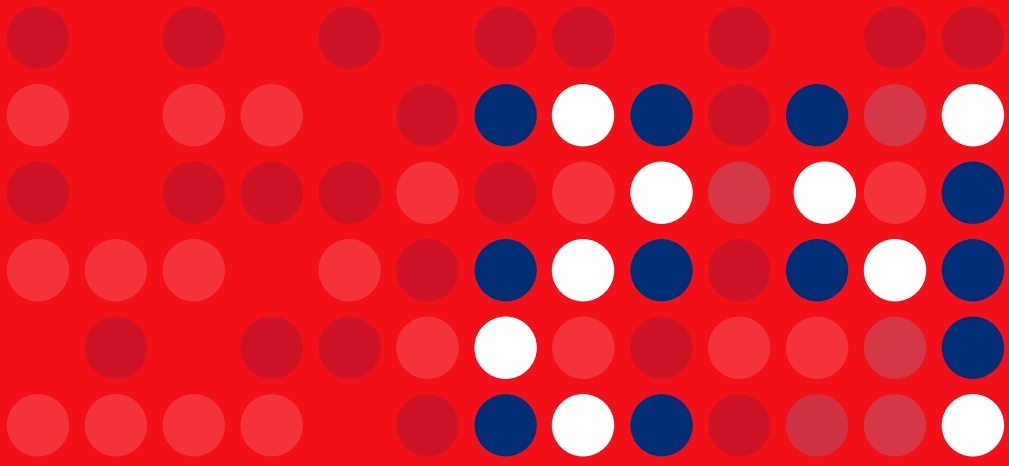
Human Immunodeficiency Virus (HIV)
Infection in the Netherlands

HIV Monitoring

HIV Monitoring Report 2024

Pre-publication chapter 2:
Prior use of pre-exposure prophylaxis (PrEP)



2. Prior use of pre-exposure prophylaxis

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Summary

The number and proportion of men who have sex with men (MSM) and transgender persons newly diagnosed with HIV in the Netherlands who report prior use of PrEP continued to increase from 7.3% (18 out of 248 individuals) in 2021, to 11.3% (27 of 240) in 2022 and 13.3% (34 of 255) in 2023. However, these are conservative estimates because individuals for whom no information about prior PrEP use was recorded in their electronic medical records (36.2% in 2023) were considered not to have used PrEP.

Of the individuals who reported prior use of PrEP and who received a genotypic resistance test prior to initiation of antiretroviral therapy (ART), 13.5% harboured resistance-associated mutations (RAMs) in the reverse transcriptase (RT) that are associated with the use of PrEP (M184VI with or without K65R RT RAMs). All individuals in whom PrEP-associated RT RAMs had been detected, were still using PrEP at the moment they tested HIV positive, or they had discontinued PrEP only a few months earlier. When limiting this analysis to individuals who had tested HIV-positive while still using PrEP or within 3 months of discontinuing PrEP, 13 (25.5%) out of 51 tested individuals harboured PrEP-associated RT RAMs. Reassuringly, the virological treatment response after initiation of ART appears to be largely unaffected by the prior use of PrEP, also in those individuals where PrEP-associated RT RAMs had been detected.

A substantial proportion (40.1%) of MSM and transgender people who reported they did not use PrEP, had indicated they would have wanted to do so, but either had no access to PrEP (22.3%), were on a PrEP waiting list when they seroconverted (2.1%), or tested HIV positive while being screened for HIV before initiating PrEP (16.8%). A further 19.3% of MSM and transgender people indicated they did not knew that PrEP existed. These proportions were fairly stable over time.

Aims

Pre-exposure prophylaxis (PrEP) is the use of antiretroviral drugs by people without HIV, to prevent HIV acquisition. In the Netherlands, individuals at high risk of HIV acquisition are eligible for the national PrEP programme at the Sexual Health Centers (SHC) of the municipal Public Health Services (GGD), which was launched in September 2019. The primary target groups of this programme are men who have sex with men (MSM) and transgender persons. Prior to this programme, PrEP use prescribed by other healthcare providers (mainly general practitioners) or accessed via informal routes like buyers' clubs, was monitored through demonstration programmes such as the AMPrEP study in Amsterdam.

In this section we describe time trends in the proportion of people newly diagnosed with HIV since 2018 who reported prior use of PrEP at the moment they enter into HIV care in the Netherlands. The primary population of interest consisted of MSM and transgender persons, who constitute the main target populations for PrEP in the Netherlands. We compared demographic and other characteristics of MSM and transgender persons who reported prior use of PrEP with those who did not.
In the group of MSM and transgender persons who did not report prior use of PrEP, we investigated their reasons and barriers for not having used PrEP.

In the group of MSM and transgender persons who did report prior use of PrEP, we evaluated if the acquisition of HIV took place while using PrEP or after discontinuation of PrEP. Furthermore, we report on acquired HIV drug resistance as a potential consequence of acquiring HIV while still using PrEP, and investigate possible impairment of the initial treatment response after start of first-line ART in this group.

Data collection

SHM collects data on prior use of PrEP in all people diagnosed with HIV from 1 January 2018 onwards who are entering care in one of the 24 Dutch HIV treatment centers. SHM has prospectively collected PrEP-related data from the electronic medical records (EMRs) of individuals with HIV first entering care, since July 2019. This is carried out in consultation and collaboration with the Dutch Association of HIV-Treating Physicians (*Nederlandse Vereniging van HIV Behandelaren*, NVHB), and the Dutch Nurses Association's HIV/AIDS nurse consultants unit ('*Verpleegkundigen & Verzorgenden Nederland – Verpleegkundig Consulenten Hiv*', V&VN VCH). Additionally, SHM retrospectively gathered information from the EMRs on prior use of PrEP by individuals who first entered into care between January 2018 and June 2019.

The population of interest for this report consists of the primary target groups for PrEP in the Netherlands: MSM and transgender men and women. In this report, cisgender men were classified as MSM when the recorded mode of HIV acquisition was 'sexual contact with other men' or 'sexual contact with men and women'. Whenever a cisgender man had another or unknown mode of HIV acquisition recorded but that man was known to have male sex partners, that individual was also grouped among the MSM.

A substantial proportion of individuals who enter into HIV care in the Netherlands, have not been born in the Netherlands, and some of them were already diagnosed with HIV before migrating to the Netherlands. Furthermore, some had used PrEP prior to migrating to the Netherlands, while others used PrEP while living in the Netherlands. When appropriate, the analyses take these factors into account.

Of note, SHM does not record data about a person's race / ethnicity, nor can we identify second or third generation migrants. In our analyses, we make a distinction between those who are born in the Netherlands versus those who were born in another country, irrespective of race / ethnicity and migrant status of their (grand)parents.

Population of interest

Between 1 January 2018 and 31 December 2023 3,566 adults were diagnosed with HIV and entered into HIV care in one of the 24 Dutch HIV treatment centers. In the EMR of 1,291 (36.2%) individuals, information was recorded on prior use of PrEP. The proportion of individuals for whom this information was available in the EMR increased from 15.4% in 2018, to 50.2% in 2023 (Figure 21, blue bars).

Of the 3,566 individuals diagnosed with HIV between 2018 and 2023 and entering HIV care, 2,203 were from the primary target groups of the Dutch PrEP programme: 2,090 cisgender MSM and 113 transgender persons. In the PrEP target groups, 911 (41.4%) out of 2,203 individuals had information about prior PrEP use available in the EMR: increasing from 16.6% in 2018, to 63.8% in 2023 (Figure 21, red bars).

The proportion of individuals newly entering in HIV care in the Netherlands, who were not born in the Netherlands, has been increasing over time. Of the 3,566 individuals, 1,586 (44.5%) were born in the Netherlands, and the remaining 1,980 (55.5%) individuals were migrants. Of these 1,980 migrants, 589 (29.8%) individuals were already diagnosed with HIV before migrating to the Netherlands, and 351 (17.7%) individuals had a negative HIV-test after they migrated to the Netherlands and hence are known to have acquired HIV after migrating to the Netherlands. For the remaining 1,040 (52.5%) migrants, we could not ascertain the country were they acquired HIV, because although these individuals first tested HIV positive while living in the Netherlands, they had no documented negative HIV test in the Netherlands. In the PrEP target groups of MSM and transgender persons, 1,828 (83.0%) out of 2,203 individuals had been diagnosed with HIV in the Netherlands, and 375 (17.0%) had been diagnosed with HIV prior to migrating to the Netherlands.

The demographic characteristics of individuals from the PrEP target groups for whom EMR information on prior PrEP use was available were largely similar to those for whom it was not (see *Table 21*).

PrEP awareness and uptake

For 322 (51.2%) of the 629 MSM and transgender people who reported no prior PrEP use and who had been newly diagnosed with HIV in the Netherlands, information was available on why they had not done so. 'Presumed to be at low risk for HIV' (25.5%), 'Not knowing PrEP existed' (19.3%), and 'Wanted to use PrEP but had no access' (18.3%) were the most commonly reported reasons. In total, 60 (18.6%) individuals had wanted to start using PrEP but tested HIV-positive at screening before entry into a PrEP programme. Eight individuals (2.5%, of whom 6 were born in the Netherlands, 2 were migrants newly diagnosed with HIV in the Netherlands) reported that they seroconverted while on a PrEP programme waiting list.

Figure 2.2A shows time trends in the reported reasons for not having used PrEP in MSM and transgender persons.

We compared the reasons for not having used PrEP between people born in the Netherlands, and those originating from western or non-western countries (Figure 2.2B). People born in the Netherlands were most likely to report 'Presumed to be at low risk for HIV' and they were least likely to report 'Not knowing PrEP existed'. People originating from non-western countries most often reported they 'Tested HIV-positive at screening before entry into a PrEP programme' or 'Not knowing PrEP existed', and they were least likely to report they 'Knew about PrEP but did not want to use it'.

Prior use of PrEP

Of the 1,291 individuals for whom information on prior use of PrEP was available in the EMR, the majority (1,142, 88.5%) reported no such use, whereas 149 (11.5%) reported prior PrEP use (*Table 2.2*).

Of the 149 people who reported prior use of PrEP, 142 were from the primary target groups for PrEP in the Netherlands: 140 MSM and 2 transgender persons. The remaining 7 individuals were 6 cisgender men and 1 cisgender woman, who were all migrants who had used PrEP prior to migrating to the Netherlands. Of the 149 individuals who reported prior PrEP use, 81 (54.4%) were migrants, 57 of which had used PrEP in the Netherlands, and 24 had used PrEP prior to migrating to the Netherlands, of whom 12 had already been diagnosed with HIV prior to migrating to the Netherlands.

The 149 individuals who reported prior use of PrEP were younger and had higher CD4 counts at diagnosis compared to those who did not use PrEP.

We calculated percentages of prior PrEP use of all 1,828 MSM and transgender people who were newly diagnosed with HIV in the Netherlands between 2018 and 2023. We conservatively assumed that when no explicit mention was made in the EMR about prior use of PrEP, the individuals had not used it. The percentage of MSM and transgender people newly diagnosed with HIV in the Netherlands for which prior PrEP use was recorded in the EMR has increased since 2019 (P_{trend}<0.0001, see Figure 2.3, red bars), with 2.0% in 2018, 4.7% in 2019, 6.7% in 2020, 7.3% in 2021, 11.3% in 2022, and 13.3% in 2023. When also including those MSM and transgender people who were diagnosed with HIV prior to migrating to the Netherlands (n=2,203), the proportions remained similar: 1.6% in 2018, 4.4% in 2019, 7.3% in 2020, 7.2% in 2021, 10.8% in 2022, and 14.2% in 2023 (see Figure 2.3, blue bars).

Access to PrEP and usage patterns

The characteristics of all 149 individuals who reported prior use of PrEP are shown in *Table 2.3*, with a stratification by those who used PrEP in the Netherlands and those who used it while still living abroad, with migrants who initiated PrEP before they migrated to the Netherlands but who continued using PrEP after they migrated to the Netherlands being included into the former group.

Of the 149 individuals who reported prior PrEP use, 24 (16.1%) were migrants who had used PrEP before moving to the Netherlands. There were 125 individuals who had used PrEP in the Netherlands, 3 of these had started PrEP before migrating to the Netherlands but continued using it until after they migrated to the Netherlands. In the remainder of this chapter we will report on these 125 individuals who had used PrEP while living in the Netherlands.

Of the 125 individuals who had used PrEP in the Netherlands, 76 (60.8%) obtained it from a healthcare provider in the Netherlands (see Table 2.3), comprising the Municipal Public Health Service (n=41), family practitioner (26), HIV treatment center (5), and other medical specialist (1). There was no further detailed information available for 3 individuals. The remaining individuals for whom this information was recorded, obtained their PrEP:

- through informal routes: buyers' club/internet/store outside of the Netherlands (15);
- from a healthcare provider outside of the Netherlands (4); or
- from a friend living with HIV who had donated some of their own medication (3).

There was no information available about the PrEP provider for the remaining 27 individuals.

Dosage schedule information was available for 78 individuals:

- 45 individuals (36.0%) reported on-demand use
- 30 individuals (24.0%) reported daily use
- 3 individuals (2.4%) reported having used PrEP less than a week

For the remaining 46 individuals (36.8%), no dosage schedule information was available.

Of the 125 individuals who reported prior PrEP use, 41 (32.8%) had regular medical check-ups at the Municipal Public Health Service during that period, 7 individuals (5.6%) attended an HIV treatment center, 17 (13.6%) were seen by a family practitioner, and 2 individuals (1.6%) were checked by a medical specialist other than HIV treatment center staff. Seventeen individuals (13.6%) reported that they did not have any medical check-ups, and there was no information available for the remaining 41 individuals (32.8%). Most of the 17 individuals who reported they had received no medical check-ups had obtained PrEP via informal means, only 4 of them had received their PrEP from a healthcare provider in the Netherlands (2 of these 4 had used PrEP for less than 1 month). Figure 2.4 shows the time trends in the PrEP providers of the MSM and transgender people who had used PrEP while living in the Netherlands.

Of the 24 individuals who had used PrEP before migrating to the Netherlands, 2 were known to have seroconverted in the Netherlands (they both had an earlier negative HIV test performed after migration to the Netherlands). Twelve of those 24 individuals had already tested HIV positive before migrating to the Netherlands, and for 10 individuals it is uncertain if they seroconverted before or after migrating to the Netherlands.

The median (IQR) number of days between the last dose of PrEP and testing HIV-positive was calculated only for those individuals for which the relevant dates were known with sufficient precision (to within a month) and was 26 (0-132) days. A total of 37 (29.6%) individuals tested HIV-positive while still using PrEP. Of the 88 individuals who did not test HIV-positive while taking PrEP, 32 reported having tested HIV-seronegative after their last use of PrEP, while 35 did not have an HIV-test shortly after discontinuing the use of PrEP. There was no information available for 21 individuals.

PrEP and possible drug resistance

Genotypic resistance test results were available for 101 (80.8%) of the 125 individuals who reported having used PrEP in the Netherlands when first entering HIV care. Reverse transcriptase (RT) resistance-associated mutations (RAM)[a], associated with the use of PrEP, were detected in 13 individuals (12.9%). All 13 individuals harboured an M184VI RT RAM (which decreases susceptibility to lamivudine and emtricitabine), and 2 of these also harboured a K65R RT RAM (which is selected for by tenofovir and decreases susceptibility to tenofovir, abacavir, lamivudine and emtricitabine).

All 13 individuals in whom M184VI RT RAM (with or without K65R RT RAM) had been detected, were still using PrEP at the moment they tested HIV positive, or they had last used PrEP only a few months before testing positive. There were 62 individuals who had tested HIV-positive while still using PrEP or within 3 months of discontinuing PrEP, 51 of these 62 individuals had received a genotypic resistance test, and 13 (25.5%) harboured PrEP-associated RAMs.

In the 24 individuals who had used PrEP prior to migrating to the Netherlands, 10 (41.7%) had genotypic resistance test results available, 2 of which showed M184VI RT resistance-associated mutations.

Prior use of PrEP and antiretroviral therapy (ART)

We investigated the virological treatment response to first-line antiretroviral therapy in the 134 people who had reported prior use of PrEP and who had been diagnosed with HIV in the Netherlands and subsequently initiated ART. Data on the subsequent virological treatment response was available for 132 of these 134 individuals. These include 14 of the 15 individuals with M184VI (with or without K65R) RT RAM, all of whom started a regimen containing an integrase inhibitor. Nine of these combined the integrase inhibitor together with a protease inhibitor with or without additional nucleoside-analogue RT inhibitors (NRTIs). The remaining 5 individuals combined an integrase inhibitor with two NRTIs.

a All RT RAMs mentioned in this chapter start and end with capital letters; i.e. M184VI ends in the capital letter 'i' and should not be confused with the number 1.

Of the individuals with either no baseline resistance test results, or whose test showed no evidence of the M184VI or K65R RT RAM, 120 initiated a first-line regimen consisting of:

- an integrase inhibitor plus two NRTIs (n=83)
- a protease inhibitor plus two NRTIs (n=3)
- an integrase inhibitor plus a protease inhibitor, with or without additional NRTIs (n=27)
- a non-nucleoside RT inhibitor plus two NRTIs (n=4)
- lamivudine / dolutegravir (n=3)

The 14 individuals with an RT RAM had a median follow-up time of 132.0 (IQR 78.9-238.3) weeks after initiating ART. In one of these 14 individuals with a M184VI (but without K65R) RT RAM the first-line regimen was discontinued due to a persistent suboptimal virological efficacy. This individual's plasma viral load had initially become undetectable three months after starting on tenofovir alafenamide / emtricitabine / bictegravir. However, in the following two-year period all eight recorded viral load measurements showed detectable viremia. The highest recorded value was 253 copies/ml. Eventually, ART was switched to a triple-class regimen consisting of 2 NRTI plus an INSTI plus a boosted protease inhibitor, after which the viral load durably became undetectable. Later, the regimen was simplified to a two-class single-tablet regimen (bictegravir / TAF / emtricitabine).
In another individual with M184VI (but without K65R) RT RAM the plasma viral load quickly dropped to below 100 copies/mL, but remained detectable on all measurements up to 1.5 years after initiating cART with dolutegravir / TDF / emtricitabine (range 61-97 copies/mL).
The remaining 12 individuals with M184VI (two of them also had a K65R) all had an optimal treatment response with successfully sustained viral suppression after initiating cART.

For the 120 individuals with no evidence of M184VI (with or without K65R RT RAM) in the baseline resistance test or for whom no test data was available, all 118 individuals with viral load measurements available at least four months after the initiation of ART showed an adequate initial virological treatment response (defined as a decrease to below 200 copies/ml). The median follow-up time was 82.1 (IQR 41.4-168.8) weeks. In seven individuals a viral rebound (defined as having a viral load measurement above 200 copies/ml following an initial treatment response) was recorded. In six of these seven individuals the viral rebound occurred because they temporarily interrupted the use of ART. Five of these six individuals re-suppressed after restarting the same or another ART regimen, except for

one individual who developed virological failure after restarting the same NNRTI-based triple regimen, and was subsequently switched to a second line regimen containing a protease inhibitor plus integrase inhibitor after which the viral load durably re-suppressed. The three individuals who initiated ART with dolutegravir / lamivudine all quickly became undetectable and experienced no viral breakthrough.

Conclusions

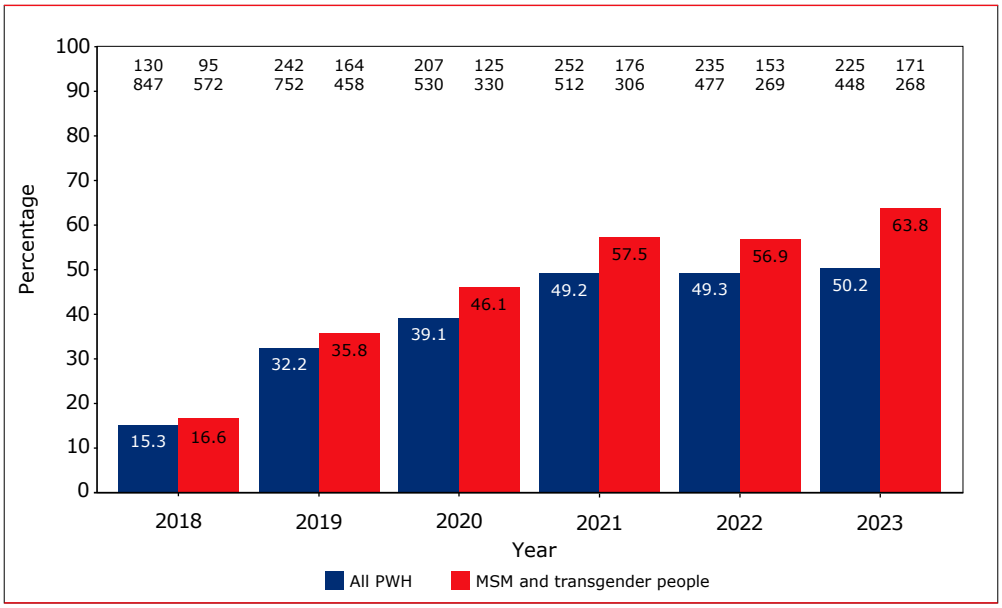
The number and proportion of newly diagnosed MSM and transgender individuals entering HIV care who reported prior use of PrEP continued to increase. In 2023, 14.2% (n=38) of newly diagnosed MSM and transgender people reported prior use of PrEP. However, this is probably a conservative estimate because in this analysis individuals for whom no explicit information about prior PrEP use was recorded in their EMR were considered not to have used PrEP. The observed increase over time cannot be completely explained by health care providers being more aware of and hence better documenting prior PrEP use.

The individuals who indicated they had used PrEP are a very heterogeneous group. Of the 149 individuals who reported prior PrEP use, 24 (16.1%) were migrants who had used PrEP before moving to the Netherlands. There were 125 individuals who had used PrEP in the Netherlands, 76 (60.8%) obtained it from a healthcare provider in the Netherlands. Seven individuals who had used PrEP did not belong to one of the target groups for PrEP in the Netherlands, these were either migrants who used PrEP before migrating to the Netherlands, or they were individuals who had obtained PrEP through informal means.

Of those individuals who had used PrEP in the Netherlands, 37 (29.6%) were diagnosed with HIV while still using PrEP. Of the 111 individuals who reported prior use of PrEP and who received a genotypic resistance test prior to initiation of ART, 15 (13.5%) were found to harbour resistance mutations that were probably associated with the continued use of PrEP after seroconversion. Reassuringly, the virological treatment response after initiation of ART appeared to be unaffected by the prior use of PrEP, also in those individuals where resistance mutations had been detected.

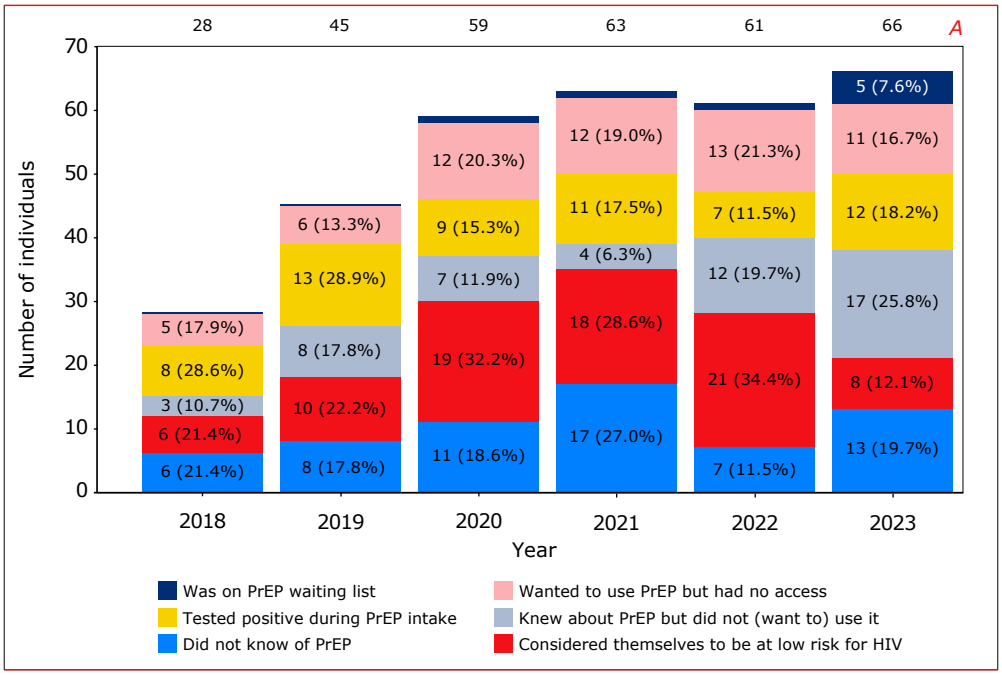
A substantial proportion (40.1%) of MSM and transgender people who reported they did not use PrEP and for whom information were available on the reasons for not doing so, had indicated they would have wanted to do so, but either had no access to PrEP (22.3%), were on a PrEP waiting list when they seroconverted (2.1%), or tested HIV positive while being screened for HIV before initiating PrEP (16.8%).

Figure 2.1: *Number and proportion of individuals diagnosed with HIV per calendar year for whom information on prior use of PrEP is available.*



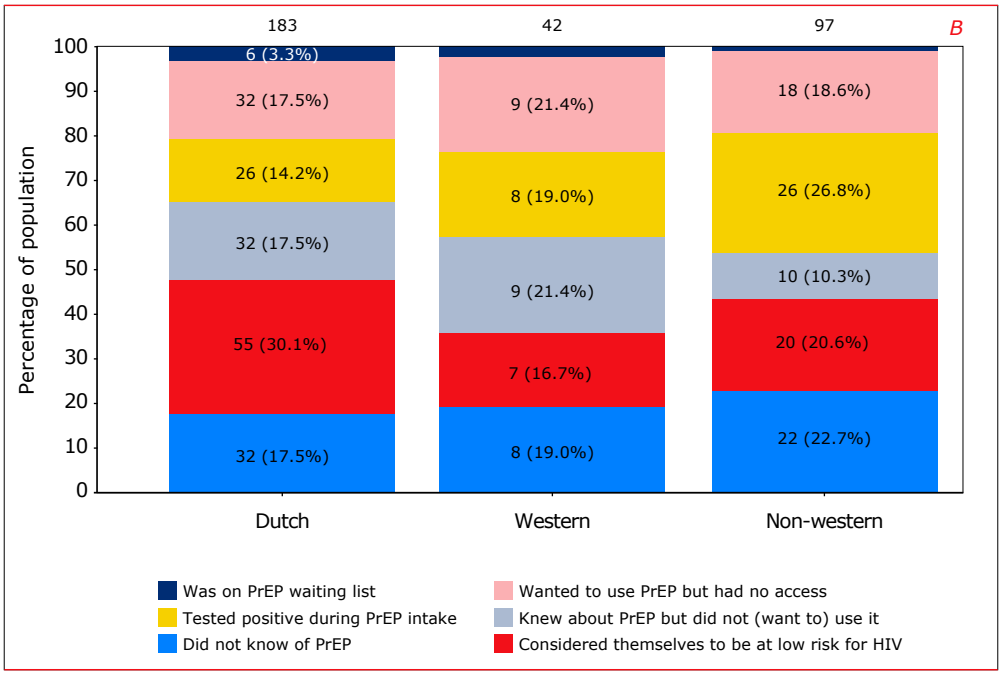
Legend: *The numbers in the top line are the number of individuals for whom information on prior use of PrEP is available in their electronic medical records. The second line is the total cohort size of each calendar year.*

Figure 2.2A: *Time trends in the reported reasons for not having used PrEP in MSM and transgender persons newly diagnosed with HIV in the Netherlands.*



Legend: *The numbers in the top line are the total number of MSM and transgender persons per calendar year for whom the reason was known why they had not used PrEP.*

Figure 2.2B: *Reported reasons for not having used PrEP in MSM and transgender persons newly diagnosed with HIV in the Netherlands, stratified by region of birth*



Legend: *The numbers in the top line are the total number of people born on the Netherlands, in western countries, and in non-western countries for whom the reason was known why they had not used PrEP.*

Figure 2.3: Time trends in the number and proportion of MSM and transgender people newly diagnosed with HIV who reported prior use of PrEP.

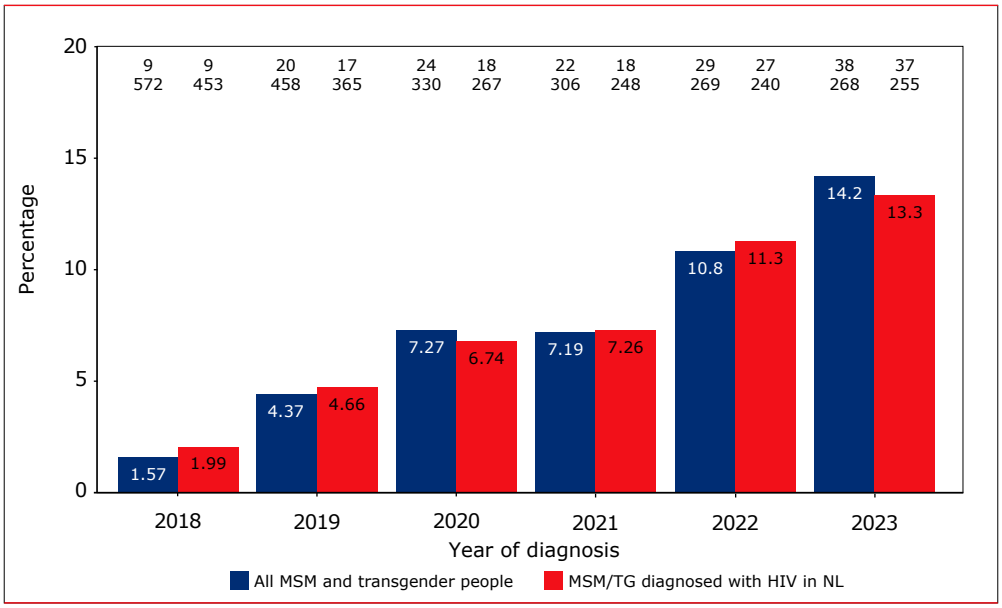


Figure legend: The numbers in the top line are the number of people who reported prior use of PrEP. The numbers in the second line are the cohort size of that calendar year.

Figure 2.4: Time trends in the number and proportion of MSM and transgender people newly diagnosed with HIV reporting prior use of PrEP while living in the Netherlands, stratified by PrEP provider.

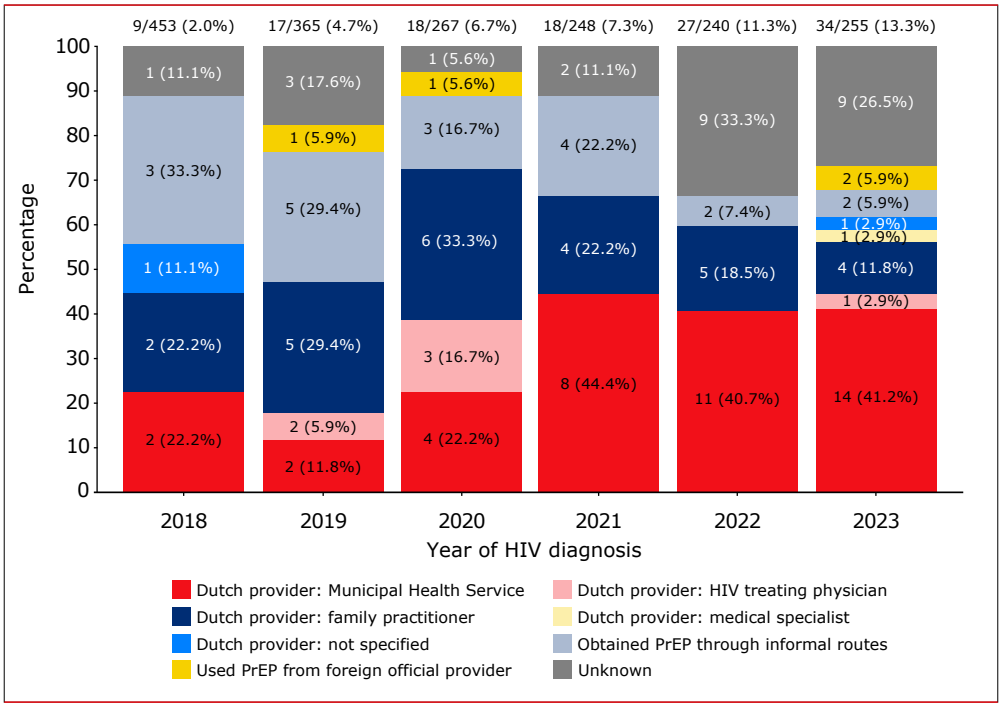


Table 2.1: Comparison of characteristics of MSM and transgender persons (ie PrEP target groups) who did or did not have information available on prior PrEP use

	Info on PrEP available	No info available	p-value
Number of subjects	911 (41.4%)	1292 (58.6%)	
Age	34 (27.8-46.4)	35.3 (27.9-48.1)	0.215
HIV acquisition group			1.000
MSM	864 (94.8%)	1226 (94.9%)	
Other men	0 (0.0%)	0 (0.0%)	
Women	0 (0.0%)	0 (0.0%)	
Transgender people	47 (5.2%)	66 (5.1%)	
Region of birth			0.255
Born in the Netherlands	428 (47.0%)	626 (48.5%)	
Migrant, western background	151 (16.6%)	181 (14.0%)	
Migrant, non-western background	332 (36.4%)	485 (37.5%)	
Documented seroconversion in NL or before migration*			0.656
In the Netherlands	129 (26.7%)	138 (20.7%)	
Before migration to the Netherlands	149 (30.8%)	226 (33.9%)	
Unknown / uncertain	205 (42.4%)	302 (45.3%)	
Recent HIV acquisition			
Tested pos. <365 days after last neg. test	314 (34.5%)	291 (22.5%)	<.001
Tested pos. <180 days after last neg. test	185 (20.3%)	140 (10.8%)	<.001
CD4 at HIV diagnosis	460 (283-660)	420 (230-616)	<.001

***Legend:** * Calculated for migrants only.*

Table 2.2: *Comparison of individuals with and without prior use of PrEP*

	Prior use of PrEP	No prior use, target groups, diagnosed in NL	No prior use, other groups, diagnosed abroad	p-value
Number of subjects	149 (16.2%)	629 (68.5%)	140 (15.3%)	
Age	32.4 (27.1-43.5)	37.2 (29.2-49.8)	28.7 (24.6-33.4)	<.001
HIV acquisition group				<.001
MSM	140 (94.0%)	596 (94.8%)	128 (91.4%)	
Other men	6 (4.0%)	0 (0.0%)	0 (0.0%)	
Women	1 (0.7%)	0 (0.0%)	0 (0.0%)	
Transgender people	2 (1.3%)	33 (5.2%)	12 (8.6%)	
Region of birth				<.001
Born in the Netherlands	68 (45.6%)	361 (57.4%)	0 (0.0%)	
Migrant, western background	26 (17.4%)	89 (14.1%)	37 (26.4%)	
Migrant, non-western background	55 (36.9%)	179 (28.5%)	103 (73.6%)	
Documented seroconversion in NL or before migration*				<.001
In the Netherlands	42 (51.9%)	89 (33.2%)	0 (0.0%)	
Before migration to the Netherlands	12 (14.8%)	0 (0.0%)	140 (100%)	
Unknown / uncertain	27 (33.3%)	179 (66.8%)	0 (0.0%)	
Recent HIV acquisition				
Tested pos. <365 days after last neg. test	108 (72.5%)	181 (28.8%)	30 (21.4%)	<.001
Tested pos. <180 days after last neg. test	70 (47.0%)	107 (17.0%)	11 (7.9%)	<.001
CD4 at HIV diagnosis	570 (379-720)	420 (241-600)	593 (365-832)	<.001
Late presenter (CD4<350)	30 (20.3%)	244 (38.8%)	34 (24.5%)	<.001
Very late presenter (CD4<200 or AIDS)	10 (6.7%)	127 (20.2%)	9 (6.4%)	<.001
Reason known for not having used PrEP	n.a.	322 (51.2%)	59 (42.1%)	<.001
Reasons for not having used PrEP				
Did not know of PrEP	n.a.	62 (19.3%)	15 (25.4%)	
Presumed to be at low risk for HIV	n.a.	82 (25.5%)	12 (20.3%)	
Knew PrEP but did not want to use it	n.a.	51 (15.8%)	2 (3.4%)	
Tested positive at PrEP intake	n.a.	60 (18.6%)	4 (6.8%)	
Wanted PrEP but had no access	n.a.	59 (18.3%)	26 (44.1%)	
Was on PrEP waiting list	n.a.	8 (2.5%)	0 (0.0%)	

Legend: *target group = MSM and transgender people; n.a. = not applicable; * Calculated for migrants only.*

Table 2.3: characteristics of individuals who reported use of PrEP

	PrEP used in the Netherlands	PrEP used abroad	p-value
Number of subjects	125 (83.9%)	24 (16.1%)	
Age	32.7 (27.1-46)	30.6 (25.9-34.3)	0.093
HIV acquisition group			<.001
MSM	123 (98.4%)	17 (70.8%)	
Other men	2 (1.6%)	4 (16.7%)	
Women	0 (0.0%)	1 (4.2%)	
Transgender people	0 (0.0%)	2 (8.3%)	
Region of birth			<.001
Born in the Netherlands	68 (54.4%)	0 (0.0%)	
Migrant, western background	17 (13.6%)	9 (37.5%)	
Migrant, non-western background	40 (32.0%)	15 (62.5%)	
STD diagnosed at entry into care			
HBV (HBV surface antigen positive)	1 (0.8%)	1 (4.2%)	0.189
HBV (HBV core antibody positive)	18 (14.4%)	4 (16.7%)	0.774
HCV (antibody positive)	2 (1.6%)	0 (0.0%)	0.533
Syphilis (RPR/VDRL positive)	34 (27.2%)	9 (37.5%)	0.308
PrEP started before migrating to the Netherlands	3 (2.4%)	24 (100%)	
PrEP provider			<.001
Provider in the Netherlands	76 (60.8%)	0 (0.0%)	
- Public Health Service	41 (32.8%)	0 (0.0%)	
- HIV treatment center	5 (4.0%)	0 (0.0%)	
- Family practitioner	26 (20.8%)	0 (0.0%)	
- Medical specialist	1 (0.8%)	0 (0.0%)	
- No info	3 (2.4%)	0 (0.0%)	
Provider outside of the Netherlands	4 (3.2%)	7 (29.2%)	
Obtained PrEP through informal routes	15 (12.0%)	5 (20.8%)	
From friend living with HIV	3 (2.4%)	1 (4.2%)	
No info	27 (21.6%)	11 (45.8%)	
Seroconversion during PrEP use			
Tested HIV-positive while on PrEP	37 (29.6%)	2 (8.3%)	
HIV-negative test performed after last dose of PrEP	32 (36.4%)	7 (31.8%)	
No HIV-negative test performed after last dose of PrEP	35 (39.8%)	14 (63.6%)	
Unknown if HIV test was performed after last dose of PrEP	21 (23.9%)	1 (4.5%)	
Seroconverted in the Netherlands or before migration			<.001
In the Netherlands	108 (86.4%)	2 (8.3%)	
Before migration to the Netherlands	0 (0.0%)	12 (50.0%)	
Unknown / uncertain	17 (13.6%)	10 (41.7%)	
Days between last PrEP use and testing HIV-positive **	26 (0-132)	86 (61-121)	0.250

	PrEP used in the Netherlands	PrEP used abroad	p-value
Recent HIV acquisition			
Tested pos. <365 days after last neg. test	98 (78.4%)	10 (41.7%)	<.001
Tested pos. <180 days after last neg. test	65 (52.0%)	5 (20.8%)	0.005
CD4 at HIV diagnosis	540 (374-727)	581 (471-680)	0.478
ARVs used for PrEP			0.066
TDF/FTC	66 (52.8%)	8 (33.3%)	
Genvoya	0 (0.0%)	1 (4.2%)	
Unspecified	58 (46.4%)	15 (62.5%)	
PrEP schedule			0.761
On demand	45 (36.0%)	6 (25.0%)	
Daily	30 (24.0%)	6 (25.0%)	
No data	46 (36.8%)	12 (50.0%)	
Used PrEP <1 week	3 (2.4%)	0 (0.0%)	
Duration of PrEP use (days)	112 (30-291)	49 (22-211)	0.617
Routine medical check-ups while on PrEP			<.001
Public Health Service	41 (32.8%)	0 (0.0%)	
Family practitioner	17 (13.6%)	0 (0.0%)	
HIV treatment center	7 (5.6%)	0 (0.0%)	
Other healthcare provider	2 (1.6%)	2 (8.3%)	
No medical check-ups	17 (13.6%)	3 (12.5%)	
No data	41 (32.8%)	19 (79.2%)	
Resistance test performed after testing HIV-positive	101 (80.8%)	10 (41.7%)	<.001
Resistance associated mutations in RT			
M184VI	13 (12.9%)	2 (20.0%)	
K65R	2 (2.0%)	0 (0.0%)	

Table legend: ** Calculated for migrants only; ** Zero days means person was diagnosed with HIV during PrEP use STI sexually transmitted infection*