HIV in Alaska

An Epidemiolgic Profile

1982-2015

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Alaska HIV Epidemiologic Profile

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Introduction: Alaska HIV Epidemiologic Profile

The purpose of the Epidemiologic Profile is to provide a description of the burden of HIV in Alaska, particularly in terms of geographic, behavioral, and clinical characteristics of persons diagnosed with HIV, people living with HIV, and persons at higher risk for HIV infection. The data presented herein serve to guide prevention, care, and treatment efforts across the HIV care continuum.

When interpreting data in this section, it is important to consider that Alaska is a low incidence jurisdiction, meaning that there are relatively few new diagnoses of HIV each year as compared to other parts of the U.S., and many subgroups have a small number of events each year. Small numerators and denominators can make interpretation of data difficult, particularly the interpretation of trends over time. Therefore, many changes in percentages and rates presented in this document should be interpreted with caution and some of the data may be statistically unreliable.

Structure of the Profile

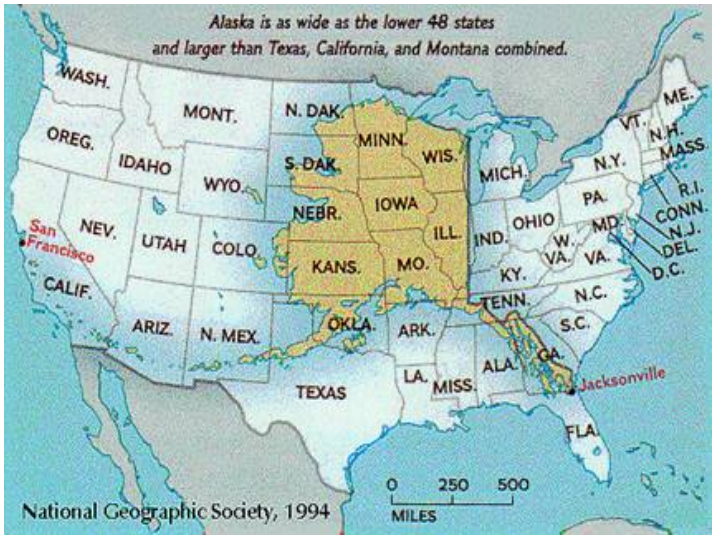
In order to summarize the HIV epidemic in Alaska and highlight emerging trends, the Epidemiologic Profile will present data using a variety of timelines and populations. The four sections of the profile will provide details about all reported cases, and cases with a new diagnosis in Alaska. There is also a section highlighting persons living with HIV. The final section includes data on sexually transmitted diseases and Hepatitis C. Sections will include data by gender, age at time of diagnosis, race/ethnicity, transmission category, and region at diagnosis (cumulative cases only).

The four sections are outlined below:

A. **All Reported Cases of HIV, 1982-2015** – This section presents cumulative data for all cases of HIV reported to the Section of Epidemiology from January 1, 1982 through December 31, 2015. This section includes cases with a new diagnosis in Alaska during this timeframe, and cases reported with a previous diagnosis out-of-state that moved in to Alaska at some point during this time period.
B. **Cumulative, 1982-2010 and Recent, 2011-2015** – This section compares trends among persons newly diagnosed in Alaska from 1982-2010 to persons newly diagnosed in Alaska more recently, from 2011-2015. This section does not include data on cases diagnosed out-of-state.
C. **People Living with HIV, 2015** – This section presents data on all persons with HIV thought to be living in Alaska and includes the HIV Care Continuum. This section includes cases diagnosed in Alaska and out-of-state, who are not known to have died, and whose most recent available address was in Alaska as of December 31, 2015.
D. **Sexually Transmitted Diseases and Hepatitis C** – This section summarizes the burden of reportable STDs in Alaska (chlamydia, gonorrhea, and syphilis) and hepatitis C from 2010-2015, with a brief discussion of co-infection.

Alaska Overview

Figure 1: Alaska's size versus the contiguous states



Alaska is the largest U.S. state with a land area of 663,300 square miles, larger than the states of Texas, California and Montana combined. If overlaid on the contiguous United States (colloquially known as the "Lower 48"), the state would stretch the distance from San Francisco, California to Jacksonville, Florida (Figure 1). Alaska is also geographically and ecologically diverse. Its geography includes over 6,600 miles of coastline, 3.5 million lakes, 16,000 square miles of glacier-covered land, and more than a dozen mountain ranges. The ecology of the state is equally varied, ranging from temperate coastal rainforests in southeastern Alaska, to sedge and grass wetlands in western Alaska, to arctic tundra in Alaska's North Slope. These vast distances and complex geographies remain key barriers to health care service delivery in the state.

Further complicating service delivery in Alaska is that 82% of Alaska communities are not connected to a highway or road system (Figure 2). Methods of transportation like small airplanes, all-terrain vehicles such as four wheelers, and snowmachines (often called snowmobiles outside of Alaska) are common. Transportation from rural villages to regional city or town "hubs", with basic health infrastructures, to larger cities such as Anchorage with more advanced health systems requires a substantial investment of both time and money.

Figure 2: National Highway System Map - Alaska

Alaska contains no counties and is instead comprised of twenty-nine boroughs, city-boroughs, municipalities and census areas (borough/census areas). Population size in borough/census areas varies greatly, from the City and Borough of Yakutat with an estimated 613 residents to the Municipality of Anchorage, the most populated area of the state, with 298,908 residents. While the overall racial breakdown of Alaska is: 67% White, 15% Alaska Native or American Indian (AN/AI), 7% Multi-race, 6% Asian, 4% Black, and 1% Native Hawaiian or Pacific Islander (NH/PI) populations can vary considerably by geographic area (Table 1). One borough (Northwest Arctic) and five census areas

(Bethel, Dillingham, Kusilvak [formerly Wade-Hampton], Nome, and Yukon-Koyukuk) are 70% or more AN/AI, while Alaska's largest city, Anchorage is only 8% AN/AI.

Table 1. Alaska Population by Race and Hispanic Origin and Borough/Census Area, July 2015*

Area Name	Total Population	% White	% AN/AI	% Black	% Asian	% NH/PI	Multi-race	% Hispanic (of any race)†
Alaska (Whole State)	737,625	67%	15%	4%	6%	1%	7%	7%
Aleutians East Borough	2,854	24%	21%	9%	41%	1%	4%	14%
Aleutians West Census Area	5,649	37%	13%	7%	36%	2%	5%	14%
Anchorage Municipality	298,908	66%	8%	6%	10%	2%	8%	9%
Bethel Census Area	18,153	12%	82%	1%	1%	<1%	4%	2%
Bristol Bay Borough	887	47%	34%	<1%	1%	<1%	17%	5%
Denali Borough	1,781	86%	5%	2%	2%	<1%	5%	4%
Dillingham Census Area	5,007	18%	71%	1%	1%	<1%	9%	3%
Fairbanks North Star Borough	98,645	77%	7%	5%	3%	1%	6%	8%
Haines Borough	2,493	79%	10%	1%	1%	<1%	9%	3%
Hoonah-Angoon Census Area	2,178	49%	38%	1%	1%	<1%	10%	5%
Juneau City and Borough	33,277	70%	12%	1%	6%	1%	9%	6%
Kenai Peninsula Borough	57,763	84%	7%	1%	1%	<1%	6%	4%
Ketchikan Gateway Borough	13,778	68%	14%	1%	8%	<1%	9%	5%
Kodiak Island Borough	13,819	57%	13%	1%	21%	1%	7%	9%
Kusilvak Census Area	8,195	5%	92%	<1%	<1%	0%	3%	1%
Lake and Peninsula Borough	1,668	25%	62%	1%	1%	1%	9%	3%
Matanuska-Susitna Borough	100,178	84%	7%	1%	1%	<1%	7%	5%
Nome Census Area	10,040	17%	74%	1%	1%	<1%	6%	2%
North Slope Borough	9,895	34%	52%	1%	6%	2%	5%	4%
Northwest Arctic Borough	7,867	13%	78%	1%	1%	<1%	6%	2%
Petersburg Borough	3,199	77%	10%	2%	3%	1%	7%	5%
Prince of Wales-Hyder Census Area	6,446	47%	42%	<1%	1%	<1%	9%	4%
Sitka City and Borough	8,929	67%	16%	1%	7%	<1%	9%	7%
Skagway Borough, Municipality of	1,040	89%	5%	<1%	1%	<1%	4%	4%
Southeast Fairbanks Census Area	6,899	80%	12%	1%	2%	1%	5%	6%
Valdez-Cordova Census Area	9,529	74%	13%	1%	4%	1%	7%	5%
Wrangell City and Borough	2,442	71%	17%	<1%	2%	<1%	10%	2%
Yakutat City and Borough	613	40%	36%	2%	5%	2%	15%	5%
Yukon-Koyukuk Census Area	5,493	23%	70%	1%	<1%	<1%	5%	2%

**Individuals of two or more races are included in the "Multi-race" category.*
†Hispanic ethnicity is reported in addition to race and is not included in the population total.

The population of Alaska has a higher proportion of males than the U.S. as a whole. As of July 1, 2015 the Alaska Department of Labor and Workforce Development (AKDOL) estimated the population of Alaska to be 737,625 of whom 382,127 (52%) were male and 355,498 (48%) were female. The U.S.

Census Bureau data for the same period estimates the total U.S. population to be 321,418,820, of whom 158,229,297 (49%) were male and 163,189,523 (51%) were female. Alaska's population is also younger than the U.S. as a whole. Using 2015 population estimates, Alaska's median age was 34.5 years, compared to 37.8 years nationally (Table 2).

Table 2. 2015 Estimates of the Percentage Resident Population for Selected Age Groups by Sex for the United States and Alaska

	Total		Males		Females	
Age Group	Alaska	U.S.	Alaska	U.S.	Alaska	U.S.
≤ 14	21%	19%	21%	20%	22%	18%
15-24	14%	14%	14%	14%	13%	13%
25-34	16%	14%	16%	14%	15%	13%
35-44	12%	13%	12%	13%	12%	12%
45-54	13%	13%	13%	13%	13%	13%
55-64	13%	13%	13%	12%	13%	13%
≥ 65	10%	15%	10%	13%	11%	16%
Median Age	34.5	37.8	34.2	36.5	34.8	39.1

Despite the national implementation of the Patient Protection and Affordable Care Act, commonly called the Affordable Care Act or "Obamacare", in 2010 and State implementation of Medicaid expansion in 2015, Alaska has a higher percentage of uninsured persons then the U.S. as a whole (Table 3).[1] In 2015, 13% of Alaskans were reported to not have any form of health insurance. Of those who did have health insurance, the majority (50%) received coverage through their employer.

Table 3. Health Insurance Coverage of the Total Population by Insurance Type – Alaska and United States, 2015

	Employer	Non-Group	Medicaid	Medicare	Other Public	Uninsured
United States	49%	7%	20%	14%	2%	9%
Alaska	50%	3%	18%	9%	7%	13%

Data source: Kaiser Family Foundation estimates based on the Census Bureau's March 2014, March 2015, and March 2016 Current Population Survey (CPS: Annual Social and Economic Supplements).

[1] Kaiser Family Foundation, State Health Facts, Health Insurance Coverage of the Total Population, 2015. Available at: http://kff.org/other/state-indicator/total-population/?state=AK. Accessed September 21, 2016.

HIV in Alaska: At A Glance

HIV in Alaska vs. US in 2014†

- In Alaska, the HIV case rate was 5.7/100,000 persons while in the U.S. it was 13.8/100,000 persons.
- In Alaska and in the U.S. males represented 81% of new diagnoses.
- Male-to-male sexual contact accounted for 60% of new cases in Alaska and 67% in the U.S., while Heterosexual contact accounted for 33% of new cases in Alaska and 24% in the U.S.
- In Alaska, 45% of new cases were among Whites, 26% American Indian/Alaska Native and 19% Blacks. In the U.S. 27% of new cases were among Whites, <1% American Indian/Alaska Native and 44% Blacks.

† *2014 data is used for this comparison as it is the most recent HIV data available from CDC*

HIV in Alaska‡

- An average of 32 Alaskans are newly diagnosed with HIV annually in Alaska.
- An average of 56 cases of HIV are reported to the Alaska Section of Epidemiology each year. This includes persons newly diagnosed with HIV in the state and persons previously diagnosed with HIV out-of-state who moved to Alaska.
- The most common risk factor among males is male-to-male sexual contact, and among females heterosexual contact.
- In 2015, 22 Alaskans were diagnosed with HIV.

‡ *Based on previous 10 years of reportable HIV data (2006-2015)*

Section A: Summary of All Reported Cases of HIV — Alaska, 1982-2015

Section Highlights

- From January 1, 1982 through December 31, 2015, 1,680 cases of HIV infection were reported to the Alaska Section of Epidemiology.
    - Of those cases 1,157 had an initial diagnosis in Alaska, and 523 were previously diagnosed out-of-state but are known to have lived in Alaska.
- 67% (n=1,128) ever had a diagnosis of AIDS.
- 35% (n=586) are known to have died.
- 81% (n=1,353) were male.
- 840 (50%) were men who Have sex with men (MSM); 318 (19%) were heterosexual (hetero).
- 901 (54%) were White; 336 (20%) were Alaska Native/American Indian; 220 (13%) were Black.

Gender

Of the 1,680 cases of HIV reported in Alaska from 1982 through 2015, 1,353 (81%) were in males and 327 (19%) were in females. Of those reported cases, 1,157 (69%) were newly diagnosed with HIV in Alaska, 910 (79%) in males and 247 (21%) in females (Table 4). Males are over-represented in the reported cases of HIV first diagnosed in Alaska. While 52% of the overall Alaska population is male, they make up 79% (n=910) of the 1,157 HIV cases first diagnosed in Alaska.

Reported gender is based on sex at the time of birth. Since reporting began in 1982 fewer than 5 cases of HIV have been reported in transgender men or women and are not presented separately.

Table 4. Summary of Reported Cases of HIV by Gender — Alaska, 1982-2015

	All Reported Cases N=1,680		Reported Cases First Diagnosed in Alaska n=1,157	
	Male	**Female**	**Male**	**Female**
HIV (non–AIDS)	422	130	268	97
HIV with AIDS	931	197	642	150
TOTAL #	1,353	327	910	247

Age

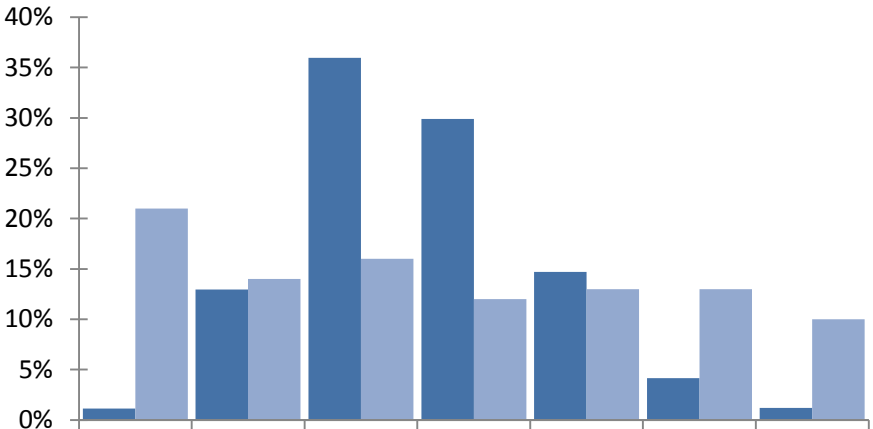
Of the 1,680 cases of HIV reported in Alaska during 1982-2015, the majority (1,126; 67%) were in persons aged 25 to 44 years. Among the 1,157 reported cases first diagnosed in Alaska, 66% (n=762) of persons were 25 to 44 years of age when first diagnosed with HIV (Table 5). The majority of cases among children aged <14 years were foreign born persons; most of these cases were attributed to exposure at birth or through breastfeeding.

Table 5. Summary of Reported Cases of HIV by Age — Alaska, 1982-2015

Age (Years)	All Reported Cases N=1,680		Reported Cases First Diagnosed in Alaska n=1,157	
	Male	Female	Male	Female
<14	11	11	8	5
15–24	191	64	108	42
25–34	522	116	328	88
35–44	413	75	286	60
45–54	160	48	130	40
55–64	43	11	38	10
≥65	13	2	12	2

Persons aged 25-44 years are over-represented in the population of persons with an initial HIV diagnosis in Alaska, representing 66% of all diagnoses combined (Figure 3), but only 28% of the Alaska population.

Figure 3. Percentage of Reported HIV Cases with an Initial Diagnosis in Alaska, by Age at Diagnosis (1982–2015) and Percentage of the Alaska Population by Age (2015)



	≤14	15-24	25-34	35-44	45-54	55-64	≥65
% Cases First Diagnosed in Alaska	1%	13%	36%	30%	15%	4%	1%
% of Alaska Population	21%	14%	16%	12%	13%	13%	10%

Race and Ethnicity

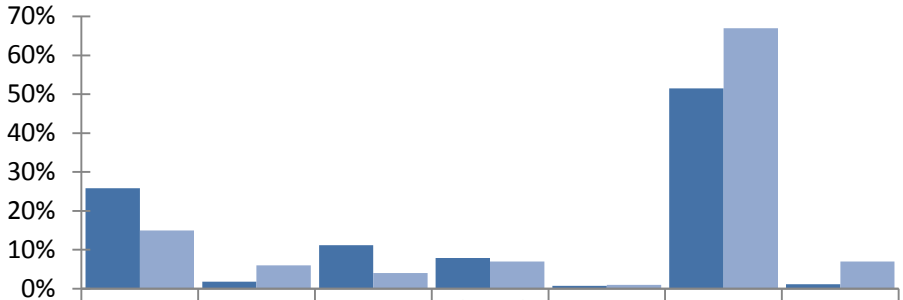
Race/ethnicity can be an indicator of economic and social factors that may influence people's risk of exposure to HIV. In Alaska, HIV affects people of all racial and ethnic groups (Table 6).

Table 6. Summary of Reported Cases of HIV by Race and Ethnicity — Alaska, 1982-2015

	All Reported Cases N=1,680		Reported Cases First Diagnosed in Alaska n=1,157	
	Male	**Female**	**Male**	**Female**
American Indian/ Alaska Native (AI/AN)	225	111	194	105
Asian	18	16	10	11
Black	167	53	100	29
Hispanic	125	23	74	17
Native Hawaiian/ Pacific Islander (NH/PI)	8	2	7	1
White	784	117	515	81
Multi–race	26	5	10	3

While the majority of reported cases first diagnosed in Alaska were among Whites (596/1,157), AI/AN (299/1,157), and Black (129/1,157) populations are over-represented in the HIV-infected population. While AI/AN make up an estimated 15% of the Alaska population, they make up 26% of the reported cases of HIV first diagnosed in Alaska. Similarly, while Blacks make up only 4% of the Alaska population, they represent 11% of reported HIV cases diagnosed in Alaska (Figure 4).

Figure 4. Percentage of Reported Cases of HIV with an Initial Diagnosis in Alaska by Race/Ethnicity (1982–2015) and Percentage of Alaska Population by Race and Hispanic Origin (July 2015)



	AI/AN	Asian	Black	Hispanic (of any race)	NH/PI	White	Multi
% Cases First Diagnosed in Alaska	26%	2%	11%	8%	1%	52%	1%
% of Alaska Population	15%	6%	4%	7%	1%	67%	7%

Transmission Category

Transmission categories are documented and collected in the HIV surveillance system through the elicitation of behavioral and health histories of persons infected with HIV. Behaviors and risk histories are elicited by health care providers and through interviews conducted with newly diagnosed individuals by health department disease intervention staff. Exposure categories are designed to classify the actual behaviors which can result in HIV transmission, not gender or sexual identities, and include:

- Male to male sexual contact (MSM);
- Injection drug use (IDU);
- Male to male sexual contact and injection drug use (MSM/IDU);
- Heterosexual contact with a person with documented HIV infection (hetero);
- Perinatal HIV infection, or mother-to-child transmission, when an HIV-infected mother transmits HIV to her infant during gestation, childbirth, or breastfeeding (perinatal); and
- No identified risk (NIR), no known risk factor was available or the patient did not report a risk behavior.

Exposure categories are ranked according to the probability of HIV transmission, and persons with more than one reported potential exposure category are classified in the exposure category most likely to have resulted in HIV transmission.

In Alaska, the most frequently reported transmission category is MSM. This remains true for both persons newly diagnosed in Alaska and persons ever reported to the Alaska Section of Epidemiology (Table 7).

Table 7. Summary of Reported Cases of HIV by Transmission Category — Alaska, 1982-2015

	All Reported Cases N=1,680		Reported Cases First Diagnosed in Alaska n=1,157	
	Male	**Female**	**Male**	**Female**
MSM	840	0	568	0
IDU	133	62	90	42
MSM and IDU	135	0	64	0
Heterosexual Contact	92	226	71	176
Perinatal	6	11	4	5
Other/NIR	147	28	113	24

Due to the large number of cases with a reported transmission category of male-to-male sex, it is important to review transmission categories for males and females separately. While, as previously indicated, the most common transmission category for reported cases of HIV first diagnosed in Alaska among males is MSM (Figure 5), and among females it is heterosexual sex (Figure 6). Among males, the second most frequently reported transmission category is Other/NIR, possibly indicating males who are unwilling to admit male-to-male sexual contact and are subsequently classified as no indicated risk. Among females, injection drug use is the second most frequently reported transmission category.

Figure 5. Cumulative Reported Cases of HIV in Males by Transmission Category, Alaska — 1982–2015

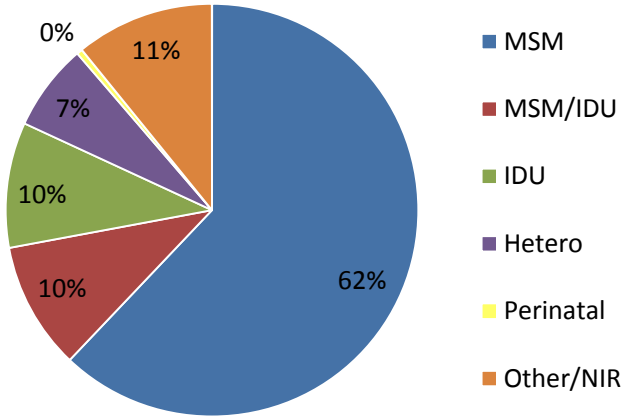
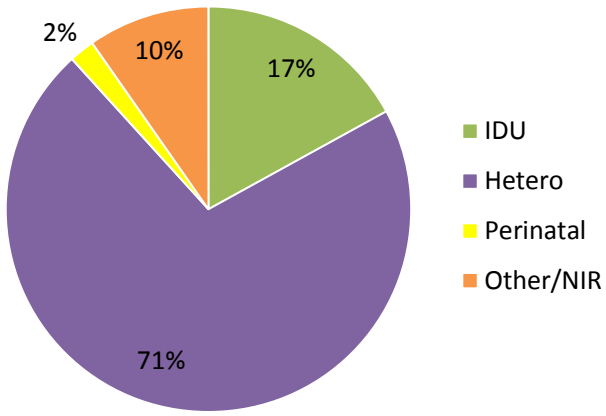


Figure 6. Cumulative Reported Cases of HIV in Females by Transmission Category, Alaska — 1982–2015



Geographic Region of Residence

HIV cases have been reported to the Alaska Section of Epidemiology from all regions of Alaska and from out of state/country (Table 8).

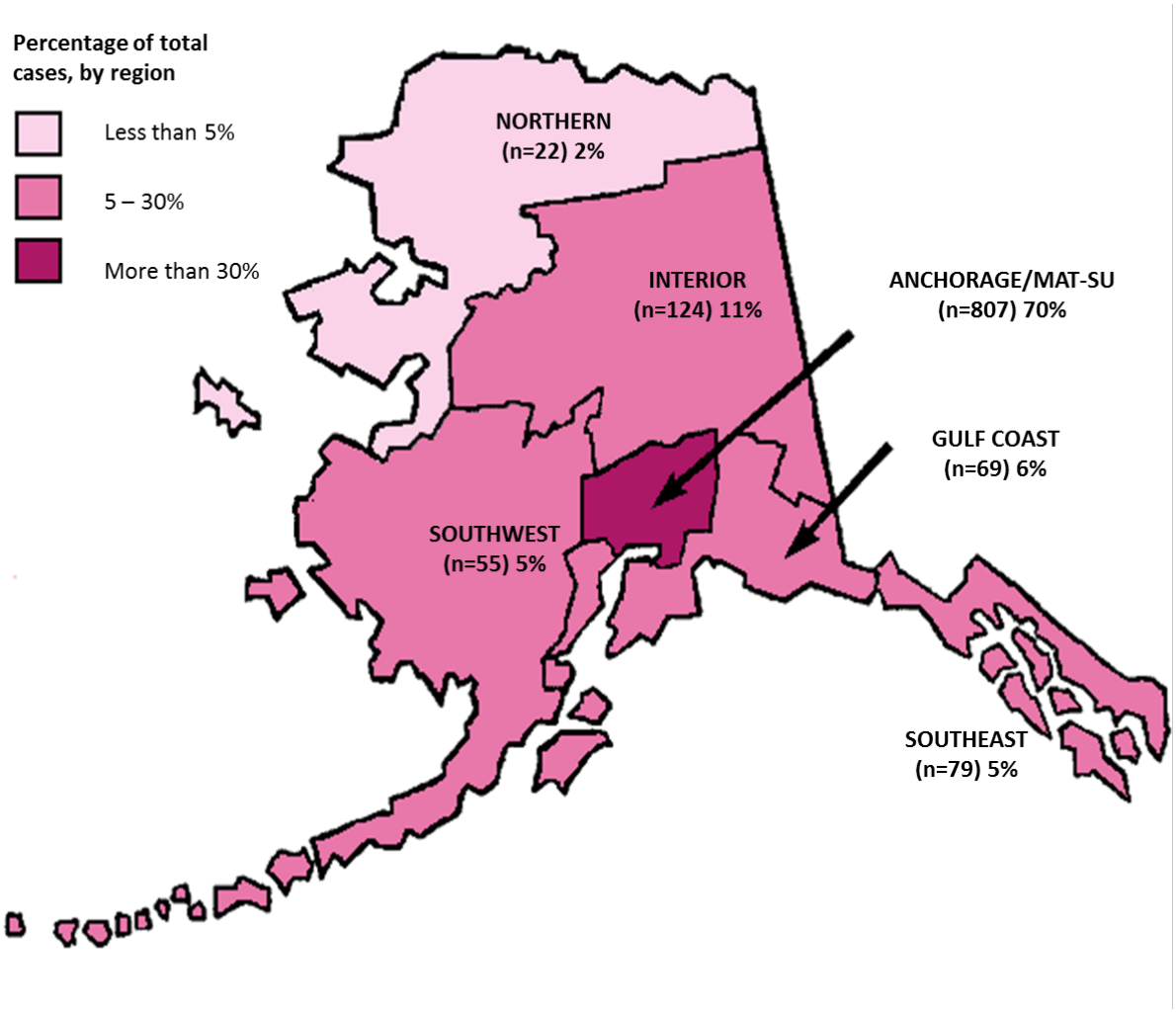
Table 8. Summary of Reported Cases of HIV by Residence at Time of Diagnosis — Alaska, 1982-2015

	All Reported Cases N=1,680		Reported Cases First Diagnosed in Alaska n=1,157	
	Male	**Female**	**Male**	**Female**
Anchorage/ Mat–Su	650	157	650	157
Gulf Coast	57	12	57	12
Interior	93	31	93	31
Northern	14	8	14	8
Southeast	56	23	56	23
Southwest	40	15	40	15
Out of State/ Country	443	81	0	0

The majority of reported cases first diagnosed in Alaska are from the Anchorage/Matanuska-Susitna (Mat-Su) region, the most populous area of the state. It is important to note that residence at diagnosis is assigned based on the address given by the patient on the date of their first positive test for HIV or AIDS. This region is not necessarily the area where infection initially occurred or the area where the infected individual currently resides or seeks care, if still living and residing in Alaska. For example, an individual residing in a rural village may have been infected with HIV during a visit to Anchorage, or a person living with HIV infection may seek HIV care in Seattle. Additionally, Alaskans tend to be highly

mobile both within Alaska and outside of the state. “Residence at diagnosis” data on newly diagnosed cases of HIV are reported in economic regions of Alaska as opposed to boroughs and census areas to protect the confidentially of HIV-positive persons in areas of low population (Figure 7).

Figure 7. Cumulative HIV Cases First Diagnosed in Alaska by Economic Region at Diagnosis, Alaska — 1982–2015



Section B: HIV in Alaska: Cumulative, 1982-2010 and Recent, 2011-2015

Section Highlights

- Of the 1,680 cases of HIV ever reported to the Alaska Section of Epidemiology, 1,157 had their initial diagnosis in Alaska.
- This section compares trends among persons newly diagnosed in Alaska cumulatively from 1982-2010 (n=1,019) to persons newly diagnosed in Alaska more recently, 2011-2015 (n=138). This comparison shows:
  - increases in cases among females;
  - significant increase in the number of cases among heterosexuals, while cases among MSM remained steady and cases in IDU decreased;
  - increases in all minority groups, most notably among blacks; and
  - increases in cases in persons younger than 25 and older than 45 years of age.

Gender

Cumulatively from 1982-2010, 79% (n=807) of HIV cases diagnosed in Alaska were among males and 21% (n=212) were among females. Among persons more recently diagnosed with HIV in Alaska, from 2011-2015, 75% (n=103) were among males and 25% (n=35) were among females (Table 9).

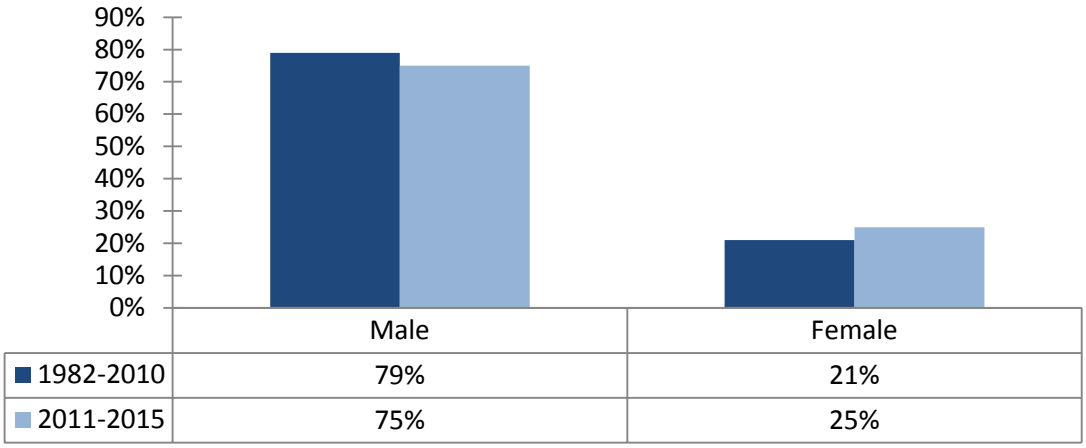
Reported gender is based on sex at the time of birth. Since reporting began in 1982, fewer than 5 cases of HIV have been reported in transgender men or women and are not presented separately.

Table 9. Summary of Reported Cases of HIV Diagnosed in Alaska (N=1,157) by Gender — Cumulative 1982-2010 and Recent 2011-2015

	Cumulative through 2010 (n=1,019)		2011 (n=24)		2012 (n=30)		2013 (n=22)		2014 (n=40)		2015 (n=22)	
	#	(%)	#	(%)	#	(%)	#	(%)	#	(%)	#	(%)
Female	212	(21)	7	(29)	10	(33)	6	(27)	7	(18)	5	(23)
Male	807	(79)	17	(71)	20	(67)	16	(73)	33	(82)	17	(77)

From both 1982-2010 and 2011-2015 the majority of HIV cases newly diagnosed in Alaska were among men, but a there has been an increase among women recently. Although they make up a small proportion of the cumulative cases in Alaska, the percentage of females newly diagnosed with HIV increased from 1982-2010 to 2011-2015 by 4% (Figure 8). Among females, changes in the number of new diagnoses are largely due to an increase in heterosexual transmission of HIV, not from other transmission categories (e.g. injection drug use).

Figure 8. Percentage of Newly Diagnosed Cases of HIV in Alaska by Sex, Cumulative 1982-2010 and Recent 2011-2015



Age

Cumulatively from 1982-2010, the majority of HIV cases newly diagnosed in Alaska were among persons aged 25-34 years (37%; n=375) and aged 35-44 years (32%; n=323). Among persons more recently diagnosed with HIV in Alaska, from 2011-2015, the majority of new HIV cases were diagnosed among persons aged 15-24 (22%; n=30) and 25-34 (30%; n=41) years (Table 10).

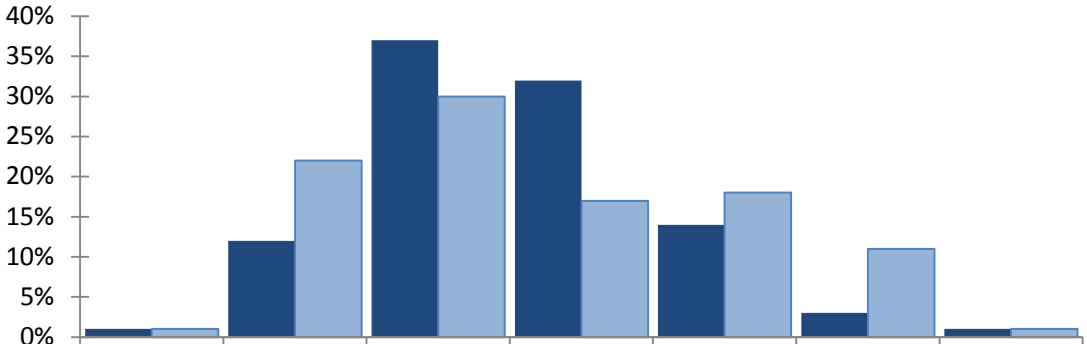
Table 10. Summary of Reported Cases of HIV Diagnosed in Alaska (N=1,157) by Age — Cumulative 1982-2010 and Recent 2011-2015

	Cumulative through 2010 (n=1,019)		2011 (n=24)		2012 (n=30)		2013 (n=22)		2014 (n=40)		2015 (n=22)	
	#	(%)	#	(%)	#	(%)	#	(%)	#	(%)	#	(%)
<14	11	(1)	0	-	2	(7)	0	-	0	-	0	-
15–24	120	(12)	8	(33)	5	(17)	3	(14)	10	(25)	4	(18)
25–34	375	(37)	6	(25)	5	(17)	10	(45)	16	(40)	4	(18)
35–44	323	(32)	5	(21)	7	(23)	2	(9)	5	(13)	4	(18)
45–54	145	(14)	3	(13)	9	(30)	2	(9)	6	(15)	5	(23)
55–64	33	(3)	2	(8)	2	(7)	3	(14)	3	(8)	5	(23)
≥65	12	(1)	0	-	0	-	2	(9)	0	-	0	-

Comparing age at HIV diagnosis during 1982-2010 to age at HIV diagnosis during 2011-2015, while persons aged 25-34 years continue to account for the largest number of new diagnosis in Alaska, the average age range of HIV diagnoses has shifted to include a wider age distribution across the lifespan, with increases in new diagnosis among persons aged 15-24 years, 45-54 years, and 55-64 years (Figure

9). Although age at HIV diagnosis does not necessarily equate to age at time of HIV acquisition, these data show that HIV continues to impact Alaskans across their lifespan, particularly younger and older persons in recent years.

Figure 9. Percentage of Newly Diagnosed Cases of HIV in Alaska by Age at Diagnosis, Cumulative 1982-2010 and Recent 2011-2015



	≤14	15-24	25-34	35-44	45-54	55-64	≥65
1982-2010	1%	12%	37%	32%	14%	3%	1%
2011-2015	1%	22%	30%	17%	18%	11%	1%

Race and Ethnicity

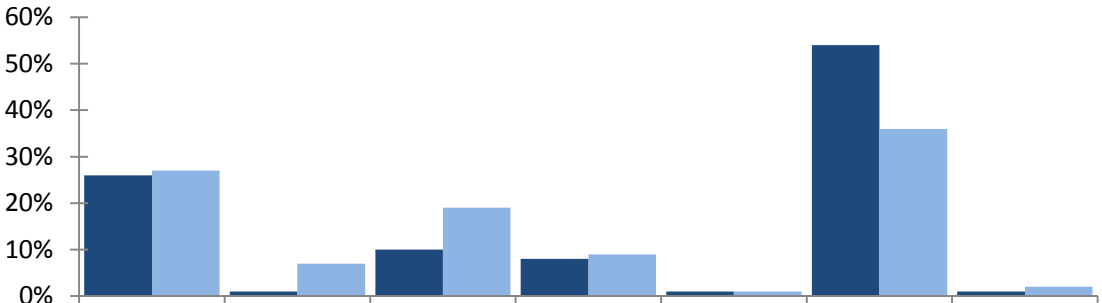
Cumulatively from 1982-2010, the majority of HIV cases newly diagnosed in Alaska were among persons with the reported race/ethnicity of White (54%; n=546) and Alaska Native/American Indian (26%; n=262). The same held true among persons more recently diagnosed with HIV in Alaska, during 2011-2015 (Table 11).

Table 11. Summary of Reported Cases of HIV Diagnosed in Alaska (N=1,157) by Race and Ethnicity — Cumulative 1982-2010 and Recent 2011-2015

	Cumulative through 2010 (n=1,019)		2011 (n=24)		2012 (n=30)		2013 (n=22)		2014 (n=40)		2015 (n=22)	
	#	(%)	#	(%)	#	(%)	#	(%)	#	(%)	#	(%)
AI/AN	262	(26)	7	(29)	6	(20)	4	(18)	11	(28)	9	(41)
Asian	12	(1)	0	-	5	(17)	3	(14)	0	-	1	(5)
Black	103	(10)	5	(21)	5	(17)	5	(23)	7	(18)	4	(18)
Hispanic	78	(8)	4	(17)	3	(10)	2	(9)	3	(7)	1	(5)
NH/PI	7	(<1)	1	(4)	0	-	0	-	0	-	0	-
White	546	(54)	7	(29)	10	(33)	8	(36)	18	(45)	7	(32)
Multi	11	(1)	0	-	1	(3)	0	-	1	(2)	0	-

Comparing race/ethnicity at HIV diagnosis during 1982-2010 to race/ethnicity at HIV diagnosis during 2011-2015, while White and Alaska Native/American Indian persons continue to account for the largest number of new diagnosis in Alaska, there has been a notable increase in the number of new diagnoses among other non-White populations. Although only 10% of persons newly diagnosed with HIV in Alaska during 1982-2010 were Black, Black persons (including African American and foreign born persons) made up 19% of new diagnosis 2011-2015. Similar increases were also seen among Asians (Figure 10).

Figure 10. Percentage of Newly Diagnosed Cases of HIV in Alaska by Race/Ethnicity Category, Cumulative 1982-2010 and Recent 2011-2015



	AI/AN	Asian	Black	Hispanic	NH/PI	White	Multi
1982-2010	26%	1%	10%	8%	1%	54%	1%
2011-2015	27%	7%	19%	9%	1%	36%	2%

Transmission Category

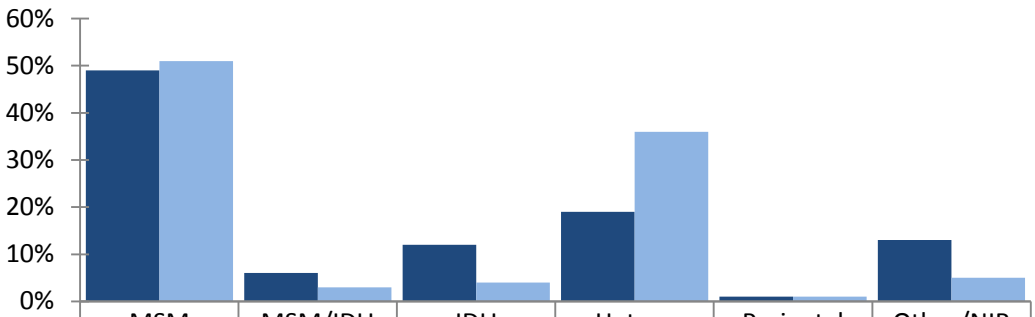
Male-to-male sexual contact was the most commonly reported HIV transmission category both cumulatively from 1982-2010 (49%; n=498) and more recently 2011-2015 (51%; n=70). Perinatal (also called mother-to-child) transmission remains rare in Alaska. Among more recent cases reported during 2011-2015, all were foreign born adoptees with no verification of initial out-of-country diagnosis, requiring these cases to be considered as an Alaska diagnosis (Table 12).

Table 12. Summary of Reported Cases of HIV Diagnosed in Alaska (N=1,157) by Transmission Category — Cumulative 1982-2010 and Recent 2011-2015

	Cumulative through 2010 (n=1,019)		2011 (n=24)		2012 (n=30)		2013 (n=22)		2014 (n=40)		2015 (n=22)	
	#	(%)	#	(%)	#	(%)	#	(%)	#	(%)	#	(%)
MSM	498	(49)	12	(50)	13	(43)	11	(50)	24	(60)	10	(45)
IDU	126	(12)	3	(13)	2	(7)	1	(5)	0	-	0	-
MSM/IDU	60	(6)	0	-	1	(3)	1	(5)	1	(2)	1	(5)
Heterosexual	198	(19)	7	(29)	11	(37)	9	(41)	13	(33)	9	(41)
Perinatal	7	(<1)	0	-	2	(7)	0	-	0	-	0	-
Other/NIR	130	(13)	2	(8)	1	(3)	0	-	2	(5)	2	(9)

When comparing reported HIV transmission category trends among persons newly diagnosed in Alaska cumulatively during 1982-2010 to persons newly diagnosed in Alaska during 2011-2015, there are notable increases in the percentage of persons with reported heterosexual transmission. There have also been decreases in persons whose reported transmission category is injection drug use and in persons with no indicated risk or other risk (Figure 11). Reductions in persons with a transmission category of Other/NIR may be attributed to better disease intervention and partner elicitation services at both the health department and medical provider levels.

Figure 11. Percentage of Newly Diagnosed Cases of HIV in Alaska by Transmission Category, Cumulative 1982-2010 and Recent 2011-2015



	MSM	MSM/IDU	IDU	Hetero	Perinatal	Other/NIR
1982-2010	49%	6%	12%	19%	1%	13%
2011-2015	51%	3%	4%	36%	1%	5%

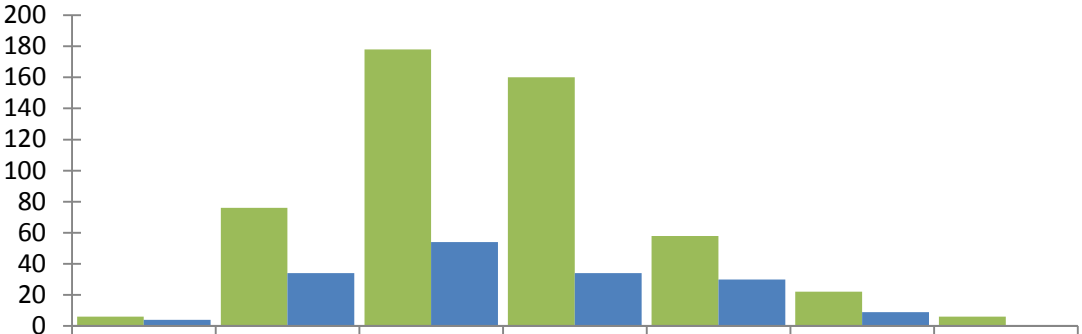
Section C: Characteristics of People Living with HIV in Alaska and the HIV Care Continuum, 2015

Section Highlights

- As of December 31, 2015, an estimated 671 persons living with HIV (PLWH) are currently residing in Alaska.
- The majority (67%; n=338) of people living with HIV in Alaska are males between the ages of 25 and 44 years.
- Of the people believed to be living with HIV in Alaska, 587 (87%) are believed to be engaged in HIV medical care (defined as having received at least one CD4 or HIV viral load (VL) laboratory test in 2015).
- Of the 587 PLWH in Alaska who are engaged in HIV medical care, 517 (88%) have laboratory test results which indicate they have achieved viral suppression (defined as a viral load equal to or less than 200 copies/mL).
- Approximately 77% of the PLWH in Alaska have achieved viral suppression (Figure 15).

Of the 671 people living with HIV (PLWH) currently believed to be alive and residing in Alaska as of December 31, 2015, 75% (n=506) are males and 25% (n=165) are females, based on reported gender at birth. Fewer than 5 persons living with HIV whose current gender identity is transgender are known to be alive and living in Alaska as of December 31, 2015. Of the males living with HIV in Alaska, the majority (67%; n=338) are between the ages of 25 and 44 years (Figure 12).

Figure 12. Persons Living with HIV/AIDS in Alaska by Age at Diagnosis and Gender at Birth — As of December 31, 2015 (N=671)



	≤14	15-24	25-34	35-44	45-54	55-64	≥65
Male	6	76	178	160	58	22	6
Female	4	34	54	34	30	9	0

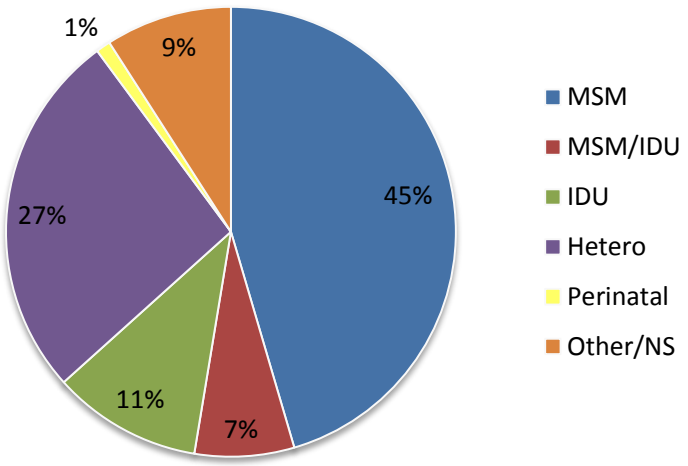
White males (n=254) and Alaska Native/American Indian males (n=104) are the two largest groups of persons living with HIV in Alaska, based on reported gender and race/ethnicity (Table 13).

Table 13. Persons Living with HIV/AIDS in Alaska by Race/Ethnicity and Gender at Birth — As of December 31, 2015 (N=671)

	Male # (%)	Female # (%)	Total # (%)
American Indian/ Alaska Native (AI/AN)	104 (15)	64 (10)	168 (25)
Asian	13 (2)	10 (1)	23 (3)
Black	64 (10)	28 (4)	92 (14)
Hispanic	52 (8)	11 (2)	63 (9)
Native Hawaiian/ Pacific Islander (NH/PI)	1 (<1)	1 (<1)	2 (<1)
White	254 (38)	47 (7)	301 (45)
Multi–race	18 (3)	4 (<1)	22 (3)

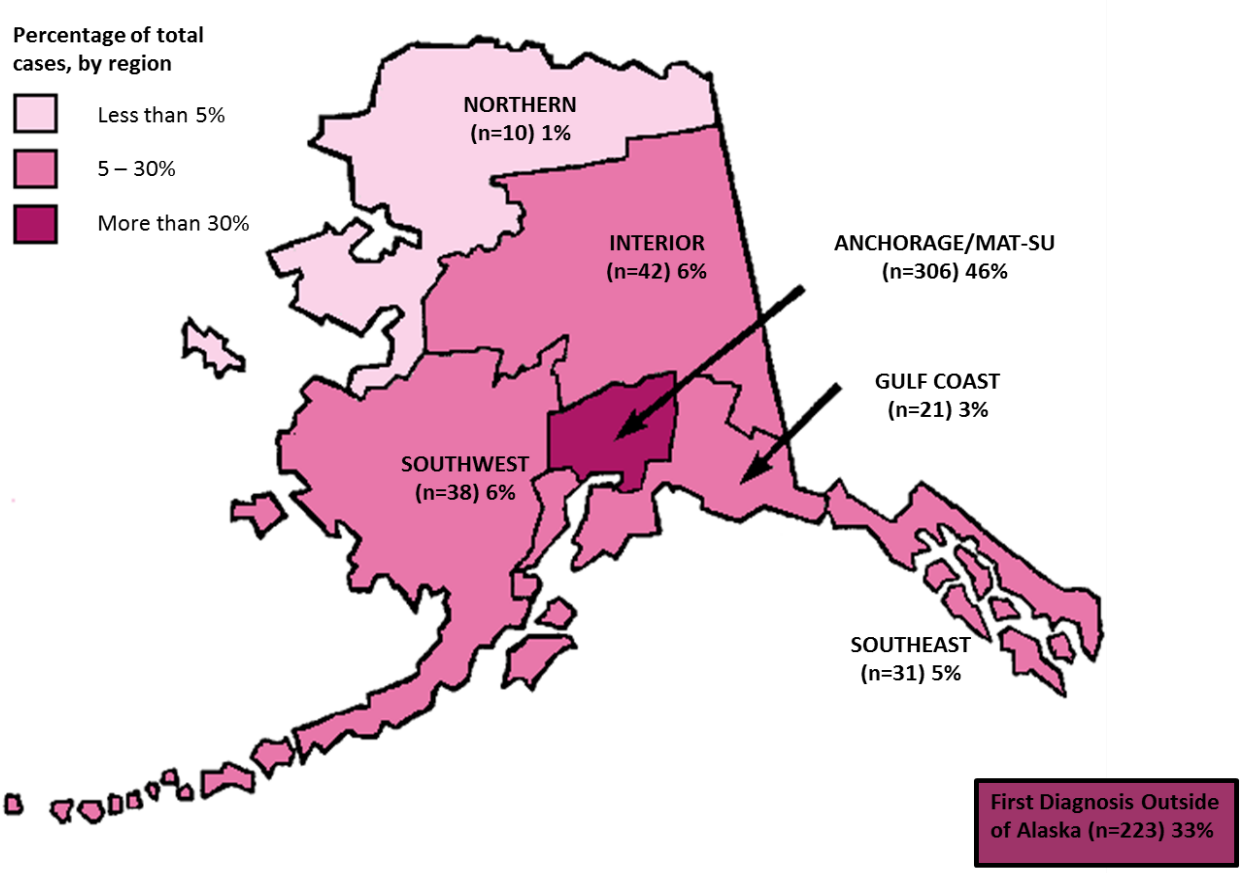
The majority (45%) of persons living with HIV in Alaska reported the transmission category of male-to-male sexual contact. Heterosexual exposure is the second most common transmission category, with 27% of persons living with HIV reporting the risk. Injection drug users account for 11% of all persons living with HIV in the state (Figure 13).

Figure 13. Persons Living with HIV/AIDS in Alaska by Transmission Category — As of December 31, 2015 (N=671)



Persons living with HIV in Alaska as of December 31, 2015, have been diagnosed in all economic regions of the state and out-of-state, although the majority (46%; n=306) reported residence in the Anchorage/Mat-Su area at the time of their HIV diagnosis (Figure 14). It is important to note that reported residence at the time of diagnosis does not necessarily reflect a person's current residence in Alaska. For example, 33% (n=223) of the people currently living with HIV in Alaska were initially diagnosed with HIV outside of Alaska. These persons' current residence may be anywhere in Alaska, and persons who were initially diagnosed in one economic region of Alaska may have subsequently moved to another.

Figure 14. People Living with HIV/AIDS by Economic Region at First Diagnosis, Alaska — As of December 31, 2015



HIV Continuum of Care

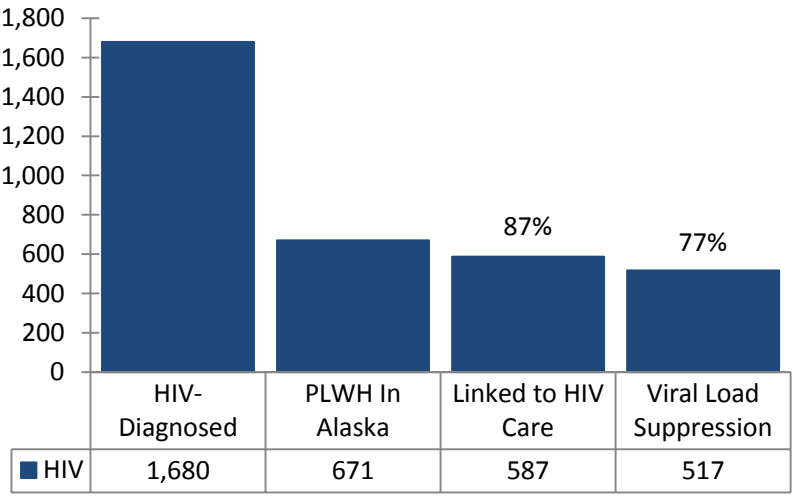
Ensuring that persons living with HIV receive appropriate medical care is an effective tool for preventing disease progression and reducing HIV transmission within the community. The model that outlines the sequential steps a person living with HIV must go through, from the time of their HIV diagnosis through successful treatment of their infection, is called the *HIV Care Continuum*. The primary stages of the Care Continuum are:

1. HIV diagnosed,
2. Linked to HIV care,
3. Retained in HIV care, and
4. Achieved viral load suppression.

HIV surveillance data collected by the SOE are used to monitor linkage and retention in care for person living with HIV in Alaska throughout the *HIV Care Continuum*. This care continuum shows that of the 1,680 persons ever reported to the Alaska HIV surveillance system, only 671 were believed to still be alive and living in Alaska as of December 31, 2015. Of the 671 persons living with HIV in Alaska, 87%

(n=587) were known to have been linked to HIV care and 77% (n=517) are known to be virally suppressed as of December 31, 2015 (Figure 15).

Figure 15. HIV Care Continuum, Alaska — As of December 31, 2015



In Alaska, linkage and retention services are provided to persons living with HIV by health department staff, medical providers, and case management agencies throughout the course of the disease. Persons newly diagnosed with HIV receive support in engaging with an HIV medical provider and long-term case management services. Persons living with HIV who are not accessing medical care receive support in re-engaging with a medical provider and supportive services. From 2012 through 2015, the Alaska Section of Epidemiology received HIV Prevention: Category C Demonstration Project funds to formally implement, monitor, and evaluate linkage and retention efforts in the state.

Using data from the Linkage and Retention database developed for the Category C Linkage to Care Demonstration Project, it is possible to summarize key populations of persons living with HIV who were known to not be accessing HIV medical care during the project period (January 1, 2012 through December 31, 2015). Although these data may not include all persons who were not accessing HIV medical care during the project period, they serve as a representative sample of out-of-care persons in Alaska.

Of the 446 cases investigated for linkage and retention services during the project period, only 23% (n=103) were found to actually be alive, residing in Alaska, and out of HIV medical care. Of those, 83% (n=85) were male, 16% (n=16) were female, and 2% (n=2) were transgender

HIV Care Continuum Indicator Definitions

HIV-Diagnosed: The total number of persons ever reported with HIV (with or without AIDS) to the HIV surveillance system in Alaska. This number includes persons living with HIV who were diagnosed in Alaska and who were previously diagnosed with HIV and moved to Alaska.

PLWH in Alaska: The total number of reported persons believed to be alive and living in Alaska as of December 31, 2015. This number includes persons living with HIV who were diagnosed in Alaska and who were previously diagnosed with HIV and moved to Alaska.

Linked to HIV Care: The total number of persons diagnosed with HIV that had one or more documented CD4 or HIV viral load in the 12 months preceding this analysis, between January 1, 2015 and December 31, 2015. As the Alaska SOE is unable to track medical visits for all persons living with HIV in the state, the receipt of CD4 and HIV viral load is used as a proxy to determine linkage with a medical provider.

Viral Load Suppression: The total number of persons whose most recent HIV viral load in the 12 months preceding this analysis, between January 1, 2015 and December 31, 2015, was considered undetectable; defined as an HIV viral load equal to or less than 200 copies/mL. As the Alaska SOE is unable to track medical visits for all persons living with HIV in the state, achieving viral load suppression is used as a proxy to determine retention with a medical provider.

(Table 14). As of December 31, 2015 it was estimated that 75% (n=506) of PLWH in Alaska were males and 25% (n=165) were females, meaning that males were over-represented in the out-of-care population. Of particular importance is that transgender persons were significantly over-represented among the out-of-care populations in Alaska. Although fewer than 5 transgender individuals were believed to be living with HIV in Alaska as of December 31, 2015, two transgender persons were identified as out of HIV care during the project period.

Table 14. Persons Living with HIV/AIDS in Alaska and Determined to be out of HIV Medical Care by Gender — 2012-2015 (n=103)

Male	Female	Transgender
# (%)	# (%)	# (%)
85 (83)	16 (16)	2 (2)

Black and White males living with HIV were more likely to be out of HIV medical care then males of other race/ethnicities or females. While Black males made up only 10% of the persons living with HIV in Alaska, they represent 17% of the out of care population. Similarly, while White males made up 38% of the persons living with HIV in Alaska, they represent 46% of the out of care population (Table 15).

Table 15. Persons Living with HIV/AIDS in Alaska and Determined to be out of HIV Medical Care by Race/Ethnicity and Gender — 2012-2015 (n=103)

	Male	Female	Transgender	Total
	# (%)	# (%)	# (%)	# (%)[‡]
Alaska Native/ American Indian	15 (15)	5 (5)	0 (0)	20 (19)
Asian	1 (1)	0 (0)	0 (0)	1 (1)
Black	18 (17)	3 (3)	2 (2)	23 (22)
Hispanic	3 (3)	3 (3)	0 (0)	6 (6)
White	47 (46)	5 (5)	0 (0)	52 (50)
Multi-race	1 (1)	0 (0)	0 (0)	1 (1)

[‡] Percentages may not total 100 due to rounding

HIV transmission category does not appear to be a considerable factor in determining whether a person living with HIV will fall out of HIV medical care. Forty-five percent of PLWH in Alaska reported the transmission category of male-to-male sexual contact and MSM made up 47% of the out of care persons identified in the project period (Table 16). Likewise, heterosexual transmission was reported in 27% of PLWH and 26% of out-of-care persons, while injection drug use was reported in 11% of PLWH in Alaska and 8% of out-of-care persons. It is important to note that, due to definitions established by CDC, transgender women whose identified HIV risk was sex with a male are included in the MSM transmission category for the purpose of this analysis.

Table 16. Persons Living with HIV/AIDS in Alaska and Determined to be out of HIV Medical Care by Transmission Category and Gender — 2012-2015 (n=103)

	Male # (%)	Female # (%)	Transgender # (%)	Total # (%)‡
Heterosexual	13 (13)	14 (14)	0 (0)	27 (26)
IDU	7 (7)	1 (1)	0 (0)	8 (8)
MSM	46 (45)	-	2 (2)	48 (47)
MSM/IDU	9 (9)	-	0 (0)	9 (9)
NRI/Other	10 (10)	0 (0)	0 (0)	10 (10)
Perinatal	0 (0)	1 (1)	0 (0)	1 (<1)

‡ Percentages may not total 100 due to rounding

Males aged 45-54 years were the only age range over-represented in the out of the care population, making up 9% (n=58) of PLWH but 29% (n=30) of out of care persons during the project period (Table 17).

Table 17. Persons Living with HIV/AIDS in Alaska and Determined to be out of HIV Medical Care by Age Range and Gender — 2012-2015 (n=103)

	Male # (%)	Female # (%)	Transgender # (%)	Total # (%)‡
≤14	0 (0)	0 (0)	0 (0)	0 (0)
15-24	0 (0)	1 (1)	0 (0)	1 (1)
25-34	9 (9)	3 (3)	0 (0)	12 (12)
35-44	26 (25)	5 (5)	2 (2)	33 (32)
45-54	30 (29)	5 (5)	0 (0)	35 (34)
55-64	15 (15)	2 (2)	0 (0)	17 (17)
≥ 65	5 (5)	0 (0)	0 (0)	5 (5)

‡ Percentages may not total 100 due to rounding

Section D: Sexually Transmitted Diseases and Hepatitis C Virus

Section Highlights

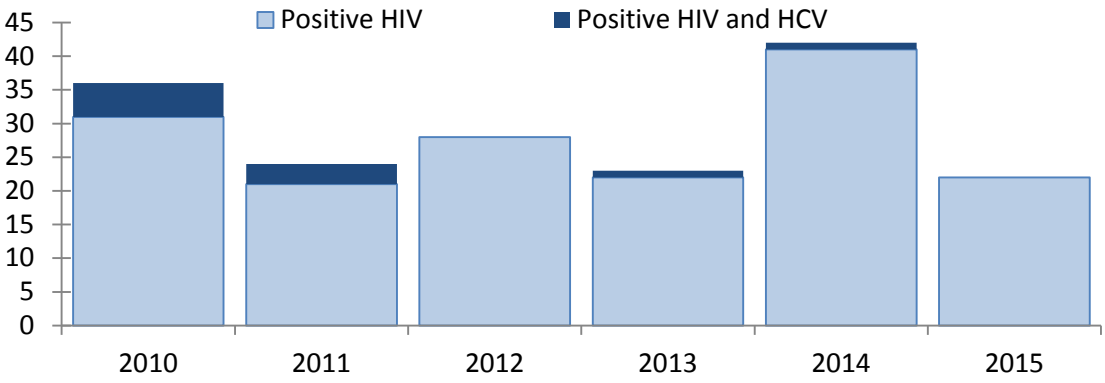
- During 2010-2015 Alaska had the highest reported chlamydia (CT) rates in the nation. In 2015, Alaska had a CT case rate of 766 cases per 100,000 persons, compared to the preliminary U.S. rate of 468 cases per 100,000 persons.
- Alaska sees large fluctuations in gonorrhea infection rates from year-to-year, but consistently has among the highest gonorrhea rates in the U.S. In 2015, Alaska had a gonorrhea case rate of 151 cases per 100,000 persons, compared to the national rate of 121 cases per 100,000 persons.
- During 2014-2015, the number of reported cases of syphilis in Alaska decreased by 50%, from 40 to 20.
- The average annual rate of hepatitis C virus (HCV) infection was 134 per 100,000 persons annually 2010-2015—many of these reports represent new diagnoses in persons with long-standing HCV infection.

HIV/STD/HCV Co-Infection

In Alaska, STD and HCV infections impact similar populations as HIV due to the overlapping modes of transmission. With very high rates of both chlamydia and gonorrhea, STD is considered to be a strong facilitator of HIV transmission in Alaska. Co-infection with a reportable bacterial STD was reported in 29% of newly diagnosed HIV cases in both 2014 and 2015. Conducting routine HIV testing for all persons infected with or at risk for an STD is an important prevention strategy to facilitate early identification of HIV infection among at-risk persons.

Co-infection with HCV is common among HIV-infected persons who inject drugs, with CDC estimating that nationally, 50%-90% of people living with HIV who use injection drugs are also infected with HCV. By contrast, the number of cases reported with HIV/HCV co-infection in Alaska is low, and has remained steady over the last several years. During 2010-2015 there were 175 newly diagnosed cases of HIV reported in Alaska, and only 10 (6%) of those ever had a positive HCV test reported to SOE (Figure 16). The most commonly reported risk factors for co-infected cases were IDU (n=5; 50%), and sexual contact (n=4; 40%) including sex with an IDU, sex with a HCV-positive person, and male-to-male sexual contact. A limitation of this analysis is that some out-of-state diagnoses of HCV might not have been reported to SOE in Alaska.

Figure 16. Reported HIV Cases Co-infected with HCV, Alaska 2010-2015

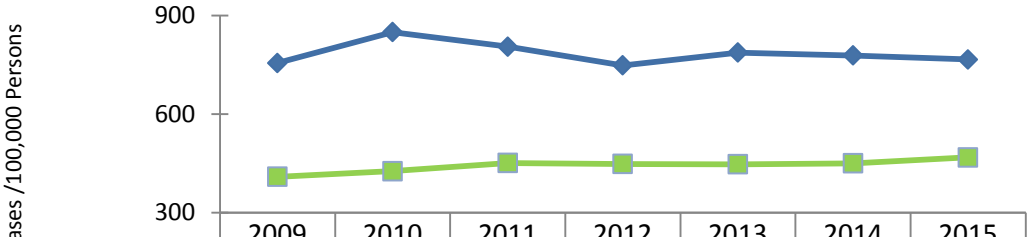


Chlamydia

Chlamydia trachomatis (CT) is the most commonly reported sexually transmitted bacterium in the U.S. Often asymptomatic , untreated CT infection can cause miscarriage, pre-term labor, low birth weight; conjunctivitis and pneumonia in neonates; pelvic inflammatory disease (PID), ectopic pregnancy, chronic pelvic pain, and infertility in women; and epididymitis and Reiter's syndrome in men. Moreover, CT can facilitate the transmission and acquisition of HIV.

From 2010 through 2015 Alaska has had the highest reported CT rates in the nation. In 2015, Alaska had a CT case rate of 766 cases per 100,000 persons, compared to the preliminary U.S. rate of 468 cases per 100,000 persons (Figure 17).

Figure 17. Chlamydia Infection Rates, by Year — Alaska and the United States, 2009–2015*



	2009	2010	2011	2012	2013	2014	2015
Alaska Rate	755	849	805	748	787	778	766
U.S. Rate	409	426	451	448	447	450	468

*The 2015 U.S. case rate is preliminary

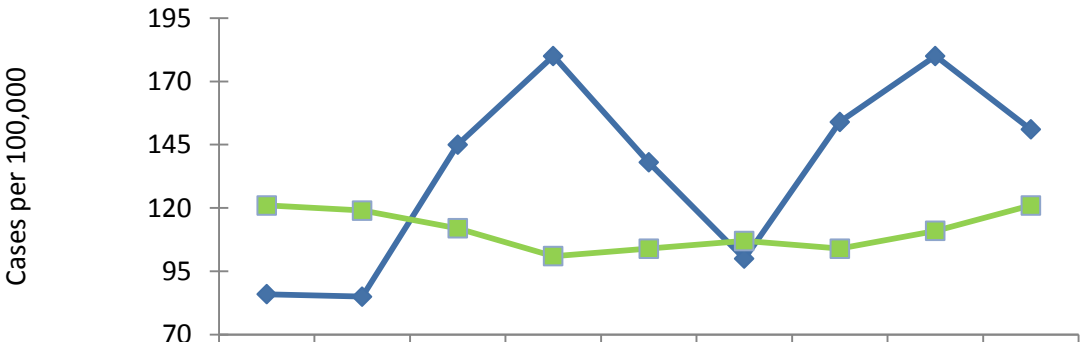
Gonorrhea

Neisseria gonorrhoeae is the bacteria which cases the sexually transmitted infection most commonly known as gonorrhea. Untreated gonorrhea can result in pelvic inflammatory disease (PID), pre-term

labor, ectopic pregnancy, and infertility in women; epididymitis and infertility in men; and conjunctivitis in neonates. Gonorrhea infection also facilitates the transmission and acquisition of HIV.

Alaska sees large fluctuations in gonorrhea infection rates from year-to-year, but since 2008 the state has had some of the highest gonorrhea rates in the United States. In 2015, Alaska had a gonorrhea case rate of 151 cases per 100,000 persons, compared to the national rate of 121 cases per 100,000 persons (Figure 18).

Figure 18. Gonorrhea Infection Rates, by Year — Alaska and the United States, 2007–2015*



	2007	2008	2009	2010	2011	2012	2013	2014	2015
Alaska Rate	86	85	145	180	138	100	154	180	151
U.S. Rate	121	119	112	101	104	107	104	111	121

*The 2015 U.S. case rate is preliminary

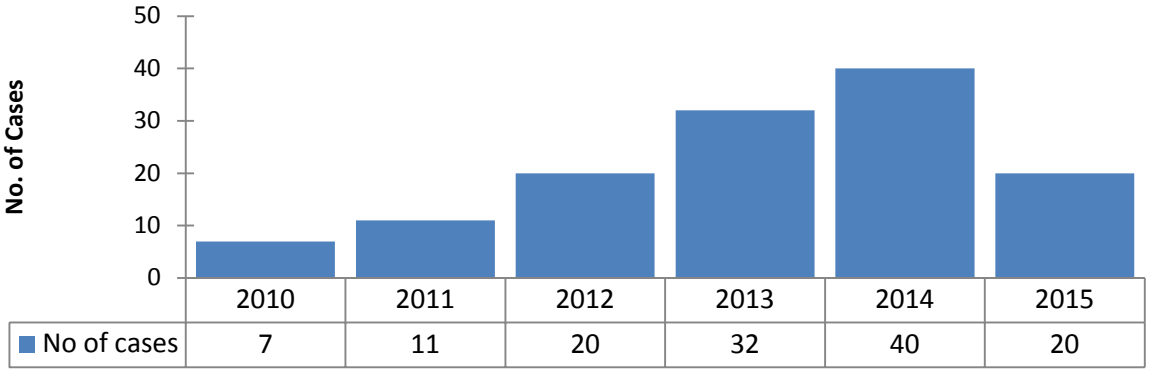
Syphilis

Syphilis is caused by the bacterium *Treponema pallidum* and, if left untreated, can cause irreversible neurological problems, lead to neonatal complications including miscarriage, stillbirth, and result in early infant death. Untreated syphilis infection can facilitate the transmission and acquisition of HIV, and co-infection with HIV and syphilis can increase the chances of developing syphilis with neurological involvement.

Since 2012, the Alaska Section of Epidemiology has been monitoring an ongoing syphilis outbreak which has been primarily associated with men who have sex with men. From 2010 to 2012 reported syphilis cases (at all stages: primary, secondary, early latent, and congenital) in Alaska more than doubled, from 7 to 20. From 2012 to 2014 Alaska's reported syphilis cases doubled again, from 20 to 40 (Figure 19). These increases closely mirror national trends in the number of reported cases of syphilis, particularly in the western part of the country[2]. Although it is too early to note any new trends, there was a 50% decrease in reported syphilis cases during 2014-2015.

[2] CDC. Sexually Transmitted Disease Surveillance 2014. Atlanta: US Department of Health and Human Services; 2015. Available at: http://www.cdc.gov/std/stats14/syphilis.htm.

Figure 19. Primary, Secondary, Early Latent, and Congenital Syphilis — Alaska, 2010–2015

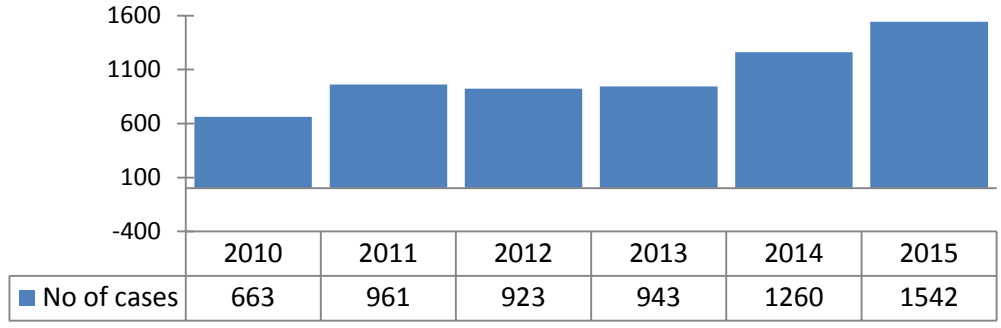


Alaska has not seen the same level of co-infection between syphilis and HIV as has been observed in other parts of the country. In 2014, there were 4 (10%) and in 2015 2 (10%) persons diagnosed with syphilis who were also diagnosed with HIV, either prior to the syphilis infection, or at the same time.

Hepatitis C

Hepatitis C is a contagious liver disease which results from infection with the Hepatitis C virus (HCV). HCV is spread primarily through contact with the blood of an infected person. HCV is the most common chronic bloodborne infection in the United States, and CDC estimates that 2.7-3.9 million persons in the United States have chronic HCV.[3] On average in Alaska, 134 HCV infections per 100,000 persons are reported annually—many of these reports represent new diagnoses in persons with long-standing HCV infection.[4] Alaska has seen an increase in the annual number of reported HCV cases 2010 through 2015 (Figure 20), similar to a national increase in the number of acute bases of hepatitis C during the same time period.[5]

Figure 20. Reported Cases of Hepatitis C Virus — Alaska, 2010–2015



[3] CDC. Hepatitis C FAQs for Health Professionals. Available at: http://www.cdc.gov/hepatitis/hcv/hcvfaq.htm#section1.
[4] Alaska SOE Bulletin. "Updated Hepatitis C Testing and Treatment Recommendations". No. 11, May 27, 2015. Available at: http://epibulletins.dhss.alaska.gov/Document/Display?DocumentId=37
[5] CDC. Surveillance for Viral Hepatitis—United States, 2014. Available at: http://www.cdc.gov/hepatitis/statistics/2014surveillance/commentary.htm.

Additional Information

Persons interested in learning more about sexually transmitted infections and hepatitis C virus in Alaska, including disease surveillance data by region and demographic breakdown, may visit the Alaska SOE *Epidemiology Bulletin Index* at http://epibulletins.dhss.alaska.gov/ . *Bulletins* are listed by disease category or by date of publication.