HIV Counseling and Testing Among Hispanics at CDC-Funded Sites in the United States, 2007

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Hispanics are the largest and fastest-growing minority population in the United States.[1] In 2007, Hispanics accounted for 15%[1] of the US population, a percentage that is expected to double by 2050.[2] Although researchers and public health practitioners commonly consider Hispanics a single, homogeneous group, Hispanics are heterogeneous[3] given that they differ according to cultural heritage, socioeconomic status, national origin, health care use, and self-identification (e.g., ethnic group or mixed race).[3–5]

Hispanics are affected by disparities.[4–6] The Centers for Disease Control and Prevention (CDC) defines disparity as a quantity that separates a group from a specified reference point on a particular measure of health expressed in terms of a rate, percentage, proportion, mean, or some other quantitative measure.[7] Eliminating disparities, which is a main goal of *Healthy People 2010*,[8] is a challenge in the Hispanic community because Hispanics are heterogeneous and adversely affected by sociocultural (e.g., stigma, homophobia), socioeconomic (e.g., poverty, lack of health insurance, low educational levels), and political (e.g., illegal immigration) factors.[3,9]

In 2007, the median income of Hispanic households was $38 679 (versus $54 920 for non-Hispanic White households),[10] and 22% of Hispanics lived below the poverty threshold (versus 8% of non-Hispanic Whites).[10] In that same year, 61% of Hispanics aged 25 years and older had at least a high school education (versus 87% of non-Hispanic Whites),[11] and 33% of Hispanics younger than age 65 years lacked health insurance coverage (versus 17% of non-Hispanic Whites).[12]

In the United States, several HIV/AIDS disparities among Hispanics exist in the areas of morbidity, mortality, and HIV testing. In 2007, Hispanics accounted for 15% (45.5 million) of the estimated US population,[1] as mentioned, but 18% (7484) of the estimated number of diagnosed cases of HIV/AIDS.[13] CDC estimates that the HIV incidence rate in 2006 was 2.5 times higher among Hispanics than it was among non-Hispanic Whites (29.3 versus 11.5 cases per 100 000 population).[13–15] In 2005, 4.7 deaths per 100 000 population were attributed to HIV among Hispanics, as compared with 2.2 deaths per 100 000 population among non-Hispanic Whites.[16]

Although a national household survey in 2006 showed that the rate of HIV testing in the preceding 12 months was higher among Hispanics (13%) than among non-Hispanic Whites (8%),[17] Hispanics are diagnosed late with HIV more frequently than non-Hispanic Whites.[13,18,19] According to CDC data, the percentage of Hispanics diagnosed with AIDS within a year of their HIV diagnosis is higher than the percentage among non-Hispanic Whites (41% versus 34%),[13] and Hispanics are twice as likely as non-Hispanic Whites to be tested late in their infection.[18] In addition, Hispanics diagnosed with HIV have a higher percentage of initial CD4 counts below 200 than non-Hispanic Whites (34% versus 30%).[19]

We analyzed 2007 data from the national HIV Counseling and Testing System (CTS) in an effort to determine whether Hispanic–White HIV testing disparities exist. We also sought to identify characteristics associated with newly diagnosed HIV among Hispanics.

METHODS

CDC began funding health departments to provide HIV counseling and testing services in 1985.[20] In 1989, CDC developed the CTS to assist national and local monitoring and evaluation of HIV counseling and testing services provided to clients.[21] CDC-funded health departments have had the option to use either the CTS or a locally developed system to collect and report HIV testing data. Information about clients is elicited and documented by a service provider for each HIV testing event, sent to the appropriate health department, and then submitted to CDC. Although CDC recommends that all health departments collect and report test-level data, aggregate-level summary data are accepted from health departments without the sufficient resources or infrastructure to report test-level data. The HIV counseling and testing data reported to CDC do not include personal

Objectives. We sought to determine whether Hispanic–White HIV testing disparities exist and to identify characteristics associated with newly diagnosed HIV among Hispanics.

Methods. We used 2007 HIV Counseling and Testing System data to compare test-level records of Hispanics and non-Hispanic Whites, and we conducted a multivariate logistic regression analysis to identify characteristics associated with newly diagnosed HIV.

Results. Relative to Whites, Hispanics were more likely to have had a positive HIV test result (1.2% versus 0.8%), to have newly diagnosed HIV (0.8% versus 0.6%), and to have test results returned and receive posttest counseling more than 2 weeks after testing (24.3% versus 21.5%). Newly diagnosed HIV among Hispanics was most strongly associated with being a man who has sex with men (MSM; adjusted odds ratio [AOR]=6.8; 95% confidence interval [CI]=6.1, 7.6), being both an MSM and an injection drug user (AOR=3.7; 95% CI=2.6, 5.3), and being aged 40 to 49 years (AOR=6.4; 95% CI=4.9, 8.2).

Conclusions. Hispanic–White disparities exist with respect to rates of positive HIV test results and late return of results. HIV prevention strategies such as rapid testing should focus on Hispanic MSM. (*Am J Public Health.* 2010;100: S152–S158. doi:10.2105/AJPH.2009.166355)

identifiers, and it is impossible to link multiple tests to 1 client; thus, the data are considered as test level rather than client level.

We established 3 inclusion criteria for our analyses. First, health departments had to have reported test-level data. Second, records were required to not have missing data for the HIV test result variable. Third, we limited our analyses to records for Hispanics and non-Hispanic Whites aged 13 years or older.

Variables Analyzed

Demographic information assessed included race/ethnicity (i.e., Hispanic or non-Hispanic White), gender, age in years at the time of HIV testing, and the state or city in which the HIV test was conducted. States and cities were grouped into 4 geographic regions (Northeast, Midwest, South, and West) according to US Census Bureau designations.[22]

HIV risks were elicited at the time of HIV testing. Risk categories were ordered hierarchically and based on the presumed likelihood of HIV transmission (as previously described in detail[21]). We included 6 risk category designations: men who have sex with men (MSM), injection drug use (IDU), a combined MSM–IDU category, heterosexual, other, and no acknowledged risk.

Setting type, classified as clinical, nonclinical, or unknown, referred to where the test was conducted. Clinical site types included sexually transmitted disease clinics, drug treatment centers, family planning clinics, prenatal–obstetric clinics, tuberculosis clinics, community health centers and public health centers, prisons and jails, and hospitals and private medical doctors' offices. Nonclinical site types included HIV counseling and testing centers and field visits. The unknown setting included records in which site type was documented as "other."

Test type was either anonymous (no personal identifiers collected) or confidential (personal identifiers collected locally but not sent to CDC). Previous HIV testing referred to whether the client reported a previous test and, if so, whether the result was reported as negative, positive, inconclusive, or unknown. The current HIV test result variable had 4 valid values: negative, positive, inconclusive, and no result.

We used the previous HIV testing and current HIV test result variables to calculate HIV status. The values for HIV status were as follows: negative, newly diagnosed (current positive test result and no self-reported history of previous positive result), previously diagnosed (current positive test result and self-reported history of previous positive result), inconclusive, and no result.

Receipt of test results and posttest counseling referred to whether test results were returned to clients and whether clients received posttest counseling specific to a testing event. We used the visit date and posttest date to calculate time to receipt of test results and posttest counseling. We grouped number of days for records with both visit and posttest dates into 2 time periods: 2 weeks or less or more than 2 weeks.

Analyses

SAS version 9.1 (SAS Institute Inc, Cary, NC) was used in conducting all analyses. HIV tests of Hispanics and non-Hispanic Whites were compared according to demographic characteristics, HIV risk, setting type, test type, HIV status, return of test results and posttest counseling, and time to return of test results and posttest counseling. Disparity was defined as a difference in HIV testing patterns between Hispanics (the group of interest) and non-Hispanic Whites (the reference group).[7] P values less than .05 were considered statistically significant. We conducted a logistic regression analysis to identify the characteristics associated with newly diagnosed HIV among Hispanics. Records with previously diagnosed, inconclusive, and no results for the calculated HIV status variable were excluded from this analysis.

In the univariate logistic regression analysis, we computed odds ratios (ORs) and 95% confidence intervals (CIs) for each independent variable to assess its association with newly diagnosed HIV. A multivariate logistic regression model was constructed to assess the adjusted association of independent variables with newly diagnosed HIV. Variables that were statistically insignificant at the 5% α level after adjustment for other variables were excluded from the final model. Adjusted odds ratios (AORs) and their 95% CIs were used in interpreting the final model.

RESULTS

Of 59 health departments (those of the 50 states; the municipalities of Chicago, Illinois;

Houston, Texas; Los Angeles, California; New York City, New York; Philadelphia, Pennsylvania; and San Francisco, California; the District of Columbia; Puerto Rico; and the US Virgin Islands) funded in 2007, CDC had HIV counseling and testing aggregate data from 28 departments and test-level data from 31 departments. Among the 31 health departments reporting test-level data, 1 was excluded from the analysis because of incomplete data. Among the 30 health departments with complete test-level HIV counseling and testing data in 2007, the inclusion criteria were met for 760 093 testing events (293 161 among Hispanics and 466 932 among non-Hispanic Whites), of which 749 142 were negative, 5031 involved new diagnoses, 2372 involved previous diagnoses, 570 were inconclusive, and 2978 had no result.

HIV Testing of Hispanics and Non-Hispanic Whites

Relative to non-Hispanic Whites, the percentages of tests among Hispanics were higher among women (50.1% versus 46.6%), those residing in the Northeast (37.7% versus 23.5%), heterosexuals (65.6% versus 58.2%), those tested in clinical settings (70.2% versus 67.2%), and those tested confidentially (91.5% versus 86.0%; Table 1). The overall percentage of positive HIV test results (1.2% versus 0.8%; P<.001) and the percentage of newly diagnosed HIV (0.8% versus 0.6%; P<.001) were higher among Hispanics than among non-Hispanic Whites. Hispanics had a higher percentage of HIV test results returned and posttest counseling received (87.0% versus 83.3%) than did non-Hispanic Whites; however, they had a higher percentage of HIV test results returned and posttest counseling received more than 2 weeks after the test was conducted (24.3% versus 21.5%; Table 1).

Characteristics Associated With Newly Diagnosed HIV

After exclusion of 2710 Hispanic records with previously diagnosed HIV, inconclusive results, and no results, the percentage of newly diagnosed HIV among Hispanics remained at 0.8%. In our univariate logistic regression analysis, characteristics associated with newly diagnosed HIV among Hispanics

TABLE 1—Demographic and HIV Testing Characteristics Among Hispanics and Non-Hispanic Whites: 30 US Health Departments, 2007

	Hispanic, No. (%)	Non-Hispanic White, No. (%)
Total[a]	293 161	466 932
Gender		
Female	146 885 (50.1)	215 249 (46.6)
Male	141 806 (48.4)	246 720 (53.4)
Age group, y		
13–19	37 495 (12.9)	61 573 (13.3)
20–29	126 260 (43.3)	197 276 (42.6)
30–39	72 828 (25.0)	93 316 (20.2)
40–49	37 908 (13.0)	69 937 (15.1)
≥50	17 092 (5.9)	40 753 (8.8)
Region[b]		
Northeast	110 440 (37.7)	109 881 (23.5)
Midwest	8 191 (2.8)	59 642 (12.8)
South	121 798 (41.5)	217 266 (46.5)
West	52 732 (18.0)	80 143 (17.2)
Risk category		
Heterosexual contact	188 216 (65.6)	258 676 (58.2)
MSM	27 422 (9.6)	66 358 (14.9)
MSM and IDU	1 484 (0.5)	3 598 (0.8)
IDU	13 181 (4.6)	38 796 (8.7)
No acknowledged risk	50 660 (17.7)	64 046 (14.4)
Other	5 797 (2.0)	13 043 (2.9)
Setting type[c]		
Clinical	205 458 (70.2)	313 519 (67.2)
Sexually transmitted disease clinic	59 077 (20.2)	139 877 (30.0)
Drug treatment center	16 079 (5.5)	32 674 (7.0)
Family planning clinic	22 731 (7.8)	36 680 (7.9)
Prenatal/obstetric clinic	36 714 (12.6)	14 110 (3.0)
Tuberculosis clinic	1 973 (0.7)	2 112 (0.5)
Community health center/public health clinic	43 514 (14.9)	47 902 (10.3)
Prison/jail	19 992 (6.8)	34 716 (7.4)
Hospital/private medical doctor's office	5 378 (1.8)	5 448 (1.2)
Nonclinical	66 504 (22.7)	126 042 (27.0)
HIV counseling and testing center	48 503 (16.6)	101 901 (21.8)
Field visit	18 001 (6.2)	24 141 (5.2)
Unknown	20 567 (7.0)	27 261 (5.8)
Test type, status, results returned, and time to receipt of results		
Test type		
Confidential	265 390 (91.5)	398 201 (86.0)
Anonymous	24 733 (8.5)	64 781 (14.0)
HIV status		
Negative	288 176 (98.3)	460 966 (98.7)
Newly diagnosed	2 275 (0.8)	2 756 (0.6)
Previously diagnosed	1 251 (0.4)	1 121 (0.2)
Inconclusive	248 (0.1)	322 (0.1)
No result	1 211 (0.4)	1 767 (0.4)

Continued

included gender (male), age (aged older than 19 years), region in which the test was conducted (West), risk category designation (MSM, MSM–IDU, IDU), setting type (nonclinical), and type of testing (anonymous; Table 2).

In the multivariate logistic regression analysis, the return of test results and posttest counseling variable was not included in the final model because of the high percentage of missing values. Region and test type became statistically insignificant at the 5% α level after adjustment for other variables and thus were excluded from the final model. After adjustment for the remaining variables in the model, risk category designation and age were the characteristics most strongly associated with newly diagnosed HIV. That is, odds of newly diagnosed HIV were higher among those in the MSM (AOR=6.8; 95% CI=6.1, 7.6) or MSM–IDU (AOR=3.7; 95% CI=2.6, 5.3) categories than among those in the heterosexual category, and odds were higher among those who were aged 40 to 49 years (AOR=6.4; 95% CI=4.9, 8.2) or aged 50 years or older (AOR=6.1; 95% CI=4.6, 8.1) than among those aged 13 to 19 years (Table 2).

DISCUSSION

Our data show that disparities exist among Hispanics receiving HIV counseling and testing services at CDC-funded sites. Hispanics, as compared with non-Hispanic Whites, had higher percentages of positive HIV test results, newly diagnosed HIV, and delays in the return of their test results. Hispanics who were older than 19 years and MSM were the groups most likely to have newly diagnosed HIV.

The higher percentage of overall positive HIV test results among Hispanics than among non-Hispanic Whites is consistent with previously published national HIV counseling and testing data (e.g., 1.3% versus 0.8%, respectively, in 2004).[21] We were unable to locate any other recent studies involving HIV testing data that incorporated comparable methods and analyses of Hispanics and non-Hispanic Whites. However, an analysis of national population-based survey data showed a higher HIV seroprevalence

TABLE 1—*Continued*

HIV test results returned and posttest counseling received		
Yes	221 649 (87.0)	334 237 (83.3)
No	33 070 (13.0)	66 877 (16.7)
Time to receipt of results, wk[d]		
≤2	149 589 (75.7)	233 833 (78.5)
>2	47 915 (24.3)	63 944 (21.5)

Note. IDU = injection drug use; MSM = men who have sex with men.

[a]The number of records for each variable does not sum to the total number of records because of missing information. The percentages of missing data for Hispanics and non-Hispanic Whites for the selected variables were as follows: gender, 1.5% vs 1.1%; age group, 0.5% vs 0.9%; region, 0.0% vs 0.0%; risk category, 2.2% vs 4.8%; setting type, 0.2% vs 0.0%; test type, 1.0% vs 0.8%; HIV status, 0.0% vs 0.0%; return of HIV test results and receipt of posttest counseling, 13.1% vs 14.1%; and time to receipt of results, 10.9% vs 10.9%.

[b]The selected health departments were grouped into the following regions: Northeast (Massachusetts; New Jersey; New York; New York City, New York; Pennsylvania; Rhode Island; and Vermont), Midwest (Chicago, Illinois; Michigan; Minnesota; Missouri; North Dakota; and Ohio), South (Delaware; District of Columbia; Florida; Georgia; Houston, Texas; Louisiana; South Carolina; Texas; and Virginia), and West (California; Colorado; Idaho; Los Angeles, California; New Mexico; Oregon; San Francisco, California; and Utah).

[c]Site types were grouped into the following setting types: clinical (sexually transmitted disease clinic, drug treatment center, family planning clinic, prenatal/obstetric clinic, tuberculosis clinic, community health center/public health clinic, prison/jail, and hospital/private medical doctor's office), nonclinical (HIV counseling and testing center and field visit), and unknown.

[d]This variable was calculated for records indicating that test results were returned and posttest counseling was received.

among Hispanics than among non-Hispanic Whites (0.30% versus 0.23%).[23] The results of our analysis revealed a higher percentage of newly diagnosed HIV among Hispanics than among non-Hispanic Whites (0.8% versus 0.6%). We could not find other comparable studies on recent HIV counseling and testing data that addressed newly diagnosed HIV.

The frequency at which HIV test results were returned and posttest counseling was received more than 2 weeks after testing was higher among Hispanics than among non-Hispanic Whites; however, the difference was small (24.3% versus 21.5%), which helps underscore the importance of Hispanics and members of other racial/ethnic groups receiving HIV test results promptly. Again, we were unable to locate any comparable studies, but 1 multivariate analysis of data from Hispanic farmworkers showed that the strongest predictor of participants accepting free HIV testing was whether the results of a finger-stick test were available within 30 minutes.[24]

Although the main findings of our analysis show that HIV testing disparities between Hispanics and Whites were small, HIV/AIDS disparities among Hispanics with respect to measures of HIV testing, morbidity, and mortality are common[13–16,18]

and should be addressed. The use of rapid HIV tests may help increase the number of individuals who are aware of their HIV serostatus; this is particularly the case among Hispanics with HIV who are diagnosed late[13,18,19] and who may benefit from early medical care that can improve the quality and length of their lives.

As mentioned, our analyses showed that, among Hispanics, those who were older than 19 years and MSM were the groups most likely to have newly diagnosed HIV. Although we could not find relevant HIV counseling and testing studies focusing on predictors of positive HIV test results in this population group, our findings are consistent with other data. Results from the national HIV Incidence Surveillance System showed that, in 2006, HIV incidence rates were lower among adolescent and young adult Hispanics (i.e., those aged 13–29 years) than among those in older age groups; however, they had the highest number of new infections.[15] HIV incidence rates could not be provided by HIV transmission category, but the number of new HIV infections was higher among Hispanic MSM than it was among Hispanics in other HIV transmission categories.[15] These results emphasize the need to focus HIV testing and other prevention strategies on Hispanics of all ages and Hispanic MSM and to

account for differences in HIV risk by country of birth.[13,25]

Limitations

Our findings are subject to at least 4 limitations. First, our data were test-level as opposed to client-level, so it is not possible to link the results of repeated tests for the same individual. However, the definition of newly diagnosed HIV we used minimized this limitation among previously undiagnosed individuals. Second, the HIV counseling and testing data are collected as part of a prevention service, which includes in many instances HIV testing and counseling to educate individuals on how to prevent infection with HIV or avoid transmitting the infection to others. Thus, given the time and high volume of tests conducted, the information collected by service providers is not routinely validated through research or epidemiological investigations.

Third, although 6 of the 9 variables we assessed involved very low rates of missing data (below 2%) for both Hispanics and non-Hispanic Whites, 3 variables had higher percentages of missing data: HIV risk category (2.2% for Hispanics and 4.8% for non-Hispanic Whites), return of HIV test results and receipt of posttest counseling (13.1% for Hispanics and 14.1% for non-Hispanic Whites), and time to return of test results and receipt of posttest counseling (10.9% for Hispanics and 10.9% for non-Hispanic Whites). Finally, our counseling and testing data were derived from many, but not all, of the health departments providing CDC-funded HIV counseling and testing, and thus they are not necessarily representative of all CDC-funded HIV testing sites or all Hispanics attending those sites. Furthermore, the majority of HIV testing in the United States, both overall[17] and specific to Hispanics (D. Duran, unpublished data, August 2008), is conducted in private settings.

Conclusions

To our knowledge, these results are the first detailed national CTS data on Hispanics to be published in the peer-reviewed literature. We believe that an insufficient number of articles have been published that specifically address HIV testing among Hispanics. As

TABLE 2—Characteristics Associated With Newly Diagnosed HIV Among Hispanics: 30 US Health Departments, 2007

	HIV Tests, No. (%)	Newly Diagnosed HIV, No. (%)	OR (95% CI)	AOR (95% CI)
Total	290 451	2275		
Gender				
Female (Ref)	145 847 (51.0)	430 (0.3)	1.0	
Male	140 163 (49.0)	1821 (1.3)	4.4 (4.0, 4.9)	2.0 (1.7, 2.2)
Age group, y				
13–19 (Ref)	37 303 (12.9)	67 (0.2)	1.0	
20–29	125 432 (43.4)	713 (0.6)	3.2 (2.5, 4.1)	2.6 (2.0, 3.4)
30–39	72 094 (25.0)	676 (0.9)	5.3 (4.1, 6.8)	4.0 (3.1, 5.2)
40–49	37 262 (12.9)	573 (1.5)	8.7 (6.7, 11.2)	6.4 (4.9, 8.2)
≥ 50	16 787 (5.8)	230 (1.4)	7.7 (5.9, 10.1)	6.1 (4.6, 8.1)
Region[a]				
Northeast (Ref)	109 417 (37.7)	898 (0.8)	1.0	
Midwest	7 964 (2.7)	76 (1.0)	1.2 (0.9, 1.5)	
South	120 985 (41.7)	797 (0.7)	0.8 (0.7, 0.9)	
West	52 085 (17.9)	504 (1.0)	1.2 (1.1, 1.3)	
Risk category				
Heterosexual contact (Ref)	186 810 (65.7)	765 (0.4)	1.0	
MSM	26 882 (9.5)	994 (3.7)	9.3 (8.5, 10.3)	6.8 (6.1, 7.6)
MSM and IDU	1 453 (0.5)	34 (2.3)	5.8 (4.1, 8.2)	3.7 (2.6, 5.3)
IDU	12 913 (4.5)	217 (1.7)	4.1 (3.6, 4.8)	2.7 (2.3, 3.2)
No acknowledged risk	50 412 (17.7)	188 (0.4)	0.9 (0.8, 1.1)	1.1 (0.9, 1.2)
Other	5 715 (2.0)	36 (0.6)	1.5 (1.1, 2.2)	1.7 (1.2, 2.5)
Setting type				
Clinical (Ref)	203 717 (70.3)	1177 (0.6)	1.0	
Nonclinical	65 678 (22.7)	727 (1.1)	1.9 (1.8, 2.1)	0.9 (0.9, 1.0)
Unknown	20 428 (7.0)	359 (1.8)	3.1 (2.7, 3.5)	2.0 (1.7, 2.2)
Test type				
Confidential (Ref)	263 072 (91.5)	1954 (0.7)	1.0	
Anonymous	24 397 (8.5)	284 (1.2)	1.6 (1.4, 1.8)	
HIV test results returned and posttest counseling received				
Yes (Ref)	220 166 (87.3)	1909 (0.9)	1.0	
No	32 063 (12.7)	291 (0.9)	1.0 (0.9, 1.2)	

Note. AOR = adjusted odds ratio; CI = confidence interval; IDU = injection drug use; MSM = men who have sex with men; OR = odds ratio.
[a]The selected health departments were grouped into the following regions: Northeast (Massachusetts; New Jersey; New York; New York City, New York; Pennsylvania; Rhode Island; and Vermont), Midwest (Chicago, Illinois; Michigan; Minnesota; Missouri; North Dakota; and Ohio), South (Delaware; District of Columbia; Florida; Georgia; Houston, Texas; Louisiana; South Carolina; Texas; and Virginia), and West (California; Colorado; Idaho; Los Angeles, California; New Mexico; Oregon; San Francisco, California; and Utah).

a result, program, surveillance, and research databases should be used more often (and developed as needed) to address issues that affect Hispanics. Policies that promote wider access to and use of such databases should be considered.

We used the national CTS data to estimate newly diagnosed HIV. Most previous studies involving national HIV counseling and testing data were limited by reporting overall rates of positive HIV test results and not distinguishing between previously known and previously unknown positive results[21,26–31] (however, 1 study[32] did both report overall rates and make this distinction). Making this distinction and thus focusing on individuals previously unaware of their infection is important with respect to prevention of ongoing transmission and prompt receipt of appropriate referrals for medical care and social services.

Furthermore, focusing on such individuals is part of the foundation of the recent CDC recommendations for HIV testing in health care settings (i.e., the testing threshold is based on previously undiagnosed HIV, and a stated central goal is for previously unaware individuals to become knowledgeable about their HIV-positive status).[33]

We believe that the method we used to estimate newly diagnosed HIV allows for more

accurate and useful program data. Another advantage of our estimate is that it lessened the effects produced by individuals who had undergone repeated testing. Because its accuracy is unknown, additional research and programmatic work are warranted to further improve this type of estimate.

The CTS is a unique source of program information that is an important part of national CDC-funded HIV prevention activities. Our findings can be used by HIV program managers and policymakers, HIV counseling and testing service providers, evaluators, researchers, and others interested in the public health implications of HIV prevention program data. To address HIV/AIDS disparities among Hispanics in the United States, a comprehensive approach is needed that accounts for the various challenges faced by the Hispanic community, including lack of health insurance, poverty, low levels of education, language barriers, immigration status, migration patterns, discrimination, "machismo," and the stigma associated with IDU and homosexuality.

Our results show that the heterogeneous Hispanic population, the largest and fastest-growing minority group in the United States, is adversely affected by HIV disparities. Effective HIV prevention interventions that are risk specific and culturally relevant for Hispanics, although needed, are currently limited in number.[34–36] In areas and settings most affected by HIV, providers should encourage HIV testing among Hispanics and ensure that test results are promptly returned. Making rapid HIV testing widely available to Hispanics, especially Hispanic MSM, and using social networks to recruit Hispanics for testing[37] could be effective strategies to increase testing rates and identify previously undiagnosed individuals at early stages so that they can benefit from appropriate clinical, medical, prevention, and social services. ∎

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