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

Sexually transmitted infections in the Netherlands in 2023

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RIVM report 2024-0038

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Colophon

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Synopsis

Sexually transmitted infections in the Netherlands in 2023

In 2023, the number of people tested at a Sexual Health Centre (SHC) for a sexually transmitted infection (STI) increased by 4 per cent compared to 2022. The percentage that tested positive for an STI (21 per cent) was the same as in 2022. Individuals who had been notified of an STI by a partner and individuals with symptoms were most likely to have an STI.

In this overview, RIVM describes the developments of STIs in the Netherlands, including the number of tests and diagnoses per STI at the SHCs. In 2023, there were a total of 172,113 consultations. 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 is a five-year long pilot, in which PrEP users are tested for STIs every three months (MSM-PrEP).

Chlamydia
There were 24,048 chlamydia diagnoses in 2023, slightly less than in 2022 (24,684). The percentage of women with chlamydia decreased from 17.9 per cent in 2022 to 16.8 per cent in 2023. The percentage of heterosexual men with chlamydia decreased from 21.2 per cent in 2022 to 19.6 per cent in 2023. The percentages of MSM and MSM-PrEP with chlamydia decreased to 10.2 and 9.1 per cent respectively (10.9 and 9.4 per cent respectively in 2022).

Gonorrhoea
The number of gonorrhoea diagnoses (13,853) was much higher than in 2022 (10,600), an increase of 31 per cent. The percentages of women and heterosexual men with gonorrhoea both increased in 2023, to 4.1 and 3.5 per cent respectively (2.3 and 2.4 per cent respectively in 2022). This is the highest percentage among women since 2014. The increase started in the second half of 2022 and continued throughout 2023. The percentage among MSM increased to 14.1 per cent in 2023 (12.8 per cent in 2022). Among MSM-PrEP, the percentage increased from 9.8 per cent in 2022 to 11.7 per cent in 2023. No antibiotic resistance to the current 'first-choice' antibiotic for gonorrhoea (ceftriaxone) was reported.

Syphilis
There were also more syphilis diagnoses in 2023 (1,693) than in 2022 (1,574). The percentage of MSM with syphilis was 2.3 per cent in 2023, the same as in 2022. Among MSM-PrEP, this percentage was 1.8 per cent in 2023, slightly higher than in 2022 (1.7 per cent). The number of diagnoses among women and heterosexual men remained low in 2023: 38 and 43 diagnoses respectively.

HIV
In 2023, 141 people were diagnosed with HIV, slightly less than in 2022 (144). Of these diagnoses, 122 were among MSM (87 per cent). The number of people with HIV who came to an HIV treatment centre for the first time in 2023 ('in care') was 987, approximately the same as in 2022 (997).

PrEP
In the PrEP pilot, 13,715 individuals (96 per cent MSM) had a first PrEP consultation, of whom 1,521 in 2023. On 31 December 2023, approximately 8,496 persons were participating in this pilot.

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

Publiekssamenvatting

Seksueel overdraagbare aandoeningen in Nederland in 2023

In 2023 heeft 4 procent meer mensen zich bij een Centrum voor Seksuele Gezondheid (CSG) laten testen op seksueel overdraagbare aandoeningen (soa) dan in 2022. Het percentage dat een soa had (21 procent) was hetzelfde als in 2022. Mensen die via een partner een melding ontvingen voor een soa of zelf klachten hadden, hadden het vaakst een soa.

Het RIVM beschrijft in dit overzicht de ontwikkelingen van soa in Nederland, waaronder het aantal testen en diagnoses per soa bij de CSG's. In 2023 waren er in totaal 172.113 consulten. 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). Dit is een pilot van vijf jaar, waarin PrEP-gebruikers elke drie maanden worden getest op soa (MSM-PrEP).

Chlamydia
In 2023 waren er 24.048 chlamydia-diagnoses, iets minder dan in 2022 (24.684). Het percentage vrouwen met chlamydia daalde van 17,9 procent in 2022 naar 16,8 procent in 2023. Het percentage heteroseksuele mannen met chlamydia daalde van 21,2 procent in 2022 naar 19,6 procent in 2023. De percentages MSM en MSM-PrEP met chlamydia daalden naar respectievelijk 10,2 en 9,1 procent in 2023 (respectievelijk 10,9 en 9,4 procent in 2022).

Gonorroe
Het aantal diagnoses gonorroe (13.853) was veel hoger dan in 2022 (10.600), een stijging van 31 procent. De percentages vrouwen en heteroseksuele mannen met gonorroe zijn in 2023 toegenomen naar respectievelijk 4,1 en 3,5 procent (dat waren respectievelijk 2,3 en 2,4 procent in 2022). Dit is het hoogste percentage onder vrouwen en heteroseksuele mannen sinds 2014.
De toename begon in de tweede helft van 2022 en zette heel 2023 door. Het percentage onder MSM steeg van naar 14,1 procent in 2023 (12,8 procent in 2022). Onder MSM-PrEP steeg het percentage van 9,8 procent in 2022 naar 11,7 procent in 2023. Er is geen antibioticaresistentie tegen het huidige 'eerste keus' antibioticum voor gonorroe (ceftriaxon) gemeld.

Syfilis
Ook waren er in 2023 meer syfilis-diagnoses (1.693) dan in 2022 (1.574). Het percentage MSM met syfilis was 2,3 procent in 2023, hetzelfde als in 2022. Onder MSM-PrEP was dit percentage 1,8 procent in 2023, een lichte stijging in vergelijking met 1,7 procent in 2022. Het aantal diagnoses onder vrouwen en heteroseksuele mannen bleef in 2023 laag: respectievelijk 38 en 43.

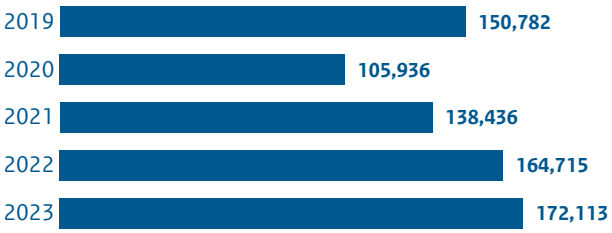
Hiv
In 2023 kregen 141 personen een hiv-diagnose, iets minder dan in 2022 (144). Hiervan waren 122 diagnoses bij MSM (87 procent). Het aantal mensen met hiv dat in 2023 voor het eerst naar een hiv-behandelcentra kwam ('in zorg') was 987; ongeveer evenveel als in 2022 (997).

PrEP
In de PrEP-pilot hebben 13.715 personen (96 procent MSM) een eerste PrEP-consult gehad, van wie 1.521 in 2023. Op 31 december 2023 deden ongeveer 8.496 mee aan deze pilot.

Kernwoorden: soa, chlamydia, gonorroe, syfilis, hiv, PrEP, antibioticaresistentie, jongeren, MSM, monitoring, CSG

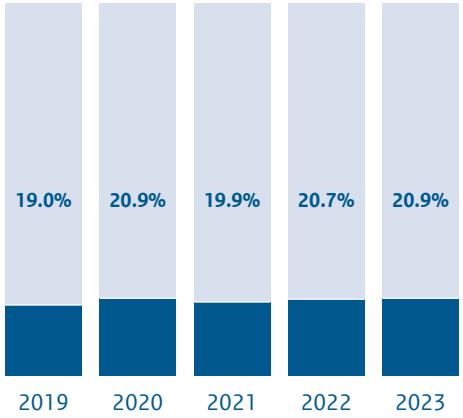
General

Number of SHC-consultations

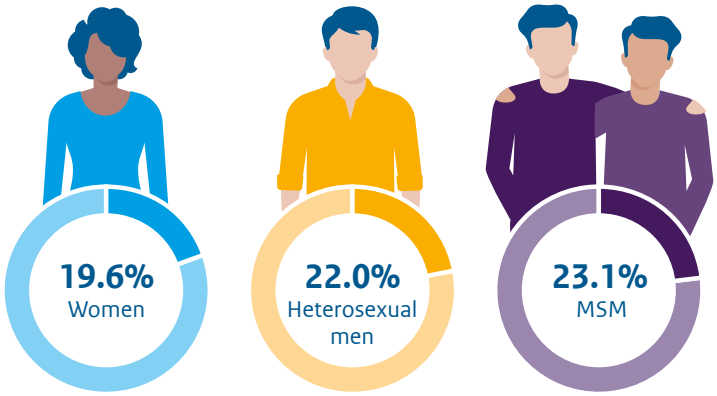


Number of GP-consultations

One or more STI



One or more STI in 2023



Chlamydia

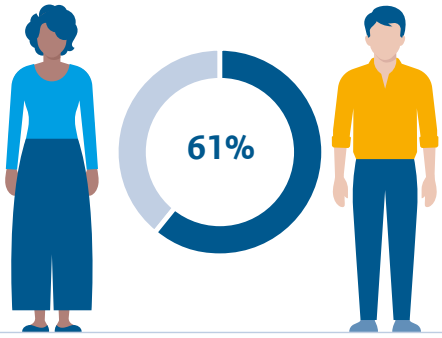
SHC

24,048
Diagnoses **at SHC**

3% decrease compared with last year

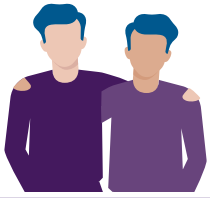
42,400
Diagnoses **at GP**

Proportion of diagnoses among women and heterosexual men <25 years



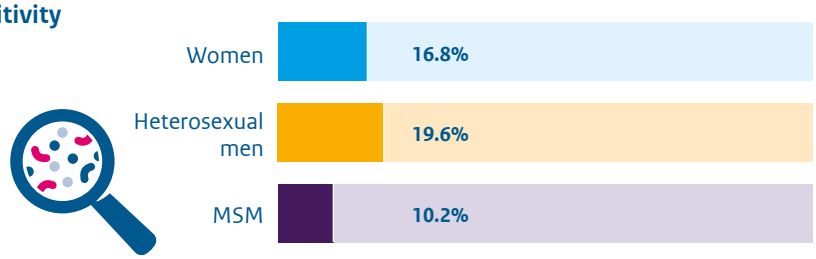
Number of LGV diagnoses among MSM

Lymphogranuloma venereum



572

Positivity



Gonorrhoea

SHC

13,853

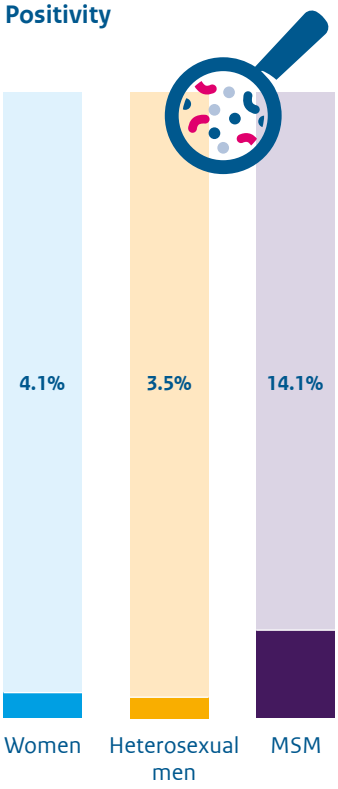
Diagnoses **at SHC**

31% increase *compared with last year*

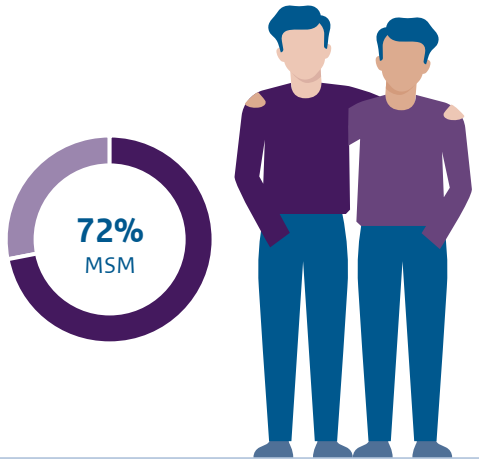
14,500

Diagnoses **at GP**

Positivity



Proportion of diagnoses among MSM



No resistance to ceftriaxone

Infectious syphilis

SHC

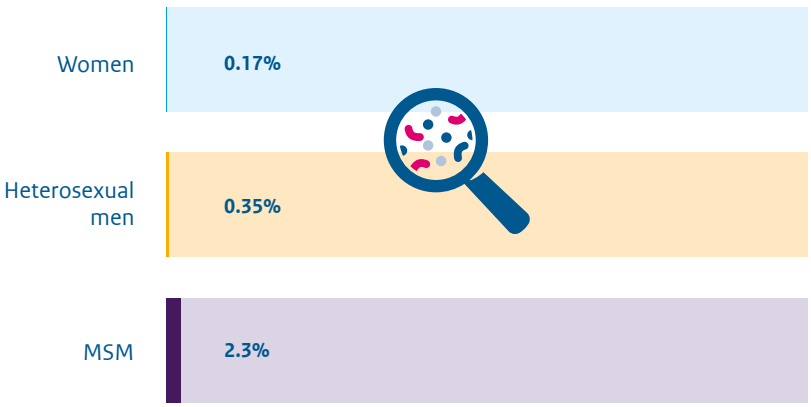
1,693

Diagnoses **at SHC**

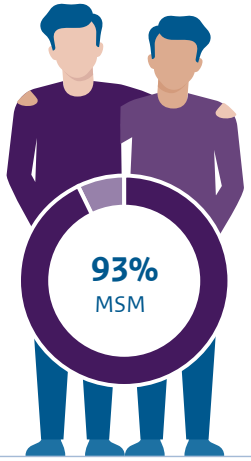
8% increase *compared with last year*

Positivity increased with age

Positivity



Proportion of diagnoses among MSM



HIV

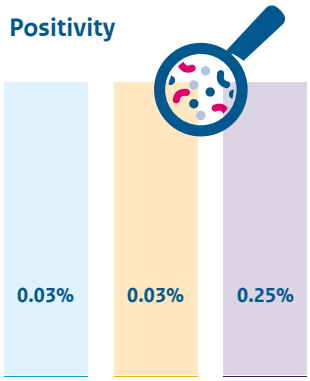
SHC

141

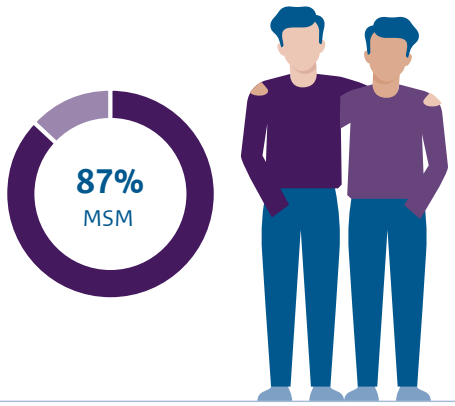
Diagnoses **at SHC**

≈ *Comparable with last year*

Positivity



Proportion of diagnoses among MSM



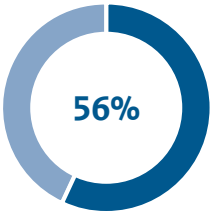
Acute hepatitis B

90

Notifications

↑ *18% increase compared with last year*

Proportion of diagnoses that had sexual contact as transmission route



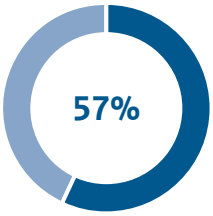
Acute hepatitis C

33

Notifications

≈ *Comparable with last year*

Proportion of diagnoses that had sexual contact as transmission route

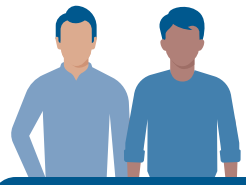


PrEP-pilot

Number of participants on 31 December 2023

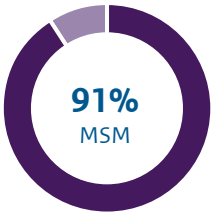
8,496

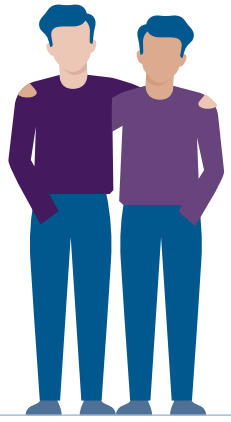
Number of new participants in 2023



1,521

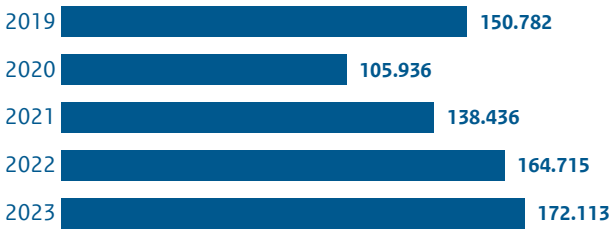
Proportion of participants who are MSM





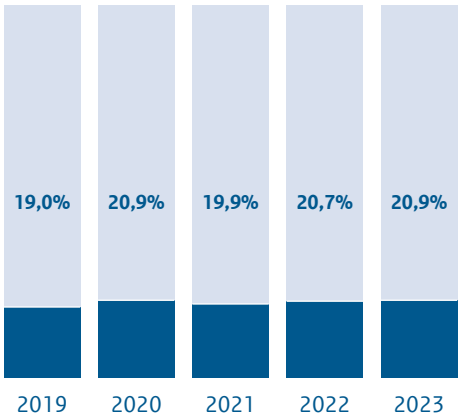
Algemeen

Aantal CSG-consulten

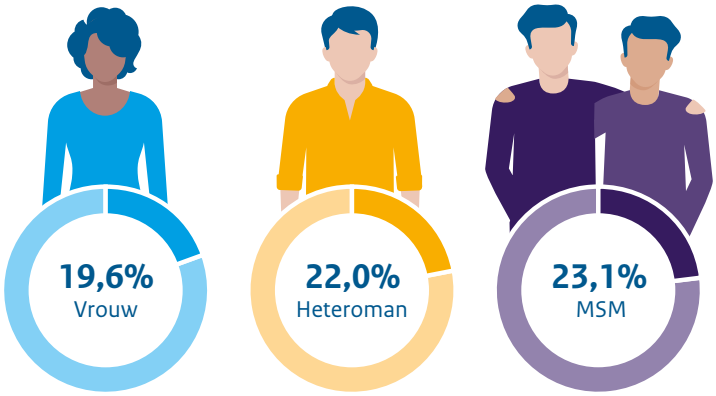


Aantal huisartsen-consulten

Eén of meer soa



Eén of meer soa in 2023



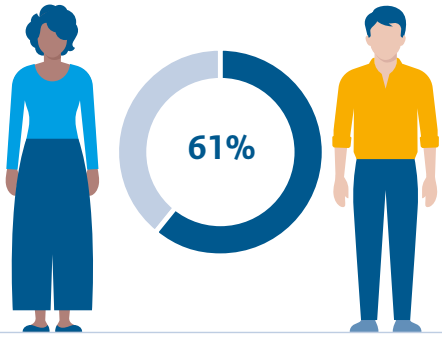
Chlamydia

24.048
Diagnoses **bij CSG**

3% daling
ten opzichte van vorig jaar

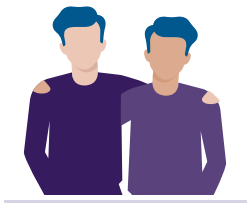
42.400
Diagnoses **bij huisarts**

Aandeel diagnoses onder vrouwen en heteromannen <25 jaar



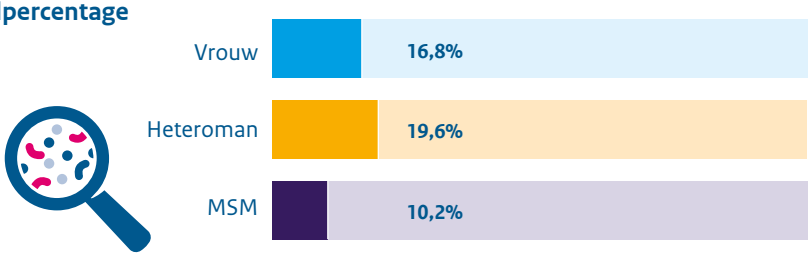
Aantal diagnoses LGV bij MSM

Lymphogranuloma venereum



572

Vindpercentage



Gonorroe

CSG

13.853

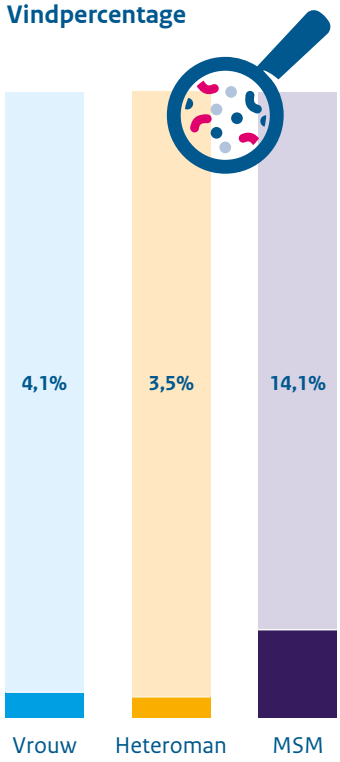
Diagnoses **bij CSG**

31% stijging *ten opzichte van vorig jaar*

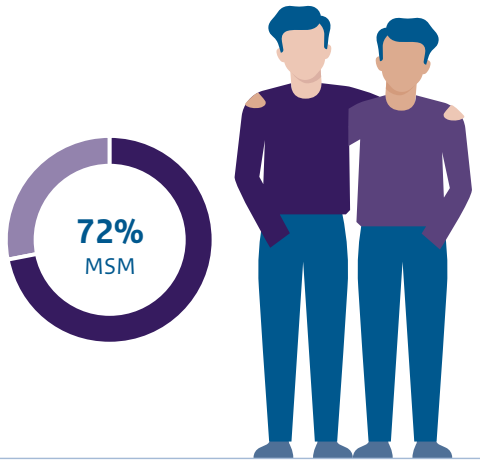
14.500

Diagnoses **bij huisarts**

Vindpercentage



Aandeel diagnoses onder MSM



Bijzonderheid

Geen resistentie tegen ceftriaxon

Infectieuze syfilis

CSG

1.693

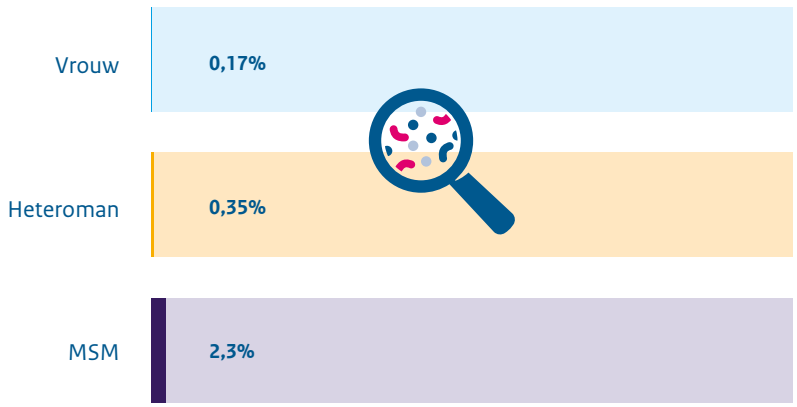
Diagnoses **bij CSG**

8% stijging *ten opzichte van vorig jaar*

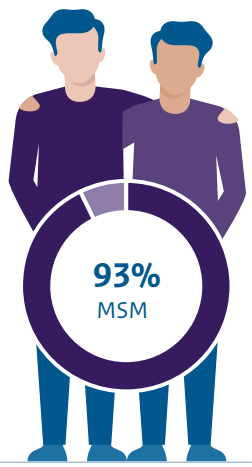
Bijzonderheid

Vindpercentage neemt toe met leeftijd

Vindpercentage



Aandeel diagnoses onder MSM



Hiv

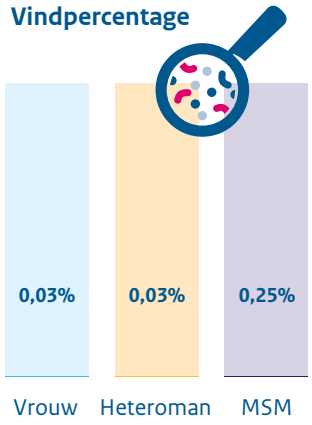
CSG

141

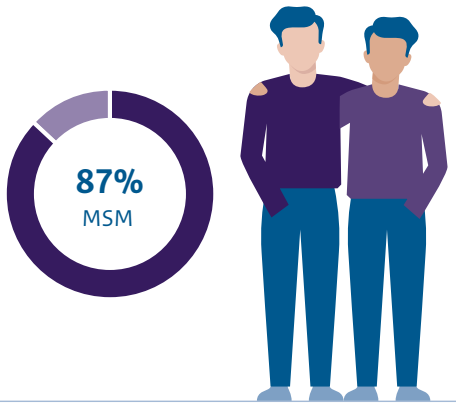
Diagnoses **bij CSG**

Vergelijkbaar met vorig jaar

Vindpercentage



Aandeel diagnoses onder MSM



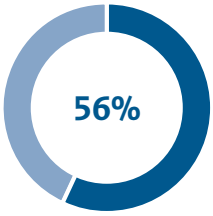
Acute hepatitis B

90

Notificaties

18% stijging ten opzichte van vorig jaar

Percentage diagnoses dat transmissieroute seksueel contact had



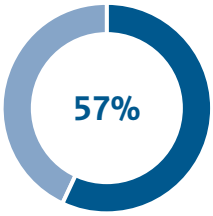
Acute hepatitis C

33

Notificaties

Vergelijkbaar met vorig jaar

Percentage diagnoses dat transmissieroute seksueel contact had

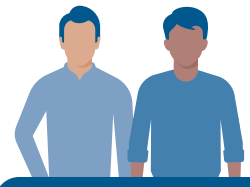


PrEP-pilot

Aantal deelnemers op 31 december 2023

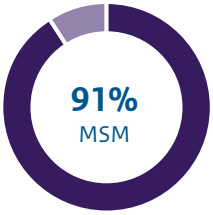
8.496

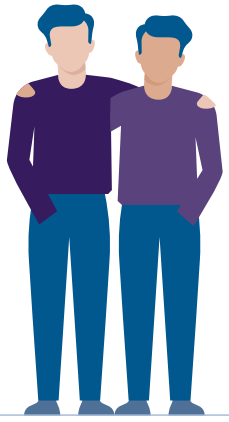
Aantal nieuwe deelnemers in 2023



1.521

Aandeel nieuwe deelnemers dat MSM is





Preface

This annual report provides an overview of the epidemiology of sexually transmitted infections (STIs), including HIV, in the Netherlands in 2023. The data presented is derived from the national STI surveillance database and from other data sources registering STIs 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, we give an overview of the main conclusions and recommendations. We hope this report will contribute to further awareness of the distribution and causes of STIs, 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 field of STIs and related subjects, as well as others who are 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

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Comments

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

Contents

Summary

In 2023, a total of 172,113 STI and PrEP consultations took place at Dutch Sexual Health Centres (SHCs); more than the number of consultations in 2022 (+4%). 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 31 December 2023, 13,715 individuals (96% of whom were men who have sex with men, MSM) had received a first PrEP consultation in this programme, including 1,521 individuals in 2023. Due to differences in testing frequency and reasons for visiting the SHC, two types of MSM consultations have been distinguished throughout the report as these two groups are not directly comparable. Firstly, within the 'Additional Sexual Healthcare' regulation (MSM-ASG) and secondly, MSM consultations in the national PrEP pilot programme (MSM-PrEP). 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.

Compared with 2022, the number of consultations in 2023 increased by 2% among women, by 3% among heterosexual men, by 9% among MSM-ASG, and by 2% among MSM-PrEP. Out of all SHC consultations in 2023, 37% were among women (64,372 consultations), 17% among heterosexual men (28,833), 28% among MSM-ASG (48,440), and 17% among MSM-PrEP (28,231). At 2,236 consultations (1%), the client was a gender diverse person, of whom 8% identified as trans men, 62% as trans women, and 30% 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 proportion of consultations with one or more positive STI tests (chlamydia, gonorrhoea, infectious syphilis, HIV, or infectious hepatitis B) amounted to 20.9% in 2023. STI positivity among women was stable at 19.6% in 2023 (compared with 19.5% in 2022). Among heterosexual men, this percentage decreased from 22.9% in 2022 to 22.0% in 2023. The positivity among MSM-ASG increased from 22.6% in 2022 to 23.1% in 2023. Among MSM-PrEP, positivity increased from 18.1% in 2022 to 19.2% in 2023. STI positivity was highest among consultations in persons with symptoms and persons who received a partner notification (above 30% for all groups). Similarly high STI positivity was seen among MSM-ASG with an STI diagnosis in the past year.

Among women and heterosexual men tested at SHCs in 2023, the proportion with multiple consultations amounted to 17% and 11%, respectively (both the same as in 2022). Among MSM-ASG, the proportion with multiple consultations amounted to 32% (29% in 2022). MSM-PrEP visit the SHC multiple times per year as part of PrEP care in the pilot; therefore 93% had multiple consultations in 2023. Out of the unique persons who were tested among MSM-PrEP, 39.4% had one or more STI diagnoses in 2023.

The total number of STI-related episodes registered with a general practitioner in 2022 (2023 data is not yet available) was estimated at 316,200 (including 138,300 STI diagnoses and 177,900 'fear of STI' episodes, among the Dutch population aged 15-64 years). This was comparable with 2021 (316,900 episodes). The reporting rate for STI-related episodes at GPs decreased for women from 30.0 per 1,000 population in 2021 to 29.4 in 2022 and increased for men from 26.0 in 2021 to 26.8 in 2022.

Bacterial STI

In 2023, chlamydia was diagnosed 24,048 times at SHCs, which amounted to a decrease compared with 2022 (24,684). Chlamydia is the most commonly reported STI among women and heterosexual men. In 2023, chlamydia positivity was 16.8% among women and 19.6% among heterosexual men, both slightly lower than in with 2022. Chlamydia positivity was 10.2% for MSM-ASG in 2023, this was similar to 2022. Chlamydia positivity among MSM-PrEP decreased from 11.7% in 2019 to 9.1% in 2023. Out of all unique persons who were tested among MSM-PrEP in 2023, 21.4% tested positive for chlamydia in at least one consultation. The highest positivity was found among persons notified of chlamydia (39.7% among women, 37.4% among heterosexual men, 22.5% among MSM-ASG, and 27.8% among MSM-PrEP). The number of lymphogranuloma venereum (LGV, an infection caused by an invasive strain of chlamydia) diagnoses increased from 469 in 2022 to 577 in 2023. Out of the diagnoses in 2023, 572 diagnoses were among MSM. The percentage of HIV-negative MSM (ASG and PrEP) among LGV-positives remained stable at 76% (74% in 2022). The estimated number of chlamydia episodes among women reported at GPs increased from 22,500 in 2021 to 24,100 in 2022. Among men, this number increased from 17,100 in 2021 to 18,300 in 2022. For both groups, reporting rates of chlamydia episodes per 1,000 individuals aged 15-64 years increased to 4.2 and 3.2, respectively, compared with 2021

(4.0 and 3.0, respectively). The reporting rate was highest among women aged 15-24 years (11.3).

The number of gonorrhoea diagnoses at SHCs increased by 31% in 2023 (13,853 diagnoses) compared with 2022. In 2023, gonorrhoea positivity was 4.1% among women and 3.5% among heterosexual men. For both groups, this is the highest gonorrhoea positivity since 2014 and amounts to a vast increase compared with 2022 (women: 2.3%, heterosexual men: 2.4%). Gonorrhoea positivity increased even further in the second half of 2023, to 4.5% among women and to 3.9% among heterosexual men. Positivity among MSM-ASG increased from 12.8% in 2022 to 14.1% in 2023 (14.8% in the second half of 2023). Among MSM-PrEP the positivity increased from 9.8% in 2022 to 11.7% in 2023 (12.3% in the second half of 2023). Out of all unique persons who were tested among MSM-PrEP in 2023, 26.2% was gonorrhoea positive in at least one consultation. High gonorrhoea positivity was seen among persons who were notified for gonorrhoea (37.8% among women, 14.9% among heterosexual men, 33.6% among MSM-ASG, and 37.5% among MSM-PrEP). Antimicrobial resistance to ceftriaxone, the first-choice antibiotic for gonorrhoea treatment, has not been reported among SHC-visitors. The number of estimated gonorrhoea episodes reported at GPs increased from 12,700 in 2021 to 14,500 in 2022. In 2022, the reporting rate for gonorrhoea at GPs was 1.3 episodes per 1,000 individuals aged 15-64 years. This amounted to 0.9 per 1,000 for women and 1.7 per 1,000 for men.

In 2023, 1,693 infectious syphilis infections were diagnosed at SHCs, which is more than in 2022 (1,574). Out of all infectious syphilis infections in 2023, 64% were diagnosed among MSM-ASG and 29% among MSM-PrEP. Women and heterosexual men are not routinely tested for syphilis; a syphilis test was done in 35% of STI consultations among women and heterosexual men in 2023. Among women, 22,757 tests and 38 diagnoses were reported in 2023 (positivity 0.17%, 0.15% in 2022). Among heterosexual men 12,115 tests and 43 diagnoses were reported (positivity 0.35%, 0.29% in 2022). In 2023, infectious syphilis positivity among MSM-ASG (2.3%) was the same as in 2022 (2.3%). Among MSM-PrEP, infectious syphilis positivity in 2023 was 1.8%, slightly higher than in 2022 (1.7%). The highest positivity was found among MSM notified of syphilis exposure (12.8% among MSM-ASG and 12.1% among MSM-PrEP). Other groups with high positivity were MSM with symptoms (5.8% among MSM-ASG and 6.7% among MSM-PrEP) and MSM-ASG who are HIV-positive (6.2%). An estimate of the number of syphilis episodes at GPs is not available due to the small number of cases.

Viral STI

At SHCs, 141 new HIV infections were diagnosed in 2023, which is comparable with 2022 (144). Out of the 141 new diagnoses, 77% occurred among MSM-ASG, 10% among MSM-PrEP, 6% among gender diverse persons, 5% among women, and 3% among heterosexual men. Out of the 14 new HIV infections among MSM-PrEP, 6 were diagnosed in PrEP start consultations and 8 in PrEP follow-up consultations. The HIV positivity among MSM-ASG decreased from 1.4% in 2013 to 0.3% in 2023. The positivity among women (0.03% in 2023), heterosexual men (0.03% in 2023), and MSM-PrEP (0.05% in 2023) is stable and low. HIV positivity among gender diverse persons was 0.8% in 2023. In 2023, 987 HIV-positive persons were newly registered in care at HIV treatment centres according to Stichting hiv monitoring (SHM) (2022: 997). Out of these, 388 were newly diagnosed in 2023 (344 in 2022), although this number may still increase due to reporting delays. The proportion of heterosexuals (men and women) among new HIV diagnoses declined slightly in 2023 (27%) compared with 2022 (31%). The proportion of MSM among new HIV diagnoses amounted to 62% in 2023 (57% in 2022). Out of MSM newly diagnosed with HIV and entering care in 2023, 36% were diagnosed at GPs, 34% at SHCs, and 22% at hospitals. Overall, 46% of newly diagnosed patients in 2023 (53% in 2022) presented late for care (CD4 <350/mm^3 or AIDS). In 2022, an estimated 94% of those living with HIV in the Netherlands had been diagnosed and linked to care. Out of these, 96% had also started treatment and 96% out of those had a suppressed viral load.

Most cases of genital warts and genital herpes are registered at GPs. In 2022, an estimated 45,800 diagnoses of genital warts (47,500 in 2021) and 28,500 diagnoses of genital herpes (27,300 in 2021) were made. At GPs, genital warts were more often reported among men (61% of all cases) than among women, while genital herpes was more often diagnosed among women (74% of all cases). In 2023, the number of diagnoses of genital warts and genital herpes at SHCs amounted to 743 and 513, respectively (787 and 601 in 2022).

The number of acute hepatitis B cases reported in the registration of notifiable diseases in 2023 (90) was higher than in 2022 (76). Sexual contact was the most frequently reported transmission route (56%). The number of acute hepatitis C cases reported in 2023 (33) was higher than in 2022 (28). The most frequently reported transmission route for acute hepatitis C was sexual contact between men (57%).

The mpox outbreak in the Netherlands started in May 2022. Since then a total of 1,293 mpox infections were reported to RIVM, 33 of which occurred in 2023. Out of all cases since May 2022, 93% occurred among MSM, and for 83% of cases, the reported transmission route was sexual contact.

Conclusion

In 2023, the total number of consultations at SHCs was higher than in 2022. In 21% of all consultations, one or more STIs were diagnosed, which was comparable with 2022. Since 2019, an increasing STI positivity has been recorded among women and heterosexual men under the age of 25. A strong increase was particularly seen in gonorrhoea among women and heterosexual men. At general practices, the estimated number of episodes of fear of STI as well as the number of STI episodes remained stable between 2021 and 2022. These trends indicate a need to maintain easy access to STI prevention, testing, and treatment, and continue the monitoring of STIs and sexual behaviour.

Samenvatting

In 2023 hebben er in totaal 172.113 soa- en PrEP-consulten plaatsgevonden bij de Centra Seksuele Gezondheid (CSG's); meer dan het aantal consulten in 2022 (+4%). Medio 2019 is het 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 2023 hadden 13.715 personen (96% waren mannen die seks hebben met mannen, MSM) een eerste PrEP-consult gehad binnen dit programma, waarvan 1.521 personen in 2023. Vanwege verschillen in restfrequentie en redenen voor een consult bij de CSG, wordt er in dit rapport onderscheid gemaakt tussen consulten in MSM binnen de 'Aanvullende Seksuele Gezondheidszorg' regeling (MSM-ASG) en consulten in MSM in het nationale PrEP pilot programma (MSM-PrEP), omdat deze twee groepen niet direct vergelijkbaar zijn. Bij de interpretatie van trends moet rekening worden gehouden met de impact van de COVID-19-pandemie en het nationale PrEP-pilotprogramma op het aantal consulten en de soa-vindpercentages, aangezien dit trends kan beïnvloeden.

In 2023 nam het aantal consulten bij de CSG's toe met 2% onder vrouwen, 3% onder heteromannen, 9% onder MSM-ASG en 2% onder MSM-PrEP ten opzichte van 2022. Van alle consulten bij het CSG was 37% onder vrouwen (64.372 consulten), 17% onder heteromannen (28.833), 28% onder MSM-ASG (48.440) en 17% onder MSM-PrEP (28.231). Bij 2.236 consultaties (1%) was de cliënt een genderdivers persoon, waarvan 8% zich identificeerde als transman, 62% als transvrouw en 30% als anders genderdivers. Genderdiverse personen zijn alleen opgenomen in de totale aantallen diagnoses en uitgesloten van verdere uitsplitsingen, omdat het aantal genderdiverse personen relatief laag is.

Het percentage consulten met één of meer positieve soa-testen (chlamydia, gonorroe, infectieuze syfilis, hiv of infectieuze hepatitis B) was 20,9% in 2023. Het soa-vindpercentage onder vrouwen bleef stabiel met 19,6% in 2023 (19,5% in 2022). Onder heteroseksuele mannen daalde dit percentage van 22,9% in 2022 naar 22,0% in 2023. Het vindpercentage onder MSM-ASG steeg van 22,6% in 2022 naar 23,1% in 2023. Onder MSM-PrEP steeg het vindpercentage van 18,1% in 2022 naar 19,2% in 2023. Het soa-vindpercentage was het hoogst onder de consulten bij personen met klachten en personen die een partnernotificatie ontvingen (ruim 30% voor alle groepen). Een vergelijkbaar hoog soa-vindpercentage werd gezien onder MSM-ASG met een soa-diagnose in het afgelopen jaar.

Van alle vrouwen en heteroseksuele mannen die zich in 2023 bij CSG's lieten testen, had respectievelijk 17% en 11% meerdere consulten (beide hetzelfde als in 2022). Onder MSM-ASG had 32% van de personen meer dan één consult (29% in 2022). MSM-PrEP bezoeken het CSG meerdere keren per jaar als onderdeel van de PrEP-zorg in de pilot, daarom had 93% meerdere consulten in 2023. Van de unieke personen getest onder MSM-PrEP had 39,4% één of meerdere soa-diagnoses.

Het totale aantal soa-gerelateerde episodes dat in 2022 (2023 is nog niet beschikbaar) bij de huisarts werd geregistreerd, was naar schatting 316.200 (138.300 soa-diagnoses en 177.900 'angst voor soa'-episodes). Dit is vergelijkbaar met 2021 (316.900 episodes). Het aantal soa-gerelateerde episodes bij de huisarts daalde voor vrouwen van 30,0 per 1.000 personen in 2021 naar 29,4 in 2022 en steeg voor mannen van 26,0 in 2021 naar 26,8 in 2022.

Bacteriële soa

In 2023 werd chlamydia 24.048 keer vastgesteld bij de CSG's, een daling ten opzichte van 2022 (24.684). Chlamydia is de meest gerapporteerde soa onder vrouwen en heteromannen. In 2023 was het chlamydia-vindpercentage 16,8% bij vrouwen en 19,6% bij heteromannen, beide iets lager dan in 2022. Het chlamydia-vindpercentage was in 2023 10,2% voor MSM-ASG, vergelijkbaar met 2022. Het chlamydia-vindpercentage onder MSM-PrEP daalde van 11,7% in 2019 naar 9,1% in 2023. Van alle unieke geteste personen onder MSM-PrEP in 2023 testte 21,4% in minimaal één consult positief op chlamydia. Het hoogste vindpercentage werd gevonden bij personen die waren gewaarschuwd voor chlamydia (39,7% bij vrouwen, 37,4% bij heteromannen, 22,5% bij MSM-ASG en 27,8% MSM-PrEP). Het aantal lymfogranuloma venereum (LGV, een infectie met een invasieve chlamydia variant) diagnoses steeg van 469 in 2022 naar 577 in 2023. Van de diagnoses in 2023 waren 572 diagnoses onder MSM. Het percentage hiv-negatieve MSM (ASG en PrEP) onder LGV-diagnoses bleef stabiel op 76% (74% in 2022). Het geschatte aantal chlamydia-episodes onder vrouwen gerapporteerd door huisartsen steeg van 22.500 in 2021 naar 24.000 in 2022. Bij mannen steeg dit aantal van 17.100 in 2021 naar 18.400 in 2022. Voor beide groepen steeg het aantal gerapporteerde chlamydia-episodes per 1.000

personen van 15-64 jaar oud, naar respectievelijk 4,2 en 3,2 (respectievelijk 4,0 en 3,0 in 2022). Het aantal chlamydia-episodes per 1.000 personen was het hoogst onder vrouwen van 15 tot 24 jaar (11,3).

Het aantal gonorroe-diagnoses bij de CSG's steeg met 31% in 2023 (13.853 diagnoses) vergeleken met 2022. In 2023 was het gonorroe-vindpercentage 4,1% onder vrouwen en 3,5% onder heteroseksuele mannen. Voor beide groepen is dit het hoogste vindpercentage sinds 2014 en een grote toename ten opzichte van 2022 (vrouwen: 2,3%, heteromannen: 2,4%). Het gonorroe- vindpercentage nam in de tweede helft van 2023 nog verder toe, tot 4,5% bij vrouwen en tot 3,9% bij heteroseksuele mannen. Het vindpercentage onder MSM-ASG steeg van 12,8% in 2022 naar 14,1% in 2023 (14,8% in de tweede helft van 2023). Onder MSM-PrEP steeg het vindpercentage van 9,8% in 2022 naar 11,7% in 2023 (12,3% in de tweede helft van 2023). Van alle unieke personen die onder MSM-PrEP werden getest, had 26,2% minimaal één gonorroe-diagnose. Het hoogste vindpercentage werd gevonden bij personen die waren gewaarschuwd voor gonorroe (37,8% bij vrouwen, 14,9% bij heteroseksuele mannen, 33,6% bij MSM-ASG en 37,5% bij MSM-PrEP). Antibioticaresistentie tegen ceftriaxon, het eerste keus antibioticum voor de behandeling van gonorroe, is niet gerapporteerd bij CSG-bezoekers. Het geschatte aantal gonorroe-episodes bij huisartsen steeg van 12.700 in 2021 naar 14.500 in 2022. Het aantal gonorroe-episodes per 1.000 personen met leeftijd 15-64 jaar was 1.3 in 2022. Voor vrouwen was dit 0,9 per 1.000 en voor mannen 1,7 per 1.000.

In 2023 werden bij de CSG's 1.693 infectieuze syfilis-infecties gediagnosticeerd, dit is meer dan in 2022 (1.574). Van alle infectieuze syfilis-infecties in 2023 werd 64% gediagnosticeerd onder MSM-ASG en 29% onder MSM-PrEP. Vrouwen en heteroseksuele mannen worden niet standaard getest op syfilis; in 2023 werd in 35% van de soa-consulten bij vrouwen en heteromannen een syfilistest afgenomen. Bij vrouwen werden 22.757 testen en 38 diagnoses gerapporteerd (vindpercentage 0,17%, 0,15% in 2022). Onder heteroseksuele mannen werden 12.115 testen en 43 diagnoses gerapporteerd (vindpercentage 0,35%, 0,29% in 2022). In 2023 was het vindpercentage onder MSM-ASG (2,3%) hetzelfde als in 2022 (2,3%). Onder MSM-PrEP was het vindpercentage 1,8% in 2023, iets hoger dan in 2022 (1,7%). Het hoogste vindpercentage werd gevonden onder MSM die waren gewaarschuwd voor syfilis (12,8% bij MSM-ASG en 12,1% MSM-PrEP). Andere groepen met een hoog vindpercentage waren MSM met symptomen (5,8% bij MSM-ASG en 6,7% MSM-PrEP) en hiv-positieve MSM-ASG (6,2%). 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 2023 141 nieuwe hiv-infecties gevonden, dit was vergelijkbaar met 2022 (144). Van de 141 nieuwe diagnoses waren er 77% bij MSM-ASG, 10% bij MSM-PrEP, 6% bij genderdiverse personen, 5% bij vrouwen en 3% bij heteroseksuele mannen. Van de 14 nieuwe hiv-infecties bij MSM-PrEP werden er 6 gediagnosticeerd tijdens PrEP-startconsulten en 8 tijdens PrEP-vervolgconsulten. Het vindpercentage onder MSM-ASG daalde van 1,4% in 2013 naar 0,3% in 2023. De vindpercentages onder vrouwen (0,03% in 2023), heteromannen (0,03% in 2023) en MSM-PrEP (0,05% in 2023) zijn stabiel laag. Het vindpercentage onder genderdiverse personen was 0,8%. Volgens Stichting hiv monitoring (SHM) zijn in 2023 987 nieuwe hiv-positieve personen aangemeld voor zorg bij hiv-behandelcentra (2022: 997). Van deze personen werden er 388 nieuw gediagnosticeerd in 2023 (344 in 2022), dit aantal kan nog oplopen door rapportagevertraging. Het aandeel heteroseksuelen (mannen en vrouwen) onder de nieuwe hiv-diagnoses daalde in 2023 licht (27%) vergeleken met 2022 (31%). Het aandeel MSM onder de nieuwe hiv-diagnoses bedroeg in 2023 62% (57% in 2022). Van de MSM met een nieuwe hiv-diagnose in 2023 werd 36% gediagnosticeerd bij huisartsen, 34% bij CSG's en 22% bij ziekenhuizen. In totaal kwam 46% van de nieuw gediagnosticeerde personen in 2023 laat in zorg (CD4 <350/mm3 of AIDS) (53% in 2022). In 2022 was naar schatting 94% van de mensen met hiv in Nederland gediagnosticeerd en gekoppeld aan zorg. Hiervan was 96% ook met behandeling begonnen en 96% daarvan had een onderdrukte virale lading.

De meeste gevallen van genitale wratten en herpes genitalis worden door de huisarts gezien. In 2022 waren er naar schatting 45.800 diagnoses van genitale wratten (47.500 in 2021) en 28.500 diagnoses van genitale herpes (27.300 in 2021). Genitale wratten werden vaker gemeld bij mannen (61% van alle gevallen) dan bij vrouwen, terwijl genitale herpes vaker bij vrouwen werd vastgesteld (74% van alle gevallen). In 2023 was het aantal diagnoses van genitale wratten en genitale herpes bij CSG's respectievelijk 743 en 513 (787 en 601 in 2022).

Het aantal acute hepatitis B-infecties in de aangiftecijfers in 2023 (90) was hoger dan in 2022 (76). Seksueel contact was de meest gerapporteerde transmissieroute (56%). Het aantal gemelde acute hepatitis C-gevallen in 2023 (33) was hoger dan in 2022 (28). De meest gemelde transmissieroute voor acute hepatitis C was seksueel contact tussen mannen (57%).

De mpox-uitbraak begon in Nederland in mei 2022, sindsdien zijn er in totaal 1.293 mpox-infecties gemeld bij het RIVM, waarvan 33 in 2023. Van alle gevallen sinds mei 2022 betrof 93% MSM en was voor 83% van de gevallen de gerapporteerde transmissieroute seksueel contact.

Conclusie

In 2023 was het totaal aantal consulten bij de CSG's hoger dan in 2022. In 21% van alle consulten werd één of meerdere soa vastgesteld, wat vergelijkbaar was met 2022. Sinds 2019 is er een toename te zien in het soa-vindpercentage onder vrouwen en heteromannen jonger dan 25 jaar. Een sterke stijging was vooral te zien in het gonorroe-vindpercentage onder vrouwen en heteromannen. Bij de huisartsenpraktijken bleef het geschatte aantal 'angst voor soa' episodes en het aantal soa-episodes tussen 2021 en 2022 stabiel. Deze trends duiden op de noodzaak om toegang tot soa-preventie, -testen en -behandeling laagdrempelig te houden en het monitoren van soa en seksueel gedrag voort te zetten.

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 STIs to collect data for surveillance and to generate insights into trends and determinants. These include Sexual Health Centres (SHCs), Stichting hiv monitoring (SHM), public health laboratories, general practitioners (GPs) participating in the Nivel Primary Care Database, and other health care providers.

The data that is systematically collected by the nationwide network of SHCs under the responsibility of the Public Health Services (PHS) is the backbone of the Dutch STI surveillance, on STI trends and risk factors. Other available STI data from surveys, screening programmes, national registries, cohort studies, and other surveillance systems is included where possible. Together, this data provides 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 2023 are presented. In addition, data from the national Health Survey/Lifestyle Monitor and data from GPs is shown for 2022. Chapters 3-5 present data on bacterial STIs (chlamydia, gonorrhoea, and syphilis), while Chapters 6-11 focus on viral STIs (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, was extrapolated from the Nivel Primary Care Database. We included data from the HIV treatment centres (Stichting hiv monitoring) to gain insight into trends in new HIV diagnoses and people living with HIV. Other data sources include the national Health Survey, weekly virological laboratory reports, the Gonococcal Resistance to Antimicrobials Surveillance (GRAS) programme, antenatal screening, mandatory reporting on hepatitis B, hepatitis C, and mpox, the hepatitis B vaccination programme for key populations, 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 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. In each region, one SHC is responsible for the coordination of STI surveillance (Figure 1.1). A total of 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 'Additional Sexual Healthcare' regulation or ASG (in Dutch). Inclusion criteria relate to 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, (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 had more strongly prioritised populations who are most at risk of STIs, such as clients who are notified of an STI or report symptoms related to STIs. This change should be taken into account when interpreting trends, as it can result in 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 have been 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 relate to 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 workers, (5) are MSM, (6) have a region of origin included in triage,[1] (7) report a partner from these regions of origin 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 testing.[2] 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 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 will discuss the number of repeat visits and STI positivity by number of consultations in Chapter 2.

Most data in this report is presented separately for women, heterosexual men, MSM, and gender diverse persons. Women are defined as cis women with any sexual contact.

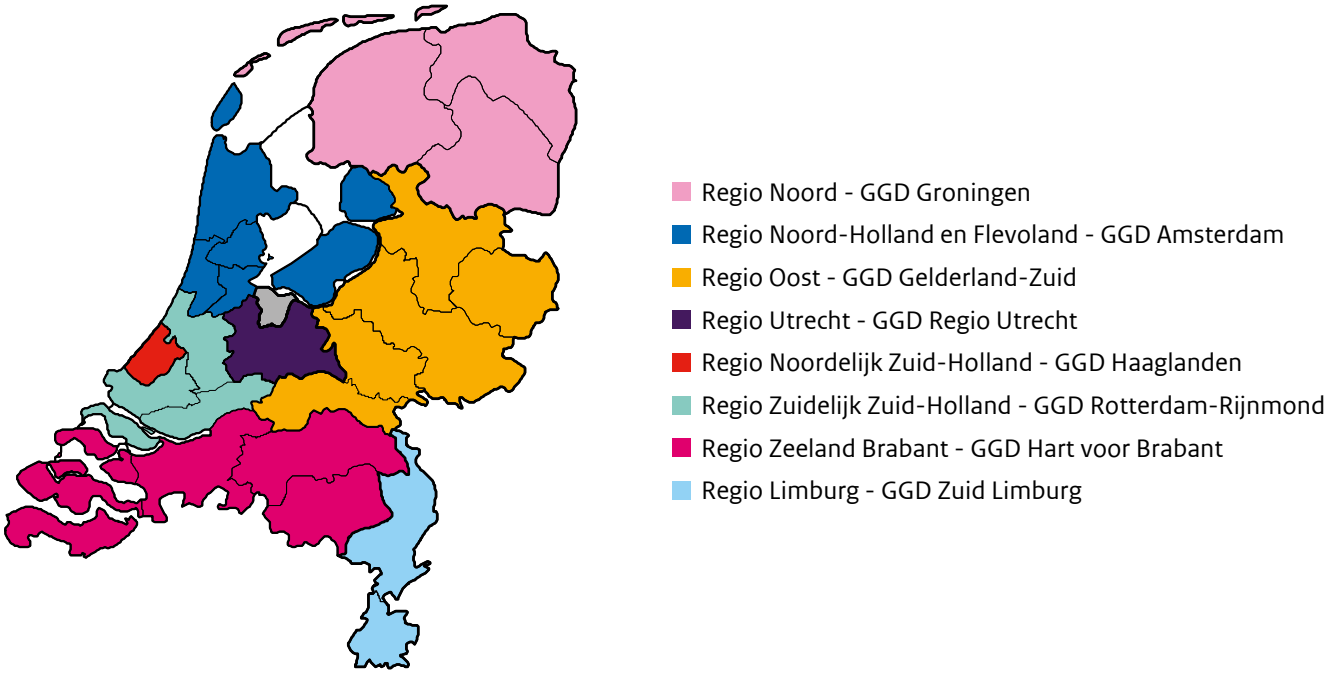
[1] Regions of origin as indicated by triage include Turkey, Africa, Latin America including Suriname and the former Netherlands Antilles, Asia, and Eastern Europe.
[2] See 'Draaiboek': https://lci.rivm.nl/draaiboeken/consult-seksuele-gezondheid

Heterosexual men are cis men who only have sex with cis women and/or other persons with a vagina. MSM are cis men who have sex with other cis men and/or other persons with a penis. The MSM group also includes men who have sex with both men and women. The group of gender diverse persons includes all persons who are not cis gender and includes, but is not limited to, trans men, trans women, and non-binary persons. Region of origin is based on the client's and the client's parents' country of birth, according to the classification of Statistics Netherlands.[3] The classification distinguishes between persons born in the Netherlands, migrants, and children of migrants. Migrants are persons who were born abroad. Children of migrants are persons who were born in the Netherlands and have at least one parent who was born abroad.

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 conducted.[4] MSM in the PrEP pilot programme visit the SHC more frequently and for different reasons than MSM who are not in the PrEP pilot. As a result, MSM in the PrEP pilot programme and MSM who have regular STI (ASG) consultations are not directly comparable in terms of the number of consultations and STI positivity. This is why consultations of MSM in this report are divided into (1) consultations that come under the ASG regulation (MSM-ASG) and (2) consultations that come under the national PrEP pilot (MSM-PrEP). A number of SHCs offer additional PrEP care outside of the PrEP pilot programme (financed through reimbursement via municipalities or other means), these PrEP consultations are included under MSM-PrEP in this report, unless otherwise specified. 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 under 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.

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 (derived from demographic and behavioural indicators) are based on data taken from SHCs under national surveillance from

Figure 1.1 Eight regions with coordinating SHC indicated



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

[3] Statistics Netherlands: https://www.cbs.nl/en-gb/our-services/methods/definitions/migration-background
[4] See 'Draaiboek': https://lci.rivm.nl/draaiboeken/consult-seksuele-gezondheid

2014 to 2023. 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. This means that, since May 2018, all SHC attendees had to give consent to share their consultation data with RIVM for surveillance purposes. The switch resulted in high numbers of non-consenting attendees in some regions, thus jeopardising 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 was obtained from SHCs on the total number of chlamydia, LGV, gonorrhoea, syphilis, and HIV tests and diagnoses. Data was stratified by sex and sexual contact. Aggregated data of non-registered consultations was added to data on registered consultations to calculate the total number of consultations and the positivity. Other than sex and sexual contact, no demographic and behavioural indicators were available for non-registered consultations. Therefore, all tables and figures regarding positivity by risk profiles are based on registered consultations only. It is indicated where aggregated data of non-registered consultations has been included to registered consultations.

The Netherlands 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 onwards are comparable with 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, unintended pregnancy, birth control, STIs, sexuality, sexual identity, and sexual violence. Data on the number and demographics of Sense consultation visitors is presented. From 2014 onwards, demographic information and the subject of Sense consultations have been 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

Since 2014, Statistics Netherlands (CBS), in collaboration with RIVM, Rutgers, and Soa Aids Nederland, has collected data on different aspects of lifestyle in a representative sample of the Dutch population in the national Health Survey (Health Survey/Lifestyle Monitor). 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 every year. In this report, we present a selection of the 2022 results in order to describe the characteristics related to sexual health and STI healthcare of the general population in the Netherlands. Data was weighted for demographic characteristics to correct for differences between the sample and the Dutch population.

1.4 STIs at general practices

Data on STI incidence reported by GPs is obtained through the primary care network maintained at the Netherlands Institute for Health Services Research (Nivel). The use of electronic health records for research purposes is allowed under certain conditions. When these conditions are fulfilled, neither obtaining informed consent from patients nor approval by a medical ethics committee is obligatory for this type of observational studies, which contain no directly identifiable data (art. 24 GDPR Implementation Act jo art. 9.2 sub j GDPR). This study has been approved according to the governance code of Nivel Primary Care Database, under number NZR-00323.030.

Nivel's primary care network is based on electronic health records in a network of GPs, the Nivel Primary Care Database (Nivel-PCD).[5] The network uses data routinely collected from GPs to monitor health and the utilisation of health services at GPs in a representative sample of

[5] Heins M, Bes J, Weesie Y, Davids R, Winckers M, Korteweg L, Hellwich M, Dijk L van, Knottnerus B, Overbeek L, Hasselaar J, Hek K, Vanhommerig J. Zorg door de huisarts. Nivel Zorgregistraties Eerste Lijn: Jaarcijfers 2022 en trendcijfers 2018-2022. Utrecht: Nivel, 2023.

approximately 10% of the Dutch population. All symptoms and diagnoses are recorded using the International Classification of Primary Care (ICPC-1) codes.[6] Since 2010, the GP network has gradually expanded from 120 practices to over 500 practices. Data on the incidence of STI episodes in the population covered by this network from 2013 to 2022 is included in this report. This is restricted to data from GPs with good quality morbidity data, which amounted to of 376 practices in 2022. Incidence rates were calculated on the basis of the number of episodes of illness per 1,000 population aged 15-64 years.[7] Annual estimates of the 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 years, as obtained from Statistics Netherlands (CBS) and reported by sex and age group (15-24 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 2013 to 2022 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 data 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 men.[8] 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 was based on the proportion of the chlamydia-related ICPC codes with:

- a chlamydia-related prescription, i.e. azithromycin or doxycycline, at GPs with good quality morbidity and prescription data (376 practices in 2022); 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 (320 practices in 2022).

1.5 Laboratory surveillance

National laboratory surveillance data is not available for STIs, except for data taken from the weekly virological reports. This includes the total number of *Chlamydia trachomatis*-positive tests from up to 21 participating laboratories (19 in 2023). The coverage of these laboratories and the extent to which they are represent the Dutch population are not exactly known, but the laboratories are spread evenly across the country and the coverage is sufficient to provide accurate and timely trends for (virological) infections and chlamydia.[9] 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 resulted in an RIVM laboratory survey of gonococci resistance in 2002.[10] 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 to 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).[11]

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

7 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.

8 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.

9 See website: https://www.rivm.nl/virologische-weekstaten

10 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.

11 The European Committee on Antimicrobial Susceptibility Testing. Breakpoint tables for interpretation of MICs and zone diameters. Version 14.0, 2024. 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. Nearly all pregnant women in the Netherlands participate in this infectious disease screening programme (0.04% refused HIV tests and 0.00% refused hepatitis B and syphilis testing in 2021).[12] The screening programme is coordinated by the Centre for Population Screening at RIVM.

1.8 Congenital syphilis

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 for the years 2014-2023.

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 nearly all newly registered individuals with HIV is collected by Stichting HIV Monitoring (SHM).[13] SHM's goal is to monitor people living with HIV who are 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 individuals diagnosed with HIV who are registered in this national cohort are followed prospectively from the time of reporting in care. Individuals with HIV who were diagnosed prior to the start of SHM were included in the cohort retrospectively. Individuals with HIV who were diagnosed before 1996 mainly include people who survived up to the start of the AIDS Therapy Evaluation in the Netherlands (ATHENA) national observational HIV cohort in 1996, SHM's predecessor.[14] The epidemiological data on newly reported HIV diagnoses as well as trends in new AIDS diagnoses after 2000 are reported in collaboration with the RIVM.[15] The number of people in the Netherlands living with HIV in 2023 (including the undiagnosed) was estimated using the European Centre for Disease Prevention and Control (ECDC) HIV Modelling Platform.[16]

1.10 HIV incidence data

HIV incidence data is 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 MSM diagnosed with HIV and those without a diagnosis. 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 Sanquin Blood Supply Foundation, the PHS of Amsterdam (GGD Amsterdam), Amsterdam University Medical Centres (Amsterdam UMC), Jan van Goyen Medical Centre, DC Klinieken Amsterdam, and 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, out 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.

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[12] Van der Ploeg CPB, Ernst A, van Lent M. PSIE Procesmonitor 2021. Belangrijkste resultaten Prenatale Screening Infectieziekten en Erytrocytenimmunisatie (PSIE) over 2021. TNO/RIVM 2023. Available from: https://www.pns.nl/documenten/proces-monitor-psie-2021

[13] See website: www.hiv-monitoring.nl

[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 AI, Wit FWNM, Boyd A, Smit C, Jongen V, Koole J. HIV Monitoring Report 2023, Human Immunodeficiency Virus (HIV) Infection in the Netherlands. Amsterdam: Stichting hiv monitoring, 2023. Available online at www.hiv-monitoring.nl

[16] European Centre for Disease Prevention and Control. HIV platform tool [Internet, software application]. Stockholm: ECDC; 2021. Available from: https://www.ecdc.europa.eu/en/publications-data/hiv-platform-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 who 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 is collected from the registration system, which is 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.[17] 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 2014-2023 period is reported.

1.14 Mpox

Data on mpox diagnoses is reported by the PHSs to 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 primary preventive vaccination (PPV) with Imvanex for MSM and transgender persons with high-risk behaviour (e.g. HIV-PrEP users, living with HIV, or having multiple sexual contacts). National data on PEP vaccinations is unavailable. Data on PrEP vaccinations that started on 25 July 2022 and the number of MSM and transgender persons invited for this vaccination are reported to RIVM through iMPeX/Osiris.

[17] Information on risk factors is available (in Dutch only) at: https://www.sanquin.nl/bloed-doneren/mag-ik-bloed-geven

2 Sexual health, STI and Sense consultations

2.1 Key points

2.1.1 Sexual Health Centres

- Due to more frequent testing among MSM-PrEP, positivity rates in this group are not directly comparable with those among MSM-ASG. In addition, restrictions during the COVID-19 pandemic impacted the number of consultations at SHCs and positivity rates in 2020 and 2021. Both factors should be taken into account when interpreting trends. For more information, see 1.1. National surveillance at Sexual Health Centres.

Consultations

- In 2023, the total number of consultations at SHCs was 172,113.
- Out of all SHC consultations, 37% concerned women (64,372), 17% heterosexual men (28,833), 28% MSM-ASG (48,440), 17% MSM-PrEP (28,231) and 1% gender diverse persons (n=2,236). Out of consultations in gender diverse persons, 36% (795) were PrEP consultations.
- Out of 2,236 consultations in gender diverse persons, 235 (8%) were in trans men, 1,121 (62%) in trans women, and 880 (30%) in other gender diverse persons. Due to the low number of consultations in gender diverse persons, characteristics of gender diverse persons are shown separately and will be excluded from most analyses.
- The number of consultations increased by 4% compared with 2022 and was also higher than in 2019 (+14%) before COVID-19. Compared with 2022, the number of consultations increased by 2% among women, by 3% among heterosexual men, by 9% among MSM-ASG, and by 2% among MSM-PrEP.
- In 36,020 consultations (20,9%) one or more STIs were diagnosed. Out of these diagnoses, 35% were in women, 18% in heterosexual men, 31% in MSM-ASG, and 15% in MSM-PrEP). The number of consultations in which one or more STIs were diagnosed increased by 6% compared with 2022 and by 49% compared with 2019.
- STI positivity increased from 13.8% among women and 15.2% among heterosexual men in 2014 to 19.6% and 22.0% in 2023, respectively. Among MSM-ASG, STI positivity was stable at around 20% from 2014-2019 and increased to 23.1% in 2023. STI positivity among MSM-PrEP fluctuated around 18% since 2019 and increased to 19.2% in 2023.
- STI positivity was above 30% in all groups for those who received a partner notification and for those reporting STI-related symptoms. Similarly high STI positivity was found for MSM-ASG with an STI diagnosis in the past year.
- Among women and heterosexual men, STI positivity was highest in those with a Dutch region of origin. Among MSM, STI positivity was highest in those who were migrants from a region with triage indication.
- Increasing STI positivity has been seen among women and heterosexual men under the age of 25 since 2019. This was most notable in adolescents under the age of 20, where positivity increased from 25.0% in 2019 to 29.9% in 2023. In those aged 20-24 years, positivity increased from 18.2% in 2019 to 22.0% in 2023. Among adults of 25 years and older, STI positivity increased from 13.1% in 2019 to 15.0% in 2020 and decreased again to 13.3% in 2023.
- Out of consultations among gender diverse persons, trans men were the group with the highest proportion of having reported STI symptoms (31%, compared with 20% of trans women and 21% of other gender diverse persons). Trans women were the group with the highest proportion of having reported sex work in the past 6 months (42%, compared with 4% of trans men and 13% of other gender diverse persons), and of living with HIV (17%, compared with 0% of trans men and 7% of other gender diverse persons). Other gender diverse persons were the group with the highest proportion of having a high level of education (65%, compared with 47% of trans men and 30% of trans women).
- Among MSM-ASG, 31% reported having group sex, and 23% reported having used drugs in relation to sex in the preceding 6 months. Out of MSM-PrEP, 45% reported having group sex, and 36% reported having used drugs in relation to sex in the preceding 6 months. STI positivity was higher among MSM who reported having group sex (29.6%, MSM-ASG and 23.6%, MSM-PrEP) and using drugs in relation to sex (32.0%, MSM-ASG and 24.6% MSM-PrEP).
- The number of consultations among women who reported sex work (4,502) increased by 10% compared with 2022 and is similar to 2019. STI positivity among women who reported sex work increased from 9.6% in 2019 to 11.5% in 2022 and remained stable at 11.4% in 2023.

Repeat testing

- Out of 52,164 women and 25,443 heterosexual men who visited SHCs in 2023, the proportion who had multiple consultations was 17% and 11%, respectively. This was comparable with previous years (17% and 11% in 2022 respectively). Among 31,487 MSM-ASG, 32% was seen multiple times (29% in 2022). MSM-PrEP visit the SHC multiple times per year as part of PrEP care in the pilot; therefore 93% of 8,558 MSM-PrEP had multiple consultations in 2023.
- Among unique MSM-ASG, 28.3% had at least one consultation with an STI diagnosis in 2023. Among unique MSM-PrEP, this amounted to 39.4%.

Regional comparisons

- In 2023, the number of STI consultations per 1,000 inhabitants between the ages of 15 and 65 ranged from 1.4 in Zaanstreek/Waterland to 14.6 in Zuid Limburg and 44.7 in Amsterdam.
- STI positivity differed between regions, ranging between 17.0% and 25.3% among women, 18.5% and 29.6% among heterosexual men, 21.8% and 27.5% among MSM-ASG, and 17.6% and 21.2% among MSM-PrEP.
- Variation between the regions was seen in sex and type of sexual contact, as well as in age, education level, and proportions of those who were notified of STI/HIV exposure or reported STI-related symptoms.

2.1.2 General practices

- 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 177,900 in 2022. The number of episodes decreased or was stable for both men and women aged 15-24 years and women aged 25-64 years, whilst the number increased for men aged 25-64 years.
- The number of STI positive episodes was higher in 2022 (138,300) than in 2021 (137,700). For both men and women, the number of STI positive episodes increased among those aged 15-24 years whereas the number of STI positive episodes decreased among those aged 25-64 years.
- The reporting rate for STI-related episodes at GPs was 52.6 and 24.2 per 1,000 population for women aged 15-24 years and women aged 25-64 years, respectively. For men, the reporting rate for STI-related episodes at GPs was 33.0 per 1,000 population for those aged 15-24 years and 24.6 per 1,000 population for those aged 25-64 years, in 2022.

2.1.3 Sense

- In 2023, 8,488 Sense consultations were registered among women, 3,454 among men, and 550 among gender diverse persons. The registration of Sense consultations is not uniform across SHCs.
- The most frequently discussed topic during Sense consultations for women was birth control (36%), followed by sexuality (29%) and unwanted sexual behaviour/violence (14%). For men, the most frequently discussed topic was sexuality (63%), followed by STIs (18%).

2.1.4 Health Survey

- In 2022, 4,277 (53%) women, 3,577 (45%) heterosexual men, and 188 (2%) men attracted to men participated in the national Health Survey/Lifestyle Monitor.
- Among women between the ages 16 and 29, 9% reported having been tested for an STI in the previous year and 4% was tested for HIV. For heterosexual men in the 16-29 age group, these percentages were 5% for STI tests and 0.8% for HIV tests.
- Higher percentages of testing were seen among MSM in the 16-44 age group, with 26% having tested for STIs and 24% for HIV in the past year. The percentage of survey participants reporting STI and HIV tests decreases with age.

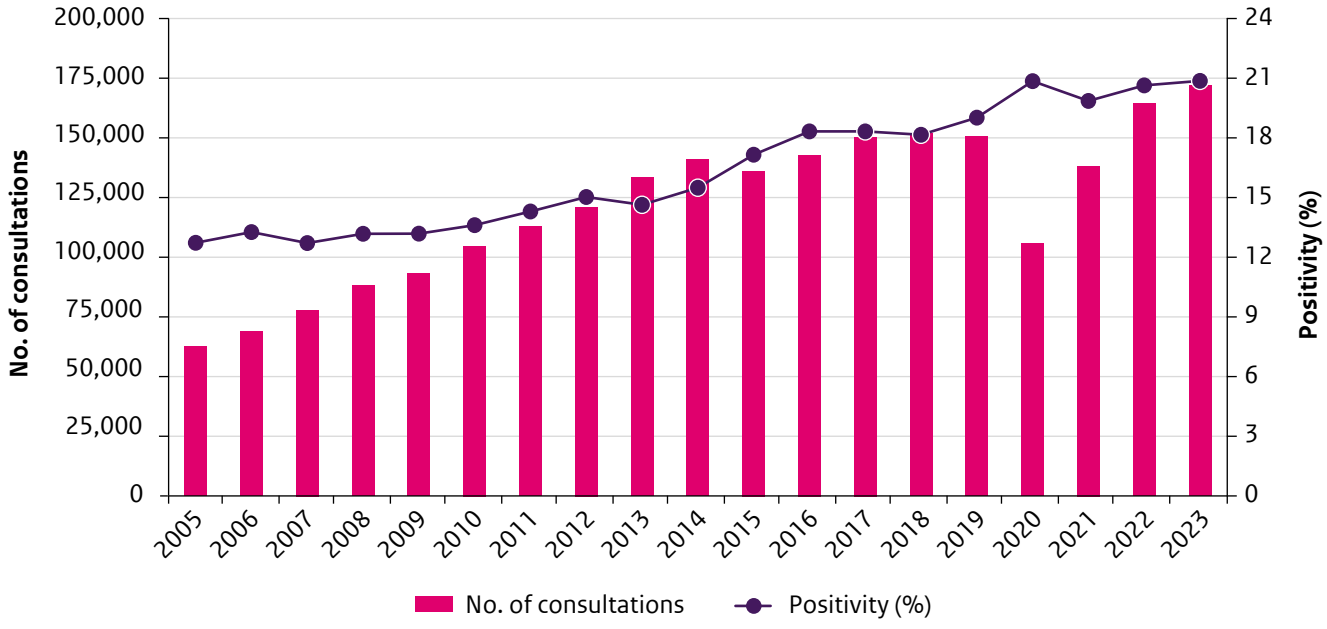
2.1.5 PrEP pilot programme

- Since August 2019, SHCs have been providing PrEP care to individuals at high risk of acquiring HIV, via a national PrEP pilot programme. In 2023, a number of SHCs started offering PrEP care on top of the number of available places in the pilot, for example via additional funds provided by their municipality. These 761 PrEP start (2 HIV diagnoses) and 993 PrEP follow-up consultations are not part of the pilot and are excluded from tables and descriptions in this section.
- An estimated 8,496 individuals participated in the PrEP pilot on 31 December 2023. Unless otherwise specified, numbers presented below pertain to the entire duration of the pilot.
- Between August 2019 and 31 December 2023, 13,715 individuals (of whom 96% were MSM) had a first PrEP consultation; 1,521 individuals (of whom 91% were MSM) joined the pilot in 2023. Out of those who joined in 2023, 38% reported previous PrEP use in the past year (41% for the duration of the pilot).
- Among 11,506 participants whose first PrEP consultation was a 'start' consultation, the most frequently reported indication for pilot participation was condomless anal sex with a partner with an unknown HIV status (68%).
- A total of 1,555 individuals discontinued pilot participation. Out of these, 12% (183) continued PrEP via another

provider and 44% (691) stopped using PrEP, with reduced risk being the most frequently cited reason for stopping PrEP use (63%). Another 136 participants (9%; all in 2023) transferred from the pilot to the additional PrEP care offered at SHCs as described above. For a further 545 individuals (35%) who discontinued pilot participation, no information on continuation of PrEP use was available.
- Since the start of the pilot, 62 participants have been diagnosed with HIV; 52 diagnoses were among MSM and 10 among gender diverse persons. There were 35 diagnoses made at the first PrEP consultation and 27 diagnoses in the 2nd-11th PrEP consultations. These 27 participants all reported having used PrEP in the past 3 months (6 daily use, 21 event-driven use). In 2023, 17 participants were diagnosed with HIV, 14 MSM and 3 gender diverse persons. All diagnoses among gender diverse persons and three diagnoses among MSM were made in their first PrEP consultation.
- In addition to those discontinuing pilot participation, 3,664 individuals were lost to follow-up. Out of these cases of loss to follow-up, 35% (1,266) occurred directly after the first consultation.
- A total of 97,885 PrEP consultations have been completed; 87% of PrEP consultations were 3-monthly follow-up consultations, with a median of 13 weeks in between consultations. In 94% 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 (41%) and a combination of both (5%).
- In addition to PrEP consultations, there were 11,848 ASG consultations (regular STI or Testlab consultations) in pilot participants for the duration of the pilot so far. In 2023, there were 2,932 ASG consultations in pilot participants (6% of all MSM-ASG consultations).
- STI positivity remained relatively stable at around 18% during PrEP pilot participation; 17.6% of participants had an STI in their PrEP start consultation and 18.9% of participants had an STI at the first PrEP follow-up consultation.

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, 2005-2023



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 programme (MSM-PrEP) are reported separately from the rest of the tables and figures.

Table 2.1a Number and proportion of ASG consultations by sex and type of sexual contact, 2019-2023

Sex and type of sexual contact	2019 n (%)	2020 n (%)	2021 n (%)	2022 n (%)	2023 n (%)
Women	54,522 (44.5)	42,238 (46.3)	53,941 (46.9)	62,883 (46.2)	64,319 (45.0)
Heterosexual men	24,706 (20.2)	18,018 (19.8)	23,198 (20.2)	27,947 (20.5)	28,825 (20.2)
MSM	42,905 (35.0)	30,400 (33.3)	37,067 (32.2)	44,318 (32.6)	48,440 (33.9)
Gender diverse persons	423 (0.3)	472 (0.5)	788 (0.7)	997 (0.7)	1,441 (1.0)
Unknown	12 (0.0)	50 (0.1)	0 (0.0)	0 (0.0)	0 (0.0)
Total	**122,568**	**91,178**	**114,994**	**136,145**	**143,025**

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

Table 2.1b Number and proportion of ASG consultations of gender diverse persons by gender, 2020-2023

Gender	2020 n (%)	2021 n (%)	2022 n (%)	2023 n (%)
Trans men	79 (16.7)	148 (18.8)	157 (15.7)	174 (12.1)
Trans women	280 (59.3)	380 (48.2)	454 (45.5)	628 (43.6)
Other gender diverse persons	113 (23.9)	260 (33.0)	386 (38.7)	639 (44.3)
Total	**472**	**788**	**997**	**1,441**

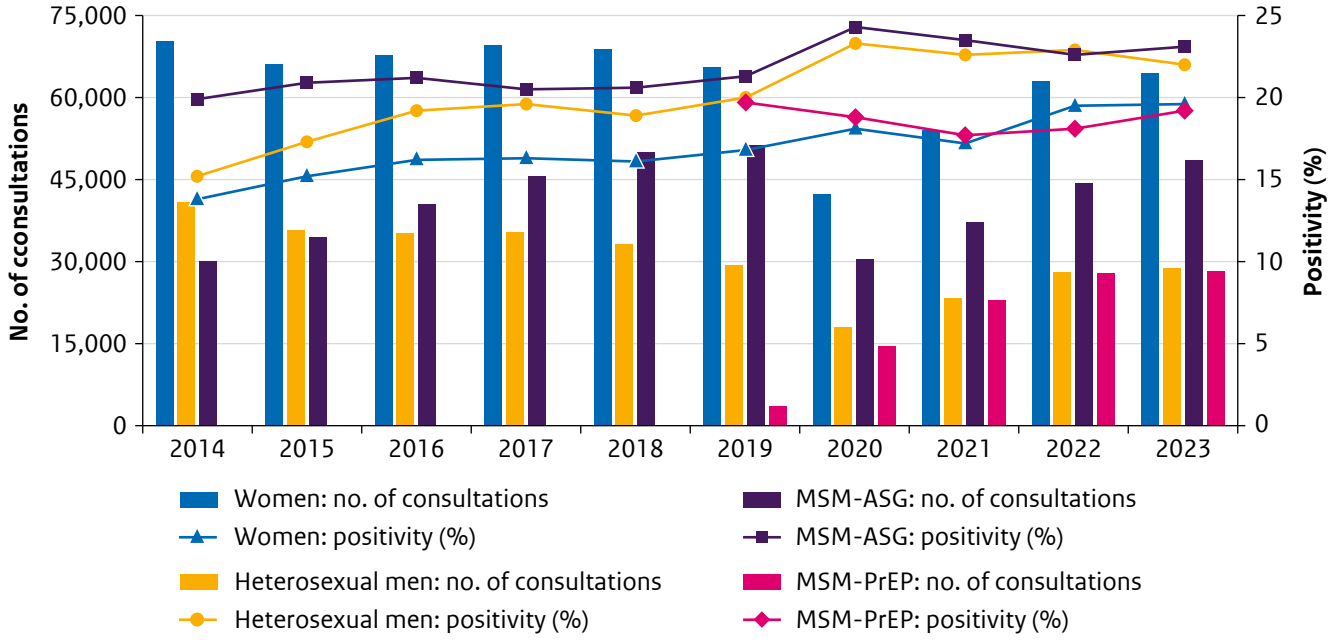
Table 2.2a Number and proportion of PrEP consultations by sex and type of sexual contact, 2019-2023

Sex and type of sexual contact	2019 n (%)	2020 n (%)	2021 n (%)	2022 n (%)	2023 n (%)
Women	6 (0.2)	27 (0.2)	37 (0.2)	38 (0.1)	53 (0.2)
Heterosexual men	0 (0.0)	1 (0.0)	3 (0.0)	0 (0.0)	9 (0.0)
MSM	3,614 (97.8)	14,534 (98.1)	22,928 (97.8)	27,892 (97.5)	28,231 (97.1)
Gender diverse persons	67 (1.8)	248 (1.7)	474 (2.0)	678 (2.4)	795 (2.7)
Unknown	9 (0.2)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
Total	**3,696**	**14,810**	**23,442**	**28,608**	**29,088**

Table 2.2b Number and proportion of PrEP consultations of gender diverse persons by gender, 2020-2023

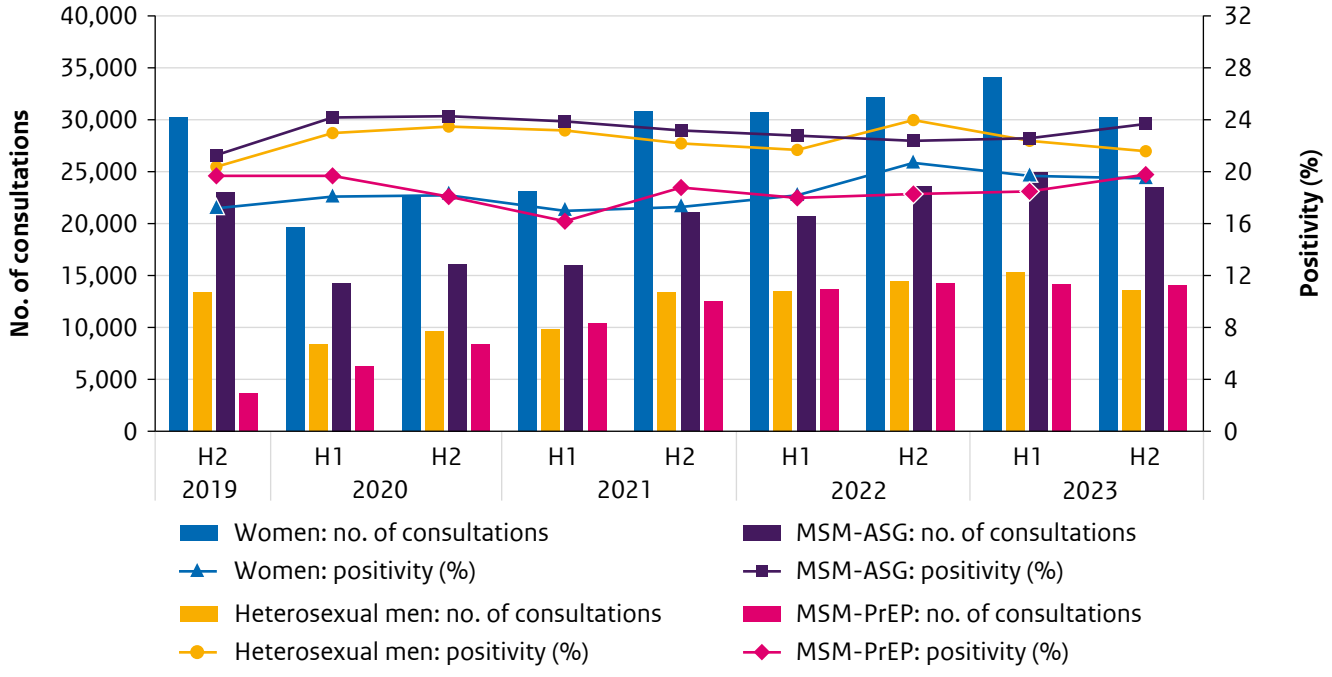
Gender	2020 n (%)	2021 n (%)	2022 n (%)	2023 n (%)
Trans men	24 (9.7)	63 (13.3)	56 (8.3)	61 (7.7)
Trans women	162 (65.3)	308 (65.0)	452 (66.7)	493 (62.0)
Other gender diverse persons	62 (25.0)	103 (21.7)	170 (25.1)	241 (30.3)
Total	**248**	**474**	**678**	**795**

Figure 2.2 Number of consultations and STI positivity by sex and type of sexual contact, 2014-2023



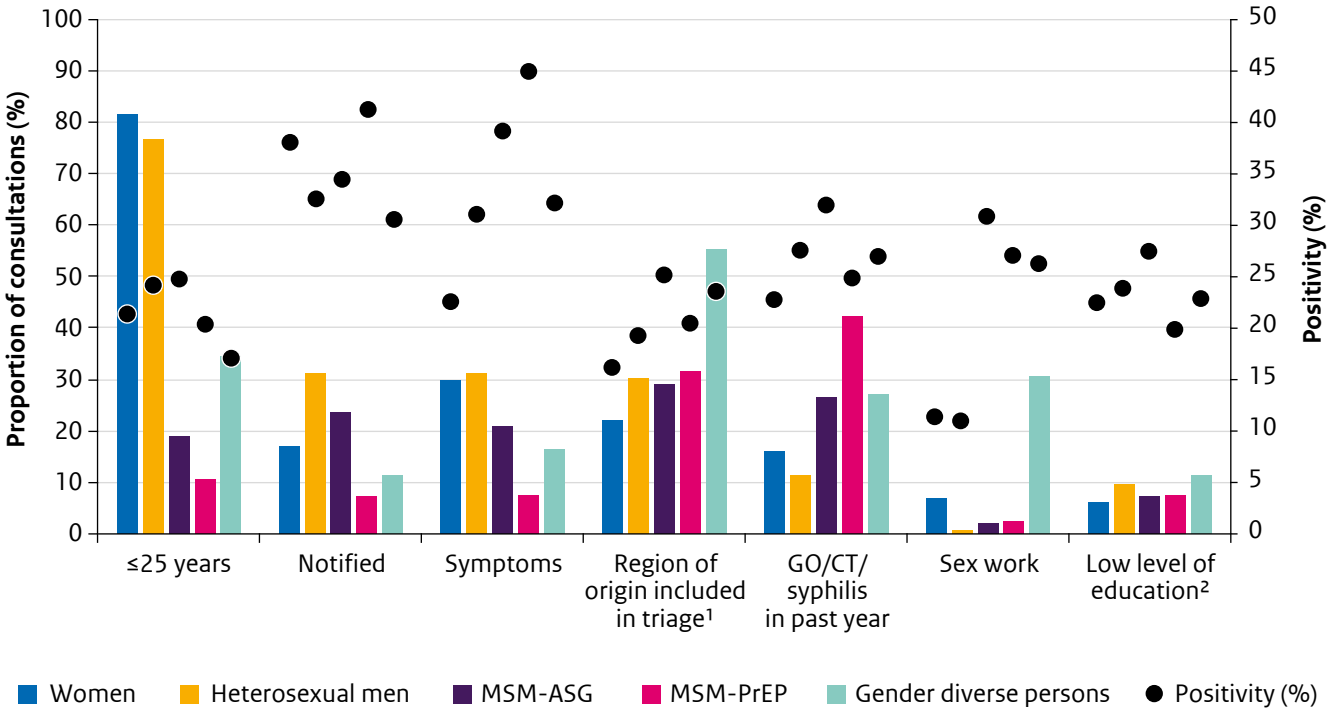
Footnote 1: STI include: chlamydia, gonorrhoea, infectious syphilis, HIV and infectious hepatitis B.
Footnote 2: Aggregated data of non-registered consultations are included in the number of consultations for 2018 and 2019. The STI positivity in 2019 was calculated based on consultations registered in 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 consultations. Furthermore, due to the three-monthly testing interval for MSM-PrEP, MSM-ASG and MSM-PrEP are not directly comparable.
Footnote 4: MSM in the PrEP programme 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 2023



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

Figure 2.4 Reported triage indication: proportion of consultations and STI positivity by sex and type of sexual contact, 2023



1 *Region of origin with triage indication includes 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 2.3 Reported triage indication: number and proportion of consultations by sex and type of sexual contact, 2023

	Women n (%)	Heterosexual men n (%)	MSM-ASG n (%)	MSM-PrEP n (%)
Notified				
No	53,330 (82.8)	19,798 (68.7)	36,887 (76.1)	26,172 (92.7)
Yes	10,928 (17.0)	8,993 (31.2)	11,482 (23.7)	2,052 (7.3)
Unknown	114 (0.2)	43 (0.1)	71 (0.1)	7 (0.0)
Symptoms				
No	43,757 (68)	19,082 (66.2)	37,456 (77.3)	26,053 (92.3)
Yes	19,219 (29.9)	9,033 (31.3)	10,129 (20.9)	2,094 (7.4)
Unknown	1,396 (2.2)	719 (2.5)	855 (1.8)	84 (0.3)
Region of origin included in triage[1]				
No	50,101 (77.9)	20,086 (69.7)	34,316 (70.9)	19,280 (68.4)
Yes	14,208 (22.1)	8,723 (30.3)	14,057 (29.1)	8,919 (31.6)
Age				
≤25	52,567 (81.7)	22,140 (76.8)	9,135 (18.9)	3,015 (10.7)
>25	11,804 (18.3)	6,693 (23.2)	39,305 (81.1)	25,216 (89.3)

Table 2.3 (continued) Reported triage indication: number and proportion of consultations by sex and type of sexual contact, 2023

	Women n (%)	Heterosexual men n (%)	MSM-ASG n (%)	MSM-PrEP n (%)
Partner in risk group[2]				
No	47,673 (74.1)	20,994 (72.8)	27,996 (57.8)	16,274 (57.6)
Yes	15,553 (24.2)	7,595 (26.3)	19,318 (39.9)	11,201 (39.7)
Unknown	1,146 (1.8)	245 (0.8)	1,126 (2.3)	756 (2.7)
Sex work, in the past 6 months				
No	59,314 (92.1)	28,435 (98.6)	46,997 (97.0)	27,146 (96.2)
Yes	4,502 (7.0)	191 (0.7)	972 (2.0)	668 (2.4)
Unknown	556 (0.9)	208 (0.7)	471 (1.0)	417 (1.5)
Gonorrhoea/chlamydia/syphilis, in the past year				
Not tested	36,968 (57.4)	20,403 (70.8)	16,367 (33.8)	2,212 (7.8)
Tested, negative	16,211 (25.2)	4,801 (16.7)	17,966 (37.1)	13,074 (46.3)
Tested, positive	10,357 (16.1)	3,276 (11.4)	12,822 (26.5)	11,931 (42.3)
Tested, unknown	78 (0.1)	17 (0.1)	183 (0.4)	158 (0.6)
Unknown	758 (1.2)	337 (1.2)	1,102 (2.3)	856 (3.0)
Victim of sexual violence				
No	62,153 (96.6)	28,706 (99.6)	47,528 (98.1)	27,622 (97.8)
Yes	2,108 (3.3)	85 (0.3)	451 (0.9)	108 (0.4)
Unknown	111 (0.2)	43 (0.1)	461 (1.0)	501 (1.8)
At least one indication (including MSM)				
No	491 (0.8)	285 (1.0)		
Yes	63,881 (99.2)	28,549 (99)	48,440 (100.0)	28,231 (100.0)

1 *Region of origin with triage indication includes 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.*

Table 2.4 Reported triage indication in gender diverse persons: number and proportion of ASG consultations by sex and gender, 2023

	Trans men n (%)	Trans women n (%)	Other gender diverse persons n (%)
Notified			
No	141 (81.0)	553 (88.1)	517 (80.9)
Yes	33 (19.0)	72 (11.5)	121 (18.9)
Unknown		3 (0.5)	1 (0.2)
Symptoms			
No	120 (69.0)	492 (78.3)	485 (75.9)
Yes	53 (30.5)	128 (20.4)	137 (21.4)
Unknown	1 (0.6)	8 (1.3)	17 (2.7)
Educational level*			
High	82 (47.1)	190 (30.3)	414 (64.8)
Medium	66 (37.9)	128 (20.4)	110 (17.2)
Low	19 (10.9)	84 (13.4)	54 (8.5)
Unknown	7 (4.0)	226 (36.0)	61 (9.5)
Sex worker			
No	165 (94.8)	343 (54.6)	550 (86.1)
Yes	7 (4.0)	265 (42.2)	80 (12.5)
Unknown	2 (1.1)	20 (3.2)	9 (1.4)
Gonorrhoea/chlamydia/syphilis, in the past year			
Not tested	101 (58.0)	227 (36.1)	312 (48.8)
Tested, negative	40 (23.0)	210 (33.4)	209 (32.7)
Tested, positive	29 (16.7)	151 (24.0)	99 (15.5)
Tested, unknown		4 (0.6)	1 (0.2)
Unknown	4 (2.3)	36 (5.7)	18 (2.8)
Known HIV-positive			
No	174 (100.0)	519 (82.6)	597 (93.4)
Yes		109 (17.4)	42 (6.6)

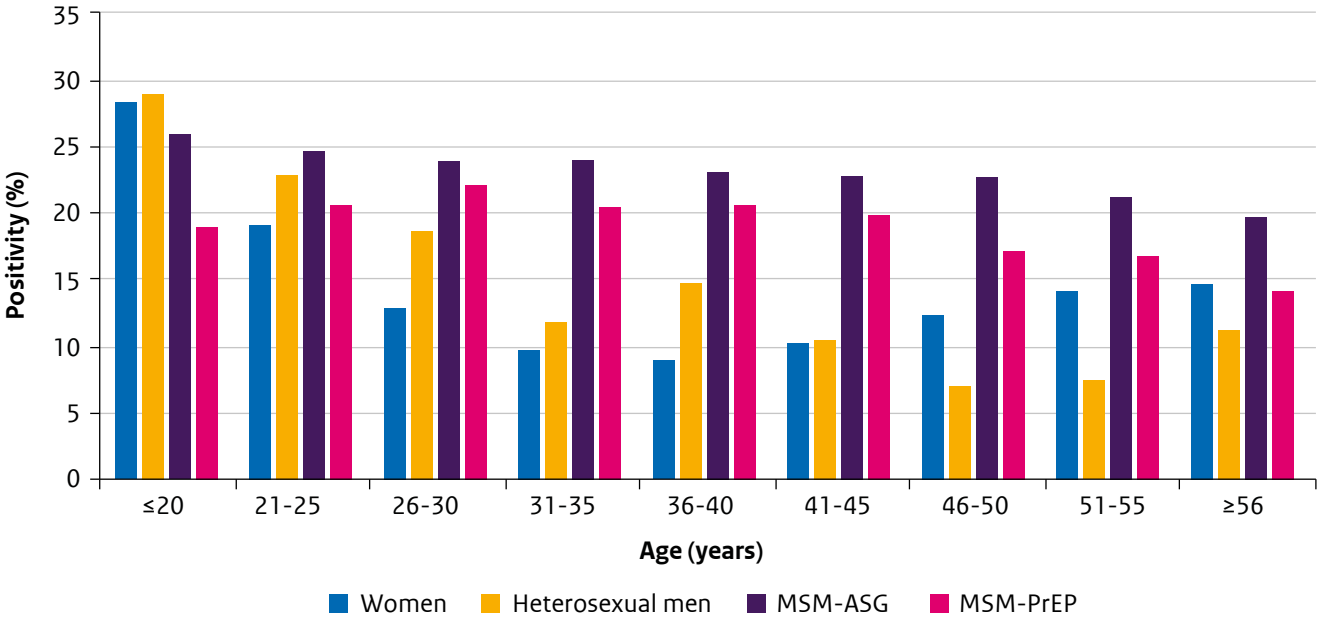
Footnote: Triage indications and demographics not shown for PrEP consultations among gender diverse persons in 2022 (n=61 in trans men, n=493 in trans women, and n=241 in other gender diverse persons).

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

Table 2.5 Age group: number and proportion of consultations, by sex and type of sexual contact, 2023

Age (years)	Women n (%)	Heterosexual men n (%)	MSM-ASG n (%)	MSM-PrEP n (%)
≤20	13,845 (21.5)	4,852 (16.8)	1,514 (3.1)	228 (0.8)
21-25	38,722 (60.2)	17,288 (60.0)	7,621 (15.7)	2,787 (9.9)
26-30	5,230 (8.1)	3,224 (11.2)	9,617 (19.9)	4,665 (16.5)
31-35	2,506 (3.9)	1,519 (5.3)	8,660 (17.9)	5,143 (18.2)
36-40	1,401 (2.2)	778 (2.7)	5,461 (11.3)	3,769 (13.4)
41-45	908 (1.4)	424 (1.5)	4,052 (8.4)	3,044 (10.8)
46-50	676 (1.1)	257 (0.9)	3,181 (6.6)	2,512 (8.9)
51-55	555 (0.9)	215 (0.7)	2,918 (6.0)	2,294 (8.1)
≥56	528 (0.8)	276 (1.0)	5,416 (11.2)	3,789 (13.4)
Total	**64,371**	**28,833**	**48,440**	**28,231**

Figure 2.5 Age group: STI positivity by sex and type of sexual contact, 2023



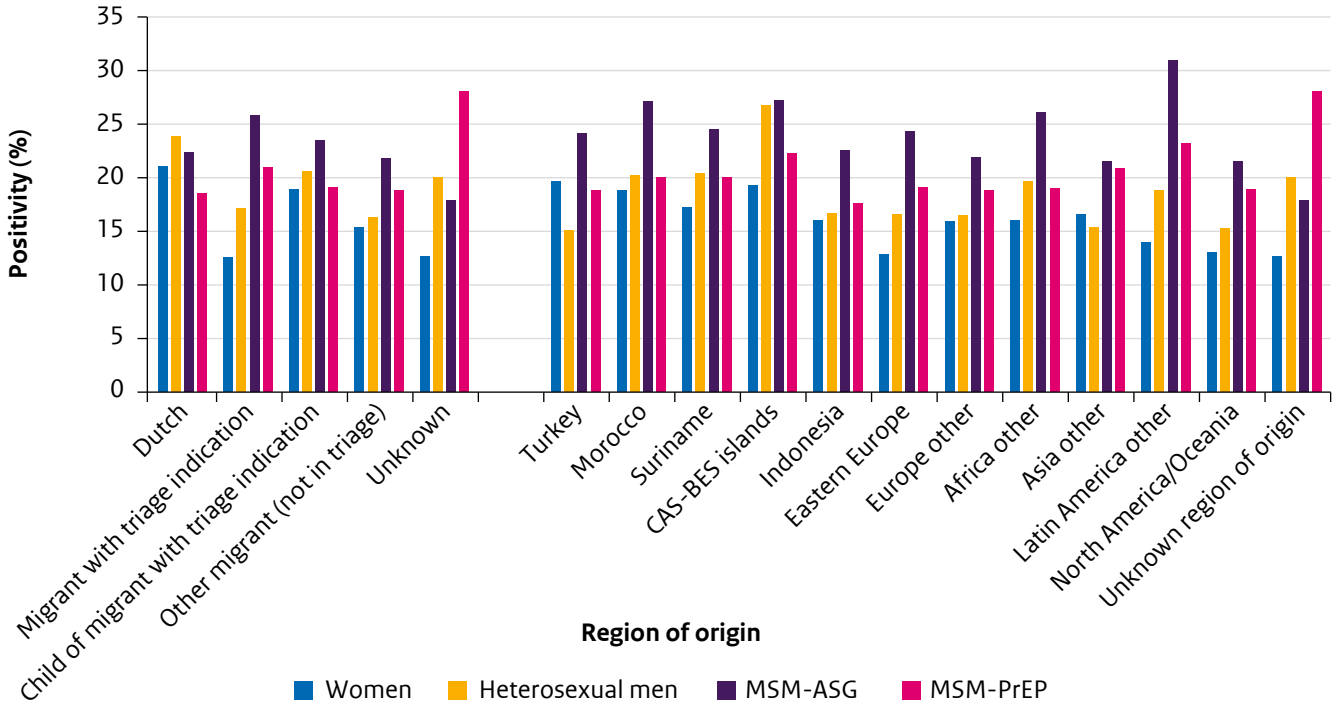
Footnote: STI include: chlamydia, gonorrhoea, infectious syphilis, HIV and infectious hepatitis B.

Table 2.6 Region of origin: number and proportion of consultations by sex and type of sexual contact, 2023

Region of origin	Women n (%)	Heterosexual men n (%)	MSM-ASG n (%)	MSM-PrEP n (%)
The Netherlands	**45,299 (70.4)**	**18,180 (63.1)**	**28,644 (59.1)**	**16,224 (57.5)**
Turkey	**757 (1.2)**	**762 (2.6)**	**1,025 (2.1)**	**606 (2.1)**
Migrant	140 (18.5)	158 (20.7)	397 (38.7)	249 (41.1)
Child of a migrant	617 (81.5)	604 (79.3)	628 (61.3)	357 (58.9)
Morocco	**793 (1.2)**	**1,040 (3.6)**	**706 (1.5)**	**295 (1.0)**
Migrant	74 (9.3)	123 (11.8)	203 (28.8)	117 (39.7)
Child of a migrant	719 (90.7)	917 (88.2)	503 (71.2)	178 (60.3)
Suriname	**2,527 (3.9)**	**1,775 (6.2)**	**1,325 (2.7)**	**807 (2.9)**
Migrant	377 (14.9)	350 (19.7)	481 (36.3)	325 (40.3)
Child of a migrant	2,150 (85.1)	1,425 (80.3)	844 (63.7)	482 (59.7)
CAS-BES islands	**1,395 (2.2)**	**981 (3.4)**	**1,098 (2.3)**	**622 (2.2)**
Migrant	541 (38.8)	472 (48.1)	814 (74.1)	499 (80.2)
Child of a migrant	854 (61.2)	509 (51.9)	284 (25.9)	123 (19.8)
Indonesia	**468 (0.7)**	**168 (0.6)**	**827 (1.7)**	**546 (1.9)**
Migrant	71 (15.2)	18 (10.7)	280 (33.9)	204 (37.4)
Child of a migrant	397 (84.8)	150 (89.3)	547 (66.1)	342 (62.6)
Eastern Europe	**2,448 (3.8)**	**686 (2.4)**	**2,602 (5.4)**	**1,434 (5.1)**
Migrant	1,811 (74.0)	418 (60.9)	2,417 (92.9)	1,338 (93.3)
Child of a migrant	637 (26.0)	268 (39.1)	185 (7.1)	96 (6.7)
Europe other	**4,018 (6.2)**	**1,618 (5.6)**	**4,853 (10.0)**	**2,606 (9.2)**
Migrant	2,449 (61.0)	960 (59.3)	4,095 (84.4)	2,096 (80.4)
Child of a migrant	1,569 (39.0)	658 (40.7)	758 (15.6)	510 (19.6)
Africa other	**1,766 (2.7)**	**1,473 (5.1)**	**1,163 (2.4)**	**659 (2.3)**
Migrant	650 (36.8)	618 (42.0)	825 (70.9)	518 (78.6)
Child of a migrant	1,116 (63.2)	855 (58.0)	338 (29.1)	141 (21.4)
Asia other	**2,217 (3.4)**	**1,221 (4.2)**	**3,086 (6.4)**	**2,435 (8.6)**
Migrant	1,143 (51.6)	673 (55.1)	2,544 (82.4)	2,059 (84.6)
Child of a migrant	1,074 (48.4)	548 (44.9)	542 (17.6)	376 (15.4)
Latin America other	**1,837 (2.9)**	**617 (2.1)**	**2,225 (4.6)**	**1,515 (5.4)**
Migrant	1,268 (69.0)	359 (58.2)	2,015 (90.6)	1,415 (93.4)
Child of a migrant	569 (31.0)	258 (41.8)	210 (9.4)	100 (6.6)
North America/Oceania	**784 (1.2)**	**288 (1.0)**	**819 (1.7)**	**450 (1.6)**
Migrant	470 (59.9)	151 (52.4)	694 (84.7)	386 (85.8)
Child of a migrant	314 (40.1)	137 (47.6)	125 (15.3)	64 (14.2)
Unknown	**63 (0.1)**	**25 (0.1)**	**67 (0.1)**	**32 (0.1)**
Total	**64,372**	**28,834**	**48,440**	**28,231**

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 2.6 Region of origin: STI positivity by sex and type of sexual contact, 2023



Footnote 1: left side: aggregated data; right side: specified per region of origin with triage indication.
Footnote 2: STI includes: chlamydia, gonorrhoea, infectious syphilis, HIV and infectious hepatitis B.
Footnote 3: 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 2.7 Demographics and (sexual) behavioural characteristics: number and proportion of consultations by sex and type of sexual contact, 2023

	Women n (%)	Heterosexual men n (%)	MSM-ASG n (%)	MSM-PrEP n (%)
Educational level[1]				
High	40,211 (62.5)	15,954 (55.3)	32,026 (66.1)	18,719 (66.3)
Medium	17,144 (26.6)	9,044 (31.4)	9,843 (20.3)	5,942 (21.0)
Low	3,943 (6.1)	2,760 (9.6)	3,520 (7.3)	2,092 (7.4)
Unknown	3,074 (4.8)	1,076 (3.7)	3,051 (6.3)	1,478 (5.2)
Number of partners, in the past 6 months				
0 partners	546 (0.8)	236 (0.8)	576 (1.2)	247 (0.9)
1 partner	16,583 (25.8)	6,030 (20.9)	3,585 (7.4)	1,385 (4.9)
2 partners	15,863 (24.6)	5,967 (20.7)	5,237 (10.8)	1,915 (6.8)
3 or more partners	29,964 (46.5)	16,504 (57.2)	38,609 (79.7)	24,469 (86.7)
Unknown	1,416 (2.2)	97 (0.3)	433 (0.9)	215 (0.8)

Table 2.7 (continued) Demographics and (sexual) behavioural characteristics: number and proportion of consultations by sex and type of sexual contact, 2023

	Women n (%)	Heterosexual men n (%)	MSM-ASG n (%)	MSM-PrEP n (%)
Receptive anal sex, in the past 6 months				
No receptive anal sex	48,969 (76.1)		13,564 (28.0)	4,721 (16.7)
Yes, consistently with a condom	1,474 (2.3)		5,984 (12.4)	1,306 (4.6)
Yes, not consistently with a condom	3,175 (4.9)		14,995 (31.0)	9,570 (33.9)
Yes, never with a condom	9,537 (14.8)		13,197 (27.2)	12,450 (44.1)
Unknown	1,217 (1.9)		700 (1.4)	184 (0.7)
Insertive anal sex, in the past 6 months				
No insertive anal sex		24,641 (85.5)	10,286 (21.2)	4,055 (14.4)
Yes, consistently with a condom		533 (1.8)	6,673 (13.8)	1,231 (4.4)
Yes, not consistently with a condom		934 (3.2)	16,293 (33.6)	9,680 (34.3)
Yes, never with a condom		2,038 (7.1)	14,564 (30.1)	13,070 (46.3)
Unknown		688 (2.4)	624 (1.3)	195 (0.7)
Vaginal sex, in the past 6 months[2]				
No vaginal sex	747 (1.2)	403 (1.4)	1,005 (11.5)	277 (16.0)
Yes, consistently with a condom	4,556 (7.1)	1,853 (6.4)	1,099 (12.6)	251 (14.5)
Yes, not consistently with a condom	23,408 (36.4)	12,754 (44.2)	2,327 (26.7)	417 (24.1)
Yes, never with a condom	34,803 (54.1)	13,523 (46.9)	2,979 (34.2)	724 (41.9)
Unknown	858 (1.3)	301 (1.0)	1,304 (15.0)	60 (3.5)
Receptive oral sex, in the past 6 months				
No receptive oral sex	6,851 (10.6)		2,657 (5.5)	633 (2.2)
Yes, consistently with a condom	1,176 (1.8)		351 (0.7)	94 (0.3)
Yes, not consistently with a condom	5,032 (7.8)		4,417 (9.1)	1,184 (4.2)
Yes, never with a condom	48,955 (76.1)		40,207 (83.0)	26,081 (92.4)
Unknown	2,358 (3.7)		808 (1.7)	239 (0.8)
Client of sex work, in the past 6 months				
No	40,736 (63.3)	27,131 (94.1)	46,369 (95.7)	27,359 (96.9)
Yes	183 (0.3)	1,377 (4.8)	1,340 (2.8)	321 (1.1)
Unknown	23,453 (36.4)	326 (1.1)	731 (1.5)	551 (2.0)
Previous HIV test				
No	47,219 (73.4)	22,762 (78.9)	6,980 (14.4)	550 (1.9)
Yes, positive	24 (0.0)	23 (0.1)	4,491 (9.3)	
Yes, negative	16,398 (25.5)	5,731 (19.9)	36,656 (75.7)	27,638 (97.9)
Yes, result unknown	130 (0.2)	36 (0.1)	107 (0.2)	33 (0.1)
Unknown	601 (0.9)	282 (1.0)	206 (0.4)	10 (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. Men who had sex with men only are excluded.*

Table 2.8 Sexual behavioural characteristics among MSM: number and proportion of consultations and STI positivity by sex and type of sexual contact, 2023

	MSM-ASG		MSM-PrEP	
	n (%)	% STI	n (%)	% STI
Total number of consultations	**48,440 (100.0)**	**23.1**	**28,231 (100.0)**	**19.2**
Anal sex, in the past 6 months				
No	3,633 (7.5)	11.2	690 (2.4)	8.7
Receptive anal sex only	6,702 (13.8)	21.3	3,385 (12)	16.7
Insertive anal sex only	10,056 (20.8)	17.9	4,040 (14.3)	12.4
Both insertive and receptive	27,474 (56.7)	27.1	19,941 (70.6)	21.4
Unknown	575 (1.2)	22.1	175 (0.6)	12.6
Group sex				
No	31,183 (64.4)	20.3	15,113 (53.5)	15.3
Yes	15,122 (31.2)	29.6	12,793 (45.3)	23.6
Unknown	2,135 (4.4)	18.2	325 (1.2)	22.2
Sex with HIV-positive MSM[1]				
No	10,194 (21.0)	22.4	5,638 (20.0)	17.7
Yes	1,516 (3.1)	32.8	1,520 (5.4)	21.4
Don't know	8,506 (17.6)	23.1	4,162 (14.7)	19.6
Missing	28,224 (58.3)	22.9	16,911 (59.9)	19.3
Drug use in relation to sex, in the past 6 months[2]				
No	36,934 (76.2)	20.5	17,958 (63.6)	16.1
Yes	10,896 (22.5)	32.0	10,096 (35.8)	24.6
Unknown	610 (1.3)	24.3	177 (0.6)	20.3
Injected/slammed drugs, in the past 6 months[1]				
No	12,700 (26.2)	31.0	10,850 (38.4)	23.0
Yes	468 (1.0)	38.2	497 (1.8)	33.2
Missing	35,272 (72.8)	20.1	16,884 (59.8)	16.3
Drugs type				
Alcohol	15,143 (31.3)	24.8	8,473 (30.0)	20.0
Erection stimulants	3,938 (8.1)	31.3	4,353 (15.4)	22.2
Cocaine	3,326 (6.9)	28.3	2,630 (9.3)	23.5
XTC/MDMA	5,941 (12.3)	29.8	5,390 (19.1)	22.7
Speed	1,527 (3.2)	31.0	1,421 (5.0)	25.8
Heroin	10 (0.0)	10.0	13 (0.0)	7.7
Crystal Meth	475 (1.0)	38.9	461 (1.6)	30.6
Mephedrone	496 (1.0)	35.5	434 (1.5)	29.7
3-MMC	4,194 (8.7)	39.8	4,633 (16.4)	29.5
4-MEC	128 (0.3)	37.5	100 (0.4)	30.0
4-FA	79 (0.2)	29.1	47 (0.2)	21.3

Table 2.8 (continued) Sexual behavioural characteristics among MSM: number and proportion of consultations and STI positivity by sex and type of sexual contact, 2023

	MSM-ASG		MSM-PrEP	
	n (%)	% STI	n (%)	% STI
Drugs type				
GHB/GBL	4,550 (9.4)	36.6	5,566 (19.7)	27.5
Ketamine	2,298 (4.7)	32.2	2,287 (8.1)	25.4
Poppers	7,462 (15.4)	29.8	6,075 (21.5)	22.6
Cannabis/hashish	4,633 (9.6)	26.3	3,009 (10.7)	20.8
Other	188 (0.4)	24.5	273 (1.0)	22.3

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 2.9 Age group and level of education: number of consultations and STI positivity by sex and type of sexual contact, 2023

Education level	Age group				
	≤20 n (% positivity)	21-25 n (% positivity)	26-35 n (% positivity)	≥36 n (% positivity)	Total n (% positivity)
Women					
Low	1,363 (30.6)	1,430 (22.1)	551 (14.2)	599 (12.9)	3,943 (22.5)
Medium	5,807 (28.6)	8,382 (21.2)	1,832 (14.1)	1,123 (12.9)	17,144 (22.4)
High	6,365 (27.6)	28,201 (18.2)	4,417 (11.0)	1,228 (11.2)	40,211 (18.7)
Heterosexual men					
Low	651 (28.3)	1,337 (26.1)	460 (17.8)	312 (14.1)	2,760 (23.9)
Medium	2,210 (30.4)	5,015 (25.7)	1,320 (21.1)	499 (13.2)	9,044 (25.5)
High	1,885 (27.4)	10,588 (21.2)	2,640 (14.0)	840 (9.9)	15,953 (20.2)
MSM-ASG					
Low	149 (27.5)	437 (30.9)	964 (31.7)	1,970 (24.7)	3,520 (27.5)
Medium	603 (27.2)	1,853 (27.0)	3,223 (27.6)	4,164 (23.9)	9,843 (25.9)
High	700 (24.3)	4,990 (23.0)	13,040 (22.1)	13,296 (20.3)	32,026 (21.5)
MSM-PrEP					
Low	22 (31.8)	156 (25.6)	516 (22.3)	1,398 (18.2)	2,092 (19.9)
Medium	101 (12.9)	732 (21.6)	1,887 (21.7)	3,222 (18.2)	5,942 (19.6)
High	99 (21.2)	1,778 (18.8)	6,911 (20.8)	9,931 (17.6)	18,719 (18.9)
Gender diverse persons					
Low	27 (7.4)	57 (24.6)	64 (21.9)	105 (26.7)	253 (22.9)
Medium	53 (13.2)	179 (23.5)	141 (21.3)	115 (20.9)	488 (21.1)
High	45 (11.1)	343 (13.7)	397 (14.6)	202 (17.8)	987 (14.8)

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 2.10a 'Big five' STI diagnoses: Number of diagnoses and positivity by sex and type of sexual contact, 2023

Diagnosis	Women	Heterosexual men	MSM-ASG	MSM-PrEP	Gender diverse persons
	n (% positivity)	n (% positivity)	n (% positivity)	n (% positivity)	n (% positivity)
Chlamydia	10,755 (16.8)	5,628 (19.6)	4,910 (10.2)	2,517 (9.1)	238 (10.8)
Gonorrhoea	2,598 (4.1)	1,007 (3.5)	6,805 (14.1)	3,236 (11.7)	207 (9.4)
Syphilis, infectious*	38 (0.2)	43 (0.4)	1,080 (2.3)	487 (1.7)	45 (2.1)
HIV	7 (0.0)	4 (0.0)	108 (0.3)	14 (0.0)	8 (0.4)
Hepatitis B, infectious	15 (0.2)	10 (0.3)	22 (0.2)	0 (0.0)	6 (0.7)

** 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: Of the 14 new HIV-diagnoses among MSM-PrEP, 6 were diagnosed in PrEP start consultations and 8 in PrEP follow-up consultations. An additional 2 PrEP participants were diagnosed with HIV in an ASG consultation, these are counted under MSM-ASG.

Table 2.10b Other STI diagnoses: number of diagnoses and positivity (in case of laboratory-confirmed diagnoses) by sex and type of sexual contact, 2023

Diagnoses	Women	Heterosexual men	MSM-ASG	MSM-PrEP	Gender diverse persons
	n (% positivity)	n (% positivity)	n (% positivity)	n (% positivity)	n (% positivity)
Laboratory-confirmed diagnoses					
Syphilis, non-infectious or not specified					
latens tarda	20 (0.1)	15 (0.1)	102 (0.2)	12 (0.0)	9 (0.4)
not specified	25 (0.1)	18 (0.1)	173 (0.4)	22 (0.1)	8 (0.4)
Hepatitis B, recovered	127 (2.0)	80 (2.3)	297 (2.6)	54 (1.4)	35 (4.3)
Hepatitis C, all types	2 (0.4)	3 (1.0)	29 (1.2)	23 (0.2)	2 (0.6)
Hepatitis C, infectious	0 (0.0)	0 (0.0)	2 (0.1)	2 (0.0)	0 (0.0)
Any LGV	0 (0.0)	1 (4.5)	377 (10.9)	195 (10.1)	4 (2.6)
Rectal LGV	0 (0.0)	1 (4.5)	371 (10.7)	192 (9.9)	4 (2.6)
Urogenital LGV	0 (0.0)	0 (0.0)	6 (0.2)	0 (0.0)	0 (0.0)
Oral LGV	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
LGV ulcer	0 (0.0)	0 (0.0)	2 (0.1)	4 (0.2)	0 (0.0)
Mpox	0 (0.0)	0 (0.0)	21 (3.5)	1 (0.5)	1 (5.6)
Other syndromes/clinical diagnoses					
Trichomoniasis[1]	82	7	2	2	0
Genital herpes					
primary: HSV1[2]	122	41	67	21	2
primary: HSV2[2]	73	42	86	20	1
primary: HSV unknown	7	7	4	0	0
recurrent	6	5	9	1	1

Table 2.10b (continued) Other STI diagnoses: number of diagnoses and positivity (in case of laboratory-confirmed diagnoses) by sex and type of sexual contact, 2023

Diagnoses	Women	Heterosexual men	MSM-ASG	MSM-PrEP	Gender diverse persons
	n (% positivity)	n (% positivity)	n (% positivity)	n (% positivity)	n (% positivity)
Other syndromes/clinical diagnoses					
Genital warts	259	299	138	36	11
Urethritis	1	387	412	101	6
Proctitis	4	4	153	51	2
Candidiasis	371	25	17	6	5
Bacterial vaginosis	953	0	0	0	6
Scabies	1	53	46	7	2
Pubic Lice	0	0	6	1	0
PID	28	0	0	0	1
Epididymitis	0	9	14	3	1
Mycoplasma genitalium	42	38	20	7	0
Ulcus e.c.i.	17	16	48	7	2

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 2.11 Clients visiting the SHC repeatedly: number and proportion of consultations and STI positivity at each visit by sex and type of sexual contact, 2023

No. of consultation	Women		Heterosexual men		MSM-ASG		Gender diverse persons	
	n (%)	STI	n (%)	STI	n (%)	STI	n (%)	STI
1	52,164 (100)	20	25,443 (100)	22.3	31,487 (100)	21.7	1,332 (100)	18.7
2	8,949 (17.2)	18.6	2,698 (10.6)	20.9	10,203 (32.4)	23.5	454 (34.1)	20.9
3	2,213 (4.2)	17.6	495 (1.9)	19.2	3,880 (12.3)	27.2	255 (19.1)	19.2
4	701 (1.3)	16.8	129 (0.5)	13.2	1,670 (5.3)	30.8	128 (9.6)	22.7

Footnote: Number of visits reach up to 13 in MSM-ASG, 9 in women, 11 in heterosexual men and 9 in gender diverse persons. 5th-13th consultation not shown because of low numbers.

Table 2.12 Characteristics of clients at repeat consultations: number and proportion of consultations by sex and type of sexual contact, 2023

No. of consultation	Women n (%)	Heterosexual men n (%)	MSM-ASG n (%)	Gender diverse persons n (%)
Notified for STI/HIV				
1	9,430 (18.1)	8,105 (31.8)	8,018 (24.1)	182 (13.2)
2	1,256 (14.0)	768 (29.1)	2,310 (23.2)	33 (7.6)
3	195 (8.8)	100 (21.0)	753 (22.7)	20 (8.2)
Symptoms				
1	16,566 (31.8)	8,133 (31.9)	7,206 (21.6)	263 (19.0)
2	2,204 (24.6)	778 (29.5)	1,995 (20.0)	57 (13.1)
3	346 (15.6)	93 (19.5)	614 (18.5)	31 (12.8)
Region of origin with triage indication[1]				
1	11,548 (22.1)	7,592 (29.7)	9,527 (28.6)	668 (48.3)
2	1,966 (22.0)	880 (33.3)	2,878 (28.9)	283 (65.1)
3	460 (20.8)	168 (35.2)	1,034 (31.2)	161 (66.3)
Age ≤25 years				
1	42,492 (81.5)	19,402 (76.0)	6,969 (20.9)	559 (40.4)
2	7,373 (82.4)	2,150 (81.5)	1,568 (15.7)	112 (25.7)
3	1,819 (82.2)	412 (86.4)	422 (12.7)	60 (24.7)
Partner in risk group[2]				
1	12,657 (24.3)	6,760 (26.5)	12,997 (39.0)	776 (56.1)
2	2,160 (24.1)	675 (25.6)	4,006 (40.2)	299 (68.7)
3	492 (22.2)	107 (22.4)	1,468 (44.4)	171 (70.4)
Sex work, in the past 6 months				
1	3,034 (5.8)	138 (0.5)	628 (1.9)	338 (24.4)
2	971 (10.9)	37 (1.4)	209 (2.1)	171 (39.3)
3	339 (15.3)	13 (2.7)	87 (2.6)	93 (38.3)
Gonorrhoea/chlamydia/syphilis, in the past year				
1	5,688 (10.9)	2,015 (7.9)	6,328 (19.0)	240 (17.3)
2	3,025 (33.8)	934 (35.4)	3,646 (36.6)	162 (37.2)
3	1,028 (46.5)	226 (47.4)	1,673 (50.5)	109 (44.9)
≥3 sexual contacts, in the past 6 months				
1	23,275 (44.6)	14,307 (56.1)	25,694 (77.1)	1,002 (72.4)
2	4,849 (54.2)	1,742 (66.0)	8,379 (84.1)	356 (81.8)
3	1,256 (56.8)	331 (69.4)	2,900 (87.6)	202 (83.1)
Client of sex work, in the past 6 months				
1	128 (0.2)	1,221 (4.8)	1,038 (3.1)	38 (2.7)
2	43 (0.5)	131 (5.0)	208 (2.1)	16 (3.7)
3	9 (0.4)	20 (4.2)	55 (1.7)	3 (1.2)

Table 2.12 (continued) Characteristics of clients at repeat consultations: number and proportion of consultations by sex and type of sexual contact, 2023

No. of consultation	Women n (%)	Heterosexual men n (%)	MSM-ASG n (%)	Gender diverse persons n (%)
Known HIV-positive				
1	21 (0.0)	21 (0.1)	2,616 (7.9)	99 (7.2)
2	1 (0.0)	2 (0.1)	1,082 (10.9)	33 (7.6)
3	0 (0.0)	0 (0.0)	455 (13.7)	11 (4.5)
Low level of education[3]				
1	3,174 (6.1)	2,451 (9.6)	2,489 (7.5)	153 (11.1)
2	576 (6.4)	260 (9.9)	704 (7.1)	46 (10.6)
3	135 (6.1)	39 (8.2)	229 (6.9)	27 (11.1)

Footnote: Number of visits reach up to 13 in MSM-ASG, 9 in women, 11 in heterosexual men and 9 in gender diverse persons. 4th-13th consultation not shown because of low numbers.

1 *Region of origin with triage indication includes 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.*

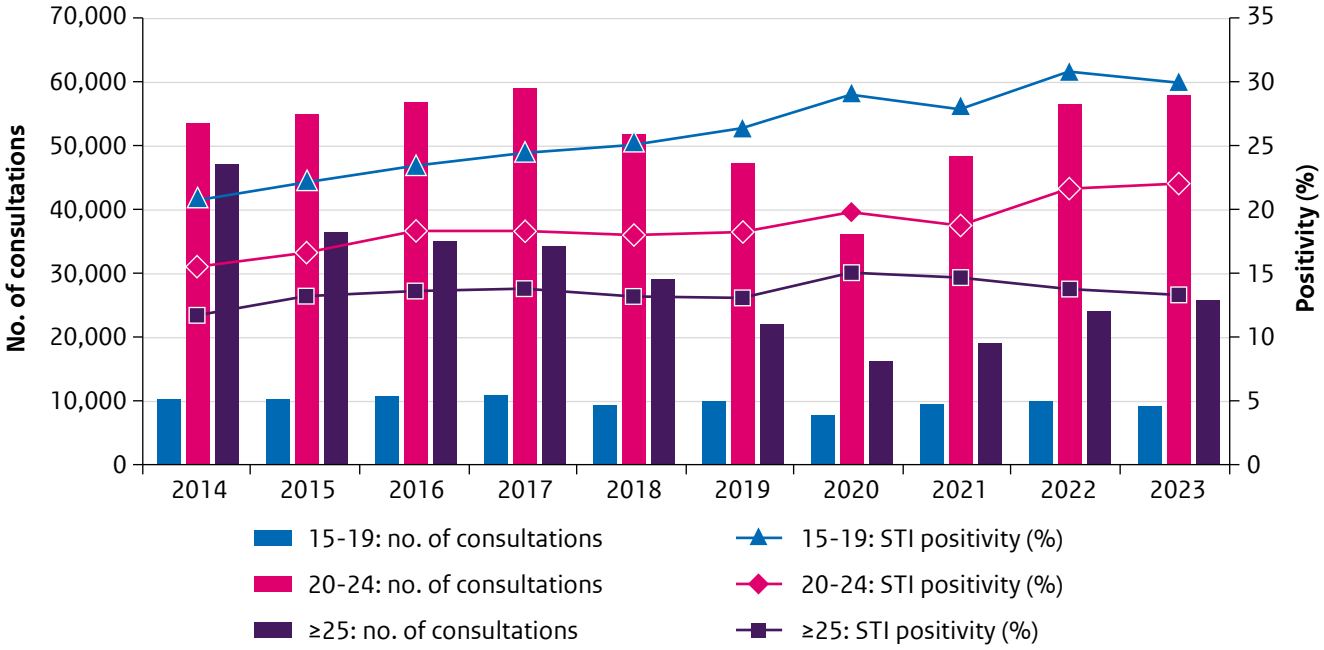
Table 2.13 Total number of tests, STI diagnoses and STI positivity on consultation and person level among MSM-ASG and MSM-PrEP, 2023

	MSM-ASG			MSM-PrEP		
	Positive (N)	Tests (N)	Positivity (%)	Positive (N)	Tests (N)	Positivity (%)
One or more STI						
Consultations	11,199	48,440	23.1	5,410	28,231	19.2
Persons	8,678	31,487	27.6	3,465	8,558	40.5
Chlamydia						
Consultations	4,910	48,108	10.2	2,517	27,763	9.1
Persons	4,174	31,340	13.3	1,871	8,486	22.0
Gonorrhoea						
Consultations	6,805	48,113	14.1	3,236	27,760	11.7
Persons	5,374	31,342	17.1	2,269	8,485	26.7
Infectious syphilis						
Consultations	1,080	47,448	2.3	487	27,876	1.7
Persons	981	31,036	3.2	423	8,503	5.0
HIV						
Consultations	108	42,651	0.3	14	28,023	0.0
Persons	104	28,345	0.4	12	8,523	0.1

Footnote: 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 2023. Positivity is calculated as N diagnoses/N tests for both levels.

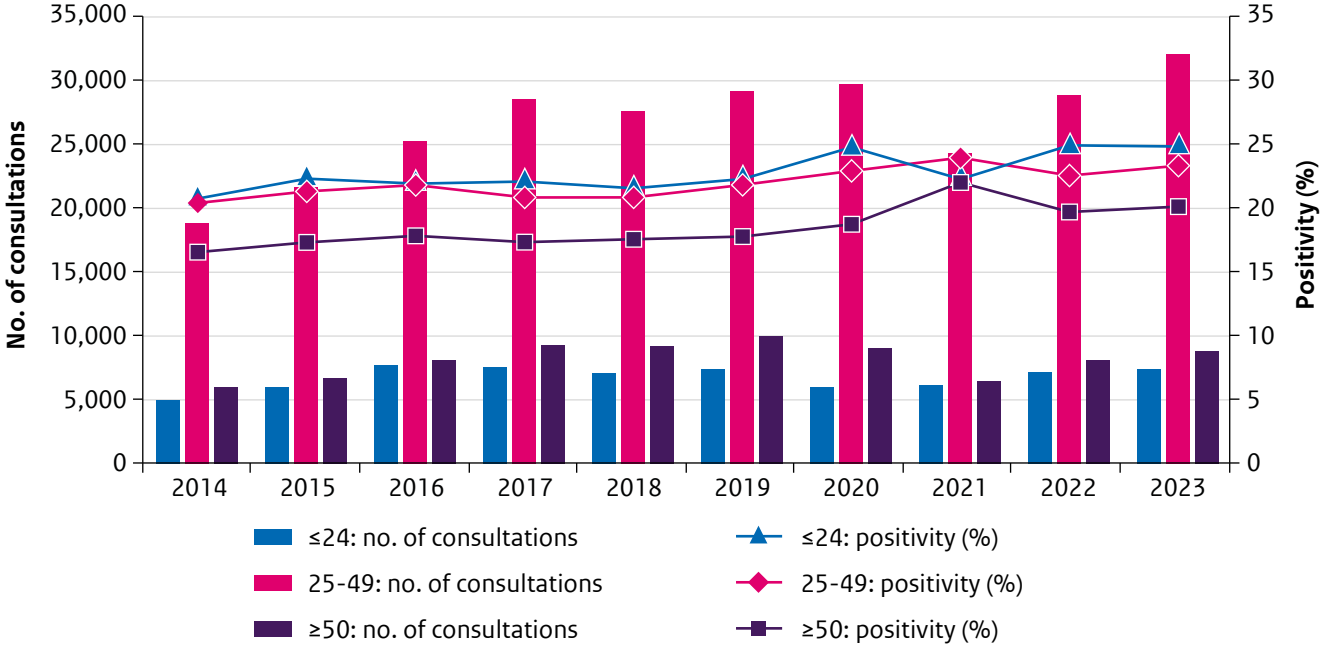
2.4 Trends in Sexual Health Centre consultations

Figure 2.7a Age groups among women and heterosexual men: number of consultations and STI positivity, 2014-2023



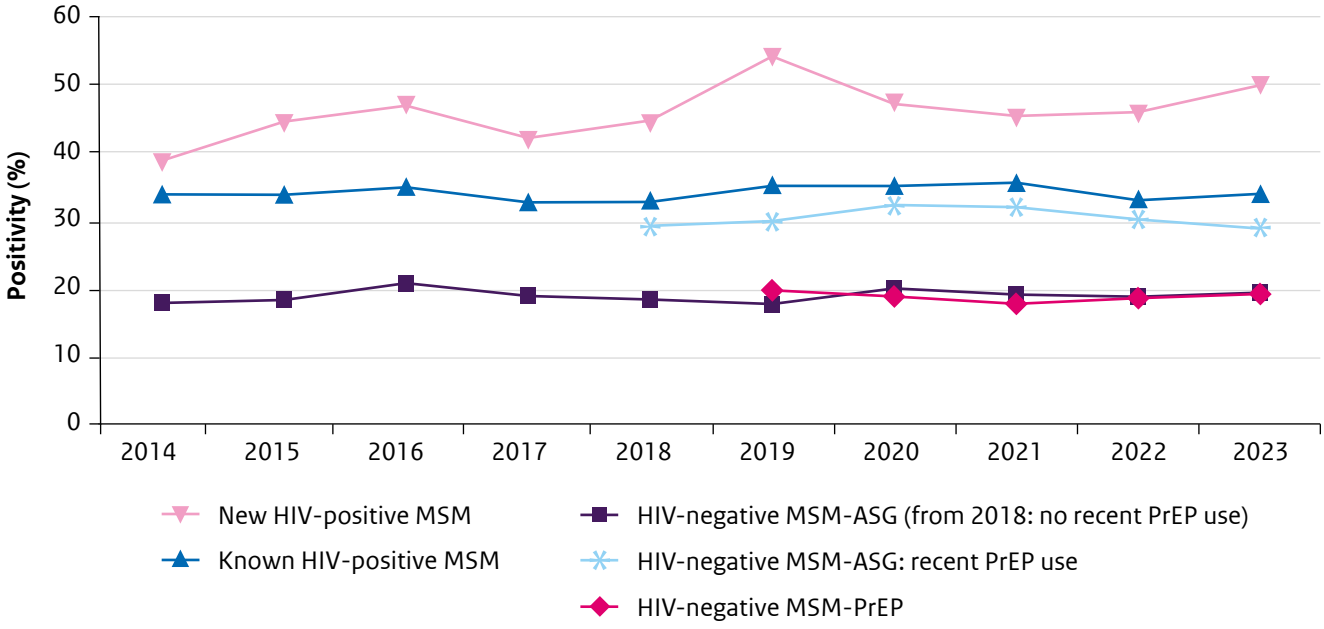
Footnote: STI include: chlamydia, gonorrhoea, infectious syphilis, HIV and infectious hepatitis B.

Figure 2.7b Age groups among MSM-ASG: number of consultations and STI positivity, 2014-2023



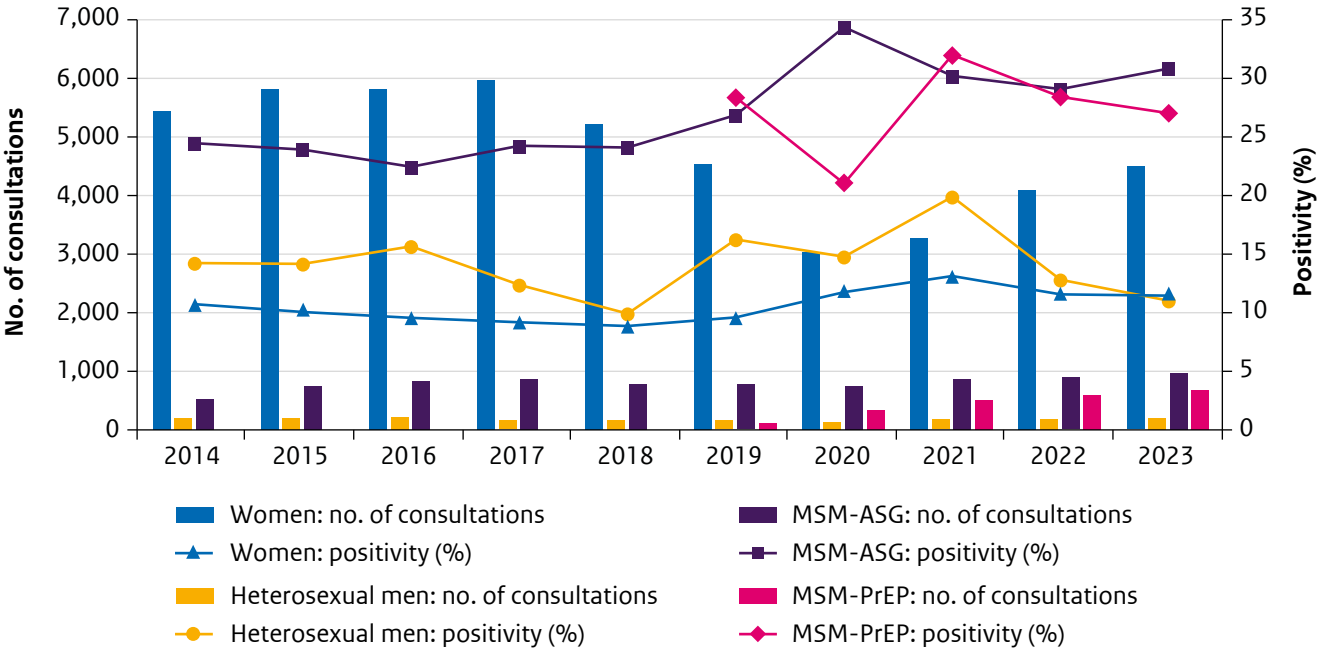
Footnote: STI include: chlamydia, gonorrhoea, infectious syphilis, HIV and infectious hepatitis B.

Figure 2.8 STI positivity among MSM by HIV status, 2014-2023



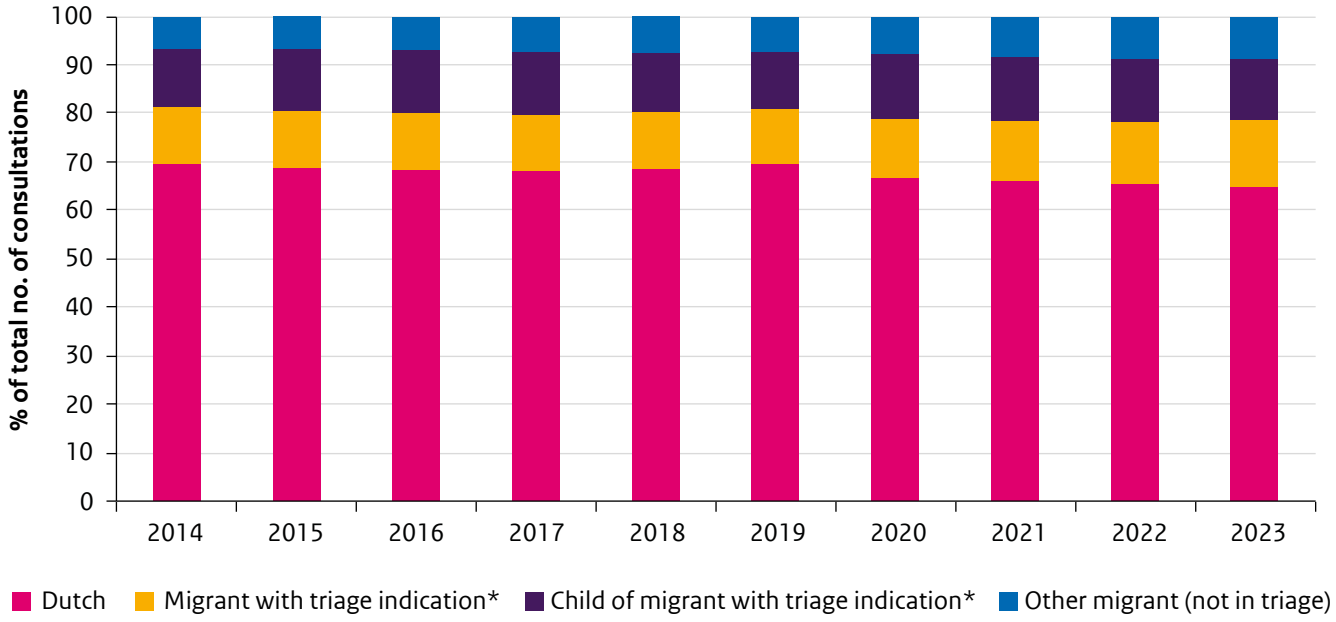
Footnote: STI include: chlamydia, gonorrhoea, infectious syphilis and infectious hepatitis B.

Figure 2.9 Clients who reported sex work in the past six months: number of consultations and STI positivity by sex and type of sexual contact, 2014-2023



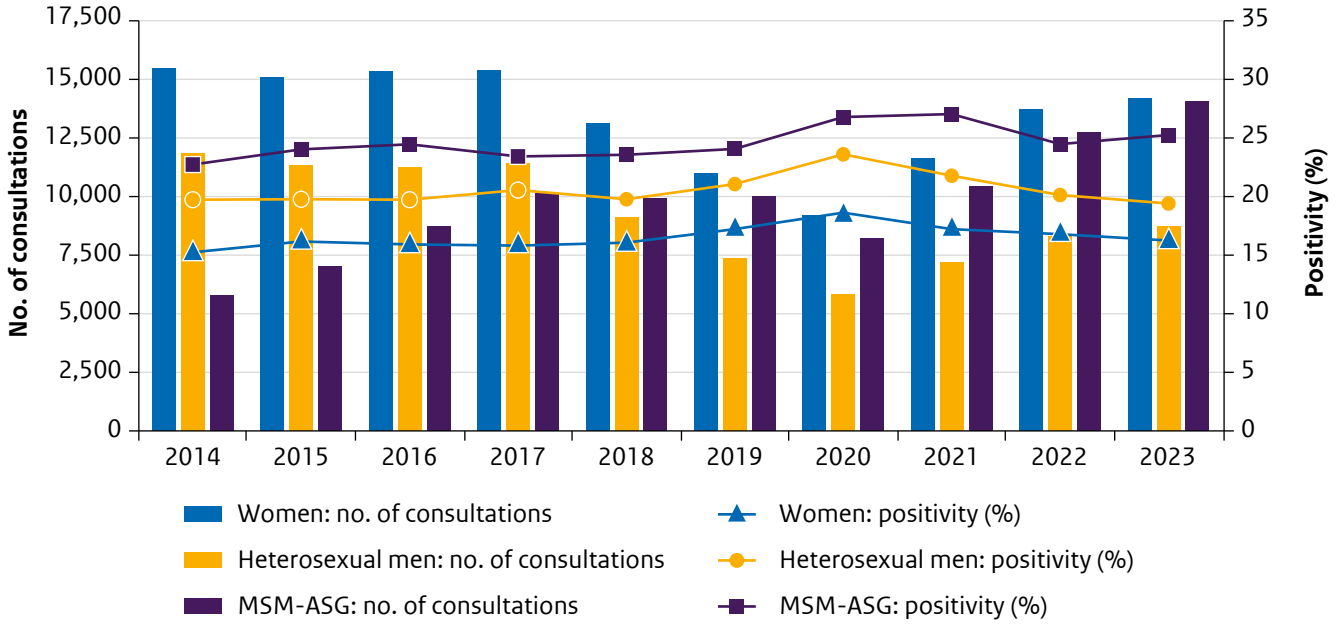
Footnote 1: STI include: chlamydia, gonorrhoea, infectious syphilis HIV, and infectious hepatitis B.

Figure 2.10 Distribution of region of origin of all ASG consultations, 2014-2023



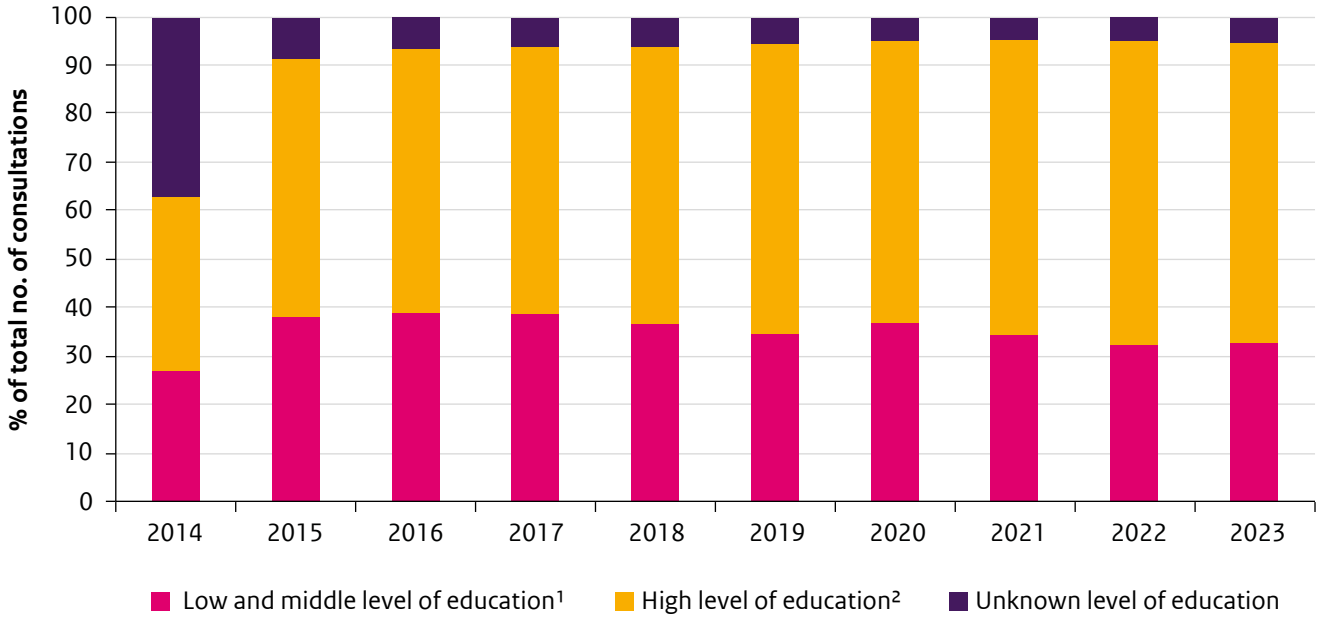
Footnote: STI include: chlamydia, gonorrhoea, infectious syphilis and infectious hepatitis B.
** Region of origin with triage indication includes Turkey, Morocco, Suriname, CAS-BES islands, Indonesia, Eastern Europe, Africa other, Latin America other, and Asia other.*

Figure 2.11 Clients from a region with triage indication: number of consultations and STI positivity by sex and type of sexual contact, 2014-2023



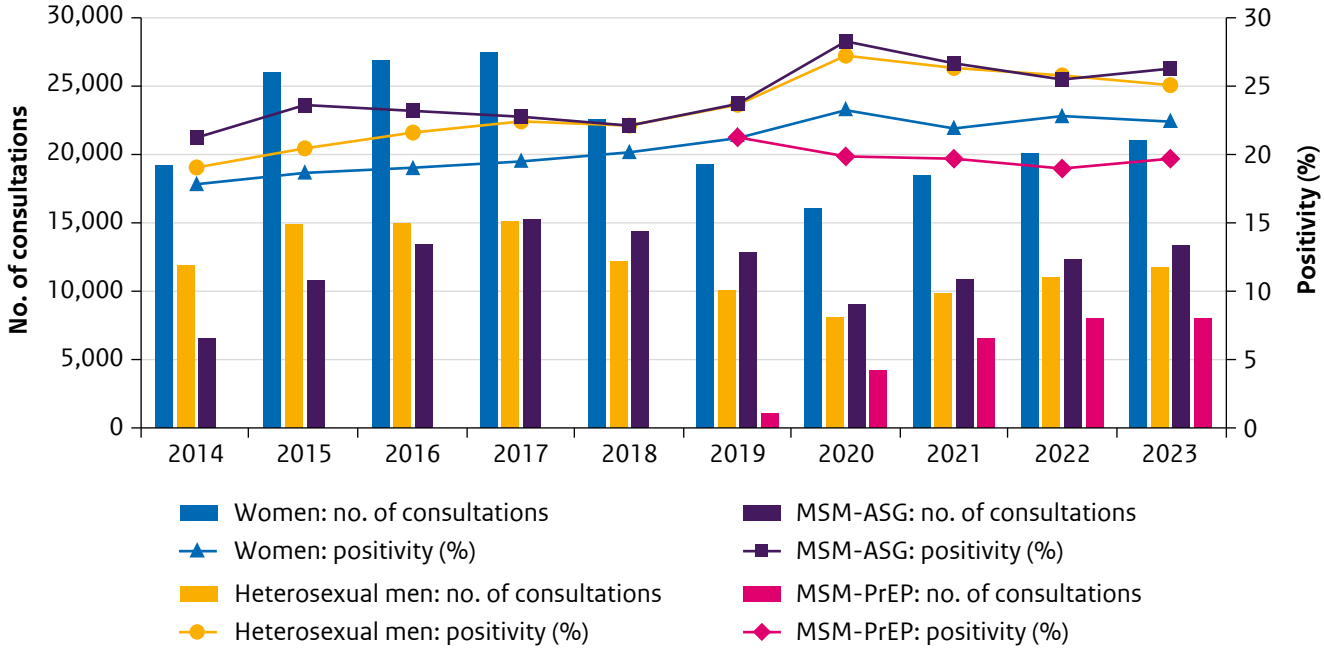
Footnote: Region of origin with triage indication includes Turkey, Morocco, Suriname, CAS-BES islands, Indonesia, Eastern Europe, Africa other, Latin America other, and Asia other.

Figure 2.12 Distribution of level of education of all ASG consultations, 2014-2023



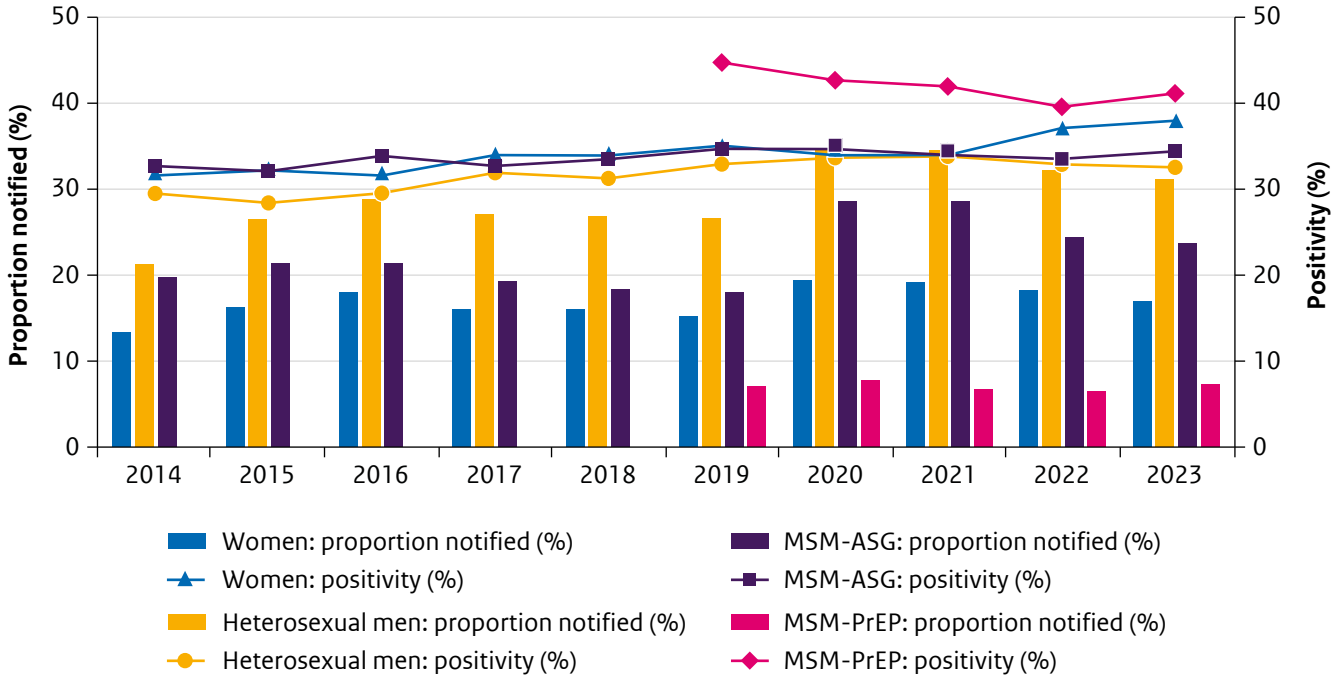
1 *No education, elementary school, lbo, mavo, vmbo, mbo-1-4, havo, vwo.*
2 *University of applied sciences, university.*

Figure 2.13 Clients with a low or middle level of education: number of consultations and STI positivity by sex and type of sexual contact, 2014-2023



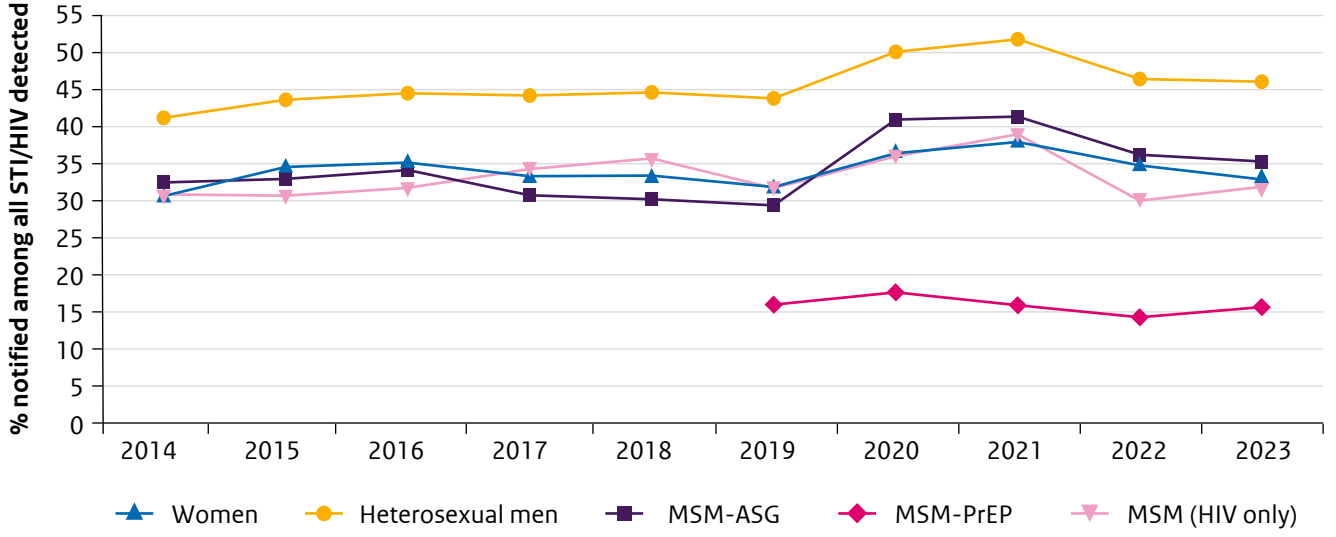
Footnote: low/middle education includes: no education, elementary school, lbo, mavo, vmbo, mbo-1-4, havo, vwo.

Figure 2.14 SHC clients who reported being notified for potential risk of exposure to STI: proportion of total clients and STI positivity by sex and type of sexual contact, 2014-2023



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

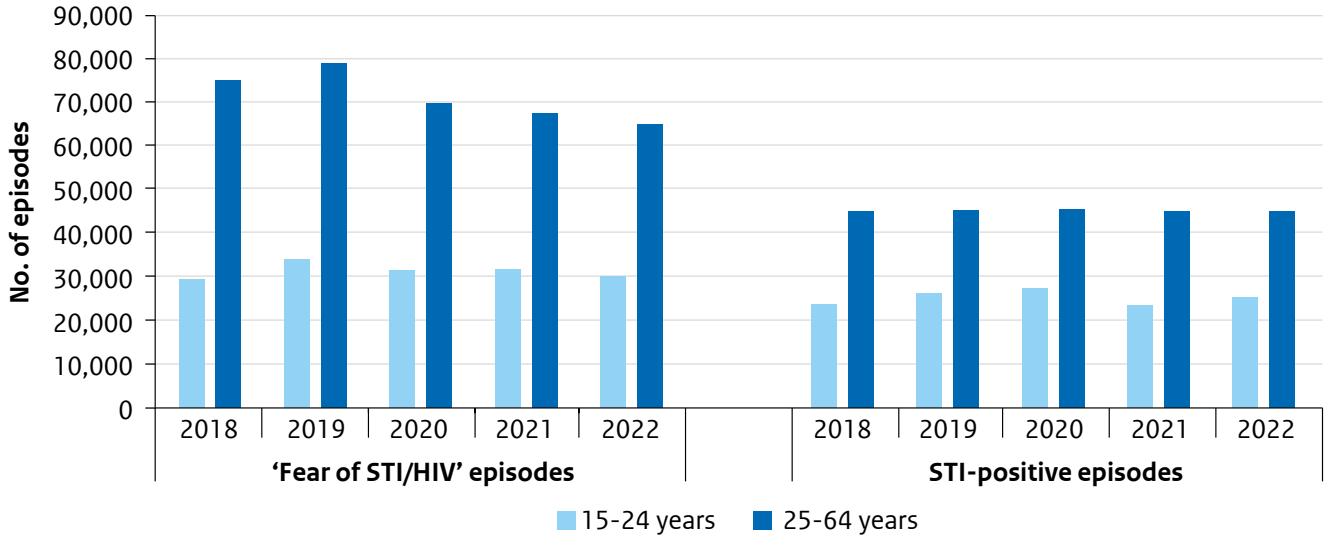
Figure 2.15 Proportion of STI detected through partner notification among women, heterosexual men, MSM-ASG, MSM-PrEP and proportion of HIV detected through partner notification among MSM, 2014-2023



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

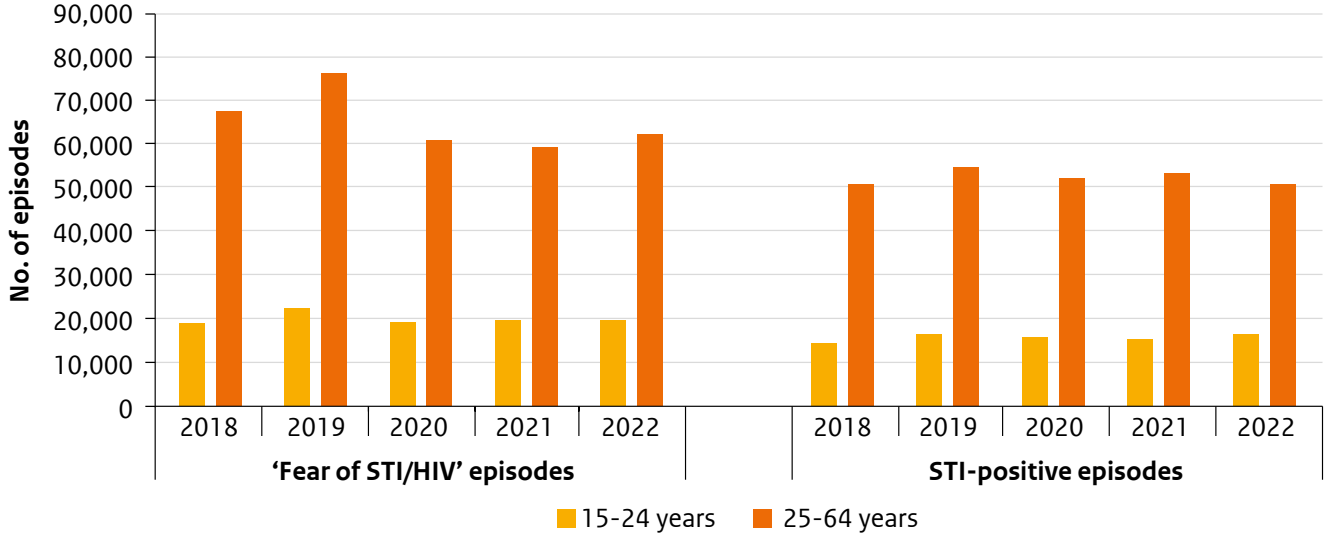
2.5 General practice

Figure 2.16a 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, 2018-2022



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 2.16b 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, 2018-2022



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 2.14 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, 2018-2022

	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**
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
2022	**29.4**	52.6	24.2	**26.8**	33.0	24.6	**28.1**	42.8	24.4

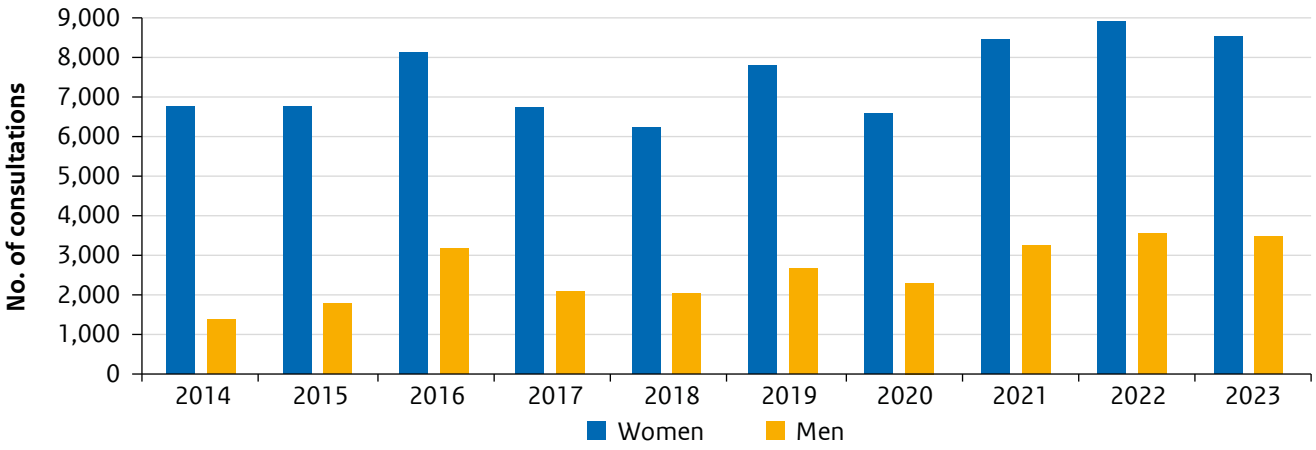
Footnote: Diagnoses included are chlamydia, gonorrhoea, syphilis, HIV, trichomonas, genital herpes, genital warts, non-specific urethritis.

2.6 Sense

Table 2.15 Number and proportion of Sense consultations by age and sex, 2023

Age (years)	Women n (%)	Men n (%)	Gender diverse persons n (%)
≤15	105 (1.2)	10 (0.3)	2 (0.4)
16-20	2,257 (26.6)	603 (17.5)	65 (11.8)
21-25	4,466 (52.6)	1,652 (47.8)	183 (33.3)
≥26	1,660 (19.6)	1,189 (34.4)	300 (54.5)
Total	**8,488**	**3,454**	**550**

Figure 2.17 Number of Sense consultations by sex, 2014-2023



Footnote: Consultations with gender diverse persons (n=550) were excluded from the figure.

Table 2.16 Number and proportion of Sense consultations by region of origin and sex, 2023

Region of origin	Women n (%)	Men n (%)
The Netherlands	4,265 (50.2)	1,690 (48.9)
Turkey	168 (2.0)	112 (3.2)
Morocco	204 (2.4)	96 (2.8)
Suriname	558 (6.6)	216 (6.3)
CAS-BES islands	320 (3.8)	116 (3.4)
Indonesia	86 (1.0)	26 (0.8)
Eastern Europe	448 (5.3)	179 (5.2)
Europe other	586 (6.9)	311 (9.0)
Africa other	432 (5.1)	205 (5.9)
Asia other	445 (5.2)	267 (7.7)
Latin America other	434 (5.1)	161 (4.7)
North-America/Oceania	117 (1.4)	63 (1.8)
Unknown	425 (5.0)	12 (0.3)
Total	**8,488**	**3,454**

Table 2.17 Subjects discussed during Sense consultations by sex, 2023

Subjects	Women n (%)	Men n (%)	Gender diverse persons n (%)
STI	495 (5.2)	664 (18.2)	19 (3.0)
Sexuality	2,713 (28.7)	2,299 (62.8)	109 (17.2)
Birth control	3,415 (36.2)	20 (0.5)	31 (4.9)
Unwanted sexual behaviour/sexual violence	1,301 (13.8)	290 (7.9)	65 (10.3)
Unintended pregnancy	654 (6.9)	11 (0.3)	8 (1.3)
Gender	6 (0.1)	25 (0.7)	335 (53.0)
Other	859 (9.1)	349 (9.5)	65 (10.3)
Total	**9,443**	**3,658**	**632**

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

Table 2.18 Sexuality topics discussed during Sense consultations by sex, 2023

Question or problems related to	Women n (%)	Men n (%)	Gender diverse persons n (%)
Human body	390 (14.0)	103 (4.4)	11 (10.0)
Sexual dysfunction	760 (27.3)	608 (25.7)	18 (16.4)
Sexual orientation	45 (1.6)	155 (6.6)	16 (14.5)
Sexual behaviour/sex techniques	1,137 (40.9)	1,118 (47.3)	47 (42.7)
Unknown/other	451 (16.2)	379 (16.0)	18 (16.4)
Total	**2,783**	**2,363**	**110**

Footnote: Numbers do not add up to total number of sexuality topics in the table above, as for some consultations multiple sexuality topics were registered.

2.7 Sexual Health in the Health Survey

Table 2.19 Characteristics of respondents to the national Health Survey 2022, by sex and sexual orientation

	Women n %	Heterosexual men n %	Men attracted to men* n %
Total	**4,277 (53.2)**	**3,577 (44.5)**	**188 (2.3)**
Age group			
16-29 years	779 (18.2)	602 (16.8)	
30-44 years	920 (21.5)	782 (21.9)	
45-59 years	1,007 (23.5)	816 (22.8)	
60 years and older	1,571 (36.7)	1,377 (38.5)	
Region of origin			
Dutch	3,387 (79.2)	2,909 (81.3)	
Non-Dutch Western	473 (11.1)	331 (9.3)	
Non-Western	417 (9.7)	337 (9.4)	
Urbanisation			
(Highly) urbanised areas	2,308 (54.0)	1,878 (52.5)	
Moderately urbanised area	727 (17.0)	576 (16.1)	
Less/non-urbanised areas	1,242 (29.0)	1,123 (31.4)	

Source: Health Survey/Lifestyle Monitor, CBS in collaboration with RIVM, Rutgers and Soa Aids Nederland, 2022
** 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 2.20 Prevalence of sexual behaviour characteristics of respondents to the national Health Survey 2022, by sex and sexual orientation

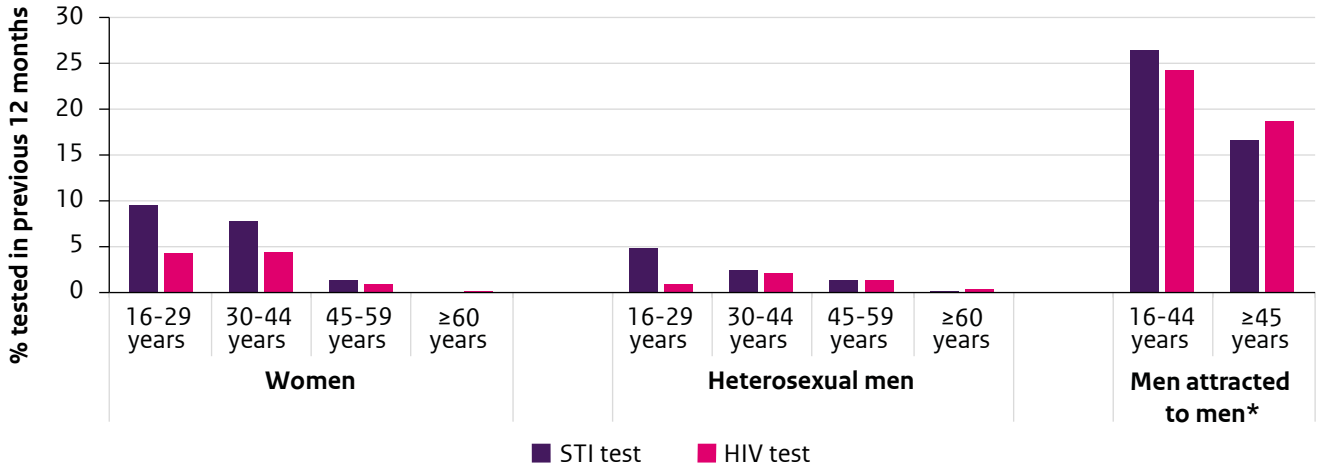
	Women %	Heterosexual men %	Men attracted to men[1] %
Two or more sex partners, in the past 12 months	**4.0**	**5.3**	**30.9**
16-29 years	12.7	15.1	
30-44 years	5.4	6.9	
45-59 years	1.8	4.0	
60 years and older	0.2	0.7	
Last sexual contact with a casual partner	**3.1**	**5.1**	**22.3**
16-29 years	9.8	14.6	
30-44 years	3.8	6.3	
45-59 years	1.8	3.2	
60 years and older	0.3	1.5	
Last sexual contact with a steady partner	**53.9**	**61.0**	**41.5**
16-29 years	53.0	41.2	
30-44 years	77.5	80.2	
45-59 years	65.4	76.3	
60 years and older	33.0	49.7	
Condom use at last sexual contact if contact was casual[2]	**39.8**	**49.7**	

Source: Health Survey/Lifestyle Monitor, CBS in collaboration with RIVM, Rutgers and Soa Aids Nederland, 2022.

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 (n≤50). No percentage is shown for men attracted to men due to low numbers (n≤50).*

Figure 2.18 Proportion tested for STI and HIV in the previous year in the Health Survey 2022, by age group, sex and sexual orientation

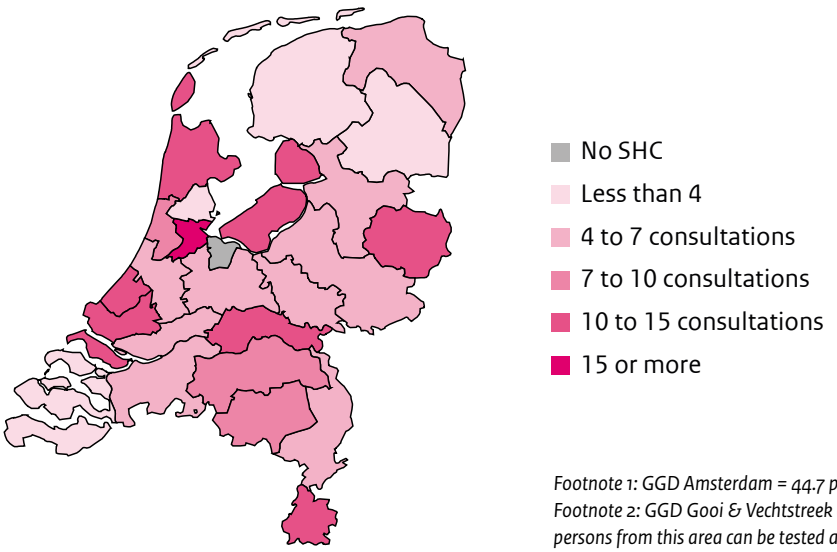


Source: Health Survey/Lifestyle Monitor, CBS in collaboration with RIVM, Rutgers and Soa Aids Nederland, 2022.

** 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 (n≤50).*

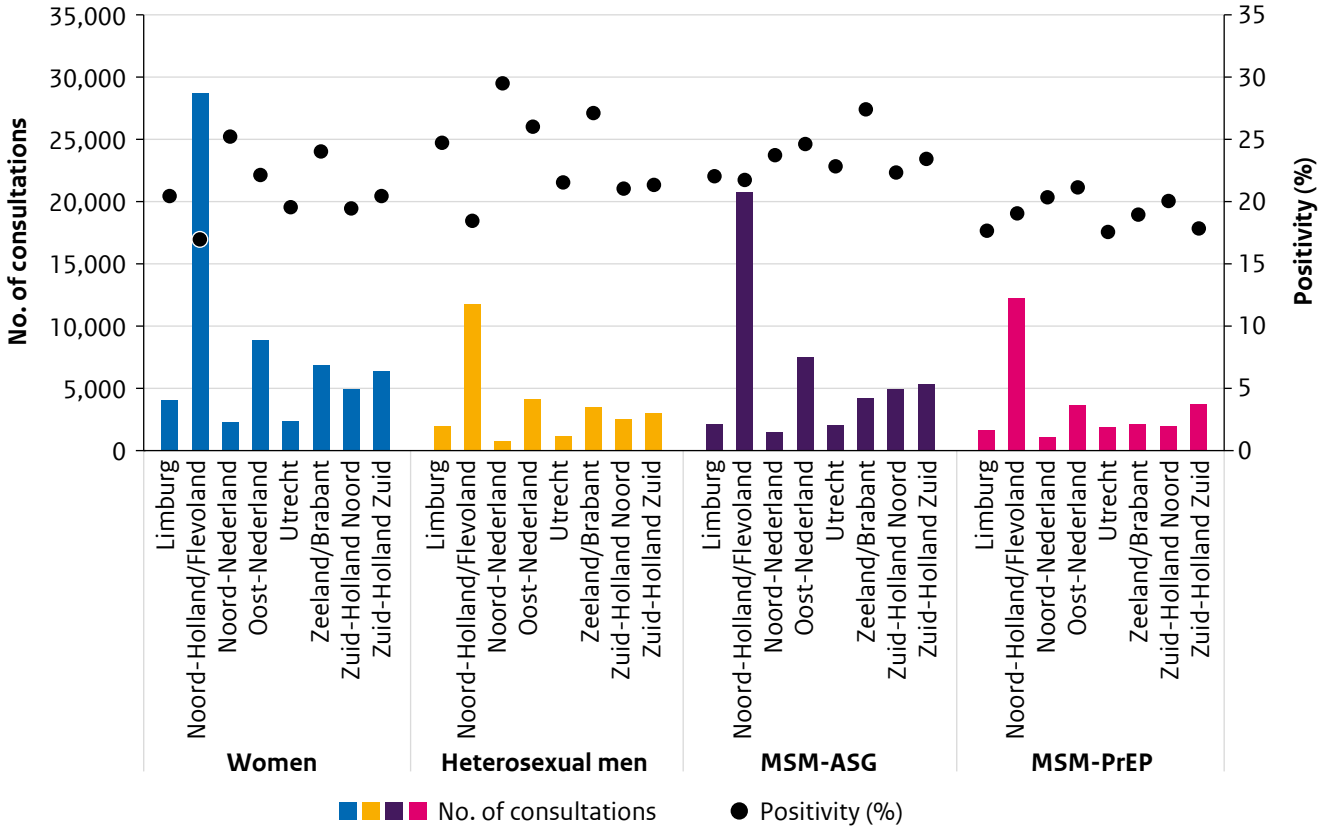
2.8 Consultations and characteristics of Sexual Health Centre attendees by region

Figure 2.19 Number of persons with at least one SHC consultation per 1,000 inhabitants 15-65 years of age by region, 2023



Footnote 1: GGD Amsterdam = 44.7 per 1,000 inhabitants.
Footnote 2: GGD Gooi & Vechtstreek (grey region) does not have an SHC, persons from this area can be tested at an SHC in surrounding regions.

Figure 2.20 Number of consultations and STI positivity by region, sex and type of sexual contact, 2023



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

Figure 2.21 Distribution of all SHC consultations by region, sex, and type of sexual contact, 2023

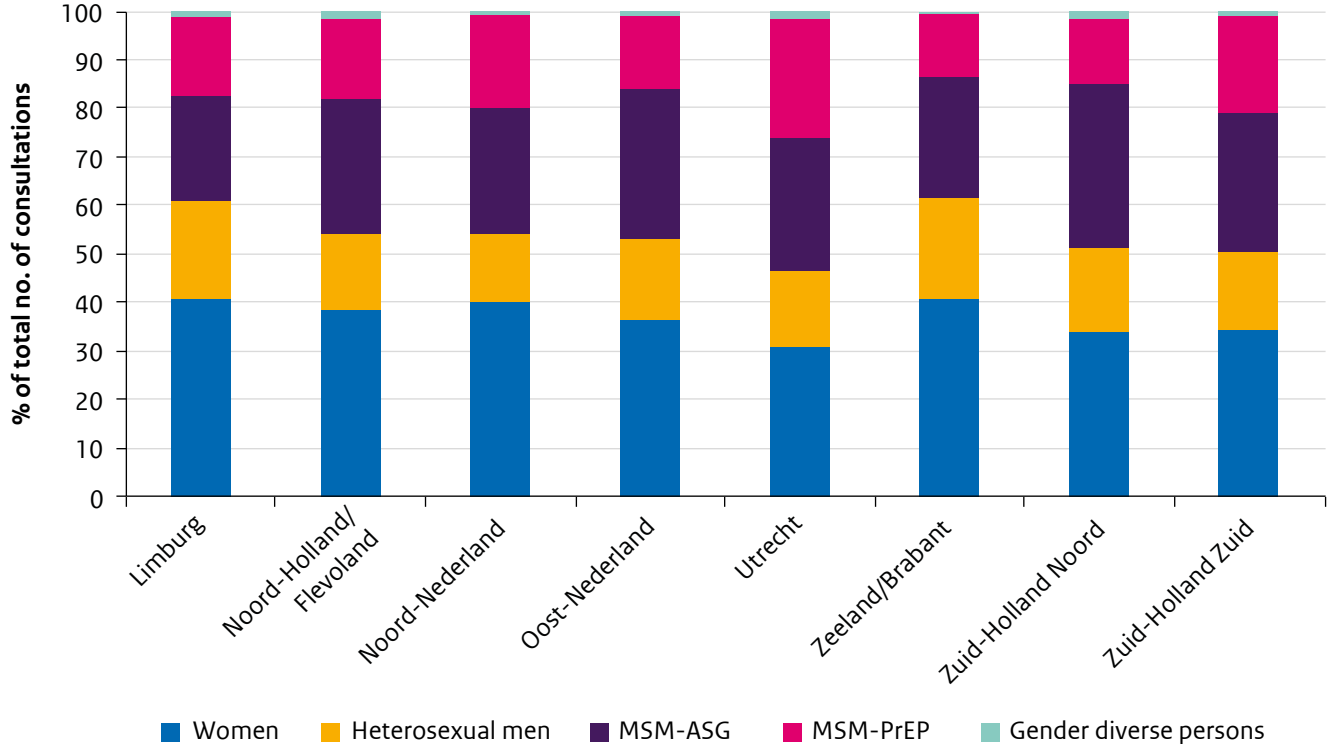


Figure 2.22 Distribution of age of all ASG consultations among women and heterosexual men by region, 2023

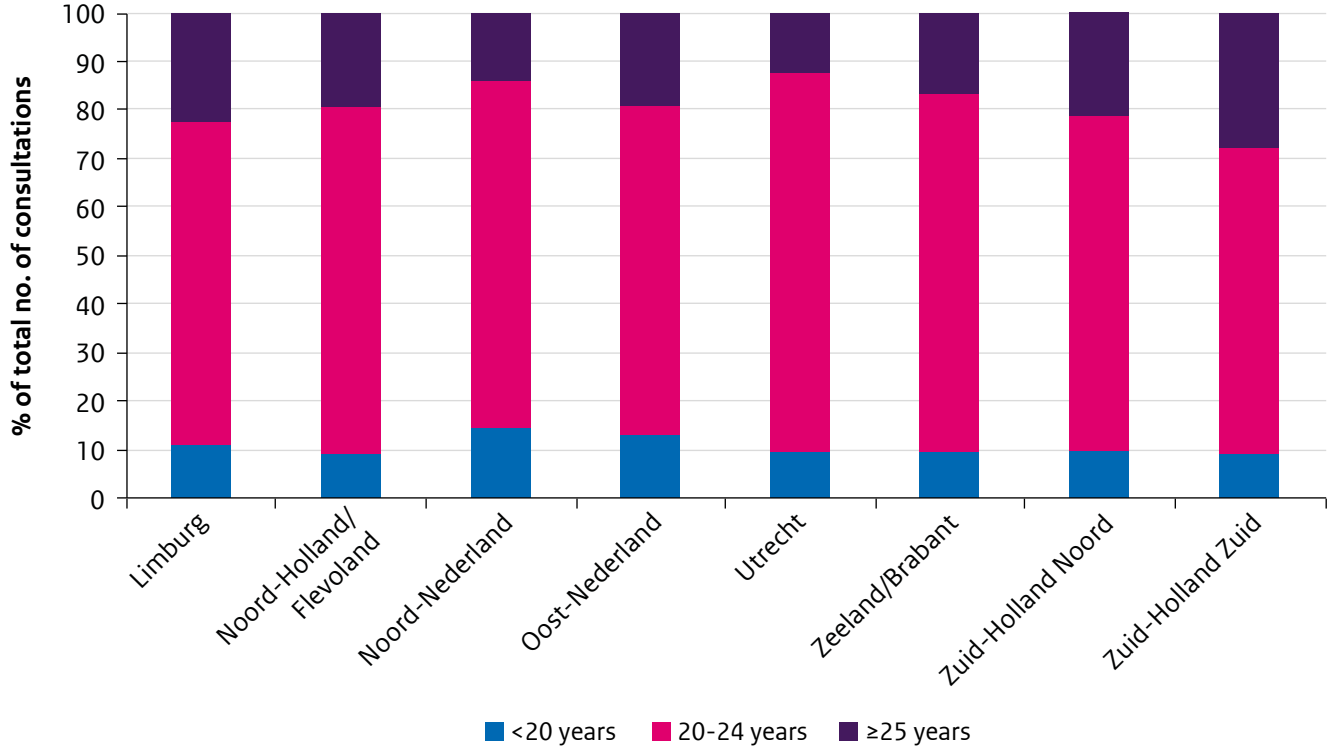


Figure 2.23 Distribution of STI symptoms and/or notification of all ASG consultations among women and heterosexual men aged >25 years by region, 2023

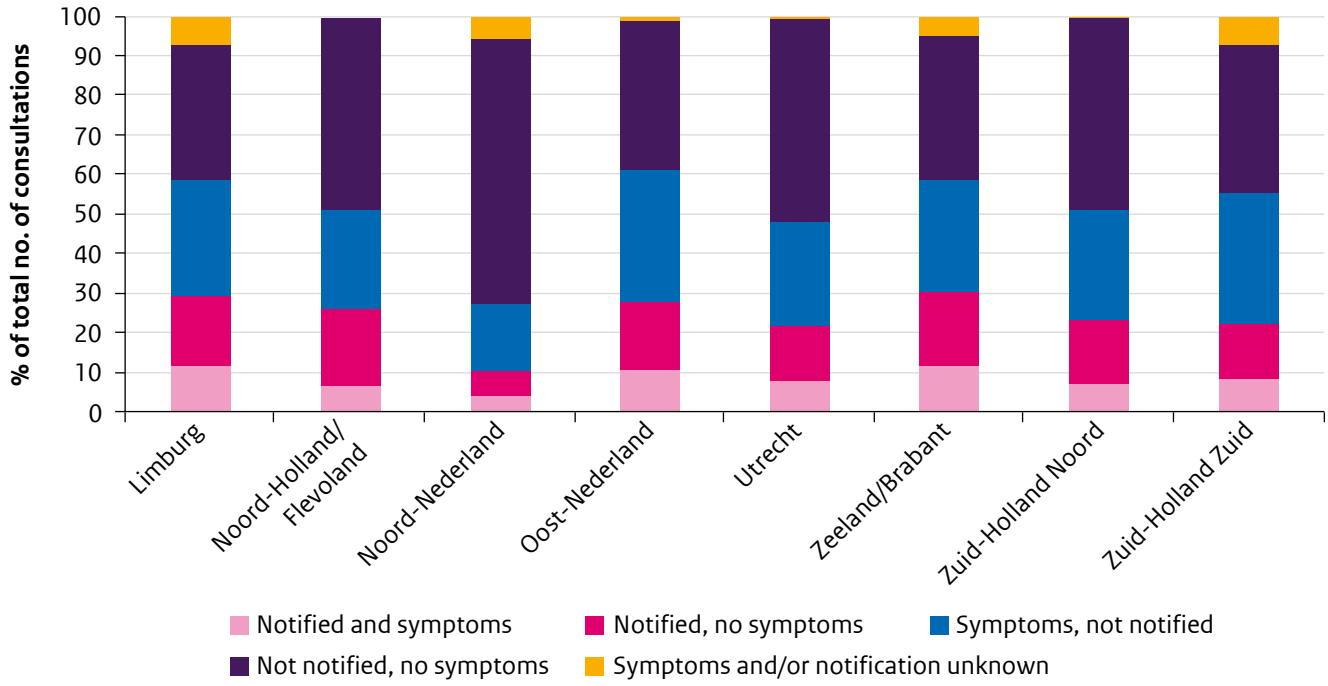
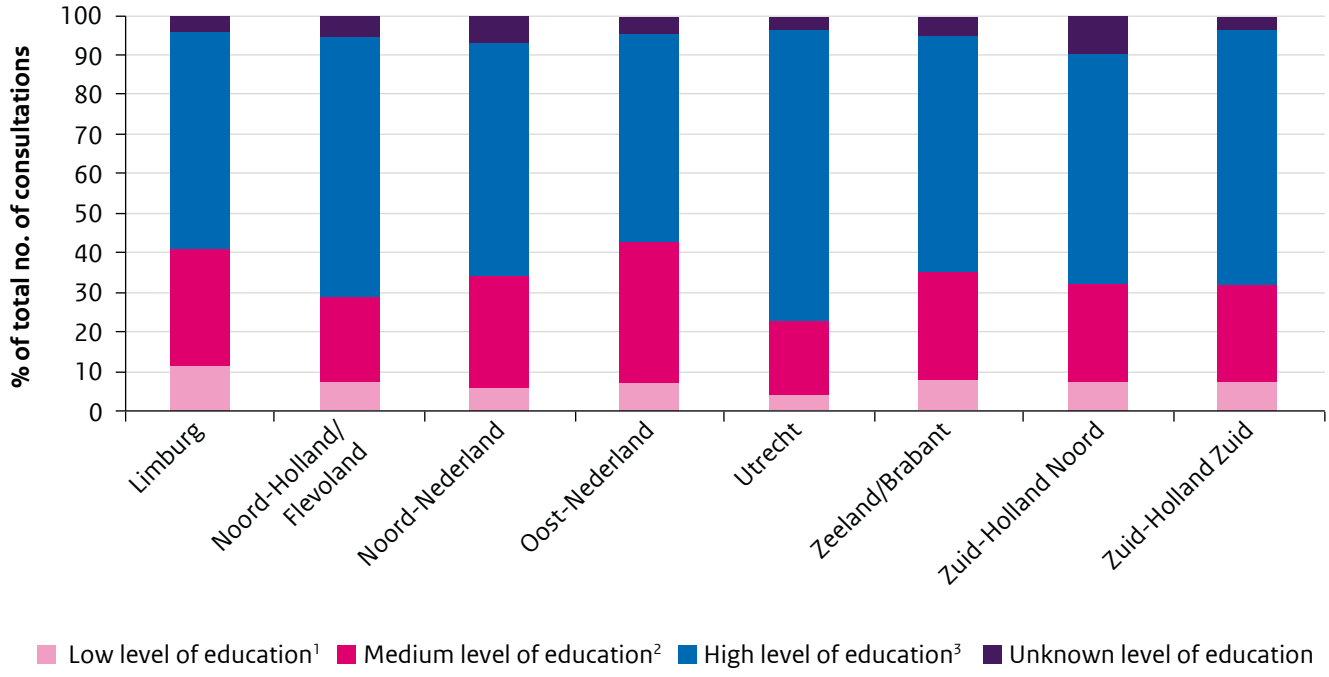


Figure 2.24 Distribution of level of education of all ASG consultations in women, heterosexual men, and MSM-ASG by region, 2023



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 2.21 Characteristics of individuals at first PrEP consultation in the national PrEP pilot at the Sexual Health Centres, July 2019 - December 2023

	Total in pilot		2023	
	n individuals	%	n individuals	%
Number of individuals with n PrEP consultations[1]				
1	13,715	100.0	1,521	
2	11,616	84.7	1,515	
3	10,387	75.7	1,570	
4	9,340	68.1	1,632	
5	8,408	61.3	1,714	
6	7,498	54.7	1,753	
7	6,731	49.1	1,914	
8	5,973	43.6	1,941	
9	5,190	37.8	1,854	
10	4,446	32.4	1,771	
11	3,771	27.5	1,776	
12	3,133	22.8	1,729	
13	2,584	18.8	1,844	
14	2,000	14.6	1,750	
15	1,438	10.5	1,397	
16	964	7.0	962	
17	499	3.6	499	
18	160	1.2	160	
19	27	0.2	27	
20	5	0.0	5	
Sex and sexual contact at first PrEP consultation				
Men who have sex with men	13,191	96.2	1,388	91.3
Other men	4	0.0	2	0.1
Women	41	0.3	12	0.8
Gender diverse persons	479	3.5	119	7.8
Median age and IQR at first PrEP consultation	33 (27-44)		30 (25-38)	
Region of origin with triage indication at first PrEP consultation[2]				
Dutch	7,646	55.7	703	46.2
Migrant	3,453	25.2	536	35.2
Child of migrant	1,088	7.9	126	8.3
Region of origin not included in triage	1,484	10.8	149	9.8
Unknown	44	0.3	7	0.5

Table 2.21 (continued) Characteristics of individuals at first PrEP consultation in the national PrEP pilot at the Sexual Health Centres, July 2019 - December 2023

	Total in pilot		2023	
	n individuals	%	n individuals	%
Educational level at first PrEP consultation[3]				
High	8,229	60.0	829	54.5
Medium	3,025	22.1	362	23.8
Low	1,111	8.1	161	10.6
Unknown	1,350	9.8	169	11.1
Previously tested for HIV at first PrEP consultation				
No	811	5.9	158	10.4
Yes	12,876	93.9	1,356	89.2
Unknown	28	0.2	7	0.5
Type of first consultation				
PrEP start consultation	11,506	83.9	1,295	85.1
PrEP follow-up consultation	2,209	16.1	226	14.9
PrEP indications at start consultation, all in the preceding 6 months[4]				
Condomless anal sex	9,346	68.1	1,039	68.3
Rectal STI diagnosis in the past year	2,402	17.5	271	17.8
PEP use in the past year	527	3.8	72	4.7
Other[5]	527	3.8	72	4.7
Any PrEP use in the past year, at first PrEP consultation				
No, not in the past year	8,038	58.6	945	62.1
Yes, 4-12 months ago	472	3.4	48	3.2
Yes, in the past 3 months	5,205	38.0	528	34.7
Previous PrEP prescriber in those who reported previous PrEP use at first PrEP consultation[6]				
General practicioner	1,295	22.8	44	7.6
HIV practicioner	213	3.8	7	1.2
Other physician	275	4.8	37	6.4
PrEP study	261	4.6	0	0.0
Informal routes	409	7.2	57	9.9
Other	472	8.3	94	16.3
Unknown	2,185	38.5	222	38.5

1 *Percentage of total number of individuals with a first PrEP consultation between July 2019 and December 2023.*
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.*
3 *Low: no education, elementary school, lbo, mavo, vmbo, mbo-1; medium: mbo-2-4, havo, vwo; high: university of applied sciences, university.*
4 *PrEP indications are registered for start consultations only. An individual can have multiple indications.*
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 2.22 Characteristics of individuals not continuing participation in the national PrEP pilot at the Sexual Health Centres, July 2019 - December 2023

	Total in pilot		2023	
	n individuals	%	n individuals	%
Estimated total number of persons participating in the PrEP pilot on 31 December 2023[1]	**8,496**			
Number of persons who reported discontinuation of SHC national PrEP pilot	**1,555**	**100.0**	**643**	**100.0**
Stopped using PrEP	691	44.4	245	38.1
Continues PrEP use via another healthcare provider	183	11.8	84	13.1
Continues PrEP use at SHC outside of pilot	136	8.7	136	21.2
No further information available	545	35.0	178	27.7
Reasons for stopping PrEP use[2]				
Reduced risk	438	63.4	184	75.1
HIV diagnosis	62	9.0	17	6.9
Side effects	50	7.2	15	6.1
Renal impairment	4	0.6	0	0.0
Drug interactions	4	0.6	2	0.8
Therapy compliance	9	1.3	4	1.6
Logistics	17	2.5	13	5.3
Unknown	3	0.4	1	0.4
Other[3]	140	20.3	18	7.3
Number of persons lost to follow-up[4]	**3,664**	**100.0**		
After first consultation	1,266	34.6		
After >1 consultations	2,398	65.4		

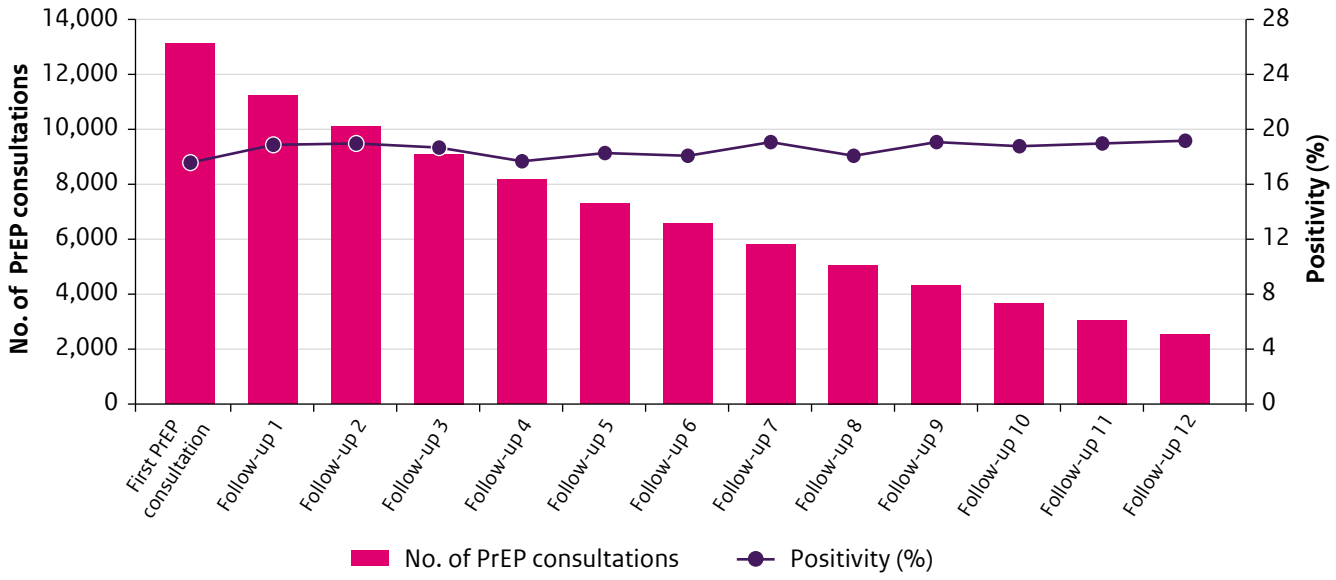
1 *Calculated as the number of persons with a PrEP consultation (in which they did not report discontinuation) in the seven months before 31 December 2023.*
2 *Only registered for persons who stopped using PrEP.*
3 *Other reasons include e.g. financial reasons or other health-related issues.*
4 *Those 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 2.23 Characteristics of consultations among persons participating in the national PrEP pilot at the Sexual Health Centres, July 2019 - December 2023

	n consultations	%
Number and type of consultations in PrEP pilot participants	**109,733**	**100.0**
PrEP start consultations with a 1-month check-in consultation[1]	6,155	5.6
PrEP start consultations without a 1-month check-in consultation[1,2]	6,089	5.5
Three-monthly PrEP follow-up consultations	85,641	78.0
Regular STI consultations	9,589	8.7
Testlab	2,259	2.1
Median and IQR time in weeks between PrEP follow-up consultations	13 (13-15)	
PrEP use in the past 3 months at PrEP follow-up consultations[3]		
Daily	44,112	54.6
Event-driven	32,951	40.8
Both	3,764	4.7
Unknown	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 the number of first PrEP consultations 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=80,829).*

Figure 2.25 Number of PrEP-pilot 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 2023



Footnote 1: STI include: chlamydia, gonorrhoea, infectious syphilis, HIV and infectious hepatitis B.
Footnote 2: Data up to the 13th PrEP consultation are shown. The maximum number of consultations recorded within one person was 20.
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

- Due to more frequent testing among MSM-PrEP, positivity rates in this group are not directly comparable with those among MSM-ASG. In addition, restrictions during the COVID-19 pandemic impacted the number of consultations at SHCs and positivity rates in 2020 and 2021. Both factors should be taken into account when interpreting trends. For more information, see 1.1. National surveillance at Sexual Health Centres.

- In 2023, 24,048 chlamydia infections were diagnosed at SHCs (45% women, 23% heterosexual men, 20% MSM-ASG, 10% MSM-PrEP, and 1% gender diverse persons). This was a 3% decrease compared with 2022.
- Chlamydia positivity among gender diverse persons was 10.8% (238/2,205). As the number of gender diverse persons was relatively low, they are not shown in tables or figures and will be excluded hereafter.
- The 23,810 resulting chlamydia diagnoses (women, heterosexual men, MSM-ASG, MSM-PrEP) were made among 21,968 individuals. There were 1,657 persons (8%) with more than one chlamydia diagnosis in 2023.
- The number of chlamydia tests increased by 4% compared with 2022. The number of tests increased by 2% among women (2023: 64,092; 2022: 62,690), by 3% among heterosexual men (2023: 28,696; 2022: 27,858), by 9% among MSM-ASG (2023: 48,108; 2022: 44,037), and by 1% among MSM-PrEP (2023: 27,763; 2022: 27,422).
- In 2023, chlamydia positivity was 16.8% among women and 19.6% among heterosexual men, both slightly lower than in 2022. Chlamydia positivity was 10.2% for MSM-ASG in 2023, this was similar to 2022.
- Chlamydia positivity among MSM-PrEP decreased from 11.7% in 2019 to 9.1% in 2023. Out of all unique persons who were tested among MSM-PrEP in 2023, 22.0% tested positive for chlamydia in at least one consultation (table 2.13).
- The highest positivity was found among persons notified of chlamydia (39.7% among women, 37.4% among heterosexual men, 22.5% among MSM-ASG, and 27.8% among MSM-PrEP).
- For persons with symptoms, high positivity was found for heterosexual men (25.4%) and to a lesser extent for women (19.1%), MSM-ASG (15.4%) and MSM-PrEP (19.2%).
- Other groups with high positivity were women and heterosexual men younger than 25 years, persons with an STI diagnosis in the past year, persons who had had three or more partners in the past 6 months and women and heterosexual men with a region of origin not included in triage.
- The trend in chlamydia positivity among MSM-ASG who recently used PrEP remained relatively stable around 14.5% from 2018-2022, then decreased to 12.3% in 2023. 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, and subsequently decreased to 8.6% in 2023. Between 2018 and 2023, the positivity among HIV-positive MSM fluctuated, amounting to 16.0% in 2023.
- Among MSM-PrEP, chlamydia positivity was 10.6% at the first follow-up consultation and fluctuated around 10% with each follow-up consultation up to the tenth consultation.
- Among MSM who were diagnosed with chlamydia, 27.2% of MSM-ASG and 27.3% of MSM-PrEP were co-infected with gonorrhoea, 3.7% of MSM-ASG and 3.1% of MSM-PrEP with syphilis, and 0.9% of MSM-ASG and 0.5% of MSM-PrEP were newly diagnosed with HIV.
- Co-infection with gonorrhoea was found among 7.2% of women and 5.9% of heterosexual men who were diagnosed with chlamydia.
- Around 37% of women were tested for chlamydia on the anorectal or oral anatomical location. Positivity was similar at the urogenital and anorectal location, 15.6% and 14.1%, respectively, but lower at the oral location (5.4%). The majority of chlamydia diagnoses among women were isolated urogenital diagnoses (62%).
- Among MSM, positivity was higher at the urogenital and anorectal locations than at the oral location. Urogenital and anorectal positivity were 3.2% and 7.6% among MSM-ASG and 2.1% and 7.3% among MSM-PrEP, respectively. Oral positivity was 1.6% among MSM-ASG and 1.2% among MSM-PrEP. Only 21% of MSM-ASG and 15% of MSM-PrEP had an isolated urogenital diagnosis.

3.1.2 General practices

- The estimated number of episodes of chlamydia at GPs increased between 2017 and 2020 among women. After a decrease in 2021, the number of chlamydia episodes among women increased by approximately 7% to 24,100 episodes in 2022.
- For men, the estimated number of episodes of chlamydia at GPs increased between 2017 and 2019. After a decrease in 2020 and 2021, the number of chlamydia episodes among men increased by approximately 7% to 18,300 episodes in 2022.
- The reporting rate for chlamydia at GPs was 3.7 episodes per 1,000 individuals aged 15-64 years. This was 4.2 per 1,000 individuals for women and 3.2 per 1,000 for men.

3.1.3 Lymphogranuloma venereum at Sexual Health Centres

- The number of lymphogranuloma venereum (LGV) diagnoses has increased since 2014, with 469 diagnoses in 2022 and 577 in 2023. Out of the diagnoses in 2023, 572 diagnoses were among MSM, 1 was in a heterosexual man, and 4 were among gender diverse persons.
- The percentage of HIV-negative MSM (ASG and PrEP) among LGV-positives increased from 22% in 2014 to 76% in 2023.
- The rectal LGV positivity among HIV-positive MSM tested for rectal chlamydia increased to 2.9% in 2023, compared with 2.7% in 2022 and 1.4% in 2021. Among HIV-negative MSM, the LGV positivity remained relatively low, 0.5% and 0.6% in 2022 and 0.6% and 0.7% in 2023 for MSM-ASG and MSM-PrEP respectively.
- For 61% of MSM diagnosed with LGV, no STI symptoms were reported.

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, 2023

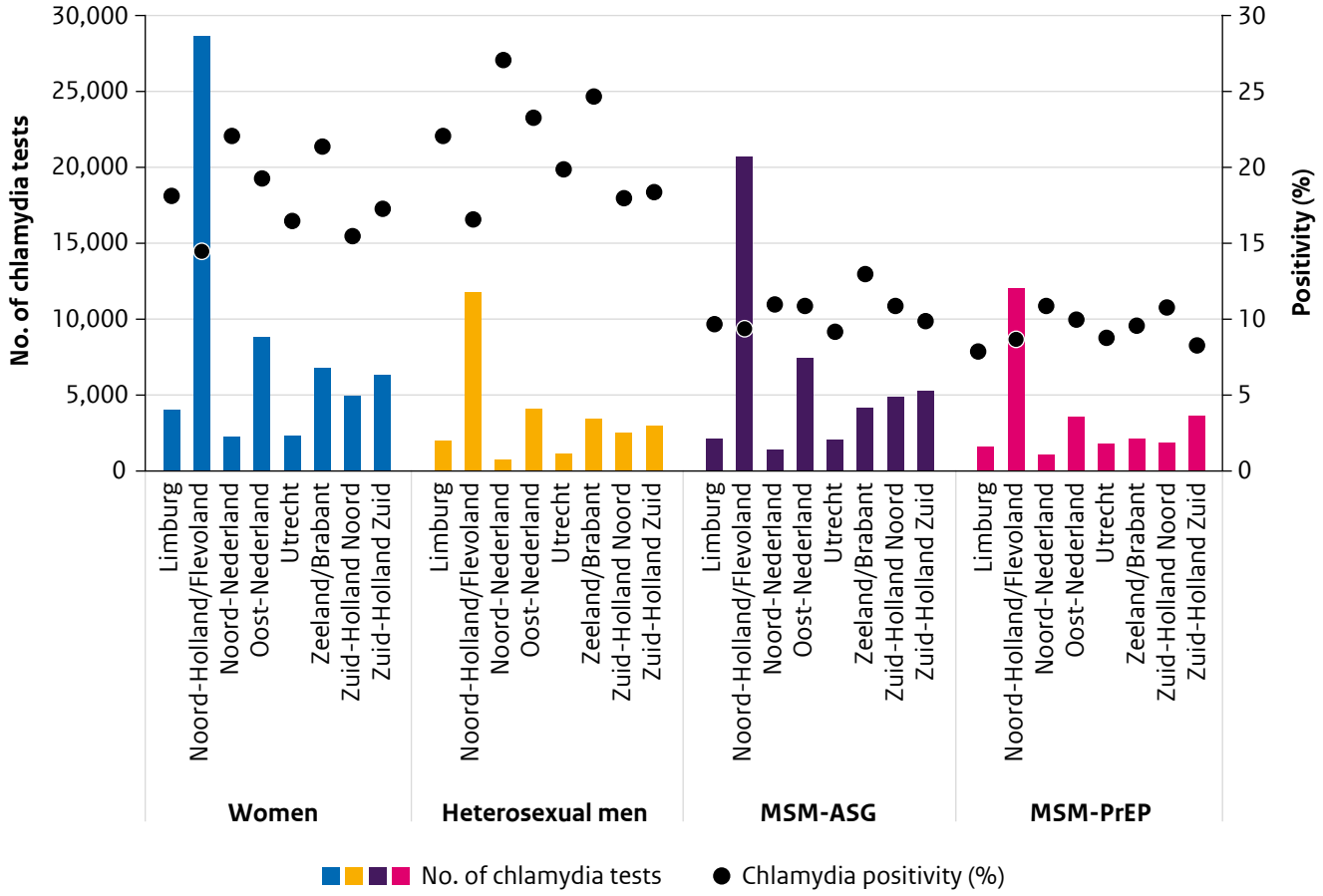
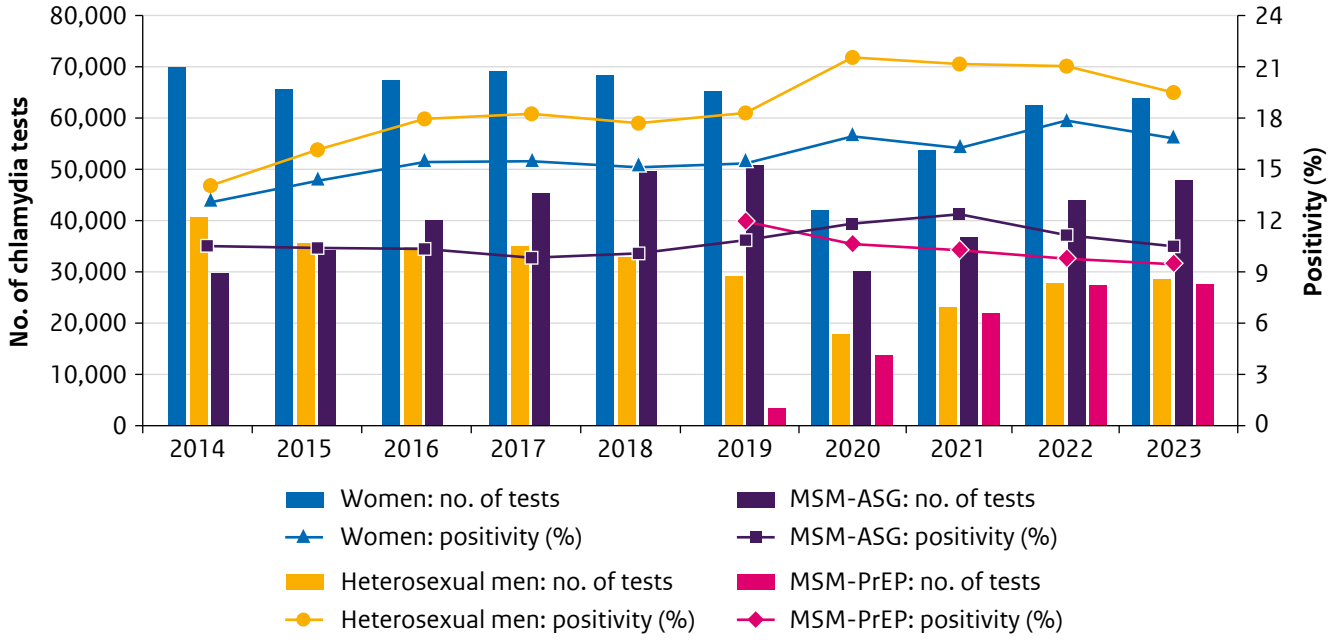
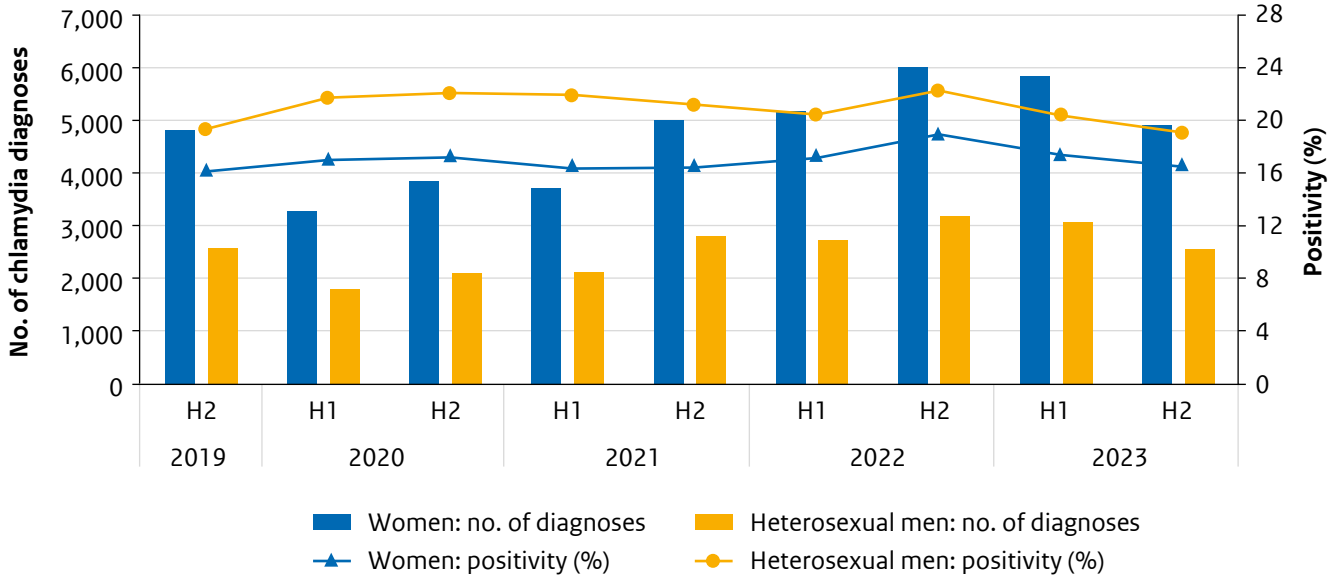


Figure 3.2 Number of chlamydia tests and chlamydia positivity by sex and type of sexual contact, 2014-2023



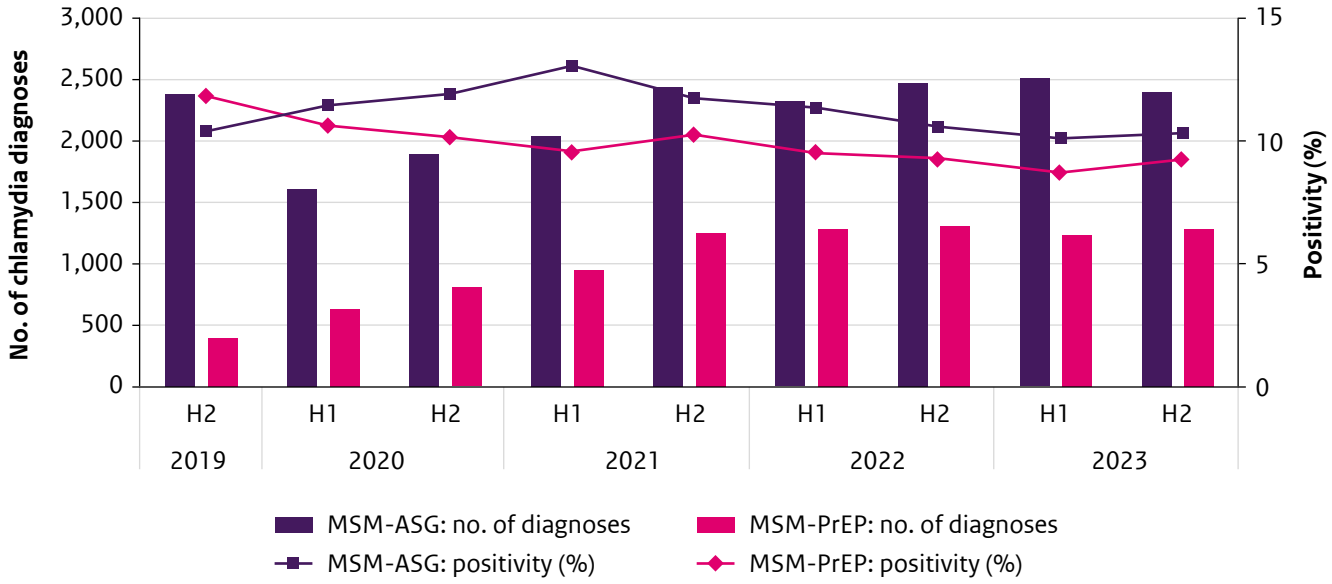
Footnote 1: Aggregated data of non-registered consultations included for 2018 and 2019.
Footnote 2: Trends in the number of tests and/or positivity in MSM over time may change due to the distinction between ASG and PrEP pilot consultations. Furthermore, due to the three-monthly testing interval for MSM-PrEP, MSM-ASG and MSM-PrEP 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 2023



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

Figure 3.3b Half-yearly number of chlamydia diagnoses and chlamydia positivity in MSM, mid 2019 to 2023



Footnote 1: MSM in the PrEP pilot occasionally visit the 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

Table 3.1a Triage indication: number of chlamydia diagnoses, tests, and positivity by sex and type of sexual contact, 2023

	Women		Heterosexual men		MSM-ASG		MSM-PrEP	
	n positive/N	%	n positive/N	%	n positive/N	%	n positive/N	%
Notified								
Not notified	7,164/53,108	13.5	2,880/19,699	14.6	3,167/36,653	8.6	2,149/25,721	8.4
Notified for chlamydia	3,103/7,819	39.7	2,505/6,697	37.4	973/4,321	22.5	199/716	27.8
Notified for other STI/HIV	470/3,075	15.3	240/2,272	10.6	762/7,083	10.8	168/1,321	12.7
Unknown	18/90	20.0	3/28	10.7	8/51	15.7	1/5	20.0
Symptoms								
No	6,840/43,574	15.7	3,225/19,025	17.0	3,274/37,233	8.8	2,114/25,614	8.3
Yes	3,656/19,151	19.1	2,280/8,970	25.4	1,548/10,042	15.4	398/2,068	19.2
Unknown	259/1,367	18.9	123/701	17.5	88/833	10.6	5/81	6.2
Region of origin included in triage[1]								
No	8,810/49,906	17.7	4,206/20,005	21.0	3,353/34,082	9.8	1,652/18,993	8.7
Yes	1,940/14,128	13.7	1,418/8,667	16.4	1,552/13,963	11.1	859/8,738	9.8
Migrant	603/6,025	10.0	439/3,145	14.0	1,138/9,904	11.5	655/6,596	9.9
Child of a migrant	1,337/8,103	16.5	979/5,522	17.7	414/4,059	10.2	204/2,142	9.5
Unknown	5/58	8.6	4/24	16.7	5/63	7.9	6/32	18.8

Table 3.1a (continued) Triage indication: number of chlamydia diagnoses, tests, and positivity by sex and type of sexual contact, 2023

	Women		Heterosexual men		MSM-ASG		MSM-PrEP	
	n positive/N	%	n positive/N	%	n positive/N	%	n positive/N	%
Age								
≤25	9,778/52,385	18.7	4,851/22,071	22.0	914/9,072	10.1	271/2,911	9.3
>25	977/11,706	8.3	777/6,624	11.7	3,996/39,036	10.2	2,246/24,852	9.0
Partner in risk group[2]								
No	8,672/47,525	18.2	4,561/20,919	21.8	2,717/27,800	9.8	1,309/16,005	8.2
Yes	1,959/15,478	12.7	1,037/7,555	13.7	2,066/19,235	10.7	1,120/11,028	10.2
Unknown	124/1,089	11.4	30/222	13.5	127/1,073	11.8	88/730	12.1
Sex work, in the past 6 months								
No	10,374/59,079	17.6	5,579/28,316	19.7	4,742/46,708	10.2	2,379/26,726	8.9
Yes	298/4,486	6.6	13/191	6.8	123/966	12.7	99/655	15.1
Unknown	83/527	15.7	36/189	19.0	45/434	10.4	39/382	10.2
Gonorrhoea/chlamydia/syphilis, in the past year								
Not tested	6,501/36,846	17.6	4,076/20,338	20.0	1,565/16,279	9.6	187/2,149	8.7
Tested, negative	2,163/16,131	13.4	731/4,767	15.3	1,421/17,842	8.0	852/12,903	6.6
Tested, positive	1,970/10,311	19.1	758/3,259	23.3	1,759/12,744	13.8	1,378/11,749	11.7
Tested, unknown	11/77	14.3	4/16	25.0	30/178	16.9	18/153	11.8
Unknown	110/727	15.1	59/316	18.7	135/1,065	12.7	82/809	10.1

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 3.1b Demographics and (sexual) behavioural characteristics: number of chlamydia diagnoses, tests, and positivity by sex and type of sexual contact, 2023

	Women		Heterosexual men		MSM-ASG		MSM-PrEP	
	n positive/N	%	n positive/N	%	n positive/N	%	n positive/N	%
Educational level[1]								
High	6,375/40,091	15.9	2,874/15,899	18.1	2,937/31,842	9.2	1,627/18,430	8.8
Medium	3,373/17,055	19.8	2,064/9,012	22.9	1,167/9,765	12.0	564/5,843	9.7
Low	752/3,922	19.2	567/2,740	20.7	448/3,491	12.8	190/2,045	9.3
Unknown	255/3,024	8.4	123/1,045	11.8	358/3,010	11.9	136/1,445	9.4
Number of partners, in the past 6 months								
0 partners	33/528	6.2	12/220	5.5	40/544	7.4	9/186	4.8
1 partner	2,327/16,498	14.1	1,030/5,996	17.2	219/3,523	6.2	50/1,332	3.8
2 partners	2,759/15,806	17.5	1,166/5,933	19.7	406/5,205	7.8	85/1,878	4.5
3 or more partners	5,530/29,878	18.5	3,407/16,460	20.7	4,186/38,429	10.9	2,352/24,165	9.7
Unknown	106/1,382	7.7	13/87	14.9	59/407	14.5	21/202	10.4

Table 3.1b (continued) Demographics and (sexual) behavioural characteristics: number of chlamydia diagnoses, tests, and positivity by sex and type of sexual contact, 2023

	Women		Heterosexual men		MSM-ASG		MSM-PrEP	
	n positive/N	%	n positive/N	%	n positive/N	%	n positive/N	%
Receptive anal sex, in the past 6 months								
No receptive anal sex	8,262/48,811	16.9			862/13,493	6.4	207/4,635	4.5
Yes, consistently with a condom	146/1,467	10.0			394/5,960	6.6	70/1,271	5.5
Yes, not consistently with a condom	548/3,164	17.3			1,935/14,927	13.0	1,053/9,414	11.2
Yes, never with a condom	1,690/9,505	17.8			1,663/13,083	12.7	1,177/12,298	9.6
Unknown	109/1,145	9.5			56/645	8.7	10/145	6.9
Insertive anal sex, in the past 6 months								
No insertive anal sex			4,942/24,553	20.1	854/10,238	8.3	283/3,968	7.1
Yes, consistently with a condom			61/532	11.5	409/6,639	6.2	66/1,197	5.5
Yes, not consistently with a condom			119/931	12.8	1,894/16,219	11.7	975/9,520	10.2
Yes, never with a condom			371/2,021	18.4	1,703/14,443	11.8	1,180/12,921	9.1
Unknown			135/659	20.5	50/569	8.8	13/157	8.3
Vaginal sex, in the past 6 months[2]								
No vaginal sex	63/734	8.6	44/396	11.1	93/994	9.4	21/270	7.8
Yes, consistently with a condom	379/4,534	8.4	145/1,844	7.9	94/1,097	8.6	25/249	10.0
Yes, not consistently with a condom	3,924/23,340	16.8	2,454/12,714	19.3	279/2,314	12.1	54/411	13.1
Yes, never with a condom	6,318/34,674	18.2	2,943/13,468	21.9	332/2,967	11.2	64/715	9.0
Unknown	71/810	8.8	42/274	15.3	113/1,289	8.8	7/59	11.9
Receptive oral sex, in the past 6 months								
No receptive oral sex	1,137/6,803	16.7			198/2,634	7.5	39/597	6.5
Yes, consistently with a condom	90/1,169	7.7			30/346	8.7	6/93	6.5
Yes, not consistently with a condom	756/5,015	15.1			483/4,405	11.0	137/1,160	11.8
Yes, never with a condom	8,452/48,805	17.3			4,136/39,967	10.3	2,324/25,716	9.0
Unknown	320/2,300	13.9			63/756	8.3	11/197	5.6

Table 3.1b (continued) Demographics and (sexual) behavioural characteristics: number of chlamydia diagnoses, tests, and positivity by sex and type of sexual contact, 2023

	Women		Heterosexual men		MSM-ASG		MSM-PrEP	
	n positive/N	%	n positive/N	%	n positive/N	%	n positive/N	%
Client of sex work, in the past 6 months								
No	7,480/40,529	18.5	5,457/27,024	20.2	4,714/46,087	10.2	2,433/26,948	9.0
Yes	18/183	9.8	113/1,366	8.3	127/1,334	9.5	26/316	8.2
Unknown	3,257/23,380	13.9	58/306	19.0	69/687	10.0	58/499	11.6
Previous HIV test								
No	8,817/47,051	18.7	4,813/22,685	21.2	720/6,923	10.4	48/520	9.2
Yes, positive	2/24	8.3	5/23	21.7	708/4,462	15.9		
Yes, negative	1,820/16,320	11.2	758/5,688	13.3	3,443/36,432	9.5	2,464/27,202	9.1
Yes, result unknown	11/130	8.5	6/36	16.7	11/107	10.3	3/31	9.7
Unknown	105/567	18.5	46/264	17.4	28/184	15.2	2/10	20.0
Drug use, in the past 6 months[3, 4]								
No					3,379/36,704	9.2	1,353/17,633	7.7
Yes					1,474/10,842	13.6	1,143/9,966	11.5
Unknown					57/562	10.1	21/164	12.8
Group sex, in the past 6 months[4]								
No					2,818/30,972	9.1	1,093/14,815	7.4
Yes					1,917/15,061	12.7	1,389/12,644	11.0
Unknown					175/2,075	8.4	35/304	11.5
Prep use, in the past 3 months[4,5]								
Known HIV-positive, not eligible					708/4,462	15.9		
No					2,775/32,067	8.7	145/2,005	7.2
Yes					1,426/11,567	12.3	2,372/25,758	9.2
via SHC					571/4,109	13.9	21/205	10.2
via GP					636/6,014	10.6	3/52	5.8
via HIV practicioner					7/45	15.6	0/6	0.0
via other physician					139/1,226	11.3	2/43	4.7
via PrEP study					88/497	17.7	8/72	11.1
via informal routes					71/424	16.7	12/97	12.4
other					48/312	15.4	14/113	12.4

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. 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 women and heterosexual men; results are therefore not shown.*

5 *Persons can receive PrEP through more than one provider.*

Table 3.2 Age group: number of chlamydia diagnoses, tests, and positivity by sex and type of sexual contact, 2023

Age (years)	Women		Heterosexual men		MSM-ASG		MSM-PrEP	
	n positive/N	%	n positive/N	%	n positive/N	%	n positive/N	%
≤20	3,434/13,783	24.9	1,259/4,841	26.0	149/1,503	9.9	21/215	9.8
21-25	6,344/38,602	16.4	3,592/17,230	20.8	765/7,569	10.1	250/2,696	9.3
26-30	546/5,191	10.5	507/3,202	15.8	955/9,556	10.0	477/4,568	10.4
31-35	167/2,485	6.7	132/1,499	8.8	911/8,609	10.6	470/5,055	9.3
36-40	83/1,389	6.0	73/769	9.5	543/5,428	10.0	349/3,720	9.4
41-45	47/899	5.2	30/419	7.2	419/4,014	10.4	278/3,003	9.3
46-50	50/671	7.5	11/254	4.3	335/3,161	10.6	214/2,474	8.6
51-55	40/553	7.2	9/210	4.3	301/2,898	10.4	182/2,276	8.0
≥56	44/518	8.5	15/271	5.5	532/5,370	9.9	276/3,756	7.3
Total	**10,755/64,092**	**16.8**	**5,628/28,696**	**19.6**	**4,910/48,108**	**10.2**	**2,517/27,763**	**9.1**

Figure 3.4 Age group: trends in chlamydia positivity in women and heterosexual men, 2014-2023

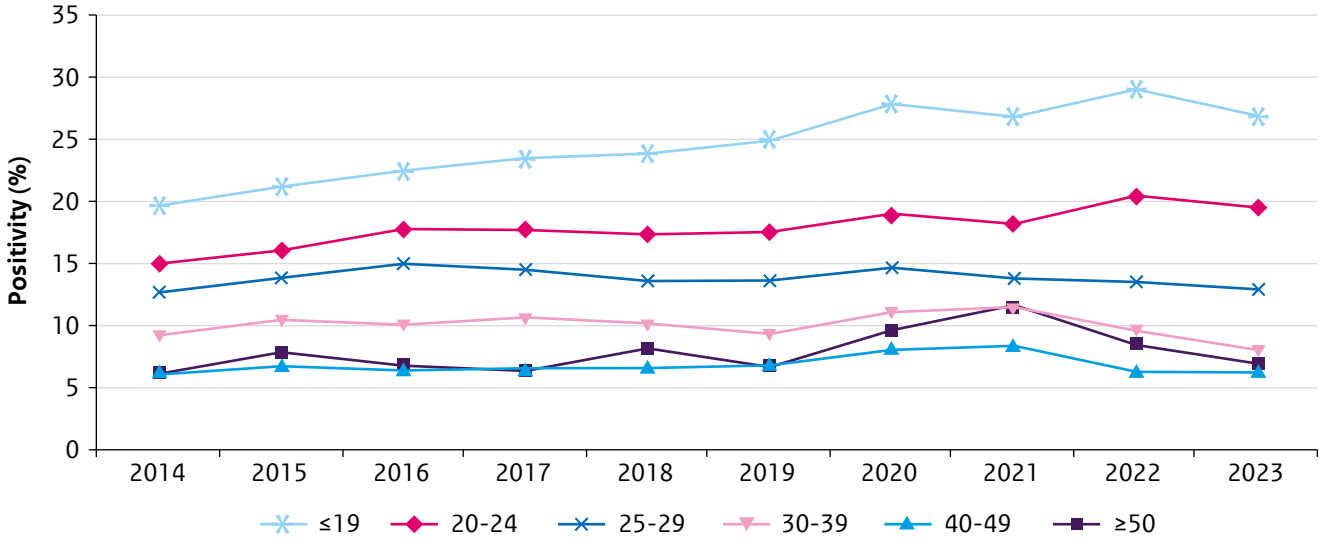
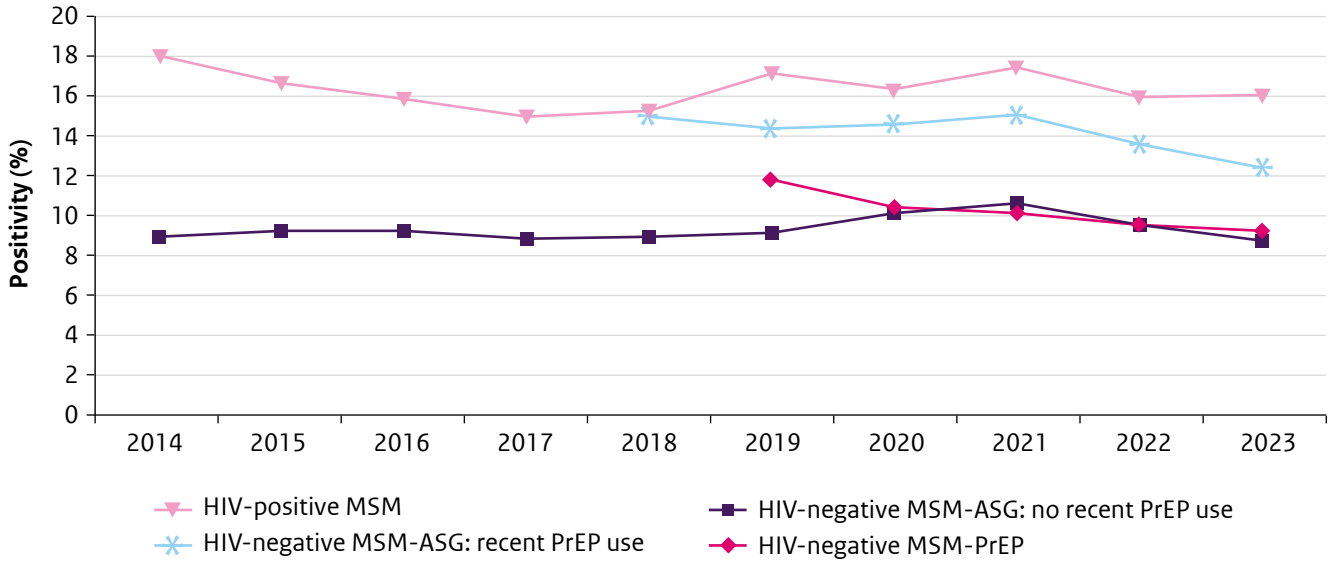


Table 3.3 Region of origin: number of chlamydia diagnoses, tests and positivity by sex and type of sexual contact, 2023

Region of origin	Women		Heterosexual men		MSM-ASG		MSM-PrEP	
	n positive/N	%	n positive/N	%	n positive/N	%	n positive/N	%
The Netherlands	8,176/45,114	18.1	3,931/18,108	21.7	2,852/28,439	10.0	1,389/15,992	8.7
Turkey	127/755	16.8	93/757	12.3	109/1,020	10.7	52/591	8.8
Morocco	124/791	15.7	175/1,038	16.9	77/702	11.0	31/282	11.0
Suriname	384/2,517	15.3	316/1,767	17.9	129/1,316	9.8	75/790	9.5
CAS-BES islands	224/1,392	16.1	223/977	22.8	138/1,089	12.7	65/610	10.7
Indonesia	70/467	15.0	27/167	16.2	97/825	11.8	42/538	7.8
Eastern Europe	253/2,440	10.4	93/682	13.6	263/2,585	10.2	108/1,403	7.7
Europe other	543/4,009	13.5	236/1,611	14.6	418/4,828	8.7	226/2,558	8.8
Africa other	240/1,741	13.8	235/1,452	16.2	125/1,153	10.8	63/644	9.8
Asia other	327/2,201	14.9	160/1,211	13.2	309/3,066	10.1	256/2,394	10.7
Latin America other	191/1,824	10.5	96/616	15.6	305/2,207	13.8	167/1,486	11.2
North-America/ Oceania	91/783	11.6	39/286	13.6	83/815	10.2	37/443	8.4
Unknown	5/58	8.6	4/24	16.7	5/63	7.9	6/32	18.8
Total	**10,755/64,092**	**16.8**	**5,628/28,696**	**19.6**	**4,910/48,108**	**10.2**	**2,517/27,763**	**9.1**

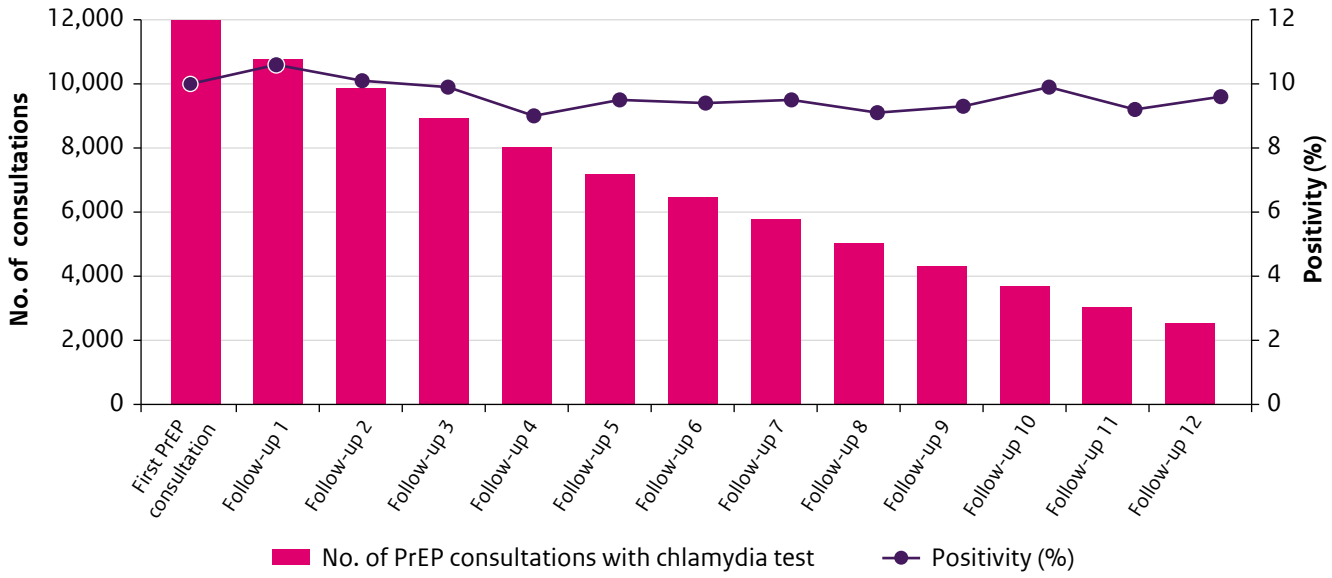
Footnote: Region of origin: migrant or child of migrant

Figure 3.5 Trends in chlamydia positivity in MSM by HIV-status and PrEP use, 2014-2023



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 the SHCs for an STI/HIV test between PrEP follow-up consultations. These consultations fall within the ASG regulation.

Figure 3.6 Number of consultations with chlamydia test and chlamydia positivity in PrEP consultations in MSM, by PrEP consultation number, July 2019 - December 2023



Footnote 1: Data up to the 12th consultation are shown. The maximum number of consultations recorded within one person was 20.
Footnote 2: MSM in the PrEP pilot occasionally visit the SHCs for an STI/HIV test between PrEP follow-up consultations. These consultations fall within the ASG regulation.

Table 3.4 Concurrent STI by sex and type of sexual contact among persons diagnosed with chlamydia, 2023

Concurrent infection	Women n (%)	Heterosexual men n (%)	MSM-ASG n (%)	MSM-PrEP n (%)
Chlamydia, total	10,755 (100.0)	5,628 (100.0)	4,910 (100.0)	2,517 (100.0)
Gonorrhoea	772 (7.2)	331 (5.9)	1,335 (27.2)	686 (27.3)
Syphilis, infectious	10 (0.1)	4 (0.1)	180 (3.7)	79 (3.1)
HIV newly diagnosed	0 (0.0)	1 (0.0)	26 (0.5)	1 (0.0)
Other STI*	81 (0.8)	69 (1.2)	45 (0.9)	12 (0.5)

** 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 for hepatitis C.*

Table 3.5a Anatomic location: number of chlamydia tests and chlamydia positivity by sex and type of sexual contact, 2016-2023

	2016	2017	2018	2019	2020	2021	2022	2023
Women								
Urogenital								
N tested	67,483	69,204	60,990	54,538	42,134	53,785	62,627	64,026
Positivity (%)	14.5	14.5	14.4	14.7	15.8	14.9	16.5	15.6
Anorectal								
N tested	21,224	23,155	21,960	19,629	16,381	20,650	24,849	23,856
Positivity (%)	13.4	12.9	12.3	13.5	14.7	13.9	15.7	14.1
Oral								
N tested	23,292	24,367	20,920	19,546	15,239	18,690	22,590	23,355
Positivity (%)	2.6	2.6	2.4	2.7	4.6	5.4	5.5	5.4
MSM-ASG								
Urogenital								
N tested	40,115	45,324	43,765	42,821	30,167	36,769	43,885	47,994
Positivity (%)	3.3	3.2	3.1	3.4	3.6	3.7	3.3	3.2
Anorectal								
N tested	38,496	43,861	42,499	41,947	29,695	36,100	43,037	46,904
Positivity (%)	7.7	7.1	7.5	8.2	8.7	9.3	8.2	7.6
Oral								
N tested	36,589	41,296	41,572	41,849	29,885	36,424	43,539	46,150
Positivity (%)	1.1	1.1	1.1	1.2	1.6	1.9	1.8	1.6
MSM-PrEP								
Urogenital								
N tested				3,369	13,853	22,023	27,381	27,723
Positivity (%)				2.6	2.6	2.3	2.0	2.1
Anorectal								
N tested				3,353	13,814	21,946	27,274	27,617
Positivity (%)				9.7	8.3	8.0	7.5	7.3
Oral								
N tested				3,349	13,848	22,017	27,384	26,492
Positivity (%)				1.2	1.3	1.4	1.4	1.2

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

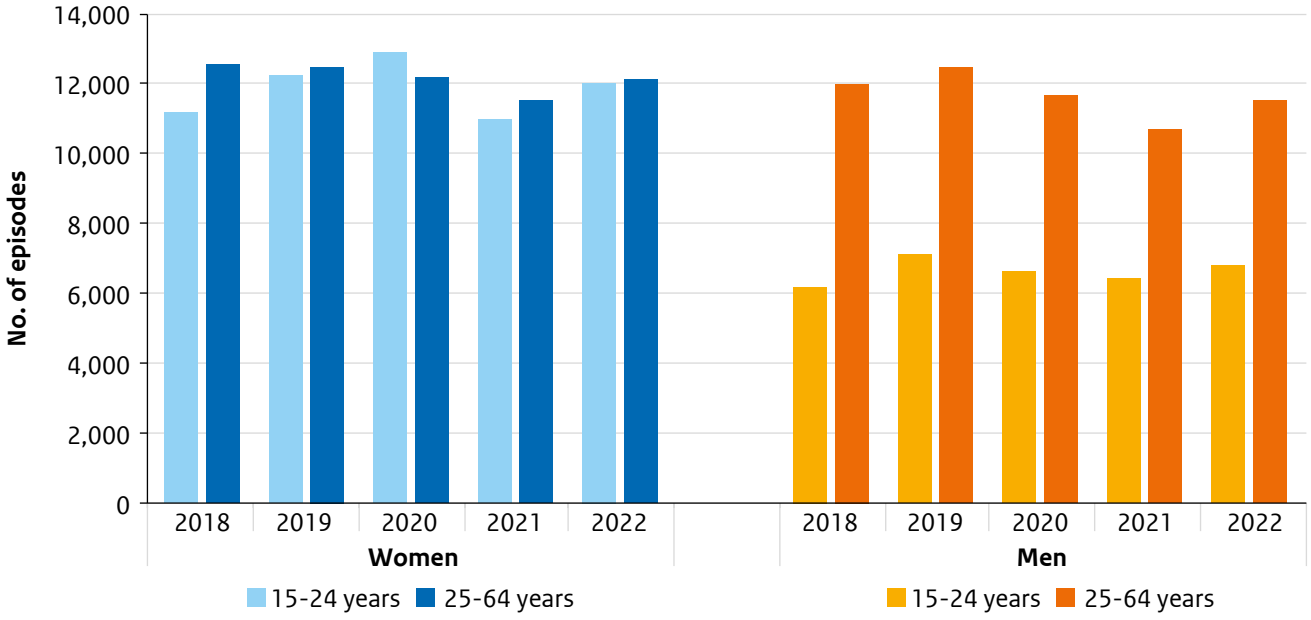
Table 3.5b Combination of anatomic location: number and proportion of chlamydia diagnoses by sex and type of sexual contact, 2023

Location	Women n (%)	MSM-ASG n (%)	MSM-PrEP n (%)
Any location, total	**10,755 (100.0)**	**4,910 (100.0)**	**2,517 (100.0)**
Urogenital only	6,630 (61.6)	1,015 (20.7)	384 (15.3)
Anorectal only	472 (4.4)	2,764 (56.3)	1,650 (65.6)
Oral only	227 (2.1)	268 (5.5)	111 (4.4)
Urogenital and anorectal	2,402 (22.3)	378 (7.7)	155 (6.2)
Urogenital and oral	541 (5.0)	46 (0.9)	5 (0.2)
Anorectal and oral	57 (0.5)	327 (6.7)	179 (7.1)
Urogenital and anorectal and oral	426 (4.0)	111 (2.3)	32 (1.3)

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.
Footnote 2: For one MSM-ASG and one MSM-PrEP, anatomic location could not be determined because of pooled testing.

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, 2018-2022



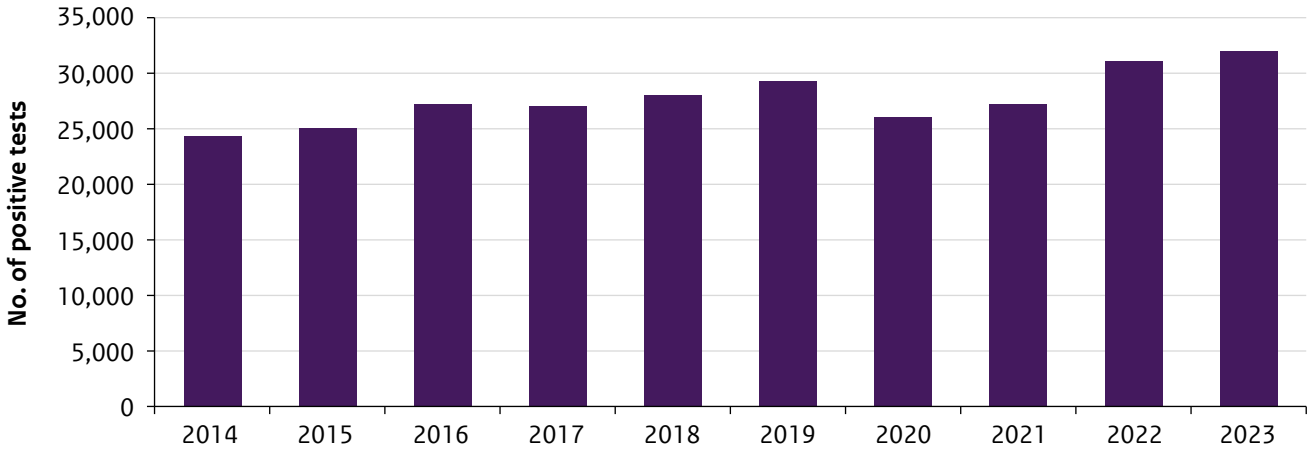
Footnote: About 50% of the total Dutch population consists of persons aged 25-64 years and about 10% consists of persons aged 15-24 years.

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, 2018-2022

	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
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
2022	**4.2**	11.3	2.6	**3.2**	6.2	2.5	**3.7**	8.8	2.6

3.4 Laboratory surveillance

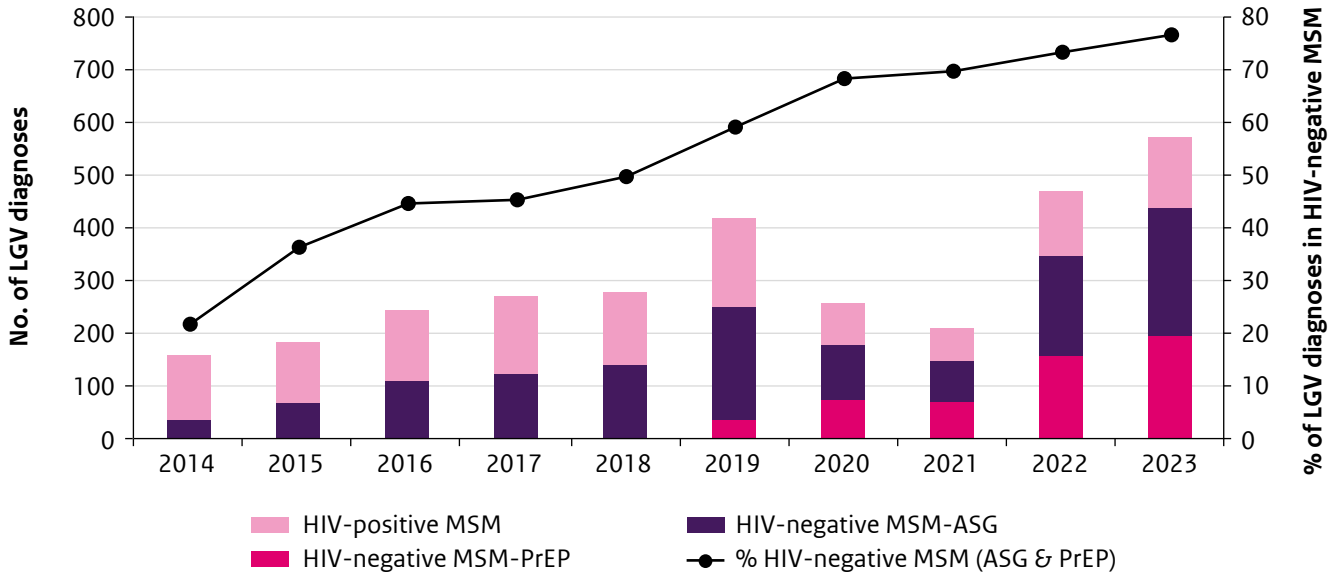
Figure 3.8 Number of positive tests for *Chlamydia trachomatis* from up to 21 medical microbiology laboratories, 2014-2023



Source: 'Virologische weekstaten'
Footnote: 19 medical microbiology laboratories in 2023.

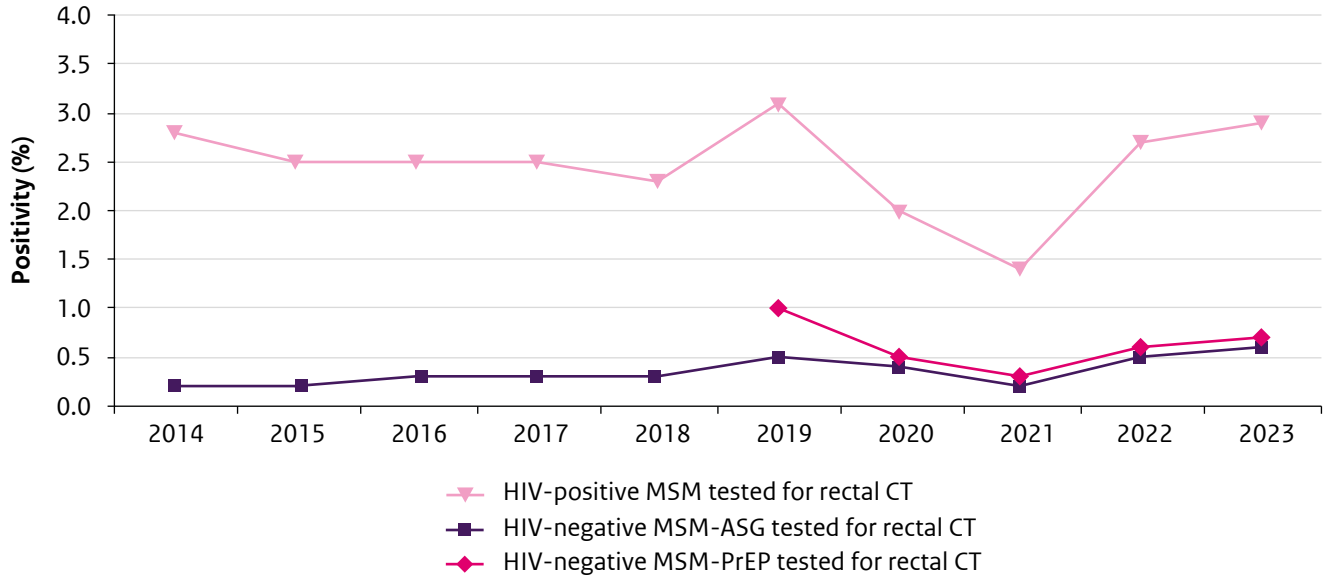
3.5 Lymphogranuloma venereum at Sexual Health Centres

Figure 3.9 Number of LGV diagnoses among MSM by HIV-status and proportion of LGV among HIV-negative MSM, 2014-2023



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, 2014-2023



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

4 Gonorrhoea

4.1 Key points

4.1.1 Sexual Health Centres

- Due to more frequent testing among MSM-PrEP, positivity rates in this group are not directly comparable with those among MSM-ASG. In addition, restrictions during the COVID-19 pandemic impacted the number of consultations at SHCs and positivity rates in 2020 and 2021. Both factors should be taken into account when interpreting trends. For more information, see 1.1. National surveillance at Sexual Health Centres.

- In 2023, 13,853 gonorrhoea infections were diagnosed at SHCs (19% women, 7% heterosexual men, 49% MSM-ASG, 23% MSM-PrEP, and 2% gender diverse persons).
- Gonorrhoea positivity among gender diverse persons was 9.4% (207/2,204). As the number of gender diverse persons was relatively low, they are not shown in tables or figures and will be excluded hereafter.
- The 13,646 diagnoses among women, heterosexual men, MSM-ASG, and MSM-PrEP amounted to a 31% increase compared with 2022 (10,427 diagnoses). The number of diagnoses increased by 78% among women (2023: 2,598; 2022: 1,458), by 51% among heterosexual men (2023: 1,007; 2022: 666), by 21% among MSM-ASG (2023: 6,805; 2022: 5,617), and by 20% among MSM-PrEP (2023: 3,236; 2022: 2,686).
- The 13,646 gonorrhoea diagnoses were among 11,616 individuals, 1,598 persons (14%) had more than one gonorrhoea diagnosis in 2023.
- In 2023, the number of gonorrhoea tests increased by 5% compared with 2022. The number of tests increased by 2% among women (2023: 64,108; 2022: 62,691), by 1% among heterosexual men (2023: 28,703; 2022: 27,866), by 9% among MSM-ASG (2023: 48,113; 2022: 44,048), and by 1% among MSM-PrEP (2023: 27,760; 2022: 27,423).
- Gonorrhoea positivity among women and heterosexual men increased slowly between 2016 and 2020, but decreased in 2021 to 1.5% among women and 1.8% among heterosexual men. Since the second half of 2022 gonorrhoea positivity increased greatly, and this increase continued in 2023. In 2023, positivity was 4.1% among women (4.5% in the second half of 2023) and 3.5% among heterosexual men (3.9% in the second half of 2023).
- Positivity among MSM-ASG has been increasing slowly from 9.5% in 2014 to 12.8% in 2022 and increased to 14.1% in 2023 (14.8% in the second half of 2023).
- Among MSM-PrEP, positivity increased from 9.8% in 2022 to 11.7% in 2023 (12.3% in the second half of 2023). Out of all unique persons who were tested among MSM-PrEP in 2023, 26.2% was gonorrhoea positive in at least one consultation (table 2.13).
- High gonorrhoea positivity was seen among persons who were notified for gonorrhoea (37.8% among women, 14.9% among heterosexual men, 33.6% among MSM-ASG, and 37.5% among MSM-PrEP). Other groups with relatively high positivity were men who reported symptoms, sex workers, persons with low education levels, and MSM reporting drug use during sex or group sex in the past six months.
- Notably, among women, higher gonorrhoea positivity rates were seen in women without a migration background and aged ≤ 25 years, while in previous years positivity rates were higher among women with a migration background and aged >25 years.
- Among women and heterosexual men, gonorrhoea positivity increased in all age groups compared with 2022, but increased most among those <25 years. Among MSM-ASG, positivity increased only among MSM-ASG aged between 20 and 39 years, and decreased among MSM-ASG aged <20 years.
- Among women diagnosed with gonorrhoea, 30% had a chlamydia co-infection. This was 33% among heterosexual men. Among MSM (both ASG and PrEP) who were diagnosed with gonorrhoea, 20% also had chlamydia and 3% had infectious syphilis.
- Around 37% of women were tested for gonorrhoea on the anorectal or oral anatomical location. Among women, positivity increased more at the oral location (1.7% in 2021 to 4.5% in 2023) than at the urogenital location (1.2% in 2021 to 2.9% in 2023). 22% of women diagnosed with gonorrhoea had an oral diagnosis only.
- Among MSM, positivity was much higher at the anorectal and oral locations than at the urogenital location. Anorectal and oral positivity were 9.3% and 9.3% among MSM-ASG and 7.8% and 7.2% among MSM-PrEP, respectively. Urogenital positivity was 3.4% among MSM-ASG and 1.5% among MSM-PrEP. Only 4% of MSM-ASG and 3% of MSM-PrEP had an isolated urogenital diagnosis.

4.1.2 General practices

- In 2022, the estimated number of gonorrhoea episodes at GPs increased compared with 2021, from around 4,200 to 5,000 among women and from 8,500 to 9,500 among men.
- In 2022, the reporting rate for gonorrhoea at GPs was 1.3 episodes per 1,000 individuals aged 15-64 years. This amounted to 0.9 per 1,000 for women and 1.7 per 1,000 for men.

4.1.3 Antimicrobial resistance of gonococci in the Netherlands

- In 2023, 15 out of 24 SHCs reported susceptibility test results in the Gonococcal Resistance to Antimicrobials Surveillance (GRAS) programme. Together, these SHCs represented 82% of all diagnosed gonorrhoea cases at SHCs in the Netherlands.
- Within participating SHCs, culture was performed for 77% of persons diagnosed with gonorrhoea. Due to negative or failed cultures, susceptibility test results were available for 41% of persons (4,642) within participating SHCs. On a national level, susceptibility test results were reported for 34% of gonorrhoea diagnoses at SHCs. This percentage has been stable around 33% since 2014.
- Antimicrobial resistance to ceftriaxone, the first-choice treatment in the Netherlands, was not reported. Since 2020, there has been an increase in isolates with slightly reduced susceptibility to ceftriaxone (MIC >0.008 and ≤0.047 mg/L).
- Resistance to ciprofloxacin has been above 50% since 2019 and was 63.1% in 2023. Resistance to cefotaxime has been below 1% since 2020 and was 0.3% in 2023. Resistance to azithromycin has been increasing since 2014, up to 30.6% in 2023.

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, 2023

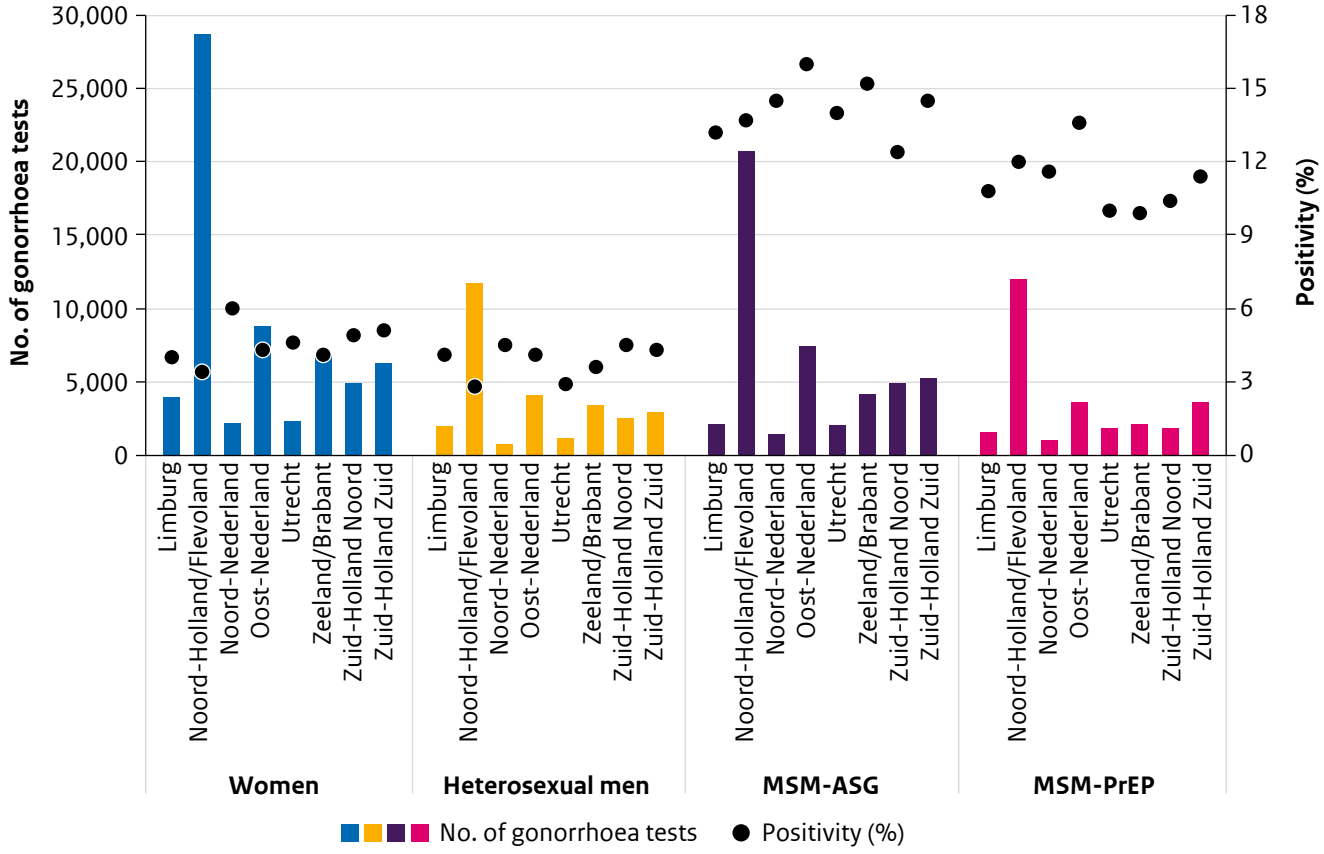
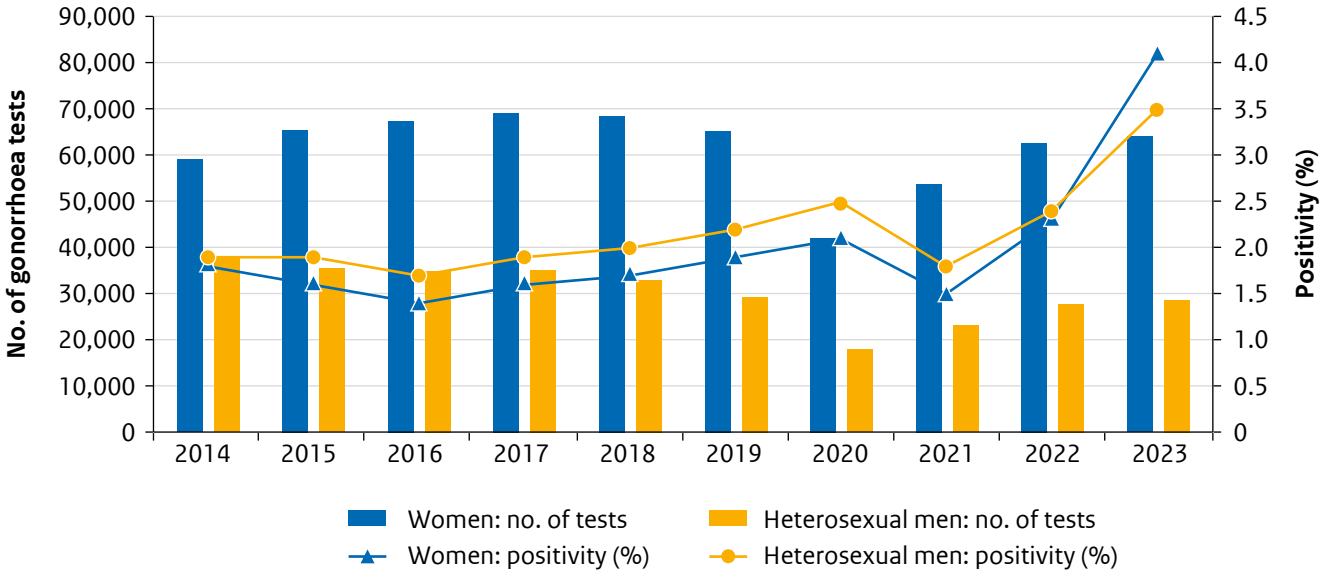
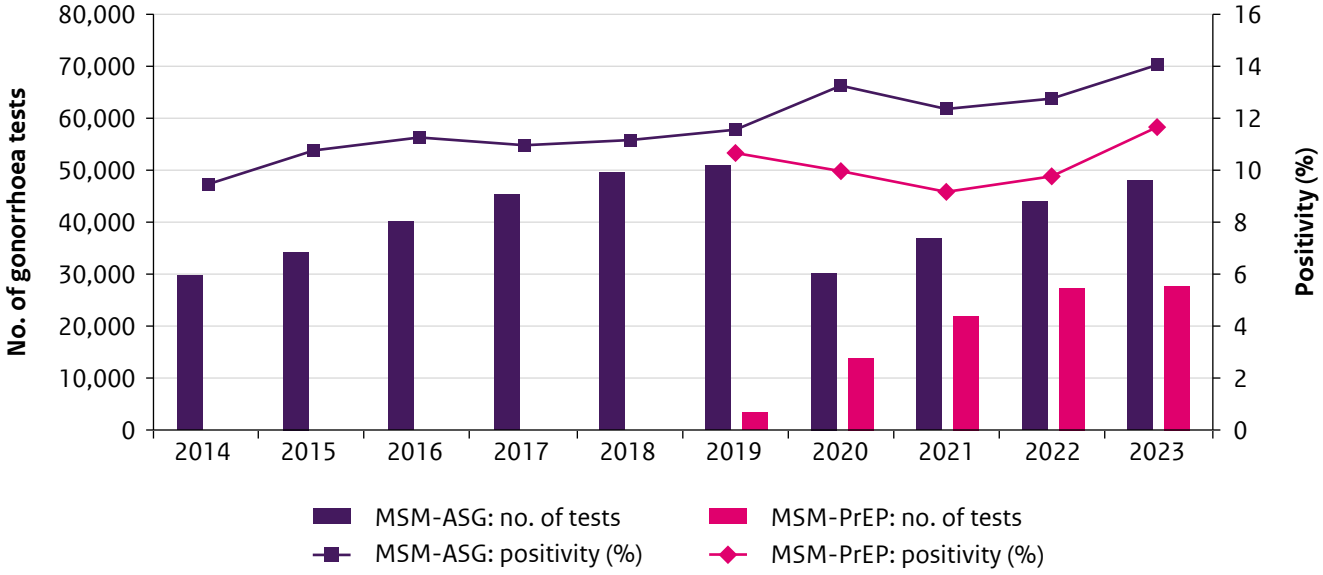


Figure 4.2a Number of gonorrhoea tests and gonorrhoea positivity in women and heterosexual men, 2014-2023



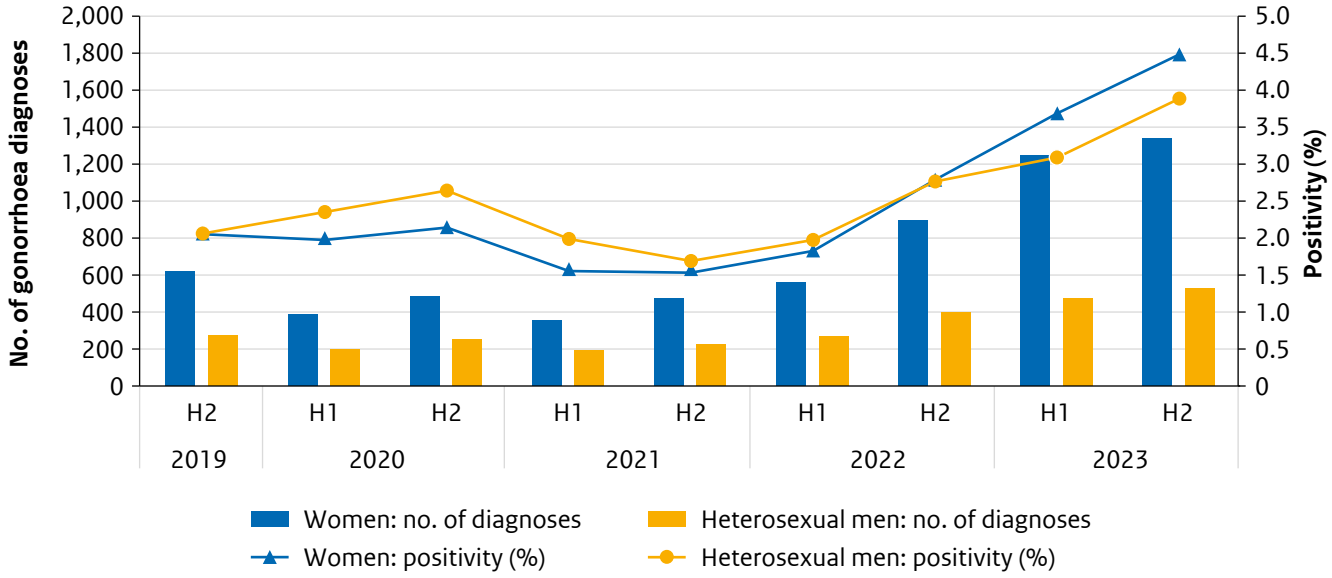
Footnote 1: Between 2012 and 2015, attendees below the age of 25 years and with no further risk factors were only tested for chlamydia. Since 2015, attendees below the age of 25 years and with no further risk factors were tested for chlamydia and gonorrhoea.
Footnote 2: Aggregated data of non-registered consultations included for 2018 and 2019.

Figure 4.2b Number of gonorrhoea tests and gonorrhoea positivity in MSM, 2014-2023



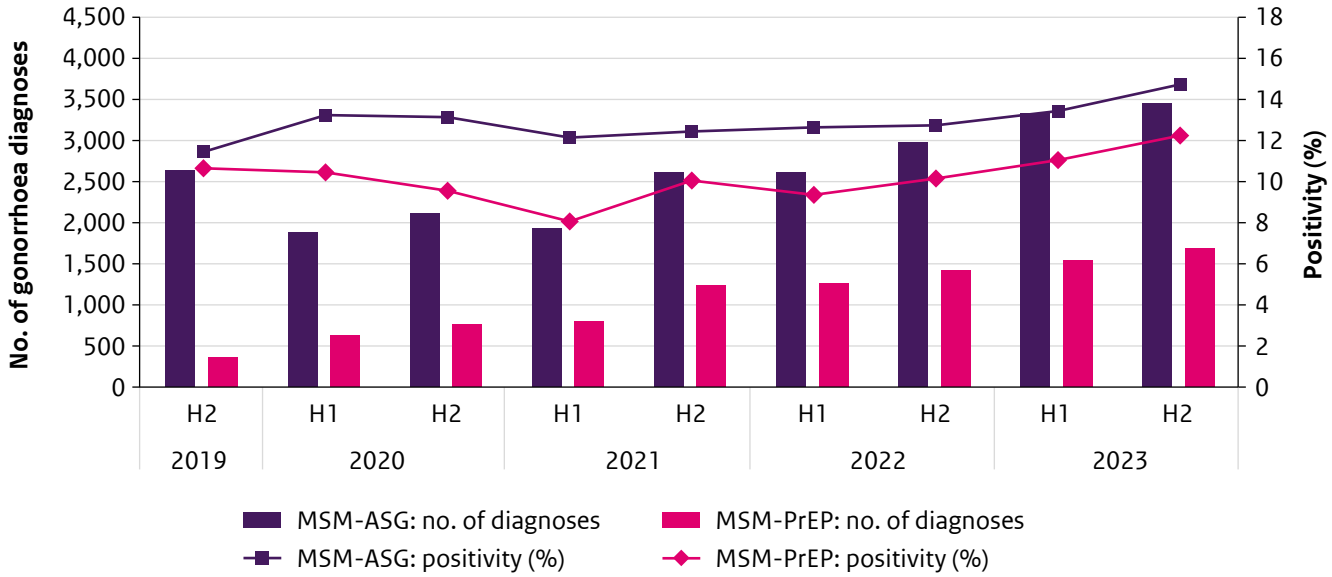
Footnote 1: Aggregated data of non-registered consultations included for 2018 and 2019.
Footnote 2: Trends in the number of tests and/or positivity in MSM over time may change due to the distinction between ASG and PrEP consultations. Furthermore, due to the three-monthly testing interval for MSM-PrEP, MSM-ASG and MSM-PrEP are not directly comparable.
Footnote 3: MSM in the PrEP programme 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 2023



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

Figure 4.3b Half-yearly number of gonorrhoea diagnoses and gonorrhoea positivity in MSM, mid 2019 to 2023



Footnote 1: MSM in the PrEP programme occasionally visit the SHCs for an STI/HIV test between PrEP follow-up consultations. These consultations fall within the ASG regulation.
Footnote2: H1 = January-June, H2=July-December.

Table 4.1a Triage indication: number of gonorrhoea diagnoses, tests, and positivity by sex and type of sexual contact, 2023

	Women		Heterosexual men		MSM-ASG		MSM-PrEP	
	n positive/N	%	n positive/N	%	n positive/N	%	n positive/N	%
Notified								
Not notified	1,657/53,115	3.1	707/19,704	3.6	4,282/36,658	11.7	2,651/25,718	10.3
Notified for gonorrhoea	550/1,454	37.8	183/1,229	14.9	1,803/5,372	33.6	416/1,110	37.5
Notified for other STI/HIV	390/9,449	4.1	116/7,742	1.5	713/6,029	11.8	168/927	18.1
Unknown	1/90	1.1	1/28	3.6	7/54	13.0	1/5	20.0
Symptoms								
No	1,559/43,582	3.6	266/19,024	1.4	4,137/37,232	11.1	2,607/25,612	10.2
Yes	974/19,158	5.1	732/8,978	8.2	2,575/10,046	25.6	621/2,068	30.0
Unknown	65/1,368	4.8	9/701	1.3	93/835	11.1	8/80	10.0
Region of origin included in triage[1]								
No	2,126/49,922	4.3	637/20,007	3.2	4,639/34,086	13.6	2,107/18,990	11.1
Yes	470/14,128	3.3	369/8,672	4.3	2,158/13,964	15.5	1,125/8,738	12.9
Migrant	178/6,027	3.0	123/3,147	3.9	1,560/9,904	15.8	873/6,596	13.2
Child of migrant	292/8,101	3.6	246/5,525	4.5	598/4,060	14.7	252/2,142	11.8
Unknown	2/58	3.4	1/24	4.2	8/63	12.7	4/32	12.5
Age								
≤25 years	2,164/52,398	4.1	769/22,076	3.5	1,482/9,071	16.3	415/2,911	14.3
>25 years	434/11,709	3.7	238/6,626	3.6	5,323/39,042	13.6	2,821/24,849	11.4
Partner in risk group[2]								
No	1,960/47,542	4.1	760/20,925	3.6	3,821/27,799	13.7	1,678/16,005	10.5
Yes	591/15,477	3.8	240/7,556	3.2	2,798/19,237	14.5	1,473/11,026	13.4
Unknown	47/1,089	4.3	7/222	3.2	186/1,077	17.3	85/729	11.7
Sex work, in the past 6 months								
No	2,345/59,092	4.0	993/28,323	3.5	6,533/46,709	14.0	3,086/26,723	11.5
Yes	233/4,488	5.2	8/191	4.2	197/967	20.4	106/655	16.2
Unknown	20/528	3.8	6/189	3.2	75/437	17.2	44/382	11.5
Gonorrhoea/chlamydia/syphilis, in the past year								
Not tested	1,346/36,859	3.7	655/20,341	3.2	1,863/16,282	11.4	229/2,149	10.7
Tested, negative	632/16,140	3.9	153/4,767	3.2	2,056/17,843	11.5	1,071/12,903	8.3
Tested, positive	582/10,307	5.6	183/3,263	5.6	2,681/12,742	21.0	1,820/11,747	15.5
Tested, unknown result	4/77	5.2	0/16	0.0	39/178	21.9	21/153	13.7
Unknown	34/725	4.7	16/316	5.1	166/1,068	15.5	95/808	11.8

1 *Region or origin with triage indication includes 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 4.1b Demographics and (sexual) behavioural characteristics: number of gonorrhoea diagnoses, tests, and positivity by sex and type of sexual contact, 2023

	Women		Heterosexual men		MSM-ASG		MSM-PrEP	
	n positive/N	%	n positive/N	%	n positive/N	%	n positive/N	%
Educational level[1]								
High	1,561/40,098	3.9	451/15,902	2.8	4,255/31,836	13.4	2,134/18,426	11.6
Medium	713/17,067	4.2	368/9,013	4.1	1,509/9,773	15.4	667/5,843	11.4
Low	195/3,922	5.0	144/2,741	5.3	573/3,492	16.4	251/2,046	12.3
Unknown	129/3,021	4.3	44/1,047	4.2	468/3,012	15.5	184/1,445	12.7
Number of partners, in the past 6 months								
0 partners	13/528	2.5	3/221	1.4	58/543	10.7	7/186	3.8
1 partner	418/16,504	2.5	150/5,999	2.5	307/3,525	8.7	50/1,332	3.8
2 partners	527/15,808	3.3	196/5,935	3.3	554/5,203	10.6	97/1,879	5.2
3 or more partners	1,575/29,885	5.3	653/16,460	4.0	5,804/38,432	15.1	3,053/24,161	12.6
Unknown	65/1,383	4.7	5/88	5.7	82/410	20.0	29/202	14.4
Receptive anal sex, in the past 6 months								
No receptive anal sex	1,835/48,820	3.8			1,339/13,499	9.9	356/4,635	7.7
Yes, consistently with a condom	57/1,467	3.9			549/5,959	9.2	120/1,271	9.4
Yes, not consistently with a condom	182/3,169	5.7			2,528/14,924	16.9	1,285/9,412	13.7
Yes, never with a condom	496/9,509	5.2			2,307/13,084	17.6	1,465/12,297	11.9
Unknown	28/1,143	2.4			82/647	12.7	10/145	6.9
Insertive anal sex, in the past 6 months								
No insertive anal sex			838/24,556	3.4	1,015/10,242	9.9	357/3,969	9.0
Yes, consistently with a condom			19/532	3.6	591/6,638	8.9	123/1,197	10.3
Yes, not consistently with a condom			42/931	4.5	2,623/16,216	16.2	1,262/9,519	13.3
Yes, never with a condom			84/2,024	4.2	2,498/14,445	17.3	1,481/12,918	11.5
Unknown			24/660	3.6	78/572	13.6	13/157	8.3
Vaginal sex, in the past 6 months[2]								
No vaginal sex	20/734	2.7	11/396	2.8	137/994	13.8	21/270	7.8
Yes, consistently with a condom	169/4,533	3.7	45/1,844	2.4	112/1,097	10.2	28/248	11.3
Yes, not consistently with a condom	980/23,345	4.2	443/12,717	3.5	238/2,316	10.3	57/411	13.9
Yes, never with a condom	1,410/34,687	4.1	501/13,471	3.7	310/2,966	10.5	63/715	8.8
Unknown	19/809	2.3	7/275	2.5	135/1,291	10.5	4/59	6.8

Table 4.1b (continued) Demographics and (sexual) behavioural characteristics: number of gonorrhoea diagnoses, tests, and positivity by sex and type of sexual contact, 2023

	Women		Heterosexual men		MSM-ASG		MSM-PrEP	
	n positive/N	%	n positive/N	%	n positive/N	%	n positive/N	%
Receptive oral sex, in the past 6 months								
No receptive oral sex	204/6,805	3.0			233/2,638	8.8	52/597	8.7
Yes, consistently with a condom	32/1,169	2.7			26/346	7.5	8/93	8.6
Yes, not consistently with a condom	241/5,019	4.8			572/4,408	13.0	151/1,162	13.0
Yes, never with a condom	2,066/48,816	4.2			5,883/39,963	14.7	3,007/25,711	11.7
Unknown	55/2,299	2.4			91/758	12.0	18/197	9.1
Client of sex work, in the past 6 months								
No	1,701/40,541	4.2	946/27,030	3.5	6,557/46,090	14.2	3,141/26,945	11.7
Yes	8/183	4.4	50/1,366	3.7	137/1,334	10.3	34/316	10.8
Unknown	889/23,384	3.8	11/307	3.6	111/689	16.1	61/499	12.2
Previous HIV test								
No	1,895/47,060	4.0	818/22,691	3.6	816/6,923	11.8	56/520	10.8
Yes, positive	2/24	8.3	0/23	0.0	875/4,465	19.6		
Yes, negative	681/16,327	4.2	171/5,689	3.0	5,078/36,432	13.9	3,177/27,198	11.7
Yes, result unknown	1/130	0.8	1/36	2.8	15/107	14.0	1/32	3.1
Unknown	19/567	3.4	17/264	6.4	21/186	11.3	2/10	20.0
Drug use before or during sex, in the past 6 months[3,4]								
No					4,374/36,707	11.9	1,634/17,630	9.3
Yes					2,346/10,841	21.6	1,583/9,966	15.9
Unknown					85/565	15.0	19/164	11.6
Group sex, in the past 6 months[4]								
No					3,665/30,976	11.8	1,316/14,812	8.9
Yes					2,922/15,060	19.4	1,879/12,644	14.9
Unknown					218/2,077	10.5	41/304	13.5

Table 4.1b (continued) Demographics and (sexual) behavioural characteristics: number of gonorrhoea diagnoses, tests, and positivity by sex and type of sexual contact, 2023

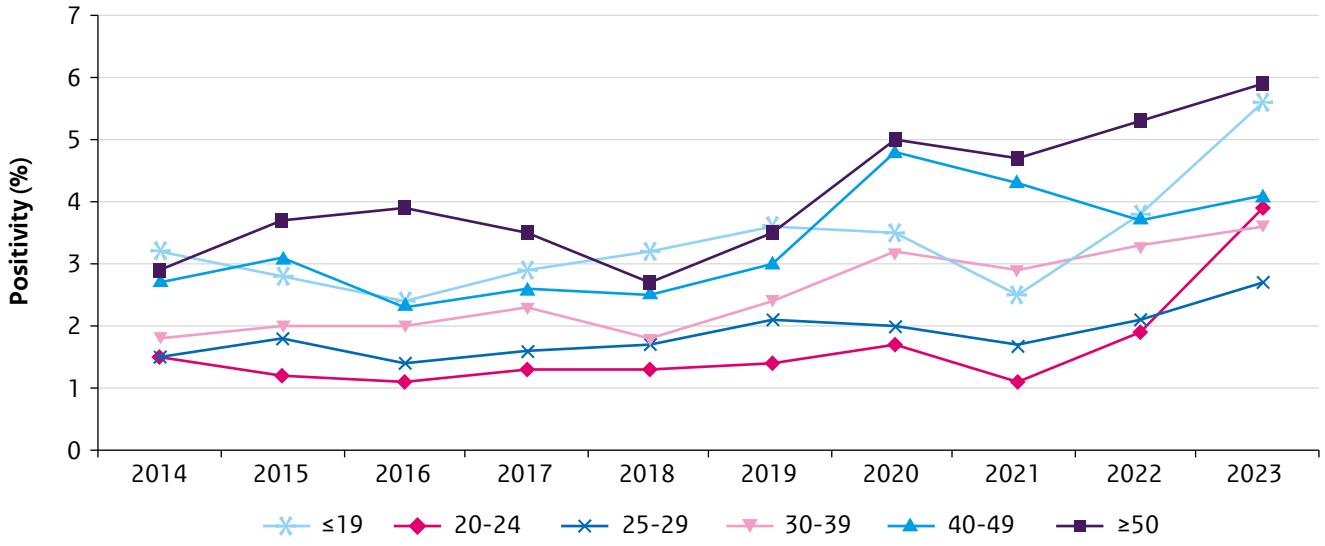
	Women		Heterosexual men		MSM-ASG		MSM-PrEP	
	n positive/N	%	n positive/N	%	n positive/N	%	n positive/N	%
Prep use, in the past 3 months[4,5]								
Known HIV-positive, not eligible					875/4,465	19.6		
No					3,745/32,068	11.7	164/2,005	8.2
Yes					2,185/11,568	18.9	3,072/25,755	11.9
via SHC					994/4,110	24.2	27/206	13.1
via GP					876/6,013	14.6	4/53	7.5
via HIV practicioner					7/45	15.6	2/6	33.3
via other physician					219/1,226	17.9	11/43	25.6
via informal routes					108/497	21.7	13/72	18.1
other					98/425	23.1	17/97	17.5

1 *Low level of education: no education, elementary school, lbo, mavo, vmbo, mbo-1; medium level of education: 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. 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 women and heterosexual men; results are therefore not shown.*
5 *Persons can receive PrEP through more than one provider.*

Table 4.2 Age group: number of gonorrhoea diagnoses, tests, and positivity by sex and type of sexual contact, 2023

Age (years)	Women		Heterosexual men		MSM-ASG		MSM-PrEP	
	n positive/N	%	n positive/N	%	n positive/N	%	n positive/N	%
≤20	788/13,788	5.7	233/4,843	4.8	263/1,504	17.5	31/214	14.5
21-25	1,376/38,610	3.6	536/17,233	3.1	1,219/7,567	16.1	384/2,697	14.2
26-30	148/5,192	2.9	108/3,203	3.4	1,454/9,556	15.2	651/4,569	14.2
31-35	82/2,486	3.3	52/1,500	3.5	1,326/8,612	15.4	651/5,052	12.9
36-40	46/1,389	3.3	42/769	5.5	779/5,429	14.3	459/3,721	12.3
41-45	48/900	5.3	10/419	2.4	539/4,014	13.4	347/3,002	11.6
46-50	37/671	5.5	7/254	2.8	396/3,163	12.5	235/2,472	9.5
51-55	37/553	6.7	8/210	3.8	329/2,897	11.4	210/2,276	9.2
≥56	36/518	6.9	11/271	4.1	500/5,371	9.3	268/3,757	7.1
Total	**2,598/64,108**	**4.1**	**1,007/28,703**	**3.5**	**6,805/48,113**	**14.1**	**3,236/27,760**	**11.7**

Figure 4.4a Age group: trends in gonorrhoea positivity in women and heterosexual men, 2014-2023



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 4.4b Age group: trends in gonorrhoea positivity in MSM-ASG, 2014-2023

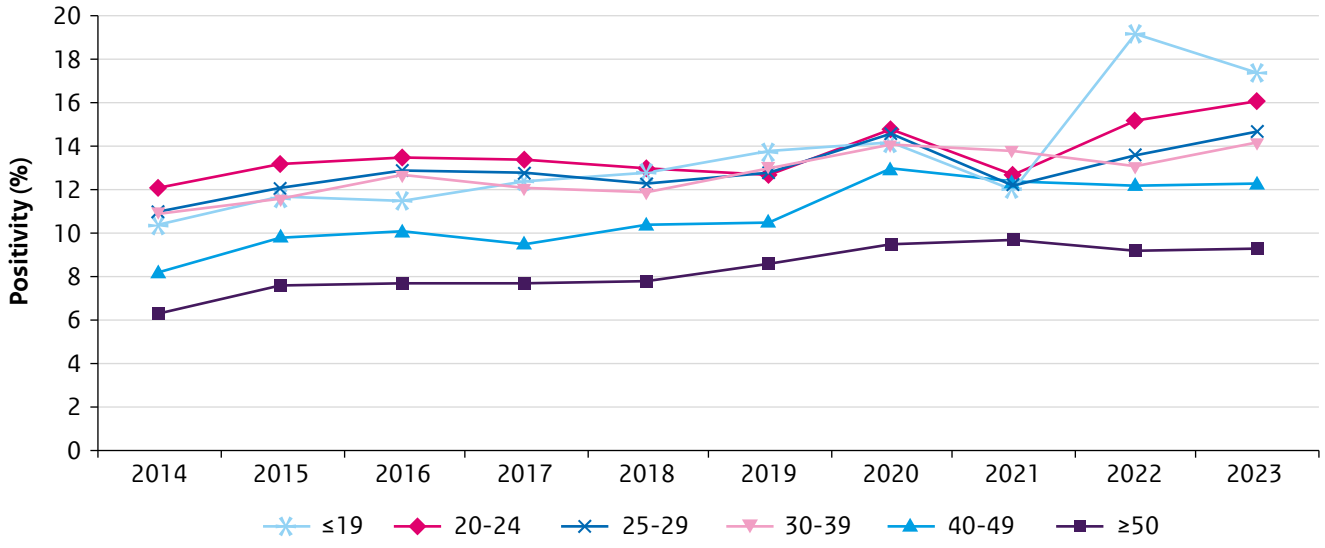
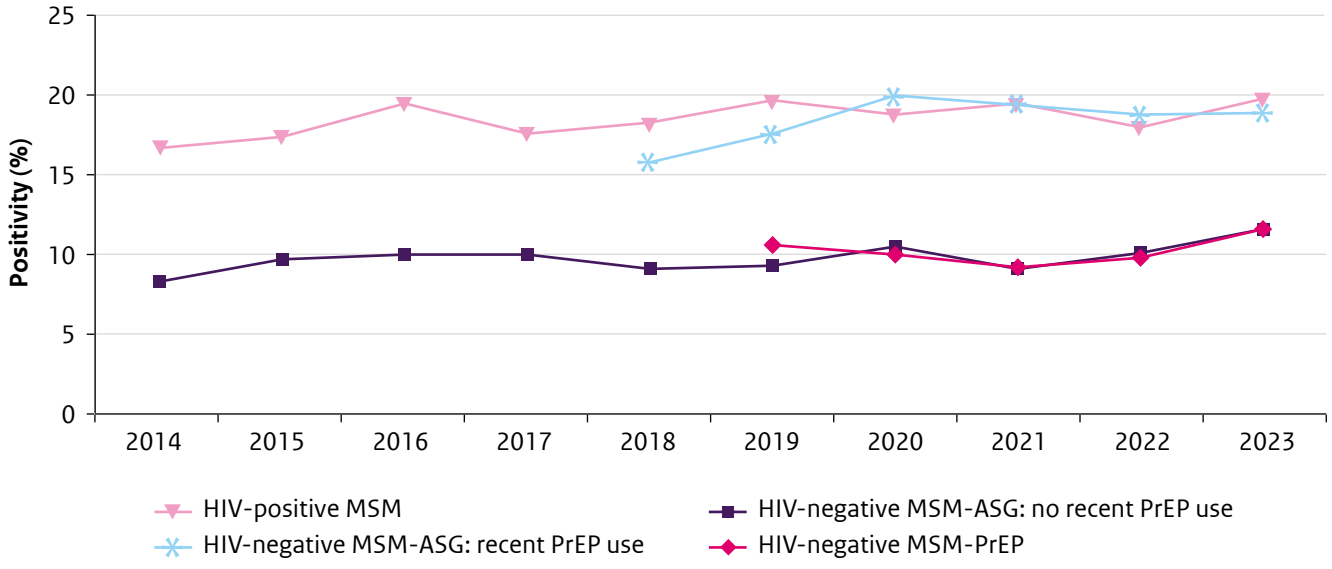


Table 4.3 Region of origin: number of gonorrhoea diagnoses, tests, and positivity by sex and type of sexual contact, 2023

Region of origin	Women		Heterosexual men		MSM-ASG		MSM-PrEP	
	n positive/N	%	n positive/N	%	n positive/N	%	n positive/N	%
The Netherlands	1,981/45,127	4.4	597/18,110	3.3	3,850/28,443	13.5	1,759/15,989	11.0
Turkey	30/755	4.0	28/757	3.7	154/1,020	15.1	77/591	13.0
Morocco	36/791	4.6	58/1,038	5.6	116/702	16.5	34/282	12.1
Suriname	82/2,518	3.3	73/1,769	4.1	188/1,316	14.3	105/790	13.3
CAS-BES islands	53/1,392	3.8	58/977	5.9	170/1,088	15.6	81/610	13.3
Indonesia	9/467	1.9	2/167	1.2	109/825	13.2	56/539	10.4
Eastern Europe	77/2,439	3.2	23/683	3.4	412/2,585	15.9	191/1,402	13.6
Europe other	128/4,011	3.2	34/1,611	2.1	683/4,828	14.1	297/2,558	11.6
Africa other	47/1,741	2.7	66/1,453	4.5	190/1,153	16.5	71/643	11.0
Asia other	63/2,201	2.9	32/1,212	2.6	387/3,066	12.6	299/2,396	12.5
Latin America other	73/1,824	4.0	29/616	4.7	432/2,209	19.6	211/1,485	14.2
North-America/Oceania	17/784	2.2	6/286	2.1	106/815	13.0	51/443	11.5
Unknown	2/58	3.4	1/24	4.2	8/63	12.7	4/32	12.5
Total	**2,598/64,108**	**4.1**	**1,007/28,703**	**3.5**	**6,805/48,113**	**14.1**	**3,236/27,760**	**11.7**

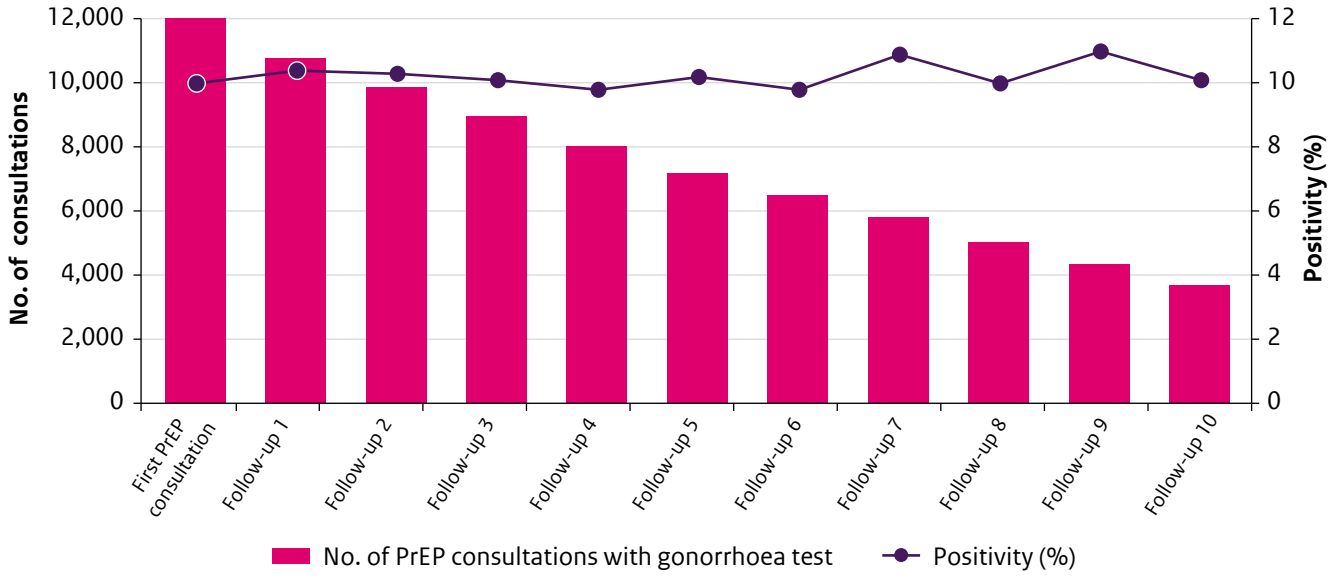
Footnote: Region of origin: migrant or child of migrant

Figure 4.5 Trends in gonorrhoea positivity in MSM by HIV-status and PrEP use, 2014-2023



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 consultations. Furthermore, due to the three-monthly testing interval for MSM-PrEP, MSM-ASG and MSM-PrEP are not directly comparable.
Footnote 3: MSM in the PrEP programme occasionally visit the SHCs for an STI/HIV test between PrEP follow-up consultations. These consultations fall within the ASG regulation.

Figure 4.6 Number of consultations with a gonorrhoea test and gonorrhoea positivity in PrEP consultations in MSM, by PrEP consultation number, July 2019 - December 2023



Footnote 1: Data up to the 10th consultation are shown. The maximum number of consultations recorded within one person was 20.
Footnote 2: MSM in the PrEP programme occasionally visit the SHCs for an STI/HIV test between PrEP follow-up consultations. These consultations fall within the ASG regulation.

Table 4.4 Concurrent STI by sex and type of sexual contact among persons diagnosed with gonorrhoea, 2023

Concurrent infection	Women n (%)	Heterosexual men n (%)	MSM-ASG n (%)	MSM-PrEP n (%)
Gonorrhoea, total	2,598 (100.0)	1,007 (100.0)	6,805 (100.0)	3,236 (100.0)
Chlamydia	772 (29.7)	331 (32.9)	1,335 (19.6)	686 (21.2)
Syphilis, infectious	3 (0.1)	2 (0.2)	210 (3.1)	101 (3.1)
HIV newly diagnosed	1 (0.0)	0 (0.0)	28 (0.4)	5 (0.2)
Other STI*	21 (0.8)	6 (0.6)	52 (0.8)	16 (0.5)

** 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 for hepatitis C.*

Table 4.5a Anatomic location: number of gonorrhoea tests and gonorrhoea positivity by sex and type of sexual contact, 2016-2023

	2016	2017	2018	2019	2020	2021	2022	2023
Women								
Urogenital								
N tested	67,473	69,204	60,958	54,487	42,083	53,752	62,616	64,034
Positivity (%)	1.1	1.3	1.3	1.5	1.6	1.2	1.8	2.9
Anorectal								
N tested	21,194	23,140	21,930	19,563	16,334	20,608	24,828	23,857
Positivity (%)	1.2	1.3	1.5	1.7	1.8	1.4	2.0	3.3
Oral								
N tested	23,469	24,569	21,128	19,597	15,231	18,682	22,601	24,751
Positivity (%)	1.3	1.4	1.4	1.8	2.0	1.7	2.6	4.5
MSM-ASG								
Urogenital								
N tested	40,129	45,341	43,767	42,819	30,167	36,775	43,887	47,994
Positivity (%)	2.9	2.8	2.7	2.7	3.6	3.4	3.2	3.4
Anorectal								
N tested	38,511	43,873	42,458	41,913	29,680	36,102	43,018	46,894
Positivity (%)	7.7	7.6	7.7	8.0	9.3	8.7	8.4	9.3
Oral								
N tested	39,416	44,754	43,262	42,406	29,910	36,441	43,530	47,514
Positivity (%)	5.9	5.8	5.7	6.0	7.8	7.4	8.2	9.3
MSM-PrEP								
Urogenital								
N tested				3,370	13,849	22,019	27,374	27,725
Positivity (%)				1.3	1.4	1.2	1.1	1.5
Anorectal								
N tested				3,350	13,805	21,946	27,260	27,609
Positivity (%)				7.3	7.0	6.1	6.4	7.8
Oral								
N tested				3,354	13,844	22,013	27,379	27,717
Positivity (%)				5.5	5.6	5.5	6.0	7.2

Footnote 1 Heterosexual men are usually only tested urogenital, while women are tested on indication for anorectal or oral gonorrhoea; indications vary by region. MSM are usually tested in all three locations.
Footnote 2: Please note that people can test positive at multiple locations.

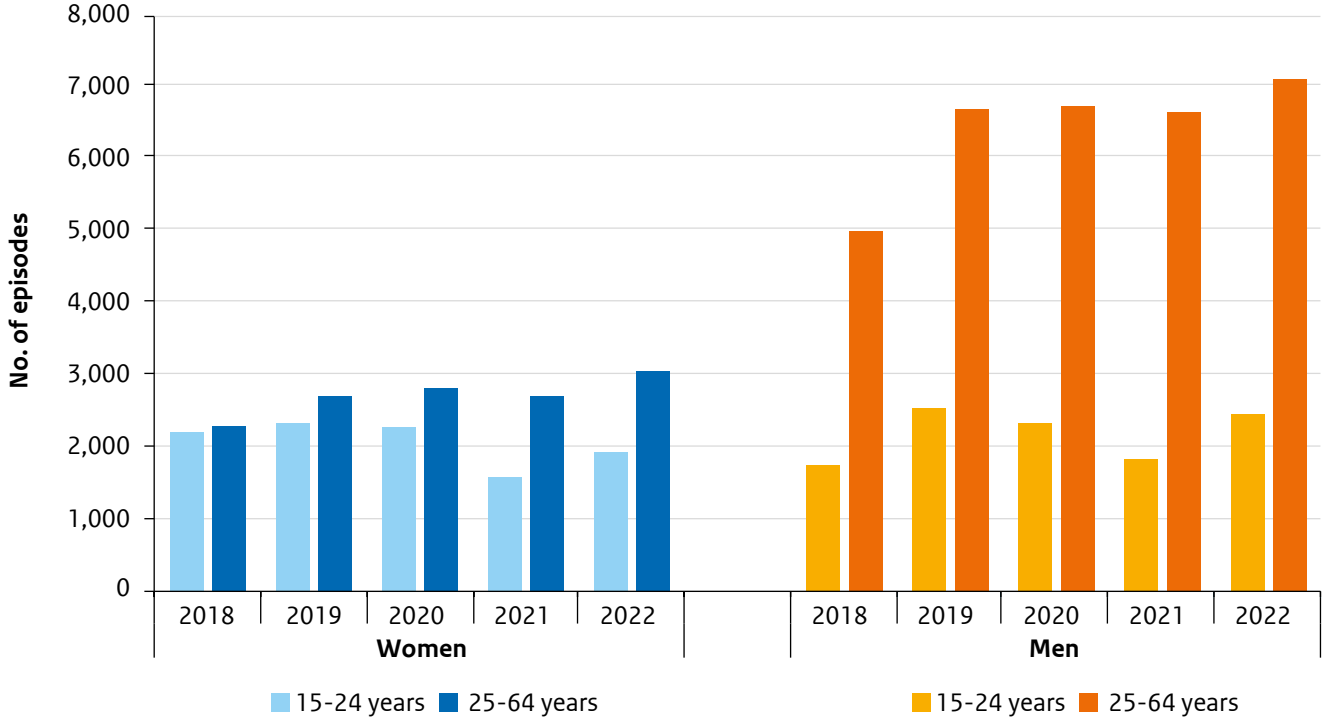
Table 4.5b Combination of anatomic location: number and proportion of gonorrhoea diagnoses by sex and type of sexual contact, 2023

Location	Women n (%)	MSM-ASG n (%)	MSM-PrEP n (%)
Any location, total	**2,598 (100.0)**	**6,805 (100.0)**	**3,236 (100.0)**
Urogenital only	951 (36.6)	294 (4.3)	85 (2.6)
Anorectal only	116 (4.5)	1,759 (25.8)	1,062 (32.8)
Oral only	569 (21.9)	1,978 (29.1)	954 (29.5)
Urogenital and anorectal	417 (16.1)	336 (4.9)	99 (3.1)
Urogenital and oral	290 (11.2)	185 (2.7)	55 (1.7)
Anorectal and oral	29 (1.1)	1,428 (21.0)	795 (24.6)
Urogenital and anorectal and oral	226 (8.7)	825 (12.1)	186 (5.7)

Footnote: Heterosexual men are usually only tested urogenital, while women are tested on indication for anorectal or oral gonorrhoea; indications vary by region. MSM are usually tested in all three 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, 2018-2022



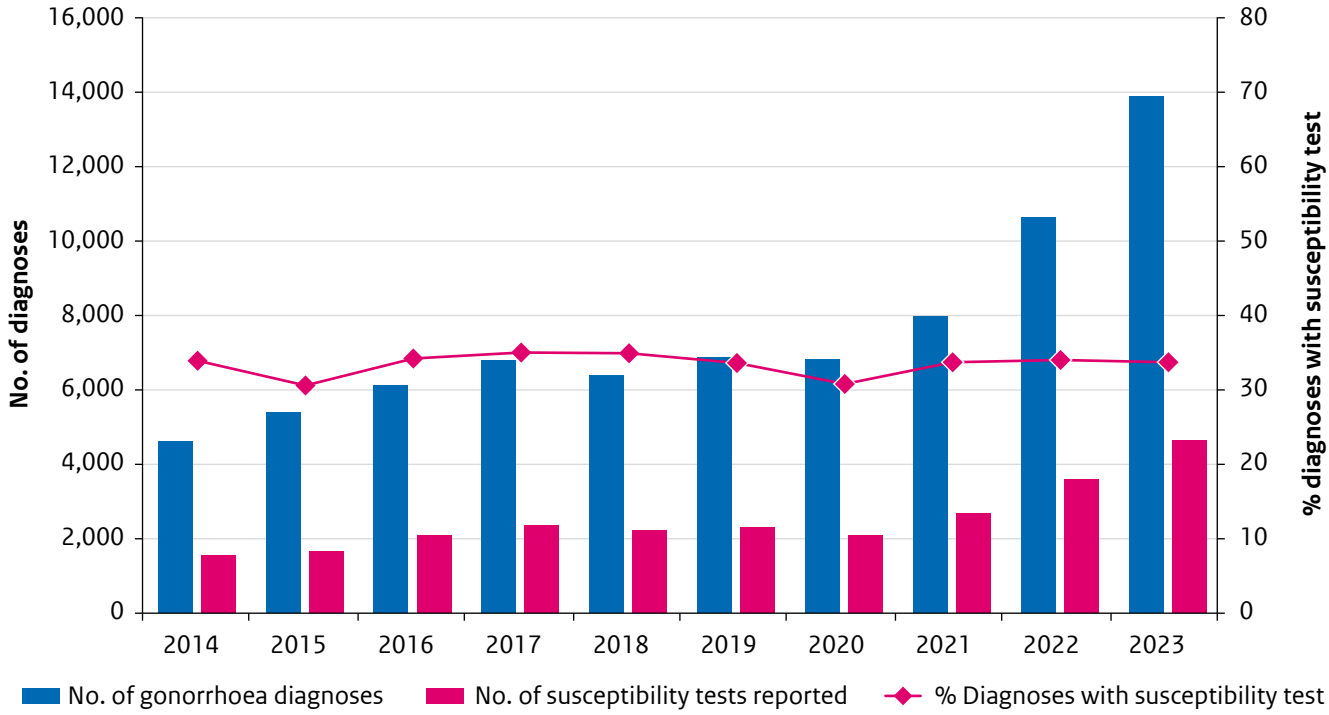
Footnote: About 50% of the total Dutch population consists of persons aged 25-64 years and about 10% consists of persons aged 15-24 years.

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, 2018-2022

	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
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
2022	**0.9**	1.8	0.7	**1.7**	2.2	1.5	**1.3**	2.0	1.1

4.4 Antimicrobial resistance of gonococci in the Netherlands

Figure 4.8 Number of gonorrhoea diagnoses and number and proportion of diagnoses with an antimicrobial susceptibility test, 2014-2023



Footnote: In less than half of all gonorrhoea diagnoses at SHCs antimicrobial susceptibility was measured by culture. This is due to the fact that not all SHCs participate in GRAS, not all patients are cultured, and cultures sometimes remain negative, making measurement of resistance levels impossible.

Figure 4.9 Number of diagnoses, performed cultures and susceptibility testing results reported in GRAS, 2023

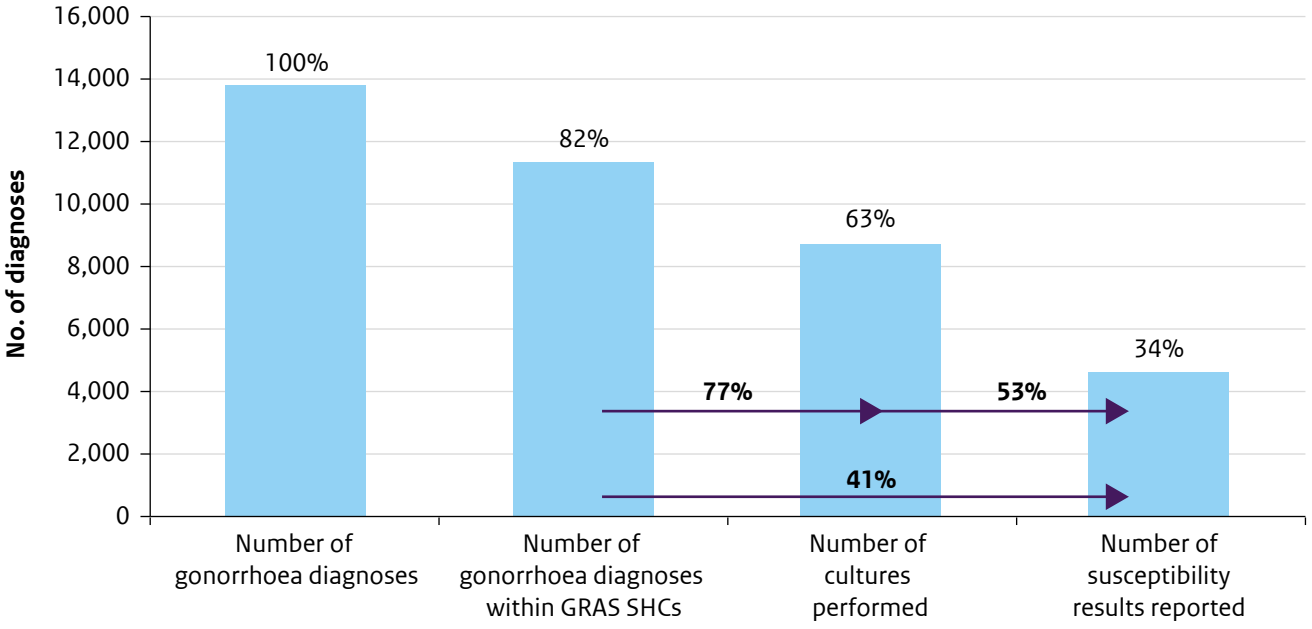


Figure 4.10 Distribution of performed cultures - negative, positive and failed - per anatomical location of gonorrhoea infection, 2023

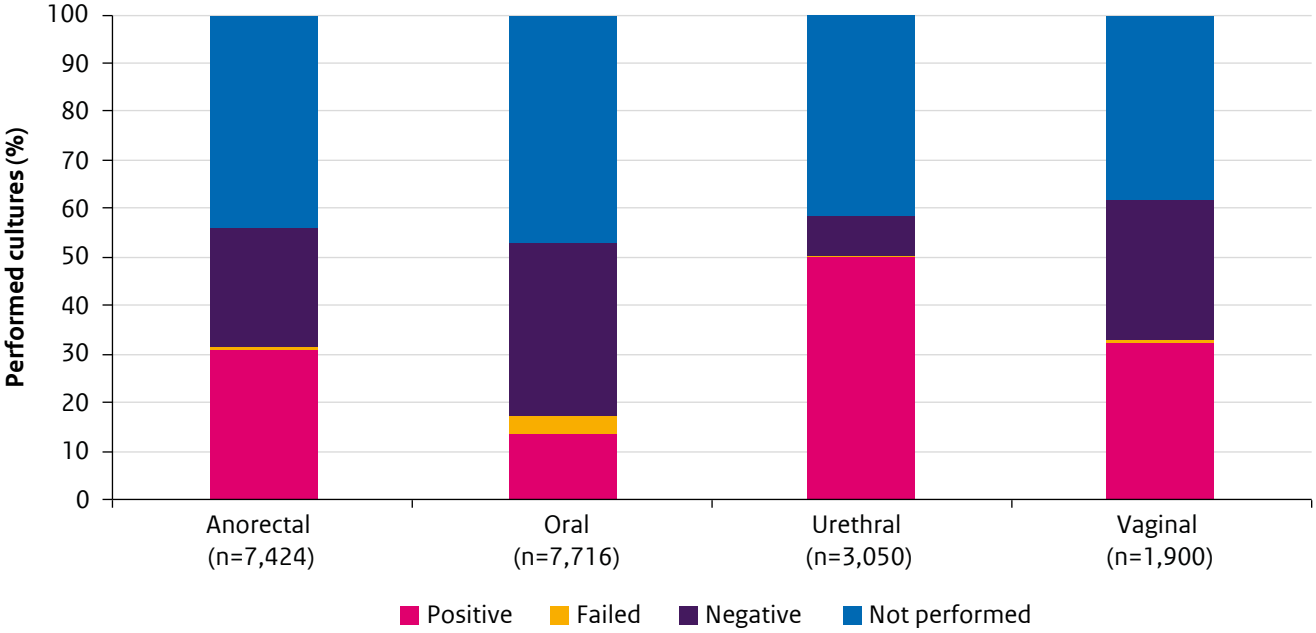
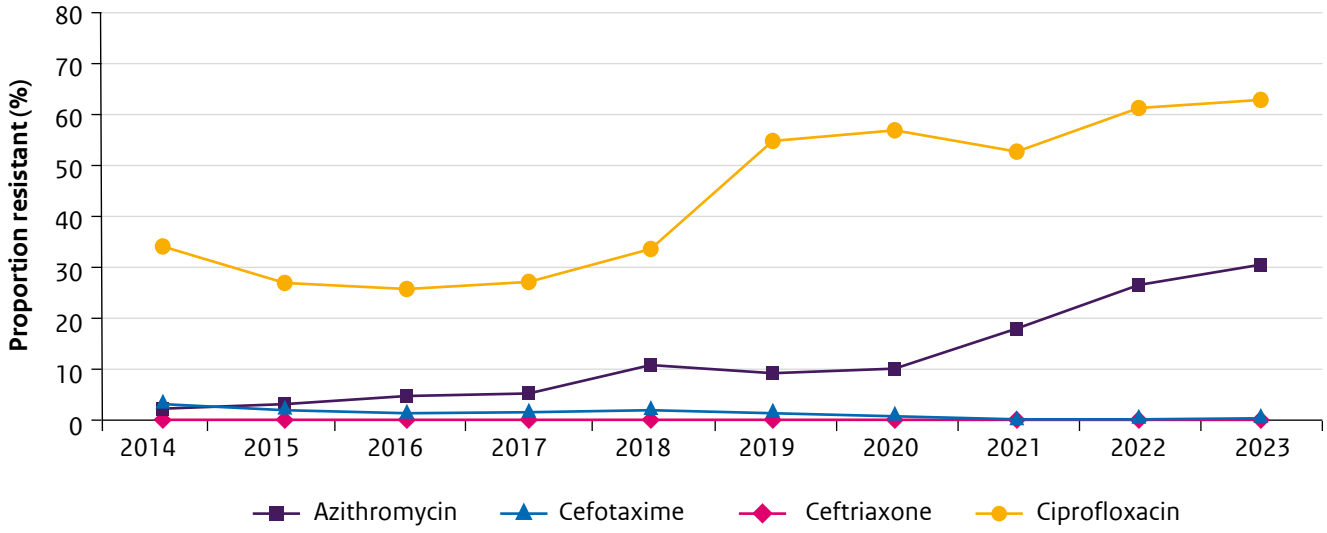
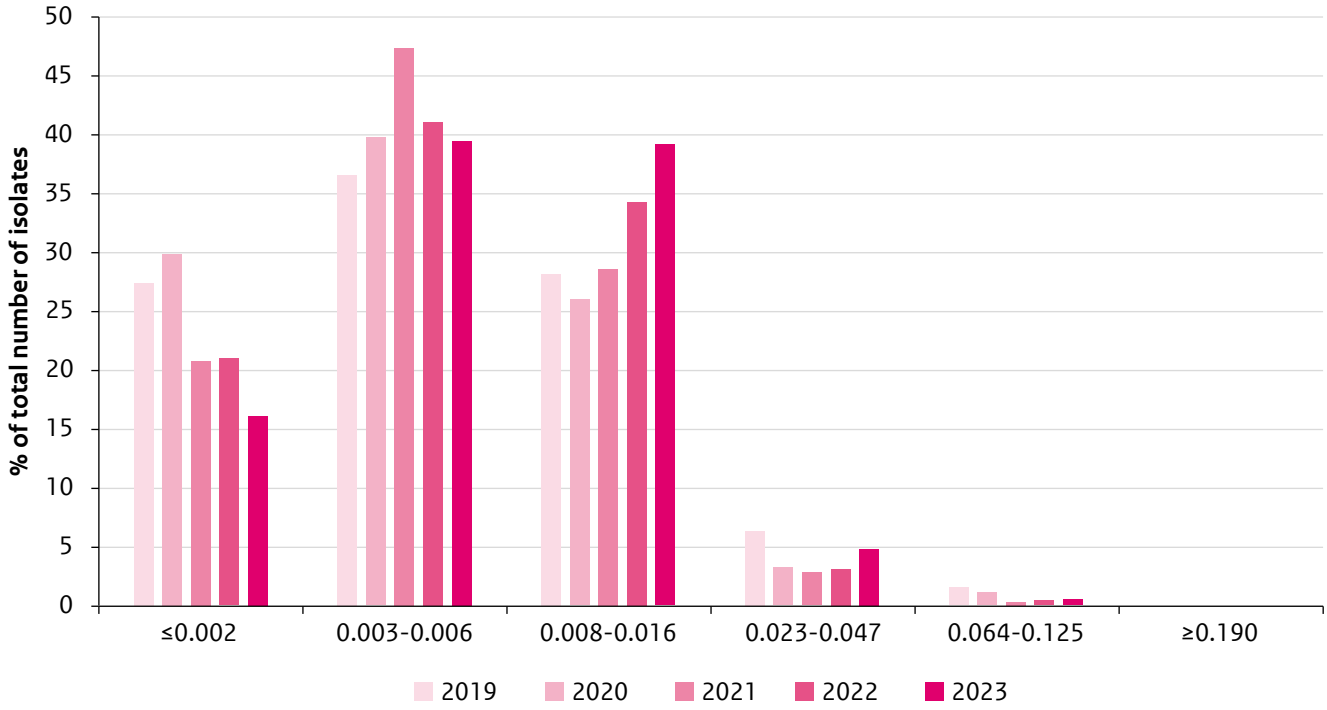


Figure 4.11 Gonococcal resistance (following EUCAST breakpoints) in the Netherlands, proportion of resistant cases, 2014-2023



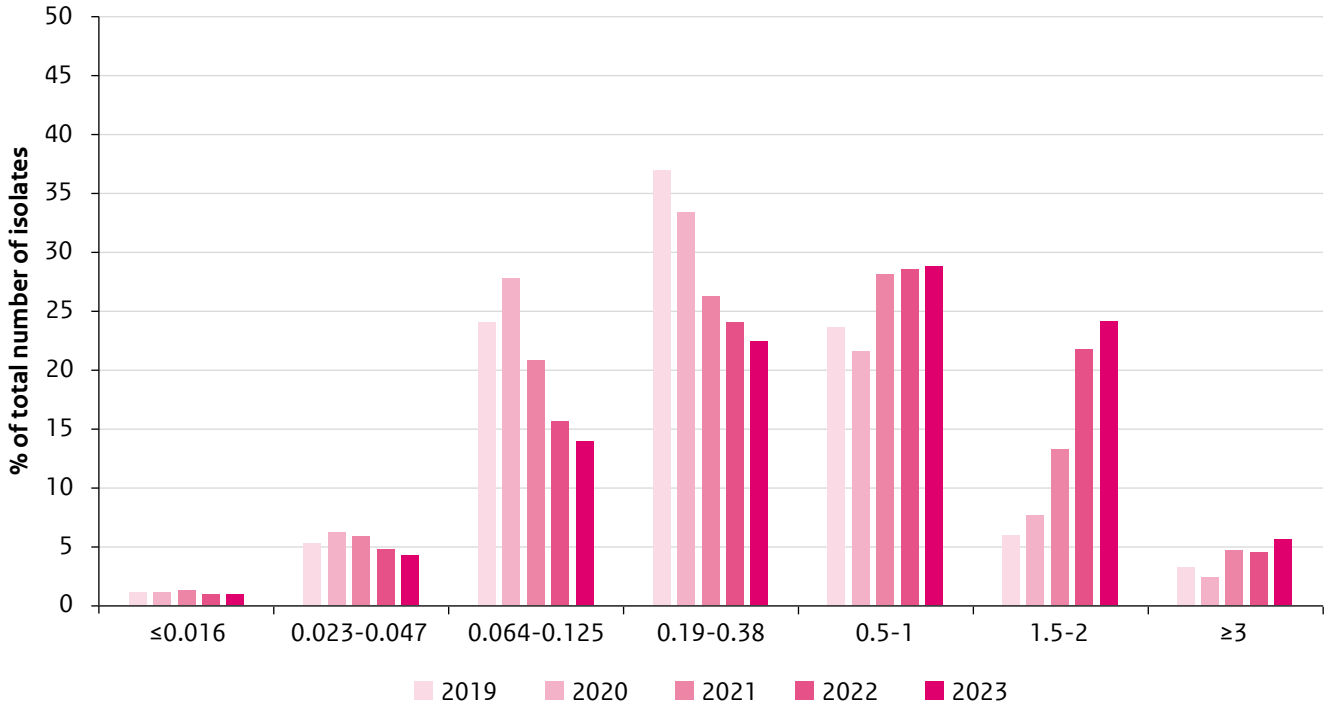
Footnote: No resistance to ceftriaxone has been reported yet.

Figure 4.12a MIC (= minimum inhibitory concentration) distribution for ceftriaxone, 2019-2023



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

Figure 4.12b MIC (= minimum inhibitory concentration) distribution for azithromycin, 2019-2023



Footnote: Following EUCAST breakpoints, no clinical breakpoint for azithromycin is available. An MIC >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

- Due to more frequent testing among MSM-PrEP, positivity rates in this group are not directly comparable with those among MSM-ASG. In addition, restrictions during the COVID-19 pandemic impacted the number of consultations at SHCs and positivity rates in 2020 and 2021. Both factors should be taken into account when interpreting trends. For more information, see 1.1. National surveillance at Sexual Health Centres.

- In 2023, 2,097 syphilis infections were diagnosed at SHCs. Out of these, 1,693 (81%) were infectious syphilis. Between 2014 and 2022, the percentage of syphilis diagnoses that were infectious among women and heterosexual men increased from 44% to 60%. In 2023, this percentage decreased to 51%. Among MSM, the percentage of syphilis diagnoses that were infectious has been stable around 83% (2023: 84%).
- Out of the infectious syphilis diagnoses, 38 (2%) were among women, 43 (3%) among heterosexual men, 1,080 (64%) among MSM-ASG, 487 (29%) among MSM-PrEP, and 45 (3%) among gender diverse persons.
- Infectious syphilis-positivity among gender diverse persons was 2.1% (45/2,137). As the number of gender diverse persons was relatively low, they are not shown in tables or figures and will be excluded hereafter.
- The 1,648 resulting infectious syphilis diagnoses (women, heterosexual men, MSM-ASG, and MSM-PrEP) were among 1,606 individuals; 41 persons (3%) had more than one syphilis diagnosis in 2023, of whom 40 persons were MSM.
- Heterosexuals <25 years are not routinely tested for syphilis. In 2023, a syphilis test was done at 35% of all STI consultations among women and heterosexual men.
- In 2023, there were 22,757 tests among women, 12,115 among heterosexual men, 47,444 among MSM-ASG, and 27,875 among MSM-PrEP. This was comparable with 2022 for women, heterosexual men, and MSM-PrEP, but increased for MSM-ASG (+9%).
- In 2023, infectious syphilis positivity among women (0.17%) and heterosexual men (0.35%) was slightly higher than in 2022 (0.15% and 0.29%, respectively), whereas positivity among MSM-ASG (2.3%) was the same as in 2022 (2.3%). For women, positivity has been increasing since 2020, whereas positivity among heterosexual men and MSM-ASG is lower than in 2020.
- Among MSM-PrEP, infectious syphilis positivity in 2023 (1.8%) was comparable with 2021 and 2022 (both 1.7%). Among all unique persons who were tested among MSM-PrEP in 2023, 5.0% tested positive for infectious syphilis in at least one consultation (table 2.13).
- The highest positivity was found among MSM notified of syphilis exposure (12.8% among MSM-ASG and 12.1% among MSM-PrEP). Other groups with high positivity were MSM with symptoms (5.8% among MSM-ASG and 6.7% among MSM-PrEP) and MSM-ASG who are HIV-positive (6.2%).
- Between 2014 and 2023, infectious syphilis positivity among HIV-positive MSM-ASG fluctuated between 6.4% and 8.5% and was lowest in 2023. Among HIV-negative MSM-ASG who did not report recent PrEP use, positivity was stable around 2%. Among MSM-ASG who reported recent PrEP use, infectious syphilis positivity decreased slightly from 4.1% in 2018 to 2.4% in 2023. Between 2019 and 2023, infectious syphilis positivity among MSM-PrEP was stable around 2%.
- Among MSM-PrEP, infectious syphilis positivity was stable at 1.5% to 1.8% from start to the seventh PrEP consultation.
- Among MSM who were diagnosed with infectious syphilis, 17% MSM-ASG and 16% MSM-PrEP were co-infected with chlamydia and 19% of MSM-ASG and 21% of MSM-PrEP with gonorrhoea.

5.1.2 Congenital syphilis

- Since 2014, the number of infections of congenital syphilis found in neonates has remained very low, at 0 to 3 per year (0 in 2023).

5.1.3 Blood donors

- Between 2014 and 2023, the syphilis incidence among regular blood donors has increased from 0.8 per 100,000 donor years in 2014 to 4.9 per 100,000 donor years in 2023. Among new blood donors, syphilis prevalence varied between 17 and 41 per 100,000 new donors over the same time period, and increased to a prevalence of 52 per 100,000 new donors in 2023.

5.2 Sexual Health Centres: characteristics, risk groups and trends

Figure 5.1 Number of syphilis diagnoses and proportion of diagnoses that is infectious by sex and type of sexual contact, 2014-2023

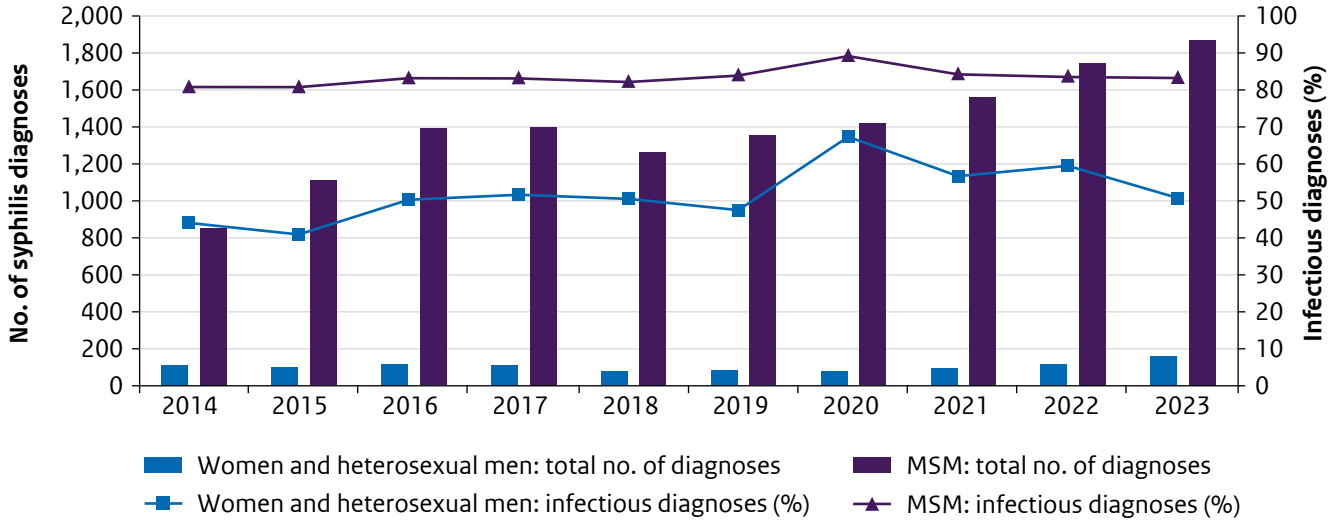


Figure 5.2 Number of syphilis tests and infectious syphilis positivity by region, sex and type of sexual contact, 2023

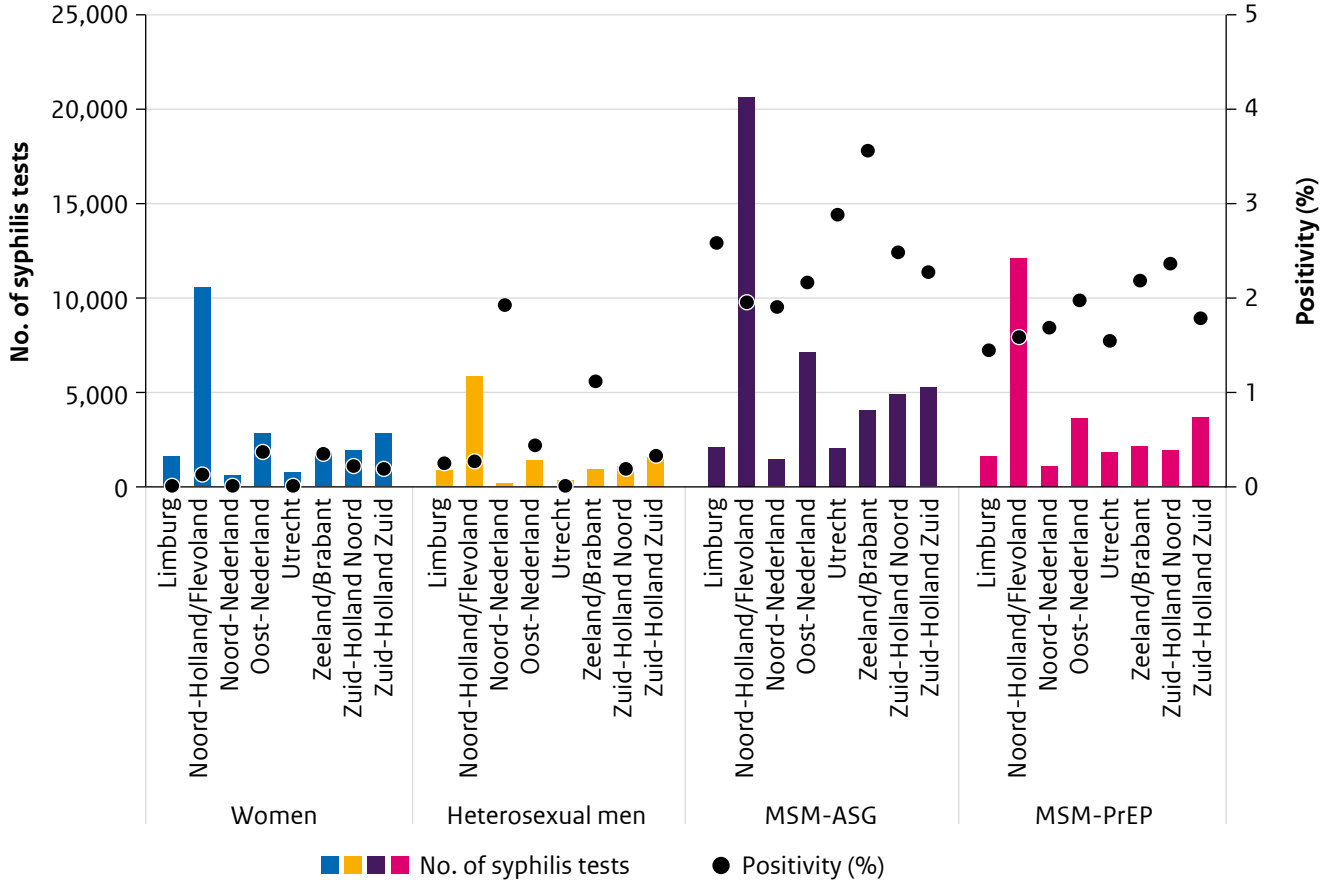
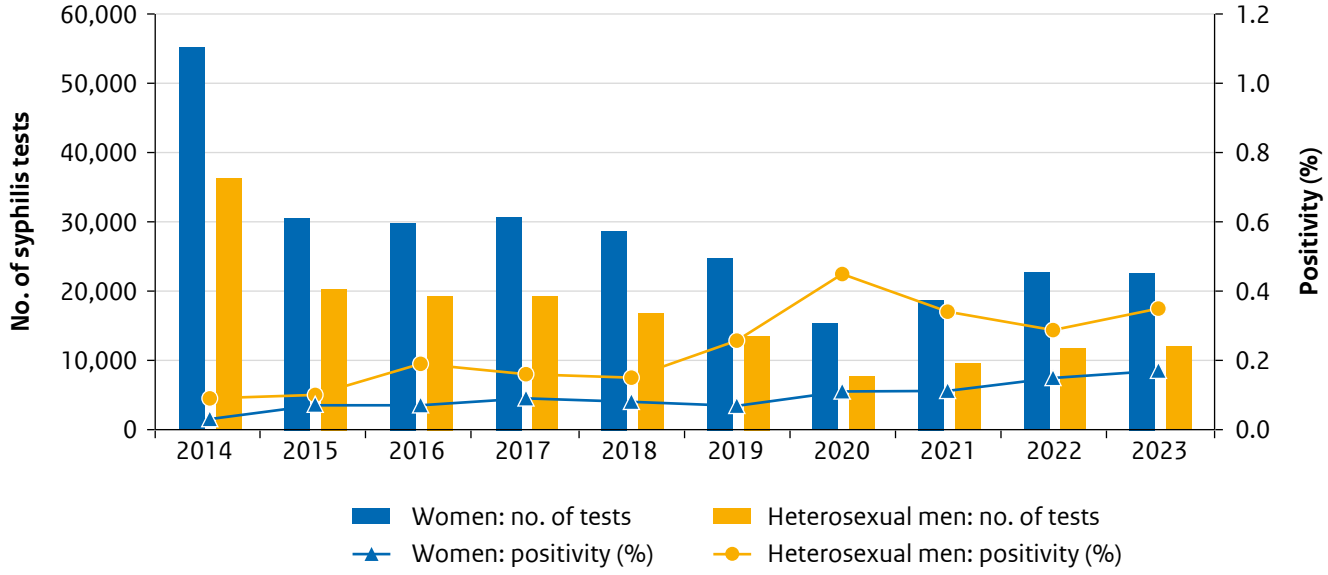
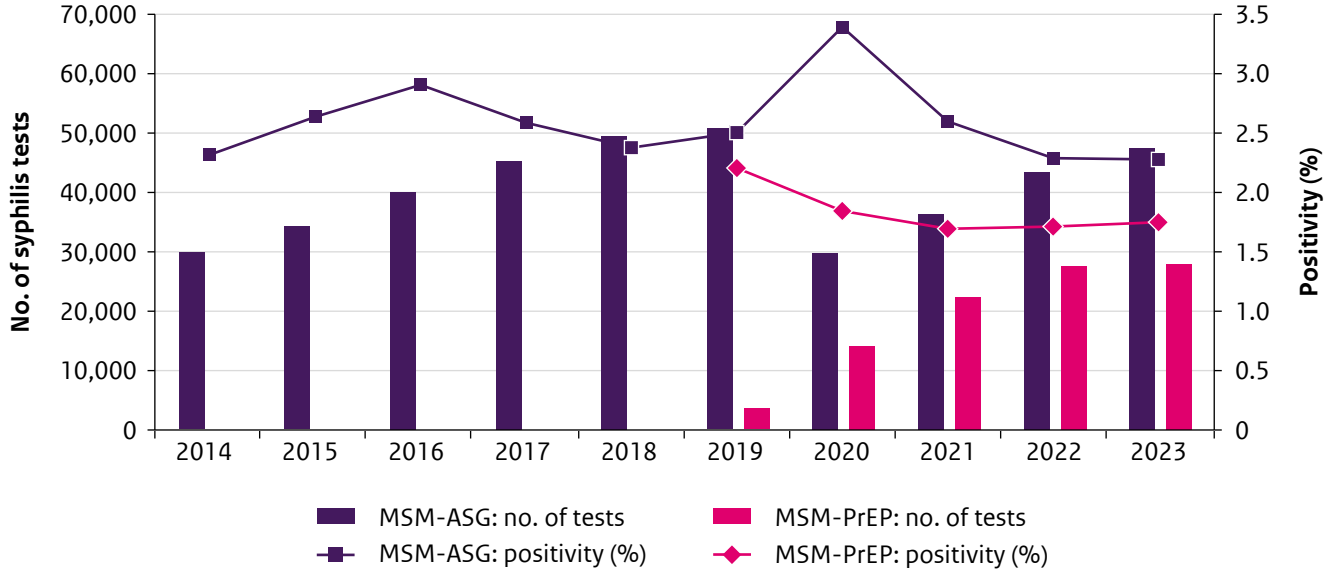


Figure 5.3a Number of syphilis tests and infectious syphilis positivity in women and heterosexual men, 2014-2023



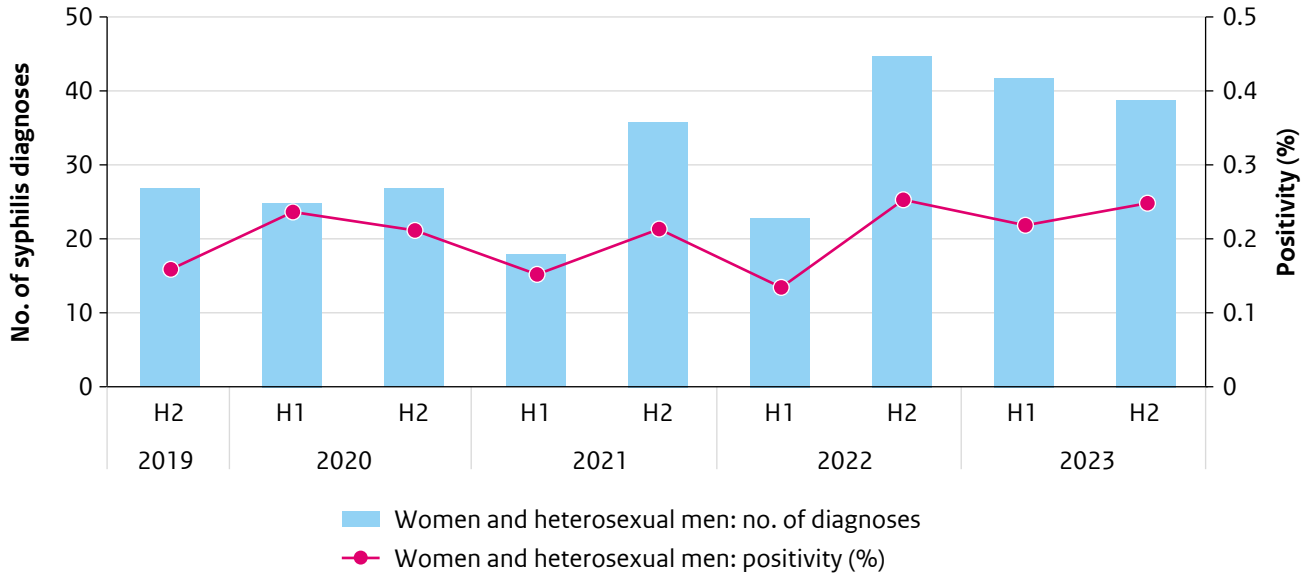
Footnote: Aggregated data of non-registered consultations included for 2018 and 2019.

Figure 5.3b Number of syphilis tests and infectious syphilis positivity in MSM, 2014-2023



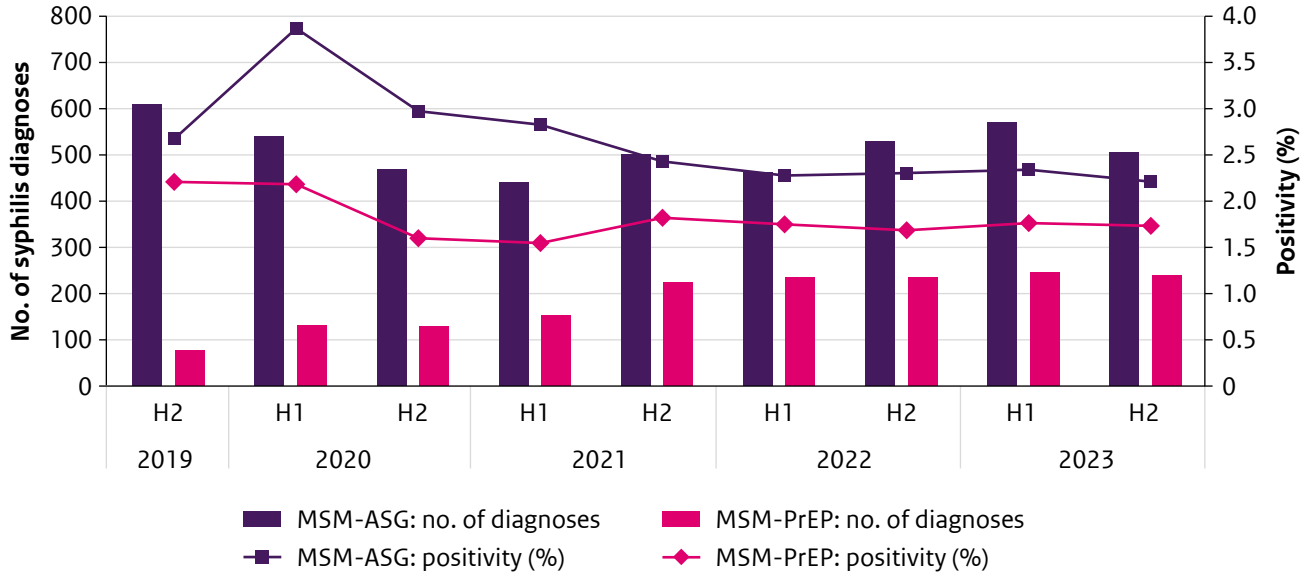
Footnote 1: Aggregated data of non-registered consultations included for 2018 and 2019.
Footnote 2: Trends in the number of tests and/or positivity in MSM over time may change due to the distinction between ASG and PrEP consultations. Furthermore, dus to the three-monthly testing interval for MSM-PrEP, MSM-ASG and MSM-PrEP are not directly comparable.
Footnote 3: MSM in the PrEP programme occasionally visit SHCs 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 women and heterosexual men, mid 2019 to 2023



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 2023



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

Footnote2: H1 = January-June, H2=July-December.

Table 5.1a Triage indication among MSM: number of infectious syphilis diagnoses, tests, and positivity, 2023

	MSM-ASG		MSM-PrEP	
	n positive/N	Positivity (%)	n positive/N	Positivity (%)
Notified				
Not notified	696/36,322	1.9	405/25,835	1.6
Notified for syphilis	213/1,666	12.8	41/340	12.1
Notified for other STI/HIV	168/9,398	1.8	40/1,696	2.4
Unknown	3/62	4.8	1/5	20.0
Symptoms				
No	497/36,859	1.3	348/25,728	1.4
Yes	567/9,758	5.8	138/2,067	6.7
Unknown	16/831	1.9	1/81	1.2
Region of origin included in triage[1]				
No	697/33,503	2.1	327/19,050	1.7
Yes	382/13,881	2.8	159/8,794	1.8
Migrant	274/9,863	2.8	130/6,637	2.0
Child of a migrant	108/4,018	2.7	29/2,157	1.3
Unknown	1/64	1.6	1/32	3.1
Age				
≤25	159/8,946	1.8	35/2,947	1.2
>25	921/38,502	2.4	452/24,929	1.8
Partner in risk group[2]				
No	580/27,251	2.1	264/16,056	1.6
Yes	468/19,123	2.4	210/11,083	1.9
Unknown	32/1,074	3.0	13/737	1.8
Sex work, in the past 6 months				
No	1,029/46,048	2.2	469/26,839	1.7
Yes	32/957	3.3	13/655	2.0
Unknown	19/443	4.3	5/382	1.3
Gonorrhoea/chlamydia/syphilis, in the past year				
Not tested	345/16,123	2.1	36/2,164	1.7
Tested, negative	310/17,642	1.8	158/12,943	1.2
Tested, positive	384/12,434	3.1	277/11,802	2.3
Tested, unknown result	7/178	3.9	2/154	1.3
Unknown	34/1,071	3.2	14/813	1.7

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 5.1b Demographics and (sexual) behavioural characteristics among MSM: number of infectious syphilis diagnoses, tests, and positivity, 2023

	MSM-ASG		MSM-PrEP	
	n positive/N	Positivity (%)	n positive/N	Positivity (%)
Educational level[1]				
High	588/31,444	1.9	303/18,513	1.6
Medium	272/9,574	2.8	116/5,859	2.0
Low	124/3,463	3.6	43/2,057	2.1
Unknown	96/2,967	3.2	25/1,447	1.7
Number of partners, in the past 6 months				
0 partners	9/548	1.6	1/212	0.5
1 partner	69/3,479	2.0	14/1,352	1.0
2 partners	107/5,121	2.1	20/1,894	1.1
3 or more partners	874/37,916	2.3	447/24,218	1.8
Unknown	21/384	5.5	5/200	2.5
Receptive anal sex, in the past 6 months				
No receptive anal sex	188/13,298	1.4	42/4,669	0.9
Yes, consistently with a condom	75/5,896	1.3	10/1,280	0.8
Yes, not consistently with a condom	397/14,770	2.7	222/9,459	2.3
Yes, never with a condom	403/12,824	3.1	209/12,313	1.7
Unknown	17/660	2.6	4/155	2.6
Insertive anal sex, in the past 6 months				
No insertive anal sex	166/10,087	1.6	57/4,010	1.4
Yes, consistently with a condom	85/6,566	1.3	8/1,207	0.7
Yes, not consistently with a condom	422/16,049	2.6	205/9,565	2.1
Yes, never with a condom	389/14,158	2.7	211/12,928	1.6
Unknown	18/588	3.1	6/166	3.6
Vaginal sex, in the past 6 months[2]				
No vaginal sex	22/962	2.3	3/270	1.1
Yes, consistently with a condom	19/1,074	1.8	2/248	0.8
Yes, not consistently with a condom	34/2,266	1.5	10/410	2.4
Yes, never with a condom	49/2,892	1.7	8/714	1.1
Unknown	11/1,289	0.9	0/60	0.0
Receptive oral sex, in the past 6 months				
No receptive oral sex	43/2,568	1.7	9/613	1.5
Yes, consistently with a condom	7/342	2.0	1/94	1.1
Yes, not consistently with a condom	99/4,320	2.3	27/1,166	2.3
Yes, never with a condom	914/39,450	2.3	447/25,795	1.7
Unknown	17/768	2.2	3/208	1.4

Table 5.1b (continued) Demographics and (sexual) behavioural characteristics among MSM: number of infectious syphilis diagnoses, tests, and positivity, 2023

	MSM-ASG		MSM-PrEP	
	n positive/N	Positivity (%)	n positive/N	Positivity (%)
Client of sex work, in the past 6 months				
No	1,030/45,434	2.3	475/27,058	1.8
Yes	20/1,315	1.5	4/317	1.3
Unknown	30/699	4.3	8/501	1.6
Previous HIV test				
No	124/6,819	1.8	10/533	1.9
Yes, positive	270/4,358	6.2		
Yes, negative	673/35,974	1.9	477/27,301	1.7
Yes, result unknown	6/104	5.8	0/32	0.0
Unknown	7/193	3.6	0/10	0.0
Drug use before or during sex, in the past 6 months[3,4]				
No	737/36,268	2.0	282/17,723	1.6
Yes	323/10,615	3.0	203/9,992	2.0
Unknown	20/565	3.5	2/161	1.2
Group sex, in the past 6 months[4]				
No	630/30,566	2.1	221/14,902	1.5
Yes	408/14,805	2.8	262/12,672	2.1
Unknown	42/2,077	2.0	4/302	1.3
Prep use, in the past 3 months[4,5]				
No	270/4,358	6.2		
Yes	541/31,780	1.7	23/2,086	1.1
via SHC	269/11,298	2.4	464/25,790	1.8
via general practicioner	133/3,865	3.4	3/206	1.5
via HIV practicioner	91/5,997	1.5	1/53	1.9
via other physician	1/45	2.2	0/6	0.0
via informal routes	23/1,222	1.9	1/44	2.3
other	22/496	4.4	4/77	5.2
Known HIV-positive, not eligible	11/421	2.6	1/103	1.0

1 *Low level of education: no education, elementary school, lbo, mavo, vmbo, mbo-1; medium level of education: 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. 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 5.2 Age group among MSM: number of infectious syphilis diagnoses, tests, and positivity, 2023

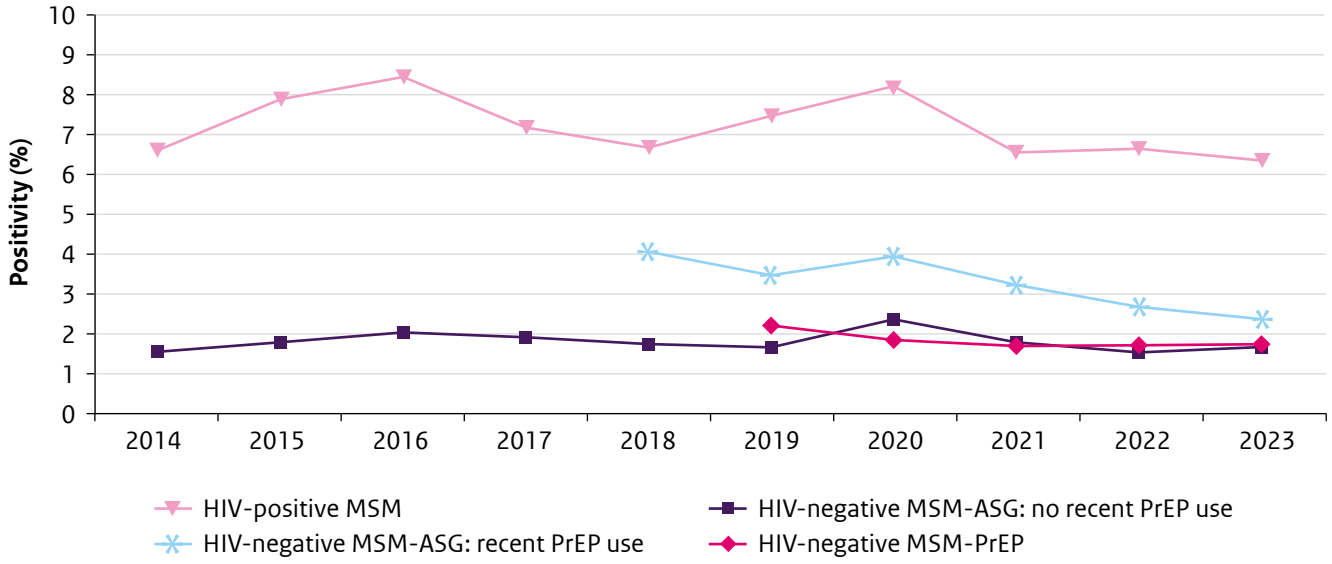
Age (years)	MSM-ASG		MSM-PrEP	
	n positive/N	Positivity (%)	n positive/N	Positivity (%)
≤20	25/1,478	1.7	2/224	0.9
21-25	134/7,468	1.8	33/2,723	1.2
26-30	182/9,452	1.9	58/4,602	1.3
31-35	158/8,506	1.9	95/5,081	1.9
36-40	130/5,361	2.4	79/3,729	2.1
41-45	110/3,952	2.8	61/3,009	2.0
46-50	95/3,085	3.1	48/2,478	1.9
51-55	81/2,846	2.8	38/2,267	1.7
≥56	165/5,300	3.1	73/3,763	1.9
Total	**1,080/47,448**	**2.3**	**487/27,876**	**1.7**

Table 5.3 Region of origin among MSM: number of infectious syphilis diagnoses, tests, and positivity, 2023

Region of origin	MSM-ASG		MSM-PrEP	
	n positive/N	Positivity (%)	n positive/N	Positivity (%)
The Netherlands	603/27,892	2.2	273/16,041	1.7
Turkey	17/1,011	1.7	11/595	1.8
Morocco	27/698	3.9	5/285	1.8
Suriname	60/1,308	4.6	9/800	1.1
CAS-BES islands	42/1,082	3.9	12/612	2.0
Indonesia	23/815	2.8	13/538	2.4
Eastern Europe	61/2,572	2.4	31/1,415	2.2
Europe other	78/4,808	1.6	44/2,565	1.7
Africa other	19/1,145	1.7	9/648	1.4
Asia other	50/3,052	1.6	43/2,405	1.8
Latin America other	83/2,198	3.8	26/1,496	1.7
North-America/Oceania	16/803	2.0	10/444	2.3
Unknown	1/64	1.6	1/32	3.1
Total	**1,080/47,448**	**2.3**	**487/27,876**	**1.7**

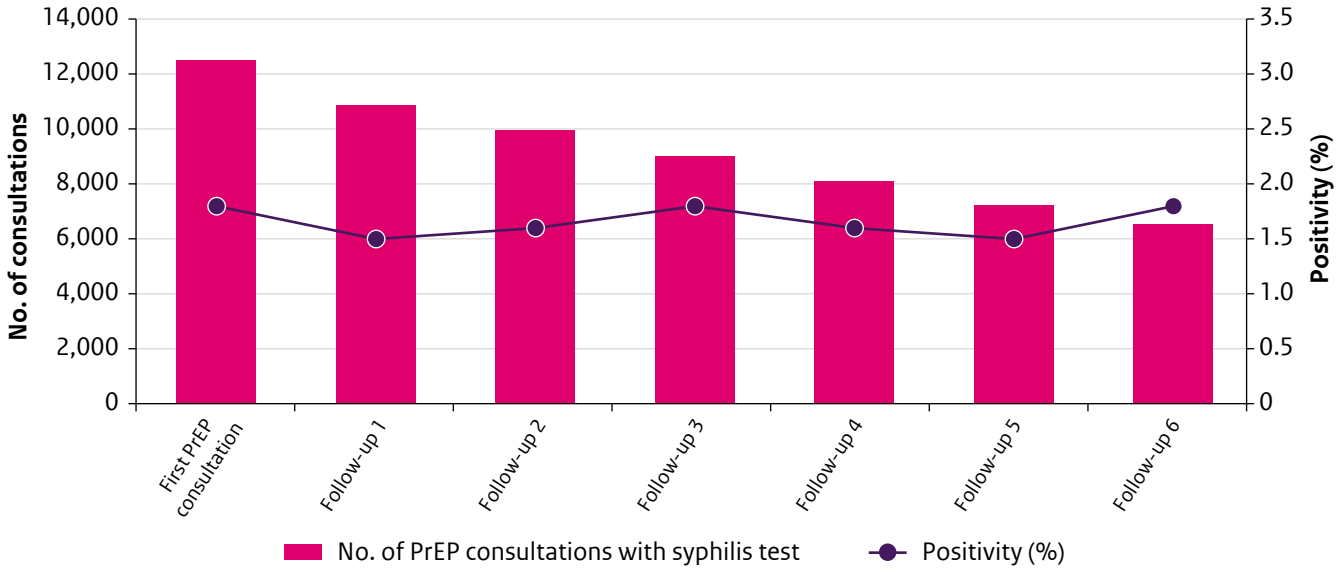
Footnote: Region of origin: migrant or child of migrant.

Figure 5.5 Trends in infectious syphilis positivity in MSM by HIV-status and PrEP use, 2014-2023



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 consultations. Furthermore, due to the three-monthly testing interval for MSM-PrEP, MSM-ASG and MSM-PrEP are not directly comparable.
Footnote 3: MSM in the PrEP programme occasionally visit the SHCs 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 in PrEP consultations in MSM, by PrEP consultation number, July 2019 - December 2023



Footnote 1: Data up to the 7th consultation are shown. The maximum number of consultations recorded within one person was 20.
Footnote 2: MSM in the PrEP programme occasionally visit the SHCs for an STI/HIV test between PrEP follow-up consultations. These consultations fall within the ASG regulation.

Table 5.4 Concurrent STI among MSM diagnosed with infectious syphilis, 2023

Concurrent infection	MSM-ASG n (%)	MSM-PrEP n (%)
Syphilis, infectious total	1080 (100.0)	487 (100.0)
Chlamydia	180 (16.7)	79 (16.2)
Gonorrhoea	210 (19.4)	101 (20.7)
HIV newly diagnosed	14 (1.3)	1 (0.2)
Other STI*	16 (1.5)	6 (1.2)

** 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.*

5.3 Antenatal screening

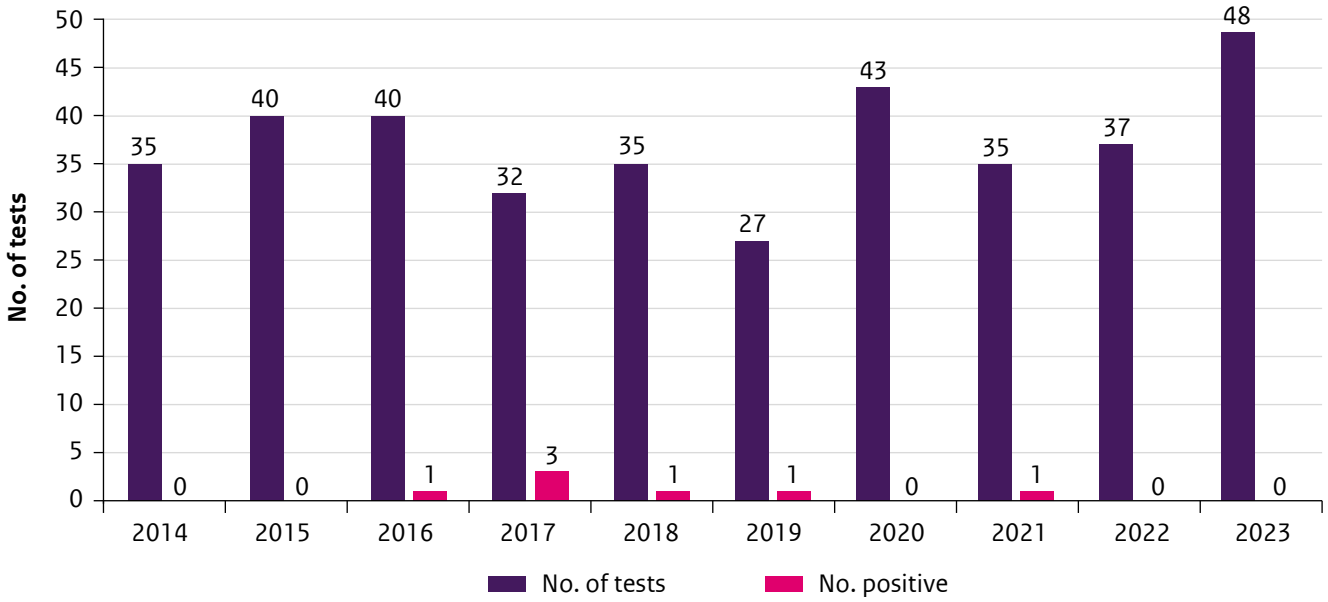
Table 5.5 Syphilis prevalence estimates in pregnant women, based on test results of antenatal screening, 2013-2022

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
2022	14/168,329	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

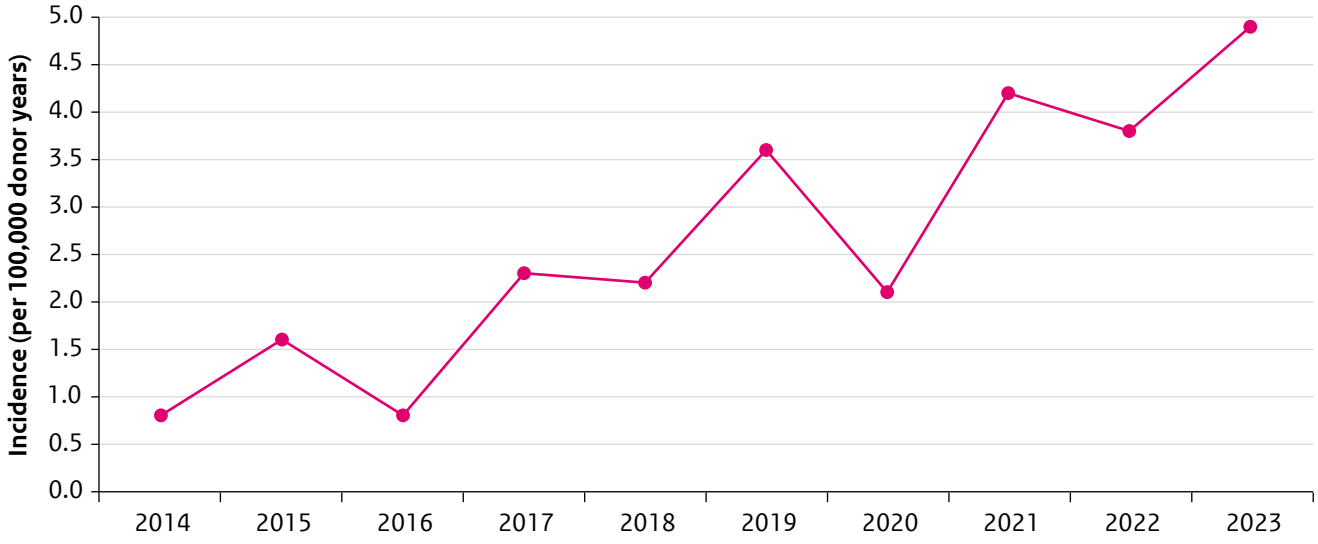
Figure 5.7 Number of tests among neonates and young infants (<1 year) suspected of being infected with congenital syphilis and the number of IgM positives, 2014-2023



Source: RIVM/CIb/IDS

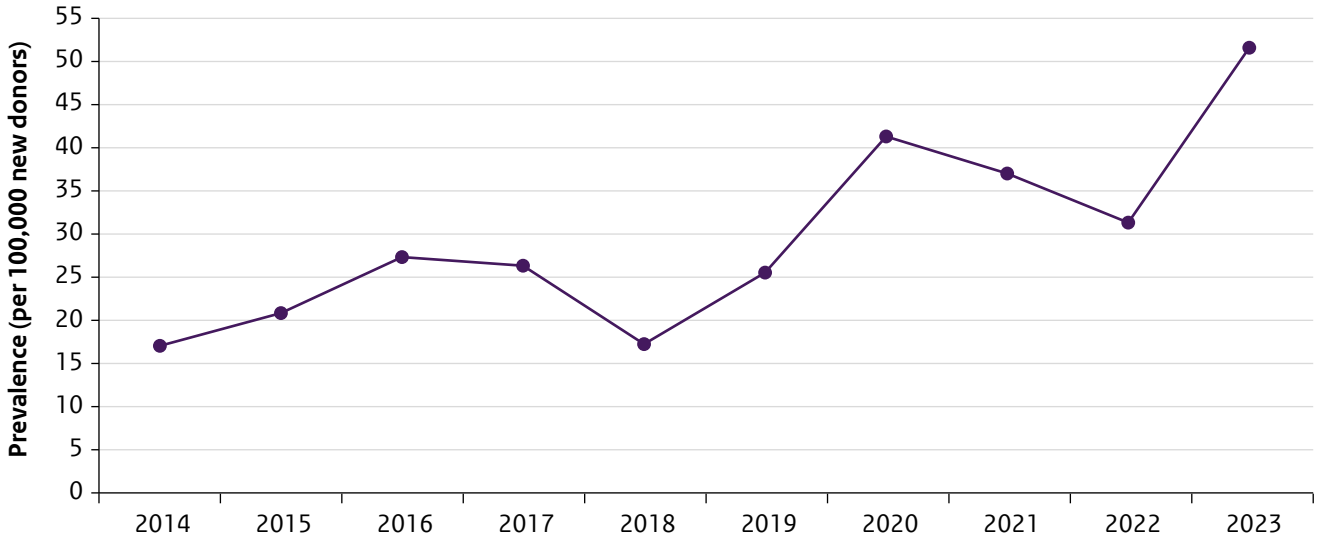
5.5 Blood donors

Figure 5.8a Incidence of syphilis per 100,000 donor years, among blood- and plasma donors in the Netherlands, 2014-2023



Source: Sanquin

Figure 5.8b Prevalence of syphilis per 100,000 new donors, among blood- and plasma donors in the Netherlands, 2014-2023



Source: Sanquin

VIRAL STI

6 HIV and AIDS

6.1 Key points

6.1.1 Sexual Health Centres

- Due to more frequent testing among MSM-PrEP, positivity rates in this group are not directly comparable with those among MSM-ASG. In addition, restrictions during the COVID-19 pandemic impacted the number of consultations at SHCs and positivity rates in 2020 and 2021. Both factors should be taken into account when interpreting trends. For more information, see 1.1. National surveillance at Sexual Health Centres.

- In 2023, 141 new HIV infections were diagnosed at SHCs. This was comparable with 2022 (144) and 2021 (138), but remained 19% lower than in 2019 (174).
- Out of the 141 new diagnoses, 77% (108) were in MSM-ASG, 10% (14) in MSM-PrEP, 6% (8) in gender diverse persons, 5% (7) in women, and 3% (4) in heterosexual men. Out of the 8 diagnoses among gender diverse persons, 5 were made in ASG consultations and 3 in PrEP start consultations.
- The total number of HIV tests in 2023 was 107,404. This was an increase of 5% compared with 2022 and 28% compared with 2021. The number of HIV tests in 2023 among heterosexual men (12,046), MSM-ASG (42,651), MSM-PrEP (28,023), and gender diverse persons (1,996) increased when compared with 2022, by 3%, 11%, 1%, and 32%, respectively. Among women, the number of HIV tests in 2023 (22,740) was comparable with 2022 (-0.2%).
- The highest positivity in 2023 was found among MSM-ASG (0.3%) and gender diverse persons (0.4%). Positivity among MSM-ASG has been steadily decreasing over time (1.4% in 2013) and positivity among women (0.03%), heterosexual men (0.03%), and MSM-PrEP (0.05%) is consistently low.
- Positivity among gender diverse persons was somewhat lower than in 2022 (0.8%). As the number of gender diverse persons who were tested for HIV was relatively low, they are not shown in tables or figures and excluded hereafter.
- Among MSM-ASG, high positivity was seen for those who were notified of HIV by a partner (2.0%) and for migrants from regions with a triage indication (0.7%), particularly those from the CAS-BES Islands (0.8%).
- There were 14 new HIV infections diagnosed among MSM-PrEP: 6 in start consultations and 8 follow-up consultations. All of those diagnosed in follow-up consultations reported having used PrEP in the past 3 months; 6 reported event-driven PrEP use and 2 reported daily PrEP use.

6.1.2 HIV treatment centres

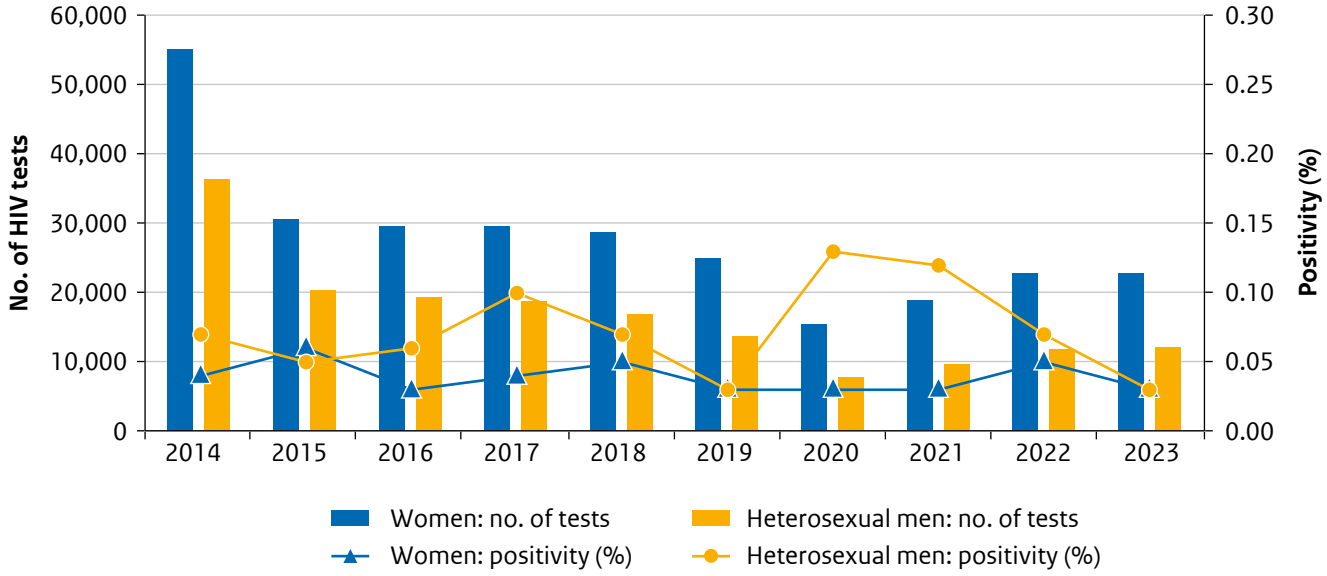
- In total, 22,541 people living with HIV were reported to be in clinical care as of December 2023.
- In 2023, 987 individuals with HIV were newly registered in care (997 in 2022). Out of these, 388 were newly diagnosed in 2023 (344 in 2022). The 2023 data is still incomplete, as some individuals who were in care in 2023 have not yet been registered in the dataset.
- The proportion of newly diagnosed heterosexual persons (men and women) declined slightly in 2023 (27%) compared with 2022 (31%). The proportion of MSM among people with new HIV diagnoses was 62% in 2023 (57% in 2022). The proportion of newly diagnosed individuals with other/unknown transmission risk was 9% in 2023 (9% in 2022).
- Out of MSM newly diagnosed with HIV and entering care in 2023, 36% was diagnosed at GPs, 34% at SHCs, and 22% at hospitals. Among heterosexual men these proportions were 45%, 8%, and 43% respectively. Among women these proportions were 33%, 8%, and 45%, respectively. In 2023, 10% of the women with HIV were diagnosed through the pregnancy screening.
- Out of all individuals diagnosed with HIV in 2023, 46% presented late (CD4<350/mm3, or AIDS-defining event regardless of CD4 count), a decline compared with 2022 (53%). This trend was also seen among MSM (37% versus 44% in 2022). Among heterosexual men this proportion declined from 70% in 2022 to 60% in 2023. Among women, the proportion of late presenters was slightly higher in 2023 (60%) compared with 2022 (56%).
- Out of individuals newly diagnosed with HIV in 2023, 22% had a newly acquired HIV infection in the past 6 months (2022: 25%). Among MSM, heterosexual men, and women these proportions were respectively 29% (2022: 28%), 19% (2022:14%), and 8% (2022: 8%).
- In 2022, approximately 94% of people living with HIV were estimated to have been diagnosed and linked to care. Out of these people, 96% had started combination antiretroviral therapy (cART). Out of those who started cART, 96% had a suppressed viral load. Among MSM, these proportions were 96%, 97%, and 97% respectively. Among heterosexuals these proportions were lower (men: 89%, 93%, 95%, women: 94%, 95%, 94%).

6.1.3 General practices

- At GPs, an estimated 23,700 prevalent HIV cases were reported in 2022, a reporting rate of 1.4 per 1,000 population. Prevalence rates were higher among men than among women (2.2 versus 0.6/1,000).

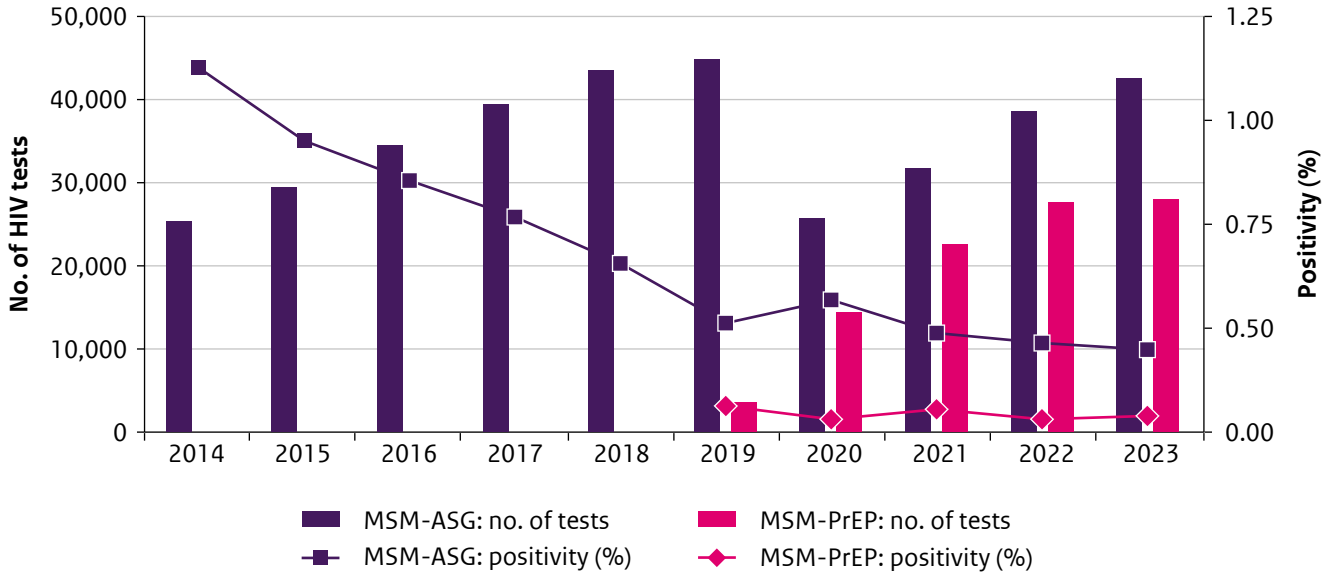
6.2 Sexual Health Centres: characteristics, risk groups and trends

Figure 6.1a Number of HIV tests and HIV positivity in women and heterosexual men, 2014-2023



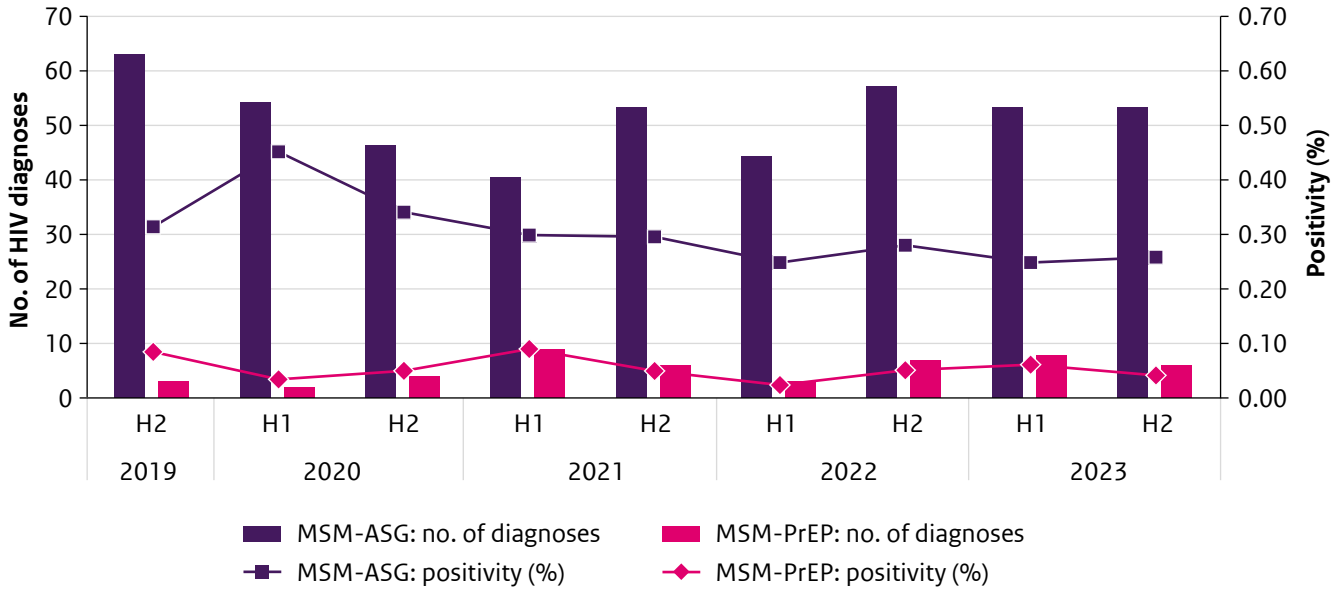
Footnote: Aggregated data of non-registered consultations included for 2018 and 2019.

Figure 6.1b Number of HIV tests and HIV positivity in MSM, 2014-2023



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, MSM-ASG and MSM-PrEP 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.
Footnote 4: Of new HIV infections diagnosed among MSM in 2023, 18 reported using PrEP in the past 3 months. Of these, 9 were PrEP participants diagnosed in a PrEP consultation.

Figure 6.2 Half-yearly number of HIV diagnoses and HIV positivity in MSM, mid 2019 to 2023



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.

Table 6.1a Triage indication among MSM-ASG: number of HIV diagnoses, tests, and positivity, 2023

	MSM-ASG	
	n positive/N	%
Notified		
Not notified	71/32,975	0.2
Notified for HIV	6/304	2.0
Notified for other STI/HIV	30/9,324	0.3
Unknown	1/48	2.1
Symptoms		
No	54/33,377	0.2
Yes	52/8,530	0.6
Unknown	2/744	0.3
Region of origin included in triage[1]		
No	44/30,672	0.1
Yes	64/11,923	0.5
Yes, migrant	55/8,177	0.7
Yes, child of migrant	9/3,746	0.2
Unknown	0/56	0.0

Table 6.1a (continued) Triage indication among MSM-ASG: number of HIV diagnoses, tests, and positivity, 2023

	MSM-ASG	
	n positive/N	%
Age		
≤25	26/8,802	0.3
>25	82/33,849	0.2
Partner in risk group[2]		
No	47/24,699	0.2
Yes	54/17,037	0.3
Unknown	7/915	0.8
Sex work, in the past 6 months		
No	100/41,486	0.2
Yes	4/809	0.5
Unknown	4/356	1.1
Gonorrhoea/chlamydia/syphilis, in the past year		
Not tested	62/15,126	0.4
Tested, negative	20/16,183	0.1
Tested, positive	20/10,280	0.2
Tested, unknown	1/154	0.6
Unknown	5/908	0.6

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 6.1b Demographics and (sexual) behavioural characteristics among MSM-ASG: number of HIV diagnoses, tests, and positivity, 2023

	MSM-ASG	
	n positive/N	%
Educational level[1]		
High	40/28,685	0.1
Medium	33/8,590	0.4
Low	17/2,890	0.6
Unknown	18/2,486	0.7
Number of partners, in the past 6 months		
0 partners	3/470	0.6
1 partner	12/3,225	0.4
2 partners	15/4,704	0.3
3 or more partners	74/33,940	0.2
Unknown	4/312	1.3

Table 6.1b (continued) Demographics and (sexual) behavioural characteristics among MSM-ASG: number of HIV diagnoses, tests, and positivity, 2023

	MSM-ASG	
	n positive/N	%
Receptive anal sex, in the past 6 months		
No receptive anal sex	14/12,749	0.1
Yes, consistently with a condom	8/5,678	0.1
Yes, not consistently with a condom	42/12,843	0.3
Yes, never with a condom	43/10,834	0.4
Unknown	1/547	0.2
Insertive anal sex, in the past 6 months		
No insertive anal sex	24/9,343	0.3
Yes, consistently with a condom	11/6,324	0.2
Yes, not consistently with a condom	34/14,342	0.2
Yes, never with a condom	38/12,161	0.3
Unknown	1/481	0.2
Vaginal sex, in the past 6 months[2]		
No vaginal sex	2/918	0.2
Yes, consistently with a condom	5/1,036	0.5
Yes, not consistently with a condom	6/2,203	0.3
Yes, never with a condom	4/2,812	0.1
Unknown	0/1,192	0.0
Receptive oral sex, in the past 6 months		
No receptive oral sex	3/2,420	0.1
Yes, consistently with a condom	0/318	0.0
Yes, not consistently with a condom	6/3,805	0.2
Yes, never with a condom	98/35,462	0.3
Unknown	1/646	0.2
Client of sex work, in the past 6 months		
No	105/40,890	0.3
Yes	2/1,212	0.2
Unknown	1/549	0.2
Previous HIV test		
No	33/6,746	0.5
Yes, negative	68/35,627	0.2
Yes, result unknown	4/96	4.2
Unknown	3/182	1.6

Table 6.1b (continued) Demographics and (sexual) behavioural characteristics among MSM-ASG: number of HIV diagnoses, tests, and positivity, 2023

	MSM-ASG	
	n positive/N	%
Drug use before or during sex, in the past 6 months[3,4]		
No	79/33,224	0.2
Yes	27/8,981	0.3
Unknown	2/446	0.4
Group sex, in the past 6 months[4]		
No	79/28,134	0.3
Yes	25/12,717	0.2
Unknown	4/1,800	0.2
PrEP use, in the past 3 months[4,5]		
No	99/31,554	0.3
Yes	9/11,085	0.1
via SHC	5/3,733	0.1
via general practicioner	2/5,932	0.0
via HIV practicioner	0/43	0.0
via other physician	0/1,216	0.0
via informal routes	3/489	0.6
other	0/418	0.0

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 *Numbers are reported of men who had sex with both men and women. 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 6.2 Age group among MSM-ASG: number of HIV diagnoses, tests, and positivity, 2023

Age (years)	MSM-ASG	
	n positive/N	%
≤20	3/1,470	0.2
21-25	23/7,332	0.3
26-30	27/8,963	0.3
31-35	19/7,729	0.2
36-40	7/4,670	0.1
41-45	8/3,346	0.2
46-50	4/2,562	0.2
51-55	6/2,288	0.3
≥56	11/4,291	0.3
Total	**108/42,651**	**0.2**

Table 6.3 Region of origin among MSM-ASG: number of HIV diagnoses, tests, and positivity, 2023

Region of origin	MSM-ASG	
	n positive/N	%
The Netherlands	37/25,523	0.1
Turkey	5/933	0.5
Morocco	0/640	0.0
Suriname	4/1,132	0.4
CAS-BES islands	7/909	0.8
Indonesia	2/708	0.3
Eastern Europe	14/2,214	0.6
Europe other	5/4,409	0.1
Africa other	6/1,020	0.6
Asia other	16/2,775	0.6
Latin America other	10/1,592	0.6
North-America/Oceania	2/740	0.3
Unknown	0/56	0.0
Total	**108/42,651**	**0.3**

Footnote: Region of origin: migrant or child of migrant

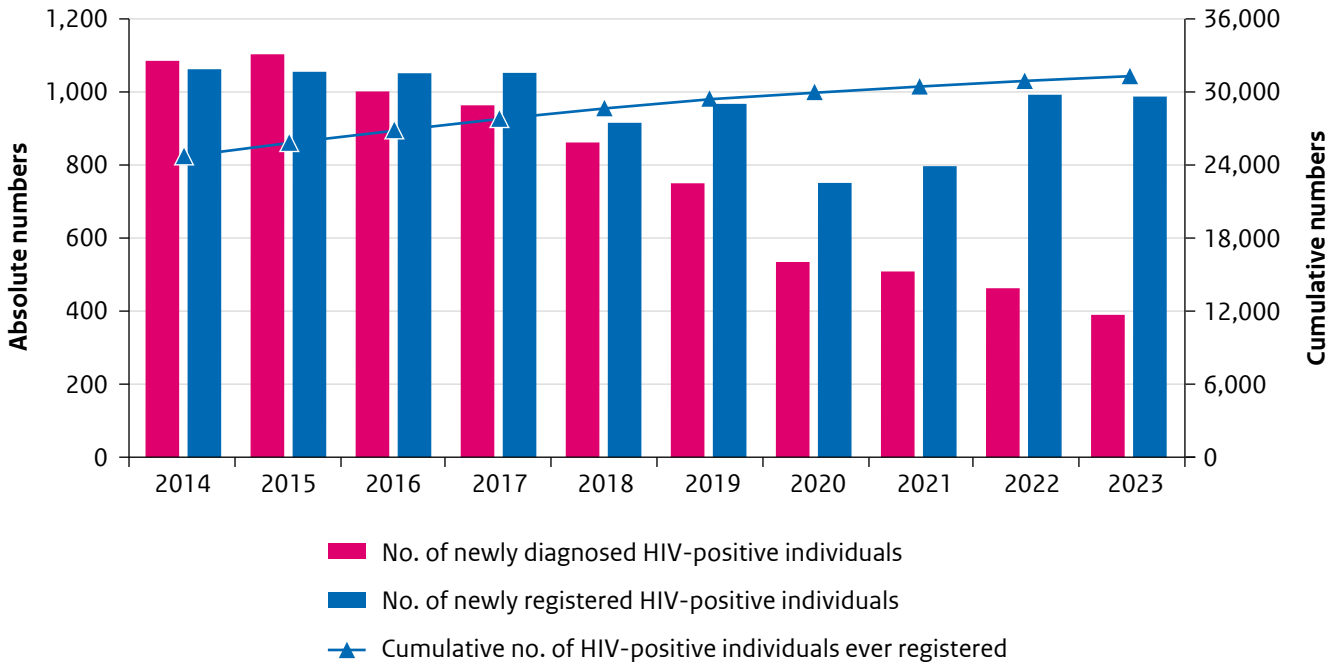
Table 6.4 Concurrent STI among MSM-ASG newly diagnosed with HIV, 2023

Concurrent infection	MSM-ASG n (%)
HIV, total	108 (100.0)
Chlamydia	26 (24.1)
Gonorrhoea	28 (25.9)
Syphilis, infectious	14 (13.0)
Other STI*	3 (2.8)

** 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

Figure 6.3 Number of newly diagnosed HIV-positive individuals and newly registered HIV-positive individuals by year, 2014-2023



Source: Stichting hiv monitoring, 2023 incomplete.

Table 6.5 Number and proportion of newly diagnosed HIV-positive individuals and of HIV-positive individuals in care by sex and main reported transmission risk group, as of 31 December 2023

Transmission risk group	Women		Men		Total	
	n (%)	Total in care (%)	n (%)	Total in care (%)	n (%)	Total in care (%)
MSM	0 (0.0)	0 (0.0)	229 (72.0)	13,871 (77.2)	239 (61.6)	14,143 (62.7)
Heterosexual contact	49 (83.1)	3,715 (87.0)	53 (16.7)	2,665 (14.8)	103 (26.5)	6,389 (28.3)
Injecting drug use	0 (0.0)	82 (1.9)	5 (1.6)	208 (1.2)	5 (1.3)	291 (1.3)
Blood or blood products	4 (6.8)	109 (2.6)	4 (1.3)	178 (1.0)	8 (2.1)	291 (1.3)
Mother to child	0 (0.0)	177 (4.1)	0 (0.0)	171 (1.0)	0 (0.0)	353 (1.6)
Other/unknown	6 (10.2)	187 (4.4)	27 (8.5)	867 (4.8)	33 (8.5)	1,074 (4.8)
Total	**59 (100.0)**	**4,270 (100.0)**	**318 (100.0)**	**17,960 (100.0)**	**388 (100.0)**	**22,541 (100.0)**

Source: Stichting hiv monitoring, 2023 incomplete.
Footnote: gender diverse persons are included in the total but not shown separately due to low numbers.

Table 6.6a Number and proportion of newly diagnosed HIV-positive individuals, by age and main transmission category, as of 31 December 2023

Age (years)	Women n (%)	Heterosexual men n (%)	MSM n (%)	Other/unknown* n (%)
0-14	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
15-19	0 (0.0)	1 (1.9)	0 (0.0)	0 (0.0)
20-24	5 (10.2)	3 (5.7)	25 (10.9)	3 (5.3)
25-29	6 (12.2)	5 (9.4)	41 (17.9)	4 (7.0)
30-39	12 (24.5)	14 (26.4)	66 (28.8)	20 (35.1)
40-49	13 (26.5)	17 (32.1)	35 (15.3)	16 (28.1)
50-59	8 (16.3)	9 (17.0)	37 (16.2)	7 (12.3)
60-69	3 (6.1)	2 (3.8)	20 (8.7)	6 (10.5)
70-79	2 (4.1)	2 (3.8)	5 (2.2)	1 (1.8)
≥80	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
Total	**49 (100.0)**	**53 (100.0)**	**229 (100.0)**	**57 (100.0)**

** Gender diverse persons, injecting drug use, blood and blood contacts, mother-to-child transmission, other, unknown.*
Source: Stichting hiv monitoring, 2023 incomplete.

Table 6.6b Number and proportion of HIV-positive individuals in care, by age at diagnosis and main transmission category, as of 31 December 2023

Age (years)	Women Total in care (%)	Heterosexual men Total in care (%)	MSM Total in care (%)	Other/unknown* Total in care (%)
0-14	5 (0.1)	0 (0.0)	6 (0.0)	364 (15.9)
15-19	174 (4.7)	33 (1.2)	251 (1.8)	63 (2.8)
20-24	533 (14.3)	186 (7.0)	1351 (9.7)	252 (11.0)
25-29	785 (21.1)	340 (12.8)	2,317 (16.7)	333 (14.5)
30-39	1,260 (33.9)	914 (34.3)	4,702 (33.9)	624 (27.2)
40-49	542 (14.6)	706 (26.5)	3,315 (23.9)	352 (15.4)
50-59	288 (7.8)	345 (12.9)	1,479 (10.7)	189 (8.3)
60-69	86 (2.3)	114 (4.3)	376 (2.7)	70 (3.1)
70-79	19 (0.5)	21 (0.8)	53 (0.4)	14 (0.6)
≥80	0 (0.0)	0 (0.0)	1 (0.0)	1 (0.0)
Unknown	23 (0.6)	6 (0.2)	20 (0.1)	28 (1.2)
Total	**3,715 (100.0)**	**2,665 (100.0)**	**13,871 (100.0)**	**2,290 (100.0)**

** Gender diverse persons, injecting drug use, blood and blood contacts, mother-to-child transmission, other, unknown.*
Source: Stichting hiv monitoring, 2023 incomplete.

Table 6.7a Number and proportion of newly diagnosed HIV-positive individuals by region of origin and main transmission category, as of 31 December 2023

Region of origin	Women n (%)	Heterosexual men n (%)	MSM n (%)	Other/unknown* n (%)
The Netherlands	15 (30.6)	27 (50.9)	116 (50.7)	18 (31.6)
Europe, other	8 (16.3)	5 (9.4)	45 (19.7)	18 (31.6)
Caribbean & Latin America	5 (10.2)	7 (13.2)	38 (16.6)	9 (15.8)
Sub-Saharan Africa	17 (34.7)	8 (15.1)	7 (3.1)	7 (12.3)
Other	4 (8.2)	5 (9.4)	20 (8.7)	4 (7.0)
Unknown	0 (0.0)	1 (1.9)	3 (1.3)	1 (1.8)
Total	**49 (100.0)**	**53 (100.0)**	**229 (100.0)**	**57 (100.0)**

** Gender diverse persons, injecting drug use, blood and blood contacts, mother-to-child transmission, other, unknown.*
Source: Stichting hiv monitoring, 2023 incomplete.

Table 6.7b Number and proportion of HIV-positive individuals in care by region of origin and main transmission category, as of 31 December 2023

Region of origin	Women Total in care (%)	Heterosexual men Total in care (%)	MSM Total in care (%)	Other/unknown* Total in care (%)
The Netherlands	1,056 (28.4)	1,231 (46.2)	9,197 (66.3)	835 (36.5)
Europe, other	268 (7.2)	226 (8.5)	1,635 (11.8)	421 (18.4)
Caribbean & Latin America	547 (14.7)	365 (13.7)	1,693 (12.2)	330 (14.4)
Sub-Saharan Africa	1,520 (40.9)	673 (25.3)	222 (1.6)	448 (19.6)
Other	313 (8.4)	156 (5.9)	1,041 (7.5)	242 (10.6)
Unknown	11 (0.3)	14 (0.5)	83 (0.6)	14 (0.6)
Total	**3,715 (100.0)**	**2,665 (100.0)**	**13,871 (100.0)**	**2,290 (100.0)**

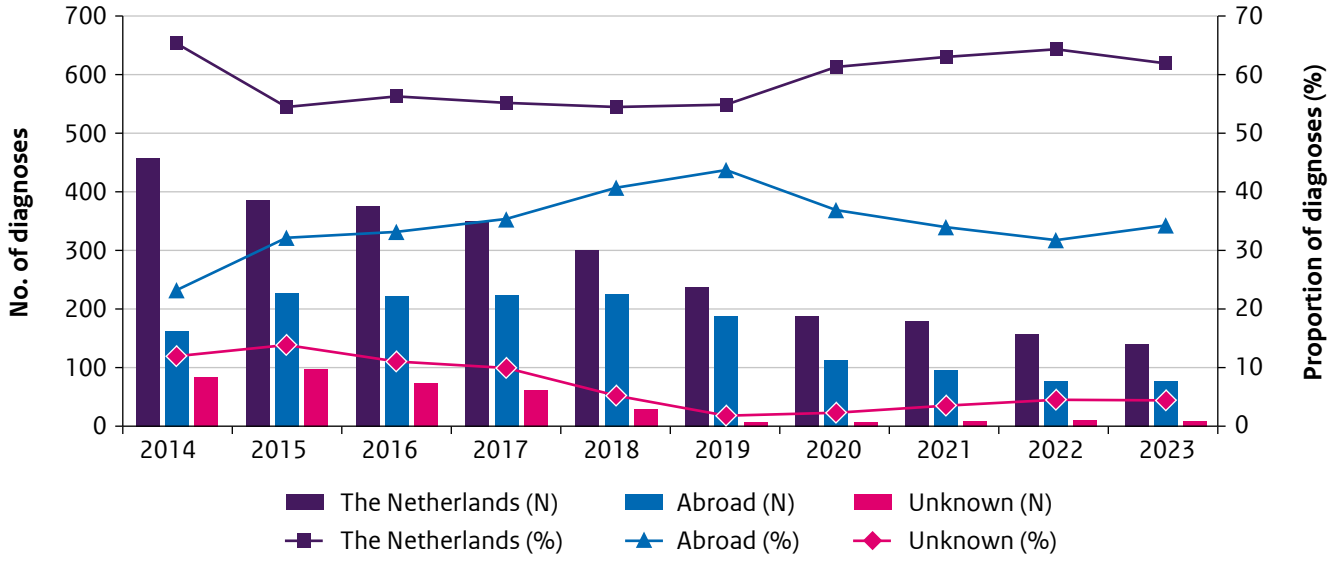
** Gender diverse persons, injecting drug use, blood and blood contacts, mother-to-child transmission, other, unknown.*
Source: Stichting hiv monitoring, 2023 incomplete.

Table 6.8 Number and proportion of newly diagnosed HIV-positive individuals, by test location and main transmission category, as of 31 December 2023

Test location	Women n (%)	Heterosexual men n (%)	MSM n (%)	Other/unknown* n (%)
PHS/SHC	4 (8.2)	4 (7.5)	78 (34.1)	8 (14.0)
Hospital	22 (44.9)	23 (43.4)	50 (21.8)	31 (54.4)
General practitioner	16 (32.7)	24 (45.3)	83 (36.2)	14 (24.6)
Pregnancy screening	5 (10.2)	0 (0.0)	0 (0.0)	1 (1.8)
Other/Unknown	2 (4.1)	2 (3.8)	18 (7.9)	3 (5.3)
Total	**49 (100.0)**	**53 (100.0)**	**229 (100.0)**	**57 (100.0)**

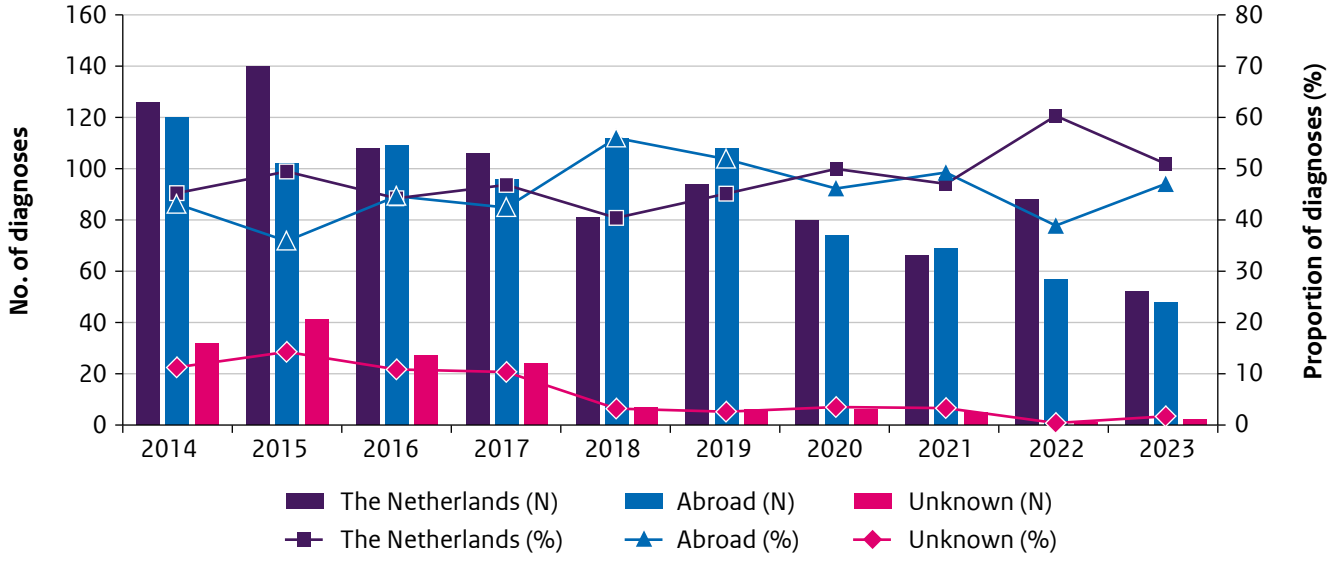
** Gender diverse persons, injecting drug use, blood and blood contacts, mother-to-child transmission, other, unknown.*
Source: Stichting hiv monitoring, 2023 incomplete.

Figure 6.4a Reported country of acquiring the HIV infection in newly diagnosed HIV-positive MSM by year of diagnosis, 2014-2023



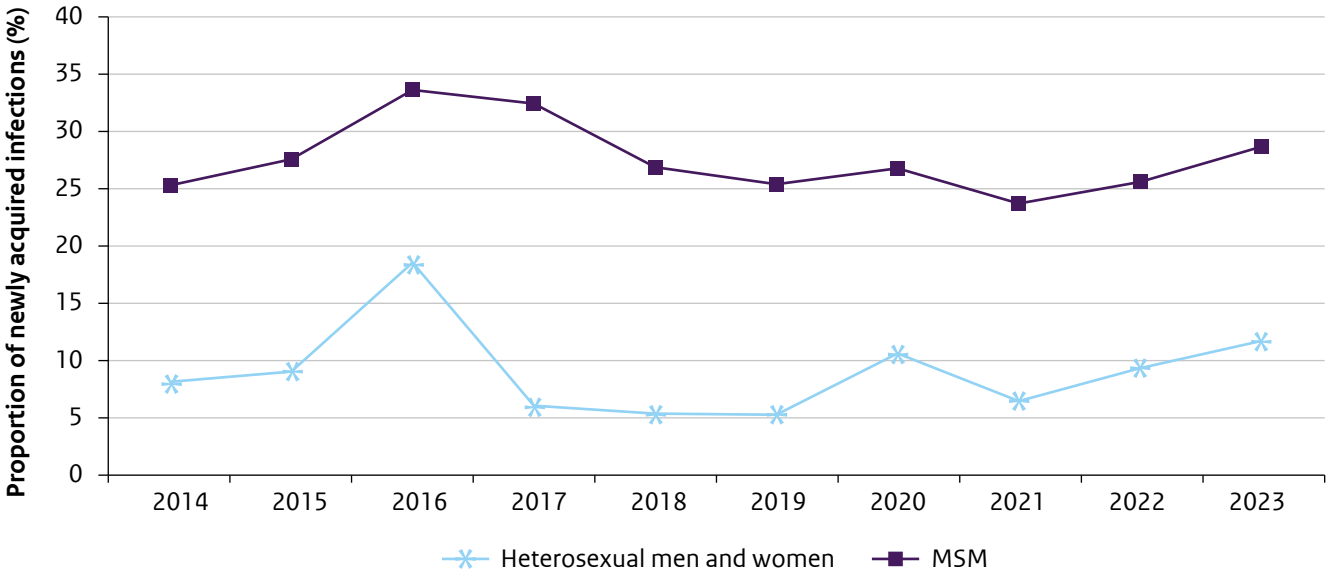
Source: Stichting hiv monitoring, 2023 incomplete.

Figure 6.4b Reported country of acquiring the HIV infection in newly diagnosed HIV-positive heterosexual men and women by year of diagnosis, 2014-2023



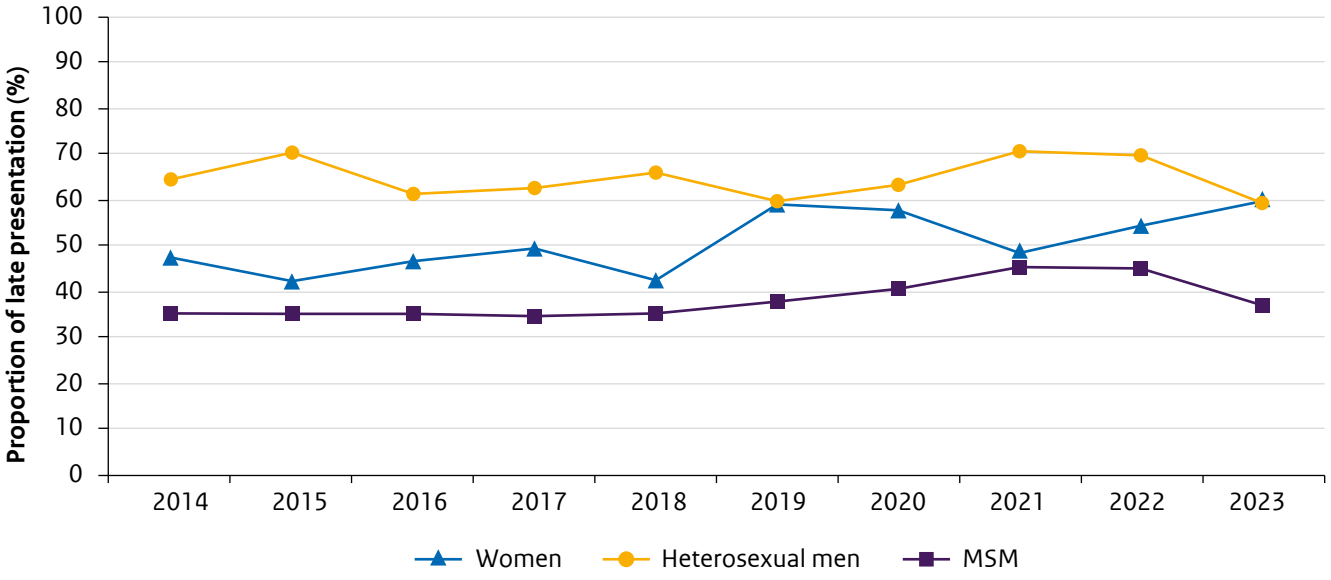
Source: Stichting hiv monitoring, 2023 incomplete.

Figure 6.5 Proportion of newly acquired HIV infections (< 6 months*) by transmission risk group, 2014-2023



Source: Stichting hiv monitoring, 2023 incomplete.
** Based on history of HIV-negative test result before HIV-diagnosis.*

Figure 6.6 Proportion of late presentation (CD4 count <350/mm³ or AIDS at diagnosis) by transmission risk group, 2014-2023



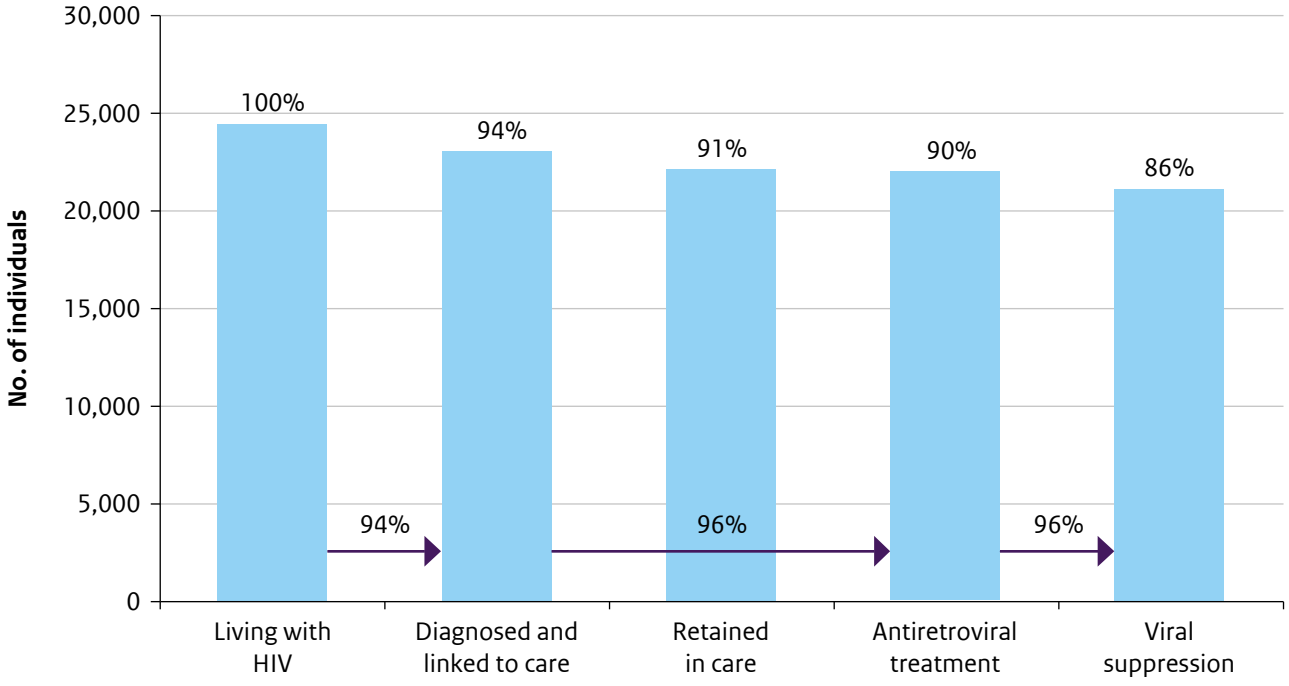
Source: Stichting hiv monitoring, 2023 incomplete.

Table 6.9 Number of AIDS patients by year of AIDS diagnosis and transmission risk group, 2014-2023

Year of diagnosis	Women n (%)	Heterosexual men n (%)	MSM n (%)	Other/unknown* n (%)
2014	31 (13.9)	49 (22.0)	108 (48.4)	35 (15.7)
2015	37 (14.5)	51 (20.0)	125 (49.0)	42 (16.5)
2016	39 (17.9)	41 (18.8)	100 (46.9)	38 (17.4)
2017	33 (15.6)	43 (20.4)	99 (46.9)	36 (17.1)
2018	27 (14.0)	34 (17.6)	88 (45.6)	44 (22.8)
2019	27 (15.1)	31 (17.3)	83 (46.4)	38 (21.2)
2020	30 (18.4)	33 (20.2)	74 (45.4)	26 (15.9)
2021	18 (13.0)	19 (13.8)	76 (55.1)	25 (18.1)
2022	23 (16.7)	28 (20.3)	57 (41.3)	30 (21.7)
2023	13 (13.3)	16 (16.3)	47 (48.0)	22 (22.4)

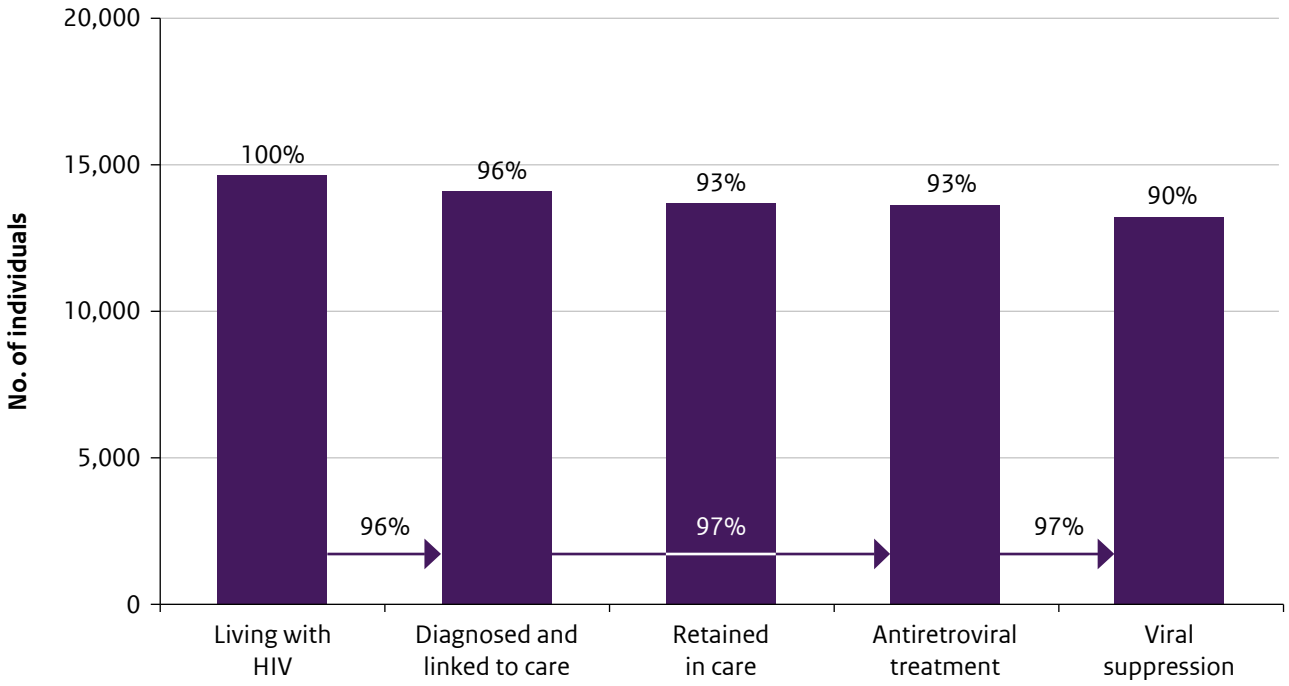
** Injecting drug use, blood and blood contacts, mother-to-child transmission, other, unknown.*
Source: Stichting hiv monitoring, 2023 incomplete.

Figure 6.7a Continuum of care for HIV in 2022, total population, Stichting hiv monitoring



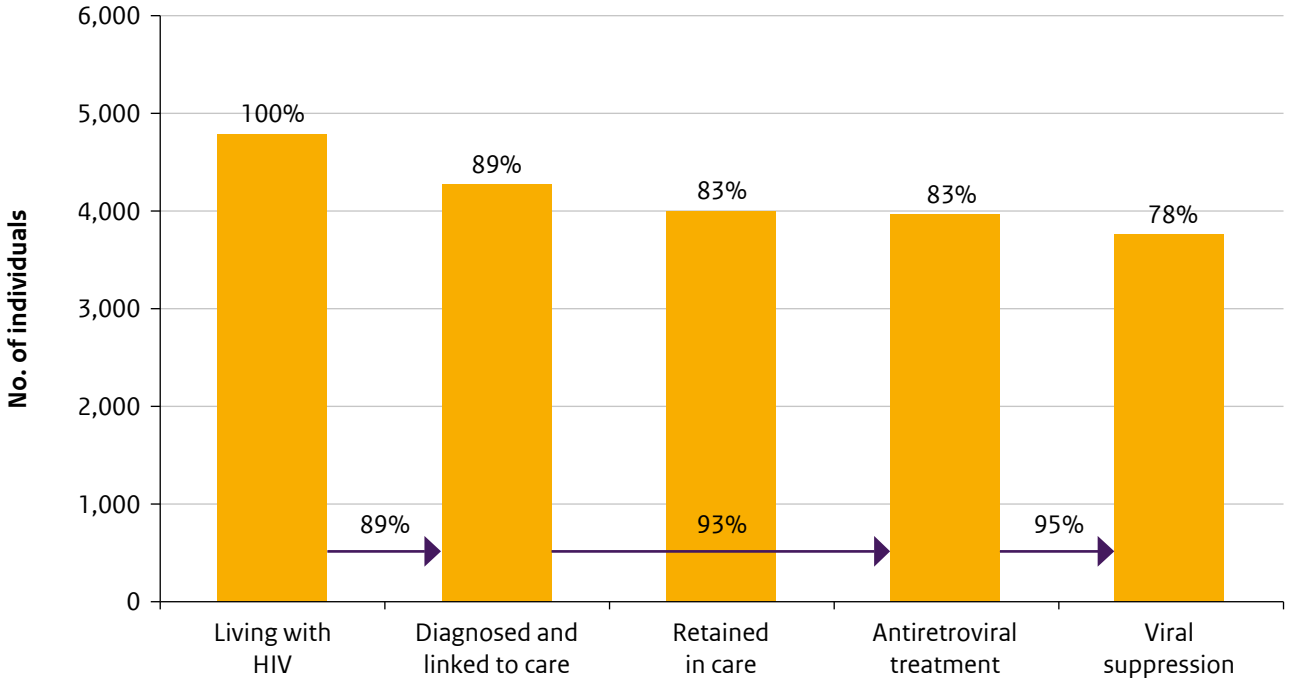
Source: Stichting hiv monitoring, Monitoring Report 2023 SHM: Monitoring of Human Immunodeficiency Virus (HIV) Infection in the Netherlands.
For details: www.hiv-monitoring.nl

Figure 6.7b Continuum of care for HIV in 2022, MSM, Stichting hiv monitoring



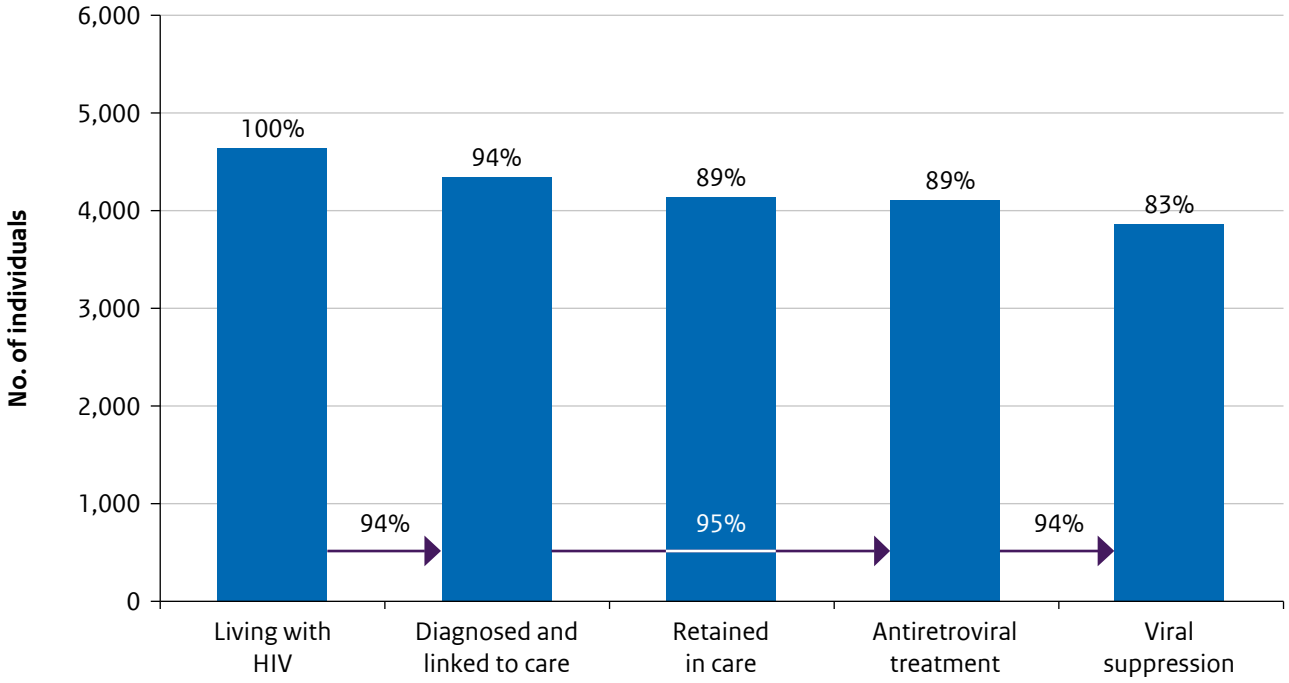
Source: Stichting hiv monitoring, Monitoring Report 2023 SHM: Monitoring of Human Immunodeficiency Virus (HIV) Infection in the Netherlands.
For details: www.hiv-monitoring.nl

Figure 6.7c Continuum of care for HIV in 2022, other men, Stichting hiv monitoring



Source: Stichting hiv monitoring, Monitoring Report 2023 SHM: Monitoring of Human Immunodeficiency Virus (HIV) Infection in the Netherlands.
For details: www.hiv-monitoring.nl

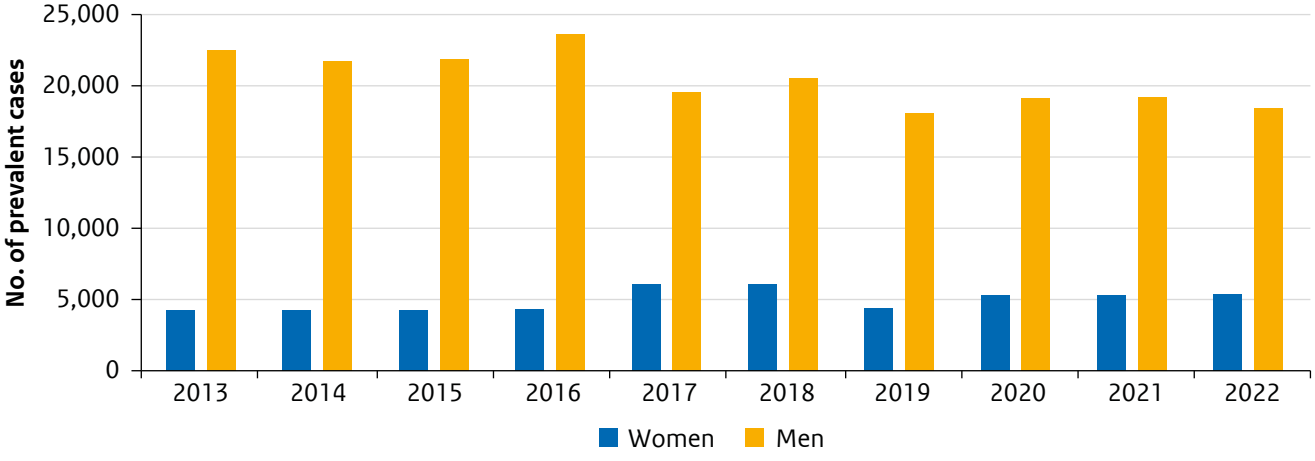
Figure 6.7d Continuum of care for HIV in 2022, women, Stichting hiv monitorin



Source: Stichting hiv monitoring, Monitoring Report 2023 SHM: Monitoring of Human Immunodeficiency Virus (HIV) Infection in the Netherlands.
For details: www.hiv-monitoring.nl

6.4 General practice

Figure 6.8 Estimated number of prevalent HIV-cases at general practices by sex, based on extrapolation from general practices in Nivel-Primary Care Database, 2013-2022



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

Table 6.10 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, 2013-2022

	Women n/1,000	Men n/1,000	Total n/1,000
2013	0.5	1.8	1.2
2014	0.5	2.7	1.6
2015	0.5	2.6	1.6
2016	0.5	2.6	1.5
2017	0.5	2.8	1.7
2018	0.7	2.3	1.5
2019	0.7	2.4	1.5
2020	0.5	2.1	1.3
2021	0.6	2.2	1.4
2022	0.6	2.2	1.4

Footnote: HIV prevalence estimates in 2013 to 2022 have been standardised for urbanisation in this report.

6.5 Other sources

6.5.1 Antenatal screening

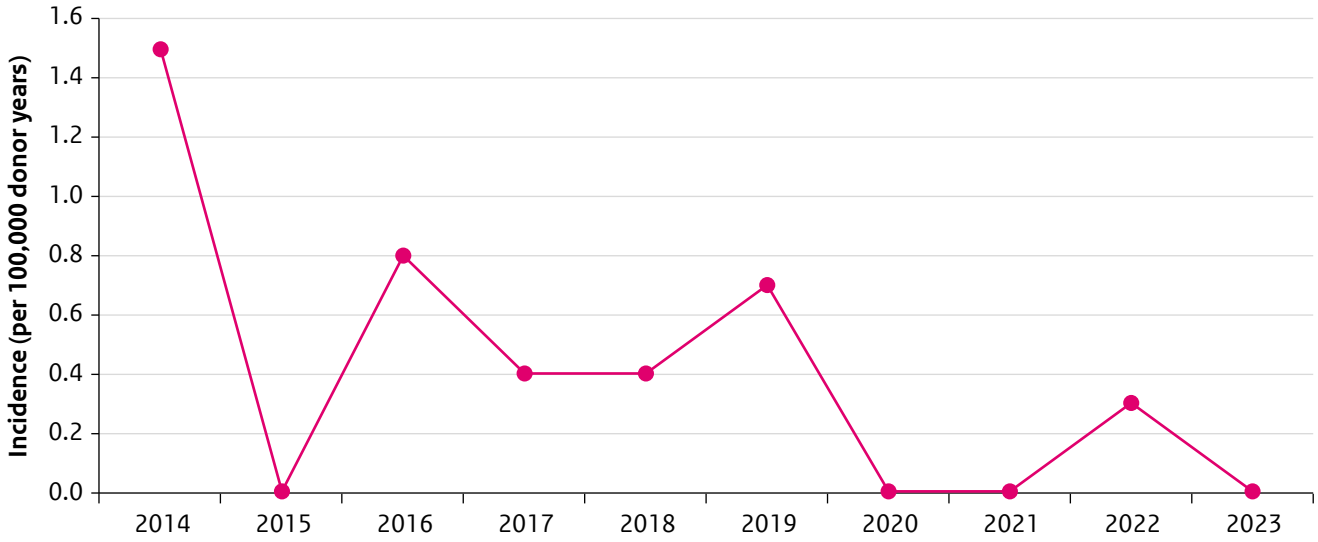
Table 6.11 HIV prevalence estimates in pregnant women, based on test results of antenatal screening, 2015-2022

Year	n positive / N women screened	Prevalence estimate
2015	105/176,103	0.06
2016	88/172,694	0.05
2017	112/170,390	0.07
2018	91/171,149	0.05
2019	96/171,480	0.06
2020	89/176,103	0.05
2021	86/176,400	0.05
2022	82/168,258	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.

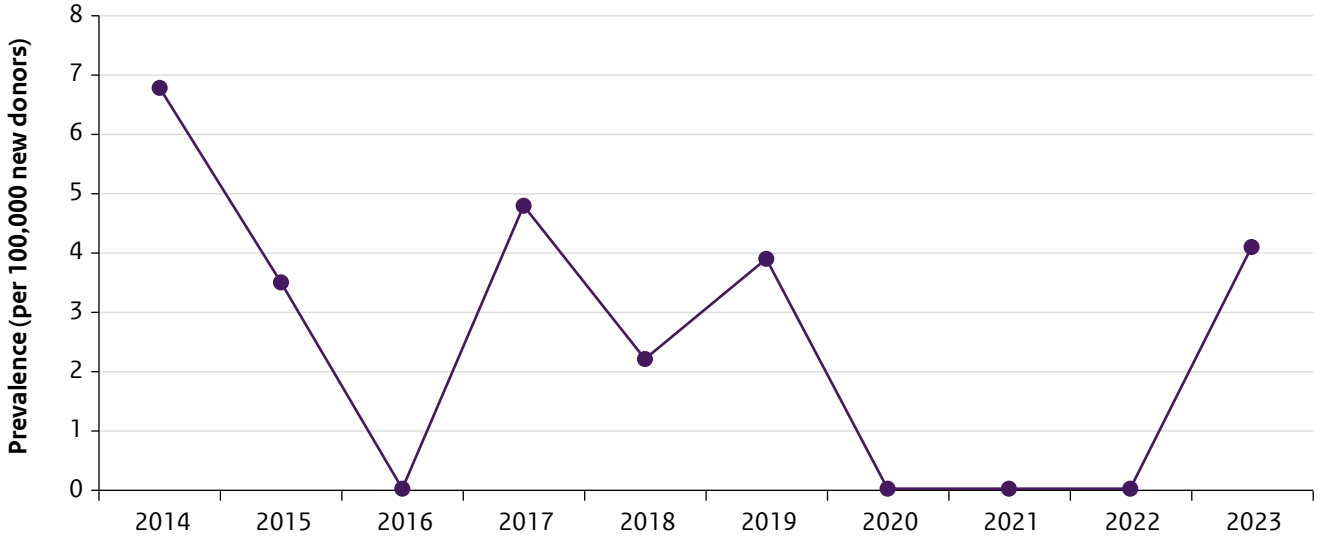
6.5.2 Blood donors

Figure 6.9a Incidence of HIV per 100,000 donor years, among blood- and plasma donors in the Netherlands, 2014-2023



Source: Sanquin

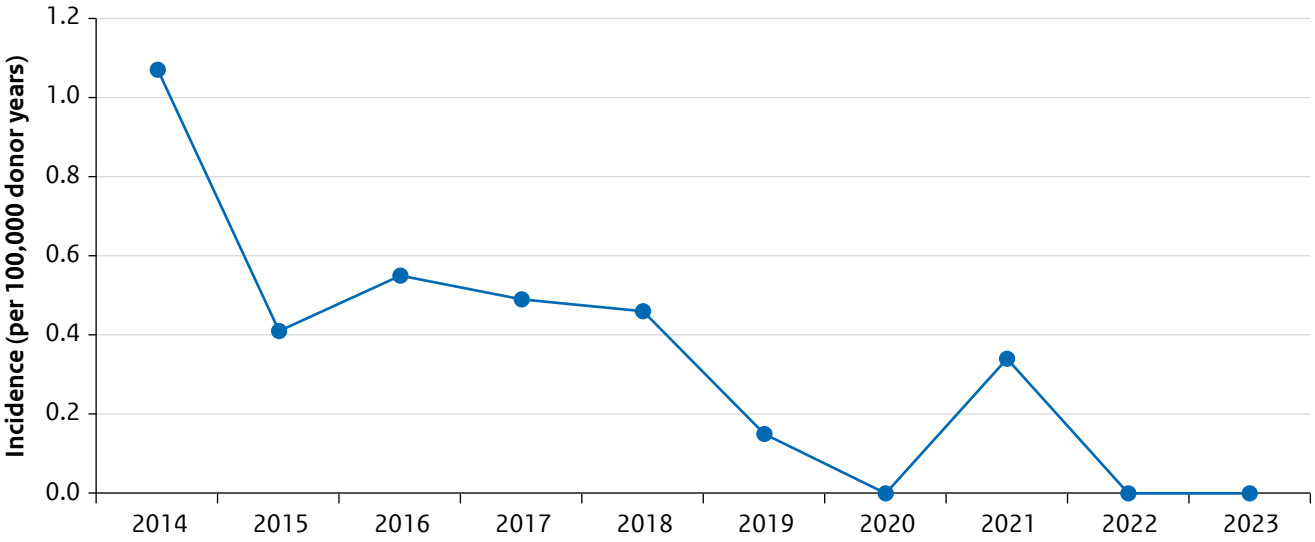
Figure 6.9b Prevalence of HIV per 100,000 new donors, among blood- and plasma donors in the Netherlands, 2014-2023



Source: Sanquin

6.4.3 Amsterdam Cohort Studies

Figure 6.10 Yearly HIV incidence among MSM in the Amsterdam Cohort Studies, 2014-2023



7 Genital warts

7.1 Key points

7.1.1 Sexual Health Centres

- Due to more frequent testing among MSM-PrEP, positivity rates in this group are not directly comparable with those among MSM-ASG. In addition, restrictions during the COVID-19 pandemic impacted the number of consultations at SHCs and positivity rates in 2020 and 2021. Both factors should be taken into account when interpreting trends. For more information, see 1.1. National surveillance at Sexual Health Centres.

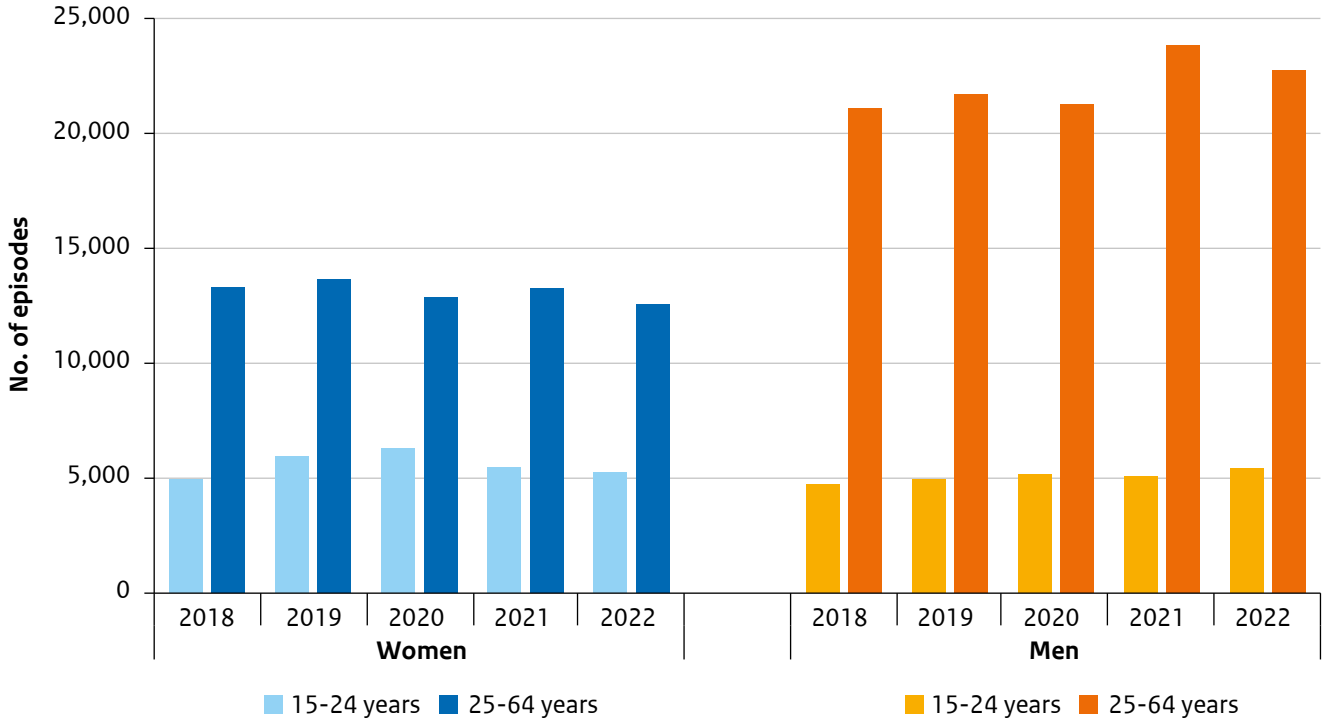
- In 2023, The number of genital warts diagnoses at SHCs was 743, of which 35% were among women, 40% among heterosexual men, 19% among MSM-ASG, 5% among MSM-PrEP, and 2% among gender diverse persons.
- In 2023, the number of genital warts diagnoses among persons aged ≤ 25 years was 498. Among women diagnosed with genital warts, 82% was ≤ 25 years old. Among heterosexual men this was 74%, among MSM-ASG 34% and among MSM-PrEP 33%.

7.1.2 General practices

- At GPs, the number of genital warts episodes, estimated with Nivel-PCD data, was 45,800 in 2022 (47,500 in 2021).
- In 2022, the reporting rate for genital warts at general practices was 4.0 episodes per 1,000 aged 15-64 years. This was 3.1 per 1,000 population for women and 4.9 per 1,000 for men.
- The reporting rate was the same among men aged 25-64 years, as among men aged 15-24 years (both 4.9 per 1,000).
- Among women aged 25-64 years, the rate was lower than among women aged 15-24 years (2.7 and 4.9 per 1,000, respectively).

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, 2018-2022



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, 2018-2022

	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
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
2022	**3.1**	4.9	2.7	**4.9**	4.9	4.9	**4.0**	4.9	3.8

8 Genital herpes

8.1 Key points

8.1.1 Sexual Health Centres

- Due to more frequent testing among MSM-PrEP, positivity rates in this group are not directly comparable with those among MSM-ASG. In addition, restrictions during the COVID-19 pandemic impacted the number of consultations at SHCs and positivity rates in 2020 and 2021. Both factors should be taken into account when interpreting trends. For more information, see 1.1. National surveillance at Sexual Health Centres.

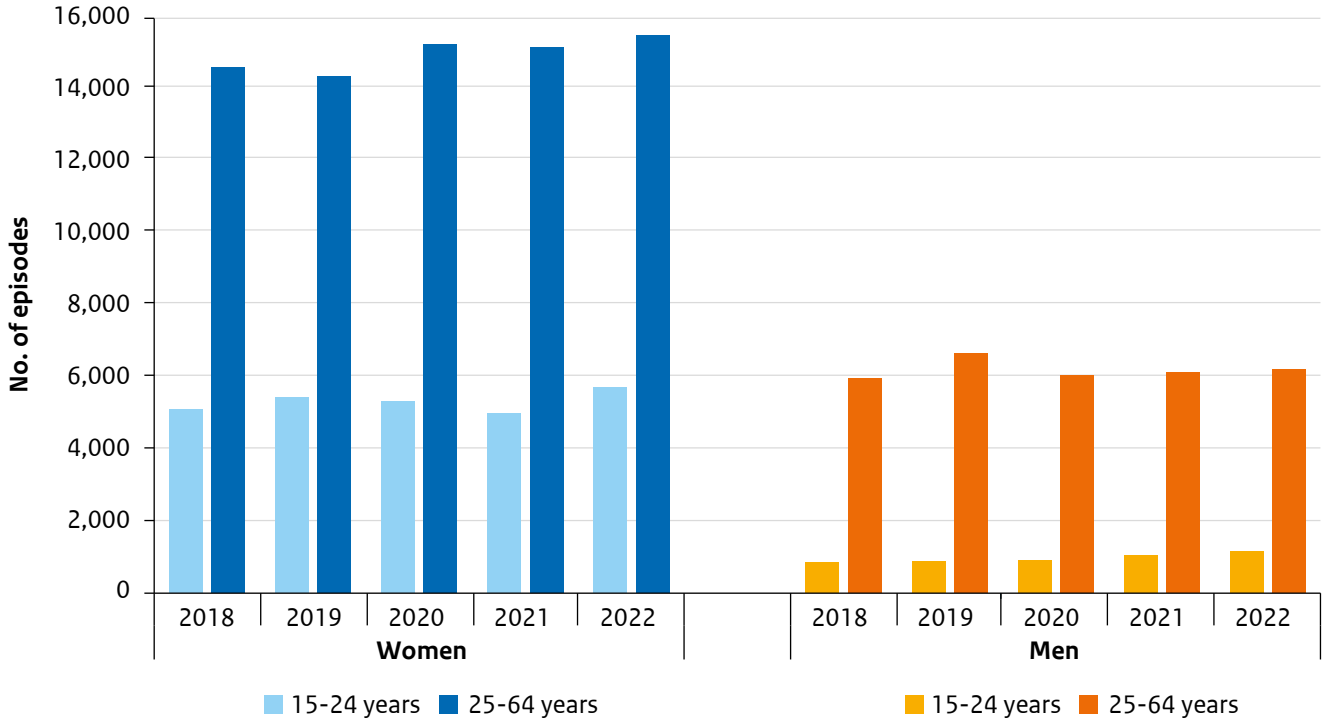
- The number of persons with a genital herpes diagnosis at SHCs in the Netherlands was 513 in 2023, of which 41% were women, 18% heterosexual men, 32% MSM-ASG, 8% MSM-PrEP, and 1% were gender diverse persons. As the number of gender diverse persons was relatively low, they will be excluded hereafter.
- In 2023, the number of genital herpes diagnoses among persons aged ≤ 25 years amounted to 262. Among women diagnosed with genital herpes, 76% was ≤ 25 years old. Among heterosexual men, 68% belonged to this age group, among MSM-ASG 19%, and among MSM-PrEP 19%.
- Among women, 59% of the diagnoses was herpes simplex virus 1 (HSV1) and 35% herpes simplex virus 2 (HSV2). Among heterosexual men, 44% was HSV1 and 45% was HSV2. For MSM-ASG, this was 41% and 52% for HSV1 and HSV2, respectively. Finally, for MSM-PrEP, 50% was HSV1 and 48% 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 2014 and 2023.

8.1.2 General practices

- At GPs, the number of genital herpes episodes in 2022, estimated using Nivel-PCD data, was 28,500, compared with 27,300 in 2021.
- In 2022, the reporting rate for genital herpes diagnoses at GPs was 2.5 per 1,000 population aged 15-64 years. This was 3.7 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, while for men this was higher in the population aged 25-64 years.

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, 2018-2022



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, 2018-2022

	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
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
2022	**3.7**	5.4	3.4	**1.3**	1.0	1.3	**2.5**	3.2	2.4

9 Hepatitis B

9.1 Key points

9.1.1 Sexual Health Centres

- Due to more frequent testing among MSM-PrEP, positivity rates in this group are not directly comparable with those among MSM-ASG. In addition, restrictions during the COVID-19 pandemic impacted the number of consultations at SHCs and positivity rates in 2020 and 2021. Both factors should be taken into account when interpreting trends. For more information, see 1.1. National surveillance at Sexual Health Centres.

- In 2023, 25,884 hepatitis B tests were conducted at SHCs, of which 6,447 (25%) were among women, 3,451 (13%) among heterosexual men, 11,433 (44%) among MSM-ASG, 3,740 (14%) among MSM-PrEP, and 813 (3%) among gender diverse persons. Overall, this was a 7% increase compared with 2022.
- In 2023, 53 infectious hepatitis B infections (both acute and chronic) were diagnosed at SHCs; a 61% increase compared with 2022. Out of the 53 cases in 2023, 42% were diagnosed among MSM-ASG, 28% among women, 19% among heterosexual men, and 11% among gender diverse persons. None were diagnosed among MSM-PrEP.
- Most hepatitis B infection occured among persons with a region of origin included in triage; among heterosexual men and gender diverse persons this amounted to 100%, among women 87%, and among MSM-ASG 64%.

9.1.2 Notification data

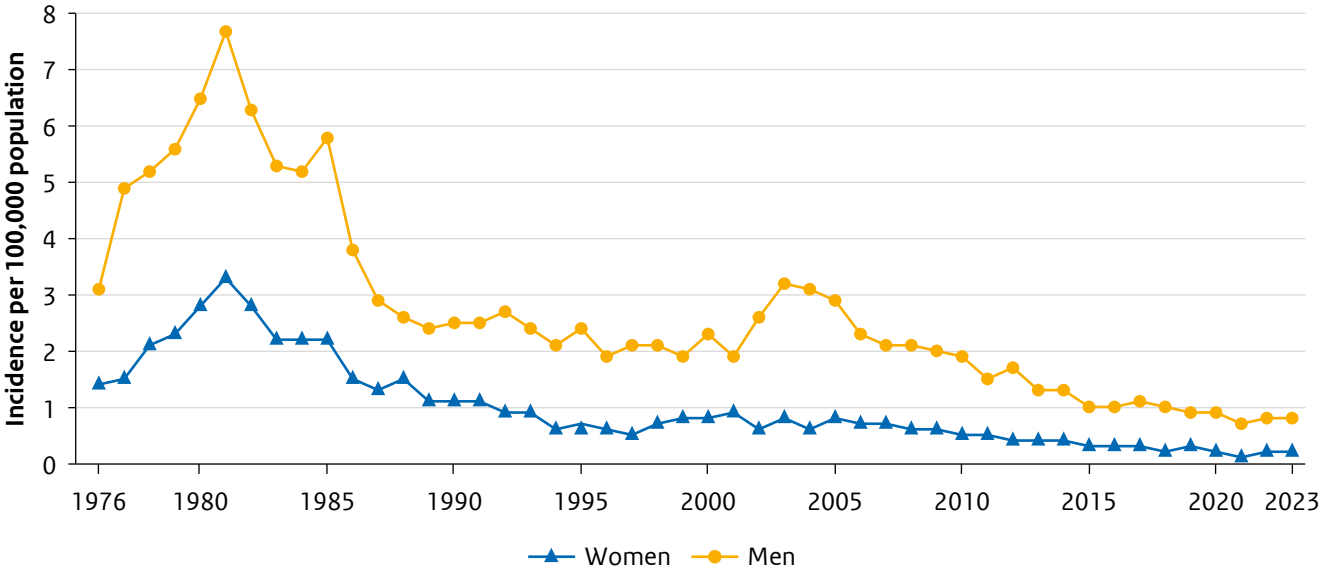
- In 2023, 929 hepatitis B infections were reported to RIVM, of which 839 (90%) were chronic/unknown infections and 90 (10%) were acute infections. Compared with 2022, chronic/unknown hepatitis B infections decreased by 3%, while acute hepatitis B infections increased by 18%.
- Sexual contact remained the most commonly reported transmission route for acute hepatitis B (56%) in 2023. In 28% of cases the route of transmission was unknown. Out of the chronic/unknown infections in 2023 with a reported route of transmission, 337 (69%) were cases by vertical transmission, 61 (13%) by sexual contact (37 heterosexuals, 17 among MSM and for 7 records, sexual contact was reported without sexual orientation), 6 (1%) among injecting drug users, 10 (2%) by occupational accidents. For 71 (15%) cases, the route of transmission was reported as 'other'. For 354 cases, the route of transmission was unknown or missing.

9.1.3 Other data sources

- In 2022, 323 women (0.2%) tested positive for hepatitis B in the antenatal screening programme. This is the same as in previous years.
- In 2023, 3,629 MSM and 622 sex workers entered the hepatitis B vaccination programme for risk groups. In 2020, the numbers of MSM (2,329) and sex workers (427) entering the programme were much lower than in 2019 (MSM: 4,262; sex workers: 808) due to COVID-19 measures. Entries have increased again since 2021, especially among MSM, but are still lower than in 2019. In 2023, 52.8% of MSM and 29.2% of the sex workers entering the programme were fully vaccinated with 3 doses.

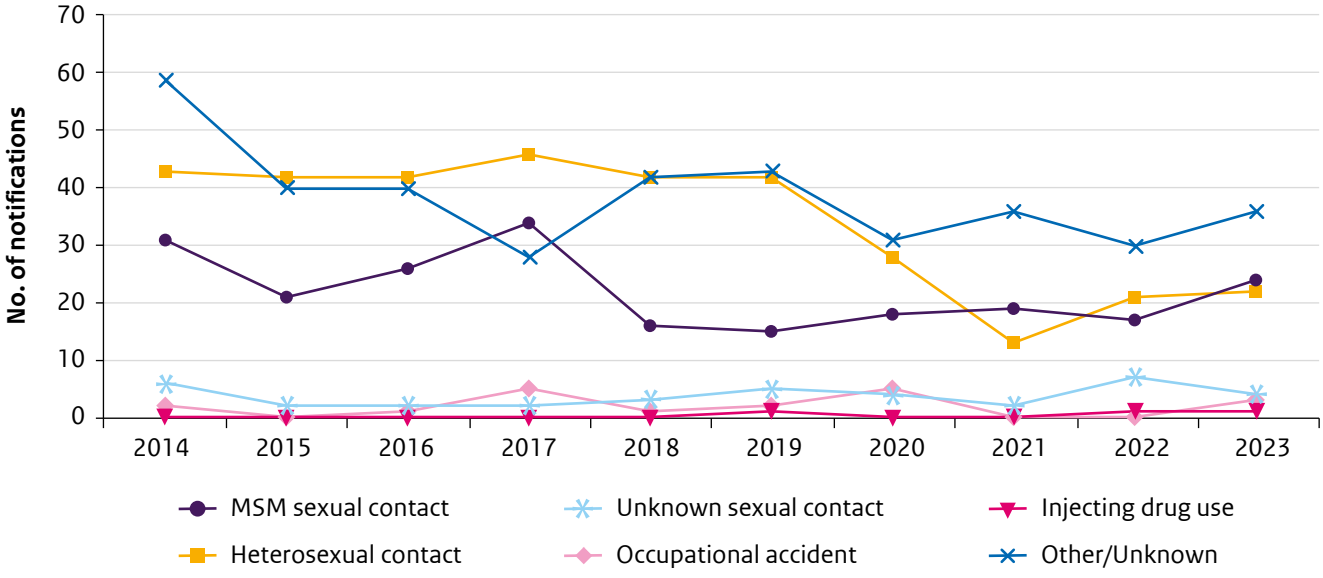
9.2 Notification data: characteristics, risk groups and trends

Figure 9.1 Incidence of acute hepatitis B per 100,000 population by sex, 1976-2023



Source: RIVM-OSIRIS, notification data.
Footnote: Data from 2023 might be incomplete due to reporting delay (data were collected on 27 February 2024).

Figure 9.2 Number of acute hepatitis B infections by route of transmission, 2014-2023



Source: RIVM-OSIRIS, notification data.
Footnote: Data from 2023 might be incomplete due to reporting delay (data were collected on 27 February 2024).

Table 9.1 Number and proportion of acute hepatitis B cases by most common route of transmission, the Netherlands, 2023

	Heterosexual contact n (%)*	MSM n (%)*	Other n (%)*
Total	**22 (100.0)**	**24 (100.0)**	**42 (100.0)**
Infected abroad	3 (13.6)	2 (8.3)	4 (9.5)
Born abroad	7 (31.8)	1 (4.2)	9 (21.4)
Infected by casual partner	13 (59.1)	24 (100.0)	3 (7.1)
Median age (range)	35 (22-70)	47 (24-72)	52 (25-80)

Source: RIVM-OSIRIS, notification data.
**Proportions per category can overlap, so percentages do not add up to 100%.*

9.3 Antenatal screening

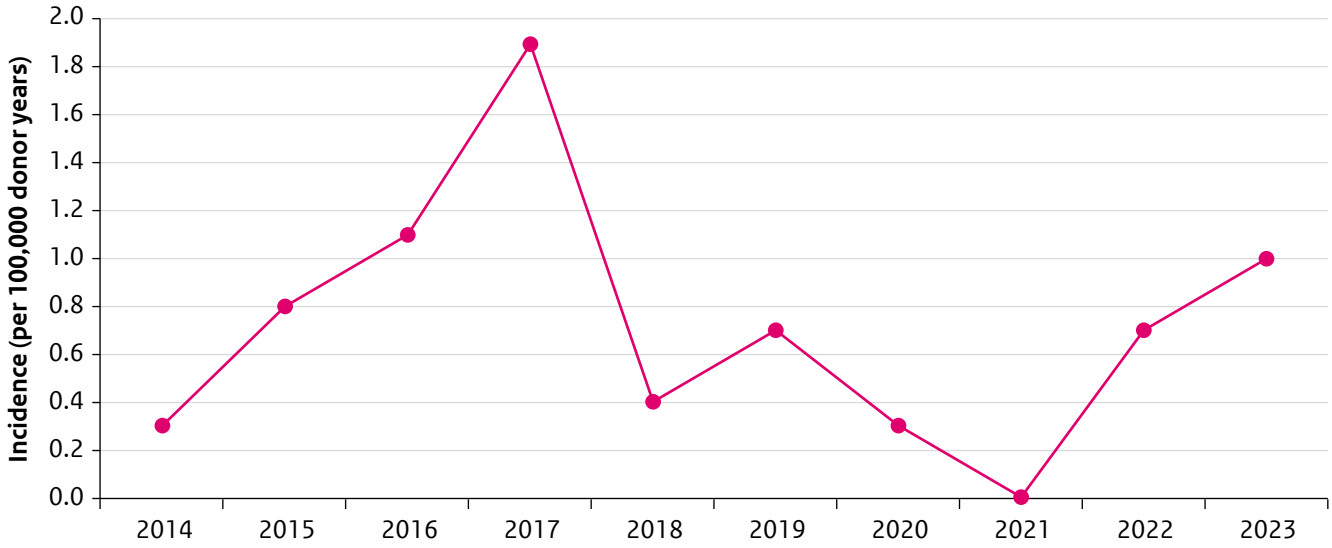
Table 9.2 Hepatitis B prevalence estimates in pregnant women, based on test results of antenatal screening, 2014-2022

	n positive / N women screened	Prevalence estimate
2014	559/174,646	0.32
2015	506/176,238	0.29
2016	507/172,799	0.29
2017	480/170,461	0.28
2018	453/171,242	0.26
2019	437/171,609	0.26
2020	394/176,235	0.22
2021	334/176,464	0.19
2022	323/168,333	0.19

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

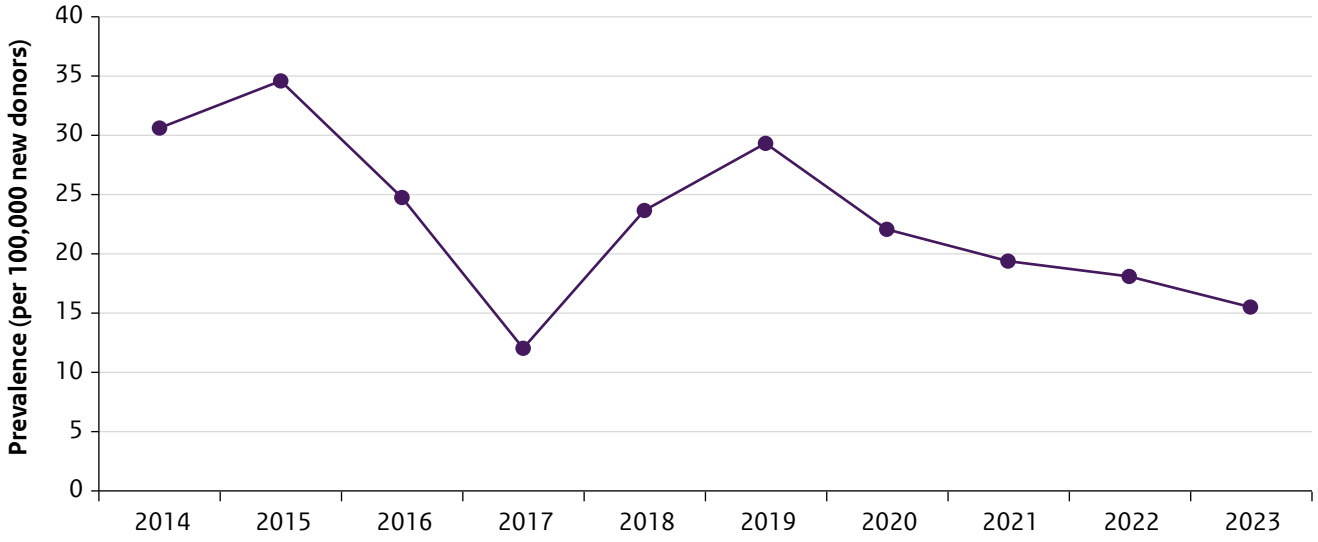
9.4 Blood donors

Figure 9.3a Incidence of hepatitis B virus per 100,000 donor years, among blood- and plasma donors in the Netherlands, 2014-2023



Source: Sanquin

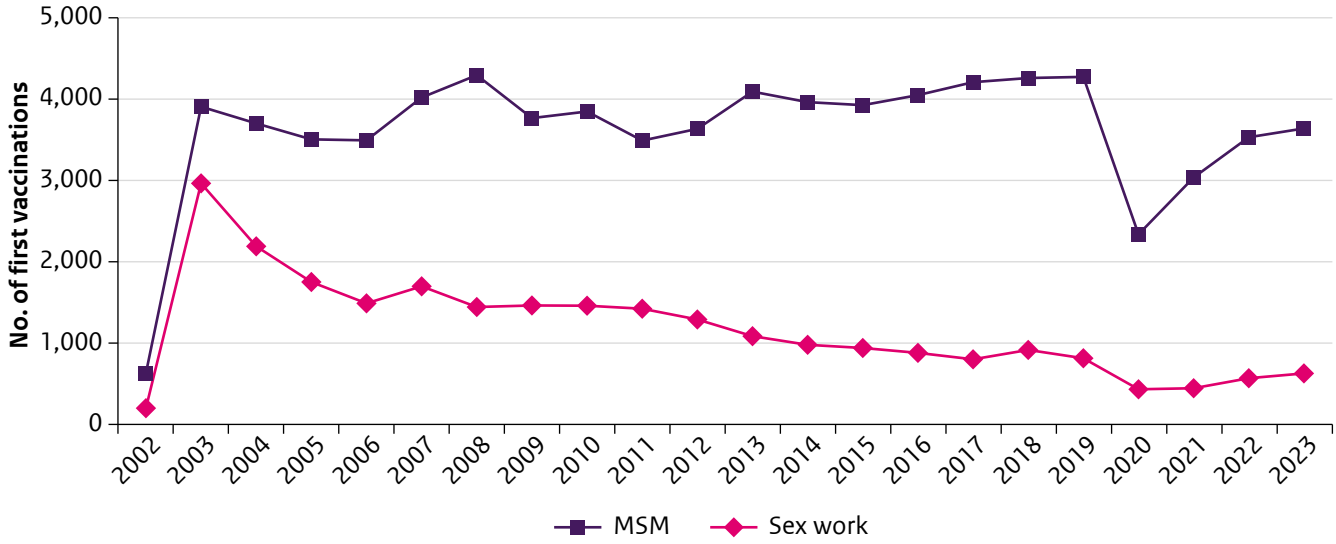
Figure 9.3b Prevalence of hepatitis B virus per 100,000 new donors, among blood- and plasma donors in the Netherlands, 2014-2023



Source: Sanquin

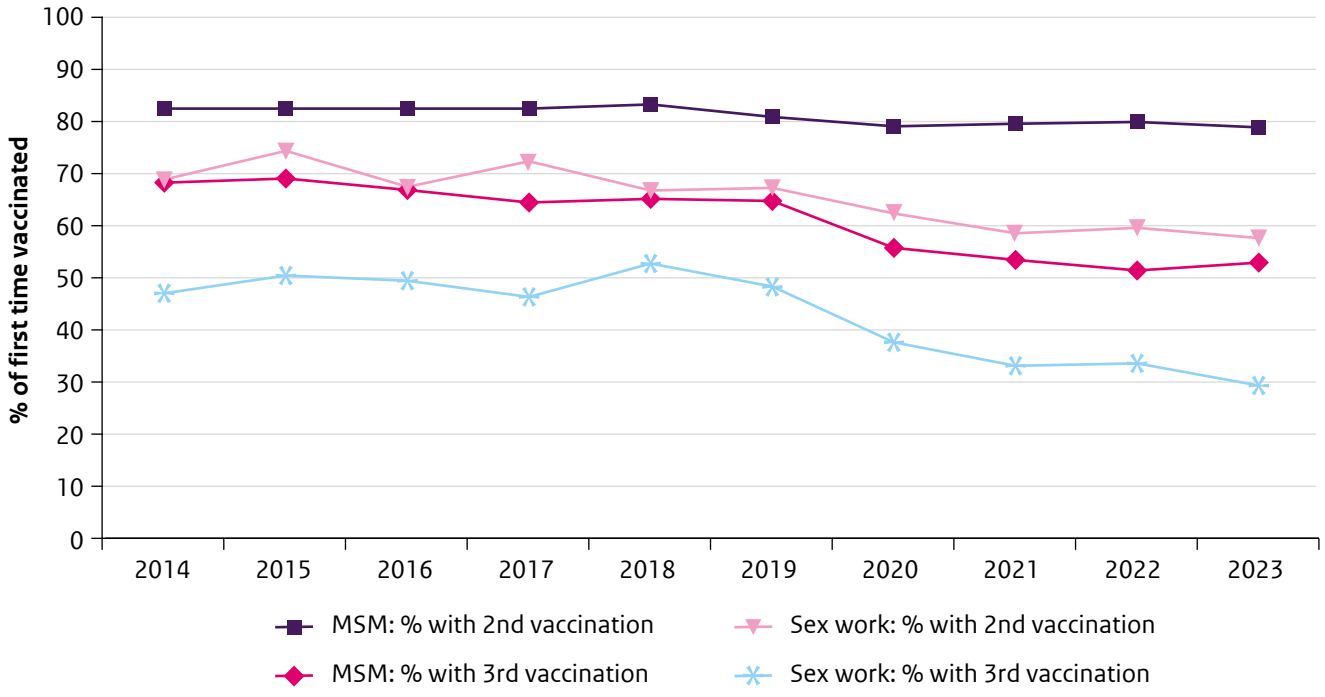
9.5 Hepatitis B vaccination programme for risk groups

Figure 9.4 Number of persons entering the hepatitis B vaccination programme, 2002-2023



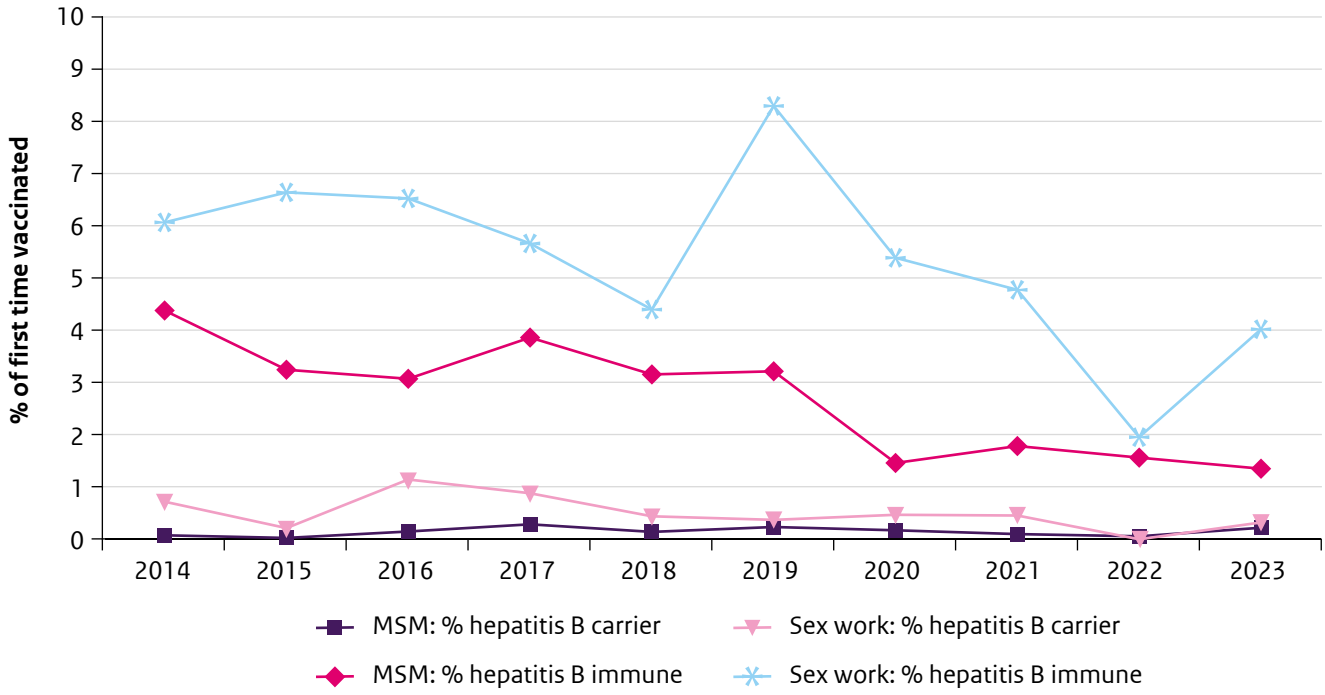
Source: RIVM, HBV vaccination programme among MSM and sex workers.

Figure 9.5 Proportion of second and third time vaccinated participants of the hepatitis B vaccination programme, 2014-2023



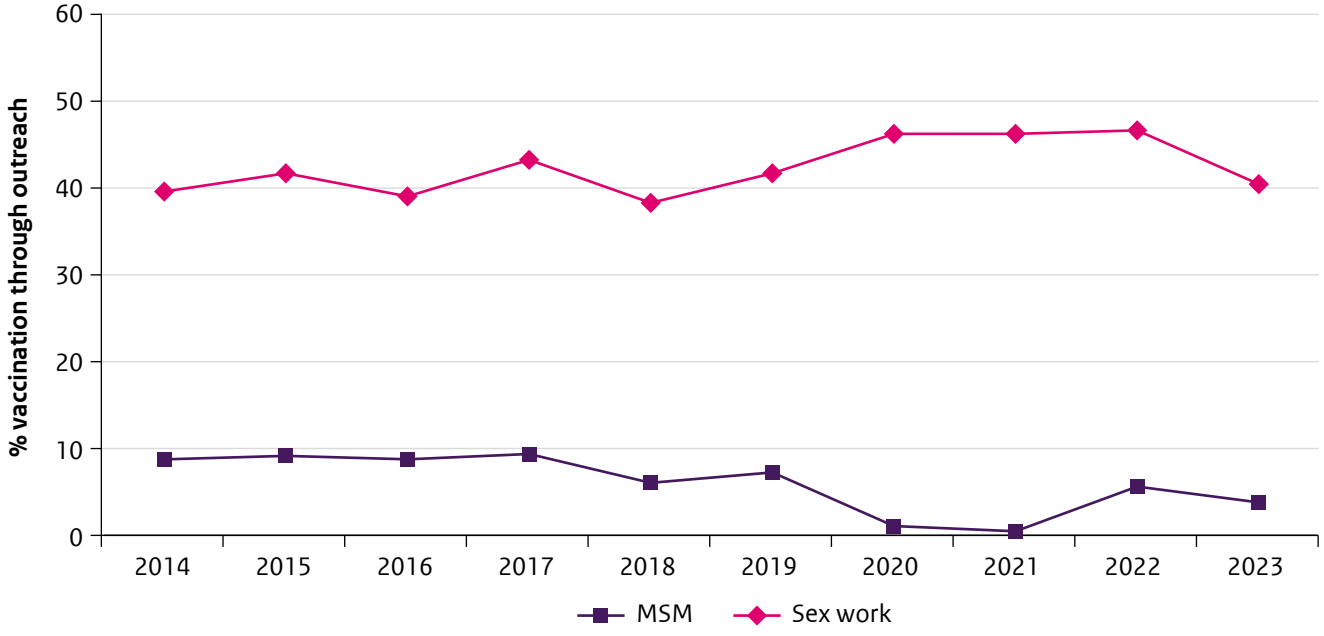
Source: RIVM, HBV vaccination programme among MSM and sex workers.

Figure 9.6 Proportion of hepatitis B chronically infected and immune participants of the hepatitis B vaccination programme, 2014-2023



Source: RIVM, HBV vaccination programme among MSM and sex workers.
Footnote: carrier and immunity status are determined by anti-HBc and HBsAg titers in the blood, taken at first vaccination.

Figure 9.7 Proportion of first hepatitis B vaccinations given at outreach locations* by risk group, 2014-2023



** 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

- Due to more frequent testing among MSM-PrEP, positivity rates in this group are not directly comparable with those among MSM-ASG. In addition, restrictions during the COVID-19 pandemic impacted the number of consultations at SHCs and positivity rates in 2020 and 2021. Both factors should be taken into account when interpreting trends. For more information, see 1.1. National surveillance at Sexual Health Centres.

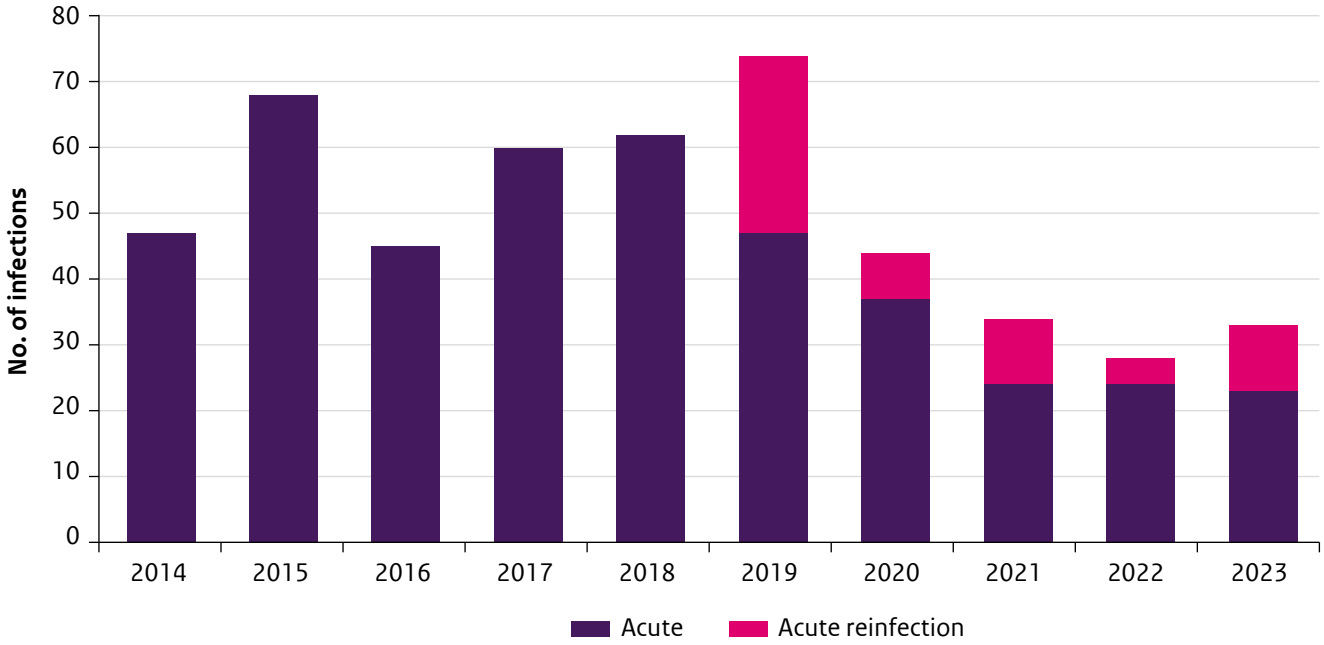
- In 2023, 14,634 hepatitis C tests were conducted at SHCs, of which 513 (4%) were among women, 314 (2%) among heterosexual men, 2,372 (16%) among MSM-ASG, and 11,082 (76%) among MSM-PrEP. Overall, this amounted to a decrease of 24% compared with 2022 (23,842).
- Among MSM-ASG tested for hepatitis C, 885 (37%) were known or new HIV-positive and 1,487 (63%) were HIV-negative.
- Out of the consultations conducted among HIV-negative MSM tested for hepatitis C (11,072), 88% were MSM-PrEP consultations. The other 12% were MSM-ASG consultations, of which 1,873 (59%) were regular or test-lab consultations among MSM-ASG who had not used PrEP in the past three months, and 614 (41%) were regular or test-lab consultations with MSM-ASG who had used PrEP in the past three months.
- Eighteen positive hepatitis C tests (acute/chronic/unknown) were registered at SHCs; 8 among MSM-ASG (2 among HIV-negative MSM-ASG and 6 among known or new HIV-positive MSM-ASG), and 7 among MSM-PrEP.
- Out of these 8 positive tests for MSM-ASG, 3 were determined to be infectious. Out of the 7 MSM-PrEP tests, 3 were determined to be infectious. For the remaining 9 positive results among MSM, it was unknown whether the infection was infectious or not.

10.1.2 Notification data

- In 2023, 439 hepatitis C infections were reported to RIVM, of which 406 (92%) were chronic/unknown infections and 33 were acute infections. Out of the acute infections, 10 were reinfections.
- Sexual contact among MSM remained the most commonly reported transmission route for acute hepatitis C (57%) in 2023.
- Out of all acute hepatitis C infections among MSM (19) in 2023, 11 were among HIV-positive MSM (58%).
- Out of the 406 chronic/unknown infections in 2023, 130 (32%) were identified among injecting drug users, 17 (4%) were cases of vertical transmission, 6 (2%) were cases of occupational accident, 8 (2%) were among MSM, 11 (3%) were among heterosexuals, 5 (1%) involved persons with unknown sexual risk, and 229 (56%) involved other/unknown risks.

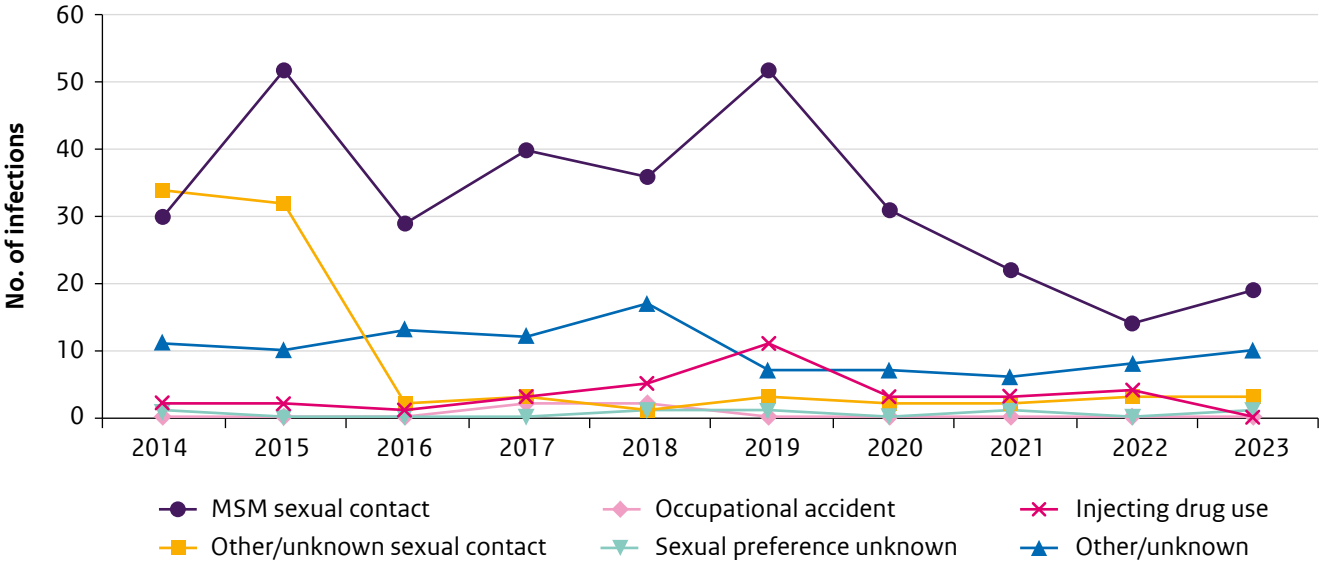
10.2 Notification data: characteristics, risk groups and trends

Figure 10.1 Number of acute hepatitis C infections, 2014-2023



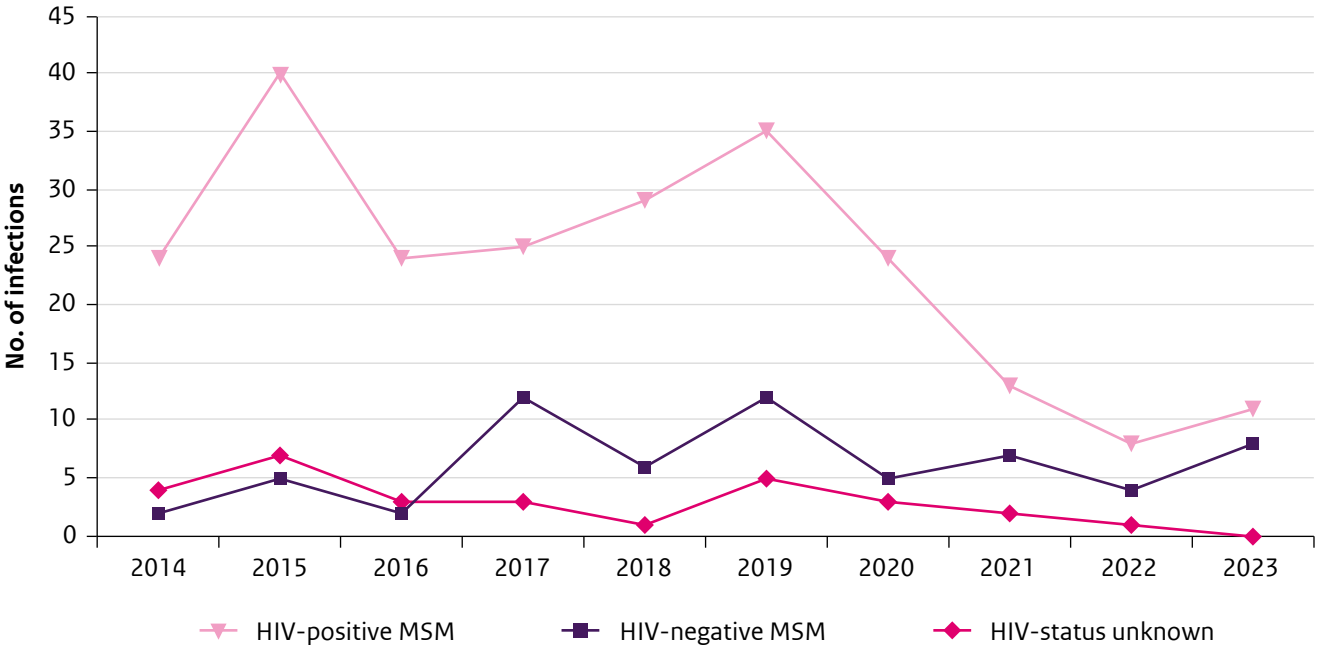
Source: RIVM-OSIRIS, notification data.
Footnote 1: Data from 2023 might be incomplete due to reporting delay (data collected on 17 March 2024).
Footnote 2: From 2018, reinfections were reported separately.

Figure 10.2 Number of acute hepatitis C infections by route of transmission, 2014-2023



Source: RIVM-OSIRIS, notification data.
Footnote: Data from 2023 might be incomplete due to reporting delay (data collected on 17 March 2024).

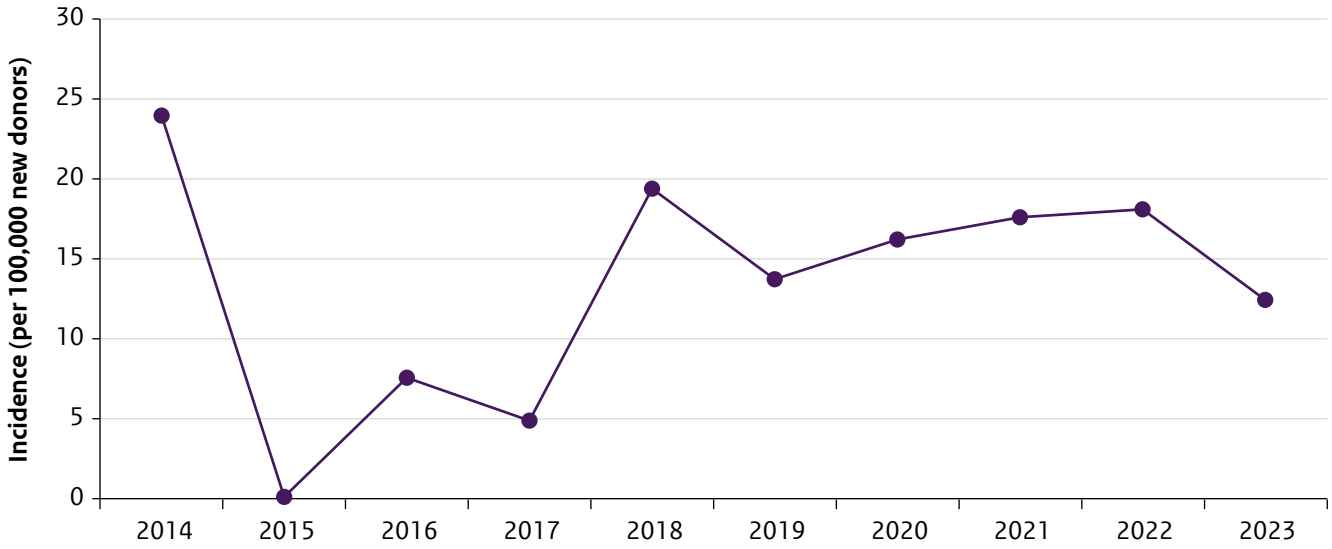
Figure 10.3 Number of acute hepatitis C infections in MSM by HIV status, 2014-2023



Source: RIVM-OSIRIS, notification data.
Footnote: Data from 2023 might be incomplete due to reporting delay (data collected on 17 March 2024).

10.3 Blood donors

Figure 10.4 Prevalence of hepatitis C virus per 100,000 new donors, among blood- and plasma donors in the Netherlands, 2014-2023



Source: Sanquin
Footnote: In the past 10 years yearly HCV incidence among regular blood donors was 0/100,000 donor-years, with the exception of 2020 (0.3/100,000).

11 Mpox

11.1 Key points

11.1.1 Sexual Health Centres

- Due to more frequent testing among MSM-PrEP, positivity rates in this group are not directly comparable with those among MSM-ASG. In addition, restrictions during the COVID-19 pandemic impacted the number of consultations at SHCs and positivity rates in 2020 and 2021. Both factors should be taken into account when interpreting trends. For more information, see 1.1. National surveillance at Sexual Health Centres.

- Since 2023, SHCs have reported data on mpox tests, diagnoses and vaccination status to RIVM. In total, 873 mpox tests were conducted, of which 594 (68%) among MSM-ASG, 193 (22%) among MSM-PrEP, 32 (4%) among heterosexual men, 36 (4%) among women, and 18 (2%) among gender diverse persons. In 2023, 23 mpox diagnoses were reported, of which 22 (96%) among MSM and 1 (4%) among a gender diverse person.
- In 2023, 25,288 complete (2 times) mpox vaccinations were reported among 10,783 (22%) MSM-ASG, 14,112 (50%) MSM-PrEP, and 393 (18%) gender diverse persons. Moreover, 8,171 persons were vaccinated only once, of whom 3,508 (7%) MSM-ASG, 4,542 (16%) MSM-PrEP, and 121 (5%) gender diverse persons.

11.1.2 Notification data

- The mpox outbreak in the Netherlands started in May 2022 and peaked with 544 new reported mpox cases up to July 2022. After July 2022 a rapid decrease of reported mpox cases was observed.
- In 2022 and 2023 together, 1,293 mpox infections were reported to RIVM. This was 1,260 in 2022 and 33 in 2023.
- Out of the reported mpox cases in 2022, 1,166 (93%) were among MSM, 29 (2%) among heterosexual men, 18 (1%) among women, and 47 (4%) among persons for whom sex and type of sexual contact were unknown. Out of the reported mpox cases in 2023, 30 (91%) were among MSM, 1 (3%) among heterosexual men and 2 (6%) among persons for whom sex and type of sexual contact were unknown.
- In 2022, 283 (22%) cases were reported among people living with HIV. This was 6 (18%) in 2023. Additionally, 312 (25%) were reported among people who reported having used PrEP in the past 6 months in 2022, and 12 (36%) in 2023.
- Sexual contact (including close skin and mucosal contact) was the most reported transmission route for mpox infections: in 2022 in 85% of reported cases and in 2023 in 70% of reported cases.

11.1.2 Other data sources

- On 25 July (week 30) 2022 the mpox PrEP vaccination campaign started, targeted at MSM and transgender persons at high risk of acquiring an mpox infection.
- In 2022 and 2023, 32,619 doses of mpox PrEP vaccination were given; 19,281 (59%) were first doses and 13,100 (40%) second doses. For 238 (1%) vaccinations, number of the dose was not registered. 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 Monthly number and cumulative number of reported mpox cases, by date of onset, 2022-2023

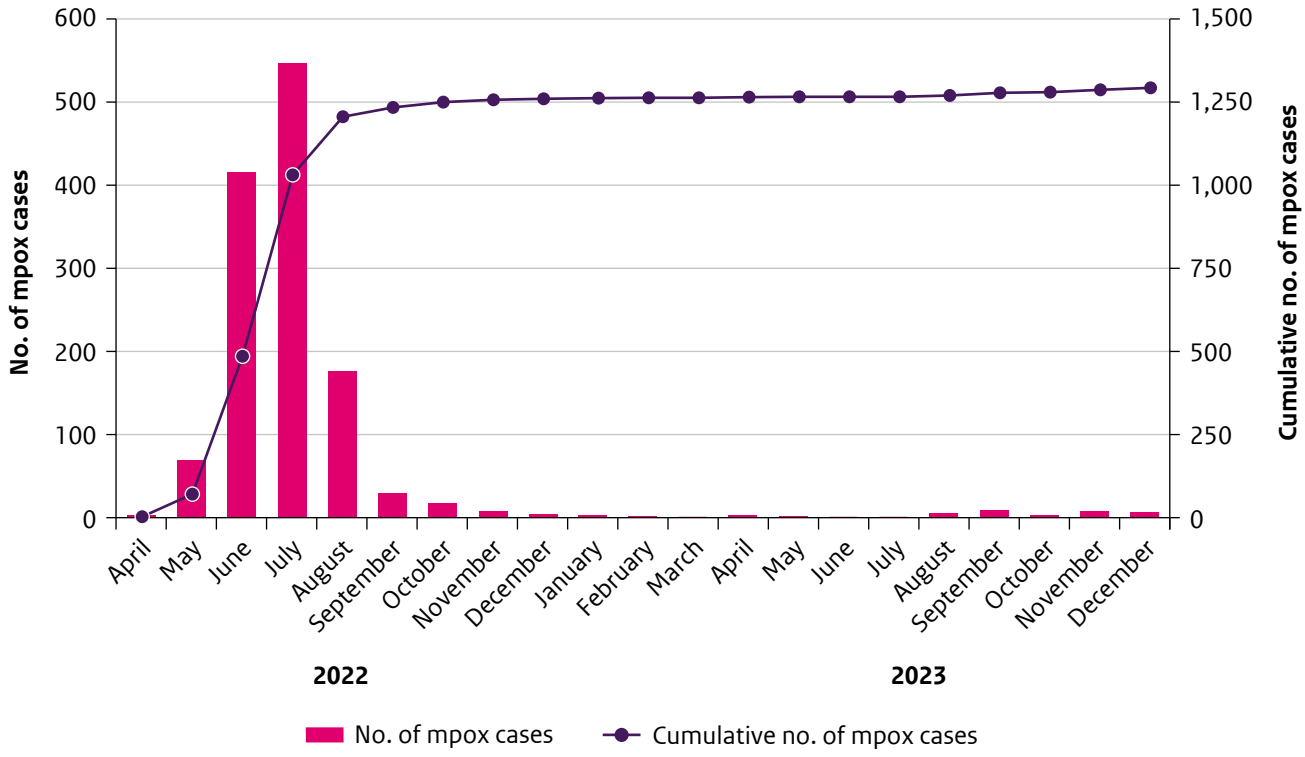


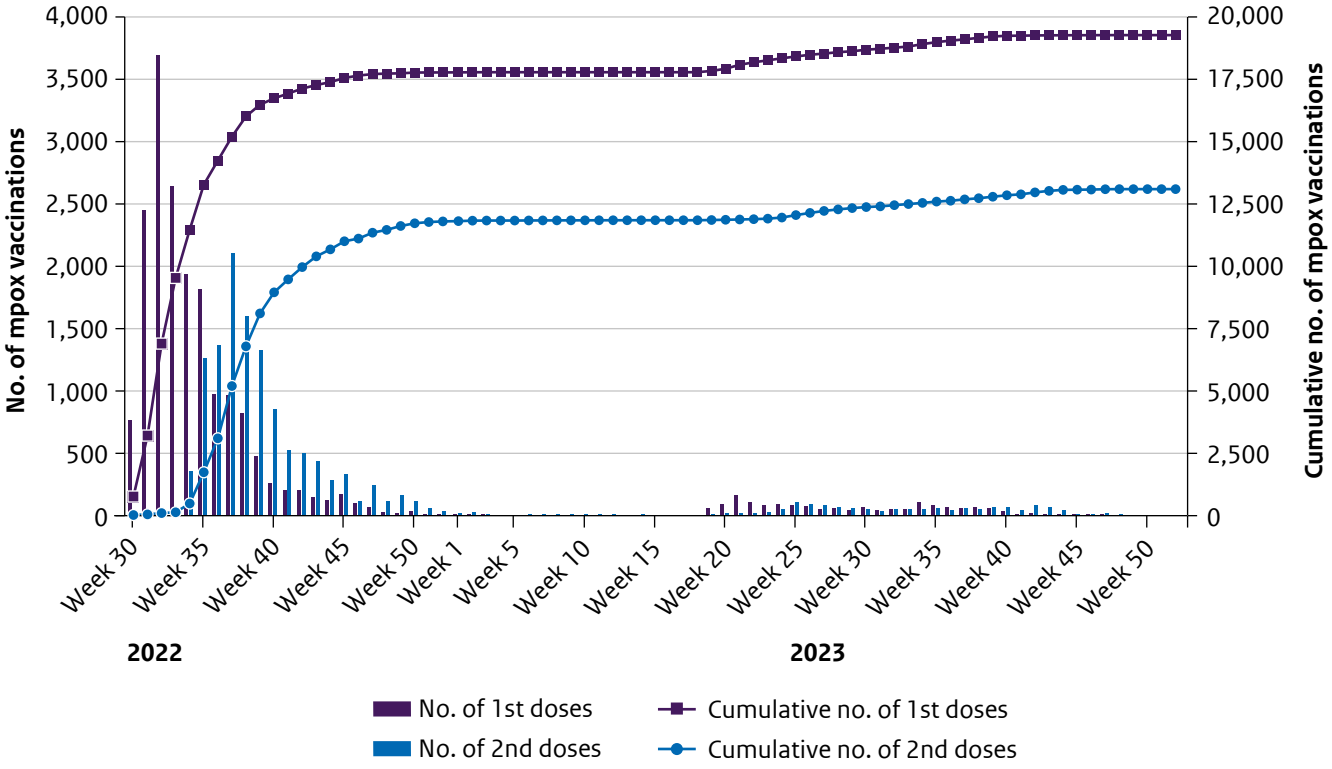
Table 11.1 Demographics and (sexual) behavioural characteristics: number and proportion of mpox cases, 2022-2023

	Total n (%)	2023 n (%)
Total	**1,293 (100.0)**	**33 (100.0)**
Sex and type of sexual contact		
Women	18 (1.4)	0 (0.0)
Heterosexual men	30 (2.3)	1 (3.0)
MSM	1,196 (92.5)	30 (90.9)
Unknown*	49 (3.8)	2 (6.1)
Age group		
≤24	86 (6.7)	4 (12.1)
25-34	445 (34.4)	10 (30.3)
35-44	431 (33.3)	13 (39.4)
45-59	269 (20.8)	3 (9.1)
≥ 60	61 (4.7)	3 (9.1)
Unknown	1 (0.1)	0 (0.0)
Region of origin		
The Netherlands	683 (52.8)	22 (66.7)
Abroad	490 (37.9)	11 (33.3)
Unknown	120 (9.3)	0 (0.0)
Travel history abroad		
No	747 (57.8)	14 (42.4)
Yes	461 (35.7)	14 (42.4)
Unknown	85 (6.6)	5 (15.2)
Ever vaccinated for smallpox (variola)		
No	1,097 (84.8)	29 (87.9)
Yes	154 (11.9)	3 (9.1)
Unknown	42 (3.2)	1 (3.0)
HIV status and PrEP use, in the past 6 months		
HIV-positive	289 (22.4)	6 (18.2)
HIV-negative, PrEP use	324 (25.1)	12 (36.4)
HIV-negative, no PrEP use	469 (36.3)	10 (30.3)
Unknown	211 (16.3)	5 (15.2)
Route of transmission		
Sexual contact (including close skin and mucosal contact)	1,076 (83.2)	23 (69.7)
Other/unknown	217 (16.8)	10 (30.3)

Source: RIVM-OSIRIS; notification data.
** The unknown category contains 48 men with unknown sexual contact (of which 2 in 2023) and 1 person with unknown sex.*

11.3 Mpox vaccination

Figure 11.2 Weekly number and cumulative number of first and second mpox PrEP vaccination dose, 2022-2023



Source: RIVM-iMPeX, RIVM-OSIRIS; notification data.
Footnote 1: In total, there were 238 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

In 2023, the total number of consultations (172,113) at SHCs was 4% higher than in 2022 (164,715 consultations) and was also higher than in 2019 (+14%) before COVID-19. The number of consultations in 2023 increased in all groups compared with 2022, except for the number of PrEP consultations, which remained stable. The number of consultations among heterosexual men remains relatively low and since 2020, more heterosexual men have visited the SHC after a partner notification. In 21% of all consultations, one or more STIs were diagnosed, which was comparable with 2022. Since 2019, increasing STI positivity has been recorded among women and heterosexual men under the age of 25 years.

At general practices, the estimated number of episodes of 'fear of STI' or STI-positive episodes remained stable between 2021 and 2022. Comparable with the trend in SHC consultations, the number of STI-positive episodes increased among both men and women aged 15-24 years. Scaling up STI care at GPs in 2022, after the COVID-19 pandemic, was similar to scaling up STI care at SHCs in that year, especially among adolescents.

Data from the annual National Health Survey showed that in 2022, testing rates among women and MSM were different from earlier years, whereas among heterosexual men testing rates were comparable. Among women, 9% of the 16-29 years age group reported being tested for STIs in the past year, compared with 11% in 2021, 13% in 2020, and 14% in 2019. Among MSM aged 16-44 years, reported STI testing was higher in 2022 (26%) compared with 2021 (23%) and 2020 (21%), which might be related to PrEP use. STI testing among heterosexual men aged 16-29 years was stable in 2022 (5%), compared with 2021 (5%) and 2020 (4%). The consistently low STI testing rate among young heterosexual men and the decreasing testing rate among women are worrisome for effective infection control, transmission prevention, and calls for action to reach this group.

Chlamydia remained the most diagnosed bacterial STI, both at SHCs and GPs. Out of the 24,048 chlamydia diagnoses, 45% were among women, 23% among heterosexual men, 20% among MSM-ASG, 10% among MSM-PrEP, and 1% among gender diverse persons. In 2023, chlamydia positivity was slightly lower among all groups than in 2022. SHCs stopped oral testing of chlamydia from November 2023 onwards, because isolated oral positive cases have been very rare in the past (always found in combination with genital positivity), in contrast to gonorrhoea, which includes a substantial number of exclusively oral infections. There is also limited transmission of oral chlamydia to a genital infection. The number of cases of lymphogranuloma venereum (LGV, the L2 strain of chlamydia) among MSM (both ASG and PrEP pilot) has increased since 2014, amounting to 572 cases in 2023. The percentage of HIV-negative MSM (ASG and PrEP pilot) among LGV-positives increased from 22% in 2014 to 76% in 2023. The percentage of asymptomatic rectal LGV among MSM increased to 61%. The increase in LGV diagnoses is seen in other European countries as well, but is most remarkable in the Netherlands.[18]

In contrast to the decreases in chlamydia positivity, the increase in gonorrhoea positivity that started in 2022 continued in 2023, especially among women and heterosexual men. The total number of gonorrhoea diagnoses increased by 31% compared with 2022. Among women, the number of diagnoses increased by 78% and among heterosexual men by 51%. Positivity increased to 4.5% among women and 3.9% among heterosexual men in the second half of 2023: the highest it has been since 2013 and higher than in the period of downscaled care during the COVID-19 pandemic. In 2023, gonorrhoea positivity among MSM also increased, though to a relatively lesser extent than among women and heterosexual men. The gonorrhoea increase is most prominent among heterosexuals under the age of 25, with high education levels, and of Dutch origin. Notably, among women, the highest gonorrhoea positivity rates were seen in those without a migration background and aged ≤25 years, while in previous years positivity rates were always higher among women with a migration background and aged >25 years. The increase in gonorrhoea among young heterosexuals was also seen at the GPs in 2022 and in other European countries.[19] The cause of this strong gonorrhoea increase remains

[18] European Centre for Disease Prevention and Control. Lymphogranuloma venereum. In: ECDC. Annual Epidemiological Report for 2022. Stockholm: ECDC; 2024.

[19] Nerlander L, Champezou L, Gomes Dias J, Aspelund G, Berlot L, Constantinou E, Díaz A, Epštein J, Fogarassy E, Hernando V, Hoffmann P, Igoe D, Klavs I, Pinto Leite P, Liitsola K, McIntyre A, Molnár Z, Olsen AO, Pires-Afonso Y, Putniņa R, Rudaitis K, Siakallis G, de Stoppelaar S, Suligoi B, Hannila-Handelberg T, Velicko I, Cabral Veríssimo V, Visser M, Wessman M, Mårdh O. Sharp increase in gonorrhoea notifications among young people, EU/EEA, July 2022 to June 2023. Euro Surveillance 2024 Mar;29(10). doi: 10.2807/1560-7917.ES.2024.29.10.2400113.

unknown. It might be a result of increased transmission after the release of social distancing measures during the COVID-19 pandemic, catchup testing, decreasing condom use, or other behavioural changes, or a combination of these factors. These findings underline the importance of testing in combination with motivational interviewing for condom use and partner notification in these groups.

The 2022 results for sex under the age of 25, a national survey on sexual health among more than 10,000 young people, showed that the age of sexual debut had increased compared with the survey results of 2017. The percentage of both boys and girls who use condoms during their first vaginal intercourse decreased to 64% and 69%, respectively. In contrast to young heterosexuals who visited the SHC, the percentage of survey participants who tested for an STI and who reported an STI was comparable with 2017.[20]

Antimicrobial resistance to ceftriaxone, the first-choice treatment for gonorrhoea in the Netherlands, was not found in 2023. However, there has been an increase in isolates with slightly reduced susceptibility to ceftriaxone. Resistance to azithromycin has been increasing since 2016, up to 31% in 2023. The increasing number of gonorrhoea diagnoses, and the observed shifts in the MIC distribution underline the importance of gonococcal resistance surveillance in the Netherlands.

In 2023, 2,097 syphilis infections were diagnosed at SHCs. Out of these, 1,693 (81%) were infectious syphilis. Out of the infectious syphilis diagnoses, 93% was among MSM. Infectious syphilis positivity has fluctuated around 2.5% among MSM-ASG in the past 10 years, and it was stable around 1.8% among MSM-PrEP. For heterosexual men, the number of diagnoses fluctuated between 33 and 43 between 2020 and 2023. Among blood donors, increases in syphilis incidence and prevalence were also seen in the past 10 years. Although absolute numbers are low among women, positivity increased from 0.07% in 2019 to 0.17% in 2023, corresponding with an increase in diagnoses from 17 in 2019 to 38 in 2023. This is worrisome, considering the potentially devastating consequences of syphilis infection during pregnancy. It is therefore important to carefully monitor syphilis cases among heterosexuals and to actively assist in partner notification,[21] while ensuring that the syphilis screening programme for pregnant women remains effectively implemented. This is still the case in the Netherlands: in 2021 0.00% of pregnant women refused hepatitis B and syphilis testing. Furthermore, no cases of congenital syphilis were reported in 2023, which is 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 August 2019 and 31 December 2023, 13,715 persons (of whom 96% were MSM) had a first PrEP consultation; 1,521 persons joined the pilot programme in 2023. On 31 December 2023, an estimated 8,496 individuals participated in the programme. Due to the continuing demand for PrEP, waiting lists at SHCs increased during 2023 and eligible people wanting to use PrEP had to 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 waiting lists (761 PrEP start and 993 PrEP follow-up consultations funded through municipal budgets). 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, 62 new HIV infections were diagnosed since August 2019. Out of those, 35 persons were diagnosed at the first PrEP pilot consultation and 27 were diagnosed during follow-up consultations. In 2023, there were 17 new HIV infections diagnosed among PrEP pilot participants, 6 at a PrEP start consultation and 11 at a PrEP follow-up consultation. In the summer of 2022, the PrEP pilot program was evaluated. The evaluation found that PrEP provision plays an important role in the further decline of the number of HIV infections in the Netherlands.[22] On the basis of this evaluation, the Minister of Health decided to continue the PrEP provision via the SHCs after the end of the pilot[23] and integrate the PrEP provision within the additional sexual health care regulation ('ASG-regeling') at the SHCs.

Data from the registry of HIV treatment centres of Stichting hiv monitoring showed that the number of new HIV diagnoses has been declining for years, but this decline seems to be levelling off. The decline could be explained

[20] Rutgers, Soa Aids Nederland. Seks onder je 25e: Samenvatting en conclusies van het onderzoek naar seksuele gezondheid van jongeren in Nederland anno 2023. 2023. Available from: https://rutgers.nl/onderzoeken/seks-onder-je-25e-2023/

[21] Willemstein, I ; Götz, H ; Visser, M ; Heijne, J. HIV and syphilis testing for women and heterosexual men aged above 25 years in the Netherlands: possibilities for targeted testing at sexual health centres. BMJ Open 2023; 13(9):e072862. doi: 10.1136/bmjopen-2023-072862.

[22] Rijksinstituut voor Volksgezondheid en Milieu. Cijfermatige eindevaluatie PrEP-pilot. 2023. Available from: https://www.rijksoverheid.nl/documenten/rapporten/2023/07/27/cijfermatige-eindevaluatie-prep-pilot

[23] Kuipers EJ. Bestendigen PrEP-zorg. 2023. Available from: https://www.tweedekamer.nl/kamerstukken/brieven_regering/detail?id=2023Z15893&did=2023D38739

by a number of factors, such as the efforts to diagnose and treat HIV infections as early as possible, the broader implementation and expansion of the national PrEP pilot programme, and the improved widespread access to PrEP. In 2023, 987 individuals with HIV were newly registered in care (997 in 2022). Out of these, 388 were newly diagnosed in 2023 (344 in 2022). Out of all individuals diagnosed with HIV in 2023, 46% presented late (CD4<350/mm3, or AIDS-defining event regardless of CD4 count), a decline compared with 2022 (53%). This trend was also seen among MSM (37% versus 44% in 2022). Among heterosexual men, this proportion declined from 70% in 2022 to 60% in 2023. Among women, the proportion of late presenters was slightly higher in 2023 (60%) than in 2022 (56%). However, absolute numbers in the last two groups are small. While it is good news that the percentages of late presenters are declining, there is still a relatively high proportion of individuals who are diagnosed late and do not benefit from starting treatment early on in their HIV infection.

Compared with 2022, the number of acute hepatitis B infections increased by 3% in 2023, whereas the number of chronic hepatitis B infections decreased by 3%. Furthermore, the number of MSM and sex workers entering the hepatitis B vaccination programme for risk groups increased compared with 2022, but was lower than the number of persons vaccinated in 2019. The number of acute hepatitis C infections increased slightly compared with 2022 but was much lower than in 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, probably due to infection-induced immunity and behaviour adaptations.[24] Since May 2022, 1,293 mpox infections were reported to RIVM, of which 1,260 occurred in 2022 and 33 in 2023. Since July 2022, over 19,000 persons received at least one dose of PrEP vaccination. At the end of 2023, the Health Council advised to continue the mpox PrEP vaccinations for those at risk.

Throughout 2023, multiple STI related outbreaks were discussed in the early warning meetings, including a Shigella sonnei cluster among MSM related to travelling, the increase in gonorrhoea diagnoses among young heterosexuals, and an increase in the number of gonorrhoea related keratoconjunctivitis cases.[25]

On the basis of the figures and trends in this report and the evaluations that took place in 2022, we recommend the following:

- Maintain strong STI control by facilitating 1) easy and low-threshold access to care and testing, 2) rapid and reliable results, and 3) effective treatment and prevention, especially in the light of the gonorrhoea increase among heterosexuals;
- Continue the monitoring of STI and HIV infections and sexual behaviour among key populations including PrEP users, in order to detect possible changes early; and
- Stimulate the systematic culturing of Neisseria gonorrhoeae for early detection and prevention of the transmission of resistant strains.

[24] Xiridou, M ; Miura, F ; Adam, P ; Op de Coul, E ; De Wit, J ; Wallinga J. The fading of the mpox outbreak among men who have sex with men: a mathematical modelling study. J Infect Dis 2023; doi: 10.1093/infdis/jiad414.
[25] Milligan AL, Randag A, Lekkerkerk S, et al. Br J Ophthalmol Epub. Ahead of print. doi:10.1136/bjo-2023-324750.

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
cART	Combination antiretroviral therapy
CBS	Centraal Bureau voor de Statistiek, Statistics Netherlands
CIb	Centrum Infectieziektebestrijding, Centre for Infectious Disease Control
COVID-19	Coronavirus disease 2019, ziekte veroorzaakt door het coronavirus 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
IgM	Immunoglobulin M
IDS	Laboratory for Infectious Disease 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
PPV	Primary Preventive Vaccination
PrEP	Pre-Expositie Profylaxe, Pre-Exposure Prophylaxis
PSIE	Prenatale Screening Infectieziekten en Erytrocytenimmunisatie, 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
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 often 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 or if it is a routine test, 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, if the patient immunity is suppressed, or if there is a history of hepatitis C, 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	H. Ardesch & L. Martens
GGD Hart voor Brabant	F. Lagendijk & R. Hermens
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	A. Lahaut & M. Steenbakkers

Regional SHCs

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

Laboratories

Gelre Ziekenhuizen
Jeroen Bosch Ziekenhuis 's-Hertogenbosch
Labmicta, medisch microbiologisch laboratorium
Laboratorium Microbiologie Twente Achterhoek
Streeklaboratorium Haarlem
Streeklaboratorium voor de Volksgezondheid Amsterdam
Radboud Universitair Medisch Centrum
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. Weijsenfeld.
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), Amsterdam:
HIV treating physicians: M. van der Kuip, D. Pajkrt.
HIV nurse consultants: F.M. Hessing, A.M. Weijsenfeld.

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, C. de Bree.
HIV nurse consultants: E.S. de Munnik, S. Phaf.
HIV clinical virologists/chemists: B. Deiman, A.R. Jansz, V. Scharnhorst, J. Tjhie, M.C.A. Wegdam.

DC Klinieken Lairesse – Hiv Focus Centrum, Amsterdam:
HIV treating physicians: J. Nellen*, A. van Eeden, E. Hoornenborg, S. de Stoppelaar.
HIV nurse consultants: H. Berends, 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, M.A. Mulder.

HagaZiekenhuis, Den Haag:
HIV treating physicians: E.F. Schippers*, C. van Nieuwkoop.
HIV nurse consultants: J. Geilings, E. van de Ven.
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: M. Langbein, 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 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: D. van der Sluis.
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, A. Stoop, M.E. van Wolfswinkel.
HIV nurse consultants: R.P. Ackens, M. Elasri, K. Houben-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, C. Timmer.
HIV nurse consultants: M.C. van Broekhuizen, S. Faber.
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, B. Stander.
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, S.M.E. Vrouenraets.
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. Henriet, 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, J. Rahamat-Langendoen, E. Ruizendaal.
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. Schölvinck, A.R. Verhage.
HIV nurse consultants: N. van der Woude.
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: R. Schuurman, F.M. Verduyn Lunel, A.M.J. Wensing.

Wilhelmina Kinderziekenhuis, UMC Utrecht, Utrecht:
HIV treating physicians: 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, V.W. Jongen, S. Popping, A.I. van Sighem, C. Smit, F.W.M.N. Wit.
Data HIV data management and quality control: M.M.J. Hillebregt, T.J. Woudstra, T. Rutkens
HIV data monitoring: D. Bergsma, N.M. Brétin, L.E. Koster, K.J. Lelivelt, L, M.J.C. Schoorl, K.M. Visser, S.T. van der Vliet.
HIV data collection: F. Paling, M. van den Akker, O.M. Akpomukai, R. Alexander, Y.M. Bakker, L. Bastos Sales, A. El Berkaoui, M. Bezemer-Goedhart, E.A. Djoechro, J.M. Grolleman, I. El Hammoud, M.R. Khouw, C.R.E. Lodewijk, E.G.A. Lucas, S. van Meerveld-Derks, H.W. Mulder, L. Munjishvili, C.M.J. Ree, R. Regtop, A.F. van Rijk, Y.M.C. Ruijs-Tiggelman, P.P. Schnörr, R. van Veen, W.H.G. van Vliet-Klein Gunnewiek, E.C.M Witte.
Patiënt registration: D. Bergsma, N.M. Brétin, Y.M.C. Ruijs-Tiggelman.

Appendix E Nivel Primary Care Database (Nivel-PCD)

Data collection and processing
Drs. Yvette Weesie

Researchers
Dr. Joost Vanhommerig

Project management
Dr. Lucy Overbeek

Appendix F STI publications (co-)authored by RIVM employees 2023

A survey-based assessment of rates and covariates of mpox diagnosis and vaccination provides evidence to refine eligibility criteria for mpox vaccination among gay, bisexual, and other men who have sex with men in the Netherlands. Adam, P ; Op de Coul, E ; Zantkuijl, P ; Xiridou, M ; Bos, H ; Blom, C; Ketsuwan, I ; te Wierik, M ; David, S ; de Wit, J. Frontiers in Public Health 2023; doi: 10.1101/2023.02.28.23286578v2.

Availability and accessibility of HIV self-tests and self-sample kits at community pharmacies in the Netherlands. Kandil, C ; Hugtenburg, J ; Heijman, T ; Bos, H ; Teichert, M ; Op de Coul, E ; et al. AIDS Res Ther 2023; 20(1):39. Doi: 10.1186/s12981-023-00529-9.

Characterizing subgroups of sexual behaviors among men who have sex with men eligible for, but not using, PrEP in the Netherlands. De la Court, F ; Van Wees, D ; Van Benthem, B ; Hoornenborg, E ; Prins, M ; Boyd, A. Plos One 2023; 18(4):e0284056. Doi: 10.1371/journal.pone.0284056.

Community-based HIV testing through a general health check event in a high HIV-prevalent multicultural area in Rotterdam, the Netherlands: a pilot study on feasibility and acceptance. Twisk, D ; Watzeels, A ; Götz, H. Pilot Feasibility Stud 2023; 9(1):101. Doi: 10.1186/s40814-023-01327-w.

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