

Human Immunodeficiency Virus (HIV)
Infection in the Netherlands



HIV Monitoring Report

2021

Chapter 9: Curaçao



9. Curaçao

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Introduction

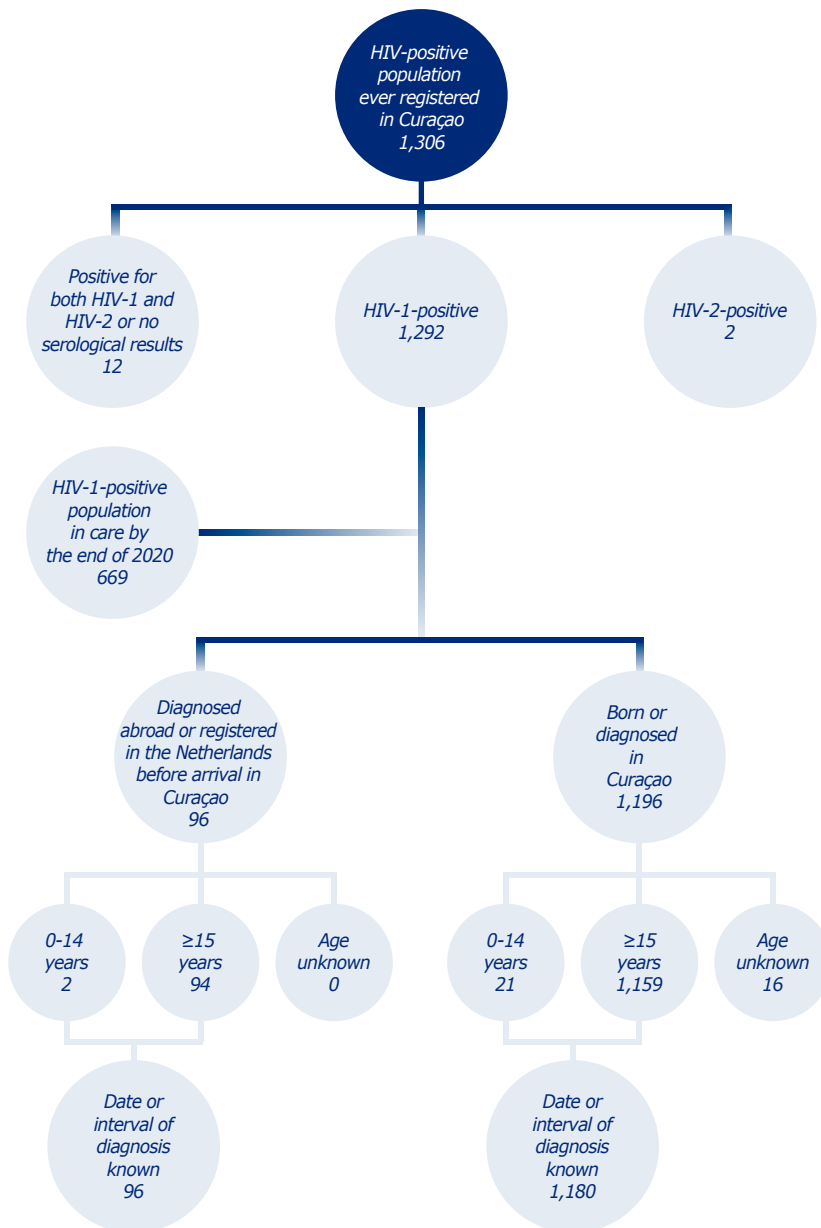
Since 2005, stichting hiv monitoring (SHM) has assisted in collecting demographic and clinical data about individuals living with HIV receiving care at the Curaçao Medical Center in Willemstad, Curaçao. As a result of this registration and monitoring, an extensive database has been established. Such a database is unique for the region and gives a clear picture of the population living with HIV, the effectiveness of HIV care, and the challenges that exist in this relatively small Caribbean setting. This special report presents a concise overview of the current state of the HIV epidemic in Curaçao.

In total, 1,306 individuals with HIV registered by SHM have been followed in the Curaçao Medical Center. Of these people, the majority were diagnosed with HIV-1 (1,292; 99%), while two individuals were diagnosed with HIV-2, and two had antibodies against both HIV-1 and HIV-2 (*Figure 9.1*). For ten individuals, serological results on HIV type were not available in the SHM database.

People newly diagnosed with HIV-1

Of the 1,292 individuals diagnosed with HIV-1, 91 (7%) were registered with an HIV treatment centre in the Netherlands prior to moving to Curaçao (*Figure 9.1*). The majority of these 91 individuals (66; 73%) originated from the former Netherlands Antilles, while 21 (23%) were born in the Netherlands and four (4%) were born elsewhere. Another five individuals were also born abroad (four in Venezuela, one in the Dominican Republic), and had a documented HIV diagnosis prior to migrating to Curaçao. The remaining 1,196 individuals were newly diagnosed while living in Curaçao, or information on where they lived at the time of diagnosis was not yet available (*Figure 9.1*). Of these 1,196 individuals, 887 (74%) were born in the former Netherlands Antilles, 112 (9%) originated from Haiti, and 90 (8%) from the Dominican Republic.

Figure 9.1: Overview of the population with HIV registered in Curaçao by the end of 2020.



For 16 (1%) of the 1,196 individuals diagnosed while living in Curaçao, the date or interval of diagnosis was not recorded in the SHM database. Among the remaining 1,180 individuals, 21 (2%) were diagnosed before the age of 15 years. The 1,159 individuals who were diagnosed at 15 years or older, comprised 243 (21%) men who reported sex with men (MSM) as the most likely mode of transmission, 492 (42%) other men, and 424 (37%) women (*Table 9.1*). Among the 492 other men, 322 (65%) most likely acquired their infection via sex with women, while the remaining 170 (35%) acquired their infection via other or unknown modes of transmission. Among the 424 women, 404 (95%) reported sex with men as the most likely mode of transmission, while the remaining 20 women reported other or unknown modes of transmission. Between 2000 and 2018, the annual number of newly-diagnosed infections hovered around 50, before decreasing to 20 in 2019 and 22 in 2020. However, at the time of writing, there may have been some backlog in reporting HIV infections newly diagnosed in 2019 and 2020, due to the transition to a new hospital at the end of 2019, and a disruption in data collection caused by the COVID-19 pandemic.

Table 9.1: Annual number of HIV-1 diagnoses in Curaçao among children under 15 years of age, and among men who acquired HIV via sex with men (MSM), other men, and women diagnosed at 15 years or older.

Year of diagnosis	MSM	Other men	Women	<15 years of age	Total
≤1999	31	105	77	17	230
2000	7	18	18	1	44
2001	3	13	14	1	31
2002	7	19	17	0	43
2003	8	28	19	0	55
2004	3	23	16	0	42
2005	12	19	17	0	48
2006	6	23	17	0	46
2007	12	17	10	0	39
2008	11	17	20	1	49
2009	9	17	21	1	48
2010	4	19	21	0	44
2011	12	19	24	0	55
2012	13	16	26	0	55
2013	19	31	22	0	72
2014	16	14	14	0	44
2015	16	22	12	0	50
2016	12	22	15	0	49
2017	14	17	13	0	44
2018	17	12	18	0	47
2019	6	10	4	0	20
2020	4	9	9	0	22
2021	1	2	0	0	3
Total	243	492	424	21	1,180

Note: Data collection for 2020 may not have been finalised at the time of writing.

Note: Data on children are not yet collected.

Legend: MSM=sex between men.

People in clinical care

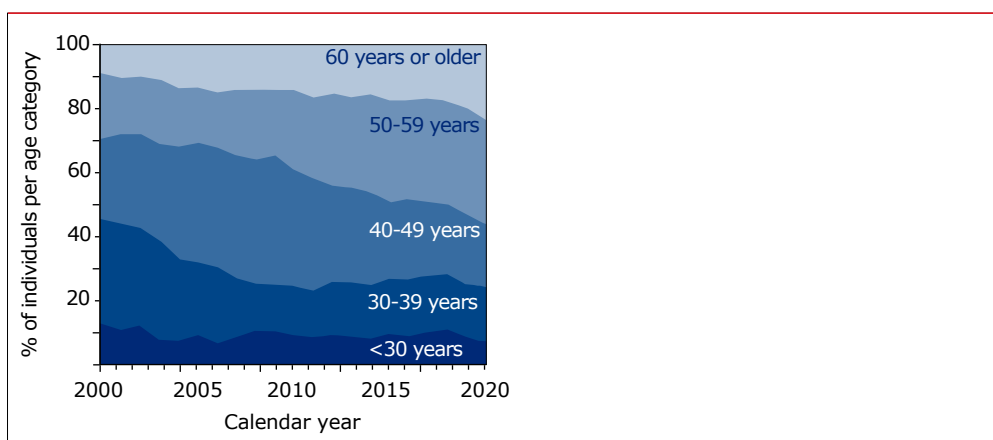
In total, 669 (52%) of the 1,292 registered HIV-1-positive individuals were known to be in clinical care in Curaçao by the end of 2020. People were considered to be in clinical care if they had visited their treating physician in 2020, or had a CD4 count or HIV RNA measurement during that year, and had not moved abroad. Of the 623 individuals who, according to this definition, were not in care by the end of 2020, 194 (31%) were known to have died, 140 (22%) to have moved abroad, and 280

(45%) were lost to care. Another three were only diagnosed with HIV in 2021 and six entered care in 2021. Of the 280 people lost to care, 60 (21%) had their last visit within a year of entering care, while another 33 (12%) had no follow-up visit after entering care. The 669 people in clinical care in 2020 included ten individuals who did not have a visit or a CD4 count or HIV RNA measurement in 2019, but had previously received care for their HIV infection. Five of these individuals had not been in care for more than three years.

Ageing population

The median age of the population in care by the end of 2020 was 52 years (interquartile range [IQR] 40-59) and has been increasing since 2000 (*Figure 9.2*). This increase in age is mainly a result of the improved life expectancy of individuals living with HIV following the introduction of combination antiretroviral treatment (cART). As a result, more than half of all people currently in care (56%) are 50 years or older, including 54% of men and 59% of women; 24% are 60 years or older. Among the 92 individuals diagnosed in 2018 or later, the median age at diagnosis was 34 years (IQR 28-46), with no differences between men and women. Of these 92 individuals, 19 (21%) were 50 years or older at the time of their diagnosis, while 30 (33%) were younger than 30 years of age.

Figure 9.2: Increasing age of the HIV-1-positive population in clinical care in Curaçao over calendar time. In 2000, 13% of the people in care were younger than 30 years of age, whereas 29% were 50 years or older. In 2020, these proportions were 8% and 56%, respectively, while 24% of people in care were 60 years of age or older. 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 or older.



Duration of infection

People in care by the end of 2020 had been diagnosed with HIV a median of 10.5 years (IQR 5.6-16.8) previously. Therefore, a large group (52%) has lived with HIV for more than 10 years; 17% for more than 20 years (*Table 9.2*). The median time since diagnosis was 9.4 years for MSM, 10.4 years for other men, and 10.8 years for women.

Table 9.2: Characteristics of the 669 HIV-1-positive individuals in clinical care in Curaçao by the end of 2020.

	Men (n=415, 62%)		Women (n=254, 38%)		Total (n=669)	
	n	%	n	%	n	%
Transmission						
MSM	162	39	–	–	162	24
Heterosexual	171	41	240	94	411	61
Other/unknown	82	20	14	6	96	14
Current age (years)						
0-15*	1	0	–	–	1	0
15-24	9	2	7	3	16	2
25-29	26	6	10	4	36	5
30-39	72	17	40	16	112	17
40-49	82	20	47	19	129	19
50-59	127	31	90	35	217	32
60-69	70	17	42	17	112	17
≥70	28	7	18	7	46	7
Country of origin						
Former Netherlands Antilles	344	83	168	66	512	77
The Dominican Republic	10	2	40	16	50	7
Haiti	21	5	26	10	47	7
The Netherlands	11	3	0	0	11	2
Other	29	7	20	8	49	7
Years aware of HIV infection						
<1	11	3	5	2	16	2
1-2	38	9	19	7	57	9
3-4	47	11	19	7	66	10
5-10	112	27	68	27	180	27
10-20	139	33	96	38	235	35
>20	65	16	46	18	111	17
Unknown	3	1	1	0	4	1

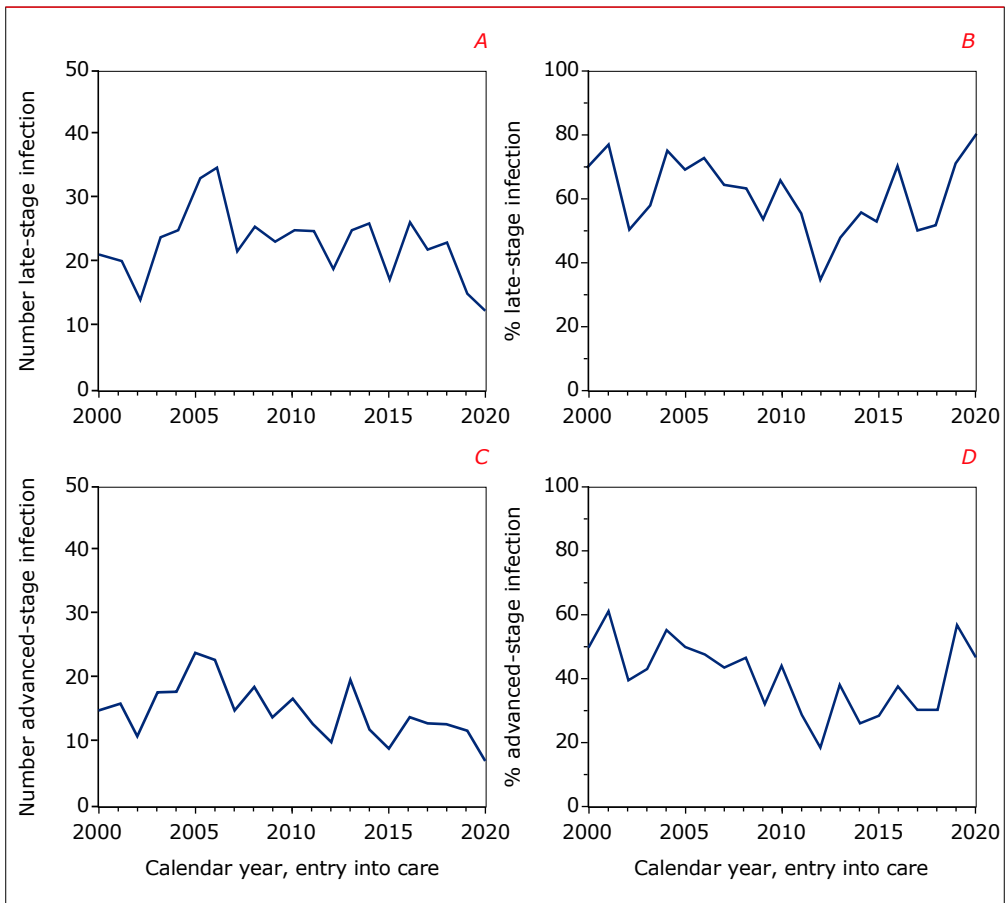
* Data on children are not yet collected.

Legend: MSM=sex between men.

Late presentation

Among the 1,180 people diagnosed with HIV-1 while living in Curaçao, a large proportion of those who have entered care since 2000 were late presenters; in other words, individuals who entered care with a CD4 count below 350 cells/mm³, or with an AIDS-defining event, regardless of CD4 count¹. The proportion of late presenters was 59% among individuals entering care in 2000-17, and remained at a high level of 64% among those entering care in 2018 or later (*Figures 9.3A and 9.3B*). In 2019 and 2020, late presentation among those entering care appeared to be more common, but this most likely reflects underreporting of people entering care, rather than an increase in the absolute number with late presentation. In contrast, there appears to have been a decrease in the proportion of people entering care with advanced HIV infection (i.e., with a CD4 count below 200 cells/mm³ or AIDS), from 50% in 2000 to 30% in 2017 (*Figures 9.3C and 9.3D*). From 2018 onwards, 41% among those entering care had advanced-stage HIV. In total, 12% of the individuals who have entered care since 2000 have presented with an AIDS-defining disease. There were no significant differences in late presentation in 2018 or later between MSM (53%), other men (72%), and women (67%), but advanced presentation appeared to be less common in MSM (25%) than in other men (56%) and women (41%).

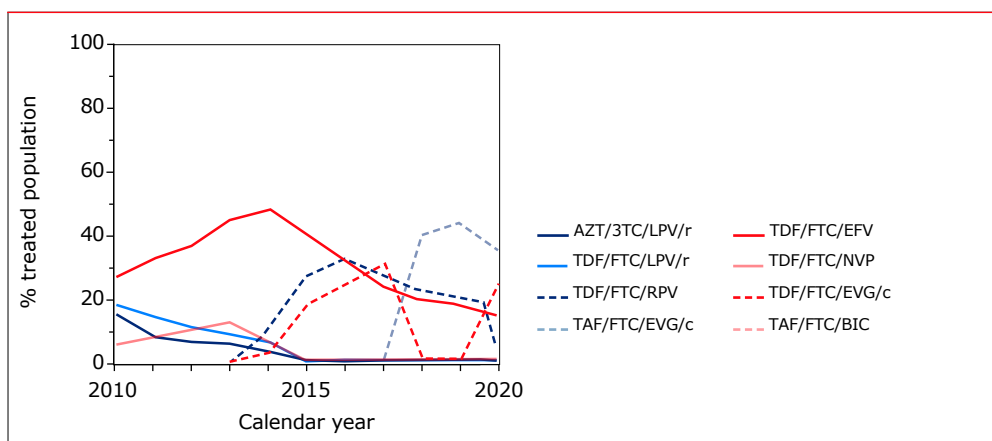
Figure 9.3: Number and proportion of people classified as presenting with (A, B) late-stage, or (C, D) advanced-stage HIV infection at the time of entry into care. From 2018 onwards, 56 (64%) individuals presented with late HIV disease while 36 (41%) were advanced presenters. Late-stage HIV infection: CD4 counts below 350 cells/mm³ or having AIDS, regardless of CD4 count. Advanced-stage HIV infection: CD4 counts below 200 cells/mm³ or having AIDS. As a pre-treatment CD4 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. From 2018 onwards, the stage of infection was unknown for 24 (22%) individuals.



Antiretroviral treatment

In total, 1,194 (92%) of the 1,292 registered HIV-1-positive individuals had started antiretroviral treatment by May 2021. Of the 98 people who never received treatment, 96 were not in care anymore, including 35 who had died, while two managed to achieve HIV RNA levels below the lower limit of quantification without treatment. Over time, there have been clear shifts in the treatment regimens prescribed in Curaçao (Figure 9.4). Of the 663 people who were still in care by the end of 2020 and had started antiretroviral treatment, 35% were being treated with a combination of tenofovir alafenamide, emtricitabine, and cobicistat-boosted elvitegravir; 24% with tenofovir alafenamide, emtricitabine, and bictegravir; 28% with tenofovir disoproxil, emtricitabine and rilpivirine; and 16% with tenofovir disoproxil, emtricitabine and efavirenz. The majority (98%) used a once-daily regimen, with 93% being treated with a fixed-dose, single tablet regimen.

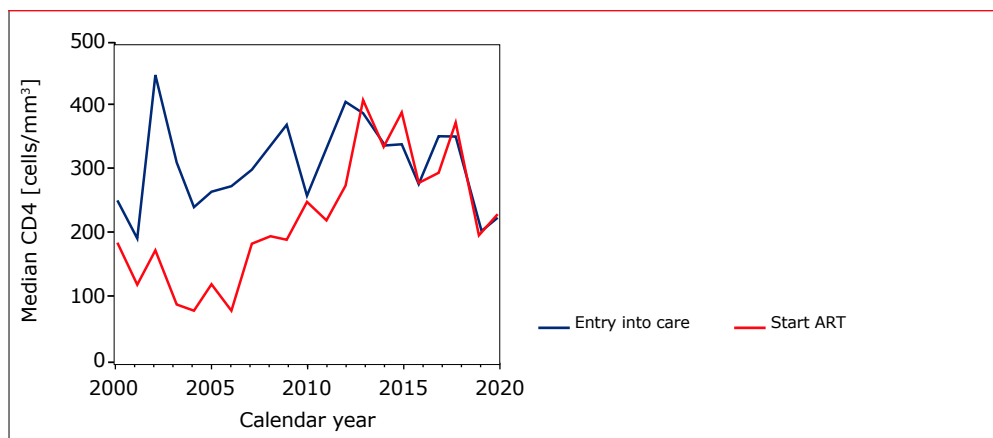
Figure 9.4: Percentage of individuals treated with antiretroviral therapy by specific regimens over calendar time. At the end of 2020, 35% were receiving TAF/FTC/EVG/c, 24% TAF/FTC/BIC, 18% TDF/FTC/RPV, and 16% TDF/FTC/EFV.



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 treatment, reflecting changes in guidelines on when to start (Figure 9.5). CD4 counts at entry into care and at the start of treatment are now almost identical, which implies that people rapidly start treatment after entry into care. In 2018-20, 96% of people received treatment within six months of entering care, irrespective of their CD4 count. During the same period, 36% of those for whom a CD4 count was available at the start of treatment had a CD4 count lower than 200 CD4 cells/mm³; 23% had between 200 and 349 cells/mm³; 24% had between 350 and 499 cells/mm³; and 17% had CD4 counts of 500 cells/mm³ or higher.

Figure 9.5: Changes over calendar time in median CD4 counts at entry into care and at the start of antiretroviral treatment (ART). In 2018–2020, CD4 counts at entry into care were 275 cells/mm³ (interquartile range [IQR] 155–457) and were very similar, 280 cells/mm³ (IQR 153–454), at the start of treatment.

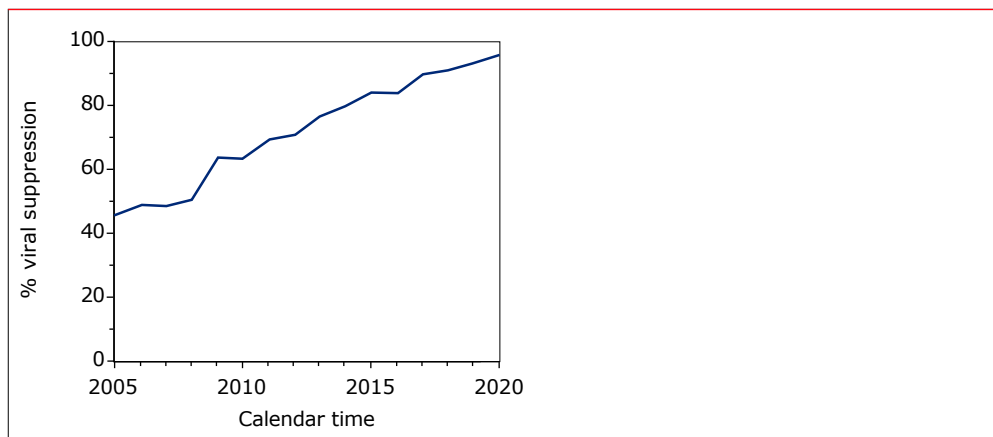


Legend: ART=antiretroviral treatment.

Treatment outcome

In the total population still in care by the end of 2020, the median current CD4 count was 487 cells/mm³ (IQR 320-726). CD4 counts were similar between MSM (503 cells/mm³; IQR 356-741) and women (607 cells/mm³; IQR 376-789). Men who acquired their infection via other or unknown modes of transmission had lower CD4 counts (389 cells/mm³; IQR 228-624). Among individuals with a viral load measurement, the proportion with HIV RNA levels lower than 200 copies/ml, increased from 45% in 2005 to 95% in 2020 (Figure 9.6).

Figure 9.6: Proportion of people in care with HIV RNA <200 copies/ml at their last viral load measurement in each calendar year.



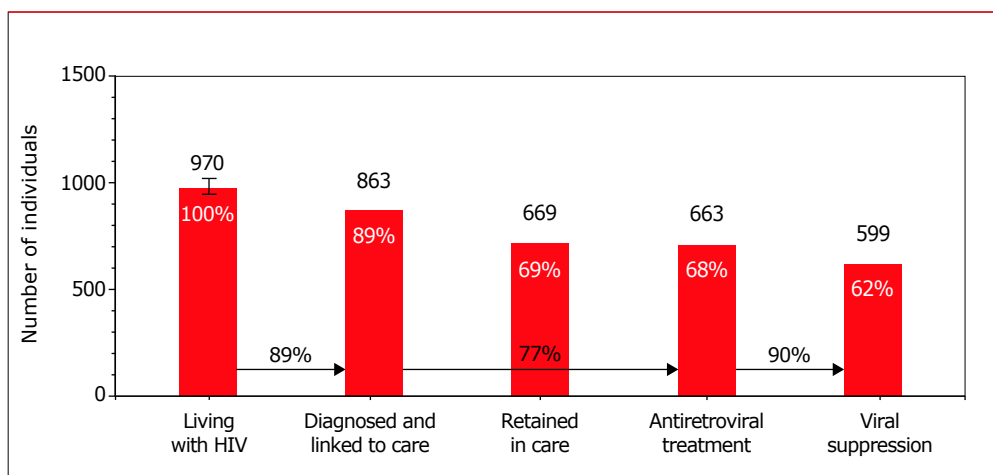
Continuum of HIV care

The total number of people living with HIV by the end of 2020, including those not yet diagnosed, was estimated to be 970 (95% confidence interval [CI] 950-1,010), of whom 110 (95% CI 90-150) were still undiagnosed (*Figure 9.7*). Of note, estimation of the undiagnosed population was based on trends over calendar time in observed diagnoses and CD4 counts at the time of diagnosis². As a result of the likely underreporting in 2019 and 2020, the estimated number of 110 may be lower than the true number. Also, the estimated number of people with undiagnosed HIV does not include populations of undocumented migrants, who are less likely to reach HIV care.

In total, 863 individuals, or 89% of the total number estimated to be living with HIV, had been diagnosed, linked to care, and registered by SHM, and were not recorded in the SHM database as having died or moved abroad. Altogether, 669 (69%) people were still in care; in other words, they had had at least one HIV RNA or CD4 count measurement, or a clinic visit in 2020. The majority of those 669 individuals (663, or 77% of those diagnosed and linked to care), had started antiretroviral treatment; 625 (94% of those who started treatment) had an HIV RNA measurement available in 2020 and 599 (96%, or 90% of those treated) had a most recent HIV RNA below 200 copies/ml. Overall, 62% of the total estimated population living with HIV, and 69% of the 863 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 Curaçao stands at 89-77-90: 89% of people living with HIV know their HIV status, 77% of all people diagnosed receive antiretroviral treatment, and 90% of people receiving treatment have a suppressed viral load³.

Figure 9.7: Continuum of HIV care for the total estimated HIV-1-positive population in Curaçao by the end of 2020. Percentages at the top of the bars are calculated relative to the number living with HIV, while percentages at the bottom correspond to UNAIDS' 95-95-95 targets.



Viral suppression

Of the 663 individuals who had started antiretroviral treatment, 64 (10%) did not have a suppressed viral load. On closer inspection, 38 (59%) of these individuals were found to have no documented RNA measurement in 2020. The remaining 26 (41%) had a viral load measurement in 2020, but with RNA levels exceeding 200 copies/ml. Of these 26 individuals, one had not yet started treatment at the time of their last available viral load measurement in 2020, and one only started treatment 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 24 individuals with RNA levels above 200 copies/ml, had been on antiretroviral treatment for longer than six months.

Lost to care

In total, 280 individuals were lost to care; 86 (31%) before the end of 2010, and 194 (69%) after 2010. The 86 individuals who were lost to care before 2010, were excluded from the estimated number of people living with HIV and the number of people diagnosed and linked to care. It is unlikely that these 86 individuals are still living in Curaçao without needing care or antiretroviral treatment. Of the 194 individuals lost to care after 2010 (i.e., the difference between the second stage (863) and third stage (669) in the care continuum), 40 (21%) were last seen for care in 2019 and 24 (12%) in 2018. In total, 63 (32%) of the 194 individuals were born outside the former Netherlands Antilles, including 25 in Haiti and 11 in the Dominican Republic; for those still in care by the end of 2020, this percentage falls to 23%. 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 treatment offered to individuals living 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 improved, enabling better monitoring of progress towards achieving UNAIDS' 95-95-95 goals for 2025. However, the relatively high proportion of people lost to care is worrisome and may result in underreporting of death and/or outmigration. In addition, the proportion of people entering care with late-stage HIV infection remained high, and may even have been rising in recent years.

Of note, data reported for 2019 and 2020 may not yet be complete. As mentioned above, the hospital moved to a new building at the end of 2019, which may have delayed notification to SHM of individuals newly diagnosed and enrolled in care around that time. Also, data collection for 2019 and 2020 was hampered by the data collector's lack of access to electronic patient records, as well as the partial lockdown in Curaçao in response to the COVID-19 pandemic. Access to patient records has now been restored and data are expected to be complete in next year's monitoring report.

Recommendations

Curaçao is in a unique position in the Caribbean, in that data from individuals living with HIV in care are regularly collected and monitored. However, it is important that the quality of these data is maintained. Moreover, currently there is no regular data collection for children living with HIV. As a result, data on children living with HIV in Curaçao are of unknown quality and are unsuitable for use in strategic planning of HIV care for this specific population. Therefore, data collection needs to be extended to include children.

Early start of ART in adults appears possible, but long-term, continuous follow up should be guaranteed to optimise the effect of ART. The continuum of care for Curaçao illustrates that while almost everyone who is still in care has started antiretroviral treatment, 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 been recently stepped up to trace people who miss their scheduled appointment in the hospital. As a result, retention in care will hopefully improve in the near future.

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

References

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