Inter Tribal Council of Arizona, Inc.

Human Immunodeficiency Virus, Sexually Transmitted Infections, and Hepatitis C Virus Surveillance among American Indians/Alaska Natives in Arizona, Nevada, and Utah, 2000 - 2020

Tribal Epidemiology Center

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TO: Tribal Leaders and Tribal Health Directors

FROM: Inter Tribal Council of Arizona, Inc.
Maria Dadgar, MBA
Executive Director

RE: *Human Immunodeficiency Virus, Sexually Transmitted Infections, and Hepatitis C Virus Surveillance among American Indians/Alaska Natives in Arizona, Nevada, and Utah 2000 - 2020*

On behalf of the Inter Tribal Council of Arizona, Inc. (ITCA) Tribal Epidemiology Center (TEC), ITCA TEC is pleased to present the report: *Human Immunodeficiency Virus (HIV), Sexually Transmitted Infections (STI), and Hepatitis C Virus (HCV) Surveillance among American Indians/Alaska Natives in Arizona, Nevada, and Utah, 2000 - 2020*.

This surveillance report was prepared in response to HIV, STI, and HCV concerns among Tribes within the Phoenix and Tucson Indian Health Service Areas. ITCA TEC utilized data from the Arizona Department of Health Services, Nevada Division of Public and Behavioral Health, Utah Department of Health, Indian Health Services, and the Centers for Disease Control and Prevention to construct the report.

This surveillance report highlights case counts, incidence rates, and mortality rates of HIV, STIs, and HCV among the American Indians/Alaska Natives populations within Arizona, Nevada, and Utah. National data is provided for comparison.

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PURPOSE

The purpose of the *Human Immunodeficiency Virus (HIV), Sexually Transmitted Infections (STI), and Hepatitis C Virus (HCV) Surveillance among American Indians/Alaska Natives in Arizona, Nevada, and Utah* is to provide 20 years of statistical trends in the Phoenix and Tucson Indian Health Service (IHS) Areas for American Indians/Alaska Natives (AI/AN).

INTRODUCTION

This report demonstrates 20 year trends in case counts, incidence rates, and mortality rates of HIV, STI, and HCV where data is available. The data are from Arizona, Nevada, and Utah state notifiable disease surveillance systems, Indian Health Services EpiDataMart, and Centers for Disease Control and Prevention (CDC) publically available data.

The surveillance data analyzed in this report are extracted from the CDC National Notifiable Disease Surveillance System (NNDSS) compliant surveillance systems of Arizona (AZ), Nevada (NV), and Utah (UT)[1]. A notifiable disease is any disease that is required by law to be reported to government authorities. It is mandatory that reportable disease cases be reported to state and territorial jurisdictions when identified by a non-tribal health provider, hospital, or laboratory. This type of required reporting uses personal identifiers, and enables the states to identify cases where immediate disease control and prevention is needed. Each state has its own laws and regulations defining what diseases are reportable. The list of reportable diseases varies among states and over time. Some Tribes have established public health codes that allow for such reporting of individually identifiable data to state health departments from Tribal health providers and hospitals.

It is voluntary that notifiable disease cases be reported to the CDC by state and territorial jurisdictions without direct personal identifiers for nationwide aggregation and monitoring of disease data. Regular, frequent, and timely information on individual cases is considered necessary to monitor disease trends, identify high risk populations or geographic areas, assess and formulate prevention and control strategies, and to design and implement data-driven public health policies. The list of nationally notifiable diseases is reviewed and modified annually by The Council of State and Territorial Epidemiologists (CSTE) and CDC. Every nationally notifiable disease is not necessarily reportable in each state. CSTE has recommended that state health departments report cases of selected diseases to NNDSS. Every year, case definitions are updated using CSTE's Position Statements.

The identification and classification of HIV, STI, and HCV cases are based on case definitions. A case definition is a set of uniform criteria used to define a disease for public health surveillance. Case definitions enable public health professionals and researchers to classify and count cases consistently across reporting jurisdictions. These definitions should not be used by healthcare providers to determine how to meet an individual patient's health needs.

This publication includes case counts, incidence and mortality rates for HIV, chlamydia, gonorrhea, primary and secondary syphilis,

congenital syphilis, and HCV among AI/ANs in AZ, NV, and UT. Cases counts are the number of people diagnosed with the disease. Incidence rates tell us about the new cases of disease developing in a population during a period of time. Mortality rates tell us about the acceleration of deaths from that specific condition within a specific population during a period of time.

HIV, STI, and HCV surveillance data for AI/ANs are used by Tribal leaders, community health representatives (CHRs), healthcare providers (e.g., Indian Health Services, and other clinicians and nurses), and public health professionals to focus prevention efforts, plan programs, allocate resources, and develop public health policies.

This report is organized into nine main sections:

- Purpose
- Introduction
- Executive Summary
- Analysis Highlights
- Technical Notes
- References
- Appendix
- Statistical Notes Table
- Glossary

The ITCA TEC team is available for any follow up from this report, and can be contacted at: TECInfo@itcaonline.com.

EXECUTIVE SUMMARY

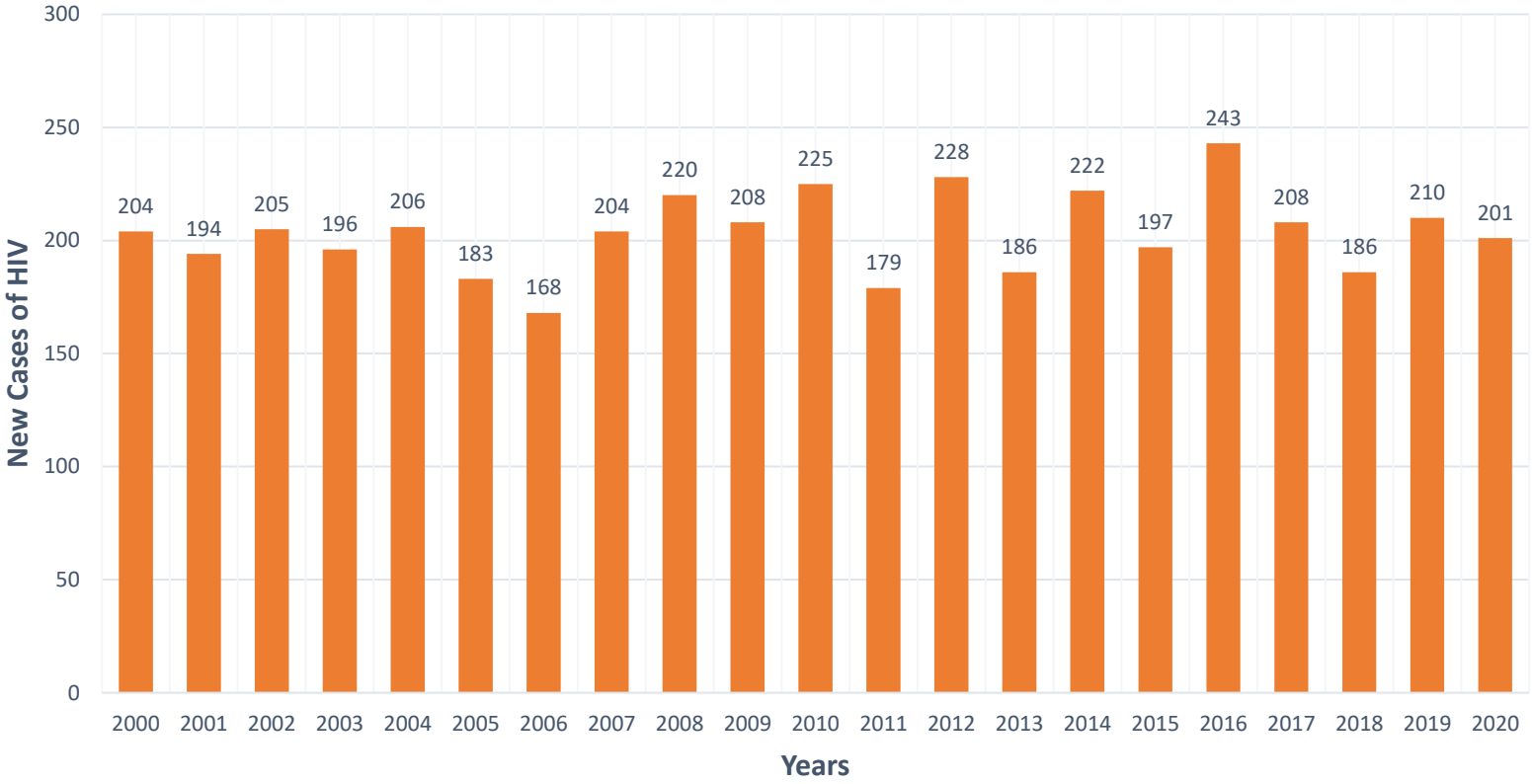
This surveillance report provides the 20 years of available data for Human Immunodeficiency Virus (HIV), sexually transmitted infections (STI), and hepatitis C virus (HCV), including: case counts, and incidence and mortality rates among American Indians/Alaska Natives (AI/ANs) in Arizona, Nevada, and Utah. National data is provided for comparison as well. It is important to note that collection of race and ethnicity in disease surveillance systems for these reportable conditions may be incomplete, not include multiple race/ethnicity, and/or may not include Tribal Health Department, Indian Health Service, or Tribal clinic infectious disease data leading to underreporting of accurate statistics presented in this report. The estimated statistics to highlight from the report, include:

- From 2000 to 2020, Arizona had a reported total of 876 new HIV cases among AI/ANs. In 2020, there were 788 AI/ANs living with HIV. AI/AN males had higher HIV incidence rates compared to AI/AN females. Arizona AI/ANs had 173 HIV-related deaths between 2000 and -2020 with a significant decline in 2012.[44-55]
- Nevada had 65 new HIV cases among AI/ANs from 2000 to 2020. AI/AN males had a higher incidence rate of HIV compared to AI/AN females during this time period. In 2020, there were 75 AI/ANs living with HIV. There were 16 HIV related deaths in Nevada from 2000 to 2020.[67-88]
- Utah has a reported total of 52 new HIV cases among AI/ANs from 2000 to 2020. In 2020 there was a total of 68 AI/ANs living with HIV. Utah reported 8 HIV deaths from 2000 to 2020. [110-112]
- In 2017 in Arizona, congenital syphilis cases began to rapidly increase among AI/AN. Arizona reported 25 congenital syphilis cases in 2020 among AI/ANs.[56-65]
- Gonorrhea cases increased across all three states and nationwide starting in 2012 to 2020.[22-32, 56-65, 89-108, 113-115]
- The number of chlamydia cases in all three states have remained steady from 2000 to 2020.[56-65, 89-108, 113-115]
- HCV statistics are underreported due to lack of funding to conduct case investigations on chronic HCV cases. [66, 109, 116]

National Statistics for Human Immunodeficiency Virus, Sexually Transmitted Infections, and Hepatitis C Virus among American Indians/Alaska Natives

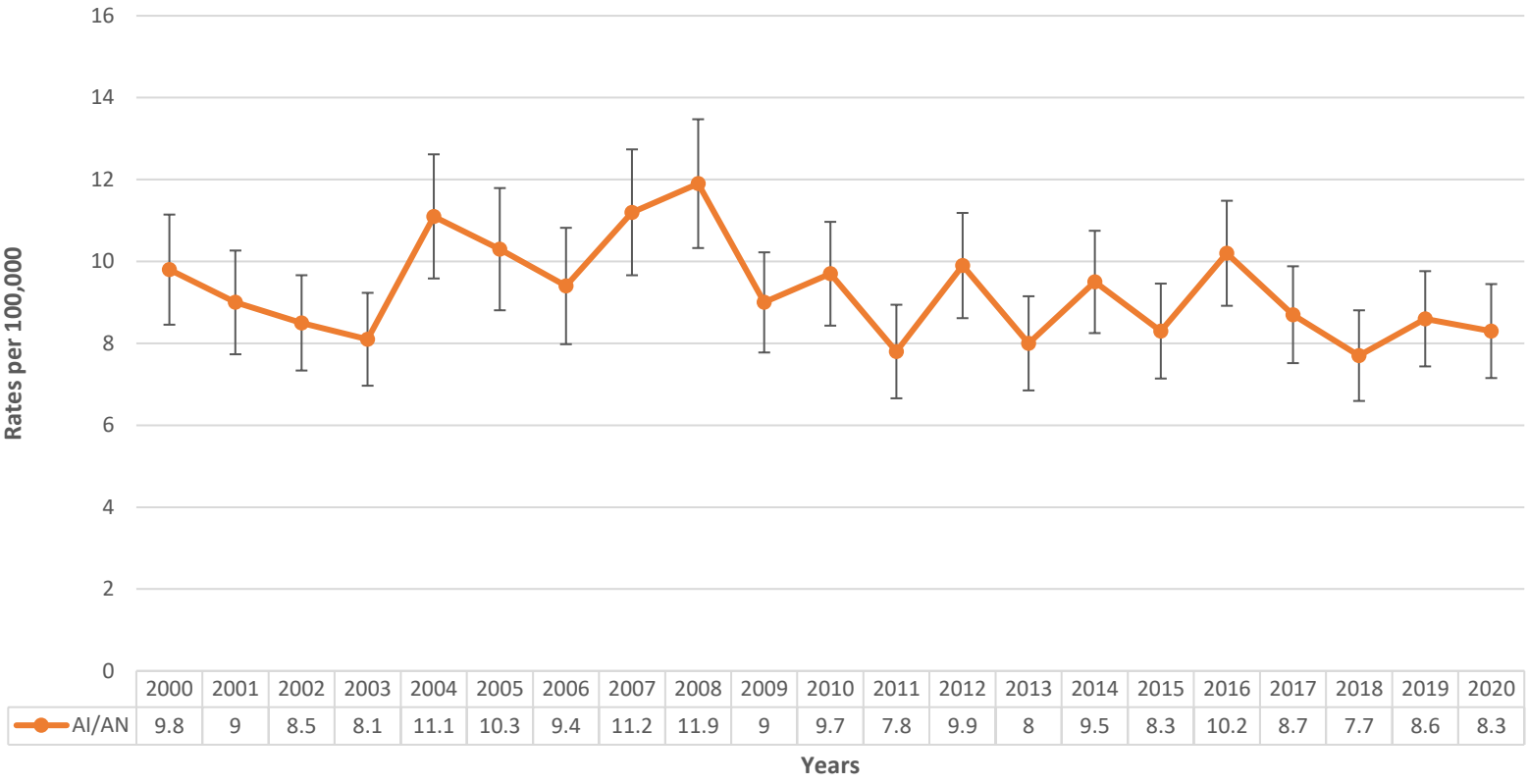
Human Immunodeficiency Virus (HIV)

Figure 1. New Human Immunodeficiency Virus (HIV) Cases among American Indians/Alaska Natives (AI/AN) in the United States (US) from, 2000 – 2020 [1-21]



Over the 20 year period in the US, there was a reported total of 4,072 AI/AN people that were newly diagnosed with HIV.

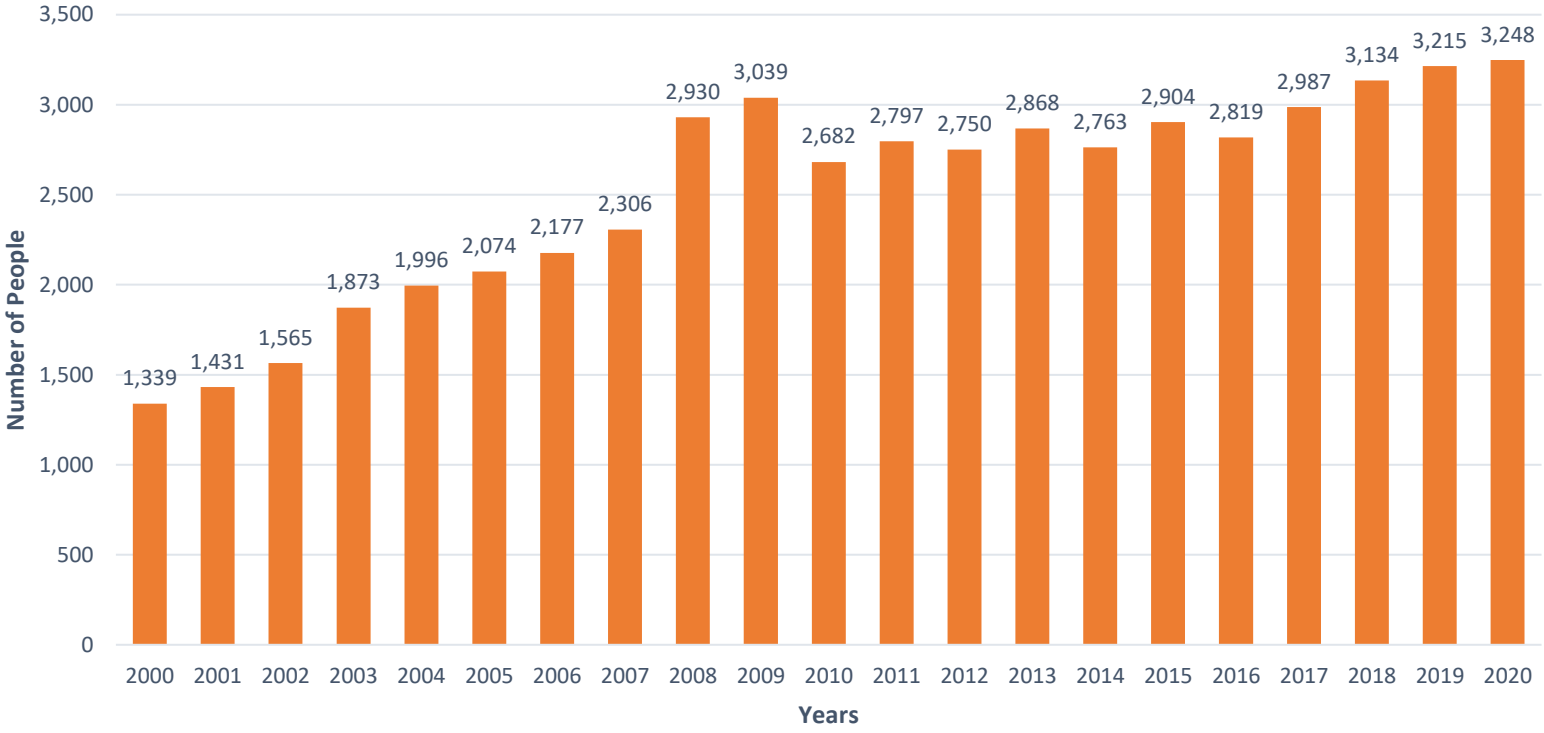
Figure 2. Human Immunodeficiency Virus (HIV) Incidence Rate per 100,000 among American Indians/Alaska Natives (AI/AN) in the United States (US) from 2000 – 2020[1-21]



	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
AI/AN	9.8	9	8.5	8.1	11.1	10.3	9.4	11.2	11.9	9	9.7	7.8	9.9	8	9.5	8.3	10.2	8.7	7.7	8.6	8.3

From 2000 to 2020, HIV incidence rate among AI/ANs in the United States remained stable. The highest rate was in 2008 with 11.9 per 100,000 and the lowest was in 2018 with a rate of 7.7 per 100,000.

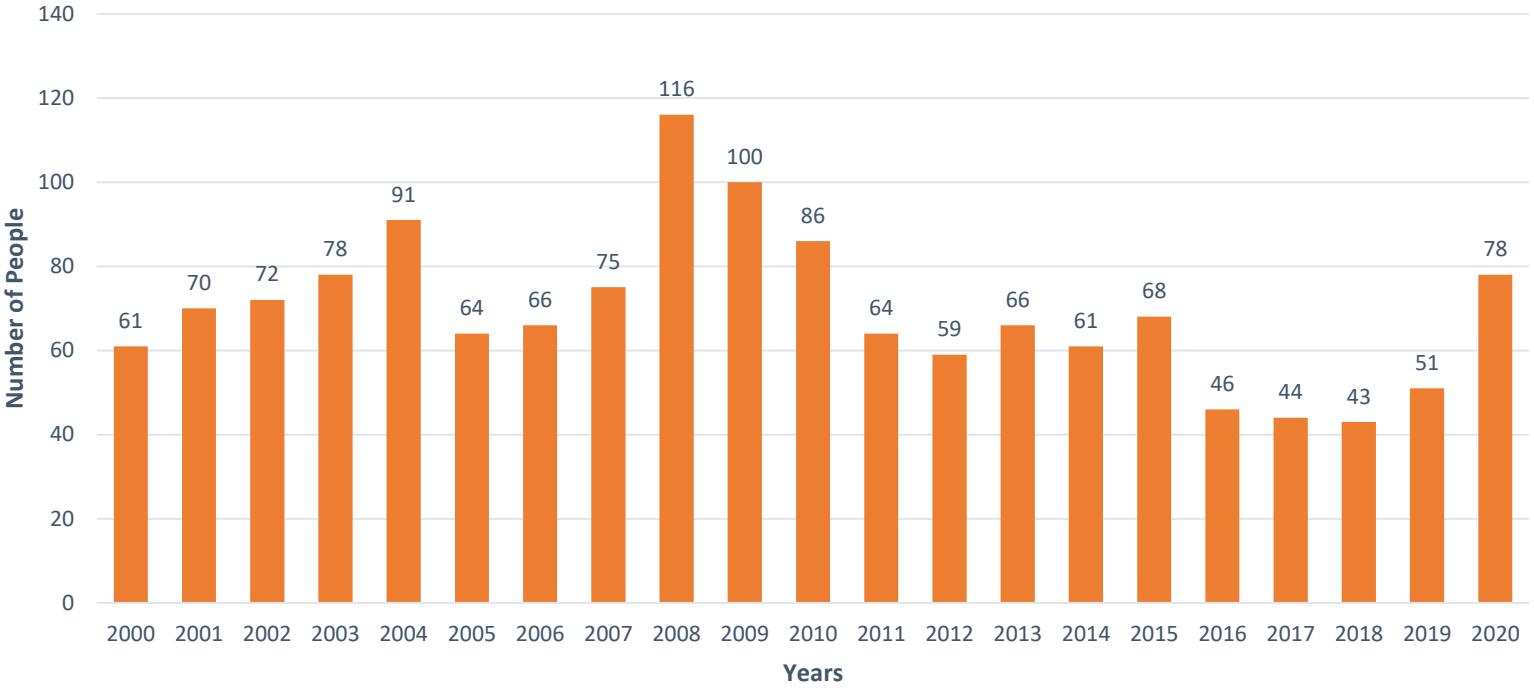
Figure 3. Number of American Indians/Alaska Natives (AI/AN) Living with Human Immunodeficiency Virus (HIV) in the United States (US) from 2000 – 2020[1-21]



From 2000 to 2020, the number of AI/ANs living with HIV in the United States steadily increased. In 2000, the number was 1,339 and by 2020, the number was 3,248.

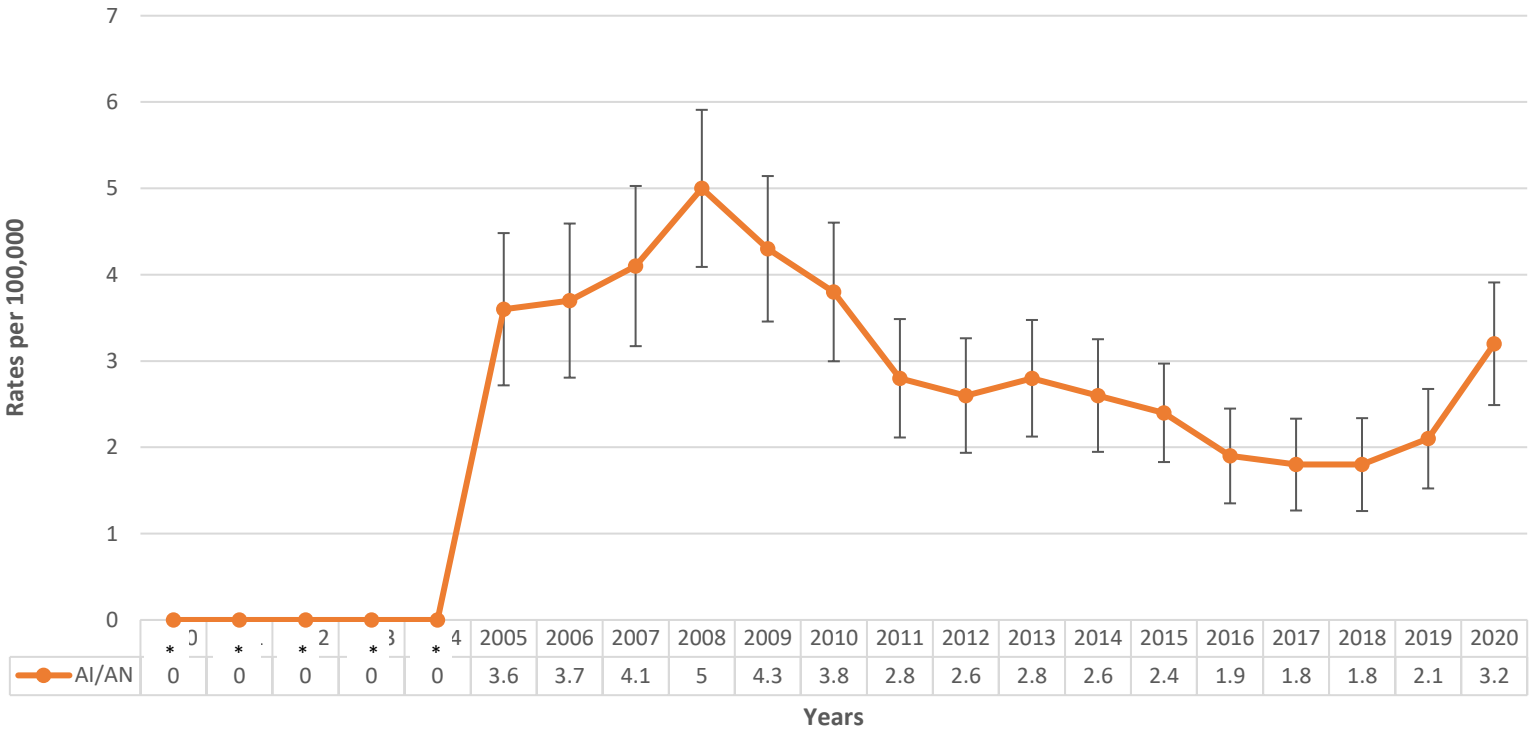
AI/AN HIV-Related Deaths and Rates in the United States

Figure 4. Human Immunodeficiency Virus (HIV) - Related Deaths among American Indians/Alaska Natives (AI/AN) in the United States (US) from 2000 – 2020[1-21]



From 2000 to 2008, the number of HIV – related deaths among AI/AN in the United States trended upward. From 2009 to 2020, the number of deaths started to trend downward. Over the 21 years, there was a reported total of 1,381 deaths among AI/AN.

Figure 5. Human Immunodeficiency Virus (HIV) Mortality Rates per 100,000 among American Indians/Alaska Natives (AI/AN) in the United States (US) from 2000 to 2020[1-]



	*	*	*	*	*	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
AI/AN	0	0	0	0	0	3.6	3.7	4.1	5	4.3	3.8	2.8	2.6	2.8	2.6	2.4	1.9	1.8	1.8	2.1	3.2

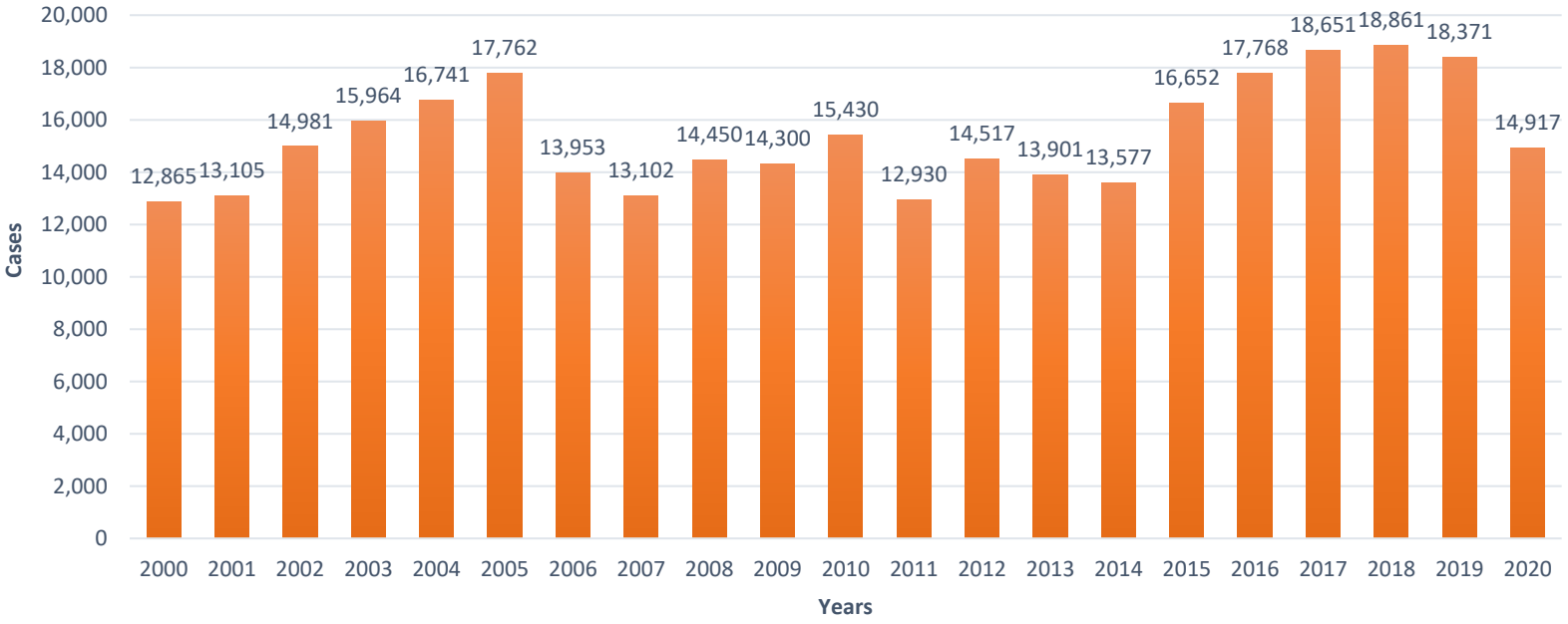
* = Data unavailable

From 2000 to 2008, the HIV mortality rate among AI/AN in United States trended upward. From 2009 to 2020, the HIV mortality rate started to trend downward. Data on mortality was unavailable until 2005.

Sexually Transmitted Infections (STI)

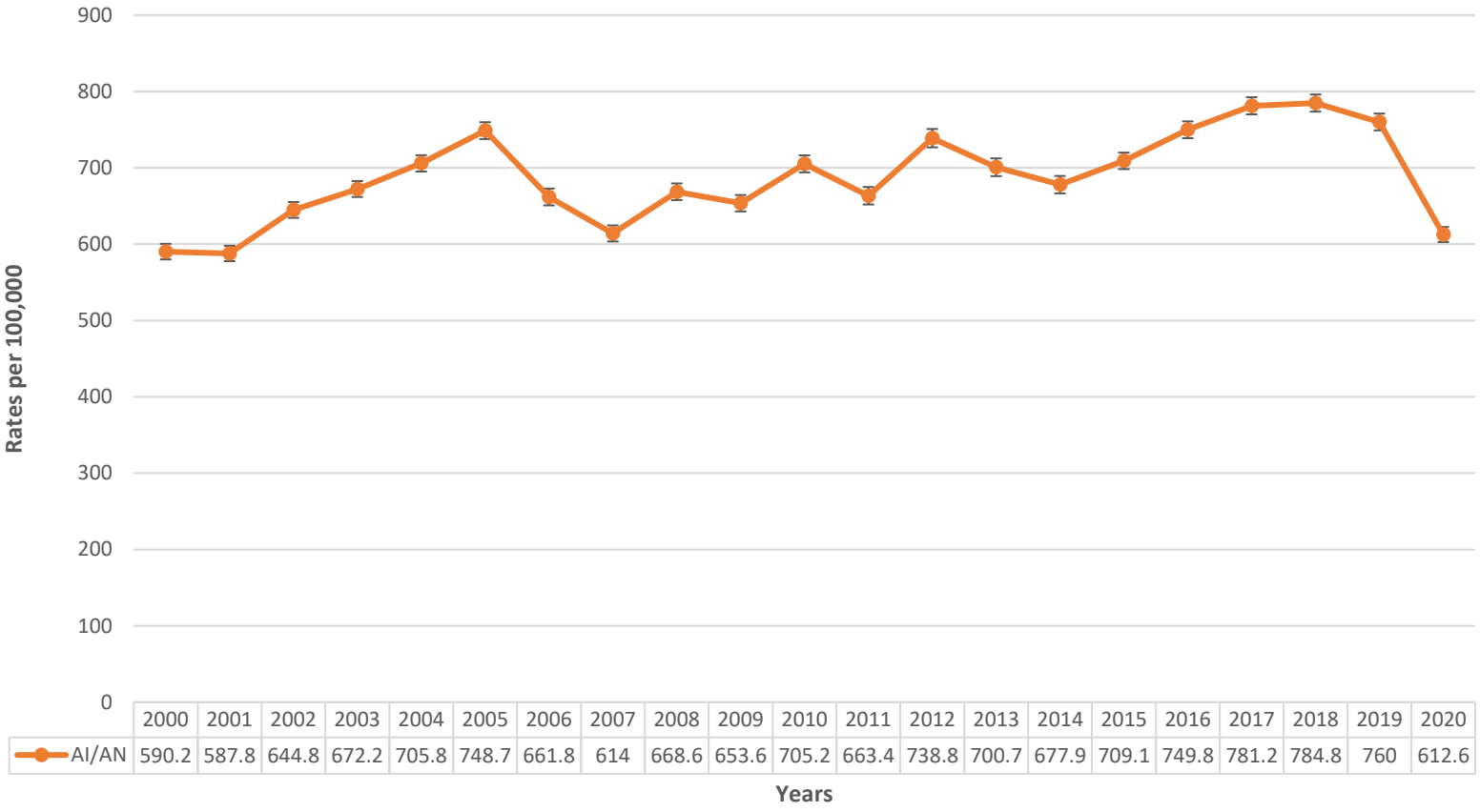
AI/AN Chlamydia Cases and Rates in the United States

Figure 6. Chlamydia cases among American Indians/Alaska Natives (AI/AN) in the United States (US) from 2000 – 2020[22-32]



From 2000 to 2020, Chlamydia cases among AI/AN in the United States remain steady. Over the 21 years, AI/AN had a reported total of 322,798 Chlamydia cases.

Figure 7. Chlamydia Incidence Rates per 100,000 among American Indians/Alaska Natives (AI/AN) in the United States (US) from 2000 – 2020[22-32]

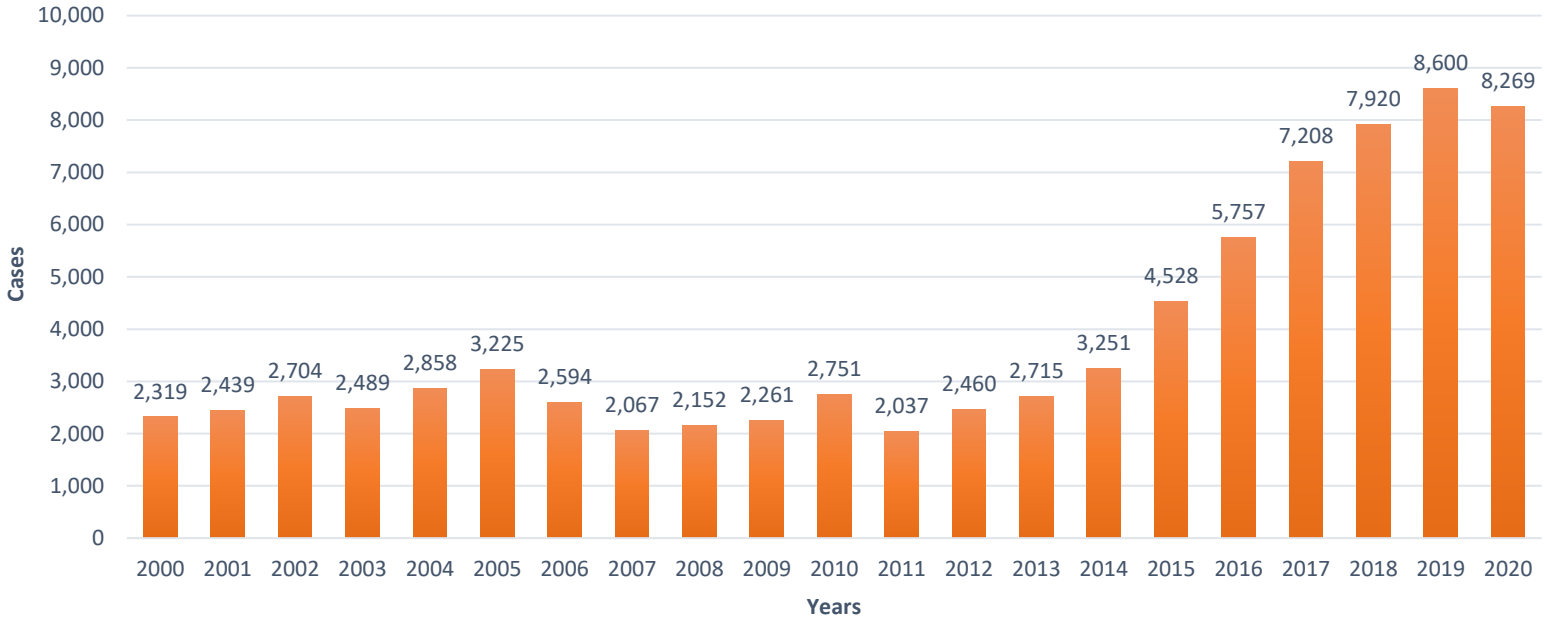


	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
AI/AN	590.2	587.8	644.8	672.2	705.8	748.7	661.8	614	668.6	653.6	705.2	663.4	738.8	700.7	677.9	709.1	749.8	781.2	784.8	760	612.6

From 2000 to 2020, Chlamydia cases among AI/AN in the United States remained stable. The highest rate was in 2018 at 784.8 per 100,000 and the lowest at 587.8 per 100,000 in 2001.

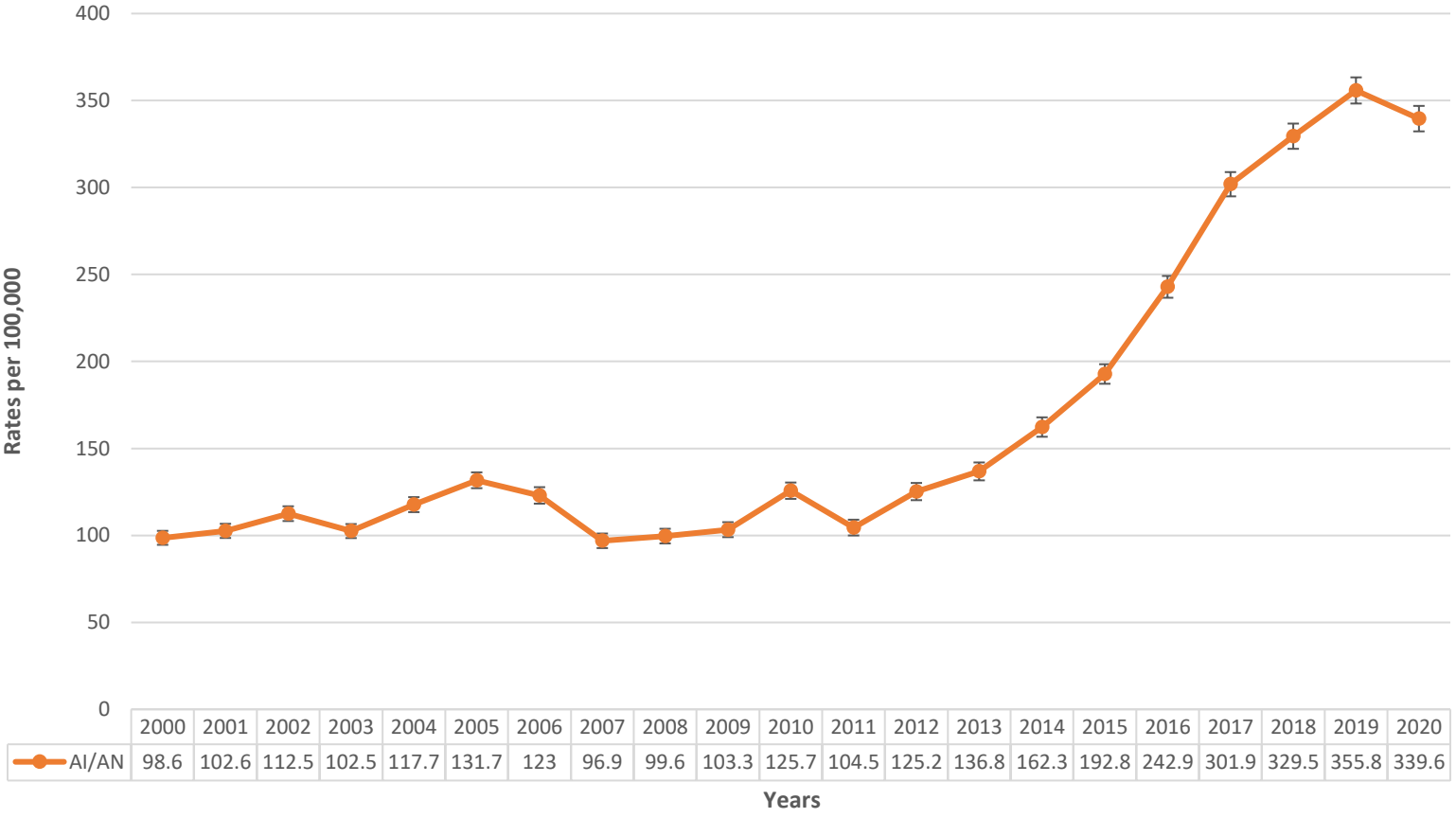
AI/AN Gonorrhea Cases and Rates in the United States

Figure 8. Gonorrhea Cases among American Indians/Alaska Natives (AI/AN) in the United States (US) from 2000 – 2020[22-32]



From 2000 to 2011, Gonorrhea cases among AI/ANs in the United States remained steady. From 2012 to 2020, Gonorrhea cases started to trend upward rapidly. Over the 21 years, there was a reported total of 80,604 Gonorrhea cases among AI/ANs.

Figure 9. Gonorrhea Incidence Rates per 100,000 among American Indians/Alaska Natives (AI/AN) in the United States (US) from 2000 – 2020[22-32]

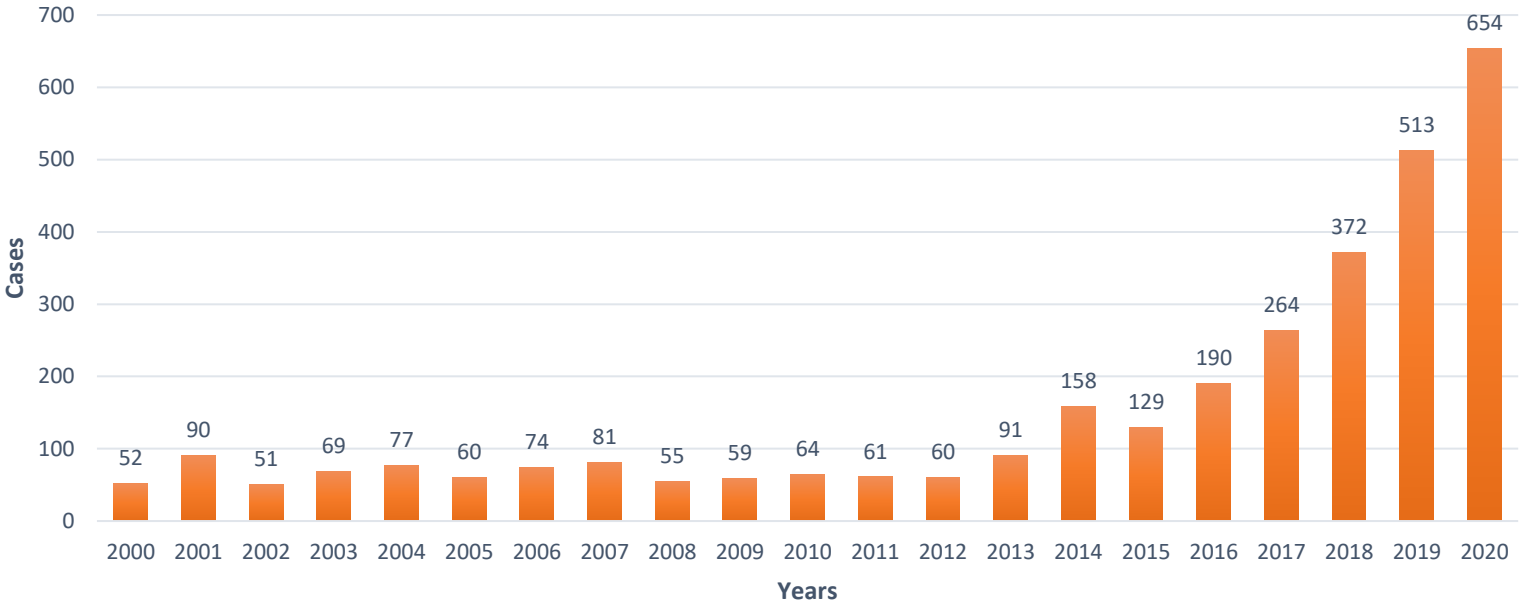


	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
AI/AN	98.6	102.6	112.5	102.5	117.7	131.7	123	96.9	99.6	103.3	125.7	104.5	125.2	136.8	162.3	192.8	242.9	301.9	329.5	355.8	339.6

From 2000 to 2012, the Gonorrhea incidence rate among AI/ANs in the United States remained steady. From 2012 to 2020, the incidence rate among AI/ANs started to trend upward rapidly.

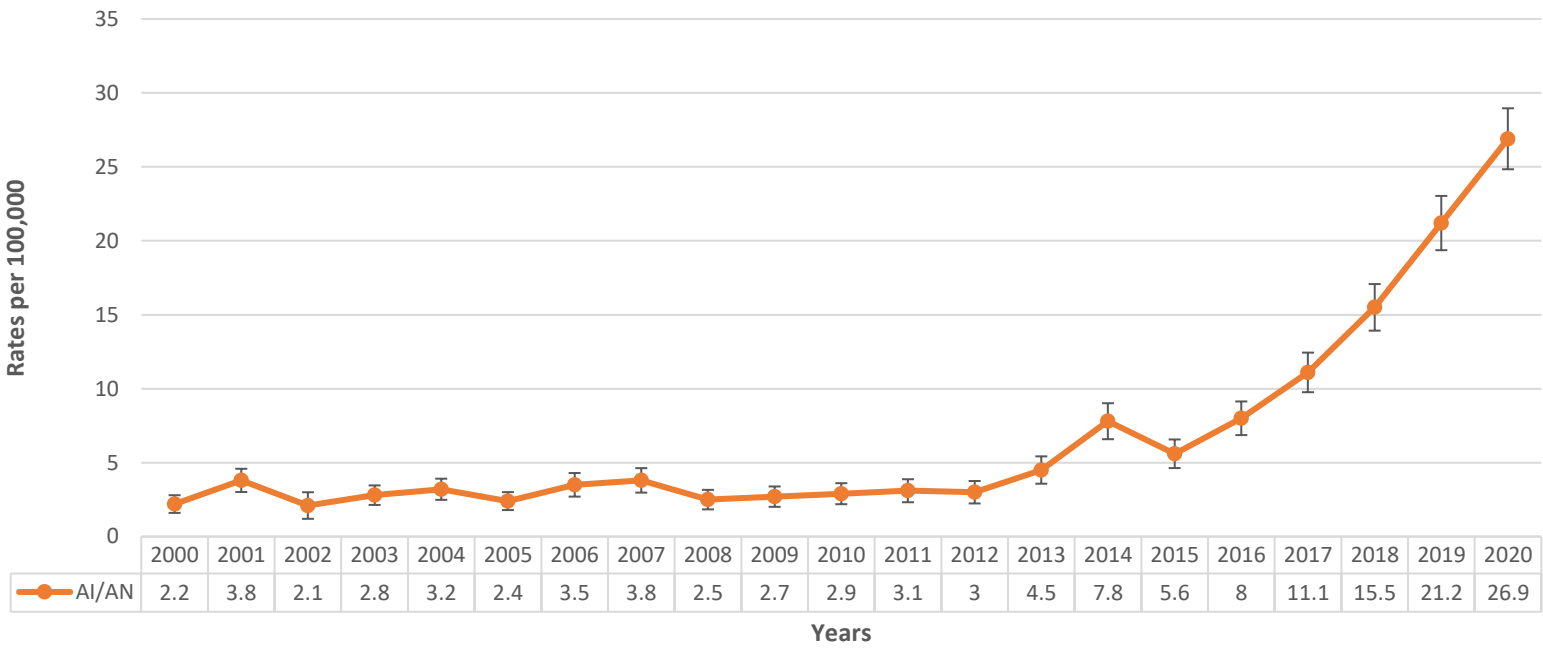
AI/AN Primary and Secondary Syphilis Cases and Rates in United States

Figure 10. Primary and Secondary Syphilis Cases among American Indians/Alaska Natives (AI/AN) in the United States (US) from 2000 – 2020[22-32]



From 2000 to 2012, Primary and Secondary Syphilis cases among AI/ANs in the United States remained steady. From 2013 to 2020 the Primary and Secondary Syphilis cases trended upward rapidly. Over the 21 years, there was a reported total of 3,224 Primary and Secondary Syphilis cases among AI/ANs.

Figure 11. Primary and Secondary Syphilis Incidence Rate per 100,000 among American Indians/Alaska Natives (AI/AN) in the United States (US) from 2000 – 2020[22-32]

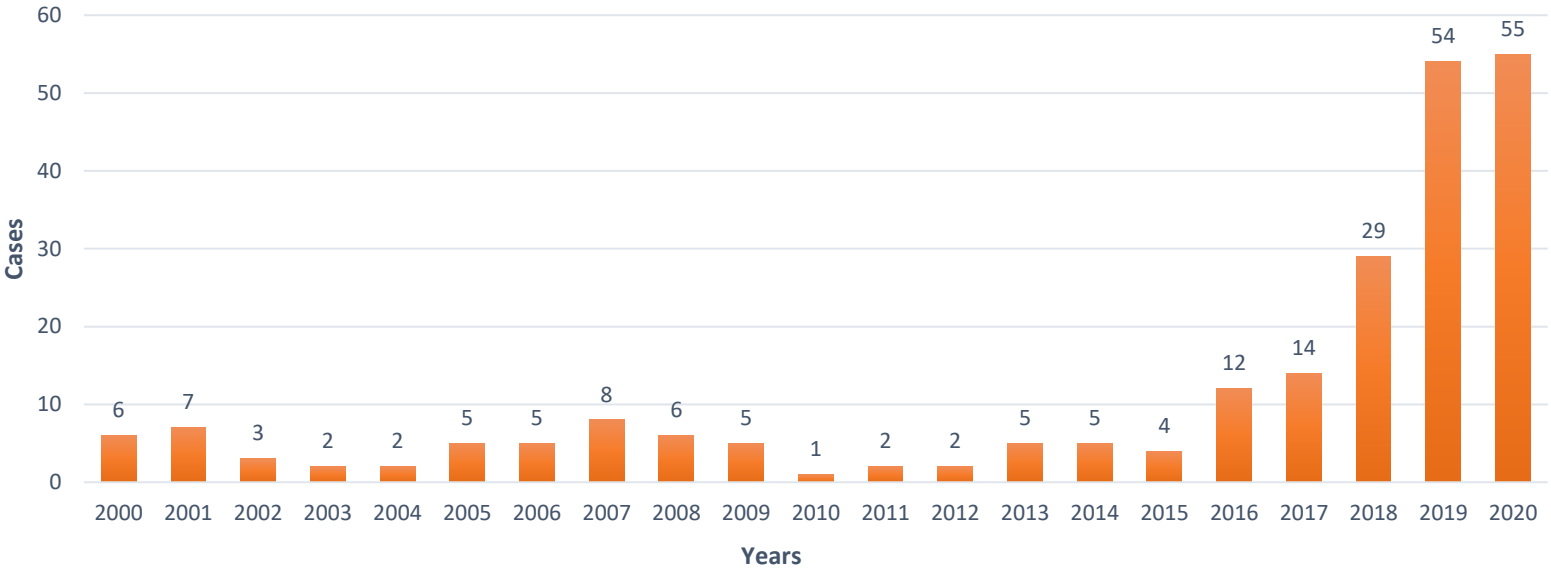


	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
AI/AN	2.2	3.8	2.1	2.8	3.2	2.4	3.5	3.8	2.5	2.7	2.9	3.1	3	4.5	7.8	5.6	8	11.1	15.5	21.2	26.9

From 2000 to 2012, the Primary and Secondary syphilis incidence rate among AI/AN in the United States remained steady. From 2012 to 2020, the incidence rate started to trend upward rapidly for AI/ANs.

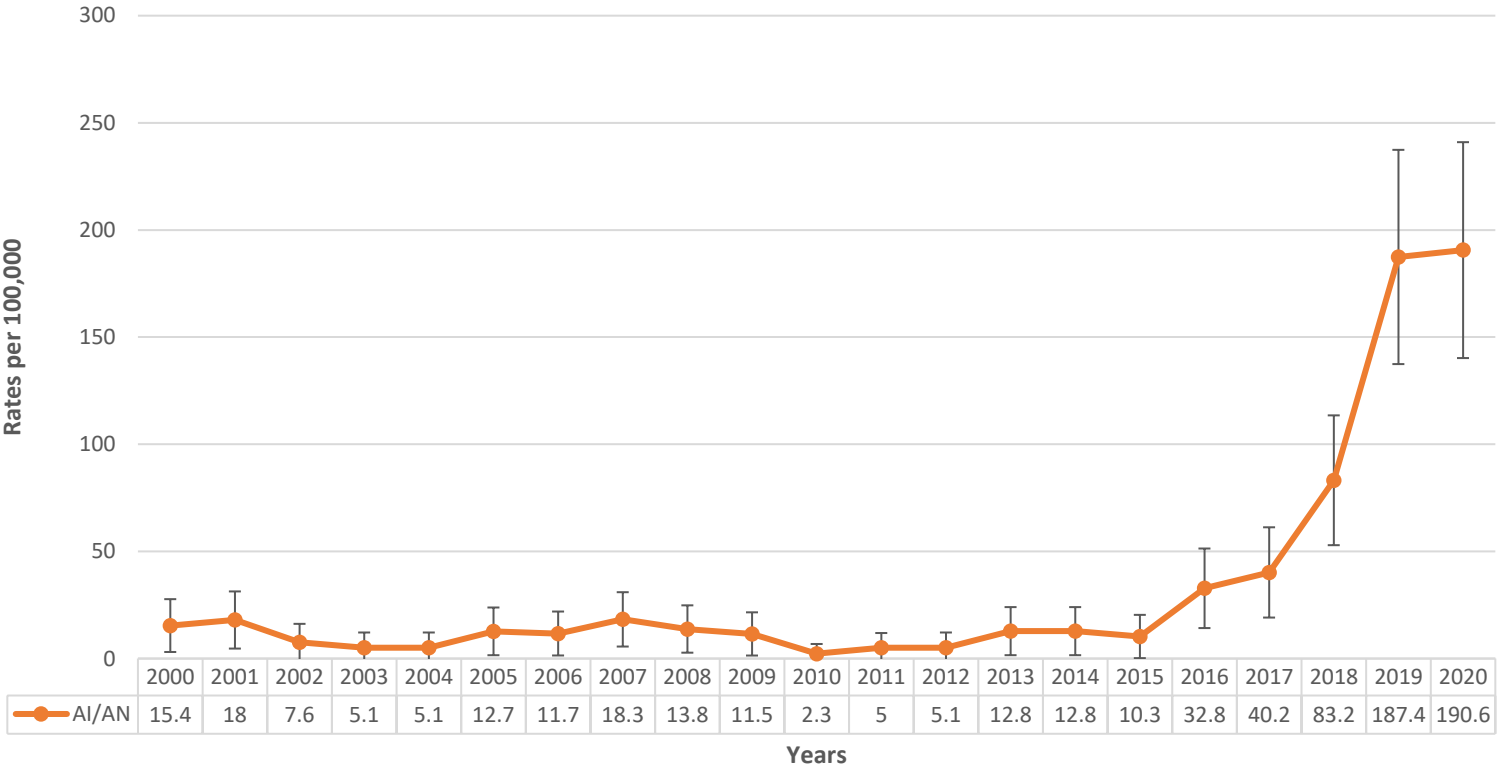
AI/AN Congenital Syphilis Cases and Rates in the United States

Figure 12. Congenital Syphilis Cases among American Indians/Alaska Natives (AI/AN) in the United States (US) from 2000 – 2020[22-32]



From 2000 to 2015, Congenital Syphilis cases among AI/ANs in the United States remained steady. From 2016 to 2020, Congenital Syphilis cases started to trend upward rapidly for AI/ANs. Over the 21 years, there was a reported total of 232 Congenital Syphilis cases among AI/ANs. More than half of these cases were reported from 2018 to 2020.

Figure 13. Congenital Syphilis Incidence Rate per 100,000 among American Indians/Alaska Natives (AI/AN) in the United States (US) from 2000 – 2020[22-32]



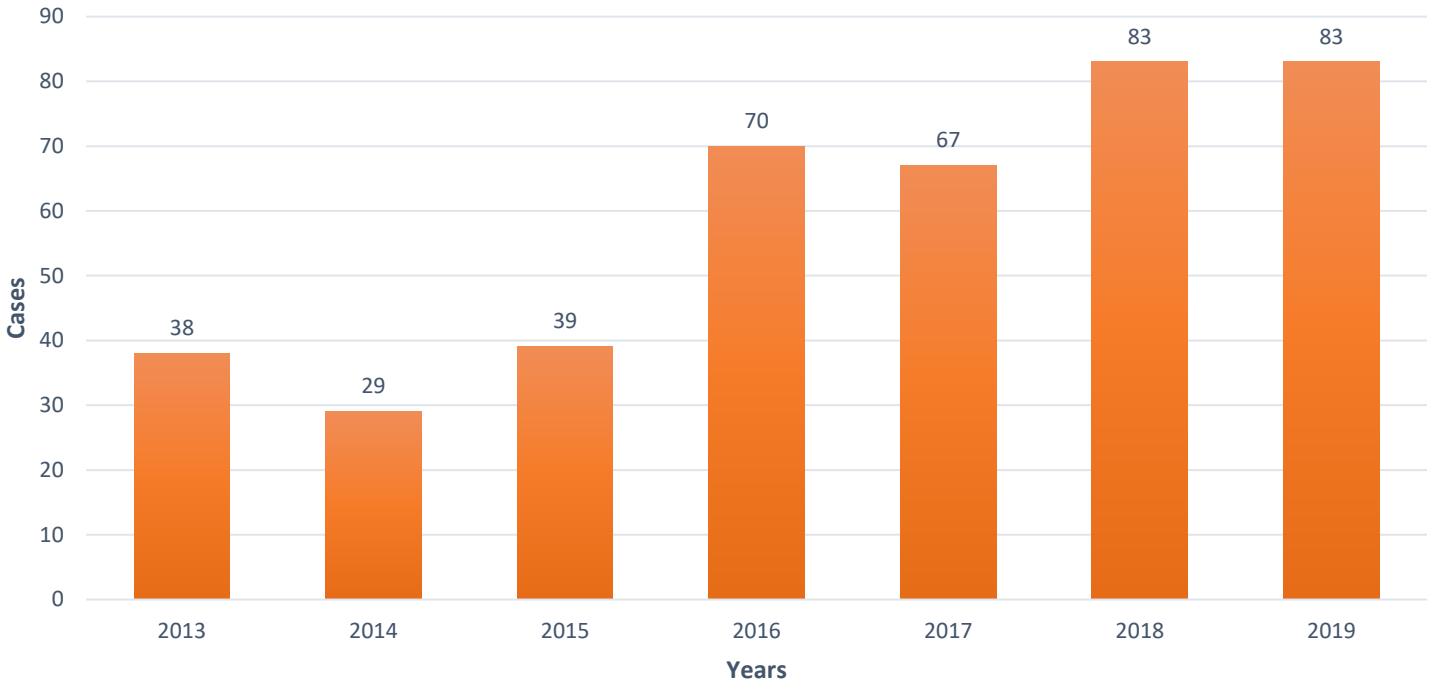
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
AI/AN	15.4	18	7.6	5.1	5.1	12.7	11.7	18.3	13.8	11.5	2.3	5	5.1	12.8	12.8	10.3	32.8	40.2	83.2	187.4	190.6

From 2000 to 2015, the Congenital Syphilis incidence rates among AI/ANs in the United States were steady. From 2016 to 2020, the incidence rate started to trend upward rapidly for AI/ANs.

Hepatitis C Virus (HCV)

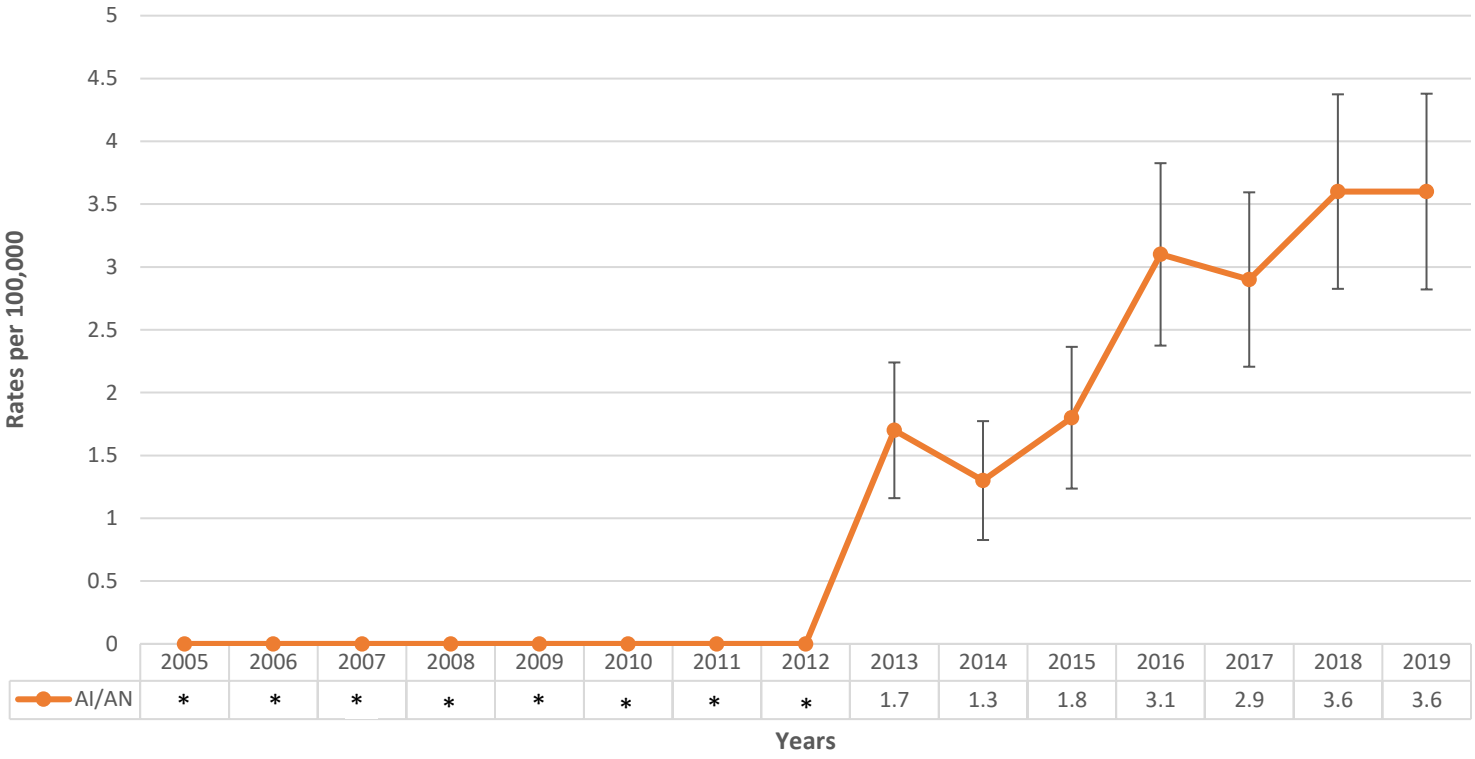
AI/AN Acute Hepatitis C Virus Cases and Rates in the United States

Figure 14. Acute Hepatitis C Virus (HCV) cases among American Indians/Alaska Natives (AI/AN) in the United States (US) from 2013 to 2019[33-43]



From 2013 to 2015, Acute Hepatitis C virus cases among AI/ANs in the United States remained steady. From 2016 to 2019, the cases started to trend upward slightly. Over the 7 years, there was a reported total of 409 cases among AI/ANs.

Figure 15. Hepatitis C Virus (HCV) Cases Incidence Rate per 100,000 among American Indians/Alaska Natives (AI/AN) in the United States (US) from 2005 – 2019[33-43]



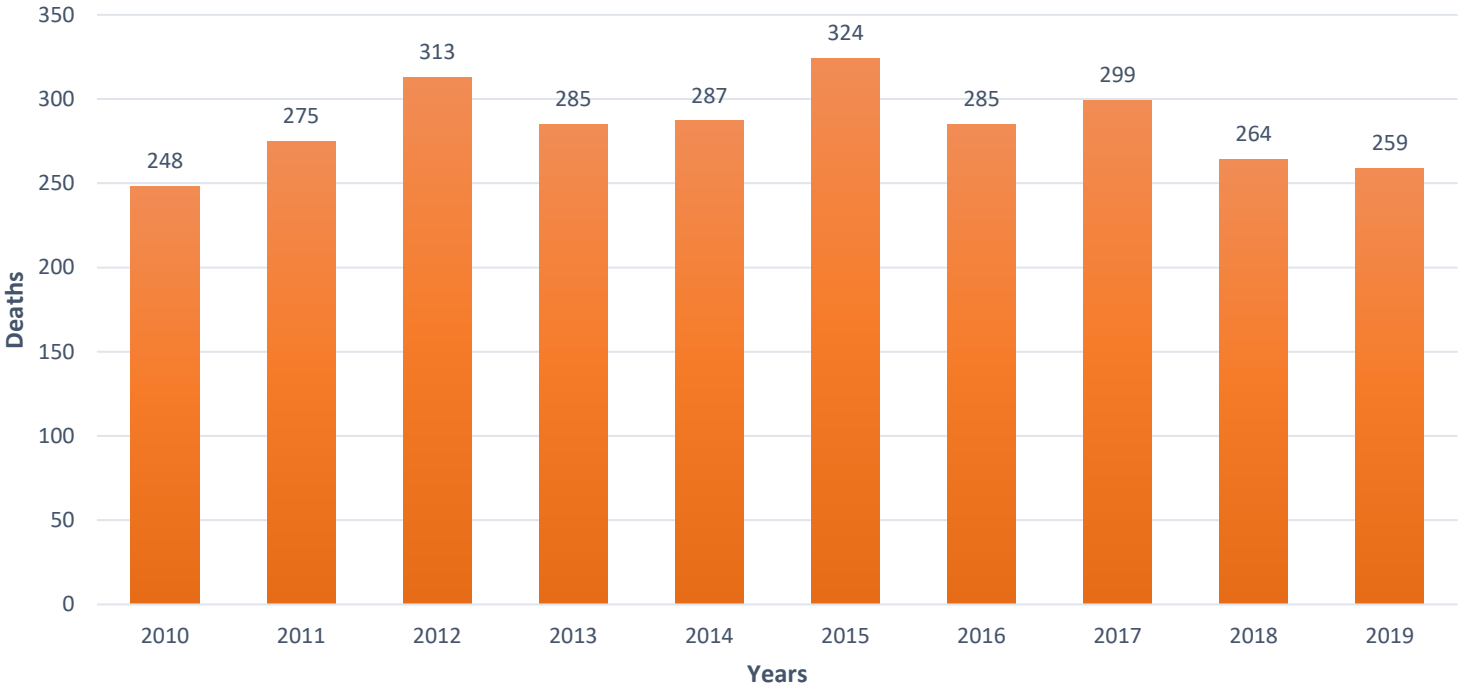
	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
AI/AN	*	*	*	*	*	*	*	*	1.7	1.3	1.8	3.1	2.9	3.6	3.6

* = Data unavailable

From 2005 to 2019, Hepatitis C Virus incidence rates among AI/ANs in the United States started to trend upward gradually during this time period.

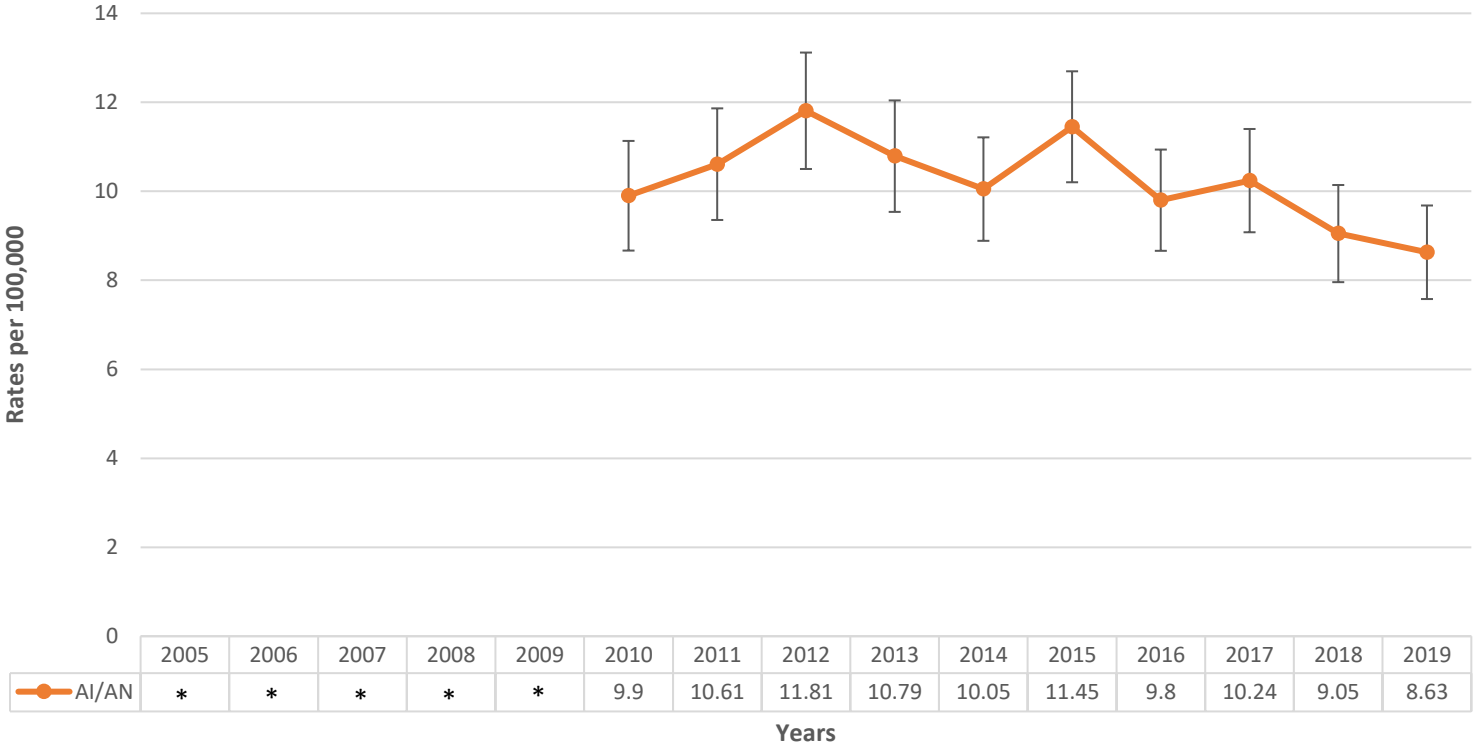
AI/AN Hepatitis C Virus Related Deaths and Rates in the United States

Figure 16. Hepatitis C Virus (HCV) Related Deaths among American Indians/Alaska Natives (AI/AN) in the United States (US) from 2010 – 2019[33-43]



From 2010 to 2019, Hepatitis C virus related deaths among AI/AN in the United States remained steady. Over the 10 years, there was a reported total of 2,839 Hepatitis C virus related deaths among AI/AN.

Figure 17. Hepatitis C Virus (HCV) Mortality Rates per 100,000 among American Indians/Alaska Natives (AI/AN) in the United States (US) from 2010 – 2019[33-43]



	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
AI/AN	*	*	*	*	*	9.9	10.61	11.81	10.79	10.05	11.45	9.8	10.24	9.05	8.63

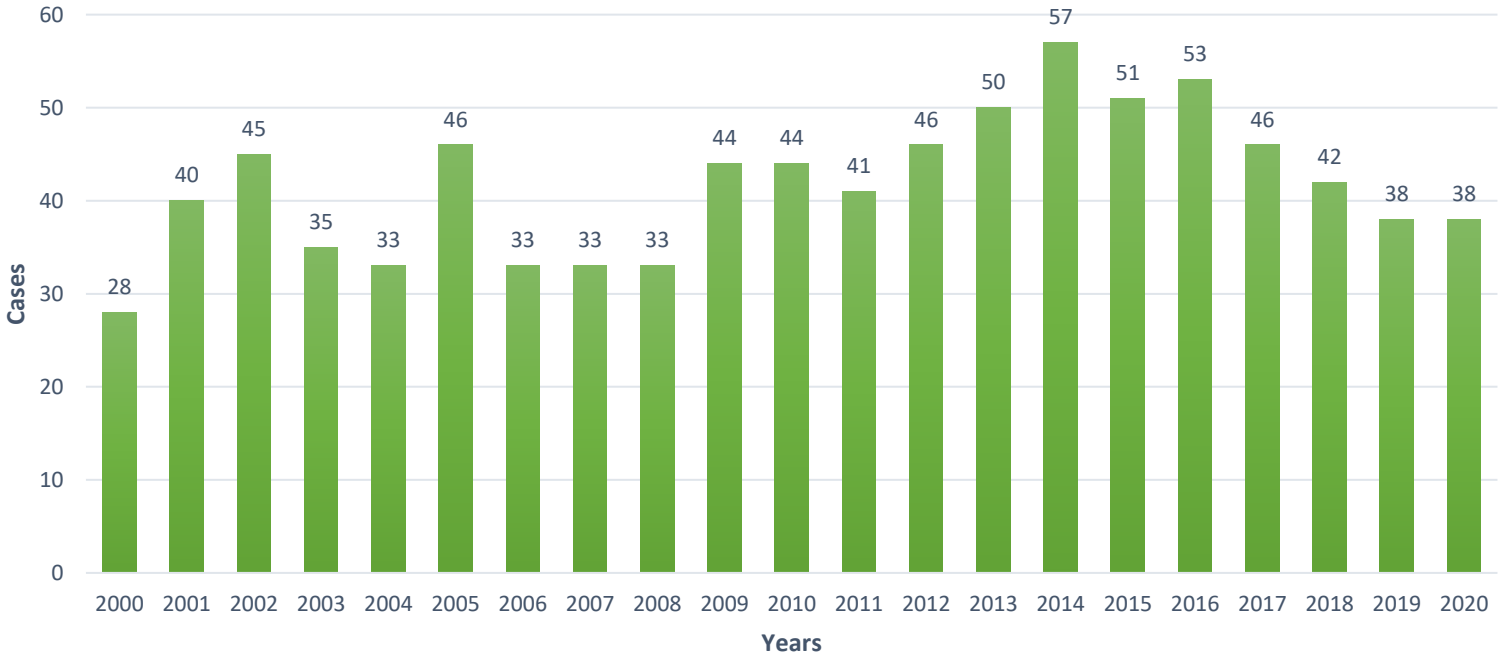
From 2010 to 2015, Hepatitis C virus mortality rates among AI/ANS in the United States remained steady. From 2016 to 2019, the mortality rates started to trend downward slightly.

Human Immunodeficiency Virus, Sexually Transmitted Infections, and Hepatitis C Virus among American Indians/Alaska Natives in Arizona

Human Immunodeficiency Virus (HIV)

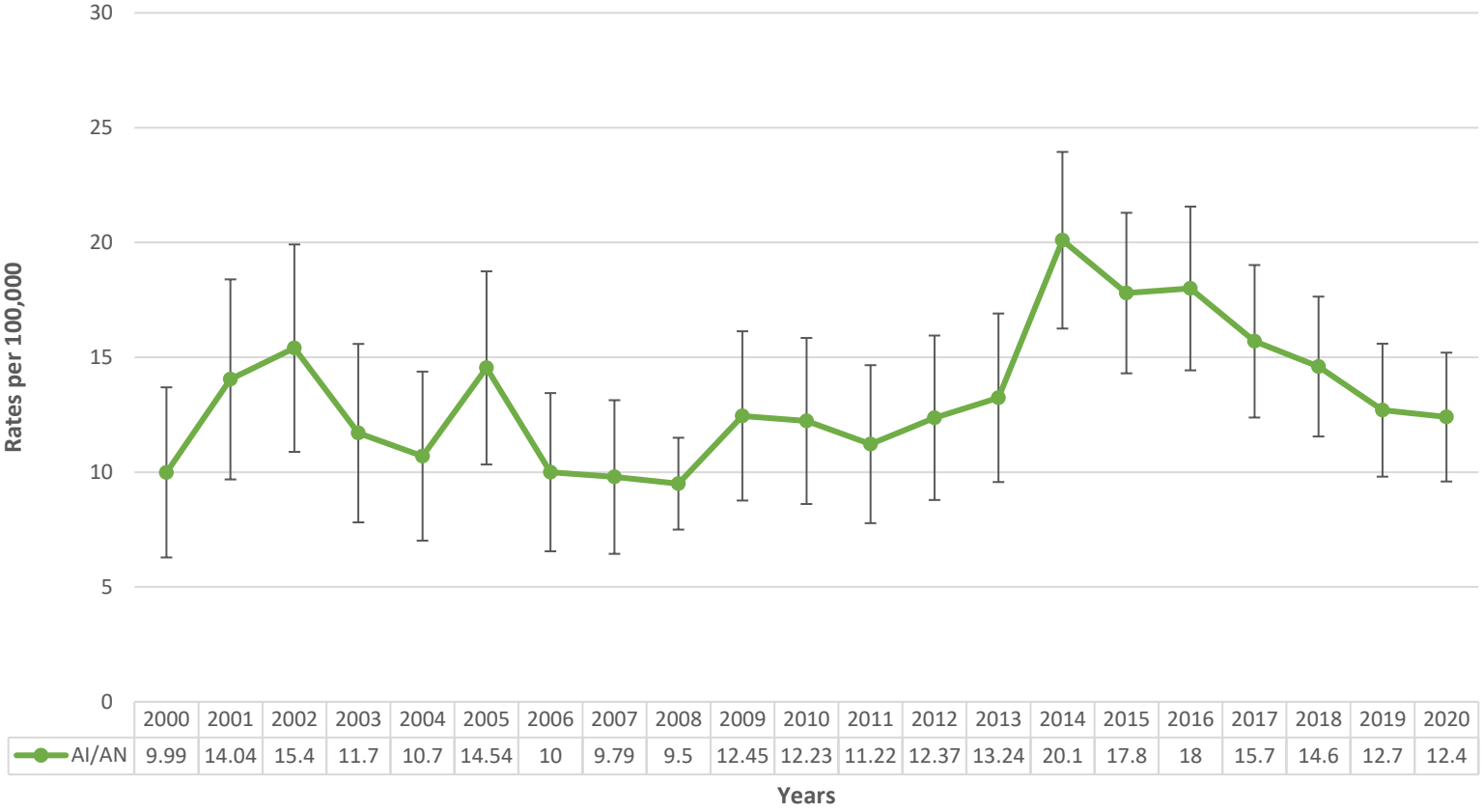
AI/AN New HIV Cases and Rates in Arizona

Figure 18. New Human Immunodeficiency Virus (HIV) Cases among American Indians/Alaska Natives (AI/AN) in Arizona from 2000 – 2020[44-55]



From 2000 to 2020, new HIV cases among AI/ANs in Arizona remained steady. Over 21 years, there was a reported total of 876 cases of HIV among AI/ANs.

Figure 19. Human Immunodeficiency Virus (HIV) Incidence Rate per 100,000 among American Indians/Alaska Natives (AI/AN) in Arizona from 2000 to 2020[44-55]



	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
AI/AN	9.99	14.04	15.4	11.7	10.7	14.54	10	9.79	9.5	12.45	12.23	11.22	12.37	13.24	20.1	17.8	18	15.7	14.6	12.7	12.4

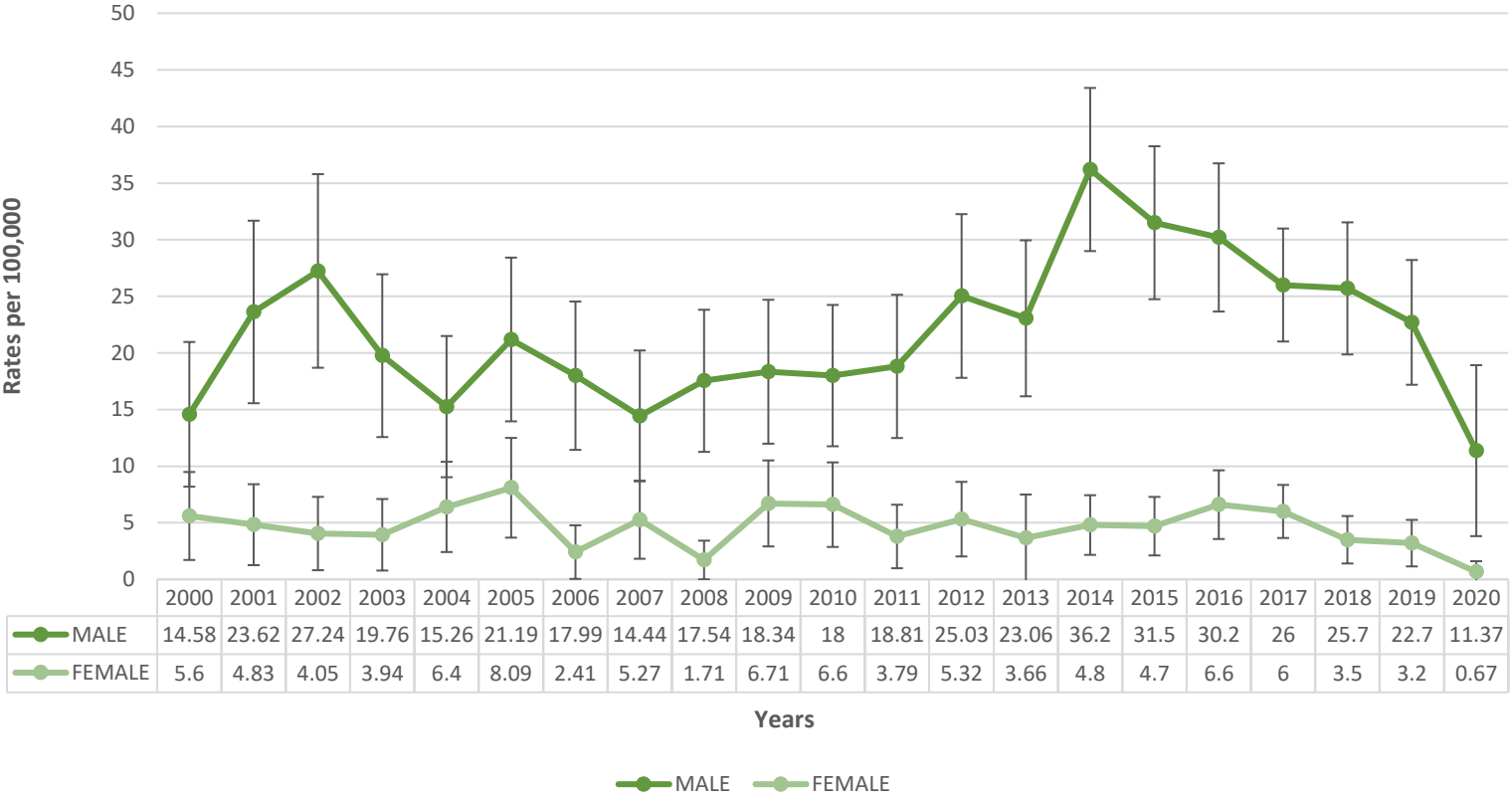
From 2000 to 2020, HIV incidence rate among AI/ANs in Arizona showed slight decreases and increases in rates over the years.

AI/AN New HIV Cases and Rates by Gender in Arizona

Figure 20. New Human Immunodeficiency Virus (HIV) Cases among American Indians/Alaska Natives (AI/AN) by Gender in Arizona from 2000 – 2020[44-55]

From 2000 to 2020, men had a higher number of new HIV cases than women among AI/ANs in Arizona. AI/AN males had a reported total of 725 new HIV cases during this time compared to 159 for AI/AN females.

Figure 21. Human Immunodeficiency Virus (HIV) Incidence Rates per 100,000 among American Indians/Alaska Natives (AI/AN) by Gender in Arizona from 2000 – 2020[44-55]

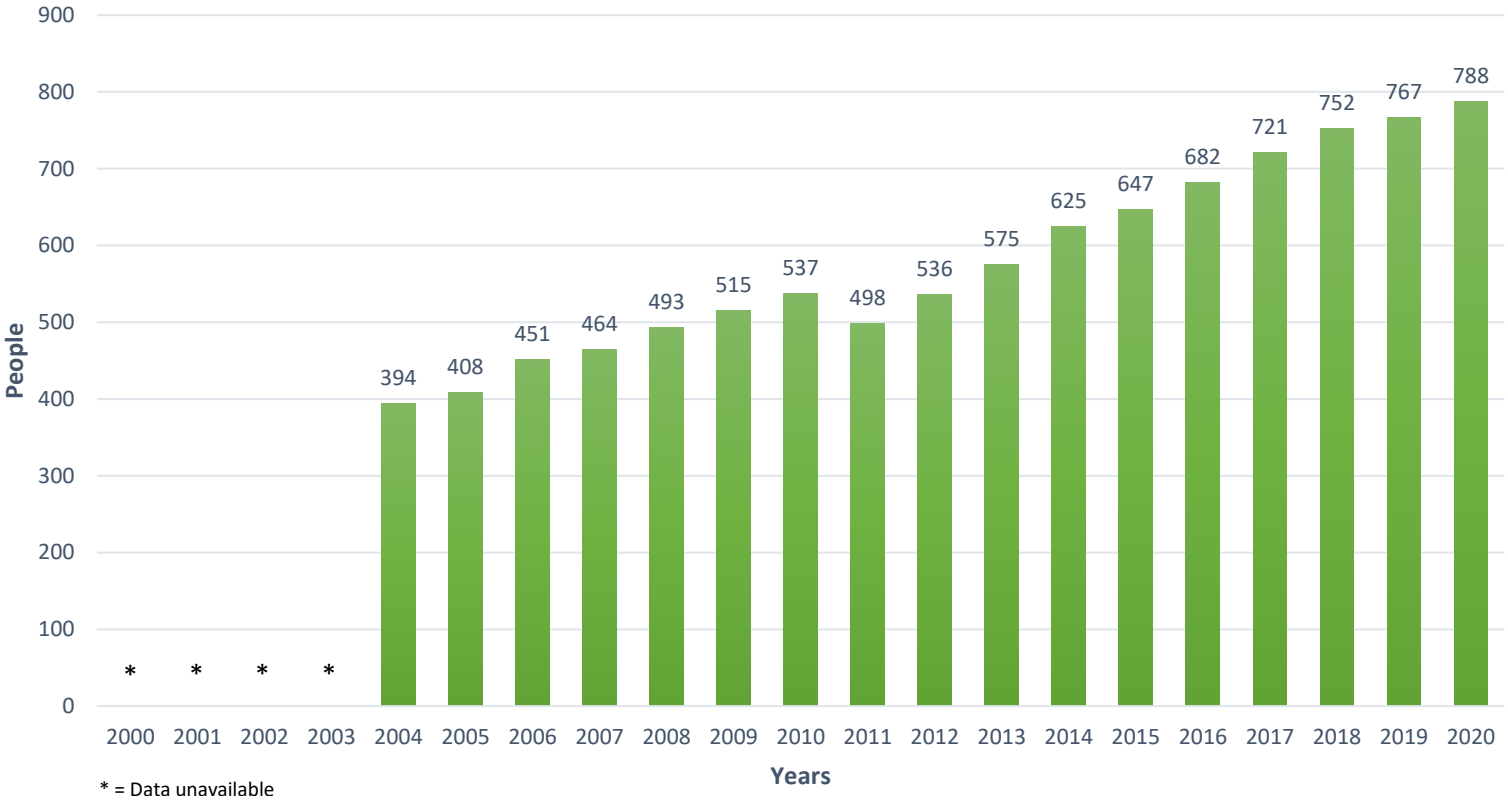


	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
MALE	14.58	23.62	27.24	19.76	15.26	21.19	17.99	14.44	17.54	18.34	18	18.81	25.03	23.06	36.2	31.5	30.2	26	25.7	22.7	11.37
FEMALE	5.6	4.83	4.05	3.94	6.4	8.09	2.41	5.27	1.71	6.71	6.6	3.79	5.32	3.66	4.8	4.7	6.6	6	3.5	3.2	0.67

From 2000 to 2020, AI/AN males had higher HIV incidence rates than AI/AN females in Arizona. HIV incidence rates in AI/AN males increased and decreased during this period. HIV incidence in AI/AN females remained steady during this period.

AI/AN Living with HIV in Arizona

Figure 22. American Indians/Alaska Natives (AI/AN) Living with Human Immunodeficiency Virus (HIV) in Arizona from 2000 – 2020[44-55]



From 2003 to 2020, the number of AI/AN living with HIV in Arizona trended slightly upward. As of 2020, there was a total of 788 AI/AN living with HIV in Arizona.

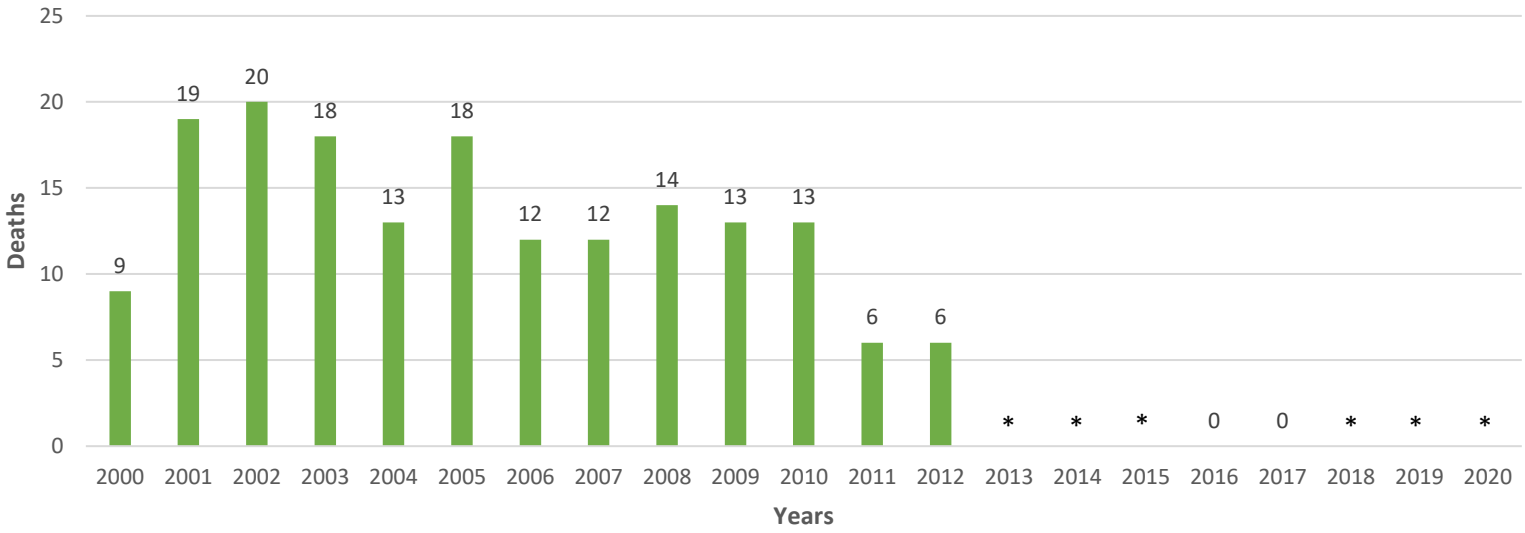
AI/AN Living with HIV by Gender in Arizona

Figure 23. American Indians/Alaska Natives (AI/AN) Living with Human Immunodeficiency Virus (HIV) by Gender in Arizona from 2000 – 2020[44-55]

From 2004 to 2020, AI/AN males accounted for the majority of individuals living with HIV compared to women in Arizona. In 2020, AI/AN males had a reported total of 662 living with HIV. AI/AN females had a reported total of 126 living with HIV.

AI/AN HIV-Related Deaths and Rates in Arizona

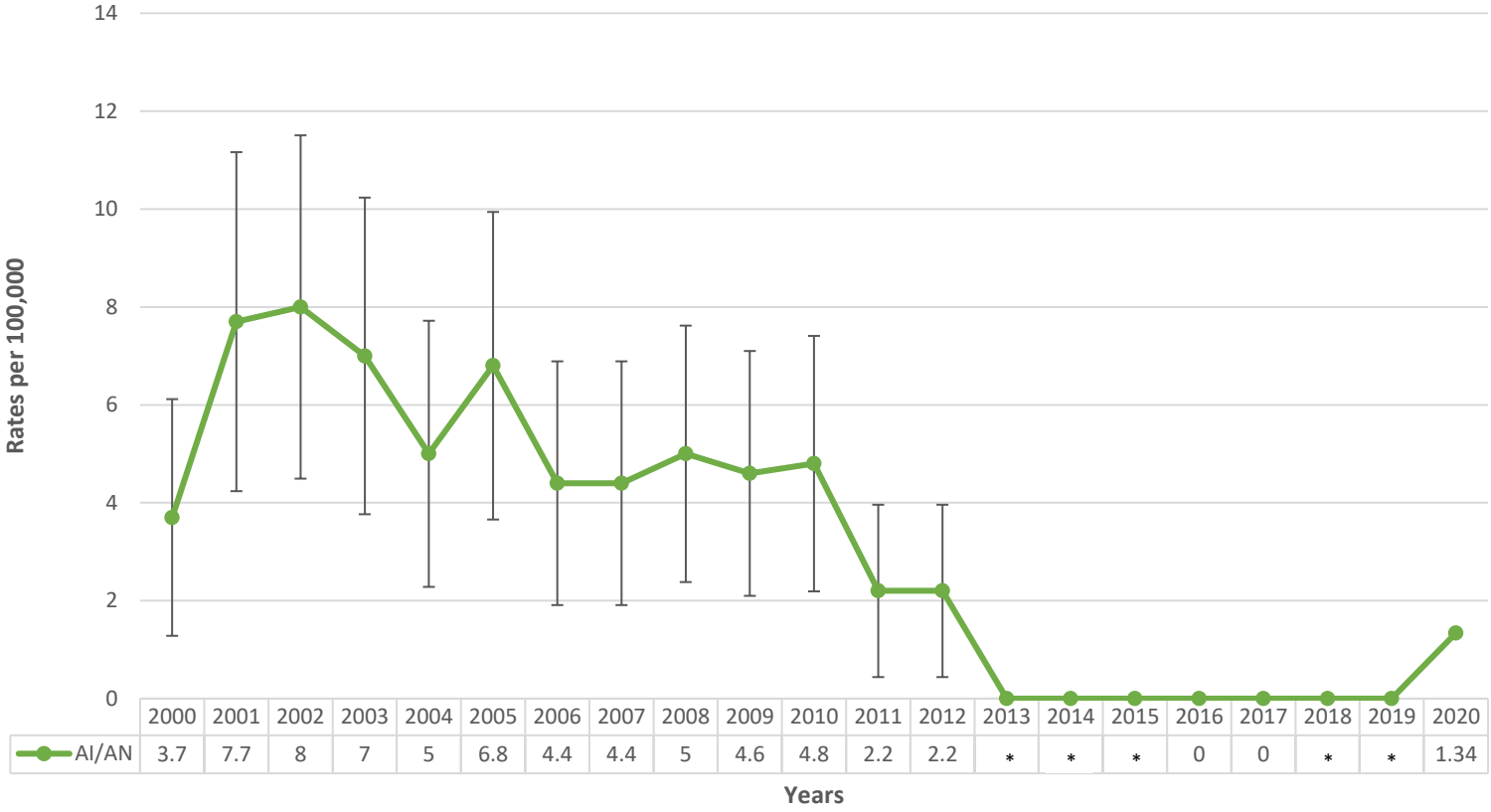
Figure 24. Human Immunodeficiency Virus (HIV)-Related Deaths among American Indians/Alaska Natives (AI/AN) in Arizona from 2000 – 2020[44-55]



*= Cell suppressed due to non-zero count less than 6

From 2000 to 2012, the number of HIV related deaths among AI/ANs in Arizona trended downward. From 2013 to 2020, the reported HIV related deaths among AI/ANs were very low. Over the 21 years, there was a reported total of 173 deaths.

Figure 25. Human Immunodeficiency Virus (HIV) Mortality Rate per 100,000 among American Indians/Alaska Natives (AI/AN) in Arizona from 2000 to 2020[44-55]



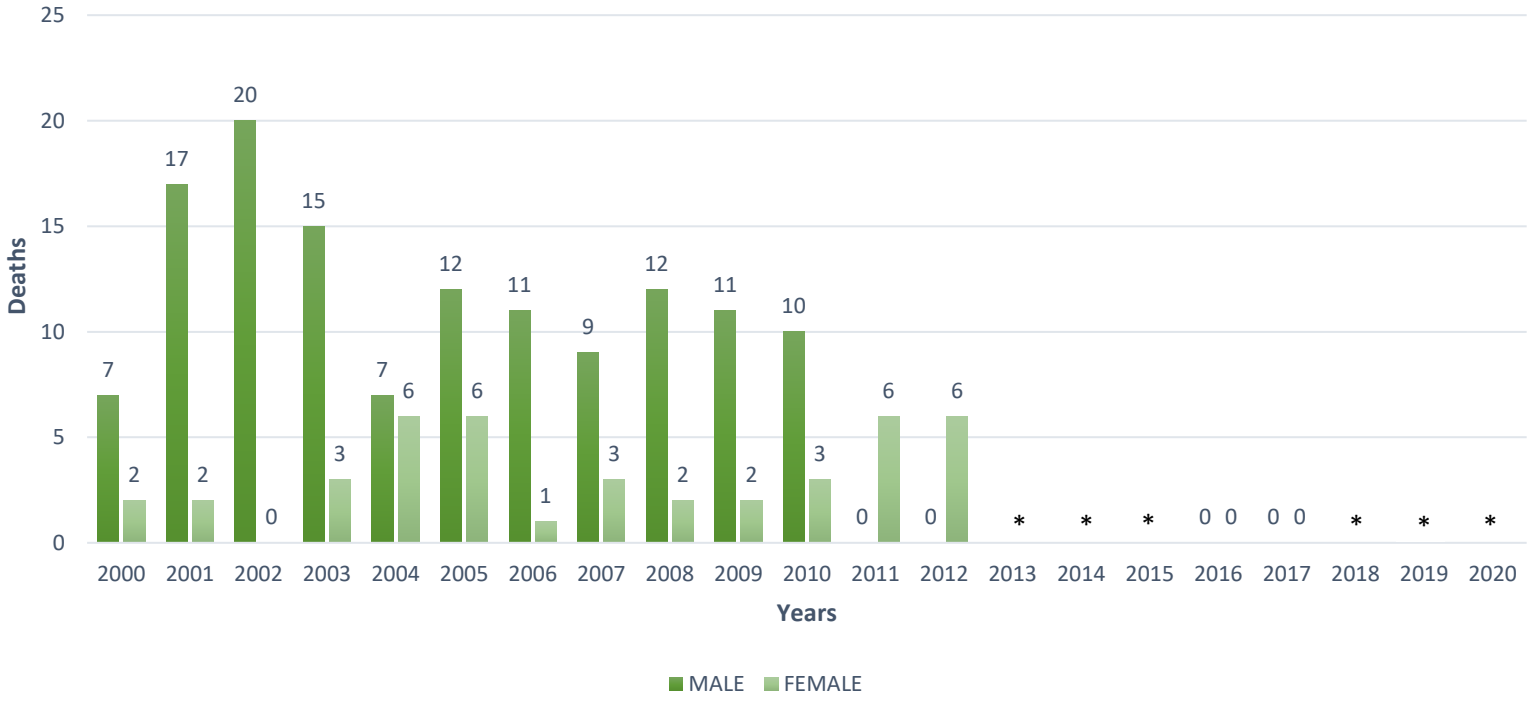
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
AI/AN	3.7	7.7	8	7	5	6.8	4.4	4.4	5	4.6	4.8	2.2	2.2	*	*	*	0	0	*	*	1.34

*= Cell suppressed due to non-zero count less than 6

From 2000 to 2020, the HIV mortality rate among AI/ANs in Arizona trended downward.

AI/AN HIV-Related Deaths and Rates by Gender in Arizona

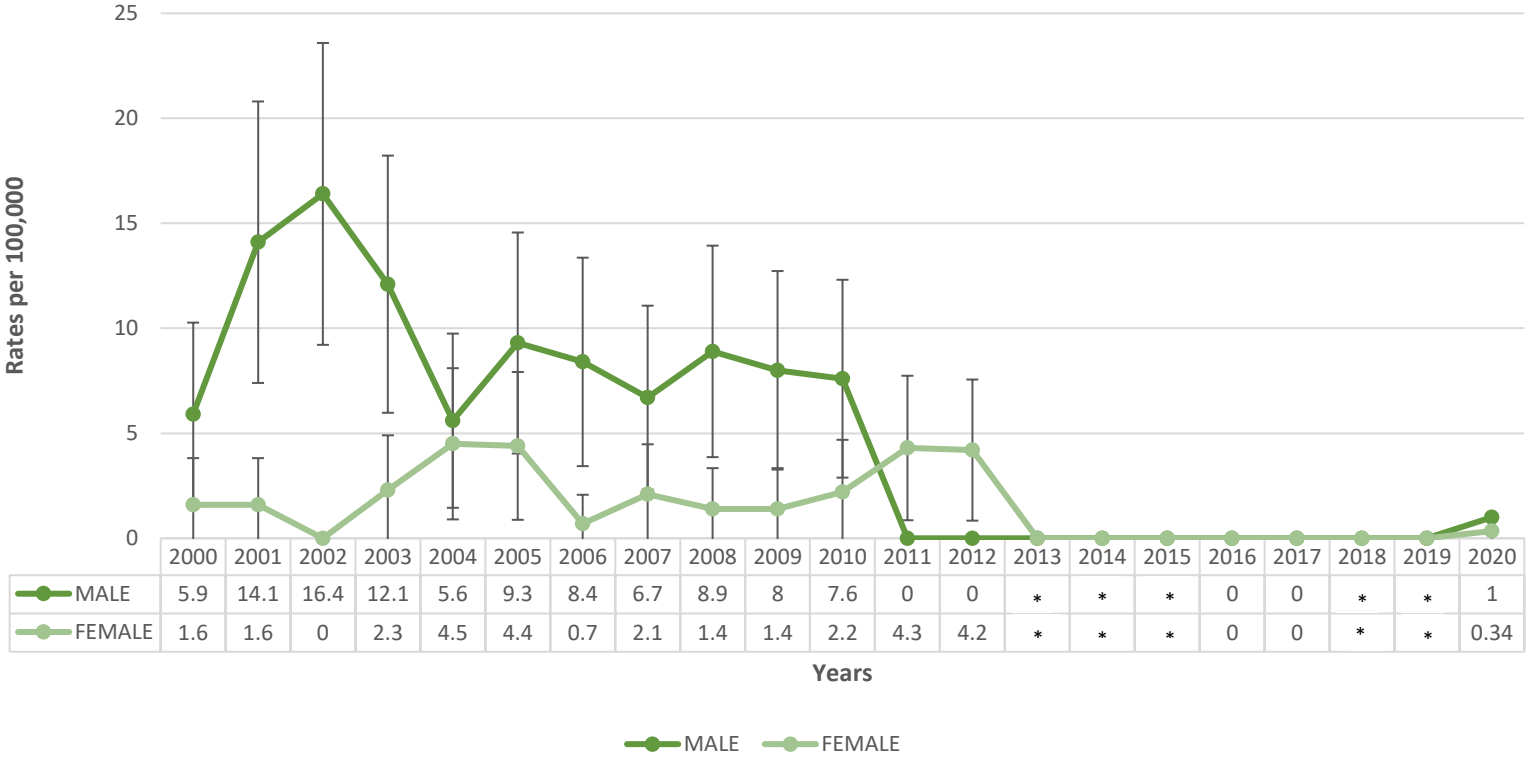
Figure 26. Human Immunodeficiency Virus (HIV)-Related Deaths among American Indians/Alaska Natives AI/AN by Gender in Arizona from 2000 – 2020[44-55]



*= Cell suppressed due to non-zero count less than 6

From 2000 to 2012, AI/AN males accounted for a majority of the HIV-related deaths in Arizona compared to AI/AN females. AI/AN males had a reported total of 131 deaths during this period. AI/AN females had a reported total of 42 deaths during this period.

Figure 27. Human Immunodeficiency Virus (HIV) Mortality Rates per 100,000 among American Indian/ Alaska Native (AI/AN) by Gender in Arizona from 2000 – 2020[45-55]



	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
MALE	5.9	14.1	16.4	12.1	5.6	9.3	8.4	6.7	8.9	8	7.6	0	0	*	*	*	0	0	*	*	1
FEMALE	1.6	1.6	0	2.3	4.5	4.4	0.7	2.1	1.4	1.4	2.2	4.3	4.2	*	*	*	0	0	*	*	0.34

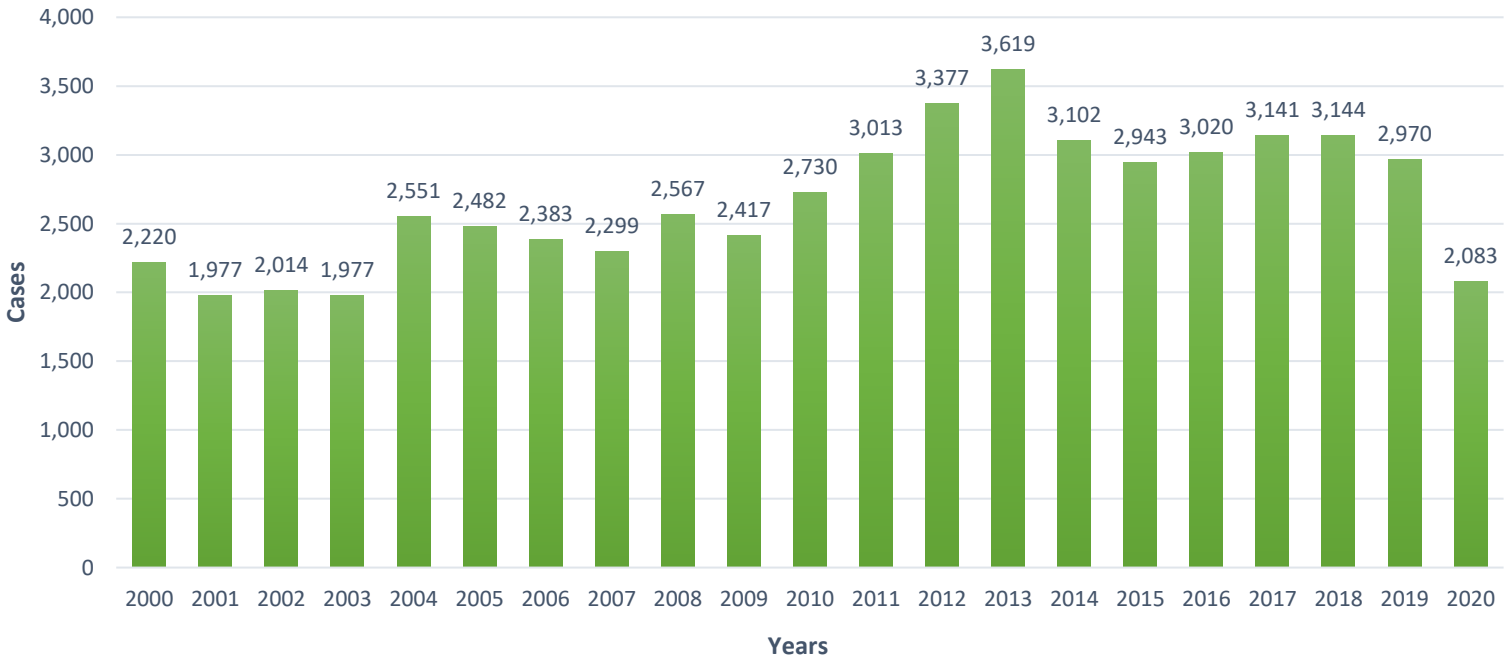
*= Cell suppressed due to non-zero count less than 6

From 2000 to 2012, AI/AN males had HIV higher incidence rates in Arizona compared to AI/AN females.

Sexually Transmitted Infections (STI)

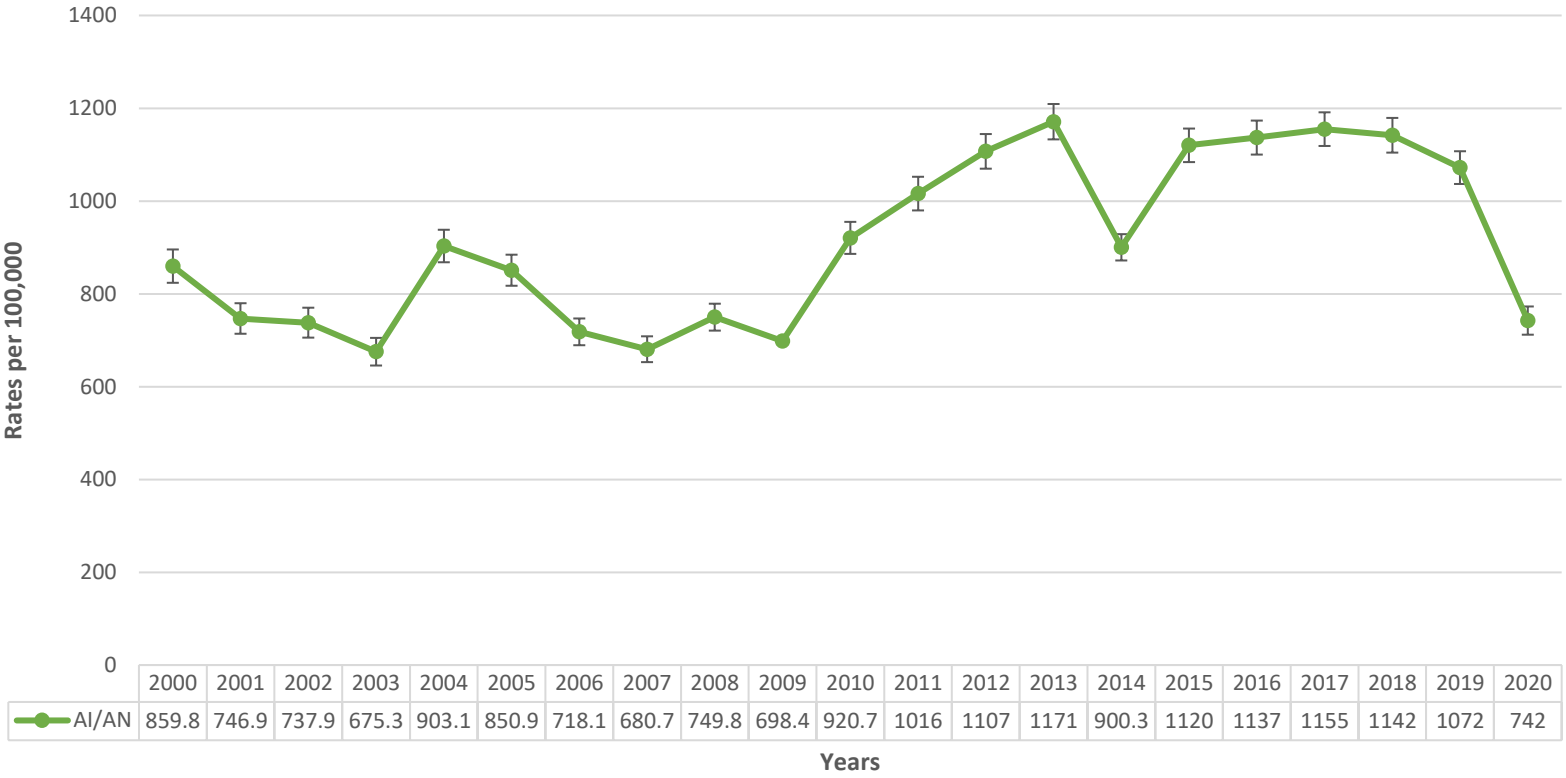
AI/AN Chlamydia Cases and Rates in Arizona

Figure 28. Chlamydia Cases among American Indian/ Alaska Native (AI/AN) in Arizona from 2000 – 2020[56-65]



From 2000 to 2020, Chlamydia cases among AI/ANs in Arizona remained steady. Over the 21 years, there was a reported total of 56,029 cases.

Figure 29. Chlamydia Incidence Rates per 100,000 among American Indian/ Alaska Native (AI/AN) from 2000 to 2020[56-65]

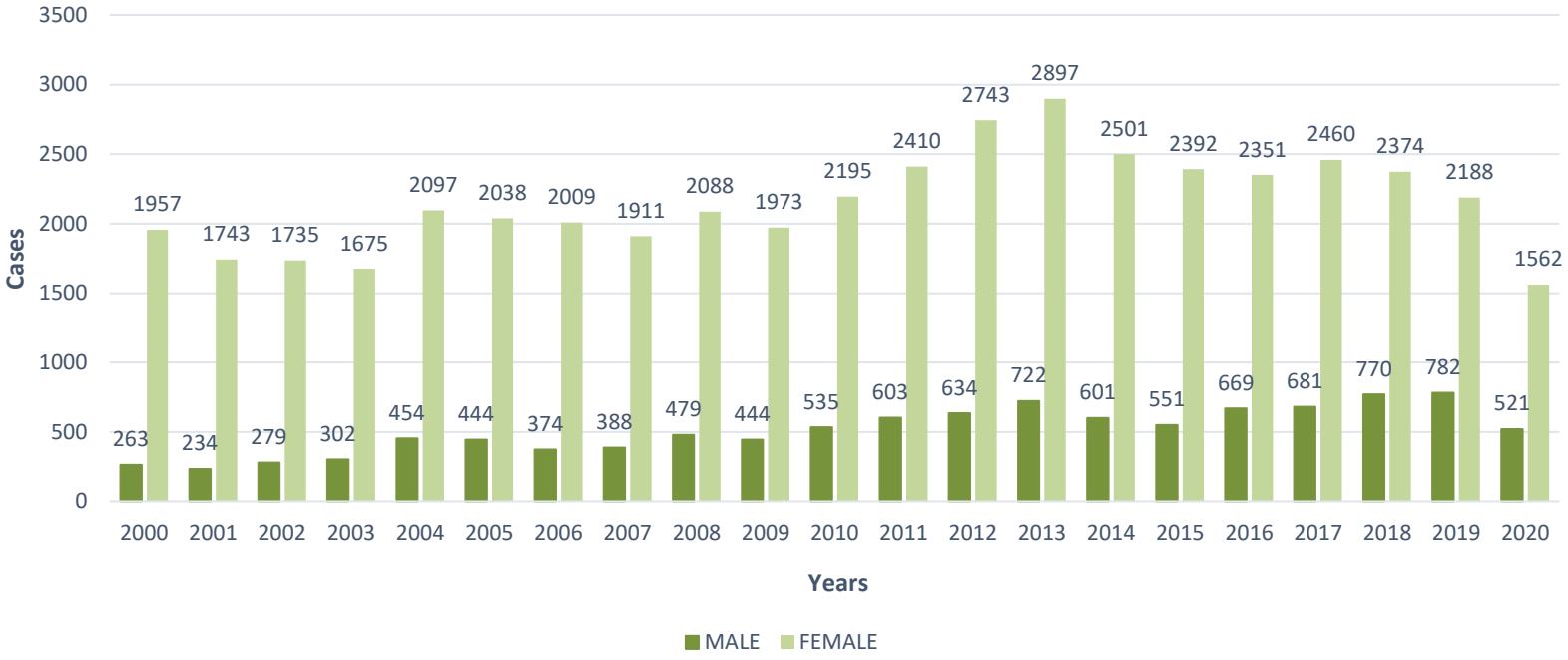


	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
AI/AN	859.8	746.9	737.9	675.3	903.1	850.9	718.1	680.7	749.8	698.4	920.7	1016	1107	1171	900.3	1120	1137	1155	1142	1072	742

From 2000 to 2020, Chlamydia incidence rates among AI/ANs in Arizona remained fairly steady with some fluctuations among the rates.

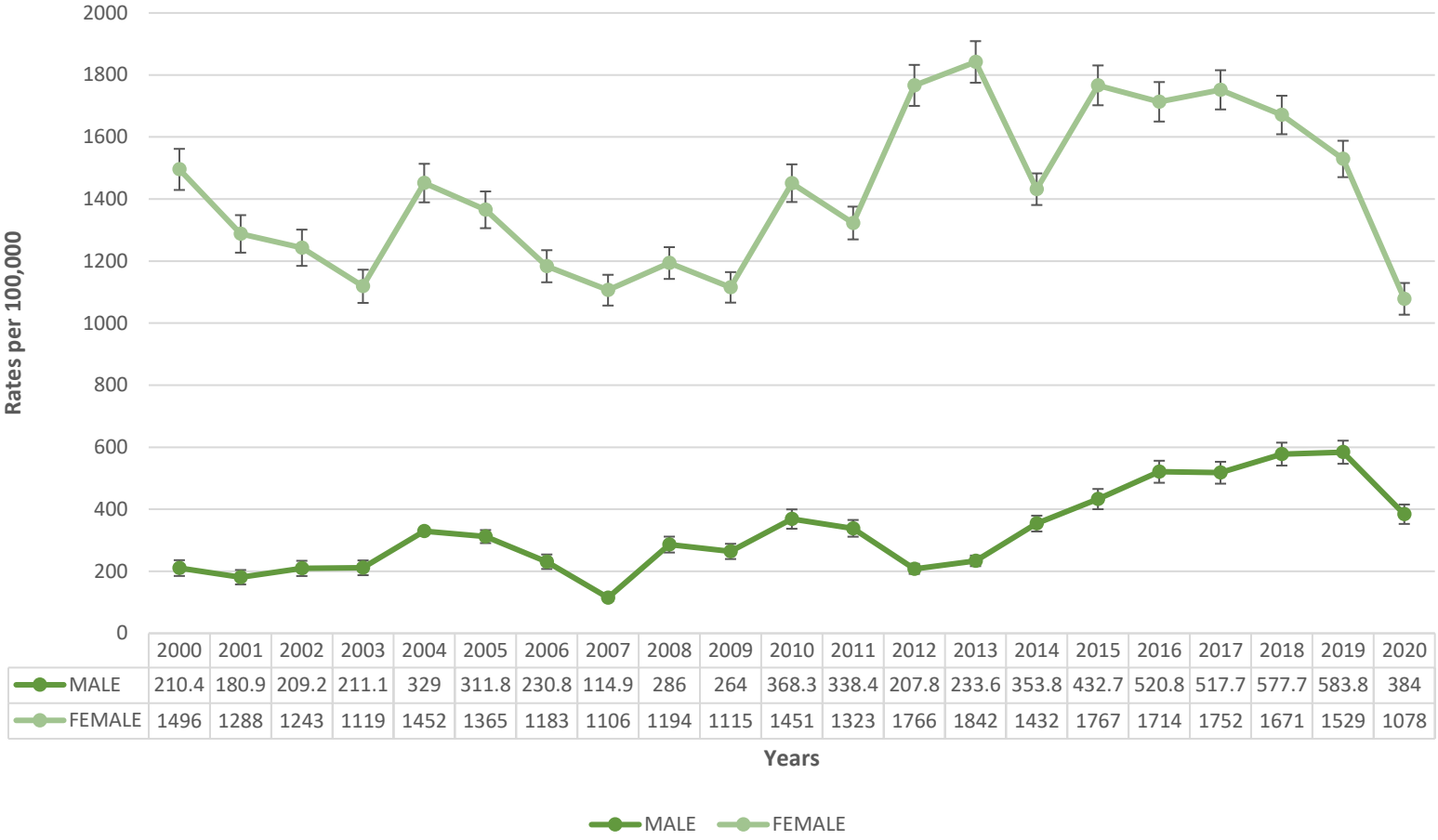
AI/AN Chlamydia Cases and Rates by Gender in Arizona

Figure 30. Chlamydia Cases among American Indians/Alaska Natives (AI/AN) by Gender in Arizona from 2000 – 2020[56-65]



From 2000 to 2020, AI/AN females had a higher number of Chlamydia cases compared to AI/AN males in Arizona. Over the 21 years, AI/AN females had a reported total of 45,299 Chlamydia cases. While AI/AN males had a reported total of 10,730 Chlamydia cases.

Figure 31. Chlamydia Incidence Rates per 100,000 among American Indians/Alaska Natives (AI/AN) by Gender in Arizona from 2000 to 2020[56-65]

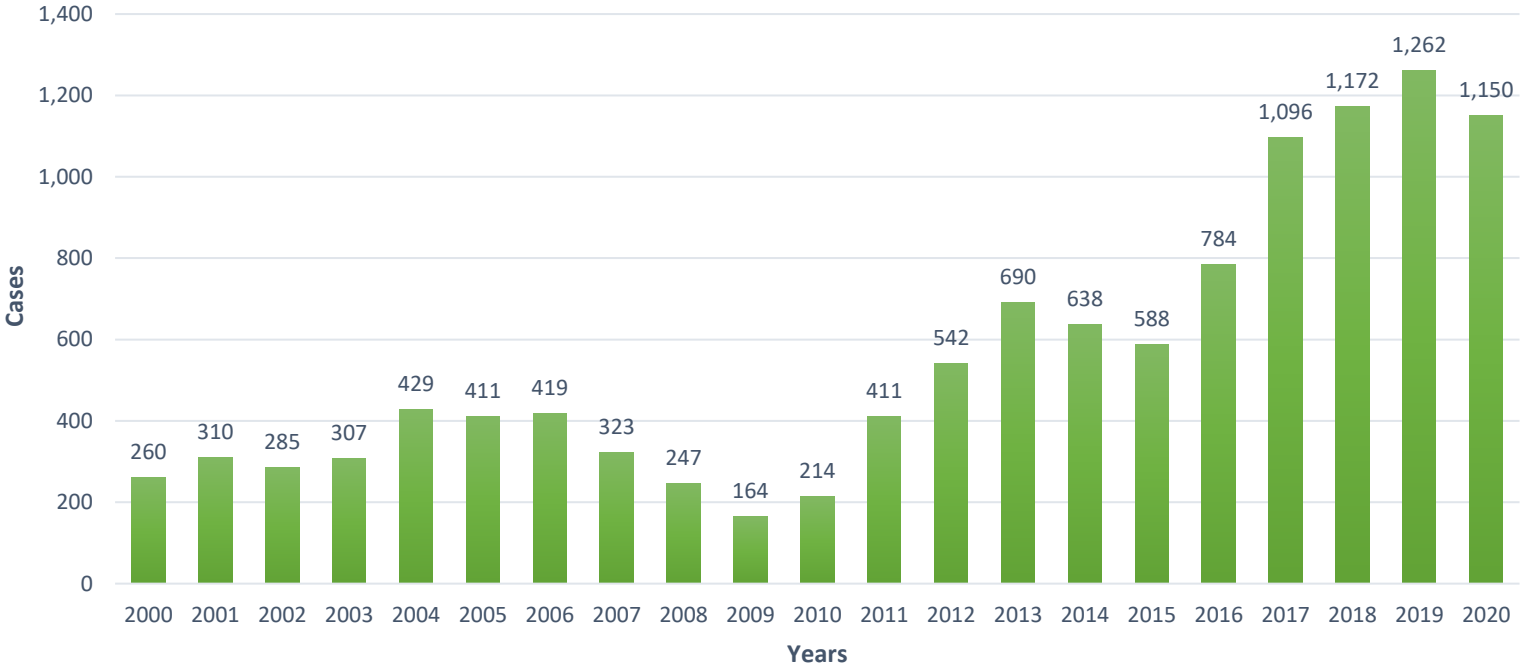


	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
MALE	210.4	180.9	209.2	211.1	329	311.8	230.8	114.9	286	264	368.3	338.4	207.8	233.6	353.8	432.7	520.8	517.7	577.7	583.8	384
FEMALE	1496	1288	1243	1119	1452	1365	1183	1106	1194	1115	1451	1323	1766	1842	1432	1767	1714	1752	1671	1529	1078

From 2000 to 2020, AI/AN females had higher Chlamydia incidence rates compared to AI/AN males in Arizona.

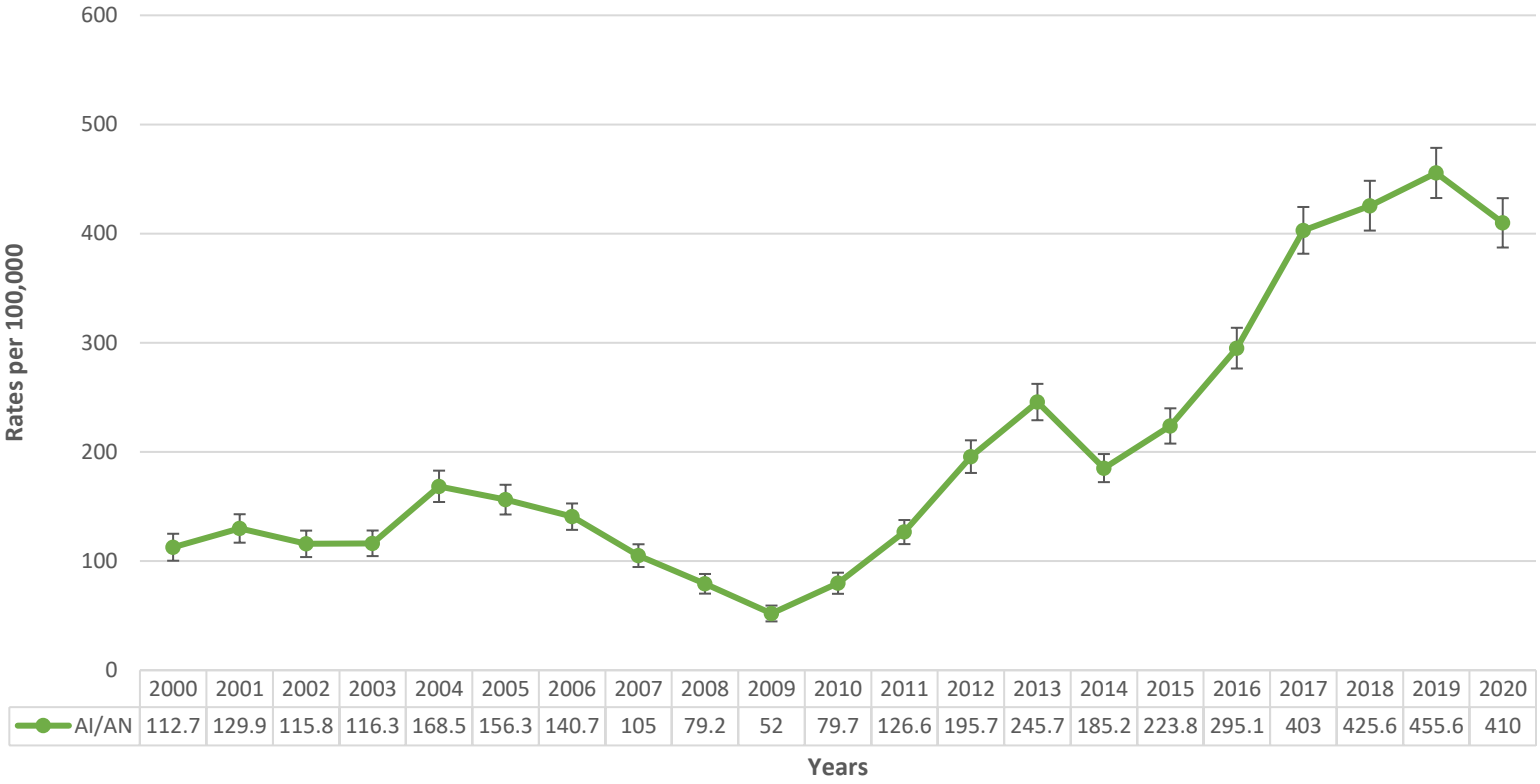
AI/AN Gonorrhea Cases and Rates in Arizona

Figure 32. Gonorrhea Cases among American Indians/Alaska Natives AI/AN in Arizona from 2000 – 2020[56-65]



From 2000 to 2008, Gonorrhea cases among AI/AN in Arizona remained steady. From 2009 to 2020, Gonorrhea cases trended upward. Over the 21 years, there was a reported total of 11,702 Gonorrhea cases.

Figure 33. Gonorrhea Incidence Rates per 100,000 among American Indians/Alaska Natives (AI/AN) in Arizona from 2000 to 2020[56-65]



	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
AI/AN	112.7	129.9	115.8	116.3	168.5	156.3	140.7	105	79.2	52	79.7	126.6	195.7	245.7	185.2	223.8	295.1	403	425.6	455.6	410

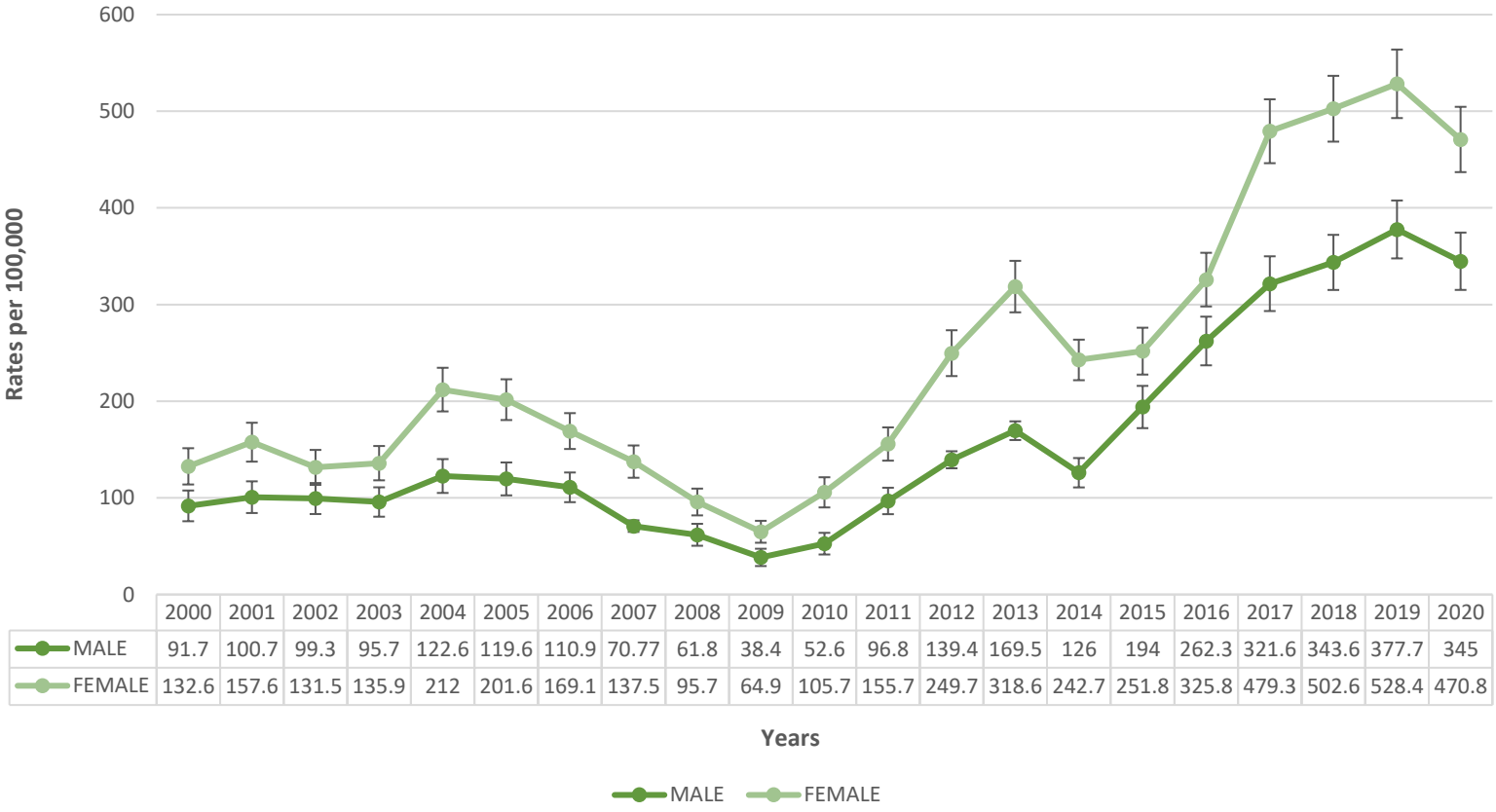
From 2000 to 2008, Gonorrhea incidence rates remained steady and started to trend downward. From 2009 to 2020, Gonorrhea incidence rates trended upward dramatically.

AI/AN Gonorrhea Cases and Rates by Gender in Arizona

Figure 34. Gonorrhea Cases among American Indians/Alaska Natives (AI/AN) by Gender in Arizona from 2000 – 2020[56-65]

From 2000 to 2020, AI/AN females had a higher amount of Gonorrhea cases compared to AI/AN males in Arizona. Over the 21 years, AI/AN females had a reported total of 6,216 Gonorrhea cases. AI/AN males had a reported total of 4,486 Gonorrhea cases.

Figure 35. Gonorrhea Incidence Rates per 100,000 among American Indians/Alaska Natives (AI/AN) by Gender in Arizona from 2000 to 2020[56-65]

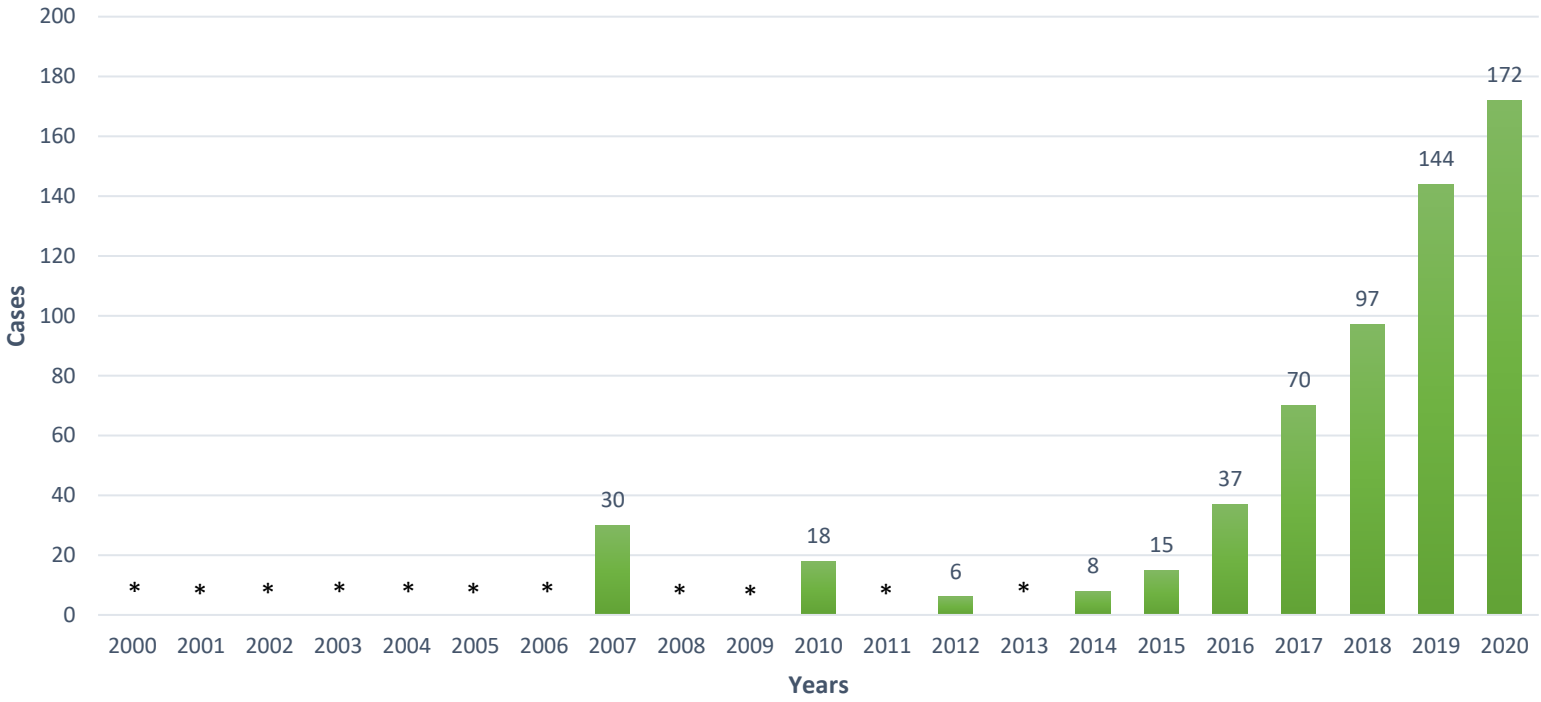


	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
MALE	91.7	100.7	99.3	95.7	122.6	119.6	110.9	70.77	61.8	38.4	52.6	96.8	139.4	169.5	126	194	262.3	321.6	343.6	377.7	345
FEMALE	132.6	157.6	131.5	135.9	212	201.6	169.1	137.5	95.7	64.9	105.7	155.7	249.7	318.6	242.7	251.8	325.8	479.3	502.6	528.4	470.8

From 2000 to 2020, AI/AN females had higher incidence rates of Gonorrhea compared to AI/AN males in Arizona.

AI/AN Primary and Secondary Syphilis Cases and Rates in Arizona

Figure 36. Primary and Secondary Syphilis Cases among American Indians/Alaska Natives (AI/AN) in Arizona from 2000 – 2020[56-65]



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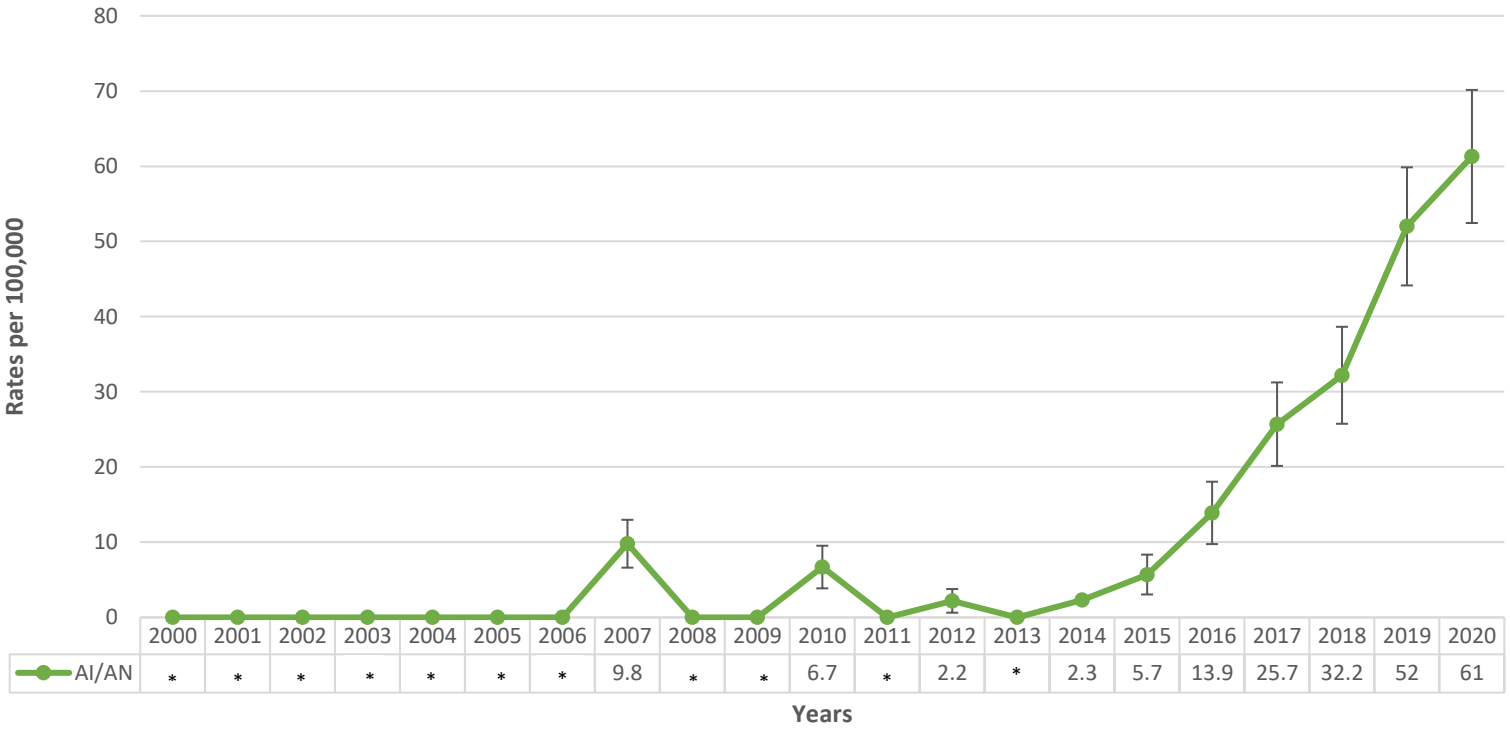
From 2000 to 2013, Primary and Secondary Syphilis cases among AI/AN in Arizona remained low with only a few cases during this time period. From 2014 to 2020, Primary and Secondary Syphilis cases trended upward rapidly. Over the 21 years, there was a reported total of 597 of Primary and Secondary Syphilis cases.

Figure 37. Primary and Secondary Syphilis Incidence Rates per 100,000 among American Indians/Alaska Natives (AI/AN) from 2000 to 2020[56-65]



	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
AI/AN	*	*	*	*	*	*	*	9.8	*	*	6.7	*	2.2	*	2.3	5.7	13.9	25.7	32.2	52	61

*= Cell suppressed due to non-zero count less than 6

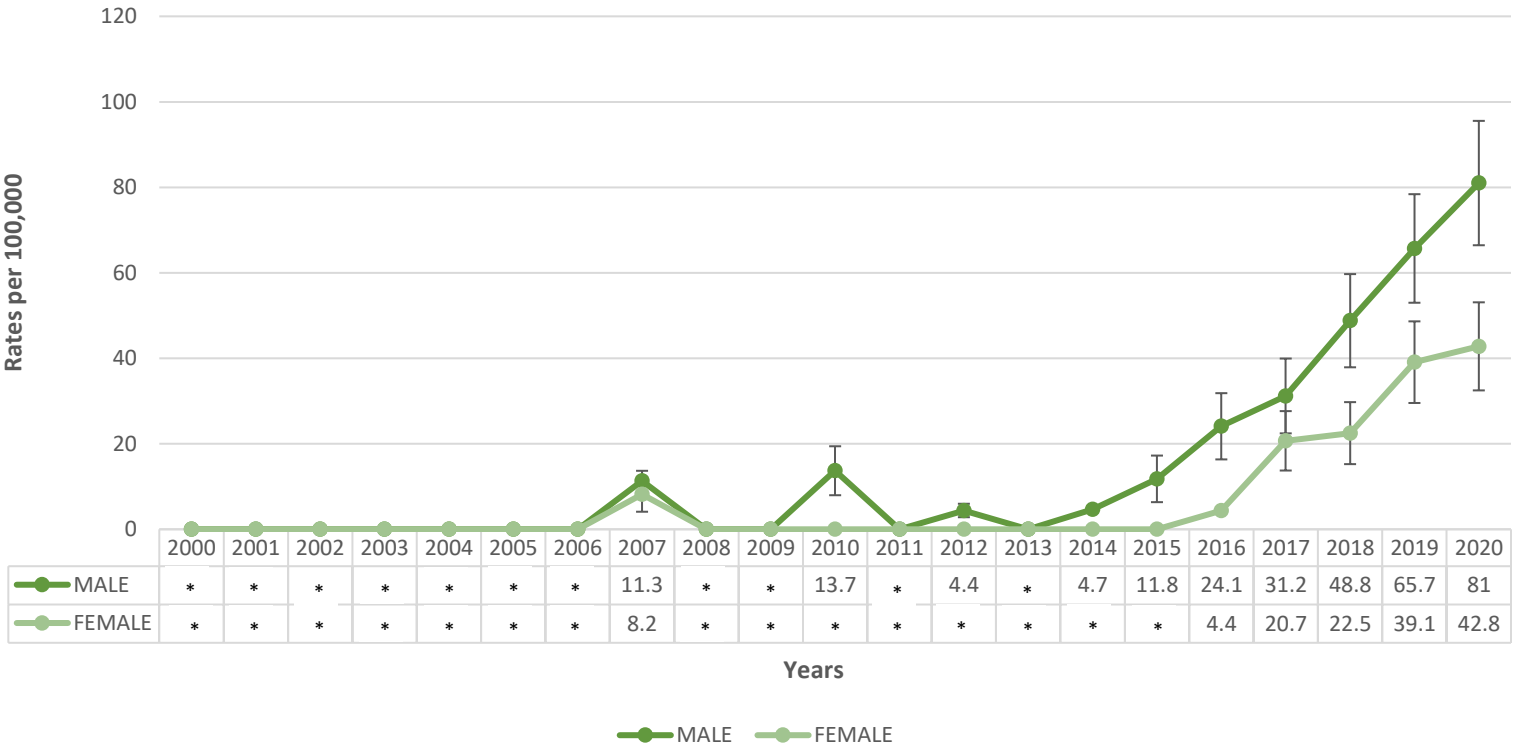
From 2000 to 2020, Primary and Secondary Syphilis cases among AI/AN in Arizona remained low until 2014 when the rates started to trended upward rapidly.

AI/AN Primary and Secondary Syphilis by Gender in Arizona

Figure 38. Primary and Secondary Syphilis Cases among American Indians/Alaska Natives (AI/AN) by Gender in Arizona from 2000 – 2020[56-65]

From 2000 to 2020, AI/AN males had a higher number of Primary and Secondary Syphilis compared to AI/AN females in Arizona. Over the 21 years, AI/AN males had a reported total of 399 Primary and Secondary Syphilis cases. AI/AN females had a reported total of 198 Primary and Secondary Syphilis cases.

Figure 39. Primary and Secondary Syphilis Incidence Rates per 100,000 among American Indians/Alaska Natives (AI/AN) by Gender in Arizona from 2000 to 2020[56-65]



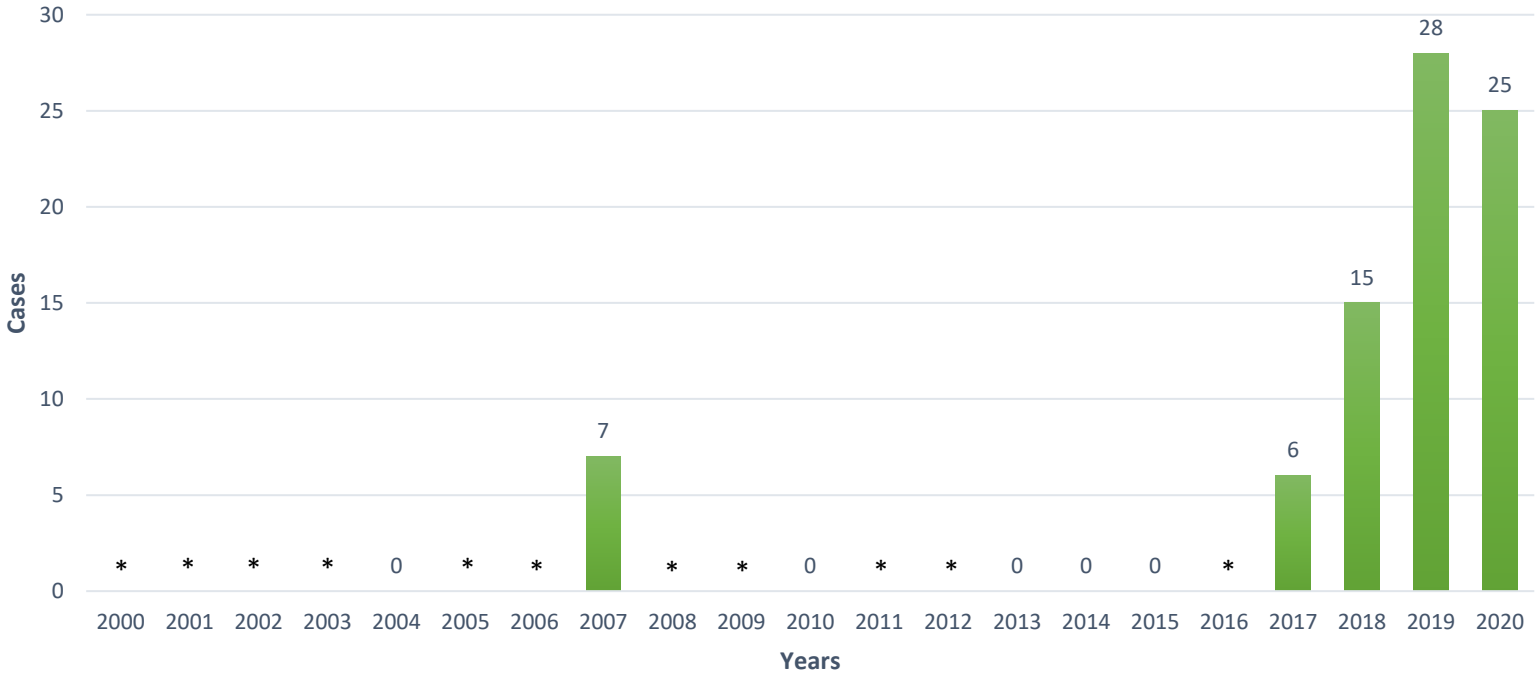
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
MALE	*	*	*	*	*	*	*	11.3	*	*	13.7	*	4.4	*	4.7	11.8	24.1	31.2	48.8	65.7	81
FEMALE	*	*	*	*	*	*	*	8.2	*	*	*	*	*	*	*	*	4.4	20.7	22.5	39.1	42.8

*= Cell suppressed due to non-zero count less than 6

From 2000 to 2020, AI/AN males had higher incidence rates compared to AI/AN females in Arizona.

AI/AN Congenital Syphilis Cases and Rates in Arizona

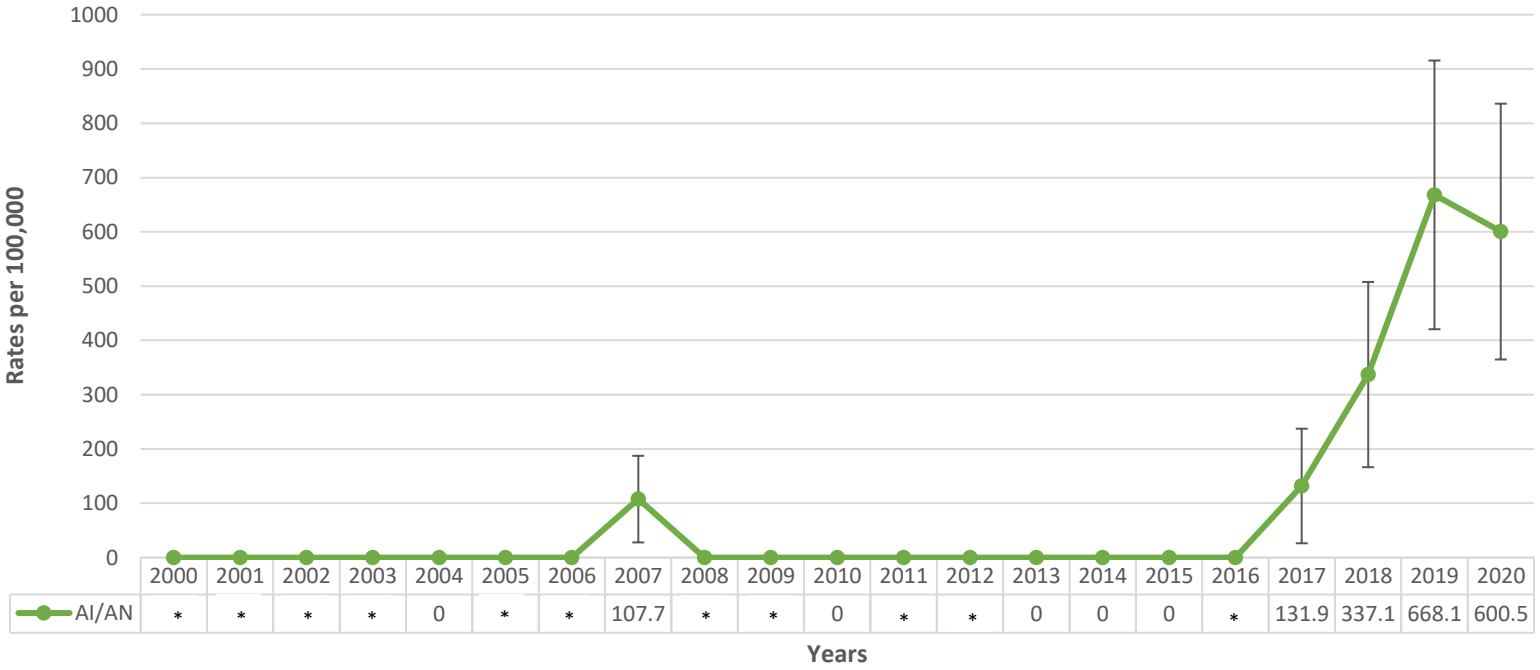
Figure 40. Congenital Syphilis Cases among American Indians/Alaska Natives (AI/AN) in Arizona from 2000 – 2020[56-65]



*= Cell suppressed due to non-zero count less than 6

From 2000 to 2016, Congenital Syphilis cases among AI/AN in Arizona remained very low. From 2017 to 2020, Congenital Syphilis cases started to trend upward dramatically during this time. Over the last 21 years, there was a reported total of 81 Congenital Syphilis cases.

Figure 41. Congenital Syphilis Incidence Rates per 100,000 among American Indians/Alaska Natives (AI/AN) in Arizona from 2000 – 2020[56-65]



	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
AI/AN	*	*	*	*	0	*	*	107.7	*	*	0	*	*	0	0	0	*	131.9	337.1	668.1	600.5

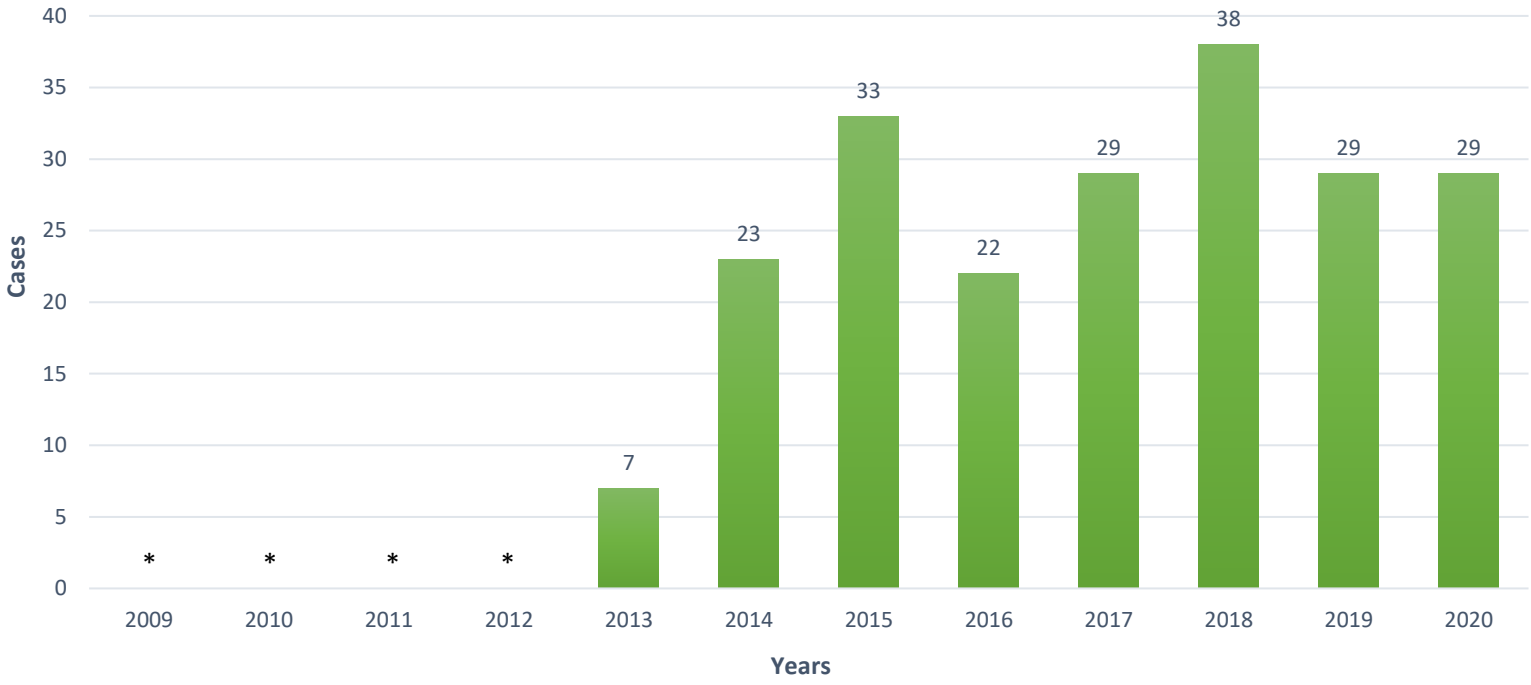
*= Cell suppressed due to non-zero count less than 6

From 2000 to 2020, Congenital Syphilis incidence rates among AI/AN in Arizona remained low until 2017 when the rates started to trend upward rapidly.

Hepatitis C Virus (HCV)

AI/AN HCV Cases in Arizona

Figure 42. Positive Hepatitis C Virus (HCV) Cases among American Indians/Alaska Natives (AI/AN) in Arizona from 2009 – 2020[66]



*= Cell suppressed due to non-zero count less than 6

From 2009 to 2020, the number of AI/AN being diagnosed with HCV has increased. There was a reported total of 218 cases.

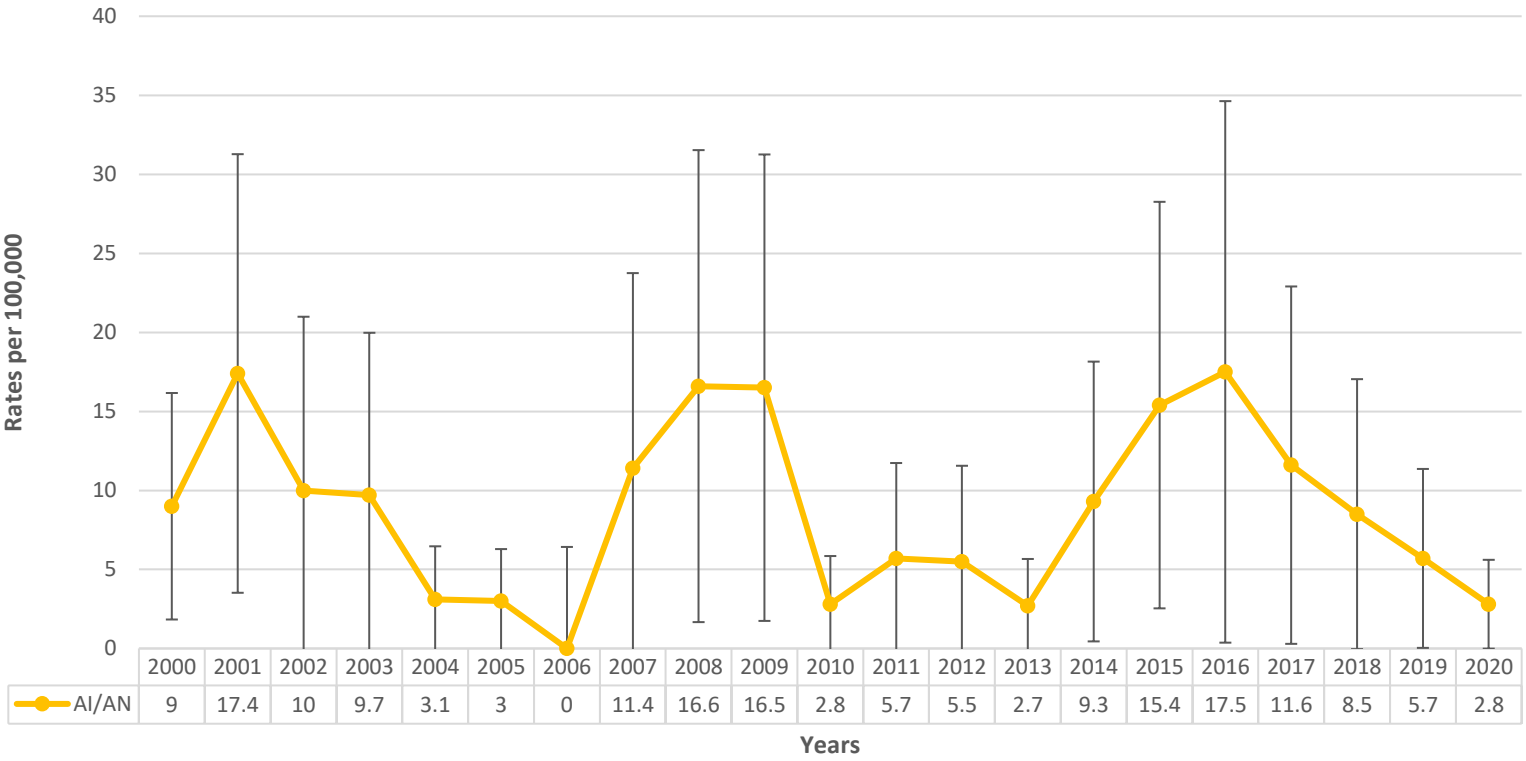
Human Immunodeficiency Virus, Sexually Transmitted Infections, and Hepatitis C Virus among American Indians/Alaska Natives in Nevada

Human Immunodeficiency Virus (HIV)

AI/AN New HIV Cases and Rates in Nevada

From 2000 to 2020, the number of new HIV cases among AI/AN in Nevada were not steady with increases and decreases in cases. Over the 21 years there was a reported total of 65 new HIV cases.[67-88]

Figure 43. Human Immunodeficiency Virus (HIV) Incidence Rate per 100,000 among American Indian/ Alaska Native (AI/AN) in Nevada from 2000 to 2020[67-88]



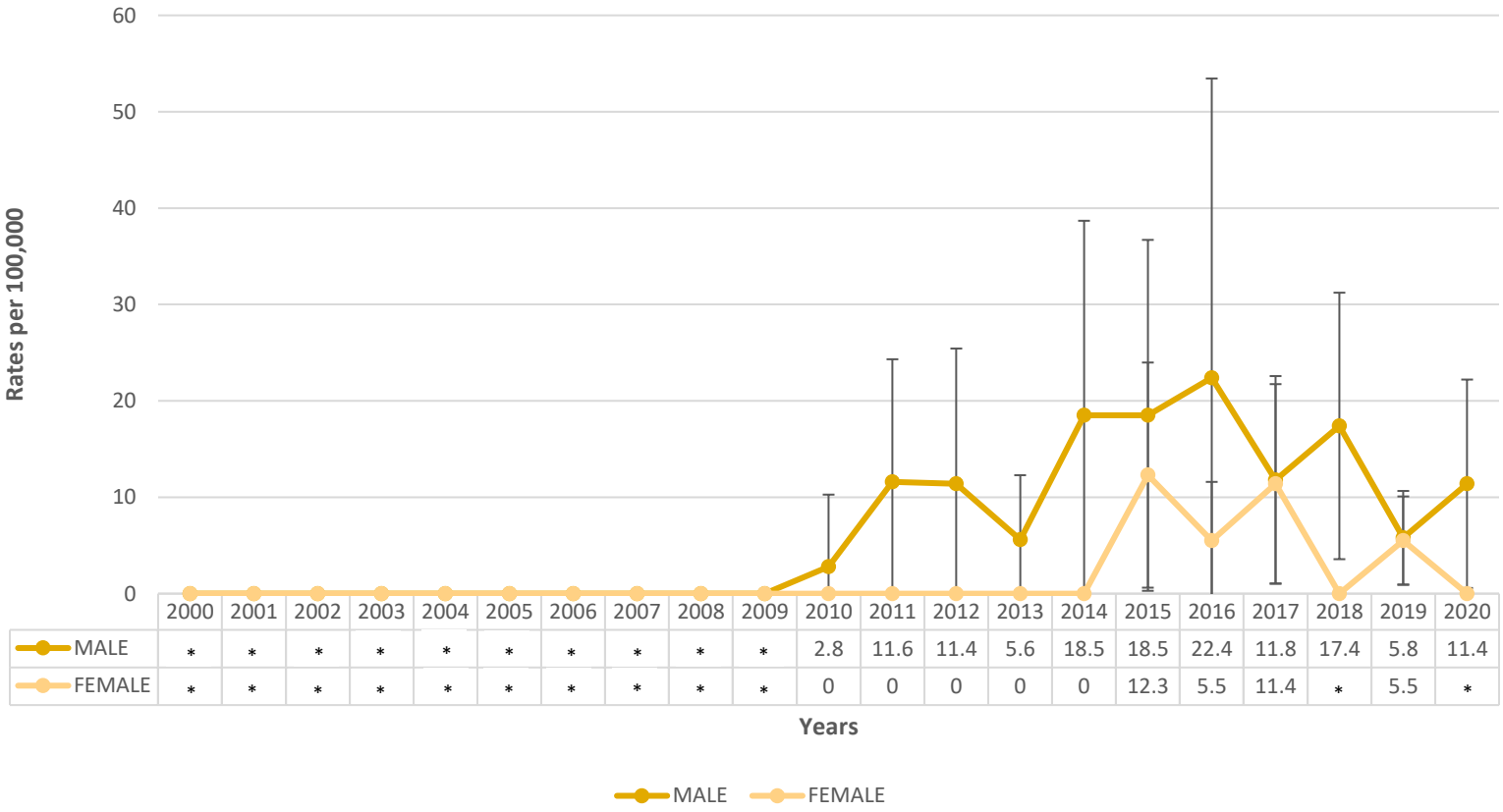
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
AI/AN	9	17.4	10	9.7	3.1	3	0	11.4	16.6	16.5	2.8	5.7	5.5	2.7	9.3	15.4	17.5	11.6	8.5	5.7	2.8

From 2000 to 2020, HIV incidence rates among AI/ANs in Nevada were inconsistent with many increases and decreases.

AI/AN New HIV Cases and Rates by Gender in Nevada

From 2010 to 2020, AI/AN males had a higher number of new HIV cases compared AI/AN women in Nevada. Over the 10 years, AI/AN males had a reported total of 26 new HIV cases. AI/AN females had a reported total of 6 new HIV cases.

Figure 44. Human Immunodeficiency Virus (HIV) Incidence Rate per 100,000 among American Indians/Alaska Natives (AI/AN) by Gender in Nevada from 2000 - 2020[67-88]



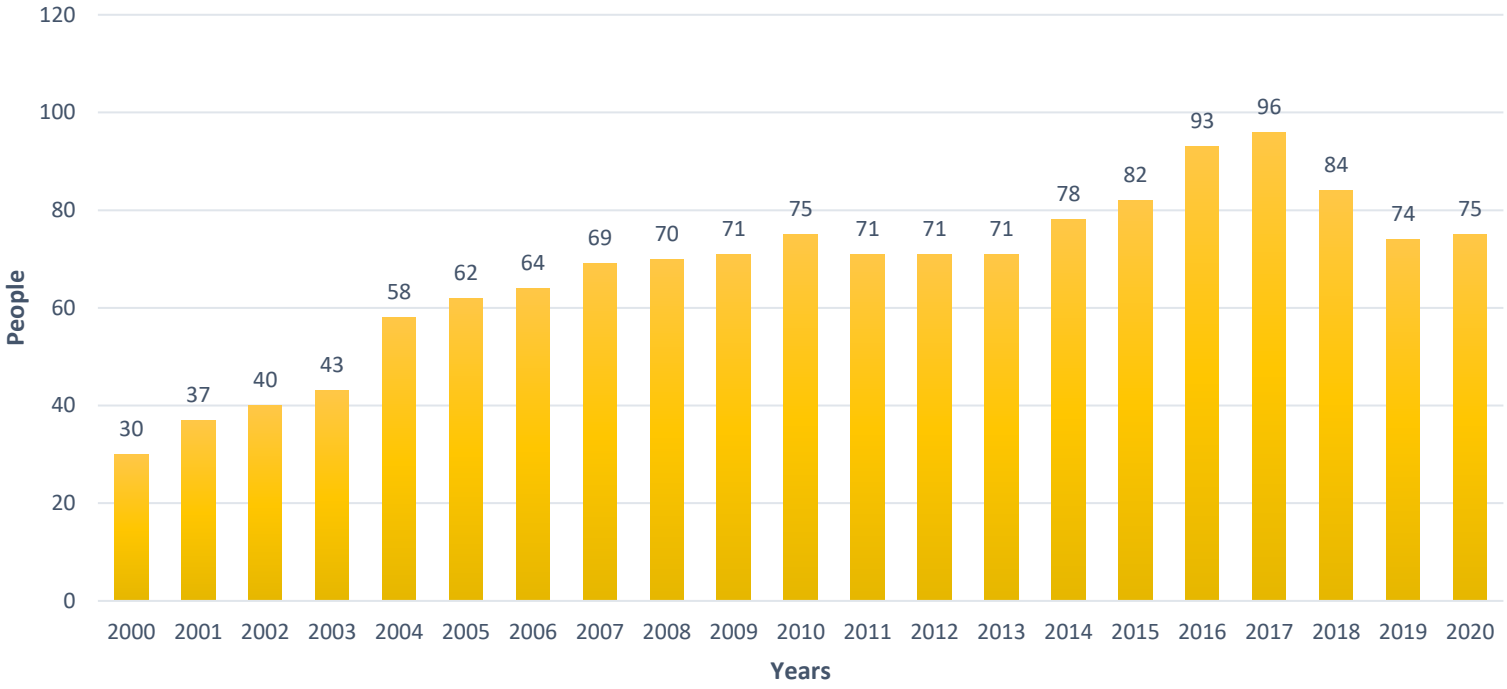
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
MALE	*	*	*	*	*	*	*	*	*	*	2.8	11.6	11.4	5.6	18.5	18.5	22.4	11.8	17.4	5.8	11.4
FEMALE	*	*	*	*	*	*	*	*	*	*	0	0	0	0	0	12.3	5.5	11.4	*	5.5	*

*= data unavailable

From 2010 to 2020, AI/AN males had higher HIV incidence rates compared to AI/AN females in Nevada.

AI/AN Living with HIV in Nevada

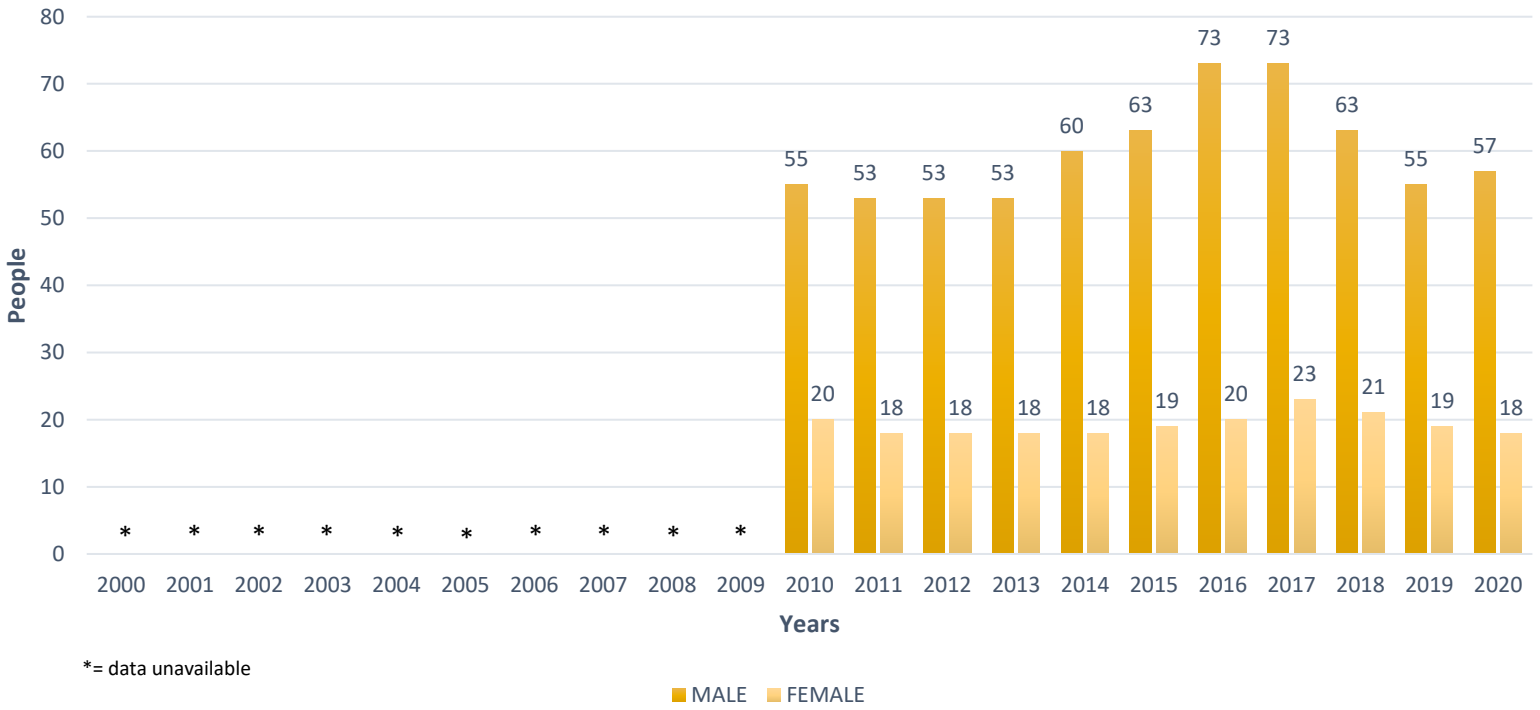
Figure 45. American Indians/Alaska Natives (AI/AN) Living with Human Immunodeficiency Virus (HIV) in Nevada from 2000 - 2020[67-88]



From 2000 to 2020, the number of AI/ANs living with HIV in Nevada remained steady. As of 2020, there were 75 AI/ANs living with HIV in Nevada.

AI/AN Living with HIV by Gender

Figure 46. American Indians/Alaska Natives (AI/AN) Living with Human Immunodeficiency Virus (HIV) by Gender in Nevada from 2000 - 2020[67-88]

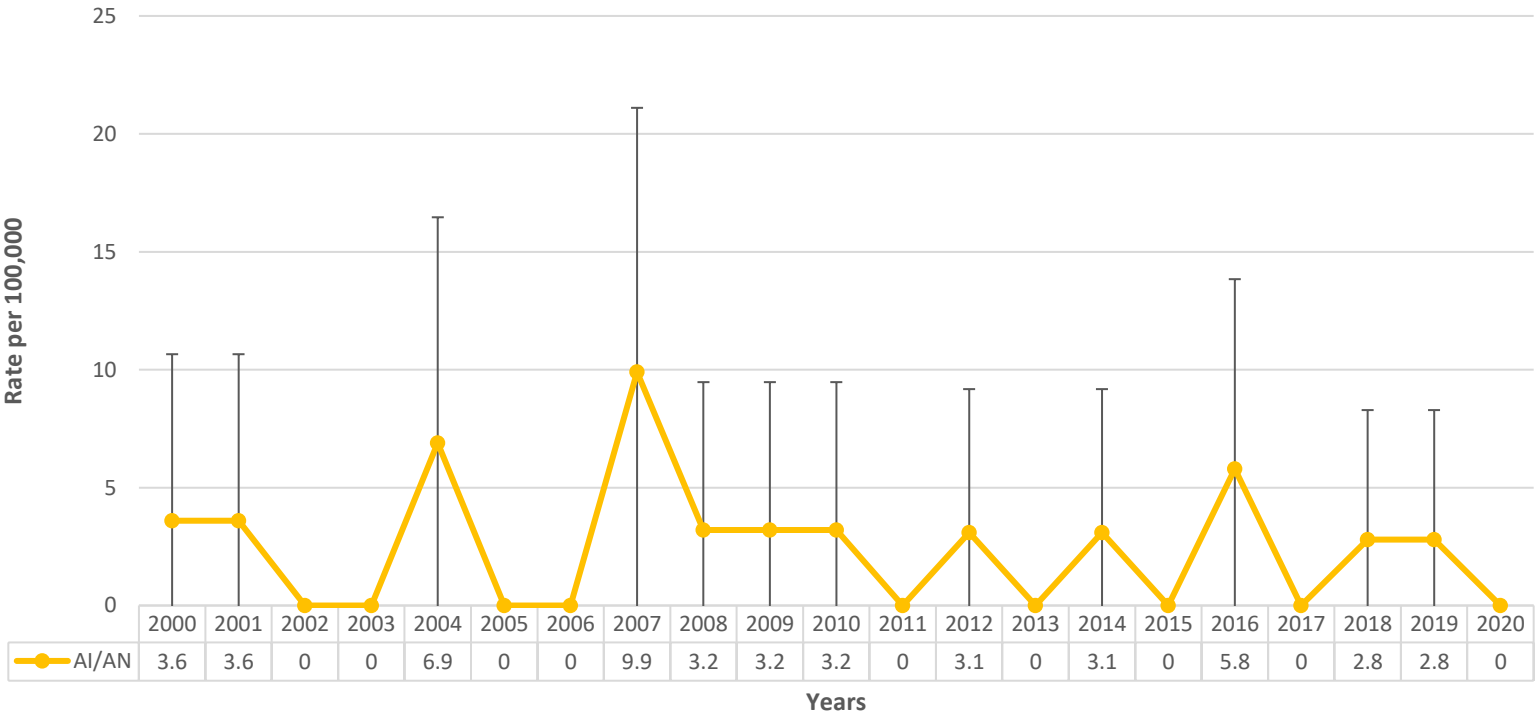


From 2010 to 2020, AI/AN males accounted for a majority of the people living with HIV compared to AI/AN females in Nevada during this time period. As of 2020, there was a reported total of 57 AI/AN males living with HIV during this time. There was a reported total of 18 AI/AN females living with HIV during this time.

AI/AN HIV-Related Deaths and Rates in Nevada

From 2000 to 2020, the number of HIV related deaths among AI/AN in Nevada remained low. Over the last 21 years, there was a reported total of 16 deaths.

Figure 47. Human Immunodeficiency Virus (HIV) Mortality Rate per 100,000 among American Indians/Alaska Natives (AI/AN) in Nevada from 2000 to 2020[67-88]



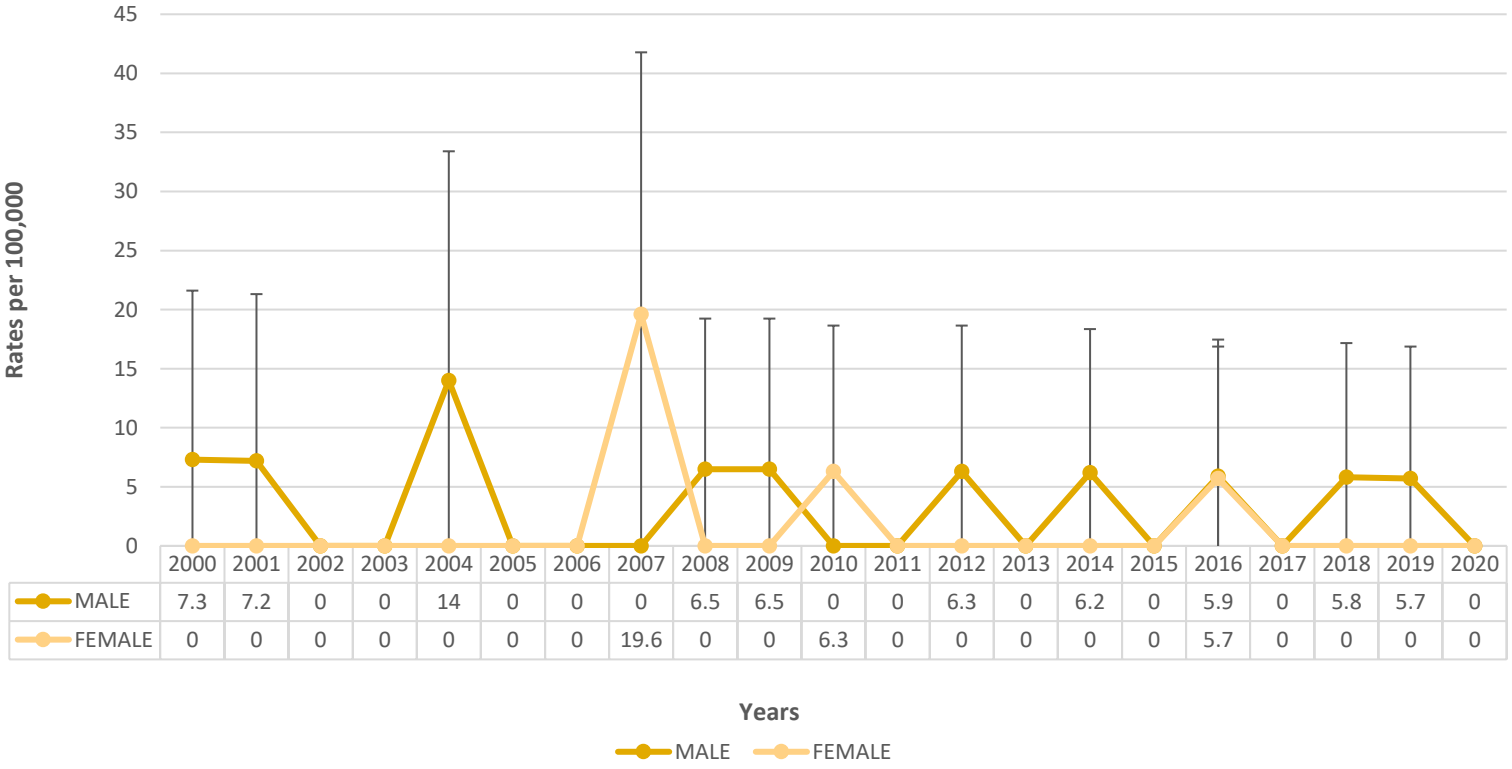
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
AI/AN	3.6	3.6	0	0	6.9	0	0	9.9	3.2	3.2	3.2	0	3.1	0	3.1	0	5.8	0	2.8	2.8	0

From 2000 to 2020, the HIV mortality rate among AI/AN in Nevada remained somewhat consistent. There were gradual increases and decreases over the 21 years.

AI/AN HIV – Related Deaths and Rates by Gender in Nevada

From 2000 to 2020, AI/AN males in Nevada had more HIV related deaths than AI/AN females. AI/AN males had a reported total of 11 deaths and AI/AN females had a reported total of 5 deaths.

Figure 48. Human Immunodeficiency Virus (HIV) Mortality Rate per 100,000 by Gender among American Indians/Alaska Natives (AI/AN) in Nevada from 2000 - 2020[67-88]



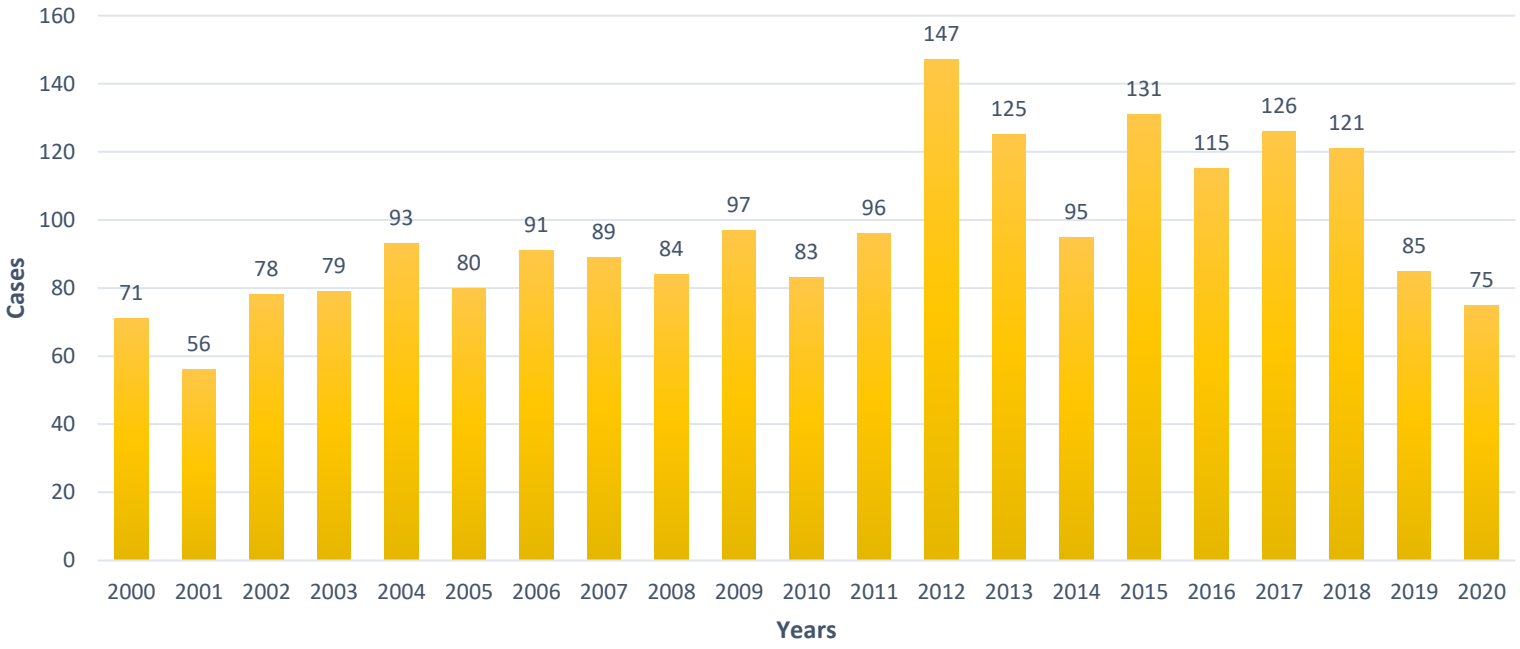
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
MALE	7.3	7.2	0	0	14	0	0	0	6.5	6.5	0	0	6.3	0	6.2	0	5.9	0	5.8	5.7	0
FEMALE	0	0	0	0	0	0	0	19.6	0	0	6.3	0	0	0	0	0	5.7	0	0	0	0

From 2000 to 2020, AI/AN males had overall higher HIV mortality rates compared to AI/AN females in Nevada.

Sexually Transmitted Infections (STI)

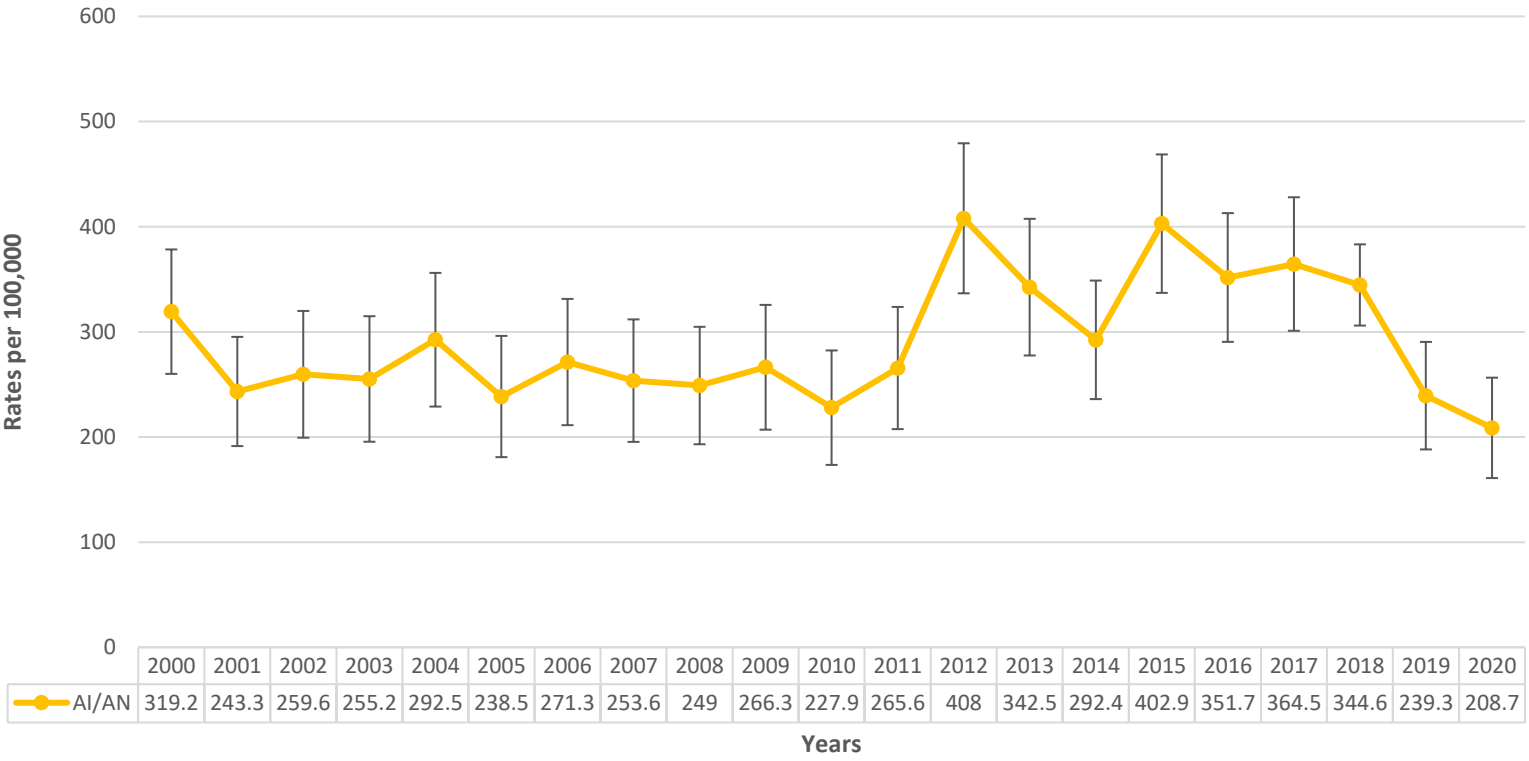
AI/AN Chlamydia Cases and Rates in Nevada

Figure 49. Chlamydia Cases among American Indians/Alaska Natives (AI/AN) in Nevada from 2000 to 2020[89-108]



From 2000 to 2020, Chlamydia cases among AI/AN in Nevada remained steady. Over the 21 years there was a reported total of 2,017 Chlamydia cases.

Figure 50. Chlamydia Incidence Rates per 100,000 among American Indians/Alaska Natives (AI/AN) in Nevada from 2000 to 2020[89-108]

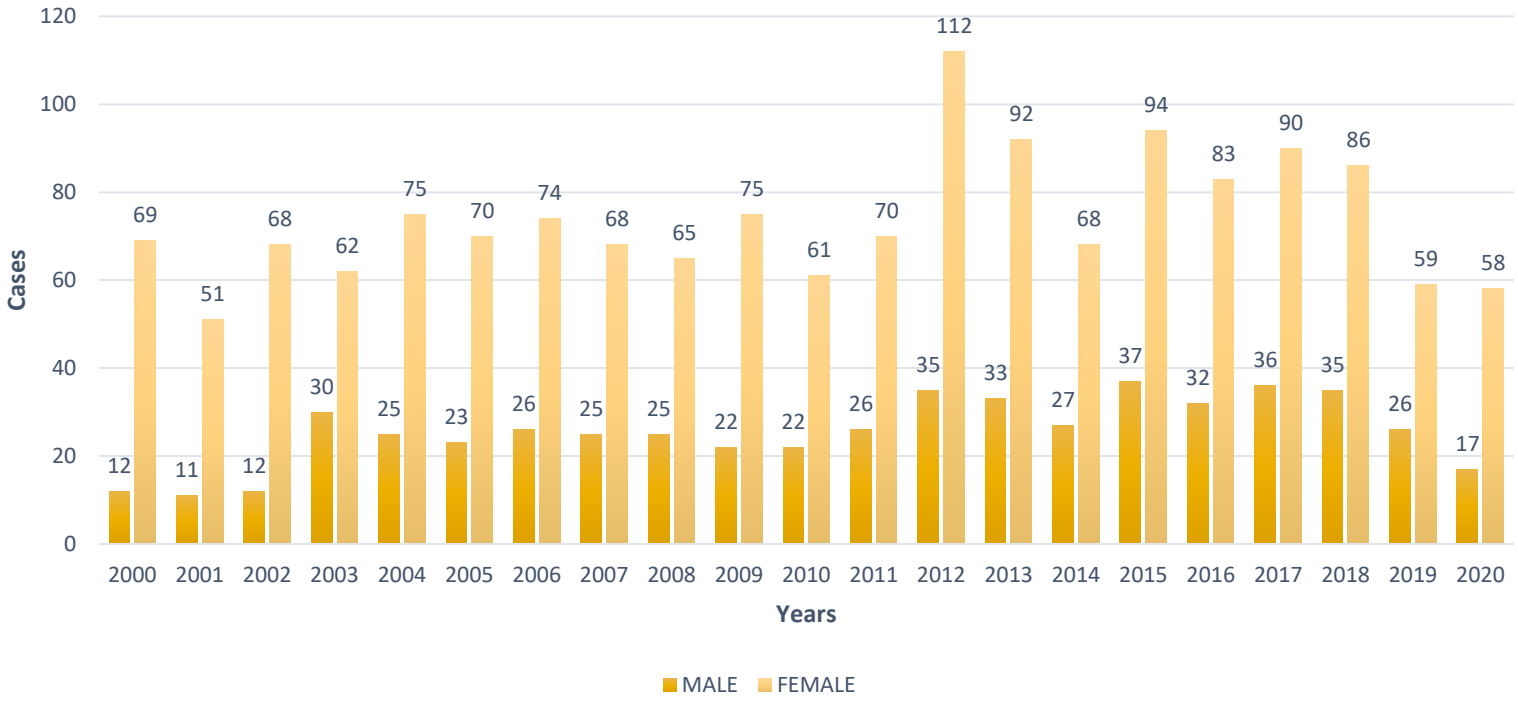


	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
AI/AN	319.2	243.3	259.6	255.2	292.5	238.5	271.3	253.6	249	266.3	227.9	265.6	408	342.5	292.4	402.9	351.7	364.5	344.6	239.3	208.7

From 2000 to 2020, the Chlamydia incidence rate among AI/AN in Nevada remained steady but started to show a decline towards the end of the time period.

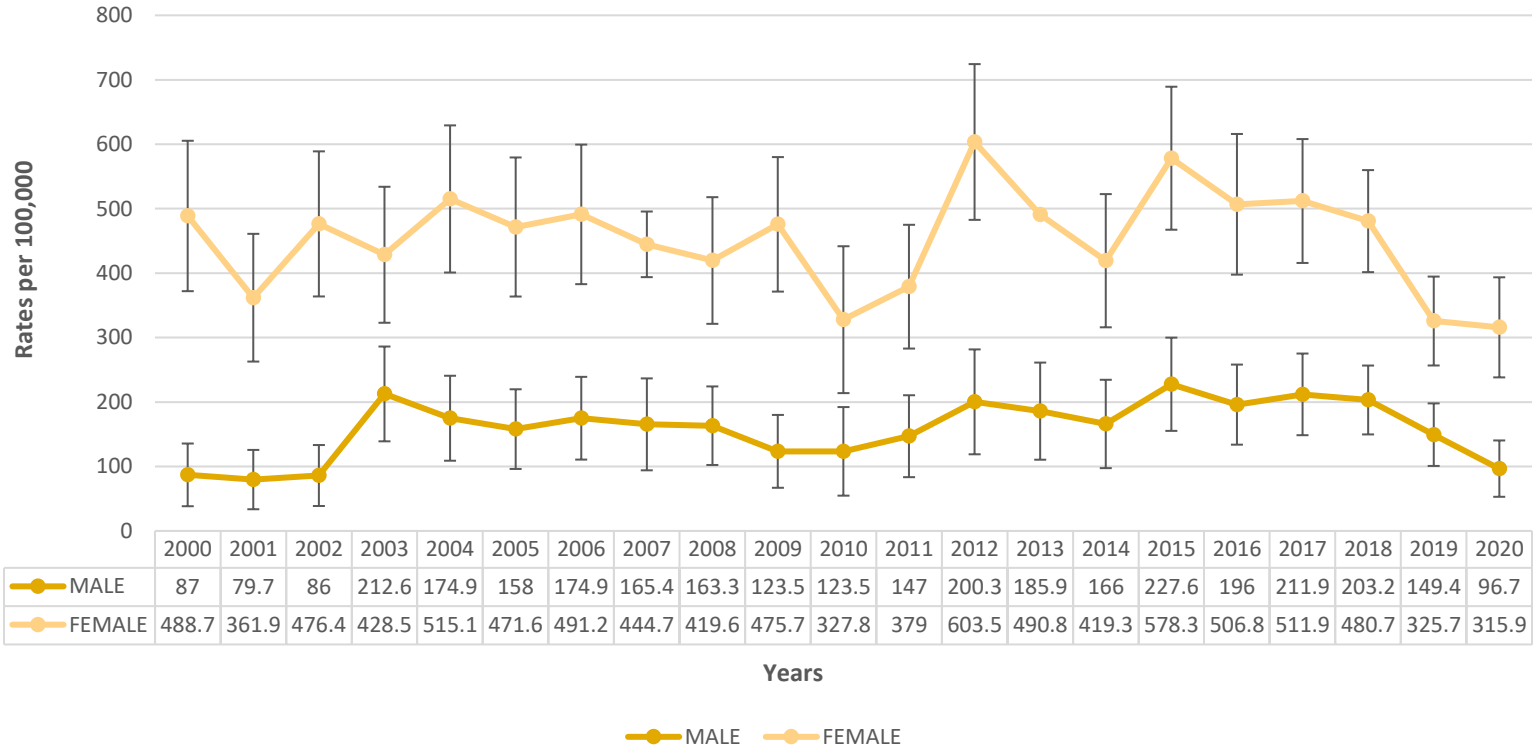
AI/AN Chlamydia Cases and Rates by Gender in Nevada

Figure 51. Chlamydia Cases among American Indians/Alaska Natives (AI/AN) by gender in Nevada from 2000 - 2020[89-108]



From 2000 to 2020, AI/AN females had a higher number of Chlamydia cases compared to AI/AN males in Nevada. AI/AN females had a reported total of 1,550 Chlamydia cases. AI/AN males had a reported total of 537 Chlamydia cases.

Figure 52. Chlamydia Incidence Rate per 100,000 among American Indians/Alaska Natives (AI/AN) by Gender in Nevada from 2000 - 2020[89-108]

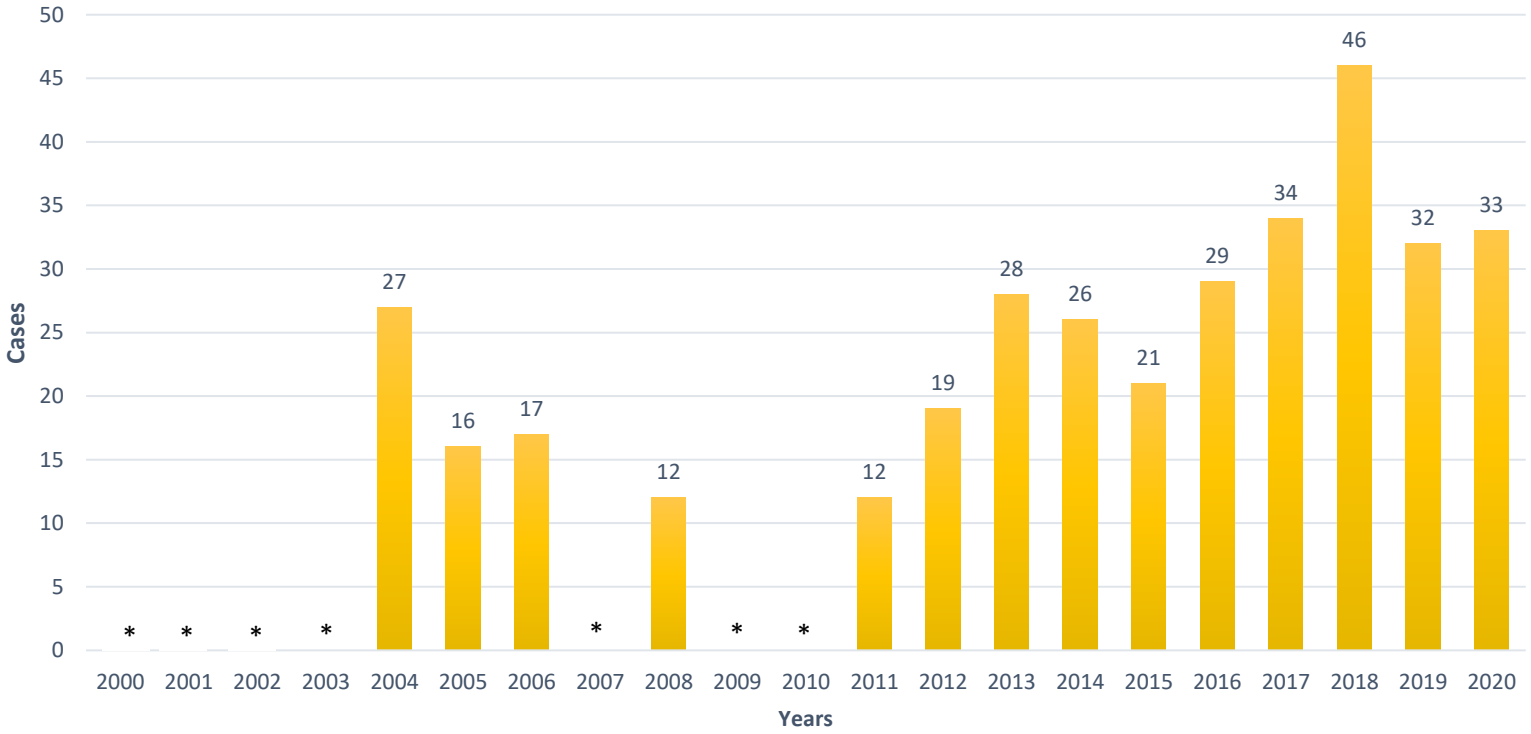


	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
MALE	87	79.7	86	212.6	174.9	158	174.9	165.4	163.3	123.5	123.5	147	200.3	185.9	166	227.6	196	211.9	203.2	149.4	96.7
FEMALE	488.7	361.9	476.4	428.5	515.1	471.6	491.2	444.7	419.6	475.7	327.8	379	603.5	490.8	419.3	578.3	506.8	511.9	480.7	325.7	315.9

From 2000 to 2020, AI/AN females in Nevada had higher Chlamydia incidence rates compared to AI/AN males.

AI/AN Gonorrhea Cases and Rates in Nevada

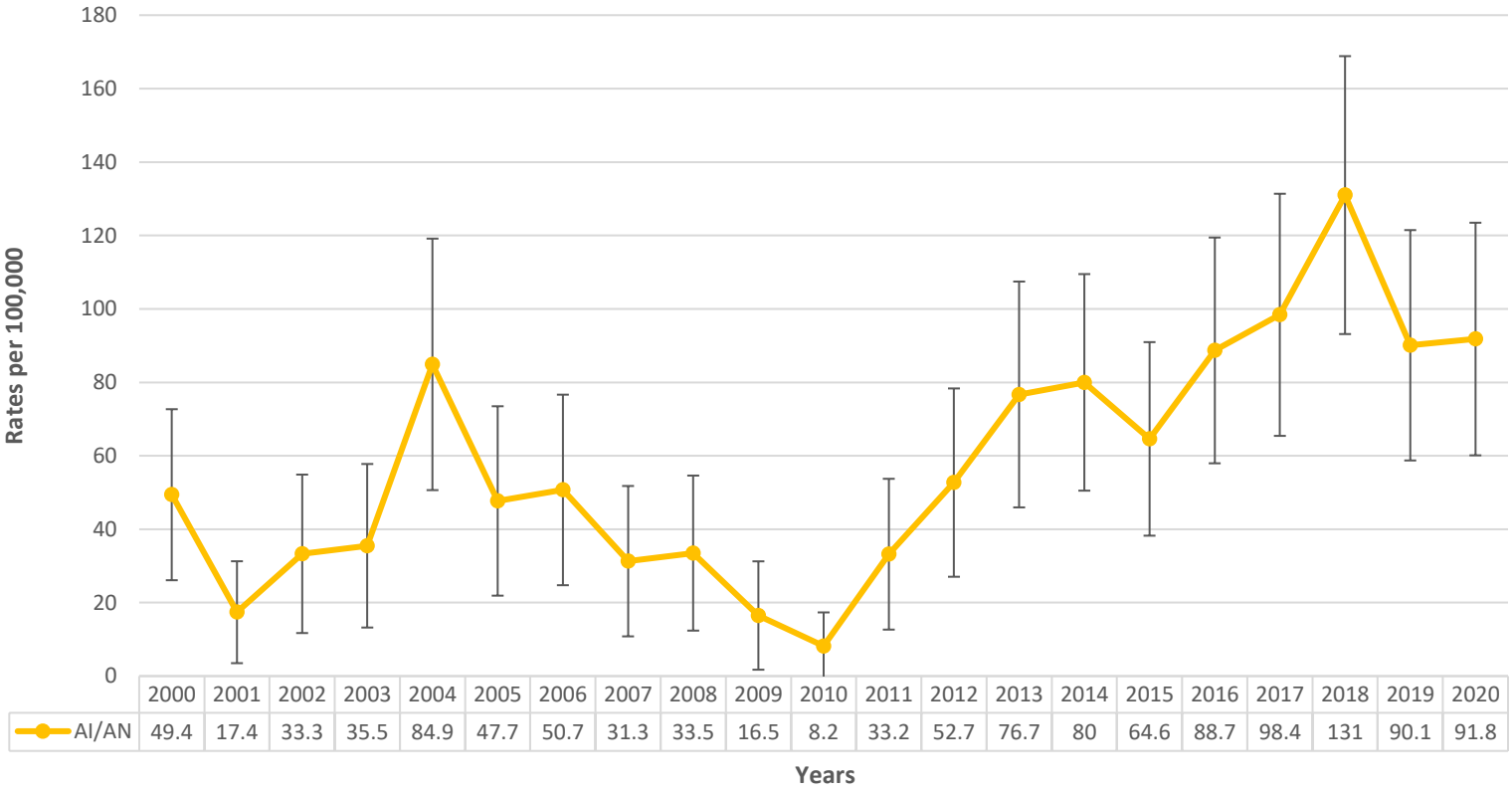
Figure 53. Gonorrhea Cases among American Indians/Alaska Natives (AI/AN) in Nevada from 2000 - 2020[89-108]



*= case count under 12

From 2000 to 2010, Gonorrhea cases among AI/AN in Nevada remained steady. From 2011 to 2020, the cases started to trend upward gradually during this time period. Over the 21 years, there was a reported total of 405 Gonorrhea cases.

Figure 54. Gonorrhea Incidence Rate per 100,000 among American Indians/Alaska Natives (AI/AN) in Nevada from 2000 to 2020[89-108]

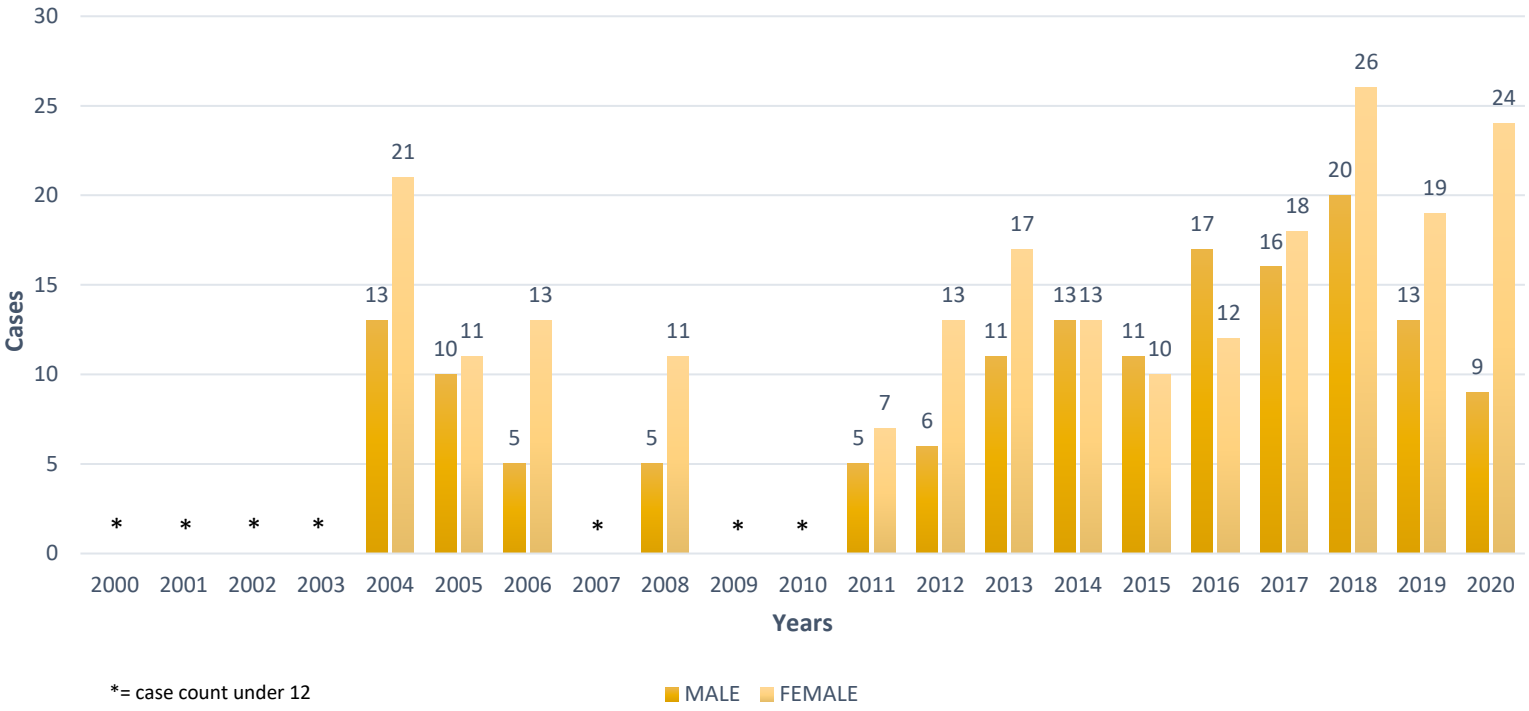


	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
AI/AN	49.4	17.4	33.3	35.5	84.9	47.7	50.7	31.3	33.5	16.5	8.2	33.2	52.7	76.7	80	64.6	88.7	98.4	131	90.1	91.8

From 2000 to 2010, Gonorrhea incidence rates among AI/AN in Nevada remained somewhat consistent with a major increase happening in 2004. From 2010 to 2020, Gonorrhea incidence rates increased rapidly.

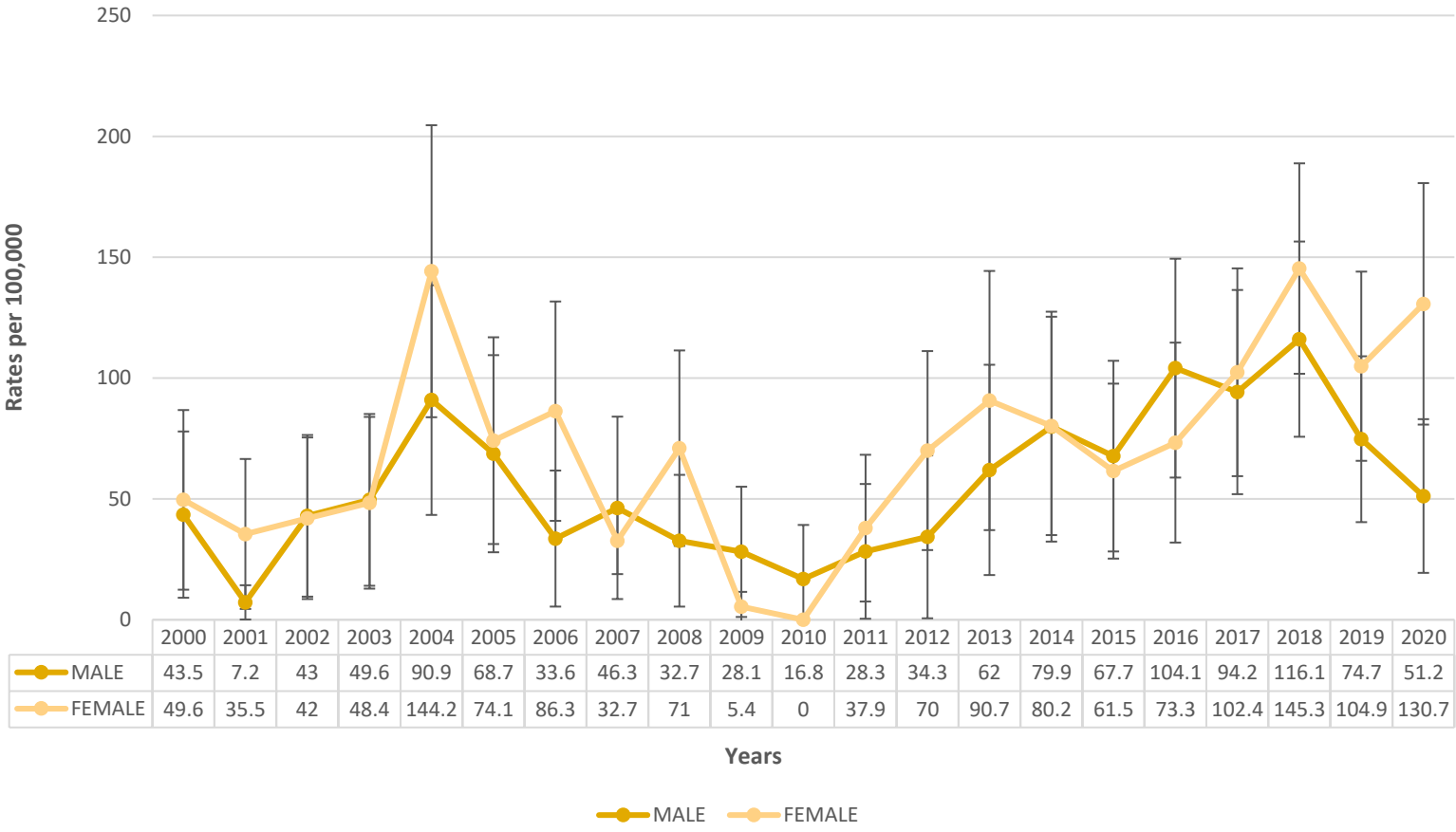
AI/AN Gonorrhea Cases and Rates by Gender in Nevada

Figure 55. Gonorrhea Cases among American Indians/Alaska Natives (AI/AN) by Gender in Nevada from 2000 - 2020[89-108]



From 2000 to 2020, Gonorrhea cases between AI/AN females and males in Nevada were very similar but AI/AN females had slightly higher cases compared to AI/AN males. AI/AN females had a reported total of 246 Gonorrhea cases. AI/AN males had a reported total of 189 Gonorrhea cases.

Figure 56. Gonorrhea Incidence Rate per 100,000 among American Indians/Alaska Natives AI/AN by gender in Nevada from 2000 - 2020[89-108]

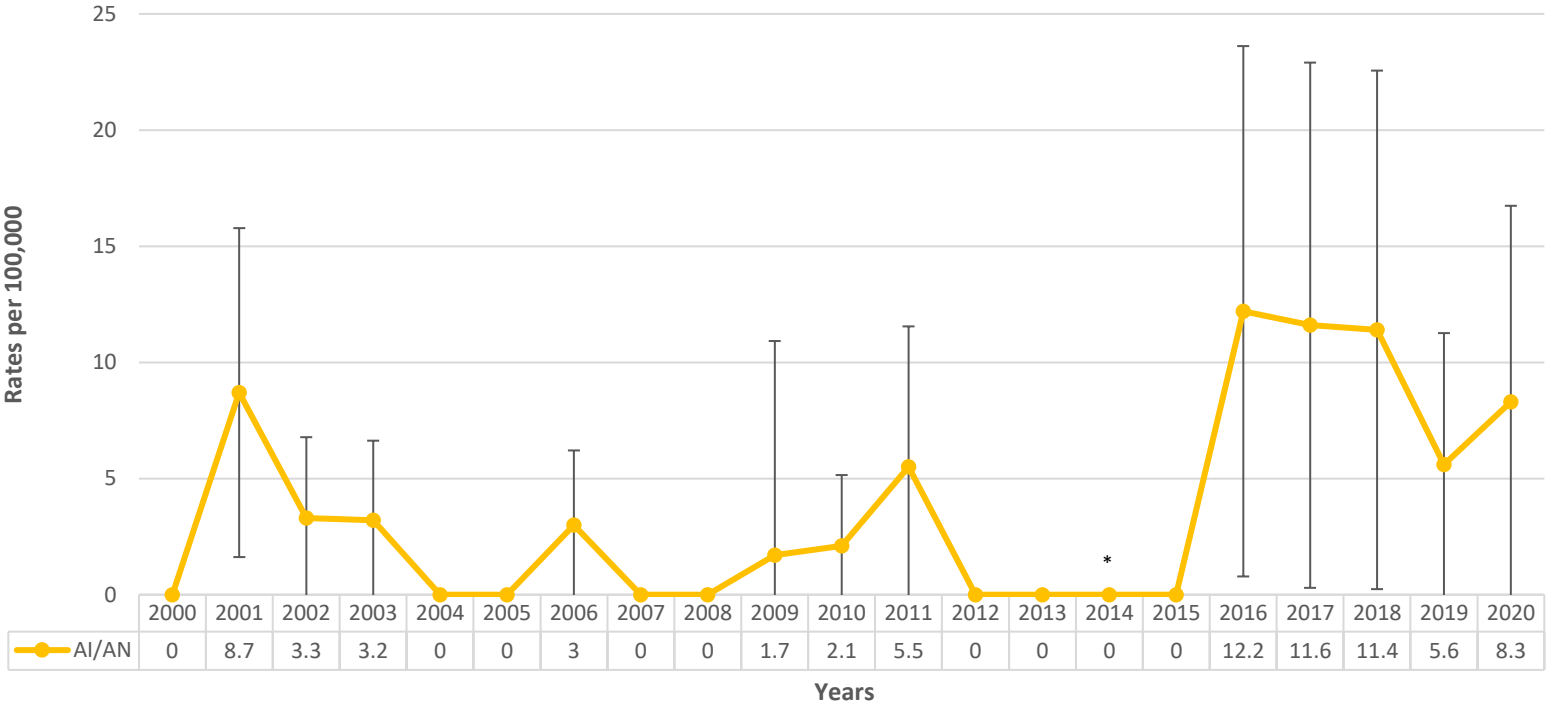


	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
MALE	43.5	7.2	43	49.6	90.9	68.7	33.6	46.3	32.7	28.1	16.8	28.3	34.3	62	79.9	67.7	104.1	94.2	116.1	74.7	51.2
FEMALE	49.6	35.5	42	48.4	144.2	74.1	86.3	32.7	71	5.4	0	37.9	70	90.7	80.2	61.5	73.3	102.4	145.3	104.9	130.7

From 2000 to 2020, AI/AN females in Nevada had higher Gonorrhea incidence rates compared to AI/AN males.

AI/AN Primary and Secondary Syphilis Cases and Rates in Nevada

Figure 57. Primary and Secondary Syphilis Incidence Rate per 100,000 among American Indians/Alaska Natives (AI/AN) in Nevada from 2000 to 2020[89-108]

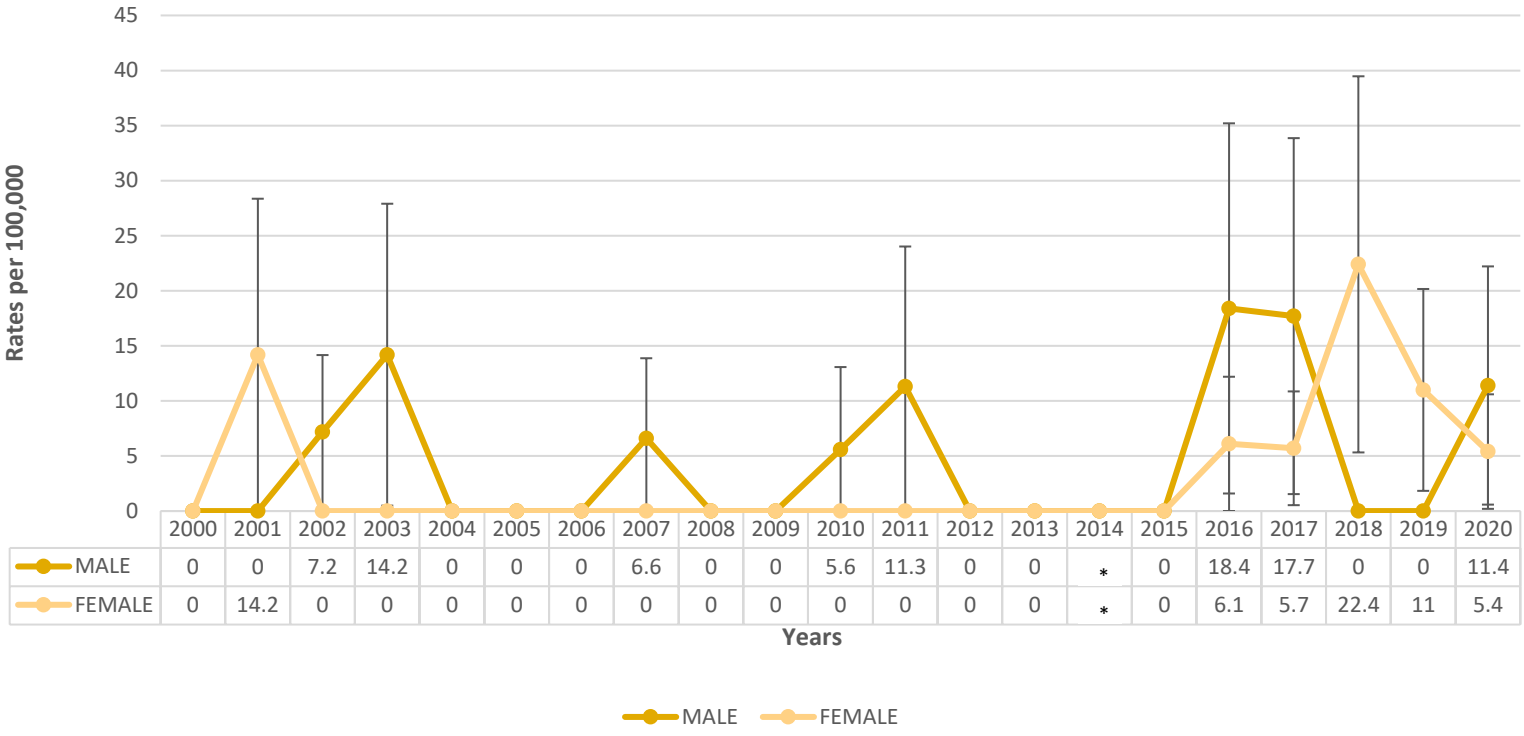


	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
AI/AN	0	8.7	3.3	3.2	0	0	3	0	0	1.7	2.1	5.5	0	0	0	0	12.2	11.6	11.4	5.6	8.3

From 2000 to 2010, Primary and Secondary Syphilis incidence rates remained low among AI/AN in Nevada with increases in 2001 and 2006. From 2010 to 2020, there was a sharp increase in 2016 and remained high during the rest of the time period.

AI/AN Primary and Secondary Syphilis Cases and Rates by Gender in Nevada

Figure 58. Primary and Secondary Syphilis Cases Incidence Rate per 100,000 among AI/AN by Gender in Nevada from 2000 - 2020[89-108]



	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
MALE	0	0	7.2	14.2	0	0	0	6.6	0	0	5.6	11.3	0	0	*	0	18.4	17.7	0	0	11.4
FEMALE	0	14.2	0	0	0	0	0	0	0	0	0	0	0	0	*	0	6.1	5.7	22.4	11	5.4

*= counts under 5 or cases of complementary suppression

From 2000 to 2020, AI/AN males in Nevada had a higher number of Primary and Secondary Syphilis cases compared to AI/AN females during this time period. AI/AN males had a reported total of 15 Primary and Secondary Syphilis cases. AI/AN females had a reported total of 11 Primary and Secondary Syphilis cases.

AI/AN Congenital Syphilis Cases in Nevada

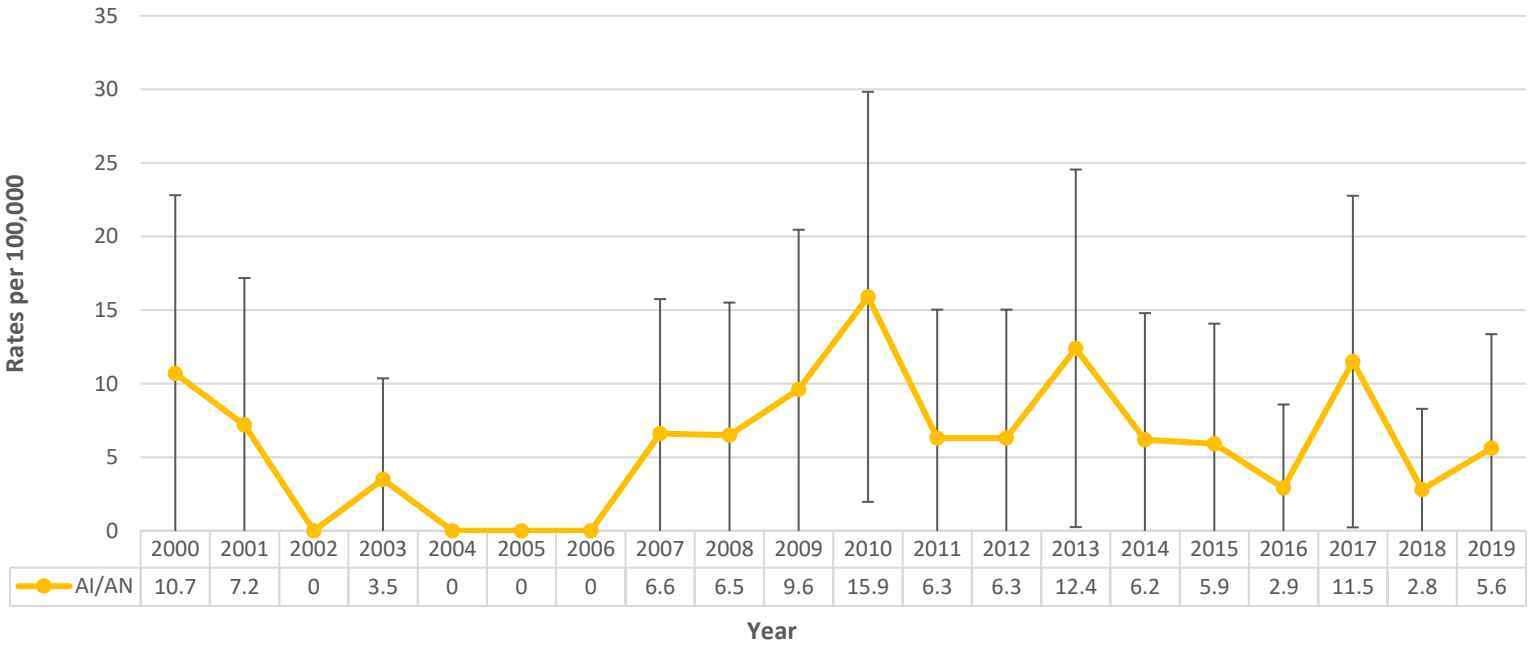
From 2000 to 2020, AI/AN Congenital Syphilis cases were low in Nevada. Over the 21 years, there was a reported total of 2 cases.

Hepatitis C Virus (HCV)

AI/AN HCV Related Deaths and Rates in Nevada

From 2000 to 2019, Hepatitis C Virus related deaths among AI/AN in Nevada remained steady. There was reported total of 38 Hepatitis C Virus related deaths.

Figure 59. Hepatitis C Virus Mortality Rate per 100,000 among American Indians/Alaska Natives (AI/AN) in Nevada from 2000 – 2019[109]



	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
AI/AN	10.7	7.2	0	3.5	0	0	0	6.6	6.5	9.6	15.9	6.3	6.3	12.4	6.2	5.9	2.9	11.5	2.8	5.6

From 2000 to 2019, Hepatitis C Virus mortality rates showed increases and decreases.

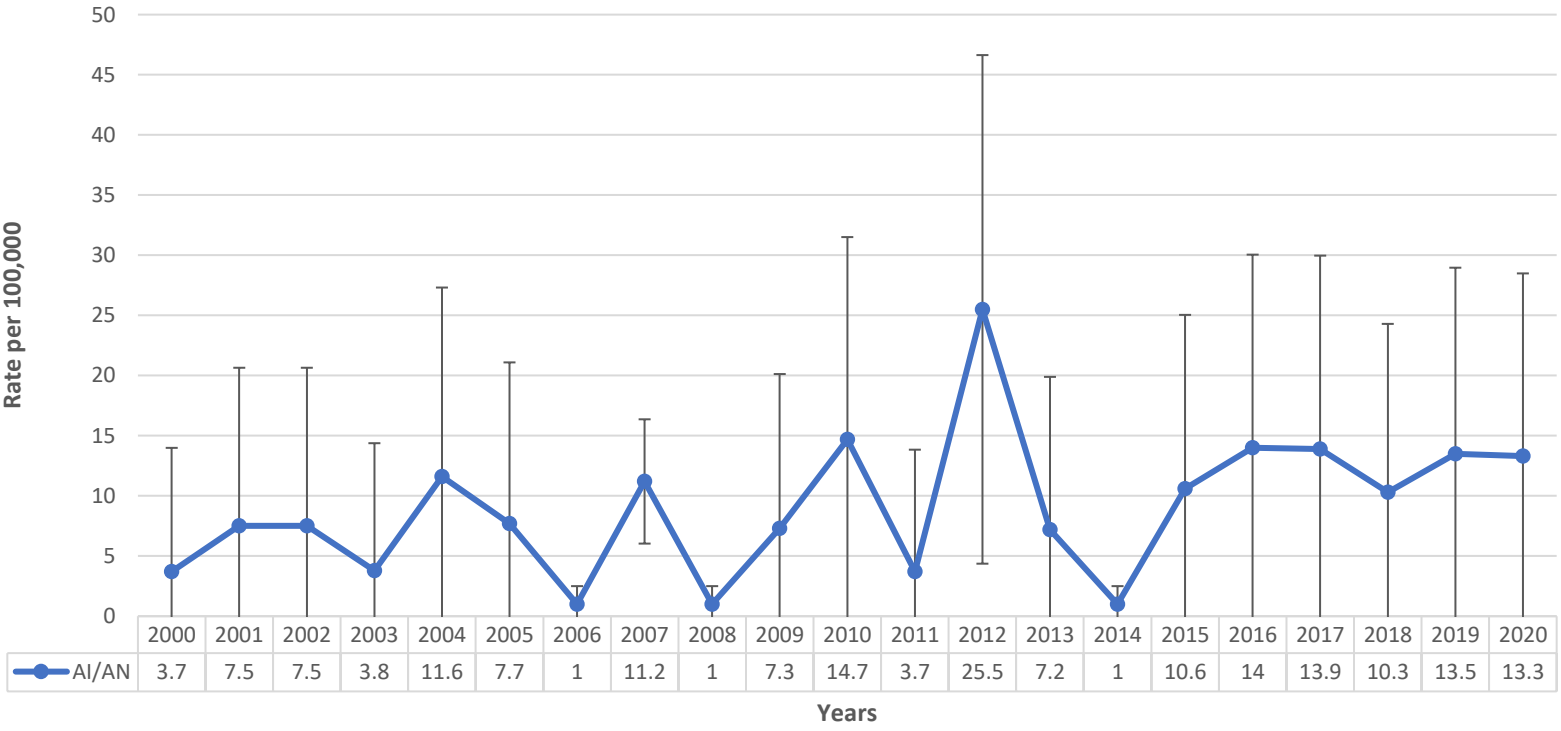
Human Immunodeficiency Virus, Sexually Transmitted Infections, and Hepatitis C Virus among American Indians/Alaskan Natives in Utah

Human Immunodeficiency Virus (HIV)

AI/AN New HIV Cases and Rates in Utah

From 2000 to 2020, the number of new HIV cases among AI/AN in Utah remained steady. There was a reported total of 52 new HIV cases.

Figure 60. Human Immunodeficiency Virus (HIV) Incidence Rate per 100,000 among American Indians/Alaska Natives (AI/AN) in Utah from 2000 – 2020[110-112]



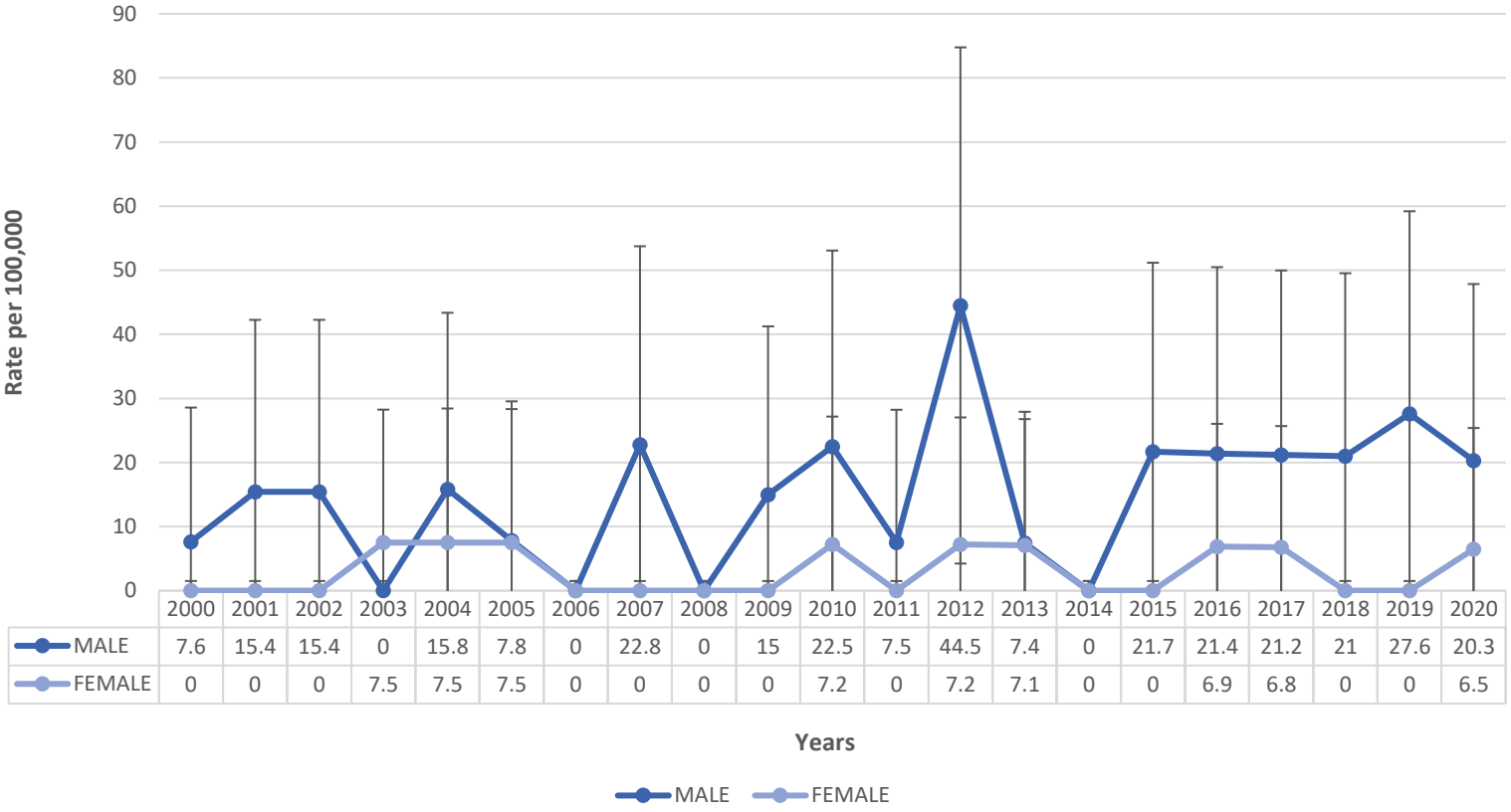
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
AI/AN	3.7	7.5	7.5	3.8	11.6	7.7	1	11.2	1	7.3	14.7	3.7	25.5	7.2	1	10.6	14	13.9	10.3	13.5	13.3

From 2000 to 2020, the HIV incidence rates among AI/AN in Utah remained inconsistent with many increases and decreases during the time period.

AI/AN New HIV Cases and Rates by Gender in Utah

From 2000 to 2020, AI/AN males in Utah had higher counts of new HIV cases compared to AI/AN females. AI/AN males had 43 cases and AI/AN females had 9 cases.

Figure 61. Human Immunodeficiency Virus (HIV) Incidence Rate per 100,000 among American Indians/Alaska Natives (AI/AN) by Gender in Utah from 2000 - 2020[110-112]

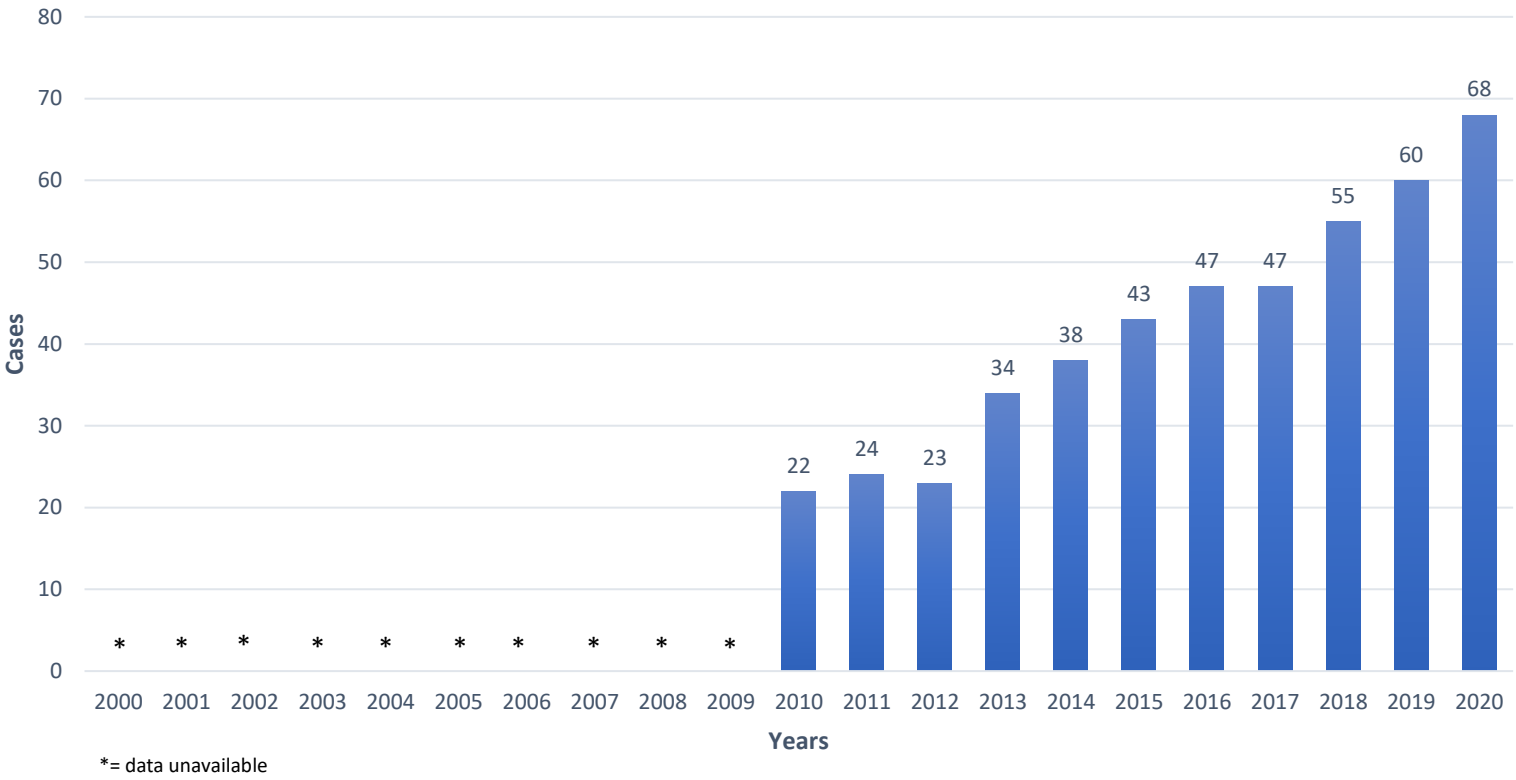


	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
MALE	7.6	15.4	15.4	0	15.8	7.8	0	22.8	0	15	22.5	7.5	44.5	7.4	0	21.7	21.4	21.2	21	27.6	20.3
FEMALE	0	0	0	7.5	7.5	7.5	0	0	0	0	7.2	0	7.2	7.1	0	0	6.9	6.8	0	0	6.5

From 2000 to 2020, AI/AN males had higher incidence rates of HIV compared to AI/AN females in Utah.

AI/AN Living with HIV in Utah

Figure 62. American Indians/Alaska Natives (AI/AN) Living with Human Immunodeficiency Virus (HIV) in Utah from 2000 - 2020[110-112]



From 2010 to 2020, the number of AI/AN living with HIV increased each year. As of 2020, there was a reported total of 68 people.

AI/AN Living with HIV by Gender in Utah

Figure 63. American Indians/Alaska Natives (AI/AN) Living with Human Immunodeficiency Virus (HIV) by Gender in Utah from 2000 - 2020[110-112]

From 2010 to 2020, there were more AI/AN males living with HIV compared to AI/AN females in Utah. As of 2020, there was a reported total of 61 AI/AN males living with HIV and 7 AI/AN females living with HIV.

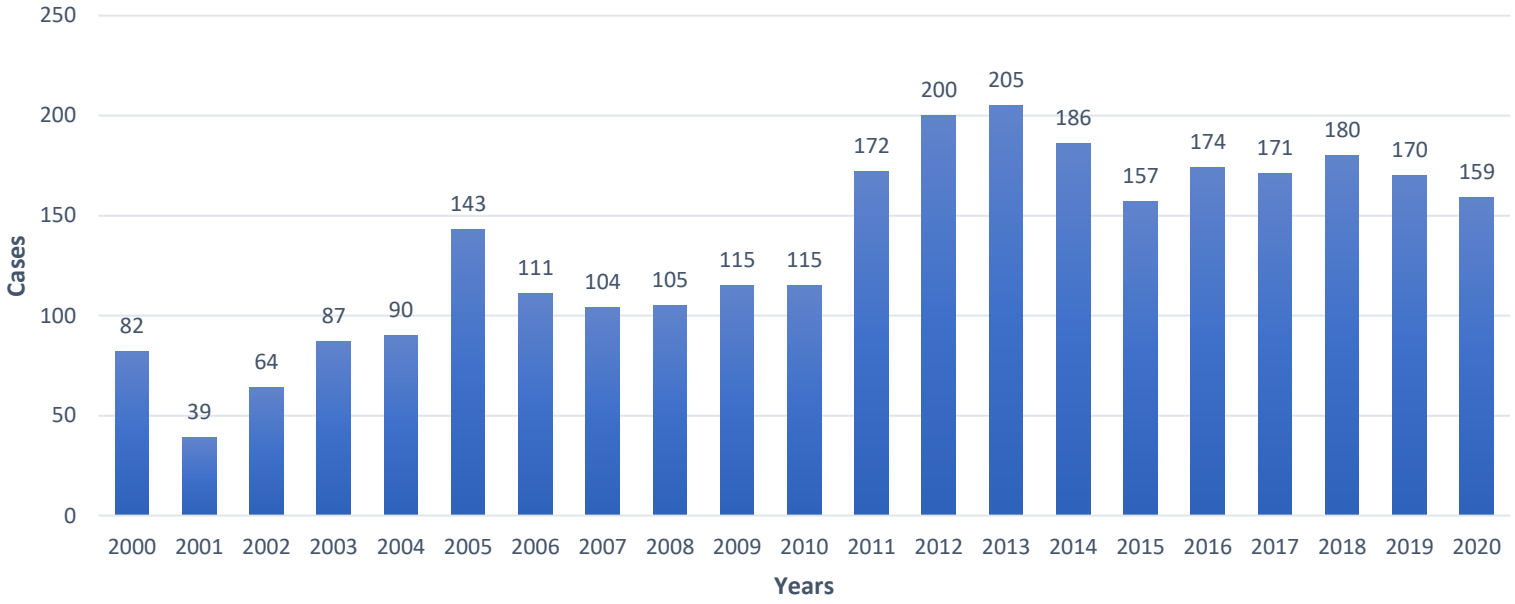
AI/AN HIV – Related Deaths in Utah

From 2000 to 2020, HIV-Related deaths among AI/AN in Utah remained very low. There was a reported total of 8 deaths.

Sexually Transmitted Infections (STI)

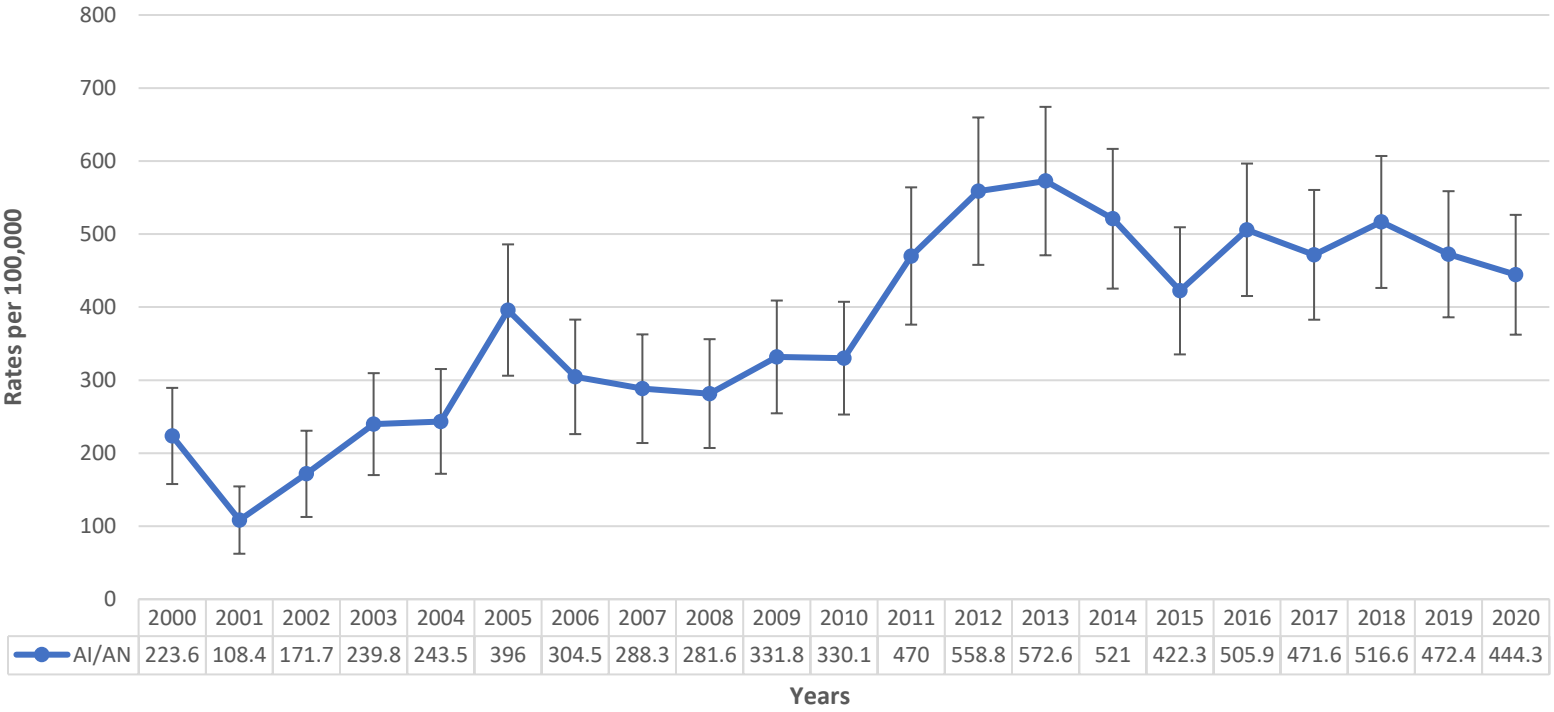
AI/AN Chlamydia Cases and Rates in Utah

Figure 64. Chlamydia Cases among American Indians/Alaska Natives (AI/AN) in Utah from 2000 – 2020[113-115]



From 2000 to 2020, Chlamydia cases among AI/ANs in Utah remained steady. There was a reported total of 2,829 Chlamydia cases.

Figure 65. Chlamydia Incidence Rates per 100,000 among AI/AN in Utah from 2000 - 2020[113-115]

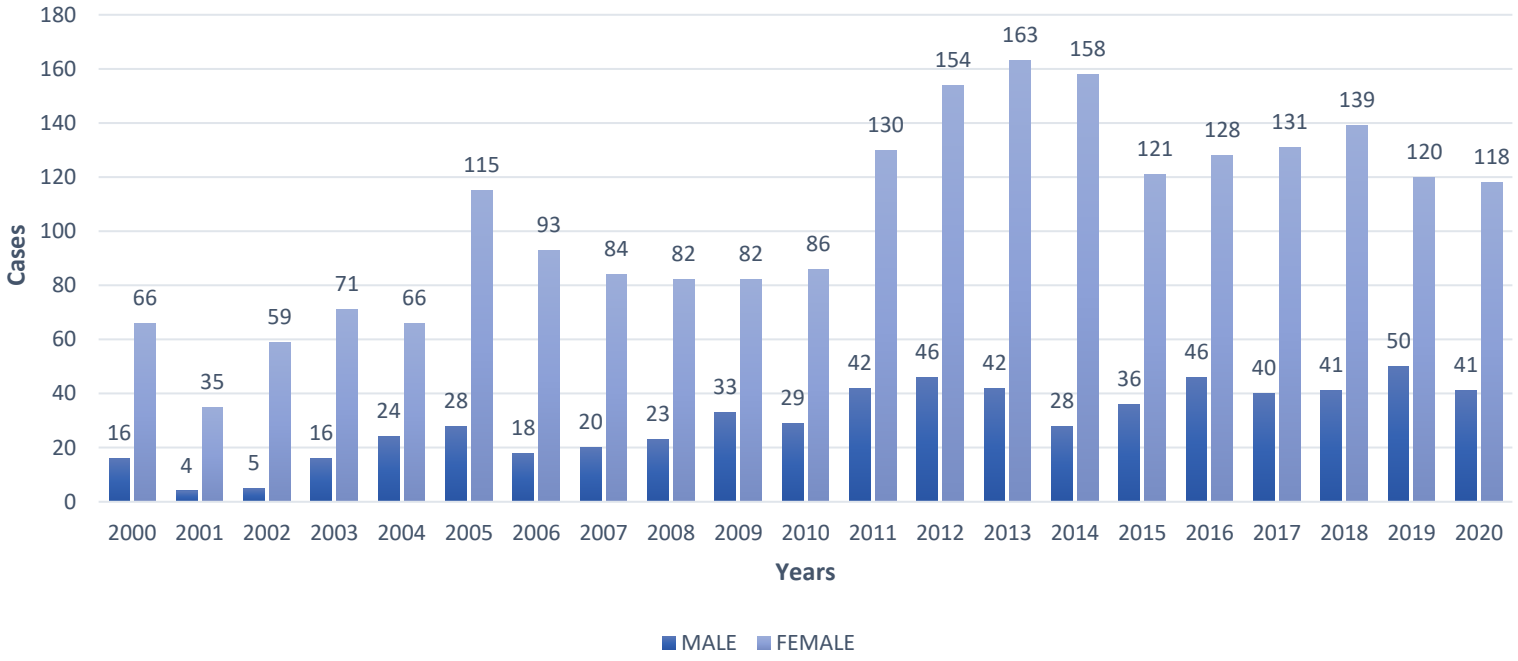


	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
AI/AN	223.6	108.4	171.7	239.8	243.5	396	304.5	288.3	281.6	331.8	330.1	470	558.8	572.6	521	422.3	505.9	471.6	516.6	472.4	444.3

From 2000 to 2010, Chlamydia incidence rates among AI/ANs in Utah trended upward and remained steady. From 2011 to 2019, the incidence rates trended upward again and remained steady towards the end of the time period.

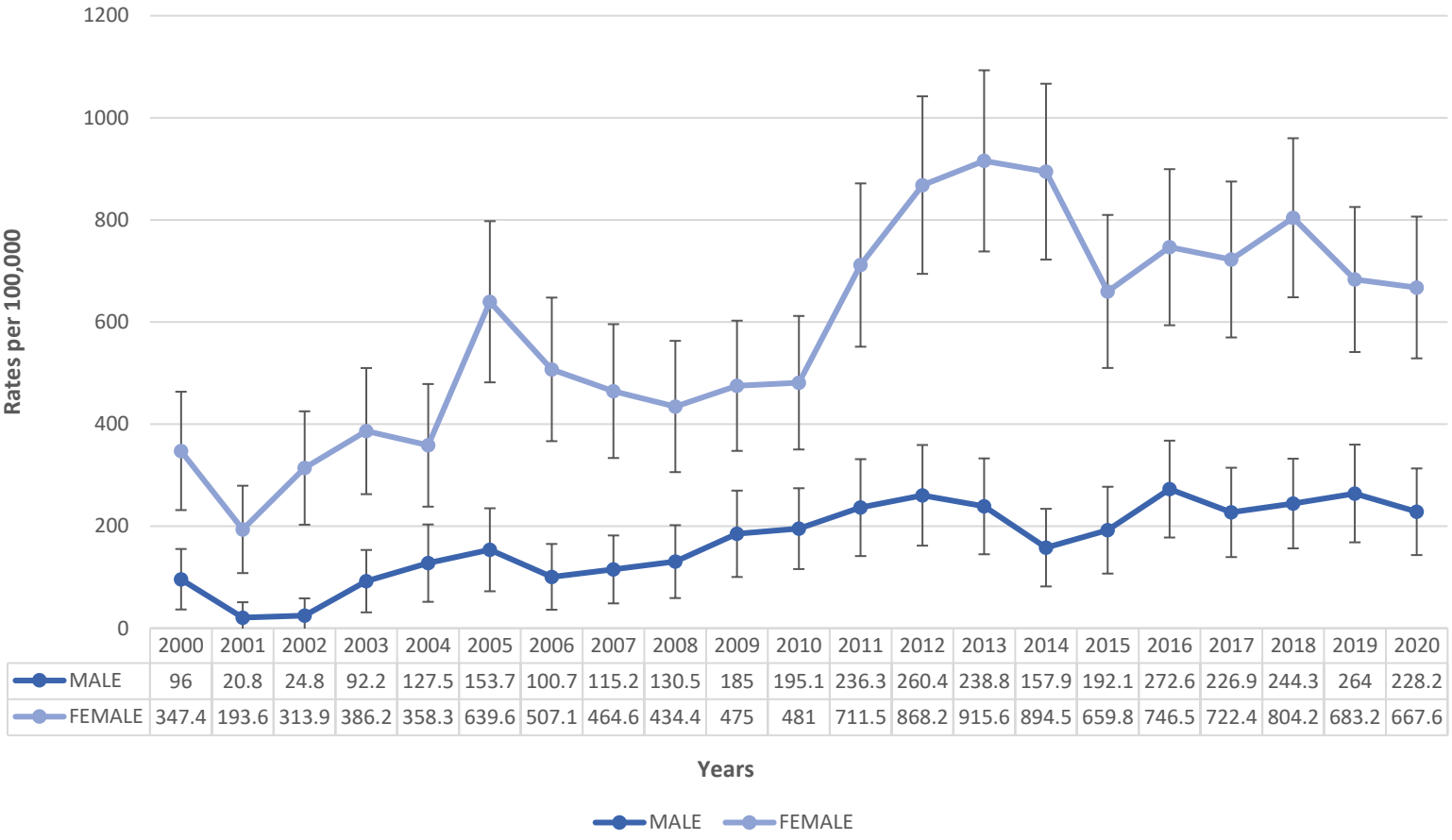
AI/AN Chlamydia Cases and Rates in Utah

Figure 66. Chlamydia Cases among American Indians/Alaska Natives (AI/AN) by Gender in Utah from 2000 - 2020[113-115]



From 2000 to 2020, AI/AN females had higher counts of Chlamydia compared to AI/AN males. AI/AN females had a reported total of 2,201 cases and AI/AN males a total of 628 cases.

Figure 67. Chlamydia Incidence Rates per 100,000 among American Indians/Alaska Natives (AI/AN) by gender in Utah from 2000 - 2020[113-115]

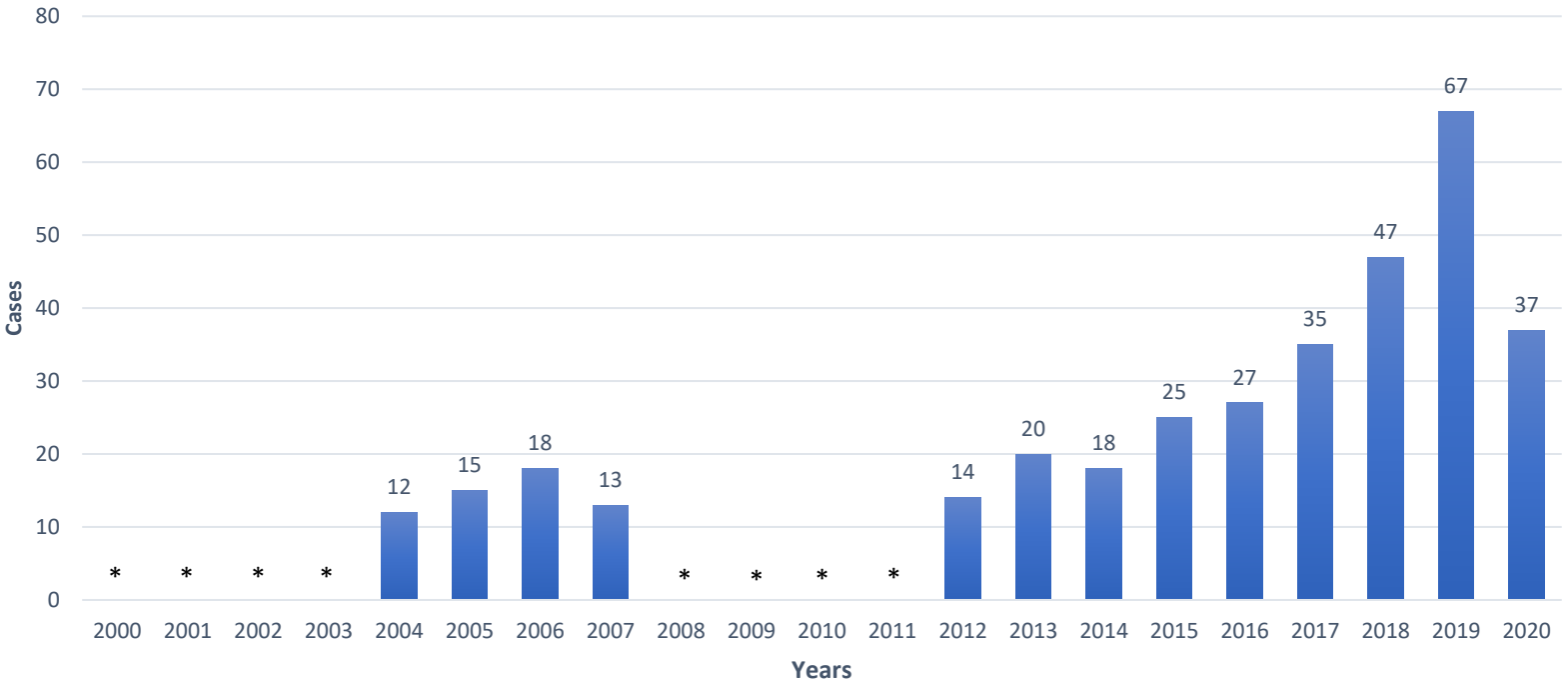


	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
MALE	96	20.8	24.8	92.2	127.5	153.7	100.7	115.2	130.5	185	195.1	236.3	260.4	238.8	157.9	192.1	272.6	226.9	244.3	264	228.2
FEMALE	347.4	193.6	313.9	386.2	358.3	639.6	507.1	464.6	434.4	475	481	711.5	868.2	915.6	894.5	659.8	746.5	722.4	804.2	683.2	667.6

From 2000 to 2020, AI/AN females had higher rates of Chlamydia compared to AI/AN males in Utah.

AI/AN Gonorrhea Cases and Rates in Utah

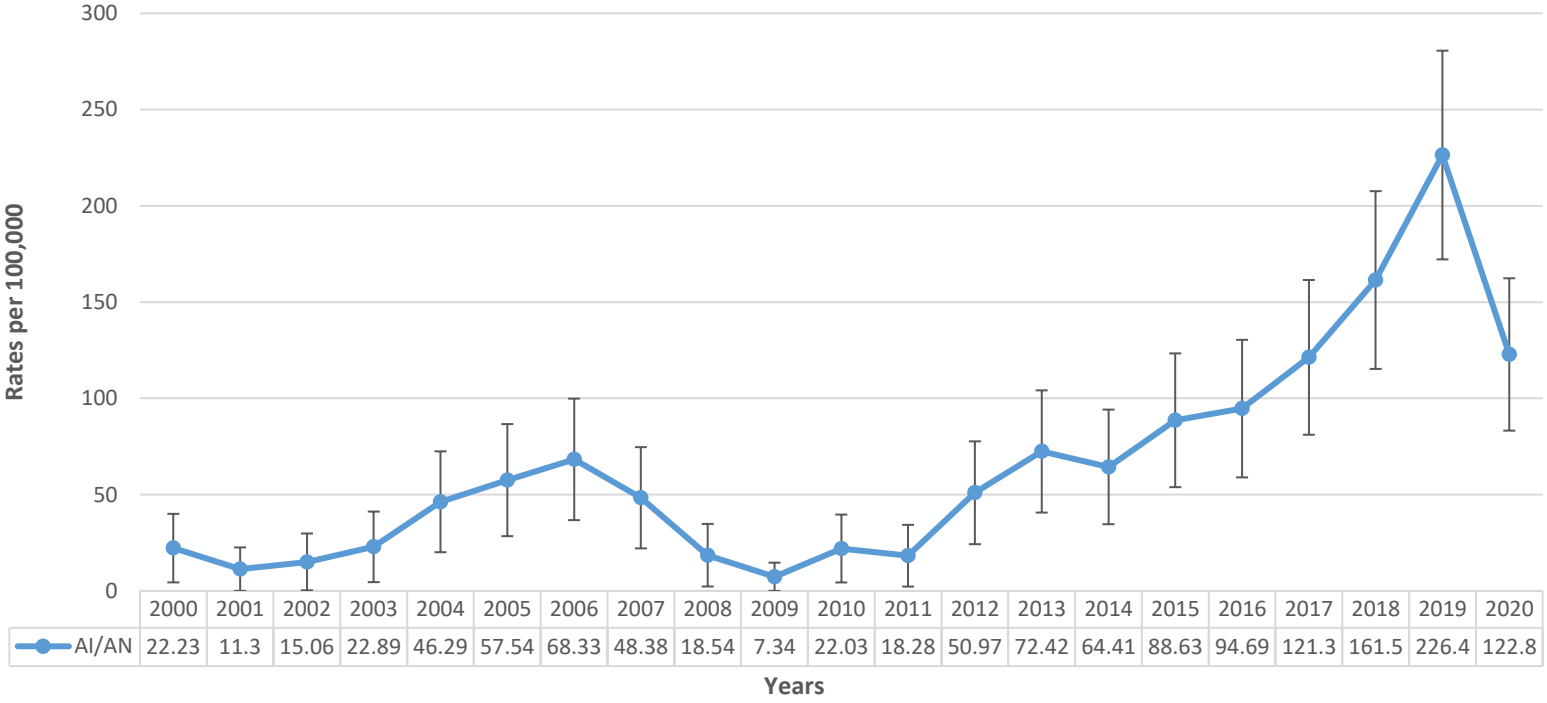
Figure 68. Gonorrhea Cases among American Indians/Alaska Natives (AI/AN) in Utah from 2000 to 2020[113-115]



*= counts under 12 suppressed

From 2000 to 2011, Gonorrhea cases among AI/AN in Utah were low in the beginning of the time period but cases started to increase dramatically in 2012. Over the 21 years, there was a reported total of 385 Gonorrhea cases.

Figure 69. Gonorrhea Incidence Rates per 100,000 among AI/AN in Utah from 2000 - 2020[113-115]

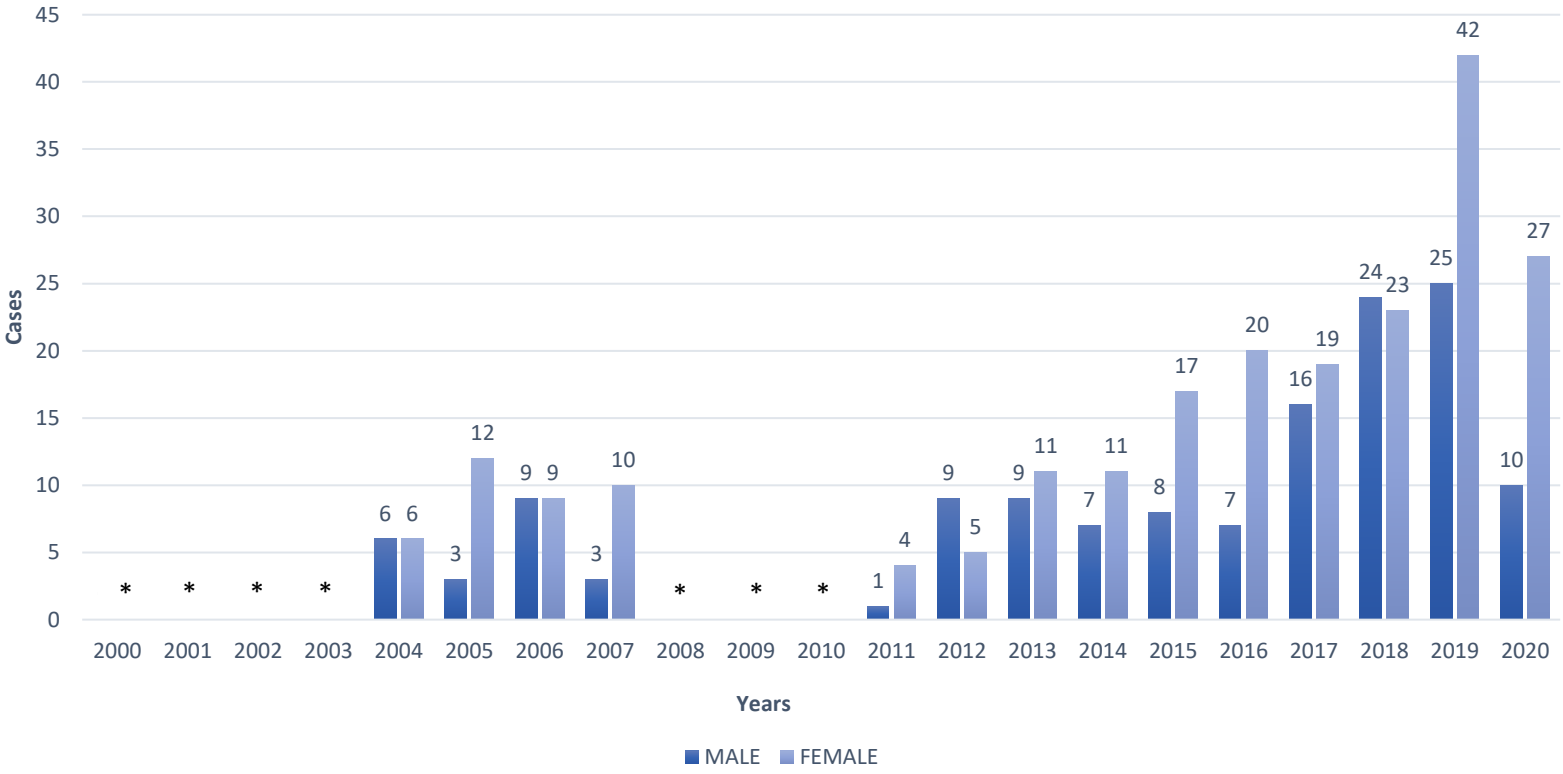


	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
AI/AN	22.23	11.3	15.06	22.89	46.29	57.54	68.33	48.38	18.54	7.34	22.03	18.28	50.97	72.42	64.41	88.63	94.69	121.3	161.5	226.4	122.8

From 2000 to 2010, Gonorrhea incidence rates among AI/AN in Utah had a slight increase and. From 2011 to 2020, the incidence rates trended upward dramatically.

AI/AN Gonorrhea Cases and Rates by Gender in Utah

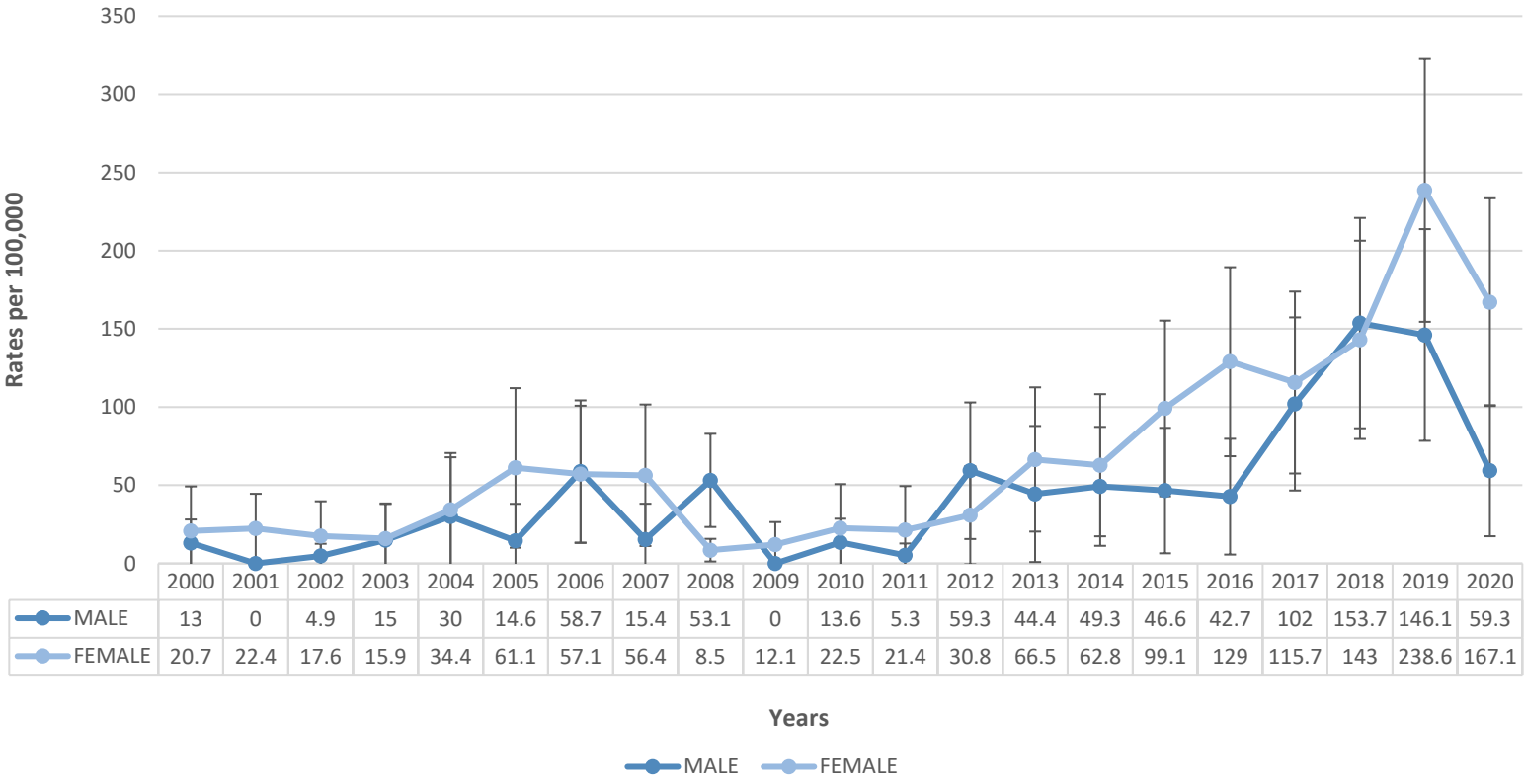
Figure 70. Gonorrhea Cases by Gender among American Indians/Alaska Natives (AI/AN) in Utah from 2000 - 2020[113-115]



*= counts under 12 suppressed

From 2000 to 2020, AI/AN females had higher cases of Gonorrhea compared to AI/AN males in Utah. AI/AN females had a reported total of 236 cases and AI/AN males had a total of 149 cases.

Figure 71. Gonorrhea Incidence Rates per 100,000 among American Indians/Alaska Natives (AI/AN) by Gender in Utah from 2000 - 2020[113-115]



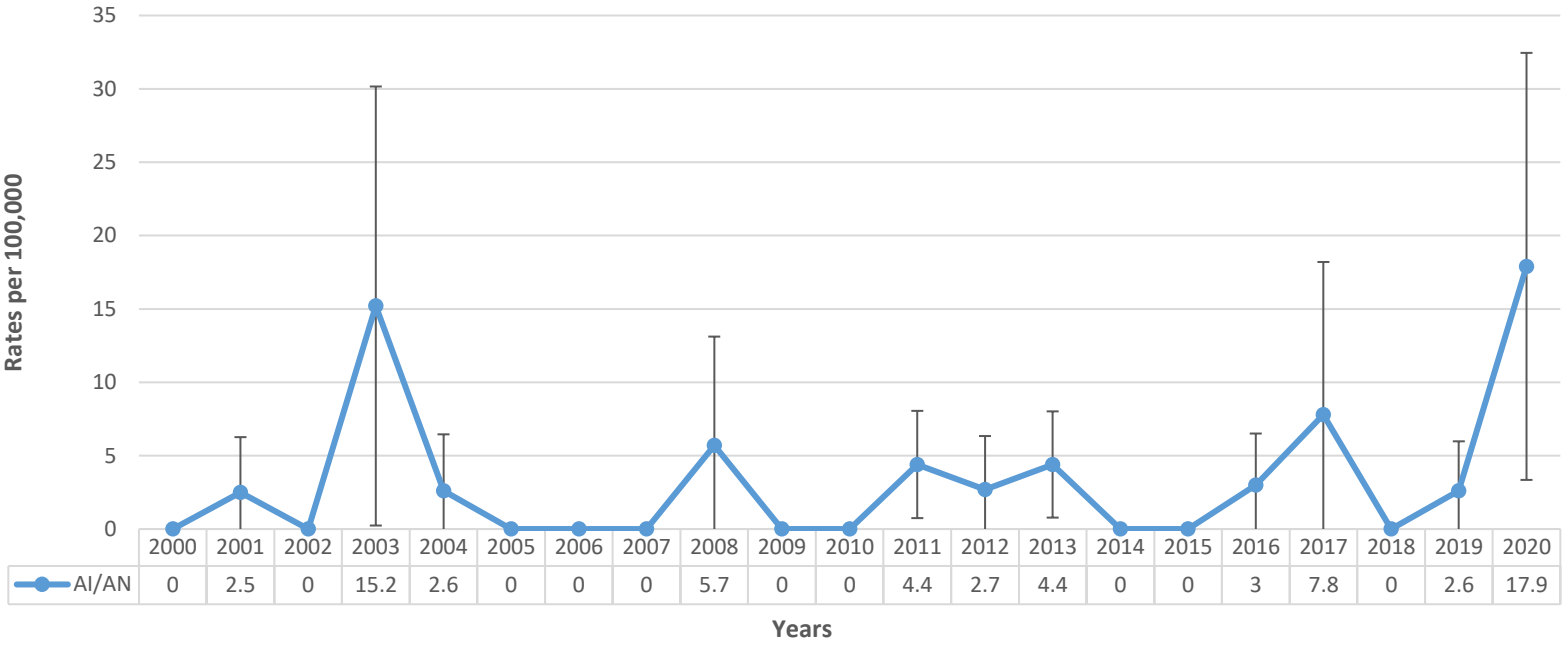
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
MALE	13	0	4.9	15	30	14.6	58.7	15.4	53.1	0	13.6	5.3	59.3	44.4	49.3	46.6	42.7	102	153.7	146.1	59.3
FEMALE	20.7	22.4	17.6	15.9	34.4	61.1	57.1	56.4	8.5	12.1	22.5	21.4	30.8	66.5	62.8	99.1	129	115.7	143	238.6	167.1

From 2000 to 2020, AI/AN females had higher Gonorrhea rates compared to AI/AN males in Utah.

AI/AN Primary and Secondary Syphilis Cases and Rates in Utah

From 2000 to 2020, Primary and Secondary Syphilis cases among AI/AN in Utah remained low. There was a reported total of 21 cases among AI/AN.

Figure 72. Primary and Secondary Syphilis Incidence Rates per 100,000 among American Indians/Alaska Natives (AI/AN) in Utah from 2000 - 2020[113-115]



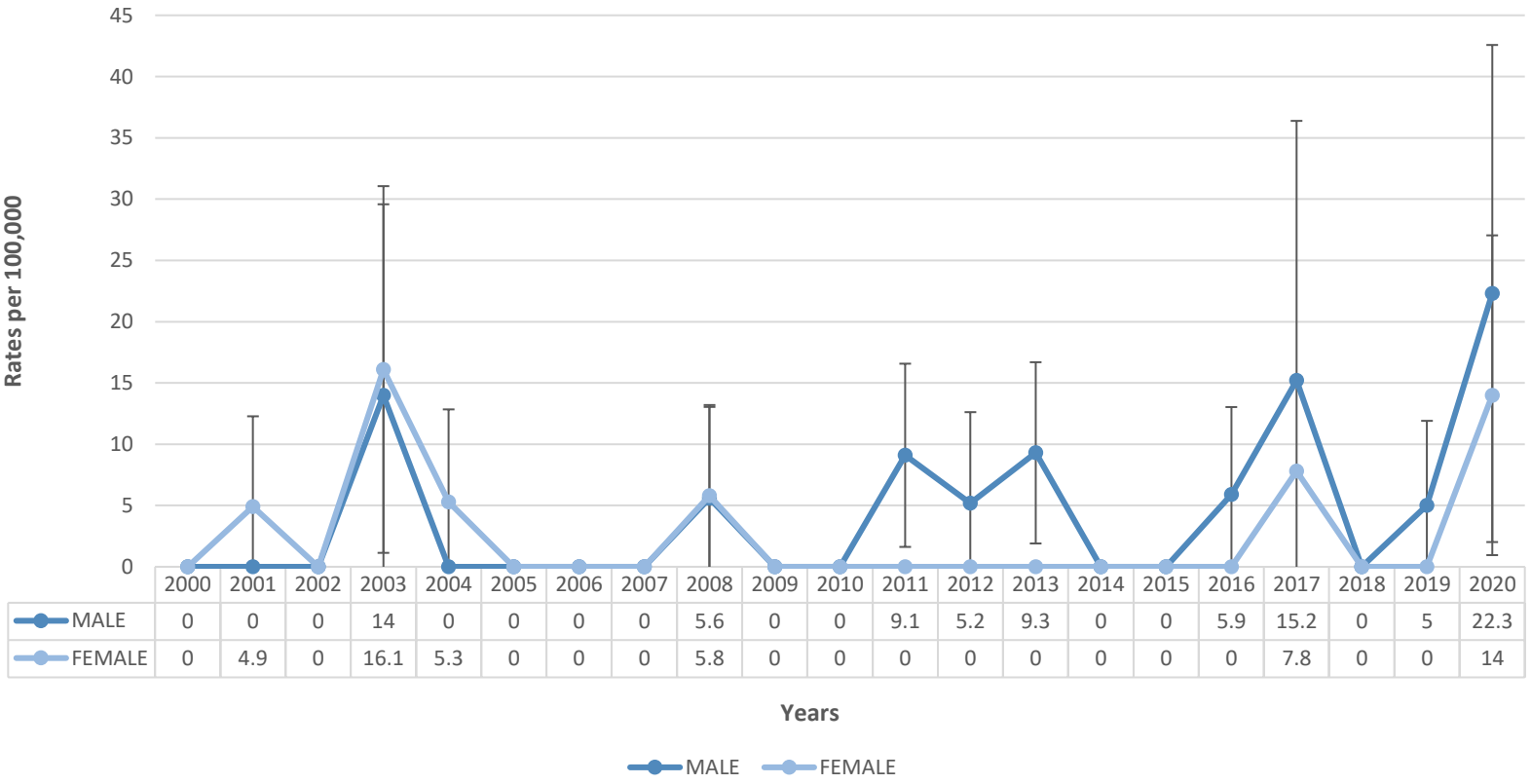
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
AI/AN	0	2.5	0	15.2	2.6	0	0	0	5.7	0	0	4.4	2.7	4.4	0	0	3	7.8	0	2.6	17.9

From 2000 to 2020, Primary and Secondary Syphilis incidence rates among AI/AN in Utah remained low with a few sharp increases during this time period.

AI/AN Primary and Secondary Syphilis Cases and Rates by Gender in Utah

From 2000 to 2020, AI/AN males in Utah had higher counts of Primary and Secondary Syphilis compared to AI/AN females. AI/AN males had a total of 14 cases and AI/AN females had a total of 7 cases.

Figure 73. Primary and Secondary Syphilis Incidence Rates per 100,000 among American Indians/Alaska Natives (AI/AN) by Gender in Utah from 2000 - 2020[113-115]



	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
MALE	0	0	0	14	0	0	0	0	5.6	0	0	9.1	5.2	9.3	0	0	5.9	15.2	0	5	22.3
FEMALE	0	4.9	0	16.1	5.3	0	0	0	5.8	0	0	0	0	0	0	0	0	7.8	0	0	14

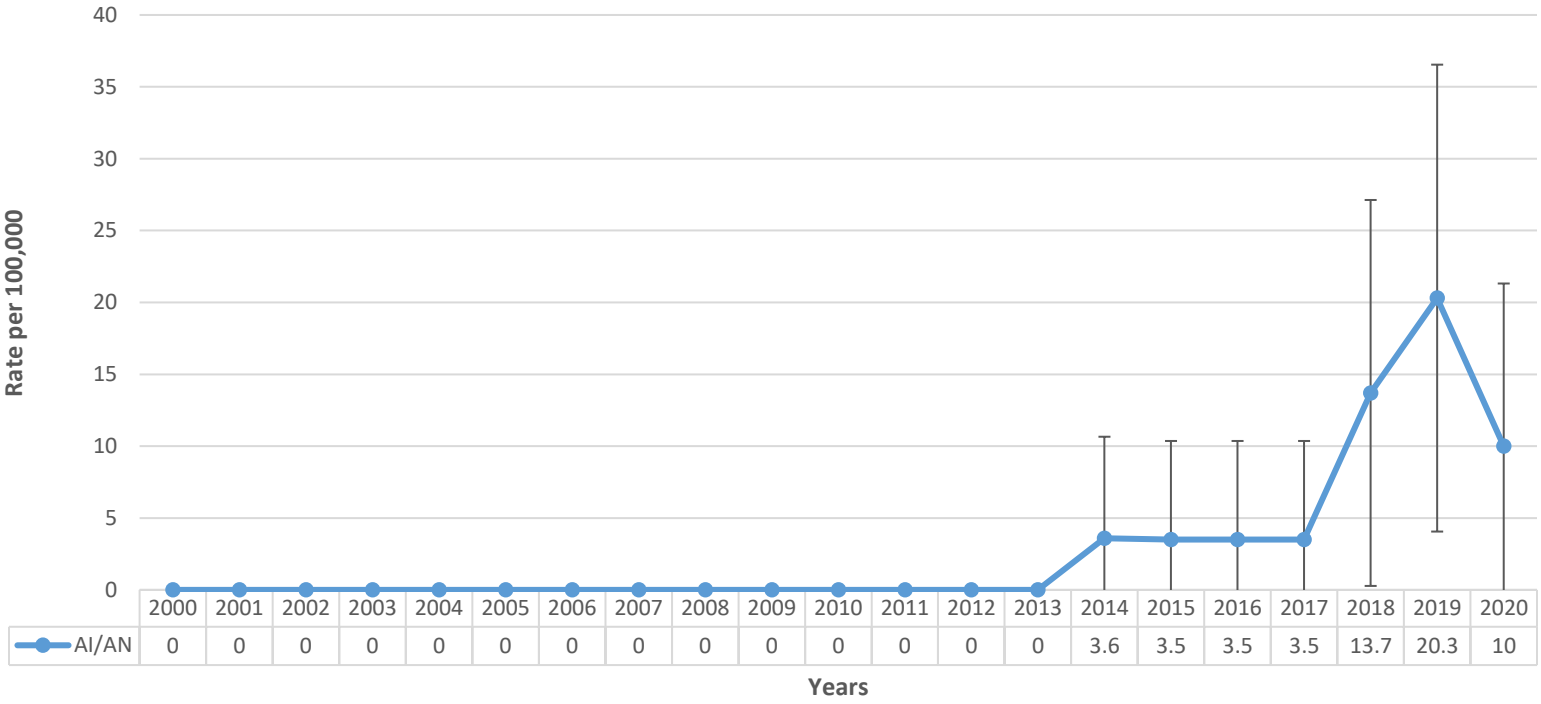
From 2000 to 2020, AI/AN males overall had higher Primary and Secondary Syphilis incidence rates compared to AI/AN females in Utah.

Hepatitis C Virus (HCV)

AI/AN Acute HCV Cases and Rates in Utah

From 2000 to 2020, there was a total of 17 cases of Acute HCV among AI/AN in Utah.

Figure 74. Acute Hepatitis C (HCV) Incidence Rates per 100,000 among American Indians/Alaska Natives (AI/AN) in Utah from 2000 – 2020[116]

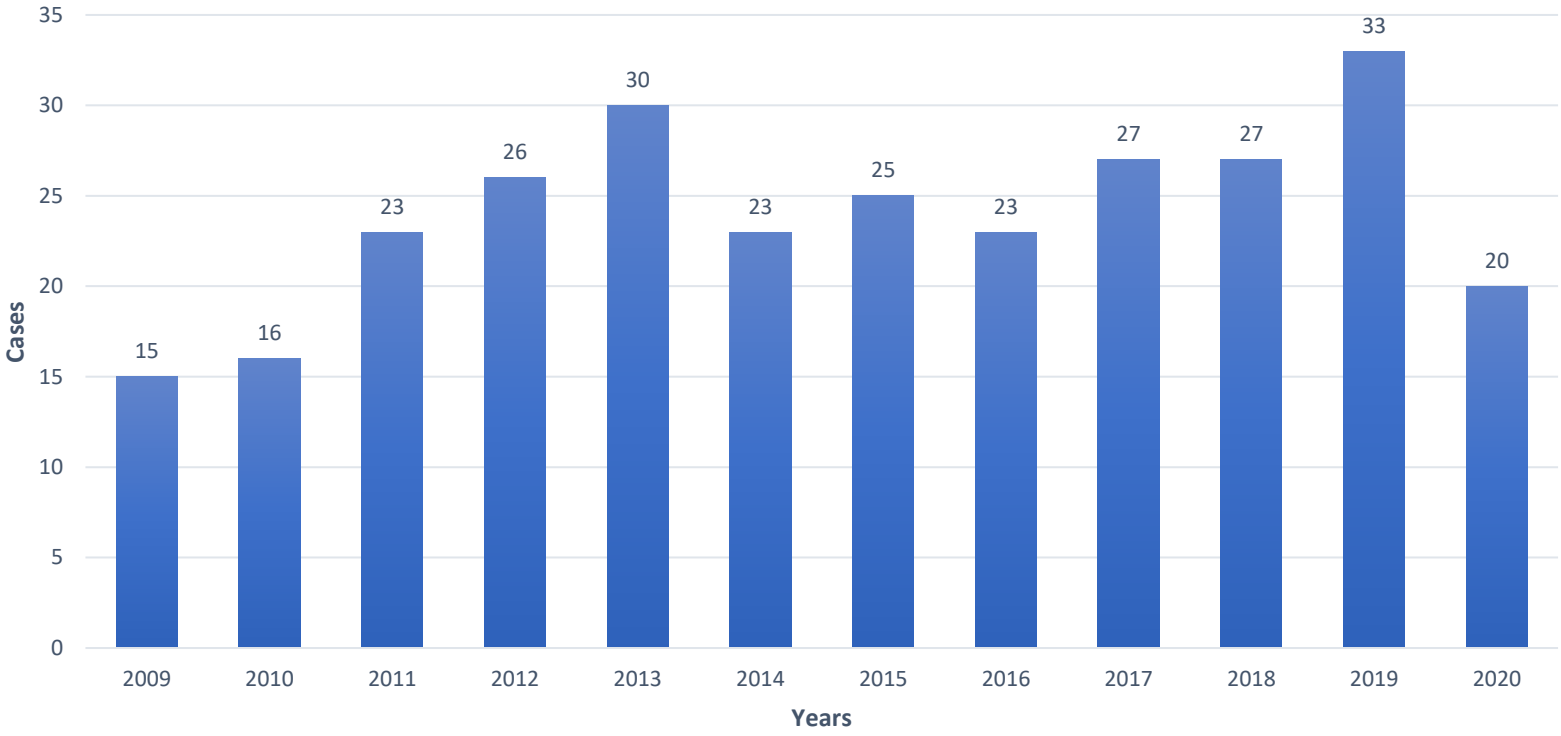


	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
AI/AN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3.6	3.5	3.5	3.5	13.7	20.3	10

From 2014 to 2020, the incidence rates of Acute HCV among AI/AN increased.

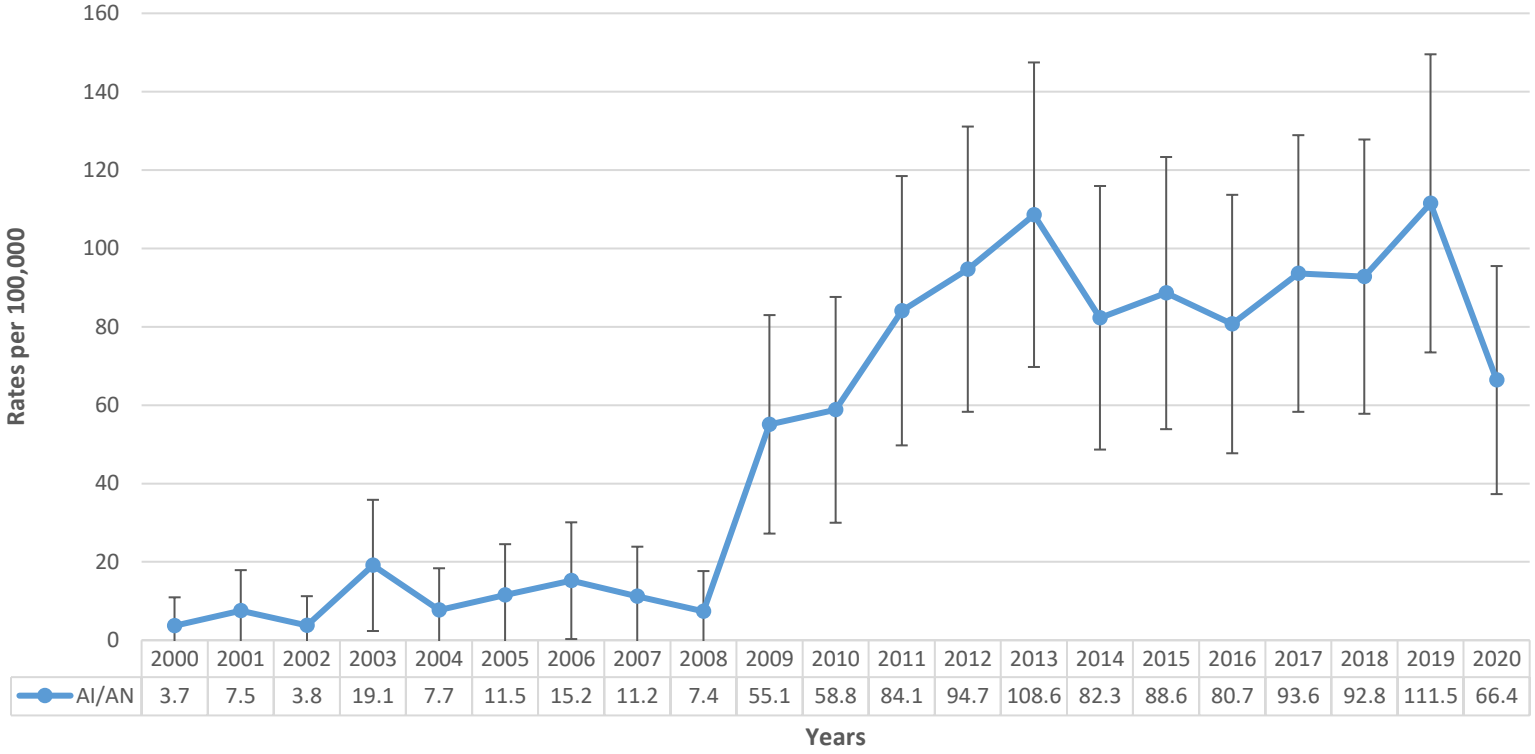
AI/AN Chronic HCV Cases and Rates in Utah

Figure 75. Chronic Hepatitis C Virus (HCV) Cases among American Indians/Alaska Natives (AI/AN) in Utah from 2000 – 2020[116]



From 2000 to 2008, there was a total of 23 Chronic HCV cases among AI/AN in Utah. From 2009 to 2020, the number of Chronic HCV cases increased rapidly totaling 288.

Figure 76. Chronic Hepatitis C Virus (HCV) Incidence Rates per 100,000 among American Indians/Alaska Natives (AI/AN) in Utah from 2000 – 2020[116]



	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
AI/AN	3.7	7.5	3.8	19.1	7.7	11.5	15.2	11.2	7.4	55.1	58.8	84.1	94.7	108.6	82.3	88.6	80.7	93.6	92.8	111.5	66.4

From 2000 to 2008, Chronic HCV incidence rates among AI/AN in Utah remained steady. From 2009 to 2020 there was a sharp increase in incidence rates.

TECHNICAL NOTES

Data Barriers

There were a number of data barriers and limitations faced in the development of this report. COVID-19 brought significant challenges to individuals wanting to get tested for HIV, STIs, and HCV. Many clinics and testing locations were closed or were operating on a very limited schedule resulting in fewer people being able to receive testing. Other individuals may have chosen not to go in for testing to avoid being exposed to COVID-19. This situation has resulted in the counts and rates being much lower than in previous years as a result of under reporting. A data barrier that occurred throughout the report was that some information was unavailable during specific time periods, for example from 2000 – 2010. The missing data resulted from lack of data or switching over to different systems that didn't include the older data. Another data barrier that was identified was the difference in each state's reporting on HCV. HCV data was the most difficult to obtain because there was very little of it and each state reported on different items. This is an issue because many states are not funded to conduct HCV surveillance or they are just now getting the funding and have to build their workforce to conduct the surveillance. A common limitation across each state is the misclassification of race/ethnicity. It is known that race/ethnicity, particularly among American Indians is often misclassified, or American Indians are considered a different race/ethnicity group. The race/ethnicity misclassification likely underreports the number of cases among American Indians.

National Notifiable Disease Surveillance System (NNDSS)

Effective public health surveillance begins at the local- and state-health department levels. The health departments work with a variety of healthcare providers, including laboratories, hospitals, and private providers to obtain case reports on many infectious and some non-infectious diseases. Each state has laws mandating that providers report cases of certain diseases to state and/or local health departments. These data provide the direction and scope of many state and local health department activities, from detecting individual cases and controlling outbreaks to implementing prevention and intervention activities. State health departments support national public health surveillance by voluntarily sharing a portion of their case specific data with CDC through daily or weekly reporting, depending on the public health urgency of the disease.

CDC's National Notifiable Diseases Surveillance System (NNDSS) is a standardized reporting system that provides public health officials the capability to monitor the occurrence and spread of diseases[1]. A key component of NNDSS is the National Electronic Disease Surveillance System (NEDSS). NEDSS provides data and information technology (IT) standards, support, and leadership to state, local, and territorial health departments that in turn provide CDC with aggregate data on nationally notifiable diseases and conditions. NEDSS's capabilities are used to support reportable disease surveillance by improving information sharing between healthcare providers and health departments and between states and CDC, support Electronic Laboratory Reporting (ELR) as part of the Meaningful Use initiative to improve public health disease reporting, and increase information sharing and system interoperability between state health departments to improve multi-state disease detection and containment.

National Notifiable Disease Surveillance System Data Sources

NEDSS/NBS

The National Electronic Disease Surveillance System (NEDSS) facilitates electronic transfer of public health surveillance data from the healthcare system to public health departments[1]. It is a conduit for exchanging information that supports NNDSS. Today, when states and territories voluntarily submit notifiable disease surveillance data electronically to CDC, they use data standards and electronic disease information systems and resources supported in part by NEDSS. This ensures that state data shared with CDC are submitted quickly, securely and in an understandable form. NEDSS defines the content (i.e., disease diagnosis, risk factor information, lab confirmation results, and patient demographics) of messages sent using the HL7 messaging standard and implements content standards that the healthcare industry uses (e.g., LOINC as the standard for transmitting laboratory test names and SNOMED as the standard for transmitting test results) for increased interoperability between states. This standardization makes the disease reported by every state comparable with each other. The NEDSS Base System (NBS), a CDC-developed information system, helps jurisdictions manage reportable disease data and send notifiable diseases data to CDC using Public Health Information Network (PHIN) standards. Arizona, Nevada, and Utah use a NEDSS-compatible system to send case notifications to NNDSS. To be considered NEDSS compatible, information systems must meet these requirements:

- Disease data entry directly through an Internet browser-based system. This creates a database accessible by health investigators and public health professionals.

- Electronic Laboratory Reporting (ELR) enables labs to report cases to health departments, integration of multiple health information databases into a single repository, and electronic messaging capabilities. This way states can share information efficiently with CDC and other health agencies.

Electronic Laboratory Reporting (ELR)

Electronic Laboratory Reporting (ELR) is the automated transmission of laboratory-related data from commercial, public health, hospital, and other labs to state and local public health departments through an electronic health records (EHR) system or a Laboratory Information Management System (LIMS)[1]. ELR helps identify reportable conditions determined by confirmatory testing and supports case reporting at the state or local level. ELR is used by laboratory providers to help them meet state reportable diseases laws mandating that providers report cases of specified diseases to the health department. ELR supports overall public health surveillance by helping improve the timeliness and accuracy of case reporting and confirmation to state and local health departments. It also supports national public health surveillance by improving the timeliness and accuracy of notifiable disease data voluntarily shared by states with CDC.

National Electronic Telecommunication Surveillance System

Before using the National Electronic Disease Surveillance System (NEDSS), CDC developed and used the National Electronic Telecommunications System for Surveillance (NETSS)[1]. NETSS is a computerized public health surveillance information system that provided CDC with weekly data regarding nationally notifiable diseases. NETSS continues to be used by reporting jurisdictions that are transitioning to the more robust NEDSS. A bare-bones approach for providing basic data and information, NETSS file content was not changed or updated

substantially since NETSS launched in 1990. Most reporting prior to 2012 from Arizona, Nevada, and Utah utilized NETSS.

HIV Case Surveillance

Using a uniform surveillance case definition and report form, all 50 states, the District of Columbia, and six U.S. dependent areas (American Samoa, Guam, Northern Mariana Islands, Puerto Rico, Republic of Palau, and the U.S. Virgin Islands) report confirmed diagnoses of HIV infection and AIDS to CDC[3]. Case reports from these jurisdictions are sent to CDC after removal of personal identifying information. As of April 2008, all jurisdictions had implemented confidential name-based HIV infection reporting. However, jurisdictions need to report 4 years of name-based surveillance data to CDC before the data can be statistically adjusted for reporting delays and missing risk-factor information. HIV reporting provides information on demographic characteristics (i.e., sex, race/ethnicity, age, and place of diagnosis), transmission category (mode of exposure), initial immune status, and viral load.

HIV Incidence Surveillance

in 2004, as an extension of HIV case surveillance activities, CDC first funded selected state and local health departments to begin data collection for HIV incidence surveillance[3]. The jurisdictions funded were Alabama, Arizona, California, Chicago, Colorado, Connecticut, District of Columbia, Florida, Houston, Indiana, Los Angeles County, Louisiana, Massachusetts, Michigan, Mississippi, New Jersey, New York, New York City, North Carolina, Philadelphia, San Francisco, South Carolina, Texas, Virginia, and Washington. State and local health departments that conduct HIV incidence surveillance collect testing and treatment history information as a part of routine surveillance activities. These data are sent to CDC after removal of personal identifying information. in addition, incidence surveillance coordinators at state and local health departments work closely with commercial/private, public, and hospital-based laboratories to acquire leftover diagnostic blood specimens to test for recent infection. By applying additional tests to leftover blood specimens from persons newly diagnosed with HIV infection in the funded jurisdictions, CDC is able to identify the number of new HIV infections in a given year. Data from jurisdictions participating in HIV incidence surveillance, are stratified by age, race/ethnicity, sex, and transmission category, describe the number of new HIV infections in the United States.

Relationship between Tribes, State, and National Surveillance

Reporting by tribal healthcare providers and facilities to state and local health authorities is dependent on the tribal health codes and the tribal reporting requirements. IHS facilities will report notifiable conditions to state and/or local health departments under the provisions of state statutes, codes and/or regulations to the extent permitted by law[9-11]. Laboratories that receive specimens from tribal healthcare facilities are required to report positive tests to the state and/or local health authorities. All cases reported to local and state health departments are reported through NNDSS.

Case Definitions

A case definition is set of uniform criteria used to define a disease for public health surveillance. Case definitions enable public health professionals to classify and count cases consistently across reporting jurisdictions, and are

not to be used by healthcare providers to determine how to meet an individual patient's health needs[12]. Therefore, not all clinically diagnosed cases are included. Any disease counts extracted from a surveillance system likely under-estimate the burden of disease in the population.

The list of reportable conditions varies by state, the Council of State and Territorial Epidemiologists (CSTE) has recommended that state health departments report cases of selected diseases, including STD, HIV, and TB, to NNDSS. Every year, case definitions are updated using CSTE's Position Statements. They provide uniform criteria of nationally notifiable infectious and non-infectious conditions for reporting purposes. The case definitions for the conditions in this report are presented in Appendix A.

REFERENCES

1. Centers for Disease Control and Prevention. *HIV/AIDS Surveillance Report*, 2000;12(No. 2). Retrieved from: https://www.cdc.gov/hiv/pdf/library/reports/surveillance/cdc-hiv-surveillance-report-2000-vol-12-2.pdf
2. Centers for Disease Control and Prevention. *HIV/AIDS Surveillance Report*, 2001;13(No. 2). Retrieved from: https://www.cdc.gov/hiv/pdf/library/reports/surveillance/cdc-hiv-surveillance-report-2001-vol-13-2.pdf
3. Centers for Disease Control and Prevention. *HIV/AIDS Surveillance Report*, 2002;14. Retrieved from: https://www.cdc.gov/hiv/pdf/library/reports/surveillance/cdc-hiv-surveillance-report-2002-vol-14.pdf
4. Centers for Disease Control and Prevention. *HIV/AIDS Surveillance Report*, 2003 (Vol. 15). Atlanta: US Department of Health and Human Services, Centers for Disease Control and Prevention, 2004. Retrieved from: https://www.cdc.gov/hiv/pdf/library/reports/surveillance/cdc-hiv-surveillance-report-2003-vol-15.pdf
5. Centers for Disease Control and Prevention. *HIV/AIDS Surveillance Report*, 2004. Vol 16. Atlanta: US Department of Health and Human Services, Centers for Disease Control and Prevention; 2005. Retrieved from: https://www.cdc.gov/hiv/pdf/library/reports/surveillance/cdc-hiv-surveillance-report-2004-vol-16.pdf
6. Centers for Disease Control and Prevention. *HIV/AIDS Surveillance Report, 2005*. Vol. 17. Rev ed. Atlanta: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention; 200. Retrieved from: https://www.cdc.gov/hiv/pdf/library/reports/surveillance/cdc-hiv-surveillance-report-2005-vol-17.pdf
7. Centers for Disease Control and Prevention. *HIV/AIDS Surveillance Report, 2006*. Vol. 18. Atlanta: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention; 2008. Retrieved from: https://www.cdc.gov/hiv/pdf/library/reports/surveillance/cdc-hiv-surveillance-report-2006-vol-18.pdf
8. Centers for Disease Control and Prevention. *HIV/AIDS Surveillance Report, 2007*. Vol. 19. Atlanta: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention; 2009. Retrieved from: https://www.cdc.gov/hiv/pdf/library/reports/surveillance/cdc-hiv-surveillance-report-2007-vol-19.pdf
9. Centers for Disease Control and Prevention. *HIV Surveillance Report, 2008*; vol 20. Published June 2010. Retrieved from: https://www.cdc.gov/hiv/pdf/library/reports/surveillance/cdc-hiv-surveillance-report-2008-vol-20.pdf
10. Centers for Disease Control and Prevention. *HIV Surveillance Report, 2009*; vol. 21. Published February 2011. Retrieved from: https://www.cdc.gov/hiv/pdf/library/reports/surveillance/cdc-hiv-surveillance-report-2009-vol-21.pdf
11. Centers for Disease Control and Prevention. *HIV Surveillance Report, 2010*; vol. 22. Published March 2012. Retrieved from: https://www.cdc.gov/hiv/pdf/library/reports/surveillance/cdc-hiv-surveillance-report-2010-vol-22.pdf
12. Centers for Disease Control and Prevention. *HIV Surveillance Report, 2011*; vol. 23. Published February 2013. Retrieved from: https://www.cdc.gov/hiv/pdf/library/reports/surveillance/cdc-hiv-surveillance-report-2011-vol-23.pdf
13. Centers for Disease Control and Prevention. *HIV Surveillance Report, 2012*; vol. 24. Published November 14. Retrieved from: https://www.cdc.gov/hiv/pdf/library/reports/surveillance/cdc-hiv-surveillance-report-2012-vol-24.pdf

14. Centers for Disease Control and Prevention. *HIV Surveillance Report, 2013*; vol. 25. Published February 2015. Retrieved from: https://www.cdc.gov/hiv/pdf/library/reports/surveillance/cdc-hiv-surveillance-report-2013-vol-25.pdf
15. Centers for Disease Control and Prevention. *HIV Surveillance Report, 2014*; vol. 26. Published November 2015. Retrieved from: https://www.cdc.gov/hiv/pdf/library/reports/surveillance/cdc-hiv-surveillance-report-2014-vol-26.pdf
16. Centers for Disease Control and Prevention. *HIV Surveillance Report, 2015*; vol. 27. Published November 2016. Retrieved from: https://www.cdc.gov/hiv/pdf/library/reports/surveillance/cdc-hiv-surveillance-report-2015-vol-27.pdf
17. Centers for Disease Control and Prevention. *HIV Surveillance Report, 2016*; vol. 28. Published November 2017. Retrieved from: https://www.cdc.gov/hiv/pdf/library/reports/surveillance/cdc-hiv-surveillance-report-2016-vol-28.pdf
18. Centers for Disease Control and Prevention. *HIV Surveillance Report, 2017*; vol. 29. Published November 2018. Retrieved from: https://www.cdc.gov/hiv/pdf/library/reports/surveillance/cdc-hiv-surveillance-report-2017-vol-29.pdf
19. Centers for Disease Control and Prevention. *HIV Surveillance Report, 2018 (Preliminary)*; vol. 30. Published November 2019. Retrieved from: https://www.cdc.gov/hiv/pdf/library/reports/surveillance/cdc-hiv-surveillance-report-2018-preliminary-vol-30.pdf
20. Centers for Disease Control and Prevention. *HIV Surveillance Report, 2019*; vol. 32. Published May 2021. Retrieved from: https://www.cdc.gov/hiv/library/reports/hiv-surveillance/vol-32/index.html
21. Centers for Disease Control and Prevention. *HIV Surveillance Report, 2020*; vol. 33. Published May 2022. Retrieved from: https://www.cdc.gov/hiv/library/reports/hiv-surveillance/vol-33/index.html
22. Centers for Disease Control and Prevention and Indian Health Service. Indian Health Surveillance Report-Sexually Transmitted Disease 2009, Atlanta, GA: US Department of Health and Human Services, January 2012. Retrieved from: https://www.cdc.gov/std/statistics/ihs/IHS-Surv-Report-2009.pdf
23. Centers for Disease Control and Prevention and Indian Health Service. Indian Health Surveillance Report-Sexually Transmitted Diseases 2011, Atlanta, GA: US Department of Health and Human Services, June 2014. Retrieved from: https://www.cdc.gov/std/statistics/ihs/IHS-Surv-Report-2011_062314.pdf
24. Centers for Disease Control and Prevention. *Sexually Transmitted Disease Surveillance 2012*. Atlanta: U.S. Department of Health and Human Services; 2013. Retrieved from: https://www.cdc.gov/std/stats/archive/Surv2012.pdf
25. Centers for Disease Control and Prevention. *Sexually Transmitted Disease Surveillance 2013*. Atlanta: U.S. Department of Health and Human Services; 2014. Retrieved from: https://www.cdc.gov/std/stats/archive/Surv2013-Print.pdf
26. Centers for Disease Control and Prevention. *Sexually Transmitted Disease Surveillance 2014*. Atlanta: U.S. Department of Health and Human Services; 2015. Retrieved from: https://www.cdc.gov/std/stats/archive/surv-2014-print.PDF
27. Centers for Disease Control and Prevention. *Sexually Transmitted Disease Surveillance 2015*. Atlanta: U.S. Department of Health and Human Services; 2016. Retrieved from: https://www.cdc.gov/std/stats/archive/STD-Surveillance-2015-print.pdf
28. Centers for Disease Control and Prevention. *Sexually Transmitted Disease Surveillance 2016*. Atlanta: U.S. Department of Health and Human Services; 2017. Retrieved from: https://www.cdc.gov/std/stats16/CDC_2016_STDS_Report-for508WebSep21_2017_1644.pdf
29. Centers for Disease Control and Prevention. *Sexually Transmitted Disease Surveillance 2017*. Atlanta: U.S. Department of Health and Human Services; 2018. Retrieved from: https://www.cdc.gov/std/stats17/2017-STD-Surveillance-Report_CDC-clearance-9.10.18.pdf

30. Centers for Disease Control and Prevention. *Sexually Transmitted Disease Surveillance 2018*. Atlanta: U.S. Department of Health and Human Services; 2019 DOI: 10.15620/cdc.79370. Retrieved from: https://www.cdc.gov/std/stats18/STDSurveillance2018-full-report.pdf
31. Centers for Disease Control and Prevention. *Sexually Transmitted Disease Surveillance 2019*. Atlanta: U.S. Department of Health and Human Services; 2020. Retrieved from: https://www.cdc.gov/std/statistics/2019/std-surveillance-2019.pdf
32. Centers for Disease Control and Prevention. Sexually Transmitted Disease Surveillance 2020. Atlanta: U.S. Department of Health and Human Services; 2022. Retrieved from: https://www.cdc.gov/std/statistics/2020/default.htm
33. Centers for Disease Control and Prevention. *Viral Hepatitis Surveillance, United States 2009*. Retrieved from: https://www.cdc.gov/hepatitis/Statistics/2009Surveillance/PDFs/2009HepSurveillanceRpt.pdf
34. Centers for Disease Control and Prevention. *Viral Hepatitis Surveillance, United States 2010*. Retrieved from: https://www.cdc.gov/hepatitis/statistics/2010surveillance/pdfs/2010HepSurveillanceRpt.pdf
35. Centers for Disease Control and Prevention. *Viral Hepatitis Surveillance, United States 2011*. Retrieved from: https://www.cdc.gov/hepatitis/statistics/2011surveillance/pdfs/2011HepSurveillanceRpt.pdf
36. Centers for Disease Control and Prevention. *Viral Hepatitis Surveillance, United States 2012*. Retrieved from: https://www.cdc.gov/hepatitis/statistics/2012surveillance/pdfs/2012HepSurveillanceRpt.pdf
37. Centers for Disease Control and Prevention. *Viral Hepatitis Surveillance, United States 2013*. Retrieved from: https://www.cdc.gov/hepatitis/statistics/2013surveillance/pdfs/2013HepSurveillanceRpt.pdf
38. Centers for Disease Control and Prevention. *Viral Hepatitis Surveillance, United States 2014*. Retrieved from: https://www.cdc.gov/hepatitis/statistics/2014surveillance/pdfs/2014HepSurveillanceRpt_Rev2016-09-26.pdf
39. Centers for Disease Control and Prevention. *Viral Hepatitis Surveillance, United States 2015*. Retrieved from: https://www.cdc.gov/hepatitis/statistics/2015surveillance/pdfs/2015HepSurveillanceRpt.pdf
40. Centers for Disease Control and Prevention. *Viral Hepatitis Surveillance, United States 2016*. Retrieved from: https://www.cdc.gov/hepatitis/statistics/2016surveillance/pdfs/2016HepSurveillanceRpt.pdf
41. Centers for Disease Control and Prevention. *Viral Hepatitis Surveillance, United States 2017*. Retrieved from: https://www.cdc.gov/hepatitis/statistics/2017surveillance/pdfs/2017HepSurveillanceRpt.pdf
42. Centers for Disease Control and Prevention. *Viral Hepatitis Surveillance, United States 2018*. Retrieved from: https://www.cdc.gov/hepatitis/statistics/2018surveillance/index.htm
43. Centers for Disease Control and Prevention. Viral Hepatitis Surveillance, United States 2019. Retrieved from: https://www.cdc.gov/hepatitis/statistics/2019surveillance/index.htm
44. Arizona Department of Health Services, (2022), *HIV Data Request 2000 - 2010*
45. Arizona HARS, (2012), *HIV By Race Ethnicity 2011*, Retrieved from: https://www.azdhs.gov/documents/preparedness/epidemiology-disease-control/disease-integrated-services/hiv-epidemiology/reports/2012/hiv-by-race-ethnicity.pdf
46. Arizona HARS, (2013), *HIV By Race Ethnicity 2012*, Retrieved from: https://www.azdhs.gov/documents/preparedness/epidemiology-disease-control/disease-integrated-services/hiv-epidemiology/reports/2013/hiv-by-race.pdf
47. Arizona HARS, (2014), *HIV By Race Ethnicity 2013*, Retrieved from: https://www.azdhs.gov/documents/preparedness/epidemiology-disease-control/disease-integrated-services/hiv-epidemiology/reports/2014/hiv-by-race.pdf
48. Arizona HARS, (2014), *HIV By Race Ethnicity 2014*, Retrieved from: https://www.azdhs.gov/documents/preparedness/epidemiology-disease-control/disease-integrated-services/hiv-epidemiology/reports/2015/2015-hiv-by-race-ethnicity.pdf

49. HIV Surveillance Program, Arizona Department of Health Services, (2015), 2015 HIV By Race/Ethnicity, Retrieved from https://www.azdhs.gov/documents/preparedness/epidemiology-disease-control/disease-integrated-services/hiv-epidemiology/reports/2015/2015-hiv-by-race-ethnicity.pdf
50. HIV Surveillance Program, Arizona Department of Health Services, (November 2016), *2016 Arizona HIV/AIDS Epidemiology Annual Report*, Retrieved from https://www.azdhs.gov/documents/preparedness/epidemiology-disease-control/disease-integrated-services/hiv-epidemiology/reports/2016/annual-report.pdf
51. HIV Surveillance Program, Arizona Department of Health Services, (2017) *2017 Arizona HIV/AIDS Epidemiology Annual Report*, Retrieved from https://www.azdhs.gov/documents/preparedness/epidemiology-disease-control/disease-integrated-services/hiv-epidemiology/reports/2017/annual-report.pdf
52. HIV Surveillance Program, Arizona Department of Health Services, (2018), *Arizona HIV Surveillance Annual Report*, Retrieved from https://www.azdhs.gov/documents/preparedness/epidemiology-disease-control/disease-integrated-services/hiv-epidemiology/reports/2018/annual-report.pdf
53. HIV Surveillance Program, Arizona Department of Health Services, (December 2019), *HIV/AIDS in Arizona Annual Report 2019*, Retrieved from https://www.azdhs.gov/documents/preparedness/epidemiology-disease-control/disease-integrated-services/hiv-epidemiology/reports/2019/annual-report.pdf
54. HIV Surveillance Program, Arizona Department of Health Services, (September 2020), *HIV/AIDS in Arizona Annual Report 2020*, Retrieved from https://www.azdhs.gov/documents/preparedness/epidemiology-disease-control/disease-integrated-services/hiv-epidemiology/reports/2020/annual-report.pdf
55. HIV Surveillance Program, Arizona Department of Health Services, (July 2021), HIV/AIDS in Arizona Annual Report 2021, Retrieved from https://www.azdhs.gov/documents/preparedness/epidemiology-disease-control/disease-integrated-services/hiv-epidemiology/reports/2021/annual-report.pdf?v=20220215
56. Arizona Department of Health Services, (2022), *STD Data Request 2000 – 2010*
57. Office of Disease Integration and Services, STD Control Program, (2012), *2011 Annual Report Sexually Transmitted Disease in Arizona*, Retrieved from: https://www.azdhs.gov/documents/preparedness/epidemiology-disease-control/disease-integrated-services/std-control/reports/2011-std-annual-report.pdf
58. Office of Disease Integration and Services, STD Control Program, (2013), *2012 Annual Report Sexually Transmitted Disease in Arizona*, Retrieved from https://www.azdhs.gov/documents/preparedness/epidemiology-disease-control/disease-integrated-services/std-control/reports/2012-std-annual-report.pdf
59. Office of Disease Integration and Services, STD Control Program, (2014), 2013 Annual Report Sexually Transmitted Disease in Arizona, Retrieved from: https://www.azdhs.gov/documents/preparedness/epidemiology-disease-control/disease-integrated-services/std-control/reports/2013-std-annual-report.pdf
60. Office of Disease Integration and Services, STD Control Program, (2015), 2014 Annual Report Sexually Transmitted Disease in Arizona, Retrieved from:

https://www.azdhs.gov/documents/preparedness/epidemiology-disease-control/disease-integrated-services/std-control/reports/2014-std-annual-report.pdf
61. STD Control Program, Arizona Department of Health Services, (2015), *2015 Sexually Transmitted Disease Annual Report*, Retrieved from https://www.azdhs.gov/documents/preparedness/epidemiology-disease-control/disease-integrated-services/std-control/reports/2015-std-annual-report.pdf
62. STD Control Program, Arizona Department of Health Services, (2016), *2016 Sexually Transmitted Disease Annual Report*, Retrieved from https://www.azdhs.gov/documents/preparedness/epidemiology-disease-control/disease-integrated-services/std-control/reports/2016-std-annual-report.pdf
63. STD Control Program, Arizona Department of Health Services, (2017) *2017 Sexually Transmitted Disease Annual Surveillance Report*, Retrieved from https://www.azdhs.gov/documents/preparedness/epidemiology-disease-control/disease-integrated-services/std-control/reports/2017-std-annual-report.pdf
64. STD Control Program, Arizona Department of Health Services, (2018), *2018 Sexually Transmitted Disease Annual Surveillance Report*, Retrieved from https://www.azdhs.gov/documents/preparedness/epidemiology-disease-control/disease-integrated-services/std-control/reports/2018-std-annual-report.pdf
65. STD Control Program, Arizona Department of Health Services, (2019), *2019 Sexually Transmitted Infection Annual Report*, Retrieved from https://www.azdhs.gov/documents/preparedness/epidemiology-disease-control/disease-integrated-services/std-control/reports/2019-std-annual-report.pdf
66. Arizona Department of Health Services, (2022), *HCV data Request*
67. Nevada State Health Division, Bureau of Community Health, (2002), *Acquired Immuno-Deficiency Syndrome (AIDS) and Human Immuno- Deficiency Virus (HIV) in Nevada Annual Report 2002*, Retrieved from: https://dpbh.nv.gov/Programs/HIV-OPHIE/dta/Publications/HIV/AIDS_Surveillance_Program_(HIV-OPHIE)_-_Publications/
68. Nevada State Health Division, Bureau of Community Health, (2003), *2003 HIV AIDS Fast Facts*, Retrieved from https://dpbh.nv.gov/Programs/HIV-OPHIE/dta/Publications/HIV/AIDS_Surveillance_Program_(HIV-OPHIE)_-_Publications/
69. Nevada State Health Division, Bureau of Community Health, (2005), *HIV/AIDS Fast Facts 2004 and 2005*, Retrieved from: https://dpbh.nv.gov/Programs/HIV-OPHIE/dta/Publications/HIV/AIDS_Surveillance_Program_(HIV-OPHIE)_-_Publications/
70. Nevada State Health Division, Bureau of Community Health, (2006), *HIV/AIDS Fast Facts 2006*, Retrieved from: https://dpbh.nv.gov/Programs/HIV-OPHIE/dta/Publications/HIV/AIDS_Surveillance_Program_(HIV-OPHIE)_-_Publications/
71. Nevada State Health Division, Bureau of Community Health, (2007), *HIV/AIDS Fast Facts Preliminary 2007*, Retrieved from: https://dpbh.nv.gov/Programs/HIV-OPHIE/dta/Publications/HIV/AIDS_Surveillance_Program_(HIV-OPHIE)_-_Publications/
72. Nevada State Health Division, Bureau of Community Health, (2008), *HIV/AIDS Fast Facts, 2008 Date of Diagnosis*, Retrieved from: https://dpbh.nv.gov/Programs/HIV-OPHIE/dta/Publications/HIV/AIDS_Surveillance_Program_(HIV-OPHIE)_-_Publications/

73. Nevada State Health Division, HIV/AIDS Surveillance Program, (2009), *Nevada HIV/AIDS Fast Facts, 2009*, Retrieved from: https://dpbh.nv.gov/Programs/HIV-OPHIE/dta/Publications/HIV/AIDS_Surveillance_Program_(HIV-OPHIE)_-_Publications/
74. Nevada State Health Division, HIV/AIDS Surveillance Program, (2010), 2010 Update: HIV/AIDS Epidemiological Profile, Retrieved from: https://dpbh.nv.gov/Programs/HIV-OPHIE/dta/Publications/HIV/AIDS_Surveillance_Program_(HIV-OPHIE)_-_Publications/
75. Nevada State Health Division, HIV/AIDS Surveillance Program, (March 2013), *HIV/AIDS Epidemiological Profile: 2011 Update*, Retrieved from: https://dpbh.nv.gov/Programs/HIV-OPHIE/dta/Publications/HIV/AIDS_Surveillance_Program_(HIV-OPHIE)_-_Publications/
76. Nevada State Health Division, HIV/AIDS Surveillance Program, (September 2013), *HIV/AIDS Epidemiological Profile: 2012 Update*, Retrieved from: https://dpbh.nv.gov/Programs/HIV-OPHIE/dta/Publications/HIV/AIDS_Surveillance_Program_(HIV-OPHIE)_-_Publications/
77. Nevada State Health Division, HIV/AIDS Surveillance Program, (October 2016), *HIV/AIDS Epidemiological Profile: 2014 Update*, Retrieved from: https://dpbh.nv.gov/Programs/HIV-OPHIE/dta/Publications/HIV/AIDS_Surveillance_Program_(HIV-OPHIE)_-_Publications/
78. Nevada State Health Division, HIV/AIDS Surveillance Program, (October 2017), *HIV/AIDS Epidemiological Profile: 2015 Update*, Retrieved from: https://dpbh.nv.gov/Programs/HIV-OPHIE/dta/Publications/HIV/AIDS_Surveillance_Program_(HIV-OPHIE)_-_Publications/
79. Nevada State Health Division, HIV/AIDS Surveillance Program, (July 2017), *2016 HIV Fast Facts*, Retrieved from: https://dpbh.nv.gov/uploadedFiles/dpbh.nv.gov/content/Programs/HIV-OPHIE/dta/Publications/2016%20HIV%20Fast%20%20Facts%20(Final)(2).pdf
80. Nevada State Health Division, HIV/AIDS Surveillance Program, (July 2018), *2017 HIV Fast Facts*, Retrieved from: https://dpbh.nv.gov/uploadedFiles/dpbh.nv.gov/content/Programs/HIV-OPHIE/dta/Publications/2017%20HIV%20Fast%20%20Facts%20(final)(2).pdf
81. Nevada State Health Division, HIV/AIDS Surveillance Program, (2018), *2018 HIV/AIDS Fast Facts*, Retrieved from: https://dpbh.nv.gov/uploadedFiles/dpbh.nv.gov/content/Programs/HIV-OPHIE/dta/Publications/2018%20HIV%20Final.pdf
82. Nevada State Health Division, HIV/AIDS Surveillance Program, (April 2020), *Nevada 2019 HIV Fast Facts*. Retrieved from: https://dpbh.nv.gov/uploadedFiles/dpbh.nv.gov/content/Programs/HIV-OPHIE/dta/Publications/Nevada-2019-HIV-Fast-Facts.pdf
83. State of Nevada, Office of HIV. Division of Public and Behavioral Health. Nevada 2020 HIV Fast Facts. Las Vegas, Nevada. e1.0. August 2021 Retrieved from: https://dpbh.nv.gov/uploadedFiles/dpbh.nv.gov/content/Programs/HIV-OPHIE/dta/Publications/Nevada%202020%20HIV%20Fast%20Facts.pdf
84. Nevada State Health Division, HIV/AIDS Surveillance Program, (July 2017), *2016 HIV Fast Facts*, Retrieved from: https://dpbh.nv.gov/uploadedFiles/dpbh.nv.gov/content/Programs/HIV-OPHIE/dta/Publications/2016%20HIV%20Fast%20%20Facts%20(Final)(2).pdf
85. Nevada State Health Division, HIV/AIDS Surveillance Program, (July 2018), *2017 HIV Fast Facts*, Retrieved from: https://dpbh.nv.gov/uploadedFiles/dpbh.nv.gov/content/Programs/HIV-OPHIE/dta/Publications/2017%20HIV%20Fast%20%20Facts%20(final)(2).pdf

86. Nevada State Health Division, HIV/AIDS Surveillance Program, (2018), *2018 HIV/AIDS Fast Facts*, Retrieved from: https://dpbh.nv.gov/uploadedFiles/dpbh.nv.gov/content/Programs/HIV-OPHIE/dta/Publications/2018%20HIV%20Final.pdf
87. Nevada State Health Division, HIV/AIDS Surveillance Program, (April 2020), *Nevada 2019 HIV Fast Facts*. Retrieved from: https://dpbh.nv.gov/uploadedFiles/dpbh.nv.gov/content/Programs/HIV-OPHIE/dta/Publications/Nevada-2019-HIV-Fast-Facts.pdf
88. State of Nevada, Office of HIV. Division of Public and Behavioral Health. Nevada 2020 HIV Fast Facts. Las Vegas, Nevada. e1.0. August 2021 Retrieved from: https://dpbh.nv.gov/uploadedFiles/dpbh.nv.gov/content/Programs/HIV-OPHIE/dta/Publications/Nevada%202020%20HIV%20Fast%20Facts.pdf
89. Nevada State Health Division, Bureau of Community Health, (September 2004), *Fast Facts on STD Cases in Nevada, 2000*, Retrieved from: https://dpbh.nv.gov/uploadedFiles/dpbh.nv.gov/content/Programs/STD/dta/Publications/2000_STD_FastFacts.pdf
90. Nevada State Health Division, Bureau of Community Health, (September 2004), *Fast Facts on STD Cases in Nevada, 2001*, Retrieved from: https://dpbh.nv.gov/uploadedFiles/dpbh.nv.gov/content/Programs/STD/dta/Publications/2001_STD_FastFacts(2).pdf
91. Nevada State Health Division, Bureau of Community Health, (September 2004), *Fast Facts on STD Cases in Nevada, 2002*, Retrieved from: https://dpbh.nv.gov/uploadedFiles/dpbh.nv.gov/content/Programs/STD/dta/Publications/2002_STD_FastFacts.pdf
92. Nevada State Health Division, Bureau of Community Health, (September 2003), *Fast Facts on STD Cases in Nevada, 2003*, Retrieved from: https://dpbh.nv.gov/uploadedFiles/dpbh.nv.gov/content/Programs/STD/dta/Publications/2003_STD_FastFacts.pdf
93. Nevada State Health Division, Bureau of Community Health, (March 2005), *Fast Facts on STD Cases in Nevada, 2004*, Retrieved from: https://dpbh.nv.gov/uploadedFiles/dpbh.nv.gov/content/Programs/STD/dta/Publications/2004_STD_FastFacts.pdf
94. Nevada State Health Division, Sexually Transmitted Disease (STD) Program, (May 2007), *STD Fast Facts, 2005 – 2006*, Retrieved from: https://dpbh.nv.gov/uploadedFiles/dpbh.nv.gov/content/Programs/STD/dta/Publications/2005-2006%20STDFastFacts.pdf
95. Nevada State Health Division, Sexually Transmitted Disease (STD) Prevention and Control Program, (March 2008), *STD Fast Facts, 2007*, Retrieved from: https://dpbh.nv.gov/uploadedFiles/dpbh.nv.gov/content/Programs/STD/dta/Publications/2007_STD_FastFacts.pdf
96. Nevada State Health Division, Sexually Transmitted Disease (STD) Program, (February 2009), *STD Fast Facts, 2008*, Retrieved from: https://dpbh.nv.gov/uploadedFiles/dpbh.nv.gov/content/Programs/STD/dta/Publications/2008_STD_FastFacts.pdf

97. Nevada State Health Division, STD Program, (March 2010), *STD Fast Facts 2009*, Retrieved from: https://dpbh.nv.gov/uploadedFiles/dpbh.nv.gov/content/Programs/STD/dta/Publications/2009_STD_FastFacts.pdf
98. Nevada State Health Division, STD Program, (March 2011), *STD Fast Facts 2010*, Retrieved from: https://dpbh.nv.gov/uploadedFiles/dpbh.nv.gov/content/Programs/STD/dta/Publications/2010_STD_FastFacts.pdf
99. Nevada State Health Division, STD Program, (February 2012), *STD Fast Facts 2011*, Retrieved from: https://dpbh.nv.gov/uploadedFiles/dpbh.nv.gov/content/Programs/STD/dta/Publications/2011_STD_FastFacts.pdf
100. Nevada State Health Division, STD Program, (April 2013), *STD Fast Facts 2012*, Retrieved from: https://dpbh.nv.gov/uploadedFiles/dpbh.nv.gov/content/Programs/STD/dta/Publications/2012_STD_Statistics.pdf
101. Nevada State Health Division, STD Program, (September 2014), *2013 Sexually Transmitted Disease Fast Facts*, Retrieved from: https://dpbh.nv.gov/uploadedFiles/dpbh.nv.gov/content/Programs/STD/dta/Publications/2013_STD_Fast_Facts_e_1.0_2014-09-03.pdf
102. Nevada State Health Division, STD Program, (July 2015), *2014 Sexually Transmitted Disease Fast Facts*, Retrieved from: https://dpbh.nv.gov/uploadedFiles/dpbh.nv.gov/content/Programs/STD/dta/Publications/2014_STD_Fast_Facts_e_1.0_2015-07-28.pdf
103. Nevada State Health Division, STD Program, (August 2017), Nevada 2015 Fast Facts, Retrieved from: https://dpbh.nv.gov/uploadedFiles/dpbh.nv.gov/content/Programs/STD/dta/Publications/2015%20STD%20Fast%20Facts%20-%20Final%20Aug2017(5)(1)(1).pdf
104. Nevada State Health Division, STD Program, (August 2017), *Nevada 2016 STD Fast Facts*, Retrieved from: https://dpbh.nv.gov/uploadedFiles/dpbh.nv.gov/content/Programs/STD/dta/Publications/2016%20STD%20Fast%20Facts%20v3%20Final(1).pdf
105. Nevada State Health Division, STD Program, (November 2018), *Nevada 2017 STD Fast Facts*, Retrieved from: https://dpbh.nv.gov/uploadedFiles/dpbh.nv.gov/content/Programs/STD/dta/Publications/Fast%20Facts%202017%20State%201.8(1).pdf
106. Nevada State Health Division, STD Program, (June 2019), *Nevada 2018 STD Fast Facts*, Retrieved from: https://dpbh.nv.gov/uploadedFiles/dpbh.nv.gov/content/Programs/STD/dta/Publications/Fast%20Facts%202018%20State%20final.pdf
107. Nevada State Health Division, STD Program, (June 2019) *Nevada 2019 STD Fast Facts*, Retrieved from: https://dpbh.nv.gov/uploadedFiles/dpbh.nv.gov/content/Programs/STD/dta/Publications/Fast%20Facts%202019%20State%20APPROVED.pdf
108. Nevada State Health Division, STD Program, (December 2021), *Nevada 2020 STD Fast Facts*, Retrieved from: https://dpbh.nv.gov/uploadedFiles/dpbh.nv.gov/content/Programs/STD/dta/Publications/State%20of%20Nevada%202020%20STD%20Fast%20Facts.pdf
109. Nevada State Health Division, (2022), *HCV Data Request 2000 – 2020*

110. Utah Department of Health, (2022) *HIV Data Request 2000 - 2020*
111. Utah Department of Health, Bureau of Epidemiology Prevention, Treatment and Care Program, (2015), *HIV Integrated Epidemiological Profile 2015*, Retrieved from: https://ptc.health.utah.gov/wp-content/uploads/2020/03/hiv_epiprofile_2015.pdf
112. Utah Department of Health and Human Services, HIV and STD Prevention Program, (2020), *2020 Annual HIV Surveillance Report*, Retrieved from: https://ptc.health.utah.gov/wp-content/uploads/2022/06/2020-HIV-Surveillance-Update_Final.pdf
113. Utah Department of Health, Bureau of Epidemiology, (2022), *STD Data Request 2000-2022*
114. Utah Department of Health, Bureau of Epidemiology, (2011), *Sexually Transmitted Disease Surveillance Utah 2002-2011*, Retrieved from: https://ptc.health.utah.gov/wp-content/uploads/2020/03/130221.2002-to-2011-STD-Annual-ReportFINAL.pdf
115. Utah Department of Health, Bureau of Epidemiology, (December 2018), Sexually Transmitted Disease Surveillance 2008-2017, Retrieved from: https://ptc.health.utah.gov/wp-content/uploads/2020/03/2017_Utah_STD_Surv_Rpt.pdf
116. Utah Department of Health, Bureau of Epidemiology, (2022), *HCV Data Request 2000-2022*

APPENDIX A

The case definitions for the chlamydia, gonorrhea, syphilis (primary), syphilis (secondary), congenital syphilis, HIV, and hepatitis C virus are reprinted in their entirety[12]. If cases definitions changed during the reporting period, both definitions are presented and the change(s) detailed at the end of that disease section.

Chlamydia

Definition updated 1/2010

Clinical description

Infection with the bacteria *Chlamydia trachomatis* may result in urethritis, epididymitis, cervicitis, acute salpingitis, or other syndromes when sexually transmitted; however, the infection is often asymptomatic in women. Perinatal infections may result in inclusion conjunctivitis and pneumonia in newborns. Other syndromes caused by *C. trachomatis* include lymphogranuloma venereum (see Lymphogranuloma Venereum) and trachoma.

Laboratory criteria for diagnosis

Isolation of *C. trachomatis* by culture, OR
Demonstration of *C. trachomatis* in a clinical specimen by detection of antigen or nucleic acid

Case classification

Confirmed: a case that is laboratory confirmed

Gonorrhea

Definition updated on 1/2014

Clinical description

A sexually transmitted bacterial infection commonly manifested by urethritis, cervicitis, proctitis, salpingitis, or pharyngitis. Infection may be asymptomatic.

Laboratory criteria for diagnosis

Observation of gram-negative intracellular diplococci in a urethral smear obtained from a male or an endocervical smear obtained from a female, OR
Isolation of typical gram-negative, oxidase-positive diplococci (presumptive *Neisseria gonorrhoeae*) from a clinical specimen, OR
Demonstration of *N. gonorrhoeae* in a clinical specimen by detection of antigen or nucleic acid

Gonorrhea cont.

Case classification

> ***Probable:*** demonstration of gram-negative intracellular diplococci in a urethral smear obtained from a male or an endocervical smear obtained from a female.
>
> ***Confirmed:*** a person with laboratory isolation of typical gram-negative, oxidase-positive diplococci by culture (presumptive *N. gonorrhoeae*) from a clinical specimen, or demonstration of *N. gonorrhoeae* in a clinical specimen by detection of antigen or detection of nucleic acid via nucleic acid amplification (e.g., polymerase chain reaction [PCR]) or hybridization with a nucleic acid probe.

Human Immunodeficiency Virus (HIV)

Definition Updated 2014

The definition applies to all HIV variants (e.g., HIV-1 or HIV-2) and excludes confirmation of HIV infection through diagnosis of AIDS-defining conditions alone. For surveillance purposes, a reportable case of HIV infection among adults and adolescents aged >13 years is categorized by increasing severity as stage 1, stage 2, or stage 3 (AIDS) or as stage unknown.

Criteria for HIV Infection

Laboratory Criteria

Positive result from an HIV antibody screening test (e.g., reactive enzyme immunoassay [EIA]*) confirmed by a positive result from a supplemental HIV antibody test (e.g., Western blot or indirect immunofluorescence assay test).
OR
Positive result or report of a detectable quantity (i.e., within the established limits of the laboratory test) from any of the following HIV virologic (i.e., non-antibody) tests†:
-- HIV nucleic acid (DNA or RNA) detection test (e.g., polymerase chain reaction [PCR])
-- HIV p24 antigen test, including neutralization assay
-- HIV isolation (viral culture)

Other Criterion (for Cases that Do Not Meet Laboratory Criteria)

HIV infection diagnosed by a physician or qualified medical-care provider§ based on the laboratory criteria and documented in a medical record. Oral reports of prior laboratory test results are not acceptable.

Case Classification

> ***Confirmed***: case meets the laboratory criteria for diagnosis of HIV infection and one of the four HIV infection stages (stage 1, stage 2, stage 3, or stage unknown). Although cases with no information on

HIV cont.

CD4+ T-lymphocyte count or percentage and no information on AIDS-defining conditions can be classified as stage unknown, every effort should be made to report CD4+ T-lymphocyte counts or percentages and the presence of AIDS-defining conditions at the time of diagnosis. Additional CD4+ T-lymphocyte counts or percentages and any identified AIDS-defining conditions can be reported as recommended.

HIV Infection, Stage 1

No AIDS-defining condition and either CD4+ T-lymphocyte count of >500 cells/µL or CD4+ T-lymphocyte percentage of total lymphocytes of >29.

HIV Infection, Stage 2

No AIDS-defining condition and either CD4+ T-lymphocyte count of 200--499 cells/µL or CD4+ T-lymphocyte percentage of total lymphocytes of 14--28.

HIV Infection, Stage 3 (AIDS)

CD4+ T-lymphocyte count of <200 cells/µL or CD4+ T-lymphocyte percentage of total lymphocytes of <14 or documentation of an AIDS-defining condition:

- Bacterial infections, multiple or retwenty year*
- Candidiasis of bronchi, trachea, or lungs
- Candidiasis of esophagus†
- Cervical cancer, invasive§
- Coccidioidomycosis, disseminated or extrapulmonary
- Cryptococcosis, extrapulmonary
- Cryptosporidiosis, chronic intestinal (>1 month's duration)
- Cytomegalovirus disease (other than liver, spleen, or nodes), onset at age >1 month
- Cytomegalovirus retinitis (with loss of vision)†
- Encephalopathy, HIV related
- Herpes simplex: chronic ulcers (>1 month's duration) or bronchitis, pneumonitis, or esophagitis (onset at age >1 month)
- Histoplasmosis, disseminated or extrapulmonary
- Isosporiasis, chronic intestinal (>1 month's duration)
- Kaposi sarcoma†
- Lymphoid interstitial pneumonia or pulmonary lymphoid hyperplasia complex*†
- Lymphoma, Burkitt (or equivalent term)
- Lymphoma, immunoblastic (or equivalent term)
- Lymphoma, primary, of brain
- Mycobacterium avium complex or Mycobacterium kansasii, disseminated or extrapulmonary†
- Mycobacterium tuberculosis of any site, pulmonary,†§ disseminated,† or extrapulmonary†
- Mycobacterium, other species or unidentified species, disseminated† or extrapulmonary†

HIV cont.

- Pneumocystis jirovecii pneumonia†
- Pneumonia, retwenty year†§
- Progressive multifocal leukoencephalopathy
- Salmonella septicemia, retwenty year
- Toxoplasmosis of brain, onset at age >1 month†
- Wasting syndrome attributed to HIV

  * Only among children aged <13 years. (CDC. 1994 Revised classification system for human immunodeficiency virus infection in children less than 13 years of age. MMWR 1994; 43[No. RR-12].)
  † Condition that might be diagnosed presumptively.
  § Only among adults and adolescents aged >13 years. (CDC. 1993 Revised classification system for HIV infection and expanded surveillance case definition for AIDS among adolescents and adults. MMWR 1992; 41[No. RR-17].)

Documentation of an AIDS-defining condition supersedes a CD4+ T-lymphocyte count of >200 cells/µL and a CD4+ T-lymphocyte percentage of total lymphocytes of >14. Definitive diagnostic methods for these conditions are available in Appendix C of the 1993 revised HIV classification system and the expanded AIDS case definition (2) and from the National Notifiable Diseases Surveillance System (available at http://www.cdc.gov/epo/dphsi/casedef/case_definitions.htm).

HIV Infection, Stage Unknown
No information available on CD4+ T-lymphocyte count or percentage and no information available on AIDS-defining conditions. Every effort should be made to report CD4+ T-lymphocyte counts or percentages and the presence of AIDS-defining conditions at the time of diagnosis.

Syphilis

Definition updated 1/2018

Syphilis is a complex bacterial sexually transmitted disease that has a highly variable clinical course. Adherence to the surveillance case definitions will facilitate understanding the epidemiology of syphilis across the US.

Syphilis, primary
Clinical description

A stage of infection with Treponema *pallidum* characterized by one or more ulcerative lesions (e.g. chancre), which might differ considerably in clinical appearance.

Syphilis cont.

Laboratory criteria for diagnosis

Confirmatory: Demonstration of *T. pallidum* by darkfield microscopy in a clinical specimen that was not obtained from the oropharynx and is not potentially contaminated by stool, OR
Demonstration of *T. pallidum* by polymerase chain reaction (PCR) or equivalent direct molecular methods in any clinical specimen.

Supportive: A reactive nontreponemal serologic test (Venereal Disease Research Laboratory [VDRL], rapid plasma reagin [RPR], or equivalent serologic methods), OR
A reactive treponemal serologic test (*T. pallidum* particle agglutination [TP-PA], enzyme immunoassay [EIA], chemiluminescence immunoassay [CIA], or equivalent serologic methods).*

> * These treponemal tests supersede older testing technologies, including microhemagglutination assay for antibody to T. pallidum [MHA-TP].

Case classification

> ***Probable****:* a case that meets the clinical description of primary syphilis and the supportive laboratory criteria
>
> ***Confirmed****:* a case that meets the clinical description of primary syphilis and the supportive confirmatory criteria.

Syphilis, secondary
Clinical description

A stage of infection caused by *T. pallidum* characterized by localized or diffuse mucocutaneous lesions (e.g., rash – such as non-pruritic macular, maculopapular, papular, or pustular lesions), often with generalized lymphadenopathy. Other symptoms can include mucous patches, condyloma lata, and alopecia. The primary ulcerative lesion may still be present. Because of the wide array of symptoms and signs possibly indicating secondary syphilis, serologic tests for syphilis and a physical examination are crucial to determining if a case should be classified as secondary syphilis.

Laboratory criteria for diagnosis

Confirmatory: Demonstration of *T. pallidum* by darkfield microscopy in a clinical specimen that was not obtained from the oropharynx and is not potentially contaminated by stool, OR

Demonstration of *T. pallidum* by polymerase chain reaction (PCR) or equivalent direct molecular methods in any clinical specimen.

Supportive: A reactive nontreponemal serologic test (VDRL, RPR, or equivalent serologic methods), AND

A reactive treponemal serologic test (TP-PA, EIA, CIA, or equivalent serologic methods).

Syphilis cont.

Case classification

> ***Probable*:** a case that meets the clinical description of secondary syphilis and the supportive laboratory criteria.
>
> ***Confirmed*:** a case that meets the clinical description of secondary syphilis and the confirmatory laboratory criteria.

Syphilis, Congenital

Definition Updated 1/2018

Clinical description

A condition caused by infection in utero with *Treponema pallidum*. A wide spectrum of severity exists, from inapparent to severe cases that are clinically apparent at birth. An infant or child (aged <2 years) may have signs such as hepatosplenomegaly, rash, condyloma lata, snuffles, jaundice (nonviral hepatitis), pseudoparalysis, anemia, or edema (nephrotic syndrome and/or malnutrition). An older child may have stigmata (e.g., interstitial keratitis, nerve deafness, anterior bowing of shins, frontal bossing, mulberry molars, Hutchinson teeth, saddle nose, rhagades, or Clutton joints).

Laboratory criteria for diagnosis

Demonstration of *T. pallidum* by darkfield microscopy of lesions, body fluids, or neonatal nasal discharge, OR

- PCR or other equivalent direct molecular methods of lesions, neonatal nasal discharge, placenta, umbilical cord, or autopsy material, OR
- Immunohistochemistry (IHC), or special stains (e.g., silver staining) of specimens from lesions, placenta, umbilical cord, or autopsy material.

Case classification

> ***Probable:*** a condition affecting an infant whose mother had untreated or inadequately treated* syphilis at delivery, regardless of signs in the infant, or an infant or child who has a reactive non-treponemal test for syphilis (VDRL, RPR, or equivalent serologic methods) AND any one of the following:
>
> - Any evidence of congenital syphilis on physical examination
> - Any evidence of congenital syphilis on radiographs of long bones
> - A reactive cerebrospinal fluid (CSF) venereal disease research laboratory (VDRL) test
> - in a non-traumatic lumbar puncture, an elevated CSF leukocyte (white blood cell [WBC]) count or protein (without other cause)

Syphilis, Congenital cont.

***Confirmed*:** a case that is laboratory confirmed

Comment

Congenital and acquired syphilis may be difficult to distinguish when a child is seropositive after infancy. Signs of congenital syphilis may not be obvious, and stigmata may not yet have developed. Abnormal values for CSF VDRL, cell count, and protein, as well as IgM antibodies, may be found in either congenital or acquired syphilis. Findings on radiographs of long bones may help because radiographic changes in the metaphysis and epiphysis are considered classic signs of congenitally acquired syphilis. The decision may ultimately be based on maternal history and clinical judgment. in a young child, the possibility of sexual abuse should be considered as a cause of acquired rather than congenital syphilis, depending on the clinical picture. For reporting purposes, congenital syphilis includes cases of congenitally acquired syphilis among infants and children as well as syphilitic stillbirths.

Hepatitis C Virus

Definition updated 2020

Acute Virus

Clinical Description

Hepatitis C is a viral infection that causes liver inflammation, sometimes leading to serious liver damage. The hepatitis C virus (HCV) spreads through contaminated blood.

Clinical Criteria

All hepatitis C virus cases in each classification category should be > 36 months of age, unless known to have been exposed non-perinatally.

One or more of the following:

- Jaundice, **OR**
- Peak elevated total bilirubin levels ≥ 3.0 mg/dL, **OR**
- Peak elevated serum alanine aminotransferase (ALT) levels >200 IU/L,

AND

The absence of a more likely diagnosis (which may include evidence of acute liver disease due to other causes or advanced liver disease due to pre-existing chronic Hepatitis C virus (HCV) infection or other causes, such as alcohol exposure, other viral hepatitis, hemochromatosis, etc.)

Laboratory Criteria for Diagnosis

Confirmatory laboratory evidence:

- Positive hepatitis C virus detection test: Nucleic acid test (NAT) for HCV RNA positive (including qualitative, quantitative, or genotype testing), **OR**
- A positive test indicating presence of hepatitis C viral antigen(s) (HCV antigen)

Presumptive laboratory evidence:

- A positive test for antibodies to hepatitis C virus (anti-HCV)

Case Classification

Probable

- A case that meets clinical criteria and has presumptive laboratory evidence, **AND**
- Does not have a hepatitis C virus detection test reported, **AND**
- Has no documentation of anti-HCV or HCV RNA test conversion within 12 months,

Confirmed

- A case that meets clinical criteria and has confirmatory laboratory evidence, **OR**
- A documented negative HCV antibody followed within 12 months by a positive HCV antibody test (anti-HCV test conversion) in the absence of a more likely diagnosis, **OR**
- A documented negative HCV antibody **OR** negative hepatitis C virus detection test (in someone without a prior diagnosis of HCV infection) followed within 12 months by a positive hepatitis C virus detection test (HCV RNA test conversion) in the absence of a more likely diagnosis

Chronic Virus

Case Classification

Probable

- A case that does not meet **OR** has no report of clinical criteria, **AND**
- Has presumptive laboratory evidence, **AND**
- Has no documentation of anti-HCV or RNA test conversion within 12 months, **AND**
- Does not have an HCV RNA detection test reported.

Confirmed

- A case that does not meet **OR** has no report of clinical criteria, **AND**
- Has confirmatory laboratory evidence, **AND**
- Has no documentation of anti-HCV or HCV RNA test conversion within 12 months.

STATISTICAL NOTES TABLE

MEASUREMENT NAME	TECHNICAL DEFINITION OF MEASUREMENT	MEASUREMENT PUBLIC HEALTH USE	MEASUREMENT FORMULAS
Crude rate	The simplest rate for a population over a specific time period. The number of new cases of disease that occurred during a specific time period in a population at risk without accounting for the differences in the composition of the population.	A crude rate includes time so this is a measure of disease risk for the population.	$\left\langle \frac{\text{Number of cases during a specific time period}}{\text{American Indian population during the same time period}} \right\rangle \times 100{,}000$
95% Confidence Intervals (CI 95%)	A range of values defined so that there is a 95% probability that the value of the point estimate, or measure is within it	Used to compare two values to determine if they are different (statistically).	For rates $\text{Point estimate} \pm [1.96 \times \text{SE}[\text{point estimate}]]$ For matched odds ratios $\text{Log OR} \pm \left[1.96 \times \sqrt{\frac{1}{b} + \frac{1}{c}}\right]$
Incidence Rate	The number of new cases per population in a given time period.	Measure of the risk of developing a new condition within a specified period of time.	$\left\langle \frac{\text{Number of new cases within a subgroup during a specific time period}}{\text{American Indian population within a subgroup during the same time period}} \right\rangle \times 100{,}000$
Mortality Rate	The number of deaths per population in a given time period	Measure of the risk of death within a specified period of time.	$\left\langle \frac{\text{Number of deaths within a subgroup during a specific time period}}{\text{American Indian population within a subgroup during the same time period}} \right\rangle \times 100{,}000$

GLOSSARY

Acute Hepatitis C - an infection is defined as the 6-month time period following exposure to the hepatitis C virus.

AIDS - acquired immunodeficiency syndrome is a group of diseases resulting from infection with the human immunodeficiency virus (HIV). A person infected with HIV gradually loses immune function, becoming less able to resist aliments and cancers, resulting in eventual death. As of 2009, all CDC HIV surveillance products and reports refer to AIDS as HIV infection, stage 3

Alaska Native – a member or descendant of indigenous peoples in Alaska.

American Indian – a member or descendant of indigenous people in the United States; this term is generally used for Native Americans who are members of tribes in all states except Alaska and Hawaii.

Chronic Hepatitis C – a long – term infection of the Hepatitis C Virus.

Congenital Syphilis – a disease that occurs when a mother with Syphilis passes the infection on to her baby during pregnancy.

Count – the number of disease, events, or other health-related occurrences.

Data – items of information expressed as measurements or statistics used to learn more about a disease or risk factor. Data are used for calculations, support of evidence, assessments, and often for decision making.

Electronic laboratory reporting – the electronic transmission from laboratories to public health of laboratory reports which identify reportable conditions.

Ethnicity – relating to cultural factors such as a shared creation narrative, ancestry, language, and beliefs. A social group characterized by ethnic affiliation or distinctiveness. Ethnicity is largely self-identified.

Hepatitis C Virus – is a liver infection caused by the Hepatitis C Virus (HCV).

HIV - Human Immunodeficiency Virus. A virus that attacks the body's immune system.

Incidence rate – the rate at which new cases of disease or health condition occur in a population. The incidence rate is calculated by the following formula in public health practice:

$$\textit{Incidence rate} = \frac{\text{Number of new cases in specified period}}{\text{Total number of persons at risk during this period}} \times 10^{n}$$

Indian Health Service (IHS) – U.S. Department for Health and Human Services funded agency responsible for providing health services to American Indians and Alaska Natives. The IHS provides health services for approximately 1.9 million American Indians and Alaska Natives who belong to 566 federally recognized Tribes, state recognized Tribes, and California Indians in 35 states. The IHS is divided into 12 geographic "Areas" of the United States: Alaska, Albuquerque, Aberdeen, Bemidji, Billings, California, Nashville, Navajo, Oklahoma, Phoenix, Portland, and Tucson.

Misclassification – the incorrect assignment of a person, value, or item into a grouping which it should not be assigned.

National Electronic Disease Surveillance System (NEDSS) - facilitates electronically transferring public health surveillance data from the healthcare system to public health departments. It is a conduit for exchanging information that supports NNDSS.

National Notifiable Disease Surveillance System (NNDSS) - a public health disease surveillance system that gives public health officials powerful capabilities to monitor the occurrence and spread of diseases.

Phoenix Service Area – the Phoenix Service Area is one of 12 geographic "Areas" within the Indian Health Service (IHS). The Phoenix Service Area serves the majority of its tri-state "Area" in Arizona, Nevada, and Utah.

Primary Syphilis - the first stage of Syphilis, marked by formation of a painless chancre at the point of infection and by hardening and swelling of adjacent lymph nodes

Race – a social construct created to categorize human beings into broad and generic groupings that are self-selected.

Rate – a measure of how fast a disease is occurring in the population. Rate is measured by the following formula:

$$Rate = \frac{\text{Number of events in specified period}}{\text{Total population during the same time period}} \times 10^n$$

Secondary Syphilis – the second stage of Syphilis, beginning with the appearance of the dermatologic eruption, slight fever, and various constitutional symptoms

STI – sexually transmitted infection. STIs are passed from one person to another through vaginal, oral, and anal sex.

HIV infection, stage 3 (AIDS) - CD4+ T-lymphocyte count of <200 cells/µL or CD4+ T-lymphocyte percentage of total lymphocytes of <14, or documentation of an AIDS-defining condition.

Documentation of an AIDS-defining condition supersedes a CD4+ T-lymphocyte count of ≥200 cells/µL and a CD4+ T-lymphocyte percentage of total lymphocytes of ≥14.

Standard population – A set population that is used to standardize age-adjusted rates so rates in different populations are comparable.

Statistics – the study of collecting, summarizing, and analyzing data.

Surveillance – systematic (orderly) and continuous collection, analysis and interpretation of data, along with the timely dissemination (distribution) of the results to those who have the right to know so that action can be taken.

Tucson Service Area – the Tucson Service Area is one of 12 geographic "Areas" within the Indian Health Service (IHS). The Tucson IHS Service Area provides healthcare for two Tribes in southern Arizona: the Tohono O'odham Nation and the Pascua Yaqui Tribe