

HIV & AIDS



in Colorado

*Integrated Epidemiologic Profile of HIV and AIDS Prevention
and Care Planning reported through December 2006*



Colorado Department
of Public Health
and Environment

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Acknowledgments

This report was prepared for the citizens of the state of Colorado, including the HIV/AIDS care and prevention community planning groups. The authors would like to thank this group for their input on this document.

This report was compiled and edited by members of the Colorado Department of Public Health and Environment STI/HIV Section staff:
Ralph Wilmoth
Anne Marlow-Geter
The STI/HIV Surveillance Program Staff
The Ryan White Program Staff
The Denver Public Health Staff:
Mark Thrun
Alia Al-Tayyib

The authors also wish to acknowledge:

Kirk Bol, Vital Statistics Section,
Colorado Department of Public Health and Environment
Tamara Hoxworth, Alcohol and Drug Abuse Division, Colorado Department of Human Services
Darren Eurich, State of Colorado Integrated Document Solutions (IDS) Design

The cooperation of physicians, local health departments, infection control practitioners, laboratories and coroners throughout the state is gratefully acknowledged. Without their cooperation, it would not be possible to provide these data.

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Acronym List

- ADAP**—AIDS Drug Assistance Programs
AIDS—Acquired Immune Deficiency Syndrome
ARVDR—Antiretroviral Drug Resistance
BMSA—Boulder Metropolitan Statistical Area
CARE Act—Comprehensive AIDS Resources Emergency Act
CDC—Centers for Disease Control and Prevention
CDPHE—Colorado Department of Public Health and Environment
CI—Confidence Interval
DMSA—Denver County Metropolitan Statistical Area
EIA—Enzyme Immunoassay
EMA—Eligible Metropolitan Area
HCV—Hepatitis C Virus
HET—Heterosexual
HIV—Human Immunodeficiency Virus
HRA—High Risk Areas
HARS—HIV and AIDS Reporting System
IDU—Injection Drug Use or Injection Drug User
MAI—Minority AIDS Initiative
MSA—Metropolitan Statistical Area
MSM—Men Who Have Sex With Men
MSM/IDU—Men Who Have Sex With Men and Injection Drug User
NHBS—National HIV Behavioral Surveillance
NNRTI—Non-Nucleoside Reverse Transcriptase Inhibitor
NRTI—Nucleoside Reverse Transcriptase Inhibitor
PLWH—People Living with HIV
RDS—Respondent-Driven Sampling
SPNS—Special Projects of National Significance
STARHS—Serologic Testing Algorithm for Recent HIV Seroconversion
STI—Sexually Transmitted Infection
TGA—Transitional Grant Areas
VBS—Venue-Based Sampling



Executive Summary

As of December 31, 2006, a cumulative total of 8,845 cases of AIDS, and an additional 6,184 cases of HIV infection have been reported in Colorado. Significant decreases in AIDS incidence and mortality have been observed both in the United States and in Colorado since the introduction and use of new anti-HIV drug therapies in 1996. In 2006, 321 AIDS cases and 306 HIV cases were diagnosed. Newly diagnosed AIDS cases have continued to trend downwards over the last five years, while cases of HIV have increased 26 percent.

As a result of new therapies, fewer people with HIV are progressing to AIDS and fewer people are dying from AIDS. AIDS-related mortality has decreased by 18 percent between 2002 and 2006. HIV or AIDS prevalence (number of persons with HIV or AIDS) have increased steadily. By December 2006, an estimated 9,831 persons were living with HIV or AIDS in Colorado.

The epidemic in Colorado is still overwhelmingly driven by sexual exposure, primarily among MSM, which continues to be the most significant risk group and account for 64.8 percent of HIV cases diagnosed in 2006. Among females, heterosexual transmission represents 61.3 percent of reported female cases.

People of color are disproportionately affected by HIV/AIDS, especially Blacks, who are over represented in all risk groups. Blacks had an 18.1 percent increase in the

number of diagnosed AIDS cases from 2002 to 2006, compared to a 12.5 percent increase among Whites.

Cases of HIV/AIDS continues to be geographically centered in the Front Range population of Colorado, although IDU cases and cases with no identified risk appear to be reported more frequently from rural/frontier counties.

Although the number of women living with HIV in Colorado has increased by 17.2 percent since the beginning of the epidemic, perinatal transmission has decreased dramatically since 1996. The decrease in transmission rates is attributed to the widespread screening of pregnant women for HIV and the use of anti-retroviral drugs during and after pregnancy, labor and delivery. Four cases of perinatally acquired HIV infection have been reported in infants born to HIV-infected mothers in Colorado in the last five years.

Overall Findings: Priority Groups for HIV Prevention

• Men Who Have Sex With Men

The HIV epidemic in Colorado continues to consist primarily of MSM and MSM/IDU, which represent 73 percent of cumulative cases of HIV and AIDS. Whites make up the largest racial group of MSM, consisting of 67.4 percent of HIV cases diagnosed in 2006. Blacks and Hispanics are over represented in relation to

their percentage of the population. MSM 20–49 years old are over represented among recently diagnosed HIV cases in relation to the percent of males in Colorado. Persons aged 30–39 years had the highest percentage of cases. MSM have a much higher rate of recent infection than any other risk group. Increases in early syphilis cases among MSM may indicate increased sexual risk behavior, which increases the possibility of transmission of HIV. Bathhouse contacts or sex arranged over the Internet continues to be a significant source of new HIV and syphilis infections.

• Blacks

Blacks are over represented in the cumulative epidemic of HIV/AIDS in Colorado among recently infected persons and among all risk groups. The HIV rate per 100,000 population for Black males (27.5) in Colorado in 2006 was nearly five and a half times the rate of White males (5.0). Among Black females the rate per 100,000 is 16.0, which is over 22 times that of White females (0.7) in Colorado.

• Injecting Drug Users

White males account for the overwhelming majority of IDU cases (1,035 or 73.6%). However, Blacks and Hispanics continue to be disproportionately represented in the IDU transmission category in relation to their proportion of the state population. Overall, Blacks account for 143 IDU cases (10.2%), and Hispanics for 196 IDU cases (13.9%).

- **Females**

The proportion of females among newly diagnosed HIV cases is increasing. In 2006, women accounted for 10.4 percent of persons living with HIV and AIDS, an increase from previous years. Black females are over represented, making up 34.2 percent of newly diagnosed female HIV cases. Heterosexual contact (50.0%) is the predominant risk reported for women diagnosed with HIV in 2006.

Data Sources

The data that form the basis of this report are principally reports of HIV and AIDS among persons who were living in Colorado at the time of diagnosis. Frequently, both HIV and AIDS cases are combined for purposes of characterizing the whole epidemic and for analysis of trends. When AIDS cases are presented in this report, it is to compare the presumably “older” epidemic with more recently acquired infections. To focus on more recently acquired infections, HIV cases diagnosed in Colorado during 2006 (that have not progressed to AIDS as of December 2006) are also presented in this report. Cases are reported to the CDPHE HIV Surveillance Program and are entered into a database known as HARS that is used in all states (and in 13 cities) to enumerate HIV and AIDS cases in these jurisdictions. AIDS cases in this report meet the 1993 U.S. CDC and Prevention surveillance case definition for AIDS, which includes HIV-infected persons with CD4+

counts of less than 200 mm³ or those diagnosed with one of 21 opportunistic infections definitive of AIDS.¹

HIV and AIDS have been reportable by name in Colorado by regulation since 1985 and by state statute since 1987. This law requires that both laboratories and physicians report cases of HIV and AIDS within seven days to the state health department. In the case of laboratories, all tests indicative of, or highly correlated with HIV, such as HIV positive antibody tests, HIV viral loads, positive cultures for HIV, and CD4+ counts of less than 500 mm³ are reportable.

The Division of Local Affairs, State Demographer’s Office has provided information about the characteristics of Colorado’s population to allow comparisons to persons reported with HIV or AIDS. Colorado’s demographic and geographic data is based on population forecasts for 2006 when possible. These forecasts are based on data available from the 2000 United States Census.

The Colorado Department of Human Services, Alcohol and Drug Abuse Division has provided estimates about the scope and size of the injection drug population in Colorado.

The Vital Statistics Section of Colorado Department of Public Health and Environment has provided cause of death data obtained from death certificates filed with the department through 2006.

The Colorado Department of Corrections has provided data on the demographic characteristics of the prison population.

The U.S. Census Bureau provided a variety of demographic and socioeconomic data on Colorado.

The Colorado Department of Labor and Employment provided data on employment in Colorado.

Strengths and Limitations of the Data

Both HIV and AIDS have been reportable by name from laboratories and care providers since 1985 by regulation and since 1987 by state statute. In 1987, CDPHE initiated an active system of surveillance for HIV and AIDS in order to accurately characterize the epidemic in Colorado. The CDPHE also collects local variables, such as incarceration or positive hepatitis C virus status, to provide additional information to HIV prevention and care planners.

In general, persons who are infected with HIV, without treatment, will eventually progress to AIDS. For some persons, this progression may be relatively rapid (less than two years) but it usually occurs over a five to 10 year period. Thus, aggregate data about AIDS cases may have limited use for HIV prevention planning because they characterize persons (and their risk behaviors) who may have been infected more than 10 years ago. The introduction of highly active

anti-retroviral therapies have further altered the natural history of HIV and delayed progression to AIDS, making AIDS data less useful each year for planning purposes. Data is available for persons recently diagnosed with HIV (which does not mean newly infected). Because these persons have not yet progressed to AIDS, they may represent those who are more recently infected with HIV (although this may be confounded by treatment). However, the usefulness of this data is limited because it only includes persons who elected to be tested for HIV. This represents a major limitation of HIV case reporting. These data do not represent persons who have never accessed testing.

The usefulness of the data is further confounded by the availability of anonymous testing. Anonymous testing for HIV has been available as a testing option in Colorado since July of 1990. Because names are not used when a person is tested anonymously, these cases are not entered into HARS and thus are not included in this report. They are included in this epidemiological profile when they are reported with HIV or AIDS by name, and the CDPHE can assure that no duplication in reporting has occurred.

Finally, data about risk are less complete for newly diagnosed HIV-infected persons than for persons with AIDS. This is because investigation of risk factors for HIV and AIDS occur over time. Persons who are newly infected may not have discussed the risk factors with HIV counselors, disease intervention specialists, or their care providers. As

the patient seeks care and agrees to interviews, risk is more likely to be ascertained.

The location where a case of HIV or AIDS is “counted” presents a special challenge. Jurisdiction of a case of either HIV or AIDS is established at the time of diagnosis. Individual cases are not monitored for changes in address. Consequently, it is impossible to measure the impact of migration in or out of any county or Colorado as a whole.

When appropriate, changes in disease trends over time are calculated using 95 percent confidence intervals. Statistical significance is noted when the calculated disease rate from one time period to the next fall outside the limits set by the confidence intervals.

Lastly, caution should be exercised when interpreting small numbers. Population rates based on small numbers may be particularly misleading.

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Description of Colorado

Summary

- The majority of Colorado's population resides in a 17 county area.
- As of December 2006, Colorado's population is estimated to be 4,813,555. The distribution between men and women is approximately equal.
- Over three million Coloradoans are between the ages of 18 and 65.
- Colorado's population is 70.7 percent White, 19.4 percent Hispanic and 3.7 percent Black. 2.8 percent Asian Pacific Islander, 0.9 percent as American Indian and 2.5 percent as other or mixed race.
- Colorado ranks thirty-first in the nation's poverty level rating. Douglas County has the lowest percent of persons living in poverty (2.9%), while Crowley County has the highest percent of person living in poverty (31.3%).
- Colorado's unemployment was 4.3 percent in 2006 compared to 5.1 percent in 2005.
- Colorado's percent of uninsured persons was slightly higher (19%) than reported nationally (18%).
- In 2006, cancer replaced heart disease as the leading cause of death in Colorado.
- In Colorado, Hispanics experienced the highest percent of high school dropouts in 2005–2006 at 8.2 percent.
- The number of incarcerated persons in Colorado increased from 20,228 in 2005 to 21,438 in 2006.

Geography

Colorado is geographically a rural state. It is made up of 64 counties and has a landmass of 104,095 square miles. The majority of Colorado's population reside in 17 counties designated as metropolitan areas as defined by the U.S. Office of Management and Budget. A metropolitan area has a total population of at least 100,000 inhabitants and at least one urbanized area of at least 50,000 inhabitants. These counties include: Adams, Arapahoe, Boulder, Broomfield, Clear Creek, Denver, Douglas, El Paso, Elbert, Gilpin, Jefferson, Larimer, Mesa, Park, Pueblo, Teller and Weld.² In addition to those counties classified as urban, the Colorado Rural Health Center classifies the following counties as frontier: Baca, Bent, Cheyenne, Costilla, Custer, Dolores, Gunnison, Hinsdale, Huerfano, Jackson, Kiowa, Kit Carson, Las Animas, Lincoln, Mineral, Moffat, Rio Blanco, Saguache, San Juan, San Miguel, Sedgwick, Washington, and Yuma.² The remaining 24 Colorado counties are considered rural.

Population

The Colorado State Demographer's Office estimated the Colorado population to be 4,813,555 in 2006. Colorado ranks twenty-second in the nation in population, accounting for approximately 1.6 percent of the U.S. population.³

Age

The median age in Colorado is 35.4 years old for the year 2006, an increase from 34.9 years old in 2004 (the median age is projected to increase to 36.6 years old by 2029). Over three million people are between the ages of 18 and 65 years old. The elderly population (over 65) has remained stable at approximately 10 percent of the population during the 1990s and early 2000s, and is expected to remain at this level through 2010.⁴ **Table 1** illustrates the distribution of the population by gender and age.

■ **TABLE 1: 2006 Colorado Population by Age and Gender**

Age Group	Male	Percent	Female	Percent	Total	Percent
<13	446,643	18.5%	425,228	17.8%	871,871	18.1%
13–19	249,028	10.3%	236,232	9.9%	485,260	10.1%
20–24	191,105	7.9%	173,521	7.3%	364,626	7.6%
25–29	158,078	6.5%	145,995	6.1%	304,073	6.3%
30–39	370,864	15.3%	342,115	14.3%	712,979	14.8%
40–49	381,234	15.8%	374,636	15.7%	755,870	15.7%
>49	623,047	25.8%	695,829	29.1%	1,318,876	27.4%
Total Population	2,419,999		2,393,556		4,813,555	

Source: Colorado State Demography Office, State Population by Age and Gender, 2006.

Race

Statewide, approximately 70.7 percent of the population classify themselves as White, 19.4 percent of the population classify themselves as Hispanic, 3.7 percent classify themselves as Black, 2.8 percent classify themselves as Asian Pacific Islander, 0.9 percent classify themselves as American Indian and 2.5 percent classify themselves as other or mixed race.⁵ It is noteworthy that according to the U.S. Census Bureau 2006 American Community Survey, 7.1 percent of Colorado's population may be non-citizen immigrants.⁶ The following tables show the racial breakdowns in Colorado by gender (**Table 2**) and county (**Table 3**). It should also be noted that the population totals presented in **Table 1** and the totals reported in subsequent tables may vary slightly due to different data sources.

■ **TABLE 2: 2006 Colorado Population by Race and Gender**

Race	Male	Percent	Female	Percent	Total	Percent
White (non-Hispanic)	1,692,198	69.9%	1,707,813	71.5%	3,400,011	70.7%
Hispanic	490,850	20.3%	443,560	18.6%	934,410	19.4%
Black (non-Hispanic)	93,178	3.8%	84,724	3.5%	177,902	3.7%
Asian/Hawaiian/PI (non-Hispanic)	62,897	2.6%	70,182	2.9%	133,079	2.8%
American Indian/Alaskan Native (non-Hispanic)	27,978	0.9%	19,183	0.8%	41,161	0.9%
Two or More Races (non-Hispanic)	61,216	2.5%	63,861	2.7%	125,077	2.6%
Total Population	2,422,317		2,389,323		4,811,640	

Source: U.S. Census Bureau, 2006 Community Survey Detailed Tables, Race by Gender.

TABLE 3: 2006 Colorado Population by Race and County

County	White (non-Hispanic)	Hispanic	Black (non-Hispanic)	Asian/ Hawaiian/PI (non-Hispanic)	American Indian/ Alaskan Native (non-Hispanic)	Two or More Races (non-Hispanic)	Total Population
ADAMS	56.6%	35.3%	2.8%	3.3%	0.7%	1.3%	414,338
ALAMOSA	50.9%	44.3%	0.9%	1.1%	1.5%	1.3%	15,225
ARAPAHOE	67.1%	16.7%	9.0%	4.7%	0.5%	2.0%	537,197
ARCHULETA	81.5%	15.7%	0.3%	0.3%	1.1%	1.2%	12,386
BACA	88.0%	8.9%	0.0%	0.4%	1.2%	1.5%	4,017
BENT	61.9%	30.8%	3.8%	0.6%	1.3%	1.6%	5,551
BOULDER	80.3%	13.1%	1.0%	3.9%	0.4%	1.3%	282,304
BROOMFIELD	81.6%	10.5%	1.1%	4.6%	0.5%	1.6%	45,116
CHAFFEE	87.3%	8.6%	1.5%	0.4%	1.0%	1.1%	16,918
CHEYENNE	90.9%	7.8%	0.5%	0.0%	0.5%	0.3%	1,906
CLEAR CREEK	91.9%	4.6%	0.3%	0.9%	0.7%	1.5%	9,130
CONEJOS	44.0%	54.4%	0.1%	0.2%	0.8%	0.5%	8,406
COSTILLA	32.4%	63.1%	0.6%	1.2%	1.4%	1.3%	3,378
CROWLEY	64.6%	24.1%	7.2%	0.8%	2.3%	1.0%	5,386
CUSTER	94.0%	3.1%	0.3%	0.4%	1.0%	1.1%	3,926
DELTA	84.5%	12.7%	0.5%	0.4%	0.6%	1.3%	30,401
DENVER	50.0%	34.8%	9.9%	3.2%	0.7%	1.4%	566,974
DOLORES	91.3%	5.2%	0.1%	0.6%	2.0%	0.8%	1,911
DOUGLAS	86.4%	6.7%	1.4%	3.6%	0.4%	1.5%	263,621
EAGLE	70.0%	27.5%	0.4%	1.0%	0.4%	0.6%	49,085
ELBERT	91.6%	4.9%	0.8%	0.7%	0.6%	1.4%	23,181
EL PASO	74.9%	12.9%	6.0%	3.0%	0.7%	2.5%	576,884
FREMONT	81.0%	10.5%	5.2%	0.6%	1.4%	1.4%	48,010
GARFIELD	74.4%	23.1%	0.4%	0.5%	0.5%	1.1%	51,908
GILPIN	89.6%	5.6%	0.7%	1.3%	0.6%	2.1%	5,042
GRAND	91.5%	5.3%	0.7%	0.9%	0.5%	1.1%	13,406
GUNNISON	91.2%	5.7%	0.5%	0.6%	0.9%	1.1%	14,331
HINSDALE	96.7%	1.5%	0.0%	0.4%	1.1%	0.4%	819
HUERFANO	59.6%	34.2%	2.7%	0.5%	1.4%	1.6%	7,808
JACKSON	90.6%	7.8%	0.0%	0.1%	0.8%	0.7%	1,406
JEFFERSON	81.2%	13.2%	0.1%	2.6%	0.6%	1.3%	526,994
KIOWA	94.1%	3.1%	0.6%	0.1%	1.6%	0.5%	1,413
KIT CARSON	79.8%	17.0%	1.9%	0.5%	0.5%	0.4%	7,590
LA PLATA	81.8%	10.4%	0.5%	0.7%	5.2%	1.3%	47,936
LAKE	54.9%	42.4%	0.2%	0.8%	0.7%	1.0%	7,814
LARIMER	85.9%	9.6%	0.8%	1.9%	0.5%	1.3%	276,253
LAS ANIMAS	56.5%	40.1%	0.5%	0.8%	1.1%	1.0%	15,564
LINCOLN	80.1%	10.6%	5.6%	0.9%	1.0%	1.7%	5,458
LOGAN	82.8%	13.1%	2.2%	0.5%	0.5%	0.9%	20,780
MESA	85.9%	10.9%	0.6%	0.7%	0.7%	1.2%	134,189
MINERAL	95.2%	1.9%	0.0%	0.0%	0.4%	2.5%	929
MOFFAT	84.5%	12.9%	0.2%	0.4%	0.8%	1.2%	13,680
MONTEZUMA	76.9%	9.5%	0.2%	0.4%	11.2%	1.8%	25,217
MONTROSE	80.2%	16.8%	0.3%	0.5%	0.9%	1.2%	38,559
MORGAN	66.1%	31.9%	0.3%	0.4%	0.7%	0.7%	28,109
OTERO	57.8%	38.8%	0.6%	0.8%	0.7%	1.3%	19,452
OURAY	93.3%	4.4%	0.1%	0.3%	0.8%	1.1%	4,307
PARK	90.9%	5.7%	0.4%	0.6%	0.7%	1.7%	17,157
PHILLIPS	80.2%	18.1%	0.2%	0.5%	0.2%	0.7%	4,601
PITKIN	89.3%	7.4%	0.5%	1.5%	0.3%	0.1%	14,798
PROWERS	59.6%	38.0%	0.4%	0.6%	0.7%	0.6%	13,776
PUEBLO	57.3%	38.5%	1.7%	0.7%	0.7%	1.0%	152,912

continued on the next page

■ **TABLE 3: 2006 Colorado Population by Race and County** *continued from page 8*

County	White (non-Hispanic)	Hispanic	Black (non-Hispanic)	Asian/ Hawaiian/PI (non-Hispanic)	American Indian/ Alaskan Native (non-Hispanic)	Two or More Races (non-Hispanic)	Total Population
RIO BLANCO	91.7%	5.8%	0.2%	0.4%	0.8%	1.1%	6,180
RIO GRANDE	60.6%	37.0%	0.3%	0.4%	0.8%	0.7%	12,006
ROUTT	93.7%	3.9%	0.4%	0.7%	0.3%	1.0%	21,580
SAGUACHE	52.0%	45.4%	0.1%	0.4%	1.1%	0.9%	7,006
SAN JUAN	87.0%	11.4%	0.0%	0.7%	0.7%	0.2%	578
SAN MIGUEL	88.0%	9.0%	0.2%	0.9%	0.8%	1.1%	7,143
SEDGWICK	82.9%	15.0%	0.4%	0.9%	0.1%	0.8%	2,467
SUMMIT	83.1%	13.7%	0.9%	1.1%	0.4%	0.8%	25,399
TELLER	90.6%	4.8%	1.0%	0.7%	0.9%	2.0%	22,243
WASHINGTON	91.0%	7.9%	0.1%	0.2%	0.3%	0.5%	4,630
WELD	69.3%	27.5%	0.5%	1.2%	0.4%	1.1%	236,857
YUMA	79.4%	19.5%	0.1%	0.1%	0.2%	0.6%	9,829

Source: U.S. Census Bureau, Population Estimates Program, 2006

Poverty and Income

In 2006, the U.S. Census Bureau estimated Colorado’s median household income to be \$64,614 and the state’s national poverty ranking was 31.⁷ The United States Department of Agriculture estimated the percent of Coloradans living below the poverty level to be 10.9 percent in 2005.⁸ **Table 4** shows the poverty levels per county in 2005. Douglas County had the lowest percentage of people living in poverty (2.9%) while Crowley County had the highest percentage of people in poverty (31.3%).

■ **TABLE 4: Percentage of the Population Under the Poverty Level by County (2005)**

County	Percentage Under Poverty Level	County	Percentage Under Poverty Level	County	Percentage Under Poverty Level
Colorado Average	10.9%	EL PASO	10.7%	MONTEZUMA	17.2%
ADAMS	11.5%	ELBERT	5.2%	MONTROSE	13.1%
ALAMOSA	22.2%	FREMONT	15.2%	MORGAN	13.1%
ARAPAHOE	9.0%	GARFIELD	7.9%	OTERO	20.4%
ARCHULETA	11.6%	GILPIN	5.5%	OURAY	7.6%
BACA	18.5%	GRAND	8.0%	PARK	7.5%
BENT	22.9%	GUNNISON	13.6%	PHILLIPS	11.2%
BOULDER	11.2%	HINSDALE	8.7%	PITKIN	4.9%
BROOMFIELD	4.9%	HUERFANO	22.8%	PROWERS	22.5%
CHAFFEE	12.8%	JACKSON	13.8%	PUEBLO	18.2%
CHEYENNE	13.0%	JEFFERSON	7.2%	RIO BLANCO	9.6%
CLEAR CREEK	6.9%	KIOWA	12.9%	RIO GRANDE	17.5%
CONEJOS	23.1%	KIT CARSON	14.9%	ROUTT	6.2%
COSTILLA	27.8%	LA PLATA	11.1%	SAGUACHE	29.1%
CROWLEY	31.3%	LAKE	14.8%	SAN JUAN	16.7%
CUSTER	12.8%	LARIMER	11.5%	SAN MIGUEL	9.4%
DELTA	14.0%	LAS ANIMAS	17.4%	SEDGWICK	12.7%
DENVER	15.6%	LINCOLN	18.0%	SUMMIT	6.3%
DOLORES	13.5%	LOGAN	14.0%	TELLER	6.8%
DOUGLAS	2.9%	MESA	12.5%	WASHINGTON	12.1%
EAGLE	6.6%	MINERAL	10.1%	WELD	11.6%
		MOFFAT	10.3%	YUMA	13.5%

Source: U.S. Department of Agriculture, Economic Research Service, 2005 County—Level Poverty Rates for Colorado.

Employment

There were an estimated 115,059 persons who were unemployed in Colorado in 2006, a rate of 4.3 percent according to the Colorado Department of Labor. This number is 13.5 percent lower than 2005 when 133,082 persons were unemployed at a rate of 5.1 percent.⁹

Health Insurance

According to the Kaiser Family Foundation, 19 percent of Colorado's population was uninsured in 2006. This is slightly higher than the U.S. estimate of 18 percent. **Table 5** shows that the percentage of Colorado's population not covered by health insurance was much greater among Hispanics (38%) than among Whites (13%).¹⁰

■ **TABLE 5: Percentage of the State Non-Elderly Adults Without Health Insurance Coverage by Race and Ethnicity (Rate of Non-Elderly Uninsured by Race and Ethnicity State Data 2005–2006, U.S. 2006)**

Race/Ethnicity	Colorado Percent Uninsured		United States Percent Uninsured	
	Number	Percent	Number	Percent
White only (non-Hispanic)	383,745	13%	20,952,671	13%
Black only (non-Hispanic)	Insufficient Data		7,173,669	22%
Hispanic	333,775	38%	15,107,364	36%
Other	Insufficient Data		3,219,707	18%
Total	791,783		46,453,411	

Sources: Urban Institute and Kaiser Commission on Medicaid and the Uninsured estimates based on the Census Bureau's March 2006 and 2007 Current Population Surveys.

Mortality

According to the CDPHE Vital Statistics Program, Colorado's death rate in 2006 was 737.3 per 100,000 population with 29,413 deaths reported. During this reporting period, cancer replaced heart disease as the leading cause of death in Colorado (158.8 per 100,000). However, heart disease remained a close second (157.8 per 100,000). While Colorado reported lower rates of death than the nation, Colorado's suicide rate (14.9 per 100,000) in 2006 is expected to be higher than national rates, although these data are not currently available for 2006 from CDC.¹¹

Education

According to the Colorado Department of Education, in 2006 there was a combined public and non-public school enrollment of 850,144 persons in Colorado. There are 1,771 public schools and 379 non-public schools in 178 districts across the state. School enrollment was comprised of 61.9 percent White, 6 percent Black, 27.6 percent Hispanic, 1.2 percent American Indian, and 3.3 percent Asian. The overall dropout rate in Colorado during the 2005 to 2006 school year was 4.5 percent. Dropout rates among Whites were lowest at 2.8 percent, and Hispanics were highest at 8.2 percent. Dropout rates for Asians were 3.1 percent, Blacks were 6.6 percent, and American Indians were 6.8 percent.¹²

■ **TABLE 6: Percentage of Population 25 Years Old and Over, High School Graduates or with Bachelors Degree or Higher, 2006**

Area	Percent High School Graduate or Higher	Percent Bachelors Degree or Higher
Boulder Metropolitan Statistical Area (Boulder)	93.1%	56.1%
Colorado Springs Metropolitan Statistical Area (Colorado Springs)	91.8%	34.3%
Denver Metropolitan Statistical Area (Denver)	87.4%	35.6%
Entire State	88.0%	34.8%

Source: U.S. Census Bureau, 2006 American Community Survey.

Table 6 shows the percent of the population graduating from high school and college. Compared to other Metropolitan Statistical Areas and the state as a whole, the Boulder MSA had the highest proportion of high school and four year college graduates. The Denver MSA had a slightly higher proportion of high school and college graduates than the state as a whole.¹³

Incarcerated persons

According to data from the Colorado Department of Corrections, 21,438 persons were in the custody of Colorado Department of Corrections in 2006 (a six percent increase over 2005); 14,115 were inmates in 24 state correctional facilities in 2006; eight of the Colorado Department of Corrections facilities are located in Fremont County. The remaining 7,323 were housed in contract facilities or county jails. Colorado's incarcerated population is 10.1 percent female and 89.9 percent male. The racial ethnicity of this population is 47.4 percent White, 19.5 percent Black, 30.2 percent Hispanic, 1.9 percent American Indian, and 1.0 percent Asian.¹⁴



Epidemiological Trends in HIV and AIDS in Colorado

Summary

- By the end of 2006, an estimated 9,831 persons were living with HIV/AIDS in Colorado (an increase of six percent from 2005).
- Cases of HIV in Colorado increased 26 percent from 2002 to 2006.
- There has been an 18 percent decrease in the number of reported AIDS related deaths from 2002 to 2006.
- In Colorado, 50.5 percent of AIDS cases are White, 19.6 percent are Black and 26.5 percent are Hispanic.
- Blacks continue to be disproportionately affected by the HIV/AIDS epidemic in Colorado, representing 13.9 percent of prevalent cases and only 3.7 percent of the state's population.
- The average number of HIV cases reported among females in Colorado has increased by 17.2 percent since the beginning of the epidemic in 1987.
- The rate of HIV/AIDS among males has increased by 7.8 percent from 2002 to 2006.
- The majority of HIV cases reported among males and females are in the 30–49 age group.
- Ninety three percent of all HIV/AIDS cases are reported in urban areas.

As of December 31, 2006, a cumulative total of 8,845 cases of AIDS and 4,645 AIDS-related deaths have been reported in Colorado. An additional 6,184 cases of HIV infection have been reported. The rate of HIV infection in Colorado for adults and adolescents is 149.8 persons per 100,000 population, compared to 143.7 persons per 100,000 population for the entire U.S.¹⁵ The rate of AIDS cases in Colorado for adults and adolescents is 104.4 persons per 100,000 population, compared to 178.6 persons per 100,000 population for the entire U.S.¹⁵ Colorado ranks twenty-sixth in total cases of AIDS reported among all states and represents 0.8 percent of all reported AIDS cases.¹⁵ Colorado has had confidential name-based HIV case reporting since November 1985 and ranks twenty-second in total HIV cases reported among those states that implemented name-based reporting prior to 2006 (Colorado's cases represent one percent of HIV cases diagnosed in states with name-based reporting).¹⁵

Table 7 compares the demographic characteristics of newly diagnosed Colorado AIDS cases with U.S. AIDS cases for 2006. Persons diagnosed with AIDS in Colorado are more often male (83.5%) as compared to the U.S. (73.4%). The majority of newly diagnosed AIDS cases in Colorado are White (50.5 percent), compared to 29.7 percent of U.S. cases. Blacks represent

19.6 percent of newly diagnosed AIDS cases in Colorado, compared to 48.7 percent nationwide. Hispanics represent a higher percent of new AIDS cases in Colorado (26.5%), compared to the United States (18.8%).

■ **TABLE 7: Adult/Adolescent AIDS Cases by Gender and Race**

Race	Colorado AIDS Cases Diagnosed in 2006			Estimated U.S. AIDS Cases Diagnosed in 2006*		
	Male No. (%)	Female No. (%)	Total No. (%)	Male No. (%)	Female No. (%)	Total** No. (%)
White (non-Hispanic)	149 (55.6%)	13 (24.5%)	162 (50.5%)	9,267 (34.3%)	1,659 (16.9%)	10,926 (29.7%)
Black (non-Hispanic)	44 (16.4%)	19 (35.8%)	63 (19.6%)	11,540 (42.8%)	6,391 (65.2%)	17,930 (48.7%)
Hispanic	66 (24.6%)	19 (35.8%)	85 (26.5%)	5,388 (20.0%)	1,516 (15.5%)	6,903 (18.8%)
Asian (non-Hispanic)	6 (2.2%)	2 (3.8%)	8 (2.5%)	423 (1.6%)	95 (1.0%)	518 (1.4%)
American Indian (non-Hispanic)	3 (1.1%)	0 (0.0%)	3 (0.9%)	118 (0.4%)	37 (0.4%)	155 (0.4%)
Other (non-Hispanic)	0 (0.0%)	0 (0.0%)	0 (0.0%)	253 (0.9%)	103 (1.1%)	353 (1.0%)

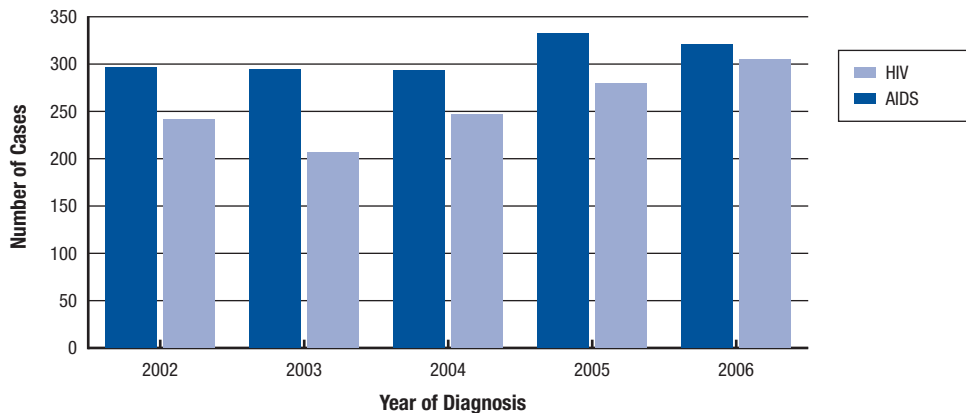
* CDC HIV/AIDS Surveillance Report, estimated number of cases and rates (per 100,000) of AIDS, by race/ethnicity, age category, and sex—50 States and District of Columbia, Vol. 18, Table 5

**Because row totals were calculated independently of the values for the sub-populations, the values in each row may not sum to the row total.

AIDS/HIV Among Adults/Adolescents in Colorado

Figure 1 illustrates diagnosed cases of HIV and AIDS between 2002 and 2006. Cases of HIV have increased 26.1 percent over the last five years, from 242 cases in 2002 to 305 in 2006. Colorado observed a 60.4 percent increase in AIDS cases from 293 diagnosed AIDS cases in 2004 to 332 diagnosed AIDS cases diagnosed in 2005. The number of AIDS cases declined again in 2006 to 321. Overall, there has been an 8.4 percent increase in the number of diagnosed AIDS cases from 2002 to 2006.

■ **FIGURE 1: Colorado AIDS and HIV by Year of Diagnosis (2000–2006)**



On the following page, **Figure 2** demonstrates the annual number of deaths among HIV and AIDS cases diagnosed in Colorado. Deaths among AIDS cases have fluctuated between 2002 and 2006, however, a 12.7 percent decline in deaths can be observed from 2005 to 2006. Overall, there has been an 18.3 percent decrease in AIDS related deaths from 2002 to 2006.

■ **FIGURE 2: Annual Deaths among Persons Diagnosed with HIV and AIDS—Colorado (2002–2006)**

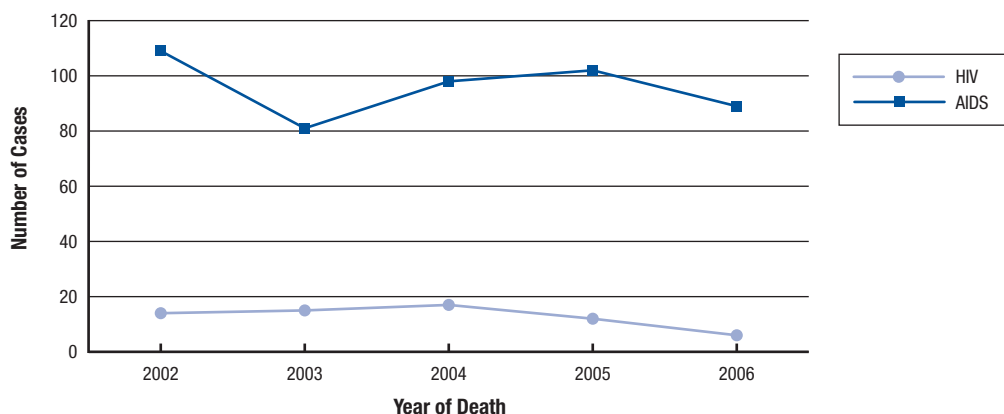


Figure 3 shows an increase in the number of persons living with either HIV or AIDS in Colorado in the last five years. The number of persons living with AIDS contributes to the increase because of improved survival for persons with HIV/AIDS who receive treatment and therefore decreasing AIDS-related deaths. By the end of 2006, an estimated 9,831 persons were living with HIV/AIDS in Colorado (an increase of 5.7 percent over 2005 when 9,300 persons were living with HIV/AIDS). The proportion of persons living with AIDS compared to those living with HIV in Colorado has remained stable during these five years, at an average of 58.7 percent living with HIV and 41.3 percent living with AIDS.

■ **FIGURE 3: Annual Number of Diagnosed Persons Living with HIV and AIDS—Colorado (2002–2006)**

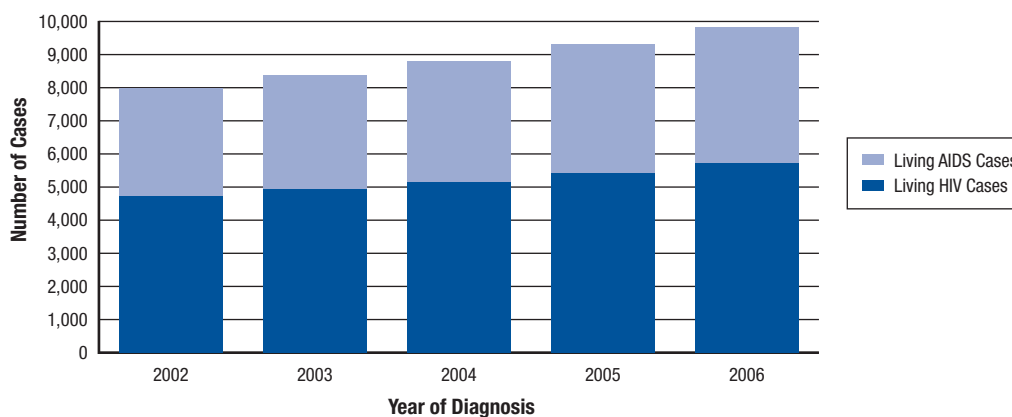


Table 8 illustrates the characteristics of persons living with HIV/AIDS. Males represent the majority (89.6%) of persons living with HIV/AIDS. Whites constitute the largest racial group living with HIV/AIDS, representing 67.4 percent of cases. Blacks continue to be disproportionately impacted by the epidemic. Although the percentage of Blacks in the total population is 3.7 percent, they represent 13.9 percent of those infected. Persons over 29 years old were more likely to be diagnosed with AIDS than those in younger age groups. MSM are the predominate risk group (64.1%) of persons living with HIV/AIDS. The majority (92.8%) of persons with HIV/AIDS live in urban areas. Urban counties include: Adams, Arapahoe, Boulder, Broomfield, Clear Creek, Denver, Douglas, El Paso, Elbert, Gilpin, Jefferson, Larimer, Mesa, Park, Pueblo, Teller and Weld.²

■ **TABLE 8: Characteristics of Persons Living with HIV and AIDS in Colorado Reported Through 12/31/06**

Characteristic	Persons living with HIV		Persons living with AIDS		Total living with either HIV or AIDS	
	Number	Percent	Number	Percent	Number	Percent
Gender						
Male	5,142	89.8%	3,668	89.3%	8,810	89.6%
Female	582	10.2%	439	10.7%	1,021	10.4%
Age Group						
<13	30	0.5%	8	0.2%	38	0.4%
13–19	141	2.5%	20	0.5%	161	1.6%
20–24	828	14.5%	132	3.2%	960	9.8%
25–29	1,329	23.2%	475	11.6%	1,804	18.4%
30–39	2,332	40.7%	1,867	45.5%	4,199	42.7%
40–49	834	14.6%	1,180	28.7%	2,014	20.5%
>49	230	4.0%	425	10.3%	655	6.7%
Race						
White (non-Hispanic)	4,024	70.3%	2,605	63.4%	6,629	67.4%
Black (non-Hispanic)	754	13.2%	608	14.8%	1,362	13.9%
Hispanic	851	14.9%	807	19.6%	1,658	16.9%
Asian (non-Hispanic)	37	0.6%	27	0.7%	64	0.7%
American Indian (non-Hispanic)	45	0.8%	38	0.9%	83	0.8%
Multiple Race (non-Hispanic)	9	0.2%	16	0.4%	25	0.3%
Hawaiian/Pacific Islander (non-Hispanic)	4	0.1%	6	0.1%	10	0.1%
Risk						
MSM	3,710	64.8%	2,587	63.0%	6,297	64.1%
IDU	461	8.1%	420	10.2%	881	9.0%
MSM/IDU	494	8.6%	379	9.2%	873	8.9%
Heterosexual Contact	421	7.4%	406	9.9%	827	8.4%
No Identified Risk	596	10.4%	269	6.5%	865	8.8%
Other	42	0.7%	46	1.1%	88	0.9%
Region						
Urban	5,383	94.0%	3,745	91.2%	9,128	92.8%
Rural	296	5.2%	328	8.0%	624	6.3%
Frontier	45	0.8%	34	0.8%	79	0.8%

HIV/AIDS by Gender

Increases in the number of persons living with HIV/AIDS (**Figure 4** on the following page) can be observed among both men and women in the last five years. In 2002, women accounted for 9.4 percent (750 females out of a total of 7,973 persons) of living cases of HIV/AIDS. As of December 31, 2006, females accounted for 1,021 cases (10.4 percent of living cases of HIV/AIDS out of a total of 9,831 persons).

■ **FIGURE 4: Cumulative Number of Diagnosed Persons Living HIV or AIDS by Gender—Colorado (2002–2006)**

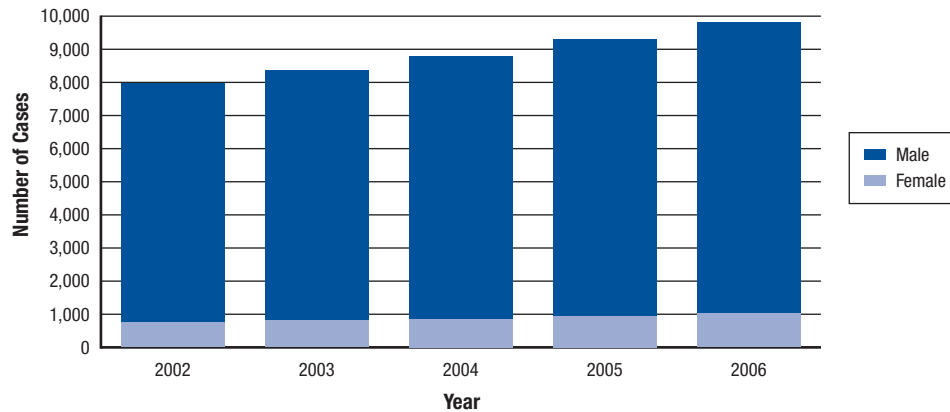


Figure 5 demonstrates the burden of reported HIV cases by gender in Colorado by illustrating the average number of reported HIV cases in five-year time periods. In the early stages of the Colorado HIV/AIDS epidemic (1987–1991), the majority of cases were reported in males. The number of HIV cases among males dramatically declined during the next 10 years (1992–2001) with an increase during the most recent five-year time frame (2002–2006). Reported cases among females have represented a much lower proportion of the HIV epidemic in Colorado. However, the number of reported cases among females has steadily increased from the onset of the epidemic to 2006. The five-year average number of reported cases has increased by 17.2 percent among women during the 20 years illustrated in **Figure 5**.

■ **FIGURE 5: Five Year Average of Reported HIV Cases by Gender—Colorado (1987–2006)**

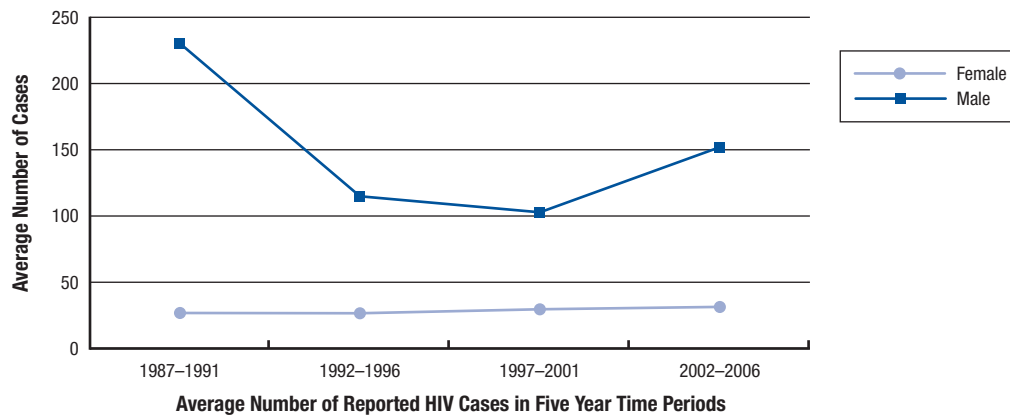
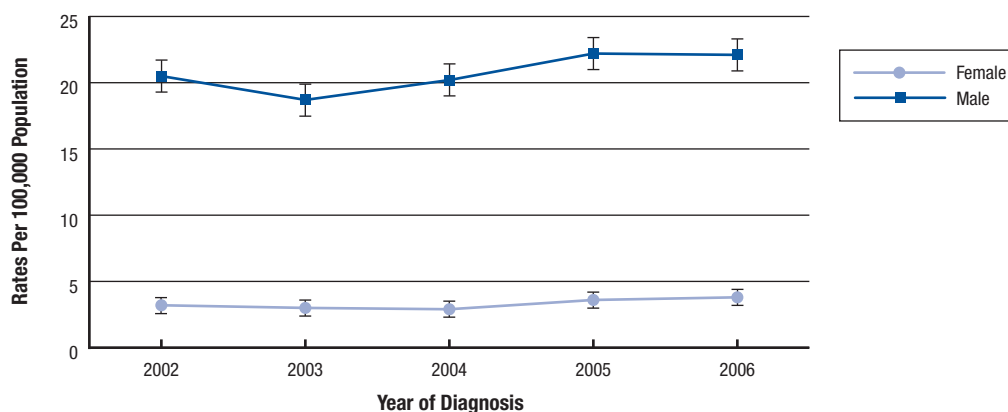


Figure 6 shows that HIV/AIDS rates per 100,000 population for males have increased by 7.8 percent between 2002 and 2006 (from a rate of 20.5 per 100,000 population to 22.1 per 100,000 population). While rates of HIV/AIDS have remained lower in females compared to males, an increase in the rate of HIV/AIDS among females occurred from 2002 through 2006. The HIV/AIDS rate per 100,000 population among females increased by 18.8 percent from 2002 through 2006 (from a rate of 3.2 per 100,000 population in 2002 to 3.8 per 100,000 population in 2006).

■ **FIGURE 6: HIV/AIDS Rate per 100,000 Population by Year of Diagnosis and Gender (with 95% Confidence Intervals)—Colorado (2002–2006)**



HIV/AIDS by Race

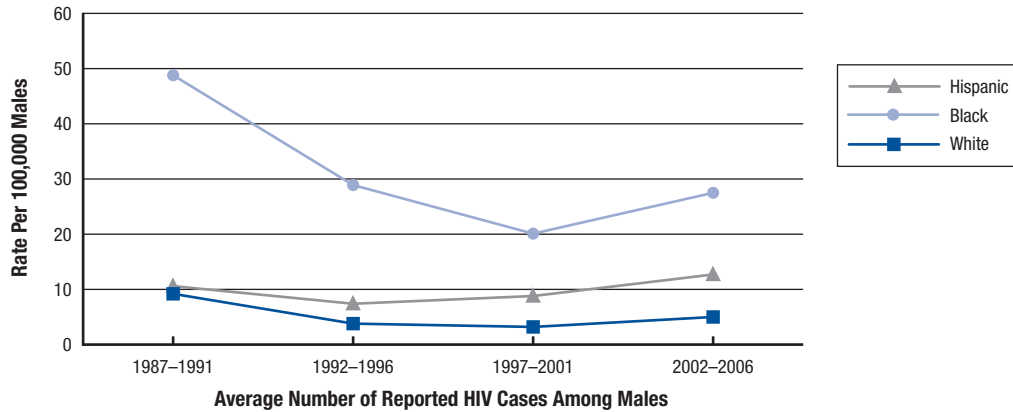
In 2006, 305 persons were newly diagnosed with HIV, 267 (87.5%) were male and 38 (12.5%) were female. By race/ethnicity, 187 (61.3%) were White, 42 (13.8%) were Black, 67 (22.0%) were Hispanic, five (1.6%) were Asian, and four (1.3%) were American Indian (**Table 9**). Females had a higher proportion of newly diagnosed HIV cases among Non-Hispanic Blacks (34.2%).

■ **TABLE 9: Colorado HIV Cases Diagnosed in 2006**

Race	Males		Females		Total	
	Number	Percent	Number	Percent	Number	Percent
White (non-Hispanic)	172	64.4%	15	39.5%	187	61.3%
Black (non-Hispanic)	29	10.9%	13	34.2%	42	13.8%
Hispanic	58	21.7%	9	23.7%	67	22.0%
Asian (non-Hispanic)	5	1.9%	0	0.0%	5	1.6%
American Indian (non-Hispanic)	3	1.1%	1	2.6%	4	1.3%
Total	267		38		305	

On the following page, **Figures 7 and 8** demonstrate the burden of HIV by gender on communities of color in Colorado by illustrating the average number of reported HIV cases in five-year periods. The average rate among Black males from 2002 to 2006 (27.5 per 100,000 population) is five and a half times that of White males (5.0 per 100,000 population). The five-year average rate of reported HIV cases among Hispanic males from 2002 to 2006 (12.7 per 100,000 population) is over two times that of White males. Among females, the racial differences are even more profound. The average rate among Black females for 2002 to 2006 is 16.0 per 100,000 population. This is 22 times higher than the rate observed in White females (0.7 per 100,000 population). The average rate among Hispanic females was 2.1 per 100,000 population (three times higher than observed among White females).

■ **FIGURE 7: Average Annual HIV Case Rates by Race Among Males—Colorado (1987–2006)**



■ **FIGURE 8: Average Annual HIV Case Rates by Race Among Females—Colorado (1987–2006)**

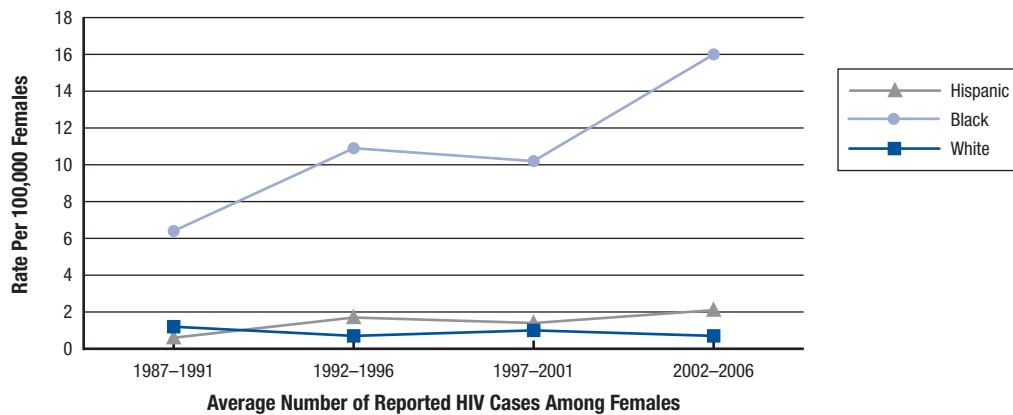
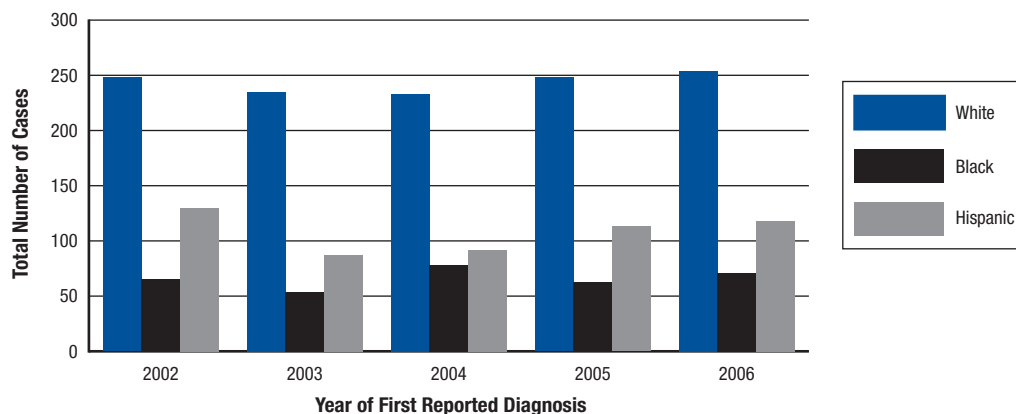


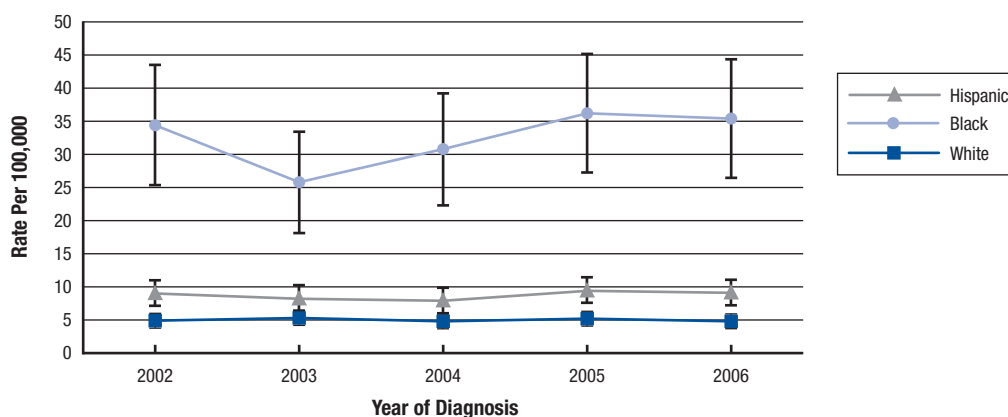
Figure 9 illustrates the total number of HIV/AIDS cases by year of first reported diagnosis and race. Cases reported among Whites have exhibited a moderate increase from 2004 (n=233) to 2006 (n=254), with an overall increase of reported HIV/AIDS cases of 2.4 percent from 2002 to 2006. Communities of color have seen much more fluctuation in number of cases during this same period. The number of HIV/AIDS cases reported among Blacks declined from 65 cases in 2002 to 54 cases in 2003. However, the number of reported HIV/AIDS cases among Blacks has continued to increase since 2003. The total number of reported HIV/AIDS cases has increased by 9.2 percent in Blacks from 2002 through 2006. During this reporting period, the number of HIV/AIDS cases among Hispanics peaked in 2002 at 130. While the total number of reported HIV/AIDS cases among Hispanics has remained below the reported number in 2002, reported case totals have steadily increased from 2003 (87) to 2006 (118).

■ **FIGURE 9: Total Number of Reported HIV/AIDS Cases by Year of First Diagnosis and Race—Colorado (2002–2006)**



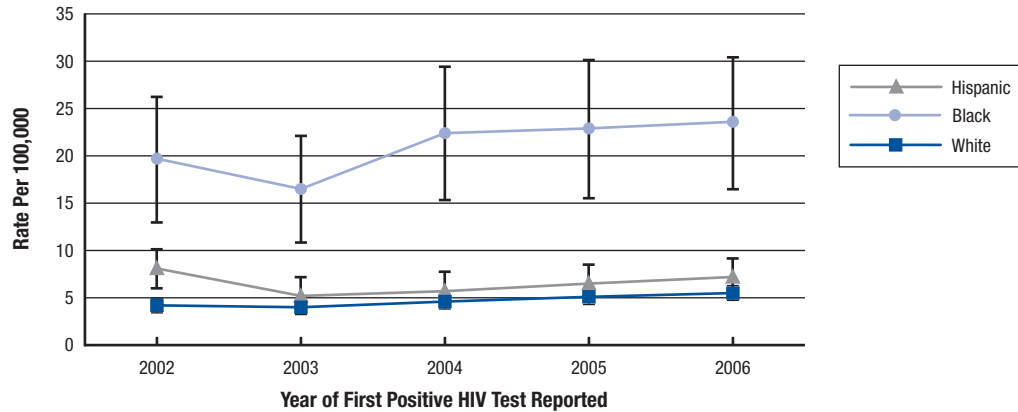
Although Whites represent the largest number of both AIDS and HIV cases, **Figures 10 and 11** illustrate that when population rates are compared, Blacks, and to a lesser degree, Hispanics, are disproportionately affected by this epidemic. Among all racial groups, the number of reported AIDS diagnoses increased from 2002 to 2006; Whites showed a 12.5 percent increase, Blacks showed an 18.1 percent increase and Hispanics showed an 8.0 percent increase during this time.

■ **FIGURE 10: AIDS Rate per 100,000 Population by Race (with 95% Confidence Intervals)—Colorado (2002–2006)**



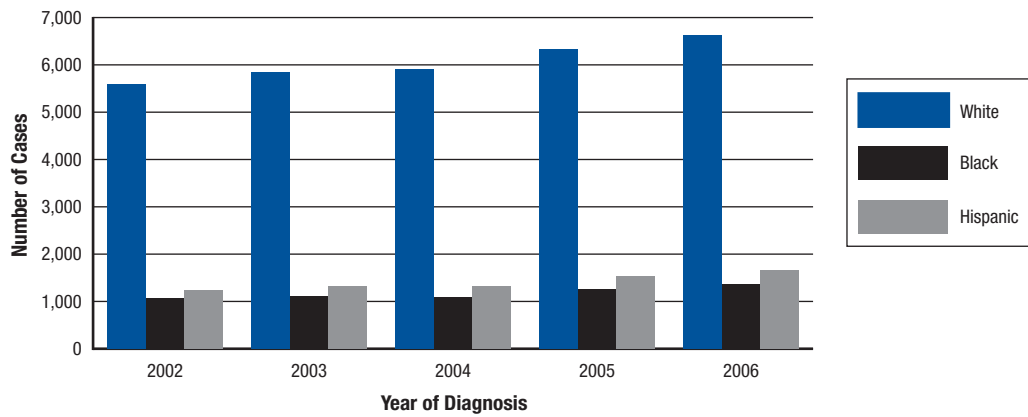
On the following page, **Figure 11** demonstrates trends in population rates in persons newly reported with HIV. Again, communities of color, particularly Blacks, are disproportionately affected; with Black rates (23.6 per 100,000 in 2006) four times greater than those of Whites (5.5 per 100,000 in 2006). Hispanic rates (7.2 per 100,000) are also higher than those of Whites. Although Whites are not as disproportionately affected as Blacks, rates among Whites have increased from 2002 (4.2 per 100,000) to 2006 (5.5 per 100,000). Blacks have also seen an increase from 19.7 per 100,000 in 2002 to 23.6 per 100,000 in 2006. Rates of newly reported HIV cases among Hispanics was greatest in 2002 (8.1 per 100,000), but have begun to increase from the lowest reported rate of 5.2 per 100,000 in 2003 to 7.2 per 100,000 in 2006.

■ **FIGURE 11: Rate per 100,000 Population of HIV Cases by Race (with 95% Confidence Intervals)—Colorado (2002–2006)**



The number of persons living with HIV/AIDS by race is illustrated in **Figure 12**. Whites constitute the largest number and percentage of HIV/AIDS cases (6,629 out of 9,831 or 67.4 percent in 2006). Blacks represent 1,362 HIV/AIDS cases or 13.8 percent and Hispanics represent 1,658 HIV/AIDS cases or 16.9 percent of all reported living cases.

■ **FIGURE 12: Living HIV/AIDS Cases by Race Reported—Colorado (2002–2006)**



Although not graphically illustrated, the percent of foreign-born persons has been increasing among communities of color. Among HIV cases newly diagnosed in 2006, 34.1 percent of Hispanics were foreign-born; the majority of these persons were born in Mexico. Among Blacks, 27.1 percent were foreign-born; their primary place of origin was the continent of Africa. Cultural and language barriers can make these groups a challenge for prevention and care providers.

HIV/AIDS by Risk

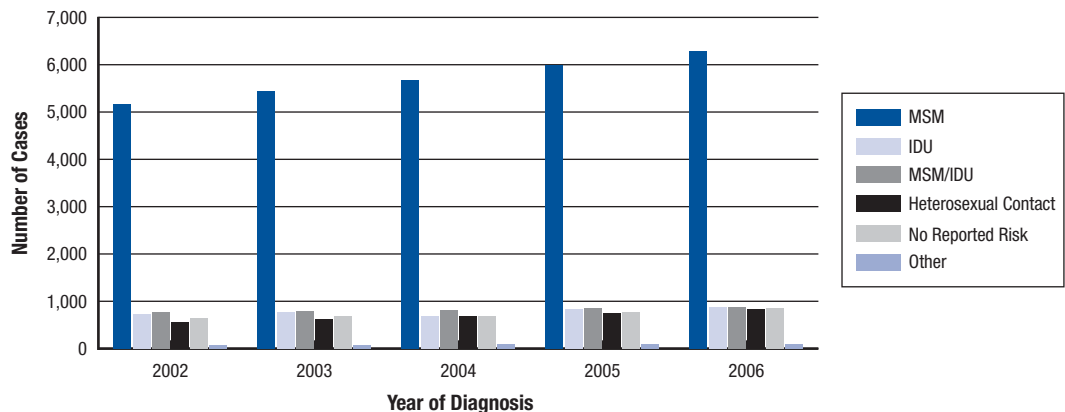
Table 10 displays HIV cases diagnosed in 2006 by risk categories and gender. One hundred and eighty-eight males (70.4%) were classified as being infected through having sex with men; nine males (3.4%) through IDU, 12 males (4.5%) through heterosexual contact, and 44 males (16.5%) had no identified risk. Heterosexual contact was the largest risk factor for females in 2006, accounting for 50 percent of the cases. Females also had a higher percentage (21.1%) of no identified risk compared to males.

■ **TABLE 10: Colorado HIV Cases by Risk and Gender, Diagnosed 2006**

Risk	Male		Female		Total	
	Number	Percent	Number	Percent	Number	Percent
MSM	188	70.4%	0	0.0%	188	61.6%
IDU	9	3.4%	11	28.9%	20	6.6%
MSM/IDU	14	5.2%	0	0.0%	14	4.6%
Heterosexual Contact	12	4.5%	19	50.0%	31	10.2%
No Identified Risk	44	16.5%	8	21.1%	52	17%
Total	267		38		305	

In **Figure 13**, the majority of cases of persons living with HIV and AIDS in Colorado are MSM (6,297 cases representing 64.1 percent); MSM/IDU constitute another 8.9 percent (873 cases) of HIV cases who were living in 2006. The number of MSM cases increased by 21.7 percent from 2002 to 2006, while MSM/IDU increased by 13.1 percent in the same time period. Injection drug users constitute nine percent (881 cases) of persons living with HIV/AIDS in 2006 and have increased by 20.2 percent over the past five years. Heterosexual contact is a growing risk group (increasing 45.3 percent from 2002 to 2006) but is far behind all other groups at 8.4 percent (827 cases) of persons living with HIV/AIDS by the end of 2006. Persons with no identified risk also increased substantially from 2002 to 2006, a 35.4 percent increase with 865 cases living in 2006.

■ **FIGURE 13: Living HIV/AIDS Cases by Risk Reported—Colorado (2002–2006)**



HIV by Age

Table 11 demonstrates the 305 cases of newly diagnosed HIV by age group and gender. More males (18.7%) are diagnosed with HIV among the younger age groups of 13–24 than females (13.2%). Males had a higher percentage of cases in the 20–24 age group (16.1 percent male versus 10.5 percent female). However, the majority of both female (60.5%) and male (59.2%) cases are distributed among cases identified in the 30–49 age range.

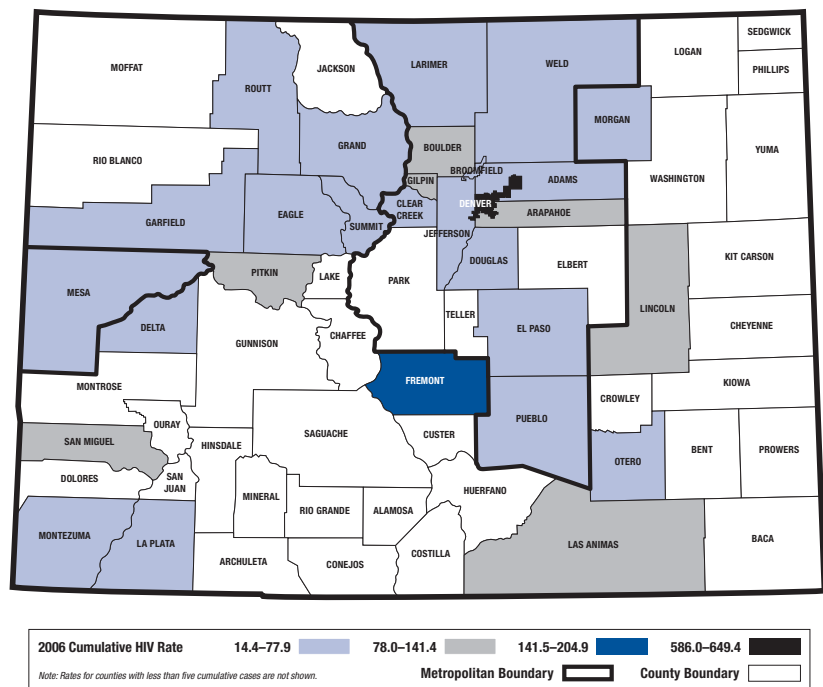
■ **TABLE 11: Colorado HIV Cases by Age Group and Gender, Diagnosed 2006**

Age Group	Male		Female		Total	
	Number	Percent	Number	Percent	Number	Percent
<13	1	0.4%	0	0.0%	1	0.3%
13–19	7	2.6%	1	2.6%	8	2.6%
20–24	43	16.1%	4	10.5%	47	15.4%
25–29	42	15.7%	7	18.4%	49	16.1%
30–39	90	33.7%	12	31.6%	102	33.4%
40–49	68	25.5%	11	28.9%	79	25.9%
>49	16	6.0%	3	7.9%	19	6.2%
Total	267		38		305	

Geographical Characteristics of HIV

Figure 14 demonstrates that the HIV epidemic in Colorado is concentrated in the Front Range counties (and population centers) of Adams, Arapahoe, Boulder, Broomfield, Denver, Douglas, El Paso and Jefferson. These counties represent 90.3 percent of HIV/AIDS cases and 67.6 percent of Colorado’s population. This map shows that Fremont County has a disproportionate share of HIV cases because it is home to the Colorado state correctional facility that houses virtually all HIV infected state prisoners. Because these patients are incarcerated, they do not place a burden for HIV care or prevention services on the surrounding rural community. Current statistics and county level data on HIV/AIDS can be obtained by accessing the CDPHE web site at <http://www.cdphe.state.co.us/dc/HIVandSTD/index.html>. Counties with fewer than five reported cases are not included on this map.

■ **FIGURE 14: Living HIV/AIDS Rate per 100,000 Population by County of Residence at Time of Diagnosis—Colorado (2002–2006)**



HIV Related Mortality

Table 12a illustrates the leading causes of death in males aged 25–44 years in 2006. Although HIV was the leading cause of death among young adult males (surpassing injuries) in 1992, it was the sixth leading cause of death in 2006. The five leading causes of death in males in this age group are accidents, suicide, heart disease, malignant neoplasm and homicide, in order of ranking.

■ **TABLE 12a: Ten Leading Causes of Death in Males Aged 25–44 Years in Order of Ranking—Colorado (2006)**

Cause of Death	Rank	Rate	Number
Accidents	1	51.9	372
Intentional Self-harm (Suicide)	2	28.3	202
Diseases of the Heart	3	15.5	111
Malignant Neoplasms	4	14.5	104
Assault (Homicide)	5	7.5	54
HIV	6	5.2	37
Chronic Liver Disease and Cirrhosis	7	3.6	26
Diabetes Mellitus	8	2.5	18
Cerebrovascular Diseases	9	1.7	12
Influenza and Pneumonia	10	1.1	8
Congenital Malformations, Deformations, and Chromosomal Abnormalities	10	1.1	8

Table 12b illustrates the leading causes of death in females aged 25–44 years in 2006. In contrast to causes of death in males, HIV is not among the ten leading causes of death among females in Colorado within this age group. The five leading causes of death for females aged 25–44 years are accidents, cancer, suicide, heart disease, and liver disease, in order of ranking.

■ **TABLE 12b: Ten Leading Causes of Death in Females Aged 25–44 Years in Order of Ranking—Colorado (2006)**

Cause of Death	Rank	Rate	Number
Accidents	1	21.3	143
Malignant Neoplasms	2	16.5	111
Intentional Self-harm (Suicide)	3	10.9	73
Diseases of the Heart	4	6.4	43
Chronic Liver Disease and Cirrhosis	5	4.0	27
Cerebrovascular Diseases	6	2.8	19
Assault (Homicide)	7	2.5	17
Influenza and Pneumonia	8	1.6	11
Diabetes Mellitus	9	1.3	9
Chronic Lower Respiratory Diseases	10	1.0	7



Demographic Characteristics of HIV and AIDS in High Risk Populations

Summary

Men Who Have Sex With Men Transmission

- The Majority of Colorado's HIV/AIDS cases can be attributed to MSM risk behaviors (64.1 percent of all cases).
- The number of MSM HIV/AIDS cases has continued to increase among Whites, Blacks and Hispanics.
- HIV/AIDS cases diagnosed for MSM aged 25–29 years have increased by 30.8 percent in the last five years.
- The percentage of rural/frontier cases has increased from 4.7 percent in the earliest stages of the AIDS epidemic (1987–1989) to 6.3 percent of reported HIV cases more recently (2002–2006).

Injecting Drug Use Transmission

- IDU and MSM/IDU HIV/AIDS cases make up 17.9 percent of all Colorado cases.
- Seventy-eight percent of IDU-attributed HIV/AIDS cases are reported among males.
- Whites make up 49.7 percent of IDU HIV/AIDS cases, while Blacks make up 25.8 percent, and Hispanics make up 23.8 percent of IDU cases.
- While the number of IDU-attributed HIV/AIDS cases in Blacks and Hispanics are decreasing, Whites experienced a 62.5 percent increase in IDU cases from 2002 to 2006.
- IDU related cases of HIV/AIDS are most commonly diagnosed in the 40–49 age group.
- The overall percent of HIV positive cases co-infected with HCV C is 14 percent.

Heterosexual Transmission

- Heterosexual HIV transmission has increased from 7.0 percent in 2004 to 8.4 percent in 2006.
- Females represent 61.3 percent of heterosexually transmitted HIV/AIDS cases.
- Blacks are more affected by heterosexual transmission than other racial categories, representing 45.2 percent of cases diagnosed in 2006.
- Heterosexual transmission of HIV is most commonly diagnosed in those persons aged 30–39 years (35.5%).

Men Who Have Sex With Men

Estimates of MSM in Colorado

According to the Colorado State Demographer's Office, there are 1,703,869 males in Colorado between the ages of 15–64 years, which is the age range when persons are most sexually active.¹⁶ A search of the literature¹⁷ indicates that the percentage of MSM in the U.S. population may range from 2.1–10.1 percent, with the mostly likely percentage of 2.9. This would mean that the number of MSM in Colorado's population could be estimated at 49,412 persons, although the range is broad (35,781–172,091).

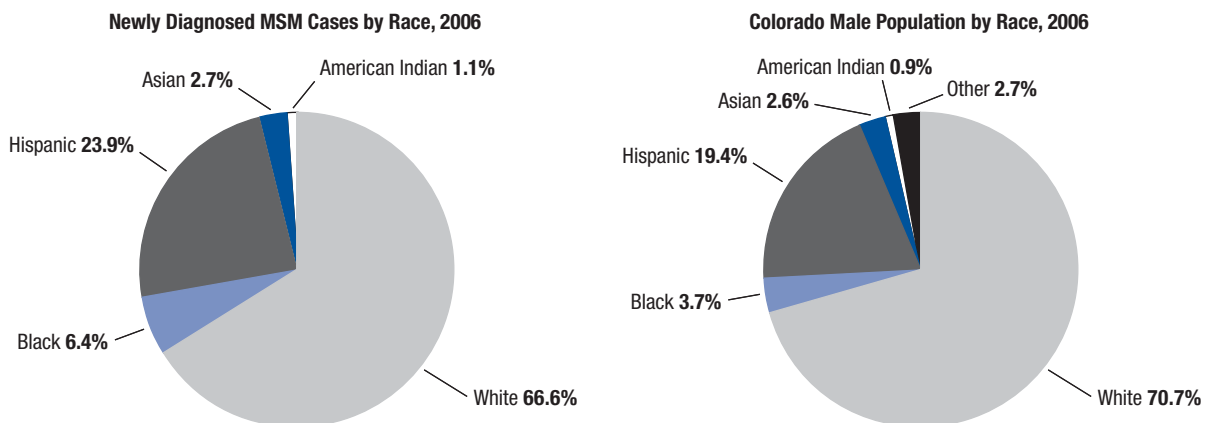
Proportion of the Epidemic Among MSM

The majority of persons living with HIV or AIDS in Colorado are MSM (64.1 percent or 6,297 cases). All other modes of acquisition represent a much smaller proportion than this group. MSM behavior hierarchically presents the greatest risk of acquiring HIV in Colorado. Men who report both sex with men and IDU represent 8.9 percent (873 cases) of the total. Combined with MSM, these two groups account for 73 percent of the epidemic in Colorado.

Racial/Ethnic Trends Among MSM

As **Figure 15** demonstrates, Blacks are over represented in the HIV epidemic among MSM; they account for 3.7 percent of Colorado's population but 6.4 percent of recently diagnosed HIV cases in the MSM group during 2006. Hispanics are also over represented (23.9 percent of newly diagnosed HIV cases) for their proportion of the population (19.4%). Whites are slightly under represented (66.6 percent of newly diagnosed HIV cases) for their proportion of the population (70.7%).

■ **FIGURE 15: HIV Positive MSM by Race Reported, Compared to Male Population—Colorado (2006)**



On the following page, **Figure 16** illustrates trends over a five-year time period in the number of newly identified HIV positive cases among White, Black and Hispanic MSM. The number of newly diagnosed cases has increased among all three racial categories since 2002. However, Black MSM accounted for the greatest increase of newly identified cases from 2002 (n=5) to 2006 (n=12), representing a 140 percent increase during this time frame. However, it should be noted that newly identified HIV cases among Black MSM decreased by 25 percent from 2005 to 2006. It is important to recognize that with small numbers, percentages and rates change significantly with relatively slight changes. Hispanic

MSM show the greatest percent increase, overall during the one year time period of 2005 to 2006 (87.5 percent). Hispanic MSM cases increased in 2006 (n=45) from 2005 (n=24). The total number of newly identified cases among White MSM also increased from 2002 to 2006 by 36.3 percent. The greatest increase among White MSM was observed from 2003 (n=97) to 2004 (n=117), a 20.6 percent increase during that one-year time frame.

■ **FIGURE 16: Number of Newly Identified HIV Cases Among MSM by Year of First Positive Test and Race—Colorado (2002–2006)**

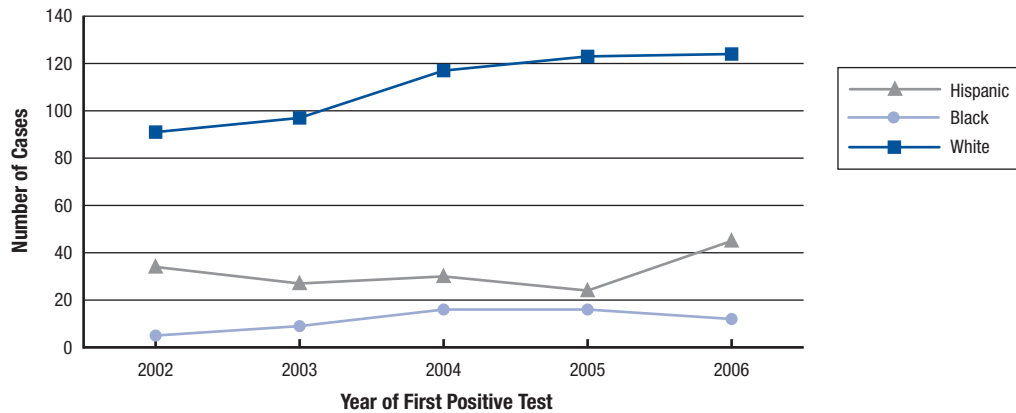
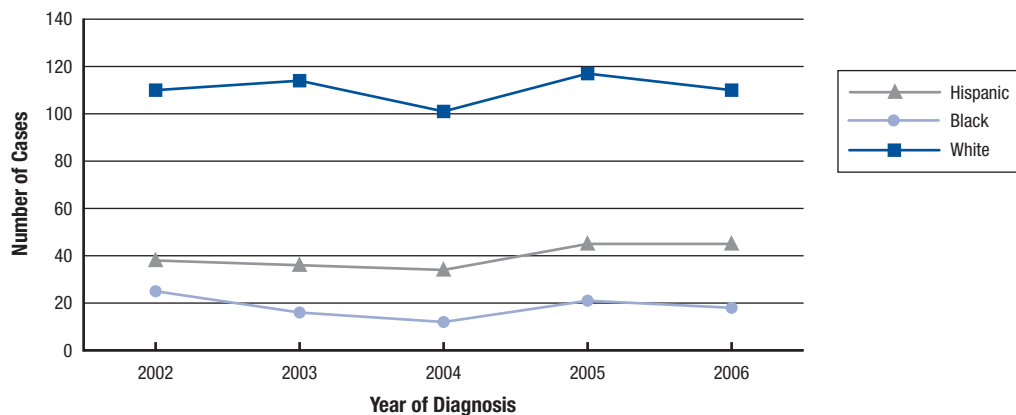


Figure 17 shows trends over a five-year period of time, 2002 to 2006 in newly diagnosed AIDS cases among MSM by racial category. Overall trends indicate the number of reported AIDS cases among White MSM has remained unchanged from 2002 (n=110) to 2006 (n=110). Trends among Black MSM demonstrate a decrease of AIDS cases from 2002 (n=25) to 2006 (n=18) of 28 percent. Finally, trends among Hispanic MSM indicate an increase in the number of reported AIDS cases from 2002 (n=38) to 2006 (n=45) of 18.4 percent.

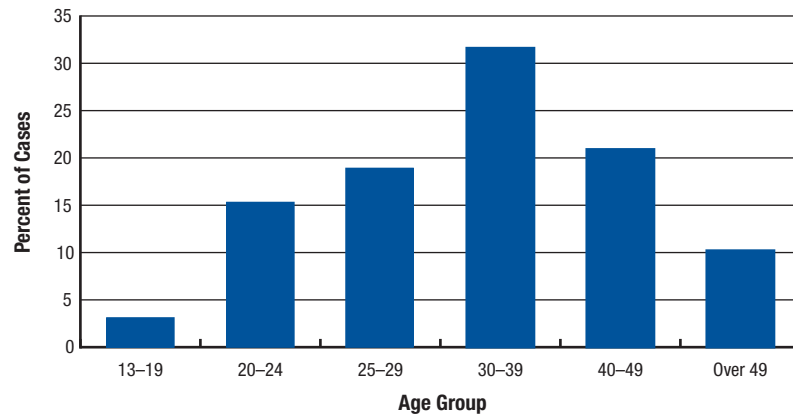
■ **FIGURE 17: Number of Newly Diagnosed AIDS Cases Among MSM by Year of Diagnosis and Race—Colorado (2002–2006)**



Age Trends Among MSM

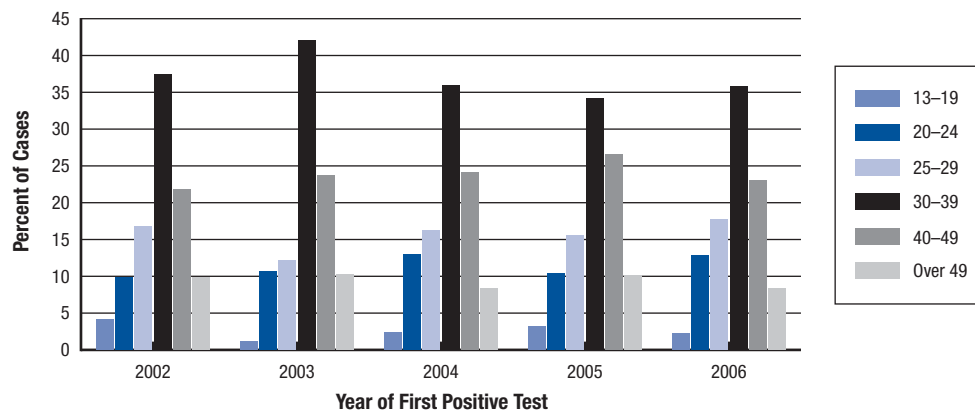
Figure 18 depicts the percentage of newly diagnosed HIV cases among MSM by age. In Colorado, 31.6 percent of the HIV epidemic is found among the 30–39 year old group, which represents 15.3 percent of the male population. Men aged 40–49 years make up 20.9 percent of recent HIV cases and are 15.8 percent of the male population. Young men aged 20–29 years are over represented; they account for 14.4 percent of the male population but account for 34.2 percent of the epidemic. Teenagers (13–19 years old) make up 10.3 percent of Colorado’s population; yet represent only 3.1 percent of the epidemic.

■ **FIGURE 18. Percent of MSM HIV Cases by Age Group—Colorado (2006)**

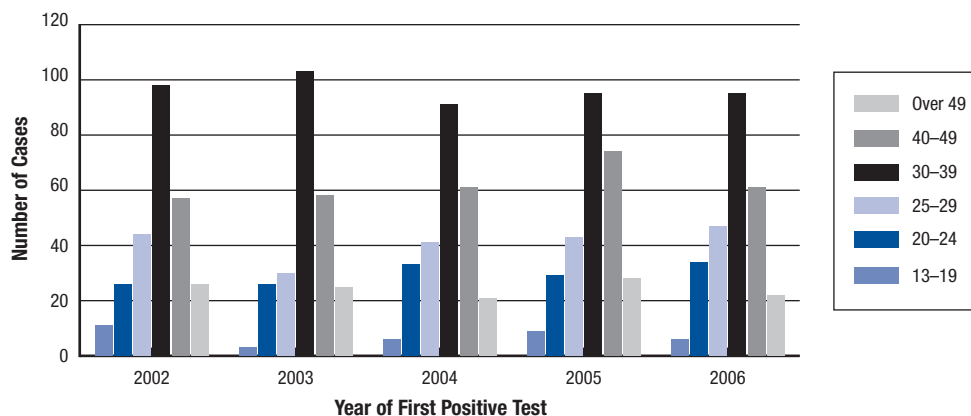


Figures **Figures 19 and 20** on the following page illustrate the number and proportion of HIV and AIDS cases diagnosed between 2002 and 2006 among MSM by age. **Figure 19** shows the proportion of positive HIV tests by age group and **Figure 20** shows the actual number of cases newly reported for each age group in 2006. HIV/AIDS cases diagnosed in MSM aged 25–29 years have increased by 30.8 percent in the last five years. However, cases within the 30–39 year old age group have decreased by 3.1 percent from 2002 to 2006. The largest decrease can be observed in the 13–19 year old age group, with a decline in reported cases of 45.5 percent from 2002 to 2006.

■ **FIGURE 19. Percentage of MSM with HIV/AIDS by Year of First Positive Test and Age Reported—Colorado (2002–2006)**



■ FIGURE 20. Number of MSM with HIV/AIDS by Year of First Positive Test and Age Reported—Colorado (2002–2006)



HIV in MSM by Region

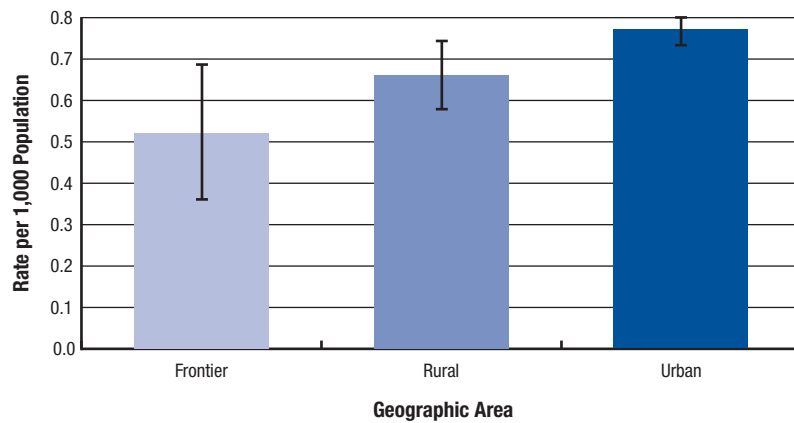
The HIV epidemic in Colorado among MSM is clearly centered in urban Colorado. Those counties defined by the Colorado Rural Health Center as urban include; Adams, Arapahoe, Boulder, Broomfield, Clear Creek, Denver, Douglas, El Paso, Elbert, Gilpin, Jefferson, Larimer, Mesa, Park, Teller and Weld counties.² Throughout the entire HIV/AIDS epidemic, over 90 percent of MSM cases have continued to reside in urban areas of Colorado. As a result, HIV/AIDS cases have remained relatively low in rural/frontier Colorado. While not graphically represented, the percentage of rural/frontier cases has increased from 4.7 percent in the earliest stages of the AIDS epidemic (1987 to 1989) to 6.3 percent of reported HIV cases from 2002 to 2006.

Injecting Drug Use

Estimates of IDU in Colorado

Population based estimates of IDU can be difficult to calculate and may be inaccurate. However, in the late 1990s the Colorado Department of Human Services, Alcohol and Drug Abuse Division, calculated an estimated 28,320 persons who have ever injected drugs during their lifetime in Colorado. Since this estimate was published, the Alcohol and Drug Abuse Division has not calculated another statewide estimate, but rather uses the proportion of IDUs in substance abuse treatment to characterize this population. In 2006, the Alcohol and Drug Abuse Division reported that 2,409 IDUs were in substance abuse programs statewide. Of these, 63.1 percent were male and 36.9 percent were female. The racial and ethnic break down of IDUs in substance abuse treatment programs in 2006 were; 78.4 percent White, 14.8 percent Hispanic, 3.4 percent Black, 2.6 percent American Indian/Alaska Native, 0.3 percent Asian/Pacific Islander, and 0.6 percent Non-Hispanic other. **Figure 21** shows the geographic distribution of persons who have injected drugs during their lifetime. In Colorado, urban areas have the highest amount of IDUs in substance abuse treatment programs (88.2 percent).

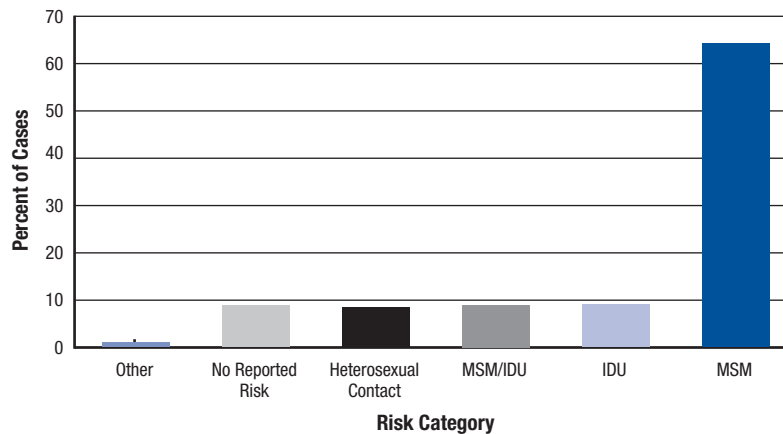
■ **FIGURE 21. Rate per 1,000 Population of Persons in Substance Abuse Treatment Programs due to IDU by Geographic Area (with 95% Confidence Intervals)—Colorado (2006)**



Proportion of Epidemic Among IDU

Through December 31, 2006, a cumulative total of 1,754 living cases of HIV/AIDS associated with IDU (either IDU alone reported by the patient, reported MSM/IDU, or sex with an IDU). Of these, 78.7 percent were reported in men and 21.3 percent were reported in women. **Figure 22** shows the proportion of the epidemic by risk group. IDU and MSM/IDU comprise 17.9 percent of the total HIV/AIDS cases reported in Colorado.

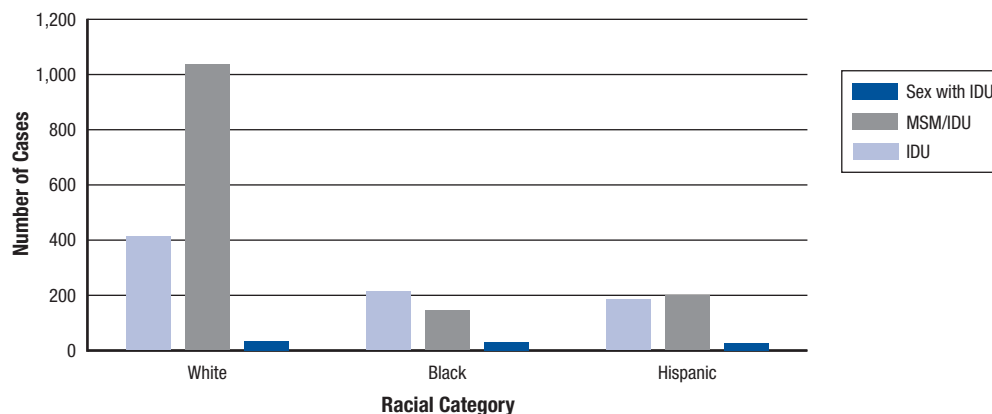
■ **FIGURE 22. HIV/AIDS Cases by Risk Category—Colorado (1987–2006)**



Racial/Ethnic Trends Among IDU

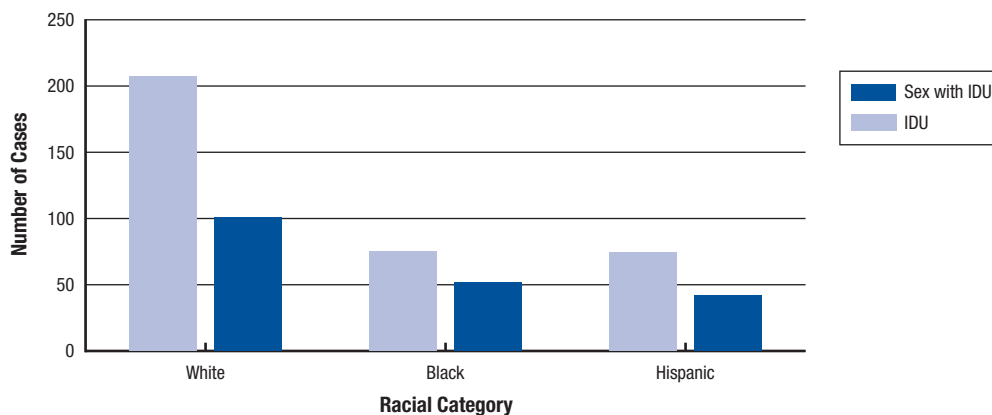
The following two graphs illustrate the impact of IDU risk behaviors in both adult/adolescent males and females. Among males, 2,321 cases of HIV or AIDS were related to IDU, either through IDU, MSM/IDU or heterosexual contact to an IDU. On the following page, **Figure 23** illustrates that among the 825 males with HIV or AIDS whose only risk is IDU, Whites account for 410 (49.7%) cases cumulatively, Blacks for 213 (25.8%) cases, and Hispanics for 196 (23.8%) cases. Among males who are MSM/IDU, the impact on communities of color is less profound. Of the 1,406 cases, White males account for the overwhelming majority of these cases (1,035 or 73.6%), Blacks for 143 cases (10.2%), and Hispanics for 196 (13.9%) cases. For the 90 men who acquired HIV through heterosexual contact with an IDU, there are 32 (35.6%) Whites, 30 (33.3%) Blacks, and 27 (30.0%) Hispanics reported.

■ **FIGURE 23. Cumulative IDU-Associated HIV/AIDS Cases in Males—Colorado (1987–2006)**



Among females, the number of IDU-related HIV or AIDS cases (575) is smaller than for males, **Figure 24**. Three hundred seventy-four cases of HIV or AIDS in females are directly related to IDU. Whites account for 207 (55.3%), Blacks account for 75 (20.1%) cases, and Hispanics constitute 74 (19.8%). The number of cases of females who acquired their infection as a result of heterosexual contact with an IDU (201 total cases) is substantially higher for females than for males in all racial/ethnic groups. White females comprise 50.2 percent (101 cases), Black females represent 25.9 percent (52 cases), and Hispanic females comprise 20.9 percent (42 cases) of this group.

■ **FIGURE 24. Cumulative IDU-Associated HIV/AIDS in Females—Colorado (1987–2006)**



Although not graphically illustrated, of the cumulative confirmed pediatric HIV/AIDS cases in Colorado, 27.9 percent were associated with IDU, because the mother reported a history of IDU, and 19.4 percent because the mother reported sexual contact with an IDU.

■ **FIGURE 25. Newly Identified IDU HIV Cases by Race Reported—Colorado (2006)**

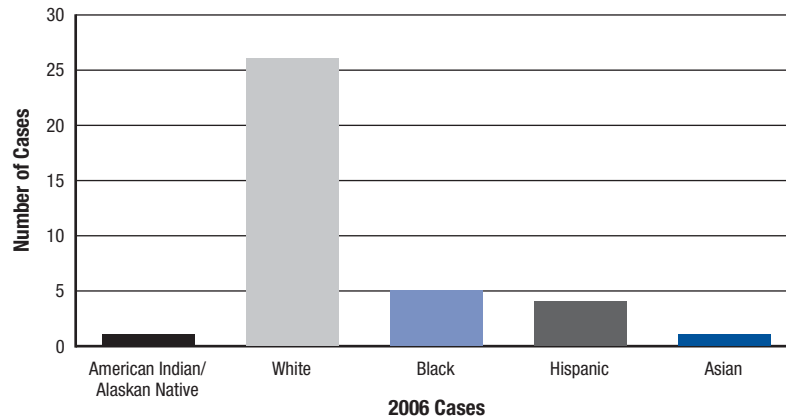
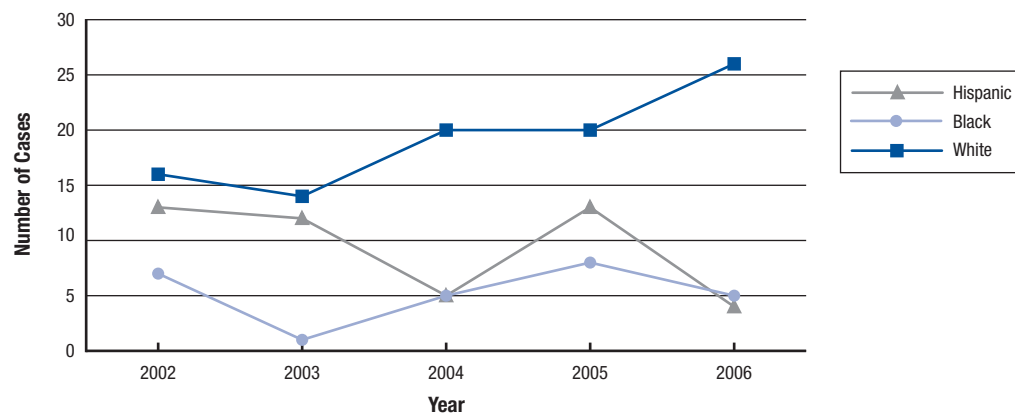


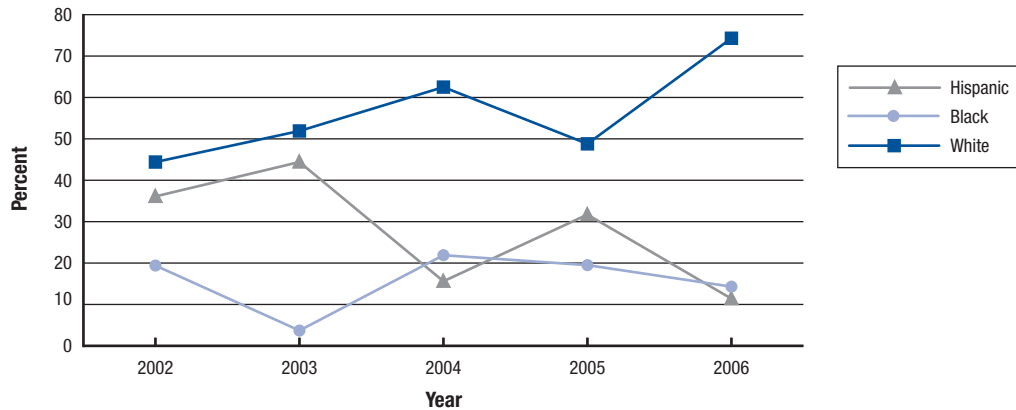
Figure 25 shows the 37 HIV cases diagnosed in 2006 among persons, who report IDU only, by race/ethnicity. Comprising 29.7 percent of new IDU HIV cases, communities of color are over-represented compared to their proportion of the state’s population (29.3%). This is particularly true among Blacks, which account for approximately 3.7 percent of Colorado population, but represent 13.5 percent of newly identified IDU HIV cases.

Figures 26 and 27 show the number and percent of new HIV/AIDS cases among IDU by race/ethnicity. Reported cases diagnosed in 2002 through 2006 demonstrate an increase in the number of reported cases among Whites and a decrease among Blacks and Hispanics. A 62.5 percent increase in the number of reported HIV/AIDS cases can be observed from 2002 (n=16) to 2006 (n=26) among White IDU. Conversely, the number of reported HIV/AIDS cases reported among Hispanics has decreased from 13 cases in 2002 to four cases in 2006. This difference represents a 69.2 percent decrease during this five-year time frame among Hispanic IDUs. A decrease in the reported number of Black IDU cases can also be observed from 2002 to 2006. The number of cases reported among Black IDUs dropped from 2002 (n=7) to 2006 (n=5), for a decrease of 28.6 percent during this time frame.

■ **FIGURE 26. Number of IDUs with HIV/AIDS by Year of First Positive Test and Race—Colorado (2002–2006)**



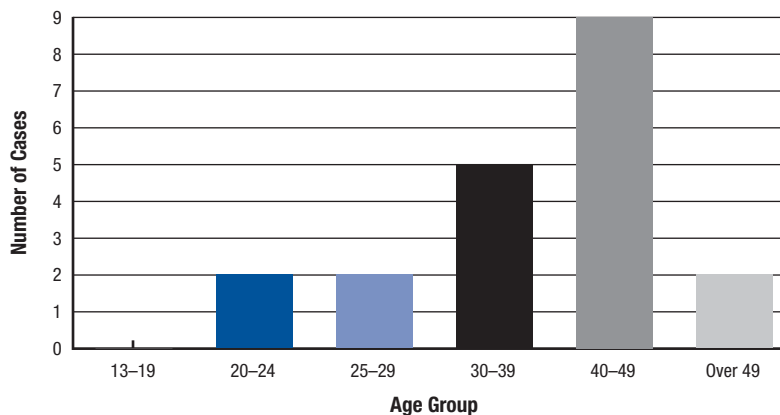
■ **FIGURE 27. Percentage of IDUs with HIV/AIDS by Year of First Positive Test and Race Reported—Colorado (2002–2006)**



Age Trends Among IDU

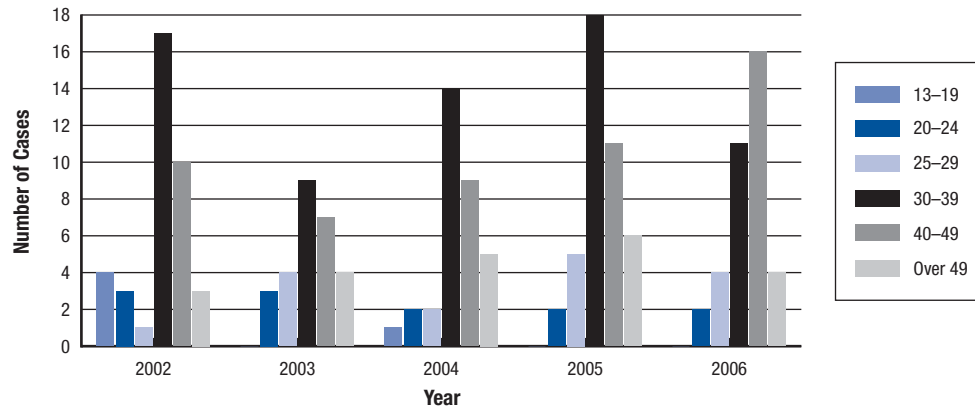
Figure 28 shows recently diagnosed HIV by age group. HIV is clearly an epidemic among older IDUs (between the ages of 30–49 years) who comprise 70 percent of cases diagnosed in 2006, but account for only 30.5 percent of Colorado’s population. HIV cases among the 20–29 year old age group and those over 40 years represent 30.0 percent (6 cases). No IDU-attributed cases were reported in 2006 among Adolescents (13–19 years old).

■ **FIGURE 28. IDU HIV Diagnosed Positive by Age Reported—Colorado (2002–2006)**

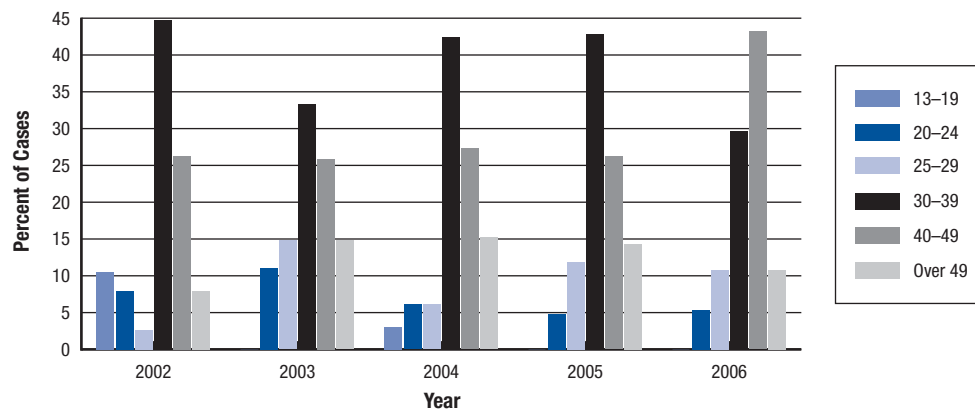


The following two graphs (**Figures 29 and 30**) illustrate newly diagnosed cases of HIV and AIDS for a five-year period from 2002 through 2006 among IDU. When reviewing cases of HIV and AIDS, those persons in the 40–49 year old age group show an increased number of cases reported from 2003 (n=7) to 2006 (n=16). All other age groups seem to be on the decline or remaining stable during this five year time period among IDU. However, it should be noted that numbers of IDU attributed HIV/AIDS cases remain small and caution should be exercised when interpreting these numbers.

■ **FIGURE 29. Number of IDUs with HIV/AIDS by Year if First Positive Test and Age Reported—Colorado (2002–2006)**



■ **FIGURE 30. Percentage of IDUs with HIV/AIDS by Year of First Positive Test and Age Reported—Colorado (2002–2006)**



Comparisons of HIV Among IDU by Gender

Figure 31 illustrates the number of reported HIV and AIDS cases among IDUs by gender from 2002 through 2006. The number of male IDUs decreased from 27 cases in 2002 to 25 cases in 2006. However, female cases increased from 11 cases reported in 2002 to 12 cases in 2006. By gender the characteristics of the epidemic among IDUs since 2002 have mirrored each other, with observable increases in the number of reported cases from 2003 through 2005 and declining from 2005 to 2006.

■ **FIGURE 31. Number of IDU with HIV/AIDS by Year of First Positive Test and Gender—Colorado (2002–2006)**

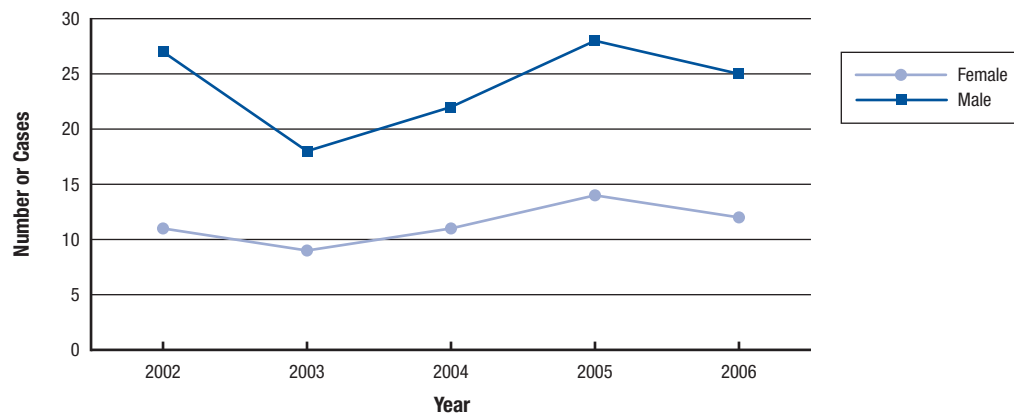
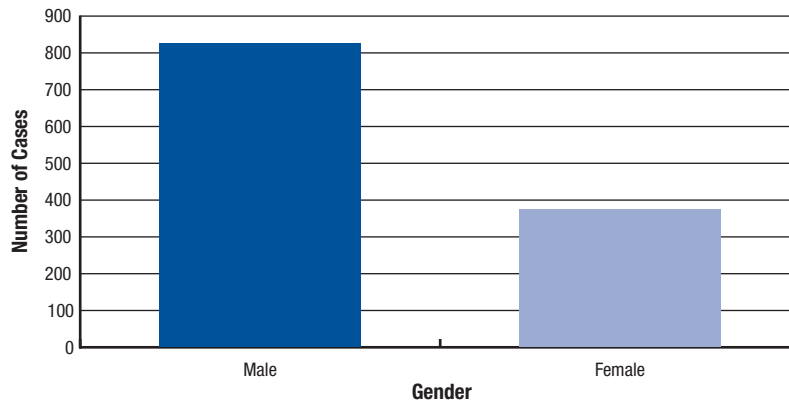


Figure 32 shows that males appear to bear a much greater burden of all IDU-attributed cases of HIV/AIDS in Colorado since reporting began in 1987. Females account for 31.2 percent of all diagnosed IDU cases and males account for 68.8 percent of all reported IDU cases in Colorado.

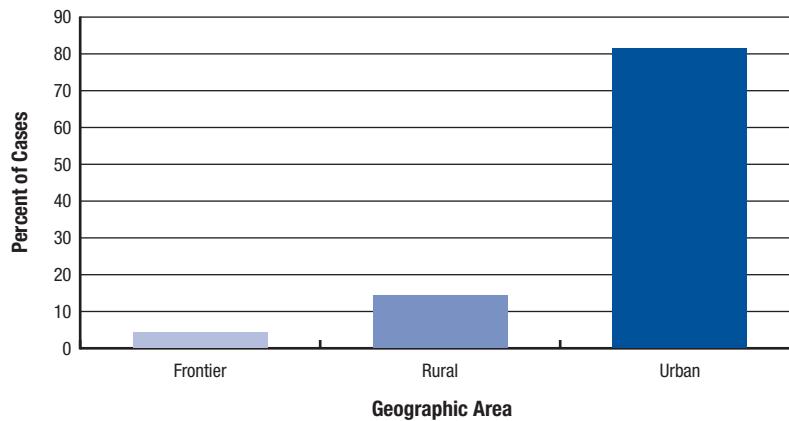
■ **FIGURE 32. Total Number of HIV/AIDS IDU Cases Reported by Gender—Colorado (1987–2006)**



HIV Among IDU by Region

Figure 33 demonstrates that those IDU HIV cases diagnosed during the five year time period of 2002 through 2006 have largely been concentrated in urban areas of Colorado. This is consistent with other risk groups, affirming that the Colorado HIV epidemic is largely centered in urban areas. Urban areas report 81.4 percent of cases, rural areas report 14.4 percent, and frontier areas report 4.1 percent. This pattern of HIV/AIDS case distribution among urban, rural and frontier regions has remained constant through the HIV/AIDS epidemic in Colorado, since the 1980s when HIV/AIDS surveillance began.

■ **FIGURE 33. IDU HIV Diagnosed Positive by Region Reported—Colorado (2002–2006)**



Other Factors Contributing to Risk Among IDU

Patterns and Trends in Drug Abuse¹⁸

Methamphetamine

According to a recently published Alcohol and Drug Abuse Division report “Patterns and Trends in Drug Abuse in Denver and Colorado: January–December 2006,” which compiles data from a variety of sources statewide, 2006 was the first time in several years that methamphetamine indicators decreased (with the exception of amount seized). In 2006, Methamphetamine was reported as the primary drug for 30.1 percent of all treatment admissions not including alcohol at intake. Since 2003, methamphetamine use has exceeded cocaine in illicit drug admissions and is second only to marijuana. However, the Denver metropolitan area accounted for only 21.4 percent of methamphetamine treatment admissions statewide and the volume of Denver area methamphetamine admissions dropped below those of cocaine related admissions in 2006. In the Denver area, female methamphetamine treatment admissions accounted for 45.4 percent in 2006. When looking at methamphetamine data for Colorado by racial category, Whites represent the majority of those admitted to treatment for methamphetamine use in Colorado (81.2 percent in 2006). The average age of those persons admitted to substance abuse treatment for methamphetamine use in 2006 was 30.6 years old. “New” users (defined as entering treatment within three years of use) are more often female (53 percent), Non-White (77 percent) and under 25 years old (58 percent). In 2006, 65.4 percent of persons admitted for methamphetamine treatment administered the drug by smoking. Smoking methamphetamine has increased from 35.6 percent to 65.4 percent from 2000 to 2006 and has become the primary route of administration. Injecting methamphetamines has declined from 38.5 percent in 2000 to 18.4 percent in 2006. The number of Colorado methamphetamine laboratory closures dramatically increased from 2000 to 2002, and then began to decline. It is suspected this decline is attributed to the fact that Colorado’s supply of methamphetamine largely comes through the Mexican drug trade.

Cocaine

As stated, in 2006 cocaine related admission into substance abuse treatment surpassed that of methamphetamine in the Denver Metro area. Cocaine related treatment admissions increased in 2005 and 2006 both in Denver and Colorado. In 2006 cocaine was reported as the primary drug of choice in 21.1 percent of all treatment admissions, excluding alcohol. In Colorado, the proportion of males using cocaine increased from 55.4 in 2000 to 59.3 percent in 2006. While Whites continue to make up the majority of cocaine-related admissions at 44.3 percent (2002–2006) statewide, Hispanics accounted for 33.8 percent in 2006. The proportion of Blacks admitted for cocaine-related treatment has continued to decrease from 2000 to 2006 both in Denver (30.7 percent to 20.8 percent) and statewide (21.9 percent to 17.3 percent).

Heroin

Heroin use in Colorado continues to be secondary to both methamphetamine and cocaine. All heroin indicators continued to decrease in 2006, except seizures. In 2006 heroin was reported as the primary drug of choice for 7.7 percent of admissions into treatment programs. Heroin-associated treatment admissions are generally male, representing 68.7 percent of admissions statewide and 68.4 percent in the Denver area. Within the racial categories of White, Black and Hispanic, heroin admissions are 64.9, 6.8, and 24.1 percent respectively. The average age of heroin users admitted to treatment programs was 38.6 years of age. The majority of heroin users administer the drug through injection (83.6%). However, the percentage of users who smoke heroin has increased from 5.4 percent in 2003 to 8.3 percent in 2006. Inhaling heroin has also increased from 4.1 percent in 2000 to 6.4 percent in 2006.

Hepatitis C and HIV Co-infection

Table 13 depicts HIV and HCV co-infections for the time period 1993–2006. Over this 14 year period, 6,566 cases of HIV were diagnosed. Cumulatively, 886 (14%) of this cohort was either at the time of HIV diagnosis or **later** became co-infected with HCV. The table compares HIV-HCV co-infection cases to HIV-only cases (N=5,680). Risk factors for co-infection include intravenous drug use (IDU), IDU/MSM, MSM, and being White or Hispanic. Co-infection with HCV poses special clinical challenges for the treatment of HIV. Due to shared routes of transmission, there is the a wide range of co-infection rates (0.1–37) depending on the risk subgroup.

■ **TABLE 13: Hepatitis C and HIV/AIDS in Colorado, Cases Diagnosed Since 1993 and Reported Through 12/31/06**

	HIV with HCV Co-infection		HIV/AIDS without HCV	
Male	726	82.0%	4,978	88.0%
Female	160	18.0%	702	12.0%
Current Age				
<13	0	0.0%	16	0.3%
13–14	0	0.0%	4	0.01%
15–19	4	0.4%	93	2.0%
20–24	35	4.0%	474	8.0%
25–29	83	9.0%	885	16.0%
30–34	187	21.0%	1,192	21.0%
35–39	203	23.0%	1,127	20.0%
40–44	178	20.0%	805	14.0%
45–49	110	12.0%	535	9.0%
50–54	49	6.0%	267	5.0%
55–59	19	2.0%	146	3.0%
60–64	11	1.0%	68	1.0%
>65	7	0.8%	58	1.0%
Race				
White	482	54.0%	3,455	61.0%
Black	145	16.0%	891	16.0%
Hispanic	226	26.0%	1,200	21.0%
American Indian/Asian and Pacific Islander	26	2.0%	111	2.0%
Multiple Race (non-Hispanic)	7	0.8%	23	0.4%
Risk				
MSM	235	27.0%	3,679	65.0%
IDU	350	40.0%	350	6.0%
MSM/IDU	180	20.0%	299	5.0%
Hemophilia	3	0.3%	0	0.0%
Heterosexual Contact	58	7.0%	685	12.0%
No Identified Risk	59	7.0%	626	11.0%
Transfusion	1	0.1%	12	0.2%
Pediatric	0	0.0%	29	0.5%
Total	886		5,680	

High Risk Heterosexual Contact

Estimates of High Risk Heterosexual Behavior in Colorado

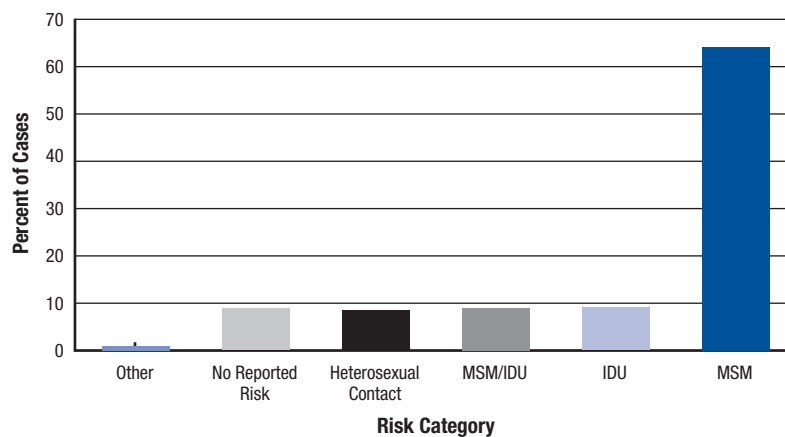
It is difficult to make an assessment of the number of persons in Colorado who engage in heterosexual contact that puts them at high risk for HIV acquisition. Despite the fact that those persons who acquire HIV heterosexually are not the same as those who acquire an STI, a diagnosis of a STI would suggest that the person is engaging in unsafe sexual practices. Specific HIV prevention strategies should be directed toward these persons. In 2006, 16,183 cases of chlamydia and 3,695 cases of gonorrhea were reported to CDPHE. Females represent 73.6 percent of reported chlamydia cases in Colorado. This may indicate higher screening rates among females than in males. Missing race and ethnicity data among STI reports continues to be of concern. In 2006, 54 percent of reported chlamydia cases did not report race and ethnicity. However, for those cases that did include race/ethnicity data, 20 percent were Hispanic, 14 percent were White and 11 percent were Black. Chlamydia continues to be diagnosed most frequently among the 15–24 year old age group. Unlike chlamydia, gonorrhea cases are more equally distributed by gender. Females account for 51 percent of all cases. Gonorrhea cases are also differently distributed by race/ethnicity and age group when compared to Colorado's chlamydia cases. Unlike chlamydia, Blacks make up the largest racial category, representing 29 percent of gonorrhea cases. Hispanics account for 22 percent and Whites make up 20 percent of gonorrhea cases. However, 29 percent of race and ethnicity data are missing for gonorrhea cases reported in 2006. The majority of gonorrhea cases are diagnosed among the 20–29 year old age group (54.9%), which is a slightly older population than the most affected age group for chlamydia cases.

Proportion of Epidemic Among Heterosexuals

To assure the accuracy of data regarding heterosexual acquisition of HIV, for a case of HIV/AIDS to be classified as heterosexually acquired, CDPHE investigation must demonstrate that the person had heterosexual contact with a partner who has documented HIV infection, or had heterosexual contact with a person who is in a high risk group for HIV (IDU or MSM). A report by the patient that he or she acquired HIV heterosexually will not automatically classify that person into the category of heterosexual acquisition.

Heterosexual transmission (**Figure 34**) accounts 8.4 percent of Colorado's cumulative HIV/AIDS epidemic. This has increased from 7.0 percent since assessed in 2004.

■ **FIGURE 34. HIV/AIDS Cases Reported by Risk Category—Colorado (1987–2006)**



Gender Trends in High Risk Heterosexual Contact

According to **Figure 35**, females are more likely to be infected with HIV through heterosexual transmission than males. Females account for 61.3 percent (up from 55 percent in 2003) of this transmission category, whereas males account for 38.7 percent (down from 45 percent in 2003) of this risk group.

■ **FIGURE 35. Heterosexually Transmitted HIV by Gender—Colorado (2006)**

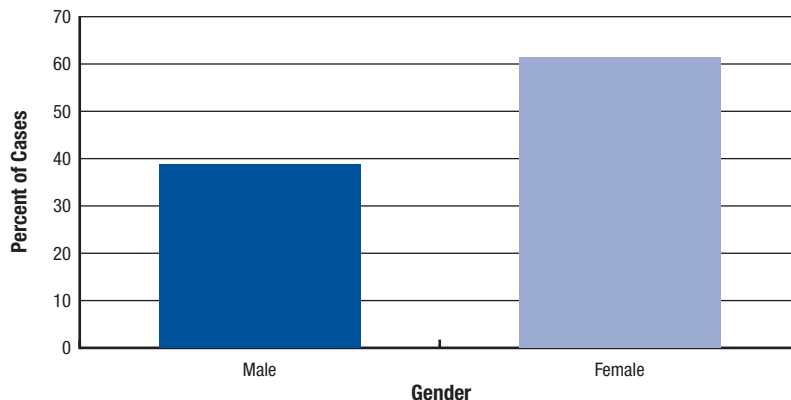
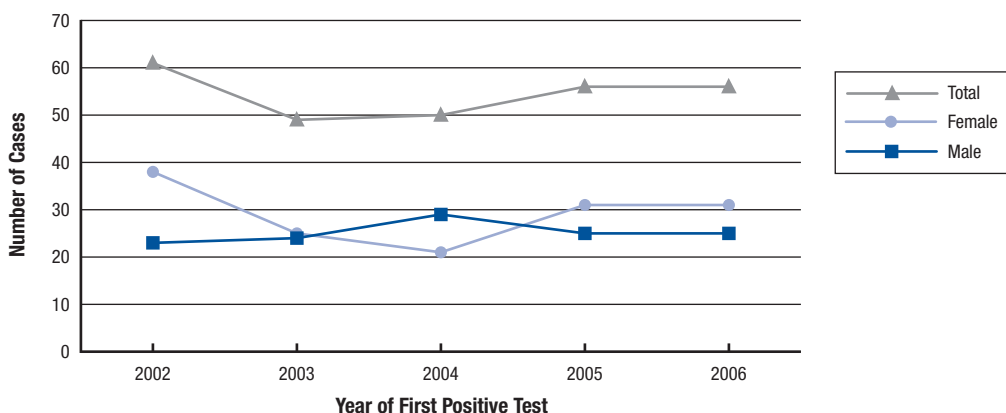


Figure 36 illustrates the number and proportion of heterosexually transmitted HIV/AIDS cases by year of first positive test and gender between 2002 and 2006. The overall number of heterosexually transmitted HIV/AIDS cases has decreased by 8.2 percent during the five-year time period of 2002 to 2006. While males experienced a decrease in cases from 2004 (29) to 2005 (25), this decrease was not sustained into 2006 and cases remained stable at 25 reported cases in 2006. Males still experienced an overall increase of 8.7 percent in the number of reported heterosexually transmitted cases from 2002 to 2006. Females have sustained an increase in the number of heterosexually transmitted cases from 2004 (21) to 2006 (31). However, the highest number of reported female cases reported was in 2002 at 38. Overall during 2002 to 2006 the number of female heterosexually transmitted HIV/AIDS cases decreased by 18.4 percent. Care should be taken in identifying trends in this group due to the small number of cases.

■ **FIGURE 36. Number of Heterosexually Transmitted HIV/AIDS Cases by Year of First Positive Test and Gender—Colorado (2002–2006)**



Racial/Ethnic Trends Among High Risk Heterosexuals

Recently diagnosed cases of HIV attributed to heterosexual transmission are illustrated in **Figure 37**. Blacks represent the largest group affected through heterosexual transmission with 14 (45.2%) cases diagnosed in 2006. Hispanics account for 32.3 percent of cases and Whites account of 22.6 percent of cases identified in 2006. In comparison to their percentage of the general population, racial/ethnic populations, particularly Blacks, are over-represented among heterosexually transmitted HIV cases.

■ **FIGURE 37. Newly Identified Cases of Heterosexually Transmitted HIV Cases by Racial Category—Colorado (2006)**

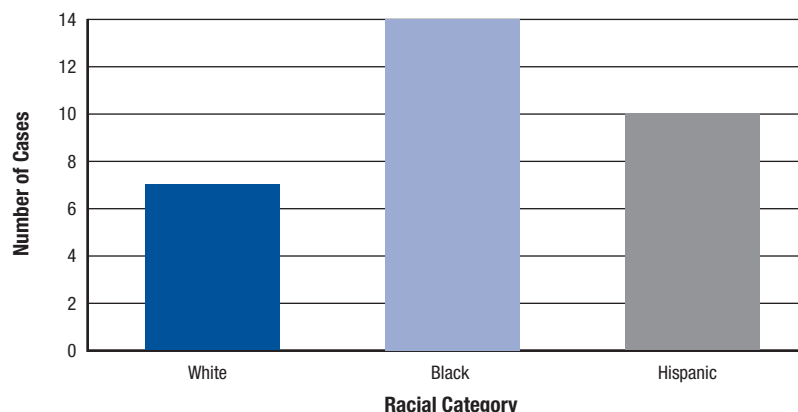
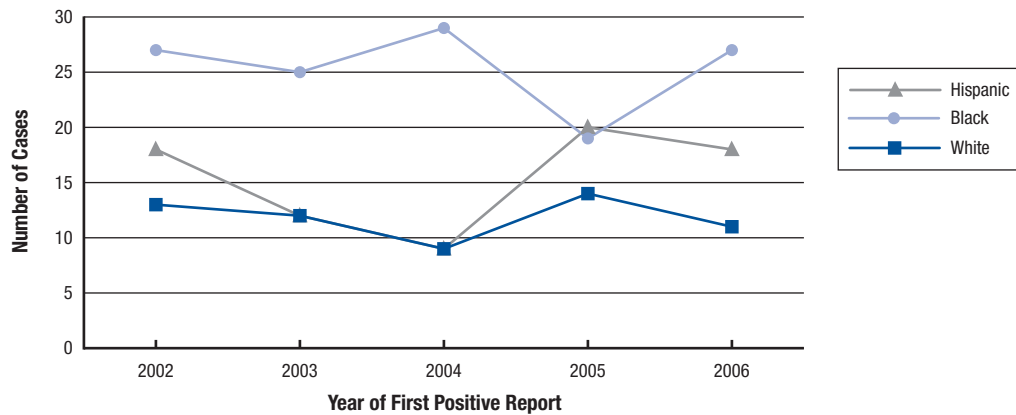


Figure 38, on the following page, illustrates the number of reported heterosexually transmitted HIV/AIDS cases for the five-year period 2002 to 2006 by racial category. It should be noted that for the purposes of this figure racial categories reporting less than five reported cases during this time frame were not graphically displayed. Those categories include American Indian/Alaska Native (4), Asian/Pacific Islander (4) and Multi-racial Non-Hispanic (1). The racial categories reporting more than five cases for this time period were Whites, Blacks and Hispanics. Whites experienced a 15.4 percent decrease in the number of reported cases from 2002 (13) to 2006 (11). Although the five-year trend line for Blacks and Hispanics appears to have great variability, overall each of these groups experience no percent change from 2002 to 2006. However, when examining different points within the five years, Blacks seem to have the largest overall increase from 2005 (19) to 2006 (27) of 42.1 percent. Hispanics also experienced a substantial increase in the number of reported heterosexually transmitted cases from 2004 (9) to 2005 (20). The number of heterosexually transmitted cases continues to be greater than the lowest number reported in 2004 of nine cases, but has not surpassed the higher number reported in 2005 of 20. Whites are the only racial category that experienced an overall decrease in the percent of reported cases from 2002 to 2006. It can be observed that the number of heterosexually transmitted cases among Whites was decreasing from 2002 until 2005, when an increase is observed. However this trend did not continue and the number of heterosexually transmitted cases reported among Whites decreased from 14 in 2005 to 11 in 2006. It should be noted that heterosexually transmitted cases of HIV/AIDS in Colorado represent a low number of cases. This should be considered when interpreting these figures.

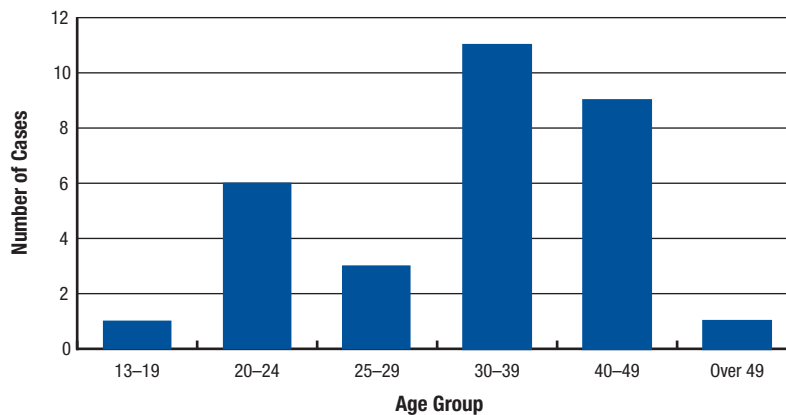
■ **FIGURE 38. Number of Heterosexually Transmitted HIV/AIDS Cases by Year of First Positive Test and Race Reported—Colorado (2002–2006)**



Age Trends Among High Risk Heterosexuals

Recently diagnosed cases of HIV attributed to heterosexual contact are illustrated by age in **Figure 39**. This graph indicates that the largest percentage (35.5%) of newly diagnosed cases is in the 30–39 years old age group. The 40–49 years old age group follows, representing 29 percent of the cases. The next highest contributing age group is young adults aged 20–24 years, representing 19.4 percent of heterosexually transmitted HIV cases in Colorado.

■ **FIGURE 39. Heterosexually Transmitted HIV by Age Reported—Colorado (2006)**



Infants Born to HIV-infected Women

As shown in **Table 14**, the number of infants born to HIV-infected women in Colorado peaked in 2004 with 27 births for the five year time period 2002 to 2006. Perinatal transmission has dropped dramatically due to the widespread use of anti-retrovirals during pregnancy, labor and delivery. Exposed infants are also given anti-retroviral drugs for six weeks after their birth. During 2002 to 2006, there have been four cases of confirmed HIV infection reported in infants. According to CDPHE vital statistics data obtained from birth certificates, 1.4 percent of mothers who delivered a child in 2006 did not receive prenatal care, and 83.2 percent had reported an HIV test during pregnancy. It should be noted that the denominator for these percentages exclude those for which the prenatal care status and HIV testing status, respectively, were unknown.

■ **TABLE 14: Number of Infants Born to HIV-Infected Women by Year of Birth—Colorado (2002–2006)**

Year of Birth	Number of Infants born to HIV Positive Women	Number of Infants who aquired HIV perinatally
2002	19	1
2003	21	0
2004	27	2
2005	25	1
2006	21	0
Total	113	4



Ryan White HIV/AIDS CARE Act Special Questions and Considerations

Summary

- The CARE Act represents the largest dollar investment made by the federal government to date specifically for the provision of services for people living with HIV disease.
- The CARE Act is intended to help communities and states increase the availability of primary health care and support services in order to reduce utilization of more costly inpatient care, increase access to care for underserved population, and improve the quality of life of those affected by the epidemic.
- Those clients utilizing Part A metropolitan area services mirror Colorado HIV/AIDS Surveillance findings.
- The majority of Part A clients access Ambulatory or Outpatient Medical Services (2,522).
- Of the 937 clients who received services at agencies funded through a Part B award, nearly all received case management (935). A substantial number of clients also received emergency financial assistance (442), food bank (436), and client advocacy (410).
- During calendar year 2006, an average of 812 clients per month accessed the AIDS Drug Assistance Program, and the average number of monthly prescriptions filled was 2,344.
- Most AIDS Drug Assistance Program clients were male (84.6%), fell within the age range of 25–44 years old (60.3%) and identified as primarily White (48.1%), Hispanic (30.7%), or Black (15.2%). Asian, American Indian/Alaska Native and other were represented in very small numbers.

On August 18, 1990, Congress enacted Public Law 101–381, the CARE Act. The CARE Act has been reauthorized twice, and represents the largest dollar investment made by the federal government to date specifically for the provision of services for PLWH disease. The most recent reauthorization of the CARE Act occurred in December 2006.

The CARE Act is intended to help communities and states increase the availability of primary health care and support services in order to reduce utilization of more costly inpatient care, increase access to care for underserved populations, and improve the quality of life of those affected by the epidemic. Briefly, the Act directs assistance through the following channels (using terminology from the December 2006 reauthorization).

- Part A** Provides emergency assistance to EMA and TGA that are most severely affected by the HIV/AIDS epidemic.
- Part B** Provides grants to all 50 States, the District of Columbia, Puerto Rico, Guam, the U.S. Virgin Islands, and five U.S. Pacific Territories or Associated Jurisdictions. Part B grants include a base grant and an award for ADAP.
- Part C** Provides grants directly to service providers such as ambulatory medical clinics to support outpatient HIV early intervention services and ambulatory care. Part C also funds planning grants, which support organizations in more effectively delivering HIV/AIDS care and services, and capacity development grants.
- Part D** Provides grants for family centered medical care (primary and specialty) involving outpatient or ambulatory care for women, infants, children, and youth with HIV/AIDS. Part D funded agencies may also provide support services and logistical support.
- Part F** Provides grants in support of Special Projects of National Significance, Dental Programs, and Minority AIDS Initiative.

The SPNS program supports the demonstration and evaluation of innovative models of HIV/AIDS care delivery for hard-to-reach populations. SPNS also funds special programs to support the development of standard electronic client information data systems.

The AIDS Education and Training Center supports education and training of health care providers through a network of 11 regional and four national centers.

Dental Programs consists of two programs. 1) The Dental Reimbursement Program provides reimbursements to dental schools, hospitals with postdoctoral dental education programs, and community colleges with dental hygiene programs for uncompensated costs incurred in providing oral health treatment to patients with HIV disease. 2) The Community-Based Dental Partnership Program provides support to increase access to oral health care services for HIV-positive persons while providing education and clinical training for dental care providers, especially those located in community-based settings.

Minority AIDS Initiative grants provide funding to evaluate and address the disproportionate impact of HIV/AIDS on women and minorities.

The state of Colorado receives funding from all five parts of the Act. This report will focus on Parts A and B.

As a TGA, the five-county Denver metropolitan area receives Part A funding. These funds are administered by the Mayor's Office of HIV Resources and support a variety of community-based services related to HIV/AIDS.

In Colorado, Part B funding is administered by CDPHE. The purpose of these funds is to improve the quality, availability, and organization of health care and support services for individuals and families

with HIV disease. Part B funds support a wide range of services statewide, including the ADAP, Health Insurance assistance, and a multitude of health related services provided by regional consortia across the state.

HIV Service Utilization Patterns of Individuals in Colorado

Part A—Denver Metro Area

Table 15 shows a comparison between clients served by Ryan White Part A funded providers in 2006 and persons diagnosed with AIDS in the Denver metro area in 2006.

Table 16 shows the number of clients that received specific types of services from providers that received funding from Ryan White Part A.

Table 17 shows a comparison between clients served by providers funded through Ryan White Part B in 2006 and persons diagnosed with AIDS in Colorado in 2006. In 2006, 937 clients received services from providers funded through the Ryan White Part B award. The majority of clients receiving services through Ryan White

■ **TABLE 15: Part A Client Characteristics by Race/Ethnicity, Gender and Age in the Denver Metropolitan Area (2006)**

Client Characteristics	CARE ACT Clients Title % of Clients	Colorado TGA AIDS Surveillance Data % of Cases
Race/Ethnicity		
White (non-Hispanic)	52.0%	48.6%
Black (non-Hispanic)	17.0%	22.6%
Hispanic	24.3%	24.5%
Asian/Pacific Islander (non-Hispanic)	<1.0%	2.4%
American Indian/Alaska Native (non-Hispanic)	1.0%	1.4%
Multiple Race/Unknown (non-Hispanic)	5.9%	0.5%
Gender		
Male	80.6%	84.9%
Female	19.1%	15.1%
Other/Unknown	<1.0%	0.0%
Age		
<13	4.4%	0.0%
13–24	3.7%	3.8%
25–44	48.5%	64.6%
45–64	41.4%	31.1%
>64	2.0%	0.5%

■ **TABLE 16: Summary of Services Received by Ryan White Part A Clients (2006)**

Service Type	Part A Number of Clients in Calendar Year 2006
Ambulatory/Outpatient Medical Care	2,522
Buddy/Companion	10
Case Management	2,081
Client Advocacy	232
Emergency Financial Assistance	327
Food Bank/Home-delivered Meals	1,055
Home Health: Paraprofessional Care	37
Home Health: Professional Care	17
Home Health: Specialized Care	1
Housing Services	364
Mental Health Services	914
Oral Health Care	832
Permanency Planning	5
Substance Abuse Services—Outpatient	228
Transportation Services	1,155
Other	124

Part B are male (79.4%). Most of the clients who received services fell within the ages of 25–44 years old (54.6%).

Of the 937 clients who received services at agencies funded through a Part B award (**Table 18**), nearly all received case management (935). A substantial number of clients also received emergency financial assistance (442), food bank assistance (436), and client advocacy (410).

AIDS Drug Assistance Program

Since 1987, Congress has appropriated funds to assist states in pro-

viding U.S. Food and Drug Administration-approved HIV-related medications to lower income, uninsured, and underinsured people living with HIV. With the initial passage of the Ryan White CARE Act in 1990, the assistance programs for HIV medications were incorporated into the Part B award and became commonly known as ADAP. For many people with HIV, access to ADAP serves as a gateway to a broad array of healthcare and supportive services, as well as other sources of coverage including Medicaid, Medicare and private insurance.

In Colorado during 2006, persons enrolled in ADAP were able to access the following classes of anti-retroviral medications: nucleoside analogues, protease inhibitors, non-nucleosides, and entry inhibitors. In addition, the ADAP formulary includes medications for the treatment or prevention of opportunistic infections. During calendar year 2006, an average of 812 clients per month accessed ADAP, and the average number of monthly prescriptions filled was 2,344. Most ADAP clients were male (84.6%), fell within the age range of 25–44 years old (60.3%) and identified as primarily White (48.1%), Hispanic (30.7%), or Black (15.2%). Asian, American Indian/Alaska Native and “other” were represented in very small numbers.

Prior to July 1, 2001, the financial eligibility criteria for ADAP were at or below 185 percent of the Federal Poverty Level. On July 1, 2001, the financial eligibility was expanded to include people at or below 300 percent of the Federal Poverty Level, which continued to be the eligibility level through 2006.

■ **TABLE 17: Part B Client Characteristics by Race/Ethnicity, Gender and Age in the Denver Metropolitan Area (2006)**

Client Characteristics	CARE ACT Clients Title % of Clients	AIDS Surveillance Data % of Cases Outside the Denver TGA
Race/Ethnicity		
White (non-Hispanic)	62.4%	54.9%
Black (non-Hispanic)	9.6%	17.7%
Hispanic	22.0%	25.7%
Asian/Pacific Islander (non-Hispanic)	<1.0%	1.8%
American Indian/Alaska Native (non-Hispanic)	1.6%	0.0%
Multiple Race/Unknown (non-Hispanic)	3.8%	0.0%
Gender		
Male	79.4%	81.4%
Female	20.0%	18.6%
Other/Unknown	<1.0%	0.0%
Age		
<13	1.0%	0.0%
13–24	2.8%	8.0%
25–44	54.6%	65.5%
45–64	39.9%	24.8%
>64	1.7%	1.8%

■ **TABLE 18: Summary of Services Received by Ryan White Part B Clients (2006)**

Service Type	Part B Number of Clients in Calendar Year 2006
Mental Health	10
Oral Health	37
Case Management	935
Client Advocacy	410
Emergency Financial Assistance	442
Food Bank	436
Health Education/Risk Reduction	91
Housing	76
Referral	49
Transportation	207
Other	68



HIV Incidence and Drug Resistance Surveillance

Summary

- The CDPHE and CDC conduct HIV surveillance activities to estimate HIV incidence rates nationally and in Colorado using STARHS.
- The majority (67.1%) of newly identified cases of HIV infection in Colorado are considered long-standing infections by STARHS.
- Of the 550 specimens submitted for STARHS, 216 were submitted from private doctors and hospitals.
- Those newly identified HIV cases classified as long-standing infections and those classified as recent infection exhibit different testing behaviors. Long-standing infections have an average of 1.5 previous tests, whereas the recent infection group has an average of 2.5 tests, signally more routine testing of persons identified within the 170-day window period for STARHS.
- In the time period of this report, 437 specimens were submitted to Stanford Virology Laboratory for genotype testing. Out of all the specimens submitted, 56 specimens, or 12.8 percent, had some level of drug resistance.

HIV Incidence Surveillance in Colorado

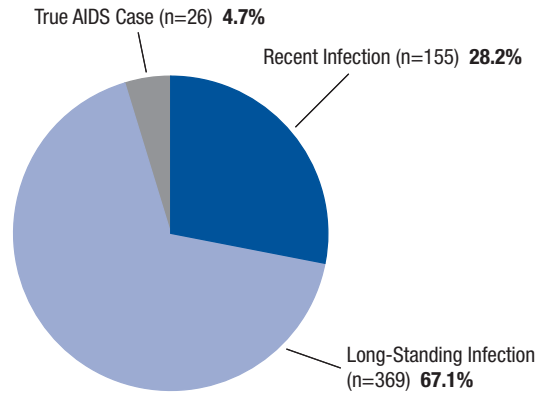
The CDPHE and CDC conduct HIV surveillance activities to estimate HIV incidence rates nationally and in Colorado using STARHS. This algorithm utilizes a detuned EIA and tradition EIA test that is applied to remnant diagnostic HIV positive serum following a blood test, and is designed to estimate HIV incidence by determining if the specimen represents a recent infection (HIV infection acquired in the last 170 days) or long-standing infection, (HIV infection acquired greater than 170 days from testing). The test measures the amount of HIV antibodies in the diagnostic serum to classify the infections as recent infections or long-standing infections as mentioned. However, based on the natural course of HIV infection, when a person is newly infected and when a person progresses to AIDS in the late stages of disease, HIV antibody levels are low. Therefore, a limitation of STARHS is misclassification of true AIDS cases as recent infections.

■ **TABLE 19: Demographic Characteristics of Persons Tested Through HIV Incidence Surveillance**

Characteristic	All Persons Tested Through STARHS		Persons Classified As Long-Standing Infections Using STARHS		Persons Classified As Recent Infections Using STARHS		True AIDS Cases	
	n=550	(100.0%)	n=369	(100.0%)	n=155	(100.0%)	n=26	(100.0%)
Gender								
Male	483	87.8%	323	87.5%	138	89.0%	22	84.6%
Female	67	12.2%	46	12.5%	17	11.0%	4	15.4%
Age Group								
<13	0	0.0%	0	0.0%	0	0.0%	0	0.0%
13–19	12	2.2%	8	2.2%	4	2.6%	0	0.0%
20–24	72	13.1%	39	10.6%	31	20.0%	2	7.7%
25–29	79	14.4%	51	13.8%	27	17.4%	1	3.8%
30–39	193	35.1%	125	33.9%	55	35.5%	13	50.0%
40–49	153	27.8%	112	30.4%	31	20.0%	10	38.5%
>49	41	7.5%	34	9.2%	7	4.5%	0	0.0%
Missing	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Race								
White (non-Hispanic)	322	58.5%	208	56.4%	103	66.5%	11	42.3%
Black (non-Hispanic)	83	15.1%	65	17.6%	14	9.0%	4	15.4%
Hispanic	130	23.6%	86	23.3%	34	21.9%	10	38.5%
Asian (non-Hispanic)	10	1.8%	7	1.9%	3	1.9%	0	0.0%
American Indian (non-Hispanic)	4	0.7%	3	0.8%	0	0.0%	1	3.8%
Multiple Races/Other	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Missing	1	0.2%	0	0.0%	1	0.6%	0	0.0%
Risk								
MSM	362	65.8%	228	61.8%	117	75.5%	17	65.4%
IDU	39	7.1%	31	8.4%	6	3.9%	2	7.7%
MSM/IDU	34	6.2%	25	6.8%	8	5.2%	1	3.8%
Heterosexual Contact	96	17.5%	72	19.5%	18	11.6%	6	23.1%
No Identified Risk	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Other	19	3.5%	13	3.5%	6	3.9%	0	0.0%

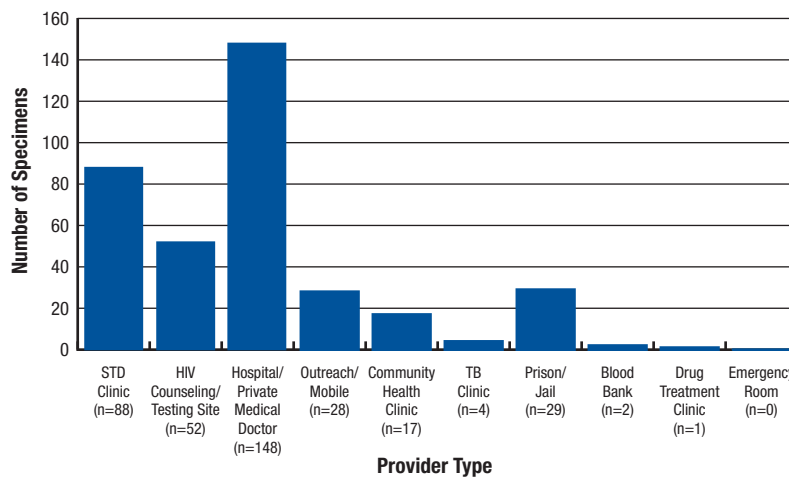
On the following page, **Figure 40** illustrates the distribution of STARHS results for specimens submitted for HIV incidence surveillance. In the time period of this report (2002 to 2006), 550 specimens were submitted to the CDC STARHS laboratory for HIV incidence surveillance. Based on the figure presented, 67.1 percent of all specimens indicate long-standing infection. This may indicate that the majority of persons infected with HIV in Colorado are not being identified early in the course of disease, and may be continuing to participate in risk behaviors that put others at risk of HIV infection.

■ **FIGURE 40. Distribution of STARHS Results**

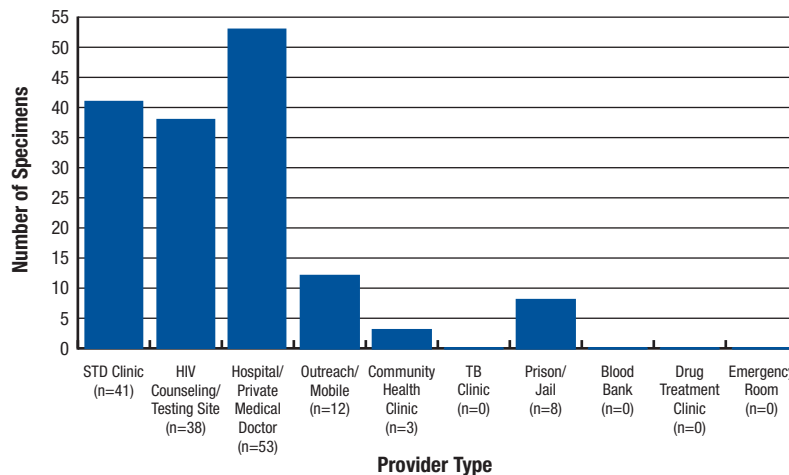


Figures 41 and 42 illustrate the facility type of those specimens submitted for HIV incidence surveillance. It should be noted that the majority of all STARHS specimens come from private medical doctors and hospitals. This observation indicates the importance of adequately educating private providers in HIV prevention strategies to help facilitate early testing behaviors among their patients.

■ **FIGURE 41. HIV Incidence Surveillance Specimens Classified as Long-Standing by Facility Type (2003–2006)**

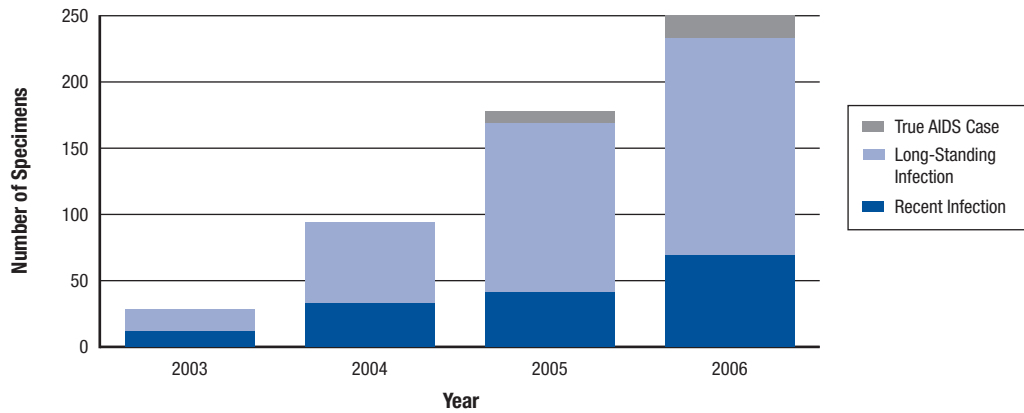


■ **FIGURE 42. HIV Incidence Surveillance Specimens Classified as Recent Infection by Facility Type (2003–2006)**



In **Figure 43**, the number of specimens sent for STARHS is shown by year. Out of all the specimens submitted, 369 specimens were considered to be long standing infections, 155 specimens were considered to be recent infections, and 26 specimens were determined to be true AIDS cases.

■ **FIGURE 43. Distribution of STARHS Results by Year (2003–2006)**



HIV Testing History Information

In addition to submitting remnant specimens for STARHS testing, CDPHE also collects HIV testing history information from all newly identified HIV cases in Colorado. This testing history information is collected to get a better idea about testing behaviors among recently diagnosed HIV cases. During 2005 and 2006, 416 testing history interviews were conducted, which correspond to STARHS results for HIV incidence surveillance. These data are presented on the following page in **Table 20**. These data demonstrate that newly identified HIV cases classified as long-standing infections and those classified as recent infection exhibit different testing behaviors. This is most clearly observed in the difference of the average number of prior HIV tests in the 24 months prior to testing HIV positive. The long-standing infection group has an average of 1.5 previous tests, whereas the recent infection group has an average of 2.5 tests, indicating more routine testing of persons identified within the 170-day window period for STARHS. Other testing history information that supports this difference includes more persons with recent infections indicating the reason for testing as concern of exposure in the past six months (32.8 percent versus 27.0 percent of long-standing infections) and keeping up with routine HIV testing practices (29.0 percent versus 14.4 percent of long-standing infection).

■ **TABLE 20: HIV Testing History Characteristics Among Newly Identified HIV Cases—Colorado (2005–2006)**

Characteristic	All Persons Tested Through STARHS		Persons Classified As Long-Standing Infections Using STARHS		Persons Classified As Recent Infections Using STARHS	
	n=416	(%)	n=285	(%)	n=131	(%)
Reason For Test						
Concern of Exposure in the Last Six Months	120	28.9%	77	27.0%	43	32.8%
Time for Routine Test	79	19.0%	41	14.4%	38	29.0%
Checking to Make Sure HIV Negative	163	39.2%	106	37.2%	57	43.5%
Test was Required	35	8.4%	30	10.5%	5	3.8%
Some Other Reason	153	36.8%	105	36.8%	48	36.6%
Most Frequent Other Reason Specified						
Current STD or STD Screening	25	17.6%	14	14.4%	11	24.4%
Doctor Recommended Testing or Doctor Rule HIV Diagnosis	16	11.3%	12	12.4%	4	8.9%
Named as a Contact to HIV, has Current or Past HIV Positive Partner	17	12.0%	10	10.3%	7	15.6%
Has Symptoms, Recent Illness, or Weight Loss	50	35.2%	37	38.1%	13	28.9%
Previous HIV Positive Anonymous Test	13	3.1%	6	2.1%	7	5.3%
Previous HIV Negative Test	13	64.7%	166	58.7%	102	77.9%
Average Number of HIV Tests in the Two Years Prior to First Positive		1.8		1.5		2.5

Antiretroviral Drug Resistance Surveillance in Colorado

The CDPHE and CDC conduct HIV surveillance activities to estimate the prevalence of transmission of ARVDR Strains of HIV in Colorado. This surveillance activity is designed to confirm recent findings, which report the prevalence of drug resistance strains in drug naïve patients as greater than five percent in the United States. These research findings hypothesize that patients receiving HIV drug treatment may not be following drug regimes and, as a result, are developing and transmitting drug resistant strains of HIV. Antiretroviral drug resistance is seen as problematic in newly infected populations, as it can limit initial HIV treatment options.

ARVDR surveillance only includes tests from:

- Persons 13 years of age or older
- Persons not receiving antiretroviral therapy prior to the reported HIV test being used for ARVDR surveillance
- The person's diagnostic HIV test must not have been more than three months prior to the test being used for ARVDR surveillance purposes

From 2003–2006, 437 specimens were submitted for genotype testing at the Stanford Virology Laboratory. Three hundred and ninety-five results were obtained, and 42 results were considered “not amplifiable.” **Table 21** provides the results reported for those specimens.

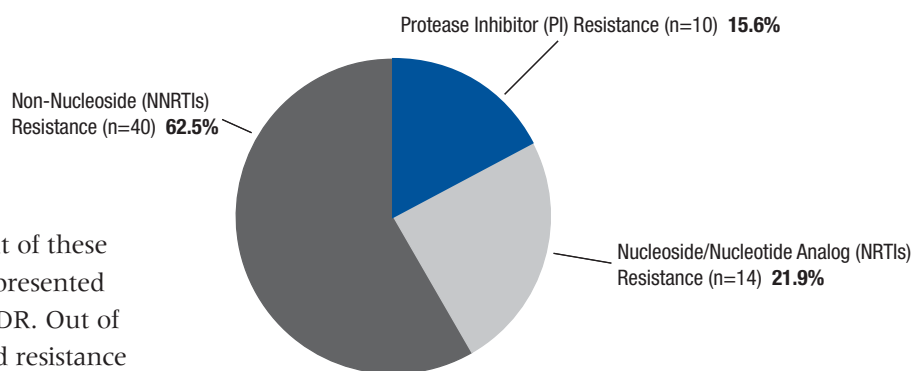
■ **TABLE 21: Demographic Characteristics of Persons Tested Through ARVDR Surveillance (2003–2006)**

Characteristic	All Persons Tested Through ARVDR Surveillance		Persons Have Some Level of ARVDR		Persons Classified As Recent Infections Using STARHS	
	n=437	(100.0%)	n=56	(100.0%)	n=100	(100.0%)
Gender						
Male	390	89.2%	48	85.7%	89	89.0%
Female	47	10.8%	8	14.3%	11	11.0%
Age Group						
<13	0	0.0%	0	0.0%	0	0.0%
13–19	7	1.6%	0	0.0%	2	2.0%
20–24	69	15.8%	11	19.6%	25	25.0%
25–29	68	15.6%	8	14.3%	17	17.0%
30–39	150	34.3%	20	35.7%	34	34.0%
40–49	106	24.3%	13	23.2%	17	17.0%
>49	37	8.5%	4	7.1%	5	5.0%
Missing	0	0.0%	0	0.0%	0	0.0%
Race						
White (non-Hispanic)	242	55.4%	34	60.7%	55	%
Black (non-Hispanic)	63	14.4%	6	10.7%	13	%
Hispanic	112	25.6%	16	28.6%	27	%
Asian (non-Hispanic)	8	1.8%	0	0.0%	3	%
American Indian (non-Hispanic)	3	0.7%	0	0.0%	1	%
Multiple Races/Other	1	0.2%	0	0.0%	0	%
Missing	8	1.8%	0	0.0%	1	%
Risk						
MSM	292	66.8%	35	62.5%	77	%
IDU	15	3.4%	3	5.4%	0	%
MSM/IDU	33	7.6%	6	10.7%	5	%
Heterosexual Contact	75	17.2%	11	19.6%	13	%
No Identified Risk	0	0.0%	0	0.0%	0	%
Other	22	5.0%	1	1.8%	5	%

Among 437 specimens submitted for ARVDR, 395 results were received and 42 could not be amplified.

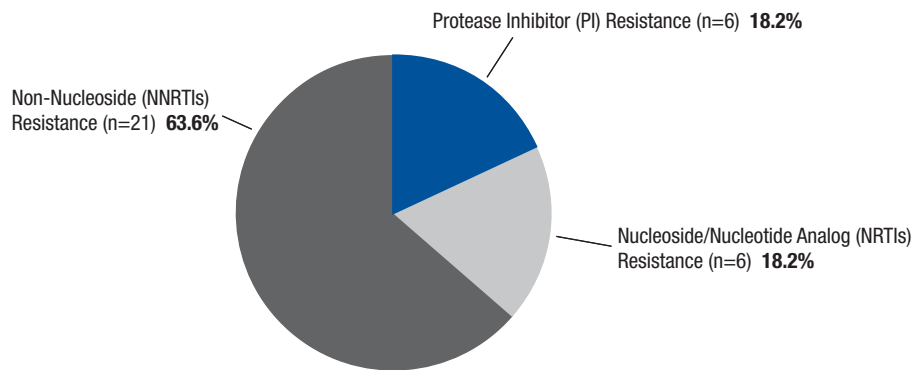
In **Figure 44**, the prevalence of HIV drug resistance is shown by separate drug class. During 2003–2006, 437 specimens were submitted to Stanford Virology Laboratory for genotype testing. Out of these specimens (n=437), 56 presented with some level of ARVDR. Out of these 56 persons, 14 had resistance to more than one drug class.

■ **FIGURE 44. Prevalence of HIV Drug Resistance by Drug Class (2003–2006)**



In **Figure 45**, the prevalence of HIV drug resistance is shown for those persons that were classified as having long-standing infections by STARHS. This figure is also separated by HIV drug resistance among those classified as long standing infections.

■ **FIGURE 45. Prevalence of HIV Drug Resistance by Drug Class in Persons with Long Standing Infection (2003–2006)**



In **Figure 46**, the prevalence of HIV drug resistance is shown for those persons that were classified as having a recent infection by STARHS. This figure is also separated by HIV drug resistance among those classified as recent infections.

■ **FIGURE 46. Prevalence of HIV Drug Resistance by Drug Class in Persons with Recent Infection (2003–2006)**

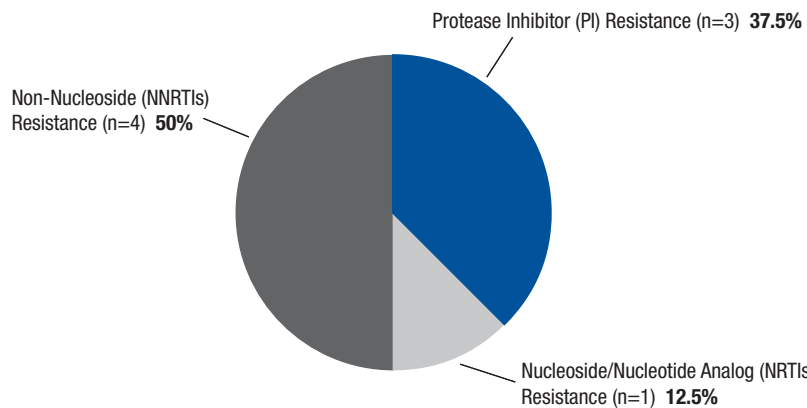


Figure 47 illustrates the facility type where those specimens submitted for ARVDR surveillance were initially tested for HIV. These sites provided CDPHE with specimens that had enough leftover serum to be sent for genotype testing. The primary sites where specimens were obtained for ARDVR testing were HIV counseling and testing sites and STI clinics.

■ **FIGURE 47. ARVDR Specimens Submitted for Genotype Testing by Facility (2003–2006)**

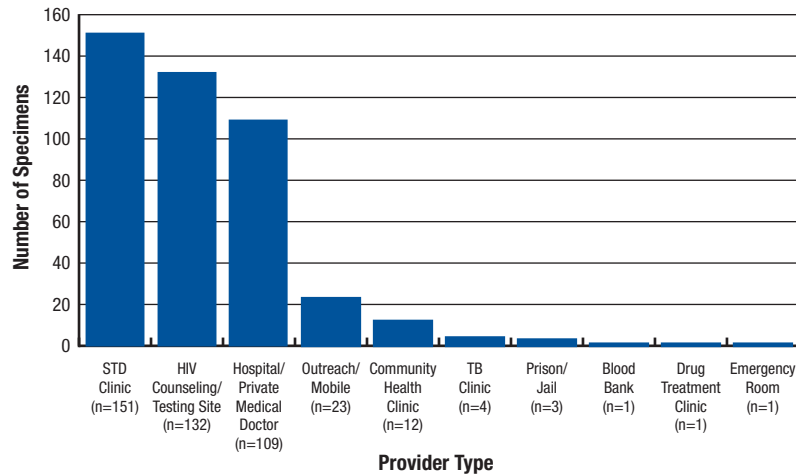
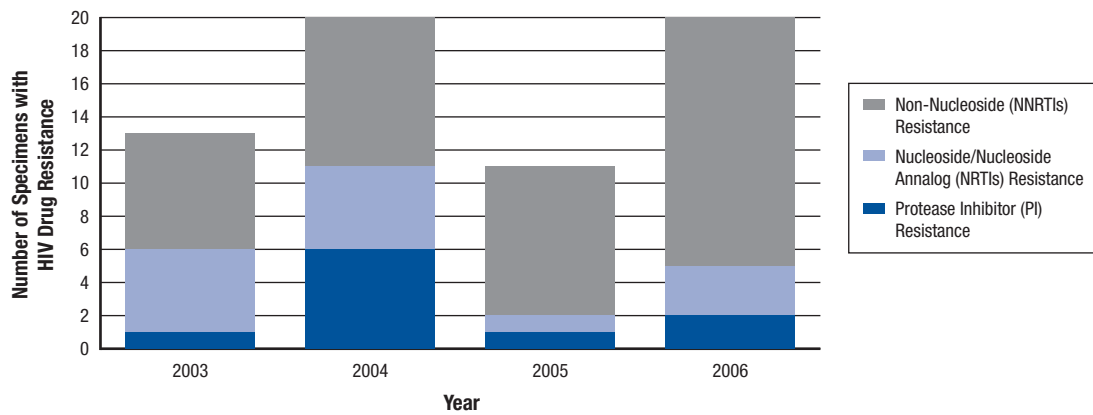


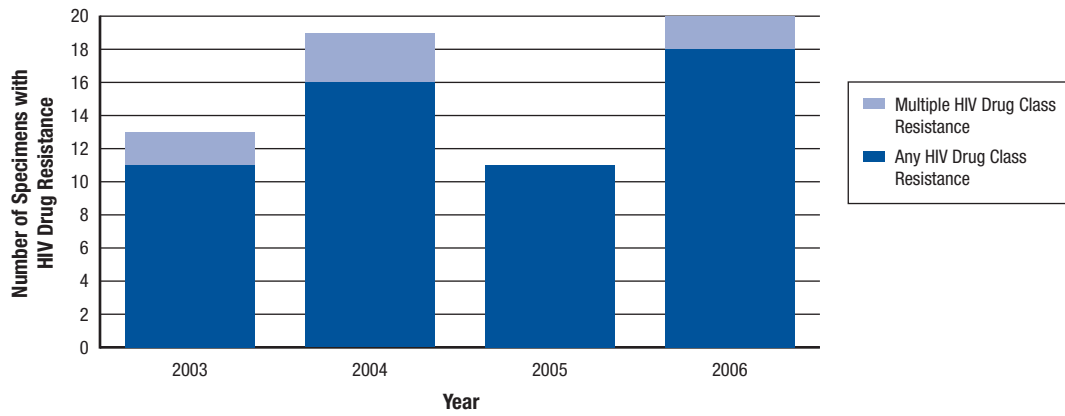
Figure 48, the prevalence of HIV drug resistance is shown by separate drug class and year. In the time period of this report, 437 specimens were submitted to Stanford Virology Laboratory for genotype testing, and 395 results were received.

■ **FIGURE 48. Prevalence of HIV Drug Resistance by Drug Class and Year (2003–2006)**



In **Figure 49**, the prevalence of HIV drug resistance is shown for specimens having either some HIV drug resistance, or resistance to multiple HIV drug classes by year. Out of all the specimens submitted, 56 specimens had some level of drug resistance, and seven had resistance to multiple HIV drug classes.

■ **FIGURE 49. Prevalence of HIV Drug Resistance by Drug Class (2003–2006)**





National HIV Behavioral Surveillance—Denver, Colorado

Summary

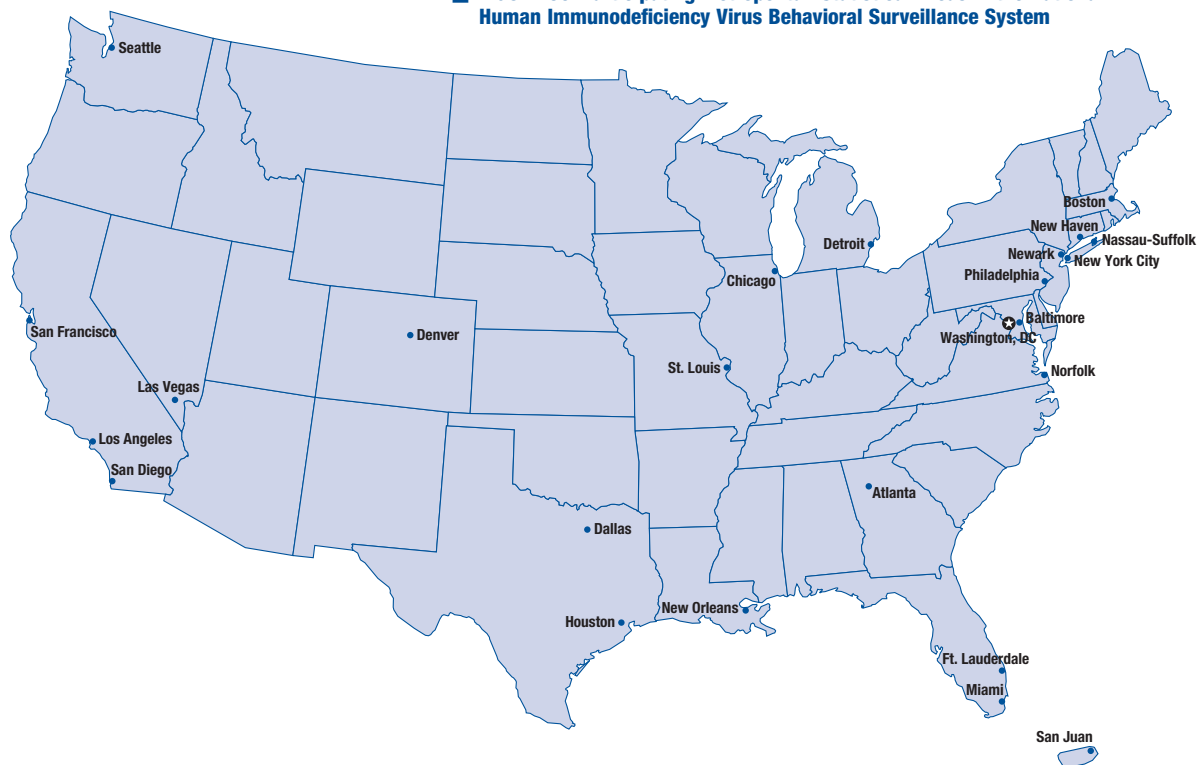
- Among NHBS participants, approximately 66 percent of MSM, 48.4 percent of IDU, and 14.3 percent of heterosexuals self-identified as Non-Hispanic White.
- Among participants, 6.2 percent of MSM, 14.8 percent of IDU, and 48.7 percent of heterosexuals self-identified as Non-Hispanic Black.
- Among self-identified Hispanics, 19.3 percent were MSM, 28.1 percent were IDU, and 31.7 percent were heterosexuals.
- Among those interviewed during the MSM cycle, 69.6 percent of participants reported having private health insurance, versus 1.2 percent for injection drug using participants and 11.6 percent for heterosexual participants.
- Among MSM participants during the past 12 months, 62.6 reported having unprotected anal sex, 70 percent reported having an HIV test, 76.6 percent reported receiving free condoms, and 77.3 percent of those participants reported using the condoms received.
- Among MSM participants, knowledge of the most recent sexual partner's HIV serostatus differs among main versus casual partners. HIV status is unknown with a casual partner more than twice as frequently as it is unknown with a main partner.
- Among IDU participants during the past 12 months, 72.8 percent of men and 63.2 percent of women reported unprotected vaginal sex with a main partner.
- Among IDU participants, 91.1 percent of reported ever being tested for HIV.
- Among IDU participants, 52.3 percent reported being infected with HCV, and almost three-quarters reported being homeless in the past 12 months.
- Among heterosexual participants in the past 12 months, 89.6 percent of men and 90.9 percent of women reported unprotected vaginal sex with a main partner.
- Among heterosexual participants, 71 percent of heterosexual participants reported ever being tested for HIV.
- Among heterosexual participants during the past 12 months, 37 percent reported receiving free condoms and 67.7 percent of those participants reported using the condoms received.

Introduction

National HIV Behavioral Surveillance System

In 2003, CDC, in collaboration with state and local health departments, initiated the NHBS system. The principal objective of the NHBS system is to monitor risk behaviors and access to prevention services among three populations at highest risk for HIV infection in the United States: MSM, IDU, and HET adults in high risk areas. The NHBS strategy involves rotating 12-month cycles of surveillance in these three populations. To date, one cycle of data collection has been completed in each population. Denver is one of 26 participating MSAs across the country (**Figure 50**). The Denver NHBS system is a collaborative effort between CDPHE and DPH.

■ **FIGURE 50. Participating Metropolitan Statistical Areas in the National Human Immunodeficiency Virus Behavioral Surveillance System**



Methods

A similar core questionnaire was administered to participants in all three cycles. The questionnaire included information about demographics, sexual behavior, injection and non-injection drug use, HIV testing behavior, and exposure to and use of prevention services. Cycle-specific questions were added to address the specific needs of each target population. Interviews were administered face-to-face using a handheld personal computer. Participation in all three cycles was voluntary and anonymous.

Men Who Have Sex With Men Cycle

Eligibility: All potential participants must have: 1) Been men or transgender people born male who were approached by study staff at sampled venues, 2) Been 18 years or older, 3) Been residents in a locally-defined geographic area of interest, 4) Not previously completed an interview for NHBS-MSM, 5) Been able to speak English or Spanish, and 6) Been able to provide consent.

Venue-Based Sampling: Local surveillance staff conducted venue-based, time-space sampling following a national surveillance protocol that organized activities into three components. First, staff conducted formative research to identify the venues, times and methods to recruit MSM. Next, staff constructed sampling frames of eligible venues and venue-specific, daytime periods that met MSM attendance, logistical, and safety eligibility criteria. The final component involved recruiting and interviewing men during sampling events.

Interviews were conducted between December 14, 2004, and February 27, 2005. Participants were recruited from local bars, dance clubs, restaurants, community-based organizations, and bathhouses in Denver. Field interviewers established boundaries (an area or a line) for the selection of men at each venue. Men entering the established boundary were approached systematically for recruitment. Those eligible for participation who agreed to participate were accompanied to a private area to conduct the NHBS-MSM interview. Participants were offered a \$25 gift certificate for their time and effort. No HIV testing was conducted as part of the MSM cycle.

Injection Drug Use Cycle

Eligibility: All potential participants must have: 1) Been aged 18 years or older, 2) Injected illicit drugs (drugs that have not been prescribed for medical purposes) in the past 12 months, 3) Lived in the participating MSA, 4) Been able to complete the eligibility screener and interview in English or Spanish, 5) Not previously completed an interview for NHBS-IDU, and 6) Been able to provide consent. Additional eligibility criteria include having physical evidence of recent injection (fresh track marks) or having current knowledge of drug packaging, pricing, and locations where drugs are sold.

Respondent-Driven Sampling: Participants were recruited through a chain-referral strategy called respondent-driven sampling (RDS). RDS is started with a limited number of “seeds” chosen by referral from key informants. After the seeds completed the interview, they were then asked to recruit up to three members from their network who are also IDU.

Interviews were conducted between July 29, 2005, and February 24, 2006. Seeds were identified through interviews with key stakeholders. Seeds were given up to three “coupons” to give to IDUs in their network. Referrals were interviewed at several sites including community-based organizations and the local public health department. RDS employs a dual incentive structure. Participants were compensated when they completed the survey and were also compensated a smaller amount for each eligible person they recruited into the project. Voluntary HIV testing was conducted as part of the IDU cycle, however, incentives were not provided for the test.

Heterosexual Cycle

Eligibility: All potential participants must have: 1) Been between the ages of 18 and 50, 2) Reported vaginal or anal sex with a person of the opposite gender in the past 12 months, 3) Been a resident in a high risk area, 4) Been male or female, not transgender, 5) Not previously completed an interview for NHBS-HET, 6) Been able to complete the interview in English or Spanish, and 7) Been able to provide consent.

High Risk Areas: An HRA is a census tract within the MSA where heterosexuals are thought to be at higher risk for HIV infection based on two indicators. The indicators used to define HRAs were rates of diagnosed cases of HIV/AIDS attributed to heterosexual exposure and rates of poverty.

Interviews were conducted between January 10, 2007, and October 31, 2007. Seeds were identified by key informants in the community. Eligible seeds were given up to five “coupons” to give to members of their network. Seeds were eligible for coupons if they were residents of specified HRAs. Referrals were interviewed at local community-based organizations and the public health department. Anonymous HIV testing was conducted as part of the HET cycle for all participants and participants were provided an incentive for the HIV test.

Partner Study: In conjunction with the NHBS-HET cycle, a one-time study of risk behaviors of male partners of women of color (defined as African American and Latinas/Hispanics) was conducted. The proposed activities in the Partner Study will attempt to answer the following two research questions: 1) “What are the risk behaviors of male sex partners of women of color?” and, 2) “To what extent do women of color’s perceptions of their male sex partners’ risky behaviors match the partners’ reported behaviors?” Both women of color and their male partners were recruited to participate in the Partner Study. Participants in the Partner Study were required to take an HIV test as part of the study.

Results

This report presents results of descriptive analyses of key demographic and behavioral surveillance indicators for the MSM, IDU, and HET cycles of NHBS collected for the Denver, Colorado MSA. Results from each cycle are analyzed separately due to the differing sampling techniques used in each cycle. Unweighted results are presented for all three cycles.

Overall National HIV Behavioral Surveillance Demographics

Demographics varied across NHBS cycles (**Table 22**). Participants differed in race and ethnicity across cycles. Approximately 66 percent of participants in the MSM cycle, 48.4 percent in the IDU cycle, and 14.3 percent in the HET cycle self-identified as Non-Hispanic White. Roughly 6.2 percent in the MSM cycle, 14.8 percent in the IDU cycle, and 48.7 percent in the HET cycle self-identified as Non-Hispanic Black. For participants self-identifying as Hispanic, the proportions are 19.3 percent for MSM, 28.1 percent for IDU, and 31.7 percent for HET. Educational attainment also varied across NHBS interview cycles. The majority of participants in the MSM cycle (79 percent) reported receiving more than a high school education, while 73.4 percent in the IDU cycle and 30.2 percent in the HET cycle reported receiving more than a high school education.

Participants also differed in their access to care. While 69.6 percent of participants in the MSM cycle reported private health insurance, only 1.2 percent of IDU participants and 11.6 percent of HET participants reported similar coverage. Almost two-thirds of IDU participants and half of HET participants reported having no health care coverage.

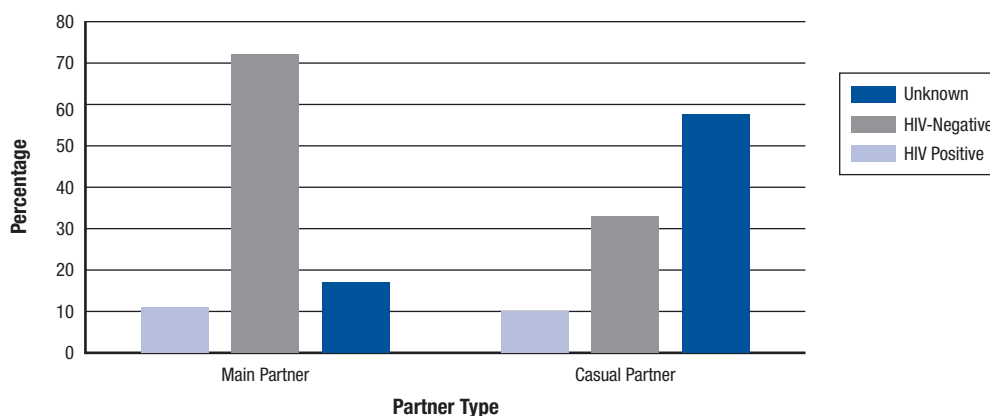
■ **TABLE 22: Demographic Characteristics of Participants, National HIV Behavioral Surveillance Study**

Characteristic	MSM n=973 (n%)	IDU n=519 (n%)	HET n=892 (n%)
Gender			
Male	973 (100.0%)	371 (71.5%)	346 (38.8%)
Female	—	148 (28.5%)	546 (61.2%)
Race/Ethnicity			
White (non-Hispanic)	628 (66.0%)	251 (48.4%)	127 (14.3%)
Black (non-Hispanic)	59 (6.2%)	77 (14.8%)	434 (48.7%)
Hispanic	184 (19.3%)	145 (28.1%)	282 (31.7%)
Asian/Pacific Islander (non-Hispanic)	22 (2.3%)	3 (0.6%)	2 (0.2%)
American Indian/Alaskan Native (non-Hispanic)	13 (1.3%)	20 (3.8%)	10 (1.1%)
Multiple Race (non-Hispanic)	35 (3.7%)	19 (3.7%)	30 (3.4%)
Other	11 (1.2%)	3 (0.6%)	6 (0.7%)
Age Group (Years)			
18–24	100 (10.3%)	34 (6.6%)	225 (25.2%)
25–34	265 (27.2%)	87 (16.8%)	242 (27.1%)
35–44	335 (34.3%)	145 (27.9%)	232 (26.0%)
45–54	195 (20.1%)	200 (38.5%)	193 (21.6%)
≥55	78 (8.0%)	53 (10.2%)	—
Education			
<High School	22 (2.3%)	17 (3.3%)	282 (31.6%)
High School Diploma or Equivalent	182 (18.7%)	121 (23.3%)	341 (38.2%)
>High School	769 (79.0%)	381 (73.4%)	269 (30.2%)
Sexual Identity			
Homosexual	868 (89.2%)	12 (2.3%)	2 (0.2%)
Bisexual	84 (8.6%)	39 (7.5%)	107 (12.0%)
Heterosexual	15 (1.6%)	465 (89.4%)	779 (87.3%)
Other	6 (0.6%)	—	2 (0.2%)
Don't Know	—	3 (0.6%)	2 (0.2%)
Health Insurance			
Private	664 (69.6%)	8 (1.2%)	103 (11.6%)
Public	55 (5.8%)	113 (21.9%)	271 (30.7%)
None	200 (21.0%)	326 (63.2%)	449 (50.9%)
Other	35 (3.6%)	69 (13.27%)	56 (6.3%)
Don't Know	—	(%)	4 (0.5%)
Venue Recruitment/Interview Location			
Bar	846 (87.0%)	—	—
Community Based Organization	13 (1.3%)	401 (77.3%)	723 (81.0%)
Dance Club	18 (1.9%)	—	—
Pride Festival	33 (3.4%)	—	—
Restaurant	24 (%)	—	—
Bath House	39 (4.0%)	—	—
Local Health Department	—	113 (21.8%)	169 (19.0%)

Men Who Have Sex with Men Behavioral Surveillance Indicators

The proportions of various HIV surveillance behaviors for MSM are reported in **Table 23**. Among men reporting anal sex with a main partner(s), 62.6 percent reported unprotected anal sex in the past 12 months. Men engaging in both receptive and insertive anal sex reported that it was unprotected at the last encounter with a main partner 59.4 percent and 59.5 percent of the time respectively. Among men reporting anal sex with a casual partner(s), 37.5 percent reported unprotected anal sex in the past 12 months. Knowledge of partner's serostatus differed by partner type (**Figure 51**).

■ **FIGURE 51. Serostatus of most recent partner, MSM cycle**



Approximately 10.4 percent of men reported ever injecting drugs. Among MSM reporting IDU, 23.5 percent reported injecting drugs in the past 12 months. A large proportion (63.6 percent) of men reporting IDU in the past 12 months reported sharing needles in the past 12 months. Cocaine was the most commonly reported non-injection drug with almost 37.4 percent of respondents reporting cocaine use in the past 12 months. Of those, a little more than half reported engaging in sexual activity under the influence of cocaine.

The majority of participants, 93.9 percent, reported ever being tested for HIV and 70 percent reported being tested in the past 12 months. Most participants were either tested at their private doctor's office (43.7%) or a public health clinic or community health center (41.4%).

More than three-quarters of participants reported receiving free condoms in the past 12 months and 77.3 percent reported using the free condoms they received. Roughly 65.9 percent reported that receiving the free condoms made them more likely to use condoms during sexual activity. Among participants, 18.6 percent reported receiving one-on-one counseling related to HIV in the past 12-months, while 6.7 percent reported receiving counseling in a group setting.

■ **TABLE 23: Prevalence of Various HIV Surveillance Behaviors, MSM Cycle (n=973)**

	n (n%)	Total
Sexual Behaviors		
Main Partner(s)		
Anal sex past 12 months	529 (86.6%)	611
Unprotected anal sex past 12 months	331 (62.6%)	529
Unprotected receptive anal sex at last sex	152 (59.4%)	256
Unprotected insertive anal sex at last sex	205 (59.5%)	346
Casual Partner(s)		
Anal sex past 12 months	432 (72.6%)	595
Unprotected anal sex past 12 months	162 (37.5%)	432
Unprotected receptive anal sex at last sex	60 (34.7%)	173
Unprotected insertive anal sex at last sex	74 (29.1%)	254
Drug Use Behaviors		
Injection Drug Use		
Ever injected any drugs	101 (10.4%)	973
Injected drugs past 12 months	4 (23.5%)	17
Shared needle at least once to inject past 12 months	7 (63.6%)	11
Shared needle at least once to divide drugs past 12 months	8 (47.1%)	17
Non-injection Drug Use		
Non-prescription drug use past 12 months	433 (44.5%)	973
Stimulant (methamphetamine, amphetamine) use past 12 months	102 (23.6%)	433
Sex under influence of stimulant past 12 months	65 (63.7%)	102
Crack use past 12 months	37 (8.5%)	433
Sex under influence of crack past 12 months	22 (59.5%)	37
Smoked or snorted cocaine past 12 months	162 (37.4%)	433
Sex under influence of cocaine past 12 months	83 (51.2%)	162
Ecstasy use past 12 months	87 (20.1%)	433
Sex under influence of ecstasy past 12 months	42 (48.3%)	87
Poppers (amyl nitrite) use past 12 months	121 (27.8%)	433
Sex under influence of poppers past 12 months	112 (92.6%)	121
HIV Testing Behaviors		
Testing History		
Ever tested for HIV	914 (93.9%)	973
Most recent HIV test positive	152 (15.6%)	973
HIV test past 12 months	640 (70.0%)	914
Testing Facility of Most Recent Test		
Private doctor's office	227 (43.7%)	519
Public health clinic/community health center	215 (41.4%)	519
HIV counseling and testing program	28 (5.4%)	519
HIV/AIDS street outreach	10 (1.9%)	519
Drug treatment program	1 (<1.0%)	519
Hospital (inpatient)	10 (1.9%)	519
Other outpatient	4 (<1.0%)	519
STI clinic	5 (<1.0%)	519
Other	19 (3.7%)	519
HIV Prevention Exposure		
Received free condoms past 12 months	745 (76.6%)	973
Used free condoms received	576 (77.3%)	745
Free condoms made more likely to use condoms	490 (65.9%)	743
Received individual-level counseling past 12 months	181 (18.6%)	972
Received group-level counseling past 12 months	65 (6.7%)	972

Injection Drug User Behavioral Surveillance Indicators

The proportions of various HIV surveillance behaviors for IDU are reported in **Table 24**. Among men reporting sex with a female main partner, 72.8 percent reported unprotected vaginal sex and 83.3 percent reported unprotected anal sex in the past 12 months. Among men reporting sex with a female casual partner, 68.2 percent reported unprotected vaginal sex and 64.3 percent reported unprotected anal sex in the past 12 months. Approximately 38.5 percent of men with a female exchange partner reported unprotected vaginal or anal sex at last sex. Roughly 5.7 percent of men reported ever having oral or anal sex with another man.

Among females reporting a male main partner, 66.3 percent reported unprotected vaginal sex and 84.2 percent reported unprotected anal sex in the past 12 months. Among females with a male casual partner, 63.2 percent reported unprotected vaginal sex and 33.3 percent reported unprotected anal sex in the past 12 months. 8.7 percent reported unprotected vaginal or anal sex at last sex with an exchange partner.

Over two-thirds (67.2%) of participants reported using needles that were used by someone else to inject drugs at least once in the past 12 months while more than half (56.2%) reported sharing a cooker that someone else used at least once when they injected in the past 12 months.

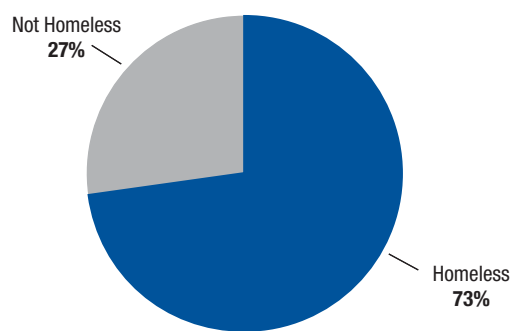
A large proportion (91.1%) of IDU participants reported ever being tested for HIV with 4.4 percent reporting being HIV positive. About one-fourth of participants reported being tested at a public health clinic or a community health center while almost 14.4 percent reported being tested in a correctional facility.

Approximately 16.2 percent of participants reported receiving free sterile needles in the past 12 months and 95.2 percent of those participants reported using the free needles they received. Most of the participants who received free needles reported that the free needles made them more likely to use sterile needles to inject. About 41.2 percent of participants reported receiving free injection kits in the past 12 months and 95.3 percent of those participants reported that the free kits made them more likely to use clean cookers, cotton, and water to inject.

A little over half of the participants, 52.3 percent, reported being infected with HCV and only 12.4 percent of them reported ever being given medication to treat their infection. Almost 70 percent of those not infected with HCV reported ever being tested.

Almost three-quarters of participants reported being homeless (i.e., living on the street, in a shelter, or a single room occupancy hotel, in the past 12 months (**Figure 52**). Among those reporting being homeless in the past 12 months, 75 percent reported being currently homeless. More than half of participants, 58 percent, reported an income of less than \$4,999 during the past year.

■ **FIGURE 52. Distribution of Injection Drug Users Reporting Being Homeless (i.e., Living on the Street, in a Shelter, or a Single Room Occupancy Hotel) in the Past 12 Months, IDU Cycle**



■ **TABLE 24: Prevalence of Various HIV Surveillance Behaviors, IDU Cycle (n=519)**

	n (n%)	Total
Sexual Behaviors for Male Respondents		
Main Partner(s)		
Unprotected vaginal sex past 12 months	155 (72.8%)	213
Unprotected anal sex past 12 months	35 (83.3%)	42
Casual Partner(s)		
Unprotected vaginal sex past 12 months	103 (68.2%)	151
Unprotected anal sex past 12 months	18 (64.3%)	28
Exchange Partner(s)		
Unprotected vaginal/anal sex at last sex	15 (38.5%)	39
Oral or anal sex with a man past 12 months	21 (5.7%)	371
Sexual Behaviors for Female Respondents		
Main Partner(s)		
Unprotected vaginal sex past 12 months	69 (66.3%)	104
Unprotected anal sex past 12 months	16 (84.2%)	19
Casual Partner(s)		
Unprotected vaginal sex past 12 months	12 (63.2%)	19
Unprotected anal sex past 12 months	1 (33.3%)	3
Exchange Partner(s)		
Unprotected vaginal/anal sex at last sex	2 (8.7%)	23
Drug Use Behaviors		
Received needles from dealer past 12 months	117 (22.5%)	519
Received needles from needle exchange past 12 months	51 (9.8%)	519
Shared needles at least once to inject past 12 months	254 (67.2%)	378
Shared cooker when injecting at least once in past 12 months	291 (56.2%)	518
Went to shooting gallery at least once in past 12 months	180 (34.7%)	519
HIV Testing Behaviors		
Testing History		
Ever tested for HIV	473 (91.1%)	519
Most recent HIV test positive	23 (4.4%)	519
Testing Facility of Most Recent Test		
Private doctor's office	4 (<1.0%)	466
Public health clinic/community health center	121 (26.0%)	466
HIV counseling and testing program	43 (9.2%)	466
HIV/AIDS street outreach	35 (7.5%)	466
Drug treatment program	26 (5.6%)	466
Hospital (inpatient)	54 (11.6%)	466
Other outpatient	8 (1.7%)	466
STI clinic	14 (3.0%)	466
Emergency room	7 (1.5%)	466
Correctional facility	67 (14.4%)	466
Other	82 (17.6%)	466
HIV Prevention Exposure		
Received free condoms past 12 months	284 (54.7%)	519
Used free condoms received	145 (51.1%)	284
Free condoms made more likely to use condoms	176 (62.0%)	284
Received free sterile needles past 12 months	176 (62.0%)	284
Used free sterile needles received	80 (95.2%)	84
Free needles made more likely to use sterile needles	77 (91.7%)	84

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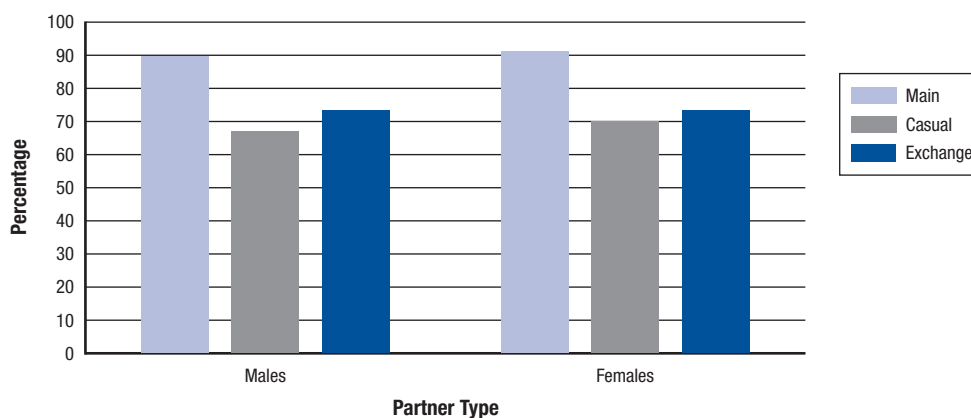
■ **TABLE 24: Prevalence of Various HIV Surveillance Behaviors, IDU Cycle (n=519)** *continued from page 63*

	n (n%)	Total
HIV Testing Behaviors		
HIV Prevention Exposure		
Received free injection kits past 12 months	214 (41.2%)	519
Used free injection kits received	204 (95.3%)	214
Free kits made more likely to use clean cookers, cotton, water	204 (95.3%)	214
Received individual-level counseling past 12 months	169 (32.6%)	519
Received group-level counseling past 12 months	87 (16.8%)	519
Hepatitis C Infection		
Infected with hepatitis C	266 (52.3%)	519
Ever given medication to treat hepatitis C	33 (12.4%)	266
Ever tested for hepatitis C	163 (68.5%)	238

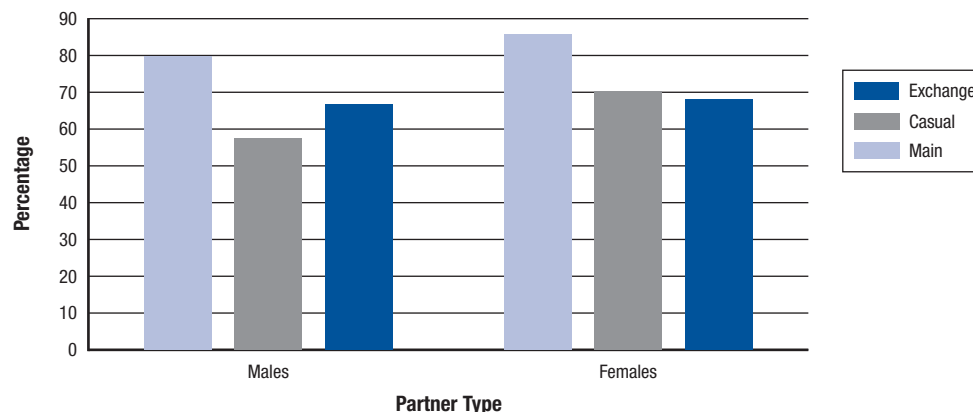
Heterosexual Behavioral Surveillance Indicators

The proportions of various HIV surveillance behaviors for HET are reported in **Table 25**. Among men reporting sex with a female main partner, 89.6 percent reported unprotected vaginal sex and 79.7 percent reported unprotected anal sex in the past 12 months (**Figure 53**). Approximately 78.2 percent of men reported unprotected vaginal or anal sex at last sex with a female main partner. Among men reporting sex with a female casual partner, 66.8 percent reported unprotected vaginal sex and 57.4 percent reported unprotected anal sex in the past 12 months. A little less than half reported unprotected vaginal or anal sex at last sex with a female casual partner. Roughly 73.1 percent of men reporting a female exchange partner reported unprotected vaginal sex in the past 12 months and 66.7 percent reported unprotected anal sex. A little more than half reported unprotected vaginal or anal sex at last sex with a female exchange partner.

■ **FIGURE 53. Proportion of Unprotected Vaginal Sex Among those Reporting Vaginal Sex in the Past 12 Months by Partner Type, HET Cycle**



■ FIGURE 54. Proportion of Unprotected Anal Sex Among those Reporting Anal Sex in the Past 12 Months by Partner Type, HET Cycle



Roughly 7.5 percent of men reported having oral or anal sex with another man in the past 12 months.

Among females reporting sex with a male main partner, 90.9 percent reported unprotected vaginal sex and 85.7 percent reported unprotected anal sex in the past 12 months. Approximately 83.3 percent of females reported unprotected vaginal or anal sex at last sex with a male main partner. Among females reporting sex with a male casual partner, 71.1 percent reported unprotected vaginal sex and 70.3 percent reported unprotected anal sex in the past 12 months. Almost two-thirds reported unprotected vaginal or anal sex at last sex with a male casual partner. Roughly 73.2 percent of females reporting a male exchange partner reported unprotected vaginal sex in the past 12 months and 68 percent reported unprotected anal sex. Approximately 71.4 percent reported unprotected vaginal or anal sex at last sex with a male exchange partner.

Approximately 25 percent of high-risk HET reported ever injecting drugs. Among those who reported ever injecting drugs, 59.3 percent reported injecting drugs in the past 12 months. Among participants reporting IDU in the past 12 months, 39.8 percent reported sharing a needle to inject at least once and 47.2 percent reported sharing a needle to divide drugs at least once in the past 12 months.

A little more than 60 percent of participants reported using non-prescription drugs in the past 12 months. Of those, 14.8 percent reported using crystal methamphetamine, 41.4 percent reported using crack cocaine, 36.3 percent reported smoking or snorting cocaine, and 19 percent reported using ecstasy in the past 12 months.

Approximately 71 percent of participants in the HET cycle reported ever being tested for HIV with only one participant reporting being HIV positive. About one third of participants reported being tested at a public health clinic or community health center, 16.9 percent reported being tested at an STI clinic, and 9.5 percent of participants reported being tested at a private doctor's office. Approximately 10 percent reported being tested in a correctional facility.

Roughly 37 of participants reported receiving free condoms in the past 12 months and 67.7 percent of those participants reported using the free condoms they received. About half reported that receiving the free condoms made them more likely to use condoms during sexual activity. Only 9.8 percent of

participants reported receiving one-on-one counseling related to HIV in the past 12 months and 5.6 percent reported receiving counseling in a group setting.

Participants were asked about diagnosis with various sexually transmitted infections during the past 12 months. Less than one percent of participants reported being diagnosed with syphilis, 5.2 percent were diagnosed with gonorrhea, 9.2 percent reported a chlamydial infection, and 1.2 percent reported being diagnosed with herpes.

■ **TABLE 25: Prevalence of Various HIV Surveillance Behaviors, HET Cycle (n=892)**

	n (n%)	Total
Sexual Behaviors for Male Respondents		
Main Partner(s)		
Unprotected vaginal sex past 12 months	216 (89.6%)	241
Unprotected anal sex past 12 months	55 (79.7%)	69
Unprotected vaginal/anal sex at last sex	79 (78.2%)	101
Casual Partner(s)		
Unprotected vaginal sex past 12 months	147 (66.8%)	220
Unprotected anal sex past 12 months	39 (57.4%)	68
Unprotected vaginal/anal sex at last sex	51 (47.7%)	107
Exchange Partner(s)		
Unprotected vaginal sex past 12 months	30 (73.1%)	41
Unprotected anal sex past 12 months	16 (66.7%)	24
Unprotected vaginal/anal sex at last sex	12 (52.2%)	23
Ever had oral or anal sex with a man	26 (7.5%)	346
Sexual Behaviors for Female Respondents		
Main Partner(s)		
Unprotected vaginal sex past 12 months	412 (90.9%)	453
Unprotected anal sex past 12 months	108 (85.7%)	126
Unprotected vaginal/anal sex at last sex	160 (83.3%)	192
Casual Partner(s)		
Unprotected vaginal sex past 12 months	216 (71.1%)	304
Unprotected anal sex past 12 months	52 (70.3%)	74
Unprotected vaginal/anal sex at last sex	87 (62.1%)	140
Exchange Partner(s)		
Unprotected vaginal sex past 12 months	52 (73.2%)	71
Unprotected anal sex past 12 months	17 (68.0%)	25
Unprotected vaginal/anal sex at last sex	15 (71.4%)	21
Drug Use Behaviors		
Injection Drug Use		
Ever injected any drugs	221 (24.8%)	892
Injected drugs past 12 months	131 (59.3%)	221
Shared needle at least once to inject past 12 months	51 (39.8%)	128
Shared needle to divide drugs past 12 months	59 (47.2%)	125
Non-injection Drug Use		
Non-prescription drug use past 12 months	548 (61.5%)	891
Crystal methamphetamine use past 12 months	81 (14.8%)	548
Crack cocaine use past 12 months	227 (41.4%)	548
Smoked or snorted cocaine past 12 months	199 (36.3%)	548
Ecstasy use past 12 months	104 (19.0%)	548

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■ **TABLE 25: Prevalence of Various HIV Surveillance Behaviors, HET Cycle (n=892)** *continued from page 66*

	n (n%)	Total
HIV Testing Behaviors		
Testing History		
Ever tested for HIV	631 (70.8%)	891
Most recent HIV test positive	1 (<1.0%)	623
Testing Facility of Most Recent Test		
Private doctor's office	56 (9.5%)	591
Public health clinic/community health center	198 (33.5%)	591
HIV counseling and testing program	13 (2.2%)	591
HIV/AIDS street outreach	14 (2.4%)	591
Drug treatment program	9 (1.5%)	591
Hospital (inpatient)	46 (7.8%)	591
Other outpatient	14 (2.4%)	591
STI clinic	100 (16.9%)	591
Emergency Room	5 (0.9%)	591
Correctional facility	62 (10.5%)	591
Other	74 (12.5%)	591
HIV Prevention Exposure		
Received free condoms past 12 months	328 (36.8%)	891
Used free condoms received	222 (67.7%)	328
Free condoms made more likely to use condoms	162 (49.4%)	328
Received individual-level counseling past 12 months	87 (9.8%)	891
Received group-level counseling past 12 months	50 (5.6%)	891
Other STIs in Past 12 Months		
Syphilis	6 (<1.0%)	891
Gonorrhea	46 (5.2%)	891
Chlamydial infection	82 (9.2%)	891
Herpes	11 (1.2%)	891

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Glossary

AIDS—

An HIV-infected person receives a diagnosis of AIDS after the development of one of the CDC-defined AIDS indicator illnesses (see opportunistic infection) or on the basis of the results of specific blood tests (i.e., a CD4+ count of less than 200 cells/microliter or a CD4+ percentage of less than 14). A positive HIV test result does not mean that a person has AIDS.

Antiretroviral therapy—

Anti-HIV treatments designed to reduce the levels of HIV in a person's body.

CDC—

The Centers for Disease Control and Prevention, in the U.S. Department of Health and Human Services, is the lead federal agency for protecting the health and safety of the people of the United States. CDC accomplishes its mission through developing and applying disease prevention and control, environmental health, and health promotion and education activities designed to improve public health in the United States. The CDC provides most of the funding for HIV prevention and HIV Surveillance activities in Colorado.

Cumulative—

Refers to the total number of HIV, AIDS or HIV/AIDS cases reported in Colorado since surveillance for this condition began in 1982.

Denominator—

Divisor; the term of a fraction, usually written under or after the line that indicates the number of equal parts into which the unit is divided; used to calculate a rate or ratio. For example, in the fraction $\frac{1}{4}$, four is the denominator.

Epidemiology—

Study of how diseases or health conditions are distributed in a population. Consequently, an epidemiologist may analyze public health data to determine how a disease is transmitted and to recommend interventions, to identify segments of a population at risk of acquiring a disease, or to monitor disease trends and predict the course and effect of a disease.

Exchange partner—

A sexual partner who receives money or drug for sex.

Exposure categories—

To monitor how HIV is being transmitted, HIV/AIDS cases are classified as one of several exposure (risk) categories developed by CDC. MSM refers to Male-to-male sexual contact; that is, homosexual or bisexual contact. Injection drug-use (IDU) refers to the use of forms of drugs that require injection. High-risk heterosexual (HET) contact refers to heterosexual contact with a

partner who is at increased risk for HIV infection (i.e., a MSM, IDU, or a person with documented HIV infection).

Hemophilia/transfusion/transplant cases are those resulting from a confirmed transfusion of blood or blood products before 1985). Perinatal HIV cases describe HIV infection in children resulting from transmission from an HIV-positive mother. Unspecified, or no identified risk cases are those persons who have no reported history of exposure at the time of the report date. This category includes persons for whom the surveillance protocols to document risk behavior information have not yet been completed, persons who have declined to disclose their risk behavior or who deny any risk behavior, and persons who do not know the HIV status or risk behaviors of their sex partners.

Genotype—

The genetic constitution of an individual or group.

Highly Active Antiretroviral Therapy (HAART)—

Aggressive anti-HIV treatments that usually include a combination of protease and reverse transcriptase inhibitors, which interrupt the HIV life cycle and whose purpose is to reduce a person's viral load to undetectable levels.

HIV—

The virus that causes AIDS. A person who has contracted the virus is said to be HIV-positive or HIV infected.

Incidence—

Refers to the number of new cases of a disease that occur in a population during a specified time, usually a year. Even though HIV data are often presented as “new cases of HIV”, these data do not represent new infections (true HIV incidence) because a person may not be tested for HIV during the same period that he or she became infected. On the other hand, incidence can be calculated for diseases (e.g., some sexually transmitted infections). These diseases have clear symptoms that are detectable when a person becomes infected and that cause a person to be tested or to seek treatment shortly after infection.

Numerator—

Dividend, the term of a fraction, usually written above or before the line that indicates the number of parts that are to be divided; used to calculate a rate or ratio. For example, in the fraction $3/4$, three is the numerator.

Perinatal—

The word means “around birth” and is used to describe events that occur during labor and birth, and immediately after delivery. When used to describe HIV transmission, however, this word applies more broadly and describes any time that a mother may transmit HIV to her child—while she is pregnant, during birth, or through breast-feeding.

Prevalence—

Refers to the total number of persons with a specific disease or condition at a given time. HIV prevalence data are generally presented as “persons living with HIV.” HIV prevalence data provided by HIV surveillance programs underestimate the true HIV prevalence because HIV-infected persons who have not yet been tested or reported to the health department are not included.

Proportion (percentage)—

A proportion is a type of ratio in which the numerator is included in the denominator. Because the numerator is a subset of the denominator, a proportion can be thought of as a ratio of a part to the whole. A proportion is usually expressed as a percentage.

Rate—


Type of ratio that includes a specification of time and a comparative value. In public health rates are typically expressed in the number of events per 100,000 persons but can be expressed using differing comparative values such as per 1,000; 10,000, etc. In epidemiology, rates express the probability of, or risk for, disease or other events in a defined population during a specified period, often one year.





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