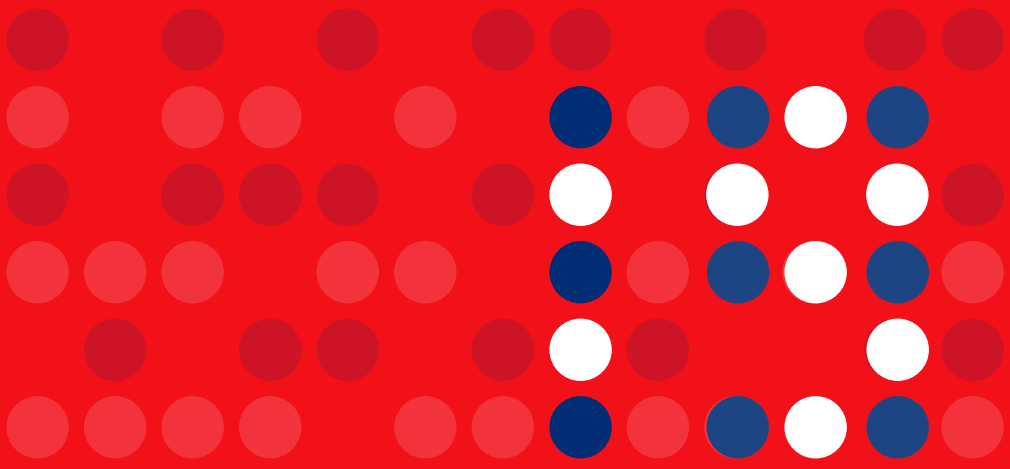
Human Immunodeficiency Virus (HIV)
Infection in the Netherlands

HIV Monitoring

HIV Monitoring Report 2019

Chapter 9: Curaçao



About Stichting HIV Monitoring

Stichting HIV Monitoring (SHM), the Dutch HIV monitoring foundation, was founded in 2001 and appointed by the Dutch minister of Health, Welfare and Sport as the executive organisation for the registration and monitoring of HIV-positive individuals in the Netherlands.

In collaboration with the HIV treatment centres in the Netherlands, SHM has developed a framework for systematically collecting HIV data for the long-term follow up of all registered individuals. The Netherlands is the only country in the world to have such a framework, which enables healthcare professionals to aspire to the highest standard of HIV care.

SHM contributes to the knowledge of HIV by studying the course of the infection and the effect of its treatment. To this end, SHM follows the treatment of every HIV-positive man, woman and child in care in the Netherlands and registered in the national observational HIV cohort, ATHENA. Continuous collection of data is carried out at 24 HIV treatment centres and subcentres and 4 paediatric HIV centres in the Netherlands. Patient data are collected and entered into the database in a pseudonymised form for storage and analysis. In this way SHM is able to comprehensively map the HIV epidemic and HIV treatment outcomes in the Netherlands.

Our mission

To further the knowledge and understanding of all relevant aspects of HIV infection, including comorbidities and co-infections (such as viral hepatitis), in HIV-positive persons in care in the Netherlands.

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Monitoring Report 2019

Human Immunodeficiency Virus (HIV) Infection in the Netherlands

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9. Curaçao

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Introduction

Since 2005, Stichting HIV Monitoring (SHM) has assisted in collecting demographic and clinical data about HIV-positive individuals in clinical care at the St. Elisabeth Hospital in Willemstad in 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 HIV-positive population, 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 HIV treatment in Curaçao.

Population

In total, 1,246 HIV-positive individuals ever registered by SHM have been followed in the St. Elisabeth Hospital in Curaçao. Of these people, the majority were diagnosed with HIV-1 (1,222; 98%), while 2 individuals were diagnosed with HIV-2, and 11 had antibodies against both HIV-1 and HIV-2. For 11 individuals, serological results on HIV type were not available in the SHM database.

People in clinical care

In total, 682 (56%) of the 1,222 registered HIV-1-positive individuals were known to be in clinical care by the end of 2018. People were considered to be in clinical care if they visited their treating physician in 2018 or had a CD4 count or HIV RNA measurement in that year and had not moved abroad. Of the 540 individuals who were not or no longer in clinical care, 183 (34%) were known to have died, and 93 (17%) to have moved abroad, while 11 people were only diagnosed with HIV in 2019, or only moved to Curaçao in 2019. Thus, 253 individuals were considered lost to care, equivalent to 27% of all HIV-1-positive individuals who were supposedly still alive and had not moved abroad.

Ageing population

The median age of the population in care by the end of 2018 was 50 years (interquartile range (IQR) 38-57) and has been increasing since 2005 (*Figure 9.1*). This increase in age is mainly a result of the improved life expectancy of HIV-positive individuals after the introduction of combination antiretroviral treatment (cART). As a result, half of all people currently in care (50%) are 50 years or older, including 48% of men and 52% of women; 18% of the individuals are 60 years or

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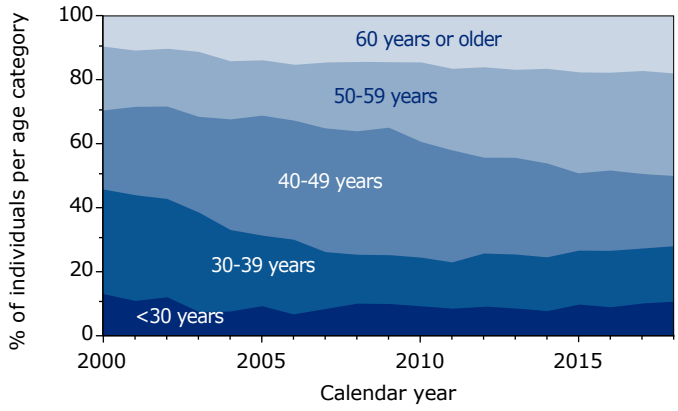
older. In contrast, the median age at the time of diagnosis decreased, from 38 (IQR 32-47) years in individuals diagnosed between 2000 and 2005 to 35 (27-46) years in those diagnosed in 2016 or later.

Figure 9.1: *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 2018, these proportions were 11% and 50%, respectively, while 18% 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 to 39 years, 40 to 49 years, 50 to 59 years, and 60 years or older.*



Duration of infection

People in care by the end of 2018 had been diagnosed with HIV a median of 8.8 (IQR 4.2-15.5) years previously. Thus, a large group (44%) of those in care had been living with HIV for more than 10 years, while 12% had done so for more than 20 years (*Table 9.1*). The median time since diagnosis was 7.4 years for men who have sex with men (MSM), 8.8 years for other men, and 9.6 years for women.

Table 9.1: Characteristics of the 682 HIV-1-positive individuals in clinical care in Curaçao by the end of 2018.

	Men (n=418, 61%)		Women (n=264, 39%)		Total (n=682)	
	n	%	n	%	n	%
Transmission						
MSM	177	42	-	-	177	26
Heterosexual	175	42	246	93	421	62
Other/unknown	66	16	18	7	84	12
Current age (years)						
0-17*	1	-	-	-	1	-
18-24	13	3	10	4	23	3
25-34	71	17	30	11	101	15
35-44	85	20	46	17	131	19
45-54	117	28	87	33	204	30
55-64	92	22	65	25	157	23
65-74	32	8	17	6	49	7
≥75	7	2	9	3	16	2
Country of origin						
Former Netherlands Antilles	343	82	174	66	517	76
Dominican Republic	8	2	42	16	50	7
Haiti	24	6	24	9	48	7
The Netherlands	13	3	1	0	14	2
Other	30	7	23	9	53	8
Years aware of HIV infection						
<1	30	7	16	6	46	7
1-2	55	13	23	9	78	11
3-4	52	12	23	9	75	11
5-10	105	25	73	28	178	26
10-20	125	30	91	34	216	32
>20	48	11	37	14	85	12
Unknown	3	1	1	0	4	1

**Data on children and adolescents are not yet collected.*

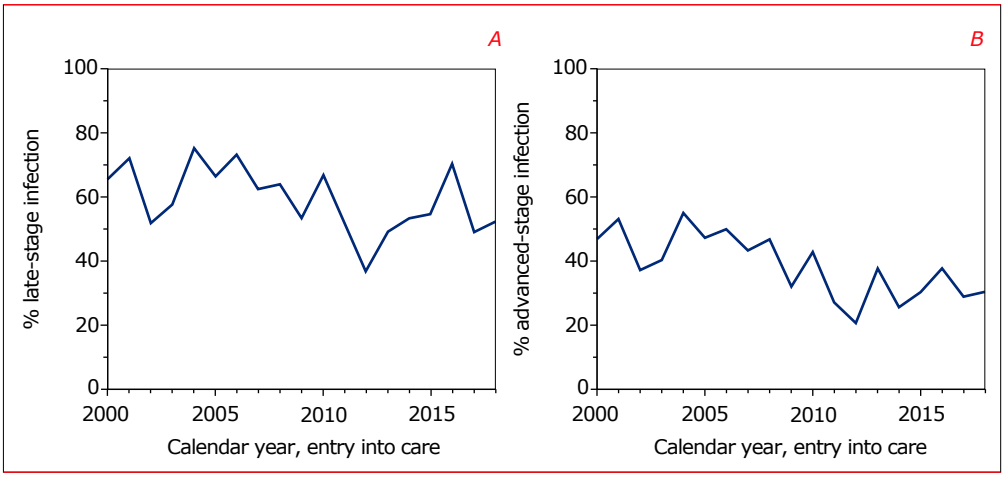
***Legend:** MSM=men who have sex with men.*

Late presentation and start of treatment

A large proportion of people who have entered care since 2000 were late presenters, i.e., individuals either presenting for care with a CD4 count below 350 cells/mm^3 or presenting with an AIDS-defining event regardless of CD4 count[1]. The proportion of late presenters was 64% among individuals entering care between 2000 and

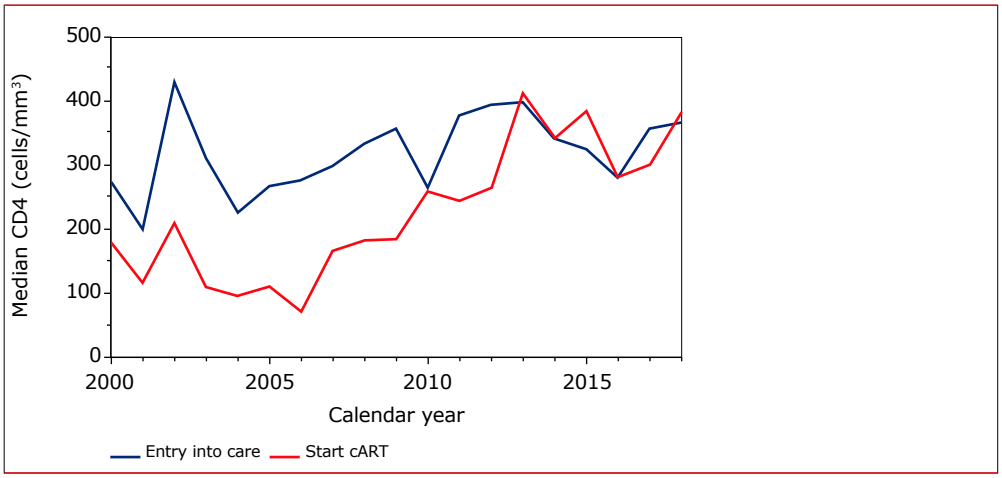
2005 and remained at a high level (58%) among those entering care in 2016 or later (*Figure 9.2A*). However, there appears to have been a decrease in the proportion of people presenting for care with advanced HIV disease, i.e., with a CD4 count less than 200 cells/mm^3 or AIDS. Between 2000 and 2005, 46% presented with advanced HIV, while this proportion was 33% among those presenting for care in 2016 or later (*Figure 9.2B*). Altogether, 12% of the individuals who entered care since 2000 presented with an AIDS-defining disease.

Figure 9.2: *Proportion of people classified as presenting with (A) late-stage or (B) advanced-stage HIV infection at the time of entry into care. From 2000 (2016) onwards, 59% (57%) presented with late HIV disease while 36% (30%) were advanced presenters. Late-stage HIV infection: CD4 counts below 350 cells/mm^3 or having AIDS, regardless of CD4 count. Advanced-stage HIV infection: CD4 counts below 200 cells/mm^3 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 18% of individuals who have entered care since 2000.*



In recent years, there has been an increase in CD4 cell counts at the start of cART (*Figure 9.3*). Between 2016 and 2018, 29% of those for whom a CD4 count was available at the start of cART had less than 200 CD4 cells/mm^3, 24% had CD4 counts between 200 and 349 cells/mm^3, 25% had CD4 counts between 350 and 499 cells/mm^3, and 22% had CD4 counts of 500 cells/mm^3 or higher. During the same period, 95% of the people entering care received treatment within six months, irrespective of their CD4 count.

Figure 9.3: Changes over calendar time in median CD4 counts at entry into care and at the start of combination antiretroviral therapy (cART). Between 2000 and 2018, the median CD4 count at the time of entry into care increased from 275 cells/mm³ (interquartile range (IQR) 144-449) to 368 (185-489) cells/mm³. During the same period, CD4 counts at start of cART increased from 180 (59-321) cells/mm³ to 383 (217-481) cells/mm³.

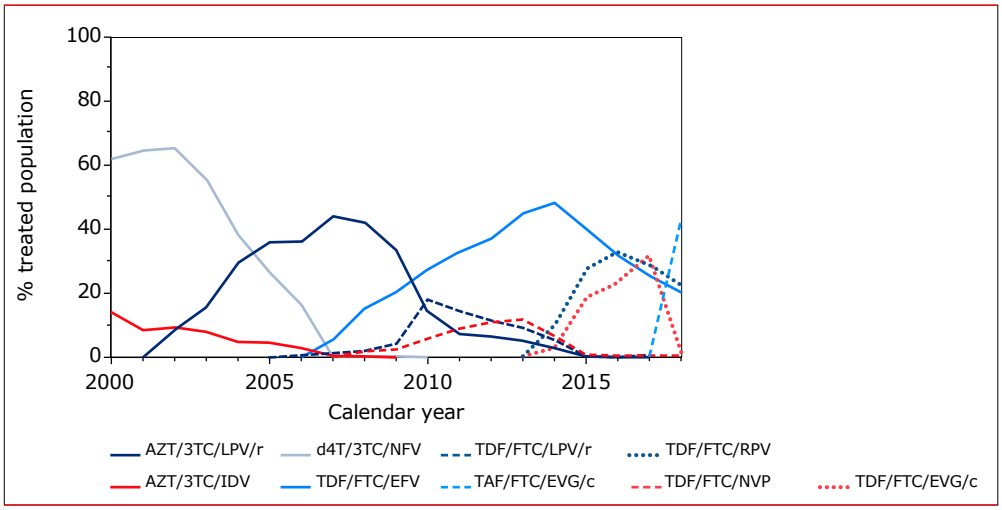


Legend: cART=combination antiretroviral therapy.

Combination treatment

In total, 1,121 (92%) of the 1,222 registered HIV-1-positive individuals had started antiretroviral treatment by May 2019 (*Appendix Table 9.1*). Over time, there have been clear shifts in the treatment regimens prescribed in Curaçao (*Figure 9.4*). Of the people who started antiretroviral treatment and were still in care by the end of 2018, 43% were being treated with tenofovir alafenamide/emtricitabine/cobicistat-boosted elvitegravir, 23% with tenofovir disoproxil/emtricitabine/rilpivirine, and 20% with tenofovir disoproxil/emtricitabine/efavirenz. The majority (96%) used a once-daily regimen, while 87% were treated with a fixed-dose single tablet regimen.

Figure 9.4: Percentage of individuals treated with antiretroviral therapy (ART) by specific regimens over calendar time. At the end of 2018, 43% of the people were receiving TAF/FTC/EVG/c, 23% RPV/TDF/FTC, and 20% TDF/FTC/EFV.

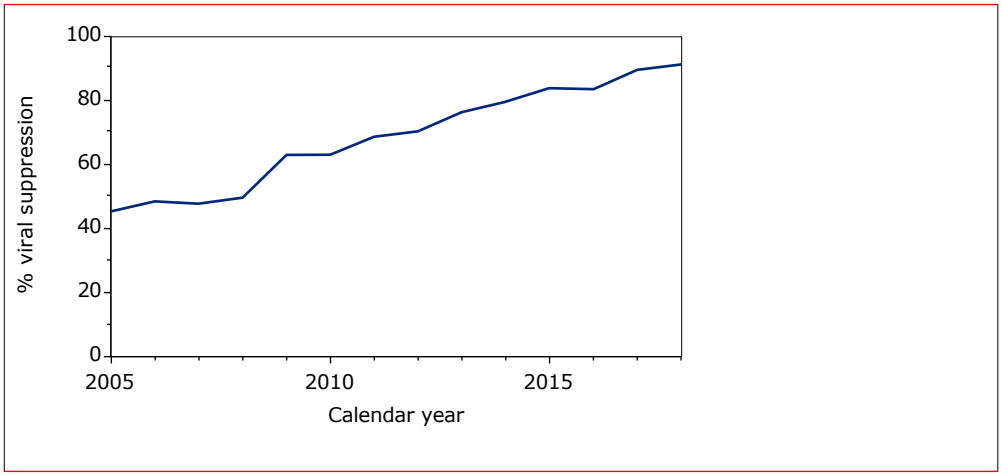


Legend: AZT=zidovudine; 3TC=lamivudine; LPV/r=ritonavir-boosted lopinavir; d4T=stavudine; NFV=nelfinavir TAF=tenofovir alafenamide; TDF=tenofovirdisoproxil fumarate; FTC=emtricitabine; RPV=rilpivirine; IDV=indinavir; EFV=efavirenz; NVP=nevirapine; EVG/c=cobicistat-boosted elvitegravir.

Treatment outcome

In the total population still in care, the median current CD4 count was 494 (IQR 356-694) cells/mm^3. CD4 counts were similar between MSM (524 (402-702) cells/mm^3) and women (514 (396-754) cells/mm^3), but men who acquired their infection via other or unknown modes of transmission had lower CD4 counts (441 (293-627) cells/mm^3). Among individuals with a viral load measurement, the proportion with HIV RNA levels less than 200 copies/ml increased from 45% in 2005 to 91% in 2018 (*Figure 9.5*).

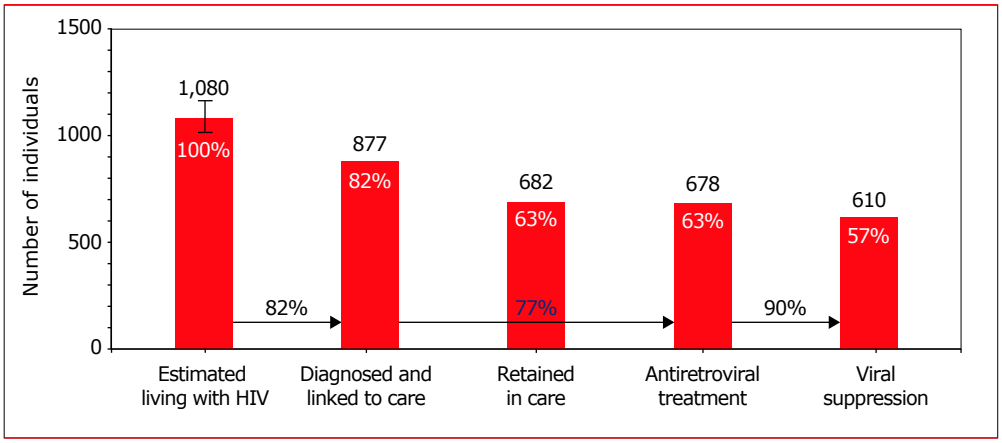
Figure 9.5: Proportion of people in care with HIV RNA <200 copies/ml at their last viral load measurement in each calendar year.



Continuum of HIV care

The total number of people living with HIV by the end of 2018, including those not yet diagnosed, was estimated to be 1,080 (95% confidence interval (CI) 1,000-1,160), of whom 200 (130-280) were still undiagnosed (*Figure 9.6*)[2]. In total, 877 individuals, or 82% 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, 682 (63%) people were still in care, i.e., they had had at least one HIV RNA or CD4 count measurement or a clinic visit in 2018. The majority of these individuals (678, or 77% of those diagnosed and linked to care) had started antiretroviral treatment. In total, 666 individuals, or 98% of those who started treatment, had an HIV RNA measurement available in 2018 and 610 (92%, or 90% of those treated) had a most recent HIV RNA below 200 copies/ml. Overall, 57% of the total estimated population living with HIV and 70% of 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) 90-90-90 target for 2020 the current estimate for Curaçao stands at 82-77-90: 82% 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 load[3].

Figure 9.6: Continuum of HIV care for the total estimated HIV-1-positive population estimated to be living with HIV in Curaçao by the end of 2018. Percentages at the top of the bars are calculated relative to the number living with HIV, while percentages at the bottom correspond to UNAIDS' 90-90-90 targets.



Viral suppression

For 68 individuals who were known to have ever started treatment it was unknown if they had a suppressed viral load. On closer inspection, 12 (18%) of these individuals were found to have no documented RNA measurement available in 2018. Of the 56 (82%) people with a viral load measurement and no viral suppression, 14 had only started antiretroviral treatment in 2018 and may not have had sufficient follow up to achieve a documented suppressed viral load.

Antiretroviral treatment

Four individuals who were in care by the end of 2018 had not yet started antiretroviral treatment, although, at the time of writing, three of these people are known to have started treatment in 2019.

Lost to care

In total, 253 individuals were lost to care, of whom 58 (23%) before the end of 2008 and 195 (77%) after 2008. The 58 individuals who were lost to care before 2008 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 58 individuals are still living in Curaçao without needing care or antiretroviral treatment. Of the 195 individuals lost to care after 2008, i.e., the difference between the second (877) and third stage (682) in the care continuum, 60 (31%) were born outside the former Netherlands Antilles, including 26 in Haiti and 11 in the Dominican Republic,

whereas this proportion was slightly lower, 24%, for those who were still in care by the end of 2018. This suggests that some of those lost to care may actually have moved abroad, in particular back to their country of birth, but also shows that, overall, a considerable proportion of people were not retained in care.

Conclusion

Over the years, the quality of treatment offered to HIV-positive individuals in Curaçao has improved considerably, as evidenced by an 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 the progress towards achieving UNAIDS' 90-90-90 goals for 2020. However, the relatively high proportion of people lost to care is worrisome and may affect underreporting of death and/or outmigration. In addition, the proportion of people entering care with late-stage HIV infection remains high, although the proportion with advanced HIV disease appears to be decreasing.

Recommendations

Curaçao is in a unique position in the Caribbean, in that data from HIV-positive individuals in care are regularly collected and monitored. However, it is important that the quality of these data is maintained. Moreover, currently no data are regularly collected for HIV-positive children. As a result, data on children living with HIV in Curaçao are of unknown quality and can therefore not be used for strategic planning of HIV care for this specific population.

Early start of cART appears possible, but long-term continuous follow up should be guaranteed to optimise the effect of cART. 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 recently been stepped up to trace people who miss their scheduled appointment in the hospital. As a result, retention in care is expected to improve in the near future.

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

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Appendix: supplementary table

Appendix Table 9.1: Annual number of new HIV diagnoses, number of individuals entering care, and number of individuals starting combination antiretroviral treatment (cART). Note: data collection for 2017 and 2018 had not yet been finalised at the time of writing.

Calendar year	Diagnosis	Entry into care	Start cART
≤1999	252	180	91
2000	45	45	31
2001	36	41	42
2002	49	45	23
2003	59	54	25
2004	49	51	41
2005	53	62	48
2006	49	63	46
2007	43	43	45
2008	53	63	53
2009	52	58	56
2010	47	51	62
2011	58	57	51
2012	60	69	62
2013	70	60	82
2014	42	53	79
2015	48	49	53
2016	49	57	62
2017	40	50	56
2018	47	56	62
2019	6	6	9
Unknown	15	9	15
Total	**1,222**	**1,222**	**1,094**

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