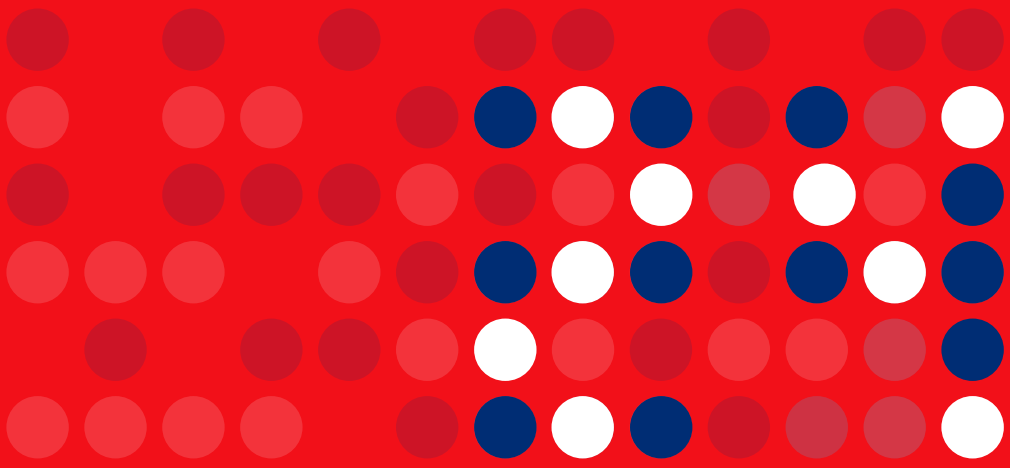
Human Immunodeficiency Virus (HIV)
Infection in the Netherlands

HIV Monitoring

HIV Monitoring Report 2024

Chapter 11: Curaçao



11. Curaçao

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Introduction

Since 2005, stichting hiv monitoring (SHM) has assisted in collecting demographic and clinical data on individuals with HIV receiving care at the sole general hospital St. Elisabeth Hospital and its successor Curaçao Medical Center in Willemstad, Curaçao. An extensive database has been established as a result of this registration and monitoring. This is unique for the region and gives a clear picture of the population with HIV, the effectiveness of HIV care, and the challenges that exist in this relatively small Caribbean setting. This chapter presents a concise overview of the current situation for people with HIV in Curaçao.

In total, 1,458 individuals with HIV recorded by SHM have been registered in Curaçao. Of these people, the majority were diagnosed with HIV-1 (n=1,444, or 99%), while one individual was diagnosed with HIV-2, and three had antibodies against both HIV-1 and HIV-2 (*Figure 11.1*). For 10 individuals, serological results on HIV type were not available in the SHM database.

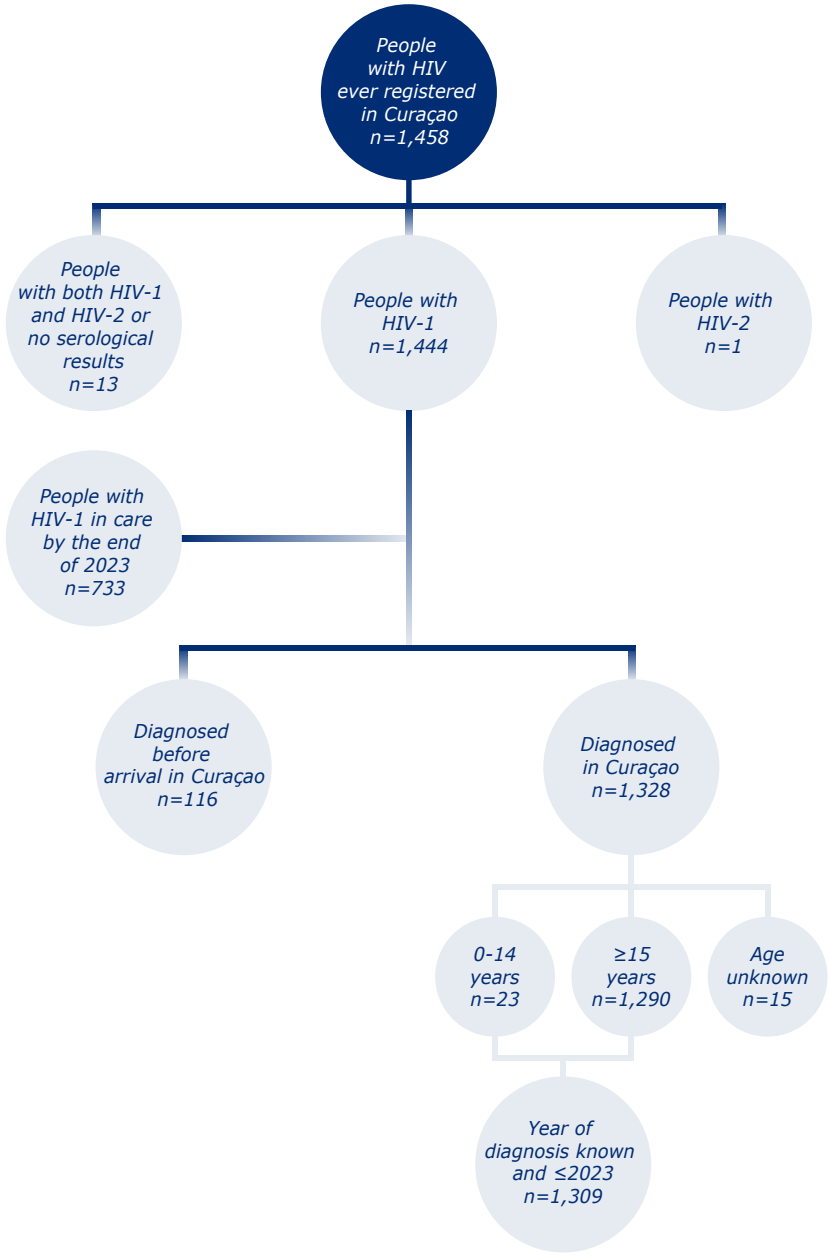
The population with HIV-1 in Curaçao

Of the 1,444 individuals in Curaçao with HIV-1, 116 (8%) had a documented HIV diagnosis prior to arrival in Curaçao (*Figure 11.1*). The remaining 1,328 individuals were newly diagnosed while living in Curaçao, or their date of arrival in Curaçao has not yet been recorded in the SHM database.

Individuals diagnosed before arriving in Curaçao

The 116 individuals with a documented HIV-1 diagnosis prior to arrival in Curaçao included 98 (84%) people who were registered with an HIV treatment centre in the Netherlands prior to moving to Curaçao (*Figure 11.1*). The majority of these 98 individuals (n=73, or 74%) originated from the former Netherlands Antilles, while 20 (20%) were born in the Netherlands and five (5%) were born elsewhere. The other 18 individuals with pre-migration diagnosis were also born abroad, including 5 in Venezuela. All 8 people arriving in Curaçao in 2021-2023 with a documented HIV-1 diagnosis prior to arrival had a suppressed viral load below 200 copies/ml (*Figure 11.2*).

Figure 11.1: *Overview of the population with HIV registered in Curaçao.*



Individuals newly diagnosed in Curaçao

Altogether, 1,328 individuals were newly diagnosed while living in Curaçao, or information on where they lived at the time of diagnosis was not yet available (*Figure 11.1*). Of these 1,328 individuals, 990 (75%) were born in the former Netherlands Antilles, 117 (9%) originated from Haiti, 95 (7%) from the Dominican Republic, 28 (2%) from Jamaica, 22 (2%) from Colombia, 20 (2%) from Venezuela, and 56 (4%) from other countries.

For 19 (1%) of the 1,328 individuals diagnosed while living in Curaçao, the date or interval of diagnosis was not recorded in the SHM database, or they were diagnosed in 2023. The remaining 1,309 individuals comprised (*Table 11.1*):

- 257 (20%) men who have sex with men (MSM);
- 560 (43%) other men,
  - 333 (59%) of whom reported sex with women as the most likely mode of transmission
  - 227 (41%) reported other or unknown modes of transmission;
- 464 (35%) women,
  - 450 (97%) of whom reported sex with men as the most likely mode of transmission
  - 14 (3%) reported other or unknown modes of transmission;
- 5 transgender men and women;
- 23 (2%) children diagnosed before the age of 15 years.

Between 2000 and 2018, the annual number of newly-diagnosed infections hovered around 50, before decreasing to around 35 in most recent calendar years (*Table 11.1*; *Figure 11.2*).

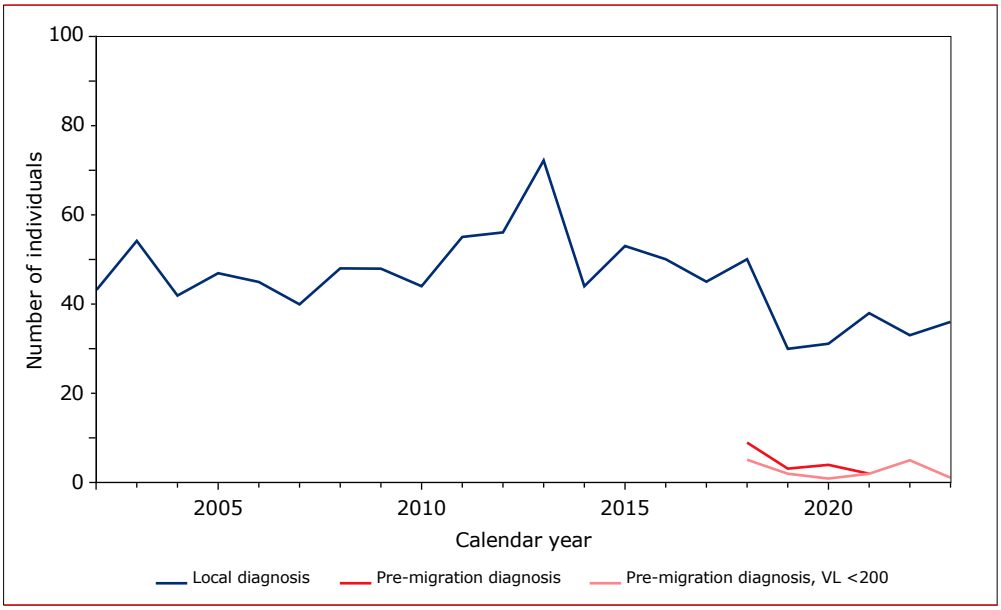
Table 11.1: Annual number of HIV-1 diagnoses in Curaçao among men who have sex with men, other men, women, and trans men and women diagnosed at 15 years of age and over, and children under 15 years.

Year of diagnosis	MSM	Other men	Women	Trans men and women	<15 years of age	Total
≤2001	41	136	109	1	18	305
2002	7	19	17	0	0	43
2003	8	28	18	0	0	54
2004	3	23	16	0	0	42
2005	11	19	17	0	0	47
2006	6	22	17	0	0	45
2007	12	18	10	0	0	40
2008	10	17	19	1	1	48
2009	9	17	21	0	1	48
2010	4	19	21	0	0	44
2011	12	19	24	0	0	55
2012	12	18	26	0	0	56
2013	18	30	22	1	1	72
2014	16	14	14	0	0	44
2015	16	23	12	1	1	53
2016	12	23	15	0	0	50
2017	14	18	13	0	0	45
2018	17	13	19	1	0	50
2019	7	15	8	0	0	30
2020	7	12	12	0	0	31
2021	5	22	10	0	1	38
2022	3	16	14	0	0	33
2023	7	19	10	0	0	36
Total	**257**	**560**	**464**	**5**	**23**	**1,309**

Note: *Data collection for 2023 may not have been finalised at the time of writing.*

Legend: *MSM = men who have sex with men.*

Figure 11.2: *Annual number of individuals newly diagnosed with HIV-1 in Curaçao (by year of diagnosis) or with documented diagnosis abroad before moving to Curaçao (by year of arrival). VL <200: individuals with documented diagnosis abroad before moving to Curaçao who already had a suppressed viral load below 200 copies/ml by the time they entered HIV care in Curaçao. NB: information on diagnosis abroad and date of arrival in Curaçao has been recorded for all newly registered individuals since early 2018, but is not yet available for everyone.*



Among the 107 individuals diagnosed in 2021-2023, the median age at diagnosis was 36 years (interquartile range [IQR] 28-50), with no differences between men and women. Of these 107 individuals:

- 31 (29%) were younger than 30 years of age at the time of diagnosis;
- 28 (26%) were aged between 30 and 39 years;
- 23 (21%) were aged between 40 and 49 years; and
- 25 (23%) were aged 50 years and over.

People in clinical care

In total, 733 (51%) of the 1,444 registered individuals with HIV-1 were known to be in clinical care in Curaçao by the end of 2023. People were considered to be in clinical care if they had visited their treating physician in 2023, or had a CD4 cell count or HIV RNA measurement during that year, and had not moved abroad. Of the 711 individuals who, according to this definition, were not in care by the end of 2023:

- 228 (32%) were known to have died;
- 196 (28%) had moved abroad; and
- 280 (39%) were lost to care

The remaining 7 individuals only entered HIV care in 2024. Of the 280 people lost to care, 56 (20%) had their last visit within a year of entering care, while another 30 (11%) had no follow-up visit after entering care. Of those lost to care:

- 164 (59%) originated from the former Netherlands Antilles;
- 49 (18%) were from Haiti;
- 29 (10%) were from the Dominican Republic; and
- 38 (14%) were from other countries.

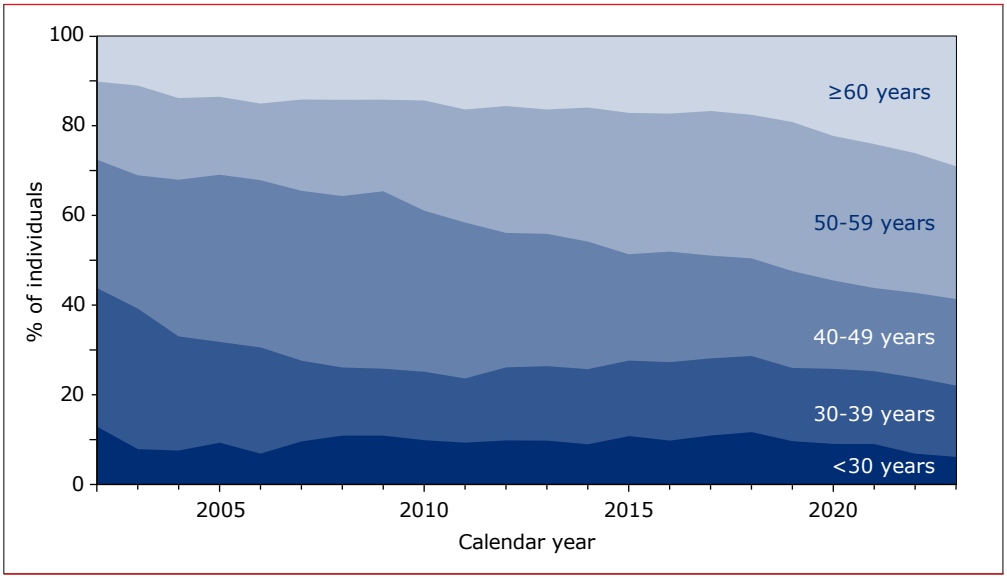
The 733 people in clinical care in 2023 included 8 individuals who did not have a clinical visit, CD4 cell count or HIV RNA measurement in 2022, but had previously received care for their HIV infection. Three of these individuals had not been in care for more than three years.

Of the 696 people who were still in care by the end of 2019, i.e., the last year before the COVID-19 pandemic, 39 (6%) did not have a clinical visit or HIV RNA or CD4 measurement in 2020. Of these 39 people, 3 had died and 10 were back in care in 2023 (including 3 individuals who had moved to the Netherlands), while the remaining 26 individuals were still lost to care.

Ageing population

The median age of the population in care by the end of 2023 was 54 years (IQR 41-61), a figure which has been increasing since 2002 (*Figure 11.3*). This increase is mainly a result of the improved life expectancy of individuals with HIV following the introduction of combination antiretroviral therapy (ART). As a result, more than half of all people currently in care (59%) are aged 50 years and over, including 57% of men and 63% of women. More than a quarter of those in care (29%) are 60 years and over.

Figure 11.3: *Increasing age of the population with HIV-1 in clinical care in Curaçao over calendar time. In 2002, 13% of the people in care were younger than 30 years of age, whereas 28% were 50 years and over. In 2023, these proportions were 6% and 59%, respectively, while 29% of people in care were 60 years of age and over. The proportion of people in clinical care as of 31 December of each calendar year is shown according to those who were <30 years of age, 30-39 years, 40-49 years, 50-59 years, and 60 years and over.*



Duration of infection

People in care by the end of 2023 had been diagnosed with HIV a median of 11.9 years (IQR 6.3-18.3) previously. Therefore, a large group (59%) has lived with HIV for more than 10 years; 20% for more than 20 years (*Table 11.2*). The median time since diagnosis was 12.4 years for MSM, 10.6 years for other men, and 12.8 years for women.

Table 11.2: Characteristics of the 733 individuals with an HIV-1 infection in clinical care in Curaçao by the end of 2023.

	MSM (n= 151, 21%)		Other men (n=303, 41%)		Women (n=278, 38%)		Total * (n=733)	
	n	%	n	%	n	%	n	%
Transmission								
Sex with men	110	73	–	–	268	96	379	52
Sex with women	1	1	172	57	0	0	173	24
Sex, partner unspecified	39	26	8	3	0	0	47	6
Other/unknown	1	1	123	41	10	4	134	18
Current age (years)								
0–14	0	0	1	0	2	1	3	0
15–24	4	3	5	2	6	2	15	2
25–29	4	3	13	4	8	3	25	3
30–39	28	19	51	17	36	13	116	16
40–49	40	26	51	17	51	18	142	19
50–59	49	32	83	27	85	31	217	30
60–69	16	11	72	24	68	24	156	21
≥70	10	7	27	9	22	8	59	8
Country of origin								
Former Netherlands Antilles	127	84	240	79	186	67	554	76
The Dominican Republic	1	1	10	3	40	14	51	7
Haiti	0	0	27	9	25	9	52	7
Colombia	8	5	7	2	4	1	19	3
Venezuela	6	4	8	3	2	1	16	2
Jamaica	0	0	3	1	10	4	13	2
The Netherlands	6	4	3	1	0	0	9	1
Other	3	2	5	2	11	4	19	3
Years aware of HIV infection								
<1	7	5	17	6	9	3	33	5
1–2	6	4	36	12	25	9	67	9
3–4	11	7	22	7	14	5	47	6
5–9	35	23	62	20	51	18	149	20
10–19	61	40	112	37	116	42	289	39
20–29	22	15	48	16	54	19	124	17
≥30	9	6	6	2	8	3	23	3
Unknown	0	0	0	0	1	0	1	0

** Includes one trans individual.*

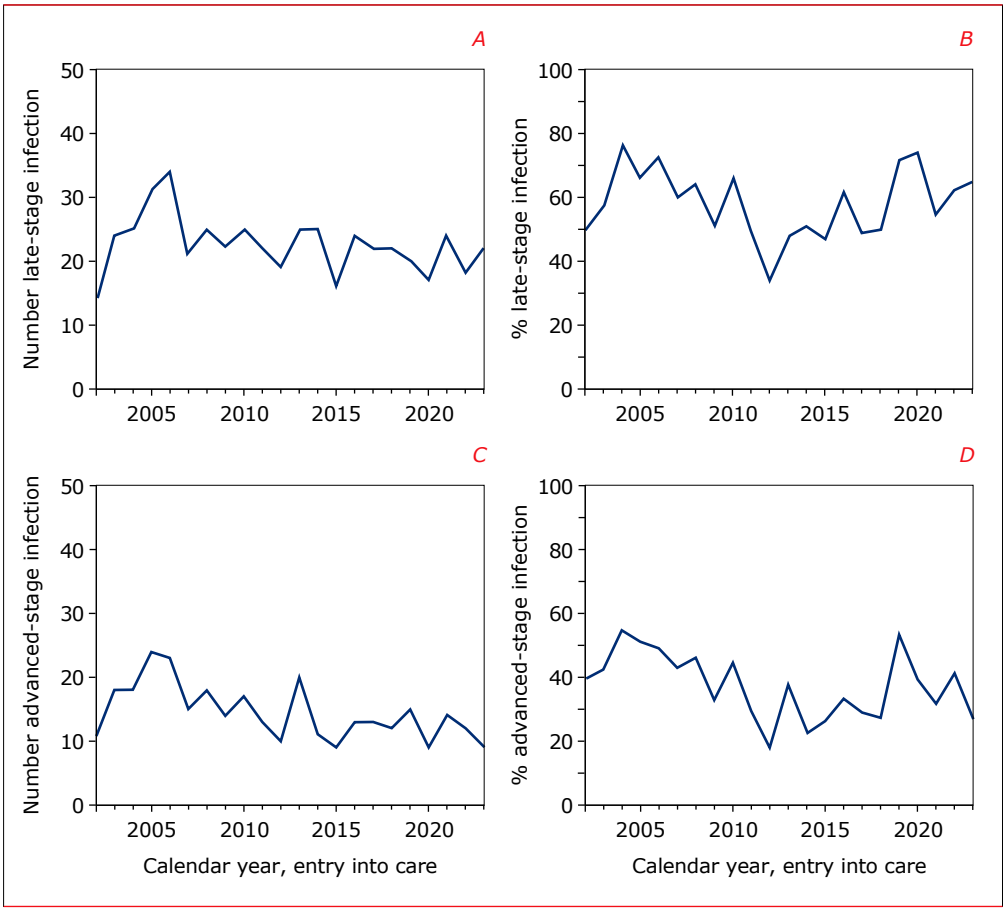
***Legend:** MSM = men who have sex men.*

Late presentation

Among the 1,309 people diagnosed with HIV-1 while living in Curaçao, a large proportion of those who have entered care since 2002 were late presenters. This refers to individuals who entered care with a CD4 cell count below 350 cells/mm^3, or with an AIDS-defining event, regardless of CD4 cell count, and who had no HIV-negative test in the 12 months prior to entry into care[1]. The proportion of late presenters was 56% among individuals entering care in 2002-2020, and remained at a high level of 60% among those entering care in 2021-2023 (*Figures 11.4A* and *11.4B*). There were no significant differences in the proportion of individuals with late presentation in 2021-2023 between MSM (63%), other men (62%), and women (55%).

Advanced HIV infection (i.e. with a CD4 cell count below 200 cells/mm^3 or AIDS) was found in 37% of individuals entering care in 2002-2020 and in 33% of those entering care in 2021-2023 (*Figures 11.4C* and *11.4D*). In total, 7 (6%) of the individuals who entered care in 2021-2023 presented with an AIDS-defining disease.

Figure 11.4: *Number and proportion of people classified as presenting with (A, B) late-stage, or (C, D) advanced-stage HIV infection at the time of entry into care. In 2021-2023, 64 (60%) individuals presented with late HIV disease while 35 (33%) were advanced presenters. Late-stage HIV infection: CD4 cell counts below 350 cells/mm³ or having AIDS, regardless of CD4 cell count, and no HIV-negative test in the 12 months prior to entry into care. Advanced-stage HIV infection: CD4 cell counts below 200 cells/mm³ or having AIDS, and no HIV-negative test in the 12 months prior to entry into care. As a pre-therapy CD4 cell count measurement close to the time of entry into care was sometimes missing, the stage of HIV infection could not be determined for all individuals. In 2021-2023, the stage of infection was unknown for 17 (14%) individuals.*



Antiretroviral therapy (ART)

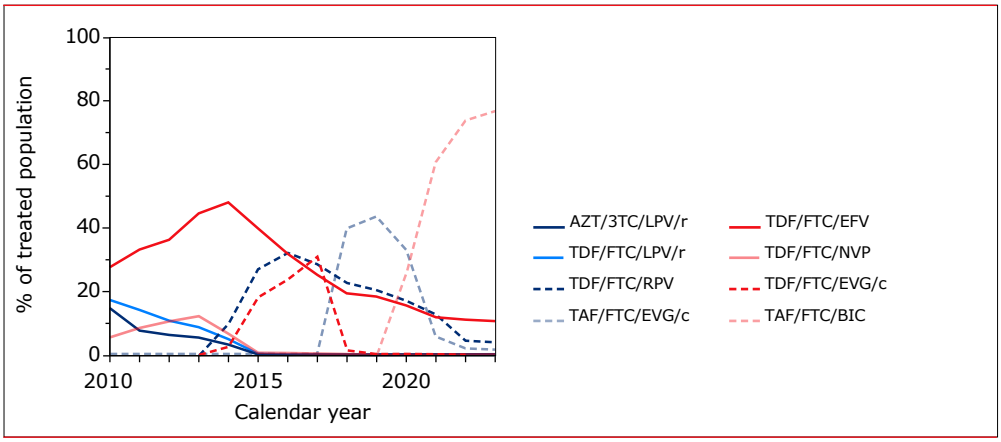
In total, 1,339 (93%) of the 1,444 registered individuals with HIV-1 had started antiretroviral therapy by the end of 2023. Of the 105 people who had not started therapy by that time, two managed to achieve HIV RNA levels below the lower limit of quantification without therapy, while 90 people were no longer in care, including 35 who had died. The other 13 individuals started therapy in 2024, or their ART may not have been recorded yet.

Over time there have been clear shifts in the ART regimens prescribed in Curaçao (*Figure 11.5*). Of the 727 people who were still in care and had started ART by the end of 2023:

- 77% were being treated with a combination of tenofovir alafenamide, emtricitabine, and bictegravir;
- 11% with tenofovir disoproxil, emtricitabine, and efavirenz; and
- 4% with tenofovir disoproxil, emtricitabine, and rilpivirine.

The majority (98%) used a once-daily regimen, with 94% being treated with a fixed-dose, single tablet regimen.

Figure 11.5: *Percentage of individuals treated with antiretroviral therapy (ART) by specific regimens over calendar time. At the end of 2023, 77% were receiving TAF/FTC/BIC, 11% TDF/FTC/EFV, and 4% TDF/FTC/RPV.*

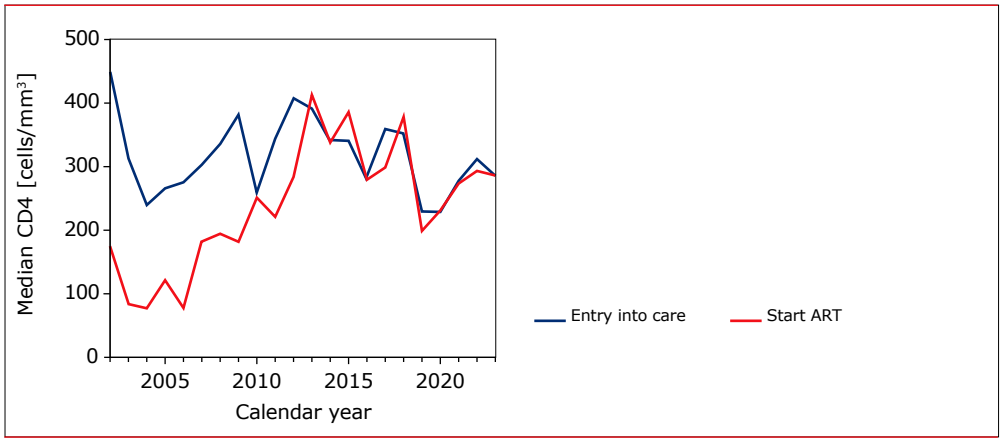


Legend: *AZT = zidovudine; 3TC = lamivudine; LPV/r = ritonavir-boosted lopinavir; TAF = tenofovir alafenamide; TDF = tenofovir disoproxil fumarate; FTC = emtricitabine; RPV = rilpivirine; EFV = efavirenz; NVP = nevirapine; EVG/c = cobicistat-boosted elvitegravir; BIC = bictegravir.*

Since the mid-2000s, there has been an increase in CD4 cell counts at the start of ART, reflecting changes in guidelines on when to initiate therapy (*Figure 11.6*). CD4 cell counts at entry into care and at the start of therapy are now almost identical, which implies that people rapidly start ART after entry into care. In 2021-2023, 93% of people received ART within six months of entering care, irrespective of their CD4 cell count. During the same period, for those with available CD4 cell count data at the start of therapy:

- 33% had a measurement below 200 CD4 cells/mm^3;
- 27% had a measurement between 200 and 349 cells/mm^3;
- 14% had a measurement between 350 and 499 cells/mm^3; and
- 27% had CD4 cell counts of 500 cells/mm^3 or higher.

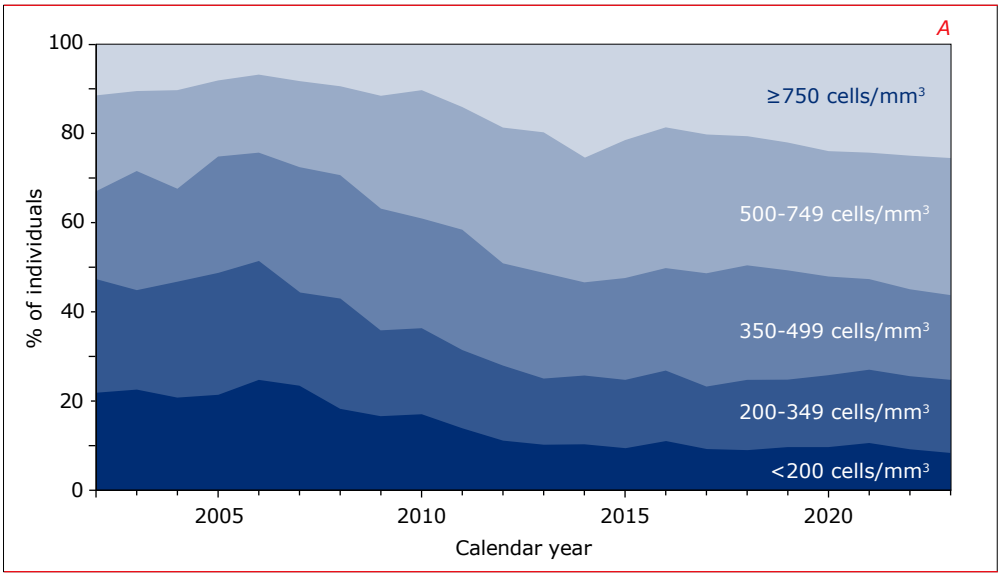
Figure 11.6: *Changes over calendar time in median CD4 cell counts at entry into care and at the start of antiretroviral therapy (ART). In 2021–2023, CD4 cell counts at entry into care were 285 cells/mm^3 (interquartile range [IQR] 163–477) and were similar, 285 cells/mm^3 (IQR 148–517), at the start of therapy.*

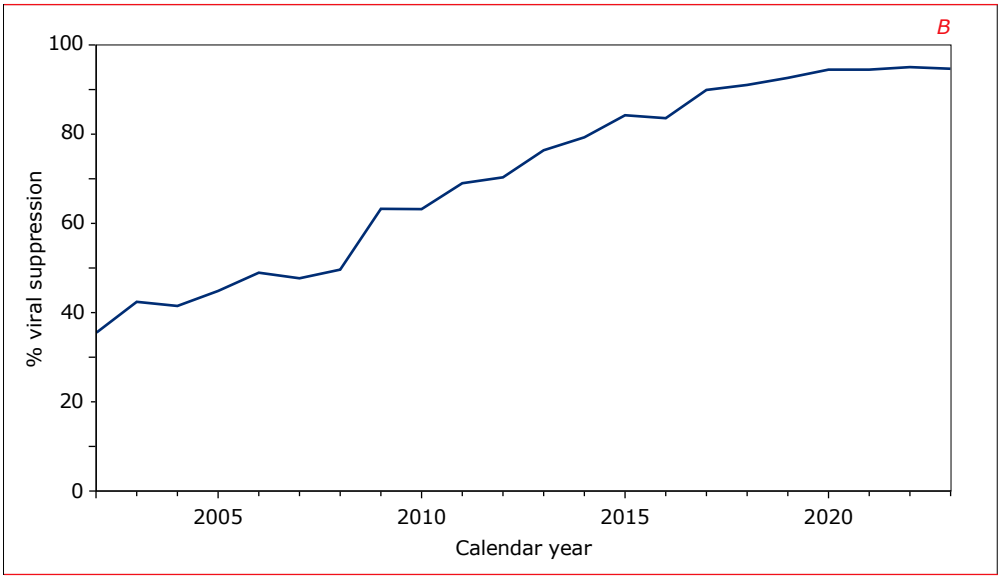


Therapy outcome

In the total population still in care by the end of 2023, the median current CD4 cell count was 473 cells/mm^3 (IQR 292-681). CD4 cell counts were highest in women (545 cells/mm^3; IQR 323-793) followed by MSM (491 cells/mm^3; IQR 291-679) and other men (413 cells/mm^3; IQR 285-607). The proportion of individuals with a most recent CD4 cell count below 350 cells/mm^3 decreased from 52% in 2002 to 24% in 2023 (*Figure 11.7A*). During the same time, among individuals with a viral load measurement, the proportion with HIV RNA levels lower than 200 copies/ml increased from 36% to 95% (*Figure 11.7B*).

Figure 11.7: *Proportion of people in care by the end of each calendar year (A) stratified by most recent CD4 cell count, and (B) with HIV RNA <200 copies/ml at their last viral load measurement in each calendar year.*





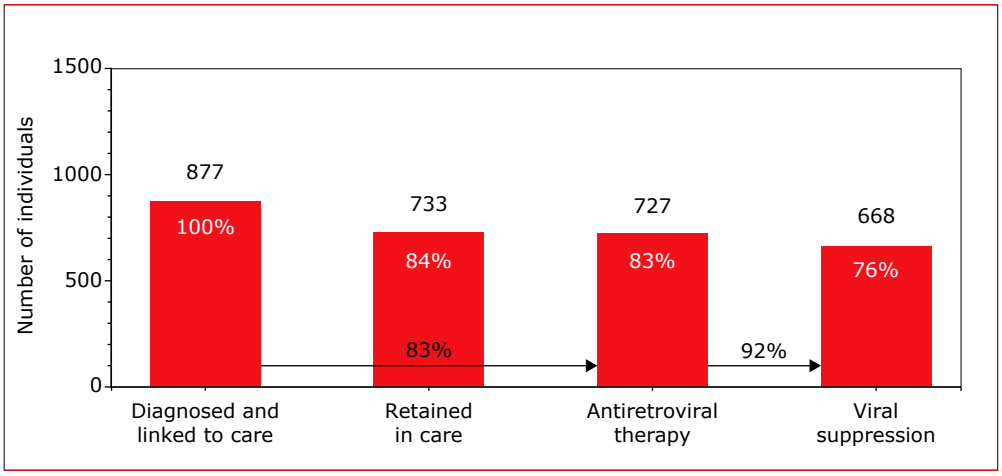
Continuum of HIV care

In total, 877 individuals had been diagnosed and linked to care, registered by SHM, had received HIV care in 2013 or later, and were not recorded in the SHM database as having died or moved abroad (*Figure 11.8*). Altogether:

- 733 people (or 84% of those diagnosed and linked to care) were still in care, having had at least one HIV RNA or CD4 cell count measurement, or a clinical visit in 2023;
- 727 (or 83% of those diagnosed and linked to care) of whom had started ART;
- 705 (97% of those who started therapy) of whom had an HIV RNA measurement available in 2023; and
- 668 (95%, or 92% of those treated) of those had a most recent HIV RNA level below 200 copies/ml.

Overall, 76% of the 877 individuals diagnosed and ever linked to care, had a suppressed viral load. In terms of the Joint United Nations Programme on HIV/AIDS' (UNAIDS) 95-95-95 target for 2025, the current estimate for the second and third "95" for Curaçao stands at 83-92: 83% of all people diagnosed receive antiretroviral therapy, and 92% of people receiving ART have a suppressed viral load[2].

Figure 11.8: *Continuum of HIV care for the population with HIV-1 in Curaçao diagnosed and linked to care by the end of 2023. Percentages at the top of the bars are calculated relative to the number of people diagnosed and linked to care, while percentages at the bottom correspond to the second and third of UNAIDS' 95-95-95 targets.*



It is worth noting that we did not estimate the total number of people with HIV, including those not yet diagnosed. Estimation of the undiagnosed population is based on trends over calendar time in observed diagnoses and CD4 cell counts at the time of diagnosis. A requirement for this estimate is that all diagnoses are reported in the SHM database, and this was not yet the case. In addition, the estimated number with undiagnosed HIV would not include populations that are less likely to reach HIV care in Curaçao, such as undocumented migrants, and would therefore underestimate the true number with undiagnosed HIV.

Viral suppression

Of the 727 individuals who had started ART, 59 (8%) did not have a suppressed viral load. On closer inspection, 22 (37%) of these individuals were found to have no documented HIV RNA measurement in 2023. The remaining 37 (63%) had a viral load measurement in 2023, but with HIV RNA levels exceeding 200 copies/ml. Of these 37 individuals, six only started ART within the six month-period prior to their last measurement and may not have had sufficient follow up to achieve a documented suppressed viral load. The remaining 31 individuals with HIV RNA levels above 200 copies/ml had started ART longer than six months previously.

Lost to care

In total, 281 individuals were lost to care by the end of 2023, of whom:

- 137 (49%) were last seen for care before the end of 2013;
- 95 (34%) between 2013 and 2019;
- 10 (4%) in 2020;
- 23 (8%) in 2021; and
- 16 (6%) in 2022.

The 137 individuals who were lost to care before 2013 were excluded from the number of people diagnosed and linked to care. It is unlikely that these 137 individuals are still living in Curaçao without requiring care or ART. In total, 51 (35%) of the 144 individuals lost to care after 2013 were born outside the former Netherlands Antilles, including 16 in Haiti and 12 in the Dominican Republic. For those still in care by the end of 2023, the percentage of people born outside the former Netherlands Antilles falls to 24%. This suggests that some of those lost to care may have moved abroad; in particular, back to their country of birth. It also shows that, overall, a considerable proportion was not retained in care.

Conclusion

Over the years, the quality of care offered to individuals with HIV in Curaçao has improved considerably, as evidenced by the increasing proportion of individuals with a suppressed viral load. In addition, timely registration of HIV RNA measurements in the SHM database has also improved, enabling better monitoring of progress towards achieving UNAIDS' 95-95-95 goals for 2025. However, the proportion of people entering care with late-stage HIV infection remained high in recent years. Furthermore, the relatively high proportion of people lost to care is worrisome and may result in underreporting of death and outmigration. Among those lost to care is a substantial group of 26 individuals who were last seen for care in 2019 (i.e. the last year before the COVID-19 pandemic) and have not yet returned.

Recommendations

Curaçao is in a unique position in the Caribbean, in that data on individuals with HIV in care are regularly collected and monitored. However, it is important that the quality of these data is maintained and that the collected data remain representative of the population with HIV.

Early start of ART in adults appears possible, but long-term, continuous follow up should be guaranteed to optimise its effect. The continuum of care for Curaçao illustrates that while almost everyone who is still in care has started antiretroviral therapy, too many individuals are lost to care. In part, this may be explained by people who, unknown to SHM, have died or moved abroad. To address this issue, efforts have recently been stepped up to trace people who miss their scheduled appointment at the hospital. It is hoped that this will improve retention in care in the near future.

Finally, a relatively large proportion of individuals enter care late in the course of their infection. More efforts should be directed at upscaling HIV testing and ensuring that people who test positive are quickly linked to care.

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