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Centers for Disease Control and Prevention-Funded Human Immunodeficiency Virus Testing, Positivity, and Service Delivery among Newly Diagnosed Women in 61 Health Department Jurisdictions, United States, 2014

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Abstract

Background—More than 1.2 million persons are living with human immunodeficiency virus (HIV) in the United States; at the end of 2011, 23% of them were women. Minority women are disproportionately affected by HIV, and new infections are higher among older women. HIV testing and service delivery among women funded by the U.S. Centers for Disease Control and Prevention (CDC) is examined.

Methods—Data were submitted by 61 health department jurisdictions. HIV testing, HIV-positive tests, new HIV diagnoses among women, and linkage and referral services among newly diagnosed women are described. Differences across demographic characteristics for HIV diagnoses, linkage, and referral services were assessed. Diagnoses were identified as new when women who tested HIV positive were not found to be reported previously in the jurisdiction's HIV surveillance system; when jurisdictions could not verify prior test results in their surveillance systems, new diagnoses were identified by self-report.

Results—Of CDC-funded testing events in 2014, 1,484,902 (48.7%) were among women, and they accounted for 19.5% of all HIV-positive testing events. Among women tested, 0.4% were HIV positive, and 0.1% had new HIV diagnoses. Women aged 40 and older and Black women were more likely to test HIV positive (0.7% and 0.5%, respectively). Among newly diagnosed women, 62.8% were linked within any timeframe, 57.1% were linked within 90 days, 74.1% were referred to partner services, 57.5% were interviewed for partner services, and 55.5% were referred to HIV risk reduction services.

Conclusions—Among all women receiving CDC-funded HIV testing, Black women and older women were more likely to have HIV-positive tests and new diagnoses. Although women overall may not be at the highest risk for HIV, Black women in this sample are disproportionately

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affected. Additionally, linkage, referral, and interview services for women need improvement. Targeted testing approaches may ensure effective test-and-treat strategies for women.

More than 1.2 million people are living with human immunodeficiency virus (HIV) infection in the United States, and at the end of 2011, 23% of them were women. In 2014, 19% of new HIV diagnoses were among women. The primary mode of HIV transmission among women is heterosexual contact, which accounted for 84% of new HIV infections among this group in 2010. Black/African American (hereafter referred to as Black) women have the second highest number of new HIV infections, after men who have sex with men. In 2010, Black women accounted for 29% of new infections among Blacks, and Hispanic/Latina women accounted for 14% of new infections among Hispanics/Latinos. It is estimated that 88% of women who are living with HIV know their diagnoses, but in 2011, only 32% were virally suppressed (Centers for Disease Control and Prevention [CDC], 2012, 2015a, 2015b). Therefore, significant improvements in linkage, adherence, and retention in HIV medical care among women are needed.

Minority women are disproportionately affected by HIV in comparison with women of other racial/ethnic groups. Of all new HIV infections among women in 2010, 65% were among Blacks and 18% among Whites (CDC, 2012). Moreover, according to the National HIV Surveillance System (NHSS), the majority of women living with HIV at the end of 2011 were Black (60.9%; Nwangwu-Ike, Hernandez, An, Huang, & Hall, 2015). In 2014, the HIV diagnosis rate also was highest among Black women (30.0 per 100,000), followed by Hispanic/Latina women (6.5 per 100,000) and was lowest among Whites (1.7 per 100,000; CDC, 2015b). Targeting HIV testing efforts toward women at higher risk may be beneficial in identifying new diagnoses because of the disparities that may exist among different groups of women. For example, in 2013, more than one-half (52%) of testing events funded by the CDC among women were among Black women, and 70.2% of new HIV diagnoses among women were among Black women (Seth, Walker, Hollis, Figueroa, & Belcher, 2015).

In addition to racial/ethnic disparities, other demographic variations in HIV diagnoses among women should be considered. The 2012 data from NHSS revealed that women aged 25 to 44 had the highest rate of HIV diagnoses (11.2 per 100,000), accounting for approximately 50.0% of HIV diagnoses (Nwangwu-Ike et al., 2015). A previous study found that older age among women was associated with HIV infection (Hodder et al., 2013). Additionally, the 2012 rate of HIV diagnoses among women from NHSS was highest in the South (10.3 per 100,000; Nwangwu-Ike et al., 2015) compared with other regions in the United States.

Early diagnoses, linkage to HIV medical care, and retention in care are important for decreasing viral load and reducing morbidity and mortality among people living with HIV (Cohen et al., 2011; Kitahata et al., 2009; The Insight Start Study Group, 2015). However, 2013 NHSS data have shown that 25% of women are at stage 3 (AIDS) when they are first diagnosed with HIV (CDC, 2015c). Additionally, according to 2010 NHSS data, although 82.5% of women were linked to care within 90 days of their diagnosis, 52.4% received ongoing care, and only 44.3% reached viral suppression. Retention in care and viral suppression were lower among women aged 25 to 35 (46.1%) when compared with women

aged 55 and older (57.0%). Viral suppression also was lower among American Indian/Alaskan Native (29.7%) and Black (41.6%) women compared with White women (46.5%; Nwangwu-Ike et al., 2015).

Although national data have found that new HIV infections and HIV diagnoses among women have been decreasing over the past several years, significant decreases in HIV incidence have only been found among Black women (CDC, 2012, 2015b; Lansky, Hall, & Mermin, 2014; Nwangwu-Ike et al., 2015). Because of the demographic variations in HIV diagnoses and treatment among women, evaluation of national data from CDC-funded HIV testing programs is needed to gain a better understanding of HIV testing, HIV positivity, and HIV service delivery among women. This paper describes CDC-funded HIV testing and HIV service delivery among newly diagnosed women in the United States in 2014. The aims are to assess 1) HIV testing and 2) identification of HIV-positive women, including newly diagnosed women, and for those who are newly diagnosed, 3) linkage to HIV medical care, 4) referral to partner services, 5) interviewed for partner services, and 6) referral to HIV risk reduction services. Demographic characteristics of women who received HIV testing and HIV-related services are described. Differences across demographic characteristics for HIV positivity, newly diagnosed HIV-positive women, linkage, and referral services also are assessed.

Methods

Data Source

The CDC funds 61 health department jurisdictions, which include the 50 states, District of Columbia, Puerto Rico, U.S. Virgin Islands, and eight directly funded city or county health departments, to provide HIV testing and other HIV prevention activities. Data for each CDC-funded HIV test are collected by local service providers and submitted to the CDC biannually without personal identifiers via a secure, online, CDC-supported system. The CDC uses its National HIV Prevention Program Monitoring & Evaluation data to assess HIV testing and HIV-related service delivery. Data submitted by March 19, 2015, were included for analyses of 2014 data. This data collection effort is considered a non-research, program evaluation activity by the CDC; therefore, approval from the institutional review board was not required. The Office of Management and Budget approved this activity.

Measures

Demographics and setting—This includes self-reported data on age, race/ethnicity, region, and test setting. Data on White, Black, and Hispanic/Latina women are presented in these analyses. Data on women from other racial/ethnic groups were not examined because of a small sample size. Additionally, jurisdictions were assigned to the Northeast, South, Midwest, and West using the U.S. census categorizations to examine HIV testing and HIV service delivery by region. Finally, data were stratified by setting type (i.e., health care or non-health care). A health care setting is defined as one that provides both medical diagnostic and treatment services (e.g., inpatient facilities, outpatient facilities, and emergency departments). A non-health care setting is defined as one that does not provide

both medical diagnostic and treatment services (e.g., HIV counseling and testing sites and community settings).

HIV testing events—HIV testing events included all National HIV Prevention Program Monitoring & Evaluation HIV testing records for which a test result (positive or negative) was reported. A single HIV testing event could include multiple tests that were administered to the same person to make a final determination of the test result.

HIV positivity—HIV positivity is defined as the proportion of women who were tested and received an HIV-positive test result during the current testing event. Newly diagnosed HIV-positive women included those who tested HIV positive during the current testing event and were not found to be previously reported in the health department jurisdiction's HIV surveillance system. If a woman was found in the HIV surveillance system as a prior HIV positive case, the HIV-positive testing event was not considered a new diagnosis. Self-report data for prior HIV status were used only for grantees who did not or were unable to verify prior test result within their HIV surveillance system due to specific policies or procedures within their state and/or health department (6 jurisdictions). In this case, newly diagnosed HIV-positive women were those who tested HIV positive during the current test event but self-reported not having a previous HIV-positive test result.

Linkage to HIV medical care—Linkage was defined as attendance at first medical appointment for HIV-positive women. Grantees collect these data in various ways, including client self-report, medical records, surveillance, or local program data. The 2010 National HIV/AIDS Strategy's goals for 2015 (White House Office of National AIDS Policy, 2010) aims for 85% of persons newly diagnosed with HIV to be linked with HIV medical care within 90 days of diagnosis. Linkage within 90 days and linkage within any timeframe (i.e., linkage within 90 days and >90 days) were examined for all newly diagnosed HIV-positive women.

Referral and interviewed for partner services—Partner services are a set of confidential, voluntary services to help HIV-positive persons notify their sex and drug injection partners of possible HIV exposure, to offer services that can protect the health of partners, and to prevent reinfection of sexually transmitted disease (CDC, 2013). Women who were either referred to or interviewed for partner services were considered “referred.” Women who were asked and provided information for partner services were considered “interviewed.” Referral and interviewed for partner services were examined for all newly diagnosed HIV-positive women.

Referral to HIV risk reduction services—HIV risk reduction services are defined as any service or intervention directly aimed at reducing risk for transmitting or acquiring HIV infection (e.g. risk reduction counseling, evidence-based interventions; CDC et al., 2014). It excludes HIV post-test counseling and indirect services, such as mental health services or housing. Referral to HIV risk reduction services was examined for all newly diagnosed HIV-positive women.

Data Analysis Plan

Descriptive statistics were used to examine HIV testing and HIV service delivery for women by demographic characteristics. Log binominal regression analysis was used to assess differences across demographic characteristics for HIV positivity, identification of newly diagnosed HIV-positive women, linkage, and referral services. Because of variations in missing data and staff and financial resources across regions and settings for linkage and referral services, log binomial analyses were not conducted by region and setting type. Analyses were conducted in SAS, version 9.3 (SAS, Inc., Cary, NC).

Results

HIV Testing Events

In 2014, a total of 3,049,845 CDC-funded HIV testing events were conducted; 48.7% (1,484,902) of these testing events were among women. Women accounted for more than one-half of CDC-funded HIV testing events among persons aged 13 to 19 (59.5%), 20 to 29 (50.9%), Blacks (51.5%), Hispanics/Latinas (50.7%), persons residing in the South (53.3%) and U.S. dependent areas (56.7%), and persons tested in health care settings (53.1%; Table 1). The highest percentages of HIV testing events among women were found among those aged 20 to 29 (41.6%), Black women (46.1%), women residing in the South (59.4%), and women tested in health care settings (76.1%; Table 2).

HIV-Positive Women

In 2014, a total of 27,765 persons were identified as being HIV positive through CDC-funded testing events. Women comprised 19.5% (5,421) of these HIV-positive testing events. Approximately one-quarter of HIV-positive testing events among those aged 40 to 49 (26.4%), 50 and older (26.9%), and Blacks (24.0%) were among women. Additionally, 23.2% of HIV-positive testing events in the Northeast, 22.8% in the U.S. dependent areas, and 22.0% in the South were among women (Table 1).

Overall HIV positivity among women was 0.4%. Women aged 40 to 49 (0.7%) and 50 and older (0.7%), Black women (0.5%), and those tested in non-health care settings (0.5%) had the highest percentages of HIV positivity. Significant findings from log binomial regression analyses indicated that women aged 20 to 29 were more likely to test HIV positive (0.2%) than persons aged 13 to 19 (0.1%), but less likely than persons aged 30 to 39 (0.4%), 40 to 49 (0.7%), and 50 and older (0.7%). Black women (0.5%) were more likely to test HIV-positive than White women (0.2%) and Hispanic/Latina women (0.2%). Additionally, the South (0.4%) had a higher percentage of HIV-positive women than the Northeast (0.4%), Midwest (0.2%), or West (0.2%). Finally, women testing in non-health care settings (0.5%) were more likely to test HIV positive than those testing in health care settings (0.3%; Table 2).

Newly Diagnosed HIV-Positive Women

In 2014, a total of 12,472 persons were identified as being newly diagnosed HIV positive. Women comprised 16.3% (2,038) of all newly diagnosed CDC-funded HIV-positive testing events. Women accounted for 24.4% of new diagnoses among persons aged 40 to 49, 27.4%

among persons 50 and older, 20.7% among Blacks, 20.1% among those residing in the U.S. dependent areas, and 19.2% among those tested in health care settings (Table 1).

Overall newly diagnosed HIV positivity among women was 0.1%. Women aged 30 and older (0.2%), Black women (0.2%), women residing in the Northeast (0.2%) and in the U.S. dependent areas (0.2%), and those tested in non-health care settings (0.2%) had the highest newly diagnosed HIV positivity. Significant findings from log binomial regression analyses indicated that women aged 20 to 29 were more likely to have new diagnoses (0.2%) than persons aged 13 to 19 (0.0%) but less likely than persons aged 30 and older (0.2%). Black women (0.2%) were more likely to have new diagnoses than White women (0.1%) and Hispanic/Latina women (0.1%). Additionally, the South (0.1%) had a higher percentage of newly diagnosed women than the Midwest (0.1%) and West (0.1%) but less likely than the Northeast (0.2%) and U.S. dependent areas (0.2%). Finally, women testing in non-health care settings (0.2%) were more likely to identify new diagnoses than those testing in health care settings (0.1%; Table 2).

Linkage to HIV Medical Care

More than 60% of newly diagnosed HIV-positive women were linked to HIV medical care within any timeframe (62.8%). Newly diagnosed HIV-positive women aged 13 to 19 (68.9%), 40 to 49 (67.5%), and 30 to 39 (66.2%), Hispanic/Latina women (63.2%), women residing in the Northeast (79.6%) and in the U.S dependent areas (68.3%), and those who were tested in health care settings (63.6%) had the highest percentages of linkage to medical care within any timeframe. Significant findings from log binomial regression analyses indicated that women aged 20 to 29 (59.1%) were less likely to be linked than those aged 30 to 39 (66.2%) and 40 to 49 (67.5%). There were no differences in linkage to care within any timeframe identified by race/ethnicity (Table 2).

More than one-half of newly diagnosed HIV-positive women were linked to HIV medical care within 90 days (57.1%). Newly diagnosed HIV-positive women aged 40 to 49 (61.5%) and 30 to 39 (61.1%), residing in the Northeast (75.7%) and in the U.S. dependent areas (66.7%) had the highest percentages of linkage to medical care within 90 days. Significant findings from log binomial regression analyses indicated that women aged 20 to 29 (53.1%) were less likely to be linked than those aged 30 to 39 (61.1%) and 40 to 49 (61.5%). There were no differences in linkage to care within 90 days identified by race/ethnicity (Table 2).

Referral to Partner Services

Nearly three-quarters (74.1%) of newly diagnosed HIV-positive women were referred to partner services. Newly diagnosed HIV-positive women aged 40 to 49 (77.6%), 30 to 39 (77.2%), and 13 to 19 (75.4%), who are White (78.1%), residing in the U.S. dependent areas (90.5%) and in the Northeast (86.7%), and tested in non-health care settings (78.6%) had the highest percentages of referral to partner services. Log binomial regression analyses indicated no significant differences in referral to partner services by age group or race/ethnicity (Table 3).

Interviewed for Partner Services

More than one-half (57.5%) of newly diagnosed HIV-positive women were interviewed for partner services. Newly diagnosed HIV-positive women aged 13 to 19 (68.9%), residing in the U.S. dependent areas (71.4%) and in the South (61.0%), and tested in non-health care settings (60.8%) had the highest percentages for being interviewed for partner services. Log binomial regression analyses indicated no differences in being interviewed for partner services by age groups or race/ethnicity (Table 3).

Referral to HIV Risk Reduction Services

More than one-half (55.5%) of newly diagnosed HIV-positive women were referred to HIV risk reduction services. Newly diagnosed HIV-positive women aged 13 to 19 (59.0%) and 40 to 49 (59.0%), who are Hispanic/Latina (59.9%), residing in the Northeast (85.1%) and in the U.S. dependent areas (82.5%) had the highest percentages for referral to HIV risk reduction services. Log binomial regression analyses indicated no differences in being referred for HIV risk reduction services by age groups or race/ethnicity (Table 3).

Discussion

In 2014, women accounted for nearly one-half of all CDC-funded testing events. They also accounted for almost one-fifth of all HIV-positive testing events, and 16.3% of newly diagnosed persons identified through CDC-funded testing programs. Among all women tested, 0.4% were HIV positive, and 0.1% either self-reported a new diagnosis (6 jurisdictions) or tested positive but were not found in the jurisdiction's HIV surveillance system (55 jurisdictions). The findings revealed that the South accounted for the largest percentage of CDC-funded HIV-positive tests among women, whereas the Northeast and the U.S. dependent areas accounted for a larger percentage of newly diagnosed HIV-positive women. Consistent with previous findings, a higher HIV positivity was found among Black women and older women (CDC, 2012; Hodder et al., 2013; Nwangwu-Ike et al., 2015; Seth, Walker, et al., 2015). The National HIV/AIDS Strategy for the United States: Updated to 2020 (White House Office of National AIDS Policy, 2015) notes that the 2020 goal to reduce the disparity between the rate of new diagnoses among Black women and the rate of new diagnoses in the overall population by 15.0% was met in 2012. Although diagnoses are decreasing among Black women, the current findings suggest that among CDC-funded testing events, a disparity exists in HIV positivity and new diagnoses for Black women when compared with women of other racial/ethnic groups, which is consistent with surveillance data (Nwangwu-Ike et al., 2015).

The current findings also suggest that a large majority of CDC-funded testing events are conducted among women aged 20 to 39 years. However, a higher percentage of new diagnoses are occurring in women aged 30 and older compared with women aged 20 to 29 years. It is unknown when these women may have been infected with HIV. In 2010, the rate of new infections among women was highest among those aged 25 to 34 (5.5 per 100,000), followed by those aged 35 to 44 (4.8 per 100,000; CDC, 2012). It is possible that older women in this sample may have been exposed to HIV and had an undiagnosed HIV

infection for several years, increasing the likelihood of transmission and the likelihood of advancing to later stages of HIV or developing AIDS.

Early initiation of and adherence to antiretroviral therapy has substantial medical benefits to HIV-positive persons by suppressing viral load and reducing morbidity and mortality. Additionally, early engagement in care and treatment provides prevention benefits to HIV-negative partners by reducing HIV transmission by up to 96% (Cohen et al., 2011; Kitahata et al., 2009; The Insight Start Study Group, 2015). Therefore, it is critical to ensure that all HIV-positive persons are diagnosed early and receive necessary HIV prevention, care, and treatment services. In 2014, among CDC-funded testing events, 62.8% of newly diagnosed HIV-positive women were linked to HIV medical within any timeframe, and 57.1% were linked within 90 days. There were no differences by race/ethnicity on both measures of linkage to HIV medical care. However, these percentages fall below the goals set by the National HIV/AIDS Strategy (White House Office of National AIDS Policy, 2010, 2015) of having 85% of newly diagnosed persons linked to HIV medical care within 90 days by 2015 and within 30 days by 2020. In addition to linkage, improvements also are needed in the percentages of newly diagnosed HIV-positive women who were interviewed for partner services (57.5%) and referred to HIV risk reduction services (55.5%).

The current findings are subject to limitations. Because the current data are limited to CDC-funded HIV testing events among women, these findings might not be generalizable to all women in the United States. Reliable estimates are not available to determine what proportion of all HIV tests in the United States is funded by the CDC. However, CDC-funded HIV testing events account for approximately 25% of all publically funded testing. Also, because of missing data, the service delivery data are an underestimate and represent the minimum percentage achieved, particularly for linkage to HIV medical care within 90 days. Linkage to HIV medical care within 90 days became a required reporting variable starting in 2012, which may contribute to incomplete data because of the time it may take grantees to update their data systems for reporting. However, significant improvements in the quality of submitted data have been seen each year. Finally, for grantees who were unable to verify data from their surveillance systems because of health department policies that may limit access, self-report data were used to identify whether a woman had ever received a previous HIV-positive diagnosis to determine whether her current test result was a new diagnosis. Therefore, the percentage of new diagnoses may be an overestimate because of self-report bias and because some HIV testing programs may offer incentives for getting tested.

Implications for Practice and/or Policy

A number of interpersonal and contextual factors place some women at greater risk for HIV. Previous research has found that intimate partner violence, relational power imbalance, substance use/abuse, and mental health are associated with risk for HIV and other sexually transmitted infections among women. These subgroups of women may be more likely to engage in riskier sexual practices, such as multiple or concurrent partners, high-risk sexual partners, and inconsistent condom use, which may lead to HIV/sexually transmitted infection (Adimora et al., 2002; Campbell et al., 2008; Crosby et al., 2008; Jackson, Seth,

DiClemente, & Lin, 2015; Logan, Cole, & Leukefeld, 2002; McCree, Koenig, Basile, Fowler, & Green, 2015; Pulerwitz, Amaro, De Jong, Gortmaker, & Rudd, 2002; Seth, Raiford, Robinson, & Wingood, 2010; Seth, Raiji, DiClemente, Wingood, & Rose, 2009; Seth, Wingood, & Diclemente, 2008; Seth, Wingood, DiClemente, & Robinson, 2011; Seth, Wingood, Robinson, Raiford, & DiClemente, 2015; Tross et al., 2009). Additionally, individual and structural barriers must be addressed to diagnose and link HIV-positive women into care early. In women, competing monetary needs, poverty, lack of access to care, and mistrust of the health care system are barriers that may impact timely diagnosis and linkage to care (Aziz & Smith, 2011; Moore, 2011). Therefore, it may be beneficial for CDC-funded testing programs to offer referrals to women, as indicated, for services to help address social determinants of health that may impact their care and treatment.

Although women overall are not at highest risk for HIV in the United States, Black women have the highest number of new infections after men who have sex with men (CDC, 2012). Therefore, targeted testing approaches for Black women may ensure effective test-and-treat strategies for this population. The current findings also indicated that among CDC-funded testing events, a higher percentage of new diagnoses were occurring among women aged 30 and older in 2014 when compared with women aged 20 to 29. CDC recommends routine HIV screening in health care settings for clients aged 13 to 64, where prevalence is 0.1% or more (Branson et al., 2006), to help identify HIV-positive persons soon after they were potentially infected. In addition to improved testing strategies, improvements in linkage and referral services are needed to ensure that HIV-positive women are receiving care and treatment. This may include better and increased data reporting as well as patient navigation services to help persons through the system and to ensure they are linked. Follow-up services also may help to improve loss to follow-up and retention in care and treatment. Finally, policy interventions, referrals, or other assistance addressing poverty, substance abuse, intimate partner violence, and mental health conditions may help to reduce interpersonal and structural barriers faced by women and ensure that HIV-positive women are not only engaged in care but also retained, ultimately improving their health outcomes and those of their sexual partners.

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Biographies

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Table 1

Numbers and Percentages of CDC-Funded HIV Testing Events and Newly Diagnosed HIV-Positive Women by Demographic Characteristics and Test Setting, United States, Puerto Rico, and the U.S. Virgin Islands, 2014

Demographic Characteristics	HIV Testing Events*		HIV-Positive Persons		Newly Diagnosed HIV-Positive Persons†	
	All HIV Testing Events	HIV Testing Events Among Women	All HIV-Positive Persons	HIV-Positive Women	All Newly Diagnosed HIV-Positive Persons	Newly Diagnosed HIV-Positive Women
	n	*n* (%)	*n*	*n* (%)	*n*	*n* (%)
Age groups (y)						
13–19	237,873	141,621 (59.5)	714	119 (16.7)	420	61 (14.5)
20–29	1,213,767	617,470 (50.9)	10,012	1,161 (11.6)	5,505	533 (9.7)
30–39	702,686	342,408 (48.7)	6,786	1,407 (20.7)	2,999	527 (17.6)
40–49	420,579	189,364 (45)	5,294	1,400 (26.4)	1,917	468 (24.4)
≥50	448,512	182,828 (40.8)	4,904	1,319 (26.9)	1,601	439 (27.4)
Race/ethnicity						
White	815,952	356,096 (43.6)	5,525	820 (14.8)	2,649	334 (12.6)
Black or African American	1,329,154	683,902 (51.5)	14,968	3,589 (24.0)	6,243	1,291 (20.7)
Hispanic or Latino	687,777	348,593 (50.7)	5,790	805 (13.9)	2,906	342 (11.8)
Region						
Northeast	508,162	222,610 (43.8)	3,665	852 (23.2)	2,035	362 (17.8)
Midwest	373,576	172,607 (46.2)	2,584	362 (14)	1,558	197 (12.6)
South	1,654,904	881,920 (53.3)	16,850	3,708 (22)	6,893	1,267 (18.4)
West	464,481	180,127 (38.8)	4,218	397 (9.4)	1,673	149 (8.9)
U.S. dependent areas	48,722	27,638 (56.7)	448	102 (22.8)	313	63 (20.1)
Test settings						
Health care	2,128,869	1,130,056 (53.1)	17,050	3,777 (22.2)	7,066	1,354 (19.2)
Non-health care	879,063	339,028 (38.6)	10,368	1,609 (15.5)	5,176	664 (12.8)
Total	3,049,845	1,484,902 (48.7)	27,765	5,421 (19.5)	12,472	2,038 (16.3)

Abbreviations: CDC, Centers for Disease Control and Prevention; HIV, human immunodeficiency virus.

*HIV testing events were defined as tests for which a test result (positive or negative) was reported.

†Persons who tested HIV-positive but did not report a previous positive test result and who had not been reported to a state's surveillance system were categorized as newly diagnosed HIV-positive persons.

Table 2

HIV-Positive Women, Newly Diagnosed HIV-Positive Women, and Linkage to HIV Medical Care by Demographic Characteristics and Test Setting, United States, Puerto Rico, and the U.S. Virgin Islands, 2014

Demographic Characteristics	HIV Testing Events among Women,* *n* (%)	HIV-Positive Women†,‡		Newly Diagnosed HIV-Positive Women†,‡		Linkage to HIV Medical Care among Newly Diagnosed HIV-Positive Women within Any Timeframe		Newly Diagnos HIV-Positive Women in 90 Days	
		n (%)	PR (95% CI)	*n* (%)	PR (95% CI)	*n* (%)	PR (95% CI)	*n* (%)	PR (95% CI)
Age groups (y)									
13–19	141,621 (9.5)	119 (0.1)	0.45 (0.37–0.54)	61 (0.0)	0.50 (0.38–0.65)	42 (68.9)	1.17 (0.97–1.40)	35 (57.4)	1.08 (0.86–1.36)
20–29	617,470 (41.6)	1,161 (0.2)	Referent	533 (0.1)	Referent	315 (59.1)	Referent	283 (53.1)	Referent
30–39	342,408 (23.1)	1,407 (0.4)	2.19 (2.02–2.36)	527 (0.2)	1.78 (1.58–2.01)	349 (66.2)	1.12 (1.02–1.23)	322 (61.1)	1.15 (1.04–1.28)
40–49	189,364 (12.8)	1,400 (0.7)	3.93 (3.64–4.25)	468 (0.2)	2.86 (2.53–3.24)	316 (67.5)	1.14 (1.04–1.26)	288 (61.5)	1.16 (1.04–1.29)
≥50	182,828 (12.3)	1,319 (0.7)	3.84 (3.55–4.15)	439 (0.2)	2.78 (2.45, 3.16)	256 (58.3)	0.99 (0.89–1.10)	233 (53.1)	1.00 (0.89–1.13)
Race/ethnicity									
White	356,096 (24)	820 (0.2)	0.44 (0.41–0.47)	334 (0.1)	0.50 (0.44–0.56)	210 (62.9)	1.01 (0.92–1.11)	195 (58.4)	1.04 (0.94–1.15)
Black or African American	683,902 (46.1)	3,589 (0.5)	Referent	1,291 (0.2)	Referent	800 (62)	Referent	725 (56.2)	Referent
Hispanic or Latino	348,593 (23.5)	805 (0.2)	0.44 (0.41–0.47)	342 (0.1)	0.52 (0.46–0.59)	216 (63.2)	1.02 (0.93–1.12)	193 (56.4)	1.00 (0.90–1.12)
Region§									
Northeast	222,610 (15)	852 (0.4)	0.91 (0.85–0.98)	362 (0.2)	1.13 (1.01–1.27)	288 (79.6)	NA	274 (75.7)	NA
Midwest	172,607 (11.6)	362 (0.2)	0.50 (0.45–0.56)	197 (0.1)	0.79 (0.68–0.92)	95 (48.2)	NA	93 (47.2)	NA
South	881,920 (59.4)	3,708 (0.4)	Referent	1,267 (0.1)	Referent	778 (61.4)	NA	686 (54.1)	NA
West	180,127 (12.1)	397 (0.2)	0.52 (0.47–0.58)	149 (0.1)	0.58 (0.49–0.68)	76 (51.0)	NA	68 (45.6)	NA
U.S. dependent areas	27,638 (1.9)	102 (0.4)	0.88 (0.72–1.07)	63 (0.2)	1.59 (1.23–2.04)	43 (68.3)	NA	42 (66.7)	NA
Test settings§									
Health care	1,130,056 (76.1)	3,777 (0.3)	Referent	1,354 (0.1)	Referent	861 (63.6)	NA	772 (57)	NA
Non-health care	339,028 (22.8)	1,609 (0.5)	1.42 (1.34–1.51)	664 (0.2)	1.63 (1.49–1.79)	409 (61.6)	NA	381 (57.4)	NA
Total	1,484,902	5,421 (0.4)		2,038 (0.1)		1,280 (62.8)		1,163 (57.1)	

Abbreviations: CDC, Centers for Disease Control and Prevention; CI, confidence interval; HIV, human immunodeficiency virus; PR, prevalence ratio.

*The percentages for HIV testing events among women are column percentages (denominator = 1,484,902).

†The denominator for the percentage of HIV-positive women and newly diagnosed HIV-positive women is HIV testing events among women by demographic characteristic.

[‡]Because of rounding, some significant differences in HIV positivity and newly diagnosed HIV-positive women may not be apparent when only examining percentages.

[§]Because of variations in missing data and staff and financial resources across regions and settings for linkage, log binomial analyses were not conducted by region and setting type.

Table 3

Newly Diagnosed HIV-Positive Women and Referral to Partner Services, Interviewed for Partner Services, and Referral to HIV Risk Reduction Services by Demographic Characteristics and Test Setting, United States, Puerto Rico, and the U.S. Virgin Islands, 2014

Demographic Characteristics	Newly Diagnosed HIV-Positive Women, *n*	Referral to Partner Services among Newly Diagnosed HIV-Positive Women		Interviewed for Partner Services among Newly Diagnosed HIV-Positive Women		Referral to HIV Risk Reduction Services among Newly Diagnosed HIV-Positive Women	
		n (%)	PR (95% CI)	*n* (%)	PR (95% CI)	*n* (%)	PR (95% CI)
Age group (y)							
13–19	61	46 (75.4)	1.05 (0.90–1.22)	42 (68.9)	1.20 (1.00–1.44)	36 (59)	1.12 (0.90–1.41)
20–29	533	383 (71.9)	Referent	306 (57.4)	Referent	280 (52.5)	Referent
30–39	527	407 (77.2)	1.07 (1.00–1.15)	309 (58.6)	1.02 (0.92–1.13)	304 (57.7)	1.10 (0.98–1.22)
40–49	468	363 (77.6)	1.08 (1.00–1.16)	271 (57.9)	1.01 (0.91–1.12)	276 (59)	1.12 (1.01–1.25)
≥50	439	309 (70.4)	0.98 (0.90–1.06)	241 (54.9)	0.96 (0.85–1.07)	234 (53.3)	1.01 (0.90–1.14)
Race/ethnicity							
White	334	261 (78.1)	1.06 (1.00–1.14)	186 (55.7)	0.96 (0.86–1.06)	187 (56.0)	1.04 (0.93–1.15)
Black or African American	1,291	949 (73.5)	Referent	751 (58.2)	Referent	698 (54.1)	Referent
Hispanic or Latino	342	241 (70.5)	0.96 (0.89–1.03)	196 (57.3)	0.99 (0.89–1.09)	205 (59.9)	1.11 (1.00–1.23)
Region*							
Northeast	362	314 (86.7)	NA	204 (56.4)	NA	308 (85.1)	NA
Midwest	197	117 (59.4)	NA	84 (42.6)	NA	117 (59.4)	NA
South	1,267	915 (72.2)	NA	773 (61)	NA	569 (44.9)	NA
West	149	108 (72.5)	NA	65 (43.6)	NA	86 (57.7)	NA
U.S. dependent areas	63	57 (90.5)	NA	45 (71.4)	NA	52 (82.5)	NA
Test settings*							
Health care	1,354	971 (71.7)	NA	752 (55.5)	NA	753 (55.6)	NA
Non-health care	664	522 (78.6)	NA	404 (60.8)	NA	364 (54.8)	NA
Total	2,038	1,511 (74.1)		1,171 (57.5)		1,132 (55.5)	

Abbreviations: CI, confidence interval; HIV, human immunodeficiency virus; PR, prevalence ratio.

*Because of variations in missing data and staff and financial resources across regions and settings for linkage, log binomial analyses were not conducted by region and setting type.