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Disparities in HIV/AIDS Diagnoses Among Racial and Ethnic Minority Youth

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Abstract

In the United States, racial and ethnic minorities suffer disproportionately from HIV/AIDS. To ensure that HIV prevention programs and care services reach and are effective among racial and ethnic minority youth, it is important to monitor the epidemic and understand the behaviors both of youth at risk for HIV infection and of those who are already infected. Using data from the national HIV/AIDS surveillance system, we analyzed trends in HIV/AIDS and AIDS diagnosis rates and compared percentage distributions of diagnoses by race/ethnicity, sex, age group, transmission category, and region of residence. From 2003 to 2006, youth (age 13–24) of minority races and ethnicities accounted for 79% of HIV/AIDS diagnoses among youth. During this period, annual rates of HIV/AIDS diagnoses were consistently higher for Black youth, and rates increased significantly among Black males. Based on these findings, we recommend that culturally appropriate interventions addressing risk behaviors among youth of minority races and ethnicities be developed, tested, and disseminated to organizations serving these populations.

Keywords: HIV/AIDS, racial/ethnic minority, youth, disparities

Substantial infectious disease morbidity including sexually transmitted diseases and HIV infection, and consequences of unprotected sexual intercourse, such as unintended pregnancies, occur among young people in the United States (Abma, Martinez, Mosher, & Dawson, 2004; Centers for Disease Control and Prevention, 2003a; Centers for Disease Control and Prevention, 2007a). The Centers for Disease Control and Prevention's (CDC) 2007 National *Youth Risk Behavior Survey* (YRBS) reports that many young people initiate sexual intercourse at early ages, with 47.8% of high school students reporting they had ever had sexual intercourse, and 7.1% reporting their first sexual intercourse before age 13 (CDC, 2008a). Although the prevalence of many health-risk behaviors has decreased among young people in the United States, many of

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The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.

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the young continue to engage in behaviors that place them at risk for HIV infection (CDC, 2008b). The 2007 YRBS found that 38.5% of sexually active high school students did not use a condom during the last time having sexual intercourse, and 2.0% had injected illegal drugs in their lifetime (CDC, 2008a). Youth who engage in unprotected sexual intercourse and/or use injection drugs are at increased risk for HIV infection.

In the United States, racial and ethnic minorities suffer disproportionately from the HIV epidemic (CDC, 2006; CDC, 2007b; CDC, 2008c; Dean, Steele, Satcher, & Nakashima, 2005; Satcher, Durant, Hu, & Dean, 2007; Whitmore, Satcher, & Hu, 2005). From 2001 to 2005, minority youth aged 13–24 years accounted for 79% of newly diagnosed HIV infections among youth in the 33 states with long-term confidential reporting (CDC, 2007b). Each minority race and ethnicity has unique cultural values, beliefs and practices about health promotion and illness that may affect their risk factors for HIV infection and contribute to disparities in HIV diagnoses and care. To ensure that HIV prevention programs and care services reach and are effective among the new generations of racial and ethnic minority youth, it is important to monitor the epidemic and understand the behaviors both of youth at risk for HIV infection and of those who are already infected.

Although youth age 15–24 years account for an increasing number of annual HIV/AIDS diagnoses, few studies have provided national data on the epidemiology of HIV/AIDS among youth (CDC, 2008d). To better characterize HIV infection and AIDS among youth in the United States, we examined data from CDC's national HIV/AIDS surveillance system to determine differences in the epidemiology of HIV/AIDS and AIDS according to race/ethnicity. We examined differences in numbers and rates of HIV/AIDS and AIDS diagnoses, proportions of late HIV diagnoses, time to progression to AIDS after an HIV diagnosis, and survival after an AIDS diagnosis.

Method

For this report, we used the most recently available national HIV and AIDS surveillance data to examine the epidemic among youth in the United States. We analyzed cases of HIV/AIDS (a diagnosis of HIV infection, with or without a diagnosis of AIDS at the time of HIV diagnosis) in youth aged 13–24 years for whom a diagnosis of HIV infection was made during 2003 to 2006 and reported to CDC through June 2007 from 33 states (Alabama, Alaska, Arizona, Arkansas, Colorado, Florida, Georgia, Idaho, Indiana, Iowa, Kansas, Louisiana, Michigan, Minnesota, Mississippi, Missouri, Nebraska, New Jersey, New Mexico, Nevada, North Carolina, North Dakota, Ohio, Oklahoma, South Carolina, South Dakota, Tennessee, Texas, Utah, Virginia, West Virginia, Wisconsin, and Wyoming). These states conducted confidential, name-based HIV/AIDS surveillance since at least 2003, a period sufficient to allow for stabilization of data collection in order to monitor trends during the study period. For analysis of AIDS data, we analyzed cases for which a diagnosis was made during 2003 to 2006 and reported to CDC through June 2007 from the 50 states and the District of Columbia.

We examined the following characteristics for youth diagnosed with HIV/AIDS and AIDS: race/ethnicity, sex, transmission category, age group, and region of residence at the time of diagnosis (AIDS cases only). Race/ethnicity was categorized into White (not Hispanic), Black (not Hispanic), Hispanic, Asian/Pacific Islander, and American Indian/Alaska Native. Mode of HIV transmission was categorized into the following categories: injection drug use (IDU), male-to-male sexual contact, both male-to-male sexual contact and IDU, and high-risk heterosexual contact. Persons whose transmission category was classified as high-risk heterosexual contact were persons who reported specific heterosexual contact with a person known to have, or to be at high risk for, HIV infection (e.g., an injection drug user). We adjusted the number of HIV/AIDS and AIDS diagnoses for

reporting delays (the time between case diagnosis and report), which may vary by transmission category, region, race/ethnicity, age, sex, and vital status (alive or dead) (Green, 1998; Song, Hall & Frey, 2005). We also adjusted the number of HIV/AIDS and AIDS diagnoses by transmission category for cases initially reported without risk factor information. Redistribution of transmission categories was based on patterns of reclassification of cases originally reported with no risk factor that follow-up investigations later reclassified into other transmission categories (Green, 1998; Song, Hall, & Frey, 2005).

We calculated annual numbers and rates of HIV/AIDS and AIDS diagnoses, as well as prevalence rates per 100,000 for persons living with diagnosed HIV/AIDS at the end of 2006. We calculated the estimated annual percent change (EAPC) in the annual rates of HIV/AIDS and AIDS diagnoses and 95% confidence intervals (CI) for each racial/ethnic group from 2003 to 2006 by fitting a linear regression line to the natural logarithm of the number of diagnoses. The significance of the trend was assessed by determining whether the 95% CI for the estimated annual percent change included zero. Population denominators used to compute rates were based on post-census estimates from the U.S. Census Bureau and bridged-race estimates from the National Center for Health Statistics (National Center for Health Statistics, 2007; U.S. Census Bureau, 2006). For geographic analysis of AIDS diagnoses, the 50 states and the District of Columbia were assigned to four U.S. regions as defined by the U.S. Census Bureau (U.S. Census Bureau, 1990).

We examined proportions of late HIV diagnoses among youth for cases diagnosed in 2005. An HIV diagnosis was considered "late" if an AIDS diagnosis was made less than 12 months from the date of HIV diagnosis. Of a total 949 persons diagnosed with HIV in 2005, three (<1%) did not have complete information on date of HIV diagnosis and were excluded from the analysis. We also analyzed AIDS data from 1997 through 2003 using the Kaplan-Meier method to estimate survival probabilities for 12 and 36 months after an AIDS diagnosis (Amato, 1998). Cases were followed up through December 31, 2006 (i.e. censored), for deaths reported through June 30, 2007 (allowing three years for deaths to have been reported). Individuals with no death reported at censoring date were assumed to be alive.

Results

Estimated Diagnoses of HIV/AIDS Among Youth

Of the 18,618 diagnoses of HIV/AIDS made among youth during 2003 to 2006 in the 33 states with confidential name-based HIV reporting, 79% were among youth of minority races and ethnicities (Table 1). Of all youth who received a diagnosis of HIV/AIDS, 61% were Black, 17% Hispanic, and less than 1% each were American Indian/Alaska Native or Asian/Pacific Islander (Table 1). By sex, 77% of males and 83% of females were members of minority races and ethnicities. Blacks accounted for the largest proportions of diagnoses among both males (57%) and females (68%). For each race/ethnicity, the predominant transmission categories were male-to-male sexual contact for males and high-risk heterosexual contact for females. From 2003 to 2006, the majority, an estimated 75%, of HIV/AIDS diagnoses among youth in the 33 states were among young adults aged 20–24 years.

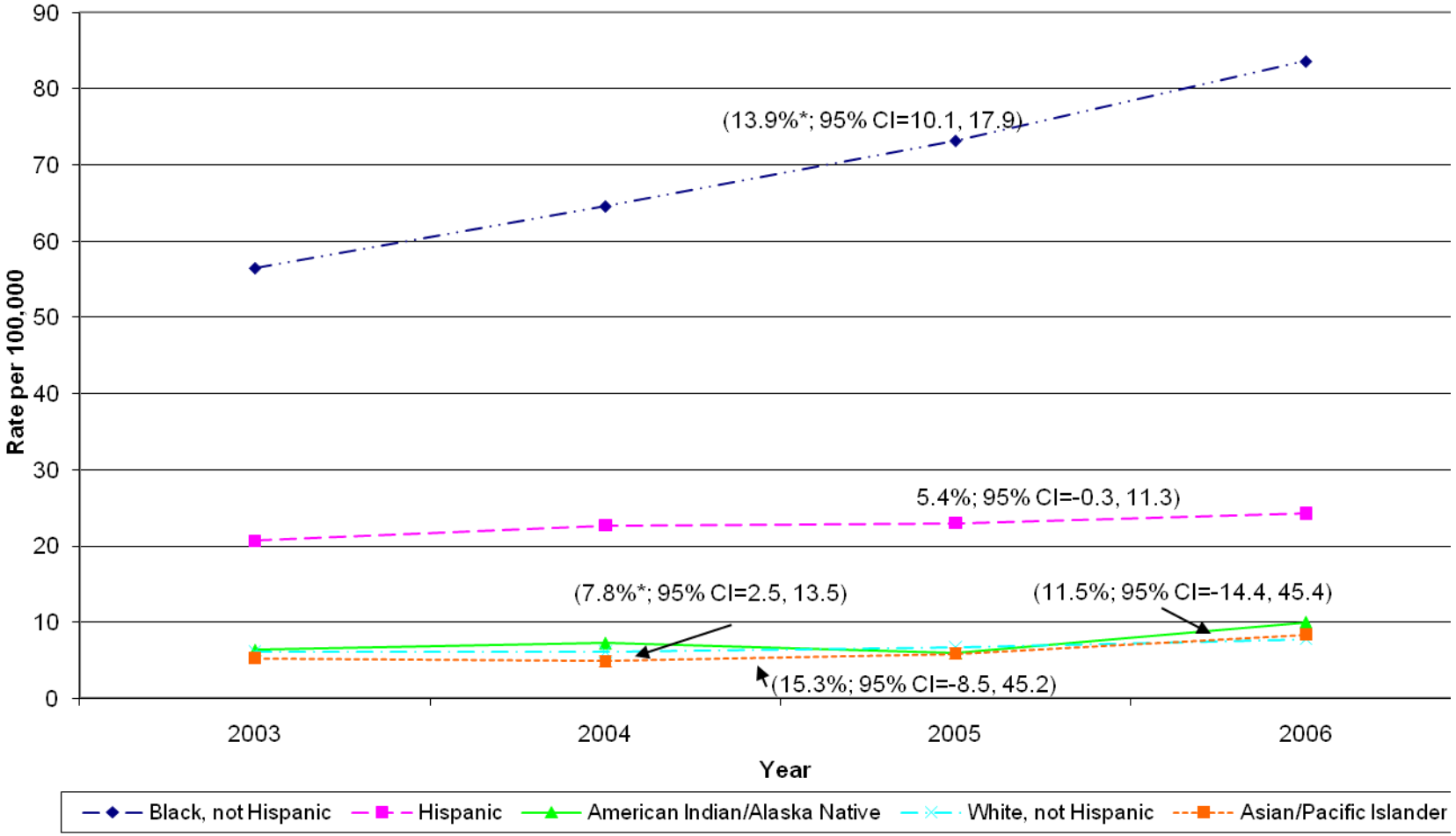
In 2006, the HIV/AIDS diagnosis rate for Black youth was 61 per 100,000; for Hispanics, it was 17 per 100,000. Rates for American Indian/Alaska Native and Asian/Pacific Islander youth were seven per 100,000 and six per 100,000, respectively. The lowest rate was that for White youth (five per 100,000). From 2003 through 2006, HIV/AIDS diagnosis rates were consistently higher among Black youth each year regardless of sex (Figures 1A& 1B). During this period, the EAPC in the annual rate of diagnoses of HIV/AIDS increased

Table 1. **Estimated Cases of HIV/AIDS* among Youth Aged 13–24 Years, by selected characteristics, 2003–2006—33 states with confidential**

	RACE/ETHNICITY						
	White	**Black**	**Hispanic**	**Asian/ Pacific Islander**	**American Indian/ Alaska Native**	**Un- known Multiple Races**	***TOTAL***
Characteristics							
	N (%)	**N (%)**	**N (%)**	**N (%)**	**N (%)**	**N (%)**	***N (%)***
ALL	3779 (20.3)	11291(60.6)	3136(16.8)	153(0.8)	96(0.5)	162(0.9)	***18618 (100)***
Male Trans- mission Category							
Male-to-male sexual contact	2323(23.2)	5763(57.4)	1722(17.1)	89(0.9)	51(0.5)	84(0.8)	***10042(100)***
Injection drug use	150(19.0)	426(53.9)	194(24.5)	9(1.1)	5(0.6)	7(0.9)	***91(100)***
MSM/IDU	231(41.7)	192(34.7)	115(20.8)	5(0.9)	4(0.7)	7(1.3)	***554(100)***
High-risk heterosexual contact	104(8.1)	873(67.7)	287(22.2)	14(1.1)	2(0.2)	10(0.8)	***1290(100)***
Other†	7(25)	13(46.4)	7(25)	0(0.0)	0(0.0)	1(3.6)	***28(100)***
Subtotal	**2824(22.2)**	**727(57.2)**	**2325(18.3)**	**116(0.9)**	**62(0.5)**	**110(0.9)**	***12705(100)***
Female Trans- mission Category							
Injection drug use	232(28.0)	448(54.0)	131(15.8)	4(0.5)	8(1.0)	7(0.8)	***830(100)***
High-risk heterosexual contact	716(14.2)	3545(70.4)	672(13.3)	32(0.6)	26(0.5)	45(0.9)	***5037(100)***
Other†	6(13.0)	31(67.4)	9(19.6)	0(0.0)	0(0.0)	0(0.0)	***46(100)***
Subtotal	**954(16.1)**	**4024(68.0)**	**811(13.7)**	**37(0.6)**	**34(0.6)**	**52(0.9)**	*5914(100)*
Age Group at Diagnosis (Years)							
13-19	667(14.5)	3206(69.5)	656(14.2)	26(0.6)	20(0.4)	36(0.8)	***4610(100)***
20-24	3112(22.2)	8086(57.7)	2481(17.7)	128(0.9)	77(0.5)	126(0.9)	***12008(100)***
Estimated Number of Persons Living with HIV/AIDS At the end of 2006	3488(17.5)	12781(64.0)	3335(16.7)	121(0.6)	85(0.4)	169(0.8)	***19.980(100)***

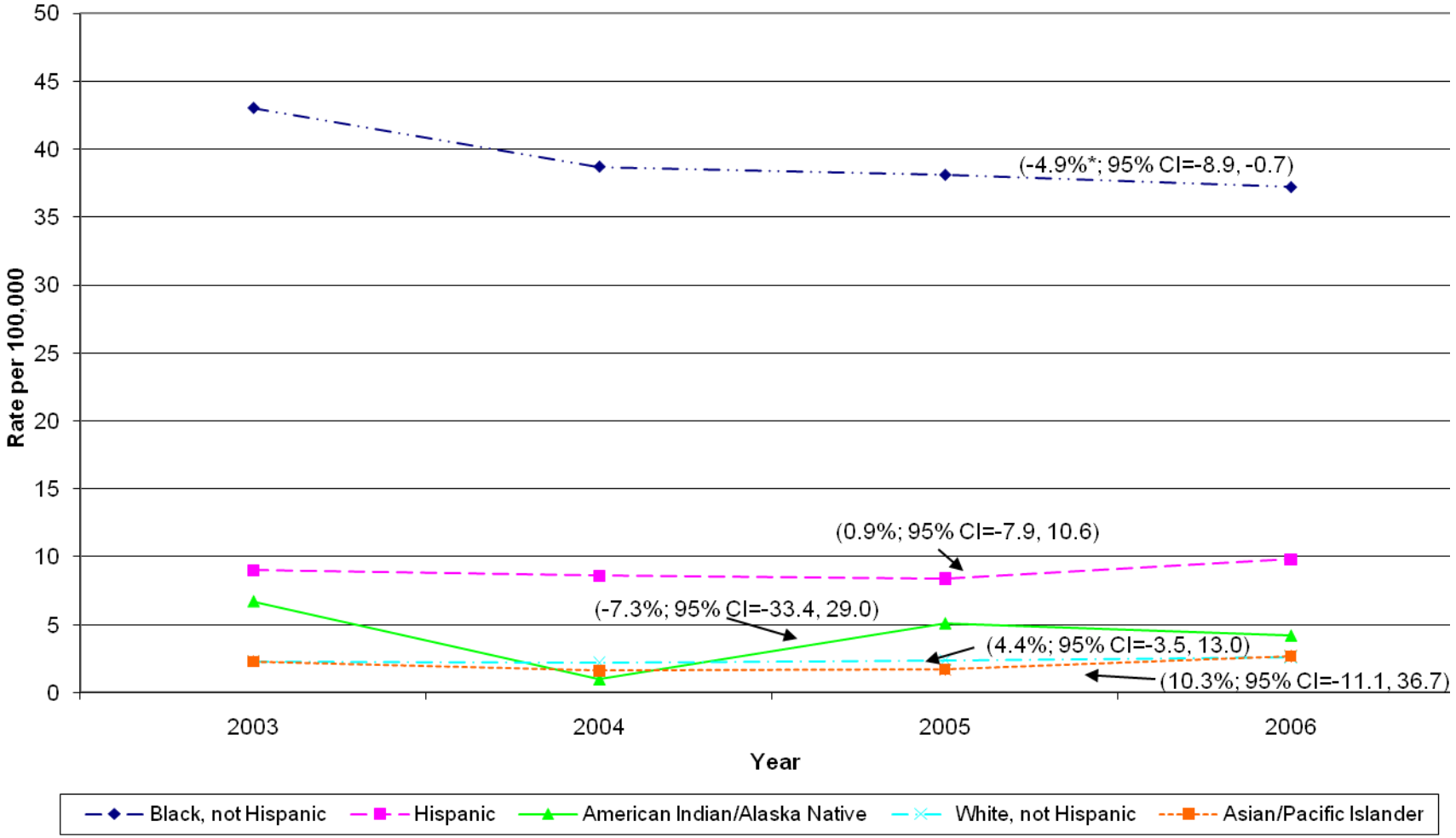
Data adjusted for reporting delays and unreported risk factor..
*Includes persons diagnosed with HIV infection with or without AIDS.
†Includes hemophilia, blood transfusions, perinatal exposure, and risk factor not reported or not identified.

Figure 1A. **Estimated Annual HIV/AIDS Diagnosis Rates for Persons Age 13-24 Years, by Race/Ethnicity and Sex, 2003-2006, 33 States with Confidential Name-Based HIV Infection Reporting - Male**



*Statistically significant

Figure 1B. **Estimated Annual HIV/AIDS Diagnosis Rates for Persons Age 13-24 Years, by Race/Ethnicity and Sex, 2003-2006, 33 States with Confidential Name-Based HIV Infection Reporting - Female**



*Statistically significant

significantly among Black (13.9%; 95% CI=10.1, 17.9) and White (7.8%; 95% CI=2.5, 13.5) males.

Estimated Numbers of Youth Living with HIV/AIDS in 33 States

At the end of 2003, an estimated 19,980 youth were living with HIV/AIDS in the 33 states; of those, 16,322 (82%) were members of minority races and ethnicities: 64% were Black, 17% Hispanic, and less than one percent each were Asian/Pacific Islander and American Indian/Alaska Native (Table 1). The rates for minority youth living with HIV/AIDS in 2006, compared with that for Whites (17 per 100,000), was higher for Blacks (243 per 100,000), Hispanics (67 per 100,000), and American Indians/Alaska Natives (21 per 100,000), and lower for Asians/Pacific Islanders (13 per 100,000). From 2003 through 2006, prevalence rates of HIV/AIDS were consistently higher among Black youth each year regardless of sex.

Time to an AIDS Diagnosis among Youth

In the 33 states with long-term confidential reporting, greater proportions of Hispanic (27%), Black (20%), and Asian/Pacific Islander (16%) youth progressed to AIDS within 12 months after a diagnosis of HIV infection than their White counterparts (14%). A smaller proportion (5%) of American Indians/Alaska Natives progressed to AIDS within 12 months after a diagnosis of HIV infection than their White counterparts.

Estimated Numbers of AIDS Diagnoses among Youth

From 2003 through 2006, an estimated 8,265 AIDS cases were diagnosed among youth in the 50 states and the District of Columbia, 84% of which were in youth of minority races and ethnicities (Table 2). In three areas, the results for each minority race and ethnicity are similar to those for HIV/AIDS: 1) the predominant transmission categories among male and female youth were male-to-male sexual contact and high-risk heterosexual contact, respectively; 2) the majority (79%) of youth diagnosed with AIDS were 20–24 years of age; and 3) most of the youth given a diagnosis of AIDS were Black (61%). The proportional distribution of cases by geographic region of residence at the time of AIDS diagnosis differed by race and ethnicity: 59% of Blacks resided in the south, 52% of Asians/Pacific Islanders and 54% of American Indians/Alaska Natives resided in the west. Approximately one-third of Hispanics resided in the west, south, and northeast each.

AIDS diagnosis rates among minority youth in 2006 were highest among Blacks (17 per 100,000) and Hispanics (five per 100,000) and lowest among American Indians/Alaska Natives (two per 100,000) and Asians/Pacific Islanders (one per 100,000). From 2003 through 2006, AIDS diagnosis rates for Black youth were higher than rates for youth of other races and ethnicities regardless of sex (Figures 2A & 2B). During this period, the EAPC in the annual rate of AIDS diagnoses increased significantly (6.1%; 95% CI=1.1, 11.3) among Black males.

Deaths among Youth with AIDS

During 2003 to 2006, there were 833 estimated deaths among youth with AIDS in the 50 states and the District of Columbia; 90% were among members of minority races and ethnicities. The largest number of deaths was among Blacks, who accounted for 69% (576 deaths) of estimated deaths among youth with AIDS (Table 2).

Estimated Numbers of Youth Living with AIDS

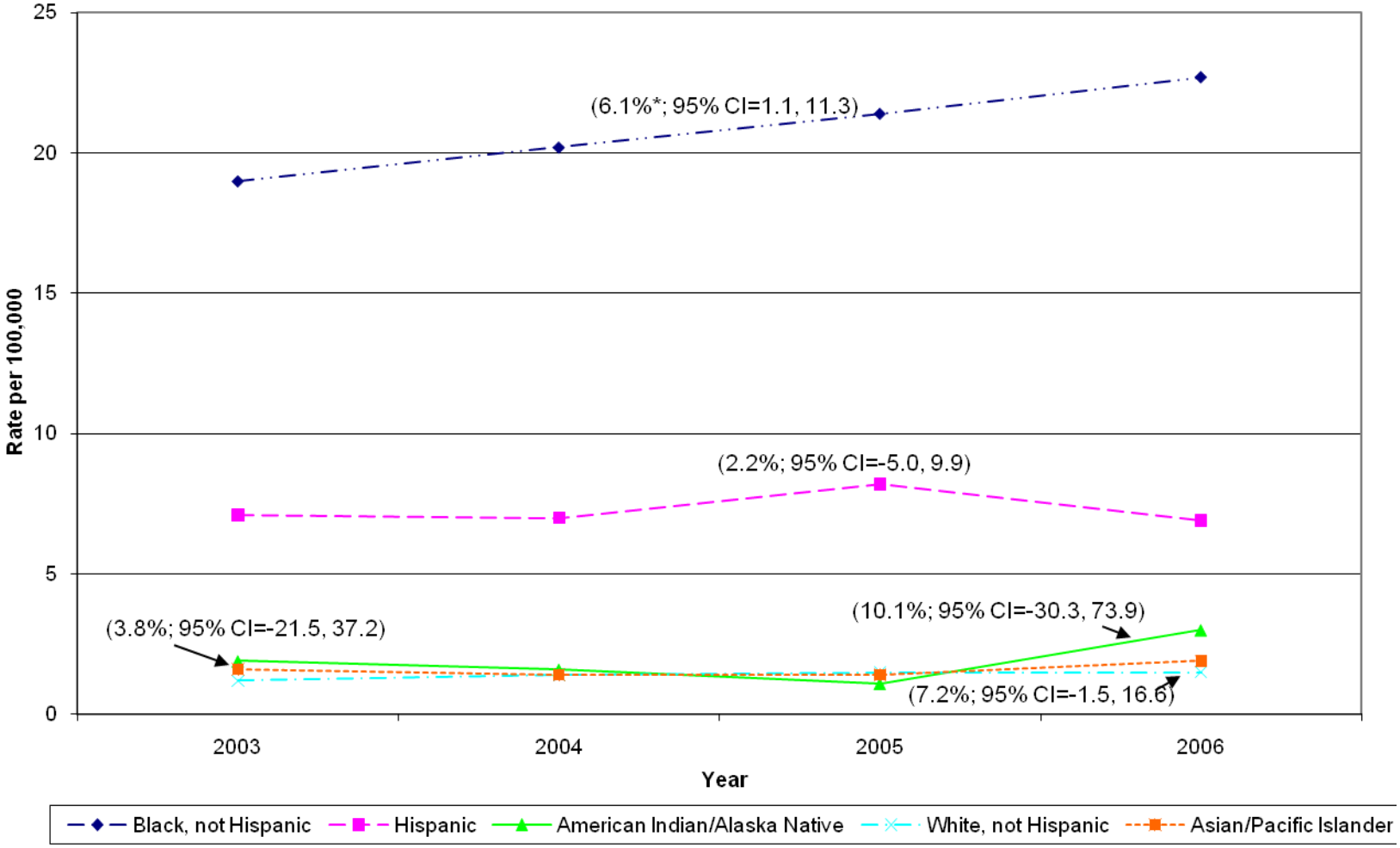
At the end of 2006, an estimated 8,565 youth in the 50 states and the District of Columbia were living with AIDS; 85% were members of minority races and ethnicities (Table 2). Among all races and

Table 2. **Estimated Cases of AIDS among Youth Aged 13–24 Years, by selected characteristics, 2003–2006—50 states and the District of Columbia**

	RACE/ETHNICITY						
	White	**Black**	**Hispanic**	**Asian/ Pacific Islander**	**American Indian/ Alaska Native**	**Un- known Multiple Races**	***TOTAL***
Characteristics							
	N (%)	**N (%)**	**N (%)**	**N (%)**	**N (%)**	**N (%)**	***N (%)***
ALL	1214(14.7)	5049(61.1)	1786(21.6)	91(1.1)	35(0.4)	(91)1.1)	***8265(100)***
Male Trans- mission Category							
Male-to-male sexual contact	667(16.9)	2283(57.8)	902(22.8)	52(1.3)	15(0.4)	29(0.7)	***3948(100)***
Injection drug use	66(15.4)	225(52.4)	125(29.1)	7(1.6)	3(0.7)	4(0.9)	***429 (100)***
MSM/IDU	89(31.3)	115(40.5)	70(24.6)	3(1.1)	2(0.7)	5(1.8)	***284 (100)***
High-risk heterosexual contact	54(8.0)	425(62.9)	182(26.9)	8(1.2)	0(0.0)	7(1.0)	***676(100)***
Other†	31(13.4)	135(58.2)	62(26.7)	1(0.4)	0(0.0)	2(0.9)	***232 (100)***
Subtotal	**906(16.3)**	**3183(57.2)**	**1340(24.1)**	**70(1.3)**	**21(0.4)**	**48(0.9)**	**5569*(100)***
Female Trans- mission Category							
Injection drug use	67(17.3)	235(60.7)	75(19.4)	2(0.5)	4(1.0)	6(1.6)	***387 (100)***
High-risk heterosexual contact	216(10.6)	1457(71.5)	306(15.0)	15(0.7)	10(0.5)	33(1.6)	***2038 (100)***
Other†	25(9.2)	174(64.0)	66(24.3)	3(1.1)	0(0.0	4(1.5)	***272(100)***
Subtotal	**308(11.4)**	**1866(69.2)**	**446(16.5)**	**20(0.7)**	**14(0.5)**	**43(1.6)**	*2697(100)*
Age Group at Diagnosis (Years)							
13-19	177(10.2)	235(13.6)	75(4.3)	2(0.1)	4(0.2)	19(1.1)	***1730(100)***
20-24	1036(15.9)	2834(58.7)	1482(22.7)	79(1.2)	32(0.50	72(1.1)	***6536 (100)***
Region of residence at Diagnosis							
North- west	231(11.9)	1108(57.1)	553(27.5)	16(0.8)	5(0.3)	49(2.5)	***1941(100)***
Midwest	197(18.7)	696(65.9)	140(13.3)	6(0.8)	3(0.3)	14(.13)	***1056(100)***
South	530(12.9)	2999(72.8)	538(13.1)	22(0.5)	8(0.2)	25(0.6)	***4122(100)***
West	256(22.3)	246(21.5)	575(50.2)	47(4.1)	19(1.7)	3(0.3)	***1146(100)***
Estimated Number of Persons Living with HIV/AIDS at the end of 2006							
	1184(13.8)	**5486(64.1)**	**1688(19.7)**	**74(0.9)**	**34(0.4)**	**98(1.1)**	***8565(100)***
Deaths of persons with AIDS 2003-2006							
	80(9.6)	576(69.1)	166(19.9)	4(0.5)	1(0.1)	6(0.7)	***833(100)***

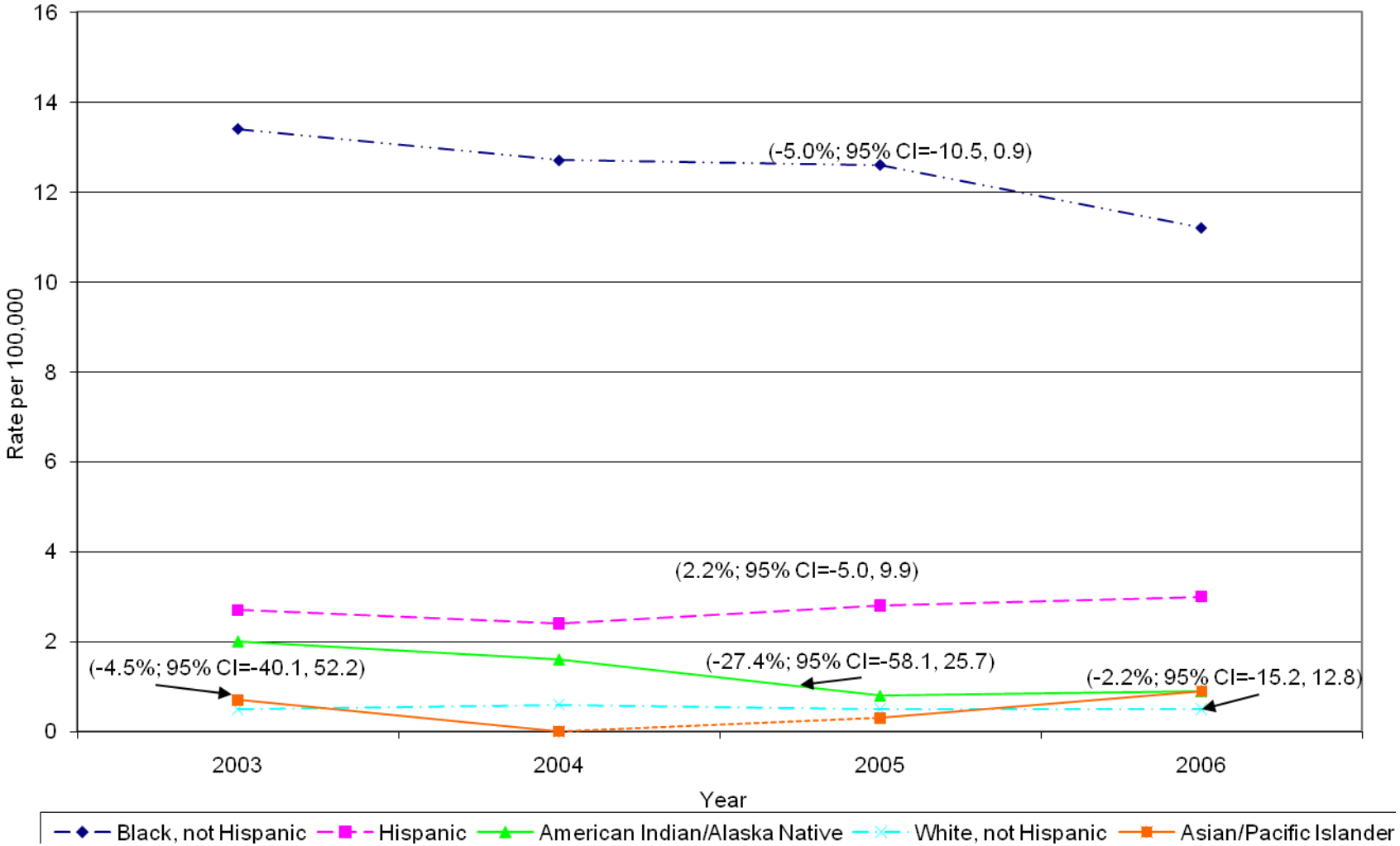
Data adjusted for reporting delays and unreported risk factor. *Includes hemophilia, blood transfusion, perinatal exposure, and risk factor not reported or not identified.

Figure 2A. **Estimated Annual AIDS Diagnosis Rates for Persons Age 13-24 Years, by Race/Ethnicity and Sex, 2003-2006, 50 States and the District of Columbia - Male**



*Statistically significant

Figure 2B. Estimated Annual AIDS Diagnosis Rates for Persons Age 13-24 Years, by Race/Ethnicity and Sex, 2003-2006, 50 States and the District of Columbia - Female



ethnicities, the largest numbers of youth living with AIDS were Black (5,486, or 64%). AIDS prevalence rates were disproportionately higher for Blacks. In 2006, the AIDS prevalence rate for Blacks (71 per 100,000) was nearly 18 times the rate for Whites (4 per 100,000), 4 times the rate for Hispanics (19 per 100,000) and 12 times the rate for American Indians/Alaska Natives (six per 100,000). Compared with the prevalence rate for White youth, the rate was lower for Asian/Pacific Islander youth (three per 100,000).

Survival after AIDS Diagnosis

Of 12,149 youth diagnosed with AIDS during 1997 to 2003 in the 50 states and the District of Columbia, 94.0% (95% CI= 93.6, 94.5) survived 12 months after an AIDS diagnosis and 88.4% (95% CI= 87.8, 89.0) survived 36 months after an AIDS diagnosis (Table 3). In each racial/ethnic group the probability of survival decreased as time from AIDS diagnosis increased. At 12 months after AIDS diagnosis, the proportion surviving was similar for all racial/ethnic groups. At 36 months after AIDS diagnosis, the proportion of Blacks, Hispanics, and America Indians/Alaska Natives surviving was lower than the proportions of Whites and Asians/Pacific Islanders surviving.

Discussion

Our analysis indicates that youth of racial and ethnic minority populations are disproportionately affected by the HIV epidemic. We found notably higher numbers and rates of HIV/AIDS and AIDS diagnoses among Black youth. Race and ethnicity are not risk factors for HIV infection but may be markers for socioeconomic factors, such as poverty, substance abuse, sexually transmitted diseases, and limited access to high-quality healthcare, which are challenges youth of minority races and ethnicities are more likely to experience than their White counterparts (CDC, 2007b; CDC, 2008a; Diaz et al., 1994; Millett, Peterson, Wolitski, & Stall, 2006; U.S. Census Bureau, 2007). Cultural norms also make it difficult for many religious and community leaders of racial and ethnicity minority populations to acknowledge or discuss sexual matters, including sexual practices, homosexuality, and the use of condoms.

Our study found that males of minority races and ethnicities are disproportionately affected by HIV. Compared with White males, rates of HIV diagnoses for Black and Hispanic males were substantially higher. Over the time period of our analysis (2003–2006), rates of HIV diagnosis significantly increased among young Black males. Male-to-male sexual contact was found to be the primary mode of HIV transmission among young men, regardless of race or ethnicity; however, the majority of HIV/AIDS diagnoses among young men who have sex with men (MSM) were among Blacks. Despite prevention efforts and advances in HIV treatment, studies continue to find that young Black and Hispanic MSM are more likely to become infected with HIV than young men of other races/ethnicities (Blair, Fleming, & Karon, 2002; CDC, 2000; CDC, 2001; Hall, Byers, Ling & Espinoza, 2007; Millett, Malebranche, Mason, & Spikes, 2005; Valleroy et al., 2000). In a study of young MSM aged 15–22 years in seven cities, the prevalence and incidence of HIV infection were higher among young MSM who were Black, Hispanic, or mixed race/ethnicity than among Whites (CDC, 2001). Studies have also found high rates of HIV infection among young Black MSM who reside in urban settings, with incidence and prevalence as high as 14% and 32%, respectively (Blair et al. , 2002; CDC, 2000; CDC, 2001; Valleroy et al., 2000). Young MSM of minority races and ethnicities should be targeted with early and sustained prevention efforts specifically tailored for their needs.

Our results show that the majority of HIV/AIDS diagnoses among young women are attributed to high-risk heterosexual contact, regardless of race or ethnicity; however, young women of minority races and ethnicities are increasingly at risk for

Table 3. **Percentage of Youth Aged 13–24 Years Surviving after an AIDS Diagnosis, by race/ethnicity and Sex — 50 States and the District of Columbia, 1997–2003**

	AIDS diagnoses	12 months	95% CI		36 months	95% CI	
Characteristics	**No.**	**%**	**Lower**	**Upper**	**%**	**Lower**	**Upper**
White, not Hispanic							
Male	1,354	95.2	93.9	96.2	91.1	89.5	92.5
Female	701	95.3	93.4	96.6	88.9	86.3	91.0
Total	2,055	95.2	94.2	96.1	90.4	89.0	91.6
Black, not Hispanic							
Male	3,626	93.6	92.8	94.4	87.3	86.2	88.4
Female	3,373	94.5	93.7	95.2	86.9	85.7	88.0
Total	7,000	94.0	93.4	94.6	87.1	86.3	87.9
Hispanic							
Male	1,991	93.1	91.9	94.1	90.3	88.9	91.5
Female	831	93.0	91.1	94.6	88.3	85.9	90.3
Total	2,822	93.1	92.1	93.9	89.7	88.5	90.8
Asian/Pacific Islander							
Male	75	94.7	86.4	98.0	94.7	86.4	98.0
Female	32	96.9	79.8	99.6	93.8	77.3	98.4
Total	107	95.3	89.1	98.0	94.4	87.9	97.4
American Indian / Alaska Native							
Male	36	97.2	81.9	99.6	88.9	73.1	95.7
Female	23	91.3	69.5	97.8	91.3	69.5	97.8
Total	59	94.9	85.1	98.3	89.8	78.8	95.3
All							
Male	7,143	93.8	93.2	94.3	89.0	88.2	89.7
Female	5,005	94.4	93.7	95.0	87.6	86.6	88.5
Total*	12,149	94.0	93.6	94.5	88.4	87.8	89.0

*Includes persons of unknown race or multiple races.

HIV infection due to biologic vulnerability, lack of recognition of their partners' risk factors, inequality in relationships, and having sex with older men who are more likely to be infected with HIV (CDC, 2003b; Doll & Beeker, 1996; Hader, Smith, Moore, & Holmberg, 2001). According to a CDC study of 637 MSM who did not disclose their sexual orientation, 55% were aged 15–22 (CDC, 2003b). Nondisclosure of sexual orientation among MSM is associated with being a member of a racial/ethnic minority group, having greater perceived community and internalized homophobia, and being less integrated socially within homosexual communities (Doll & Beeker, 1996). MSM who do not disclose their sexual orientation are likely to have one or more female sex partners and less likely than disclosers to seek HIV testing. This can lead to transmission of HIV to their male as well as their female sex partners. Comprehensive HIV testing and prevention programs should be developed or expanded for young women of minority races who engage in high-risk heterosexual contact. In addition, more resources and prevention strategies are needed to address underlying causes of HIV transmission among young women of minority races, such as poverty and partner risk behavior.

The use of illegal substances (injected and not injected) has also contributed to the increased risk for HIV infection among racial

and ethnic minority youth. Among racial and ethnic minority youth, the majority of HIV/AIDS diagnoses attributed to injection drug use were among Black and Hispanic youth. Young people in the United States use alcohol, tobacco, and other drugs at high rates (Substance Abuse and Mental Health Services Administration, 2007). Both casual and chronic substance users are more likely to engage in high-risk behaviors, such as unprotected sex, when they are under the influence of drugs or alcohol (Leigh & Stall, 2003).

The findings in this study are subject to several limitations. First, confidential name-based HIV surveillance data were available for a limited number of states. The 33 states included in this analysis represent 63% of all AIDS cases in the United States, and, therefore, the results of this analysis might not be representative of the entire nation (CDC, 2008c). Also, this analysis does not include HIV data from Illinois and California—states with large populations of minority races and ethnicities. Second, estimates of new HIV diagnoses reflect only those cases diagnosed and reported to a state or local health department. It is difficult to interpret whether the increases in diagnosis rates are attributable to increased detection of HIV infection through increased testing or to increased HIV transmission; however, HIV diagnosis rates for youth reflect relatively recent infections because less time is likely to have passed since the young person's exposure. Finally, the findings might be affected by statistical adjustments made for reporting delays and for cases reported with no identified risk factor. The assumptions by which cases with no known risk factors were redistributed among transmission categories might no longer be valid; these assumptions are currently being reevaluated.

There has been an overall decrease in HIV-related sexual risk behaviors among high school students, which corresponds to a simultaneous decrease in pregnancy, and birth rates among adolescents; however, measures are needed to eliminate disparities among subgroups (CDC, 2006c; Martin et al., 2008; Ventura, Abma, Mosher, & Henshaw, 2004). Among Blacks, the prevalence of sexual experience, multiple sex partners, and current sexual activity remains higher than among any other subgroup of high school students (CDC, 2008b). Efforts to delay onset of sexual activity and increase condom use among adolescents who are sexually active are warranted, especially among Black and Hispanic youth (CDC, 2008b). Adolescents need accurate, age-appropriate information about HIV infection and AIDS, including how to reduce or eliminate risk factors, how to talk with a potential partner about risk factors, and where to get tested for HIV. HIV education should occur early before young people engage in activities that increase their risk for HIV infection. Young people who are already infected with HIV need focused support to minimize the risk of further transmission.

HIV prevention programs targeting youth should provide age-appropriate messages that incorporate youth norms and reflect realistic life situations which resonate with young people. These programs should incorporate methods and processes to evaluate the success of promoting sexual health and responsible sexual behavior among youth. Leadership is needed in the health sector to create an open environment for discussion of sexuality, to provide access to information and education about sexuality, and to care for sexually related concerns. In 2006, CDC issued revised recommendations for HIV testing of adolescents, encouraging health care providers to make HIV testing a routine part of primary health care (CDC, 2006). Providers should inquire about sexual behavior, assess risk for acquiring sexually transmitted diseases, and provide age-appropriate counseling and education. HIV screening for asymptomatic infection should be discussed with all adolescents and encouraged for those who are sexually active. Providing information regarding HIV infection, HIV testing, HIV transmission, and implications of infection should be an essential component of the preventive guidance provided to all adolescents as part

of primary care (American Academy of Pediatrics, 2001).

CDC's Division of Adolescent and School Health provides funding to help non-governmental organizations deliver capacity-building assistance to agencies and organizations serving youth at high risk for HIV infection (CDC, 2007c). Populations of interest include young MSM, especially Black and Hispanic MSM, Black and Hispanic females, youth in juvenile justice facilities or alternative schools, and runaway and homeless youth (CDC, 2007c). Disparities in annual diagnoses and rates of HIV infection among racial and ethnic minority youth highlight the continued need for comprehensive, HIV prevention among these groups and the need to develop novel, culturally appropriate programs to reach those most at risk. HIV prevention outreach and education efforts, including programs on abstinence and on delaying the initiation of sex, can teach young people how to modify risky behaviors and how to adopt and maintain safer behaviors and encourage them to learn their HIV status. A multifaceted approach to HIV prevention, which includes individual, peer, familial, school, and community programs, is necessary to reduce the incidence of HIV in young people. HIV prevention education should be developed with the active involvement of parents, be locally determined, and consistent with community values. It should address the needs of youth who are not engaging in sexual intercourse and youth who are currently sexually active, while ensuring that all youth are provided with effective education to protect themselves and others from HIV infection throughout their lives.

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