HIV & AIDS

in Colorado

Integrated Epidemiologic Profile of HIV and AIDS Prevention and Care Planning reported through June 2003

Colorado Department
of Public Health
and Environment

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Executive Summary

As of June 30, 2003, a cumulative total of 7,858 cases of AIDS and an additional 6,132 cases of HIV infection have been reported in Colorado. AIDS cases peaked in 1993 and decreased by 21 percent between 1993 and 1995. 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. Decreases in AIDS cases are evident across all racial and risk groups. In 2002, 311 AIDS cases were diagnosed, an increase of 12% over the previous year.

AIDS-related mortality peaked two years after the peak in AIDS incidence, in 1995 when 512 deaths were reported. The number of deaths related to AIDS also declined dramatically until the late 1990s. In the last five years, deaths related to AIDS has fluctuated between 110 and 133 deaths per year.

In contrast to trends in new AIDS cases, which peaked in 1993, the trend in persons testing positive for HIV peaked in 1987. There has been an increase of 43% in the number of HIV cases between 1999 and 2002 (when 304 cases were diagnosed).

As a result of new therapies, fewer people are dying from AIDS and fewer people with HIV are progressing to AIDS. Prevalent cases of HIV or AIDS have increased steadily. By 2002, an estimated 9,153 persons were living with HIV or AIDS in Colorado, 37% have progressed to AIDS.

Compared to the eastern and southern United States and to larger metropolitan areas, the epidemic in Colorado is still overwhelmingly driven by sexual exposure, primarily among men who have sex with men (MSM), which continues to be the most significant risk group for males (at 76 percent of HIV or AIDS cases). Among females, the impact of heterosexual contact is undeniable, comprising 38% of new HIV cases.

Racial and ethnic minorities are disproportionately affected by HIV/AIDS, especially Blacks, whose over-representation is observed in all risk groups. When more recently infected cases are scrutinized, increasing proportions of recently infected persons appear to be racial or ethnic minorities or to have acquired their infection through injection drug use (IDU).

HIV/AIDS continues to be geographically centered in the Front Range population of Colorado, although IDUs appear to be more likely than other risk groups to live in rural Colorado.

Although the number of women living with HIV in Colorado has increased, 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-retrovirals during and after pregnancy, labor, and delivery. Two cases of perinatally acquired HIV infection have been reported in infants born to HIV-infected mothers in Colorado in the last five years.

The majority of persons diagnosed with AIDS or HIV in 2002 had access to primary medical care (92%). In 2002, Ryan White Comprehensive AIDS Resource Emergency (CARE) Act funds were used primarily to provide medical care and case management.

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 (men who have sex with men/injection drug use), which comprise over 76 percent of cumulative cases. In the last five years, the proportion of infected Hispanic MSM has steadily increased more than any other racial category. MSM ages 20 to 29 are over represented among recently diagnosed HIV cases: males in this age group account for 15 percent of the male population, but account for 32 percent of the recent epidemic. MSM have a much higher rate of recent infection (infected within 170 days of first HIV test) than any other risk group.

Recently among MSM, alarming increases in early syphilis cases indicate increased sexual risk behavior, which increases the possibility of transmission of HIV. Bathhouse contacts continue to be an important source of new infections of both HIV and syphilis.

- **Blacks**
  This group is 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 for Blacks in Colorado in 2002 was 26.8, nearly five times the rate of Whites. Among females, the differences are even more profound. Black females had rates per 100,000 that were 21 times higher than White females in recently diagnosed HIV cases.

- **Injecting Drug Users**
  Blacks are disproportionately affected by IDU. Blacks represent 16 percent of HIV cases diagnosed in 2002, but only four percent of the general population. HIV is clearly an epidemic among older persons (ages of 30–49). Seventy-four percent of recent HIV infection is in this age group. Additionally, it is worth noting that IDUs appear to be more likely than other risk groups to live in rural Colorado.

- **Females**
  The proportion of females among newly diagnosed HIV cases is increasing. In 2002, women accounted for 10% of person living with HIV and AIDS, up from under 2% in 1985 and 5% in 1990. Females have a higher proportion of people of color, 40% were Black and 31% were Hispanic. Heterosexual contact was the predominant risk for women diagnosed with HIV in 2002.

Data Sources

The data that form the basis of this report are principally reports of HIV (infection with the Human Immunodeficiency Virus) and AIDS (the most severe clinical manifestation of HIV) among persons who were living in Colorado at the time of this diagnosis. Frequently, both HIV infections 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 2001–2002 (that have not progressed to AIDS as of June 2003) are also presented in this report. Cases are reported to the Colorado Department of Public Health and Environment (CDPHE), HIV Surveillance Program and are entered into a database known as the HIV and AIDS Reporting System (HARS) that is used in all states (and in 13 cities) to enumerate AIDS and/or HIV infections in these jurisdictions. AIDS cases in this report meet the 1993 Centers for Disease Control and Prevention (CDC) surveillance case definition for AIDS[1], which includes HIV-infected persons with CD4+ counts of less than 200 mm^3 or those diagnosed with one of 21 opportunistic infections definitive of AIDS.

HIV infection and AIDS have been reportable by name in Colorado by regulation since 1985 and by statute since 1987. This law requires that both laboratories and physicians report cases of HIV and AIDS within seven days to CDPHE. 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 mm^3 are reportable.

Serologic Testing Algorithm for Recent HIV Seroconversion (STARHS) data consists of all HIV tests sent to the CDPHE for either initial or confirmatory HIV testing between the years 1994 and 2000. Samples were sent by private physicians, state and locally funded HIV counseling and testing sites, private and public clinics and state and local correctional facilities. HIV tests completed by private labs were not included in these data. HIV data used in this study are unlinked from identifying demographic information. STARHS incidence calculations are population-based cross sectional estimations of incidence and are not an incidence density calculation. Since these data do not include all the HIV tests in the state of Colorado and are population based estimates, these results should be interpreted with caution and not generalized to individuals or specific populations.

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 infection or AIDS. Colorado's demographic and geographic data is based on the 2000 United States (U.S.) census and estimates are made each year about changes to Colorado's population by the State Demographer's Office.

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 CDPHE has provided cause of death data obtained from death certificates filed with the department through 2002.

The Colorado Department of Corrections (DOC) 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 statute. In 1987, CDPHE initiated an active system of surveillance for HIV and AIDS in order to accurately characterize the epidemic in Colorado. An evaluation study conducted in 2001 demonstrated that completeness of reporting of AIDS and HIV in Colorado was approximately 97 percent for recently diagnosed cases. CDPHE also collects local variables, such as incarceration or Hepatitis C 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 a few individuals, this progression may be relatively rapid (less than two years) but has usually been over a 5 to 10 year period. However, the "incubation period" of HIV progression to AIDS may be substantially longer. 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 a decade or more 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. They 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 in the HIV/AIDS Reporting System database and thus are not included in this report. When these persons access health care, they are reported by their providers and by laboratories that perform testing to assess immune function and at that point are entered into HARS. They are included in this epidemiological profile when they are reported with HIV or AIDS by name, and CDPHE can assure that no duplication in reporting has occurred.

Finally, data about risk is less complete for newly diagnosed HIV-infected persons than for persons with AIDS. In 2002, risk data for all AIDS cases reported since 1982 was not available for four percent of cases (n=7,858); for AIDS cases newly diagnosed in 2002, risk was not identified in 15 percent of cases. However, 18 percent of HIV cases diagnosed in 2002 (n=304) had no risk reported. The reason for this is that investigation of risk factors for HIV and AIDS occurs over time. Persons who are newly infected may not have discussed risk 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 on Colorado as a whole.

STARHS data do not include all of the HIV tests in the state of Colorado and therefore the data cannot be generalized to individuals, specific populations or to all of Colorado. STARHS seroincidence calculations are population based estimates and are not incidence density calculations. In 1996 and 1997, approximately 65% of the positive HIV samples were not stored at the CDPHE and therefore not STARHS tested and not included in these HIV seroincidence estimates. Due to missing data, the reported HIV seroincidence rates could have underestimated the HIV seroincidence rates for the years 1996 and 1997. Anonymous tests were included in these data. Due to the possibility that a person could test for HIV more than once during the time in which they would be classified as a recent infection for the purposes of the STARHS HIV seroincidence calculations, reported HIV seroincidence rates could have been overestimated for all years.

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

Geography

Colorado is geographically a rural state. It is comprised of 64 counties and has a landmass of 104,095 square feet. The largest proportion of Colorado's population is located in 11 counties along the Front Range (Adams, Arapahoe, Boulder, Broomfield, Denver, Douglas, El Paso, Jefferson, Larimer, Pueblo, and Weld), which account for 15 percent of Colorado's land area but 81 percent of the population.[2] These counties include the population centers of Colorado Springs, Pueblo, metropolitan Denver, Boulder, Ft. Collins, and Greeley.

Population

According to the Colorado State estimates, Colorado's population is estimated to be 4,506,542 in July of 2002 . Colorado ranks 22nd in the nation in population and accounts for approximately 1.5 percent of the U.S. population.[3]

Age

The projected median age in Colorado is 34.9 years for the year 2002, up from 32.4 years in 1990 (the median age is projected to increase to 36.4 years in 2024) and 3.0 million people are under the age of 45 years.[4] The elderly population (over 65) has remained stable at approximately 10 percent of the population during the 1990's and is projected to remain at this level through 2010. The following table illustrates the distribution of the population by gender and age.

TABLE 1: 2002 Colorado Population by Age and Gender

Age Group	Male	Percent	Female	Percent	Total	Percent
<13	424,715	18.7%	404,602	18.1%	829,317	18.4%
13–19	231,792	10.2%	216,870	9.7%	448,662	10.0%
20–24	169,866	7.5%	151,142	6.8%	321,008	7.1%
25–29	173,144	7.6%	154,063	6.9%	327,207	7.3%
30–39	364,836	16.1%	338,872	15.2%	703,708	15.6%
40–49	369,982	16.3%	367,739	16.4%	737,721	16.4%
50+	535,816	23.6%	603,103	27.0%	1,138,919	25.3%
Total Population	**2,270,151**		**2,236,391**		**4,506,542**	

Source: U.S. Census Bureau, Population Division, State population datasets, State estimates by demographic characteristics—single year of age, sex, race, and Hispanic Origin, July 1, 2002

Race

Statewide, approximately 74 percent of the population classify themselves as White, 18 percent of the population classify themselves as Hispanic, four percent classify themselves as Black, three percent classify themselves as Asian, and two percent classify themselves as American Indian. There are 10.2 percent of Coloradans who speak Spanish at home. It is worth noting that

according to the U.S. Census Bureau 2001 Supplementary Survey, 6 percent of Colorado's population may be non-citizen immigrants.[5] Because of Colorado's migrant workforce, it is likely that these immigrants are Hispanic. It is not possible to determine whether these immigrants are included in Colorado's census figures, although it seems unlikely because the census is conducted in April of the start of each decade, and the immigrant workforce influx generally occurs during the growing season, starting in June.

TABLE 2: 2002 Colorado Population by Race and Gender

Race	Male	Percent	Female	Percent	Total	Percent
White	1,651,369	72.7%	1,656,805	74.1%	3,308,174	73.4%
Hispanic	428,685	18.9%	389,589	17.4%	818,274	18.2%
Black	89,805	4.0%	81,976	3.7%	171,781	3.8%
Asian/Hawaiian/PI	52,695	2.3%	59,541	2.7%	112,236	2.5%
American Indian/ Alaskan Native	15,565	0.7%	14,907	0.7%	30,472	0.7%
Two or More Races	32,032	1.4%	33,573	1.5%	65,605	1.5%
Total Population	**2,270,151**		**2,236,391**		**4,506,542**	

Source: U.S. Census Bureau, Population Division, State population datasets, State estimates by demographic characteristics—single year of age, sex, race, and Hispanic Origin, July 1, 2002

TABLE 3: 2001 Colorado Population by Race and County

County	Hispanic	White	Black	American Indian & Alaska Native	Asian
ADAMS	28.2	63.3	3.0	1.2	3.2
ALAMOSA	41.4	54	1.0	2.3	0.8
ARAPAHOE	11.8	73.9	7.7	0.7	3.9
ARCHULETA	16.8	80.1	0.4	1.4	0.3
BACA	7.0	90.4	0.0	1.2	0.2
BENT	30.2	63.3	3.7	2.2	0.6
BOULDER	10.5	83.6	0.9	0.6	3.1
CHAFFEE	8.6	87.3	1.6	1.1	0.4
CHEYENNE	8.1	90.5	0.5	0.8	0.1
CLEAR CREEK	3.9	94.0	0.3	0.7	0.4
CONEJOS	58.9	39.3	0.2	1.7	0.2
COSTILLA	67.6	28.2	0.8	2.5	1.0
CROWLEY	22.5	66.5	7.0	2.6	0.8
CUSTER	2.5	94.2	0.4	1.1	0.3
DELTA	11.4	86.0	0.5	0.8	0.3
DENVER	31.7	51.9	11.1	1.3	2.8
DOLORES	3.9	92.8	0.1	2.0	0.4
DOUGLAS	5.1	89.7	1.0	0.4	2.5
EAGLE	23.2	74.2	0.3	0.7	0.8
EL PASO	11.3	76.2	6.5	0.9	2.5
ELBERT	3.9	93.2	0.6	0.6	0.4
FREMONT	10.3	81.1	5.3	1.5	0.5
GARFIELD	16.7	81.0	0.4	0.7	0.4
GILPIN	4.2	92.0	0.5	0.8	0.7
GRAND	4.4	93.0	0.5	0.4	0.7
GUNNISON	5.0	92.3	0.5	0.7	0.5
HINSDALE	1.5	96.6	0.0	1.5	0.3
HUERFANO	35.1	58.4	2.7	2.7	0.4
JACKSON	6.5	92.1	0.3	0.8	0.1
JEFFERSON	10.0	84.9	0.9	0.8	2.3

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■ **TABLE 3: 2001 Colorado Population by Race and County**

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County	Hispanic	White	Black	American Indian & Alaska Native	Asian
KIOWA	3.1	94.3	0.5	1.1	0.0
KIT CARSON	13.7	83.4	1.7	0.5	0.3
LAKE	36.1	61.6	0.2	1.3	0.3
LA PLATA	10.4	82.3	0.3	5.8	0.4
LARIMER	8.3	87.5	0.7	0.7	1.6
LAS ANIMAS	41.5	55.2	0.4	2.5	0.4
LINCOLN	8.5	84.2	5.0	0.9	0.6
LOGAN	11.9	84.4	2.0	0.6	0.4
MESA	10.0	87.0	0.5	0.9	0.5
MINERAL	2.0	95.4	0.0	0.8	0.0
MOFFAT	9.5	88.2	0.2	0.9	0.3
MONTEZUMA	9.5	77.5	0.1	11.2	0.2
MONTROSE	14.9	82.4	0.3	1.0	0.4
MORGAN	31.2	67.0	0.3	0.8	0.2
OTERO	37.6	59.2	0.8	1.4	0.7
OURAY	4.1	93.2	0.1	0.9	0.3
PARK	4.3	92.5	0.5	0.9	0.4
PHILLIPS	11.8	86.3	0.2	0.3	0.4
PITKIN	6.5	90.6	0.5	0.3	1.1
PROWERS	32.9	65.1	0.3	1.2	0.4
PUEBLO	38.0	57.7	1.9	1.6	0.7
RIO BLANCO	4.9	92.6	0.2	0.8	0.3
RIO GRANDE	41.7	56.6	0.3	1.3	0.2
ROUTT	3.2	94.8	0.1	0.5	0.4
SAGUACHE	45.3	51.6	0.1	2.1	0.5
SAN JUAN	7.3	91.2	0.0	0.7	0.2
SAN MIGUEL	6.7	90.4	0.3	0.8	0.7
SEDGWICK	11.4	86.5	0.5	0.1	0.8
SUMMIT	9.8	86.7	0.7	0.5	0.9
TELLER	3.5	92.9	0.5	1.0	0.6
WASHINGTON	6.3	92.7	0.0	0.6	0.1
WELD	27.0	70.0	0.6	0.9	0.8
YUMA	12.9	86.1	0.1	0.3	0.1

Source: Table GTC-P6, Census 2000 Summary File 1

Poverty and Income

According to the U.S. Census Bureau, in 1991 Colorado ranked 37th in the nation in persons living in poverty (10 percent of the population). In 2000, Colorado's median household income was $48,322, and Colorado had the lowest rate of poverty in the country (8.1 percent of the population).[7, 8] By 2002, Colorado's median income increased to $49,397, and nine percent of the population lived in poverty. **Table 4** shows the poverty levels per county. Douglas county had the smallest percent of people living in poverty (1.7%) while Crowley county had the largest percent of its population living in poverty (34.1%).

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

County	Percentage Under Poverty Level	County	Percentage Under Poverty Level	County	Percentage Under Poverty Level
ADAMS	8.9	BACA	17.5	CHEYENNE	12.6
ALAMOSA	20.3	BENT	23.1	CLEAR CREEK	6.0
ARAPAHOE	5.8	BOULDER	7.8	CONEJOS	23.9
ARCHULETA	13.2	CHAFFEE	11.5	COSTILLA	28.5

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TABLE 4: Percentage of the Population Under the Poverty Level by County

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County	Percentage Under Poverty Level
CROWLEY	34.1
CUSTER	13.6
DELTA	14.2
DENVER	13.1
DOLORES	15.2
DOUGLAS	1.7
EAGLE	6.0
EL PASO	8.7
ELBERT	5.1
FREMONT	15.2
GARFIELD	7.8
GILPIN	5.5
GRAND	7.3
GUNNISON	11.4
HINSDALE	10.6
HUERFANO	21.9
JACKSON	14.5
JEFFERSON	5.1
KIOWA	12.8
KIT CARSON	13.2
LAKE	11.0
LA PLATA	10.7
LARIMER	7.5
LAS ANIMAS	18.4
LINCOLN	15.3
LOGAN	12.8
MESA	11.0
MINERAL	12.4
MOFFAT	9.9
MONTEZUMA	16.2
MONTROSE	12.6
MORGAN	12.9
OTERO	19.1
OURAY	8.0
PARK	6.2
PHILLIPS	11.6
PITKIN	4.4
PROWERS	18.5
PUEBLO	14.6
RIO BLANCO	10.1
RIO GRANDE	18.5
ROUTT	6.2
SAGUACHE	21.7
SAN JUAN	17.6
SAN MIGUEL	8.3
SEDGWICK	12.9
SUMMIT	6.1
TELLER	6.2
WASHINGTON	11.9
WELD	10.0
YUMA	13.2
Entire State	**8.9**

Source: U.S. Census Bureau, Housing and Household Economic Statistics Division,
Small Area Estimates Branch, 2000 State and County FTP Files, model based estimates
Last Revised: October 28, 2003

Employment

There were an estimated 139,848 persons who were unemployed in Colorado in 2002, a rate of 5.7 percent according to the Colorado Department of Labor.[6] This number is 60.9 percent higher than last year when 85,295 persons were unemployed for a rate of 3.7 percent. The current estimate of the unemployment rate through June 2003 is six percent[11] which reflects an increasing trend in unemployment in the last two years.

Health Insurance

According to the U.S. Census Bureau, the number of Coloradans with health insurance decreased in 2002. 16.2% of Colorado's population were uninsured, compared to 15.6 percent in 2001. This is the highest rate since 1996 when 16.6 percent of Coloradans were uninsured. Estimates by the Kaiser Family Foundation show the percent of the population not covered by health insurance was much greater among Hispanics (36%) than among Whites (11%) or Blacks (22%).[12]

Mortality

According to the Vital Statistics Section of the CDPHE, Colorado's death rate in 2002 was 646.2 per 100,000 population with 29,147 deaths reported. Heart disease continues to be the leading cause of death, followed by cancer. While Colorado reported lower rates of death than the nation, Colorado's suicide rate (16.0 per 100,000) in 2002[5] continues to be substantially higher than the U.S. suicide rate.

Education

According to the Colorado Department of Education, in 2001 there was a combined public and non-public school enrollment of 808,925 in Colorado. There are 1,684 public schools in 178 districts across the state.[9, 10] Whites comprised 65.7 percent of school enrollment, Blacks 5.7 percent, Hispanics, 24.3

percent, Native Americans 1.2 percent, and Asians 3.0 percent. The overall drop out rate in Colorado in 2001 was 1.9 percent. Dropout rates among Asians were the lowest at 1.5 percent, and American Indians were the highest at 5.0 percent. Dropout rates for Whites were 2.0 percent, Blacks were 3.0 percent, and Hispanics were 4.6 percent.[10]

Table 5 shows the percent of the population graduating from high school and college. Compared to other metropolitan statistical areas and the state as a whole, Boulder county-Longmont Primary Metropolitan Statistical Area (PMSA) had the highest proportion of high school and four-year college graduates. Denver county Metropolitan Statistical Area (MSA) had a slightly lower proportion of high school graduates than the state as a whole but a somewhat higher percent of college graduates.

■ TABLE 5: Percentage of Population 25 Years and Over, High School Graduates or with Bachelors Degree or Higher, 2002

Area	Percent High School Graduate or Higher	Percent Bachelors Degree or Higher
Boulder–Longmont, CO PMSA	87.4%	55.2%
Colorado Springs, CO MSA	86.7%	35.1%
Denver, CO PMSA	67.0%	35.7%
Entire State	81.8%	33.5%

Sources: Census 2001 Supplementary Survey, Profile data available for selected areas from Table 2

Incarcerated persons

According to data from the DOC, 17,367 person were in the custody of DOC in 2002 (a 4.6 percent increase over 2001). Of the total 17,367 inmates, 8.5 percent were females and 91.5 percent were males. The racial and ethnic make-up of the 2002 DOC population is 45 percent White, 22 percent Black, 29 percent Hispanic, two percent American Indian, and one percent Asian.[13]

2

Epidemiological Trends in HIV and AIDS in Colorado

Through June 30, 2003, a cumulative total of 7,858 cases of AIDS and 4,668 AIDS-related deaths have been reported. An additional 6,132 cases of HIV infection (persons who have not progressed to AIDS) have been reported. Colorado ranks 23rd in total cases of AIDS in the United States (0.9 percent of all reported AIDS cases) and ranks 24th in population (1.5 percent of United States population). **Table 6 and 7** compares the demographic characteristics of newly diagnosed Colorado AIDS cases with United States AIDS cases for 2002.

Persons diagnosed with AIDS in Colorado are more often male (89%) as compared to the United States (74%) cases. **Table 6** shows a breakdown of United States and Colorado cases by race and gender. The majority of newly diagnosed AIDS cases in Colorado are White (55%), compared to 29 percent of United States cases. Blacks represent 19 percent of newly diagnosed AIDS cases in Colorado, compared to a substantial higher percent nationwide (52%). Hispanics represents a higher percent of new AIDS cases in Colorado (22%), compared to United States cases (17%).

■ TABLE 6: AIDS and HIV Adult/Adolescent Cases by Race

	Colorado AIDS Cases Diagnosed in 2002			Estimated U.S. AIDS Cases Diagnosed in 2002*		
Race	Male (p=276)	Female (p=35)	Total (p=311)	Male (p=30,120)	Female (p=10,589)	Total (p=40,709)
White	59%	29%	55%	34%	17%	29%
Black	17%	34%	19%	46%	68%	52%
Hispanic	22%	26%	22%	18%	14%	17%
Asian	<1%	0%	<1%	1%	<1%	1%
American Indian	1%	11%	2%	<1%	<1%	<1%

*CDC HIV/AIDS Surveillance Report, Cases of HIV Infection and AIDS in the United States, 2002, Vol. 14, Table 5

Table 7 illustrates the exposure categories for AIDS diagnosed in 2002 in Colorado and nationwide. Among Colorado male AIDS, MSM remains the main exposure category and comprise a substantially greater proportion in Colorado (65%) than for United States AIDS cases reported in men (45%). IDU comprise a greater proportion of United States male AIDS cases (16%), compared to Colorado males (7%). Female IDU in Colorado represent 37 percent of cases, a higher proportion than female United States cases (21%). Heterosexual contact in United States cases (18%) is over twice that in Colorado cases (8%) and is influenced by the substantially higher percent of United States females (42%).

■ **TABLE 7: Adult/Adolescent AIDS Cases by Risk**

Exposure Category	Colorado AIDS Cases Diagnosed in 2002 Male (n=276)	Female (n=35)	Total (n=311)	U.S. AIDS Cases Reported in 2002** Male (n=32,513)	Female (n=11,279)	Total (n=43,792)
MSM	65%	•	57%	45%	•	33%
IDU	7%	37%	11%	16%	21%	17%
MSM/IDU	9%	•	8%	5%	•	3%
Heterosexual Contact	5%	34%	8%	10%	42%	18%
Other/No Identified Risk*	14%	29%	15%	24%	37%	28%

*Other includes cases exposed through hemophilia/coagulation disorders and receipt of blood transfusion, blood components or tissue

**CDC HIV/AIDS Surveillance Report, Cases of HIV Infection and AIDS in the United States, 2002, Vol. 14, Table 16

AIDS/HIV among Adults/Adolescents in Colorado

Figure 1 illustrates that diagnosed cases of AIDS peaked in 1993 and have declined through 2002. In 1993, 732 persons were diagnosed with AIDS, compared with 311 persons diagnosed with AIDS in 2002. There was a 12 percent increase between 2001 and 2002, from 278 to 311 persons, respectively. The number of HIV cases peaked in 1987 with 586 cases and decreased to a low of 212 in 1999 (a 64 percent decrease). There has been an increase of 43 percent between 1999 and 2002, from 212 to 304 persons, respectively. The largest increase was seen in the last year when the number of cases increased from 249 to 304, a 22 percent increase.

■ **FIGURE 1: Colorado AIDS and HIV by Year of Diagnosis, 1986–2002**

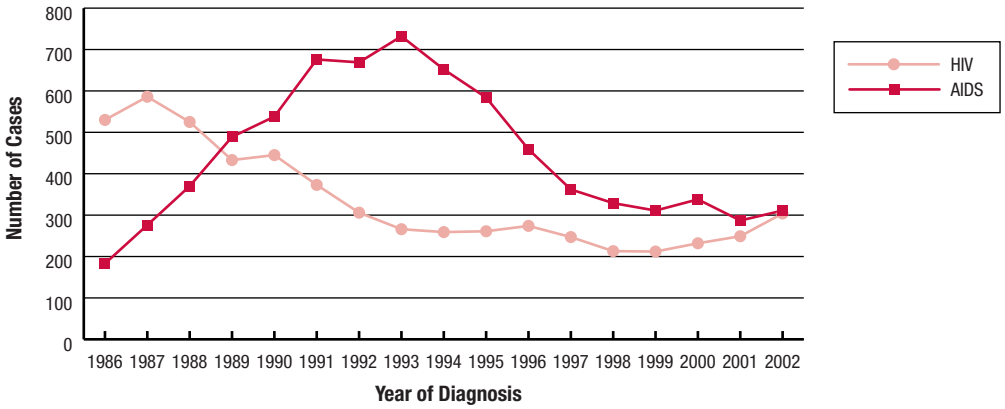


Figure 2 demonstrates that deaths have declined in both males and females since peaking in 1995. Deaths decreased dramatically from 1995 to 2000 and the rate of decrease appeared to have leveled off in the last five years. Among males, deaths declined 81 percent, from 498 in 1995 to 93 in 2000. Among females, deaths declined 54 percent, from 37 in 1995 to 17 in 2000. In the last five years, male deaths have declined from 123 in 1998 to 110 in 2002, while female deaths have remained relatively stable (10 and 11 deaths, respectively).

■ **FIGURE 2: Annual Deaths among Persons Diagnosed with HIV and AIDS in Colorado, 1986–2002**

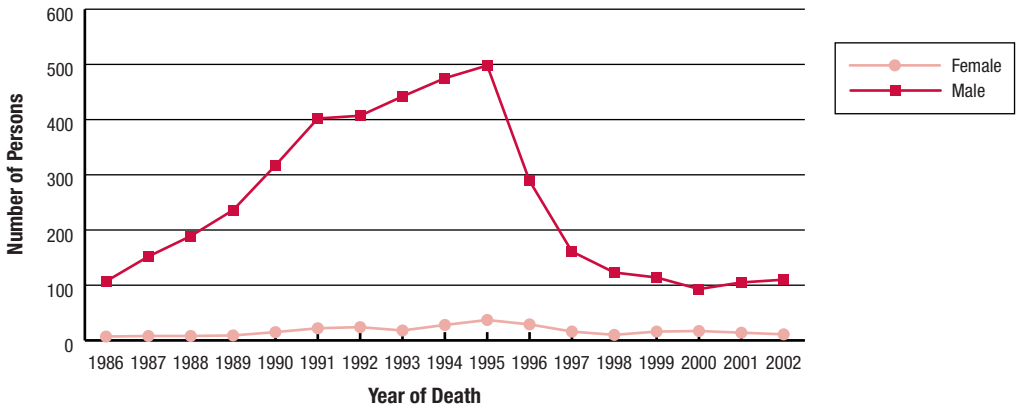


Figure 3 shows an increase in the number of persons living with either HIV or AIDS in Colorado. The number of persons living with full-blown AIDS contributes to this increase in prevalent cases because of improved survival for persons with AIDS who receive treatment and due to decreases in the number of deaths. By 2002, an estimated 9,153 persons were living with HIV or AIDS in Colorado (an increase of six percent over 2001 when 8,659 persons were living with HIV or AIDS.) The proportion of persons living with AIDS has increased from 14 percent in 1986 to 37 percent in 2002.

■ **FIGURE 3: Annual Number of Diagnosed Persons Living with HIV and AIDS in Colorado, 1986–2002**

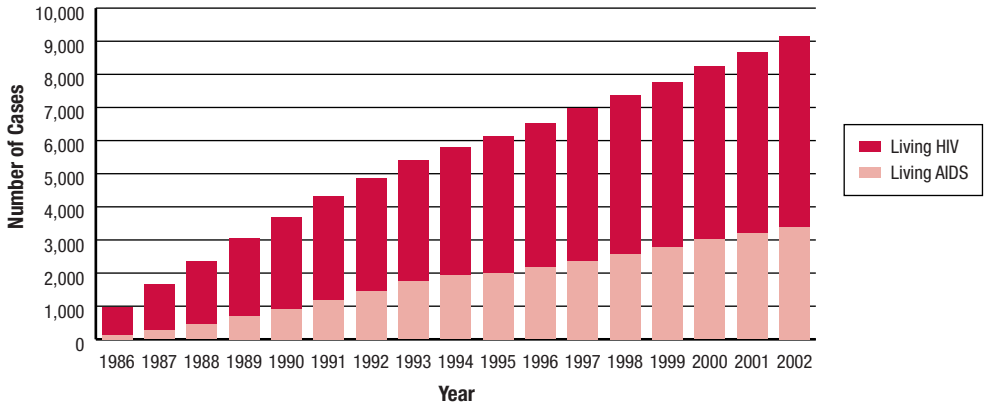


Table 8 on the next page illustrates the characteristics of persons living with HIV/AIDS. Males constitute the majority (90%) of persons living with HIV/AIDS. Blacks continue to be disproportionately impacted by the epidemic. Although the percentage of Blacks in the total population is four percent, they represent 14 percent of prevalent cases. Cases of AIDS were more likely to be older than persons with HIV only. MSM is the predominate risk factor (64%) of persons living with HIV/AIDS. The majority (88%) live in urban areas.

■ **TABLE 8: Characteristics of Persons Living with HIV and AIDS in Colorado Reported Through 6/30/03**

Characteristic	Persons living with HIV	Persons living with AIDS	Total living with either HIV or AIDS
Sex			
Male	90%	91%	90%
Female	10%	9%	10%
Age Group			
<13	2%	<1%	<1%
13–19	2%	<1%	2%
20–24	10%	3%	10%
25–29	25%	12%	20%
30–39	41%	48%	44%
40–49	17%	27%	18%
>49	3%	9%	5%
Race			
White	71%	67%	70%
Black	14%	14%	14%
Hispanic	14%	18%	15%
American Indian	1%	<1%	<1%
Asian	<1%	<1%	<1%
Multiple Races/Other	<1%	<1%	<1%
Exposure Category			
MSM	64%	64%	64%
IDU	9%	11%	10%
MSM/IDU	10%	10%	10%
Heterosexual Contact	6%	8%	7%
No Identified Risk	10%	6%	9%
Other	<1%	1%	1%
Region			
Urban	89%	86%	88%
Rural	11%	14%	12%

HIV and AIDS by Gender

Although increases in prevalent cases (**Figure 4**) are seen in both men and women, women accounted for an increasing proportion of persons living with HIV/AIDS. In 2002, women accounted for 10 percent of persons living with HIV or AIDS, up from under two percent in 1985 and five percent in 1990.

■ **FIGURE 4: Annual Number of Diagnosed Persons Living HIV and AIDS Cases by Sex Reported Through 6/30/03, Colorado**

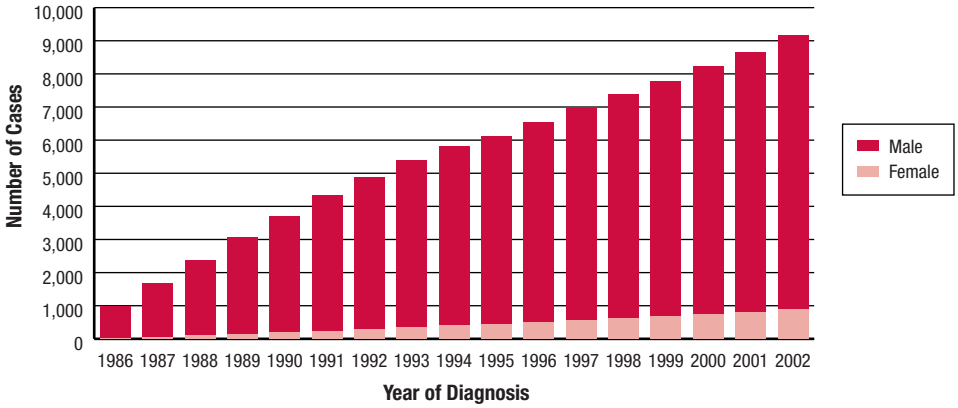


Figure 5 illustrates changes in the epidemic by comparing the gender characteristics of the earliest diagnosed AIDS cases with more recently diagnosed HIV cases. Among AIDS cases in the early years (1985 to 1989) of the epidemic, females accounted for only five percent of reported cases. When HIV cases reported from 1998-2002 are analyzed by gender, the proportion of cases among females had increased to 16 percent.

■ **FIGURE 5: HIV and AIDS by Sex**

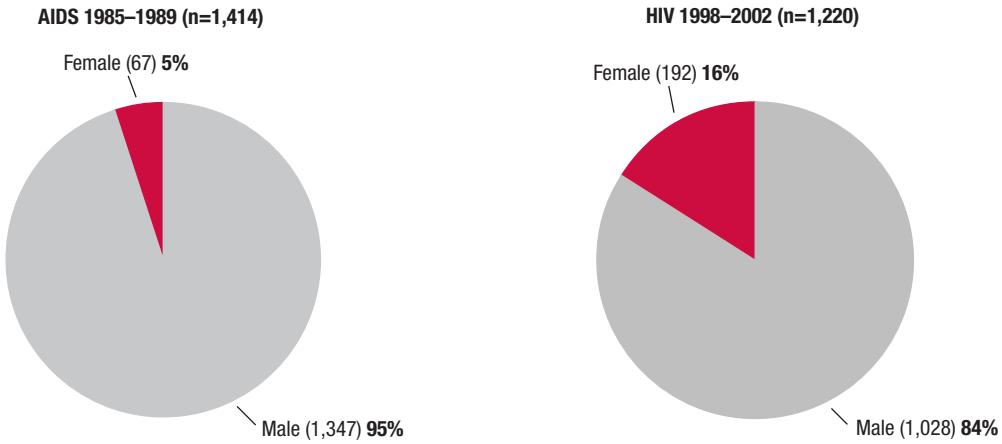
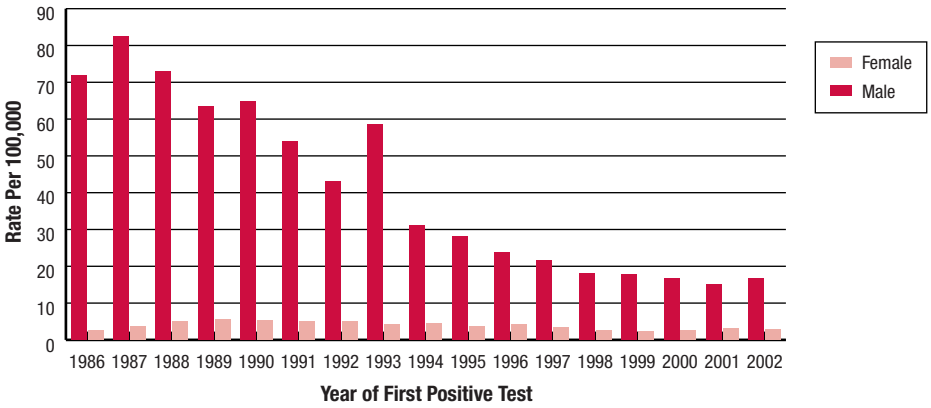


Figure 6 shows that HIV/AIDS rates per 100,000 population for males have decreased by 80 percent between 1987 and 2002 (from a rate of 82.5/100,000 to 16.8). In the last five years, the rate per 100,000 has fluctuated between 15.0 and 18.2 per 100,000. Rates among females have remained low but have not decreased as significantly (19 percent, from 3.6 to 2.9/100,000) in the same time period. Among females, the rate per 100,000 has been between 2.3 and 3.2 per 100,000.

■ **FIGURE 6: HIV/AIDS Rate per 100,000 by Year of First Positive Test and Sex Reported Through 6/30/03, Colorado**



AIDS/HIV by Race

In 2002, 304 persons were diagnosed with HIV, 252 (83%) were male and 52 (17%) were female. By race/ethnicity, 169 (56%) were White, 46 (15%) were Black, 81 (27%) were Hispanic, two (<1%) were Asian, and five (2%) were American Indian (**Table 9**). Females were shown to have a higher proportion of people of color, 40 percent were Black and 31 percent were Hispanic.

TABLE 9: Colorado HIV Cases Diagnosed in 2002

	Male		Female		Total	
Race	**Number**	**Percent**	**Number**	**Percent**	**Number**	**Percent**
White	158	63%	11	21%	169	56%
Black	25	10%	21	40%	46	15%
Hispanic	65	26%	16	31%	81	27%
Asian	1	<1%	1	2%	2	<1%
American Indian	3	1%	2	4%	5	2%
Multiple Race	0	0%	1	2%	1	<1%
Total	**252**	**100%**	**52**	**100%**	**304**	**100%**

The following pie charts (**Figure 7**) illustrate the changes in the racial distribution of Colorado's HIV epidemic by comparing persons presumed to have been infected early in the epidemic (AIDS 1985–1989) versus those presumed to be more recently infected (HIV 1997–2002). Using this model, the proportion of Whites is smaller (from 83 percent of AIDS cases to 59 percent of HIV cases), while the percentage of Blacks is larger across the same groups (from seven percent of AIDS cases to 16 percent of HIV cases). The differences in the percentage of Hispanics also indicate that they are an increasing proportion of more recently infected persons, from nine percent to 23 percent.

FIGURE 7: AIDS and HIV Cases by Race, Colorado

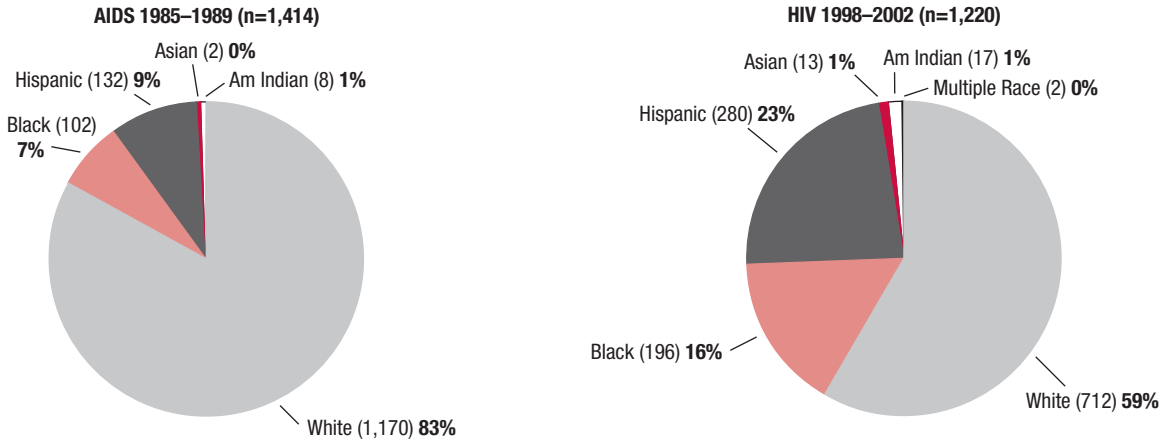
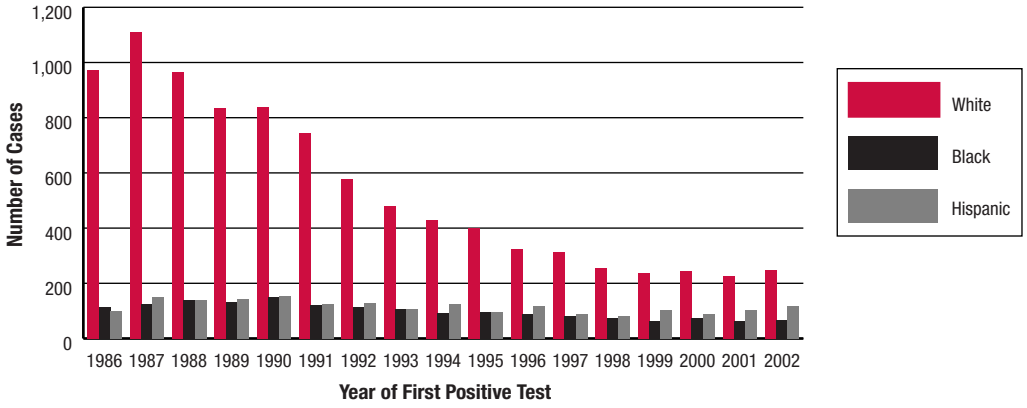


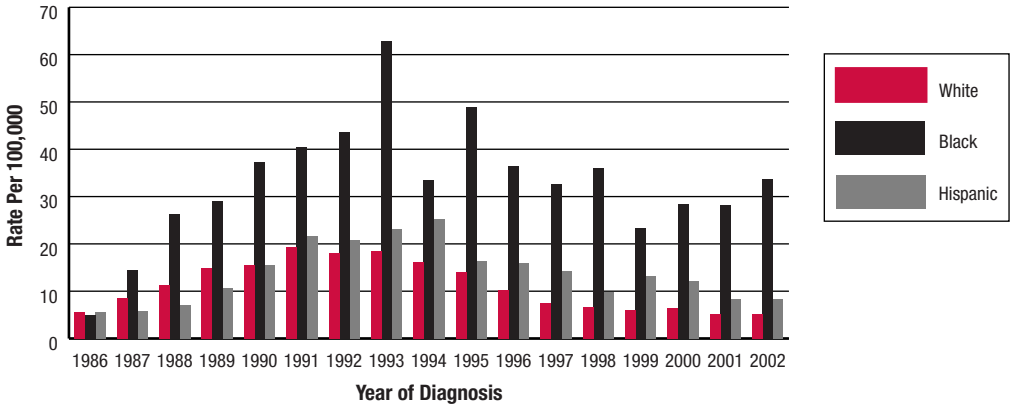
Figure 8 illustrates that the number of persons testing positive for HIV peaked in 1987 and has decreased substantially through 2002. Whites had the most dramatic decrease (78%) from 1,109 cases in 1987 to 247 in 2002. Ethnic minorities have not demonstrated the same rate of decrease. Blacks declined from 124 cases in 1987 to 66 in 2002, a 47 percent decrease. Hispanics declined from 152 cases in 1987 to 119 cases in 2002, a 22 percent decrease. In the last five years, all racial/ethnic groups have seen a leveling off in the number of cases.

■ **FIGURE 8: HIV/AIDS Cases by Race and Year of First Positive Test Reported Through 6/30/03, Colorado**



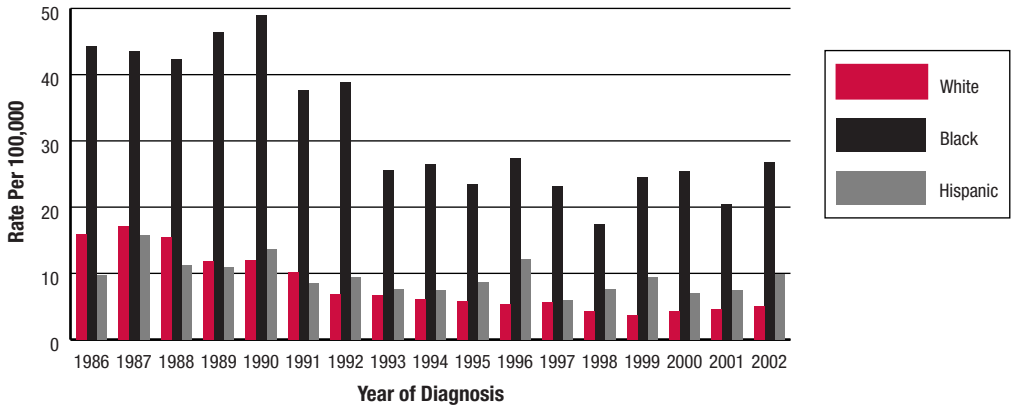
Although Whites comprise the largest number of both AIDS and HIV cases, **Figures 9 and 10** illustrate that when population rates are compared, both Blacks and Hispanics are disproportionately affected by this epidemic. **Figure 9** shows a decrease in AIDS by population rates since the early '90s among all racial groups, with rates peaking in Whites in 1991 (19.3/100,000), Blacks in 1993 (62.9/100,000), and Hispanics in 1994 (25.3/100,000). Blacks demonstrate disproportionately higher rates at 33.8/100,000 in 2002, compared to 5.2/100,000 in Whites and 8.4/100,000 in Hispanics.

■ **FIGURE 9: AIDS Rate per 100,000 Population by Race in Colorado, 1986–2002**



Similar trends are seen in more recent HIV infection (**Figure 10**). Ethnic minorities are disproportionately affected in rates per 100,000, with Black rates (26.8/100,000) five times those of Whites (5.1/100,000) and Hispanic rates (9.9/100,000) twice those of Whites. In the last five years rates have risen in all racial groups. Blacks increased 53 percent from 17.5 in 1998 to 26.8/100,000 in 2002. Hispanics increased 30 percent from 7.6/100,000 to 9.9/100,000 in the same time period. The rate in Whites increased 19 percent from 4.3/100,000 in 1998 to 5.1/100,000 in 2002.

■ **FIGURE 10: HIV Rate per 100,000 Population by Race in Colorado, 1986–2002**



As illustrated by **Figure 11**, there have been substantial decreases since the epidemic peaked in 1993 in the number of diagnosed AIDS cases by year among Whites and Blacks (Hispanics peaked in 1994). Among Whites, cases decreased 61 percent from 525 cases in 1993 to 207 cases in 1998. In the last five years, cases decreased among Whites by 17 percent to 172 cases in 2002. Decreases are less significant for both Blacks and Hispanics. Blacks decreased by 35 percent in the period 1993 to 1998 from 96 to 62 cases, while Hispanics decreased by 49 percent from 104 cases in 1993 to 53 cases in 1998. In the last five years, Hispanics have increased by 30 percent to 69 cases in 2002, and Blacks have decreased six percent to 58 cases in 2002.

■ **FIGURE 11: Number of AIDS Cases by Race and Year of Diagnosis Reported Through 6/30/03, Colorado**

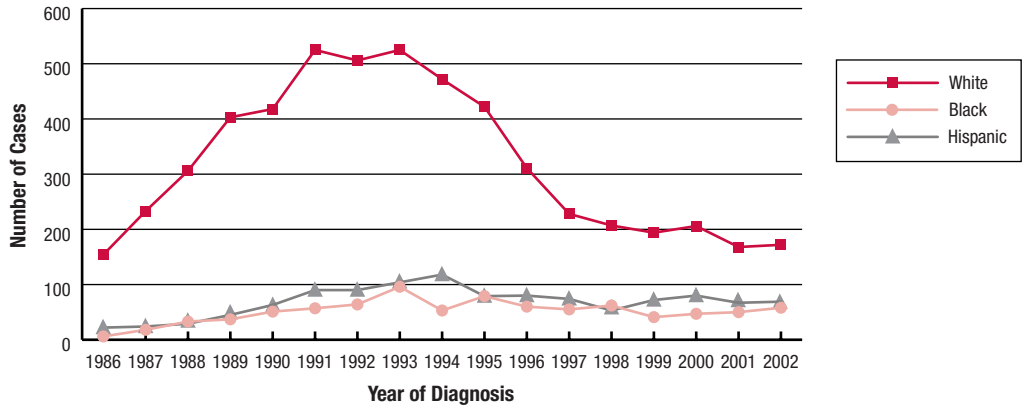
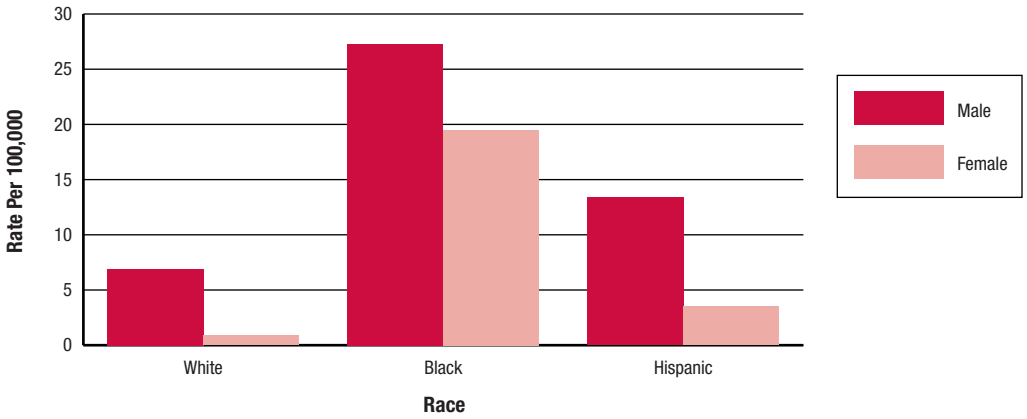


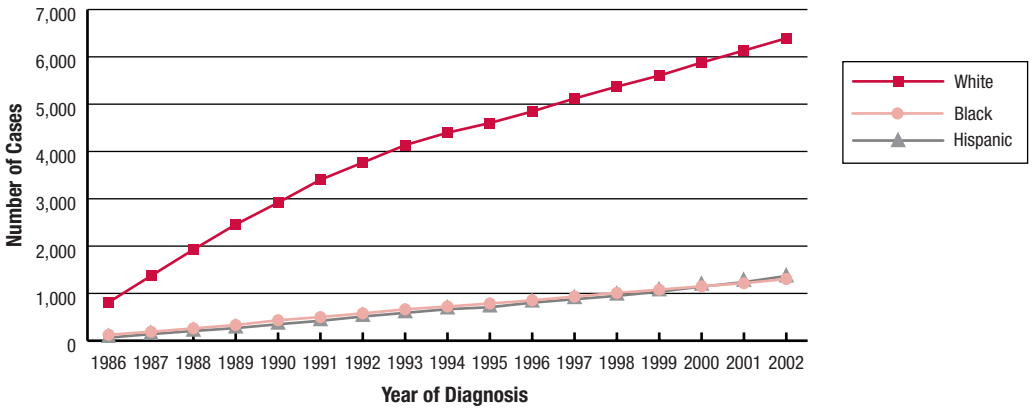
Figure 12 demonstrates the burden of HIV by gender on racial and ethnic minority populations in Colorado by illustrating recently diagnosed HIV cases. The rate among Black males (27.3/ 100,000 population) is nearly four times that of White males (6.9/100,000). Hispanic male rates (13.4/100,000) are over two times that of White males. Among females the racial differences are even more profound. The rate among Black females (19.5/100,000) is over 21 times that in White females (0.9/100,000), and Hispanic females (3.5/100,000) is almost four times that of White females.

■ **FIGURE 12: Average Annual HIV Case Rates 2001–2002 by Sex and Race, Colorado**



Cases of persons living with HIV and AIDS by race are illustrated in **Figure 13**. Whites constitute the largest number and percentage of prevalent HIV/AIDS cases (6,398 out of 9,153 or 70 percent in 2002). Blacks and Hispanics have nearly identical numbers of prevalent cases, which is why the graph lines intersect throughout much of the graph. In 2002, Hispanics account for 15 percent (1,368 persons) and Blacks account for 14 percent (1,264 persons) of persons living with HIV in Colorado.

■ **FIGURE 13: Living HIV/AIDS Cases by Race Reported Through 6/30/03, Colorado**



Although not graphically illustrated, the percent of foreign-born persons has been increasing among ethnic minorities. In HIV cases newly diagnosed in 2002, 86% of Hispanics were foreign-born, their primary county of origin was Mexico. Among Blacks, 21% were foreign-born, their primary place of origin was the continent of Africa. Cultural and language barriers make these groups a challenge for prevention and care providers.

AIDS and HIV by Risk

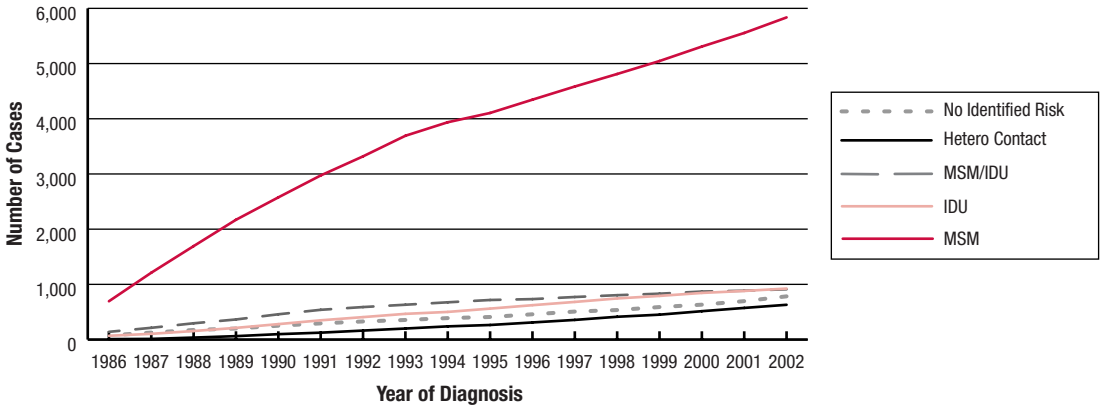
Table 10 displays HIV diagnosed in 2002 by risk categories and gender. One hundred and sixty-one (53%) were persons classified as being infected through MSM, 26 (9%) were IDUs, 40 (13%) through heterosexual contact, and 56 (18%) had no identified risk. Heterosexual contact was the largest risk factor for females in 2002, accounting for 48 percent of the cases.

■ **TABLE 10: Colorado HIV Cases by Risk and Gender, Diagnosed 2002**

	Male		Female		Total	
Exposure Category	**Number**	**Percent**	**Number**	**Percent**	**Number**	**Percent**
MSM	161	64%	•	•	161	53%
IDU	21	8%	5	10%	26	9%
MSM/IDU	20	8%	•	•	20	7%
Heterosexual Contact	15	6%	25	48%	40	13%
Maternal Transmission	0	0%	1	2%	1	<1%
No Identified Risk	35	14%	21	40%	56	18%
Other	0	0%	0	0%	0	0%
Total	**252**	**100%**	**52**	**100%**	**304**	**100%**

As shown in **Figure 14**, the vast majority of cases of persons living with HIV and AIDS in Colorado are MSM (5,836 cases representing 64 percent); MSM/IDU constitute another 10 percent (911 cases) of HIV cases who were living in 2002. Prevalent MSM cases increased by five percent from 2001 to 2002, while MSM/IDU increased by only three percent. All other risk groups are far behind MSM, including IDU, which constitute 10 percent (889 cases) of prevalent cases in 2002 and increased by five percent over the past year. Heterosexual contact appears to be a growing risk group (increasing 10 percent in the past year) but is far behind all other groups at seven percent (630 cases) of persons living with HIV or AIDS at the end of 2002. Persons with no identified risk (NIR) also demonstrated a substantial increase from 2001 to 2002, a 12 percent increase.

■ **FIGURE 14: Living HIV/AIDS Cases by Risk Reported Through 6/30/03, Colorado**



AIDS and HIV by Age

Table 11 demonstrates the 304 cases of newly diagnosed HIV by age group and gender. The age distributions were similar for both sexes. The majority of cases were in the 30–39 age group, with the next largest group being the 20–29 age group.

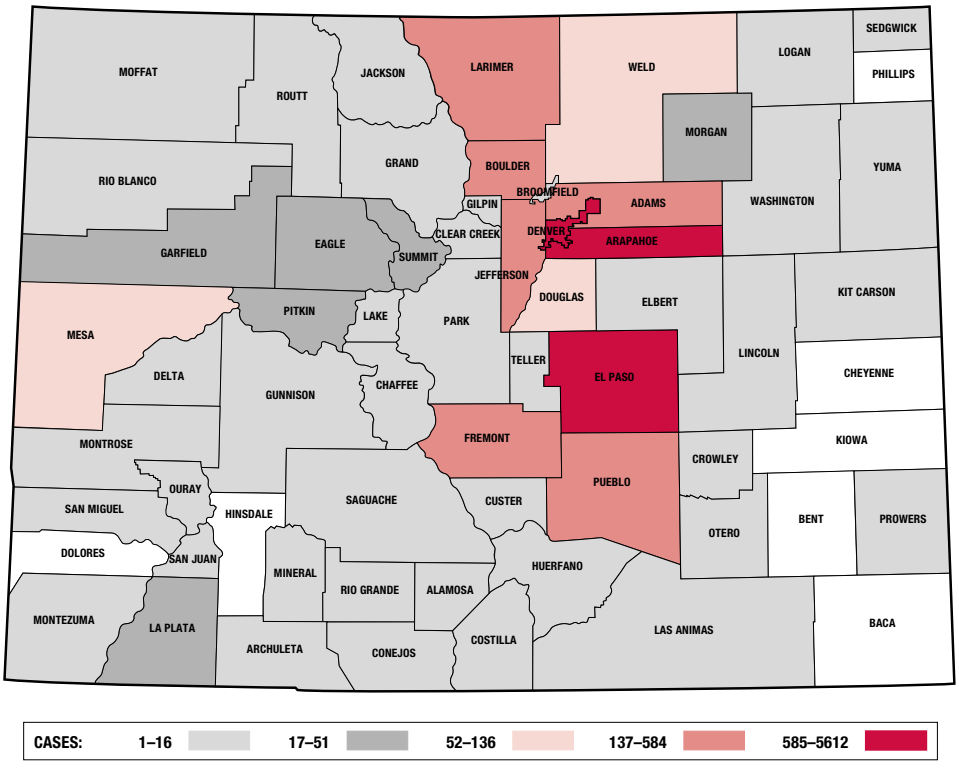
■ **TABLE 11: Colorado HIV Cases by Age Group and Gender, Diagnosed 2002**

	Male		Female		Total	
Age Group	**Number**	**Percent**	**Number**	**Percent**	**Number**	**Percent**
<13	0	0%	1	2%	1	<1%
13–19	15	6%	1	2%	16	5%
20–24	32	13%	5	10%	37	12%
25–29	42	17%	12	23%	54	18%
30–39	94	37%	21	40%	115	38%
40–49	54	21%	9	17%	63	21%
>49	15	6%	3	6%	18	6%
Total	**252**	**100%**	**52**	**100%**	**304**	**100%**

Geographical Characteristics of HIV

Figure 15 demonstrates that the HIV epidemic in Colorado is concentrated in the Front Range in the counties (and population centers) of Denver, Boulder, Broomfield, Adams, Arapahoe, Jefferson, Douglas, and El Paso. These counties represent 89 percent of prevalent HIV/AIDS cases and 68 percent of Colorado's population. This map shows that Fremont County appears to have a disproportionate share of HIV because it is home to the Colorado state correctional facility that houses virtually all HIV infected 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 and AIDS can be obtained by accessing the Internet.

■ **FIGURE 15: Living Colorado HIV/AIDS Cases by County of Residence at Time of Diagnosis**



HIV Related Mortality

Table 12 illustrates the leading causes of death in males 25-44 in 2002. Although HIV was the leading cause of death among young adult males (surpassing injuries) in 1992, in 2002, it was the sixth leading cause of death. The five leading causes of death in males are unintentional injuries, suicide, malignant neoplasm, heart disease, homicide, and liver disease in order of ranking.

TABLE 12: Top Ten Leading Causes of Death in Males Aged 25–44 Years in Order of Ranking

Cause of Death	Crude Rate	Number
1. Unintentional Injuries	50.2	369
2. Suicide	31.9	234
3. Malignant Neoplasm	15.5	114
4. Heart Disease	13.6	100
5. Homicide	7.5	55
6. HIV	7.1	52
7. Chronic Liver Disease and Cirrhosis	6.5	48
8. Diabetes Mellitus	3.9	29
9. Cerebrovascular Disease	2.6	19
10. Events of Undetermined Intent	2.5	18

HIV is no longer among the ten leading causes of death in young adult females aged 25–44. HIV peaked in 1995 as the seventh leading cause of death in this group and tied with pneumonia in 1998 as the 10th leading cause of death. In 2002, HIV dropped to the 15th leading cause of death. The five leading causes of death in women are unintentional injuries, malignant neoplasm, suicide, heart disease, and chronic liver disease in order of ranking.

3

Characteristics of HIV and AIDS in High Risk Populations

Men Who Have Sex With Men (MSM)

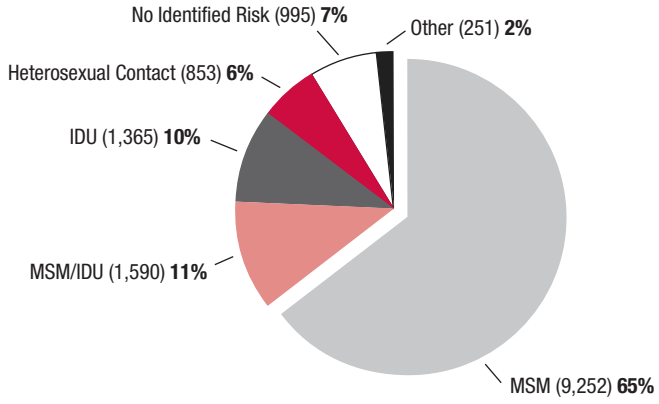
Estimates of MSM in Colorado

According to the U.S. Census Bureau, there are 1,600,106 males in Colorado between the ages of 15–64, which is the age range when persons are most sexually active. A search of the literature[14] indicates that the percentage of men who have sex with men (MSM) ranges from 2.1% to 10.1%, with the average at 2.9%. This would mean that the number of MSM in Colorado could be estimated to be 46,403 although the estimated range is much broader (33,602 to 161,610).

Proportion of the Epidemic Among MSM

The vast majority of persons with HIV or AIDS in Colorado (as shown in **Figure 16**) are MSM (65% or 9,252 cases); all other modes of acquisition comprise a much smaller proportion than this significant group. Because MSM behavior appears to hierarchically present the greatest risk of acquiring HIV in Colorado, men who report both sex with men and injecting drug use (MSM/IDU) are included in the MSM group for purposes of this analysis. When this population (MSM/IDU), representing 11% (or 1,590 cases) of the total, is combined with MSM, together they comprise 76% of the epidemic in Colorado.

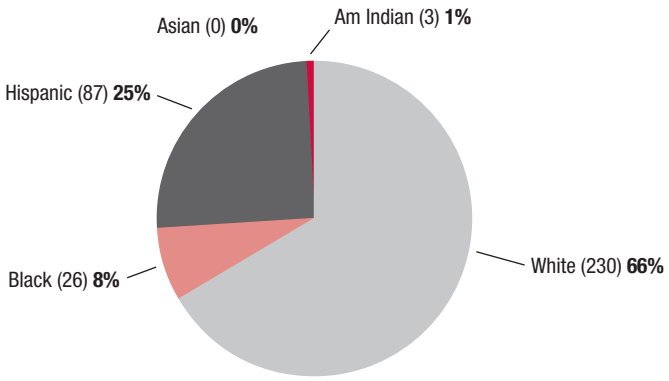
■ **FIGURE 16: HIV/AIDS by Risk Reported Through 6/30/03, Colorado**



Racial/Ethnic Trends Among MSM

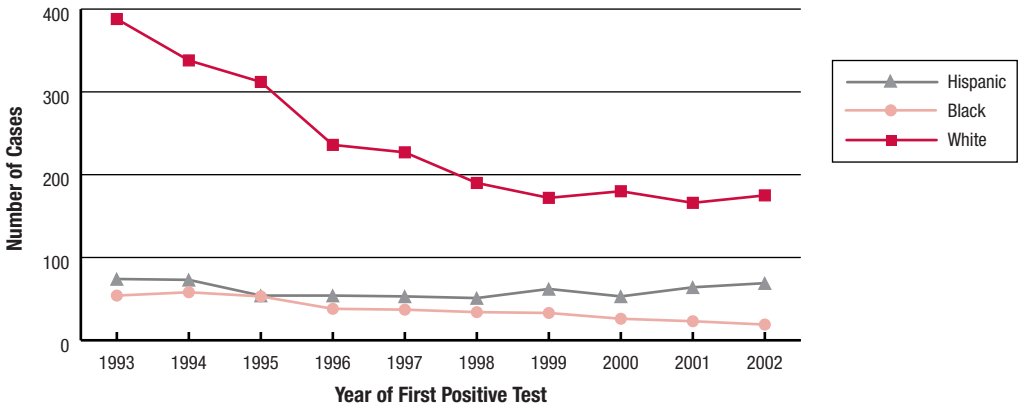
As **Figure 17** on the next page demonstrates, Blacks are over represented in the HIV epidemic among MSM & MSM/IDU; they account for 4% of Colorado's population but comprise 8% of recently diagnosed HIV in this group. Hispanics are slightly over represented (25% of newly diagnosed HIV) for their proportion of the population (18%). Whites are slightly under represented (66% of newly diagnosed HIV) for their proportion of the population (73%).

■ **FIGURE 17: MSM and MSM/IDU HIV Diagnosed Positive 2001–2002 by Race Reported Through 6/30/03, Colorado**



Figures 18 and 19 illustrate the changes in the number and proportion of HIV cases among White, Black and Hispanic MSM and MSM/IDU. The number of new cases (**Figure 18**) has decreased steadily for Whites and Blacks since the early nineties, but has remained relatively stable for Hispanics.

■ **FIGURE 18: Number of MSM and MSM/IDU with HIV/AIDS by Year of First Positive Test and Race Reported Through 6/30/03, Colorado**



■ **FIGURE 19: Percentage of MSM and MSM/IDU with HIV/AIDS by Year of First Positive Test and Race Reported Through 6/30/03, Colorado**

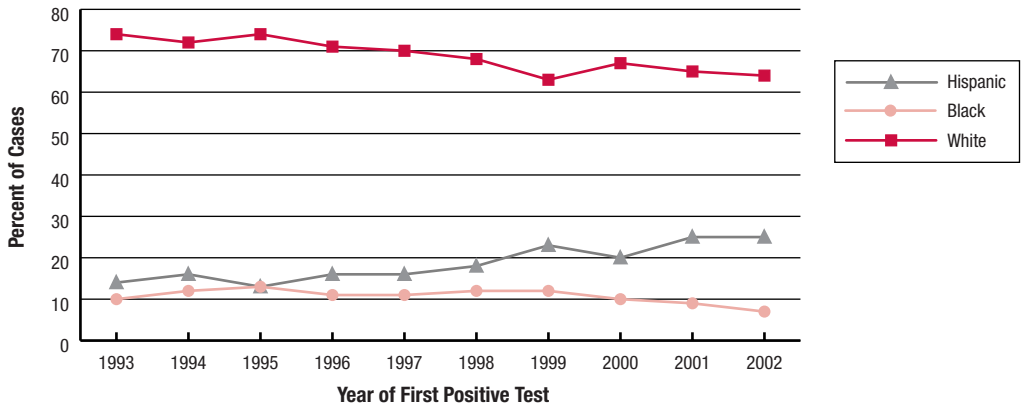
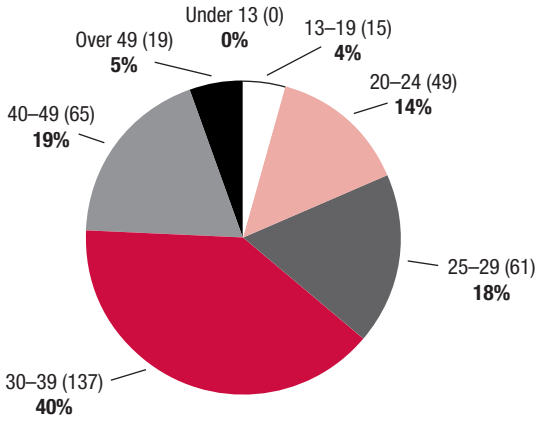


Figure 19 shows the percentage each racial group represents among MSM and MSM/IDU over time. Whites accounted for 74% of the HIV/AIDS burden among MSM and MSM/IDU in 1993 and 64% in 2002, a 14 % decrease. The proportion of Blacks decreased in this time period, from 10% in 1993 to 7% in 2002, a 30% decrease. Hispanics have demonstrated a steady increase during this time period from 14% in 1993 to 25% in 2002, a 79% increase.

Age Trends Among MSM

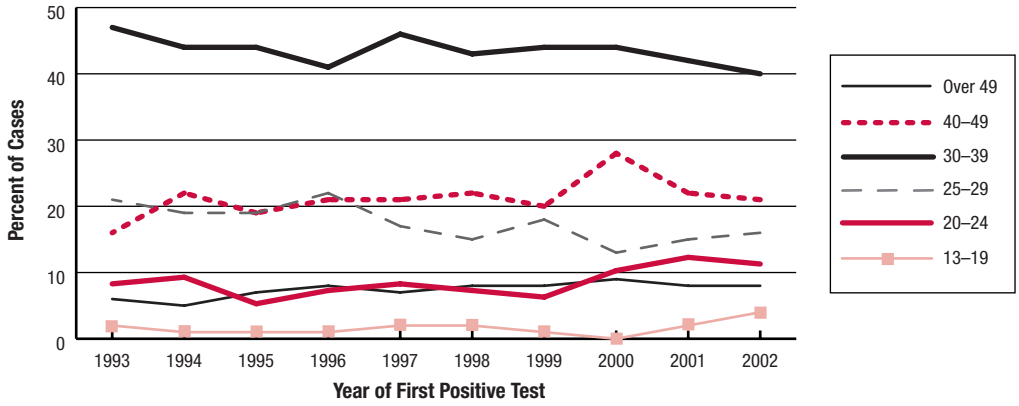
Figure 20 describes the recent HIV epidemic among MSM and MSM/IDU by age. In Colorado, 40% of the HIV epidemic is found among the 30–39 year age group, which represents 16% of the male population. Men age 40–49 years old comprise 19% of recent HIV cases and are 16% of the male population. Young men age 20–29 are over represented: they comprise 15% of the male population, but account for 32% of the epidemic. Teenagers age 13–19 make up 11% of Colorado's population, yet comprise only 4% of the epidemic.

■ **FIGURE 20: MSM and MSM/IDU HIV Diagnosed Positive 2001–2002 by Age Reported Through 6/30/03, Colorado**

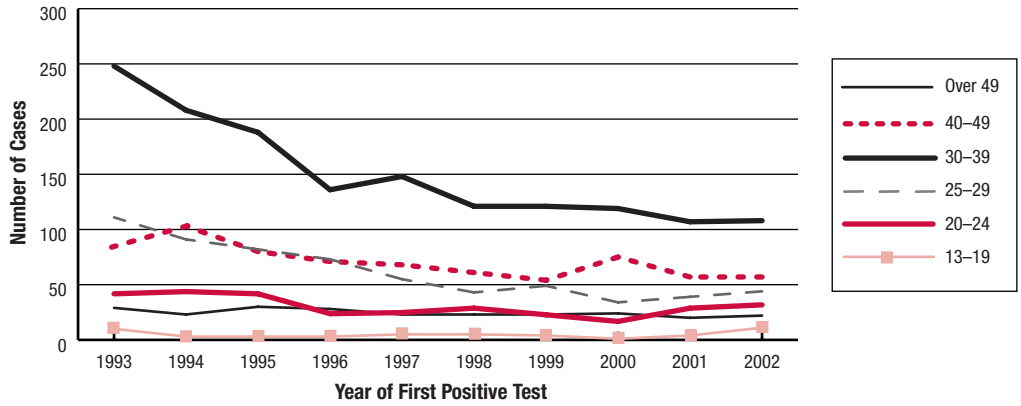


Figures 21 and 22 on the next page illustrate the number and proportion of HIV cases over time among MSM and MSM/IDU by age. **Figure 21** shows that the proportion of positive HIV tests by age groups have remained relatively stable, with some exceptions; 20–24 year olds have increased from 7% to 11% in the last five years. In the 30–39 age group, there has been a decrease, from 43% in 1998 to 40% in 2002. The 13–19 year old age group is too small to illustrate significant changes. Decreases in the number of reported cases have been observed for all age groups (**Figure 22**) since peaking in the early nineties.

■ **FIGURE 21: Percentage of MSM and MSM/IDU with HIV/AIDS by Year of First Positive Test and Age Reported Through 6/30/03, Colorado**



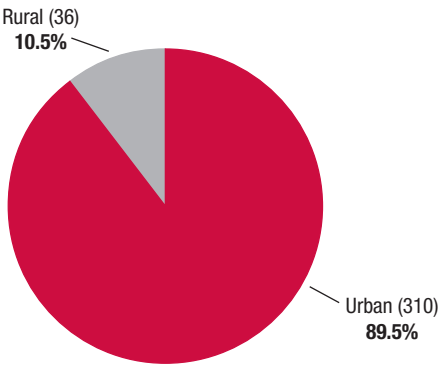
■ **FIGURE 22: Number of MSM and MSM/IDU with HIV/AIDS by Year of First Positive Test and Age Reported Through 6/30/03, Colorado**



HIV in MSM by Region

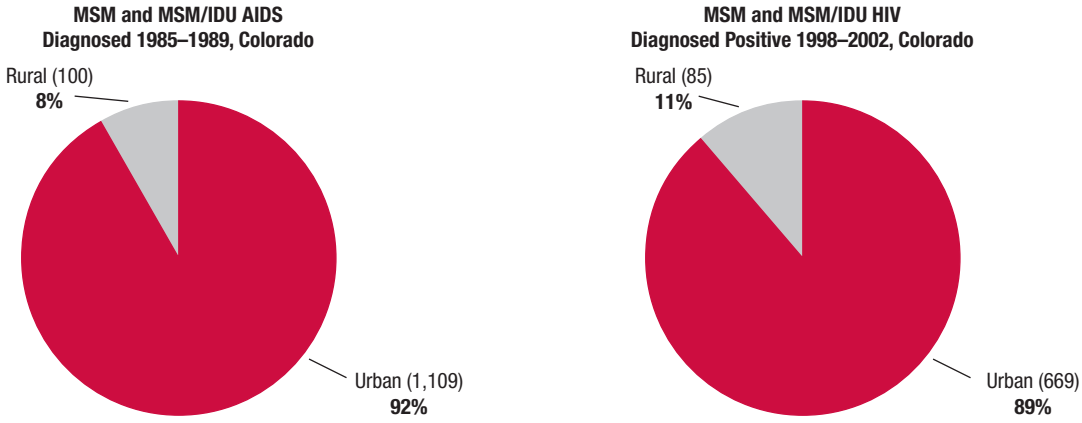
The HIV epidemic in Colorado among men who have sex with men, with or without a history of injecting drug use, is clearly centered in urban Colorado (the counties of Adams, Arapahoe, Boulder, Denver, Jefferson and El Paso) which accounts for 63% of the state's population but 90% of the recent HIV epidemic. **Figure 23** illustrates that only 10% of recently diagnosed HIV cases in this risk group are residents of rural Colorado (37% of Colorado's population).

■ **FIGURE 23: MSM and MSM/IDU HIV Diagnosed Positive 2001–2002 by Region Reported Through 6/30/03, Colorado**



Steady decreases in the reported number of HIV or AIDS cases among MSM has been observed in both urban and rural areas since the peaking in 1986 and 1987. HIV has remained a proportionately stable urban epidemic although **Figure 24** shows a 3% increase in rural cases between earlier diagnosed AIDS cases (1985–1989) and more recently diagnosed HIV (1998–2002).

■ **FIGURE 24: MSM and MSM/IDU with HIV and AIDS**



Other Factors Contributing to Risk Among Men Who Have Sex With Men (MSM)

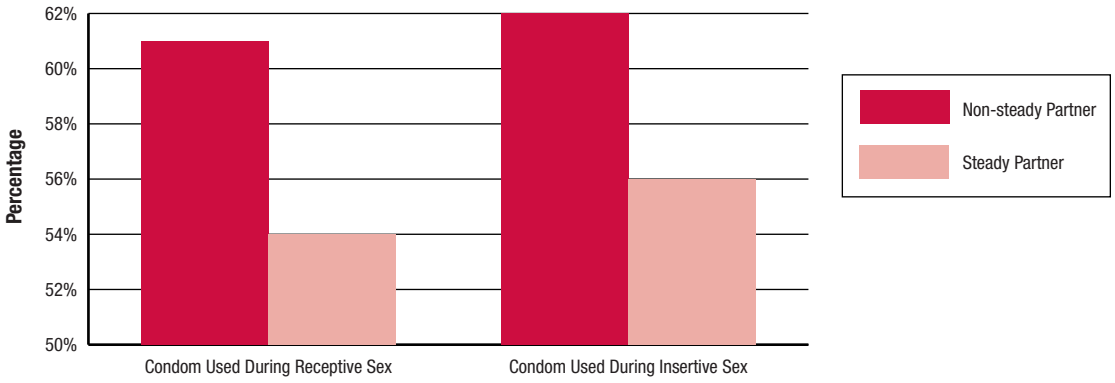
Measures of Risk Behavior Reported for MSM

The supplement to HIV/AIDS surveillance (SHAS) questionnaire was collected at Denver Public Health to obtain additional risk, treatment, and substance use information from HIV positive individuals. Adults in HIV treatment for more than three months through the Denver Health and Hospital System were recruited by care providers, letters, and flyers. Consent forms were signed and all information was collected through self-report during an interview. These data were collected between January 1, 2000 and June 30, 2003. There were 408 total interviews collected between January 1, 2000 and June 30, 2003. Two hundred and twenty three persons interviewed were identified as MSM.

Condom Use

Thirty four percent of MSM answered questions about condom use. Over half of the MSM who answered questions about condom use reportedly used condoms during sex. Condoms were used during both receptive and insertive anal sex. Condoms were used more frequently with a person who was not a steady partner (red bars) than with a steady partner (light red bars) during both receptive and insertive anal sex. With a steady partner, condoms were used more frequently during insertive sex than in receptive sex (56% vs. 54%). With a non-steady partner, condoms were used more frequently during insertive sex than receptive sex (62% vs. 61%).

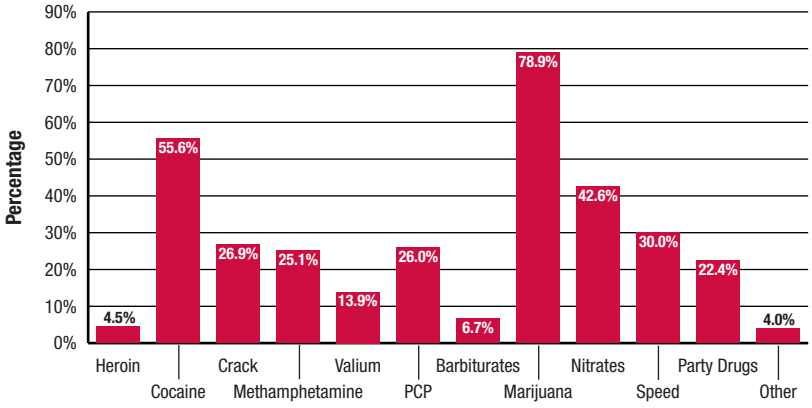
■ **FIGURE 25: Proportion of MSM Using Condoms During Anal Sex, Denver, Colorado, 2000–2003**



Categories are not mutually exclusive.

Eighty two percent of MSM reported using non-injection drugs. Of the MSM who reported using non-injection drugs, 79 percent reported using marijuana followed by cocaine (56%), nitrates or "poppers" (43%), and speed (30%). Heroin was the drug least used by MSM (4%).

■ **FIGURE 26: Proportion of MSM Using Non-injection Drugs, Denver, Colorado, 2000–2003**



Categories are not mutually exclusive.

Sex in Bathhouses

Seventy six percent of MSM answered questions regarding sex in bathhouses. Of those, 32.5 percent reportedly had sex in a bathhouse in the last 12 months.

Recent Trends in Syphilis Among Men Who Have Sex With Men (MSM)

In 2002 and 2003, the trends in sexually transmitted diseases (STDs) among MSM continue to increase in Colorado, despite continued prevention efforts. These data raise concerns about continued increases in sexual risk behavior and the possibility for increased HIV transmission. The following table shows the number of new cases of syphilis (primary, secondary, and early latent) in six-month intervals. In the first six months of 2003, 32 cases of early syphilis were reported. Of those, 20 (63%) were among MSM and 11 (34%) were HIV positive. This is similar to the two previous six-month periods. This trend mirrors syphilis outbreaks seen in other large U.S. cities in recent years. Among MSM with primary and secondary and early latent syphilis, 70 percent were White, 15 percent were Hispanic, and 10 percent were Black.

TABLE 13: Primary, Secondary, and Early Latent Syphilis in Colorado

	Total Number of Cases	MSM	HIV + MSM
January–June 2002	28	12	10
July–December 2002	43	31	15
January–June 2003	32	20	11

Bath House Screening

Following the increase in syphilis cases in the Denver Metro area in the spring of 2002, some of which had been linked to exposures in the gay bath houses, Denver Public Health (DPH) with support from the CDPHE extended bath house outreach screening in May 2002. HIV testing in the Denver bath houses had been an ongoing activity of DPH for many years, but with added funding from CDPHE, the number of outreach screening hours were increased as were the number of screening sites. Syphilis serology was also added to the screening. Currently, syphilis and HIV screening is offered at all three bath houses at least once a week. Gonorrhea and chlamydia testing was also offered starting in January 2003. Hours at each site differ from week to week in order to reach a wide range of clients. Through December 18, 2002, a total of 273 persons had been tested for syphilis and 241 persons for HIV. This represents respectively six percent and five percent of all persons who were present at the time of screening and were thus eligible for testing. Of persons tested, five (2%) were positive for syphilis, and nine (4%) were positive for HIV. Notification of results was documented for four of the five syphilis cases and seven of nine HIV cases.

Thus far, the screening project has been moderately successful. Efforts are under way to increase the number of persons willing to be tested, including a social marketing campaign and offering incentives. Onsite rapid HIV testing with results available while the client waits may also increase the willingness to be tested and at the same time increase the proportion of persons receiving HIV test results. However, while a rapid test has recently been approved by the Food and Drug Administration (FDA), this test is not yet available for outreach use.

The Context of Risk Among Men Who Have Sex With Men (MSM)

CDPHE research and evaluation unit completed a needs assessment in 2003 and concluded the following qualitative analysis. Information drawn from focus groups, interviews, surveys, and a community forum involving MSM in metro Denver reveals that unprotected anal sex or "barebacking" is a very common practice among Denver MSM. Both bath houses and the Internet are important venues for meeting partners with whom to engage in unsafe behaviors. Some MSM who regularly frequent bath houses view them as communal settings that affirm patrons' sexual behavior and sexual orientation. Others emphasize that bath houses are associated with anonymity, with minimal communication occurring about safer sex practices. Condoms are available in bath houses, but their use is reportedly inconsistent. Overall, the Internet is seen as an important medium through which to identify a high number of new sexual partners. Over the Internet, men can seek out partners with similar sexual interests, persons who are infected or not infected with HIV, and persons who use substances to enhance sexual pleasure.

Substance use is frequently associated with engaging in unsafe behaviors. MSM use and abuse substances and engage in high-risk sex for many reasons including factors such as histories of abuse, growing up in a homophobic environment, shame, low self-esteem, mental illness (including depression), feelings of hopelessness, sexual addiction, a need to feel attractive, a need to feel close to someone, tendencies toward thrill seeking, and desires to enhance sexual pleasure.

Many MSM report that access to and widespread use of antiretroviral medications are affecting decisions regarding the practice of safer behaviors. Partner status can also play an important role in negotiating sexual risk. Many MSM suggest that in the context of a monogamous relationship they have chosen to forgo the use of condoms. Some indicate doing so only after feeling pressure from their partner. Others report that they forego the use of condoms in an effort to feel closer to their partner. They suggest that the prevalence of unprotected anal sex may be higher for those in primary relationships than for those who are not.

A wide range of opinions exist among MSM regarding the responsibility of a man living with HIV to disclose his serostatus to a sexual partner. While some believe that MSM living with HIV are obligated to disclose their status, others believe that an uninfected partner is responsible for protecting himself. Still others hold that this is a mutual responsibility. MSM living with HIV report fears of rejection and ostracism should they choose to inform a potential sexual partner of their serostatus.

Many MSM have reported growing tired of hearing prevention messages that stress 100 percent condom use. Barriers to the use of condoms include decreased sensation, interference with arousal, and the desire to demonstrate trust or achieve a sense of intimacy. In general, level of risk among MSM does not tend to be static in that at various times in their lives, MSM engage in higher risk behaviors then return to behaviors of lesser risk.

Some African American MSM report the lack of a strong, ongoing sense of both community and self-worth among African American MSM, which can affect levels of risk. They suggest that the wider African American community has rendered HIV and its impact on the community invisible, which makes community level prevention efforts difficult. Latino MSM have made a similar observation, lamenting that prominent community leaders have failed to mention HIV/AIDS as an issue affecting Latinos. Both African American and Latino communities are said to be less than welcoming and affirming to MSM, although the level of acceptance is perceived to be improving. Latino and African American MSM also express feeling a lack of inclusion in the broader MSM community, at times experiencing discrimination and stereotyping similar to that found within the wider white-dominated society. Latino MSM mentioned that the lack of representations of Latinos in HIV prevention media

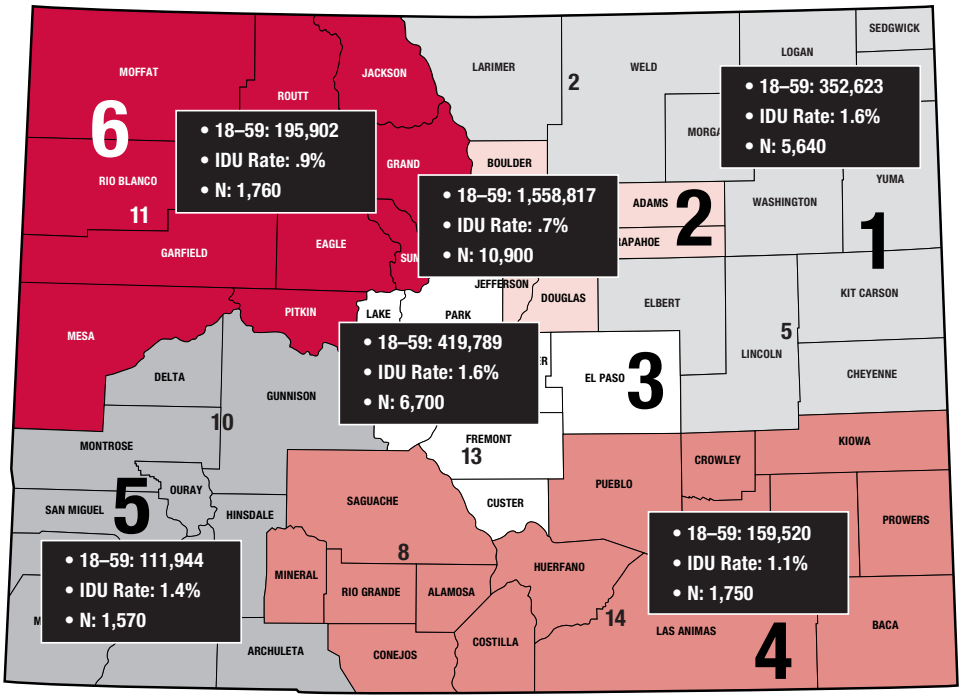
often makes it difficult for them to relate to the associated messages. Some African American MSM state that a high degree of shame is attached to HIV disease and that stigma keeps people from testing or seeking treatment if they are infected. Both the African American and Latino communities are said to have a relatively high percentage of MSM who do not gay identify, in part due to a widespread lack of acceptance of homosexuality in these communities.

Injecting Drug Use (IDU)

EstimateS of IDU in Colorado

According to data supplied by the Colorado Department of Human Services, Alcohol and Drug Abuse Division (ADAD), there are an estimated 28,320 persons who have ever injected drugs during their lifetime. It is also estimated that there are between 15,000 to 18,000 current IDUs in Colorado. **Figure 27** shows the geographic distribution of IDU in people who have injected drugs ever in their lifetime. Northeastern and the Denver metropolitan area have the highest IDU rates (1.6%), followed by the southwestern area (1.4%).

■ **FIGURE 27: Lifetime IDU Rates by Substate Planning Area**

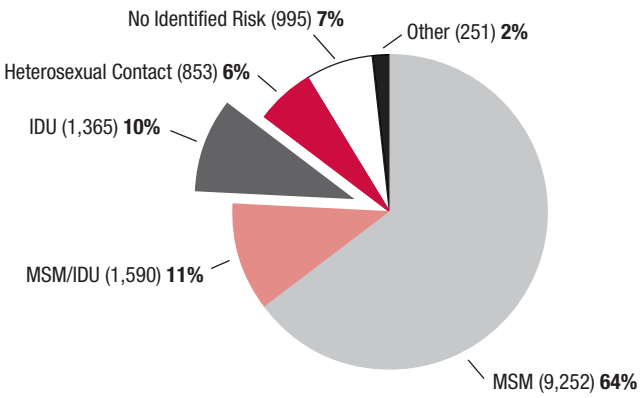


COLORADO TOTAL:	18–59: 2,798,595	IDU RATE: 1% 28,320	ESTIMATE FOR 2003

Proportion of Epidemic Among IDU

Through June 30, 2003, there were a cumulative total of 1,802 cases of AIDS and 1,328 cases of HIV infection associated with IDU (either IDU alone reported by the patient, reported MSM/IDU, or sex with an IDU). Of these, 81 percent were reported in men and 19 percent were reported in women. **Figure 28** on the next page shows the proportion of the epidemic by risk group. IDU comprises 10 percent of the total HIV/AIDS reported in Colorado.

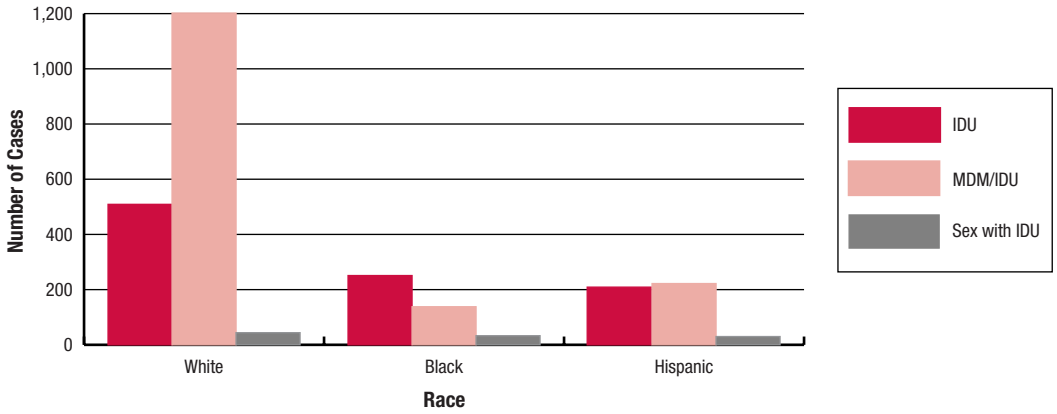
■ **FIGURE 28: HIV/AIDS by Risk Reported Through 6/30/03, Colorado**



Racial/Ethnic Trends Among IDU

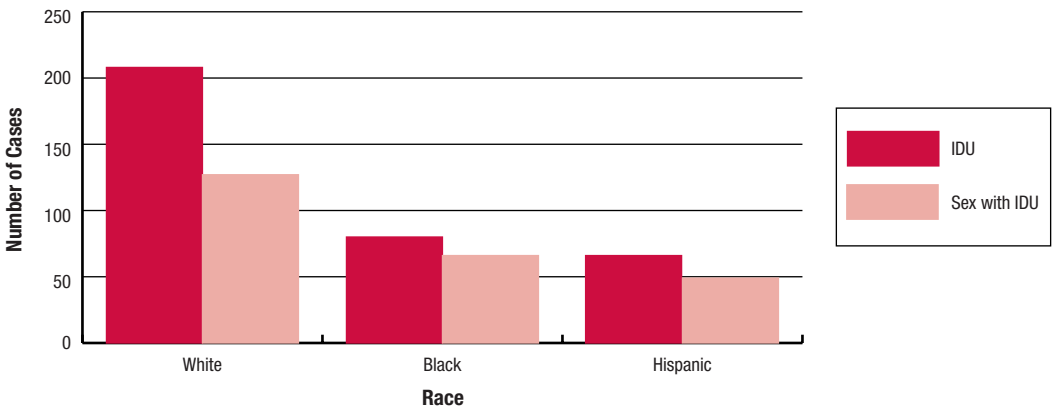
The following two graphs illustrate the impact of injection drugs on both males and females. **Figure 29** illustrates that among the 993 males with HIV or AIDS whose only risk is IDU, Whites account for 509 (51%) cases cumulatively, Blacks for 251 (25%) cases, and Hispanics for 209 (21%) cases. Among males who are MSM/IDU, the impact on racial/ethnic minorities is less profound. Of the 1,590 cases, Whites account for the overwhelming majority of these cases (1,202 or 76%), Blacks for 138 cases (9%), and Hispanics for 222 (14%) cases. For the 109 men who acquired HIV through heterosexual contact with an IDU, there are 44 (40%) Whites, 33 (30%) Blacks, and 30 (28%) Hispanics reported.

■ **FIGURE 29: Cumulative IDU-Associated HIV/AIDS in Males Reported Through 6/30/03, Colorado**



Among women, the number of IDU-related HIV or AIDS cases is smaller than for men, **Figure 30**. Three hundred seventy-two cases of HIV or AIDS in females are directly related to IDU. Whites account for 208 (56%), Blacks account for 80 (22%) cases, and Hispanics constitute 66 (18%) and are over represented among female IDU. The number of cases of females who acquired their infection as a result of heterosexual contact with an IDU is significantly higher for females than for males in all racial/ethnic groups (248 total cases). White females comprise 51 percent (127 cases), Black females are over represented at 27 percent (66 cases), and Hispanic females comprise 20 percent (49 cases) of this group.

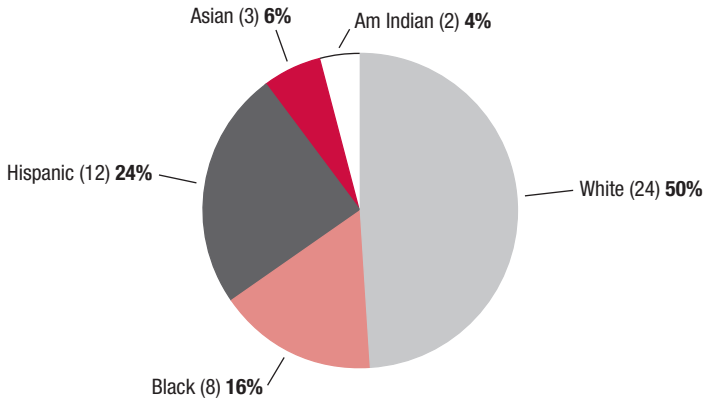
■ **FIGURE 30: Cumulative IDU-Associated HIV/AIDS in Females Reported Through 6/30/03, Colorado**



Although not graphically illustrated, of the cumulative confirmed HIV positive and AIDS cases in children in Colorado, 26 percent were associated with IDU because the mother reported a history of IDU, and 18 percent because the mother reported sexual contact with an IDU.

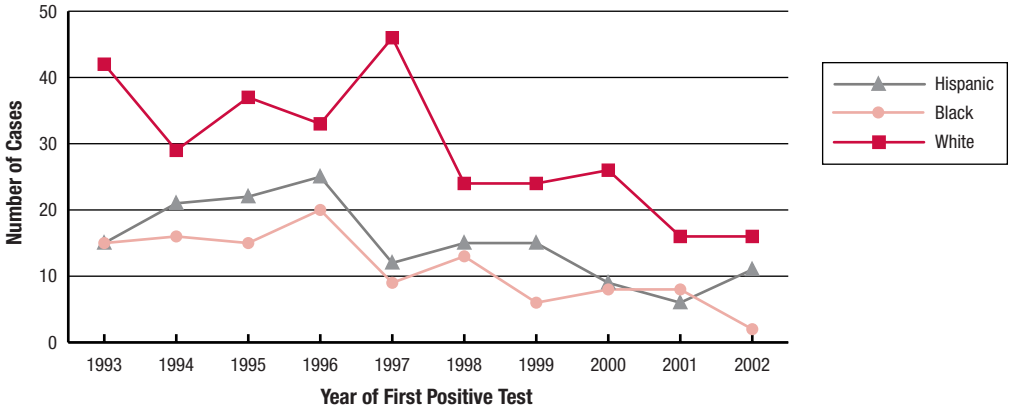
Figure 31 shows recently diagnosed HIV cases among persons who report IDU, by race/ethnicity. Comprising 50 percent of new HIV cases, ethnic minorities are noticeably over represented compared to their proportion of the state's population. (Blacks are over represented at 16 percent and Hispanics at 24 percent. Whites are under represented at 50 percent of the recent HIV burden.

■ **FIGURE 31: IDU HIV Diagnosed Positive 2001–2002 by Race Reported Through 6/30/03, Colorado**

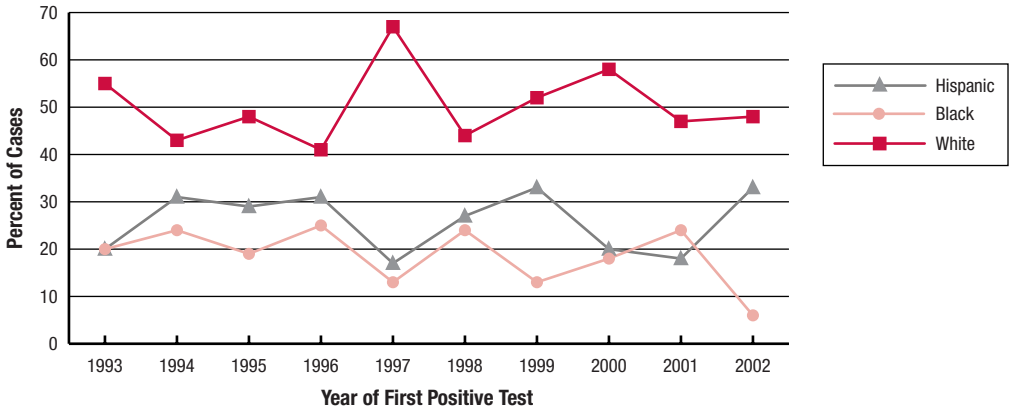


Figures 32 and 32 on the next page show the number and percent of new HIV cases among IDU by race/ethnicity. Reported cases demonstrate a decreasing trend among all racial groups. This decrease is more apparent among Whites. From 1993 to 2002, cases among Whites decreased from 42 in 1993 to 16 in 2002, a decrease of 62 percent. Cases among Blacks decreased in the same time period from 15 to two cases, a decrease of 87 percent. Cases among Hispanics also decreased in the same time period from 15 to 11 cases, a decrease of 27 percent. When the proportion of cases is compared, IDU appears to remain relatively stable. These numbers are so small that this may not be significant.

■ **FIGURE 32: Number of IDU with HIV/AIDS by Year of First Positive Test and Race Reported Through 6/30/03, Colorado**



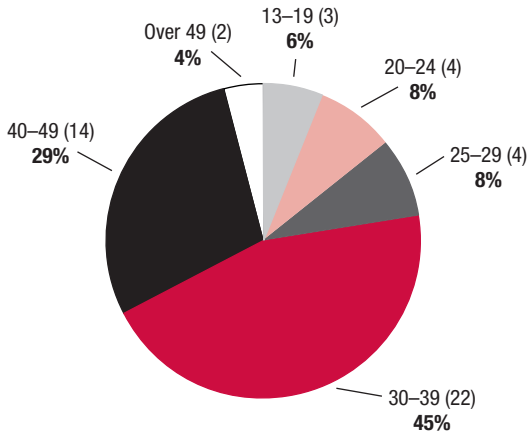
■ **FIGURE 33: Percentage of IDU with HIV/AIDS by Year of First Positive Test and Race Reported Through 6/30/03, Colorado**



Age Trends Among IDU

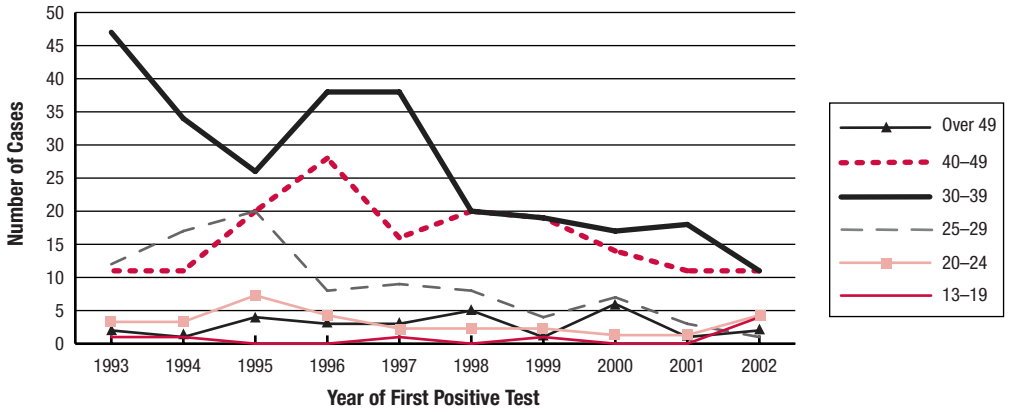
Figure 34 shows recently diagnosed HIV by age group. HIV is clearly an epidemic among older IDU (between the ages of 30–49) who comprise 74 percent of the recent (2001–2002) IDU epidemic and only 33 percent of Colorado's population. IDU age group of 20–29 year olds represent 16 percent (8 cases). Adolescents (13–19) do not appear to be profoundly affected by HIV related to IDU. Three cases were reported in this time period.

■ **FIGURE 34: IDU HIV Diagnosed Positive 2001–2002 by Age Reported Through 6/30/03, Colorado**

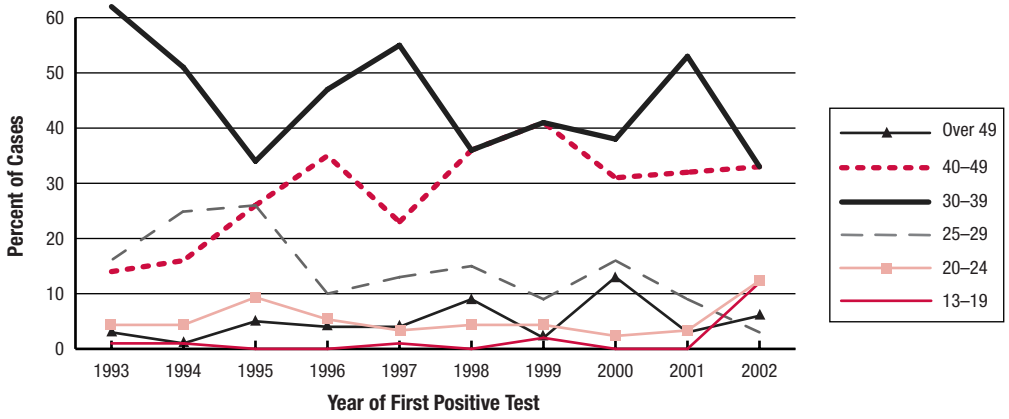


The following two graphs (**Figures 35 and 36**) illustrate trends among IDU by age. The number of reported HIV diagnosis peaked for all age groups in the late 1980's and has continued to decline (**Figure 35**). Percentages of reported cases (**Figure 36**) among IDU by age have remained relatively stable across all age groups. The majority of cases are seen in the 30–49 age group. The numbers of reported cases among IDU by age are small. Caution should be exercised in interpreting them.

■ **FIGURE 35: Number of IDU with HIV/AIDS by Year of First Positive Test and Age Reported Through 6/30/03, Colorado**



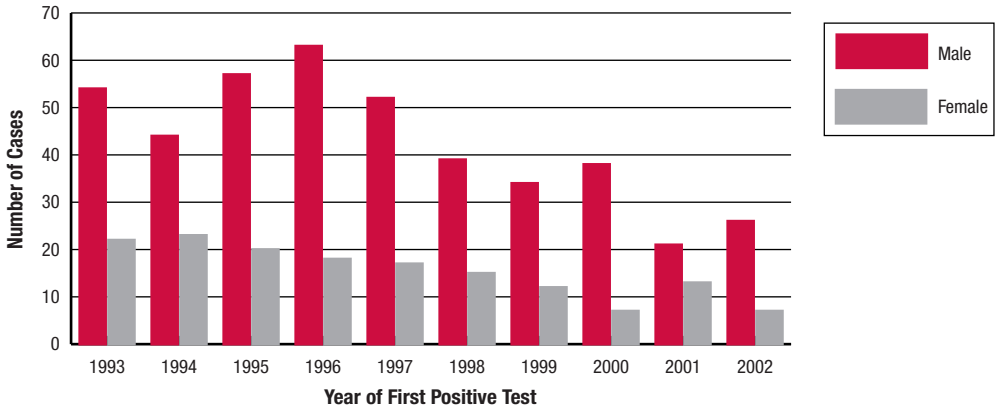
■ **FIGURE 36: Percentage of IDU with HIV/AIDS by Year of First Positive Test and Age Reported Through 6/30/03, Colorado**



Comparisons of HIV Among IDU by Sex

The following two graphs on the next page (**Figures 37 and 38**) show both number and percentage of HIV and AIDS cases among IDU by sex since 1993. The number of male IDU declined 33 percent from 39 cases in 1998 to 26 cases in 2002. Female IDU declined 53 percent in the last five years, from 15 cases in 1998 to seven cases in 2002. By gender the characteristics of the epidemic among IDU since 1993 have remained relatively stable (**Figure 38**), with females representing between approximately one third and one quarter of the proportion of HIV/AIDS cases.

■ **FIGURE 37: Number of IDU with HIV/AIDS by Year of First Positive Test and Sex Reported Through 6/30/03, Colorado**



■ **FIGURE 38: Percentage of IDU with HIV/AIDS by Year of First Positive Test and Sex Reported Through 6/30/03, Colorado**

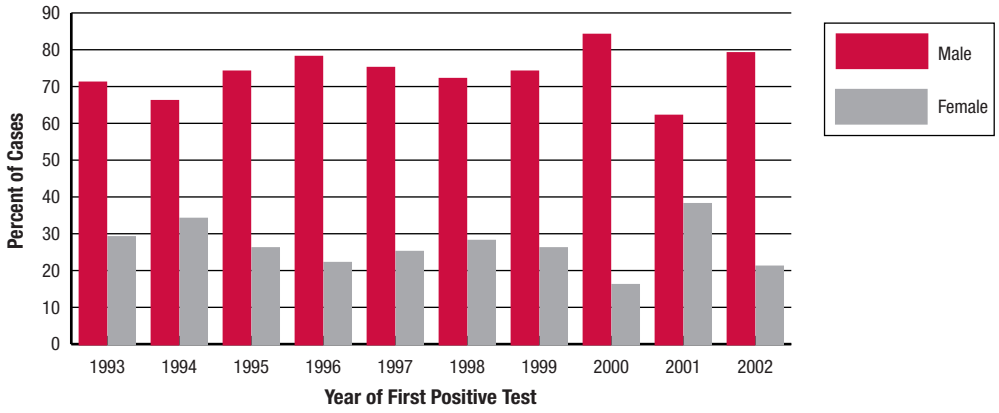
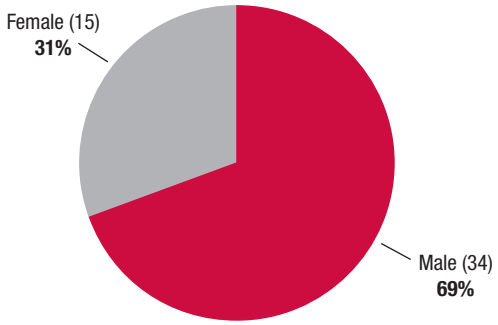


Figure 39 shows that males appear to bear a much larger burden of the recent HIV epidemic among IDU. Females account for 31 percent (15 cases) of recently diagnosed IDU, males account for 69 percent (34 cases).

■ **FIGURE 39: IDU HIV Diagnosed Positive 2001–2002 by Sex Reported Through 6/30/03, Colorado**



HIV Among IDU by Region

Figure 40 demonstrates that the recent HIV epidemic among IDU is largely urban (71%) compared to 29 percent rural. Urban Colorado is defined as the Front Range counties of Adams, Arapahoe, Boulder, Denver, Jefferson, and El Paso). Rural Colorado comprises 40 percent of the state's population.

■ **FIGURE 40: IDU HIV Diagnosed Positive 2001–2002 by Region Reported Through 6/30/03, Colorado**

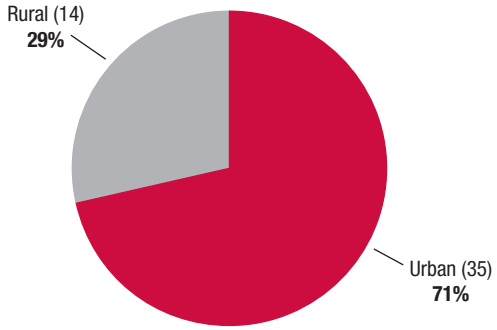
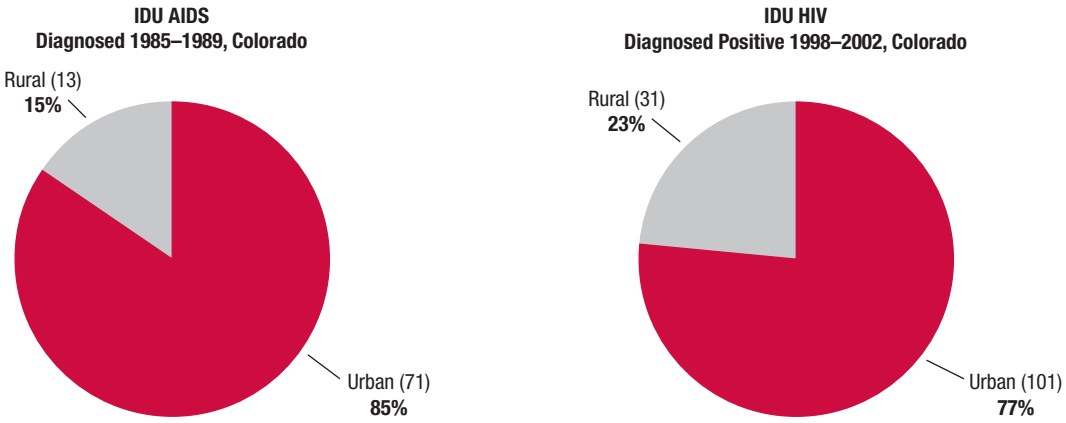


Figure 41 illustrates the geographic distribution of the proportion and number of HIV/AIDS cases among IDU. In AIDS cases diagnosed between 1985 and 1989, 15 percent of the cases resided in rural areas and 85 percent lived in urban areas. HIV diagnosed between 1998 and 2002 (presumably more recent infections) showed that 23 percent lived in rural areas compared to 77 percent in urban areas.

■ **FIGURE 41: Geographic Distribution of HIV and AIDS Cases Among IDU**



Other Factors Contributing to Risk Among Injection Drug Users (IDU)

Measures of Risk Behavior Reported for IDU

The supplement to HIV/AIDS surveillance (SHAS) questionnaire was collected at Denver Public Health to obtain additional risk, treatment, and substance use information from HIV positive individuals. Adults in HIV treatment for more than three months through the Denver Health and Hospital System were recruited by care providers, letters, and flyers. Consent forms were signed and all information was collected through self-report during an interview. These data were collected between January 1, 2000 and June 30, 2003. There were 408 total records collected between January 1, 2000 and June 30, 2003. Forty-four persons interviewed identified as IDU. Twenty-six (59%) were men and 18 (41%) were women. Fourteen (32%) were White, 15 (34%) were Black, four (9%) each were Hispanic and American Indian, one (2%) was Asian, and six (14%) were other.

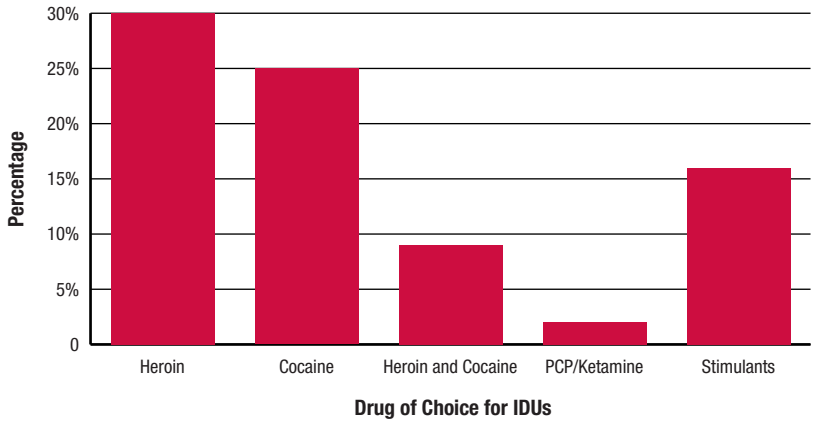
Condom Use

Ten males and 13 females reported sex with a steady partner in the last 12 months. Male IDUs reported more condom use with a steady partner (70%) than female IDUs (54%), and 86 percent of male IDUs reported condom use with a non-steady partner. Female IDUs did not report condom use with a non-steady partner.

Substance Use

The primary drug used by IDUs was heroin 13 (30%) followed by cocaine 11 (25%), and stimulants seven (16%). PCP/Ketamines were used the least by IDUs (2%). Of the 44 total IDUs, 30 (68%) reported that they shared needles.

■ **FIGURE 42: Proportion of IDUs Using Injection Drugs, Denver, Colorado, 2000–2003**



Categories are not mutually exclusive.

Hepatitis C and HIV Co-Infection

Table 14 illustrates the comparison of the HIV reporting database to the database of persons infected with Hepatitis C since 1993; 1,183 persons with HIV were co-infected with Hepatitis C in this time period. Compared to the database of persons diagnosed since 1993 with HIV, persons co-infected with Hepatitis C were more likely to be IDU, female, older, and Black or Hispanic. Co-infection with Hepatitis C poses special clinical challenges for the treatment of HIV. Additionally, anecdotal reports[16] have suggested that persons who are infected with HIV and Hepatitis C at the same time may have a delayed seroconversion period for HIV of up to 13 months. This phenomenon has profound implications for agencies testing persons at risk for both infections and may require that different information about follow-up testing be given to this group. Due to shared routes of transmission, hepatitis co-infection occurs in 12–30 percent of HIV patients.

■ **TABLE 14: Hepatitis C and HIV/AIDS in Colorado, Cases Diagnosed Since 1993 and Reported Through 6/30/03**

	HIV/AIDS with HCV		Total HIV and AIDS	
Male	1,006	85.0%	6,300	88.6%
Female	177	15.0%	810	11.4%
Current Age*				
<13	3	0.3%	14	0.2%
13–19	1	0.1%	19	0.3%
20–29	34	2.9%	435	6.1%
30–39	286	24.2%	2,229	31.4%
40–49	593	50.1%	2,900	40.8%
>49	266	22.5%	1,508	21.2%
Race				
White	684	57.8%	4,625	65.0%
Black	277	23.4%	1,031	14.5%
Hispanic	236	19.9%	1,332	18.7%
Other	36	3.0%	122	1.7%
Risk				
MSM	292	24.7%	4,389	61.7%
IDU	438	37.0%	795	11.2%
MSM/IDU	326	27.6%	662	9.3%
Hemophilia	29	2.5%	18	0.3%
Heterosexual Contact	54	4.6%	624	8.8%
Transfusion	3	0.3%	22	0.3%
No Identified Risk	38	3.2%	572	8.0%
Perinatal	3	0.3%	28	0.4%
Total	**1,183**		**7,110**	

*Current age could not be calculated for 5 persons

The Context of Risk Among Injection Drug Users (IDU)

CDPHE research and evaluation unit completed a needs assessment in 2003 and concluded the following qualitative analysis.

Information drawn from interviews, surveys, and focus groups conducted with IDU in the Denver area reveal drugs of choice that include powder cocaine, heroin, methamphetamines, crack, hallucinogens, and depressants. Drugs of choice tend to vary by socioeconomic circumstances, ethnicity, age, and sexual orientation. Sharing needles and syringes is said to be very common in the area, and the sharing of other drug preparation and injection-related equipment such as cotton, cookers, and water is even more common. Some IDU claim to view needle/syringe sharing as a habit and as part of socializing among long time users. Others describe sharing as an attempt to avoid withdrawal symptoms in an environment where access to sterile syringes is limited. Such limited access is attributed to policies at many local pharmacies that restrict sales, the lack of needle exchange, and state paraphernalia laws that restrict possession of needles/syringes. Not having a safe place to shoot drugs also influences injection-related HIV risk. This is especially a problem for those in unstable living situations. Some people are said to share needles because they really do not care what happens to them. Many IDU, however, do report taking precautions to reduce their risk for acquiring HIV while using drugs, including using only one's own syringe, using bleach, and limiting sharing to close friends, partners, and family members.

In addition to risks for HIV resulting from sharing needles, syringes, and other paraphernalia, IDU identify risks resulting from unprotected sex, including sex with high-risk partners. Female IDU report engaging in prostitution to support their own habits and often the habits of their steady male partners. Also, women users are often required to give sexual favors to dealers even when they have enough money to buy their drugs. They are also at heightened risk for violence and sexual assault. Many IDU claim to have unprotected sex due to a denial of risk, a dislike of condoms, or getting caught up in the heat of the moment. Some injectors, however, do report using condoms as well as monogamy and sexual abstinence as risk-reduction measures. Among many high-risk people, testing for HIV is said to be uncommon, and few IDU living with HIV are believed to disclose their serostatus.

Many IDU report that they started using drugs to forget the pain of coming from highly dysfunctional families in which physical, sexual, and emotional abuse were common. Other reasons that people give for beginning to use drugs include growing up in areas of high unemployment, poor schools, and discrimination; having family members (especially parents) who were users; having a partner who is a user; peer pressure and/or a need to belong; youthful rebellion; curiosity; personal tragedy; and physical pain. Among IDU it is common to see coexisting problems such as addiction, mental illness, physical illness, poverty, homelessness or unstable living situations, unemployment, histories of incarceration, and histories of violence.

IDU confront many problems accessing necessary services. Overall, many IDU lack trust in other people, including other users, as well as trust in most agencies. They are especially mistrustful of the judicial system, law enforcement, and other government agencies. Difficulties in accessing medical care are common complaints and include the cost of care, long waits in order to see a provider, the quality of subsidized services, disrespectful treatment, and providers' reluctance to give pain medication to users. IDU also confront many problems accessing appropriate drug treatment, especially methadone maintenance. These include the cost of methadone, long intake processes, counselor attitudes, hours of operation, the inconvenience of daily visits, and the fact that they can be dismissed from the program for failure to pay, failure to show on a given day, and relapse. Some people also lament that methadone is very addictive with severe withdrawal symptoms. Other problems related to

substance abuse treatment include: 1) waiting periods; 2) the short length of many treatment programs; 3) long separations from children while in residential treatment; 4) the rigidity of therapeutic communities; 5) the lack of dealing with mental health problems and major life concerns; 6) staff turnover; and 7) the lack of aftercare or maintenance programs. The location of many types of services and difficulties with transportation and childcare are also barriers to accessing services. Many women fear losing their children if they disclose to service providers that they are drug users. In general, users experience discrimination within many service arenas, with many providers treating them disrespectfully. Some agencies will not serve people who are known to be current and even former drug users. Other agencies that offer services to IDU are not equipped to address the depth and complexity of their life issues.

High Risk Heterosexual Contact

Estimates of High-Risk Heterosexual Behavior in Colorado

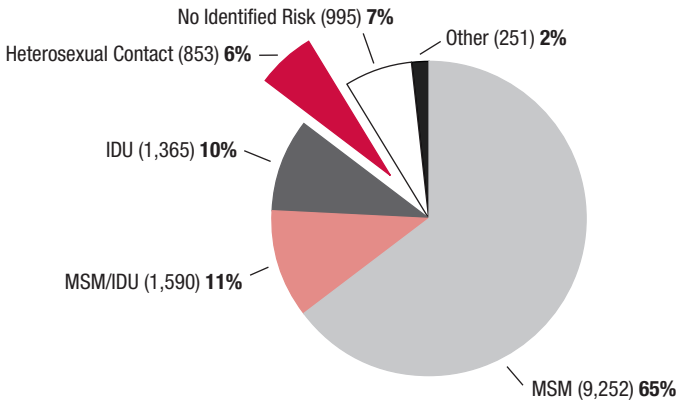
It is difficult to make an assessment of the number of persons in Colorado who engage in heterosexual contact that puts them at high risk for HIV acquisition. Despite the fact that those persons who acquire HIV heterosexually is not the same as those who acquire STDs, a diagnosis of a STD would suggest that the individual is engaging in unsafe sexual practices. Specific HIV prevention strategies should be directed toward these individuals. In 2002, 13,621 cases of Chlamydia and 3,396 cases of gonorrhea were reported to the CDPHE. Females are clearly at higher risk of acquiring Chlamydia. Among cases reported in 2002, females accounted for 74 percent. Among gonorrhea cases, females comprised 47 percent. Fifty percent of Chlamydia cases reported in 2002 were missing race/ethnicity data. However, blacks comprised 25 percent of cases, and Hispanics comprised 38 percent of cases with race/ethnicity data. Twenty six percent of reported gonorrhea cases were missing race/ethnicity data. Blacks comprised 43 percent of cases, and Hispanics comprised 28 percent of cases where race/ethnicity data was reported.

To assure the accuracy of data regarding heterosexual acquisition of HIV, in order for a case of HIV/AIDS to be classified as heterosexually acquired, a CDPHE investigation must demonstrate that the individual 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 individual into the category of heterosexual acquisition.

Proportion of Epidemic Among Heterosexuals

Heterosexual transmission (**Figure 43**) accounts for only six percent of Colorado's HIV/AIDS epidemic.

Figure 43: HIV/AIDS by Risk Reported Through 6/30/03, Colorado



Gender Trends in High-Risk Heterosexual Contact

According to **Figure 44**, females are more likely to be recently infected by heterosexual transmission than males. Females account for 62 percent of this transmission category, whereas males account for 38 percent of this risk group.

■ **Figure 44: Heterosexually Transmitted HIV Diagnosed Positive 2001–2002 Reported Through 6/30/03, Colorado**

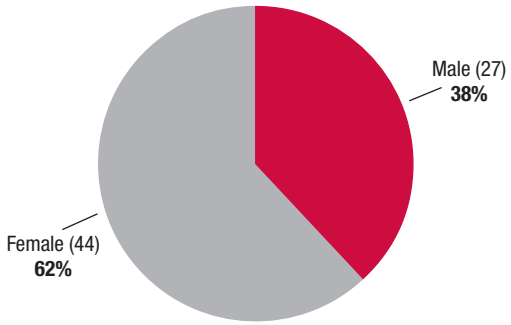
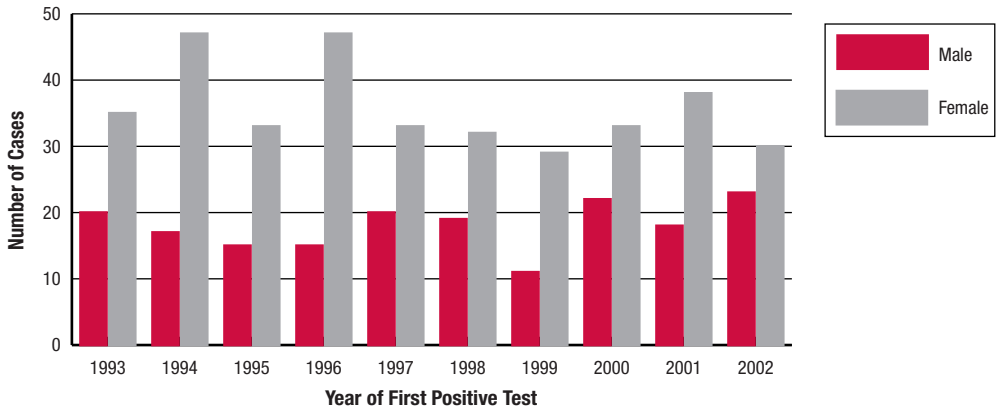


Figure 45 illustrates that the number and percent of female cases in this group has decreased from 1993–2002. The number of heterosexually transmitted HIV cases in females and males has remained relatively stable in the last five years. Care should be taken in interpreting trends in this group, especially in recent years, due to the small number of cases.

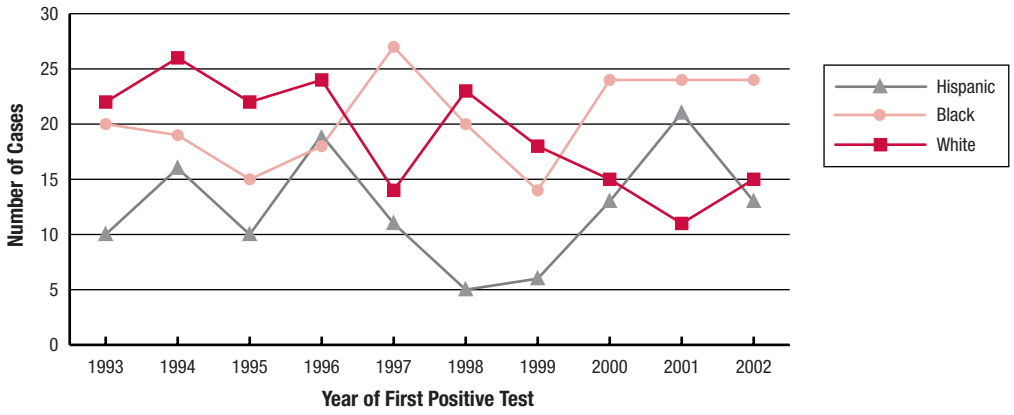
■ **Figure 45: Number of Heterosexually Transmitted HIV/AIDS by Year of First Positive Test and Sex Reported Through 6/30/03, Colorado**



Racial/Ethnic Trends Among High-Risk Heterosexuals

Figure 46 shows changes in the number of cases of heterosexually transmitted HIV infection since 1993. These numbers are small and they should be interpreted cautiously. This chart shows fairly substantial fluctuations in reported cases in each racial group. In the last five years, Whites displayed an overall decrease since 1998. Cases in Whites decreased from 23 cases in 1998 to 15 cases in 2002. Hispanics demonstrated the largest increase in the last five years, from five cases in 1998 to 13 cases in 2002. Blacks also increased from 20 cases in 1998 to 24 cases in 2002.

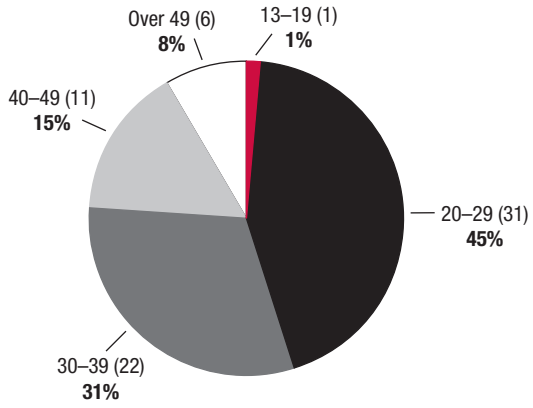
■ **Figure 46: Number of Heterosexually Transmitted HIV/AIDS by Year of First Positive Test and Race Reported Through 6/30/03, Colorado**



Age Trends Among High-Risk Heterosexuals

Recently diagnosed cases of HIV attributed to heterosexual contact are illustrated by age in **Figure 47**. This pie indicates that the largest percentages (45 percent) of newly diagnosed cases are in the 20–29 age group (it is worth noting that these individuals may have been infected as adolescent or young adults) and 31 percent are in the 30–39 age group. Adolescents comprise only one percent of newly diagnosed cases.

■ **Figure 47: Heterosexually Transmitted HIV Diagnosed Positive 2001–2002 by Age Reported Through 6/30/03, Colorado**



Infants Born to HIV-infected Women

As shown in **Table 15**, the number of infants born to HIV infected women in Colorado peaked in 2000 with 29 births. However, the number of infants who acquired HIV from their mothers peaked in 1994 and 1995 with four cases each year. Perinatal transmission dropped dramatically after that with 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. Use of these drugs did not become a standard of medical care until 1996. Since 1996, there have been three cases of confirmed HIV infection reported in infants. One was a treatment failure on AZT monotherapy. One woman had a negative prenatal HIV test performed during her first-trimester, and seroconverted later in her pregnancy. The other infant was infected because the mother did not receive prenatal care and was not

administered the anti-retroviral therapy. According to the CDPHE vital statistics data obtained from birth certificates, one percent of mothers who delivered a child in 2002 did not receive prenatal care but only 70 percent had an HIV test during their pregnancy. Women living in the San Juan Valley were least likely to have had an HIV performed during pregnancy.

■ **TABLE 15: Number of Infants Born to HIV-infected Women by Year of Birth**

Year of Birth	Number of Infants born to HIV Positive Women	Number of Infants who aquired HIV perinatally
1992	19	3
1993	15	1
1994	21	4
1995	19	4
1996	18	0
1997	16	1
1998	14	0
1999	12	1
2000	29	0
2001	21	1
2002	17	0

Other Factors That Contribute to Risk Among High Risk Heterosexuals

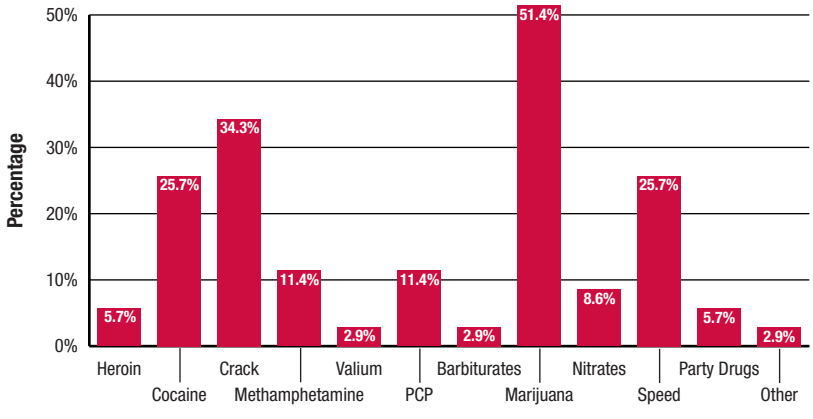
Measures of Risk Behavior Reported for Heterosexuals

The supplement to HIV/AIDS surveillance (SHAS) questionnaire was collected at Denver Public Health to obtain additional risk, treatment, and substance use information from HIV positive individuals. Adults in HIV treatment for more than three months through the Denver Health and Hospital System were recruited by care providers, letters, and flyers. Consent forms were signed and all information was collected through self-report during an interview. These data were collected between January 1, 2000 and June 30, 2003. There were 408 total interviews performed between January 1, 2000 and June 30, 2003. Thirty-five persons interviewed identified as high risk heterosexuals. Fifteen (43%) were men and 20 (57%) were women. Seven (20%) were White, 11 (31%) were Black, nine (26%) were Hispanic and eight (23%) were classified as Other.

Substance Use

Fifty-seven percent of heterosexuals reported using non-injection drugs at some point in their life. Forty-five percent of those who reported non-injection drugs reported using non-injection drugs in the last 12 months. Fifty-one percent of heterosexuals reported using marijuana followed by crack (34%) and cocaine or speed (26%). The drugs used least by heterosexuals were Valium and barbiturates (3%).

■ **FIGURE 48: Proportion of Heterosexuals Using Non-injection Drugs, Denver, Colorado, 2000–2003**

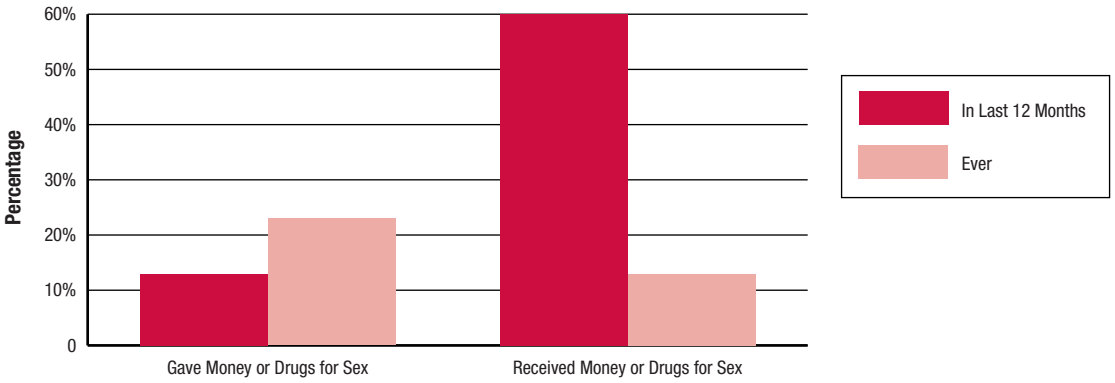


Categories are not mutually exclusive.

Exchanging Sex or Money for Drugs

Thirty-one percent of heterosexuals answered questions regarding exchanging money or drugs for sex. In the last 12 months (red bars), heterosexuals received money or drugs for sex at a much higher rate (60%) than they gave money or drugs for sex (13%). When asked if a person had ever exchanged sex or money for drugs (light red bars), heterosexuals reported that they have given money or drugs for sex at a higher rate (23%) than they had received money or drugs for sex (13%).

■ **FIGURE 49: Proportion of Heterosexuals Who Exchanged Money or Drugs for Sex, Denver, Colorado, 2000–2003**



Categories are not mutually exclusive.

The Context of Risk Among Women with Opposite Sex Partners

CDPHE research and evaluation unit completed a needs assessment in 2003 and concluded the following qualitative analysis. Among HIV infected people who claim sex with partners of opposite sex as their only risk for infection, the proportion that are women is twice that of men. According to interviews, focus groups, and surveys conducted among high-risk women, HIV risk is most often attributed to unsafe sex with multiple partners and/or sex with high-risk partners. Among many women at risk, unsafe behaviors occur in the context of alcohol and other drug use and their effects on decision-making, prostitution to support an addiction or their partner's addiction, and/or to meet basic needs, rape, low self-esteem, and a lack of empowerment. For many women, increased risk for HIV must be viewed against a backdrop of physical, sexual, and emotional abuse, issues of mental health, and the circumstances of poverty and attempts to meet basic needs.

Other factors affecting women's risk of HIV include denial of risk, getting caught up in the heat of the moment, the need for intimacy and trust, and difficulties negotiating condom use with men. Some women still think of HIV as a "gay men's disease" in spite of significant numbers of HIV cases occurring among women. Other women report that they can tell if a partner has HIV based on what the partner looks like or how the partner is dressed. Others believe that men cannot get HIV from women. Condom negotiation can be very difficult for many women given the resistance of their male partners. At times, even the suggestion of using condoms is reported to cause partners to become angry and accuse women of being untrustworthy.

Among women at increased risk, HIV prevention and related services are often viewed as inaccessible or inappropriate. For those seeking substance abuse treatment, barriers include the cost, accessibility, and availability of treatment; waiting lists to get into subsidized care; disrespectful treatment from providers; poor quality of care; the failure to address mental health issues that often underlie substance abuse issues; the short duration of many treatment programs; and the lack of aftercare

follow-up. Many women cite cost as a barrier to accessing quality mental health care services, given that only a limited amount of subsidized care is available. This is especially the case for those who have not been clinically diagnosed with a serious mental illness yet suffer from problems such as depression, posttraumatic stress syndrome, and low self-esteem. Access to needed medications is also problematic for those who lack health insurance. Some women report that counselors are often not sufficiently skilled to deal with women's difficult, more global life issues. Other barriers to accessing services include lack of transportation and childcare. Transportation is especially limited or reportedly non-existent for those living in rural areas. Stable housing situations are also reported to be difficult to access by persons with low incomes, especially for those who have a documented history of substance abuse and/or a criminal record. Additionally, not knowing where to go for services is a commonly reported problem.

Information drawn from women highlights the need to address HIV within the context of other, often competing yet interrelated priorities for women who are at increased risk. These priorities include ensuring adequate shelter, finding employment, providing for their children, avoiding addiction-related sickness, ensuring adequate childcare, dealing with grief and loss, accessing health care, and addressing the need to feel valued, respected, and loved.

Other Modes of Transmission

It is important for HIV prevention planning that the HIV epidemic be characterized by mode of transmission. Persons who are diagnosed with HIV and AIDS are interviewed, and their medical records are examined to determine their risk category.

Data about risk is less complete for newly diagnosed HIV-infected persons than for persons with AIDS. In 2002, risk data for cumulative AIDS cases was not available for 308 or four percent of cases (n=7,858); for AIDS cases newly diagnosed in 2002, risk was not identified in 15 percent of the cases. Similarly, 18 percent of newly diagnosed HIV cases (n=304) had no risk reported. No cases of female-to-female transmission have been documented.

Other modes of transmission (blood transfusion, organ or tissue transplant, hemophilia and occupational acquisition) account for two percent of AIDS cases (157/7,858) through June 2002. Transfusion recipients account for 76 cumulative AIDS cases since 1982, transplant recipients for one; hemophiliacs (recipients of clotting factor) for 80, and occupational acquisition for two (both were health care workers who sustained percutaneous needlestick injuries from HIV-infected patients and seroconversion was documented; one other probable case of occupational acquisition is classified as "no identified risk"). It is important to articulate here that "no identified risk" does not mean that there are new or unidentified means of transmission.

Serologic Testing Algorithm for Recent HIV Seroconversion (STARHS), 1994–2000

Background

STARHS is a new testing algorithm that allows a single HIV positive serum sample to be tested and classified as a "recent" infection or not. A recent infection is a test from a person that acquired HIV within 170 days (95% CI, 132-212 days) of testing. From this classification, HIV seroincidence can be calculated. Seroincidence is the number of new HIV infections in the population at risk over a specific period of time. For this report, HIV seroincidence will be reported as a rate per 100 person years, which is the rate of new HIV infections per 100 persons testing for HIV within a one-year period.

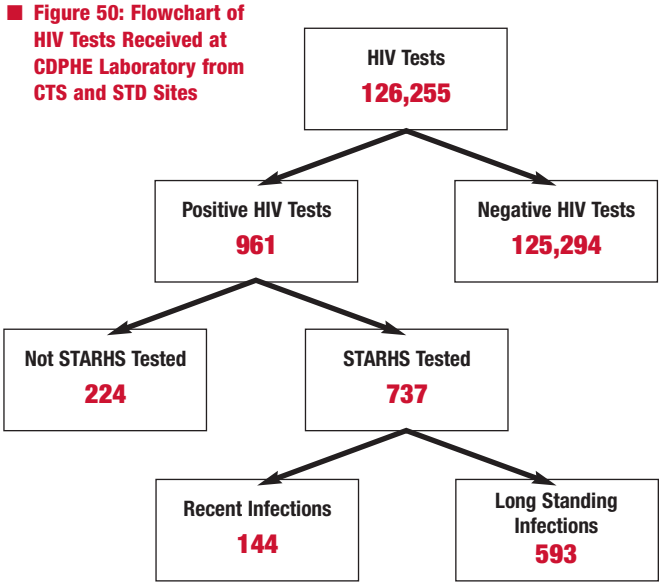
Another way to think about the HIV seroincidence rate is as a percentage of new infections per year. HIV seroincidence was calculated using a specific incidence density equation that takes into account the 170-day window period of the STARHS test and a one-year testing time[1].

Population

HIV tests were submitted to the CDPHE laboratory for testing or confirmatory testing from the STD and CTS sites in Colorado between 1994 and 2000; 126,255 total samples were submitted and analyzed.

The HIV seroincidence rate for STD and CTS sites between 1994 and 2000 was 0.33 per 100 person years. Even though the HIV seroincidence rate fluctuated over time the HIV seroincidence rate in 2000 was the same as the HIV seroincidence rate in 1994 (0.32 per 100 person years).

■ **Figure 50: Flowchart of HIV Tests Received at CDPHE Laboratory from CTS and STD Sites**



MSM have a much higher HIV seroincidence rates than people who identify as heterosexual. The risk group MSM includes: MSM and MSM who are also IDU. The heterosexual risk group includes: people who have sex with the opposite sex; people who have sex with the opposite sex and are IDU; people who have a STD; people who have sex with an IDU; a person who has HIV or an STD; and women who have sex with an MSM.

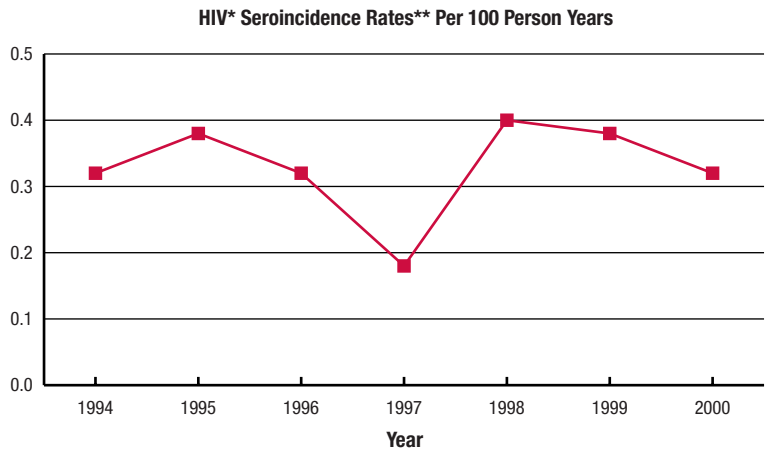
■ **TABLE 16: HIV* Seroincidence Rates in STD and CTS Sites in Colorado, 1994–2000**

	HIV Seroincidence Rates** Per 100 Person Years (95% C.I.*)							
	1994–2000	1994	1995	1996	1997	1998	1999	2000
Overall	0.33 (0.22, 0.49)	0.32 (0.16, 0.60)	0.37 (0.20, 0.68)	0.32 (0.16, 0.61)	0.17 (0.07, 0.39)	0.40 (0.21, 0.77)	0.37 (0.18, 0.76)	0.32 (0.15, 0.67)
Risk Factor								
MSM*	1.94 (1.28, 3.01)	1.77 (0.85, 3.59)	2.20 (1.12, 4.31)	2.21 (1.08, 4.39)	1.09 (0.40, 2.66)	2.22 (1.04, 4.56)	2.05 (0.86, 4.56)	2.21 (0.95, 4.80)
Heterosexual	0.09 (0.05, 0.17)	0.10 (0.03, 0.28)	0.10 (0.03, 0.27)	0.07 (0.02, 0.24)	0.04 (0.01, 0.19)	0.14 (0.04, 0.38)	0.14 (0.04, 0.41)	0.05 (0.01, 0.23)

*HIV, Human Immunodeficiency Virus; *CI, Confidence Intervals.
**HIV seroincidence rate calculated using the following equation from Janssen et al, 1998;
[# STARHS recent infections / (# STARHS recent infections + HIV negative tests]) (365.25/170) (100).
^ Seroincidence rates could not be computed due to either 0 STARHS "recent" infections or the seroincidence rate was under 0.01 per 100 person years.
Indeterminate tests were deleted from analysis.
The first positive or last negative HIV tests were used in repeat testers.
Approximately 76 percent of the positive HIV tests were not available for STARHS testing in years 1996 and 1997.

While it appears that there is a large difference between year 1997 and 1998 in the overall HIV seroincidence rates, the actual difference is only 0.23 per 100 person years. Years 1996 and 1997 are missing positive HIV samples. This could have led to the decrease in HIV seroincidence rates for these two years. Even with this limitation of the data there is still very little change in the overall HIV seroincidence rates between 1994 and 2000.

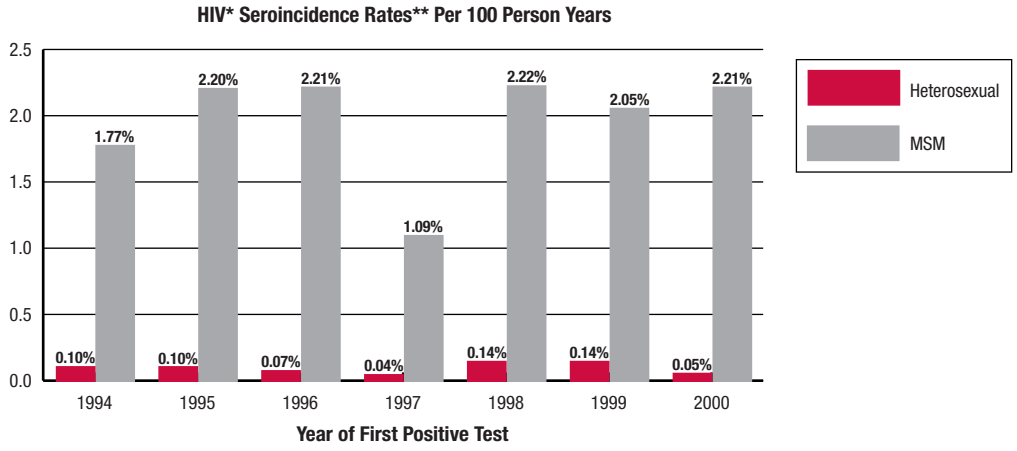
■ **Figure 51: HIV Seroincidence Rates in STD and CTS Sites in Colorado, 1994–2000**



*HIV, Human Immunodeficiency Virus.
**HIV seroincidence rate calculated using the following equation from Janssen et al, 1998;
(# STARHS recent infections / [# STARHS recent infections + HIV negative tests]) (365.25/170) (100).
Approximately 76 percent of the positive HIV tests were not available for STARHS testing in years 1996 and 1997.

HIV seroincidence rates changed over time within each risk group with both decreases and increases in the HIV seroincidence rates. HIV seroincidence rates in MSM were consistently much higher than the heterosexual group. In MSM, the HIV seroincidence rate is slightly higher in 2000 (2.21 per 100 person years) than in 1994 (1.77 per 100 person years). In heterosexuals, the HIV seroincidence rates also increase and decrease over time but are slightly lower in 2000 (0.05 per 100 person years) than in 1994 (0.10 per 100 person years).

■ **Figure 52: HIV Seroincidence Rates in STD and CTS Sites in Colorado, 1994–2000**



*HIV, Human Immunodeficiency Virus.
**HIV seroincidence rate calculated using the following equation from Janssen et al, 1998;
(# STARHS recent infections / [# STARHS recent infections + HIV negative tests]) (365.25/170) (100).

■ **TABLE 17: Total Number of HIV* Tests and Positive** HIV* Tests in Each Age Group by Year for STD and CTS Sites, Colorado, 1994–2000**

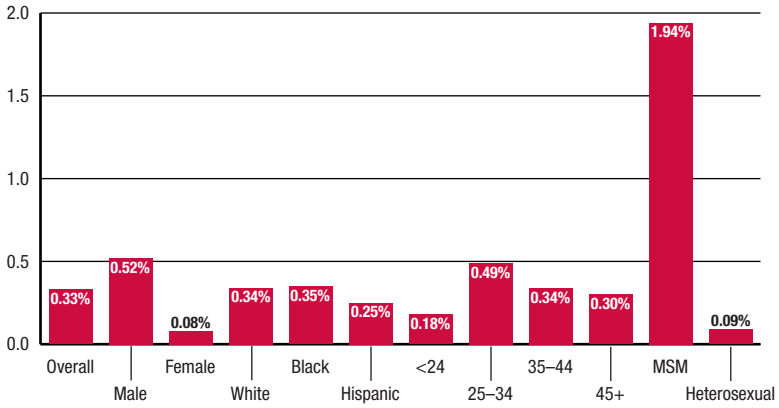
	1994		1995		1996		1997		1998		1999		2000	
	n	# HIV Positive	n	# HIV Positive	n	# HIV Positive	n	# HIV Positive	n	# HIV Positive	n	# HIV Positive	n	# HIV Positive
Overall	22,176	240	21,563	191	20,864	135	17,477	108	16,685	110	13,045	87	14,445	90
Risk Factor														
MSM*	16,850	186	16,313	138	15,944	100	13,276	75	12,844	79	9,932	63	11,155	56
Heterosexual	3,056	50	2,914	51	2,608	33	2,359	30	2,237	31	1,729	23	1,739	31

*HIV, Human Immunodeficiency Virus.
**Not all positive HIV tests were available for STARHS testing.
Numbers may not add up due to omission of the "other" risk group.

HIV Seroincidence Rates Using STARHS Methodology, STD and CTS Sites, Colorado 1994–2000

HIV seroincidence rates for people who chose to test at STD and CTS sites in Colorado during 1994–2000. HIV seroincidence rates were calculated using STARHS methodology.[17] The overall HIV Seroincidence rate was 0.33 per 100 person years. When HIV seroincidence was calculated by demographic group, males had a higher HIV Seroincidence rate (0.52 per 100 person years) than females (0.08 per 100 person years). Blacks have the highest HIV seroincidence rate of all the races (0.35 per 100 person years), followed by Whites (0.34 per 100 person years), and Hispanics (0.25 per 100 person years). The highest HIV seroincidence rates by age group were in the 25–34 age group (0.49 per 100 person years) followed by 35 to 44 age group (0.34 per 100 person years), 45 and over age group (0.3 per 100 person years), and under 24 age group (0.18 per 100 person years). MSM had the highest HIV seroincidence rate (1.94 per 100 person years) between the two risk groups which was much higher than those who identified as heterosexual (0.09 per 100 person years).

■ **FIGURE 53: HIV Seroincidence Rates Per 100 Person Years STD and CTS Sites, Colorado, 1994–2000**



Delays in HIV Testing

As **Table 18** on the next page shows, the time between the first positive HIV test and AIDS diagnosis was examined for cases of AIDS diagnosed between 1993 and 2002. A significant number of AIDS cases are tested relatively late in the course of their HIV infection. Thirty-six percent were tested for HIV within two months and 43 percent within 12 months of AIDS diagnosis. These individuals pose a challenge to HIV prevention efforts. Knowing one's serostatus allows for early medical evaluation and possible appropriate clinical intervention as well as behavior changes that may prevent transmission to others.

Women tend to test later in their course of infection than men. People of color test later than Whites, and the Asian population tests latest (64 percent tested within 12 months of AIDS diagnosis). Heterosexual contact and cases with no identified risk test later in their infection than other risk groups. The numbers in these groups are small, with the majority of the cases among White MSM. Persons who live in rural Colorado appear to seek testing for HIV later in the course of their infection than persons living in urban Colorado. The delay in testing late in the course of HIV infection appeared to be increasing, until 2002 when 45 percent of persons tested within 12 months of their AIDS diagnosis.

TABLE 18: Colorado AIDS Cases Diagnosed 1993–2002

		Time between HIV test and AIDS diagnosis			
	n	Within 2 months		Within 12 months	
Total	4,365	1,554	35.6%	1,858	42.6%
Sex					
Male	3,948	1,398	35.4%	1,659	42.0%
Female	417	159	38.1%	199	47.7%
Race					
White	2,905	984	33.9%	1,156	39.8%
Black	601	223	37.1%	283	47.1%
Hispanic	796	323	40.6%	388	48.8%
Asian	23	12	52.2%	15	65.2%
Am Indian	35	12	34.3%	14	40.0%
Risk					
MSM	2,793	1,002	35.9%	1,189	42.6%
IDU	481	135	28.1%	174	36.2%
Heterosexual Contact	333	155	46.5%	196	58.9%
No Identified Risk	237	150	63.3%	169	71.3%
Region					
Urban	3,750	1,315	35.1%	1,449	38.6%
Rural	615	239	38.9%	409	66.5%
Date of Diagnosis					
1993	732	222	30.3%	275	37.6%
1994	652	196	30.1%	233	35.7%
1995	584	171	29.3%	218	37.3%
1996	459	157	34.2%	194	42.3%
1997	362	162	44.8%	177	48.9%
1998	329	139	42.2%	161	48.9%
1999	311	127	40.8%	145	46.6%
2000	338	138	40.8%	168	49.7%
2001	287	122	42.5%	147	51.2%
2002	311	120	38.6%	140	45.0%

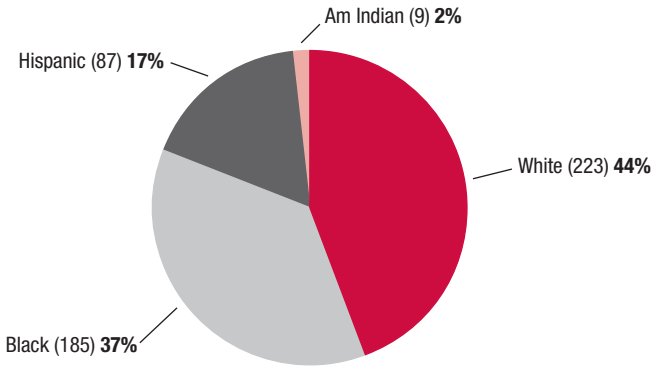
HIV in Colorado's Prisons

Since 1985, the Colorado Department of Corrections (DOC) has screened inmates for HIV when they were admitted to a DOC facility. Through September 30, 2002, 490 HIV-infected inmates have been admitted to DOC. The overwhelming majority of these inmates are housed at the Colorado Territorial Correctional Facility in Canon City (CTCF) where specialized medical care is available. (There are three exceptions to housing HIV-infected inmates at CTCF: 1) When inmates pose a serious threat to the safety of other inmates, guards, or to themselves, they are incarcerated at the Colorado State Penitentiary, or so-called "Super-Max," where the inmate is confined to his cell 23 hours a day and does not have contact with other inmates; 2) when the patient is about to be released and is assigned to Camp George West, a pre-release facility; and 3) when the patient is hospitalized in a DOC mental health facility).

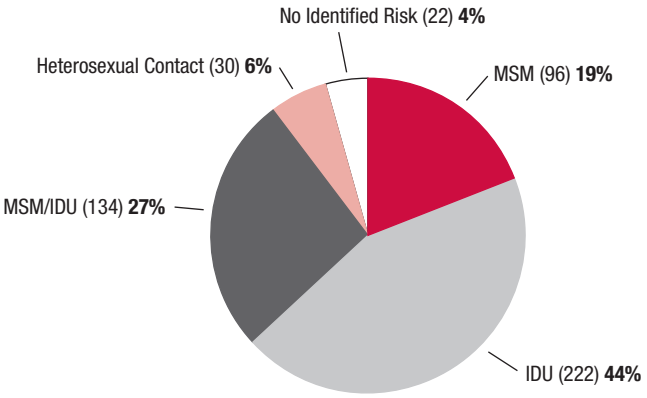
Figure 54 shows that the racial and ethnic composition of HIV and AIDS cases in the Colorado DOC is markedly different than the composition of Colorado's population (Whites account for 74 percent of the state, Blacks four percent, and Hispanics 18 percent) and somewhat different than the DOC racial characteristics. The DOC population is 44 percent White, 37 percent Black, and 17 percent Hispanic. Blacks are over represented among incarcerated persons by a factor of nine when compared to Colorado's population. Although not graphically illustrated, of the 504 case of HIV or AIDS at DOC, 91 percent are male and nine percent are female, which is fairly consistent with the sexual characteristics of DOC where 93 percent of inmates are male and 7 percent female.

Figure 55 shows the risk characteristics of HIV in DOC. When compared to risk for Colorado's epidemic, prisoners with HIV are more likely to be IDU (44 percent compared to10 percent) and men who have sex with men and inject drugs (MSM/IDU) (27 percent compared to 11 percent). They are less likely to be MSM (19 percent among HIV/AIDS cases at DOC compared to 65 percent of cases statewide) or to have an unidentified risk (four percent at DOC compared to seven percent). Not surprisingly, this suggests that IDU are more likely to be incarcerated than MSM. The percentage of cases ascribed to heterosexual acquisition is the same (six percent in both groups).

■ **Figure 54: HIV/AIDS in DOC by Race Reported Through 6/30/03, Colorado**



■ **Figure 55: HIV/AIDS in DOC by Risk Reported Through 6/30/03, Colorado**



4

Ryan White HIV/AIDS Care Act Special Questions and Considerations

On August 18, 1990, Congress enacted Public Law 101-381, the Ryan White Comprehensive AIDS Resources Emergency (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 people living with HIV (PLWH) 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. Briefly, the Act directs assistance through the following channels:

Title I Eligible Metropolitan Areas (EMAs) with the largest numbers of reported cases of AIDS, to meet emergency service needs of PLWH disease.

Title II All states, the District of Columbia, Puerto Rico, and eligible U.S. Territories to improve the quality, availability, and organization of health care and support services for individuals living with HIV disease and their families.

Title III Public and private non-profit entities to support outpatient early intervention HIV services for PLWH.

Title IV Public and private nonprofit entities for projects to coordinate services to and provide enhanced access to research for children, youth, women, and families with HIV/AIDS.

Part F Special Projects of National Significance (SPNS) to support the development of innovative models of HIV/AIDS care that are designed to be replicable and have a strong evaluation component; AIDS Education and Training Centers (AETC) to conduct education and training for health care providers; and the HIV/AIDS Dental Reimbursement Program to assist accredited dental schools and post-doctoral dental programs with uncompensated costs incurred in providing oral health treatment to HIV-positive patients.

The state of Colorado receives funding from all Titles, as well as Part F. Of interest here are Titles I and II.

As an EMA, the five-county Denver metropolitan area receives Title I 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, Title II funding is administered by the 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. Title II funds support a wide range of services statewide, including the AIDS Drug Assistance Program (ADAP), Health Insurance assistance, and a multitude of health related services provided by regional consortia across the state.

What are the HIV Service Utilization Patterns of Individuals in Colorado?

Title I—Denver Metro Area

Table 19 shows a comparison between clients served by the Ryan White Title I in 2002 and persons diagnosed with AIDS in the Denver metro area in 2002. CARE Act funds are serving a larger proportion of persons who acquired HIV heterosexually when compared with persons diagnosed with AIDS in 2002. The majority of clients are male (89%), but females are receiving a greater proportion of services in proportion to AIDS cases. In terms of age, most clients fall within the 25 to 44 age range (58%). Persons under 13 and between the ages of 45–64 receive a higher percent of services in comparison to AIDS cases diagnosed in 2002.

■ **TABLE 19: Title I Client Characteristics by Race/Ethnicity, Sex, and Age in the Denver metropolitan area, 2002**

Client Characteristics	CARE ACT Clients Title % of Clients	Denver Metro AIDS Surveillance Data % of Clients
Race/Ethnicity		
White	51%	51%
Black	18%	20%
Hispanic	23%	25%
Asian/Pacific Islander	<1%	0%
Am Indian/Alaska Native	1%	3%
Multiple Race/Unknown	4%	2%
Sex		
Male	82%	88%
Female	18%	12%
Other/Unknown	<1%	0%
Age		
<13	8%	<1%
13–24	4%	3%
25–44	58%	74%
45–64	30%	21%
>64	1%	2%
Risk		
MSM	54%	55%
IDU	8%	11%
MSM/IDU	7%	10%
Heterosexual Contact	15%	10%

In 2002, 185 clients received services funded through the Ryan White Title I award. O these, 655 were new clients. Of the clients who received services during 2002 (**Table 20**), the majority of persons (1,970) received medical care, 1,753 received case management, 753 received dental care, 919 received mental health services, and 272 received substance abuse treatment. The average number of visits for each service are as follows: substance abuse treatment averaged 18.3 visits, case management 16.6, mental health services 11.5, medical care 10.7, and dental care 3.8. Substance abuse services include both outpatient and residential care. In a residential treatment setting, visits are often counted in terms of inpatient days. Therefore, this data must be interpreted with caution.

Other services provided by Title I included home health care, hospice care, client advocacy, emergency financial, food bank/home delivered meals, housing services, permanency planning, transportation, day/respite care, and other support services.

■ **TABLE 20: Title I Average Number of Visits Per Client by Type of Service, 2002**

	Medical Care	Dental Care	Mental Health Services	Substance Abuse Treatment	Case Management
Number of Clients	1,970	753	919	272	1,753
Number of Visits	21,083	2,887	10,585	4,967	29,158
Average Number of Visits per Client	10.7	3.8	11.5	18.3	16.6

Title II Statewide

Table 21 shows a comparison between clients served by the Ryan White Title II in 2002 and persons diagnosed with AIDS in Colorado in 2002. In 2002, 3,185 clients received services funded through the Ryan White Title II award. Of these, 655 were new clients. Title II is providing services to a smaller proportion of Blacks and MSM/IDU than were diagnosed with AIDS in 2002. The majority of clients are male, but females are receiving a greater proportion of services in proportion to AIDS cases. Most of the clients receiving services fall within the ages of 25 to 44.

■ **TABLE 21: Title II Client Characteristics by Race/Ethnicity, Sex, and Age in Colorado, 2002**

Client Characteristics	CARE ACT Clients Title % of Clients	Colorado AIDS Surveillance Data % of Clients
Race/Ethnicity		
White	66%	55%
Black	8%	19%
Hispanic	23%	22%
Asian/Pacific Islander	<1%	<1%
Am Indian/Alaska Native	1%	2%
Multiple Race/Other	1%	0%
Sex		
Male	82%	89%
Female	18%	11%
Other/Unknown	<1%	0%
Age		
<13	1%	<1%
13–24	3%	2%
25–44	65%	73%
45–64	30%	23%
>64	1%	2%
Risk		
MSM	64%	57%
IDU	11%	11%
MSM/IDU	1%	8%
Heterosexual Contact	22%	8%

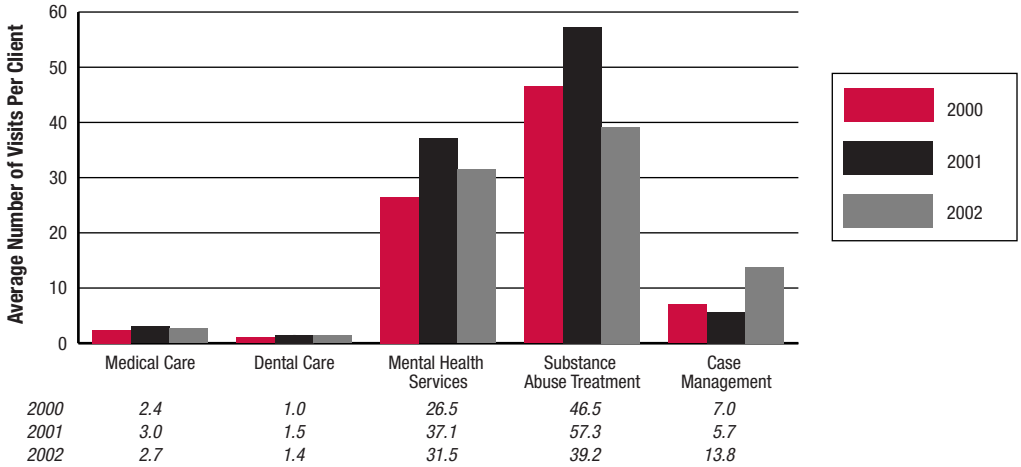
Of the 2,198 clients receiving services funded through Title II award (**Table 22**), the majority of clients received case management (1,052). Two hundred fifty-six received medical care, 65 received mental health services, 34 received dental care, and 18 received substance abuse treatment. The average number of visits per client was greatest among those receiving substance abuse treatment (39.2), followed by mental health services (31.5), case management (13.8), medical care (2.7), and dental care (1.4).

Figure 56 shows the average number of visits per client over a three-year period. Medical care, dental care, and substance abuse treatment were relatively stable between 2000 through 2002. There has been more than a two-fold increase in case management from 7.0 visits in 2000 to 13.8 visits in 2002. Substance abuse treatment declined from 46.5 visits in 2000 to 39.2 visits in 2002.

■ **TABLE 22: Average Number of Visits Per Client by Type of Title II Service, 2002**

	Medical Care	Dental Care	Mental Health Services	Substance Abuse Treatment	Case Management
Number of Clients	256	34	65	18	1,052
Number of Visits	702	48	2,050	706	14,480
Average Number of Visits per Client	2.7	1.4	31.5	39.2	13.8

■ **FIGURE 56: Average Number of Visits Per Client by Type II Service, 2000–2002**



	Medical Care	Dental Care	Mental Health Services	Substance Abuse Treatment	Case Management
2000	*2.4*	*1.0*	*26.5*	*46.5*	*7.0*
2001	*3.0*	*1.5*	*37.1*	*57.3*	*5.7*
2002	*2.7*	*1.4*	*31.5*	*39.2*	*13.8*

AIDS Drug Assistance Program (ADAP)

Since 1987, Congress has appropriated funds to assist states in providing FDA-approved antiretroviral therapies to AIDS patients. With the initial passage of the Ryan White CARE Act in 1990, the assistance programs for antiretroviral therapies were incorporated into the Title II award and became commonly known as ADAP. ADAP now provides FDA-approved HIV-related prescription drugs to under-insured and uninsured individuals living with HIV/AIDS. 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 2002, persons enrolled in ADAP were able to receive the following classes of antiretroviral drugs: nucleoside analogues, protease inhibitors, non-nucleosides, and most medications to treat opportunistic infections. During the calendar year 2002, approximately 1,400 clients accessed ADAP, with 485 being new clients. Most Colorado ADAP clients were male (85%), fell within the age range of 25 to 44 (62%), and were primarily White (54%), Hispanic (22%), or Black (14%). 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 300 percent of the Federal Poverty Level.

What Are the Number and Characteristics of Individuals Who Know They Are HIV-Positive but Who Are Not in Care?

The framework developed by Health Resources and Service Administration (HRSA) for measuring unmet need for HIV primary medical care defines unmet need as lack of evidence of any of the following three components of HIV primary medical care: viral load, CD4 count, or use of antiretroviral therapy during a 12-month period. Colorado requires that laboratories report all tests indicative of HIV infection to CDPHE. All viral load tests and CD4 counts under 500_{mm3} absolute or under 29 percent are reported to the surveillance program. The results are entered into the HARS on a yearly basis. Viral load and CD4 tests are used by care providers to determine if it is appropriate to initiate antiretroviral treatment. These tests enable us to characterize HIV infected persons who are receiving primary medical care and those who are not in care. Additional laboratory information is obtained by conducting medical record chart reviews and contact with primary care providers. The following table determines the pattern of primary medical care.

Table 23 shows the determination of unmet need. Of the 292 persons diagnosed living with AIDS in 2002, two (<1%) were not receiving primary medical care. There was a much higher percentage of HIV diagnosed in 2002 that were not receiving medical care (14%). This may be the result of persons who had a previous recent negative HIV test and know they were recently infected and may not feel they need immediate medical care. The combined results show that nine percent of newly diagnosed HIV and AIDS were not in care.

■ **TABLE 23: Colorado Determination of Unmet Need**

	Number of Persons Living	Number of Persons Receiving Primary Medical Care	Number of Persons Who are Not in Primary Medical Care (unmet need)
AIDS Diagnosed 2002	292	290 (100%)	2 (<1%)
HIV Diagnosed 2002	298	255 (86%)	43 (14%)
Total HIV/AIDS Diagnosed 2002	590	545 (92%)	45 (8%)

Table 24 shows the demographic characteristics of the 45 persons recently diagnosed with HIV or AIDS not in primary medical care by diagnostic category. The majority is male (96%). Whites comprise the highest percent by racial group (64%) while Blacks show disproportionately higher percent (18%) in relation to the population. The majority of persons not in care are in the 20 to 39 age group. MSM are the major risk group not in care (47%), followed by persons with no identified risk (36%). IDU and heterosexual contact both represent six percent of the persons not in care.

■ **TABLE 24: Demographics of Persons Not in Primary Medical Care Diagnosed in 2002**

	Person Living with HIV (n=43)	Person Living with AIDS (n=2)	Total (n=45)
Sex			
Male	36 (84%)	2 (100%)	38 (84%)
Female	7 (16%)	0 (0%)	7 (16%)
Race			
White	27 (63%)	2 (100%)	29 (64%)
Black	8 (19%)	0 (0%)	8 (18%)
Hispanic	7 (16%)	0 (0%)	7 (16%)
Asian	0 (0%)	0 (0%)	0 (0%)
American Indian	1 (2%)	0 (0%)	1 (2%)
Age			
<13	0 (0%)	0 (0%)	0 (0%)
13–19	2 (5%)	0 (0%)	2 (4%)
20–24	6 (14%)	0 (0%)	6 (13%)
25–29	9 (21%)	0 (0%)	9 (20%)
30–39	13 (30%)	1 (50%)	14 (31%)
40–49	11 (26%)	0 (0%)	11 (24%)
>49	2 (5%)	1 (50%)	3 (7%)
Risk			
MSM	19 (44%)	2 (100%)	21 (47%)
IDU	4 (9%)	0 (0%)	4 (9%)
MSM/IDU	0 (0%)	0 (0%)	0 (0%)
Heterosexual Contact	4 (9%)	0 (0%)	4 (9%)
No Identified Risk	16 (37%)	0 (0%)	16 (36%)
Perinatal Transmission	0 (0%)	0 (0%)	0 (0%)

Table 25 shows the demographic characteristics of the 545 persons receiving medical care who were diagnosed with either HIV or AIDS in 2002. When compared to persons not in care, they are more likely to be MSM. Persons in the 20 to 29 age group and with no identified risk are less likely to be receiving primary medical care.

■ **TABLE 25: Demographics of Persons in Primary Medical Care Diagnosed in 2002**

	Person Living with HIV (n=255)	Person Living with AIDS (n=290)	Total (n=545)
Sex			
Male	211 (83%)	257 (89%)	468 (86%)
Female	44 (17%)	33 (11%)	77 (14%)
Race			
White	140 (61%)	162 (56%)	302 (56%)
Black	37 (15%)	53 (18%)	90 (17%)
Hispanic	72 (28%)	64 (22%)	136 (25%)
Asian	2 (1%)	2 (<1%)	4 (<1%)
American Indian	4 (2%)	6 (2%)	10 (2%)
Multiple Race	0 (0%)	3 (1%)	3 (<1%)
Age			
<13	1 (<1%)	1 (<1%)	2 (<1%)
13–19	14 (6%)	1 (<1%)	15 (3%)
20–24	30 (12%)	6 (2%)	36 (7%)
25–29	45 (18%)	29 (10%)	74 (14%)
30–39	102 (40%)	126 (43%)	228 (42%)
40–49	48 (19%)	91 (31%)	139 (26%)
>49	15 (6%)	36 (12%)	51 (9%)
Risk			
MSM	141 (55%)	170 (59%)	311 (57%)
IDU	20 (8%)	31 (11%)	51 (9%)
MSM/IDU	20 (8%)	25 (9%)	45 (8%)
Heterosexual Contact	36 (14%)	22 (8%)	58 (11%)
No Identified Risk	37 (15%)	40 (14%)	77 (14%)
Perinatal Transmission	1 (<1%)	2 (<1%)	3 (<1%)

Knowledge of HIV Disease Markers Among Primarily Spanish-Speaking Patients at Denver Health

Of the 7,858 AIDS cases reported in Colorado through June 30, 2003, Whites comprise the largest number. However, Blacks and Hispanics are disproportionately affected by this epidemic (**Tables 26 and 27**). Although together they comprise 22% of Colorado's population, between July 2002 and June 2003, cases among these two ethnic groups combined accounted for 42% of reported AIDS cases and 43% of reported HIV cases in the state (**Table 27**). This disparity reflects a nationwide trend. In 2001, Blacks demonstrated disproportionately higher rates of AIDS, (27.6/100,000), compared to Whites (4.8/100,000) and Hispanics (8.3/100,000). HIV infection rates showed similar disproportionate findings, with Black rates five times those of Whites, and Hispanic rates nearly twice those of Whites.

TABLE 26: AIDS in Colorado: Cases Reported Through 6/30/03

	COLORADO			DENVER			DENVER HEALTH		
	AIDS Cases		% of	AIDS Cases		% of	AIDS Cases		% of
Race	n	(%)	pop[1]	n	(%)	pop[1]	n	(%)	pop[2]
White	5,578	(72%)	74%	4,537	(71%)	65%	1,908	(62%)	25%
Black	880	(12%)	4%	784	(12%)	11%	506	(17%)	14%
Hispanic	1,175	(15%)	18%	942	(15%)	32%	620	(21%)	52%

[1] Percent of 2000 US Census Bureau reports for Colorado and Denver.
[2] Percent of persons with at least one Denver Health visit during 2000.

TABLE 27: AIDS and HIV Diagnosed or Reported Between 7/1/02 and 6/30/03

	COLORADO				DENVER HEALTH			
	AIDS Cases		HIV Cases		AIDS Cases		HIV Cases	
Race	n	(%)	n	(%)	n	(%)	n	(%)
White	155	(58%)	134	(57%)	51	(50%)	48	(59%)
Black	52	(20%)	36	(16%)	23	(23%)	14	(17%)
Hispanic	59	(22%)	62	(27%)	28	(27%)	20	(25%)

Note: Unique individuals may be counted more than once during the report interval

Black and Hispanic patients also have significantly shorter AIDS survival times and a higher incidence of opportunistic infections compared to Whites. A review of records among HIV positive patients at Denver Health (DH) showed that the median initial CD4 cell count was lowest for Hispanic patients (median 220 cells/mm^3) when compared with Black (median 318 cells/mm^3) or White patients (median 372 cell/mm^3). Median initial viral load was 64,121 copies/ml for Hispanics compared with a median of 25,026 copies/ml for White patients. Later disease stage presentation was also observed, as 11 % of White participants had a major opportunistic infection compared with 29% among Hispanics. It is currently estimated that, in the United States, 300,000 persons infected with HIV may be unaware of their HIV serostatus. Knowing one's serostatus allows for early medical evaluation, appropriate clinical intervention, as well as opportunities to effect behavioral changes to prevent transmission to others. The above data suggest that delays in discovering serostatus occur more frequently among Blacks and Hispanics than among Whites.

Survival is influenced by how early HIV infection is detected and when care is initiated. Client knowledge and feedback about disease markers such as CD4 counts and viral load could influence patient participation in the initiation of medical follow-up and adherence to treatment regimens.

Data gathered from medical records through the Adult and Adolescent Spectrum of Disease (ASD) study and from client interview in the Supplement to HIV/AIDS Surveillance (SHAS) surveys were combined to assess knowledge of these disease markers. Among 431 patients interviewed at DH, since May 2000, 130 were Hispanic, of whom 56 (43%) interviewed in Spanish. Disease state at interview was more advanced among Hispanic patients, (Table 27.), but among those interviewed in Spanish, disease state was even more advanced. Comparing respondents by language, Spanish interviewees were less likely to know a CD4 or viral load had been obtained, and were less able to categorize their first CD4 cell count value compared with those interviewed in English.

In fact, more CD4 and viral load tests had been performed on Spanish-speaking participants during the same time interval than among English-speaking interviewees (**Table 28**). Thus, while language appeared to be associated with a person's level of knowledge about these disease markers for their own health care, health care delivery was appropriately more vigilant and targeted to the group presenting in a more advanced state.

TABLE 28: CD4 and Viral Load Knowledge, Testing and Results, by SHAS Language Interview, Denver Health

	KNOWLEDGE DURING INTERVIEW			TESTING PRIOR TO INTERVIEW			
	CD4		Viral Load	CD4		Viral Load	
Language	Tested %	Result %	Tested %	Tests/Yr.	Average Value	Tests/Yr.	Average Value
English	95%	70%	94%	3.4	384	4.0	58,061
Spanish	61%	27%	71%	4.9	292	5.7	36,287

Among this sample, approximately 13% were primarily Spanish-speaking, all of whom received care from Spanish-speaking providers. Despite being interviewed at a more advanced disease state, more Spanish language respondents were less likely to know that viral load and CD4 testing had been conducted or know the results of those tests. Poor knowledge of disease markers or their meaning might diminish initiation and the effectiveness of therapy. In clinics and throughout the community, additional education and culturally appropriate messages are needed to enhance HIV care and prevention efforts. To improve clinical outcomes, it is essential that Spanish-speaking, HIV-infected patients be better informed of the value of early access, the process of care, and their active partnering role in preventing disease progression and transmission.

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