CHAPTER 3

REPORTABLE DISEASES, ARIZONA, 2008-2018

3A. NON-SEXUALLY TRANSMITTED DISEASES

3B. SEXUALLY TRANSMITTED DISEASES

3C. HUMAN IMMUNODEFICIENCY VIRUS (HIV) DISEASE AND ACQUIRED IMMUNODEFICIENCY SYNDROME (AIDS)

3A.

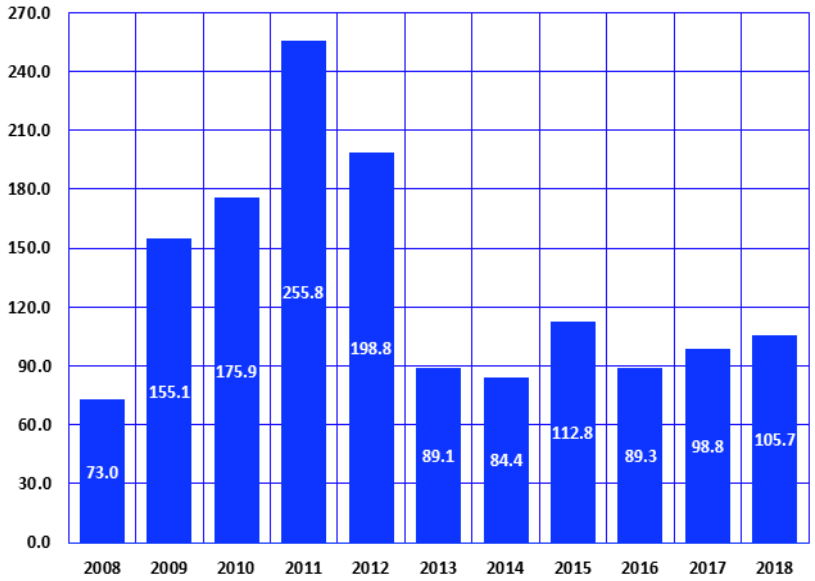
NON-SEXUALLY TRANSMITTED DISEASES

The infectious diseases designated as notifiable vary slightly by state. A notifiable disease is one for which regular, frequent, and timely information regarding individual cases is considered necessary for the prevention and control of the disease. All states generally report the internationally quarantinable diseases (i.e., cholera or plague) in compliance with the World Health Organization's International Health Regulations.

Data on morbidity, levels of disease, and disability in the Arizona population are obtained for certain infectious diseases that must be reported by law. The Bureau of Epidemiology and Disease Control Services conducts surveillance and monitoring of these reportable diseases and it provided data for the respective sections of this chapter and sections 5F, 6A, and 6B.

This section provides some illustrative findings from the tabulated data. It is not intended to be an exhaustive analysis of the incidence of infectious diseases in the State. There is more information available online on the website of the Office of Infectious Disease Services at: http://azdhs.gov/phs/oids/index.htm.

Figure 3A-1
Trends in the Incidence Rates[a] of Valley Fever (Coccidioidomycosis) by Year, Arizona, 2008-2018

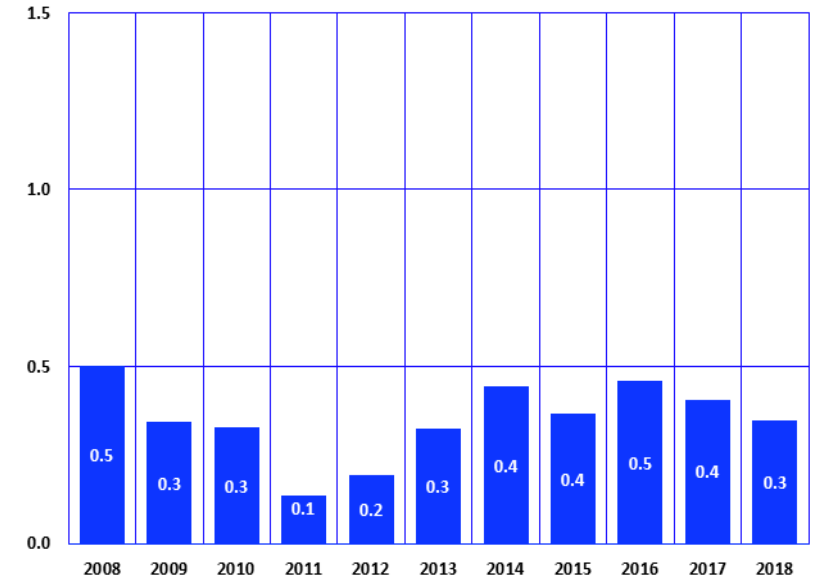


Note: [a] Number of cases per 100,000 population.

Coccidioidomycosis or *Valley Fever* is a fungal infection caused by inhalation of airborne spores that are present in the soil of southwestern United States, California, and parts of Central and South America. Most infections are asymptomatic or self-limited in patients with healthy immune systems. In rare instances, severe lung disease or disseminated infection can develop in patients.

Valley Fever imposed the greatest burden on morbidity among all non-sexually transmitted, notifiable diseases in Arizona in 2018. The reported incidence of Valley Fever increased 8.6 percent from 2017 (n=6,885) to 2018 (n=7,478). The 2018 incidence rate of 105.7/100,000 (**Figure 3A-1, Table 5F-2**) was 7.0 percent greater than the incidence rate of 98.8/100,000 in 2017, but was 58.7 percent lower than the unprecedented incidence rate of 255.8/100,000 in 2011.

Figure 3A-2
Trends in Case Fatality Rates[a] for Valley Fever (Coccidioidomycosis) by Year, Arizona, 2008-2018



Note: [a] Number of deaths per 100 reported cases.

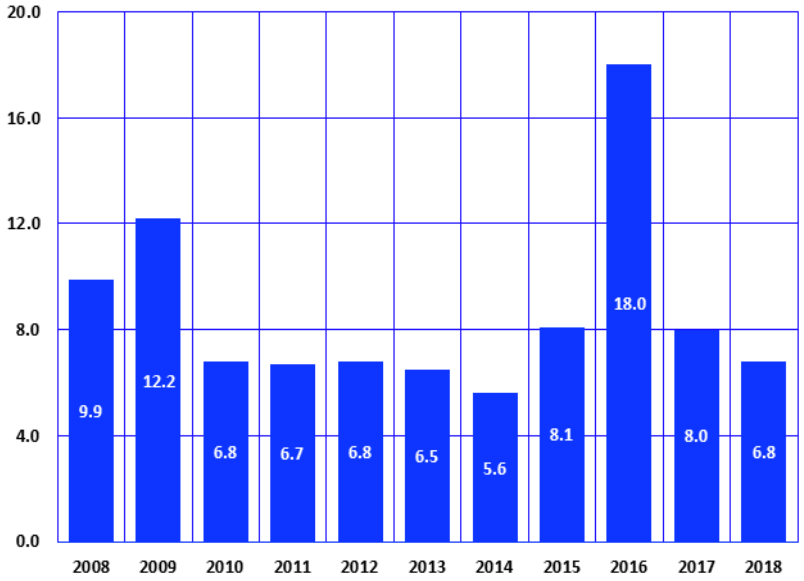
Twenty six of the 7,478 Arizonans who had *Valley Fever* in 2018 died from it (**Table 3A-2)** for a case fatality rate of 0.3 deaths per 100 cases (**Figure 3A-2**). The 2018 case mortality rate for Coccidioidomycosis was 30.9 percent lower than in 2008.

Shigellosis is an infectious disease caused by a group of bacteria called *Shigella* that can cause diarrhea in humans. To spread from one person to another, *Shigellae* can be transmitted through contaminated foods, sexual contact, and water used for drinking or recreational purposes.

From 2008–2018, *shigellosis* was the most common enteric disease to afflict Arizonans after *campylobacteriosis* and *salmonellosis* (**Table 3A-1**).

The number of reported cases of *shigellosis* has decreased by 77 cases from 555 in 2017 to 478 in 2018. Compared to 2017, The incidence rate of *shigellosis* was 15.0 percent lower at approximately 7 reported cases/100,000 population in 2018 (**Figure 3A-3**).

Figure 3A-3
Trends in the Incidence Rates[a] of Shigellosis by Year, Arizona, 2008-2018

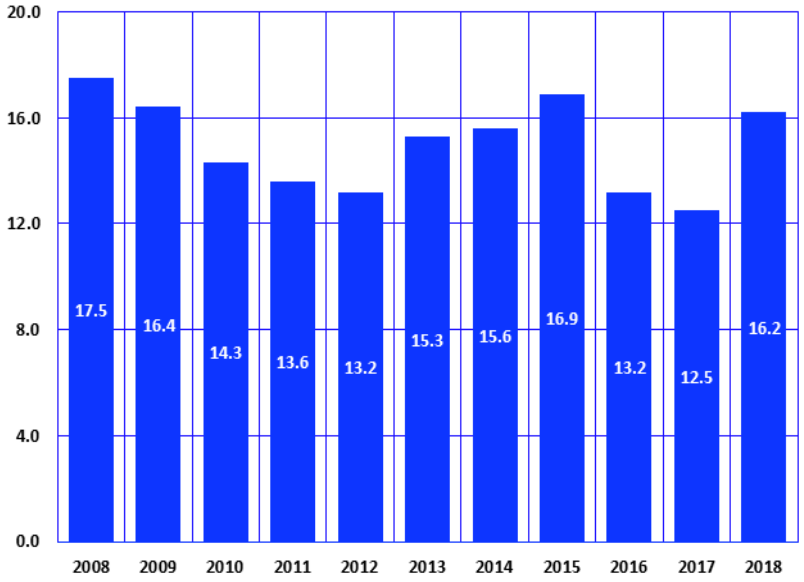


Note: [a] Number of reported cases per 100,000 population.

Salmonellosis is a bacterial infection. Most of those who are infected with *Salmonella* develop diarrhea, fever, and abdominal cramps.

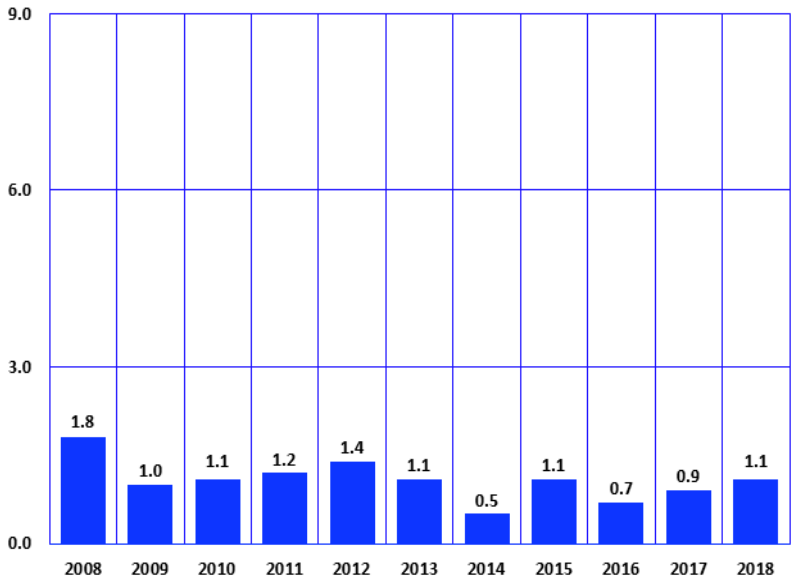
The incidence rate of *salmonellosis* increased 29.6 percent from 12.5/100,000 in 2017 to 16.2/100,000 in 2018 (**Figure 3A-4**). The risk of *salmonellosis* was substantially higher in Apache (53.2/100,000), Santa Cruz (42.0/100,000), Navajo (39.9/100,000) and Graham (39.3/100,000) than the remaining counties (**Table 5F-2**).

Figure 3A-4
Trends in the Incidence Rates[a] of Salmonellosis[b] by Year, Arizona, 2008-2018



Notes: [a] Number of reported cases per 100,000 population; [b] Excluding S. Typhi and S. Paratyphi.

Figure 3A-5
Trends in the Incidence Rates[a] of Hepatitis A by Year, Arizona, 2008-2018

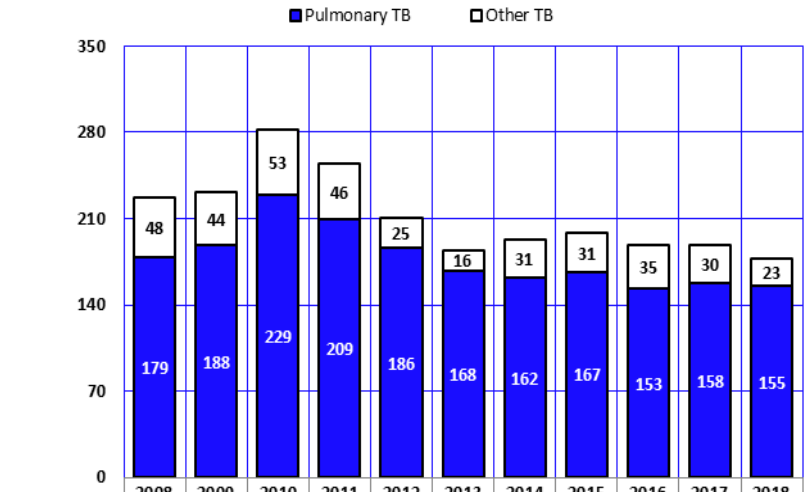


Note: [a] Number of reported cases per 100,000 population.

Hepatitis A is a liver disease caused by the *hepatitis A* virus. During 1995-1996, highly effective *hepatitis A* vaccines became available in the United States. Routine childhood vaccination for *hepatitis A* was recommended in 1999. The expansion of recommendations for routine *hepatitis A* vaccination to include all children in the United States aged 12-23 months is likely to reduce hepatitis rates further.

In Arizona, the incidence rate of *hepatitis A* decreased 38.9 percent from 1.8/100,000 in 2008 to 1.1/100,000 in 2018 (**Figure 3A-5**).

Figure 3A-6
Trends in the Incidence of Pulmonary Tuberculosis and Total Tuberculosis[a] by Year, Arizona, 2008-2018



	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total TB	227	232	282	255	211	184	193	198	188	188	178
Other TB	48	44	53	46	25	16	31	31	35	30	23
Pulmonary TB	179	188	229	209	186	168	162	167	153	158	155

Note: [a] Number of reported cases by year.

Tuberculosis (TB) is an infectious disease that usually attacks the lungs, but can attack almost any part of the body. Tuberculosis is spread from person to person through the air.

The number of reported cases of *pulmonary tuberculosis* slightly decreased from 158 cases in 2017 to 155 reported cases in 2018. The number of reported cases of tuberculosis other than pulmonary decreased in 2018 to 23 cases (**Figure 3A-6, Table 3A-1**). The incidence rate of *total* tuberculosis decreased from 2.7/100,000 in 2017 to 2.5/100.000 in 2018 (**Table 5F-2**).

Pulmonary tuberculosis accounted for 87.1 percent of all tuberculosis infections in 2018 (**Table 3A-1**). Ten Arizonans who had *tuberculosis* died from it in 2018 (**Table 3A-2**).

TABLE 3A-1
NUMBER OF REPORTED CASES OF SELECTED NOTIFIABLE DISEASES BY CATEGORY, ARIZONA, 2008-2018

Disease	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Vaccine Preventable											
Measles	18	0	*	*	*	*	*	7	31	0	0
Mumps	*	10	*	0	*	*	12	*	7	34	15
Pertussis	218	277	546	867	1,130	1,440	517	580	287	420	239
Pertussis confirmed cases	(23)	(79)	(95)	(160)	(575)	(1,068)	(287)	(341)	(154)	(262)	(135)
Rubella	*	0	*	0	0	0	0	0	0	*	0
Congenital Rubella Syndrome	0	0	0	0	0	0	0	0	0	0	0
Haemophilus influenzae type b (invasive, age < 5 years)	*	*	*	*	*	*	0	*	*	*	*
Tetanus	0	0	*	*	0	0	0	*	*	0	0
Varicella (chickenpox)	778	534	755	660	535	354	300	270	279	189	245
Central Nervous System											
Aseptic Meningitis	688	516	733	400	453	343	288	189	146	81	N/A
Meningococcal Disease	9	15	14	16	6	12	9	*	*	*	*
Viral Encephalitis	8	*	6	6	*	*	*	*	*	*	*
Enteritides											
Amebiasis	11	7	13	21	17	21	24	*	6	16	21
Campylobacteriosis	1,006	877	956	939	940	846	939	1,379	1,241	1,372	1,269
Cholera	0	0	0	0	0	0	0	0	0	0	*
Cryptosporidiosis	89	34	40	46	47	42	46	62	549	112	203
E. coli O157:H7	69	68	100	126	141	246	98	128	148	166	296
Giardiasis	142	198	167	133	113	115	119	143	125	145	149
Salmonellosis (exl. *S*. Typhi & *S*. Paratyphi)	1,143	1,079	984	877	857	1,007	1,040	1,143	899	874	1,149
Salmonella Paratyphi A	*	*	7	*	0	*	*	*	*	*	*
Salmonella Paratyphi B	10	6	*	7	*	*	*	16	0	0	0
Salmonella Paratyphi C	0	0	0	0	0	0	0	0	0	0	0
Shigellosis	650	806	465	434	444	428	376	549	1,231	555	478
Typhoid Fever	*	*	6	*	7	12	*	*	9	*	9
Mycosis											
Coccidioidomycosis (Valley Fever)	4,768	10,233	11,888	16,472	12,920	5,861	5,624	7,622	6,101	6,885	7,478
Hepatitides											
Hepatitis A	118	68	62	77	93	73	35	72	46	61	80
Hepatitis B (acute)	163	193	150	185	104	50	38	43	16	41	30
Hepatitis C (acute)	0	0	0	NA	NA	NA	NA	NA	NA	N/A	N/A
Hepatitis D	0	0	*	0	0	0	*	0	0	0	*
Hepatitis E	0	0	*	0	0	0	*	0	0	*	0
Tuberculosis											
Pulmonary TB	179	188	229	209	186	168	162	167	153	158	155
Total TB	227	232	282	255	211	184	193	198	188	188	178

TABLE 3A-1 (continued)
NUMBER OF REPORTED CASES OF SELECTED NOTIFIABLE DISEASES BY CATEGORY, ARIZONA, 2008-2018

Disease	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Zoonoses/Vector-borne											
Brucellosis	*	*	9	*	*	*	6	*	*	8	*
Colorado Tick Fever	0	0	*	0	0	0	*	*	0	0	0
Dengue	6	*	10	*	10	*	91	24	14	*	10
Erlichiosis	*	*	0	*	*	*	*	*	*	*	*
Hantavirus Pulmonary Syndrome	*	*	0	*	*	*	*	*	*	*	0
Human Rabies	0	0	0	0	0	0	0	0	0	0	0
Lyme Disease	8	7	*	15	13	32	21	12	13	28	7
Malaria	17	10	28	21	19	33	25	14	38	26	24
Plague	*	0	0	0	0	0	0	*	0	*	0
Relapsing Fever, Tick-borne	0	*	0	*	*	*	12	*	*	*	*
Rocky Mountain Spotted Fever	17	23	17	77	50	63	16	17	23	27	38
St. Louis Encephalitis	0	0	0	0	0	0	*	23	0	6	0
Tularemia	0	0	*	0	0	0	0	*	*	*	0
West Nile Virus	114	21	166	69	135	62	108	103	78	110	27
Other											
Botulism	*	*	0	*	12	*	*	*	*	*	12
Legionellosis	26	49	65	46	44	69	59	93	76	74	83
Listeriosis	8	8	10	8	14	*	14	*	6	8	6
Methicillin Resistant *S. aureus* (invasive)	1,417	1,171	1,166	1,196	1,089	1,066	1,178	1,155	1,265	1,355	1,529
Streptococcal-Group A (invasive)	204	161	190	206	199	231	250	351	555	614	758
Streptococcal-Group B (invasive, age <90 d)	57	52	45	39	57	35	41	61	60	63	40
Streptococcus pneumoniae (invasive)	1,077	907	823	767	661	786	724	678	716	707	862
Reyes Syndrome	0	0	0	0	0	0	0	0	0	0	0
Toxic Shock Syndrome	*	*	*	*	*	*	6	*	*	0	*
Vibrio spp. (except toxogenic *V.cholerae*)	14	19	18	26	29	19	36	33	19	25	54
Yersiniosis (except *Y. pestis*)	*	7	*	6	10	9	*	12	14	20	11

Notes: * Cell suppressed due to non-zero count less than 6; Non-resident cases have been excluded. Only incident cases are reported. Cases are counted by date reported to public health. Case counts include both probable and confirmed cases unless otherwise indicated. *E. coli* has included both *E. coli* O157:H7 and Shiga-toxin positive *E.coli* since October 2004. *Haemophilus influenzae* type B includes all invasive *H. influenzae* B, not just meningitis, as of 1995. Meningococcal disease includes all invasive disease caused by *Neisseria meningitidis*, not just meningitis. Animal rabies cases are not included. Reported coccidioidomycosis cases were elevated from June 2009 through December 2012 and then declined in 2013 due to changes in reporting practices and laboratory testing from a major commercial laboratory. A change in the criteria for counting Lyme disease in 2013 may account for the increase in cases in that year. Aseptic meningitis and Reyes syndrome ceased being reportable in January 2018. For additional statistics on these diseases, please see:

https://azdhs.gov/preparedness/epidemiology-disease-control/index.php#data-stats

Source: Arizona Department of Health Services, Bureau of Epidemiology and Disease Control Services and Office of Disease Integration and Services.

TABLE 3A-2
NUMBER OF DEATHS FROM SELECTED NOTIFIABLE DISEASES BY CATEGORY AND YEAR, ARIZONA, 2008-2018

ICD-9/ICD-10 codes	Disease	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
VACCINE PREVENTABLE												
055/B05	Measles	0	0	0	0	0	0	0	0	0	0	0
072/B26	Mumps	0	0	0	0	0	0	0	*	0	0	0
033/A37	Whooping cough (pertussis)	*	*	0	0	0	0	0	0	*	*	0
056/B06	Rubella	0	0	0	0	0	0	0	0	0	0	0
052/B01	Chickenpox	0	*	*	*	*	0	*	0	0	0	*
CENTRAL NERVOUS SYSTEM												
047.9/G03.0	Aseptic meningitis	*	*	0	*	*	0	0	*	0	*	*
036/A39	Meningococcal infections	0	0	*	*	*	*	*	0	0	0	0
049.9/A86	Viral encephalitis	*	*	*	6	*	*	*	*	*	*	*
ENTERITIDES (FOODBORNE)												
006/A06	Amebiasis	0	0	0	0	0	0	*	0	0	0	0
007.1/A07.1	Giardiasis	0	0	0	0	0	0	0	0	0	0	0
003/A02	Salmonellosis *(except typhoid)*	*	0	*	*	0	0	*	*	*	*	*
004/A03	Shigellosis	0	*	*	0	0	*	*	*	0	0	0
002/A01	Typhoid	*	0	0	0	0	0	0	0	0	0	0
MYCOSIS												
114/B38	Coccidioidomycosis *(Valley Fever)*	24	35	39	22	25	19	25	28	28	28	26
HEPATITIDES												
070.0-070.1/B15	Hepatitis A	*	*	*	0	*	*	*	0	0	0	0
070.2-070.3/B16	Hepatitis B	6	*	10	9	12	9	8	8	10	*	6
070.4-070.5/B17-B18	Other viral hepatitis	176	233	207	209	274	265	248	257	207	191	133
070.6-070.9/B19	Unspecified	*	*	*	0	0	*	*	*	0	*	*
TUBERCULOSIS												
010-011/A15-A16	Respiratory TB	10	8	12	10	*	11	6	9	6	7	*
010-018/A15-A19	Total TB	13	8	15	12	*	15	8	10	7	10	10
ZOONOSES/VECTOR-BORNE												
023.9/A23	Brucellosis	0	0	0	0	0	0	0	*	0	0	0
061/A90	Dengue	0	0	0	0	0	0	0	0	0	0	0
071/A82	Human Rabies	0	0	0	0	0	0	0	0	0	0	0
084/B50-B54	Malaria	0	0	0	0	0	*	0	0	0	0	0
020/A20	Plague	0	0	0	0	*	0	0	0	0	0	0
082/A77.0	Rocky Mountain Spotted Fever	*	*	*	*	0	*	0	0	*	*	0
021/A21	Tularemia	0	0	0	0	0	0	*	0	0	0	0
OTHER												
482.8/A48.1	Legionellosis	0	*	0	*	*	*	*	*	*	0	6
027.0/A32	Listeriosis	0	0	0	0	*	0	*	0	0	0	0
331.8/G93.7	Reyes Syndrome	0	0	0	0	0	0	0	0	0	0	0
995.0/A48.3	Toxic Shock Syndrome	0	0	0	0	0	0	0	0	*	0	0

Note: * Cell suppressed due to non-zero count less than 6.

3B.

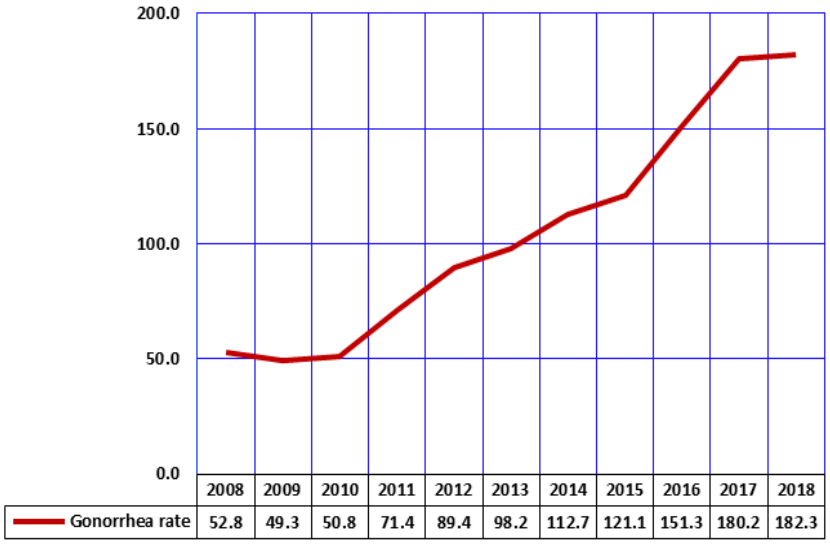
SEXUALLY TRANSMITTED DISEASES

All states require that certain sexually transmitted diseases (STDs) be reported by physicians and other health care providers when they suspect that a case has occurred or they have laboratory confirmation.

It is important to note that disease reporting is likely incomplete and completeness may vary depending on the disease. Moreover, changes in methods for public health surveillance, or implementation of new diagnostic tests can cause changes in disease reporting that are independent of the true incidence of disease.* In this section, STD rates were calculated using denominators from the CDC for years prior 2018. In the current report, the Arizona Department of Health Services denominators were used to compute the STD rates.

*Centers for Disease Control and Prevention. Summary of notifiable diseases – United States, 2008. Published June 25, 2010, for 2008; Vol. 57 (No. 54). Available online at http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5754a1.htm

Figure 3B-1
Trends in the Incidence Rates[a] of Gonorrhea by Year, Arizona, 2008-2018



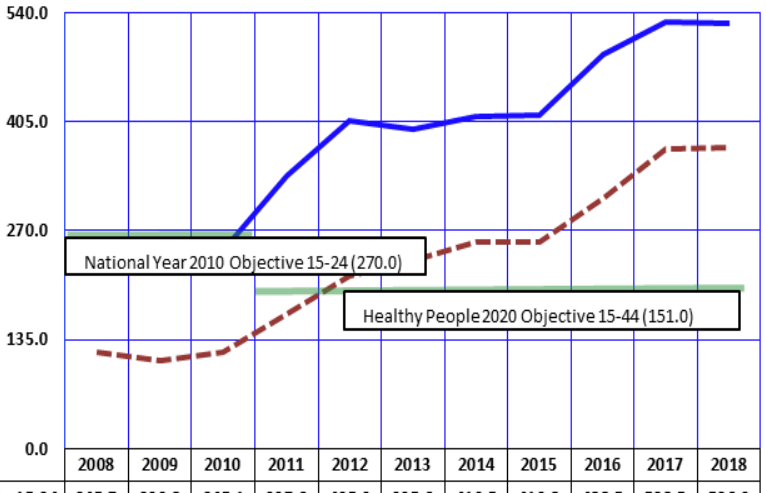
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Gonorrhea rate	52.8	49.3	50.8	71.4	89.4	98.2	112.7	121.1	151.3	180.2	182.3

Note: [a] Number of reported cases per 100,000 population.

Neisseria gonorrhoeae infection is the second most commonly reported notifiable disease in the United States. (**Figure 3B-1**). The consistent steady increase in the incidence rate of gonorrhea since 2009 likely resulted from a combination of factors, such as changes in surveillance, increases in the number of tests performed, and actual increases in disease occurrence (**Figure 3B-1**).

The *Healthy People 2010* objective HP25-2 defines the target rate for gonorrhea as equal to or lower than 19.1 cases per 100,000 population. However, the *Healthy People 2020* target is for ages 15-44 and is set at 151.0/100,000 females and 147.0/100,000 males (**Table 6A-2**).

Figure 3B-2
Trends in the Incidence Rates[a] of Gonorrhea among Females aged 15-24 and 15-44 Years, Arizona, 2008-2018



	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Rate 15-24	245.7	230.8	245.1	337.6	405.9	395.6	410.5	413.8	488.5	528.5	526.9
Rate 15-44	118.7	109.3	118.9	166.8	214.6	233.8	256.0	254.9	310.3	370.8	372.8

Notes: [a] Number of reported cases per 100,000 females; There was a change in target rate and age range for Healthy People 2020 objective.
In National Year 2010 objective was for females aged 15 and 24 years. In Healthy People 2020 objective is for females aged 15 and 44 years.

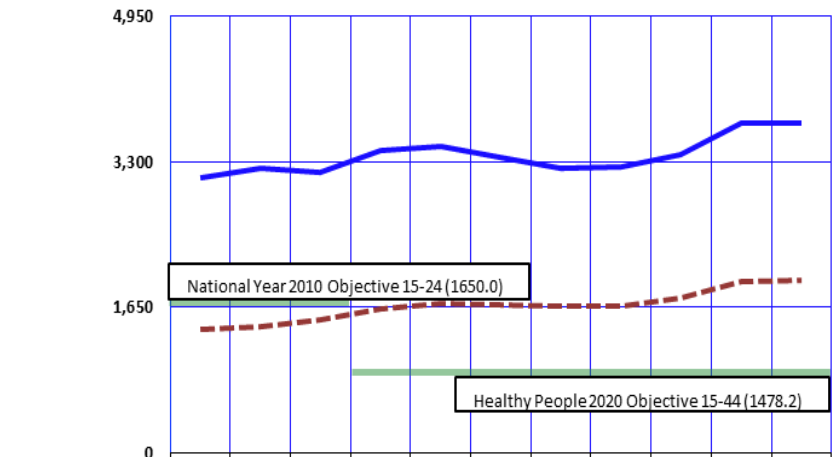
The 2018 incidence rate for gonorrhea was 372.8 per 100,000 for Arizona females aged 15-44 years, meaning Arizona's incidence rate was higher than the *Healthy People 2020* objective. Generally, the trends in gonorrhea incidence rates are similar for women in the age groups 15-24 and 15-44, although the overall incidence rate is consistently higher for women aged 15-24.

Chlamydia trachomatis is the most prevalent bacterial sexually transmitted disease in the United States (1,758,668 cases in 2018) with the highest rates reported among adolescents and young adults (**Table 3B-4**). Recent availability of sensitive tests for *chlamydia* using DNA amplification technology undoubtedly contributed to the increase in the number of reported cases in Arizona over the last decade (**Figure 3B-3**, **Table 3B-1**).

The incident rate of chlamydia was previously reported for females aged 15-24 years, however based on changes in *Healthy People 2020*, it would be reported for females 15-44 years. The *Healthy People 2020* goal for chlamydia is set at 1,478.2 per 100,000 females. The incidence rate for Arizona in 2018 was 1,958 per 100,000 females age 15-44 years (**Table 6A-2**).

http://www.cdc.gov/std/stats18/chlamydia.htm

Figure 3B-3
Trends in the Incidence Rates[a] of Chlamydia among Females 15-24 and 15-44 Years, Arizona, 2008-2018



	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Rate 15-24	3,126	3,221	3,180	3,437	3,473	3,353	3,227	3,246	3,381	3,737	3,747
Rate 15-44	1,392	1,434	1,510	1,628	1,688	1,683	1,663	1,657	1,748	1,940	1,958

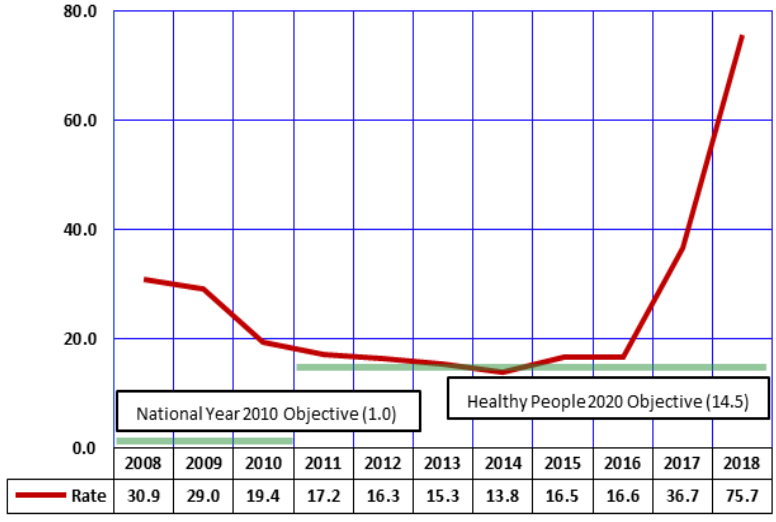
Notes: [a] Number of reported cases per 100,000 females; There was a change in target rate and age range for Healthy People 2020 objective. In National Year 2010 objective was for females aged 15-24 years. In Healthy People 2020 objective is for females aged 15-44 years.

Congenital syphilis is an infection caused by the spirochete *Treponema pallidum*, which can be passed from the mother to child during fetal development or birth. Not all infants born to infected women will be infected.

In 1988, CDC implemented a new Congenital syphilis case definition. It no longer relies on documentation of infection in the infant; rather, it presumes that an infant is infected if it cannot be proven that an infected mother was adequately treated for syphilis before or during pregnancy.

The *Healthy People 2020* goal for congenital syphilis is 14.5 cases per 100,000, which has been surpassed by Arizona in each year from 2008 to 2018, with sole exception of 2014. The Arizona incidence rates of congenital syphilis were for the most part below 20 cases per 100,000 infants, with exception to years prior 2010 and after 2016. In 2017, a sharp increase in the incidence was recorded (36.7/100,000), and in 2018, the rate more than doubled at 75.7/100,000 (**Figure 3B-4**, **Table 6A-2**).

Figure 3B-4
Trends in the Incidence Rates[a] of Congenital Syphilis by Year, Arizona, 2008-2018



	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Rate	30.9	29.0	19.4	17.2	16.3	15.3	13.8	16.5	16.6	36.7	75.7

TABLE 3B-1
NUMBER OF REPORTED CASES OF SEXUALLY TRANSMITTED DISEASES BY CATEGORY AND YEAR, ARIZONA, 2008-2018

Disease	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Gonorrhea	3,449	3,250	3,249	4,564	5,856	6,505	7,585	8,270	10,330	12,514	12,903
Gonococcal PID[a]	0	0	0	0	0	0	0	0	0	*	17
Resistant Gonorrhea[b]	0	0	0	0	0	0	*	0	0	0	0
Syphilis (P & S)[c]	317	231	230	274	204	290	572	590	721	943	1,052
Syphilis-Total[d]	1,396	1,085	904	907	795	966	1,434	1,482	1,903	2,424	3,258
Chlamydia	24,769	26,002	26,861	29,251	30,571	30,923	31,750	32,511	34,923	39,635	40,866

Notes: * Cell suppressed due to non-zero count less than 6; [a] PID is pelvic inflammatory disease; [b] Includes PPNG, penicillase producing Neisseria gonorrhea, a form of gonorrhea which is resistant to penicillin; [c] Primary and secondary syphilis only; [d] Early, late, congenital and other; since 2005, the table includes all positive laboratory results for chlamydia and gonorrhea with or without communicable disease report.

Source: Arizona Department of Health Services, Bureau of Epidemiology and Disease Control, Office of HIV / STD.

TABLE 3B-2
NUMBER OF DEATHS ASSOCIATED WITH SPECIFIED SEXUALLY TRANSMITTED DISEASES BY CATEGORY AND YEAR, ARIZONA, 2008-2018

Disease	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Gonococcal infections	0	0	0	0	0	0	0	0	0	0	0
Syphilis-Total	*	0	0	*	*	*	*	0	*	*	*

Notes: * Cell suppressed due to non-zero count less than 6; Number of deaths associated with Syphilis are still birth (congenital syphilis).

TABLE 3B-3
FREQUENCY OF REPORTED CASES OF GONORRHEA, CHLAMYDIA, AND EARLY SYPHILIS BY AGE AND GENDER, ARIZONA, 2018

Age group	GONORRHEA				CHLAMYDIA				EARLY SYPHILIS			
	Males	Females	Unknown or Transgender	Total	Males	Females	Unknown or Transgender	Total	Males	Females	Unknown or Transgender	Total
0-4	*	*	0	10†	*	*	0	10†	0	0	0	0
5-9	0	*	0	0†	*	*	0	10†	0	0	0	0
10-14	*	32	0	40†	46	164	0	210	*	0	0	0†
15-19	724	937	*	1,664	2,312	7,050	30	9,392	57	39	0	96
20-24	1,838	1,509	6	3,353	4,661	10,185	34	14,880	223	91	0	314
25-29	1,724	1,121	*	2,849	3,038	4,928	27	7,993	294	89	0	383
30-34	1,170	782	6	1,958	1,628	2,183	12	3,823	244	72	0	316
35-39	742	474	*	1,220	1,008	1,113	6	2,127	213	52	0	265
40-44	446	233	*	681	538	593	*	1,135	139	28	0	167
45-49	359	138	*	498	339	258	*	598	126	21	0	147
50-54	248	69	*	318	208	125	0	333	113	8	0	121
55-59	152	25	*	179	131	76	*	209	71	7	0	78
60-64	55	12	0	67	46	35	*	82	37	*	0	40†
65-over	62	7	0	69	44	24	0	68	21	*	0	20†
Total	7,530†	5,340†	30†	12,900†	14,000†	26,740†	120†	40,860†	1,540†	410†	0	1,950†

Notes: * Cell suppressed due to non-zero count less than 6; † Sum rounded to nearest tens unit due to non-zero addend less than 6; since 2005, the table includes all positive laboratory results for chlamydia and gonorrhea with or without communicable disease report; In 2018, 3 gonorrhea and 4 chlamydia cases were excluded due to missing age.

Source: Arizona Department of Health Services, Bureau of Epidemiology and Disease Control Services, Office of HIV / STD.

TABLE 3B-4
RATES[a] OF REPORTED CASES OF GONORRHEA, CHLAMYDIA, AND EARLY SYPHILIS BY AGE AND GENDER, ARIZONA, 2018

Age group	GONORRHEA			CHLAMYDIA			EARLY SYPHILIS		
	Males	Females	Total	Males	Females	Total	Males	Females	Total
0-4	**	**	**	**	**	1.6	0.0	0.0	0.0
5-9	0.0	**	**	**	**	**	0.0	0.0	0.0
10-14	**	13.9	7.9	19.2	71.2	44.7	**	0.0	**
15-19	300.3	406.8	353.0	959.1	3060.8	1992.4	23.7	16.9	20.4
20-24	721.0	645.2	685.9	1828.3	4354.4	3044.0	87.5	38.9	64.2
25-29	658.9	463.0	565.5	1161.1	2035.3	1586.6	112.4	36.8	76.0
30-34	492.5	352.5	426.2	685.3	984.0	832.2	102.7	32.5	68.8
35-39	325.5	215.2	272.2	442.1	505.4	474.6	93.4	23.6	59.1
40-44	213.3	112.2	163.4	257.2	285.6	272.3	66.5	13.5	40.1
45-49	167.2	63.9	115.6	157.9	119.4	138.8	58.7	9.7	34.1
50-54	118.9	32.1	75.1	99.8	58.2	78.7	54.2	3.7	28.6
55-59	71.7	11.0	40.8	61.8	33.4	47.6	33.5	3.1	17.8
60-64	28.3	5.5	16.2	23.7	15.9	19.8	19.0	**	9.7
65-over	11.1	1.1	5.7	7.9	3.7	5.6	3.8	**	1.9
Total	213.9	150.2	182.3	398.0	751.7	577.5	43.7	11.6	27.6

Notes: ** Cell suppressed due to rate/ratio/percent based on non-zero count less than 6; [a] Number of cases per 100,000 population; table includes all positive laboratory results for chlamydia and gonorrhea with or without communicable disease report in 2017; denominators for unknown or transgender category are not available; rates per 100,000 population.

Source: Arizona Department of Health Services, Bureau of Epidemiology and Disease Control Services, Office of HIV / STD.

TABLE 3B-5
FREQUENCY OF REPORTED CASES, PERCENT DISTRIBUTION AND RATES OF EARLY AND LATE SYPHILIS, GONORRHEA, AND CHLAMYDIA BY RACE/ETHNICITY, ARIZONA, 2018

Race/ethnicity	SYPHILIS						GONORRHEA						CHLAMYDIA		
	Early			Late			Resistant			Total					
	Cases	%	Rate	Cases	%	Rate	Cases	%	Rate	Cases	%	Rate	Cases	%	Rate
White Non-Hispanic	686	35.2	17.4	322	25.9	8.2	0	0.0	0.0	3,229	25.0	81.8	8,599	21.0	217.8
Black or African American	199	10.2	58.5	141	11.3	41.5	0	0.0	0.0	2,152	16.7	632.6	3,934	9.6	1156.5
Hispanic or Latino	729	37.4	32.7	523	42.0	23.5	0	0.0	0.0	3,408	26.4	153.0	11,822	28.9	530.7
Asian or Pacific Islander	33	1.7	12.6	14	1.1	5.3	0	0.0	0.0	123	1.0	46.9	460	1.1	175.3
American Indian or Alaska Native	234	12.0	78.3	141	11.3	47.2	0	0.0	0.0	1,157	9.0	387.4	3,082	7.5	1031.9
Multi-racial	45	2.3	N/A	21	1.7	N/A	0	0.0	0.0	150	1.2	N/A	236	0.6	N/A
Not Specified	25	1.3	N/A	83	6.7	N/A	0	0.0	N/A	2,684	20.8	N/A	12,733	31.2	N/A
Total	1,951	100.0	27.6	1,245	100.0	17.6	0	N/A	N/A	12,903	100.0	182.3	40,866	100.0	577.5

Notes: [a] Number of cases per 100,000 population; Table includes all positive laboratory results for chlamydia and gonorrhea with or without communicable disease report in 2018; rates per 100,000 population.

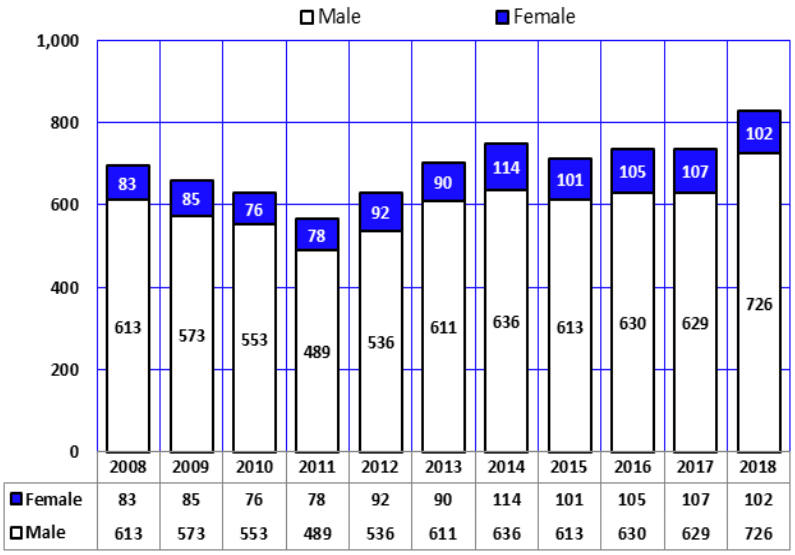
Source: Arizona Department of Health Services, Bureau of Epidemiology and Disease Control Services, Office of HIV / STD.

3C.

HUMAN IMMUNODEFICIENCY VIRUS (HIV) DISEASE AND ACQUIRED IMMUNODEFICIENCY SYNDROME (AIDS)

Statistics about the estimated incidence of Human Immunodeficiency Virus (HIV) disease and Acquired Immunodeficiency Syndrome (AIDS) for 1981-2018, as provided by the Office of HIV, STD, and Hepatitis Services, are available in Tables 3C-1, 3C-2, 3C-3, 3C-4, and 5F-3 of this report. In the past, the cases of persons previously reported as HIV positive and subsequently diagnosed with AIDS were not properly counted since these were not new cases, only a new diagnosis reflecting a progression of the disease. The data presented in this report are based on a revised approach adopted by the Office of HIV/AIDS Services. The estimated incidence of HIV/AIDS includes the sum of new HIV cases and new AIDS cases, which were not diagnosed as HIV positive in any prior calendar year. The cases of persons who were diagnosed with both HIV and AIDS in the same calendar year are counted only as AIDS to avoid double counting.

Figure 3C-1
Reported Cases of HIV/AIDS by Gender and Year of Diagnosis, Arizona, 2008-2018



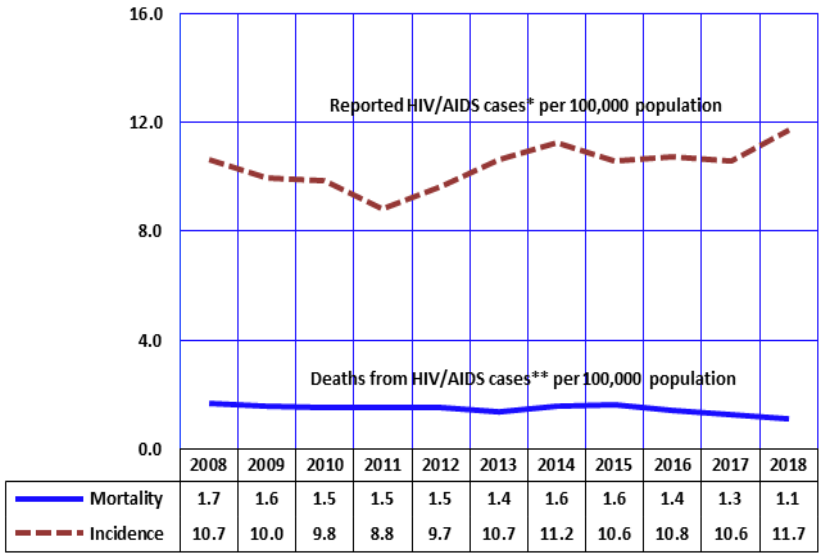
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Female	83	85	76	78	92	90	114	101	105	107	102
Male	613	573	553	489	536	611	636	613	630	629	726

Since the first case of AIDS diagnosed in an Arizona resident in 1981, a total of 24,468 cases of HIV/AIDS had been diagnosed in the State by the end of 2018 and reported by July 1, 2019 (**Table 3C-1**).

In 2018, males accounted for 87.7 percent of all *HIV/AIDS* diagnoses. The male-to-female ratio of *HIV/AIDS* diagnoses in Arizona in 2018 was 7.1:1 (726/102; **Figure 3C-1**, **Table 3C-2**).

The proportion of risk behaviors attributed to emerging cases of HIV/AIDS in 2018 remained similar to previous years. Of the 828 *HIV/AIDS* cases diagnosed in 2018, 527 were among men who reported sexual contact with other men (**Table 3C-4**). Another 51 reported heterosexual contact. An additional 48 reported only injecting drugs. Adults without an indicated risk accounted for 160 of HIV/AIDS cases diagnosed in 2018.

Figure 3C-2
Trends in the Incidence Rates of HIV/AIDS and Mortality Rates for HIV Disease by Year, Arizona, 2008-2018



	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Mortality	1.7	1.6	1.5	1.5	1.5	1.4	1.6	1.6	1.4	1.3	1.1
Incidence	10.7	10.0	9.8	8.8	9.7	10.7	11.2	10.6	10.8	10.6	11.7

Notes: *By year of diagnosis; **By year of death.

The incidence rate measures the relative risk for HIV/AIDS in a population. The incidence rate of HIV/AIDS has increased in Arizona by 9.3 percent from 10.7 cases per 100,000 population in 2008 to 11.7/100,000 in 2018 (**Figure 3C-2**; the incidence rates for 2008 – 2018 have been re-computed based on the latest volume of the HIV/AIDS data as of 7/01/2019).

The rate of deaths from *HIV disease* remained unchanged from 2014 to 2015, then decreased slightly at 1.4 deaths per 100,000 population in 2016 to 1.1 in 2018 (**Figure 3C-2**).

Of the 828 *HIV/AIDS* cases diagnosed in 2018, 281 were White non-Hispanic, 331 were Hispanic, 145 were Black, 44 were American Indian, and 20 were Asian or Pacific Islander (**Table 3C-3**).

TABLE 3C-1
FREQUENCY DISTRIBUTION OF HIV/AIDS BY AGE AT DIAGNOSIS, ARIZONA, 1981-2018

Age Group (years)	HIV/AIDS cases
Under 5	130
5-12	62
13-19	565
20-29	7,378
30-39	8,637
40-49	5,050
50 or above	2,628
Missing	18
Total	24,468

TABLE 3C-2
HIV/AIDS CASES AND DEATHS BY YEAR OF DIAGNOSIS AND GENDER, ARIZONA, 1981-2007 and 2008-2018

	1981-2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
# Males	14,771	613	573	553	489	536	611	636	613	630	629	726
# Females	2,055	83	85	76	78	92	90	114	101	105	107	102
# Total	16,826	696	658	629	567	628	701	750	714	735	736	828
# Presumed Living	8,971	594	560	552	507	563	645	707	665	700	708	813
# Known dead	7,855	102	98	77	60	65	56	43	49	35	28	15
% Mortality	**47.4**	**13.6**	**13.8**	**10.7**	**9.2**	**8.9**	**6.7**	**4.7**	**5.7**	**3.9**	**3.3**	**1.8**

Note: Due to reporting delays, all numbers are provisional (2018 volume as of 07/01/2019).

Source: Arizona Department of Health Services, Bureau of Epidemiology and Disease Control, Office of HIV/AIDS Services.

TABLE 3C-3
DISTRIBUTION OF REPORTED HIV/AIDS CASES BY YEAR OF DIAGNOSIS AND RACE/ETHNICITY, ARIZONA, 1981-2007 AND 2008-2018

Race/ethnicity	1981-2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
White non-Hispanic	10,339	342	282	312	227	245	284	270	249	248	251	281
Black or African American non-Hispanic	1,625	71	69	59	76	103	116	132	132	137	116	145
Hispanic or Latino all races	3,942	231	245	203	202	211	242	268	251	274	297	331
Asian or Pacific Islander non-Hispanic	113	15	13	10	16	16	9	17	23	17	23	20
American Indian or Alaska Native non-Hispanic	533	28	39	36	41	45	46	58	52	54	46	44
Two or more races/ other or unknown race	274	9	10	9	*	8	*	*	7	*	*	7
Total	16,826	696	658	629	570†	628	700†	750†	714	740†	740†	828

Note: * Cell suppressed due to non-zero count less than 6; † Sum rounded to nearest tens unit due to non-zero addend less than 6; Due to reporting delays, all numbers are provisional (2018 volume as of 07/01/2019).

TABLE 3C-4
DISTRIBUTION OF REPORTED HIV/AIDS CASES BY YEAR OF DIAGNOSIS AND TRANSMISSION CATEGORY, ARIZONA, 1981-2007 AND 2008-2018

Transmission	1981-2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
MSM	9,965	421	362	394	335	368	431	470	421	447	453	527
IV Drug User (IDU)	2,235	65	53	42	56	54	53	55	53	53	35	48
MSM/IDU	1,779	40	35	46	36	32	34	40	48	32	39	35
Hemophiliac (Adult)	82	0	0	0	0	0	0	0	0	0	0	0
Heterosexual Contact	1,479	60	64	68	79	99	70	77	80	64	63	51
Transfusion/transplant (Adult)	125	0	0	0	0	0	0	0	0	0	0	0
No indicated risk (Adult)	1,011	107	140	77	60	67	107	103	106	136	141	160
Pediatric Hemophiliac	17	0	0	0	0	0	0	0	0	0	0	0
Pediatric transfusion/transplant	*	0	0	0	0	0	0	0	0	0	0	0
Mother HIV+	121	*	*	*	*	8	*	*	*	*	*	7
Pediatric (no indicated risk)	9	0	0	0	0	0	*	*	*	0	*	0
Total	16,830†	700†	660†	630†	570†	628	700†	750†	710†	740†	740†	828

Note: * Cell suppressed due to non-zero count less than 6; † Sum rounded to nearest tens unit due to non-zero addend less than 6; Due to reporting delays, all numbers are provisional (2018 volume as of 07/01/2019).

Source: Arizona Department of Health Services, Bureau of Epidemiology and Disease Control, Office of HIV/AIDS Services.