By Rupali K. Doshi, John Milberg, Theresa Jumento, Tracy Matthews, Antigone Dempsey, and Laura W. Cheever

DOI: 10.1377/hlthaff.2016.0655
HEALTH AFFAIRS 36,
NO. 1 (2017): 116–123

For Many Served By The Ryan White HIV/AIDS Program, Disparities In Viral Suppression Decreased, 2010–14

Rupali K. Doshi (rkdoshi@gwu.edu) is an assistant research professor of epidemiology and biostatistics at the Milken Institute School of Public Health at George Washington University, and chief of the Strategic Information Division, HIV/AIDS, Hepatitis, STD, and TB Administration, District of Columbia Department of Health, both in Washington, D.C.

John Milberg is a health scientist at the Division of Policy and Data, HIV/AIDS Bureau, Health Resources and Services Administration (HRSA), in Rockville, Maryland.

Theresa Jumento is a branch chief at the Division of Policy and Data, HIV/AIDS Bureau, HRSA.

Tracy Matthews is deputy director of the Division of Policy and Data, HIV/AIDS Bureau.

Antigone Dempsey is director of the Division of Policy and Data, HIV/AIDS Bureau.

Laura W. Cheever is the associate administrator of the HIV/AIDS Bureau.

ABSTRACT **For twenty-five years, the Ryan White HIV/AIDS Program has supported a comprehensive system of health services for vulnerable and under- or uninsured people living with HIV. Using data from the Health Resources and Services Administration about people living with HIV and served by the Ryan White HIV/AIDS Program, we found reductions in disparities in viral suppression rates between 2010 and 2014—with rates for Blacks/African Americans, adolescents and young adults, and people living in the South becoming more similar to rates for Whites, older adults, and people in other regions of the United States, respectively. Although absolute viral suppression rates for people without stable housing and transgender people improved during the same time period, disparities were not reduced between these groups and those with stable housing and nontransgender people, respectively. Addressing persistent disparities through the effective use of this program will be one of the key ways to meet the goals of the National HIV/AIDS Strategy.**

As medicine and public health contribute to significant breakthroughs in the prevention and treatment of serious illnesses, increasing attention has been paid to identifying and reducing disparities in health outcomes—for example, across races/ethnicities and socioeconomic status. Over the past several decades, the exploration of disparate health outcomes for specific diseases has informed health care and public health professionals about how advances in health care can reach more populations.[1,2] In the United States, members of racial/ethnic minority groups; lesbian, gay, bisexual, or transgender (LGBT) people; and impoverished populations experience higher rates of disease and worse health outcomes for a variety of health conditions, including cardiovascular disease, lung disease, accidental death, and infectious diseases.[3]

HIV medicine and service delivery have improved dramatically over the past three decades, transforming what was once considered a death sentence into a chronic disease. The Affordable Care Act (ACA) reduced barriers to access to care for people living with HIV, but increased health care coverage alone may be insufficient to overcome structural and other barriers that drive disparities in the United States.

An example of a racial/ethnic disparity in HIV is the high prevalence of new HIV diagnoses among Blacks/African Americans. The Centers for Disease Control and Prevention (CDC) estimates that although Blacks/African Americans account for 13 percent of the overall US population, they accounted for 45 percent of new HIV diagnoses in 2013 and have much higher rates of HIV and stage 3 AIDS, compared with other racial/ethnic groups.[4] In addition, rates of linkage to HIV care after diagnosis, retention in HIV care, and viral suppression are lower among Blacks/African Americans, compared with Whites.[1,5]

Viral suppression below 200 copies/ml is a critical health outcome for people living with HIV because it is highly associated with reduced morbidity and mortality and reduced risk of HIV transmission.[6] In this article we analyze trends from 2010 to 2014 in disparities in HIV viral suppression observed among clients served by the Ryan White HIV/AIDS Program (a federally funded health care safety net for people living with HIV) for key populations identified in the National HIV/AIDS Strategy.

Health Care Landscape For People Living With HIV

The National HIV/AIDS Strategy, initially released in 2010 and updated with targets for 2020, calls for a reduction in HIV-related disparities.[7,8] Key US populations that experience disparities in HIV prevalence or outcomes and that are identified in the National HIV/AIDS Strategy are gay and bisexual men, young Black gay and bisexual men, Black women, people living in the South, transgender people, youth, women (especially with histories of intimate partner violence), people who inject drugs, people leaving the correctional system, and homeless people.[8]

Since 2014 the implementation of the ACA has provided new ways for people living with HIV to access health care coverage.[9] Certain provisions, such as those that eliminated restrictions on coverage for preexisting conditions and expanded coverage for adult children through age twenty-six under parental plans, may particularly benefit people living with HIV.

The Ryan White HIV/AIDS Program

The Ryan White HIV/AIDS Program is a federal program that provides care, treatment, and support services for people living with HIV as a payer of last resort. Administered by the Health Resources and Services Administration (HRSA), the program is well positioned to contribute significantly to reducing HIV-related health disparities[10] because it uses a public health approach to provide a comprehensive system of safety-net care for people living with HIV. Over its twenty-five-year history, it has worked to reduce disparities in HIV health outcomes related to race/ethnicity, age, gender, and other risk factors.

One way the Ryan White HIV/AIDS Program has improved the measurement of disparities has been through the collection of client-level demographic and clinical outcomes data, which began in 2010 with the Ryan White HIV/AIDS Program Services Report. In addition, based on requirements Congress added in 2000, the program has heavily promoted clinical quality management among funded providers, with a clear focus on improving health outcomes. HRSA expects funded providers to implement clinical quality management activities and has provided opportunities for technical assistance in this area through training and education, collaborative learning groups, and coaching.[11]

In this study we used annually reported client-level data to understand how viral suppression changed over time among clients of the Ryan White HIV/AIDS Program. The study provides a snapshot of clinical outcomes for a national program that serves over half of all people diagnosed with HIV in the United States and is the third-largest payer US of HIV health care.[12]

Study Data And Methods

DATA SOURCE, DEFINITIONS, AND METHODS Data for this study were derived from the annual client-level services reports submitted to HRSA in the period 2010–14 by each provider funded by the Ryan White HIV/AIDS Program that offered services in a given year. Approximately 800 medical care providers submit data annually. All viral load test results on each client are reported by the providers of outpatient ambulatory medical care or medical case management. Details on this data collection system have been provided previously.[13]

All analyses were conducted in SAS, version 9.3. Analyses were limited to HIV-positive clients ages thirteen and older who were Black/African American, Hispanic/Latino, or White; received at least one outpatient ambulatory HIV medical visit funded by the Ryan White HIV/AIDS Program during the calendar year of interest; and had at least one viral load value reported.

We assessed disparities across demographic groups by comparing the differences in viral suppression rates. Viral suppression was defined as having the most recent HIV RNA value in the calendar year below 200 copies/ml. We compared the unadjusted difference in viral suppression rates separately by age group (ages 13–24 versus ages 45 and older, and ages 25–44 versus ages 45 and older), race/ethnicity (Black/African American versus White, or Hispanic/Latino versus White), gender (female versus male, or transgender versus male), HIV transmission risk factor (men who have sex with men versus all others, and people who inject drugs versus all others), housing status (unstable versus stable or temporary versus stable), and region (Northeast versus West, South versus West, or Midwest versus West).

Unstable housing was defined as an emergency shelter, a public or private place not designed for or ordinarily used as a regular sleeping accom-

modation for human beings (including a vehicle; an abandoned building; a bus, train, or subway station or airport; and anywhere outdoors), jail, prison, a juvenile detention facility, or a hotel or motel paid for with an emergency shelter voucher. *Temporary housing* was defined as transitional housing for homeless people; temporary accommodations with family members or friends; and other temporary accommodations such as those provided by a Ryan White HIV/AIDS Program housing subsidy, temporary placement in an institution, or a hotel or motel paid for without an emergency shelter voucher. *Stable housing* was defined as a rented or owned unsubsidized room, house, or apartment; unsubsidized permanent accommodations with family members or other self-sufficient arrangements; accommodations funded with assistance from the Housing Opportunities for Persons with AIDS Program of the Department of Housing and Urban Development; a house or apartment subsidized by some other program (including the federally funded Section 8 housing voucher program, the HOME Investment Partnerships Program, and public housing programs); permanent housing for formerly homeless people; and institutional settings with support and continued residence expected.[14]

The following HIV transmission risk factors were reported in the Ryan White HIV/AIDS Program Services Report:[14] men having sex with men, injection drug use, hemophilia or coagulation disorder, heterosexual contact, receipt of a transfusion (of either blood or blood components) or tissue, and perinatal transmission. In this study we dichotomized HIV transmission risk factors in two ways: men having sex with men versus all other people, and injection drug users versus all other people. The Cochran-Armitage test was used to determine whether there was a significant trend in the period 2010–14 in the proportion of clients with a suppressed viral load.

The disparity assessments were conducted using models that estimated the outcome, which was the differences in viral suppression rate, by controlling for certain demographic factors. A separate model was run for each demographic factor of interest. In each model, we used the approach outlined by Donna Spiegelman and Ellen Hertzmark.[15] For example, the model used to calculate the adjusted differences in viral suppression rates by age group included race/ethnicity and gender. Type of insurance was included in the regional analysis because of large regional differences in insurance status by state.

To determine whether or not a disparity was present, we modified the approach used in the 2014 National Healthcare Quality and Disparities Report by the Agency for Healthcare Research and Quality, according to which *disparity* was defined as an absolute difference of 10 percent and the difference between the two groups must be significant ($p < 0.05$) according to a two-tailed test.[16] In this study, because of large sample size, adjusted viral suppression differences below 5 percentage points reached statistical significance ($p < 0.05$). We considered a disparity to exist if there was an adjusted viral suppression difference of 5 or more percentage points because we believed that amount of difference was clinically meaningful and relevant for public health program planning.

The Wald chi-square test was used to determine the significance of adjusted viral suppression differences within each year. To determine whether there were significant changes in adjusted viral suppression differences between 2010 and 2014, we compared the multivariate regression model fitted with and without an interaction term for the disparity of interest and year.[17]

LIMITATIONS This study had several limitations. First, the data were limited to information reported by providers funded by the Ryan White HIV/AIDS Program. Thus, comparisons with other providers can be made only indirectly.

Second, our analysis was restricted to clients who received at least one outpatient ambulatory HIV medical visit in a given year and also had viral load data reported. While this is a large population, the Ryan White HIV/AIDS Program also served approximately 200,000 other clients who received another funded service such as mental health or substance abuse care; the Ryan White HIV/AIDS Program Services Report does not capture viral load data for these clients.

Third, HRSA does not routinely collect data on a measure of severity of illness, and therefore we were not able to adjust for that severity.

Finally, data collection methods and consistency could vary somewhat across sites. Nevertheless, we experienced low levels of missing and out-of-range data, and the results on measures of viral suppression and retention in care that we saw in our population were in line with other reports from the literature.[18,19]

Study Results

Based on our inclusion criteria, 242,523 clients were available for analysis in 2010, and 268,008 clients were available in 2014 (Exhibit 1). The viral suppression rate increased from 69.4 percent in 2010 to 81.5 percent in 2014. These results differed slightly from the data presented in previous reports from HRSA[13,20] as a result of our age and race/ethnicity restrictions outlined in

EXHIBIT 1

Numbers of people living with HIV who received at least one outpatient ambulatory HIV medical visit funded by the Ryan White HIV/AIDS Program and unadjusted viral suppression (VS) rates, by selected demographic characteristics, 2010–14

	2010		2011		2012		2013		2014	
	Number	VS %	Number	VS %	Number	VS %	Number	VS %	Number	VS %
All	242,523	69.4	251,229	72.5	264,263	75.0	270,225	78.5	268,008	81.5
AGE RANGE (YEARS)										
45 or older	125,048	75.9	134,095	78.6	144,627	80.9	148,747	83.9	149,858	86.6
25–44	109,383	65.4	108,698	68.4	111,532	70.8	113,611	74.5	110,284	77.4
13–24	14,880	46.7	15,800	50.7	16,447	53.1	16,763	59.9	15,848	64.8
RACE/ETHNICITY										
White	70,143	76.3	69,439	79.0	72,113	81.4	71,457	84.3	69,082	86.8
Black/African American	116,772	63.3	123,190	67.1	127,876	69.9	130,872	73.9	128,891	77.2
Hispanic/Latino	55,328	73.7	58,355	76.1	63,991	77.9	67,355	81.4	67,886	84.3
GENDER										
Male	174,370	71.0	180,200	73.9	192,722	75.9	197,294	79.3	194,783	82.3
Female	73,096	66.3	76,298	69.9	77,423	73.2	79,316	77.1	78,593	80.3
Transgender	1,845	61.7	2,095	65.0	2,461	69.2	2,511	72.3	2,614	74.3
HIV TRANSMISSION RISK FACTOR										
Non-MSM	147,557	67.8	152,654	70.9	155,710	73.8	157,019	77.5	153,139	80.5
MSM	94,966	71.9	98,575	75.0	108,553	76.7	113,206	80.0	114,869	82.8
Non-PWID	221,029	69.5	229,729	72.6	243,862	75.0	248,982	78.5	248,996	81.5
PWID	21,494	68.6	21,500	71.0	20,401	74.6	21,243	78.5	19,012	81.0
HOUSING STATUS										
Stable	180,067	71.2	193,150	74.1	207,694	76.3	216,910	80.0	214,801	82.9
Temporary	28,464	63.7	31,561	67.4	31,577	69.7	32,370	73.4	30,113	76.9
Unstable	5,570	54.5	7,405	61.4	6,902	59.8	8,784	64.2	9,062	67.1
REGION										
West	38,458	76.1	40,942	78.9	46,031	78.2	41,052	82.3	38,333	84.2
Midwest	20,071	68.4	24,382	73.0	28,088	76.3	30,830	79.6	30,965	83.3
Northeast	54,341	69.9	58,963	71.8	59,565	75.9	65,482	80.2	63,662	83.3
South	107,499	67.9	114,879	71.3	120,611	73.2	129,790	76.6	130,412	79.9
TYPE OF INSURANCE										
Medicare	21,405	76.9	22,609	80.1	21,759	81.8	21,474	84.3	24,762	87.5
Medicaid or other public	86,946	66.6	88,467	68.9	92,027	72.1	89,092	75.8	88,182	78.7
Private	31,525	77.0	32,744	80.1	34,186	82.7	33,054	85.7	31,975	88.2
Other	10,888	71.9	8,169	75.3	5,772	76.6	3,391	79.8	11,190	83.5
None	73,831	65.4	87,679	69.6	89,244	71.2	92,467	75.3	83,068	77.6
Multiple	32,065	74.4	34,014	76.6	40,175	79.9	40,836	83.3	36,956	86.2

SOURCE Authors' analysis of data for 2010–14 from the Ryan White HIV/AIDS Program Services Report. **NOTES** The population was clients listed in the services reports who were HIV-positive; ages thirteen or older; and Black/African American, Hispanic/Latino, or White; and who had at least one outpatient ambulatory HIV medical visit funded by the Ryan White HIV/AIDS Program and viral load data reported. In all cases, the trend in percentages with viral suppression (defined in the text) for the period 2010–14, measured using the Cochran-Armitage test, was significant ($p < 0.001$). Unstable, temporary, and stable housing are defined in the text. "Other public" is public insurance except for Medicaid or Medicare. "Other" is type of insurance not listed in the table. Region was determined by the location of the medical provider; individuals with providers in multiple states were excluded from the regional data displayed. Regions were organized those of the Centers for Disease Control and Prevention that are reported for national HIV surveillance (see Note 4 in text): Northeast: CT, ME, MA, NH, NJ, NY, PA, RI, and VT; Midwest: IL, IN, IA, KS, MI, MN, MO, NE, ND, OH, SD, and WI; South: AL, AR, DE, DC, FL, GA, KY, LA, MD, MS, NC, OK, SC, TN, TX, VA, and WV: West: AK, AZ, CA, CO, HI, ID, MT, NV, NM, OR, UT, WA, and WY. US dependent areas (American Samoa, Guam, the Northern Mariana Islands, Puerto Rico, the Republic of Palau, and the US Virgin Islands) were not included in this analysis. MSM is men who have sex with men. PWID is people who inject drugs.

the "Study Data And Methods" section. For all subgroups analyzed, there was an increase in the viral suppression rates from 2010 to 2014. Clients ages 13–24 had the lowest rate of viral suppression of any subgroup in 2010 (46.7 percent) but showed significant improvement in 2014 (64.8 percent).

In adjusted analyses, we found that being younger, Black/African American, or transgender and living in temporary or unstable housing were associated with more than 5-percentage-point disparities in viral suppression compared to the reference groups in 2010 (Exhibit 2). Adjusted disparities in age and between Blacks/African Americans and Whites decreased from 2010 to 2014 but persisted. The disparities in HIV transmission risk factor and housing status did not change significantly between 2010 and

EXHIBIT 2

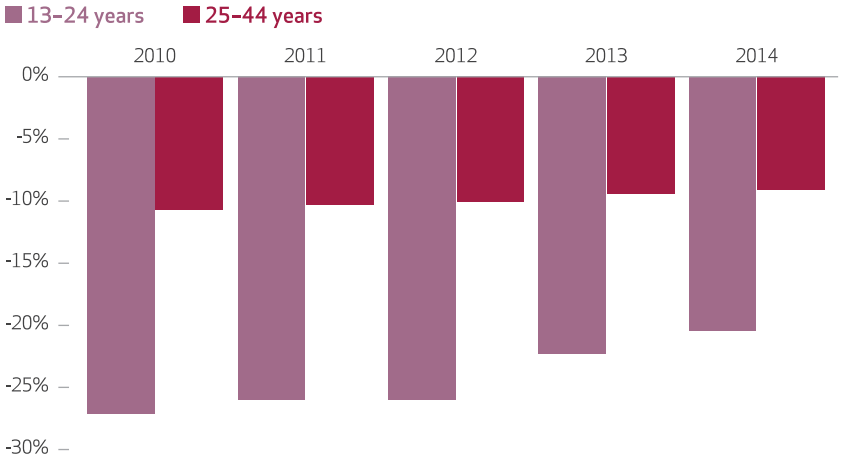
Adjusted viral suppression rates among HIV-positive people treated by the Ryan White HIV/AIDS Program, by selected demographic characteristics, 2010 and 2014

	Adjusted difference (%)		Adjusted average annual change (%)
	2010	2014	
Age range (years), adjusted for race/ethnicity and gender			
25–44 vs. 45 or older	−10.7****	−9.1****	−0.4***
13–24 vs. 45 or older	−27.1****	−20.4****	−1.7***
Race/ethnicity, adjusted for age and gender			
Black/African American vs. White	−11.0****	−7.9****	−0.8***
Hispanic/Latino vs. White	−0.8	−1.2**	0.1
Gender, adjusted for age and race/ethnicity			
Female vs. male	−1.6	−0.5	−0.3****
Transgender vs. male	−6.8**	−6.0**	−0.2
HIV transmission risk factor, adjusted for age, race/ethnicity, and gender			
MSM vs. non-MSM	−1.1****	−1.5****	0.1
PWID vs. non-PWID	−4.8****	−4.3****	−0.1
Housing status, adjusted for age, race/ethnicity, and gender			
Unstable vs. stable	−15.5****	−14.3****	−0.3
Temporary vs. stable	−6.6****	−4.8****	−0.5***
Region, adjusted for age, race/ethnicity, gender, and type of insurance			
Midwest vs. West	−1.5**	2.1***	−0.9****
Northeast vs. West	−4.3****	0.3	−1.1****
South vs. West	−3.5****	−0.8	−0.7****

SOURCE Authors' analysis of data for 2010–14 from the Ryan White HIV/AIDS Program Services Report. **NOTES** The exhibit shows the differences in the adjusted viral suppression rates between 2010 and 2014. For example, in 2010, the viral suppression rate for Blacks/African Americans was 11 percentage points lower than the rate for Whites, after adjusting for age and gender. Significance in the 2010 and 2014 columns refers to the chi-square *p* value for comparison of the adjusted viral suppression rates for the group reported versus the reference group listed. Significance in the rightmost column refers to the chi-square *p* value for the interaction term (year * disparity of interest) (2014 vs. 2010). Regions are defined in the Notes to Exhibit 1. Unstable, temporary, and stable housing are defined in the text. MSM is men who have sex with men. PWID is people who inject drugs. $^{**}p < 0.05$ $^{***}p < 0.01$ $^{****}p < 0.001$

EXHIBIT 3

Adjusted differences in viral suppression rates between two groups of younger HIV-positive people and those ages 45 and older served by the Ryan White HIV/AIDS Program, 2010–14



SOURCE Authors' analysis of data for 2010–14 from the Ryan White HIV/AIDS Program Services Report. **NOTE** Values were adjusted for race/ethnicity and gender.

2014, except that the disparity between temporarily versus stably housed clients decreased. Adjusted disparities across geographic regions were minimal in 2014.

Adjusted disparities between younger clients and those ages forty-five and older improved from 2010 to 2014 but were never less than 5 percent (Exhibit 3). Similarly, the disparity in viral suppression rates between Blacks/African Americans and Whites improved from 2010 to 2014 but did not fall below 5 percent (Exhibit 4).

Discussion

The overall proportion of Ryan White HIV/AIDS Program clients with virally suppressed HIV increased from 69.4 percent in 2010 to 81.5 percent in 2014. Risk groups such as men who have sex with men (MSM) and people who inject drugs (PWID) are at higher risk of HIV acquisition and have been identified as target populations in the National HIV/AIDS Strategy 2020. While we found that the adjusted viral suppression rate

differences between MSM versus non-MSM and PWID versus non-PWID were statistically significant, the differences did not meet the 5-percentage-point threshold that we applied to define a disparity. Several other disparities were notable, although many improved over time. A direct causal relationship between the provision of services by the Ryan White HIV/AIDS Program and improved disparities could not be determined by our analysis. However, other analyses have demonstrated that Ryan White HIV/AIDS Program clients were more likely to receive support services and had higher rates of viral suppression, compared with nonclients.[21,22]

Age disparities were apparent, particularly in 2010, but we found a significant decline from 2010 to 2014 in disparities between those ages 13–24 and those ages 45 and older. The Ryan White HIV/AIDS Program has devoted significant resources and effort to improving outreach and engagement for adolescents and young adults, including support services and Special Projects of National Significance.[23] Further evaluations will help pinpoint those activities that had the greatest impact on this positive trend.

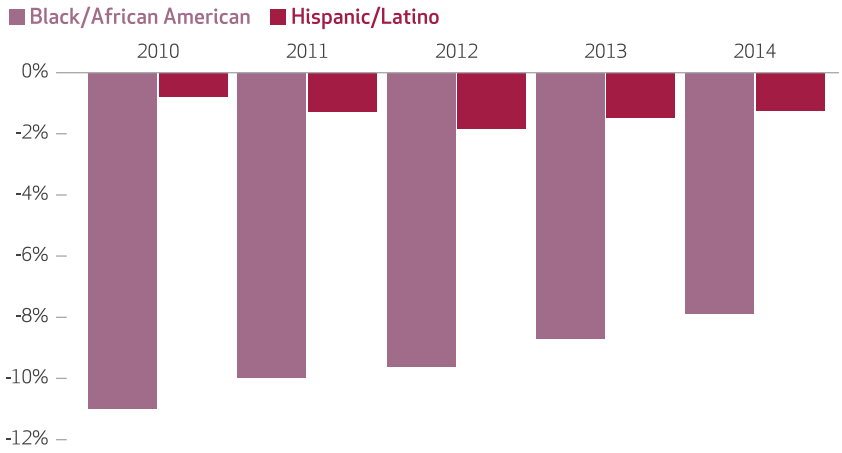
Our results demonstrated disparities in viral suppression between Blacks/African Americans and Whites in 2010 that were consistent with those found by the CDC's Medical Monitoring Project for 2009–11[18] and the Centers for AIDS Research Network of Integrated Clinical Systems for 2010.[19] Our examination of viral suppression disparities over time was a novel approach. While the disparities between Blacks/African Americans and Whites declined over time, the findings indicate that there is still room for improvement. Racial/ethnic disparities should continue to be monitored closely, given the long history of health disparities by race/ethnicity in the United States.[3]

Disparities between transgender and other people living with HIV remained persistent during our five-year study period. Our finding of lower rates of viral suppression among transgender people was not consistent with findings from the HIV Research Network,[24] although it was consistent with results from the Medical Monitoring Project.[25] The lack of improvement in disparities between transgender and other people that we found indicates that the area is ripe for further exploration and intervention to improve outcomes.

The South is experiencing more new HIV infections than other areas of the United States.[4] In our unadjusted analysis (Exhibit 1), we found that the South had lower viral suppression rates than all of the other regions, but this disparity largely disappeared when we adjusted for age, race/ethnicity, gender, and type of insurance (Exhibit 2). These findings suggest that Southerners' HIV outcomes are largely driven by age, race/ethnicity, gender, and type of insurance. Sorting out the relative effects of these factors would help focus the interventions needed to improve HIV outcomes in the South.

EXHIBIT 4

Adjusted differences in viral suppression rates between two racial/ethnic minority groups and Whites among HIV-positive people served by the Ryan White HIV/AIDS Program, 2010–14



SOURCE Authors' analysis of data for 2010–14 from the Ryan White HIV/AIDS Program Services Report. **NOTE** Values were adjusted for age and gender.

Our analysis demonstrated clear disparities in viral suppression rates between those with unstable or temporary housing and those with stable housing. This is consistent with other assessments of homeless people living with HIV.[26–28] Housing stability is a key component in achieving optimal HIV outcomes because it allows people living with HIV to focus on taking their medications daily and attend medical appointments regularly. Housing support for people living with HIV is led by the Housing Opportunities for Persons with AIDS Program and the Ryan White HIV/AIDS Program.

Policy Implications

While the evolving health care landscape in the United States has provided many new opportunities for people living with HIV to gain health care coverage, some challenges remain that limit the affordability of and access to care. For example, covered medical services for the insured vary from state to state, and many health plans have significant deductibles or cost-sharing requirements that may be prohibitively expensive for many low-income people living with HIV and seeking care. The Ryan White HIV/AIDS Program works in many ways to fill these gaps in essential services, including providing assis-

tance with health insurance premiums, copayments, and cost sharing. It also provides access to important mental health care and substance use treatment that health plans often cover not at all or only to a limited degree. In addition, while health plans rarely cover the supportive services needed to keep low-income people in care—such as intensive case management, food assistance, transportation for medical appointments, and emergency housing—the Ryan White HIV/AIDS Program allows funding to be used for the provision of these services based on local needs.

For our demographic groups of interest, we next highlight programs and existing research gaps to improve future outcomes for people living with HIV.

RACIAL/ETHNIC GROUPS To address racial/ethnic disparities in HIV outcomes, the Minority AIDS Initiative, which was authorized by Congress in 1999 and codified in the Ryan White Treatment Modernization Act of 2006, provides targeted funding for capacity building and service delivery to members of the racial/ethnic minority groups most affected by HIV.[29] The Minority AIDS Initiative has placed a particularly important emphasis on minority populations disproportionately affected by HIV and those with poorer outcomes. In the future, it will be possible to examine the impact of programs funded by the initiative on racial/ethnic viral suppression disparities.

TRANSGENDER PEOPLE A further analysis of outcomes for transgender individuals by subpopulation (that is, male-to-female and female-to-male) is needed to make informed policy decisions related to the two groups, whose members have specific social and health care needs. Findings from the ongoing Enhancing Engagement and Retention in Quality HIV Care for Transgender Women of Color initiative (a HRSA-funded Special Project of National Significance) should inform further needed efforts to reduce disparities for this population. This initiative is designed to improve retention in care and viral suppression for transgender women of color and increase the understanding of factors that affect their HIV care outcomes.

SOUTHERNERS HRSA has helped address viral suppression disparities between Southerners and people in other US regions through its many learning collaboratives, which are based on the Institute for Healthcare Improvement model.[30] These learning collaboratives are aimed at improving care for people living with HIV through improving the quality of care and performance management. Recent collaboratives, which have all included Southern states, have demonstrated improvements in HIV-related health outcomes in participating programs.

Interventions occurring in the South that target the reduction of disparities in viral suppression rates for adolescents and young adults, Blacks/African Americans, and specific categories of health care coverage are likely to improve those rates in the South. It will be especially important to pursue these interventions and focused programs in the era of the ACA and the evolving discussion of health care coverage at the federal and state levels resulting from changes in leadership.

PEOPLE WITHOUT STABLE HOUSING Unstably housed people living with HIV have been identified as a vulnerable group by the National HIV/AIDS Strategy and the HIV/AIDS Bureau of HRSA. A Special Projects of National Significance initiative uses the patient-centered medical home model to improve engagement in their care by homeless people living with HIV who also have substance use disorders, mental illnesses, or both. By supporting the use of implementation science to address poor HIV outcomes for specific vulnerable populations, the HIV/AIDS Bureau hopes to identify best practices for engaging and retaining these clients in care and to ultimately see improvements in their health outcomes.

Conclusion

Since 2010 the Ryan White HIV/AIDS Program has been able to use its large client-level database to explore differences in clinical outcomes by several socioeconomic and other demographic factors. We found evidence of improvements in disparities in viral suppression rates for certain groups over time, especially for Blacks/African Americans compared to Whites and for adolescents and young adults compared to older people. However, our analysis also uncovered persistent disparities across races/ethnicities, age groups, gender, and housing status. These findings will help the Ryan White HIV/AIDS Program refine and implement specific approaches to reducing disparities and contribute to achieving the goals of the National HIV/AIDS Strategy. ■

All authors conducted this work while employees of the US Department of Health and Human Services (HHS), Health Resources and Services Administration (HRSA), HIV/AIDS Bureau. The views expressed in this article are solely the opinions of the authors and do not necessarily represent the official position of HHS or HRSA. The authors thank Vimal Rao, of the HRSA HIV/AIDS Bureau, for his contributions to analytic methods and Allahna Esber, also of the HRSA HIV/AIDS Bureau, for a technical review of the paper.

NOTES

1 O'Keefe EB, Meltzer JP, Bethea TN. Health disparities and cancer: racial disparities in cancer mortality in the United States, 2000–2010. Front Public Health. 2015;3:51.
2 Marmot MG, Smith GD, Stansfeld S, Patel C, North F, Head J, et al. Health inequalities among British civil servants: the Whitehall II Study. Lancet. 1991;337(8754):1387–93.
3 Institute of Medicine. Unequal treatment: confronting racial and ethnic disparities in healthcare. Washington (DC): National Academies Press; 2003.
4 Centers for Disease Control and Prevention. HIV surveillance report: diagnoses of HIV infection in the United States and dependent areas, 2013 [Internet]. Atlanta (GA): CDC; 2015 Feb [cited 2016 Dec 1]. Available from: http://www.cdc.gov/hiv/pdf/library/reports/surveillance/cdc-hiv-surveillance-report-2013-vol-25.pdf
5 Centers for Disease Control and Prevention. Monitoring selected national HIV prevention and care objectives by using HIV surveillance data—United States and 6 U.S. dependent areas—2010: Part B [Internet]. Atlanta (GA): CDC; 2013 Jan [cited 2016 Dec 1]. Available from: http://www.cdc.gov/hiv/pdf/statistics_2010_HIV_Surveillance_Report_vol_18_no_2.pdf
6 Department of Health and Human Services, Panel on Antiretroviral Guidelines for Adults and Adolescents. Guidelines for the use of antiretroviral agents in HIV-1-infected adults and adolescents [Internet]. Washington (DC): HHS; [last updated 2016 Jul 14; cited 2016 Dec 9]. Available from: http://aidsinfo.nih.gov/ContentFiles/AdultandAdolescentGL.pdf
7 White House Office of National AIDS Policy. National HIV/AIDS strategy for the United States [Internet]. Washington (DC): White House; 2010 Jul [cited 2016 Dec 8]. Available from: https://www.whitehouse.gov/sites/default/files/uploads/NHAS.pdf
8 White House Office of National AIDS Policy. National HIV/AIDS strategy for the United States: updated to 2020 [Internet]. Washington (DC): White House; 2015 Jul [cited 2016 Dec 1]. Available from: https://www.aids.gov/federal-resources/national-hiv-aids-strategy/nhas-update.pdf
9 HHS.gov. About the law [Internet]. Washington (DC): Department of Health and Human Services; [cited 2016 Dec 1]. Available from: http://www.hhs.gov/healthcare/about-the-law/
10 Saag MS. Viva no différence! Clin Infect Dis. 2012;55(9):1252–4.
11 Health Resources and Services Administration. Clinical quality management Policy Clarification Notice [Internet]. Rockville (MD): HRSA; [cited 2016 Dec 1]. (Policy Clarification Notice [PCN] No. 15-02). Available from: http://hab.hrsa.gov/manageyourgrant/clinicalqualitymanagementpcn.pdf
12 Henry J. Kaiser Family Foundation. HIV/AIDS policy fact sheet: the Ryan White Program [Internet]. Menlo Park (CA): KFF; 2013 Mar [cited 2016 Dec 1]. Available from: http://kaiserfamilyfoundation.files.wordpress.com/2013/03/7582-07.pdf
13 Doshi RK, Milberg J, Isenberg D, Matthews T, Malitz F, Matosky M, et al. High rates of retention and viral suppression in the US HIV safety net system: HIV care continuum in the Ryan White HIV/AIDS Program, 2011. Clin Infect Dis. 2015;60(1):117–25.
14 HRSA. 2014 annual Ryan White HIV/AIDS Program Services Report (RSR) instruction manual [Internet]. Rockville (MD): HRSA; [cited 2016 Dec 1]. Available for download from: https://careacttarget.org/category/topics/ryan-white-services-report-rsr
15 Spiegelman D, Hertzmark E. Easy SAS calculations for risk or prevalence ratios and differences. Am J Epidemiol. 2005;162(3):199–200.
16 Agency for Healthcare Research and Quality. 2014 national healthcare quality and disparities report [Internet]. Rockville (MD): AHRQ; 2015 May [cited 2016 Dec 1]. (AHRQ Pub. No. 15-0007). Available from: http://www.ahrq.gov/sites/default/files/wysiwyg/research/findings/nhqrdr/nhqdr14/2014nhqdr.pdf
17 Selvin S. Statistical analysis of epidemiologic data. New York (NY): Oxford University Press; 1991.
18 Beer L, Mattson CL, Bradley H, Skarbinski J. Understanding cross-sectional racial, ethnic, and gender disparities in antiretroviral use and viral suppression among HIV patients in the United States. Medicine (Baltimore). 2016;95(13):e3171.
19 Dombrowski JC, Kitahata MM, Van Rompaey SE, Crane HM, Mugavero MJ, Eron JJ, et al. High levels of antiretroviral use and viral suppression among persons in HIV care in the United States, 2010. J Acquir Immune Defic Syndr. 2013;63(3):299–306.
20 HRSA. Ryan White HIV/AIDS Program annual client-level data report 2014 [Internet]. Rockville (MD): HRSA; 2015 Dec. [cited 2016 Dec 1]. Available from: http://hab.hrsa.gov/data/servicesdelivered/2014RWHAPDataReport.pdf
21 Bradley H, Viall AH, Wortley PM, Dempsey A, Hauck H, Skarbinski J. Ryan White HIV/AIDS Program assistance and HIV treatment outcomes. Clin Infect Dis. 2016;62(1):90–8.
22 Weiser J, Beer L, Frazier EL, Patel R, Dempsey A, Hauck H, et al. Service delivery and patient outcomes in Ryan White HIV/AIDS Program–funded and –nonfunded health care facilities in the United States. JAMA Intern Med. 2015;175(10):1650–9.
23 HRSA. Part F: Special Projects of National Significance (SPNS) Program [Internet]. Rockville (MD): HRSA; [last reviewed 2016 Oct; cited 2016 Dec 2]. Available from: http://hab.hrsa.gov/abouthab/partfspns.html
24 Yehia BR, Fleishman JA, Moore RD, Gebo KA. Retention in care and health outcomes of transgender persons living with HIV. Clin Infect Dis. 2013;57(5):774–6.
25 Mizuno Y, Frazier EL, Huang P, Skarbinski J. Characteristics of transgender women living with HIV receiving medical care in the United States. LGBT Health. 2015;2(3):228–34.
26 Wolitski RJ, Kidder DP, Pals SL, Royal S, Aidala A, Stall R, et al. Randomized trial of the effects of housing assistance on the health and risk behaviors of homeless and unstably housed people living with HIV. AIDS Behav. 2010;14(3):493–503.
27 Aidala AA, Lee G, Abramson DM, Messeri P, Siegler A. Housing need, housing assistance, and connection to HIV medical care. AIDS Behav. 2007;11(6, Suppl):101–15.
28 Buchanan D, Kee R, Sadowski LS, Garcia D. The health impact of supportive housing for HIV-positive homeless patients: a randomized controlled trial. Am J Public Health. 2009;99(Suppl 3):S675–80.
29 HRSA. Part F: Minority AIDS Initiative [Internet]. Rockville (MD): HRSA; [cited 2016 Dec 15]. Available from: https://hab.hrsa.gov/about-ryan-white-hivaids-program/part-f-minority-aids-initiative
30 Institute for Healthcare Improvement. The Breakthrough Series: IHI's collaborative model for achieving breakthrough improvement [Internet]. Boston (MA): IHI; 2003 [cited 2016 Dec 9]. (IHI Innovation Series White Paper). Available from: http://www.ihi.org/resources/pages/ihiwhitepapers/thebreakthroughseriesihiscollaborativemodelforachievingbreakthroughimprovement.aspx