

This annual update reflects events through December 31, 2012 that were reported to the Montana Department of Public Health and Human Services by January 26, 2013 (HIV/AIDS) or May 22, 2013 (STDs). Only laboratory confirmed and physician documented cases are included in this report. This report was prepared by the Montana HIV and STD Surveillance programs and is made possible through the cooperative agreement between Montana Department of Public Health and Human Services and the Centers for Disease Control and Prevention. HIV data are maintained in the enhanced HIV/AIDS Reporting System, STD data are maintained in STD*MIS, and Hepatitis C data are maintained in the Montana Infectious Disease Information System. Please contact Peter Choi at 406-444-0273 or pchoi@mt.gov with questions or comments.

The HIV Epidemiologic Profile Annual Update characterizes the HIV/AIDS epidemic in Montana. The report attempts to quantify the magnitude of HIV/AIDS in Montana, describe the affected population, show the geographic distribution of the disease, and summarize 2012 sexually transmitted disease (STD) and Hepatitis C surveillance data.

The Montana Department of Public Health and Human Services (DPHHS) initiated acquired immunodeficiency syndrome (AIDS) surveillance in 1985 and formally incorporated human immunodeficiency virus (HIV) surveillance in 2000. Newly diagnosed persons with HIV infection in Montana and previously diagnosed persons who are now Montana residents are required to be reported to their local health jurisdiction and DPHHS.

The Administrative Rules of Montana (ARM) have been revised in 2013 to enhance HIV surveillance. In addition to reporting tests confirming HIV infection, ARM 37.114.204(7) requires laboratories to report to DPHHS all HIV viral load test results and all CD4 T-lymphocyte test results, unless it is known that the test was performed in association with a disease other than HIV infection.

Overview of HIV in Montana

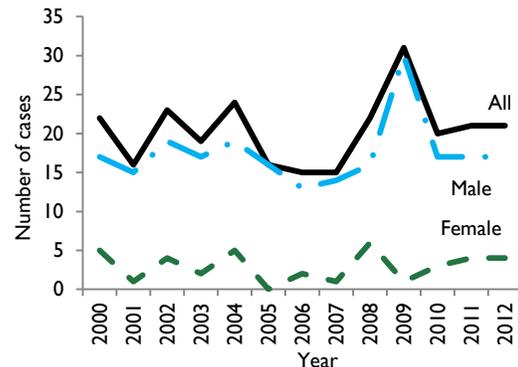
As of December 31, 2012, a total of 1,126 cases of HIV disease have been reported in Montana, of which more than 400 persons are known to have died. Of the total cases, 652 (58%) were Montana residents at the time of diagnosis, with a majority (70%) residing in one of the six most populous counties at the time of diagnosis.*† As of the end of 2012, 548 persons were known to be living in Montana with HIV infection. This includes persons diagnosed in Montana and those diagnosed out-of-state but who have subsequently moved to Montana.

HIV infection diagnosed in Montana

From 1985 through 2012, 652 HIV infections diagnosed in Montana residents have been reported

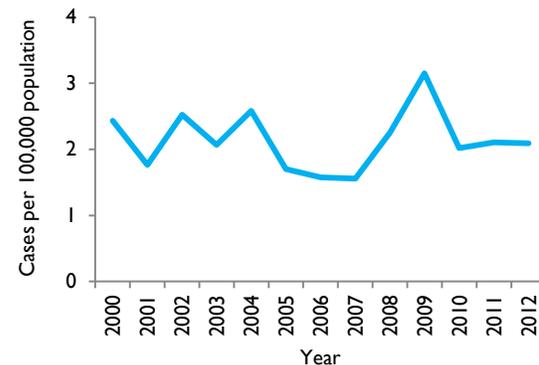
to DPHHS. In 2012, 21 newly diagnosed HIV infections were reported. Since 2000, 15–31 cases of have been diagnosed each year, predominantly among males (Figure 1). Figure 2 illustrates the newly diagnosed case rate reported since 2000. The Montana rate in 2012 was 2.1 cases per 100,000 population compared to an estimated U.S. rate of 15.8 per 100,000 population in 2011, the most recent year data is available.‡

Figure 1: Newly diagnosed HIV infections by year and sex — Montana, 2000–2012



Source: Enhanced HIV/AIDS Reporting System, funded by the Centers for Disease Control and Prevention

Figure 2: Rate of newly diagnosed cases of HIV infection — Montana, 2000–2012



Source: Enhanced HIV/AIDS Reporting System, funded by the Centers for Disease Control and Prevention

* Six most populous counties are: Cascade, Flathead, Gallatin, Lewis & Clark, Missoula, and Yellowstone

† 22 cases did not have a reported county of residence

‡ Centers for Disease Control and Prevention. *HIV Surveillance Report, 2011*; vol. 23. <http://tinyurl.com/detmc8>. Published February 2013. Accessed July 23, 2013.

Table 1 outlines the characteristics of the 21 cases. HIV in Montana continues to overwhelmingly be diagnosed among males and non-Hispanic whites. While a transmission category is unknown at this time in four male patients, male-to-male sexual contact (MSM), was reported for more than half of male patients, including one who also reported injection drug use (IDU). Several patients' ethnicity, race, and transmission category are unknown at this time. Additional information regarding these patients is being ascertained.

Also noteworthy is that 8 of the 21 patients were diagnosed with AIDS at the same time, or within 30 days of HIV diagnosis, indicating a delayed recognition of HIV infection.

Table 1: Newly reported persons diagnosed with HIV infection — Montana, 2012

Characteristic		Number
Total		21
Sex		
	Male	17
	Female	4
Disease progression		
	HIV only	12
	HIV and later AIDS	1
	HIV & AIDS diagnosed simultaneously [*]	8
Age at diagnosis (years)		
	13-19	1
	20-29	5
	30-39	5
	40-49	8
	50-59	2
Ethnicity, race		
	Non-Hispanic, white	15
	Non-Hispanic, American Indian / Alaska Native	3
	Other/Unknown	3
Transmission category[†]		
Male only:		
	Male-to-male sexual contact (MSM)	9
	Injection drug use (IDU)	1
	MSM and IDU	1
	Heterosexual contact	2
	NIR/NRR	4
Female only:		
	Heterosexual contact	0
	Injection drug use (IDU)	1
	NIR/NRR [‡]	3

* AIDS diagnosis occurred within 30 days—or one calendar month following HIV diagnosis—or HIV diagnosis occurred any time after AIDS diagnosis

† Transmission category summarizes the likely risk factors by which a person may have acquired HIV based on a hierarchical order of probability

‡ NIR/NIR includes risk factor not reported or not identified

Source: enhanced HIV/AIDS Reporting System, funded by the Centers for Disease Control and Prevention

Table 2 outlines the characteristics of 652 persons who were diagnosed with HIV infection in Montana since 1985, including the 262 (40%) persons who are known to have died as of December 31, 2012. Years 2006–2012 have been expanded to provide greater detail on the patients' characteristics in recent years.

Patient characteristics have been similar through the years. Since 1985, 86% of all persons diagnosed with HIV infection in Montana were male and 67% were 20–39 years of age. Additionally, the ethnicity and race of persons diagnosed with HIV infection in Montana nearly mirrors the general population. However, non-Hispanic blacks/African Americans account for a greater proportion of the diagnosed HIV infections, 3% (19 cases), than their representation among the general Montana population (0.4%).

Among males diagnosed with HIV infection, the majority have a reported transmission category of male-to-male sexual contact. Among females, the most frequently reported transmission category is heterosexual contact with a person known to have, or to be at high risk for, HIV infection. There is a significantly greater proportion of females who reported a transmission category of high-risk heterosexual contact (53%) compared to males who reported the same transmission category (5%).

Figure 3 illustrates the geographic distribution of cases in Montana by county of residence at the time of HIV diagnosis. Reflecting their larger populations, 70% of patients diagnosed in Montana had a reported residence as one of the six most populous counties (i.e., Cascade, Flathead, Gallatin, Lewis & Clark, Missoula, and Yellowstone). However, regardless of county population size, persons diagnosed with HIV infection have resided throughout Montana. Forty-three of the 56 counties have been reported as the county of residence at the time of diagnosis.

Table 2: New HIV infection diagnoses by year of diagnosis and selected characteristics — Montana, 1985–2012

	2006	2007	2008	2009	2010	2011	2012	1985–2012
Total	15	15	22	31	20	21	21	652 (%)
Sex								
Male	13	14	16	30	17	17	17	560 (86%)
Female	2	1	6	1	3	4	4	92 (14%)
Disease progression								
HIV only	3	6	11	19	14	15	12	--
HIV and later AIDS	2	5	3	2	1	3	1	--
HIV & AIDS diagnosed simultaneously*	10	4	8	10	5	3	8	--
Avg. age at diagnosis (years)	40.4	33.4	37.4	35.4	32.4	42.6	37.3	35.6
Age group at diagnosis (years)								
<13	--	--	--	--	--	--	--	4 (1%)
13–19	--	--	--	--	--	--	1	13 (2%)
20–29	4	7	6	12	9	4	5	193 (30%)
30–39	4	4	8	9	5	2	5	239 (37%)
40–49	2	2	6	3	5	10	8	121 (19%)
50–59	3	2	2	6	1	2	2	61 (9%)
>59	2	--	--	1	--	3	--	21 (3%)
Ethnicity, race								
Non-Hispanic (NH), white	12	14	18	27	16	19	15	555 (85%)
NH, American Indian / Alaska Native	2	--	--	2	2	1	3	49 (8%)
Hispanic, any race	1	1	3	1	1	1	1	20 (3%)
NH, black/African American	--	--	1	--	--	--	1	19 (3%)
NH, other†	--	--	--	1	--	--	1	8 (1%)
Transmission category‡								
Male only:								
Male-to-male sexual contact (MSM)	6	10	11	21	15	11	9	340 (61%)
Injection drug use (IDU)	2	1	1	2	--	2	1	60 (11%)
MSM & IDU	1	1	--	3	1	1	1	57 (11%)
Heterosexual contact§	3	--	1	1	1	1	2	28 (5%)
NRR/NIR¶	1	2	3	3	--	2	4	59 (11%)
Other**	--	--	--	--	--	--	--	16 (3%)
Female only:								
Heterosexual contact§	2	--	5	--	1	1	--	49 (53%)
Injection drug use (IDU)	--	--	--	--	1	1	1	20 (21%)
NRR/NIR¶	--	--	1	1	1	2	3	17 (18%)
Other**	--	1	--	--	--	--	--	6 (7%)

* AIDS diagnosis occurred within 30 days—or one calendar month following HIV diagnosis—or HIV diagnosis occurred any time after AIDS diagnosis

† Non-Hispanic, other is all other races including mixed races

‡ Transmission category summarizes the likely risk factors by which a person may have acquired HIV based on a hierarchical order of probability

§ Heterosexual contact with a person known to have, or to be at high risk for, HIV infection

¶ NRR/NIR includes risk factor not reported or not identified

** Other includes hemophilia, blood transfusion, and perinatal exposure

Source: enhanced HIV/AIDS Reporting System, funded by the Centers for Disease Control and Prevention

Section total may not sum to overall total due to missing information

Table 3: Characteristics of persons living with HIV infection — Montana, 2012

Total Sex	HIV		AIDS		HIV/AIDS	
	206		342		548	
Male	168	82%	294	86%	462	84%
Female	38	18%	48	14%	86	16%
Current age (years)						
13–19	2	1%	--	--	2	<1%
20–29	25	12%	10	3%	35	6%
30–39	55	27%	53	16%	108	20%
40–49	59	29%	125	37%	184	34%
50–59	47	23%	113	33%	160	29%
>59	15	7%	40	12%	55	10%
Ethnicity, race						
Non-Hispanic (NH), white	175	85%	280	82%	455	83%
NH, American Indian / Alaska Native	8	4%	29	8%	37	7%
NH, black/African American	9	4%	14	4%	23	4%
Hispanic	8	4%	11	3%	19	3%
NH, other*	6	3%	8	2%	14	3%
Transmission category by Sex[†]						
Male only:						
Male-to-male sexual contact (MSM)	113	67%	184	63%	297	64%
Injection drug use (IDU)	12	7%	30	10%	42	9%
MSM & IDU	21	13%	45	15%	66	14%
Heterosexual contact [‡]	5	3%	12	4%	17	4%
NRR/NIR [§]	15	9%	22	7%	37	8%
Other [¶]	2	1%	1	<1%	3	1%
Female only:						
Heterosexual contact [‡]	20	53%	27	56%	47	55%
Injection drug use (IDU)	7	18%	14	29%	21	24%
NRR/NIR [§]	10	26%	5	10%	15	17%
Other [¶]	1	3%	2	4%	3	3%

* Non-Hispanic, other is all other races including mixed races

† Transmission category summarizes the likely risk factors by which a person may have acquired HIV based on a hierarchical order of probability

‡ Heterosexual contact with a person known to have, or to be at high risk for, HIV infection

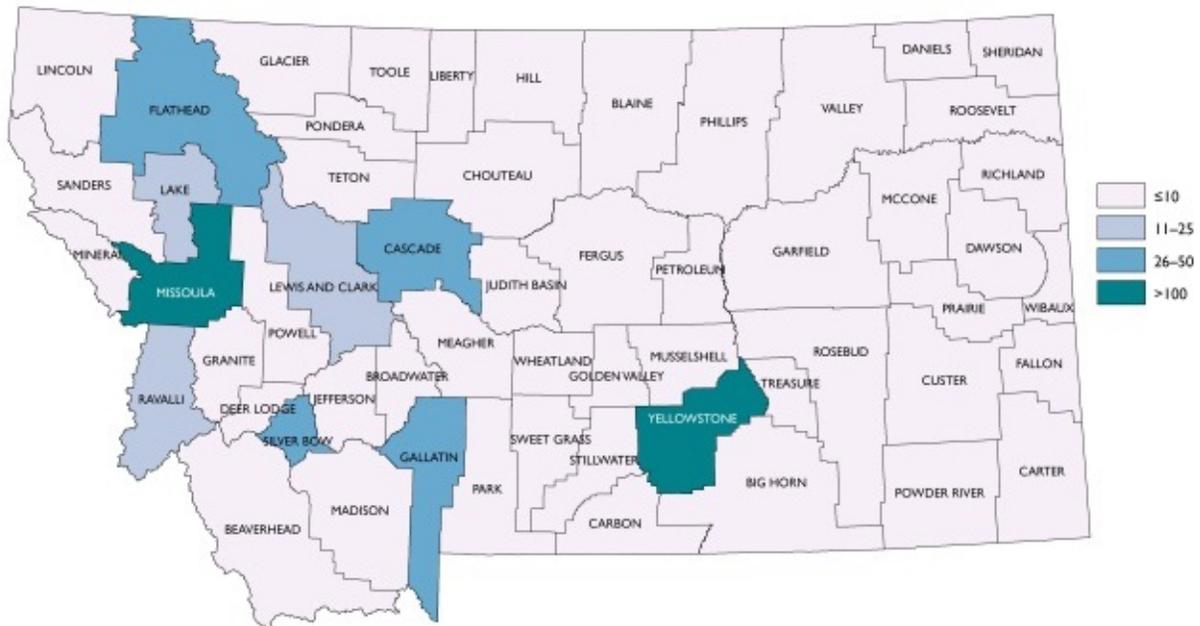
§ NRR/NIR includes risk factor not reported or not identified

¶ Other includes hemophilia, blood transfusion, and perinatal exposure

Source: enhanced HIV/AIDS Reporting System, funded by the Centers for Disease Control and Prevention

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Figure 5: Number of persons living with HIV by county of residence — Montana, 2012



Of the 548 persons living in Montana, 123 (22%) were identified as not having accessed HIV medical care in 2012. Accessing medical care was defined as having one or more CD4 or HIV viral load tests in 2012. The in-care and out-of-care populations seem to be very similar. The only significant differences between the two populations appear to be sex and current diagnosis. Males make up 89% of out-of-care persons compared to 83% of in-care. Contrastingly, females represent 17% of the in-care population

compared to 11% of the out-of-care population. Additionally, among in-care persons 65% have been diagnosed with AIDS compared to 54% of persons not-in-care. However, the greater representation of HIV-only persons out-of-care may be misleading. Some of these persons may meet the criteria to be classified as AIDS, but because they have not accessed care, they have not been identified as having progressed to an AIDS diagnosis.

Table 4: Persons living with HIV infection, selected characteristics by care status — Montana, 2012

Total Sex	In-care in 2012 425		Out-of-care in 2012 123	
	Male	353	83%	109
Female	72	17%	14	11%
Current diagnosis				
HIV only	150	35%	56	46%
HIV/AIDS	275	65%	67	54%
Current age (years)				
13–19	2	<1%	--	--
20–29	27	6%	8	7%
30–39	86	20%	22	18%
40–49	141	33%	43	36%
50–59	128	30%	32	27%
>59	41	10%	14	12%
Ethnicity, race				
Non-Hispanic (NH), white	353	83%	102	83%
NH, American Indian / Alaska Native	29	7%	8	7%
Hispanic, any race	16	4%	3	2%
NH, black/African American	15	4%	8	7%
NH, other†	12	3%	2	2%
Transmission category by sex‡				
Male only:				
Male-to-male sexual contact (MSM)	231	65%	66	61%
Injection drug use (IDU)	34	10%	8	7%
MSM & IDU	49	14%	17	16%
Heterosexual contact§	14	4%	3	3%
NRR/NIR¶	22	6%	15	14%
Other**	3	1%	--	--
Female only:				
Heterosexual contact§	38	53%	9	64%
Injection drug use (IDU)	17	24%	4	29%
NRR/NIR¶	15	21%	--	--
Other**	2	3%	1	7%

* AIDS diagnosis occurred within 30 days—or one calendar month following HIV diagnosis—or HIV diagnosis occurred any time after AIDS diagnosis

† Non-Hispanic, other is all other races including mixed races

‡ Transmission category summarizes the likely risk factors by which a person may have acquired HIV based on a hierarchical order of probability

§ Heterosexual contact with a person known to have, or to be at high risk for, HIV infection

¶ NRR/NIR includes risk factor not reported or not identified

** Other includes hemophilia, blood transfusion, and perinatal exposure

Source: enhanced HIV/AIDS Reporting System, funded by the Centers for Disease Control and Prevention

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STD Surveillance Update

Sexually transmitted diseases (STDs) continue to be the most frequently reported diseases to DPHHS. Nearly 4,000 STD cases were reported in 2012. All but four Montana counties reported at least one STD case.

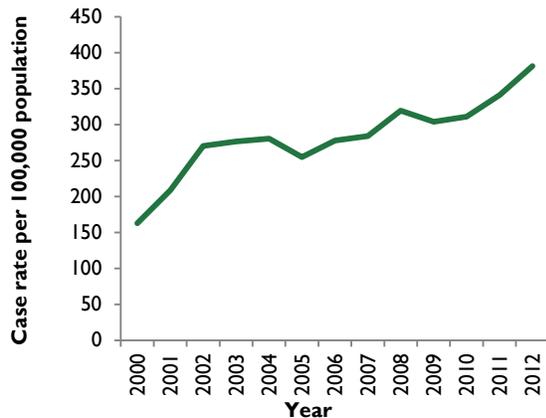
Table 5: Sexually transmitted disease cases — Montana, 2012

Disease	Cases
Chlamydia	3,834
Gonorrhea	108
Syphilis	3

Data Sources: STD*MIS Surveillance System, funded by the Centers for Disease Control and Prevention

In 2012, 3,834 chlamydia cases were reported to DPHHS, 432 more than in 2011. The incidence rate of chlamydia cases increased by 11.9% from 341 to 381 cases per 100,000 population (Figure 6).

Figure 6: Chlamydia rate by year — Montana, 2000–2012



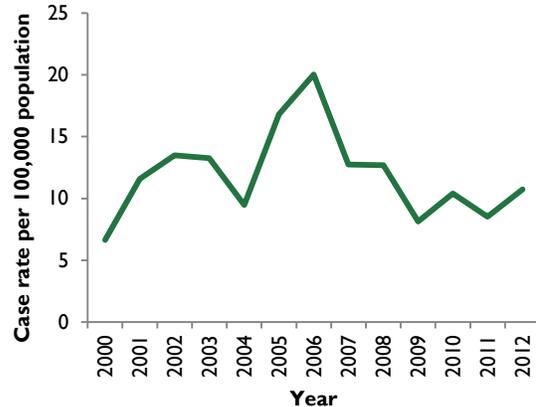
Data Sources: STD*MIS Surveillance System, funded by the Centers for Disease Control and Prevention

Table 6 outlines the characteristics of chlamydia cases reported to DPHHS during Morbidity and Mortality Weekly Report (MMWR) Year 2012. More than two times the number of chlamydia cases were reported among females than males, which in part is attributable to more females than males seeking health screening services. Nearly 90% of chlamydia cases occurred among persons 15–29 years of age. The highest incidence rates occurred among persons aged 15–19 and 20–24 years (Figure 8).

Gonorrhea is the second most commonly reported STD in Montana. Since 2000, 60 to 191 gonorrhea cases have been reported each year, including 108 cases reported in 2012, 23 (26%) more than in 2011. Montana’s 2012 gonorrhea incidence rate (10.7 cases

per 100,000 population) is one of the lowest in the United States. Since 2000, the incidence rate in Montana has ranged from 7 to 20 cases per 100,000 population (Figure 7).

Figure 7: Gonorrhea rate by year — Montana, 2000–2012



Data Sources: STD*MIS Surveillance System, funded by the Centers for Disease Control and Prevention

Table 7 outlines the characteristics of the gonorrhea cases reported to DPHHS during MMWR Year 2012. More than 80% of cases were among persons aged 15–29 years. And the highest incidence rates occurred among persons aged 15–19 and 20–24 years (Figure 9). Unlike chlamydia cases, gonorrhea cases held a nearly one-to-one ratio of female to male cases.

In 2012, persons classified as American Indian accounted for 65% of the reported gonorrhea cases while only accounting for approximately 7% of the Montana population. Sixty-six percent of the cases among persons reported as American Indian were part of an outbreak in one jurisdiction, which has continued into 2013.

Persons reported as American Indian accounted for a greater proportion of chlamydia (25%) and gonorrhea (65%) cases compared to their representation in the general population (7%) in 2012. However, it is important consider that broader STD screening practices among American Indians likely contribute to their higher reported STD incidence rate. To date, the specific magnitude of the contribution has not been measured.

Table 8 lists the county of residence for gonorrhea and chlamydia cases in 2012.

Table 6: Chlamydia cases by age, sex, and race — Montana, 2012*

Age (years)	Female					Male					Total	Total
	White	American Indian	Other†	Missing	Total	White	American Indian	Other†	Missing	Total		
0–14	18	19	--	6	43	3	--	--	--	3	46	
15–19	600	261	18	60	939	102	94	10	15	221	1160	
20–24	746	214	30	59	1049	357	110	28	33	528	1577	
25–29	228	120	7	30	385	159	45	14	20	238	623	
30–34	84	46	2	15	147	72	27	2	5	106	253	
35–39	27	20	0	7	54	26	10	2	2	40	94	
≥ 40	33	9	0	1	43	27	8	2	1	38	81	
Total	1,736	689	57	178	2,660	746	294	58	76	1,174	3,834	

* Race classification is irrespective of ethnicity (Hispanic or non-Hispanic)

† Other includes persons of more than one race, black/African American, and Asian/Pacific Islander

Data Sources: STD*MIS Surveillance System, funded by the Centers for Disease Control and Prevention

Table 7: Gonorrhea cases by age, sex, and race — Montana, 2012*

Age (years)	Female					Male					Total	Total
	White	American Indian	Other†	Missing	Total	White	American Indian	Other†	Missing	Total		
0–14	--	--	--	--	--	--	--	--	--	--	--	
15–19	3	11	--	1	15	2	3	--	--	5	20	
20–24	7	15	1	--	23	3	17	--	1	21	44	
25–29	3	9	--	--	12	3	6	1	3	13	25	
30–34	1	3	--	--	4	3	--	--	--	3	7	
35–39	1	2	--	--	3	--	1	--	--	1	4	
≥ 40	--	1	--	--	1	5	2	--	--	7	8	
Total	15	41	1	1	58	16	29	1	4	50	108	

* Race classification is irrespective of ethnicity (Hispanic or non-Hispanic)

† Other includes persons of more than one race, black/African American, and Asian/Pacific Islander

Data Sources: STD*MIS Surveillance System, funded by the Centers for Disease Control and Prevention

Figure 8: Chlamydia rate by age at diagnosis — Montana, 2012

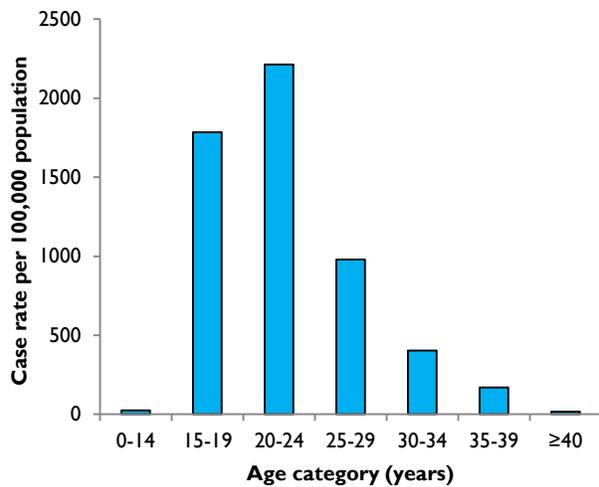


Figure 9: Gonorrhea rate by age at diagnosis — Montana, 2012

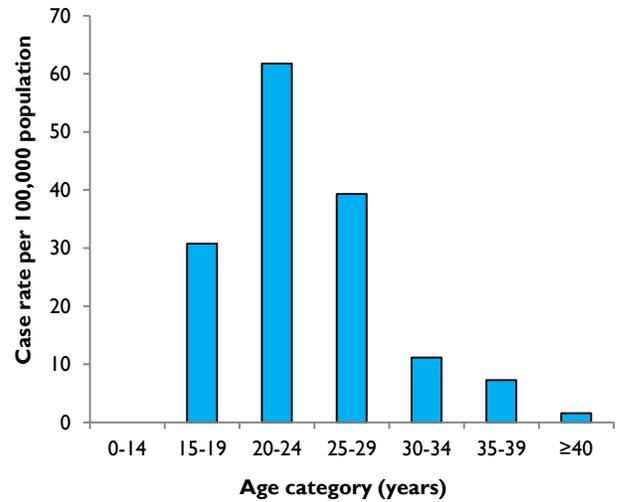


Table 8: Chlamydia and gonorrhea cases by county of residence — Montana, 2012

County	Chlamydia	Gonorrhea
Beaverhead	45	--
Big Horn	153	2
Blaine	51	6
Broadwater	6	--
Carbon	20	1
Carter	1	--
Cascade	417	3
Chouteau	3	--
Custer	31	--
Daniels	1	--
Dawson	26	--
Deer Lodge	23	--
Fallon	13	--
Fergus	15	--
Flathead	241	1
Gallatin	326	3
Garfield	--	--
Glacier	154	1
Golden Valley	2	--
Granite	3	--
Hill	265	2
Jefferson	16	--
Judith Basin	2	--
Lake	159	13
Lewis and Clark	170	--
Liberty	8	--
Lincoln	51	--
Madison	6	--
McCone	4	--
Meagher	--	--
Mineral	14	--
Missoula	439	12
Musselshell	5	--
Park	16	--
Petroleum	--	--
Phillips	5	--
Pondera	2	--
Powder River	2	--
Powell	17	--
Prairie	1	--
Ravalli	71	--
Richland	49	--
Roosevelt	163	44
Rosebud	68	5
Sanders	16	--
Sheridan	6	--
Silver Bow	100	--
Stillwater	17	--
Sweet Grass	4	--
Teton	6	--
Toole	8	--
Treasure	1	--
Valley	22	--
Wheatland	4	--
Wibaux	--	--
Yellowstone	586	15
Total	3,834	108

Data Sources: STD*MIS Surveillance System, funded by the Centers for Disease Control and Prevention

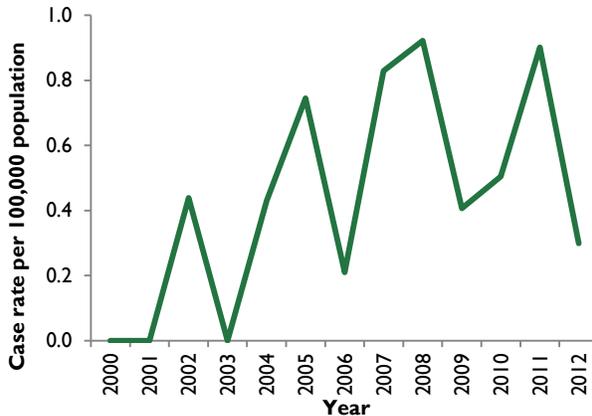
Syphilis is characterized into stages for the purposes of treatment and follow-up. Since 2000, 10 or fewer cases of syphilis (all stages) have been reported in Montana each year. In 2012, Montana reported three syphilis cases compared to nine in 2011. Two cases were male and were diagnosed at the secondary

stage. The female case was diagnosed at the late latency stage. The two male cases reported having sex with men. In 2012, Montana's rate of primary and secondary syphilis was 0.2 cases per 100,000 population compared to the U.S. rate in 2011, of 4.5

cases per 100,000 population. Figure 10 displays the fluctuating incidence rate of syphilis in Montana.

A syphilis sore can facilitate the transmission of HIV infection, with two to five times increased likelihood of HIV transmission when sores are present.[§] In 2011, three patients were HIV positive at the time of syphilis diagnosis. In 2012, none of the cases were known to be HIV positive.

Figure 10: Syphilis rate by year — Montana, 2000–2012



Viral Hepatitis C Update

In 2012, 1,251 confirmed cases of HCV were reported in Montana. Confirmed cases include both active and resolved infections. The cases ranged in age from 2–80 years with a median of 46 years. In 2012, the most common age group for newly reported cases of HCV infection was 50–59 years. Of the HCV cases reported, nine cases were acute diagnoses (0.9 cases per 100,000), the same as in 2011. The acute hepatitis C cases ranged in age from 18–33 years with a median of 24 years and six cases were female.

[§] Centers for Disease Control and Prevention. Syphilis – CDC Fact Sheet. Available at: <http://www.cdc.gov/std/syphilis/stdfact-syphilis.htm>. Accessibility verified 2/21/13.