

# **CHAPTER 3**

## **REPORTABLE DISEASES, ARIZONA, 2006-2016**

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**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**

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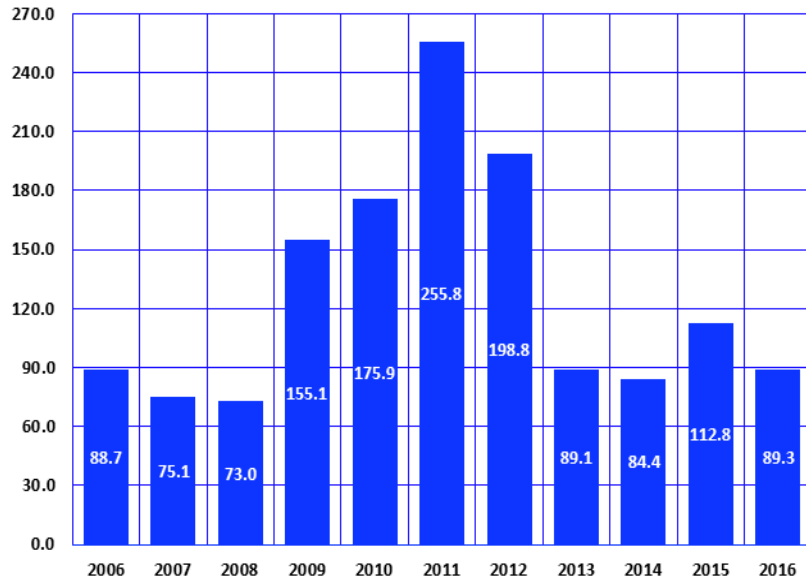
The infectious diseases designated as notifiable vary slightly by state. A notifiable disease is one for which regular, frequent, and timely information regarding individual cases is considered necessary for the prevention and control of the disease. All states generally report the internationally quarantinable 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>.

### 3A. NON-SEXUALLY TRANSMITTED DISEASES

**Figure 3A-1**  
Trends in the Incidence Rates<sup>a</sup> of Valley Fever (Coccidioidomycosis) by Year, Arizona, 2006-2016

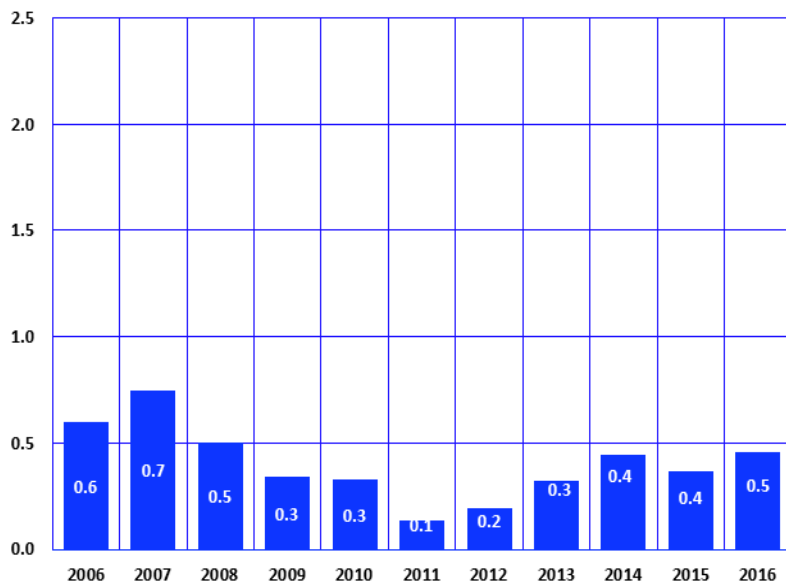


Note: <sup>a</sup> Number of cases per 100,000 population.

*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 2016. The reported incidence of Valley Fever decreased 20.0 percent from 2015 (n=7,622) to 2016 (n=6,101). The 2016 incidence rate of 89.3/100,000 (**Figure 3A-1, Table 5F-2**) was less than one percent greater than the incidence rate of 88.7/100,000 in 2006, but was 65.1 percent lower than the incidence rate of 255.8/100,000 in 2011.

**Figure 3A-2**  
Trends in Case Fatality Rates<sup>a</sup> for Valley Fever (Coccidioidomycosis) by Year, Arizona, 2006-2016



Note: <sup>a</sup> Number of deaths per 100 reported cases.

Twenty eight of the 6,101 Arizonans who had *Valley Fever* in 2016 died from it (**Table 3A-2**) for a case fatality rate of 0.5 deaths per 100 cases (**Figure 3A-2**). The 2016 case mortality rate for Coccidioidomycosis was 23.0 percent lower than in 2006.

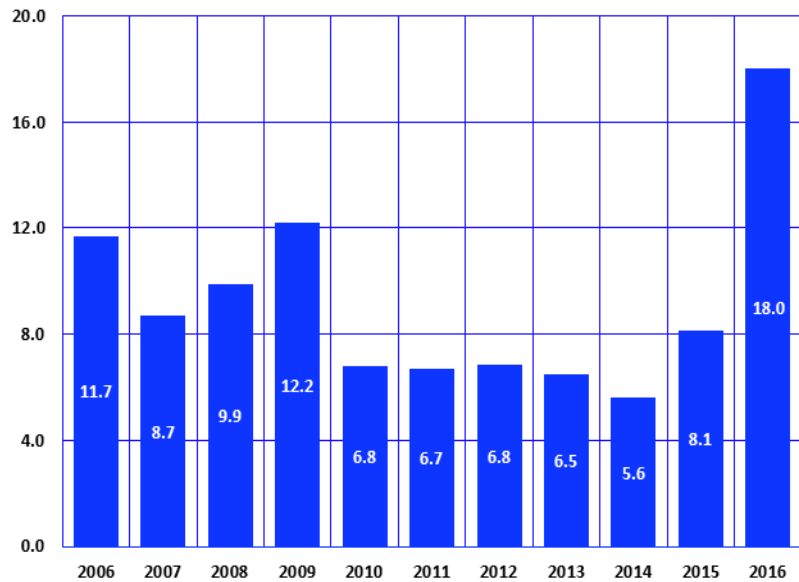
### 3A. NON-SEXUALLY TRANSMITTED DISEASES

**Figure 3A-3**  
Trends in the Incidence Rates<sup>a</sup> of Shigellosis by Year, Arizona, 2006-2016

*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 2006–2016, *shigellosis* was the most common enteric disease to afflict Arizonans after *campylobacteriosis* and *salmonellosis* (**Table 3A-1**).

The number of reported cases of *shigellosis* in 2016 was 1,231, an increase from the number of cases observed in 2015 (549). The incidence rate of *shigellosis* in 2016, 18.0 cases per 100,000, was the highest incidence rate recorded for the first time since 2006 (**Figure 3A-3**).

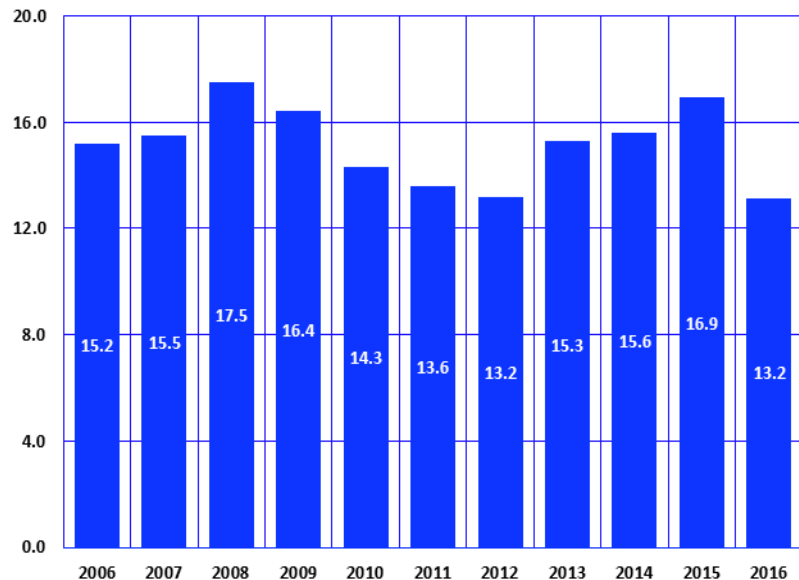


Note: <sup>a</sup> Number of reported cases per 100,000 population.

**Figure 3A-4**  
Trends in the Incidence Rates<sup>a</sup> of Salmonellosis<sup>b</sup> by Year, Arizona, 2006-2016

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

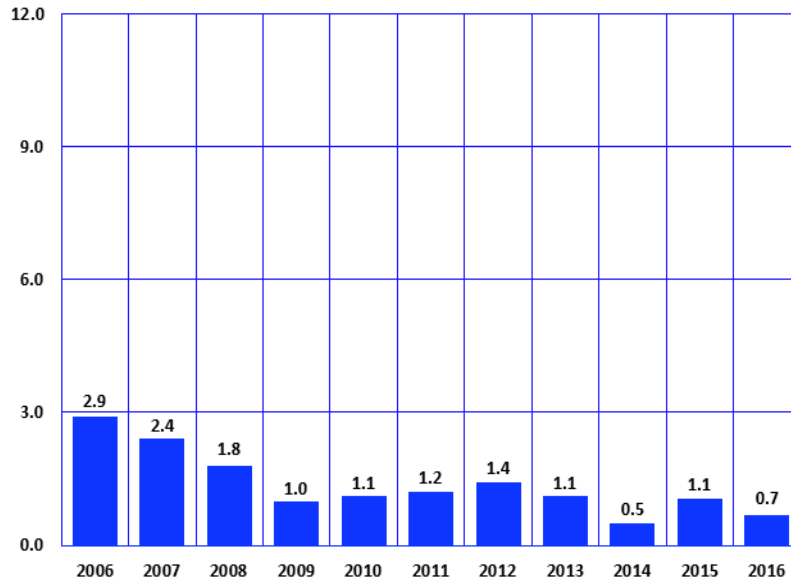
The incidence rate of *salmonellosis* decreased 22.2 percent from 16.9/100,000 in 2015 to 13.2/100,000 in 2016 (**Figure 3A-4**). The risk of *salmonellosis* was substantially higher in Santa Cruz (31.6/100,000), Graham (31.3/100,000), and Gila (25.8/100,000) counties (**Table 5F-2**).



Notes: <sup>a</sup> Number of reported cases per 100,000 population; <sup>b</sup> Excluding *S. Typhi* and *S. Paratyphi*.

### 3A. NON-SEXUALLY TRANSMITTED DISEASES

**Figure 3A-5**  
Trends in the Incidence Rates<sup>a</sup> of Hepatitis A by Year,  
Arizona, 2006-2016

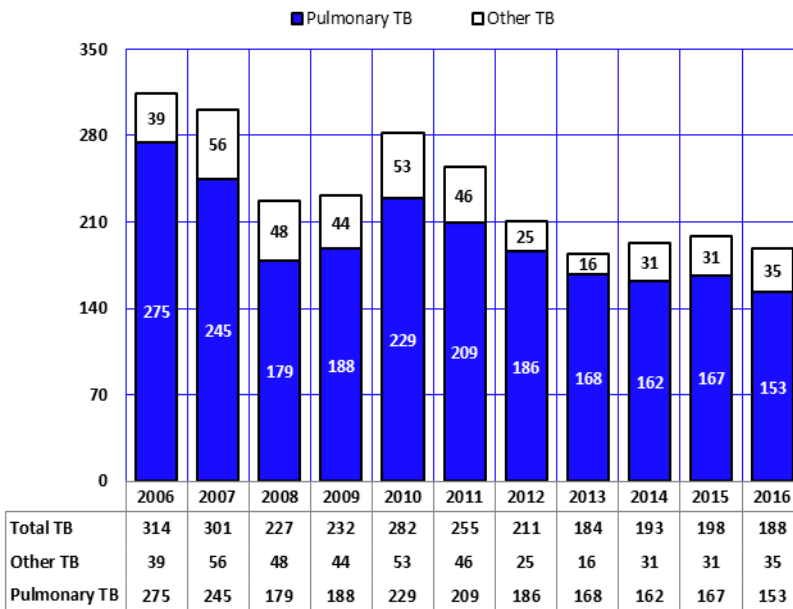


Note: <sup>a</sup> Number of reported cases per 100,000 population.

*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 by 76.8 percent from 2.9/100,000 in 2006 to 0.7/100,000 in 2016 (**Figure 3A-5**).

**Figure 3A-6**  
Trends in the Incidence of Pulmonary Tuberculosis and Total Tuberculosis<sup>a</sup>  
by Year, Arizona, 2006-2016



Note: <sup>a</sup> 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* decreased from 167 reported cases in 2015 to 153 cases in 2016. The number of reported cases of tuberculosis other than pulmonary which remained stable since 2014 at 31 cases, increased in 2016 to 35 cases (**Figure 3A-6, Table 3A-1**). The incidence rate of *total* tuberculosis decreased slightly to 2.8/100,000 between 2015 and 2016 (**Table 5F-2**).

*Pulmonary tuberculosis* accounted for 81.4 percent of all tuberculosis infections in 2016 (**Table 3A-1**). Seven Arizonans who had *tuberculosis* died from it in 2016 (**Table 3A-2**).

**TABLE 3A-1  
NUMBER OF REPORTED CASES OF SELECTED NOTIFIABLE DISEASES BY CATEGORY, ARIZONA, 2006-2016**

Disease	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
<b>Vaccine Preventable</b>											
Measles	0	*	18	0	*	*	*	*	*	*	31
Mumps	40	10	*	10	*	0	*	*	12	*	7
Pertussis	508	210	218	277	546	867	1,130	1,440	517	580	287
Pertussis confirmed cases	(36)	(15)	(23)	(79)	(95)	(160)	(575)	(1,068)	(287)	(341)	(154)
Rubella	0	0	*	0	*	0	0	0	0	0	0
Congenital Rubella Syndrome	0	0	0	0	0	0	0	0	0	0	0
<i>Haemophilus influenzae</i> type b (invasive, age < 5 years)	*	*	*	*	*	*	*	*	0	*	*
Tetanus	0	0	0	0	*	*	0	0	0	*	*
Varicella (chickenpox)	974	930	778	534	755	660	535	354	300	270	279
<b>Central Nervous System</b>											
Aseptic Meningitis	720	632	688	516	733	400	453	343	288	189	146
Meningococcal Disease	16	13	9	15	14	16	6	12	9	*	*
Viral Encephalitis	18	14	8	*	6	6	*	*	*	*	*
<b>Enteritides</b>											
Amebiasis	16	13	11	7	13	21	17	21	24	*	6
Campylobacteriosis	803	962	1,006	877	956	939	940	846	939	1,379	1,241
Cholera	0	*	0	0	0	0	0	0	0	0	0
Cryptosporidiosis	29	53	89	34	40	46	47	42	46	62	549
<i>E. coli</i> O157:H7	105	106	69	68	100	126	141	246	98	128	148
Giardiasis	163	192	142	198	167	133	113	115	119	143	125
Salmonellosis (exl. <i>S. Typhi</i> & <i>S. Paratyphi</i> )	949	997	1,143	1,079	984	877	857	1,007	1,040	1,143	899
<i>Salmonella</i> Paratyphi A	*	*	*	*	7	*	0	*	*	*	*
<i>Salmonella</i> Paratyphi B	7	*	10	6	*	7	*	*	*	16	0
<i>Salmonella</i> Paratyphi C	0	*	0	0	0	0	0	0	0	0	0
Shigellosis	729	557	650	806	465	434	444	428	376	549	1,231
Typhoid Fever	7	7	*	*	6	*	7	12	*	*	9
<b>Mycosis</b>											
Coccidioidomycosis (Valley Fever)	5,535	4,832	4,768	10,233	11,888	16,472	12,920	5,861	5,624	7,622	6,101
<b>Hepatitides</b>											
Hepatitis A	179	152	118	68	62	77	93	73	35	72	46
Hepatitis B (acute)	373	180	163	193	150	185	104	50	38	43	16
Hepatitis C (acute)	0	0	0	0	0	NA	NA	NA	NA	NA	NA
Hepatitis D	*	*	0	0	*	0	0	0	*	0	0
Hepatitis E	*	*	0	0	*	0	0	0	*	0	0
Hepatitis non-A non-B	NA	NA	NA	NA	NA	NA	N/A	NA	NA	NA	NA
<b>Tuberculosis</b>											
Pulmonary TB	275	245	179	188	229	209	186	168	162	167	153
Total TB	314	301	227	232	282	255	211	184	193	198	188

**TABLE 3A-1 (continued)  
NUMBER OF REPORTED CASES OF SELECTED NOTIFIABLE DISEASES BY CATEGORY, ARIZONA, 2006-2016**

Disease	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
<b>Zoonoses/Vector-borne</b>											
Brucellosis	*	*	*	*	9	*	*	*	6	*	*
Colorado Tick Fever	0	0	0	0	*	0	0	0	*	*	0
Dengue	9	8	6	*	10	*	10	*	91	24	14
Ehrlichiosis	0	0	*	*	0	*	*	*	*	*	*
Hantavirus Pulmonary Syndrome	13	6	*	*	0	*	*	*	*	*	*
Human Rabies	0	0	0	0	0	0	0	0	0	0	0
Lyme Disease	12	*	8	7	*	15	13	32	21	12	13
Malaria	23	12	17	10	28	21	19	33	25	14	38
Plague	0	*	*	*	0	0	0	0	0	*	0
Relapsing Fever, Tick-borne	0	0	0	*	0	*	*	*	12	*	*
Rocky Mountain Spotted Fever	11	10	17	23	17	77	50	63	16	17	23
St. Louis Encephalitis	*	0	0	0	0	0	0	0	*	23	0
Tularemia	*	*	0	0	*	0	0	0	0	*	*
West Nile Virus	148	98	114	21	166	69	135	62	108	103	78
<b>Other</b>											
Botulism	*	*	*	*	0	*	12	*	*	*	*
Legionellosis	38	40	26	49	65	46	44	69	59	93	76
Listeriosis	7	12	8	8	10	8	14	*	14	*	6
Methicillin Resistant <i>S. aureus</i> (invasive)	1,336	1,305	1,417	1,171	1,166	1,196	1,089	1,066	1,178	1,155	1,265
Streptococcal-Group A (invasive)	351	208	204	161	190	206	199	231	250	351	555
Streptococcal-Group B (invasive, age <90 d)	54	59	57	52	45	39	57	35	41	61	60
<i>Streptococcus pneumoniae</i> (invasive)	971	923	1,077	907	823	767	661	786	724	678	716
Reyes Syndrome	0	0	0	0	0	0	0	0	0	0	0
Toxic Shock Syndrome	*	*	*	*	*	*	*	*	6	*	*
<i>Vibrio</i> spp. (except toxogenic <i>V. cholerae</i> )	25	11	14	19	18	26	29	19	36	33	19
Vancomycin resist. <i>Enterococcus</i> spp.(VRE)	2,683	2,494	NA	NA	NA	NA	NA	NA	NA	NA	N/A
Yersiniosis (except <i>Y. pestis</i> )	11	8	*	7	*	6	10	9	*	12	14

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. Hepatitis D has been reported separately from Hepatitis non-A non-B since 1997. Hepatitis E has been reported separately from Hepatitis non-A non-B beginning in 1998. VRE ceased being reportable beginning in April 2008. Reported coccioidomycosis 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. For additional statistics on these diseases, please see <http://www.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, 2006-2016**

ICD-9/ICD-10 codes	Disease	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
<b>VACCINE PREVENTABLE</b>												
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	0	*
056/B06	Rubella	0	0	0	0	0	0	0	0	0	0	0
052/B01	Chickenpox	0	0	0	*	*	*	*	0	*	0	0
<b>CENTRAL NERVOUS SYSTEM</b>												
047.9/G03.0	Aseptic meningitis	0	0	*	*	0	*	*	0	0	*	0
036/A39	Meningococcal infections	*	0	0	0	*	*	*	*	*	0	0
049.9/A86	Viral encephalitis	*	*	*	*	*	6	*	*	*	*	*
<b>ENTERITIDES (FOODBORNE)</b>												
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
<b>MYCOSIS</b>												
114/B38	Coccidioidomycosis (Valley Fever)	33	36	24	35	39	22	25	19	25	28	28
<b>HEPATITIDES</b>												
070.0-070.1/B15	Hepatitis A	*	*	*	*	*	0	*	*	*	0	0
070.2-070.3/B16	Hepatitis B	21	13	6	*	10	9	12	9	8	8	10
070.4-070.5/B17-B18	Other viral hepatitis	189	131	176	233	207	209	274	265	248	257	207
070.6-070.9/B19	Unspecified	*	*	*	*	*	0	0	*	*	*	0
<b>TUBERCULOSIS</b>												
010-011/A15-A16	Respiratory TB	13	10	10	8	12	10	*	11	6	9	6
010-018/A15-A19	Total TB	20	12	13	8	15	12	*	15	8	10	7
<b>ZOONOSES/VECTOR-BORNE</b>												
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
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
020/A20	Plague	0	*	0	0	0	0	*	0	0	0	0
082/A77.0	Rocky Mountain Spotted Fever	0	0	*	*	*	*	0	*	0	0	*
021/A21	Tularemia	0	0	0	0	0	0	0	0	*	0	0
<b>OTHER</b>												
482.8/A48.1	Legionellosis	*	*	0	*	0	*	*	*	*	*	*
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	*

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





### **3B.**

#### **SEXUALLY TRANSMITTED DISEASES**

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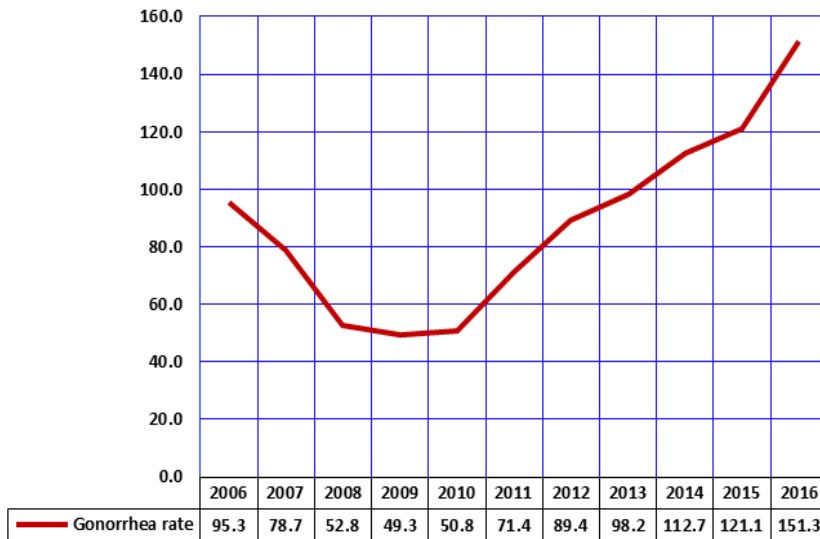
All states require that certain sexually transmitted diseases (STDs) be reported by physicians and other health care providers when they suspect that a case has occurred or they have laboratory confirmation.

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, rates for STDs were calculated using denominators based on 2016 estimates taken from the CDC.

\*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>

### 3B. SEXUALLY TRANSMITTED DISEASES

**Figure 3B-1**  
Trends in the Incidence Rates<sup>a</sup> of Gonorrhea by Year, Arizona, 2006-2016

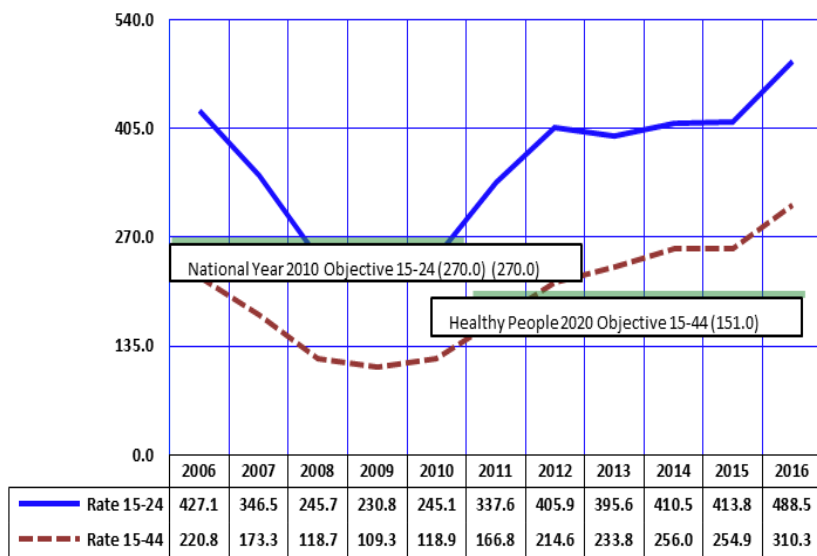


Note: <sup>a</sup> Number of reported cases per 100,000 population.

*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<sup>a</sup> of Gonorrhea among Females 15-24 and 15-44 Years, Arizona, 2006-2016



The 2016 incidence rate for gonorrhea was 310.3 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 trend in gonorrhea incidence rates are similar for women aged 15-24 and aged 15-44, although the overall incidence rate is consistently higher for women aged 15-24.

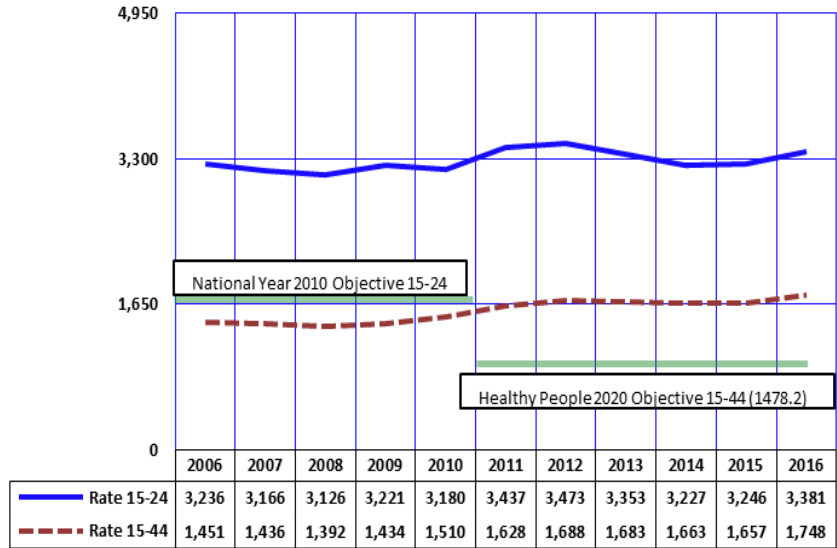
Notes: <sup>a</sup> Number of reported cases per 100,000 females; There was a change in target rate and age range for Healthy People 2020 objective. In National Year 2010 objective was for females ages 15-24. In Healthy People 2020 objective is for females ages 15-44.

### 3B. SEXUALLY TRANSMITTED DISEASES

*Chlamydia trachomatis* is the most prevalent bacterial sexually transmitted disease in the United States (1,526,658 cases in 2015) 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 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 2016 was 1,748 per 100,000 females age 15-44 years (Table 6A-2).

**Figure 3B-3**  
Trends in the Incidence Rates<sup>a</sup> of Chlamydia among Females 15-24 and 15-44 Years, Arizona, 2006-2016



Notes: <sup>a</sup> 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 ages 15-24. In Healthy People 2020 objective is for females ages 15-44.

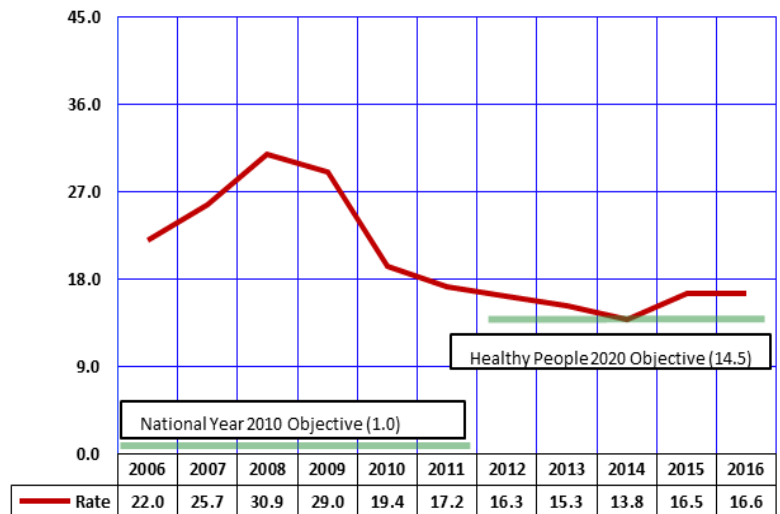
<http://www.cdc.gov/std/stats15/chlamydia.htm>

**Figure 3B-4**  
Trends in the Incidence Rates<sup>a</sup> of Congenital Syphilis by Year, Arizona, 2006-2016

*Congenital syphilis* (CS) 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 CS 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 14.5/100,000. In Arizona, the incidence rate of CS increased slightly from 16.5/100,000 in 2015 to 16.6/100,000 in 2016 (Figure 3B-4, Table 6A-2).



**TABLE 3B-1  
NUMBER OF REPORTED CASES OF SEXUALLY TRANSMITTED DISEASES BY CATEGORY AND YEAR, ARIZONA, 2006-2016**

Disease	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
<b>Gonorrhea</b>	5,949	5,062	3,449	3,250	3,249	4,564	5,856	6,505	7,585	8,270	10,330
<b>Gonococcal PID<sup>a</sup></b>	*	*	0	0	0	0	0	0	0	0	0
<b>Resistant Gonorrhea<sup>b</sup></b>	0	0	0	0	0	0	0	0	*	0	0
<b>Syphilis (P &amp; S)<sup>c</sup></b>	203	296	317	231	230	274	204	290	572	590	721
<b>Syphilis-Total<sup>d</sup></b>	931	1,242	1,396	1,085	904	907	795	966	1,434	1,482	1,903
<b>Chlamydia</b>	24,090	24,866	24,769	26,002	26,861	29,251	30,571	30,923	31,750	32,511	34,923

Notes: \* Cell suppressed due to non-zero count less than 6; <sup>a</sup> PID is pelvic inflammatory disease; <sup>b</sup> Includes PPNG, penicillase producing Neisseria gonorrhoea, a form of gonorrhoea which is resistant to penicillin; <sup>c</sup> Primary and secondary syphilis only; <sup>d</sup> Early, late, congenital and other; since 2005, the table includes all positive laboratory results for chlamydia and gonorrhoea 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, 2006-2016**

Disease	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
<b>Gonococcal infections</b>	0	0	0	0	0	0	0	0	0	0	0
<b>Syphilis-Total</b>	0	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, 2016**

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	6	0	6	0	0	0	0
5-9	0	*	0	0+	0	*	0	0+	0	0	0	0
10-14	10	38	0	48	26	166	*	193	0	0	0	0
15-19	659	856	0	1,515	1,967	6,385	*	8,356	35	7	0	42
20-24	1,633	1,388	*	3,022	3,898	9,145	*	13,046	111	21	0	132
25-29	1,333	894	*	2,228	2,352	4,330	*	6,683	140	7	0	147
30-34	837	540	*	1,378	1,277	1,838	*	3,117	97	15	0	112
35-39	514	248	*	763	715	894	*	1,610	58	9	0	67
40-44	371	170	0	541	388	479	0	867	42	10	0	52
45-49	282	94	0	376	280	214	*	495	59	*	0	60+
50-54	209	51	0	260	165	145	0	310	56	6	0	62
55-59	93	19	0	112	77	59	0	136	20	0	0	20
60-64	41	8	0	49	41	15	0	56	17	0	0	17
65-over	28	*	0	30+	29	16	0	45	6	*	0	10+
<b>Total</b>	<b>6,010+</b>	<b>4,320+</b>	<b>0+</b>	<b>10,330+</b>	<b>11,215</b>	<b>23,700+</b>	<b>10+</b>	<b>34,920+</b>	<b>641</b>	<b>80+</b>	<b>0</b>	<b>721</b>

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.

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

**TABLE 3B-4  
RATES<sup>a</sup> OF REPORTED CASES OF GONORRHEA, CHLAMYDIA, AND EARLY SYPHILIS  
BY AGE AND GENDER, ARIZONA, 2016**

Age group	GONORRHEA			CHLAMYDIA			EARLY SYPHILIS		
	Males	Females	Total	Males	Females	Total	Males	Females	Total
<b>0-4</b>	**	**	**	0.0	2.9	1.4	0.0	0.0	0.0
<b>5-9</b>	0.0	**	**	0.0	**	**	0.0	0.0	0.0
<b>10-14</b>	4.3	16.9	10.5	11.2	73.9	42.2	0.0	0.0	0.0
<b>15-19</b>	279.0	380.8	328.6	832.8	2840.4	1812.7	19.1	7.6	13.4
<b>20-24</b>	646.3	591.7	620.2	1542.7	3898.5	2677.4	64.1	17.9	41.9
<b>25-29</b>	550.4	398.5	477.6	971.2	1930.1	1432.5	84.6	9.8	48.7
<b>30-34</b>	365.1	247.9	308.2	557.0	843.6	697.1	65.0	11.0	38.7
<b>35-39</b>	240.7	118.3	180.3	334.9	426.3	380.4	52.9	10.5	31.9
<b>40-44</b>	176.8	81.5	129.3	184.9	229.6	207.2	44.8	6.7	25.8
<b>45-49</b>	136.6	45.6	91.1	135.7	103.8	120.0	54.7	**	29.1
<b>50-54</b>	98.5	23.3	60.3	77.8	66.2	71.9	42.9	5.5	23.9
<b>55-59</b>	45.7	8.6	26.4	37.8	26.7	32.0	18.2	0.0	8.7
<b>60-64</b>	22.4	3.9	12.6	22.4	7.3	14.4	15.3	0.0	7.2
<b>65-over</b>	5.4	**	2.9	5.6	2.6	4.0	2.1	**	1.1
<b>Total</b>	177.2	125.6	151.3	330.7	689.5	511.5	30.9	4.7	17.7

Notes: \*\* Cell suppressed due to rate/ratio/percent based on non-zero count less than 6; <sup>a</sup> Number of cases per 100,000 population; table includes all positive laboratory results for chlamydia and gonorrhea with or without communicable disease report in 2016; 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, 2016**

Race/ethnicity	SYPHILIS						GONORRHEA						CHLAMYDIA		
	Early			Late			Resistant			Total			Cases	%	Rate
	Cases	%	Rate	Cases	%	Rate	Cases	%	Rate	Cases	%	Rate			
<b>White Non-Hispanic</b>	452	37.4	11.7	169	24.9	4.4	0	0.0	0.0	2,434	0.2	62.8	6,282	0.2	162.0
<b>Black or African American</b>	139	11.5	43.5	89	13.1	27.8	0	0.0	0.0	1,645	0.2	514.3	2,829	0.1	884.5
<b>Hispanic or Latino</b>	468	38.7	22.3	295	43.5	14.1	0	0.0	0.0	2,931	0.3	139.7	10,118	0.3	482.2
<b>Asian or Pacific Islander</b>	17	1.4	5.9	12	1.8	4.2	0	0.0	0.0	82	0.0	33.5	343	0.0	133.8
<b>American Indian or Alaska Native</b>	98	8.1	40.1	44	6.5	18.0	0	0.0	0.0	658	0.1	229.0	2,432	0.1	846.5
<b>Not Specified</b>	35	2.9	N/A	71	10.3	N/A	0	0.0	N/A	2,580	0.2	N/A	12,935	0.4	N/A
<b>Total</b>	1,209	100.0	17.7	679	100.0	9.9	0	0.0	0.0	10,330	1.0	151.3	32,923	1.0	511.5

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 2016; rates per 100,000 population.

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





### 3C.

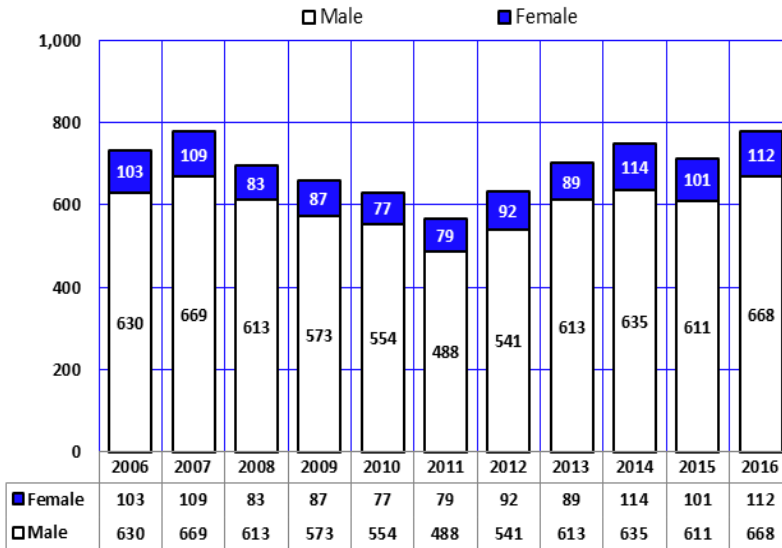
#### **HUMAN IMMUNODEFICIENCY VIRUS (HIV) DISEASE AND ACQUIRED IMMUNODEFICIENCY SYNDROME (AIDS)**

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Statistics about the estimated incidence of Human Immunodeficiency Virus (HIV) disease and Acquired Immunodeficiency Syndrome (AIDS) for 1981-2015, as provided by the Office of HIV, STD, and Hepatitis Services, are available in Tables 3C-1, 3C-2, 3C-3, 3C-4, 3C-5 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.

### 3C. HIV DISEASE AND AIDS

**Figure 3C-1**  
Reported Cases of HIV/AIDS by Gender and Year of Diagnosis, Arizona, 2006-2016

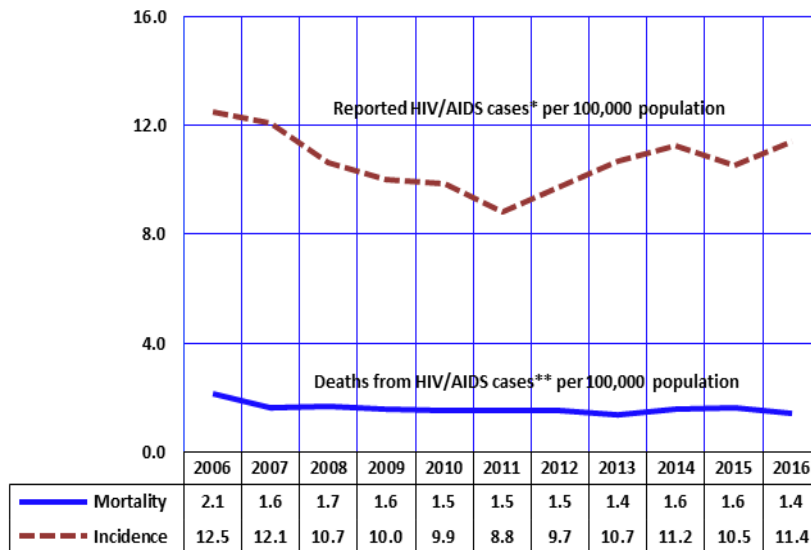


Since the first case of AIDS diagnosed in an Arizona resident in 1981, a total of 23,068 cases of HIV/AIDS had been diagnosed in the State by the end of 2016 and reported by July 1, 2017 (**Table 3C-1**).

In 2016, males accounted for 85.7 percent of all *HIV/AIDS* diagnoses. The male-to-female ratio of *HIV/AIDS* diagnoses in Arizona in 2016 was 6.0:1 (668/112; **Figure 3C-1, Table 3C-2**).

The proportion of risk behaviors attributed to emerging cases of *HIV/AIDS* in 2016 remained similar to previous years. Of the 780 *HIV/AIDS* cases diagnosed in 2016, 475 were among men who reported sexual contact with other men (**Table 3C-4**). Another 58 reported heterosexual contact. An additional 54 reported only injecting drugs. Adults without an indicated risk accounted for 161 of *HIV/AIDS* cases diagnosed in 2016.

**Figure 3C-2**  
Trends in the Incidence Rates of HIV/AIDS and Mortality Rates for HIV Disease by Year, Arizona, 2006-2016



The incidence rate measures the relative risk for *HIV/AIDS* in a population. The incidence rate of *HIV/AIDS* has fallen in Arizona by 8.7 percent from 12.5 cases per 100,000 population in 2006 to 11.4/100,000 in 2016 (**Figure 3C-2**; the incidence rates for 2006 – 2016 have been re-computed based on the latest volume of the *HIV/AIDS* data as of 7/01/2017).

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 (**Figure 3C-2**).

Of the 780 *HIV/AIDS* cases diagnosed in 2016, 276 were White non-Hispanic, 282 were Hispanic, 144 were Black, 53 were American Indian, and 20 were Asian or Pacific Islander (**Table 3C-3**).

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

**TABLE 3C-1  
FREQUENCY DISTRIBUTION OF HIV/AIDS BY AGE AT DIAGNOSIS,  
ARIZONA, 1981-2016**

<b>Age Group (years)</b>	<b>HIV/AIDS cases</b>
<b>Under 5</b>	122
<b>5-12</b>	59
<b>13-19</b>	508
<b>20-29</b>	6,870
<b>30-39</b>	8,263
<b>40-49</b>	4,835
<b>50 or above</b>	2,393
<b>Missing</b>	18
<b>Total</b>	23,068

**TABLE 3C-2  
HIV/AIDS CASES AND DEATHS BY YEAR OF DIAGNOSIS AND GENDER,  
ARIZONA, 1981-2005 and 2006-2016**

	<b>1981-2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>
<b># Males</b>	13,570	630	669	613	573	554	488	541	613	635	611	668
<b># Females</b>	1,857	103	109	83	87	77	79	92	89	114	101	112
<b># Total</b>	15,427	733	778	696	660	631	567	633	702	749	712	780
<b># Presumed Living</b>	8,003	618	675	608	579	570	519	583	662	720	680	762
<b># Known dead</b>	7,424	115	103	88	81	61	48	50	40	29	32	18
<b>% Mortality</b>	<b>48.1</b>	<b>15.7</b>	<b>13.2</b>	<b>12.6</b>	<b>12.3</b>	<b>9.7</b>	<b>8.5</b>	<b>7.9</b>	<b>5.7</b>	<b>3.9</b>	<b>4.5</b>	<b>2.3</b>

Note: Due to reporting delays, all numbers are provisional (2016 volume as of 05/04/2017).

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, 1981-2005 AND 2006-2016**

Race/ethnicity	1981-2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
White non-Hispanic	9,727	323	363	343	283	313	226	246	285	272	250	276
Black or African American non-Hispanic	1,462	106	81	71	69	59	75	104	117	132	130	144
Hispanic or Latino all races	3,418	257	282	229	246	204	203	213	241	267	252	282
Asian or Pacific Islander non-Hispanic	88	10	15	15	13	11	17	17	9	17	22	20
American Indian or Alaska Native non-Hispanic	482	27	28	29	39	37	41	45	46	56	51	53
Two or more races/ other or unknown race	250	10	9	9	10	7	*	8	*	*	7	*
<b>Total</b>	<b>15,427</b>	<b>733</b>	<b>778</b>	<b>696</b>	<b>660</b>	<b>631</b>	<b>570†</b>	<b>633</b>	<b>700†</b>	<b>750†</b>	<b>712</b>	<b>780†</b>

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 (2016 volume as of 05/04/2017).

**TABLE 3C-4  
DISTRIBUTION OF REPORTED HIV/AIDS CASES BY YEAR OF DIAGNOSIS AND TRANSMISSION CATEGORY,  
ARIZONA, 1981-2005 AND 2006-2016**

Transmission	1981-2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
MSM	9,120	476	437	418	362	396	334	373	425	471	422	475
IV Drug User (IDU)	2,128	86	51	67	54	41	54	54	54	55	54	54
MSM/IDU	1,664	47	45	38	34	46	35	29	32	38	46	30
Hemophiliac (Adult)	83	0	0	0	0	0	0	0	0	0	0	0
Heterosexual Contact	1,342	70	80	57	65	67	78	96	68	77	79	58
Transfusion/transplant (Adult)	126	*	0	0	0	0	0	0	0	0	0	0
No indicated risk (Adult)	825	47	159	113	141	79	65	73	117	103	107	161
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+	110	6	6	*	*	*	*	8	*	*	*	*
Pediatric (no indicated risk)	9	0	0	0	0	0	0	0	0	0	0	0
<b>Total</b>	<b>15,430†</b>	<b>730†</b>	<b>778</b>	<b>700†</b>	<b>660†</b>	<b>630†</b>	<b>570†</b>	<b>633</b>	<b>700†</b>	<b>750†</b>	<b>710†</b>	<b>780†</b>

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 (2016 volume as of 05/04/2017).

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