HIV & AIDS in Colorado

Colorado Department of Public Health and Environment

HIV/AIDS Epidemiology Annual Report

For cases diagnosed through December 2012

Colorado Department of Public Health and Environment

June 2014

Table of Contents

Acknowledgments

This HIV/AIDS Annual Report was produced by the STI/HIV Section, Colorado Department of Public Health & Environment. Access to this publication is available through the Internet at the following address:
http://www.colorado.gov/cs/Satellite/CDPHE-DCEED/CBON/1251621400997

Megan Duffy, MPH – Lead Author
Melanie Mattson, STI/HIV Section Chief
Anita Watkins, MPH
Elaine Daniloff, MSPH
Mary M Reed, MSPH
Kelly Voorhees, MSPH
Mishelle Macias, MHS
Jean Ajayi
Peter Brandauer
Susanna Hernandez
Pam Montoya
Doug Robinson
Phillip Whitt
STI/HIV Registry Unit Staff
HIV Care and Treatment Program Staff
Stephanie Stark, RN – Denver Hospital Authority

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

For further information about this report contact the STI/HIV Surveillance Program at 303-692-2700 or cdphe_stihivdatarequest@state.co.us.

Acronym List

ADAP	AIDS Drug Assistance Programs
AIDS	Acquired Immune Deficiency Syndrome
ARVDR	Antiretroviral Drug Resistance
BMSA	Boulder Metropolitan Statistical Area
CARE Act	Comprehensive AIDS Resources Emergency Act
CDC	Centers for Disease Control and Prevention
CDOC	Colorado Department of Corrections
CDPHE	Colorado Department of Public Health and Environment
CI	Confidence Interval
DPH	Denver Public Health
eHARS	Enhanced HIV and AIDS Reporting System
EIA	Enzyme Immunoassay
GED	General Education Development
HCV	Hepatitis C Virus
HET	Heterosexual
HIS	HIV Incidence Surveillance
HIV	Human Immunodeficiency Virus
HRA	High Risk Areas
IDU	Injection Drug Use or Injection Drug User
MAI	Minority AIDS Initiative
MSA	Metropolitan Statistical Area
MSM	Men Who Have Sex With Men
MSM/IDU	Men Who Have Sex With Men and Injection Drug User
NHBS	National HIV Behavioral Surveillance
NNRTI	Non-Nucleoside Reverse Transcriptase Inhibitor
NRTI	Nucleoside Reverse Transcriptase Inhibitor
PLWH	Persons Living with HIV
PLWHA	Persons Living with HIV/AIDS
SPNS	Special Projects of National Significance
STARHS	Serologic Testing Algorithm for Recent HIV Seroconversion
STI	Sexually Transmitted Infection
TTH	HIV Testing and Treatment History

Executive Summary

Through 2012, 10,334 cases of AIDS and 6,998 cases of HIV infection have been diagnosed and reported in Colorado. Significant decreases in AIDS incidence have been observed both in the United States and in Colorado since the introduction and use of new anti-HIV drug therapies in 1996. Overall the number of reported cases of AIDS each year in Colorado has continued to decrease since a peak of 704 reported cases in 1993.

Antiretroviral treatment has reduced both mortality and morbidity among persons with HIV infection. AIDS-related mortality has decreased by 43 percent from 2008 to 2012 while the prevalence of PLWHA has increased steadily. By December 2012, 11,543 persons were known to be living with HIV or AIDS in Colorado.

Acquisition of HIV disease in Colorado is still overwhelmingly driven by sexual exposure, primarily among men who have sex with men. MSM continues to be the most significant risk group and accounted for 74.4 percent of adult male HIV cases diagnosed in 2012. Among females, heterosexual transmission represents 58.3 percent of newly diagnosed adult HIV cases.

Diagnosed cases of HIV/AIDS remained geographically centered in the Front Range and urban population centers of Colorado. Although the number of women living with HIV in Colorado has been increasing, perinatal transmission has decreased dramatically since 1996. The decrease in transmission rates is attributed to the widespread screening of pregnant women for HIV and the use of anti-retroviral drugs during and after pregnancy, labor and delivery.

Data Sources

Colorado 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, all HIV viral loads, and CD4+ counts of less than 500 mm^3 are reportable.

The data that form the basis of this report are principally reports of HIV and AIDS among persons who were living in Colorado at the time of their diagnosis. Frequently, both HIV and AIDS cases are combined for purposes of characterizing the epidemic and for analysis of trends. Cases are reported to the CDPHE STI/HIV Surveillance Program and are entered into eHARS, the CDC sponsored database that is used to enumerate HIV and AIDS cases in Colorado. AIDS cases in this report meet the 1993 U.S. Centers for Disease Control and Prevention surveillance case definition for AIDS, 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.

The Division of Local Affairs, State Demographer's Office has provided information about the characteristics of Colorado's population to allow comparisons to persons reported with HIV or AIDS when possible. Otherwise population characteristics came from the U.S. Census Bureau.

The Vital Statistics Section of CDPHE has provided cause of death data obtained from death certificates filed with the department through 2012.

The CDOC has provided data on the demographic characteristics of the prison population.

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

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

Strengths and Limitations of the Data

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

In general, persons who are infected with HIV, without treatment, will eventually progress to AIDS. For some persons, this progression may be relatively rapid (less than two years) but it usually occurs over a five to 10 year period. Thus, aggregate data about AIDS cases may have limited use for HIV prevention planning because they characterize persons (and their risk behaviors) who may have been infected more than 10 years ago. The introduction of highly active anti-retroviral therapies have further altered the natural history of HIV and delayed progression to AIDS, making AIDS data less useful each year for planning purposes. Data is available for persons recently diagnosed with HIV (which does not mean newly infected). However, the usefulness of this data may be limited because it only includes persons who elected to be tested for HIV. Prevention strategies initiated in Colorado to test, diagnose and treat targeted population groups at risk for HIV infection can find more people who may not know they are infected with HIV and provide them with ongoing care services to reduce transmission of HIV.

Finally, data about risk are less complete for newly diagnosed HIV-infected persons than for persons with AIDS. Investigation of risk factors for HIV occurs over time, persons who are newly infected may not have discussed the risk factors with HIV counselors,

disease intervention specialists, or their health 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. Changes in address are reported through a passive surveillance. Consequently, it is difficult to measure the impact of migration in or out of any county or Colorado as a whole.

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

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

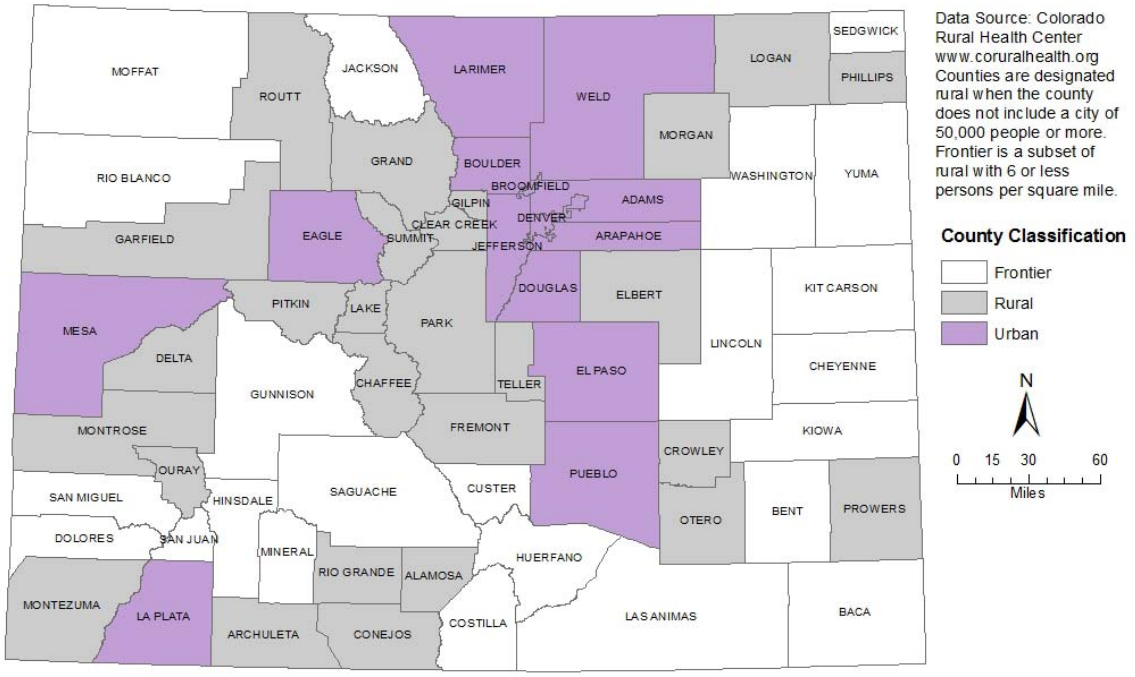
List of Tables of Figures

Description of Colorado

Summary

- The majority of Colorado's population resided in 13 counties.
- As of December 2012, Colorado's population was estimated to be 5,187,582 with an approximately equal distribution between men and women.
- Sixty-six percent of Coloradans were between the ages of 18 and 65.
- Colorado's population was 69.6 percent White, 21.0 percent Hispanic and 3.8 percent Black. Asian/Pacific Islander, American Indian, Multiple races, and other races comprise the remaining 5.6 percent.
- Colorado ranked 18th in the nation's poverty level rating in 2012.
- In 2012, Douglas County had the lowest percent of persons living in poverty (4.0%), while Sagauche County had the highest percent of persons living in poverty (24.8%).
- Colorado's unemployment was 8.0 percent in 2012 compared to 8.3 percent in 2011.
- Colorado percent of nonelderly uninsured persons was lower (17%) than reported nationally (18%) in 2012.
- In 2012, cancer was the leading cause of death in Colorado.
- The number of incarcerated persons in Colorado increased from 22,814 in 2011 to 23,210 in 2012.

Figure 1: Map of Colorado by County Classification



Source: Colorado Rural Health Center[1]

Geography

Colorado is a geographically rural state. It is made up of 64 counties and has a landmass of 104,095 square miles. The majority of Colorado's population resides in 13 counties designated as urban by the U.S. Census Bureau. Urban counties include: Adams, Arapahoe, Boulder, Broomfield, Denver, Douglas, Eagle, El Paso, Jefferson, La Plata, Larimer, Mesa, Pueblo and Weld. A county is designated rural when the county does not include a micro- or metropolitan area of 50,000 people or more. Counties classified as frontier, a subset of rural, have six or fewer persons per square mile. All three classifications and their counties are pictured in **Figure 1** above.

Population

The 2012 Census estimation produced a population of 5,187,582 for Colorado. The state ranks twenty-second in the nation in population, accounting for approximately 1.65 percent of the U.S. population.[2]

Age

The median age in Colorado was 36 years old in 2012. Of the state's population, 66.0 percent was between the ages of 18 and 65. The elderly population (over 65) continued to increase slightly over the last few years starting with 9.8 percent in 2009 and is 11.8 percent in 2012.[2] **Table 1** illustrates the distribution of the population by age and gender.

Table 1: 2012 Colorado Population by Age and Sex

Age Group	Male	Percent	Female	Percent	Total	Percent
<10	354,518	13.6	337,184	13.0	691,702	13.3
10-14	174,372	6.7	167,254	6.5	341,626	6.6
15-19	175,945	6.8	163,502	6.3	339,447	6.5
20-24	190,417	7.3	174,836	6.8	365,253	7.0
25-29	199,981	7.7	184,262	7.1	384,243	7.4
30-34	193,883	7.4	183,544	7.1	377,427	7.3
35-39	178,123	6.8	168,180	6.5	346,303	6.7
40-44	184,751	7.1	176,292	6.8	361,043	7.0
45-49	175,498	6.7	174,729	6.8	350,227	6.8
50-54	185,747	7.1	189,445	7.3	375,192	7.2
55-59	171,300	6.6	177,332	6.9	348,632	6.7
60-64	143,706	5.5	149,540	5.8	293,246	5.7
≥65	275,464	10.6	337,777	13.1	613,241	11.8
Total	2,603,705	100.0	2,583,877	100.0	5,187,582	100.0

Source: U.S. Census Bureau, 2012 Colorado Counties by Age, Gender and Race/Ethnicity. [2]

Race/Ethnicity

Statewide, 69.6 percent of population classified themselves as Non-Hispanic White, 21.0 percent as Hispanic, 3.8 percent as Black, 2.9 as Asian/Pacific Islander, and 2.0 percent classified themselves as mixed race. The following tables show the racial breakdowns in Colorado by gender (**Table 2**) and county (**Table 3**). It should be noted that some of the subsequent tables may have slightly different denominators.

Table 2: 2012 Colorado Population by Race and Sex

Race	Male	Percent	Female	Percent	Total	Percent
White (Non-Hispanic)	1,802,881	69.2	1,805,206	69.9	3,608,087	69.6
Hispanic	555,896	21.4	532,848	20.6	1,088,744	21.0
Black (Non-Hispanic)	105,996	4.1	93,130	3.6	199,126	3.8
Asian/Hawaiian/Pacific Islander (Non-Hispanic)	69,759	2.7	83,135	3.2	152,894	2.9
American Indian/Alaskan Native (Non-Hispanic)	16,771	0.6	16,233	0.6	33,004	0.6
Two or More Race (Non-Hispanic)	52,402	2.0	53,325	2.1	105,727	2.0
Total	2,603,705	100.0	2,583,877	100.0	5,187,582	100.0

Source: U.S. Census Bureau, 2012 Colorado Counties by Age, Gender and Race/Ethnicity. [2]

Table 3: 2012 Colorado Counties Percent of the Population by Race/Ethnicity

County	White (Non-Hispanic)	Hispanic	Black (Non-Hispanic)	Asian/PI (Non-Hispanic)	Amer. Indian/ AK Native (Non-Hispanic)	Multiple Races (Non-Hispanic)	Total Population
Adams	52.7	38.4	2.8	3.7	0.6	1.7	459,598
Alamosa	50.0	45.3	1.1	1.0	1.1	1.4	16,148
Arapahoe	63.0	18.6	9.8	5.3	0.4	2.7	595,546
Archuleta	78.1	17.9	0.3	0.7	1.4	1.5	12,070
Baca	87.4	9.4	0.8	0.2	1.0	1.4	3,751
Bent	59.3	31.3	6.4	0.9	1.4	0.7	5,773
Boulder	79.0	13.5	0.8	4.3	0.4	1.9	305,318
Broomfield	78.1	12.2	1.2	6.0	0.5	1.9	58,298
Chaffee	85.8	10.0	1.6	0.7	0.8	1.0	18,150
Cheyenne	86.3	11.2	0.4	0.6	0.7	0.6	1,874
Clear Creek	91.2	5.4	0.7	0.8	0.7	1.3	9,026
Conejos	43.2	54.6	0.2	0.3	0.7	1.0	8,275
Costilla	32.2	64.7	0.2	1.0	1.1	1.0	3,594
Crowley	57.4	29.8	8.8	1.2	1.6	1.0	5,365
Custer	91.8	5.1	1.0	0.4	0.6	1.3	4,249
Delta	82.5	14.4	0.6	0.6	0.6	1.3	30,432
Denver	52.7	31.5	9.5	3.6	0.6	2.0	634,265
Dolores	89.7	4.3	0.3	0.4	3.0	2.7	1,994
Douglas	84.7	8.0	1.2	3.9	0.3	1.9	298,215
Eagle	67.0	30.3	0.5	1.1	0.3	0.8	51,874
Elbert	90.5	6.0	0.6	0.9	0.5	1.6	23,383
El Paso	71.3	15.6	6.0	3.0	0.6	3.3	644,964
Fremont	80.1	12.6	3.8	0.6	1.5	1.4	46,788

continued on next page

County	White (Non-Hispanic)	Hispanic	Black (Non-Hispanic)	Asian/PI (Non-Hispanic)	Amer. Indian/ AK Native (Non-Hispanic)	Multiple Races (Non-Hispanic)	Total Population
Garfield	68.6	28.4	0.5	0.7	0.5	1.2	56,953
Gilpin	89.5	6.0	0.7	1.5	0.7	1.5	5,491
Grand	89.4	7.6	0.4	0.9	0.4	1.2	14,195
Gunnison	88.1	9.0	0.4	0.6	0.5	1.3	15,475
Hinsdale	92.3	4.1	0.5	0.5	1.0	1.7	810
Huerfano	61.1	35.4	0.5	0.7	1.0	1.2	6,596
Jackson	86.3	11.6	0.1	0.1	1.0	0.8	1,348
Jefferson	79.2	14.9	1.0	2.7	0.5	1.6	545,358
Kiowa	92.3	5.9	0.4	0.0	0.4	1.1	1,444
Kit Carson	77.3	18.5	2.0	0.7	0.5	1.0	8,094
Lake	57.6	39.7	0.4	0.5	0.7	1.3	7,338
La Plata	79.8	12.3	0.4	0.7	5.1	1.8	52,401
Larimer	84.1	10.8	0.8	2.1	0.4	1.7	310,487
Las Animas	53.1	42.5	1.3	0.8	1.3	1.0	14,945
Lincoln	78.7	13.4	5.2	0.8	0.7	1.3	5,453
Logan	77.2	16.3	4.0	0.7	0.8	0.9	22,631
Mesa	82.6	13.7	0.6	0.9	0.7	1.5	147,848
Mineral	95.1	2.8	0.3	0.1	0.7	1.1	709
Moffat	82.8	14.2	0.3	0.7	0.7	1.4	13,200
Montezuma	74.1	11.9	0.3	0.7	11.1	1.8	25,431
Montrose	77.0	20.0	0.4	0.7	0.6	1.3	40,725
Morgan	60.8	34.4	2.8	0.6	0.4	0.9	28,472
Otero	55.9	40.9	0.6	0.8	0.6	1.2	18,698
Ouray	92.5	5.0	0.2	0.7	0.3	1.1	4,530
Park	91.1	5.0	0.5	0.7	0.8	1.8	16,029
Phillips	78.5	19.1	0.6	0.7	0.3	0.7	4,367
Pitkin	87.2	9.6	0.6	1.4	0.2	1.1	17,263
Prowers	61.9	35.7	0.6	0.4	0.6	0.8	12,389
Pueblo	53.5	42.0	1.7	0.8	0.6	1.3	160,852
Rio Blanco	84.0	11.7	1.0	0.6	0.9	1.8	6,857
Rio Grande	53.6	43.8	0.3	0.5	0.9	1.0	11,943
Routt	90.7	6.8	0.4	0.7	0.3	1.1	23,334
Saguache	56.7	39.4	0.3	0.9	1.1	1.3	6,304
San Juan	83.6	13.6	0.0	0.7	0.6	1.6	690
San Miguel	87.7	9.4	0.3	0.8	0.5	1.3	7,580
Sedgwick	83.0	14.0	0.4	0.8	0.4	1.3	2,383
Summit	83.0	14.1	0.8	0.9	0.2	1.1	28,044
Teller	90.2	5.8	0.6	0.9	0.7	1.9	23,389
Washington	88.2	9.4	0.7	0.3	0.2	1.0	4,766
Weld	67.4	28.4	0.9	1.4	0.6	1.4	263,691
Yuma	77.3	21.2	0.2	0.2	0.4	0.6	10,119

Source: U.S. Census Bureau, 2012 Colorado Counties by Age, Gender and Race/Ethnicity. [2]

Poverty and Income

In 2012, the U.S. American Community Survey (ACS) estimated Colorado's median household income to be $58,244 (±$315) using a 5-year estimate.[14] The ACS estimated the percent of Coloradans living below the poverty level to be 12.9 percent in 2012[6]

which was up from 2011 at 12.5 percent. **Table 4** shows the percent of the population below poverty level per county in 2012. Douglas County had the lowest percentage of people living in poverty (4.0%) while Saguache County had the highest percentage of people in poverty (24.8%). The county whose percent below poverty had decreased the most was Lake County with 22.2 percent of people below the poverty level in 2011.

Table 4: Percentage of the Population Under the Poverty Level by County, 2012

County	Percentage Under Poverty Level	County	Percentage Under Poverty Level	County	Percentage Under Poverty Level
Colorado	12.5	**Elbert**	6.0	**Montezuma**	19.6
		El Paso	12.5	**Montrose**	13.8
Adams	14.2	**Fremont**	15.1	**Morgan**	14.6
Alamosa	21.8	**Garfield**	10.9	**Otero**	24.8
Arapahoe	11.8	**Gilpin**	10.3	**Ouray**	6.0
Archuleta	8.8	**Grand**	8.6	**Park**	8.4
Baca	14.5	**Gunnison**	16.3	**Phillips**	18.2
Bent	20.9	**Hinsdale**	5.1	**Pitkin**	11.0
Boulder	13.3	**Huerfano**	20.8	**Prowers**	22.2
Broomfield	6.1	**Jackson**	12.4	**Pueblo**	18.1
Chaffee	9.4	**Jefferson**	8.6	**Rio Blanco**	13.4
Cheyenne	7.8	**Kiowa**	14.9	**Rio Grande**	17.9
Clear Creek	9.8	**Kit Carson**	11.7	**Routt**	7.5
Conejos	17.2	**Lake**	15.4	**Saguache**	24.8
Costilla	24.7	**La Plata**	11.1	**San Juan**	19.5
Crowley	22.8	**Larimer**	13.7	**San Miguel**	7.3
Custer	13.8	**Las Animas**	18.6	**Sedgwick**	15.1
Delta	14.9	**Lincoln**	10.1	**Summit**	11.8
Denver	18.9	**Logan**	15.9	**Teller**	8.2
Dolores	14.9	**Mesa**	13.4	**Washington**	10.1
Douglas	4.0	**Mineral**	6.7	**Weld**	14.4
Eagle	10.0	**Moffat**	12.0	**Yuma**	10.7

Source: U.S. Census Bureau, 2012 ACS 5 yr Tables, Poverty Status by County.[6]

Employment

There were an estimated 219,572 persons who were unemployed in 2012, a rate of 8.0 percent, according to the Colorado Department of Labor. This rate is 3.6 percent lower than 2011 when 225,730 persons were unemployed at a rate of 8.3 percent.[7]

Insurance

According to the Kaiser Family Foundation, 17 percent of Colorado's population was uninsured in 2011-2012. This was lower than the U.S. estimate of 18 percent in 2012 and ranked the state at 22nd for uninsured nonelderly in the nation.[8] **Table 5** shows that the percentage of Colorado's population not covered by health insurance was much greater among Hispanics (28%) and Blacks (26%) than among Whites (13%).

Table 5: Percentage of the Non-Elderly Adults without Health Insurance Coverage by Race and Ethnicity, Colorado 2011-2012 and United States 2012

Race	Colorado	United States
White, Non-Hispanic	13%	13%
Black, Non-Hispanic	26%	21%
Hispanic	28%	31%
Other	15%	16%
Total	17%	18%

Sources: Henry J. Kaiser Family Foundation State Health Facts.[8]

Education

According to the Colorado Department of Education, in 2012 there was a combined public and non-public school enrollment of 863,561 persons in Colorado. School enrollment was comprised of 55.6 percent White, 32.3 percent Hispanic, 4.7 percent Black, 3.4 percent Asian/Pacific Islander, 3.3 percent two or more races and 0.8 percent American Indian.[9] The overall dropout rate in Colorado during the 2011-2012 school year was 2.9 percent. **Table 6** shows the percent of the population graduating from high school and college by gender. Compared to other MSAs and the state as a whole, the Boulder MSA had the highest proportion of higher education degrees, the Grand Junction MSA had the highest proportion of high school graduates or GEDs and the Greeley MSA had the highest proportion of the population without a high school diploma or GED.

Table 6: Percentage of Population 25 Years Old and Over, High School Graduates or Higher Degree by Gender and Metropolitan Statistical Areas (MSA), 2012.

	No HS Diploma/GED			HS Grad/Equivalent			Higher Degree		
Area	Men	Women	Total	Men	Women	Total	Men	Women	Total
Boulder MSA	6.3	5.7	5.9	29.4	31.3	30.4	64.4	62.9	63.6
Colorado Springs MSA	6.5	6.7	6.6	47.0	49.1	48.1	46.5	44.2	45.3
Denver-Aurora-Broomfield MSA	11.1	10.1	10.5	42.3	44.0	43.2	46.6	46.0	46.2
Fort Collins-Loveland MSA	6.5	5.3	5.9	41.5	41.8	41.7	51.9	52.7	52.4
Grand Junction MSA	10.5	9.8	10.2	57.0	54.2	55.5	32.5	36.1	34.3
Greeley MSA	15.9	14.0	15.0	51.0	49.9	50.5	33.0	36.0	34.6
Pueblo MSA	14.7	12.8	13.7	56.4	53.8	55.1	28.9	33.5	31.2
Colorado	10.7	9.4	10.0	44.9	45.5	45.2	44.4	45.0	44.7
United States	14.9	13.7	14.2	49.3	49.7	49.5	35.7	36.6	36.2

Source: U.S. Census Bureau, 2012 Census ACS 5-year Estimate Data Tables, Education Attainment by Metropolitan Statistical Areas.[5]

Incarcerated persons

According to data from the Colorado Department of Corrections, 23,210 persons were incarcerated in 2012; this was a slight increase from 2011 when 22,814 persons were incarcerated. Twenty state correctional facilities housed 14,118 inmates, and the remaining 9,092 inmates were housed in contract facilities or county jails. Seven CDOC facilities were located in Fremont County. Colorado's incarcerated population was 91 percent male and 9 percent female. Racial characteristics of the inmate population were as follows: 45 percent White, 32 percent Hispanic, 19 percent Black, 3 percent American Indian, and 1 percent Asian.[10]

Epidemiological Trends in HIV Disease in Colorado

Summary

- By the end of 2012, an estimated 11,543 Colorado residents were living with HIV disease (an increase of 1.6 percent from 2011).
- Of the total number of people diagnosed with AIDS through 2012, 65.7 percent were White, 19.3 percent were Hispanic and 12.9 percent were Black.
- Blacks continued to be disproportionally affected by HIV disease and represented 14.6 percent of PLWHA (prevalent cases of HIV and AIDS) while comprising only 3.8 percent of Colorado's population.
- The 25-29 year old age group accounted for the largest proportion of newly diagnosed HIV cases (19.1%) in 2012.
- Ninety-five percent of newly diagnosed HIV disease cases were reported in urban counties in 2012.
- There have been 5,660 HIV/AIDS-related deaths reported in Colorado from the early 1980's through the end of 2012.

HIV Disease in Colorado

A cumulative total of 10,334 cases of AIDS and 6,998 cases of HIV infection have been reported in Colorado, and an estimated 11,543 persons were living with HIV disease through the end of 2012. Colorado's HIV (not AIDS) prevalence of 124 persons per 100,000 population was lower than the U.S. prevalence of 334 for the entire U.S. in 2010. Colorado's 2010 AIDS prevalence was 97 persons per 100,000 population compared to the U.S. prevalence of 191 during the same year. In 2011, Colorado ranked 24th in total AIDS cases reported among all states and represented 0.91 percent of all reported AIDS cases in 2011.

Table 7 compares the racial characteristics of Colorado and U.S. AIDS cases through 2012. The majority of Colorado AIDS cases were White (59.5%), compared to the U.S. (33.4%). Blacks represented a lower percent of PLWA in Colorado, compared to the U.S. (15.2% to 43.1%, respectively), whereas Hispanics represented a higher percent of AIDS cases in Colorado (22.6%), compared to the U.S. (20.1%).

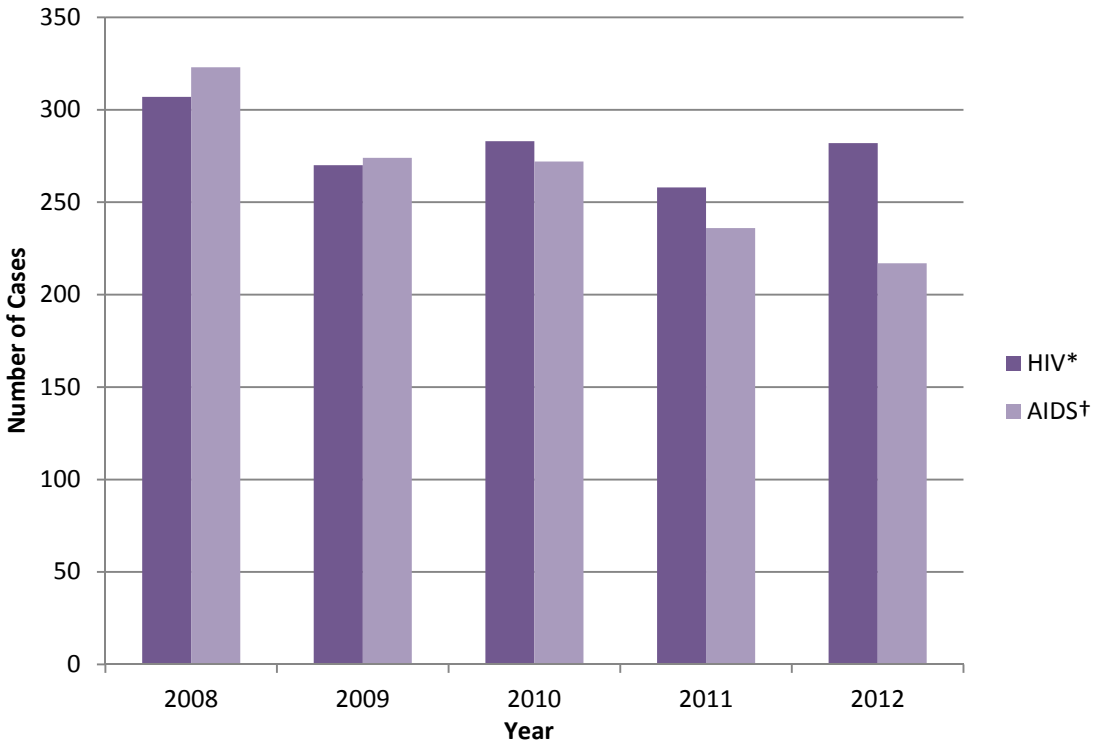
Table 7: Adults/Adolescents Living with AIDS by Race, Colorado 2012 and United States 2010

	Colorado		United States*	
Race	Number	Percent	Number	Percent
White	3,040	59.5	164,480	33.4
Hispanic	1,156	22.6	99,183	20.1
Black	778	15.2	212,157	43.1
Asian/PI	53	1.0	5,754	1.2
American Indian	45	0.9	1,729	0.4
Multiple Races	33	0.6	8,878	1.8
Total	5,105	100.0	492,276	100.0

*Source: CDC HIV/AIDS Surveillance Report, Adults and adolescents living with an AIDS diagnosis, by race/ethnicity and selected characteristics, year-end 2010 – United States, Vol. 23, Table 22 [11]

Figure 2 illustrates reported cases of HIV and AIDS between 2008 and 2012. Newly diagnosed cases of HIV that did not progress to AIDS in the same year have decreased slightly, from 307 cases in 2008 to 282 cases in 2012. Similar to HIV, there has been a decrease in the number of newly diagnosed AIDS cases from 2008 to 2012 (32.8%).

Figure 2: Colorado HIV and AIDS by Year of Diagnosis (2008-2012)



*Excludes those with an AIDS diagnosis in the same year.
†AIDS diagnosis regardless of time since HIV diagnosis, HIV infection case may be counted in a previous year.

Figure 3 demonstrates the annual number of deaths among HIV and AIDS cases in Colorado. Deaths among AIDS cases have steadily declined between 2008 and 2012, during which a 43.2 percent decrease in deaths was observed.

Figure 3: Annual Death among Persons Diagnosed with HIV and AIDS – Colorado (2008-2012)

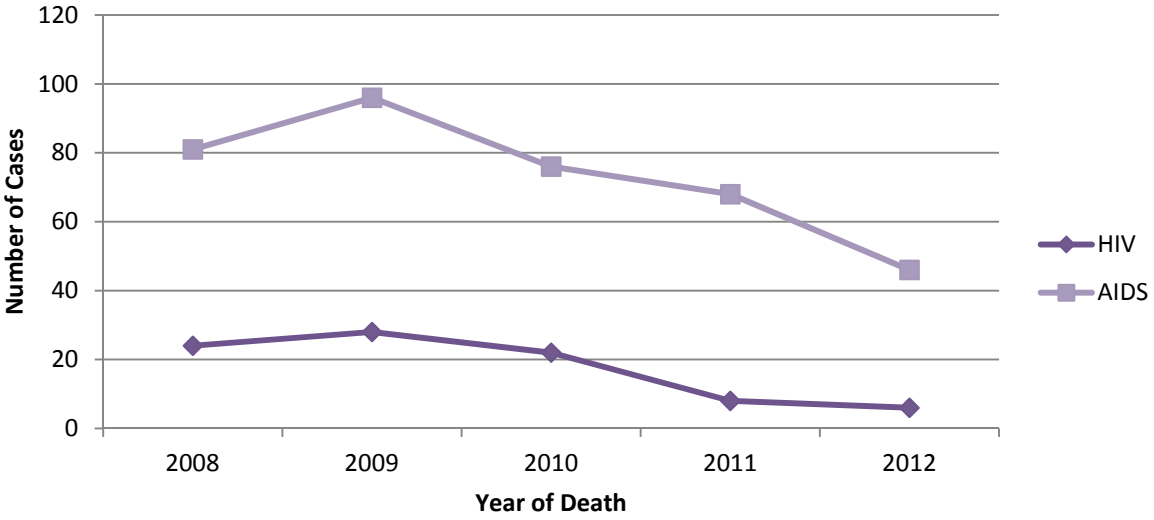
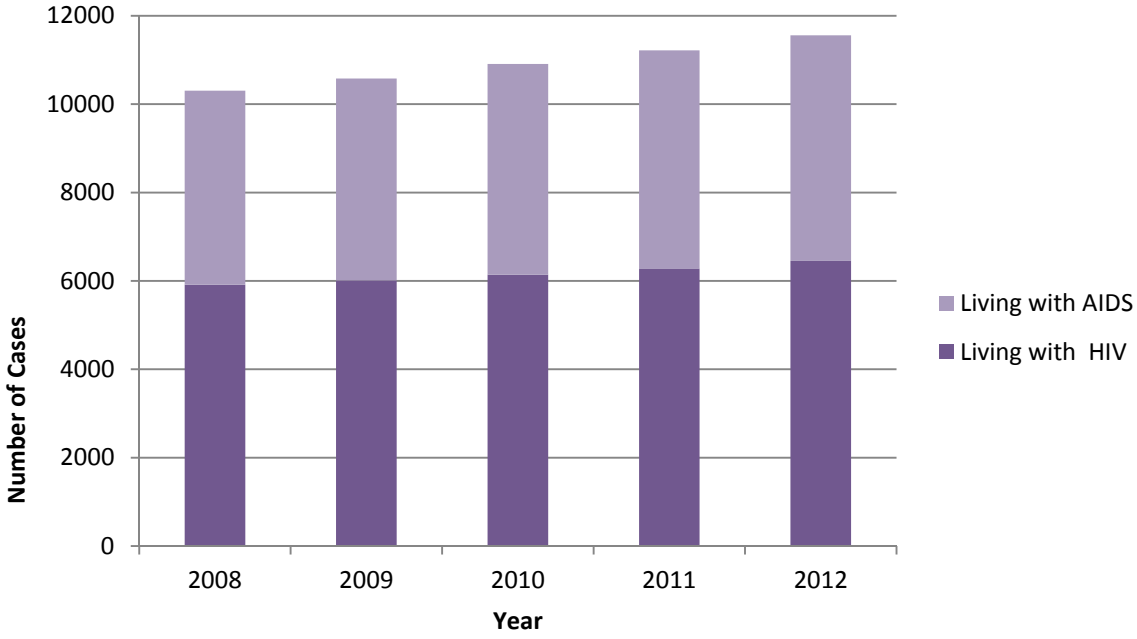


Figure 4 shows an increase in the number of PLWHA in Colorado during the last five years. By the end of 2012, there was an estimated 11,543 PLWHA in Colorado, an increase of 1.6 percent from 11,359 in 2011.

Figure 4: Annual Number of Diagnosed Persons Living with HIV and AIDS – Colorado (2008-2012)



Tables 8a and **8b** illustrate the demographic characteristics of PLWHA. Males represented the majority (88.5%) of PLWHA. Whites constituted the largest racial group living with HIV disease, representing 63.6 percent of cases. Blacks continued to be disproportionately impacted by the epidemic. Although the percentage of Coloradans who identify as Black was 3.8 percent, Blacks represented 14.6 percent of PLWHA. Men who have sex with men was the predominant risk group, representing 64.8 percent of PLWHA. The majority (94.4%) of PLWHA lived in the urban areas of Colorado.

Table 8a: Characteristics of PLW HIV and AIDS in Colorado Through 12/31/12

	Living with HIV		Living with AIDS		Living with HIV/AIDS	
	Number	Percent	Number	Percent	Number	Percent
Total	**6436**	**100**	**5107**	**100**	**11543**	**100**
Gender						
Male	5,704	88.6	4,511	88.3	10,215	88.5
Female	732	11.4	596	11.7	1,328	11.5
Race						
White	4,298	66.8	3,041	59.5	7,339	63.6
Hispanic	1045	16.2	1,156	22.6	2,201	19.1
Black	904	14.0	779	15.3	1,683	14.6
Asian	55	0.9	49	1.0	104	0.9
Pacific Islander	8	0.1	4	0.1	12	0.1
American Indian	42	0.7	45	0.9	87	0.8
Multiple Races	25	0.4	33	0.6	58	0.5
Unknown	59	0.9	0	0.0	59	0.5
Risk						
MSM	4,239	65.9	3,237	63.4	7,476	64.8
IDU	400	6.2	410	8.0	810	7.0
MSM/IDU	509	7.9	451	8.8	960	8.3
Heterosexual Contact	566	8.8	585	11.5	1,151	10.0
No Identified Risk	657	10.2	379	7.4	1,036	9.0
Pediatric	54	0.8	15	0.3	69	0.6
Transfusion/Hemophilia	11	0.2	30	0.6	41	0.4
Region						
Urban	6,134	95.3	4,758	93.2	10,892	94.4
Rural	243	3.8	313	6.1	556	4.8
Frontier	48	0.7	36	0.7	84	0.7
Unknown	11	0.2	0	0.0	11	0.1

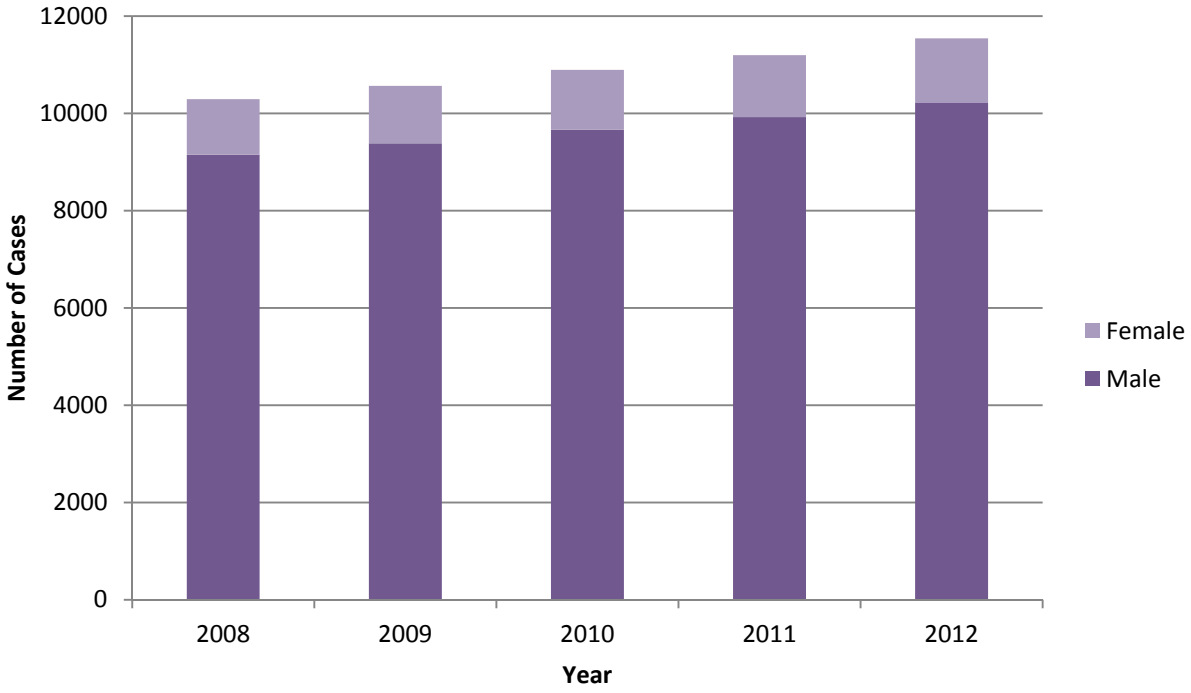
Table 8b: Age Characteristics of PLW HIV and AIDS in CO Through 12/31/12

	Living with HIV		Living with AIDS		Living with HIV/AIDS	
	Number	Percent	Number	Percent	Number	Percent
Total	**6436**	**100.0**	**5107**	**100.0**	**11543**	**100.0**
Current Age Group						
<5	5	0.1	0	0.0	5	0.0
5-9	23	0.4	2	0.0	25	0.2
10-12	6	0.1	0	0.0	6	0.1
13-14	1	0.0	1	0.0	2	0.0
15-19	19	0.3	5	0.1	24	0.2
20-24	167	2.6	36	0.7	203	1.8
25-29	320	5.0	146	2.9	466	4.0
30-34	508	7.9	275	5.4	783	6.8
35-39	506	7.9	413	8.1	919	8.0
40-44	714	11.1	742	14.5	1,456	12.6
45-49	1,092	17.0	1051	20.6	2,143	18.6
50-54	1,182	18.4	1001	19.6	2,183	18.9
55-59	915	14.2	683	13.4	1,598	13.8
60-64	561	8.7	446	8.7	1007	8.7
>65	417	6.5	306	6.0	723	6.3
Age Group at HIV Diagnosis						
<5	38	0.6	7	0.1	45	0.4
5-9	15	0.2	7	0.1	22	0.2
10-12	2	0.0	5	0.1	7	0.1
13-14	3	0.0	3	0.1	6	0.1
15-19	164	2.5	110	2.2	274	2.4
20-24	987	15.3	591	11.6	1,578	13.7
25-29	1480	23.0	983	19.2	2,463	21.3
30-34	1385	21.5	1085	21.2	2,470	21.4
35-39	1041	16.2	899	17.6	1,940	16.8
40-44	636	9.9	593	11.6	1,229	10.6
45-49	344	5.3	425	8.3	769	6.7
50-54	190	3.0	190	3.7	380	3.3
55-59	91	1.4	97	1.9	188	1.6
60-64	33	0.5	52	1.0	85	0.7
>65	27	0.4	60	1.2	87	0.8
Age Group at AIDS Diagnosis						
<5			4	0.1	4	0.0
5-9			3	0.1	3	0.0
10-12			0	0.0	0	0.0
13-14			3	0.1	3	0.0
15-19			24	0.5	24	0.2
20-24			221	4.3	221	1.9
25-29			637	12.5	637	5.5
30-34			1007	19.7	1007	8.7
35-39			1115	21.8	1,115	9.7
40-44			892	17.5	892	7.7
45-49			602	11.8	602	5.2
50-54			323	6.3	323	2.8
55-59			160	3.1	160	1.4
60-64			72	1.4	72	0.6
>65			44	0.9	44	0.4

HIV/AIDS by Gender

Increases in the number of PLWHA can be observed among both men and women in the last five years (**Figure 5**). In 2008 women accounted for 11.1 percent of the living cases of HIV disease whereas, they accounted for 13.0 percent of cases as of December 31, 2012.

Figure 5: Number of Persons Living with HIV or AIDS by Gender – Colorado (2008-2012)



HIV/AIDS by Race

In 2012, 392 persons were newly diagnosed with HIV (including those who progressed to AIDS in the same year). Of those, 332 (84.7%) were male and 60 (15.3%) were female. By race/ethnicity, 195 (49.7%) were White, 69 (17.6%) were Black, 115 (29.3%) were Hispanic, 6 (1.5%) were Asian/Pacific Islander, and 5 (1.3%) were American Indian (**Table 9**). By gender, a greater proportion of females identified as Non-Hispanic Blacks (46.7%) compared to males (12.3%).

Table 9: Colorado HIV Cases Diagnosed by Race and Gender in 2012

	Male		Female		Total	
Race	**Number**	**Percent**	**Number**	**Percent**	**Number**	**Percent**
White (Non-Hispanic)	180	54.2	15	25.0	195	49.7
Hispanic	103	31.0	12	20.0	115	29.3
Black (Non-Hispanic)	41	12.3	28	46.7	69	17.6
Asian/Hawaiian/Pacific Islander (Non-Hispanic)	3	0.9	3	5.0	6	1.5
American Indian/Alaskan Native (Non-Hispanic)	3	0.9	2	3.3	5	1.3
Two or More Race (Non-Hispanic)	2	0.6	0	0.0	2	0.5
Total	332	84.7	60	15.3	392	100.0

Although Whites represent the largest number of HIV/AIDS cases, **Figure 6** and **Figure 7** illustrate that when comparing population rate, Blacks, and to a lesser degree, Hispanics, were disproportionally affected by this epidemic. **Figure 6** demonstrates trends in rates of persons reported with an HIV diagnosis. **Figure 7** demonstrates trends in rates of persons with a newly reported AIDS diagnosis. Blacks had an HIV rate 6.7 times greater than that of Whites in 2012.

Figure 6: HIV Rate per 100,000 Population of HIV Cases by Race (with standard error bars) – Colorado (2008-2012)

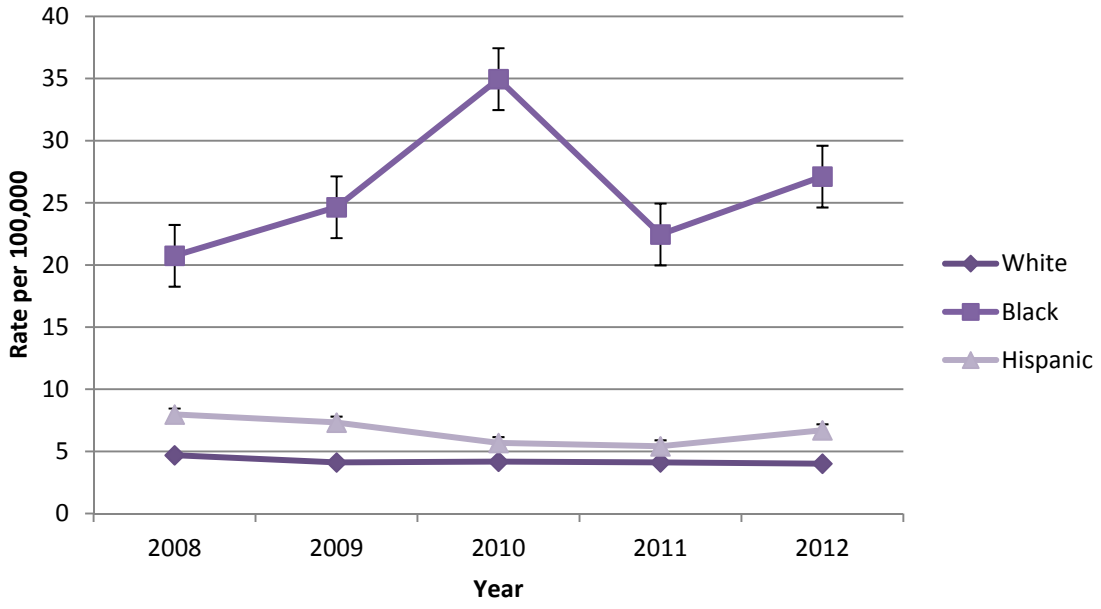
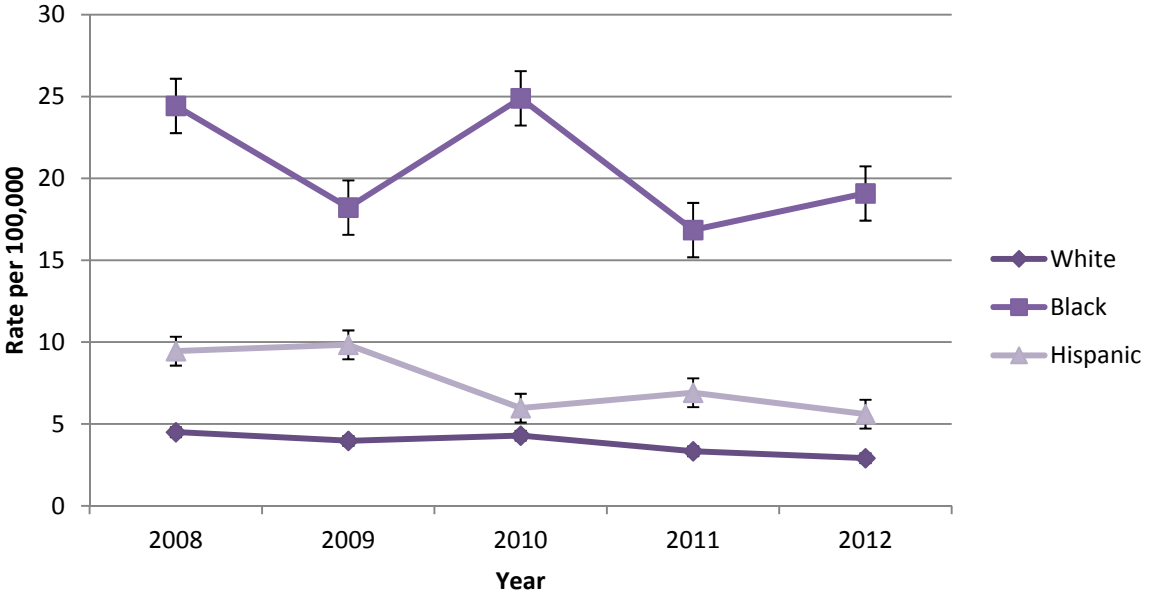
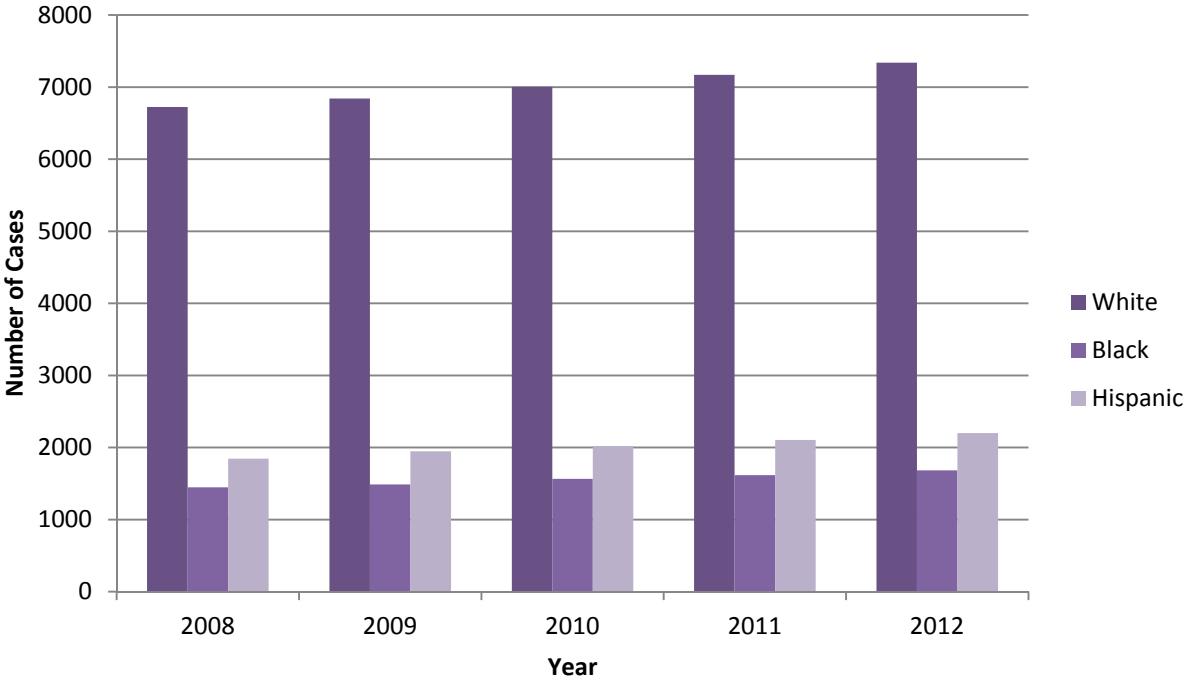


Figure 7: AIDS Rate per 100,000 Population by Race (with standard error bars) – Colorado (2008-2012)



The number of PLWHA by race is illustrated in **Figure 8**. Whites constituted the largest number and percentage of HIV/AIDS cases.

Figure 8: Persons Living with HIV/AIDS Cases by Race – Colorado (2008-2012)



The percent of foreign-born persons diagnosed with HIV/AIDS had been increasing among communities of color in the past five years. Among HIV cases newly diagnosed in 2012, 18.3 percent of those identified as Hispanics were foreign-born. The majority of

these persons were born in Mexico (81.0%). Thirty percent of new HIV diagnoses among Blacks were foreign-born. The largest proportion of foreign-born blacks was born in Ethiopia (33.3%). Cultural and language barriers can make these groups a challenge for prevention services and care providers.

HIV/AIDS by Risk

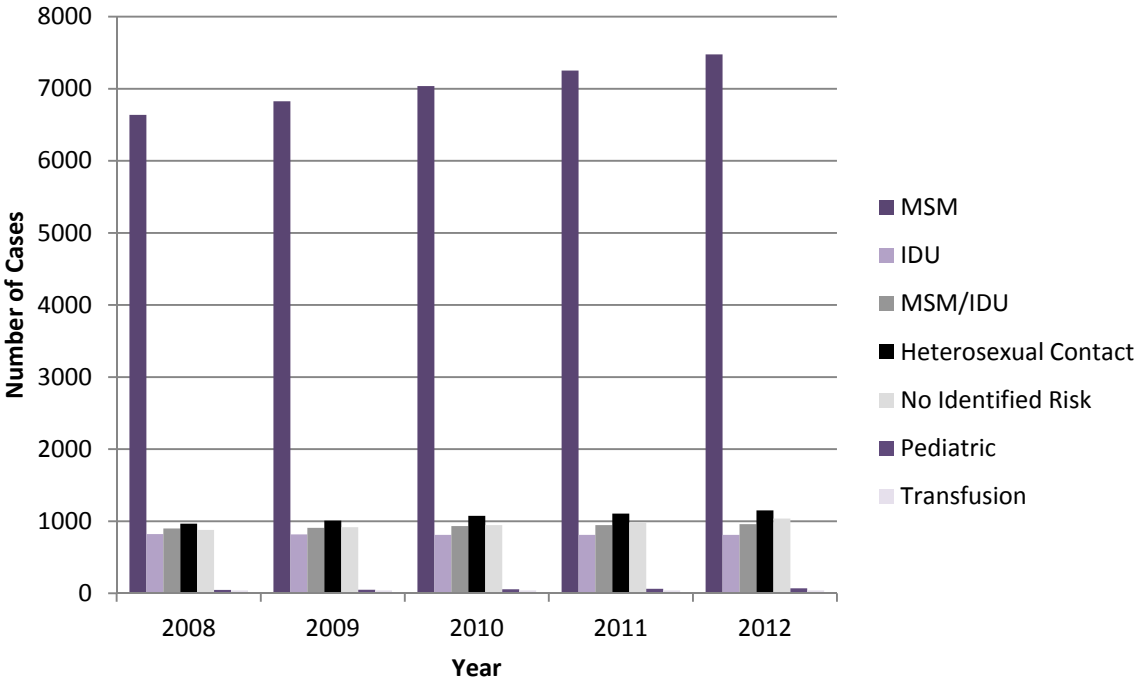
Table 10 displays HIV cases diagnosed in 2012 by risk categories and gender. The largest proportion of males (74.4%) was classified as MSM. High-risk heterosexual contact continued to be the largest risk factor for females, accounting for 58.3 percent of the cases. Females also had a higher percentage (26.7%) of no identified risk compared to males (12.3%). The cases infected from pediatric transmission in 2012 were all born in foreign countries, particularly Africa, who immigrated or were adopted into the country following the leniency of immigration HIV testing.

Table 10: Colorado HIV Cases by Risk and Gender, Diagnosed 2012

	Male		Female		Total	
Risk	**Number**	**Percent**	**Number**	**Percent**	**Number**	**Percent**
MSM	247	74.4	-	---	247	63.0
IDU	7	2.1	5	8.3	12	3.1
MSM/IDU	23	6.9	-	---	23	5.9
Heterosexual Contact	12	3.6	35	58.3	47	12.0
No Identified Risk	41	12.3	16	26.7	57	14.5
Pediatric	2	0.6	4	6.7	6	1.5
Transfusion/Hemophilia	0	0.0	0	0.0	0	0.0
Total	332	84.7	60	15.3	392	100.0

Figure 9 demonstrates that the majority of PLWHA in Colorado were MSM (7476 cases representing 64.8 percent). MSM/IDU constituted an additional 8.3 percent (960 cases), and IDU constitute 7.0 percent (810 cases) of PLWHA through 2012. Heterosexual contact was a growing risk group (increasing 19.2 percent from 2008 to 2012), and persons with no identified risk increased 17.7 percent over the past five years.

Figure 9: Living with HIV Disease Cases by Risk Reported – Colorado (2008-2012)



HIV by Age

Table 11 describes the 392 cases of newly diagnosed HIV by age group at diagnosis and gender. Females had a higher percentage of cases in the 30-34 age group (21.7 percent in females versus 14.2 percent of males). The majority of female cases (61.6%) are in the 30-49 age range and male cases (67.6%) were in the 20-39 age range.

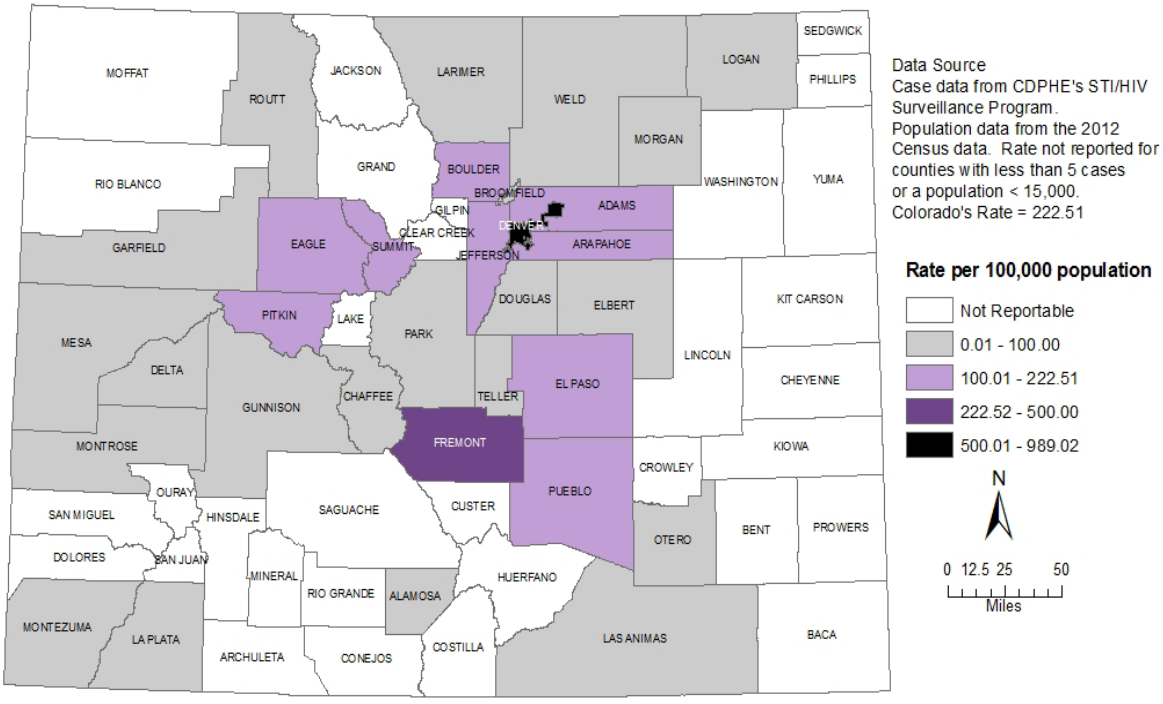
Table 11: Colorado HIV Cases by Age Group and Gender, Diagnosed 2012

	Male		Female		Total	
Age Group	Number	Percent	Number	Percent	Number	Percent
<5	0	0.0	3	5.0	3	0.8
5-9	2	0.6	1	1.7	3	0.8
10-12	0	0.0	0	0.0	0	0.0
13-14	0	0.0	0	0.0	0	0.0
15-19	6	1.8	1	1.7	7	1.8
20-24	61	18.4	9	15.0	70	17.9
25-29	70	21.1	5	8.3	75	19.1
30-34	47	14.2	13	21.7	60	15.3
35-39	46	13.9	8	13.3	54	13.8
40-44	38	11.4	5	8.3	43	11.0
45-49	28	8.4	11	18.3	39	9.9
50-54	22	6.6	3	5.0	25	6.4
55-59	2	0.6	1	1.7	3	0.8
60-64	3	0.9	0	0.0	3	0.8
>65	7	2.1	0	0.0	7	1.8
Total	332	84.7	60	15.3	392	100.0

Geographical Characteristics of HIV

Figure 10 demonstrates that the highest rates of HIV in Colorado was in the Front Range counties (and population centers) of Adams, Arapahoe, Boulder, Denver, Eagle, El Paso, Jefferson, Pitkin, Pueblo and Summit. These ten counties represent 89.8 percent of HIV/AIDS cases and 66.4 percent of Colorado's population. This map shows that Fremont County had a disproportionate share of HIV cases. The Colorado state correctional facility that housed virtually all HIV infected state prisoners was located in Fremont County. Due to their incarceration, these cases did not place a burden for HIV care or prevention services on the surrounding rural community. Counties with fewer than five reported cases or with a population less than 15,000 are not included on this map.

Figure 10: Living HIV/AIDS Rate per 100,000 Population by County of Residence at Time of Diagnosis – Colorado, 2012



Note: Rates for counties with less than five cases or population <15,000 are not shown.

HIV Related Mortality

The overall age-adjusted death rate for Colorado was 663 deaths per 100,000 population in 2012. The top two causes of death were cancer and heart disease. The age-adjusted death rate for these two causes was 143 and 127, respectively. The HIV related death rates by age and gender are illustrated in **Table 12** and **Table 13** below. [12]

Table 12: HIV Related Death Rate by Gender, 2012

Gender	Population	Deaths	Age Adjusted Death Rate per 100,000 population
Male	2,598,544	38	1.4
Female	2,590,139	7	0.2
Total	5,188,683	45	0.8

CoHID Death Data Statistics, 2012[12]

Table 13: HIV Related Death Rate by Age, 2012

Age Group	Population	Deaths	Age Adjusted Death Rate per 100,000 population
<25	1,741,296	0	0.0
25-34	743,182	5	0.1
35-44	712,476	5	0.1
45-54	731,933	17	0.3
55-64	644,002	13	0.2
≥65	615,794	5	0.1
Total	5,188,683	45	0.8

CoHID Death Data Statistics, 2012[12]

Demographic Characteristics of HIV and AIDS in High Risk Populations

Summary

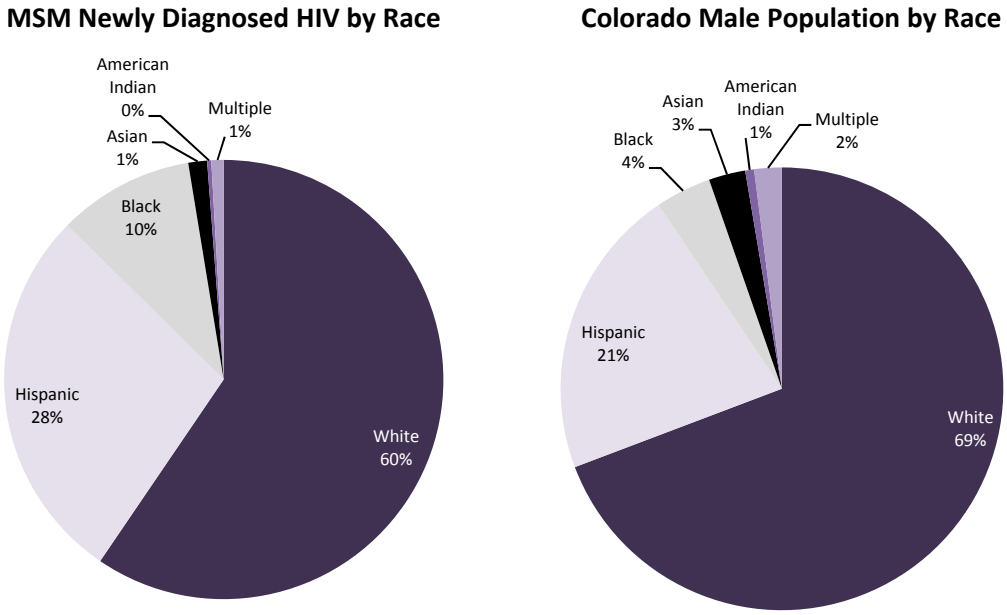
Men Who Have Sex with Men

- The majority of Colorado's HIV/AIDS cases can be attributed to MSM risk behaviors (65.1 percent of all cumulative cases).
- The number of new MSM HIV/AIDS cases remained relatively stable since 2009 among Whites, remained relatively stable the past 5 years among Blacks, and has been increasing since 2010 among Hispanics.
- HIV/AIDS cases diagnosed for MSM ages 30-39 years have decreased by 28.0 percent in the last five years.

Racial/Ethnic Trends Among MSM

As **Figure 11** demonstrates, Blacks were over-represented in the HIV proportion among MSM; accounting for 4.1 percent of Colorado's male population but 10.0 percent of HIV cases diagnosed in MSM from 2008-2012. Hispanics were also over-represented (27.9 percent of newly diagnosed HIV MSM cases) for their proportion of the male population (21.4%), while Whites represented 59.5 percent of newly diagnosed HIV MSM cases and 69.2 percent of the male population.

Figure 11: HIV Positive MSM by Race (2008-2012) Compared to Male Population (2012) – Colorado



Age Trends Among MSM

Figure 12 depicts the percentage of newly diagnosed HIV cases among MSM by age in 2012. Fifty-one percent of new HIV diagnoses occurred among 20-34 year olds, which represented only 22.4 percent of the male population. Young men ages 20-29 years were over represented, accounting for 36.8 percent of the HIV epidemic and 15.0 percent of the male population.

Figure 12: Percent of MSM HIV Cases by Age at Diagnosis – Colorado (2008-2012)

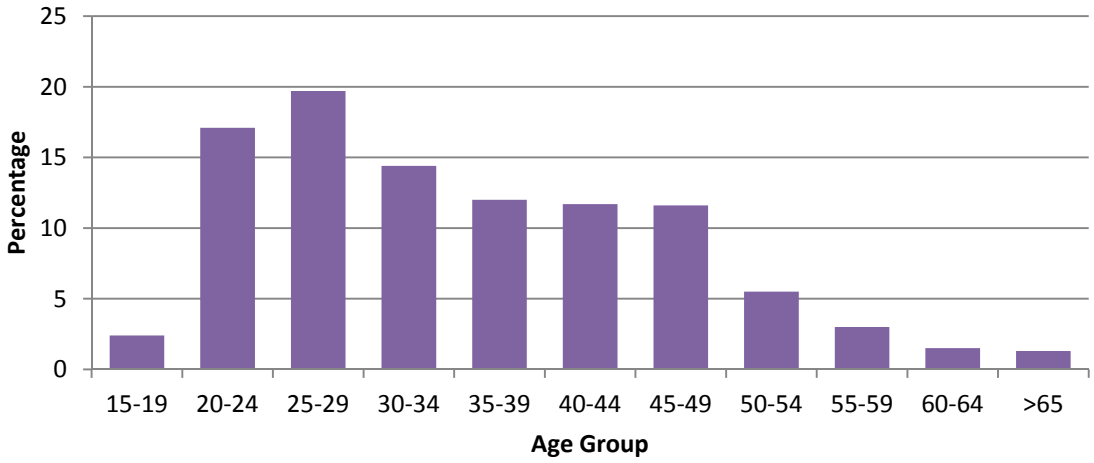
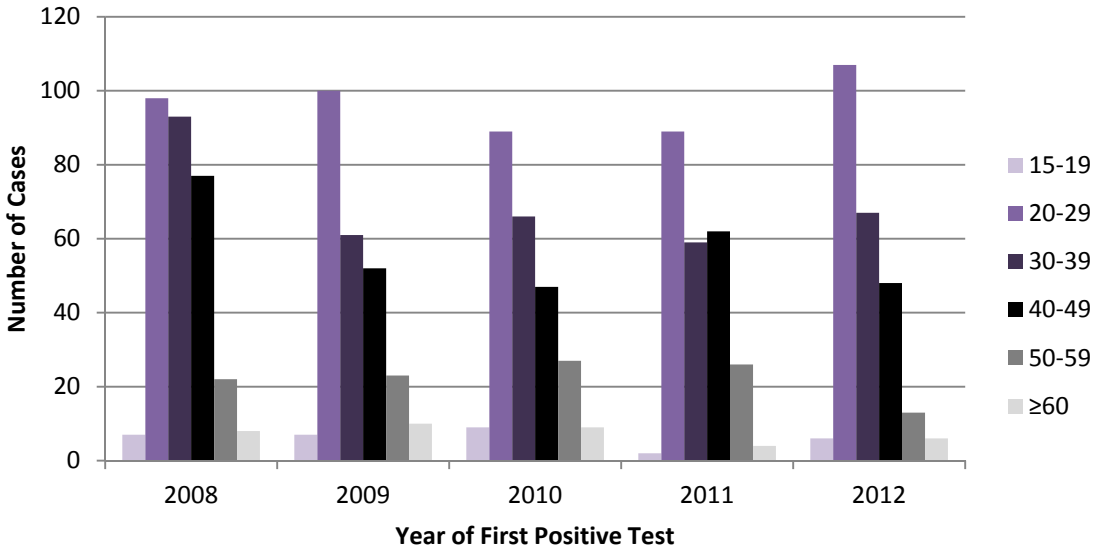


Figure 13 illustrates the number of HIV and AIDS cases diagnosed between 2008 and 2012 among MSM by age at diagnosis. HIV/AIDS cases diagnosed in MSM age 30-39 years have decreased by 28.0 percent whereas 20-29 years have increased by 9.2 percent from 2008 to 2012.

Figure 13: Number of MSM with HIV/AIDS by Year of First Positive Test and Age at Diagnosis – Colorado (2008-2012)



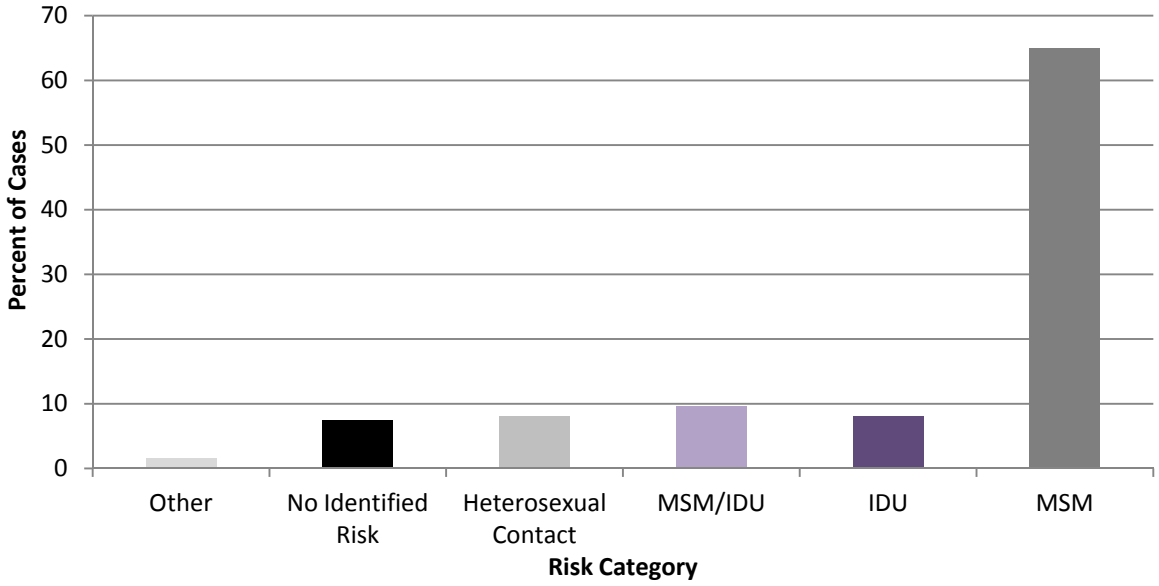
Injection Drug Use

- IDU and MSM/IDU HIV/AIDS cases made up 17.8 percent of Colorado cases.
- Males accounted for 80.3 percent of IDU-attributed HIV/AIDS cases reported.
- Whites made up 52.1 percent of IDU-only new HIV cases 2008-2012, while Hispanics made up 27.5 percent of IDU cases, and Blacks comprise 16.7 percent.
- IDU-related cases of HIV/AIDS were most commonly diagnosed in the 20-29 age group in the past 5 years.

Proportion of Epidemic among IDU

Through December 31, 2012, a cumulative total of 3,459 cases of HIV/AIDS were associated with IDU or MSM/IDU risk. Of these, 80.3 percent were reported in men and 19.7 percent were reported in women. **Figure 14** shows the proportion of the epidemic by risk group. IDU and MSM/IDU comprise 17.8 percent of the total HIV/AIDS cases reported in Colorado.

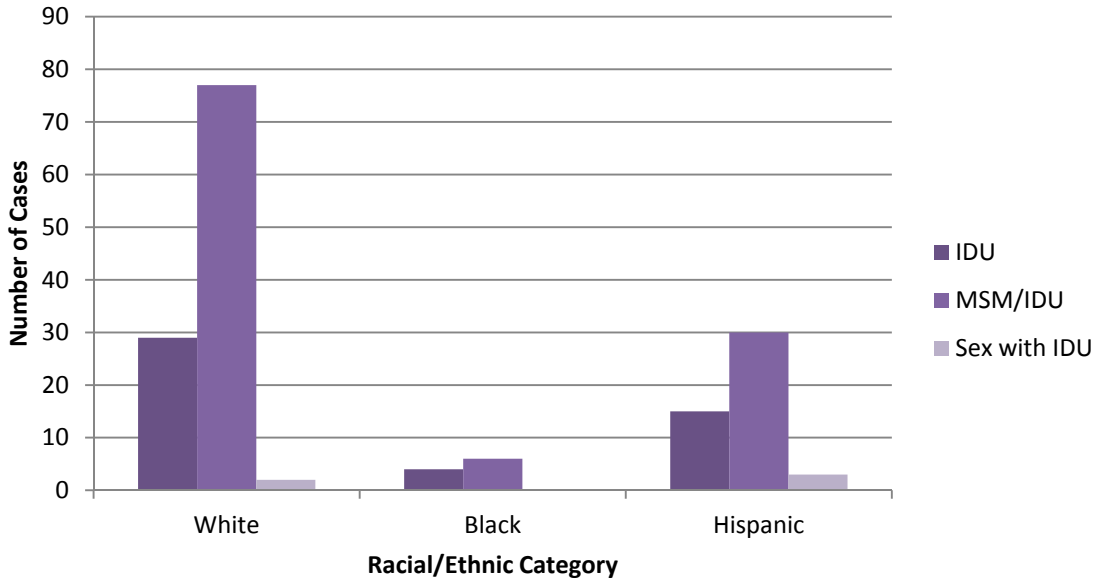
Figure 14: HIV/AIDS Cases by Risk Category – Colorado (1982-2012)



Racial Ethnic Trends among IDU

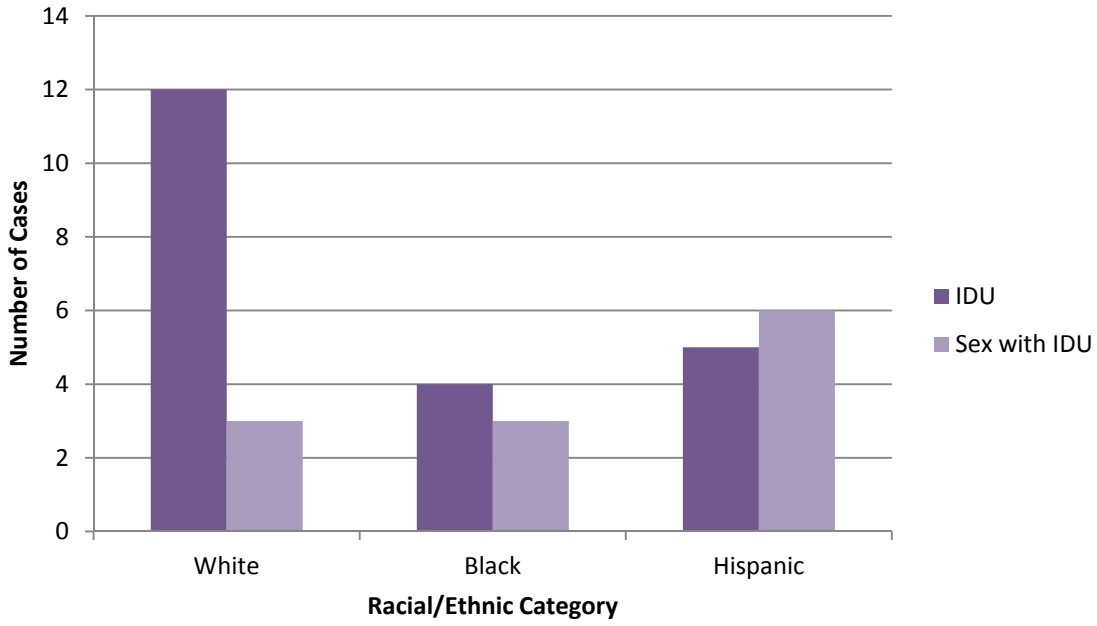
The following two graphs illustrate the impact of IDU risk behaviors in both males and females. Among males, 2,779 cumulative cases of HIV or AIDS were related to IDU, either through IDU, MSM/IDU, or heterosexual contact to an IDU. **Figure 15** shows that among the 52 males diagnosed with HIV in 2008-2012 whose only risk was IDU, Whites account for 29 (55.8%) cases, Hispanics for 15 (28.8%) cases, and Blacks for 4 (7.7%) cases. Among the 117 males who were MSM/IDU, White males accounted for the overwhelming majority of these cases (77 or 65.8%), Hispanics for 30 (25.6%) cases, and Blacks for 6 cases (5.1%).

Figure 15: IDU-Associated HIV/AIDS Cases by Race in Males – Colorado (2008-2012)



Among females, the number of IDU-related HIV or AIDS cumulative cases (680) was smaller than for males. From 2008 to 2012, 21 cases of HIV or AIDS in females were directly related to IDU. As shown in **Figure 16,** Whites accounted for 12 (57.1%), Blacks accounted for 4 (19.0%) and Hispanics constitute 5 (23.8%) cases. The number of cases of females who acquired their infection as a result of heterosexual contact with an IDU (N=15) was higher than for males in all racial/ethnic groups. White females comprised 20.0 percent (N=3), Hispanic females comprised 40.0 percent (N=6), and Black females represented 20.0 percent (N=3) of this risk group.

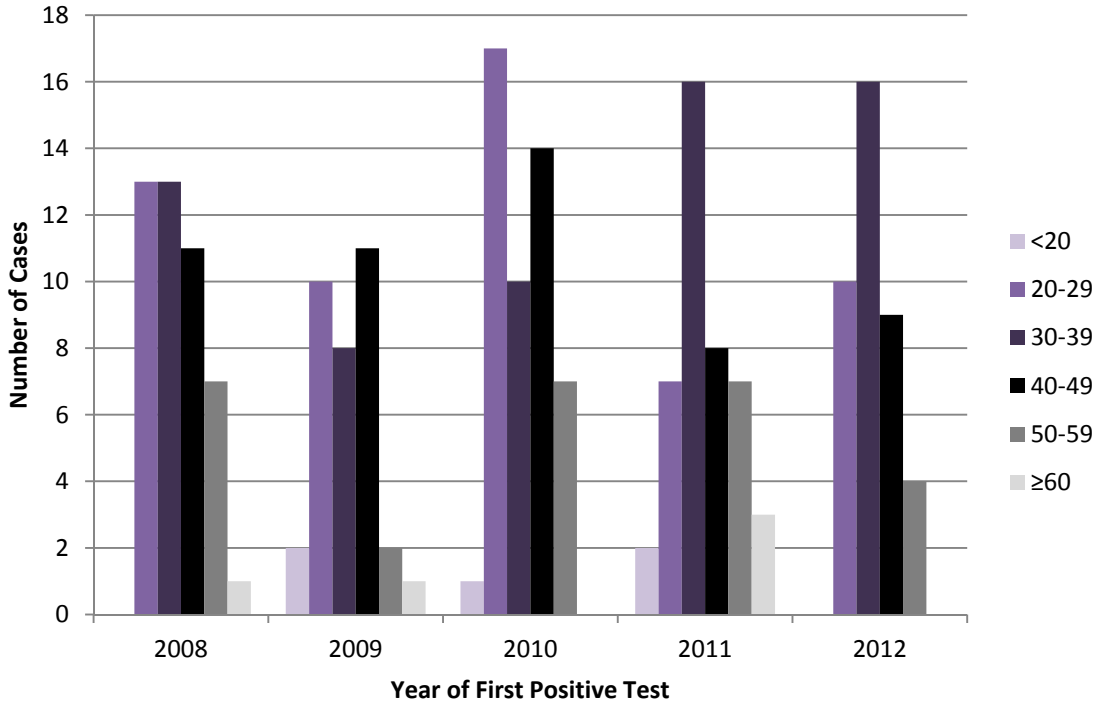
Figure 16: IDU-Associated HIV/AIDS Cases by Race in Females – Colorado (2008-2012)



Age Trends among IDU

Figure 17 illustrates newly diagnosed cases of HIV and AIDS for a five-year period from 2008 through 2012 among IDU. When reviewing cases of HIV and AIDS, all age groups showed a fairly steady trend in the number of cases reported from 2008 to 2012. However, it should be noted that the number of IDU attributed HIV/AIDS cases remained small and caution should be exercised when interpreting these numbers.

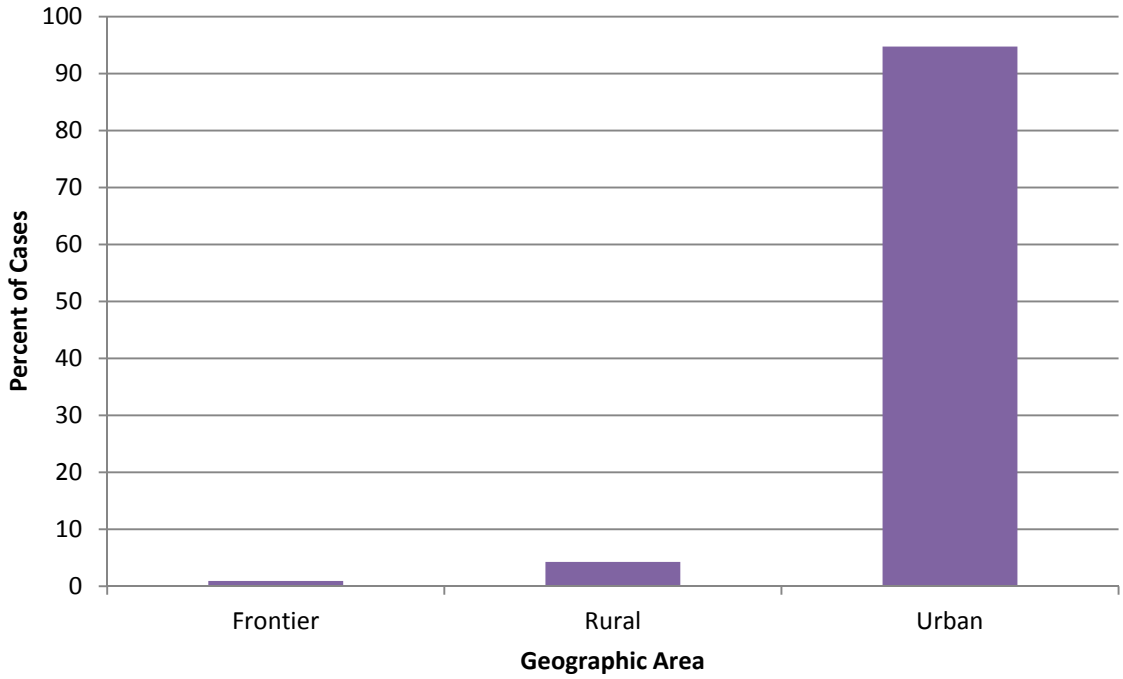
Figure 17: Number of IDUs with HIV/AIDS by Year of First Positive Test and Age at Diagnosis – Colorado (2008-2012)



HIV Among IDU by Region

Figure 18 demonstrates that those IDU HIV cases diagnosed during the five year time period of 2008 through 2012 had largely been concentrated in urban areas. This was consistent with other risk groups, affirming that the Colorado HIV epidemic was largely centered in urban areas. Urban areas reported 94.8 percent of cases, rural areas 4.3 percent, and frontier areas 1.0 percent of cases. This pattern of HIV/AIDS case distribution among urban, rural and frontier regions has remained fairly stable since the beginning of the epidemic.

Figure 18: IDU HIV Diagnosed Positive by Region Reported – Colorado (2008-2012)



Heterosexual Transmission

- Heterosexual HIV transmission has increased slightly from 10.8 percent in 2008 to 12.0 percent in 2012.
- Females represented 74.5 percent of heterosexually transmitted HIV/AIDS cases in 2012.
- Of new HIV cases transmitted by heterosexual contact in 2012, Blacks made up 38.3 percent, while Whites made up 31.9 percent, and Hispanics comprised 19.1 percent.
- Heterosexual transmission of HIV was most commonly diagnosed in those persons aged 25-29 years representing 17.1 percent of cases.

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 put them at high risk for HIV. A diagnosis of a sexually transmitted infection (STI) would suggest that the person had engaged in unsafe sexual practices. Specific HIV prevention strategies should be directed toward these persons. In 2012, 21,631 cases of chlamydia and 2,822 cases of gonorrhea were reported to CDPHE.

Proportion of Epidemic among Heterosexuals

Heterosexual transmission (**Figure 19**) accounted for 8.1 percent of Colorado's cumulative HIV/AIDS cases from years 1982 through 2012.

Figure 19: HIV/AIDS Cases Reported by Risk Category – Colorado (1982-2012)

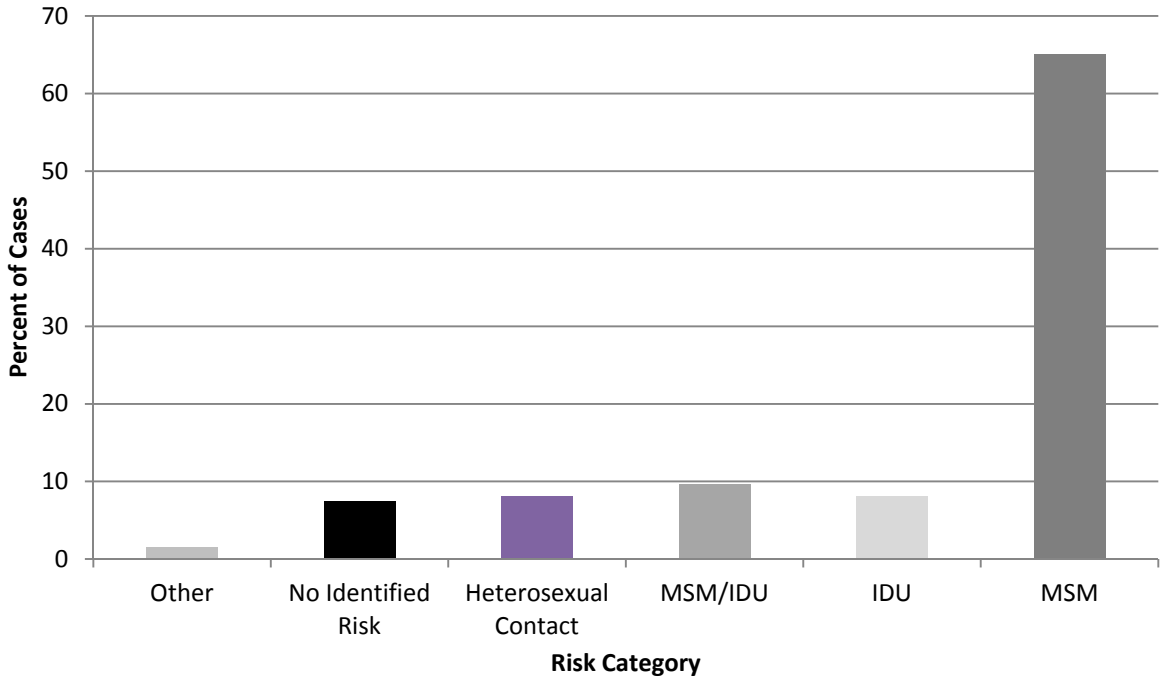
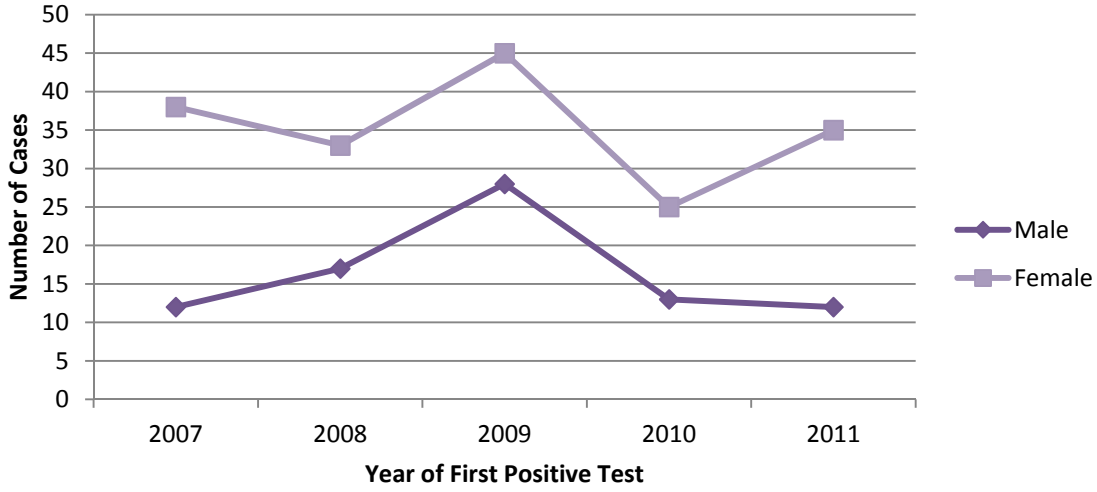


Figure 20 illustrates the number of heterosexually transmitted HIV/AIDS cases by year of first positive test and gender between 2008 and 2012. The overall number of heterosexually transmitted HIV/AIDS cases had remained relatively similar during the five-year time period. Care should be taken in identifying trends in this group due to the small number of cases.

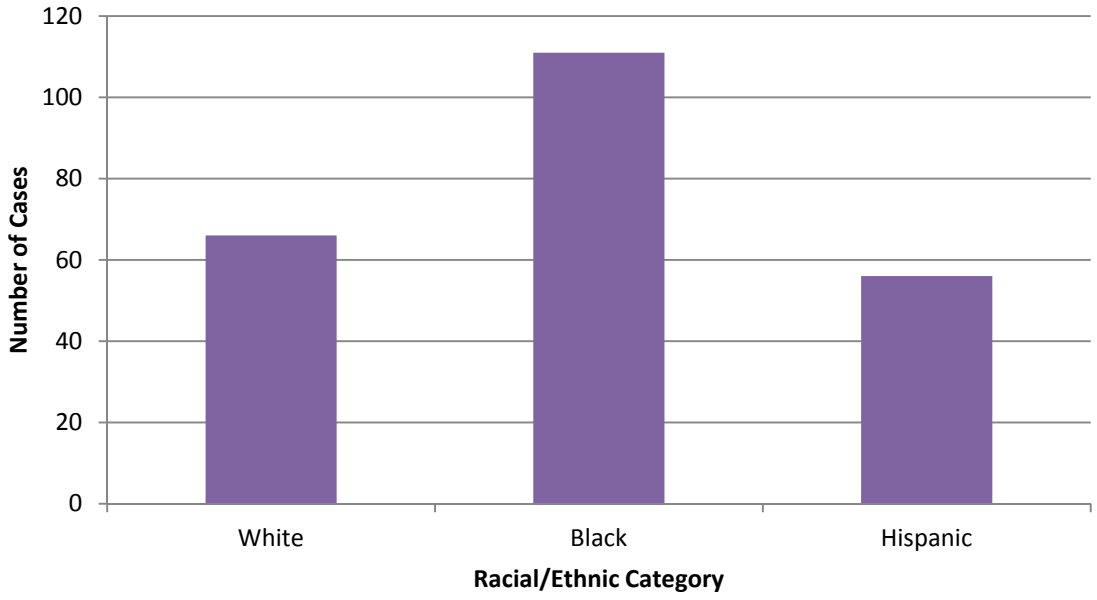
Figure 20: Number of Heterosexually Transmitted HIV/AIDS Cases by Year of First Positive Test and Gender – Colorado (2008-2012)



Racial/Ethnic Trends Among High Risk Heterosexuals

Recently diagnosed cases of HIV attributed to heterosexual transmission are illustrated in **Figure 21**. Two of the major race/ethnicity groups accounted for similar amounts whereas the third has almost twice the amount of the heterosexual transmission of HIV from 2008 to 2012. Blacks accounted for the largest with 111 (43.0%) cases, Whites accounted for 25.6 percent (N=66) of cases and Hispanics accounted for 21.7 percent (N=56) of cases. In comparison to their percentage of the total population, racial/ethnic population, Blacks were over represented among heterosexually transmitted HIV cases.

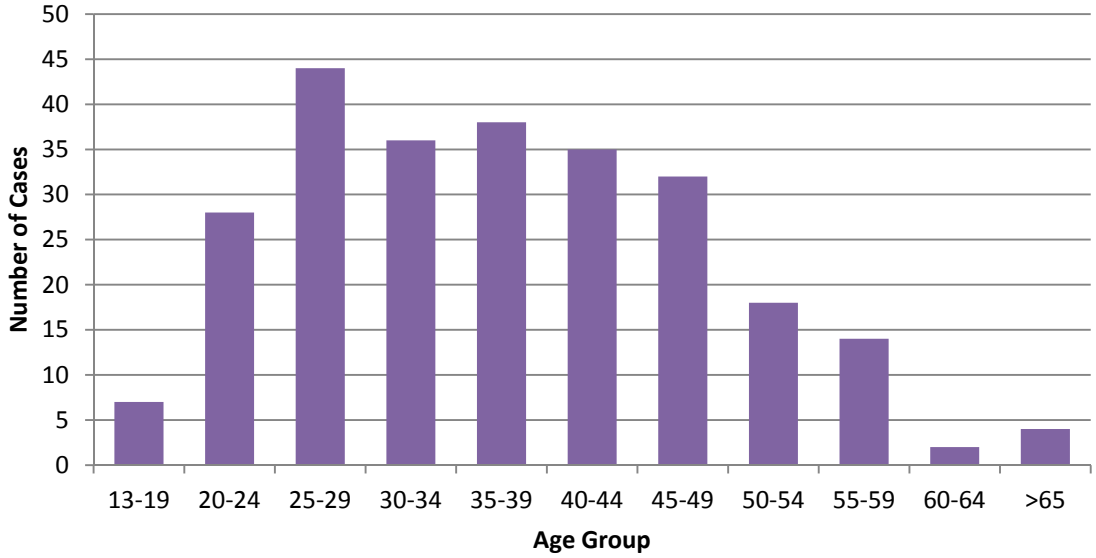
Figure 21: Newly Identified Cases of Heterosexually Transmitted HIV Cases by Racial Category – Colorado (2008-2012)



Age Trends Among High Risk Heterosexuals

Figure 22 illustrates recently diagnosed cases of HIV attributed to heterosexual contact by age. This graph indicates that the largest proportion (17.1%) of newly diagnosed cases occurred in the 25-29 year old age group. The 35-39 year old age group followed, representing 14.7 percent of the cases. The next highest contributing age group was 30-34 representing 14.0 percent each of heterosexually transmitted HIV cases in Colorado.

Figure 22: Heterosexually Transmitted HIV by Age of Diagnosis – Colorado, 2008-2012



Infants Born to HIV-infected Women

As shown in **Table 14**, the number of infants known to be born to HIV-infected mothers remained right around 30 except 2010 and 2011. During 2008 to 2012, there have been four cases of confirmed perinatal transmitted HIV infection reported. Of these four perinatal cases two were born outside of the United States. According to CDPHE vital statistics data obtained from birth certificates, 1.9 percent of mothers who delivered a child in 2012 did not receive prenatal care, and 94.3 percent had reported an HIV test during pregnancy.[13]

Table 14: Number of Infants Born to HIV-infected Women by Year of Birth – Colorado (2008-2012)

Year of Birth	Number of Infants born to HIV Positive Women	Number of Infants who acquired HIV perinatally
2008	30	4
2009	30	0
2010	24	0
2011	22	0
2012	30	0
Total	136	4

Demographic Characteristics of Late Stage HIV Diagnoses

Summary

- The racial/ethnic distribution of late stage diagnoses was 49.7 percent White, 29.3 percent Hispanic and 17.6 percent Black.
- The mean age of those HIV late stage diagnoses was 40.
- Among late stage diagnoses, 63.0 percent reported MSM risk, 14.5 percent reported no identified contact and 12.0 percent reported heterosexual risk.
- Twelve percent of late stage diagnoses occurred in foreign born persons.

Description of the late stage diagnoses population

A late stage diagnosis is defined as an AIDS diagnosis within 365 days of an HIV diagnosis. As **Figure 23** demonstrates, the overall number and percentage of late stage diagnosed cases has been relatively consistent for the last ten years. The percentage has ranged from 29 to 37 percent. In 2012, 113 of 392 new HIV diagnoses were late stage HIV diagnoses (29%).

Figure 23: New HIV Disease Late Stage Cases and Percentage in Colorado, 2003 – 2012

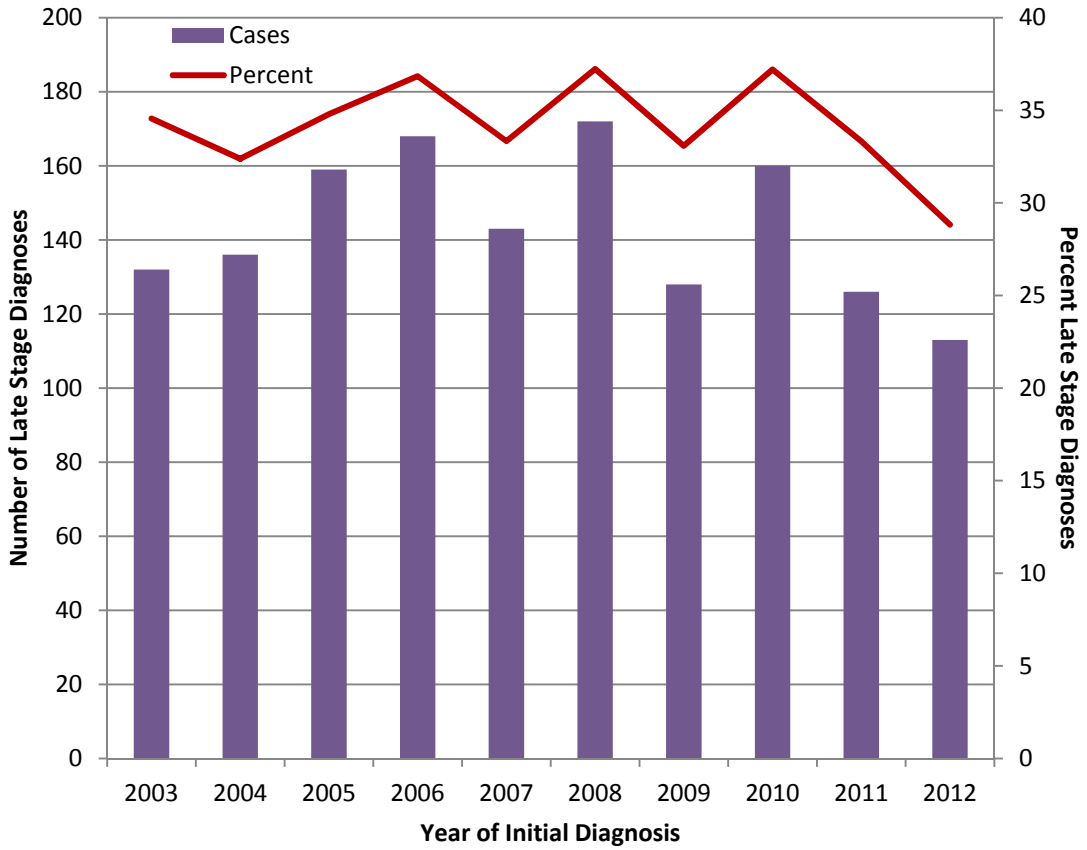


Table 15: Characteristics of New HIV Disease Diagnoses in Colorado, 2012

	Late Stage Diagnoses		Non-Late Stage Diagnoses		Total	
	Number	Percent	Number	Percent	Number	Percent
Total	113	100.0	279	100.0	392	100.0
Gender						
Male	97	85.8	235	84.2	332	84.7
Female	16	14.2	44	15.8	60	15.3
Race						
NH White	52	46.0	143	51.3	195	49.7
Hispanic (all races	43	38.1	72	25.8	115	29.3
NH Black	15	13.3	54	19.4	69	17.6
NH Asian/PI	1	0.9	5	1.8	6	1.5
NH American Indian	2	1.8	3	1.1	5	1.3
NH Multiple Races	0	0.0	2	0.7	2	0.5
Age Group at HIV Diagnosis						
<5	0	0.0	3	1.1	3	0.8
5-9	0	0.0	3	1.1	3	0.8
10-12	0	0.0	0	0.0	0	0.0
13-14	0	0.0	0	0.0	0	0.0
15-19	1	0.9	6	2.2	7	1.8
20-24	9	8.0	61	21.9	70	17.9
25-29	10	8.8	65	23.3	75	19.1
30-34	15	13.3	45	16.1	60	15.3
35-39	25	22.1	29	10.4	54	13.8
40-44	19	16.8	24	8.6	43	11.0
45-49	18	15.9	21	7.5	39	9.9
50-54	8	7.1	17	6.1	25	6.4
55-59	1	0.9	2	0.7	3	0.8
60-64	3	2.7	0	0.0	3	0.8
>65	4	3.5	3	1.1	7	1.8
Risk						
MSM	69	61.1	178	63.8	247	63.0
IDU	3	2.7	9	3.2	12	3.1
MSM/IDU	4	3.5	19	6.8	23	5.9
Heterosexual Contact	12	10.6	35	12.5	47	12.0
No Identified Risk	25	22.1	32	11.5	57	14.5
Pediatric	0	0.0	6	2.2	6	1.5
Transfusion/Hemophilia	0	0.0	0	0.0	0	0.0
Region						
Urban	106	93.8	265	95.0	371	94.6
Rural	5	4.4	13	4.7	18	4.6
Frontier	2	1.8	1	0.4	3	0.8
Unknown	0	0.0	0	0.0	0	0.0

Table 15: Characteristics of New HIV Disease Diagnoses in Colorado, 2012, cont.

	Late Stage Diagnoses		Non-Late Stage Diagnoses		Total	
	Number	Percent	Number	Percent	Number	Percent
Total	113	100.0	279	100.0	392	100.0
Birth Country						
United States (50 states)	98	86.7	247	88.5	345	88.0
Foreign Born	15	13.3	32	11.5	47	12.0
African	5	33.3	17	53.1	22	46.8
Asian	0	0.0	1	3.1	1	2.1
Caribbean	0	0.0	0	0.0	0	0.0
C. American	2	13.3	1	3.1	3	6.4
S. American	0	0.0	1	3.1	1	2.1
European	0	0.0	2	6.3	2	4.3
Middle East	0	0.0	0	0.0	0	0.0
Mexico	8	53.3	9	28.1	17	36.2
U.S. Dependent Areas	0	0.0	0	0.0	0	0.0
Other / Unknown	0	0.0	1	3.1	1	2.1

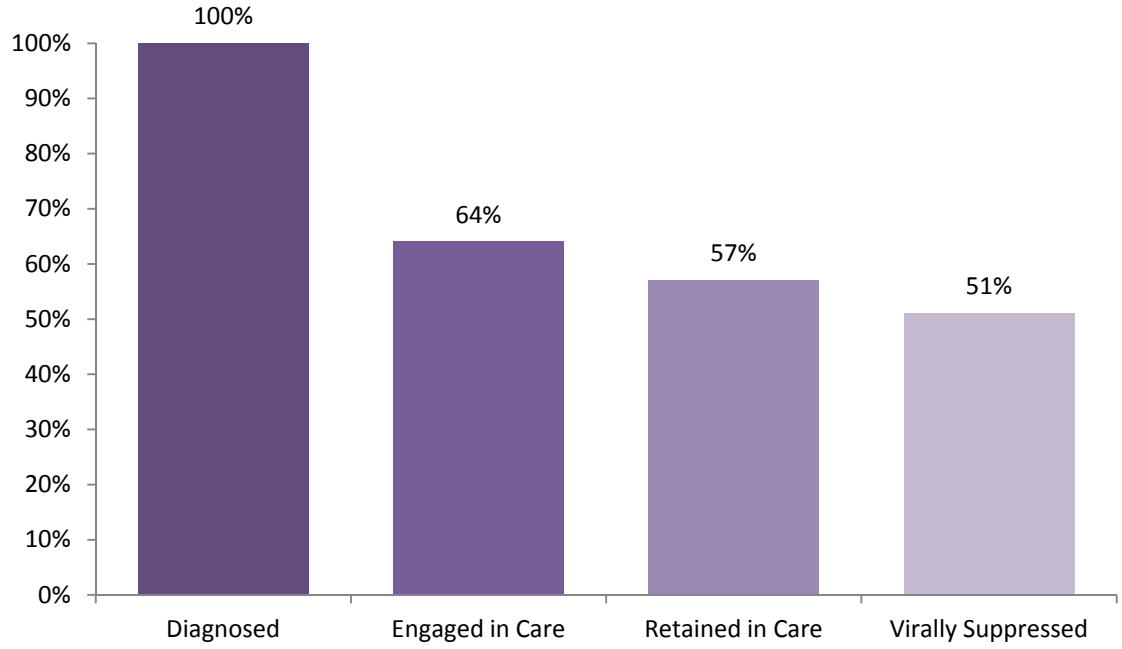
As shown in **Table 15**, foreign born persons comprise a larger percent of late stage diagnosed cases (13%) compared to non-late stage diagnosed cases (12%). Late stage diagnosed cases tended to be older than non-late stage diagnosed cases with a larger percentage in the 35-49 year old age group (55% vs. 27%). Of those late stage diagnoses that were foreign born, 13 percent were from Africa, 53 percent were from Mexico and the remainder was from Asia, Caribbean, South and Central America and the Middle East.

HIV Care Continuum – Colorado

Summary

- Sixty four percent of diagnosed Coloradans were in care.
- Fifty seven percent of diagnosed Coloradans were retained in care.
- Fifty one percent of diagnosed Coloradans were virally suppressed.

Figure 24: HIV Care Continuum, Colorado



Definitions:

Diagnosed: Persons diagnosed with HIV infection (regardless of stage of disease) through February 28, 2013, alive as of February 28, 2014, live in Colorado to the best of our knowledge and have lab evidence of medical care in Colorado in the last 20 years.

Engaged in Care: Percent of diagnosed with at least one cd4 or viral load lab test during the time period of March 1, 2013 – February 28, 2014, reported to the state.

Retained in Care: Percent of diagnosed with at least two lab tests at least 90 days apart during March 1, 2013 – February 28, 2014 reported to the state OR virally suppressed at the time of their last lab during March 1, 2013 – February 28, 2014, but did not have any additional lab > 90 days away from this time period.

Virally Suppressed: Percent of diagnosed where their most recent (March 1, 2013 – February 28, 2014) viral load test had a result of <200 cells/µL.

National HIV Behavioral Surveillance – Denver, CO

Summary

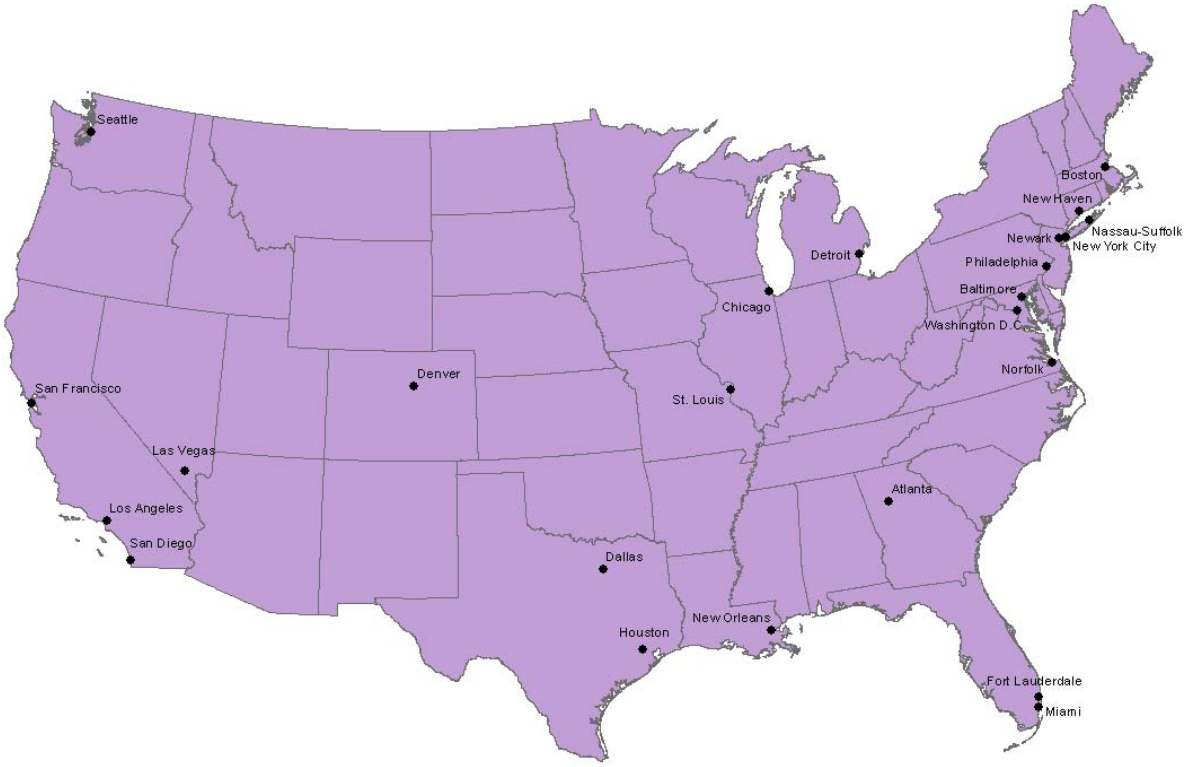
- Among participants 51.4 percent were White, 29.1 percent were Hispanic, and 12.0 percent were Black.
- The majority of participants were between 35 and 54 years of age (54.5%).
- Participants identified themselves mostly as heterosexual (83.3%), with the remaining identifying as homosexual (5.8%) or bisexual (10.9%).
- Among participants, 70.2 percent have been homeless at one point in their life with 79.0 percent of those being currently homeless.
- Fifty four percent of participants currently have health insurance with 4.0 percent having private insurance and 84.5 percent with public insurance. 79.3 percent reported visiting a health care professional in the prior 12 months.
- Over half reported first injecting drugs before the age of 20 years (54.1%)
- Eighty five percent reported using in the prior 12 months.
- Thirty five percent reported only using sterile needles in the prior 12 months.
- Over three-fourths (79.3%) used non-prescription drugs in the prior 12 months with marijuana being reported by a vast majority (81.4%) of those.
- A majority of participants have had an HIV test (89.7%) with 54.1% having had a test within the prior 12 months.
- Forty percent of participants reported receiving free sterile needles in the prior 12 months and 98.0% of those reported using the free needles.

Introduction

National HIV Behavioral Surveillance System

In 2003, CDC, in collaboration with state and local health departments, initiated the National HIV Behavioral Surveillance (NHBS) system. The objective of the NHBS system is to monitor risk behaviors and access to prevention services among three populations at highest risk for HIV infection in the United States: MSM, IDU, and heterosexual adults in high risk areas. The system involved rotating cycles lasting 12 months of surveillance in these three populations. In 2012, the third cycle of injection drug users was completed; this is the second population in the third iteration. Denver is one of 26 participating MSAs across the country (**Figure 24**). The Denver NHBS system is a collaborative effort between CDPHE and Denver Public Health (DPH).

Figure 25: Participating Metropolitan Statistical Areas in the National HIV Behavioral Surveillance System



Not pictured: San Juan, Puerto Rico

Overall Methods

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

Injection Drug User Cycle

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

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

Interviews were conducted between July 18 and December 21, 2012. Seeds were identified through interviews with key stakeholders. Seeds were given up to three "coupons" to give to IDUs in their network. Referrals were interviewed at several sites including community-based organizations and local public health departments. Participants were compensated when they completed the survey and were also compensated a smaller amount for each eligible person they recruited into the project. Voluntary HIV testing was also conducted as part of the IDU cycle with extra compensation provided.

Cycle Demographics

As shown in **Table 16**, the majority of participants were White (51.4%) 35-54 year old (54.5%) males (76.2%). A majority of participants reported a high school or higher education (75.8%), being unemployed (42.2%), and health insurance (53.8%). Only 70.2 percent reported ever being homeless.

Table 16: Sociodemographic Characteristics of Participants in the Third Cycle of IDU, National HIV Behavioral Surveillance Study – Denver (N=516), 2012

Gender	N (%)	Total
Male	393 (76.2)	516
Female	123 (23.8)	516
Transgender	0 (0)	516
Race/Ethnicity		
White, non-Hispanic	265 (51.4)	516
Black, non-Hispanic	62 (12.0)	516
Hispanic	150 (29.1)	516
American Indian/Alaskan Native, non-Hispanic	10 (1.9)	516
Asian/Pacific Islander, non-Hispanic	1 (0.2)	516
Multiple Race, non-Hispanic	28 (5.4)	516
Age group		
18-24	40 (7.7)	516
25-34	96 (18.6)	516
35-44	147 (28.5)	516
45-54	134 (26.0)	516
≥55	99 (19.2)	516
Education		
< High School	125 (24.2)	516
High School or Equivalent	199 (38.6)	516
>High School	192 (37.2)	516

continued on next page

Sexual Identity		
Homosexual	30 (5.8)	516
Bisexual	56 (10.9)	516
Heterosexual	430 (83.3)	516
Health Insurance		
Currently have health insurance	277 (53.8)	515
Private	11 (4.0)	277
Public	234 (84.5)	277
Other	32 (11.5)	277
None	238 (46.2)	515
Annual Income		
$0-9,999	289 (56.0)	516
$10,000-19,999	134 (26.0)	516
$20,000-39,999	64 (12.4)	516
$40,000-74,999	16 (3.1)	516
$75,000 or more	13 (2.5)	516
Employment Status		
Full-time or Part-time	69 (13.4)	516
Homemaker	6 (1.2)	516
Full-time Student	12 (2.3)	516
Retired	21 (4.1)	516
Disabled	163 (31.6)	516
Unemployed	218 (42.2)	516
Other	27 (5.2)	516
Incarceration History		
Ever been in jail or prison for more than 24 hours	480 (93.0)	516
Been in jail or prison for more than 24 hours in the past 12 months	247 (51.5)	480
Homeless in last 12 months		
No	154 (29.8)	516
Yes, not currently	76 (21.0)	362
Yes, currently	286 (79.0)	362

Note: Categories may not add up to total due to missing data for individual variable, percentages do not reflect missing data.

Drug Use Behaviors

The majority reported first injecting drugs before the age of 20 years (54.1%). Thirty three percent of participants reported sharing needles at least once in the prior 12 months. The most popular injection drug was heroin with 84.9 percent of participants injecting the drug at least once in the prior 12 months. Over three-fourths (79.3%) used non-prescription drugs in the prior 12 months with marijuana being reported by a vast majority (81.4%). The majority of participants reported never attending drug treatment (70.4%).

Table 17: Prevalence of HIV Surveillance Substance Use Behaviors of Participants in the Third Cycle of IDU, National HIV Behavioral Surveillance Study – Denver (N=516), 2012

Injection Drug Use Age when first injected	N (%)	Total
≤20	279 (54.1)	516
21-30	173 (33.5)	516
>30	64 (12.4)	516
Frequency of injecting in last 12 months		
More than once a day	215 (41.7)	516
Once a day	68 (13.2)	516
More than once a week	97 (18.8)	516
Once a week	40 (7.7)	516
More than once a month	48 (9.3)	516
Once a month	14 (2.7)	516
Less than once a month	34 (6.6)	516
Drugs Injected		
speedball (heroin and cocaine together)	250 (48.4)	516
heroin	438 (84.9)	516
powdered cocaine	244 (47.3)	516
crack cocaine	65 (12.6)	516
crystal meth	254 (49.2)	516
oxycontin	75 (14.5)	516
Frequency used new, sterile needle in last 12 months		
Never	11 (2.1)	516
Rarely	26 (5.0)	516
About half	88 (17.1)	516
Usually	208 (40.3)	516
Always	183 (35.5)	516
Needle Safety		
Shared needle at least once to inject in last 12 months	168 (91.3)	184
Shared needle to divide drugs in last 12 months	135 (82.3)	164
Knew HIV status of person last injected with	151 (49.5)	305
HIV Positive	9 (6.0)	151
Knew Hepatitis C status of person last injected with	156 (51.2)	305
HCV Negative	90 (58.1)	155
Non-Injection Drug Use		
Non-prescription drug use in last 12 months	409 (79.3)	516
Marijuana	332 (81.4)	408
Crystal meth	209 (51.1)	409
Crack cocaine	210 (51.3)	409
Powdered cocaine (smoked or snorted)	194 (47.4)	409
Downers (Valium, Ativan, Xanax)	200 (48.9)	409
Painkillers (Oxycontin, Vicodin, Percocet)	229 (56.0)	409
Hallucinogens (LSD, mushrooms)	95 (23.2)	409
X or Ecstasy	79 (19.3)	409
Heroin (smoked or snorted)	162 (39.6)	409
Viagra, Levitra or Cialis	35 (8.9)	393
Used for erectile dysfunction	16 (45.7)	35

continued on next page

Alcohol Use		
Binge drinking (≥5 in one sitting-Males) in last 12 months		
Never	62 (20.2)	307
At least once a day	45 (14.7)	307
At least once a week	95 (30.9)	307
At least once a month	49 (16.0)	307
less than once a month	56 (18.2)	307
Binge drinking (≥4 in one sitting-Females) in last 12 months		
Never	21 (22.8)	92
At least once a day	17 (18.4)	92
At least once a week	18 (19.6)	92
At least once a month	18 (19.6)	92
less than once a month	18 (19.6)	92
Binge drinking (5 or more in one sitting) in last 30 days		
0	94 (18.2)	516
1-10	101 (19.6)	516
11-20	32 (6.2)	516
21-30	30 (5.8)	516
≥31	259 (50.2)	516
Alcohol and Drug Treatment		
Ever participated in alcohol treatment program	223 (43.2)	516
Participated in last 12 months	76 (34.1)	223
Ever participated in drug treatment program	363 (70.4)	516
Participated in last 12 months	184 (50.7)	363

Note: Categories may not add up to total due to missing data for individual variable, percentages do not reflect missing data.

High-Risk Sexual Behaviors

The majority reported their first sexual experience before the age of 20 years (95.4%). Almost ninety percent reported unprotected sex with a main partner, whether vaginal (89.8%) or anal (87.1%). About three quarters reported unprotected sex with a casual partner, whether vaginal (78.3%) or anal (70.8%). Over three quarters (78.0%) reported being under the influence of either alcohol or drugs during their last sexual encounter and over half (54.0%) knew their partner's HIV status.

Table 18: Prevalence of HIV Surveillance Sexual Behaviors of Participants in the Third Cycle of IDU, National HIV Behavioral Surveillance Study – Denver (N=516), 2012

Age at first sexual experience	N (%)	Total
≤20	477 (95.4)	500
21-30	18 (3.6)	500
>30	5 (1.0)	500
Number of partners in last 12 months		
0	109 (21.8)	500
1-10	362 (72.4)	500
11-20	14 (2.8)	500
21-30	4 (0.8)	500
≥31	11 (2.2)	500

continued on next page

Number of main partners		
0	82 (35.2)	233
1-2	135 (57.9)	233
3-5	14 (6.0)	233
6-9	0 (0)	233
>10	2 (0.9)	233
Number of casual partners		
1-10	180 (87.0)	207
11-20	13 (6.3)	207
21-30	5 (2.4)	207
≥31	9 (4.3)	207
Main Partners		
Unprotected vaginal sex in last 12 months	230 (89.8)	256
Unprotected anal sex in last 12 months	74 (87.1)	85
Gave money, drugs, etc in exchange for sex	17 (6.1)	277
Received money, drugs, etc. in exchange for sex	25 (9.0)	278
Casual Partners		
Unprotected vaginal sex in last 12 months	173 (78.3)	221
Unprotected anal sex in last 12 months	46 (70.8)	65
Gave money, drugs, etc in exchange for sex	62 (26.1)	238
Received money, drugs, etc. in exchange for sex	65 (27.3)	238
Last Sex Partner		
Unprotected vaginal sex	288 (77.2)	373
Unprotected anal sex	22 (84.6)	26
Under the influence of alcohol or drugs		
Both	143 (36.6)	391
Alcohol	27 (6.9)	391
Drugs	135 (34.5)	391
Marijuana	179 (64.4)	278
Speedballs (heroin and cocaine together)	75 (27.0)	278
Heroin	16 (5.8)	278
Crack cocaine	7 (2.5)	278
Knew partner's HIV status	211 (54.0)	391
HIV Positive	5 (2.4)	211

Note: Categories may not add up to total due to missing data for individual variable, percentages do not reflect missing data.

STI/HIV Testing & Prevention Behaviors

Over three-quarters (79.3%) of participants reported visiting a health care professional in the prior 12 months and 47.4 percent of those were offered an HIV test at the visit. One quarter (23.5%) reported getting tested for an STI (excluding HIV and hepatitis) in the prior 12 months. Over half (51.2%) reported being told by a health care provider about a positive hepatitis test. A great majority have been tested for HIV (89.7%). Only 26.9 percent have not tested for HIV in the prior two years and almost half (45.7%) have not tested for HIV in the prior 12 months. Almost forty percent (39.5%) received free sterile needles in the prior 12 months and 98.0 percent of those used the free needles they received. A greater percentage (47.3%) received free condoms in the prior 12 months and only 53.7 percent of those used the free condoms.

Table 19: Prevalence of HIV Surveillance Testing & Prevention Behaviors of Participants in the Third Cycle of IDU, National HIV Behavioral Surveillance Study – Denver (N=516), 2012

STI Testing Behavior	N (%)	Total
STI testing in last 12 months		
Chlamydia	87 (71.3)	122
Gonorrhea	85 (69.7)	122
Syphilis	80 (65.6)	122
Other STI	13 (10.8)	120
STI diagnosis in last 12 months		
Chlamydia	17 (3.3)	516
Gonorrhea	17 (3.3)	516
Syphilis	3 (0.6)	516
Other STI	8 (1.6)	516
Hepatitis		
Ever had a blood test for hepatitis B	293 (57.9)	506
Ever had a blood test for hepatitis C	453 (88.1)	514
Ever told had hepatitis by health care provider	264 (51.2)	516
A	0 (0)	262
B	222 (84.7)	262
C	33 (12.6)	262
Other (alcohol induced)	6 (2.3)	262
Other STIs		
Ever told had genital herpes by health care provider	18 (3.5)	516
Ever told had genital warts by health care provider	26 (5.0)	516
Ever told had human papillomavirus (HPV) by health care provider	19 (3.7)	516
HIV Testing Behavior		
Visited a health care professional in last 12 months	409 (79.3)	516
HIV test offered at health care visit	193 (47.4)	407
Ever tested for HIV	461 (89.7)	514
Tested for HIV while in jail or prison in last 12 months	56 (22.7)	247
Number of times tested in past two years		
0	139 (26.9)	516
1-5	300 (58.1)	516
6-10	19 (3.7)	516
>10	58 (11.3)	516
Result of most recent HIV test		
Negative	412 (89.4)	461
Positive	25 (5.4)	461
Never obtained results	22 (4.8)	461
Indeterminate	2 (0.4)	461
Reason not tested for HIV in last 12 months		
Think at a low risk for infection	68 (28.7)	237
Afraid of result	41 (17.3)	237
Don't have time	25 (10.6)	237
Some other reason	14 (5.9)	237
No particular reason	89 (37.5)	237
HIV Positive Individuals		
Recent positive test was first positive test	12 (48.0)	25
Asked for names of partners by health dept	19 (76.0)	25

continued on next page

Gave names of partners	17 (89.5)	19
Ever had a negative test before first positive test	9 (75.0)	12
Seen by health care provider for HIV infection	25 (100)	25
Currently taking antiretroviral medications	18 (72.0)	25

HIV Prevention

Received free sterile needles in last 12 months	204 (39.5)	516
Received free sterile needles from which place(s)		
HIV/AIDS-focused community-based organization	190 (93.1)	204
Needle or syringe exchange program	10 (4.9)	204
IDU outreach program	3 (1.5)	204
Health center or clinic	1 (0.5)	204
Drug or alcohol treatment program	0 (0)	204
Some other place	0 (0)	204
Used free sterile needles received	200 (98.0)	204
Received free condoms in last 12 months	244 (47.3)	516
Received free condoms from which place(s)		
HIV/AIDS-focused community-based organization	181 (74.2)	244
Needle or syringe exchange program	34 (13.9)	244
IDU outreach program	24 (9.9)	244
Health center or clinic	3 (1.2)	244
Drug or alcohol treatment program	1 (0.4)	244
Some other place	1 (0.4)	244
Used free condoms received	131 (53.7)	244
Received individual-level HIV counseling in last 12 months	127 (24.6)	516
Received group-level HIV counseling in last 12 months	62 (12.0)	516

Note: Categories may not add up to total due to missing data for individual variable, percentages do not reflect missing data.

References

1. Colorado Rural Health Center. http://www.coruralhealth.org
2. US Census Bureau, 2012 Census ACS 1-year Estimate Data Table B01001 (geography: State of Colorado). http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml.
3. US Census Bureau, 2012 Census Estimates Data Table SC-EST2012-03 (geography: State of Colorado). http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml.
4. US Census Bureau, 2012 Census ACS 1-year Estimate Data Table B03002 (geography: Colorado Counties). http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml.
5. US Census Bureau, 2012 ACS 5-year Estimate Data Table B15002 (geography: Colorado Metropolitan Statistical Areas) http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml.
6. US Census Bureau, 2012 ACS 5-year Estimate Data Table S1701 (geography: State of Colorado and all counties within) http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml.
7. Colorado Department of Labor and Employment. Colorado LMI Gateway, Labor Force Information. http://lmigateway.coworkforce.com
8. The Henry J. Kaiser Family Foundation. State Health Facts. Colorado: Uninsured Rates for the Nonelderly by Race/Ethnicity, states (2011-2012), US (2012). http://www.statehealthfacts.org/prfileind.jsp?ind=143&cat=3&rgn=7
9. Colorado Department of Education. Fall 2012 Pupil Membership. http://www.cde.state.co.us/cdereval/rv2010pmlinks.htm
10. Colorado Department of Corrections. Statistical Report, Fiscal Year 2012. June 2012. http://www.doc.state.co.us/opa-publications/97
11. Centers for Disease Control and Prevention. HIV/AIDS Surveillance Report, 2011. Vol. 23. Atlanta: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, 2012. http://cdc.gov/hiv/topics/surveillance/resources/reports/
12. Colorado Health Information Dataset (CoHID). Death Data Statistics, 2012. http://www.chd.dphe.state.co.us/cohid/Default.aspx
13. Colorado Health Information Dataset (COHID). Birth Data Statistics, 2012. http://www.chd.dphe.state.co.us/cohid/Default.aspx
14. US Census Bureau, 2012 Census ACS 5-year Estimate Data Table B19013 (geography: State of Colorado). http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml.