

## Progress Towards the 90-90-90 Targets for Controlling HIV — China, 2018

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### Summary

#### What is already known about this topic?

Since the Joint United Nations Programme on HIV and AIDS (UNAIDS) announced the 90-90-90 targets to control the global HIV epidemic in 2014, many countries have undertaken innovative measures to achieve this goal. The National Center for AIDS/STD Control and Prevention (NCAIDS) of China CDC convenes experts annually to evaluate the national progress towards these indicators. The most recent progress of 90-90-90 targets in China has not been previously published.

#### What is added by this report?

At the end of 2018, the percentage of living with HIV (PLWH) who had received a confirmed HIV diagnosis in China was 68.9% (61.5%-78.3%). The antiretroviral treatment coverage of diagnosed PLWH was 83.4%, and among patients on treatment for at least 12 months, 94.2% achieved viral suppression. This provides most recent progress of 90-90-90 target in China.

#### What are the implications for public health practice?

China has made significant strides in curbing the HIV epidemic, but analysis on progress for the first 90 target for HIV testing remains out of reach. Innovative testing strategies may need to be developed to ensure that more PLWH can be identified.

In 2014, the Joint United Nations Programme on HIV and AIDS (UNAIDS) established the 90-90-90 targets, which sets the goal that by 2020, 90% of all people living with HIV (PLWH) should be aware of their HIV status, 90% of all diagnosed PLWH should be accessing antiretroviral therapy (ART), and 90% of all patients receiving ART should have suppressed viral loads (*1*). Correspondingly, the Chinese government developed an action plan for 2016-2020 to meet the 90-90-90 targets and to control the national HIV epidemic. As part of this effort, the Chinese National Free Antiretroviral Treatment Program eliminated the CD4 cell count eligibility threshold and began offering

free treatment to all PLWH starting in 2016 (*2*).

Every year, the National Center for AIDS/STD Control and Prevention (NCAIDS) of Chinese Center for Disease Control and Prevention, compiles data from the nationwide HIV/AIDS Comprehensive Response Information Management System (CRIMS) (*3*) and convenes experts to evaluate the state of the epidemic and the national response (*Table 1*). Data on China's progress towards the 90-90-90 targets are shared with international organizations, including UNAIDS and the World Health Organization (WHO). As of the end of 2018, estimates for the three target indicators stand at 68.9% (61.5%-78.3%), 83.4%, 94.2%, respectively. Progress towards the first 90% target lags behind the second and third targets. Testing strategies need to be tailored and strengthened so that more PLWH can be screened and diagnosed in a timely manner.

The number of HIV tests performed annually has increased from 128 million in 2014 to 241 million in 2018 (*Figure 1*). For this same period, CRIMS data report that the total survival number of PLWH with a confirmed diagnosis increased from 500,679 to 861,042 (*Table 2*), and the number of newly diagnosed cases per calendar year rose from 103,501 in 2014 to 148,589 in 2018 (*Figure 1*). CRIMS data on the care continuum are presented in *Table 2*. A joint assessment by NCAIDS, UNAIDS and WHO used

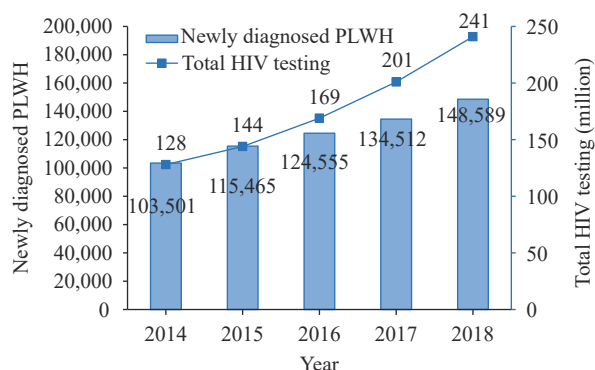


FIGURE 1. Number of total HIV tests performed and number of newly diagnosed PLWH from 2014 to 2018.

TABLE 1. Definitions of the 90-90-90 targets, calculated each calendar year using CRIMS data.

	Numerator	Denominator
First 90%: Diagnosis	Number of surviving PLWH with a confirmed HIV diagnosis, taken from CRIMS.	Number of PLWH estimated through Spectrum modelling, figures were taken from the joint estimation group.
Second 90%: Treatment	Number of PLWH on ART, taken from CRIMS.	Number of surviving PLWH with a confirmed HIV diagnosis, taken from CRIMS.
Third 90%: Viral Suppression	Number of PLWH with viral load $\leq$ 1,000 copies/mL, taken from CRIMS.	Number of PLWH on ART for at least 12 months and at least one viral load test result*, taken from CRIMS.

\* The calculation of the third 90% is different from the UNAIDS recommendation. The Chinese National Free Antiretroviral Treatment Program provides free viral load testing once a year. Patients newly initiated on ART may not have received a viral load test by the end of the reporting period (4).

TABLE 2. China's continuum of HIV care, 2014–2018.

Items	2014	2015	2016	2017	2018
Total survival number of PLWH	500,679	577,423	664,751	758,610	861,042
PLWH on ART	295,358	386,756	494,657	609,829	718,499
Patients on ART eligible for viral load testing	216,576	285,237	359,337	447,720	573,992
Patients on ART with $\geq$ 1 viral load test result	197,735	263,712	255,924	362,970	512,499
Patients with suppressed viral load	179,807	241,003	237,696	339,510	482,954

Spectrum modelling to estimate that at the end of 2018, the total number of PLWH in China was 1,250,000 (1,100,000–1,400,000). The percentage of PLWH with a confirmed HIV diagnosis at the end of 2018 in China was 68.9% (61.5%–78.3%). There were an estimated 81,000 (60,000–105,000) new infections in 2018 and the estimated national prevalence in 2018 is 0.090% (0.079%–0.101%).

The number of people receiving ART increased from 295,358 in 2014 to 718,499 in 2018 (Table 2), corresponding to treatment coverage of 59.0% in 2014 and 83.4% in 2018 (Figure 2). Over 90% of patients on ART for over 12 months have suppressed viral loads, and this percentage rose to 94.2% in 2018.

## Discussion

In 2018, UNAIDS presented an update on the global progress towards the 90-90-90 targets: 79% (67%–92%) of all PLWH globally knew their HIV status. Among those who knew their HIV status, 78% (69%–82%) were accessing antiretroviral therapy, and 86% (72%–92%) of PLWH on ART had suppressed viral loads. Fifteen countries reported meeting the targets in 2018 (5).

Although China can be credited for substantial recent progress, the challenges remain in achieving 90-90-90 targets. Data show that there is a large gap to meeting the first 90% target. This indicates that there is insufficient access to testing for those who already

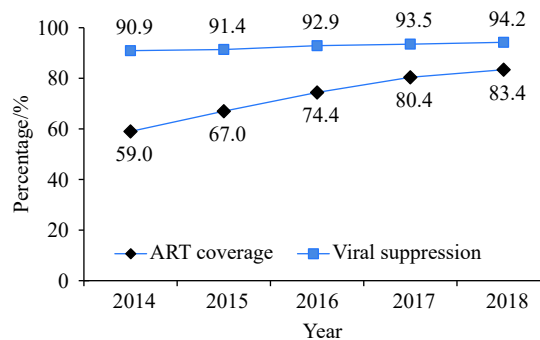


FIGURE 2. ART coverage and viral suppression from 2014 to 2018.

infected with HIV. New approaches to testing should be investigated and implemented, including additional focus on self-testing, partner testing, and promoting testing-seeking behavior strategies. National HIV testing outreach campaigns will also be intensified to increase awareness and uptake of HIV testing among key populations at risk. Through investing in new policies and programs, earlier HIV detection and prevention of further transmission can be achieved.

While China's ART coverage is relatively favorable among low- and middle-income countries (6), improvements are necessary in the treatment and care services system (7). A major priority is to reduce the time between HIV diagnosis and ART initiation (8). Patients who are diagnosed late at low CD4 cell counts and advanced disease progression should be offered immediate and/or accelerated ART initiation (2). Previous research has shown that structural

interventions to simplify the algorithm between screening and treatment initiation can reduce mortality, and the implementation of such interventions should continue to be expanded nationally (9). Maintaining timely linkage to care and high treatment retention rates is crucial to improving overall health outcomes (9).

Finally, the increased involvement of community-based organizations has led to greater HIV awareness, program participation, and improved HIV-related outcomes. Specifically, initiatives led by community-based organizations can increase HIV testing uptake and decrease HIV-related mortality and virologic failure (10). Additional investment in collaborations between health authorities and community-based organizations can yield significant benefits.

The findings in this report are subject to some limitations. First, the number of PLWH estimated through modelling methods may be affected by available parameters and complex circumstances. Second, China's national treatment program only provides free viral load testing on a once per year basis post-ART initiation. Thus, only the viral loads of patients who have been treated for more than one year and have successfully accessed viral load testing are capable of being observed. This introduces bias into the national viral suppression estimates because patients who failed treatment are also more likely to not receive a viral load test. However, CRIMS is a robust and comprehensive case reporting system with national coverage and up-to-date clinical information on all diagnosed PLWH in China (3), and we have confidence in the overall findings.

China has made significant strides in the fight against HIV. Yet, in light of the geographic diversity of the epidemic and the complexity in addressing disparate population needs, many challenges still exist. Tremendous efforts need to be sustained in order to curb transmission. Proportional budget allocations, healthcare system reform and expansion, reduction in HIV stigma, and additional emphasis on key populations are needed for China to achieve the 90-90-90 targets.

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