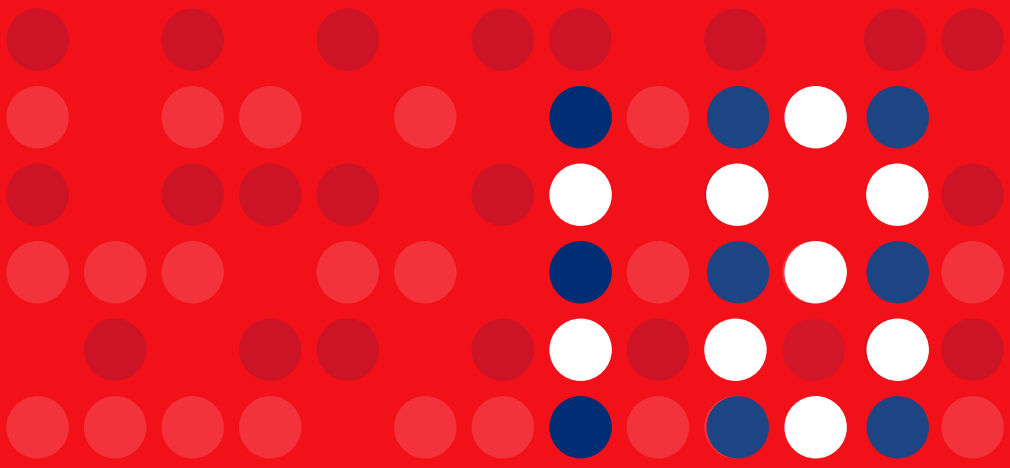
Human Immunodeficiency Virus (HIV)
infection in the Netherlands

HIV Monitoring

HIV Monitoring Report 2018

Chapter 7: Quality of care



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.

SHM comprehensively maps the HIV epidemic and HIV treatment outcomes in the Netherlands, thereby contributing to the knowledge of HIV. 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.

In addition to national reports, healthcare professionals are provided with treatment centre-specific reports to enable them to monitor and optimise care provided in their centres. Moreover, upon request, SHM data are also made available for use in HIV-related research, both in the Netherlands and internationally. The outcome of SHM's research and international collaborations provides tangible input into policy guidelines and further improves HIV care 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.

HIV Monitoring

Monitoring Report 2018

Human Immunodeficiency Virus (HIV) Infection in the Netherlands

Interactive PDF user guide

This PDF allows you to find information and navigate around this document more easily.

Links in this PDF

Words and numbers that are underlined are links — clicking on them will take you to further information within the document or to a web page (which opens in a new window) if they are a url (e.g http://www.cdc.gov/hiv/guidelines/).

Reference numbers

Click on the reference numbers in the text to see the reference details on a web page (which opens in a new window).

Guide to buttons

Content page

Next chapter

Preceding chapter

You can also navigate using the bookmarks.

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To cite this report, please use: van Sighem A.I., Boender T.S., Wit F.W.N.M., Smit C., Matser A., Reiss P. Monitoring Report 2018. Human Immunodeficiency Virus (HIV) Infection in the Netherlands. Amsterdam: Stichting HIV Monitoring, 2018. Available online at www.hiv-monitoring.nl

ISBN/EAN: 978-94-90540-09-8
First edition: November 2018
Editing: Sally H. Ebeling, Boston, MA, USA

Art Direction & DTP: Studio Zest, Wormer, the Netherlands

7. Quality of care

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Box 7.1: Definitions

Diagnosis	The moment an individual is newly diagnosed with an HIV infection. The time of diagnosis can be weeks, months, or years after infection.
Registration	The moment an HIV-positive individual in care is notified to SHM by their treating physician or nurse and registered in the SHM database. Registration is usually within a few months of entering care, but can take longer. Collection of demographic and clinical data from the time of HIV diagnosis can only be done after an HIV-positive individuals is registered with SHM.
Entry into care	The moment an HIV-positive individual is first seen for care in an HIV treatment centre, which is usually within a few weeks of HIV diagnosis.
Volume indicator	The number of people newly entering care for the first time between 2012 and 2016 for each treatment centre.
Outcome indicators *Retention in care*	I. Short term retention: The proportion of people who entered care at an HIV treatment centre between 2012 and 2017 for the first time after diagnosis and who were still in care, had not moved and had not died at least 18 months after entering care II. Retention in care in 2017: the proportion of people who had not moved, had not died and had a clinical visit in 2017, stratified by year of entering care (2012-2017).

Initiation of cART	I. Start of combination antiretroviral therapy (defined as a combination of three antiretroviral drugs from two different antiretroviral drug classes) within 6 months of entry into care. II. The proportion of people who had entered care between 2012 and 2016, had initiated cART, and were still in care in 2017.
Viral suppression	I. The proportion of treatment-naive people with a plasma HIV RNA level <400 copies/ml at 6 months after the start of cART. II. The proportion of all HIV-positive people on cART for at least 6 months with a plasma HIV RNA level <100 copies/ml. III. The proportion of people who entered HIV care between 2012 and 2016, were still in care in 2017, and had a plasma HIV RNA level <100 copies/ml.
Process indicators *Prior to cART initiation*	The proportion of people newly entering HIV care for whom data were available on CD4 count, plasma HIV RNA, total cholesterol, and screening for the presence of hepatitis C virus (HCV) co-infection and hepatitis B virus (HBV) co-infection in the 6 months after entry into care.
Following cART initiation	I. The proportion of people in whom CD4 cell count, plasma HIV RNA and total cholesterol measurements were carried out at least once within approximately 12 months after cART initiation. II. The proportion of men who have sex with men (MSM) who were HCV-negative at entry into care and in whom repeat HCV screening was carried out within approximately 18 months after the initial HCV negative test. III. The proportion of MSM for whom syphilis serology was repeated within approximately 18 months after the first assessment at entry into care.

Box 7.2: Data used in this chapter

DataCapTree: impact of new data entry system launched in 2018 on 2017 data
In 2018, Stichting HIV Monitoring launched a new data entry system, DataCapTree, which went live in February 2018 with an initial set of approved data collection protocols. Data included in this new data entry system at the time of the May 2018 database lock were used in this chapter to describe patients newly entering care, the initiation of cART and retention in care rates. However, as the laboratory data were not yet fully up to date by May 2018, the decision was made to use data from the database lock of 31 December 2017 (from the previous data entry system, Oracle Clinical) for those indicators that include laboratory measurements. As data collection over the previous year standardly continues through the months of January to May in the subsequent year, the use of laboratory data from an earlier database lock may mean that the backlog in data collection over 2017 might be slightly greater than in previous years.

Introduction

One of SHM's missions is to contribute to the quality of HIV care in the Netherlands. Through the collection of pseudonymised data from individuals living with HIV in outpatient care in the currently 26 officially acknowledged HIV treatment centres, SHM provides a nationwide overview of the outcome of care for individuals living with HIV. This unique overview allows SHM to facilitate the assessment of quality of HIV care in the Netherlands.

In general, HIV treatment guidelines are intended not only to support physicians in providing optimal health care, but also to reduce the variation in care between different treatment centres. The Dutch Association of HIV-Treating Physicians (*Nederlandse Vereniging van HIV Behandelaren*, NVHB) has issued national guidelines for the treatment and monitoring of HIV-positive people in the Netherlands[1]. Using these guidelines as a basis, we defined a set of indicators with which to explore the quality of care in Dutch HIV treatment centres and gain insight into potential variation in outpatient care between HIV treatment centres.

Methods

The indicators selected for this analysis were derived from formal NVHB recommendations that, in general, follow the United States Department of Health and Human Services (DHHS) HIV/AIDS practice guidelines. These indicators were classified as volume, outcome or process indicators.

As reported in earlier studies, the number of patients in care (i.e., the centre volume) may have an impact on the reported indicators[2,3,4]. In particular, a smaller number of patients in some HIV treatment centres could result in less informative proportions, as a single deviating score on an indicator could result in a wide range of scores for a given indicator. For this reason, when reporting the results, we took treatment centre size into account, categorising centres according to the number of patients in care as follows: large (red dots): ≥700 patients (11 centres); medium-sized (blue dots): 400-700 patients (9 centres); small (grey dots): ≤400 patients (6 centres). Patients who switched between centres are presented as a green dot (*retention in care* indicator only).

Volume indicator

To meet the requirements of the national certification process for HIV treatment centres in the Netherlands (Harmonisatie Kwaliteitsbeoordeling in de Zorgsector, HKZ), HIV treatment centres are expected to enrol a minimum number of approximately 20 new patients into care each year. Therefore, as a volume indicator, we quantified the number of patients newly entering care for the first time each year between 2012 and 2017 for each treatment centre.

Outcome indicators

The outcome indicators included *retention in care*, *initiation of cART* and *achievement of viral suppression*. For the purpose of the current analysis, we defined short-term and long term retention in care as follows:

Short term retention in care was defined as the proportion of those patients who had entered care for the first time after being diagnosed with HIV in one of the Dutch HIV treatment centres between 2012 and 2015, and who were still alive and in care at least 18 months after entering care. Patients who died were excluded from the retention in care indicators.

Retention in care in 2017 was defined as the proportion of patients who had not moved, had not died, and had had a clinical visit in 2017, stratified by year of entering care (2012-2015). During the observation period, approximately 14% of patients switched treatment centres; these patients were considered to be retained in care, since they were documented as having remained in care and were not lost to follow up. However, to avoid double counting, they were not assigned to a particular centre, but were included in a separate category.

Initiation of cART describes, in the first place, the overall proportion of patients who had entered care between 2012 and 2016 and who had started cART within 6 months of entry into care. This indicator was stratified by CD4 cell count at entry into care: CD4 ≥500 cells/mm^3, CD4 350-500 cells/mm^3 and CD4 <350 cells/mm^3. Secondly, the initiation of care indicator describes the proportion of patients who had ever initiated cART among those who entered care between 2012 and 2016 and who were still in care in 2017.

Viral suppression was assessed by three indicators. The first indicator was defined as the proportion of treatment-naive patients with a plasma HIV RNA level <400 copies/ml at 6 months after the start of cART. The HIV RNA measurement closest to 6 months after the start of cART was chosen, with a minimum window of 3 months and a maximum of 9 months. The target suppression rate was set at ≥90%. This indicator, developed using the Delphi method, is part of the HKZ certification process and was defined jointly with the NVHB[5] during the development of *Zichtbare Zorg* (Visible Healthcare; ZiZo) indicators and HKZ.

The second indicator for viral suppression was the proportion of all HIV-positive patients on cART for at least 6 months with a plasma HIV RNA level <100 copies/ml. This indicator was calculated for the calendar years 2012-2017.

The third indicator for viral suppression was the proportion of all HIV-positive patients who entered care between 2012 and 2016 and who were still in care in 2017 with a most recent plasma HIV RNA level below <100 copies/ml, regardless of cART use.

Process indicators

Process indicators were calculated for two scenarios: prior to starting cART and following cART initiation.

To calculate the process indicators prior to cART initiation, we included all patients who had entered care between 2012 and 2016. Only patients who had entered care for the first time and were in care for at least 12 months were included; patients who had switched treatment centres were not counted as newly entering care, as they had remained in care elsewhere. Of note, patients who had been in care and started cART outside the Netherlands were excluded. The indicators were defined as the proportion of patients newly entering care between 2012 and 2016 for whom the following measurements were available in the 6 months after entry into care:

CD4, plasma HIV RNA, total cholesterol, screening for the presence of hepatitis C virus (HCV) co-infection and hepatitis B virus (HBV) co-infection. In terms of cholesterol measurements, patients were stratified according to age the at time of entering care (<50 years and ≥50 years).

To calculate the process indicators following cART initiation, we included patients who had started cART in 2012-2016. The indicators were defined as the proportion of patients in whom the following measurements were carried out at least once within approximately 12 months after cART initiation: CD4 cell count, plasma HIV RNA and total cholesterol (stratified by age in the specific calendar of observation: <50 years and ≥50 years).

Additional process indicators were specifically defined for men who have sex with men (MSM), based on the national guideline recommendations to carry out annual HCV screening among MSM who report HCV-related risk-taking behaviour and to perform annual syphilis screening for all MSM. The first of these indicators was calculated for MSM who were HCV-negative at entry into care in 2012-2015. We calculated the proportion with repeat HCV serology or HCV RNA within approximately 18 months after the date of their HCV negative test result. It is worth noting that data on HCV-related risk-taking behaviour are not available to SHM and therefore this indicator may well overestimate the number of MSM that should have been repeatedly screened for HCV.

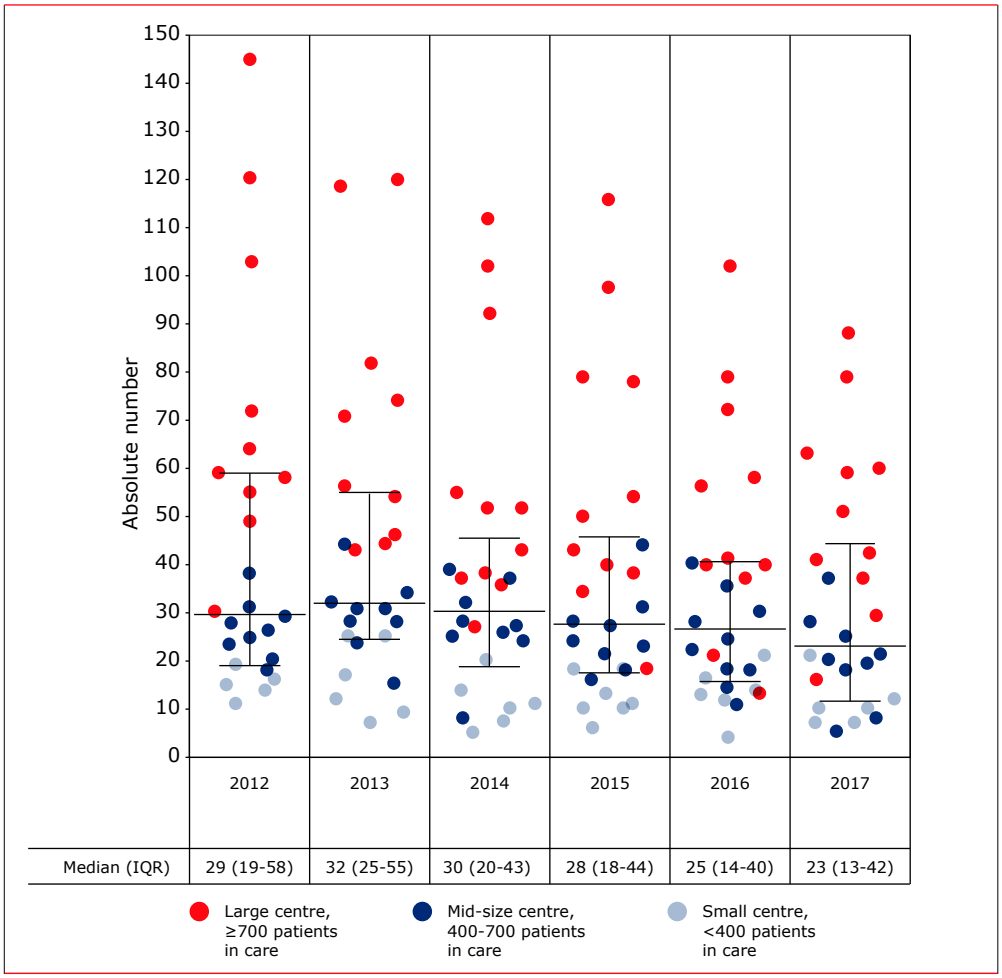
The second of the MSM-specific indicators was derived for all MSM who entered care in 2012-2015, and describes the proportion of men for whom syphilis serology was repeated within approximately 18 months after the first time syphilis was assessed.

Results

Volume indicator

The numbers of patients who newly entered care in 2012-2017 across the HIV treatment centres are shown in *Figure 7.1*. The median number of patients annually entering care varied between 32 in 2013 and 23 in 2017 and shows a small decrease over time. The minimum number ranged from 11 patients in 2012 to 4 in 2016 and 5 in 2017. In 2017, ten HIV treatment centres had fewer than 20 newly-entering patients.

Figure 7.1: Annual number of patients newly entering care per HIV treatment centre in the Netherlands in 2012–2017.



Legend: IQR=interquartile range.

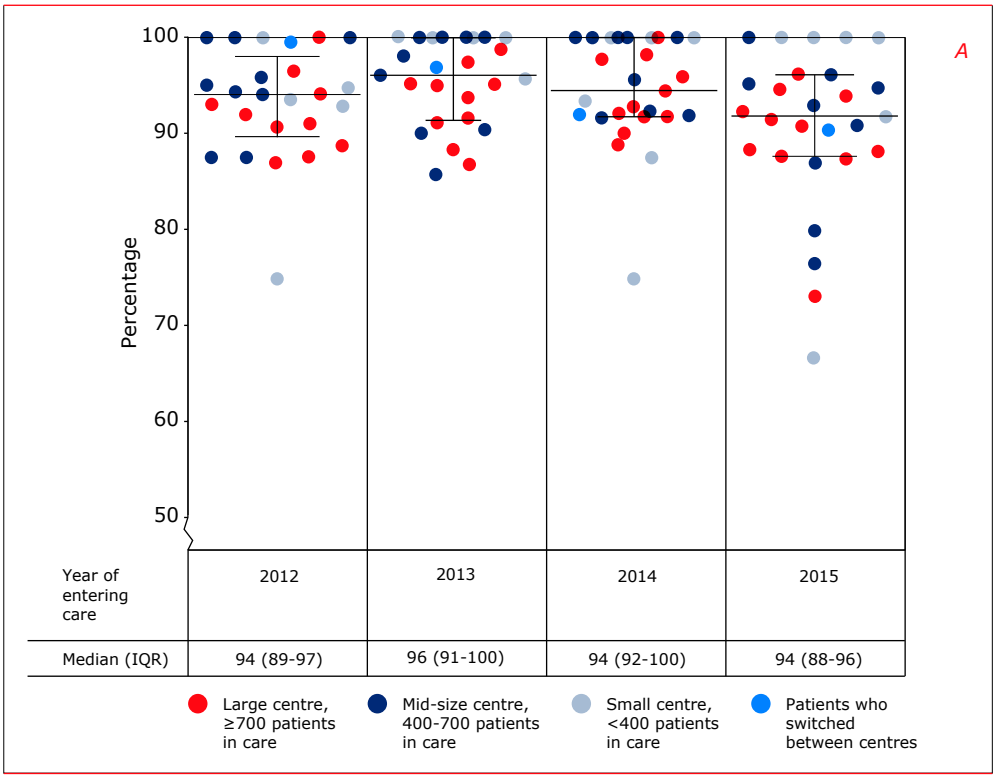
Retention in care

Figure 7.2A shows the variation in retention in care rate across treatment centres for patients who entered care between 2012-2015. The median retention rates varied between 94% and 92%, with a minimum of 67% and a maximum of 100%.

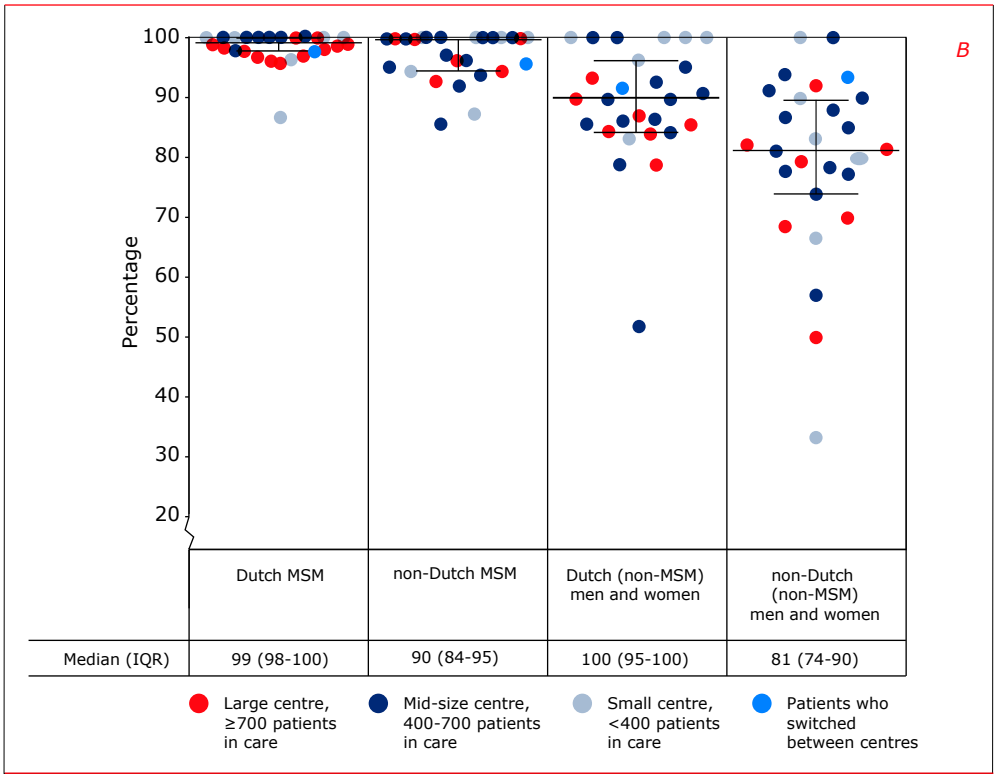
Figure 7.2B shows the retention rates for those who entered care between 2012-2015, stratified by MSM vs non-MSM and by patients' region of origin (Dutch vs non-Dutch). Retention in care rates were highest in Dutch MSM (99%) and Dutch (non-MSM) male and female patients (100%) compared with non-Dutch MSM (90%) and non-Dutch (non-MSM) male and female patients (81%), respectively (Chi square test p<0.0001). Lower retention rates were observed among non-Dutch MSM from western European countries other than the Netherlands and women from eastern Europe or an unknown region of origin.

Figure 7.2C shows the long term retention-in-care rates. Among patients who entered care in 2012, the median retention-in-care rate in 2017 was 84%. This rate increased when people entered care more recently, with a median retention rate of 95% for those who entered care in 2016.

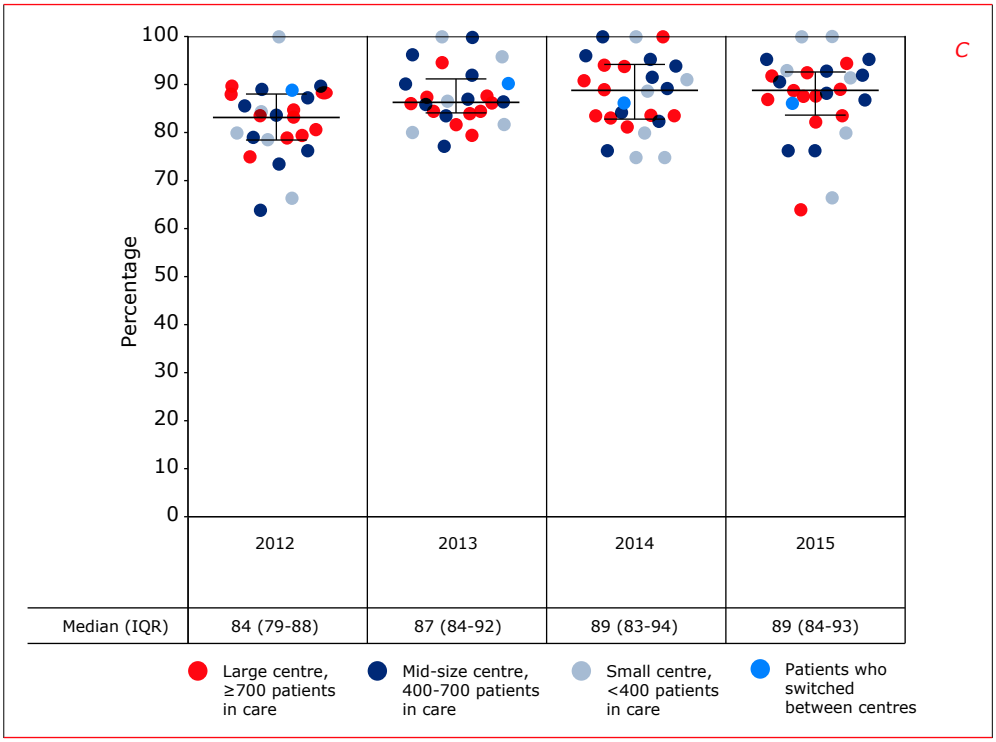
Figure 7.2: *Retention in care: A) 18 months after entering care, over time by year of entering care, B) by HIV transmission group and patients' region of origin, C) in 2017 for those who entered care between 2012–2015. Retention rates are presented as the median and interquartile range across all HIV treatment centre.*



Legend: *IQR=interquartile range.*



Legend: *IQR=interquartile range.*



Legend: *IQR=interquartile range.*

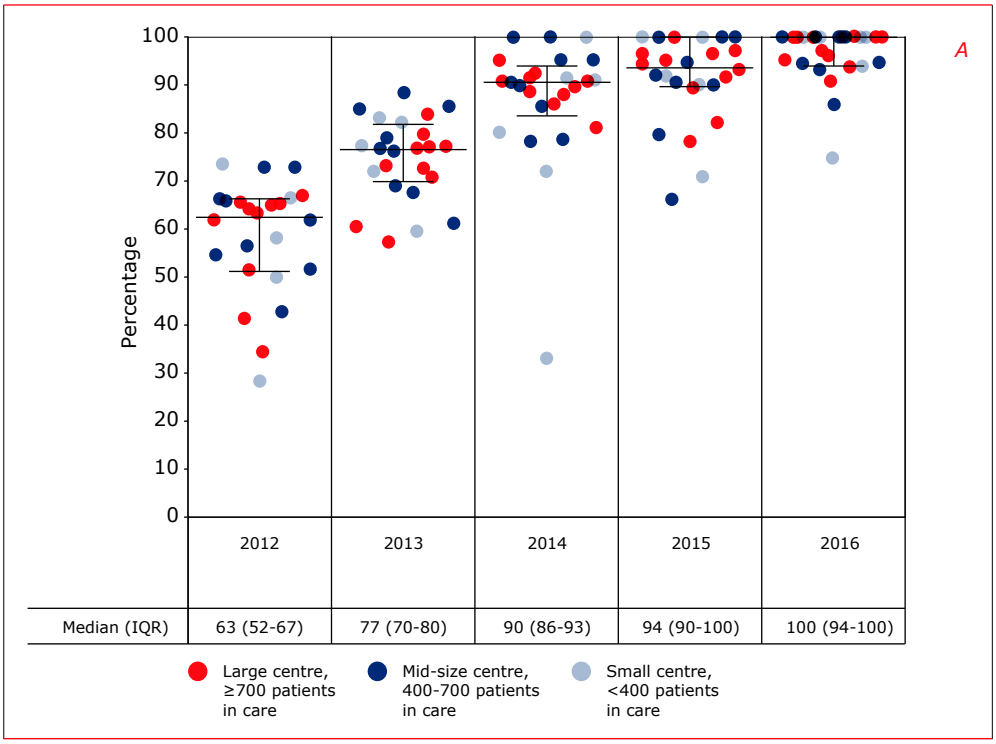
Initiation of cART

Figure 7.3A shows the proportions of patients starting cART within 6 months after entering care. Overall, a median of 63% of the patients who entered care in 2012 started cART within 6 months of entry, and this proportion increased to a median of 100% among those who entered care in 2016. In terms of variation across HIV treatment centres, the lowest proportion of patients starting cART within 6 months was 29% for 2012 and 75% in 2016.

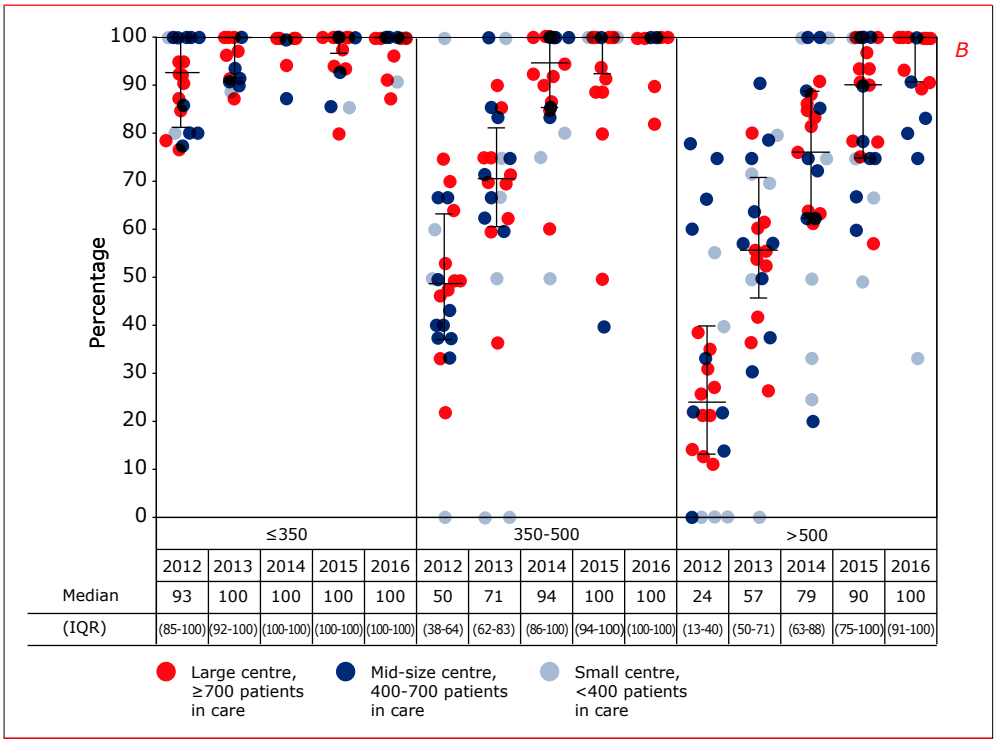
When stratified by CD4 cell count, the proportion of patients starting cART within 6 months of entering care was lower for the CD4 cell category >500 cells/mm^3, compared with that of <350 cells/mm^3 (*Figure 7.3B*). This difference between CD4 cell categories became smaller over time, and in 2016 the median proportions of patients starting cART within 6 months was 100% for all CD4 cell count strata; nonetheless, considerable variation remained between HIV treatment centres. This variation was greatest for individuals who entered care with more than 500

CD4 cells/mm^3. Among those who entered care between 2012 and 2016 and remained in care in 2017, almost everyone had initiated cART (98%). This proportion was greater than 90% in all centres (*Figure 7.3C*).

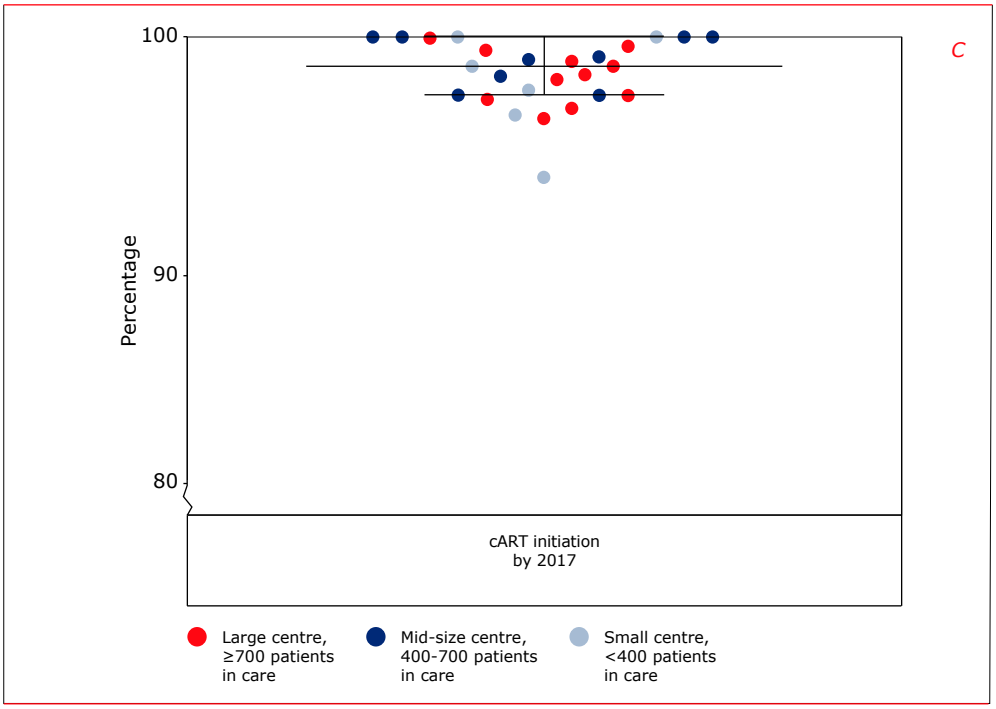
Figure 7.3: *The proportion of patients who entered care between 2012–2016 and started combination antiretroviral therapy (cART) within 6 months after entry: A) overall, B) by CD4 cell count at entry, C) the proportion who newly entered care between 2012–2016 and who initiated cART and were still in care in 2017.*



Legend: *IQR=interquartile range.*



Legend: *IQR=interquartile range.*

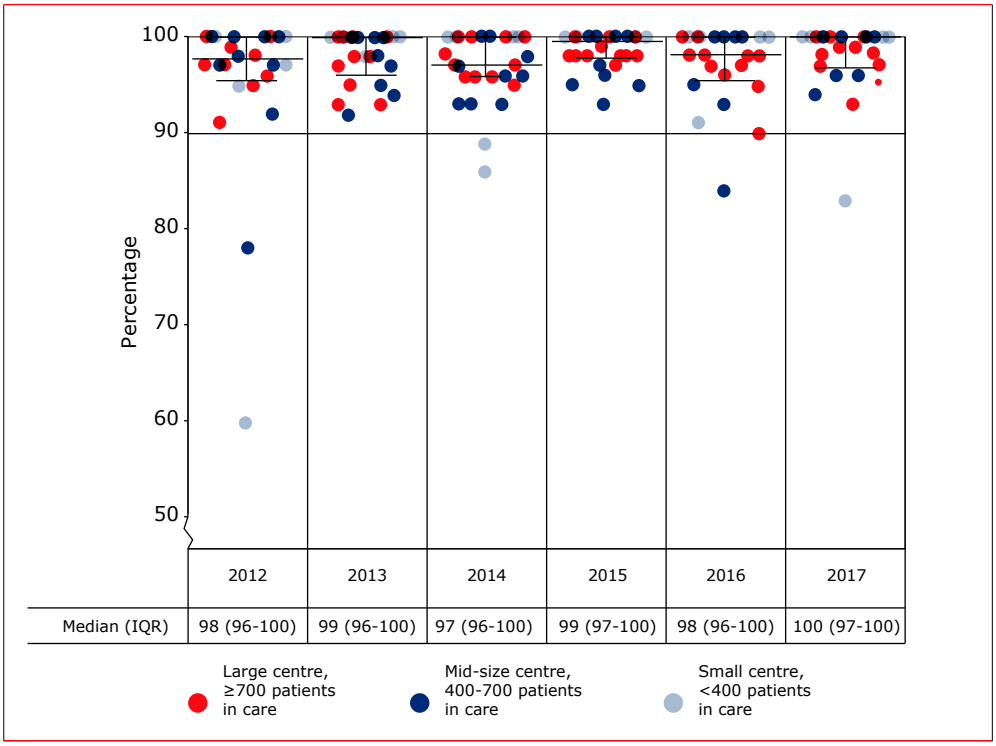


Legend: *cART=combination antiretroviral therapy.*

Viral suppression

Viral suppression was assessed with three indicators. The first indicator is the proportion of treatment-naive patients with an HIV RNA level <400 copies/ml at 6 months (minimum and maximum: 3-9 months) after the start of cART. *Figure 7.4* shows the viral suppression rates for patients newly initiating treatment during the period 2012-2017. The median rates varied from 97% to 100% in this period. In 2017, in one small treatment centre, less than 90% of the treatment-naive patients had achieved an HIV RNA <400 copies/ml within 6 (3-9) months after starting cART.

Figure 7.4: Proportion of treatment-naive patients with a plasma HIV RNA level <400 copies/ml at 6 months (minimum and maximum: 3-9 months) after the start of combination antiretroviral therapy (cART) across all HIV treatment centres.



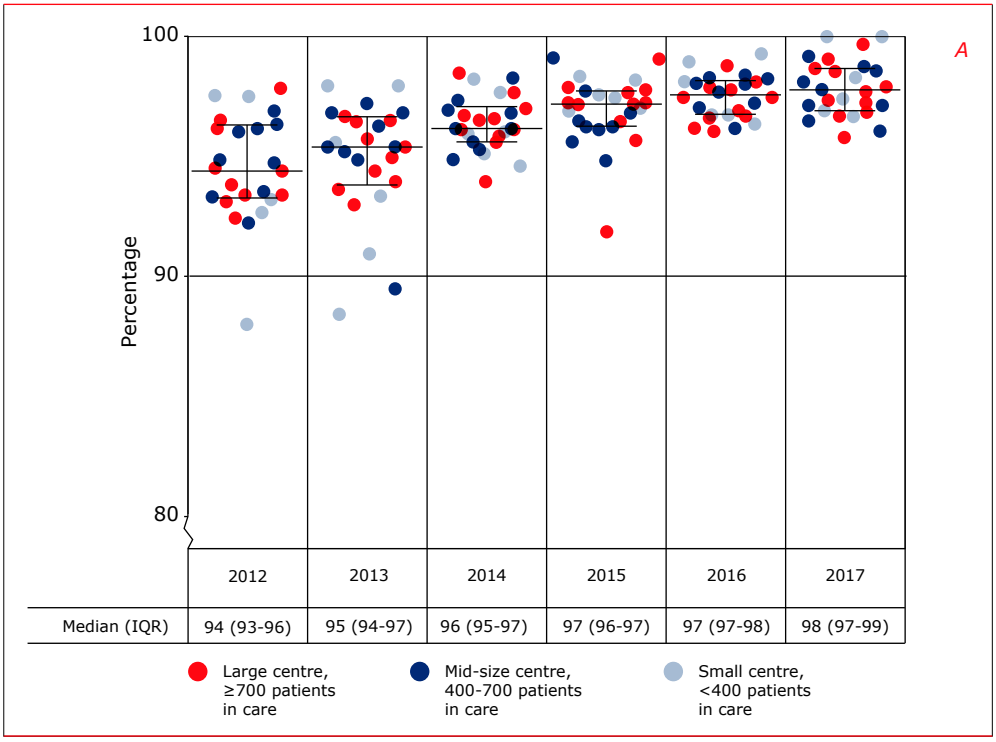
***Legend:** IQR=interquartile range.*

The second viral suppression indicator is the proportion of all HIV-positive patients in care who have been on cART for at least 6 months and have a last available HIV RNA level <100 copies/ml. This indicator was calculated for the calendar years 2012-2017 (*Figure 7.5A*). In all calendar years, the median proportion was more than 90%, with limited variation according to centre size.

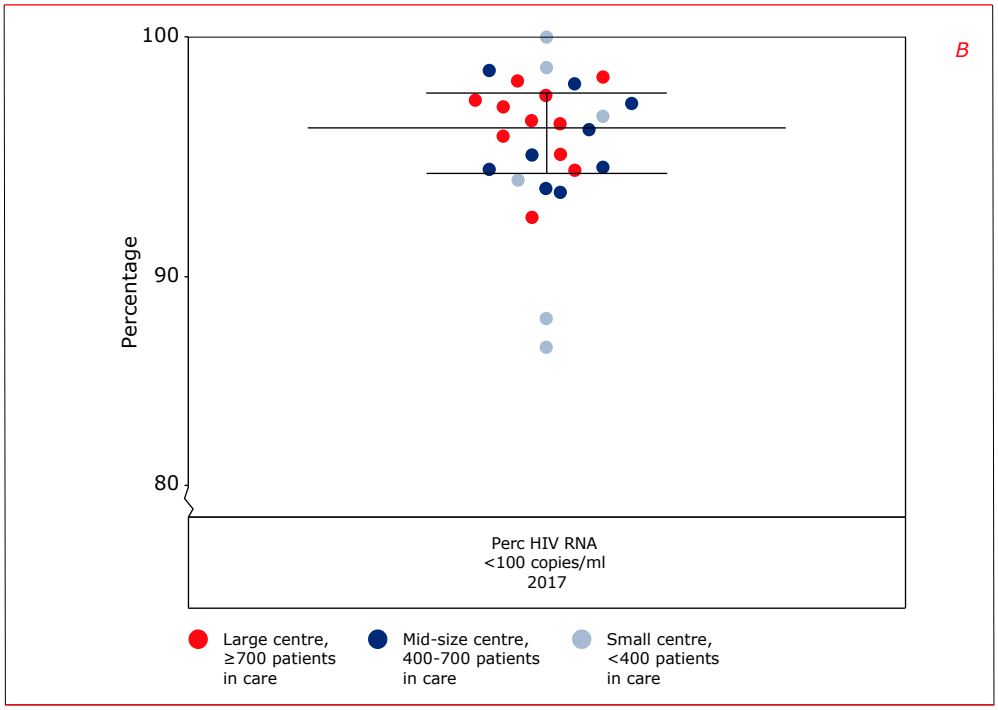
Overall, and not stratified by treatment centre, the proportion of patients with long-term viral suppression was slightly lower in those of non-Dutch origin than in those originating from the Netherlands (96% vs 98%, p=0.001). Moreover, MSM had higher suppression rates after more than 6 months of cART use than non-MSM (98% vs 95%, p<0.0001).

Figure 7.5B shows the proportion of patients who entered care between 2012-2016, were still in care in 2017, and had a last available HIV RNA level <100 copies/ml, regardless of cART use. Overall 96% of the patients in care in 2017 had an HIV RNA level<100 copies/ml, although this rate was below 90% for two HIV treatment centres.

Figure 7.5: *A) The proportion of all HIV-positive patients in care who had been on combination antiretroviral therapy (cART) for at least 6 months and who had an HIV RNA level <100 copies/ml. This indicator was calculated for each calendar year during the period 2012-2017 and is presented as the proportion across all HIV treatment centres; B) The proportion of HIV-positive patients who entered care between 2012-2016 and who are still in care in 2017 with an HIV RNA level <100 copies/ml.*



Legend: *IQR=interquartile range.*



Process indicators

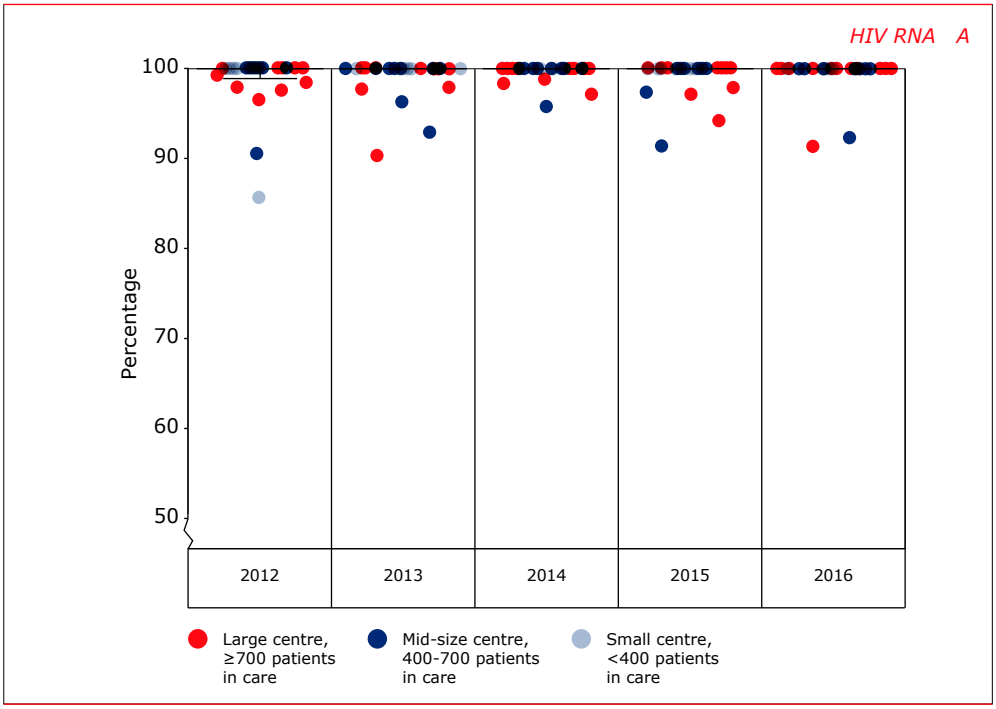
Prior to starting cART

Figure 7.6 shows the variation between Dutch HIV treatment centres in terms of measuring plasma HIV RNA, CD4 cell count, and total cholesterol (stratified by age at first visit), as well as HCV and HBV screening, in patients who newly entered care in 2012-2016. The median rates of testing for plasma HIV RNA and CD4 cell count within 6 months after entering care were stable over time and greater than 90% in all years. However, there was considerable inter-centre variation in those patients with a cholesterol measurement. This variation was greater in patients below 50 years of age at the time of their first clinical visit than in those above 50 years. Although, in the majority of centres all patients above 50 years of age had a cholesterol measurement, there remained some centres in which less than 90% of patients above 50 years of age had an available cholesterol measurement.

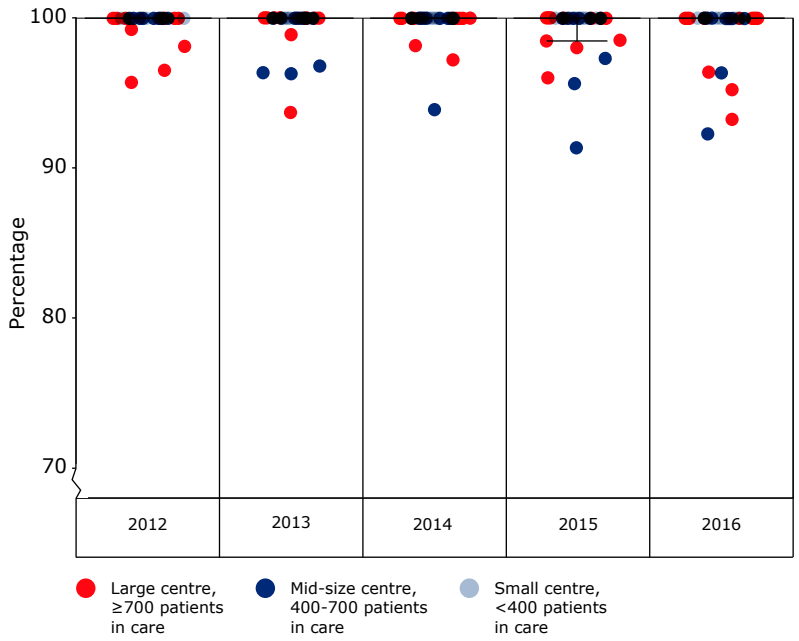
In terms of HCV screening, the median proportions of patients being screened improved over time from 87% in 2012 to 94% in 2016. The maximum proportion of patients screened for HCV was 100% in all years, while the minimum rates were between 54% (2014) and 73% (2015). Overall, patients who were screened for HCV during their first year in care were more likely to be MSM (p=0.004), although one centre did have a minimum HCV screening rate of 64% among MSM. Of those patients who were not screened for HCV (regardless of HIV transmission mode) during their first months in care, 47% were subsequently tested for HCV: for this group the median time between entry in care and their first HCV test was 17 months (IQR=13-28 months).

The median proportion of patients screened for HBV also increased over time from 90% in 2012 to 93% in 2016. However, observed minimum rates were 55% in 2013 and 33% in 2016.

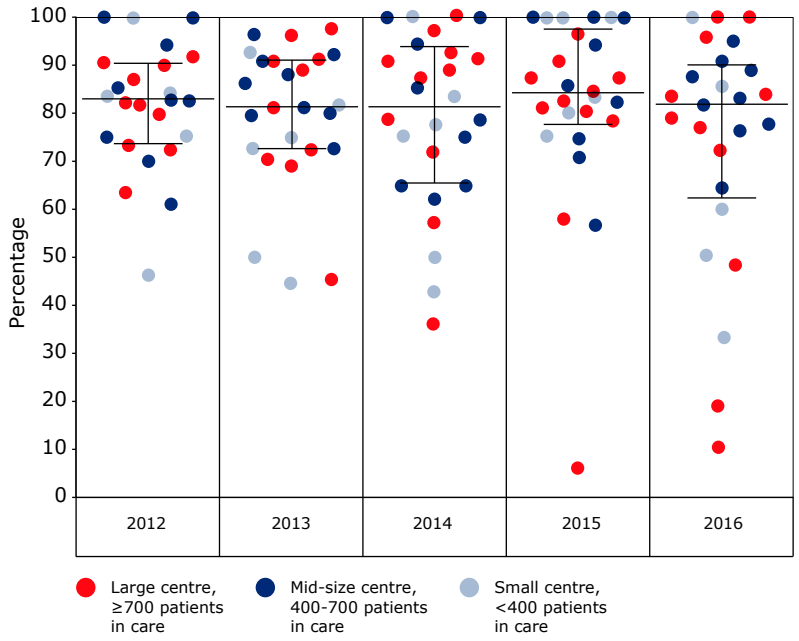
Figure 7.6: Proportions of patients who newly entered care in Dutch HIV treatment centres in 2012–2016, with assessment within 6 months of (A) HIV RNA, (B) plasma CD4 cell count, (C) total cholesterol in patients aged <50 year at entry in care, (D) total cholesterol in patients aged ≥50 year at entry in care, (E) hepatitis C and (F) hepatitis B.



CD4 B

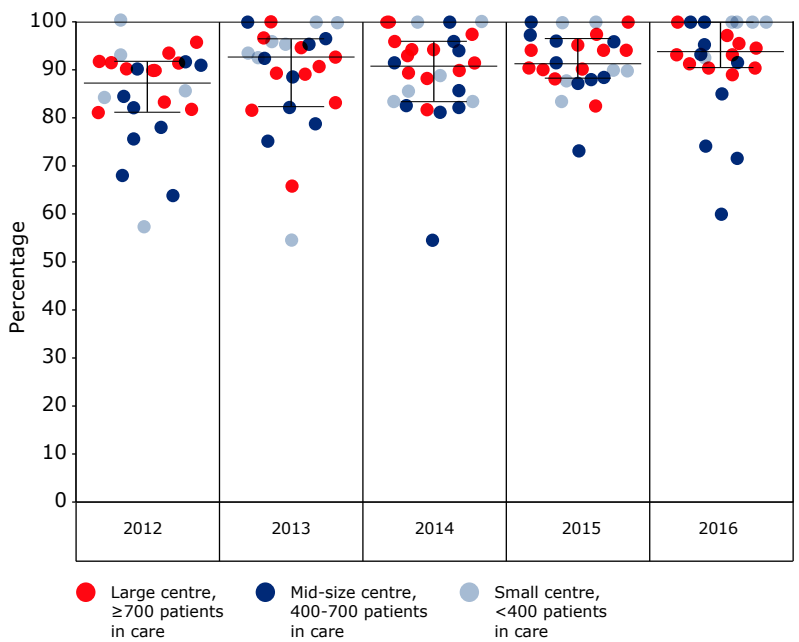


Total cholesterol <50 years C

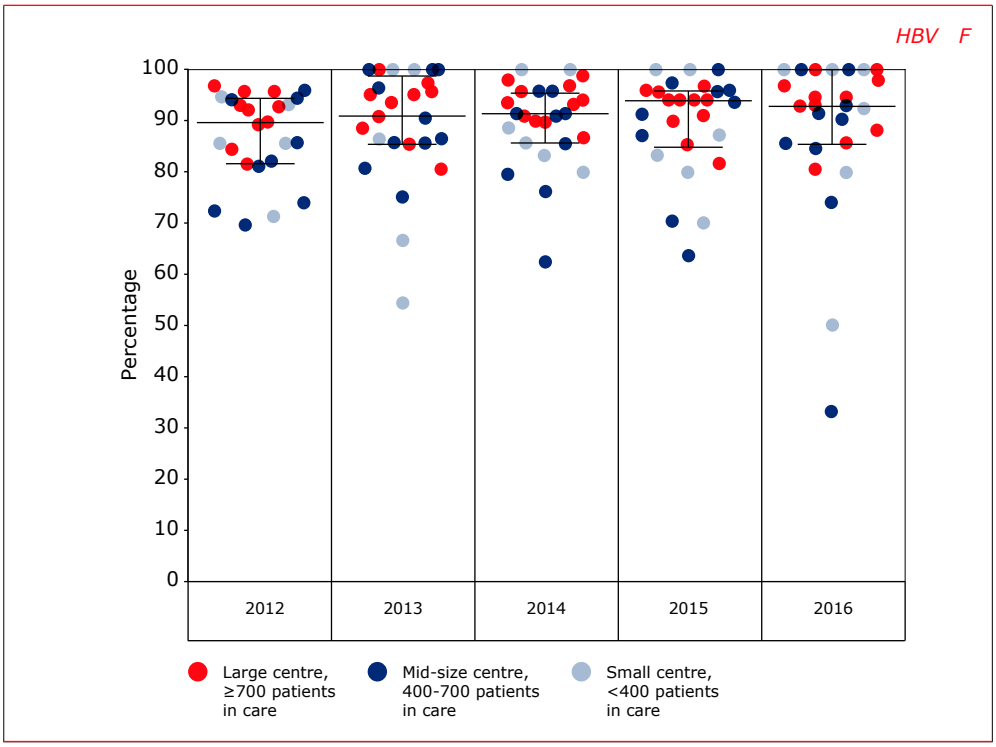


Total cholesterol ≥50 years D

HCV E



Legend: *HCV=hepatitis C virus.*

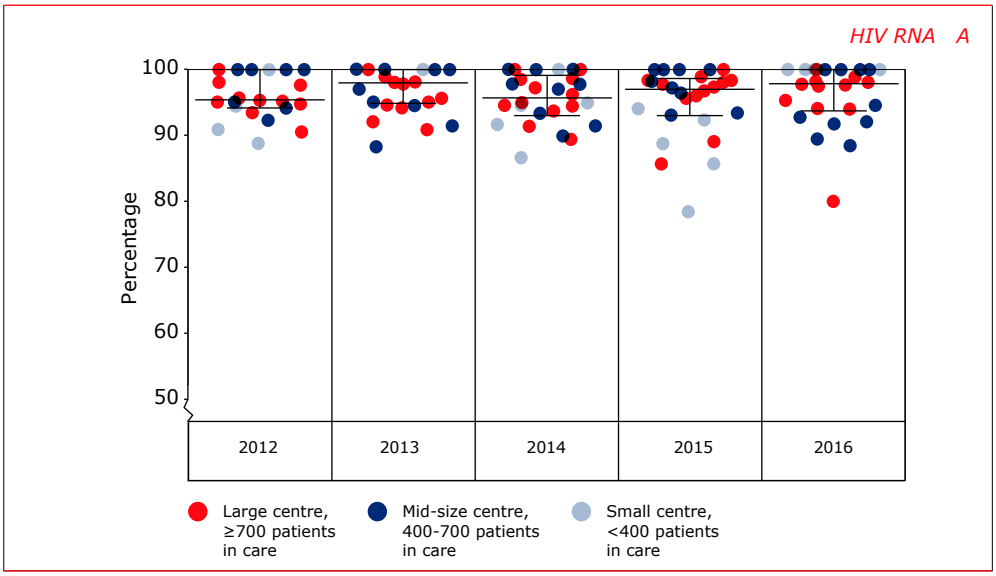


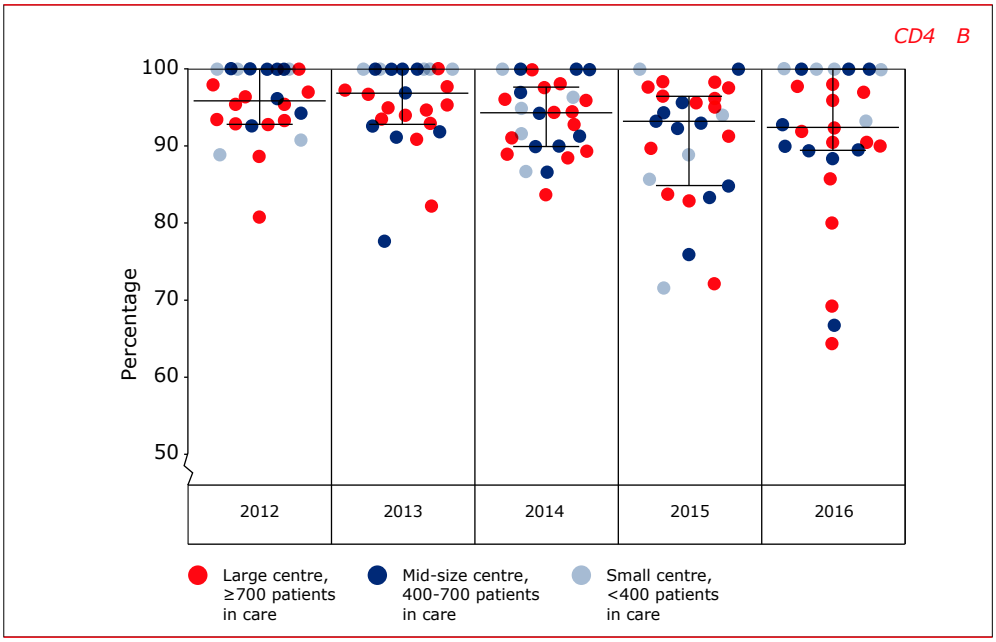
Legend: HBV=hepatitis B virus.

Following the start of cART

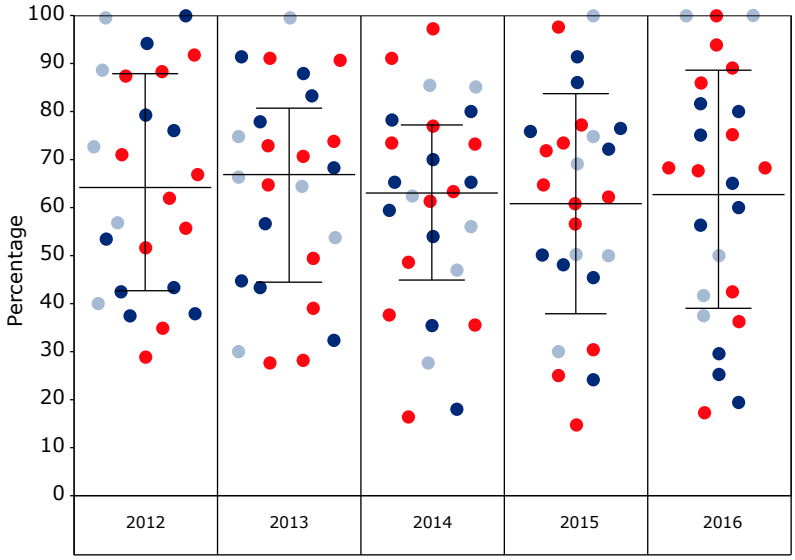
Figure 7.7 shows the variation between HIV treatment centres in the Netherlands in terms of assessing plasma HIV RNA, CD4 cell count, and total cholesterol, stratified by age, once within 13 months after cART initiation for all patients who initiated cART between 2012 and 2016 and who were still in care 12 months after starting cART. The median proportion of patients with an HIV RNA measurement remains stable high over time. However, the median proportion of patients with a CD4 cell measurement has decreased over time, from 81% in 2012 to 64% in 2016. Finally, the assessment of total cholesterol following treatment initiation varied greatly between treatment centres, irrespective of centre size and time-updated age (*Figure 7.7C* and *7.7D*).

Figure 7.7: Proportions of patients in HIV treatment centres in the Netherlands who initiated combination antiretroviral therapy (cART) in 2012–2016, with assessment of (A) HIV RNA, (B) plasma CD4 cell count, (C) total cholesterol in patients aged <50 year at entry in care, (D) total cholesterol in patients aged ≥50 year at entry in care within 13 months after start of cART.

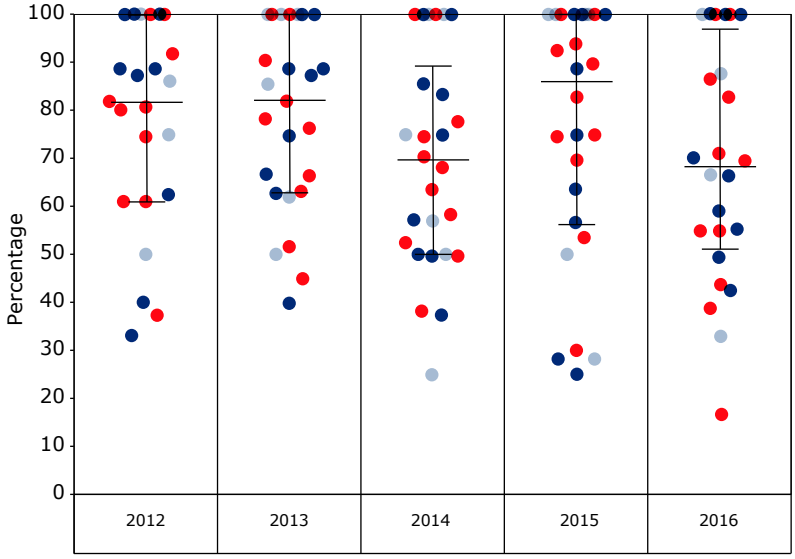




Total cholesterol <50 years C



Total cholesterol ≥50 years D

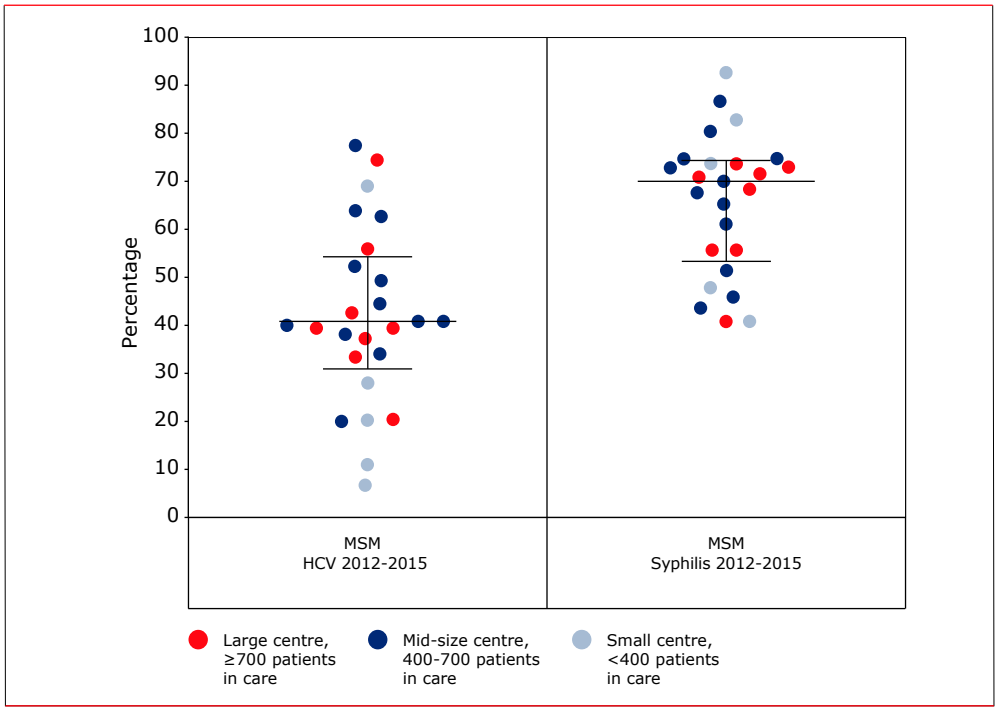


Repeat screening for hepatitis C and syphilis in MSM

To assess repeat screening for hepatitis C virus and syphilis in MSM, 18 months of follow up after the first documented HCV serology test date is required. We therefore used 2015, rather than 2016, as the most recent year of entry.

Between 2012 and 2015, 2,765 MSM newly entered care; of those, 2,518 (95%) were screened for the presence of HCV in the first year after entering care. Sixty-one (2%) of these 2,518 MSM tested positive for HCV. The remaining 2,457 (98%) MSM were HCV-negative when they entered HIV care, and this group was included in the calculation of the repeat HCV screening rate. *Figure 7.8* depicts the rate of repeat HCV screening within 18 months after the first screening among MSM who were HCV-negative at entry into care. This figure shows considerable variation in the rate of repeat HCV screening. The median rate of repeat HCV antibody or HCV RNA testing in MSM who were HCV-negative at entry into care was 42%; the maximum rate was 78%, while one centre carried out repeat HCV tests in only 7% of MSM who were HCV-negative at entry into care. In total 1,372/2,457 MSM were not repeatedly screened for the presence of HCV. Of note, for 12 of these 1372 (1%) MSM, repeat HCV screening could not be documented despite the presence of at least one elevated ALAT measurement (≥200 u/l, 5x40 u/l) during the observation period, possibly indicating acute HCV infecton[6]. A large degree of variation was also observed between HIV treatment centres for repeat syphilis screening among MSM during follow up. The maximum rate of patients undergoing repeat syphilis screening was 93%, and the minimum was 41%, with the median being 70%.

Figure 7.8: Rates of repeat screening for hepatitis C virus (HCV) among men who have sex with men (MSM) who were HCV-negative at entry in care and for syphilis among all MSM who entered care in one of the HIV treatment centres in 2012 and 2015.



Legend: HCV=hepatitis C virus.

Changes in performance over time

SHM has provided HIV treatment centres with the outcomes of centre-specific, ZiZo and HKZ-approved indicators since 2011. However, in 2017, SHM also provided each centre with a number of the indicators described in this chapter, in a manner that allowed the centres to compare their indicators with the blinded scores of other centres. Subsequently, several centres approached SHM for more specific data regarding their scores.

In the context of quality of HIV care in the Netherlands, the data presented in this chapter may therefore serve as a useful benchmark with which to compare centres and identify potential aspects for improvement. It is likely too early to observe an effect of this benchmarking, as most of the recent indicator scores are only reported through 2016. Nonetheless, general improvements in performance over time have

been observed for earlier initiation of cART, as well as for HBV and HCV screening prior to cART initiation. On the other hand, a decline was observed over time in the performance of CD4 measurements after cART initiation, and the overall assessment of cholesterol remains low over time. Finally, although, performance in terms of the HKZ indicator 'short term viral suppression' is generally high, one centre failed to achieve a score greater than 90% on more than one occasion.

This year each treatment centre will again be provided with their centre-specific indicators benchmarked against the blinded scores of all other centres. This will allow treatment centres to potentially identify elements of care that may be further improved.

Key findings and conclusions

The most important findings of this comparison of quality indicators between HIV treatment centres in the Netherland are as follows:

- In 2017, 10 HIV treatment centres did not meet the criterion of seeing a minimum of 20 new patients per year, as required by the current HKZ standards for HIV treatment centres in the Netherlands. Seven of these centres had already failed to meet this particular criterion in 2016.
- After exclusion of patients who had died, overall and treatment centre-specific retention-in-care rates 18 months after entering care are generally high. However, lower retention rates were observed for patients of non-Dutch origin (both for MSM and non-MSM) than for patients born in the Netherlands. This is in line with the continuum of care presented in *Chapter 1* of this report.
- Over time, the proportion of patients initiating cART within 6 months after entering care has clearly increased, reaching a median of 100% for those who entered care in 2017. However, considering that current guidelines recommend treatment for all patients regardless of CD4 count[1], it is worth noting that the rates for starting cART within 6 months were still relatively lower in patients who entered care with a CD4 cell count >500 CD4 cells/mm^3. This effect was observed in small, mid-sized, and large treatment centres and indicates a need for further improvement.
- Regardless of time since entering care, a median of 99% of all patients who had entered care between 2012 and 2016 and who were retained in care in 2017 had initiated cART.
- Viral suppression rates in the first 6 months on cART, as well as during longer term use of cART, were high across all HIV treatment centres in the Netherlands, regardless of centre size.

- A median of 96% of the patients who had entered care between 2012 and 2016 and who were retained in care in 2017 had an HIV RNA level <100 copies/ml.
- In MSM who had entered care between 2012 and 2015 and who were HCV-negative at entry into care, the rate of repeat HCV screening varied widely. However, these findings should be interpreted with some caution for two reasons. Firstly, national guidelines[1] currently only recommend repeat screening for HCV in those MSM who report behaviour which continues to put them at risk of sexually acquired HCV. However, SHM does not collect data on risk-taking behaviour and we were therefore unable to account for this in our analyses. Secondly, the variation in repeat HCV screening may be explained by physicians applying a policy of targeted screening based on the presence of incident transaminase elevations as an indicator of liver damage. This notion is supported by the observation that the majority of those MSM not screened for HCV did not have elevated transaminase levels.
- In MSM who entered care between 2012 and 2015, repeat syphilis screening also varied considerably. As with HCV, this variation may reflect differences in screening policy between centres, possibly based on the assessment of risk-taking behaviour. However, as SHM does not collect data on risk-taking behaviour, we were unable to account for this in our analyses.
- Quality of care covers several aspects of health care[7,8]. As such, the wide range of indicators used in these analyses offers broad coverage of various aspects of HIV care and provides insight into care provision among the different treatment centres. Nonetheless, data reliability remains an important issue, and it should be recognised that, incidentally, some of the reported variation may be due to missing data.

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