

## HIV Testing Before and During the COVID-19 Pandemic — United States, 2019–2020

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HIV testing is a core strategy for the Ending the HIV Epidemic in the U.S. (EHE) initiative, which has the aim of reducing new HIV infections by at least 90% by 2030.\* During 2016–2017, jurisdictions with the highest HIV diagnosis rates were those with higher prevalences of HIV testing; past-year HIV testing was higher among persons who reported recent HIV risk behaviors compared with those who did not report these risks (1). During 2020–2021, the COVID-19 pandemic disrupted health care delivery, including HIV testing in part because many persons avoided services to comply with COVID-19 risk mitigation efforts (2). In addition, public health departments redirected some sexual health services to COVID-19–related activities.† CDC analyzed data from four national data collection systems to assess the numbers of HIV tests performed and HIV infections diagnosed in the United States in the years before (2019) and during (2020) the COVID-19 pandemic. In 2020, HIV diagnoses reported to CDC decreased by 17% compared with those reported in 2019. This decrease was preceded by decreases in HIV testing during the same period, particularly among priority populations including Black or African American (Black) gay men, Hispanic or Latino (Hispanic) gay men, bisexual men, other men who have sex with men (MSM), and transgender persons in CDC-funded jurisdictions. To compensate for testing and diagnoses missed during the COVID-19 pandemic and to accelerate the EHE initiative, CDC encourages partnerships among federal organizations, state and local health departments, community-based organizations, and health care systems to increase access to HIV testing services, including strategies such as self-testing and routine opt-out screening in health care settings.

CDC recommends that all adolescents and adults aged 13–64 years be tested for HIV at least once, with annual rescreening of persons who report behaviors that increase the chances of acquiring or transmitting HIV<sup>§</sup> (3). Testing is the gateway to preexposure prophylaxis (PrEP) among uninfected persons for whom prophylaxis is indicated and to rapid treatment of persons with HIV infection<sup>¶</sup> (4). The EHE initiative's emphasis on the role of routine testing contributes to its goals

of reducing HIV infections and decreasing HIV disparities among populations most affected by the disease. For example, to prevent new HIV infections, the EHE initiative provides additional resources to jurisdictions with populations most disproportionately affected by HIV, including Black and Hispanic MSM. These populations account for the majority of new HIV infections in the United States (5).

The COVID-19 pandemic began during 2020, when jurisdictions funded to conduct activities as part of the EHE effort in the United States were beginning to expand testing and other HIV prevention activities. Access to and use of sexually transmitted disease (STD) and HIV diagnostic and preventive services were interrupted as the COVID-19 pandemic changed health-seeking behaviors (6). In addition, public health departments redirected some sexual health services to COVID-19–related activities.

This analysis summarizes the reported number of HIV tests conducted and the number of those test results that were positive during 2019–2020. Data on HIV tests conducted were derived from three overlapping data sources: the Health Resources and Services Administration's Uniform Data System (HRSA UDS),\*\* CDC's National HIV Prevention Program Monitoring and Evaluation system (CDC NHM&E),†† and the National Syndromic Surveillance Program's (NSSP) commercial laboratory data.§§ Data on the number of positive tests

\*\* The number of HIV tests performed, and the number of new diagnoses were extracted from the HRSA UDS reporting tables. <https://data.hrsa.gov/tools/data-reporting/program-data> (Accessed March 15, 2022).

†† CDC analyzes and disseminates data on CDC-funded HIV tests received from the NHM&E data reporting system (EvaluationWeb), reported by 60 CDC-funded health departments and 100 CDC-funded community-based organizations. The number of HIV tests and new diagnoses reported during 2019–2020 from health care and non-health care settings were summarized from the 2019 (<https://www.cdc.gov/hiv/pdf/library/reports/cdc-hiv-annual-hiv-testing-report-2019.pdf>) and 2020 (<https://www.cdc.gov/hiv/pdf/library/reports/cdc-hiv-annual-hiv-testing-report-2020.pdf>) NHM&E Annual HIV Testing reports.

§§ NSSP is a collaboration among CDC; local and state health departments; and federal, academic, and private sector partners (<https://www.cdc.gov/nssp/index.html>). Data were extracted from two laboratory data sources for all test orders with either an order or result containing “56888-1” within the reported Logical Observation Identifiers Names and Codes, indicative of an HIV-1 or HIV-2 antigen or antibody test recommended for HIV screening; other tests ordered were not selected for this analysis. Tests with a reactive result for this screening test should be confirmed using FDA-approved supplemental tests. In this analysis all reactive results are reported regardless of the final HIV diagnostic algorithm interpretation. <https://www.aphl.org/aboutAPHL/publications/Documents/ID-2019Jan-HIV-Lab-Test-Suggested-Reporting-Language.pdf>

\* <https://www.hiv.gov/federal-response/ending-the-hiv-epidemic/overview>

† <https://www.ncsddc.org/wp-content/uploads/2021/01/COVID19-State-of-STD-Field-Phase-III-Report-1.28.21-FINAL-1.pdf>

§ <https://www.cdc.gov/hiv/basics/hiv-testing/getting-tested.html>

¶ <https://www.cdc.gov/hiv/pdf/risk/prep/cdc-hiv-prep-guidelines-2021.pdf>

came from HIV diagnoses reported through the National HIV Surveillance System (NHSS).<sup>¶¶</sup> For each data source, differences between 2019 and 2020 were calculated for both the absolute number and corresponding percentages of HIV tests conducted. Differences in HIV testing by race and ethnicity and by population group were estimated from CDC NHM&E data,<sup>\*\*\*</sup> the only source of HIV testing data for which these additional variables were available. In addition, the total number of HIV antigen or antibody screening tests were summarized by the surveillance week<sup>†††</sup> during which they were

performed to assess weekly changes in testing reported to NSSP from February 3, 2019 (2019, week 6) through December 26, 2020 (2020, week 52). This activity was reviewed by CDC and was conducted consistent with applicable federal law and CDC policy.<sup>§§§</sup>

During February 3–December 31, 2019, and February 1–December 31, 2020, CDC received reports of 17,007,063 total HIV screening tests from two commercial laboratories (Table). Analyses of commercial laboratory tests reported by surveillance week indicated that testing volumes remained stable throughout 2019, at approximately 200,000 tests per week (Figure 1). In early 2020, testing volumes exceeded 2019 levels; however, by week 12, testing volumes declined to <50% the levels observed during 2019 and remained low through the end of 2020, with 1,350,609 (14.7%) fewer tests reported in 2020 compared with 2019.

In 2019, HRSA UDS received reports of 2,713,628 Bureau of Primary Health Care (BPHC)-funded HIV tests, and CDC NHM&E received reports of 2,385,343 CDC-funded tests

<sup>§§§</sup> 45 C.F.R. part 46.102(l)(2); 21 C.F.R. part 56; 42 U.S.C. Sect. 241(d); 5 U.S.C. Sect. 552a; 44 U.S.C. Sect. 3501 et seq.

<sup>¶¶</sup> <https://www.cdc.gov/hiv/library/reports/hiv-surveillance.html>

<sup>\*\*\*</sup> Restricted to non-health care settings because CDC NHM&E data on population groups are required for all CDC-funded tests performed in non-health care settings but are only required for HIV-positive test results in health care settings. Population groups (e.g., MSM, transgender persons, persons who inject drugs, and heterosexual persons) are hierarchically assigned based on self-reported behaviors and gender identification. In NHM&E data, an HIV test is defined as a sequence of ≥1 HIV test conducted to determine a person's HIV status. Total tests include only tests with negative or positive results (excluding tests with discordant or inconclusive results).

<sup>†††</sup> The surveillance week for which the NNDSS disease report is assigned by the reporting local or state health department for the purposes of *MMWR* disease incidence reporting and publishing.

**TABLE. Comparison of HIV testing and diagnosis data from four data sources — United States, 2019 and 2020**

Characteristic	Commercial laboratory testing, NSSP*		HRSA UDS, BPHC-funded HIV tests, <sup>†</sup> health care settings		CDC NHM&E-funded HIV tests <sup>§</sup>				NHSS HIV diagnoses reported to CDC**
	Total HIV-1/HIV-2 ag/ab tests	Reactive tests <sup>¶</sup>	Total HIV tests	New diagnoses	Health care settings		Non-health care settings		
					Total HIV tests	New diagnoses	Total HIV tests	New diagnoses	
Observed, 2019 <sup>††</sup>	9,178,836	66,026	2,713,628	7,164	1,752,586	5,374	632,757	3,556	36,940
Observed, 2020 <sup>††</sup>	7,828,227	55,658	2,489,031	6,304	1,005,553	3,857	319,799	2,509	30,635
<b>Total observed, 2019–2020</b>	<b>17,007,063</b>	<b>121,684</b>	<b>5,202,659</b>	<b>13,468</b>	<b>2,758,139</b>	<b>9,231</b>	<b>952,556</b>	<b>6,065</b>	<b>67,575</b>
Absolute difference, 2019–2020	–1,350,609	–10,368	–224,597	–860	–747,033	–1,517	–312,958	–1,047	–6,305
% Change, 2019–2020	–14.7	–15.7	–8.3	–12.0	–42.6	–28.2	–49.5	–29.4	–17.0

**Abbreviations:** ab = antibody; ag = antigen; BPHC = Bureau of Primary Health Care; HRSA = Health Resources and Services Administration; NHM&E = National HIV Prevention Program Monitoring and Evaluation; NHSS = National HIV Surveillance System; NSSP = National Syndromic Surveillance Program; STD = sexually transmitted disease; TB = tuberculosis.

\* NSSP is a collaboration among CDC; local and state health departments; and federal, academic, and private sector partners (<https://www.cdc.gov/nssp/index.html>). Data were extracted from two laboratory data sources for all test orders with either an order or result containing “56888-1” within the reported Logical Observation Identifiers Names and Codes, indicative of an HIV-1 or HIV-2 antigen or antibody test recommended for HIV screening. The performance period during which CDC and the laboratories submitted HIV test data began on February 3, 2019.

<sup>†</sup> Number of HIV tests performed; the number of new diagnoses were extracted from the HRSA Health Center Program Uniform Data System reporting tables. <https://data.hrsa.gov/tools/data-reporting/program-data>

<sup>§</sup> CDC analyzes and disseminates data on CDC-funded HIV tests received from the NHM&E data reporting system (EvaluationWeb), reported by 60 CDC-funded health departments and 100 CDC-funded community-based organizations. The number of HIV tests and new diagnoses reported during 2019–2020 from health care and non-health care settings were summarized from the 2019 (<https://www.cdc.gov/hiv/pdf/library/reports/cdc-hiv-annual-hiv-testing-report-2019.pdf>) and 2020 (<https://www.cdc.gov/hiv/pdf/library/reports/cdc-hiv-annual-hiv-testing-report-2020.pdf>) NHM&E Annual HIV Testing reports. An HIV test was defined as a sequence of ≥1 HIV test conducted to determine a person's HIV status. Total HIV tests included only tests with negative or positive results; tests with discordant or inconclusive results were excluded. New diagnoses were defined as persons who received a positive test result from the current HIV test who had no indication of a previous positive test result. Health care settings included STD clinics, community health centers, emergency departments, correctional clinics, primary care clinics, substance abuse treatment facilities, pharmacies, dental clinics, TB clinics, and inpatient hospitals. Non-health care settings included HIV testing sites, community settings, non-health care correctional facilities, health department field visits, and syringe service programs.

<sup>¶</sup> NSSP reactive tests included all screening test results reported as “reactive,” which was defined as preliminarily positive test results; additional testing was not required to confirm an HIV diagnosis.

\*\* <https://www.cdc.gov/hiv/library/reports/hiv-surveillance.html>

<sup>††</sup> To make NSSP counts comparable, “Observed, 2019” refers to February 3–December 31, 2019, and “Observed 2020” includes February 1–December 31, 2020.

(including 1,752,586 [73%] from health care settings and 632,757 [27%] from non–health care settings) (Table). These sources reported substantial decreases in the number of tests and positive results in 2020 compared with 2019. HRSA UDS data indicated an 8.3% decrease in HIV screening tests. In 2020, the total number of HIV tests funded by CDC that were distributed in health care and non–health care settings decreased by nearly one half (42.6% and 49.5%, respectively) compared with 2019, and ranged from –44.1% to –59.1% for racial and ethnic groups and –47.3% to –57.4% for population groups (Figure 2) in non–health care settings during this period. Substantial absolute reductions in HIV tests reported in non–health care settings were among those prioritized in CDC’s HIV testing efforts, including 74,947 fewer tests among MSM (a 49.2% reduction), 4,145 fewer tests among transgender persons (a 47.3% reduction), and 430,713 (44.1%) and 265,494 (46.3%) fewer tests among Black and Hispanic persons, respectively. In 2020, 30,635 diagnoses were reported to

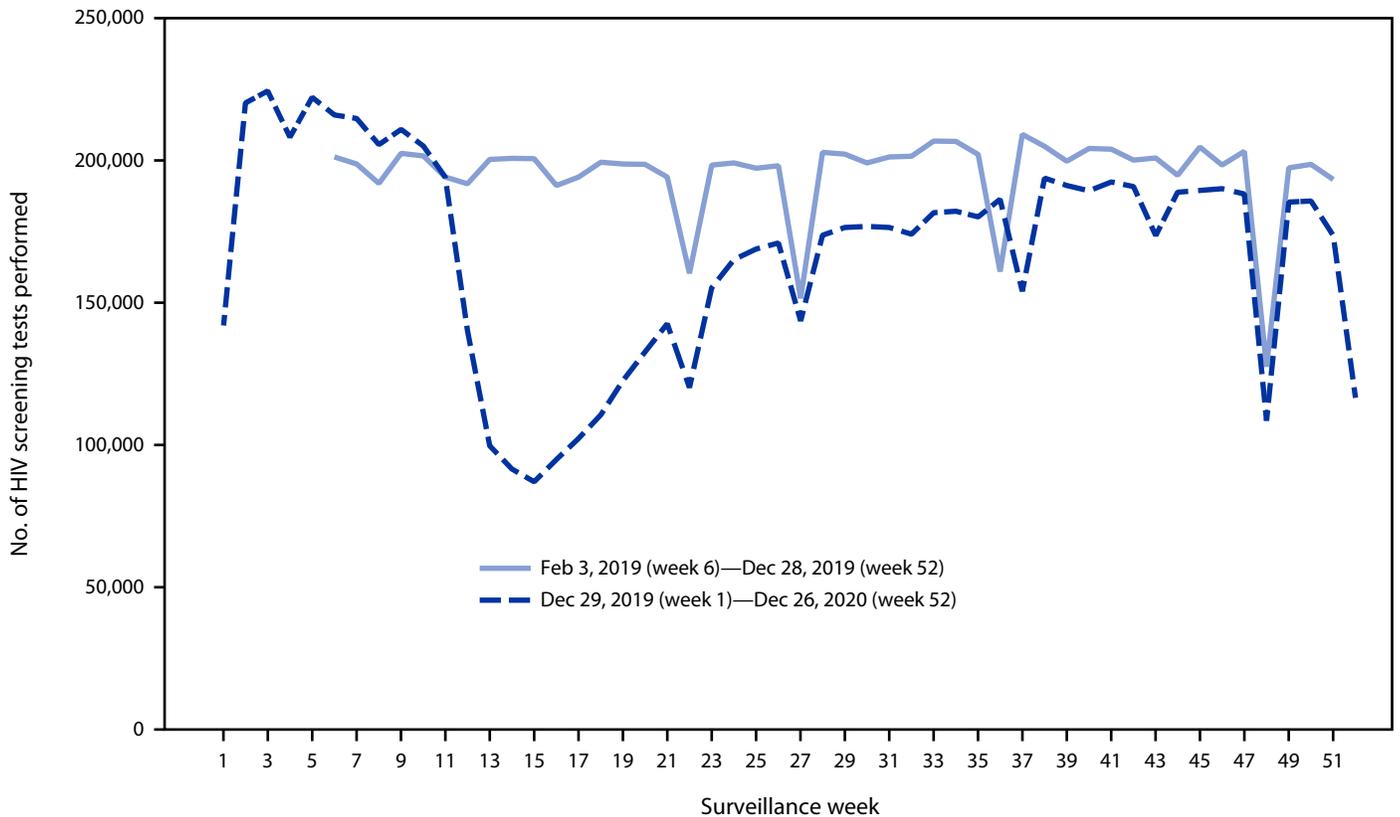
NHSS compared with 36,940 in 2019 (Table). Reductions in testing were mirrored by a 17.0% reduction in new diagnoses.

Discussion

In 2020, the number of HIV tests reported to CDC- and BPHC-funded settings and some commercial laboratories declined sharply compared with 2019. All racial and ethnic groups and population groups examined experienced substantial decreases in HIV testing, including populations with elevated potential for HIV acquisition, including Black and Hispanic persons, MSM, and transgender persons, all of whom experienced substantial decreases in the availability of CDC-funded HIV testing. Similar declines in clinical visits for HIV testing and other services during the COVID-19 pandemic (e.g., STD testing and PrEP) have been reported (7).

The COVID-19 pandemic adversely affected efforts to expand HIV testing, including expansions related to the EHE initiative. The substantial reduction in testing and new

FIGURE 1. Weekly HIV screening tests\* reported by two commercial laboratories — National Syndromic Surveillance Program,† United States, February 3, 2019–December 26, 2020<sup>§</sup>



\* Data were extracted from two laboratory data sources for all test orders with either an order or result containing “56888-1” within the reported Logical Observation Identifiers Names and Codes, indicating an HIV-1 or HIV-2 antigen or antibody test recommended for HIV screening and summed by surveillance week from February 3, 2019 (2019, week 6) through December 26, 2020 (2020, week 52). The performance period during which CDC and the laboratories submitted HIV test data began on February 3, 2019.

† National Syndromic Surveillance Program is a collaboration among CDC; local and state health departments; and federal, academic, and private sector partners. <https://www.cdc.gov/nssp/index.html>

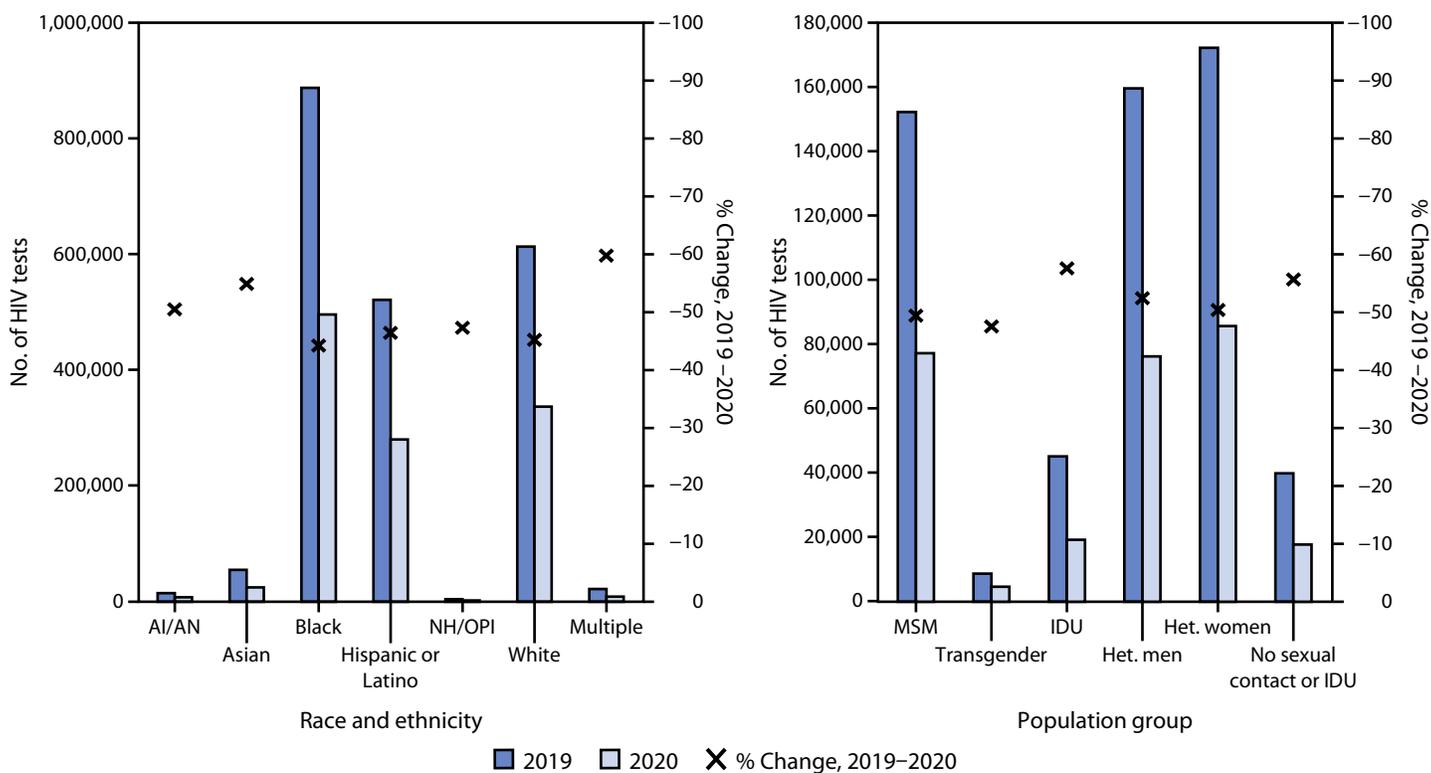
§ Data collection began February 3, 2019.

diagnoses suggest that a concerted effort is needed at local, state, and national levels to increase testing rates among all persons, especially those populations most affected by HIV, in keeping with EHE goals. Self-testing for HIV is another testing option outside of health care settings, and it is an effective, convenient, and accurate way to diagnose HIV infection.<sup>¶¶¶</sup> Distribution of HIV self-tests increases awareness of HIV infection among priority populations, including some MSM who do not report annual HIV testing using other modalities (8). Self-test distribution has expanded since 2020 and might have replaced some of the usual sources of testing in the United States during the pandemic (9).

The findings in this report are subject to at least three limitations. First, it cannot be determined whether decreases in the number of reported HIV tests and new HIV diagnoses resulted from decreased access to testing services and laboratory materials, reductions in sexual behaviors that would make testing unnecessary, reductions in overall HIV incidence, or a combination of these and other factors. Limited evidence obtained through a survey of MSM indicated that sexual activity declined early in the COVID-19 pandemic (10); similar data are not yet available for other populations or during later phases of the pandemic. Second, CDC NHM&E, HRSA UDS, and commercial laboratory data represent the number of tests performed and not the number of unique persons tested; clients tested multiple times might have been included in the analysis. Finally, the findings of this analysis are not a

¶¶¶ <https://www.cdc.gov/hiv/policies/data/self-testing-issue-brief.html>

**FIGURE 2. Absolute numbers and percent change in total number of CDC-funded HIV tests,\* by race and ethnicity,<sup>†</sup> and population group<sup>§</sup> in non-health care settings<sup>¶</sup> — United States, 2019 and 2020**



**Abbreviations:** AI/AN = American Indian or Alaska Native; Het. = heterosexual; IDU = injection drug use; MSM = men who have sex with men; NHM&E = National HIV Prevention Program Monitoring and Evaluation; NH/OPI = Native Hawaiian or other Pacific Islander.

\* Summarized from the 2019 (<https://www.cdc.gov/hiv/pdf/library/reports/cdc-hiv-annual-hiv-testing-report-2019.pdf>) and 2020 (<https://www.cdc.gov/hiv/pdf/library/reports/cdc-hiv-annual-hiv-testing-report-2020.pdf>) NHM&E Annual HIV Testing reports. An HIV test is defined as a sequence of  $\geq 1$  HIV test conducted to determine a person's HIV status. Total tests include only tests with negative or positive results (excludes tests with discordant or inconclusive results).

<sup>†</sup> Race and ethnicity categories include Hispanic and Latino persons of any race; multiple races; and American Indian or Alaska Native, Asian, Black, Native Hawaiian or other Pacific Islander, and White races.

<sup>§</sup> Population groups are hierarchically assigned based on self-reported behaviors and gender identification. In this figure, the MSM group includes MSM and MSM who inject drugs; the transgender group includes transgender persons and transgender persons who inject drugs.

<sup>¶</sup> Restricted to non-health care settings because NHM&E data on population groups are required for all CDC-funded tests performed in non-health care settings but are only required for HIV-positive test results in health care settings. Non-health care settings include HIV testing sites, community settings, non-health care correctional facilities, health department field visits, and syringe service programs.

**Summary****What is already known about this topic?**

HIV testing is the first step in accessing HIV prevention and care services. The COVID-19 pandemic disrupted health care delivery and might have affected HIV testing, which is critical to ending the HIV epidemic in the United States.

**What is added by this report?**

From 2019 to 2020, new HIV diagnoses reported to CDC decreased by 17% accompanied by a substantial decline in HIV testing during the same period, including among priority populations in CDC-funded jurisdictions.

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

Partnering among federal organizations, state, and local health departments, community-based organizations, and health care systems to increase access to services, including HIV self-testing and routine opt-out screening in health care settings, can compensate for testing and diagnoses missed during the COVID-19 pandemic and accelerate the Ending the HIV Epidemic initiative.

comprehensive estimate of HIV testing; some testing providers, including some commercial laboratories, do not report to NSSP, and self-testing results are not included in this report.

To compensate for testing and diagnoses missed during the COVID-19 pandemic and accelerate the EHE initiative, partnerships among federal organizations, state and local health departments, community-based organizations, and health care systems could increase access to HIV testing services, including self-testing. In addition, expansion of routine screening in health care settings and locally tailored HIV testing efforts in non-health care settings is an important aspect of the EHE initiative and its goal of reducing disparities in HIV diagnoses.\*\*\*\* CDC supports the need for status-neutral approaches to health care and service delivery, which emphasizes ongoing engagement in HIV-related services irrespective of a person's HIV status (4).

\*\*\*\* <https://www.cdc.gov/hiv/funding/announcements/ps20-2010/index.html>

**Acknowledgments**

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All authors have completed and submitted the International Committee of Medical Journal Editors form for disclosure of potential conflicts of interest. No potential conflicts of interest were disclosed.

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