000			Men n/1,000			Total n/1,000		
	All	15-24	25-64	All	15-24	25-64	All	15-24	25-64
2017	3.1	5.0	2.6	4.2	4.0	4.3	3.7	4.5	3.5
2018	3.3	4.7	2.9	4.6	4.4	4.6	3.9	4.6	3.8
2019	3.5	5.7	3.0	4.7	4.5	4.7	4.1	5.1	3.9
2020	3.4	6.0	2.8	4.6	4.7	4.6	4.0	5.3	3.7
2021	3.3	5.2	2.9	5.1	4.6	5.2	4.2	4.9	4.0

8 Genital herpes

8.1 Key points

8.1.1 Sexual Health Centres

- In this report, consultations of MSM are divided into consultations that fall within the regulation 'Additional Sexual Healthcare' (MSM – ASG) and consultations that fall within the national PrEP pilot programme (MSM – PrEP pilot). Due to the three-monthly testing interval for MSM – PrEP pilot, MSM – ASG and MSM – PrEP pilot are not directly comparable. Additional information can be found in *1.1 National surveillance at Sexual Health Centres*.
- The impact of the COVID-19 pandemic and the national PrEP pilot programme on the number of consultations and STI positivity need to be taken into account when interpreting trend data, as this may influence trends.
- The number of persons with a genital herpes diagnosis at SHCs in the Netherlands was 601 in 2022, of which 41% were women, 21% heterosexual men, 31% MSM – ASG, 6% MSM – PrEP pilot, and 1% gender-diverse persons. As the number of gender-diverse persons was relatively low, they are not shown in tables and figures and will be excluded hereafter.
- In 2022, the number of persons aged <25 years with a genital herpes diagnosis was 260 (68% women, 22% heterosexual men, 9% MSM – ASG, and 2% MSM – PrEP pilot), and the number of persons aged ≥25 years with a genital herpes diagnosis was 336 (21% women, 20% heterosexual men, 49% among MSM – ASG, and 10% MSM – PrEP pilot).

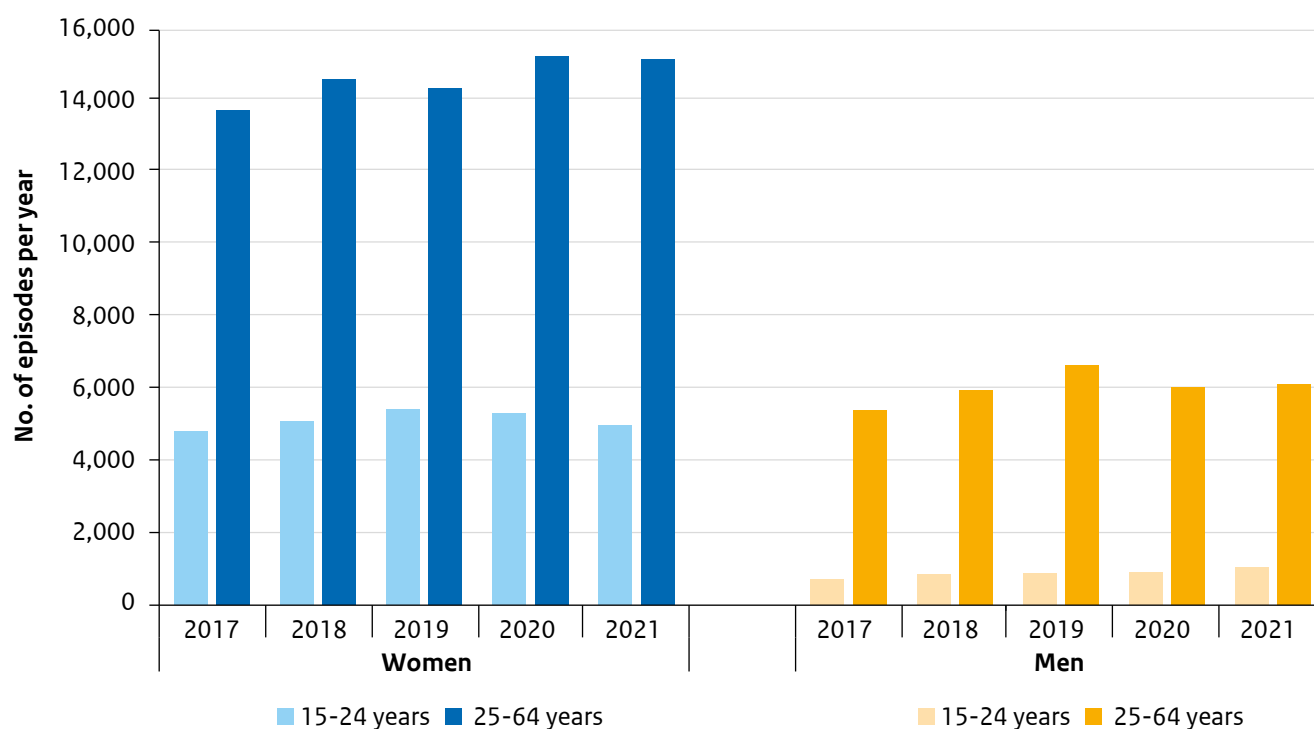
- Of all the persons with a genital herpes diagnosis at SHCs, 408 were not from a region of origin as indicated by triage criteria (41% women, 21% heterosexual men, 32% MSM – ASG, and 6% MSM – PrEP pilot), whereas 188 were from a region of origin as indicated by triage criteria (42% women, 21% heterosexual men, 30% MSM – ASG, and 7% MSM – PrEP pilot).
- Among women, 55% of the diagnoses was due to herpes simplex virus 1 (HSV1), and 38% due to herpes simplex virus 2 (HSV2). Among heterosexual men 40% was due to HSV1, and 53% was due to HSV2. For MSM – ASG, this was 34%, and 60% for HSV1 and HSV2, respectively. Finally, for MSM – PrEP pilot, 43% was due to HSV1 and 46% due to HSV2.
- The proportion of HSV1, HSV2 and primary genital herpes with an unknown type of all primary genital herpes diagnoses has been relatively stable between 2013 and 2022.

8.1.2 General practice

- At GPs, the number of genital herpes episodes in 2021, estimated with Nivel-PCD data, was 27,300 compared with 27,500 in 2020.
- In 2021, the reporting rate for genital herpes diagnoses at GPs was 2.4 per 1,000 population aged 15-64. This was 3.6 per 1,000 for women and 1.3 per 1,000 for men.
- The reporting rate for women was higher for women aged 15-24 years old, while for men this was higher in the population aged 25-64.

8.2 General practice

Figure 8.1 Estimated annual number of episodes of genital herpes at general practices by sex and age group, based on extrapolation from general practices in Nivel-PCD, 2017-2021



Footnote: About 50% of the total Dutch population consists of persons aged 25-64 years and about 10% consists of persons aged 15-24 years.

Table 8.1 Annual reporting rate (number of episodes per 1,000 persons of 15-64 years of age) of genital herpes at GPs in the Netherlands by gender and age group, based on GP practices in Nivel-PCD, 2017-2021

	Women n/1,000			Men n/1,000			Total n/1,000		
	All	15-24	25-64	All	15-24	25-64	All	15-24	25-64
2017	3.3	4.7	3.0	1.1	0.7	1.2	2.2	2.7	2.1
2018	3.5	4.9	3.2	1.2	0.8	1.3	2.4	2.8	2.3
2019	3.5	5.2	3.2	1.3	0.8	1.5	2.4	3.0	2.3
2020	3.7	5.1	3.3	1.2	0.8	1.3	2.4	2.9	2.3
2021	3.6	4.7	3.3	1.3	1.0	1.3	2.4	2.9	2.3

9 Hepatitis B

9.1 Key points

9.1.1 Sexual Health Centres

- In this report, consultations of MSM are divided into consultations that fall within the regulation 'Additional Sexual Healthcare' (MSM – ASG) and consultations that fall within the national PrEP pilot programme (MSM – PrEP pilot). Due to the three-monthly testing interval for MSM – PrEP pilot, MSM – ASG and MSM – PrEP pilot are not directly comparable. Additional information can be found in *1.1 National surveillance at Sexual Health Centres*.
- The impact of the COVID-19 pandemic and the national PrEP pilot programme on the number of consultations and STI positivity need to be taken into account when interpreting trend data, as this may influence trends.
- In 2022, 24,290 hepatitis B tests were conducted at SHCs, of which 6,411 (26%) were among women, 3,276 (13%) among heterosexual men, 10,717 (44%) among MSM – ASG and 3,886 (16%) among MSM – PrEP pilot. Overall, this was an increase of 23% compared with 2021.
- In 2022, 33 infectious hepatitis B infections (both acute and chronic) were diagnosed at SHCs; a 6% decrease compared with 2021. Of the 33 cases in 2022, 51% were among heterosexual men, 48% among MSM – ASG (0% among MSM – PrEP pilot) and 0% among women.
- Most cases with hepatitis B infection were among persons with a region of origin included in triage; among heterosexual men this was 100% and among MSM – ASG 63%.

9.1.2 Notification data

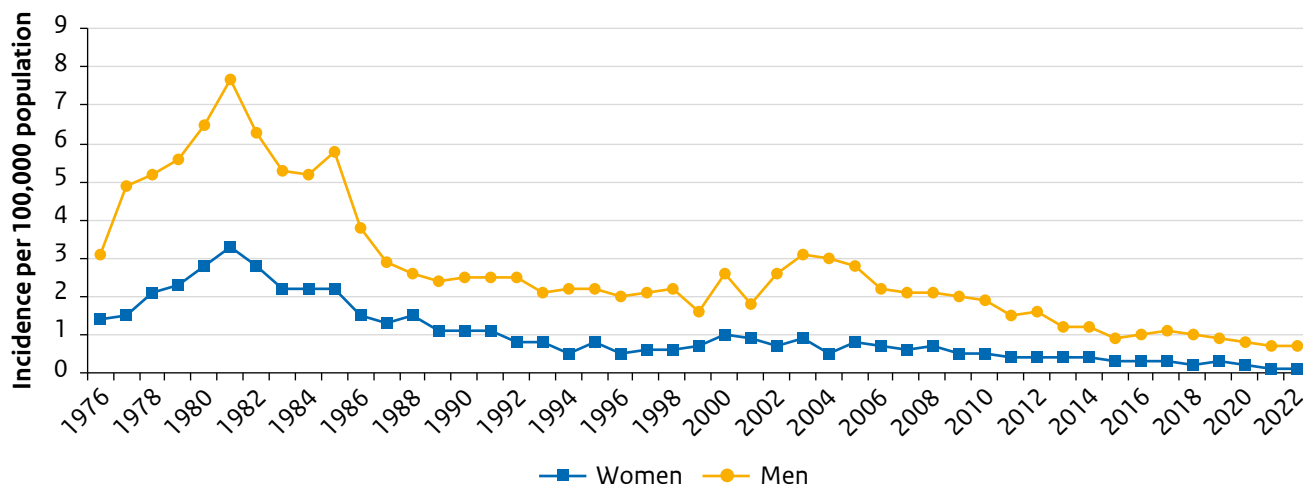
- In 2022, 888 hepatitis B infections were reported to the RIVM, of which 812 (91%) were chronic/unknown infections, and 76 (9%) were acute infections. Chronic/unknown hepatitis B infections increased with 7% compared with 2021. Acute hepatitis B infections increased by 3% compared with 2021.
- Sexual contact remained the most commonly reported transmission route for acute hepatitis B (59%) in 2022. In 24% of cases the route of transmission was unknown. Of the chronic/unknown infections in 2022 with a reported route of transmission, 345 (75%) were cases by vertical transmission, 38 (8%) by sexual contact (23 heterosexuals, 11 among MSM and 4 persons with unknown sexual risk), 4 (1%) among injecting drug users, and 4 (1%) by occupational accident. For 350 chronic/unknown infections the route of transmission was unknown.

9.1.3 Other data sources

- In 2021, 334 (0.2%) women tested positive for hepatitis B in the antenatal screening programme.
- In 2022, 3,521 MSM and 563 sex workers entered the hepatitis B vaccination programme for risk groups. In 2020, the numbers of MSM (n=2,329) and sex workers (n=427) entering the programme were much lower compared with 2019 (MSM n=4,262, sex workers n=808) due to COVID-19 measures, but in 2021 and 2022 entries increased again, especially among MSM. In 2021, 51.3% of MSM and 33.5% of the sex workers entering the programme were fully vaccinated with 3 doses.

9.2 Notification data: characteristics, risk groups and trends

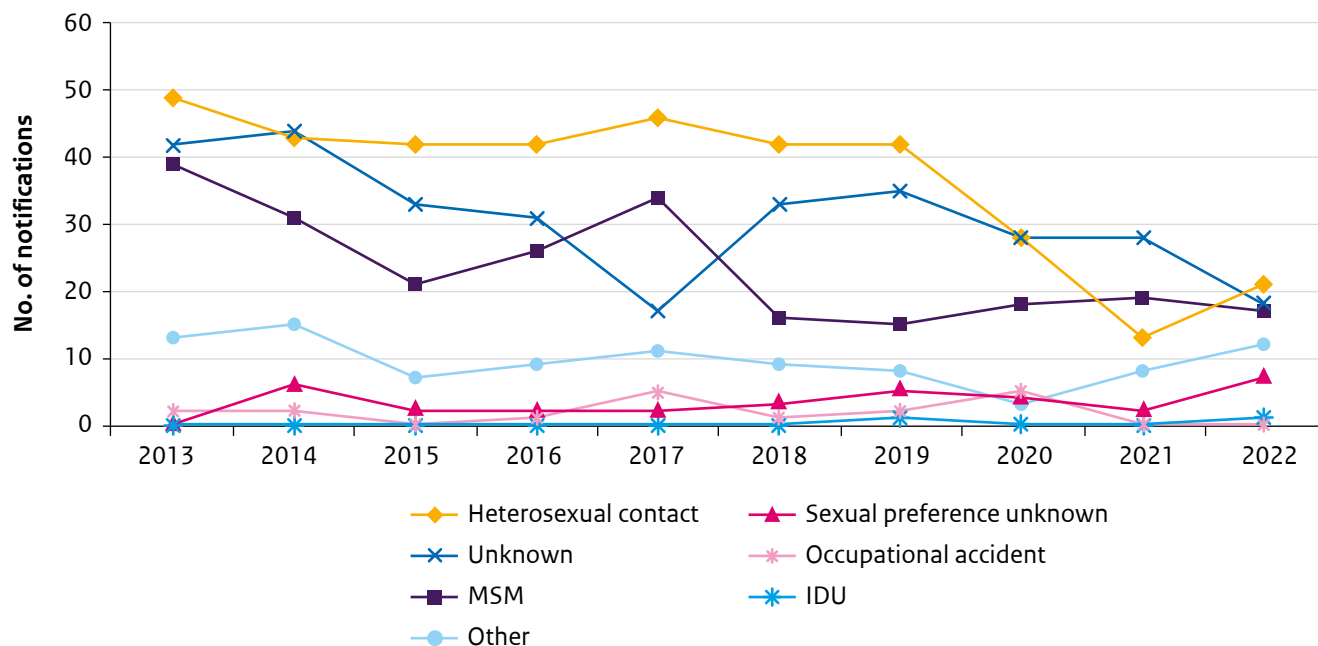
Figure 9.1 Incidence of acute hepatitis B per 100,000 population by sex, 1976-2022



Source: RIVM-OSIRIS, notification data

Footnote: Data from 2022 might be incomplete due to reporting delay and/or COVID-19 measures (data were collected on 19 March 2023).

Figure 9.2 Number of acute hepatitis B infections by route of transmission, 2013-2022



Source: RIVM-OSIRIS, notification data

Footnote: Data from 2022 might be incomplete due to reporting delay and/or COVID-19 measures (data were collected on 19 March 2023).

Table 9.1 Proportion of acute hepatitis B cases by most common route of transmission, the Netherlands, 2022

	Heterosexual contact	MSM	Other
	(N=21) n (%)*	(N=17) n (%)*	(N=38) n (%)*
Infected abroad	3 (14.3)	1 (5.9)	8 (21.1)
Born abroad	7 (33.3)	2 (11.8)	9 (23.7)
Infected by casual partner	15 (71.4)	16 (94.1)	5 (13.2)
Median age (range)	41 (20-72)	51 (24-73)	45 (20-77)

Source: RIVM-OSIRIS, notification data

* Proportions per category can overlap, so percentages do not add up to 100%.

9.3 Antenatal screening

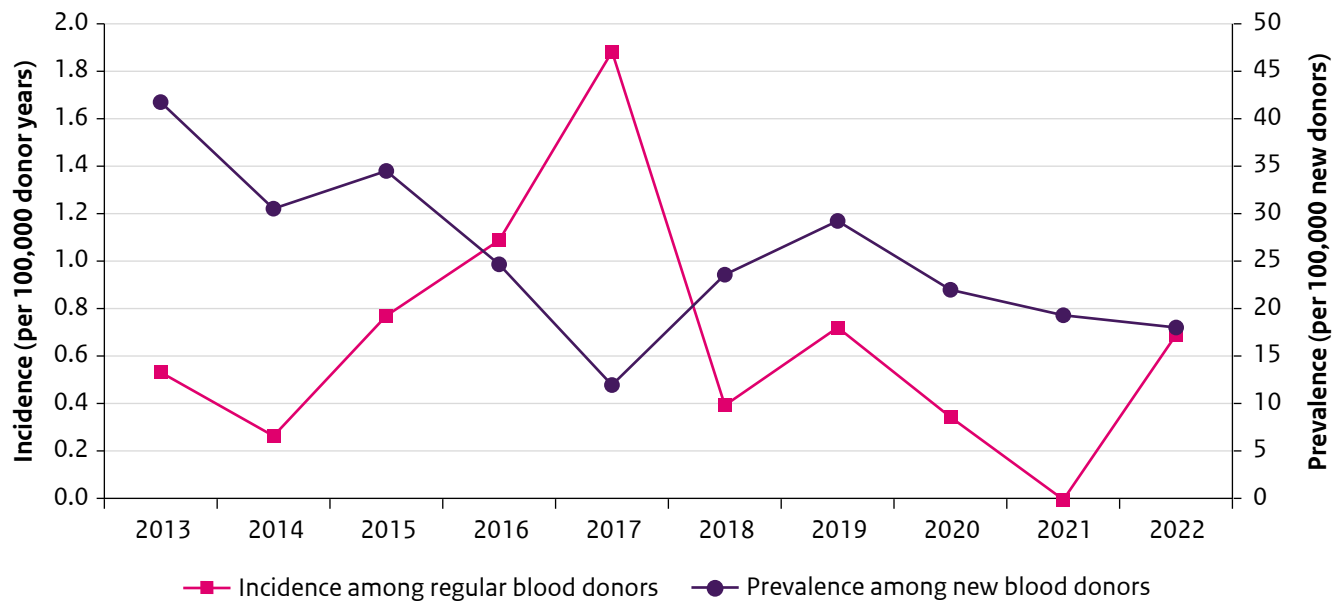
Table 9.2 Hepatitis B prevalence estimates in pregnant women, based on test results of antenatal screening, 2013-2021

Period	No. of women screened	Confirmed positive test results	Prevalence estimate
2013	176,086	529	0.30
2014	174,646	559	0.32
2015	176,238	506	0.29
2016	172,799	507	0.29
2017	170,461	480	0.28
2018	171,242	453	0.26
2019	171,609	437	0.26
2020	176,235	394	0.22
2021	176,464	334	0.19

Sources: C.P.B. van der Ploeg (TNO), P. Oomen (RIVM), M van Lent (RIVM). Prenatale Screening Infectieziekten en Erythrocytenimmunisatie (PSIE). Procesmonitor 2020. TNO/RIVM 2022; and earlier monitors.

9.4 Blood donors

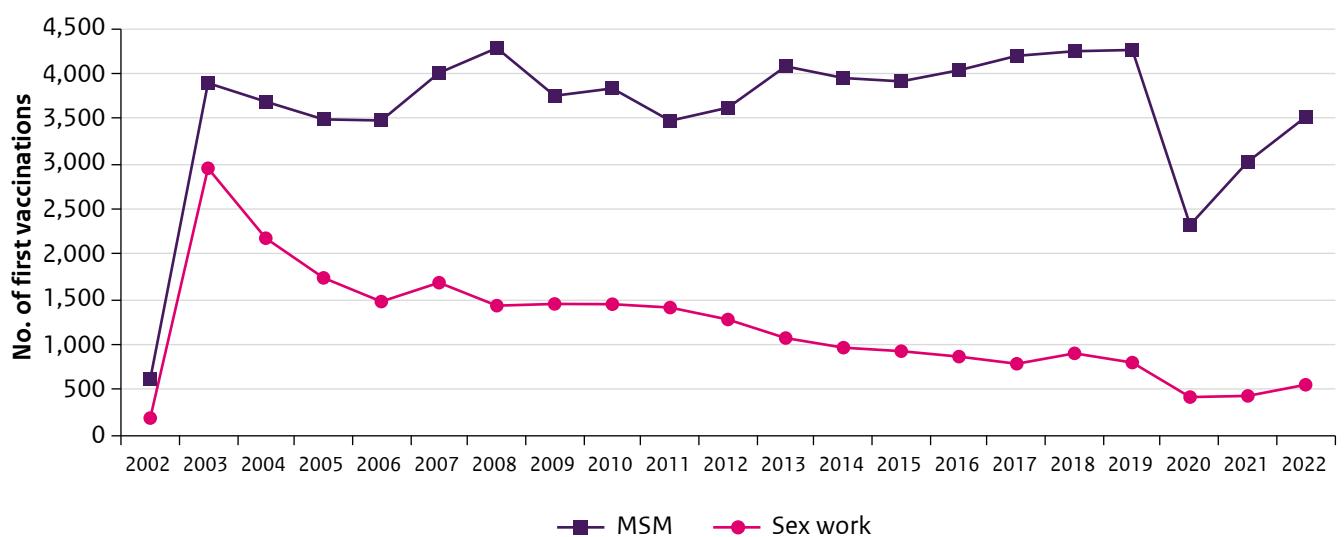
Figure 9.3 Incidence and prevalence of hepatitis B virus among blood- and plasma donors in the Netherlands, 2013-2022 (incidence per 100,000 donor years and prevalence per 100,000 new donors)



Source: Sanquin

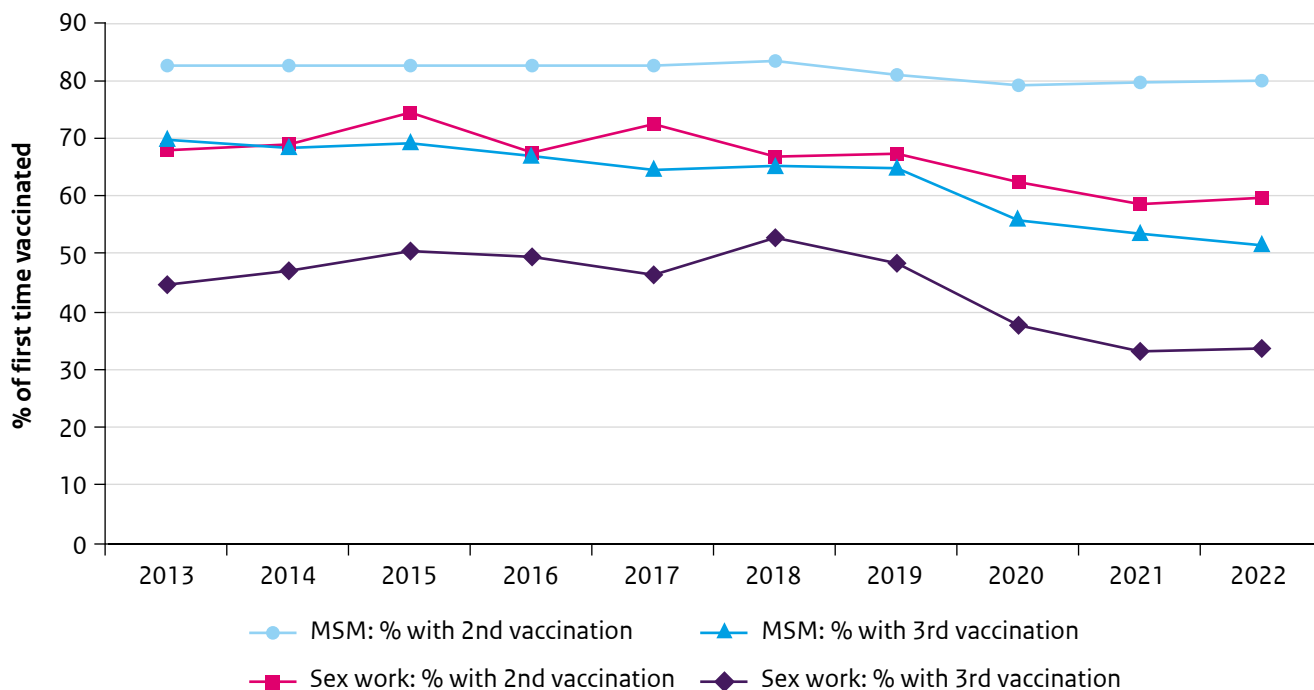
9.5 Hepatitis B vaccination programme for risk groups

Figure 9.4 Number of persons entering the hepatitis B vaccination programme, 2002-2022



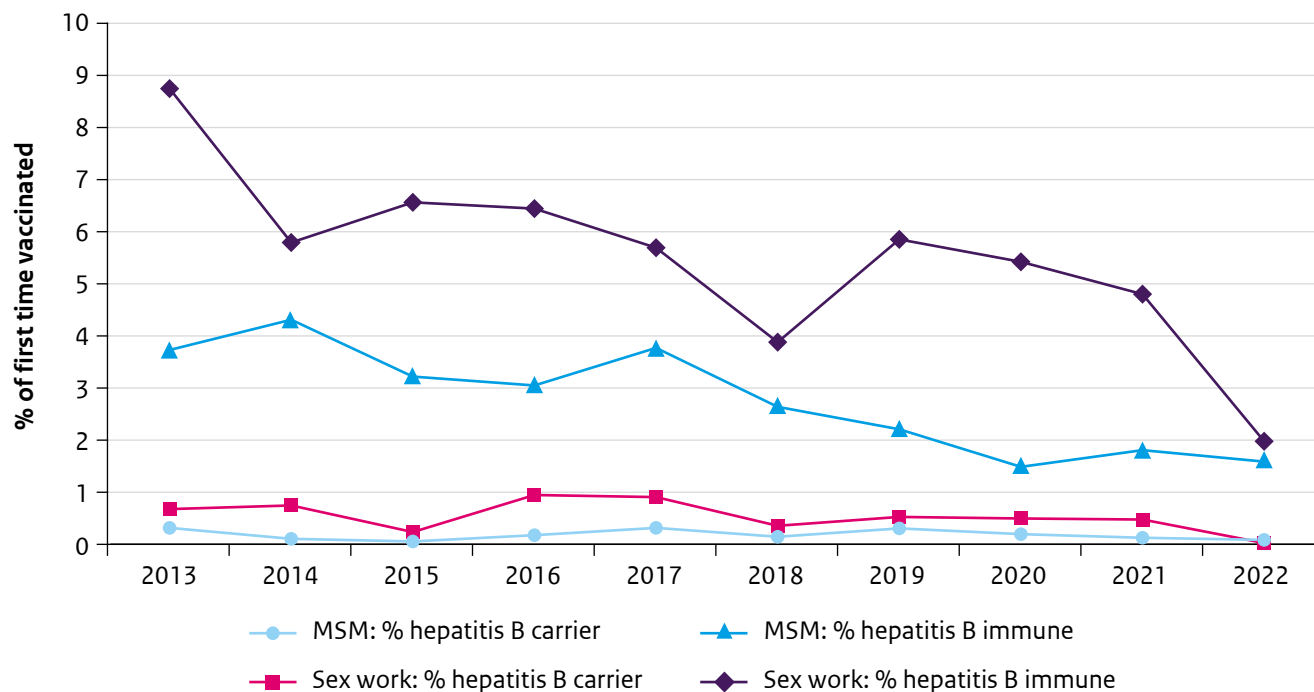
Source: RIVM, HBV vaccination programme among MSM and sex workers.

Figure 9.5 Percentage of second and third time vaccinated participants of the hepatitis B vaccination programme, 2013-2022



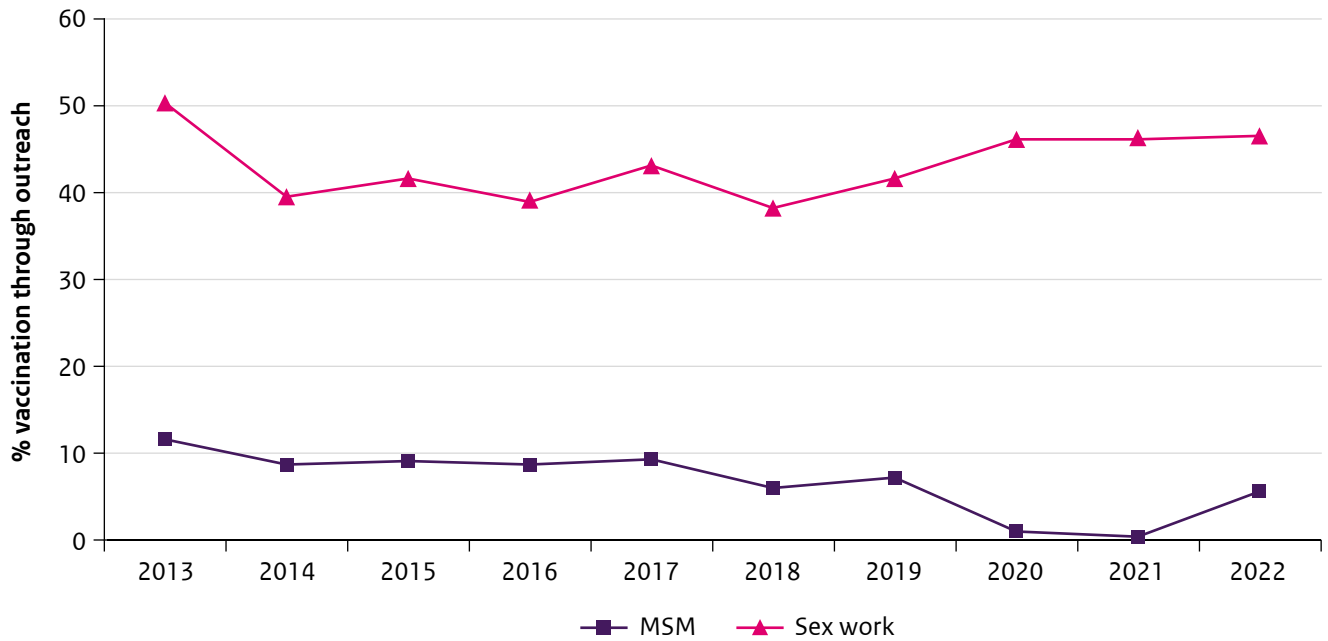
Source: RIVM, HBV vaccination programme among MSM and sex workers.

Figure 9.6 Percentage of hepatitis B chronically infected and immune participants of the hepatitis B vaccination programme, 2013-2022



Source: RIVM, HBV vaccination programme among MSM and sex workers.

Figure 9.7 Percentage of first hepatitis B vaccinations given at outreach locations* by risk group, 2013-2022



* Outreach locations include penitentiary institutes, MSM locations, drug locations or sex work locations. Non-outreach locations are SHCs and PHS locations.
Source: RIVM, HBV vaccination programme among MSM and sex workers

10 Hepatitis C

10.1 Key points

10.1.1 Sexual Health Centres

- In this report, consultations of MSM are divided into consultations that fall within the regulation 'Additional Sexual Healthcare' (MSM – ASG) and consultations that fall within the national PrEP pilot programme (MSM – PrEP pilot). Due to the three-monthly testing interval for MSM – PrEP pilot, MSM – ASG and MSM – PrEP pilot are not directly comparable. Additional information can be found in 1.1 *National surveillance at Sexual Health Centres*.
- The impact of the COVID-19 pandemic and the national PrEP pilot programme on the number of consultations and STI positivity need to be taken into account when interpreting trend data, as this may influence trends.
- In 2022, 19,181 hepatitis C tests were conducted at SHCs, of which 502 (3%) were among women, 318 (2%) among heterosexual men, 3,207 (17%) among MSM – ASG and 15,154 (79.0%) among MSM – PrEP pilot. Overall, this was a decrease of 20% compared with 2021 (23,842).
- Among MSM – ASG tested for hepatitis C, 921 (29%) were known or new HIV-positive and 2,286 (71%) were HIV-negative.
- Of the consultations conducted among HIV-negative MSM tested for hepatitis C (17,405), 87% were MSM – PrEP pilot consultations. The other 13% were MSM – ASG consultations, of which 1,400 (62%) were regular or test-lab consultations among MSM – ASG who had not used PrEP in the past three months, and

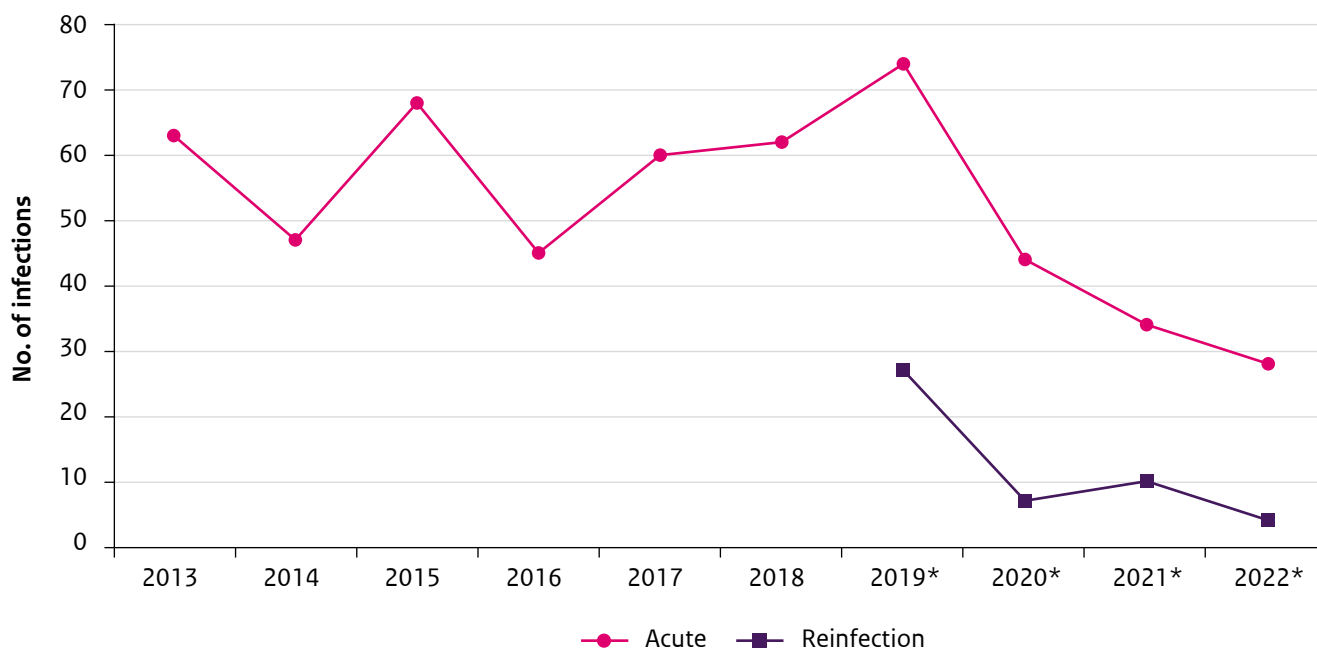
- 854 (38%) were regular or test-lab consultations with MSM – ASG who had used PrEP in the past three months.
- Twenty-eight positive hepatitis C tests (acute/chronic/unknown) were registered at SHCs; 11 among MSM – ASG (3 among HIV-negative MSM – ASG and 8 among known or new HIV-positive MSM – ASG), and 14 among MSM – PrEP pilot.
 - Of the 11 positive tests for MSM – ASG, 4 were determined to be infectious. Of the 14 MSM – PrEP pilot tests, 5 were determined to be infectious. For the remaining 16 positive results in MSM, it was unknown whether the infection was infectious.

10.1.2 Notification data

- In 2022, 482 hepatitis C infections were reported to the RIVM, of which 454 (94%) were chronic/unknown infections and 28 (6%) were acute infections. Of the acute infections, 4 (14%) were reinfections. Acute hepatitis C infections decreased by 62% compared with 2019.
- Sexual contact among MSM remained the most commonly reported transmission route for acute hepatitis C (43%) in 2022.
- Of all acute hepatitis C infections among MSM (12) in 2022, 6 were among HIV-positive MSM (50%).
- Of the 454 chronic/unknown infections in 2022, 132 (29%) were identified among injecting drug users (IDUs), 34 (7%) were cases of vertical transmission, 7 (2%) were cases of occupational accident, 14 (3%) were among MSM, 11 (2%) were among heterosexuals, 1 (0.2%) was a person with unknown sexual risk, and 250 (55%) involved other/unknown risks.

10.2 Notification data: characteristics, risk groups and trends

Figure 10.1 Number of acute hepatitis C infections, 2013-2022

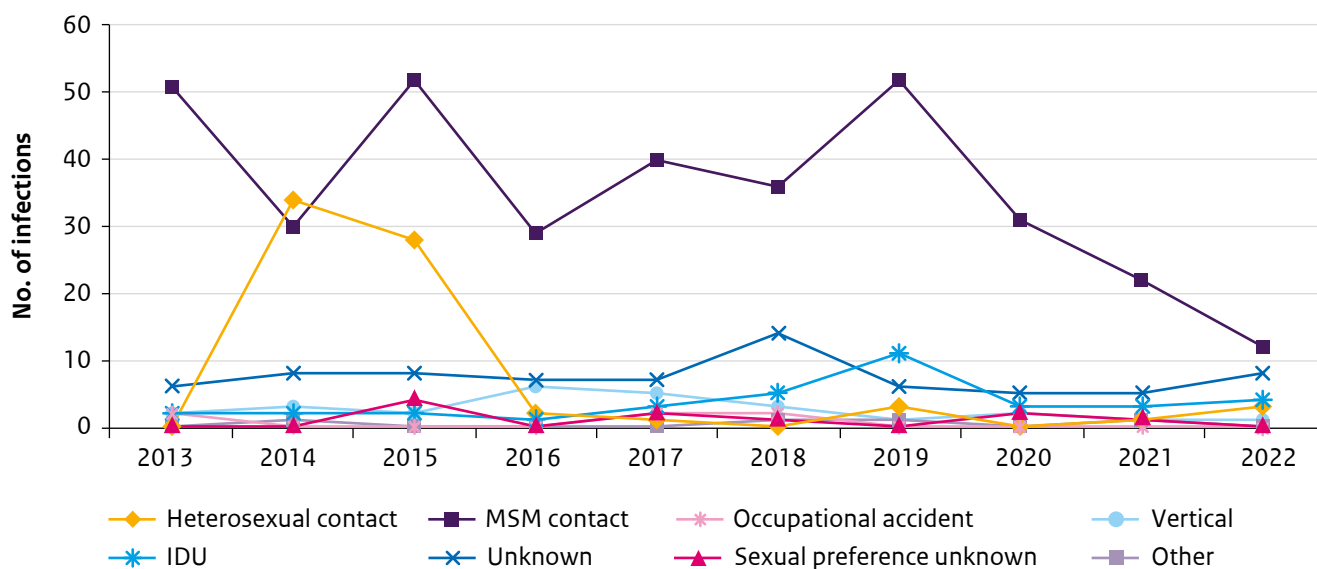


Source: RIVM-OSIRIS, notification data

Footnote: Data from 2022 might be incomplete due to reporting delay (data collected on 10 March 2023).

* Acute includes cases reported as 'acute' or as 'reinfection'.

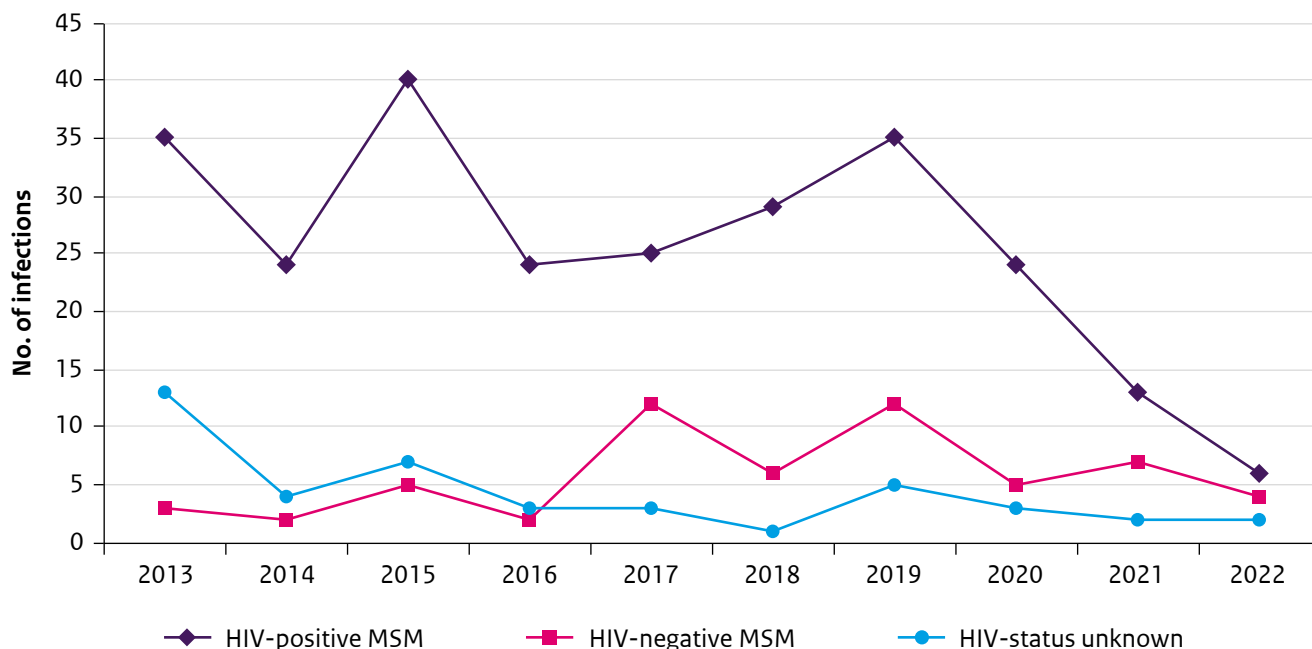
Figure 10.2 Number of acute hepatitis C infections by route of transmission, 2013-2022



Source: RIVM-OSIRIS, notification data

Footnote: Data from 2021 might be incomplete due to reporting delay and/or COVID-19 measures (data collected on 16 March 2023).

Figure 10.3 Number of acute hepatitis C infections in MSM by HIV status, 2013-2022

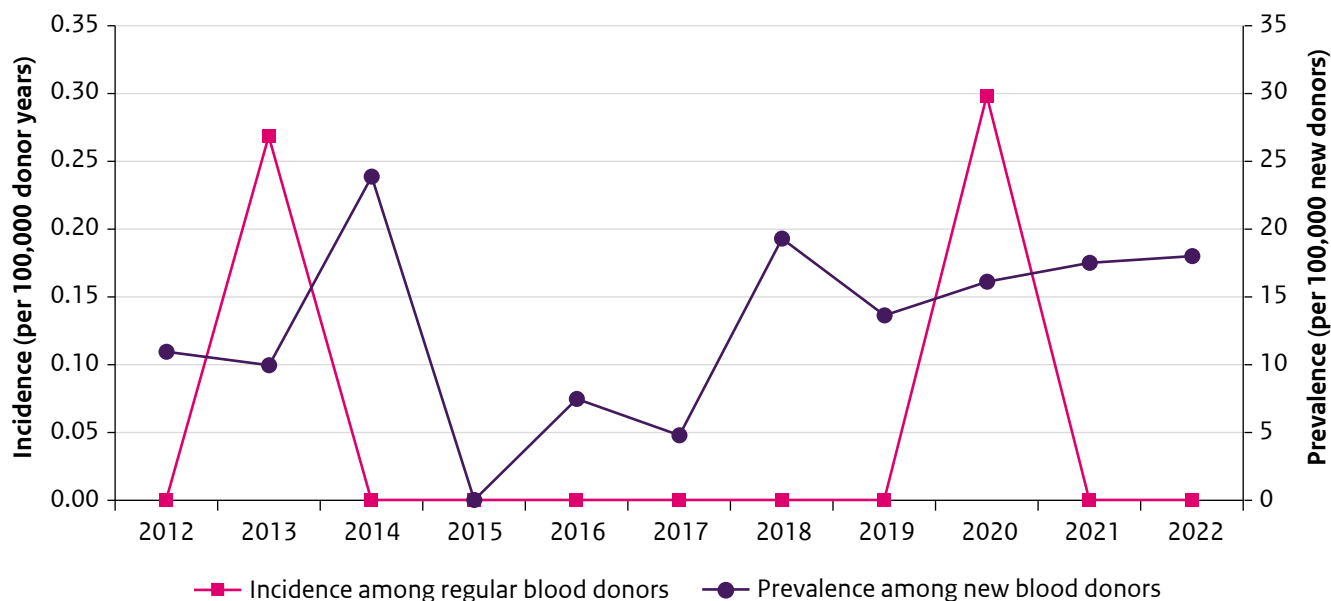


Source: RIVM-OSIRIS, notification data

Footnote: Data from 2022 might be incomplete due to reporting delay and/or COVID-19 measures (data collected on 16 March 2023).

10.3 Blood donors

Figure 10.4 Hepatitis C incidence among regular blood donors and prevalence among new blood donors (per 100,000 donor years and per 100,000 donors) in the Netherlands, 2012-2022



Source: Sanquin

11 Mpox

11.1 Key points

11.1.1 Notification data

- The mpox outbreak in the Netherlands started in May 2022 and peaked with 170 new reported mpox cases per week in July 2022 (week 27). After week 27 a decrease in weekly reported mpox cases was seen.
- In 2022, a total of 1,259 mpox infections were reported to the RIVM, of which 1,160 (92%) were among MSM, 29 (2%) among heterosexual men, 18 (1%) among women, and 52 (4%) among persons for whom sex and type of sexual contact were unknown.
- Of the 1,259 reported mpox infections, 282 (22%) were reported among people living with HIV and 330 (26%) among people who reported using PrEP in the past 6 months.

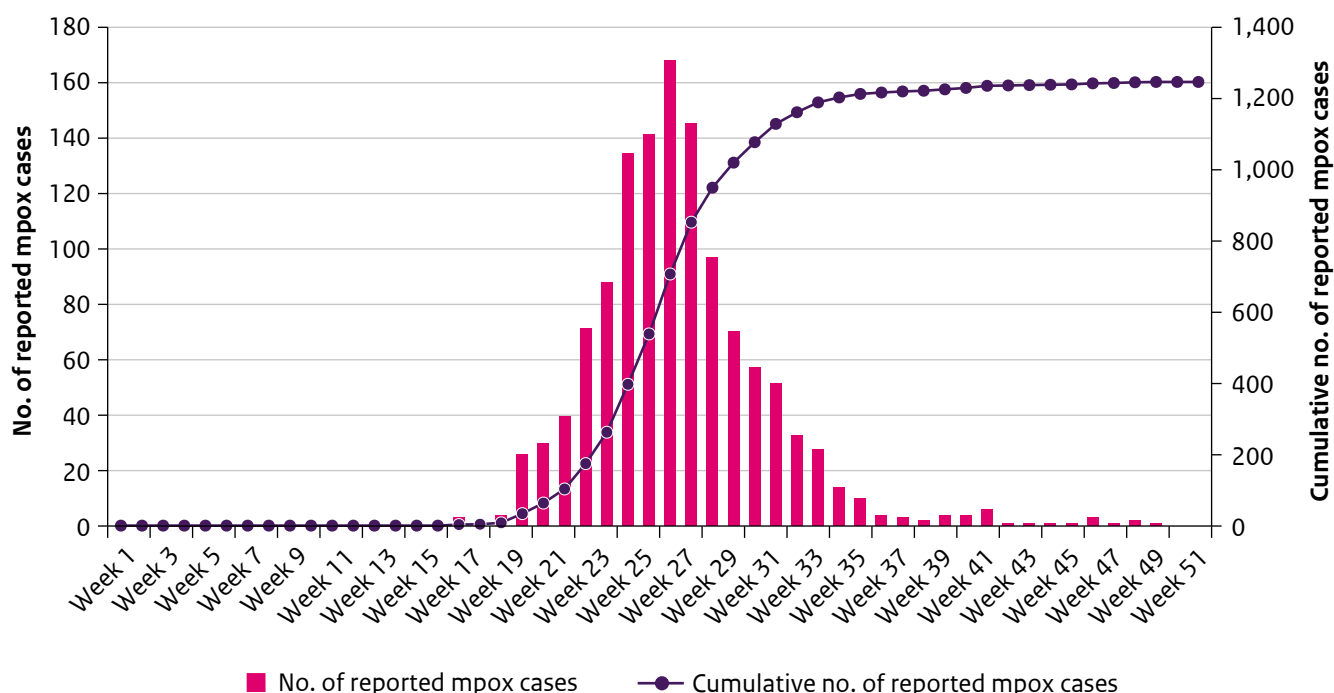
- Sexual contact (including close skin and mucosal contact) was the most reported transmission route for mpox infections (83%) in 2022. In 13% of the cases the route of transmission was unknown.

11.1.2 Other data sources

- On 25 July 2022 the mpox PrEP vaccination campaign started, targeted at MSM and transgender persons at high risk of acquiring an mpox infection.
- In 2022, 29,587 doses of mpox PrEP vaccination were given, of which 17,783 (60%) were first doses and 11,804 (40%) second doses. Reasons why people did not receive a second dose were amongst others previous vaccination for smallpox, previous PEP vaccination or mpox infection.

11.2 Notification data: characteristics, risk groups and trends

Figure 11.1 Weekly number and cumulative number of reported mpox cases, by date of onset, 2022



Source: RIVM-OSIRIS, notification data

Table 11.1 Number of mpox cases by demographics, behavioral characteristics, vaccination status, HIV status and PrEP use, 2022

	Total (N=1.259) n (%)
Sex and type of sexual contact	
Women	18 (1,4)
Heterosexual men	29 (2,3)
MSM	1.160 (92,1)
Unknown*	52 (4,1)
Age group	
≤24	82 (6,5)
25-34	435 (34,6)
35-44	418 (33,2)
45-59	266 (21,1)
≥ 60	58 (4,6)
Region of origin	
The Netherlands	660 (52,4)
Europe other	169 (13,4)
Outside of Europe	307 (24,4)
Unknown	123 (9,8)
Travel history abroad	
No	731 (58,1)
Yes	442 (35,1)
Unknown	86 (6,8)
Ever vaccinated for smallpox (variola)	
No	1.067 (84,7)
Yes	150 (11,9)
Unknown	42 (3,3)
HIV status	
Negative	829 (65,8)
Positive	282 (22,4)
Unknown	148 (11,8)
PrEP use in past 6 months	
No	725 (57,6)
Yes	330 (26,2)
Unknown	204 (16,2)

Source: RIVM-OSIRIS, notification data

* The unknown category contains 51 men with unknown sexual contact and 1 person with unknown sex.

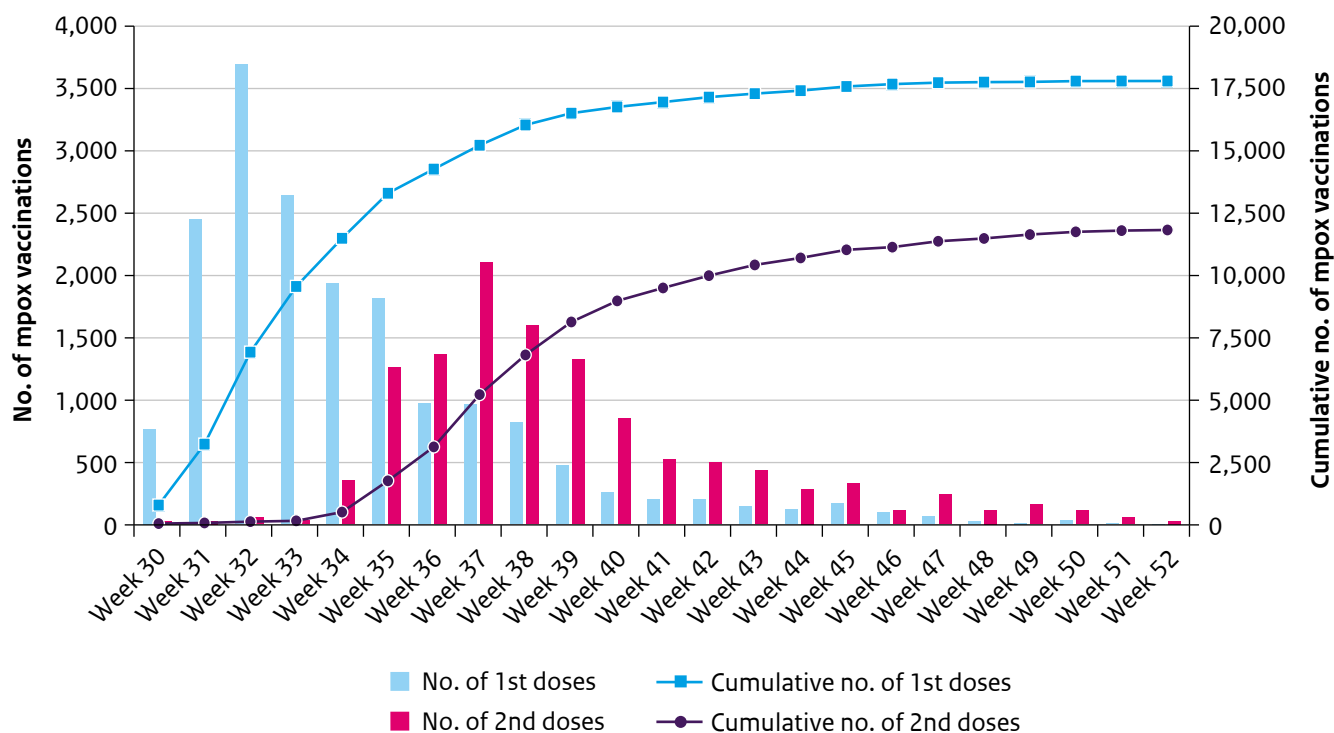
Table 11.2 Proportion of mpox cases by most common route of transmission, 2022

	Total (N=1,259) n (%)
Sexual contact (including close skin and mucosal contact)	1,045 (83.0)
Direct unprotected (without PPE*) physical contact with patient	19 (1.5)
Proximity of less than 1.5 meters with patient, longer than 2 hours (health care or social setting)	29 (2.3)
Family or household contact	9 (0.7)
Other/unknown	157 (12.5)

Source: RIVM-OSIRIS, notification data
* Personal Protective Equipment

11.3 Mpox vaccination

Figure 11.2 Weekly number and cumulative number of first and second mpox PrEP vaccination dose, 2022



Source: RIVM-iMPeX, RIVM-OSIRIS

Footnote 1: In 2022, there were 210 vaccinations without registration of the number of the dose. These are missing from the figure.

Footnote 2: All vaccinations registered with a date before 25-07-2022 have been included in this figure in week 30.

Footnote 3: A small number of vaccinations are missing from persons who did not give permission to share data with the RIVM.

12 Conclusions and recommendations

For the first time since the COVID-19 pandemic, the number of consultations at SHCs in 2022 is higher than the pre-COVID-19 levels, indicating that STI care at the SHCs is recovered. In 2022, the total number of consultations (164,715) at SHCs was 9% higher compared with 2019 (150,782 consultations). The number of consultations in 2022 increased in all groups compared with 2021: 17% among women, 20% among heterosexual men, 20% among MSM – ASG, and 22% among MSM – PrEP pilot. Out of all consultations, 1% was in gender-diverse persons. In 21% of all consultations, one or more STIs were diagnosed, an increase compared to earlier years. An increasing STI positivity has been recorded among women and heterosexual men of all ages since 2019. This was most notable in adolescents.

The COVID-19 pandemic had an impact on the estimated number of STI-related episodes at GPs. The estimated number of episodes of fear of STI as well as the number of STI episodes slightly decreased in 2021 compared with 2020, mainly among those younger than 25 years old. People at risk of an STI were able to find their way to GPs during the pandemic, although to a lesser extent. During the COVID-19 pandemic there might have been a shift towards more online testing, or people had less reasons for STI testing because of changes in sexual behaviour^{17,18}. In a mathematical modelling study, the impact of these COVID-19-related changes on transmission of chlamydia and gonorrhoea among MSM was assessed¹⁹. The disruption in STI care due to COVID-19 might have resulted in a small increase in chlamydia prevalence, but a decrease in gonorrhoea prevalence. Scaling up STI care is imperative to prevent increases in STI transmission. Scaling up of STI care at GPs similar to the scaling up of STI care at SHCs might have taken place, but 2022 figures for GP consultations are not yet available.

This decrease seen at GPs was not seen in data from the annual National Health Survey which showed that testing rates among women, heterosexual men and MSM were comparable between 2021 and 2020. In women, 11% of the 16-29 years age group reported being tested for STI in the past year, which was comparable with 2020 (13%) and with 2019 (14%). Among MSM, reported STI testing

was similar between 2021 and 2020 (23% vs. 21%), as was reported STI testing among heterosexual men aged 16-29 years (5% vs. 4%). The low STI testing rate among young heterosexual men is worrisome for effective infection control and transmission prevention and calls for action to reach this group.

Chlamydia remained the most diagnosed bacterial STI, both at SHCs and GPs. The number of chlamydia tests at SHCs increased by 19% compared with 2021. Of the 24,684 chlamydia diagnoses, 45% were in women, 24% in heterosexual men, 19% in MSM – ASG, 10% in MSM – PrEP and 1% in gender-diverse persons. Chlamydia positivity among heterosexual men at SHCs increased in 2021 to 21% and remained stable in 2022. In women chlamydia positivity steadily increased to 18% in 2022. Chlamydia positivity decreased or remained stable among women and heterosexual men aged 25 years or older but increased among women and heterosexual men aged younger than 25 years. Chlamydia positivity among gender-diverse persons was 11%. Chlamydia positivity among MSM – ASG and MSM – PrEP (11% and 9%, respectively) was slightly lower in 2022 compared to 2021. Twenty-three per cent of MSM in the PrEP pilot were diagnosed with chlamydia at least once in 2022, which indicates high chlamydia transmission dynamics in this group. The number of cases of lymphogranuloma venereum (LGV, the L2 strain of chlamydia which can lead to serious symptoms and complications) among MSM (both ASG and PrEP pilot) increased from 210 in 2021 to 469 in 2022. The percentage of HIV-negative MSM (ASG & PrEP pilot) among LGV positives increased from 37% in 2015 to 74% in 2022. The percentage of asymptomatic rectal LGV increased to 57%.

In 2022, 10,600 gonorrhoea infections were diagnosed at SHCs (14% women, 6% heterosexual men, 53% MSM – ASG, 25% MSM – PrEP pilot and 2% gender-diverse persons). This was an increase of 33% compared with 2021. In 2022, positivity increased to 2.3% in women and 2.4% in heterosexual men, the highest it has been since 2013 among women and similar to positivity in 2019 for heterosexual men. This increase was mostly seen in the second half of 2022. A strong increase in gonorrhoea diagnoses and

¹⁷ [Samenvatting-COSEKS-3.pdf](#)

¹⁸ [Soa/hiv-zorg in coronatijd: Het perspectief van zorgprofessionals](#)

¹⁹ Xiridou M, Heijne J, Adam P, Op de Coul E, Matser A, de Wit J, Wallinga J, van Benthem B. How the Disruption in Sexually Transmitted Infection Care Due to the COVID-19 Pandemic Could Lead to Increased Sexually Transmitted Infection Transmission Among Men Who Have Sex With Men in The Netherlands: A Mathematical Modeling Study. *Sex Transm Dis.* 2022 Feb 1;49(2):145-153. doi: 10.1097/OLQ.0000000000001551.

positivity might be a result of increased transmission after the release of social distancing measures during the COVID-19 pandemic, caught up of testing or a combination of both. Positivity among MSM – ASG increased slightly from 12% in 2021 to 13% in 2022. Among MSM – PrEP pilot the positivity increased from 9% in 2021 to 10% in 2022. Of all unique persons tested among MSM – PrEP pilot in 2022, 24% was gonorrhoea positive in at least one consultation. Antimicrobial resistance to ceftriaxone, the first-choice treatment for gonorrhoea in the Netherlands, was not found in 2022. However, there has been an increase in isolates with slightly reduced susceptibility to ceftriaxone (MIC >0.002 and ≤0.016 mg/L), but not in isolates with higher MIC values. Resistance to azithromycin has been increasing since 2016, up to 27% in 2022. The observed shifts in the MIC distribution, especially in pharyngeal strains, and regional differences underlines the importance of including extragenital infections and all geographic regions in gonococcal resistance surveillance²⁰.

For both chlamydia and gonorrhoea, the increase in the number of diagnoses among women under the age of 25 was notable. This could only partly be explained by the increase in the number of consultations of this group at the SHC, since the positivity also increased. The increase in the number of gonorrhoea cases occurred mostly in the second half of 2022 and continued in the first months of 2023. The increase in the number of diagnoses was seen especially among women under the age of 25, women with high education level and women born in the Netherlands. However, it is important to note that gonorrhoea positivity was still higher in women with low education levels and with a different region of origin. In the same time period, an increase in the number of gonorrhoea cases was also seen in heterosexual men younger than 25, although to a lesser extent than in women. The number of consultations in heterosexual men remain relatively low, and since 2020 more heterosexual men visited the SHC after partner notification. These findings underline the importance of testing and partner notification in these groups.

In 2022, 1,925 syphilis infections were diagnosed at SHCs. Of these, 82% were infectious syphilis. Of infectious syphilis diagnoses, 2% were among women, 2% among heterosexual men, 63% among MSM – ASG, 30% among MSM – PrEP pilot and 2% among gender-diverse persons. In 2022, infectious syphilis positivity among heterosexual men (0.29%) and MSM – ASG (2.3%) was slightly lower compared with 2021 (0.34% and 2.6% respectively).

Among MSM – PrEP pilot, infectious syphilis positivity in 2022 was comparable with 2021 (1.7%). Of all unique persons tested among MSM – PrEP pilot in 2022, 5% tested positive for infectious syphilis in at least one consultation, which underlines the importance of regular STI testing among PrEP users. Although absolute numbers are low in women, positivity increased from 0.07% in 2019 to 0.15% in 2022, corresponding with an increase in diagnoses from 17 in 2019 to 34 in 2022. This is worrisome, considering the potentially devastating consequences of syphilis infection during pregnancy. It is therefore important to carefully monitor syphilis cases in heterosexuals and to actively assist in partner notification, while at the same time ensuring that the syphilis screening programme for pregnant women remains effectively implemented. In 2022, no cases of congenital syphilis were reported, comparable with previous years (0 to 3 per year since 2010).

SHCs have been providing PrEP care to persons at high risk of acquiring HIV, via a national PrEP pilot programme, since August 2019. Between July 2019 and December 31st 2022, 12,195 persons (of whom 97% were MSM) had had a first PrEP consultation; 2,413 persons joined the pilot programme in 2022 and 1,141 persons discontinued participation in the PrEP pilot programme and 4,015 individuals were lost to follow-up. The number of new persons on PrEP increased steadily over time, but new PrEP inclusions are put on hold since the maximum number of inclusions has been reached at most SHCs in 2022. By 31 December 2022, an estimated number of 8,558 individuals participated in the programme. This estimation is more than the maximum number of pilot participants due to a delay in the registration of persons lost to follow-up. Due to the continuing demand for PrEP, waiting lists at SHCs increased, and eligible people willing to use PrEP must be referred to other providers, such as GPs. PrEP care through GPs, however, is still insufficiently accessible. In the meantime, several municipalities provided additional budget to decrease the number of persons on waiting lists. The evaluation of the national PrEP pilot programme showed that PrEP care offered at SHCs reaches a high standard of care. Among persons in the national PrEP pilot programme, 42 new HIV infections were diagnosed since August 2019. Of those, 29 persons were diagnosed at the first PrEP pilot consultation and 13 participants during follow-up. In 2022, there were 10 new HIV infections diagnosed in MSM – PrEP pilot consultations, four at a PrEP start consultation and 6 at a PrEP follow-up consultation.

²⁰ Visser M, Götz HM, van Dam AP, van Benthem BH. Trends and regional variations of gonococcal antimicrobial resistance in the Netherlands, 2013 to 2019. *Euro Surveill.* 2022 Aug;27(34):2200081. doi: 10.2807/1560-7917.ES.2022.27.34.2200081.

Data from the registry of HIV treatment centres of the stichting hiv monitoring showed that the number of new HIV diagnoses has been declining for years. This decline could be explained by a number of factors, such as the efforts to diagnose and treat HIV infections as early as possible, and as a result of the broader implementation and expansion of the national PrEP pilot programme and the generally improved access to PrEP. In 2022, the number of newly registered HIV positive individuals increased, which is partly related to migration due to the war in Ukraine. The increase may also be because there were a number of HIV positive persons already in care but not yet registered to the SHM, whom are now registered, or because of increased testing due to the release of the COVID-19 measures. The influence of these different trends on the number of new HIV infections, combined with changes in sexual behaviour and increased travel, are difficult to disentangle. Furthermore, at the time of writing this report, the SHM data for 2022 are not yet complete, and updating data may reveal other trends in the upcoming months. The percentage of late HIV diagnoses (CD4 < 350/mm³ or AIDS) stabilised in 2022 among heterosexual men around 70%, declined among MSM (from 47% to 44%), but was slightly higher among women (56% compared to 52%).

Compared with 2021, the number of acute and chronic hepatitis B infections increased in 2022. Furthermore, the number of MSM and sex workers entering the hepatitis B vaccination programme for risk groups increased compared with 2021 but are lower than number of persons vaccinated in 2019. The number of acute and chronic hepatitis C infections were comparable with 2021 but much lower compared to 2019.

In early May 2022, a global outbreak of mpox started among persons, mainly MSM, without travel history to regions known to be enzootic for mpox. In the Netherlands, the first case of mpox was diagnosed in May 2022 and the outbreak peaked in July 2022, whereafter a sharp decline in cases occurred just before pre-exposure prophylaxis (PrEP) vaccination had been started. In total, 1,259 mpox infections were reported to the RIVM in 2022, of which 92% were among MSM²¹. Since July 2022, over 17,500 persons received at least one dose of PrEP vaccination.

The national action plan on STI, HIV and sexual health was updated in 2022²² and the Ministry of Health published a policy letter underlining the importance of a positive approach towards sexual health²³. The main goals are maintenance and improvement of the monitoring and surveillance of sexual health, sexual health and prevention, testing and treatment of STIs including HIV.

Based on the figures and trends, and as mentioned in the updated national action plan and policy letter, we recommend the following:

- Accessible STI testing with a focus on the inclusion of heterosexual men, persons with low education and key populations with an increased risk of acquiring an STI
- Maintain strong STI control by facilitating 1) easy access to care and testing, 2) rapid and reliable results, and 3) effective treatment and prevention.
- Continue the monitoring of STI and HIV infections and sexual behaviour among key populations including PrEP users, in order to detect possible changes early.
- Stimulate the systematic culturing of *Neisseria gonorrhoeae* for early detection and prevention of the transmission of resistant strains.

²¹ van Ewijk CE, Miura F, van Rijkevorseel G, de Vries HJ, Welkers MR, van den Berg OE, Friesema IH, van den Berg PR, Dalhuisen T, Wallinga J, Brandwagt D, van Cleef BA, Vennema H, Voordouw B, Koopmans M, van der Eijk AA, Swaan CM, Te Wierik MJ, Leenstra T, Op de Coul E, Franz E; Members of the Dutch Mpox Response Team. Mpox outbreak in the Netherlands, 2022: public health response, characteristics of the first 1,000 cases and protection of the first-generation smallpox vaccine. *Euro Surveill.* 2023 Mar;28(12):2200772. doi: 10.2807/1560-7917.ES.2023.28.12.2200772

²² RIVM. [Update Nationaal actieplan Soa, Hiv, Seksuele gezondheid 2023-2027.](#)

²³ <https://www.rijksoverheid.nl/documenten/kamerstukken/2022/10/05/kamerbrief-over-beleidsvisie-seksuele-gezondheid>

APPENDICES

Appendix A List of abbreviations

ACS	Amsterdam Cohort Studies
AIDS	Acquired Immune Deficiency Syndrome
ASG	Aanvullende Seksuele Gezondheidszorg regeling, Additional Sexual Healthcare regulation
ATHENA	AIDS Therapy Evaluation in the Netherlands
CBS	Centraal Bureau voor de Statistiek, Statistics Netherlands
Cib	Centrum Infectieziektebestrijding, Centre for Infectious Disease Control
COVID-19	Ziekte veroorzaakt door het coronavirus 2019, Coronavirus disease 2019
CSG	Centrum Seksuele Gezondheid
ECDC	European Centre for Disease Prevention and Control
EUCAST	European Committee on Antimicrobial Susceptibility Testing
GDPR	General Data Protection Regulation
GGD	Gemeentelijke Geneeskundige Dienst, Public Health Service
GP	General Practitioner
GRAS	Gonococcal Resistance to Antimicrobials Surveillance programme
HBV	Hepatitis B Virus
HCV	Hepatitis C Virus
HIV	Human Immunodeficiency Virus
HSV	Herpes Simplex Virus
ICPC	International Classification of Primary Care
IDU	Injecting Drug User
IgM	Immunoglobulin M
IDS	Centre for research Infectious Diseases diagnostics and Screening
LCI	Landelijke Coördinatie Infectieziektebestrijding, National Coordination Centre for Communicable Disease Control
LGV	Lymfogranuloma venereum, Lymphogranuloma venereum
MIC	Minimum Inhibitory Concentration
MSM	Men who have Sex with Men
NAAT	Nucleic Acid Amplification Test
Nivel	Nederlands Instituut voor onderzoek van de Gezondheidszorg, Netherlands Institute for Health Services Research
Nivel-PCD	Nivel Primary Care Database
PCR	Polymerase Chain Reaction
PEP	Post-Exposure Prophylaxis
PHS	Public Health Service
PID	Pelvic Inflammatory Disease
PrEP	Pre-Expositie Profylaxe, Pre-Exposure Prophylaxis
PSIE	Prenatale Screening Infectieziekten en Erythrocytenimmunisatie, Prenatal Screening for Infectious Diseases and Erythrocyte Immunisation
RIVM	Rijksinstituut voor Volksgezondheid en Milieu, National Institute for Public Health and the Environment
SHC	Sexual Health Centre
SHM	Stichting HIV Monitoring, HIV Monitoring Foundation
soa	Seksueel Overdraagbare Aandoening(en)
SOAP	Seksueel Overdraagbare Aandoeningen Peilstation, Online STI registration system
STI	Sexually Transmitted Infection
TNO	Nederlandse Organisatie voor toegepast-natuurwetenschappelijk onderzoek

Appendix B STI case-definitions of Sexual Health Centres

Chlamydia

Chlamydia diagnosis is based on positive nucleic acid amplification test (NAAT) on genital (vagina/urine) material or on indication extragenital (anus, oropharynx) material collected either by a professional or self-collected by patients. Chlamydia diagnosis in a person is defined by a combination of genital and extragenital testing.

Lymphogranuloma venereum

LGV is diagnosed based on a positive PCR for *Chlamydia trachomatis* species, followed by genotyping assessing Ct serotype L1, L2 or L3.

Gonorrhoea

Gonorrhoea diagnosis is based on positive nucleic acid amplification test (NAAT) on genital (vagina/urine) material or on indication extragenital (anus, oropharynx) material collected either by a professional or self-collected by patients. Gonorrhoea diagnosis in a person is defined by a combination of genital and extragenital testing.

Syphilis

Syphilis diagnosis is based on a serological screening by Treponemal tests (Treponemal tests: TPHA/TPPA or EIA) followed by IgG or IgM-westernblot. Activity of the infection is assessed by non treponemal tests like RPR/VDRL. NAAT is indicated in primary infection. The stage of syphilis is defined by clinicians according to symptoms: Lues stage I, II, latens recens (infection acquired in the last 12 months). These three stages are defined as infectious syphilis. Lues stage unknown or lues latens tarda are non-infectious stages of syphilis diagnosis.

HIV

HIV is diagnosed based on a positive 4th generation HIV combotest (anti-HIV and p24 Antigen), followed by an immunoblot on the same sample to confirm presence of antibodies and to distinguish between HIV-1 and HIV-2. On indication, HIV PCR is performed to confirm an infection.

Genital warts

Genital warts is a clinical diagnosis based on symptoms.

Genital herpes

Genital herpes diagnostic is primarily based on clinical symptoms, and confirmed by herpes NAAT from lesions to confirm the diagnosis and differentiate Herpes Simplex Virus 1 (HSV1) and HSV2.

Hepatitis B

Hepatitis B screening is performed by detection of Anti-HBcore antibodies. In case of positive screening-test, HBs-antigen is tested to diagnose infectious hepatitis B.

Hepatitis C

Hepatitis C is diagnosed based on several steps of a combination of serological and molecular methods, depending on possible/suspected time-point of exposure. If exposure is more than 3 months before consultation, diagnosis is based on an anti-HCV-test, and confirmed with HCV-immunoblot or HCV-RNA. If exposure is less than 3 months before consultation or when the patient immunity is suppressed, diagnosis is based on HCV-RNA.

Mpox

Mpox is diagnosed based on a positive PCR. There are several PCR protocols for diagnosis, which are either orthopox-specific with subsequent identification by sequence analysis, or mpox-specific. When using an orthopox-specific PCR, and in case of a positive test, one of the positive materials (preferably the one with the lowest Ct value) should be sent to the RIVM or Erasmus MC for confirmation of mpox.

Appendix C National surveillance of Sexual Health Centres

Coordinating SHCs

GGD Amsterdam	E. Hoornenborg
GGD Haaglanden	M. Suijker
GGD Groningen	F. de Groot & H. Ardesch
GGD Hart voor Brabant	S. Van Bergen & F. Lagendijk
GGD Gelderland-Zuid	T. de Glee
GGD Rotterdam-Rijnmond	S.M. Rovers
GGD Regio Utrecht	L. van Neer & M. van den Elshout
GGD Zuid Limburg	C.J.P.A. Hoebe & M. Steenbakkers

Regional SHCs

GGD Brabant-Zuidoost	GGD Hollands-Midden	GGD Zaanstreek-Waterland
GGD Drenthe	GGD Hollands Noorden	GGD Zeeland
GGD Flevoland	GGD Kennemerland	GGD Zuid-Holland Zuid
GGD Fryslan	GGD Twente	GGD Zuid Limburg
GGD Noord- en Oost-Gelderland	GGD West-Brabant	Veiligheidsregio Limburg Noord
GGD Gelderland-Midden	GGD IJsselland	

Laboratories

Albert Schweitzer Ziekenhuis Dordrecht
CERTe Medische Diagnostiek & Advies
Deventer ziekenhuis
Diagnostiek voor U Eindhoven
Erasmus MC Rotterdam
Gelre Ziekenhuizen Apeldoorn
Gelre Ziekenhuizen
Groene Hart Ziekenhuis Gouda
Haaglanden Medisch Centrum
Isala klinieken Zwolle
Jeroen Bosch Ziekenhuis 's-Hertogenbosch
Labmicta, medisch microbiologisch laboratorium
Laboratoria Pathologische Anatomie en Medische Microbiologie Veldhoven
Laboratorium Microbiologie Twente Achterhoek
Laboratorium voor Infectieziekten Groningen
Laboratorium voor Medische Microbiologie en Immunologie Tilburg, Elisabeth-TweeSteden Ziekenhuis
Leiden Universitair Medisch Centrum
Maastricht Universitair Medisch Centrum (MUMC+)
Meander Medisch Centrum Amersfoort
Medisch Centrum Alkmaar
Microvida, Tilburg
Reinier Haga Medisch Diagnostisch Centrum
Star-SHL Etten-Leur/Rotterdam (GGD Zeeland en West-Brabant)
Streeklaboratorium GGD Amsterdam
Streeklaboratorium Haarlem
Streeklaboratorium voor de Volksgezondheid Amsterdam
Streeklaboratorium voor de Volksgezondheid Deventer
Streeklaboratorium voor de Volksgezondheid Haarlem
Radboud Universitair Medisch Centrum
Rijnstate Microbiologisch en Immunologisch Laboratorium (MIL)
Zaans Medisch Centrum Zaandam
Ziekenhuis Gelderse Vallei Ede
Ziekenhuis Rivierenland

Appendix D Stichting HIV Monitoring

Clinical centres

* denotes site coordinating physician

Amsterdam UMC, Amsterdam:

HIV treating physicians: M. van der Valk*, M.A. van Agtmael, M. Bomers, S.E. Geerlings, A. Goorhuis, V.C. Harris, J.W. Hovius, B. Lemkes, F.J.B. Nellen, E.J.G. Peters, T. van der Poll, J.M. Prins, K.C.E. Sigaloff, V. Spoorenberg, M. van Vugt, W.J. Wiersinga, F.W.M.N. Wit.

HIV nurse consultants: C. Bruins, J. van Eden, I.J. Hylkema-van den Bout, L.M. Laan, F.J.J. Pijnappel, S.Y. Smalhout, M.E. Spelbrink, A.M. Weijzenfeld.

HIV clinical virologists/chemists: N.K.T. Back, M.T.E. Cornelissen, R. van Houdt, M. Jonges, S. Jurriaans, C.J. Schinkel, M.R.A. Welkers, K.C. Wolthers.

Emma Kinderziekenhuis (Amsterdam UMC, AMC site), Amsterdam:

HIV treating physicians: M. van der Kuip, D. Pajkr.

HIV nurse consultants: F.M. Hessing, A.M. Weijzenfeld.

Admiraal De Ruyter Ziekenhuis, Goes:

HIV treating physicians: M. van den Berge*, A. Stegeman.

HIV nurse consultants: S. Baas, L. Hage de Looff.

HIV clinical virologists/chemists: A. van Arkel, J. Stohr, B. Wintermans.

Catharina Ziekenhuis, Eindhoven:

HIV treating physicians: M.J.H. Pronk*, H.S.M. Ammerlaan.

HIV nurse consultants: E.S. de Munnik.

HIV clinical virologists/chemists: B. Deiman, A.R. Jansz, V. Scharnhorst, J. Tjhie, M.C.A. Wegdam.

DC Klinieken Lairese – Hiv Focus Centrum, Amsterdam:

HIV treating physicians: M. van der Valk*, A. van Eeden, E. Hoornenborg, J. Nellen.

HIV nurse consultants: W. Alers, L.J.M. Elsenburg, H. Nobel.

HIV clinical virologists/chemists: C.J. Schinkel.

ETZ (Elisabeth-TweeSteden Ziekenhuis), Tilburg:

HIV treating physicians: M.E.E. van Kasteren*,

M.A.H. Berrevoets, A.E. Brouwer.

HIV nurse specialist: B.A.F.M. de Kruijf-van de Wiel.

HIV nurse consultants: A. Adams, M. Pawels-van Rijkevoorsel.

HIV data collection: B.A.F.M. de Kruijf-van de Wiel.

HIV clinical virologists/chemists: A.G.M. Buiting, J.L. Murck.

Erasmus MC, Rotterdam:

HIV treating physicians: C. Rokx*, A.A. Anas, H.I. Bax, E.C.M. van Gorp, M. de Mendonça Melo, E. van Nood, J.L. Nouwen, B.J.A. Rijnders, C.A.M. Schurink, L. Slobbe, T.E.M.S. de Vries-Sluijs.

HIV nurse consultants: N. Bassant, J.E.A. van Beek, M. Vriesde, L.M. van Zonneveld.

HIV data collection: J. de Groot.

HIV clinical virologists/chemists: J.J.A. van Kampen, M.P.G. Koopmans, J.C. Rahamat-Langendoen.

Erasmus MC Sophia Kinderziekenhuis, Rotterdam:

HIV treating physicians: P.L.A. Fraaij, A.M.C. van Rossum, C.L. Vermont.

HIV nurse consultants: L.C. van der Knaap.

Flevoziekenhuis, Almere:

HIV treating physicians: J. Branger*, R.A. Douma.

HIV nurse consultant: A.S. Cents-Bosma.

HagaZiekenhuis, Den Haag:

HIV treating physicians: E.F. Schippers*, C. van Nieuwkoop.

HIV nurse consultants: J. Geilings, S. van Winden.

HIV data collection: G. van der Hut.

HIV clinical virologists/chemists: N.D. van Burgel.

HMC (Haaglanden Medisch Centrum), Den Haag:

HIV treating physicians: E.M.S. Leyten*, L.B.S. Gelinck, F. Mollema.

HIV nurse consultants: G.S. Wildenbeest.

HIV clinical virologists/chemists: T. Nguyen.

Isala, Zwolle:

HIV treating physicians: P.H.P. Groeneveld*, J.W. Bouwhuis, A.J.J. Lammers.

HIV nurse consultants: A.G.W. van Hulzen, S. Kraan, M.S.M. Kruiper.

HIV data collection: G.L. van der Blik, P.C.J. Bor.

HIV clinical virologists/chemists: S.B. Debast, G.H.J. Wagenvoort.

Leids Universitair Medisch Centrum, Leiden:

HIV treating physicians: A.H.E. Roukens*, M.G.J. de Boer, H. Jolink, M.M.C. Lambregts, H. Scheper.

HIV nurse consultants: W. Dorama, N. van Holten.

HIV clinical virologists/chemists: E.C.J. Claas, E. Wessels.

Maasstad Ziekenhuis, Rotterdam:

HIV treating physicians: J.G. den Hollander*, R. El Moussaoui, K. Pogany.

HIV nurse consultants: C.J. Brouwer, D. Heida-Peters, E. Mulder, J.V. Smit, D. Struik-Kalkman.

HIV data collection: T. van Niekerk.

HIV clinical virologists/chemists: O. Pontesilli, C. van Tienen.

Maastricht UMC+, Maastricht:

HIV treating physicians: S.H. Lowe*, A.M.L. Oude Lashof, D. Posthouwer, M.E. van Wolfswinkel.

HIV nurse consultants: R.P. Ackens, M. Elasri, K. Pintaric, J. Schippers.

HIV clinical virologists/chemists: T.R.A. Havenith, M. van Loo.

Medisch Centrum Leeuwarden, Leeuwarden:

HIV treating physicians: M.G.A. van Vonderen*, L.M. Kampschreur.

HIV nurse consultants: M.C. van Broekhuizen.

HIV clinical virologists/chemists: A. Al Moujahid.

Medisch Spectrum Twente, Enschede:

HIV treating physicians: G.J. Kootstra*, C.E. Delsing.

HIV nurse consultants: M. van der Burg-van de Plas, L. Scheiberlich.

Noordwest Ziekenhuisgroep, Alkmaar:

HIV treating physicians: W. Kortmann*, G. van Twillert*, R. Renckens, J. Wagenaar.

HIV nurse consultants & HIV data collection: D. Ruiter-Pronk, F.A. van Truijen-Oud.

HIV clinical virologists/chemists: J.W.T. Cohen Stuart, M. Hoogewerf, W. Rozemeijer, J.C. Sinnige.

OLVG, Amsterdam:

HIV treating physicians: K. Brinkman*, G.E.L. van den Berk, K.D. Lettinga, M. de Regt, W.E.M. Schouten, J.E. Stalenhoef, J. Veenstra, S.M.E. Vrouwenraets.

HIV nurse consultants: H. Blaauw, G.F. Geerders, M.J. Kleene, M. Knapen, M. Kok, I.B. van der Meché, A.J.M. Toonen, S. Wijnands, E. Wttewaal.

HIV clinical virologists: D. Kwa, T.J.W. van de Laar.

Radboudumc, Nijmegen:

HIV treating physicians: R. van Crevel*, K. van Aerde, A.S.M. Dofferhoff, S.S.V. Henriët, H.J.M. ter Hofstede, J. Hoogerwerf, O. Richel.

HIV nurse consultants: M. Albers, K.J.T. Grintjes-Huisman, M. de Haan, M. Marneef.

HIV clinical virologists/chemists: M. McCall.

HIV clinical pharmacology consultant: D. Burger.

Rijnstate, Arnhem:

HIV treating physicians: E.H. Gisolf*, M. Claassen, R.J. Hassing.

HIV nurse consultants: G. ter Beest, P.H.M. van Bentum, Y. Neijland, M. Valette.

HIV clinical virologists/chemists: C.M.A. Swanink, M. Klein Velderman.

Spaarne Gasthuis, Haarlem:

HIV treating physicians: S.F.L. van Lelyveld*, R. Soetekouw.

HIV nurse consultants: L.M.M. van der Prijt, J. van der Swaluw.

HIV clinical virologists/chemists: J.S. Kalpoe, A. Wagemakers, A. Vahidnia.

Medisch Centrum Jan van Goyen, Amsterdam:

HIV treating physicians: F.N. Lauw, D.W.M. Verhagen.

HIV nurse consultants: M. van Wijk.

Universitair Medisch Centrum Groningen, Groningen:

HIV treating physicians: W.F.W. Bierman*, M. Bakker,

R.A. van Bentum, M.A. van den Boomgaard,

J. Kleinnijenhuis, E. Kloeze, A. Middel, D.F. Postma,

H.M. Schenk, Y. Stienstra, M. Wouthuyzen-Bakker.

HIV nurse consultants: A. Boonstra, M.M.M. Maerman,

D.A. de Weerd.

HIV clinical virologists/chemists: K.J. van Eije, M. Knoester,

C.C. van Leer-Buter, H.G.M. Niesters.

Beatrix Kinderziekenhuis (Universitair Medisch Centrum Groningen), Groningen:

HIV treating physicians: B.R. Brandsema, E.H. Schölvinc, A.R. Verhage.

HIV nurse consultants: H. de Jonge.

HIV clinical virologists/chemists: M. Knoester, C.C. van Leer-Buter, H.G.M. Niesters.

Universitair Medisch Centrum Utrecht, Utrecht:

HIV treating physicians: T.Mudrikova*, R.E. Barth,

A.H.W. Bruns, P.M. Ellerbroek, M.P.M. Hensgens,

J.J. Oosterheert, E.M. Schadd, A. Verbon, B.J. van Welzen.

HIV nurse consultants: B.M.G. Griffioen-van Santen,

I. de Kroon.

HIV clinical virologists/chemists: F.M. Verduyn Lunel,

A.M.J. Wensing.

Wilhelmina Kinderziekenhuis, UMC Utrecht, Utrecht:

HIV treating physicians: S.P.M. Geelen, Y.G.T. Loeffen,

T.F.W. Wolfs.

HIV nurse consultants: M. Kok.

HIV clinical virologists/chemists: F.M. Verduyn Lunel,

A.M.J. Wensing.

Curaçao Medical Center, Willemstad (Curaçao):

HIV treating physicians: E.O.W. Rooijakkers,
D. van de Wetering.

HIV nurse consultants: A. Alberto.

Data collection: I. der Meer.

Coordinating center:

Board of directors: M. van der Valk, S. Zaheri.

HIV data analysis: A.C. Boyd, D.O. Bezemer, A.I. van Sighem,
C. Smit, F.W.M.N. Wit.

HIV data management and quality control: M.M.J. Hillebregt,
T.J. Woudstra, T. Rutkens.

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L. van de Sande, K.M. Visser, S.T. van der Vliet.

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M. van den Akker, M. Akpomukai, R. Alexander,
Y.C.M. Bakker, A. El Berkaoui, M. Bezemer-Goedhart,
E.A. Djoechro, L.E. Koster, C.R.E. Lodewijk, E.G.A. Lucas,
S. van Meerveld-Derks, H. Mulder, L. Munjishvili,
B.M. Peeck, C.M.J. Ree, R. Regtop, A.F. van Rijk,
Y.M.C. Ruijs-Tiggelman, P.P. Schnörr, M.J.C. Schoorl,
E.M. Tuijn, R. van Veen, E.C.M Witte.

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Appendix E Nivel Primary Care Database (Nivel-PCD)

Data collection and processing

Rodrigo Davids

Drs. Yvette Weesie

Researchers

Dr. Joost Vanhommerig

Project management

Dr. Bart Knottnerus

Prof. Dr. Jeroen Hasselaar

Appendix F STI publications (co-)authored by RIVM employees 2022

Contribution of sexual health services to hepatitis B detection and control (Netherlands, 2008-2016).

Raven, S. ; Hautvast, J. ; Yiek, W.K. ; Veldhuijzen, I. ; van Steenberghe, J. ; van Aar, F. ; Hoebe, C.J.P.A. ; Sex Transm Infect 2022; doi: 10.1136/sextrans-2022-055639.

Controversies and evidence on Chlamydia testing and treatment in asymptomatic women and men who have sex with men: a narrative review. Dukers-Muijers, N.H.T.M. ; Evers, Y.J. ; Hoebe, C.J.P.A. ; Wolffs, P.F.G. ; de Vries, H.J.C. ; Hoenderboom, B. ; Heijne, J. ; van Bergen ; et al. BMC Infect Dis 2022; 22(1):255. doi: 10.1186/s12879-022-07171-2.

Decrease in viral hepatitis diagnoses during the COVID-19 pandemic in the Netherlands. Sonneveld, M.J. ; Veldhuijzen, I.K. ; van de Laar, T.J.W. ; Op de Coul, E.L.M. ; van der Meer, A.J. ; J Hepatol 2022; 77(3):896-897. doi: 10.1016/j.jhep.2021.04.015.

Determinants associated with viable genital or rectal Chlamydia trachomatis bacterial load (FemCure).

Janssen, K.J.H. ; Wolffs, P.F.G. ; Hoebe, C.J.P.A. ; Heijman, T. ; Gotz, H.M. ; de Vries, H.J. ; et al. Sex Transm Infect 2022; 98(1):17-22. doi: 10.1136/sextrans-2020-054533.

Determinants of PrEP Uptake, Intention and Awareness in the Netherlands: A Socio-Spatial Analysis. Wang, H. ; Shobowale, O. ; den Daas, C. ; Op de Coul, E. ; et al. Int J Environ Res Public Health 2022; 19(14):8829. doi: 10.3390/ijerph19148829.

Eligibility criteria vs. need for pre-exposure prophylaxis: a reappraisal among men who have sex with men in Amsterdam, the Netherlands. de la Court, F. ; Boyd, A. ; van Wees, D.A. ; van Benthem, B.H.B. ; Xiridou, M. ; et al. Epidemiol Infect 2022; 150:e190. doi: 10.1017/S0950268822001741.

Estimated incubation period for monkeypox cases confirmed in the Netherlands, May 2022. Miura, F. ; van Ewijk, C.E. ; Backer, J.A. ; Xiridou, M. ; Franz, E. ; Op de Coul, E. ; Brandwagt, D. ; van Cleef, B. ; van Rijckevorsel, G. ; Swaan, C. ; van den Hof, S. ; Wallinga, J. ; Euro Surveill 2022; 27(24):2200448. doi: 10.2807/1560-7917.ES.2022.27.24.2200448.

Estimating the potential to prevent locally acquired HIV infections in a UNAIDS Fast-Track City, Amsterdam.

Blenkinsop, A. ; Monod, M. ; van Sighem, A. ; Pantazis, N. ; Op de Coul, E. ; et al. Elife 2022; 11:e76487. doi: 10.7554/eLife.76487.

Frequency of Chlamydia trachomatis and Neisseria gonorrhoeae in Patients with Imminent Preterm Delivery on the Island of Curaçao.

Hage, A. ; Juliana, N.C.A. ; Steenhof, L. ; Voigt, R.R. ; Morre, S.A. ; et al. Pathogens 2022; 11(6):670. doi: 10.3390/pathogens11060670.

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Leenen, J. ; Wijers, J.N.A.P. ; den Daas, C. ; de Wit, J. ; Hoebe, C.J.P.A. ; Dukers-Muijers, N.H.T.M. ; BMJ Open 2022; 12(1):e049175. doi: 10.1136/bmjopen-2021-049175.

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Xiridou, M. ; Heijne, J. ; Adam, P. ; Op de Coul, E. ; Matser, A. ; de Wit, J. ; Wallinga, J. ; van Benthem, B. ; Sex Transm Dis 2022; 49(2):145-53.

Identifying STI risk groups based on behavioral and psychological characteristics among heterosexuals during the COVID-19 pandemic.

van Wees, D.A. ; Godijk, N.G. ; den Daas, C. ; Kretzschmar, M.E.E. ; Heijne, J.C.M. ; Sex Transm Dis 2022; 49(2):154-9. doi: 10.1097/OLQ.0000000000001550.

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The impact of the COVID-19 pandemic on hepatitis B virus vaccination and transmission among men who have sex with men: A mathematical modelling study. Xiridou, M. ; Adam, P. ; Meiberg, A. ; Visser, M. ; Op de Coul, E. ; et al. Vaccine 2022; 40(33):4889-4896. doi: 10.1016/j.vaccine.2022.06.075.

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Vaccine effectiveness following routine immunization with bivalent HPV vaccine: Protection against incident genital HPV infections from a reduced-dosing schedule. Hoes, J. ; King, A.J. ; Schurink-van 't Klooster, T.M. ; Berkhof, J. ; Bogaards, J.A. ; de Melker, H.E. ; J Infect Dis 2022; 226(4):634-643. doi: 10.1093/infdis/jiab250.

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