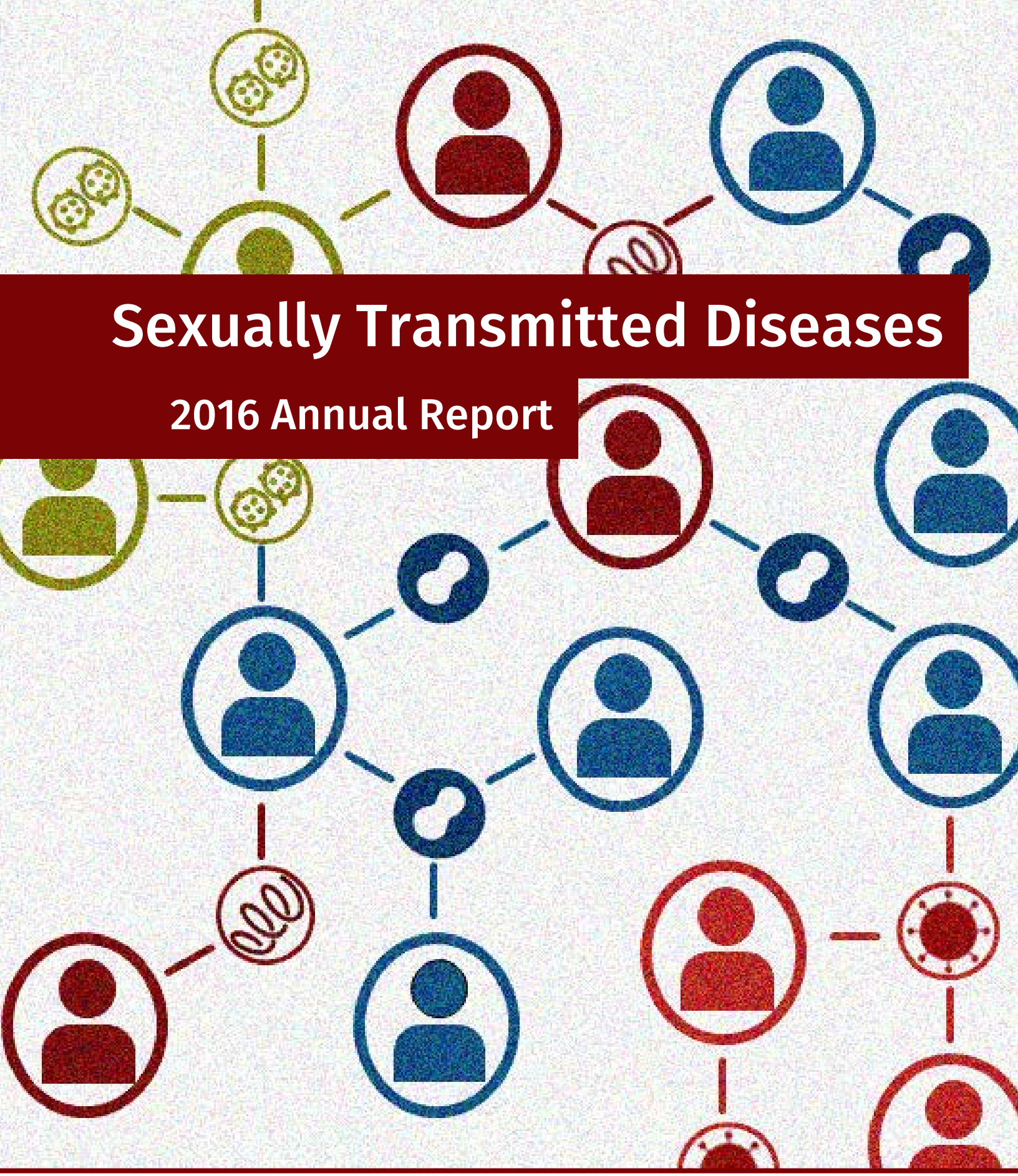

Sexually Transmitted Diseases

2016 Annual Report

ARIZONA DEPARTMENT OF HEALTH SERVICES

Office of Disease Integration and Services
STD Control Program
150 N. 18th Ave, Suite 110
Phoenix, AZ 85007

ARIZONA DEPARTMENT OF HEALTH SERVICES

PREPAREDNESS

November 2017

Dear Arizonans:

The Arizona Department of Health Services (ADHS), Sexually Transmitted Disease Control Program (STDCP) is pleased to provide the 2016 Arizona STD Annual Report. This report highlights the impact of sexually transmitted diseases (STDs) among the residents of Arizona by focusing primarily on syphilis, gonorrhea, and chlamydia, the most commonly reported STDs. The following information details the increasing number of STDs affecting our State. All 2016 data are from the ADHS STDCP surveillance system, PRISM (Patient Reporting Investigation Surveillance Manager).

STDs affect people of all ages, races, ethnicities, educational levels, and economic status. The majority of people infected with STDs do not have symptoms; however, STDs can cause severe outcomes, such as sterility, Pelvic Inflammatory Disease, deformities in newborns, and even stillbirths. Additionally, there is a growing possibility of drug resistance in gonorrhea. Of greatest concern persons infected with an STD are more likely to become infected with HIV, if exposed.

The ADHS STDCP is addressing these health disparities by collaborating across ADHS programs and reaching out to county and tribal health departments, community-based organizations, the Indian Health Service, the Centers for Disease Control and Prevention, and countless Arizona medical providers to promote STD prevention and intervention statewide.

Our goal through this report is to disseminate useful and pertinent data to the Arizona public and community leaders to promote dialogue about sexual health and disease prevention, to promote screening, medical treatment and services, and to improve the sexual health of all Arizonans. Sexual health is everyone's responsibility.

Please contact us with any further questions regarding STD education, prevention, and screening opportunities.

Sincerely,

Roxanne Ereth, MPH
STD Control Program Manager

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Mission

The Mission of the Arizona Department of Health Services (ADHS) STD Control Program (STDCP) is to improve the sexual health of all Arizonans by strengthening the prevention and control of Sexually Transmitted Disease in Arizona through education, surveillance, collaboration, and program development.

Executive Summary

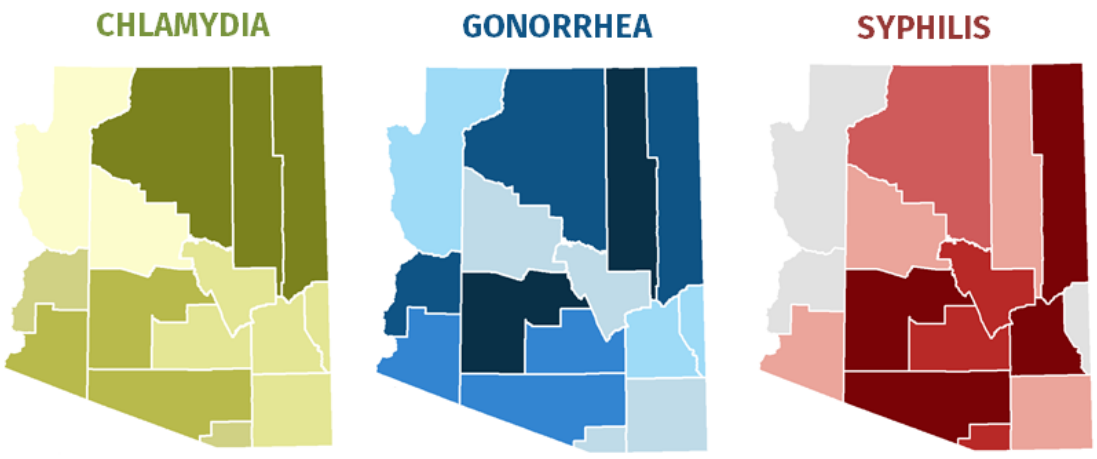
Key points:

- STDs are widespread, impacting people of all race/ethnicity, gender, age, and location.
- Rates of chlamydia, gonorrhea, and syphilis are increasing in Arizona.
- The most vulnerable populations include youth, MSM, pregnant women, and women of childbearing age.

The State of Arizona is comprised of fifteen counties, and twenty-two federally recognized American Indian Tribes. The STDCP is primarily responsible for conducting surveillance of sexually transmitted diseases in Arizona, monitoring disease trends, providing early detection of outbreaks, and implementing evidence-based practices to effectively manage limited resources to identify common risk factors and disparities. Additionally, STDCP provides epidemiological, technical, and programmatic consultation services to local health departments and Reservations throughout the State of Arizona.

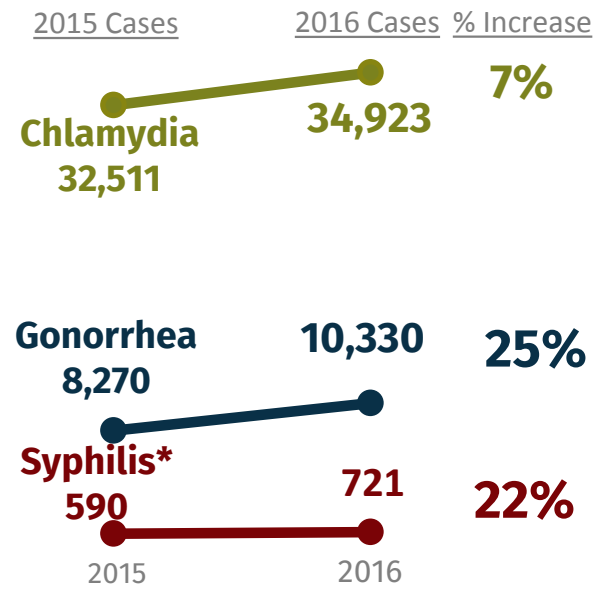
The primary diseases monitored by the STDCP, include chlamydia, gonorrhea, and syphilis. While there are many differences in the epidemiological impact of these diseases, certain themes resonate. First and foremost, every county is impacted by these diseases. Furthermore, **STDs are serious diseases that can lead to severe outcomes, including scarring and inflammation of the reproductive organs, Pelvic Inflammatory Disease, infertility, and complications during pregnancy**[1].

STDs are widespread impacting every Arizonan community



*Rates are grouped using natural breaks. Darker shades indicate a higher rate.

STDs in Arizona continue to rise.



*Syphilis includes primary and secondary cases *only*.

Not only are STDs widespread, but they are on the rise. Chlamydia continues to be the most common reportable STD in Arizona with 34,923 cases in 2016- which is a 7% increase since 2015. Gonorrhea soared to 10,330 cases in 2016 (25% increase), and syphilis rose to 721 (22% increase).

What do we do with all these cases?

The State Health Department works with various partners to monitor disease trends and to develop evidence-based prevention strategies.

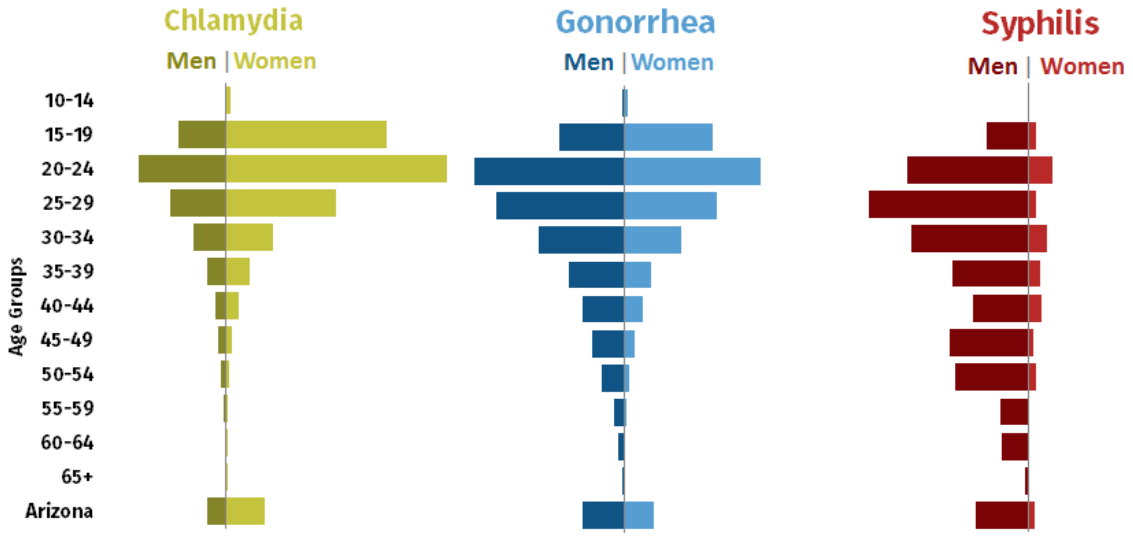
Local Health Departments (LHDs) are key partners in STD Prevention. They provide STD control activities through direct clinical care (i.e., testing and treatment), case investigations, partner services activities, referrals, community outreach, and education. LHDs also coordinate with medical providers and correctional health within their jurisdiction to provide STD testing and treatment services.

Who is most impacted by these diseases?

With so many cases it is important to target intervention efforts toward persons who are at highest risk and most vulnerable. Youth between the ages of 16-24 have the highest rates of STDs in Arizona.

STD Cases primarily impact younger persons between the ages of 15-29.

Women are more heavily affected by chlamydia and gonorrhea than by syphilis.



Other high-risk populations include Men who have Sex with Men (MSM) and pregnant women. STDs can have a drastic impact on the health of a developing baby, so the screening and treatment of women of childbearing age is extremely important.

Congenital Syphilis and Syphilitic Stillbirth in Arizona

While all STDs can lead to complications during pregnancy, congenital syphilis leads to the most severe outcomes, including stillbirth. For untreated newborns that survive gestation, syphilis can attack the skin, bones, eyes, ears, heart, and brain. This can lead to developmental problems, and even death shortly after delivery.[2]

Arizona was consistently in the top five states with the highest rates of congenital syphilis 2001-2007. Arizona has since improved in ranking, dropping into the top 10 2016.[3] Though there has been a drop in cases over the past couple of years, the numbers have increased to 16 cases in 2016, two of which were stillbirths.

Due to the risk of stillbirth and developmental problems among untreated syphilitic newborns that survive gestation, Arizona Revised Statute 36-693 stipulates that a physician, or any other person permitted by law, who is attending to the care of pregnant women must provide for syphilis testing at the mother's first prenatal visit. Additionally, Maricopa County issued a Board Order in 2003, requesting a third-trimester blood test for syphilis in all pregnant women. This order requires a blood test for syphilis for newborns, or for their mothers, at the time of delivery. If an infant is stillborn, a blood sample of the umbilical cord should be taken to help identify congenital syphilis cases.[4]

Data are from the STDCP surveillance system, 2016 CDC Surveillance Report, and the CDC website.

References

1. C. f. D. C. a. Prevention, "10 Ways STDs Impact Women Differently from Men – CDC Fact Sheet," [Online]. Available: https://www.cdc.gov/std/health-disparities/stds-women-042011.pdf.

2. C. f. D. C. a. Prevention, "Congenital Syphilis – CDC Fact Sheet," [Online]. Available: https://www.cdc.gov/std/syphilis/stdfact-congenital-syphilis.htm.

3. C. f. D. C. a. Prevention, "Table 40. Congenital Syphilis – Reported Cases and Rates of Reported Cases by State, Ranked by Rates, United States, 2016," [Online]. Available: https://www.cdc.gov/std/stats16/tables/40.htm.

4. Letter to Maricopa County Providers, January 25, 2010. Maricopa County Department of Public health. 1645 East Roosevelt, Phoenix, AZ 85006; tommickey@mail.maricopa.gov

Chlamydia

Key Points

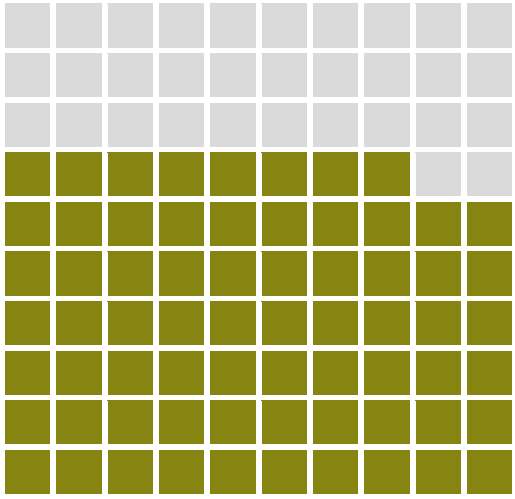
Chlamydia is **most common** reportable disease in Arizona

Young women infected with chlamydia are at risk for developing Pelvic Inflammatory Disease, an extremely painful and expensive disease.

Healthcare providers can **prevent** the spread of chlamydia by offering **treatment to partners.**

How is chlamydia different from other STDs?

68% of cases are in women.



When left untreated, chlamydia can lead to Pelvic Inflammatory disease and ectopic pregnancy in women.[1]

Estimated cost per case of PID

$3,202[2]

Furthermore, pregnant women infected with chlamydia can pass the infection to their newborn during delivery, causing the baby to develop blindness and/or pneumonia if left untreated.

Did you know...?

Chlamydia is the **most common** reportable disease in the State of Arizona. In 2016 there were

34,923 cases!

Chlamydia also accounts for the **majority** of all STDs reported to the State Health Department.

What are we doing to prevent new cases?

With the case counts continuing to increase, we rely heavily on the support of local healthcare providers and clinics to ensure that patients are adequately screened and treated.

Screening

Funding is allocated to 33 sites throughout the State of Arizona for the screening of uninsured/underinsured women between the ages of 16-24. Sites are strategically selected based on the number of positive cases they typically detect.

Treating Partners

Healthcare providers can offer their patients additional medication to treat partners through Expedited Partner Therapy (EPT). EPT allows providers to treat partners of patients for STDs, like chlamydia and gonorrhea, without performing a physical exam. This practice allows for cost-effective and timely treatment of partners and helps to prevent re-infected by their partner.

References

1. S. M. Vranic, "Chlamydia trachomatis Infections of the Adults," Sexually Transmitted Infections, 2012.
2. Owusu-Edusei K, Chesson HW, Gift TL, et al. The estimated direct medical cost of selected sexually transmitted infections in the United States, 2008. Sex Transm Dis 2013; 40: 197–201.

Gonorrhea

In 2016, Arizona gonorrhea rates increased by 25%.

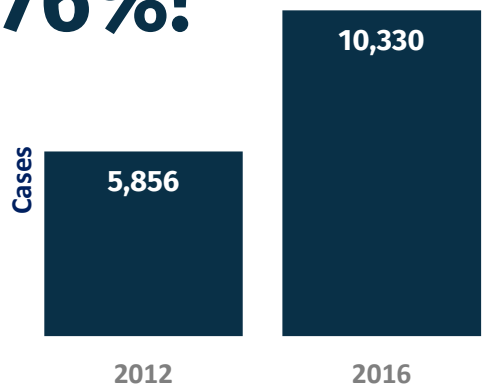
Due to antimicrobial resistance, there is only one class of medications that can be used to treat gonorrhea.

Healthcare providers can prevent the spread of gonorrhea by offering additional medication for treating partners.

How is Gonorrhea different from other STDs?

Since 2012, the number of gonorrhea **cases** has increased

76%!



Why do we care??

Untreated gonorrhea infection may lead to **serious, irreversible complications** such as infertility in men and women, pelvic inflammatory disease (PID), premature delivery, and neonatal blindness in infants born to infected women.

Reference

1. C. f. D. C. a. Prevention, "Gonococcal Isolate Surveillance Project (GISP)," [Online]. Available: https://www.cdc.gov/std/gisp/default.htm.

Did you know...?

Antibiotic resistance is a growing concern for gonorrhea as the bacteria has developed a resistance to **almost all available treatments**. The Gonococcal Isolate Surveillance Project (GISP) began in 1986 to monitor resistance trends in the US and to ensure that gonorrhea is being successfully treated.[1]

Each month, 25 specimens from **Arizona** are tested for resistance to antibiotics.

Of the 300 samples submitted by Arizona for testing in 2016,

NONE

were found resistant to ceftriaxone, the recommended treatment for gonorrhea.

Treating Partners

When someone is infected with gonorrhea, they continue to transmit the disease to others until they receive treatment. Similar to chlamydia, to help combat the spread of gonorrhea, healthcare providers can offer their patients additional medication to treat partners through Expedited Partner Therapy (EPT).

Syphilis

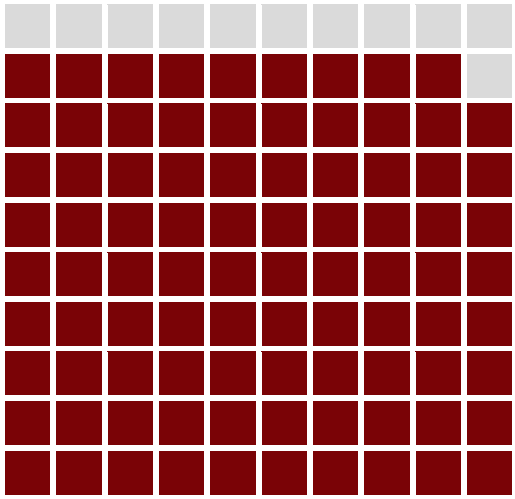
Syphilis rates are increasing in Arizona

The highest rates of syphilis are in Men who have Sex with Men

There has been a shortage of the primary therapy used to treat syphilis since April 2016

How is syphilis different from other STDs?

89% of cases are in men.



Although syphilis is the least common reportable disease, it has the most severe outcomes.

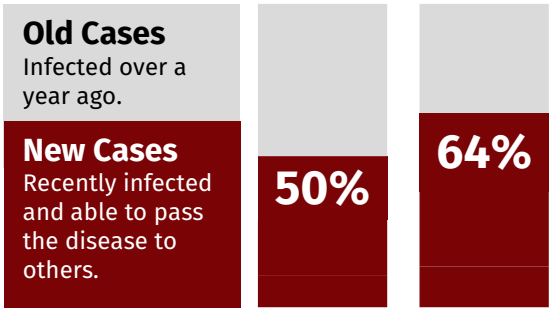
When left untreated, syphilis can travel through the body and cause problems with the skin, bones, ears, eyes, heart, and brain.[1] Although most Arizona syphilis cases occur in Men who have Sex with Men (MSM), due to the severe outcomes in pregnancy, prevention through screening and treatment of pregnant women is extremely important.

Did you know...?

When someone is infected with syphilis, they pass through stages. At times they are symptomatic and can pass the disease to others, but eventually, the symptoms disappear and they are no longer able to spread the infection. [1]

The timing of when they experience their symptoms can be used to determine approximately when they were infected and when they could have passed the disease to others.

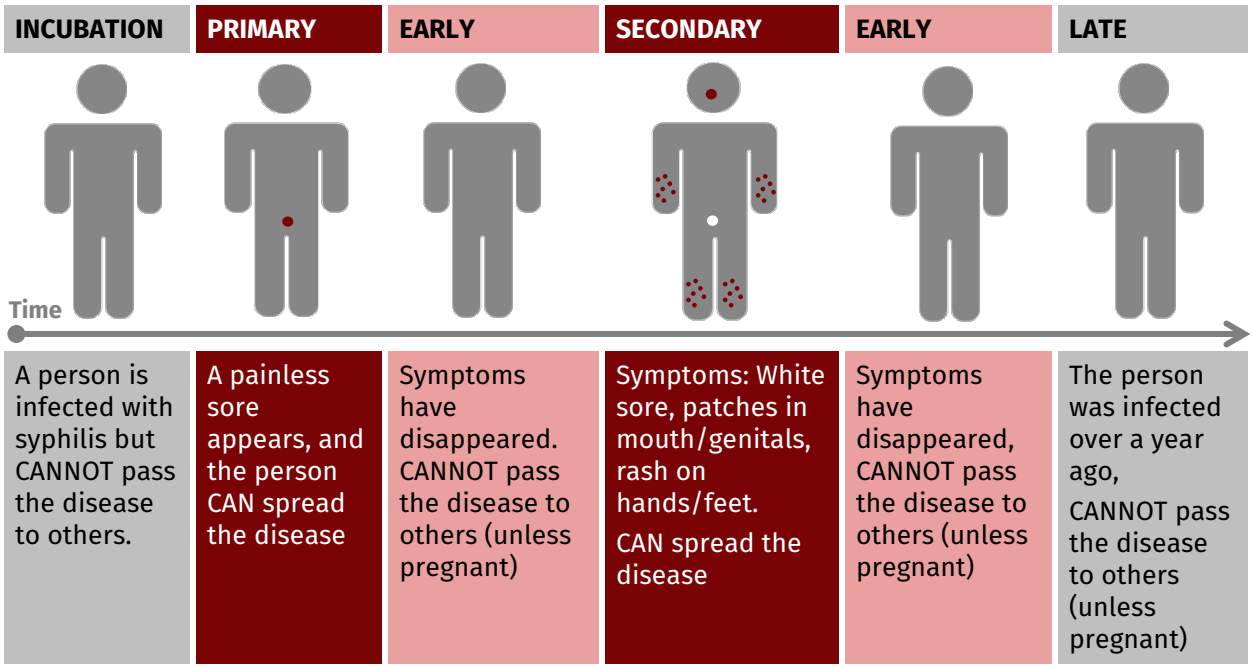
More of the syphilis cases reported in Arizona are **new** and **recently infectious**.



Prevention activities and the data included in this report focuses on the new cases because they were recently infected and capable of passing the disease to others.

How do you know it's a 'new' case?

Symptoms provide an indication of where someone is at with their infection.



How is syphilis treated?

Persons infected with syphilis who were infected sometime within the past year are treated with one shot of Bicillin L-A (a derivative of Penicillin). Persons who are in the late stage of their infection (i.e., were infected over a year ago) are treated with three shots of Bicillin L-A at 1-week intervals. While alternative treatment regimens are available for syphilis, this is the only therapy recommended for pregnant women.

In April 2016 a shortage of Bicllin was declared, and the State Health Department implemented an enhanced surveillance protocol to monitor the available doses to ensure that there was adequate treatment available for persons infected with syphilis.

Reference

1. C. f. D. C. a. Prevention, "Syphilis – CDC Fact Sheet," [Online]. Available: https://www.cdc.gov/std/syphilis/stdfact-syphilis.htm.

Congenital Syphilis

There were 2 syphilitic stillbirths in 2016.

Rates of syphilis are also increasing in women.

Most cases of congenital syphilis in Arizona occurred as a result of late or no access to prenatal care.

Congenital Syphilis

Pregnant with untreated syphilis can pass the infection to their developing baby, causing deafness, bone disorders, other congenital defects, or even stillbirth.[1]

In 2016, there were 16 cases of congenital syphilis, and two of those cases were stillborn.

The majority of congenital cases were reported in Maricopa County.

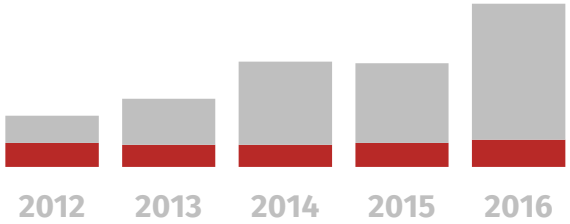
References

1. C. f. D. C. a. Prevention, "Congenital Syphilis – CDC Fact Sheet," [Online]. Available: https://www.cdc.gov/std/syphilis/stdfact-congenitalsyphilis.htm.
2. C. f. D. C. a. Prevention, "STDs during Pregnancy – CDC Fact Sheet (Detailed)," [Online]. Available:https://www.cdc.gov/std/pregnancy/stdfact-pregnancy-detailed.htm.
3. Letter to Maricopa County Providers, January 25, 2010. Maricopa County Department of Public health. 1645 E. Roosevelt, Phoenix, AZ 85006; tommickey@mail.maricopa.gov

Access to Prenatal Care

Congenital syphilis is highly preventable and treatable. CDC recommends screening all pregnant women in their first trimester,[2] and in 2003 Maricopa County issued a broad order recommending third-trimester screening.[3]

Although syphilis is rising in women, congenital cases are remaining fairly stable.



Why do we have congenital cases if women are being screened?

Although providers are screening pregnant women, many women struggle to access prenatal care.

Only **six** (38%) of the women who gave birth to syphilitic babies had access to prenatal care.

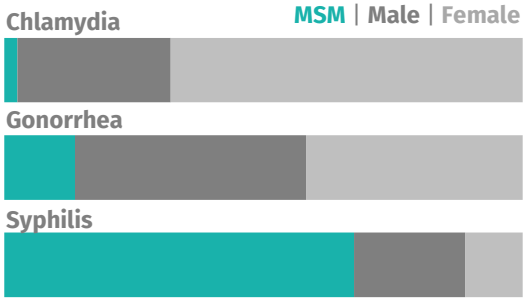
Men Who Have Sex with Men (MSM)

MSM data for chlamydia and gonorrhea are severely limited.

MSM are disproportionately impacted by STDs (in particular syphilis) compared to non-MSM and women.

Men who have Sex with Men (MSM) represent a critical population in terms of STD control.

In Arizona, 68% of syphilis cases were reported as MSM in 2016.

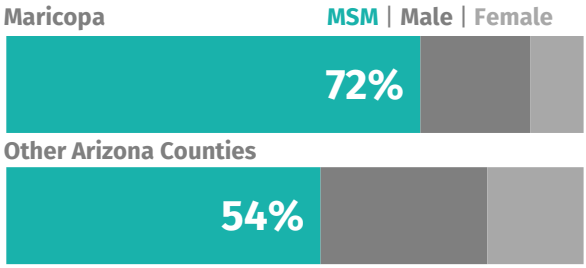


Conversely, 2.5% of all chlamydia cases and 14% of gonorrhea cases identified as MSM.

Data on sex partners for chlamydia and gonorrhea is limited so MSM proportions may be underestimated.
Chlamydia and gonorrhea cases receive less follow-up than syphilitic cases, so the numbers presented in this report may not accurately represent the true proportion of MSM infected.
Furthermore, chlamydia and gonorrhea are site-specific tests. If the exposure occurred in the throat or rectum, but the case provided a urine sample, they might not present with a positive test result.

Historically, MSM are also more likely to be co-infected with HIV compared to other populations,[1,2] which increases the likelihood of adverse health events. MSM is the only male population for whom the CDC recommends annual STD screening, which highlights the importance of STD control among this population.[3]

A higher proportion of syphilis cases in Maricopa County are MSM, compared to other counties.



References

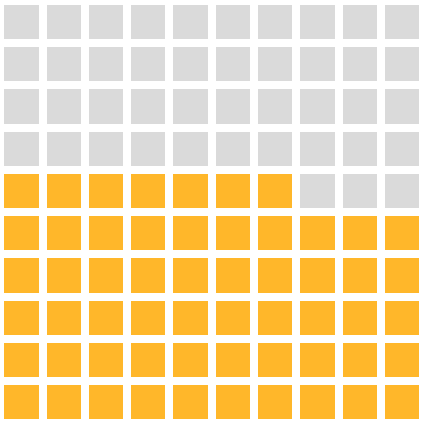
1. P. B. S. B. S. S. J. Pathela, "HIV incidence among men with and those without sexually transmitted rectal infections: estimates from matching against an HIV case registry," *Clinical Infectious Diseases,* pp. 57:1203-1209, 2013.
2. C. f. D. C. a. Prevention, "STDs and HIV – CDC Fact Sheet," [Online]. Available: https://www.cdc.gov/std/hiv/stdfact-std-hiv-detailed.htm.
3. C. f. D. C. a. Prevention, "STD & HIV Screening Recommendations," [Online]. Available: https://www.cdc.gov/std/prevention/screeningreccs.htm.

Adolescents and Young Adults

Female adolescents are at a greater risk of developing Pelvic Inflammatory Disease.

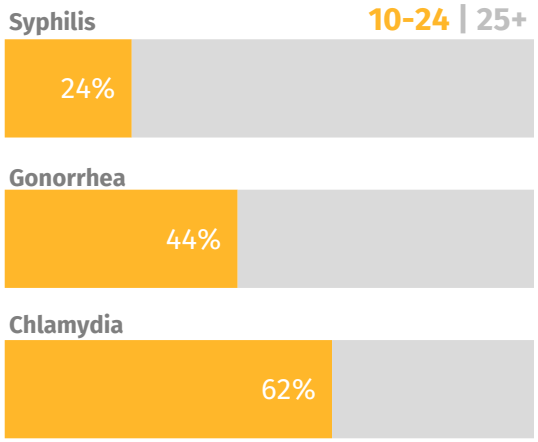
Case counts and rates for STDs among those aged 10-24 are the highest of all age groups in Arizona.

Adolescents and young adults represent a unique and important population. The majority (57%) of STD cases in Arizona are aged 10-24.

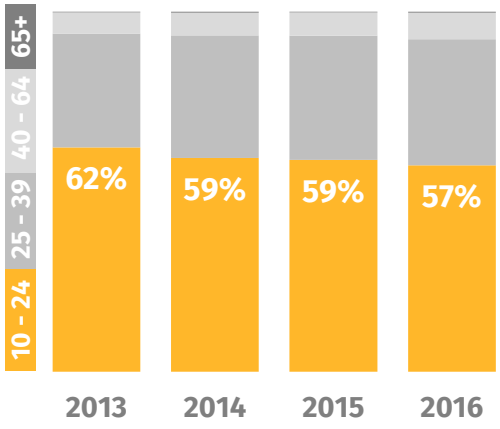


Studies have shown that adolescents and young adults are more susceptible to STDs due to delicate nature of tissues at that age. STDs are frequently asymptomatic, putting female adolescents at a greater risk of developing irreversible consequences.[1] **Thus, the CDC recommends all sexually active women under the age of 25 be screened for STDs.[2]**

The majority of chlamydia cases are between the ages of 10 and 24, followed by a lower percentage of gonorrhea and syphilis cases.



The percentage of STDs that are in persons aged 10– 24 has decreased slightly over the last few years.



References

1. Institute of Medicine, The Hidden Epidemic: Confronting Sexually Transmitted Diseases, Washington, DC: The National Academy of Sciences, 1997.
2. C. f. D. C. a. Prevention, "STD & HIV Screening Recommendations," [Online]. Available: https://www.cdc.gov/std/prevention/screeningreccs.htm.

Re-infections and Co-infections

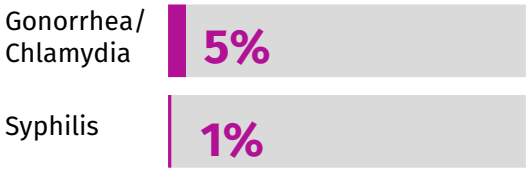
Repeat infections can put people at risk for more severe health outcomes and comorbidity.

STD prevention is HIV prevention.

Among those infected with an STD, HIV coinfections are more common in Men who have Sex with Men and older persons.

Re-infection

5% of Gonorrhea/chlamydia cases are **re-infected** within 12 months, and only 1% of syphilis cases are re-infected in that same time frame.



Although repeat infections make up a small proportion of the total number of cases, repeat infections can cause scarring that can put people at risk for more severe health outcomes and comorbidities.[1]

STD/HIV Co-infections

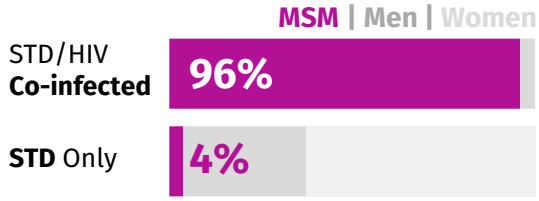
A small **percentage** of STD cases are **co-infected with HIV**. However, Co-infection data is limited as HIV and STD data are housed in separate databases.

The main difference between STDs and HIV is that STDs can be cured, but HIV requires a lifetime of management through treatment and access to healthcare. Persons with STDs have similar risk factors as those who develop HIV, so **STD prevention is HIV prevention**.

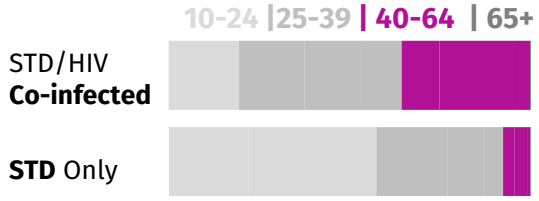
HIV Co-Infection Disparities

There is a huge disparity by sexual orientation and age among STD/HIV co-infected persons.

Most STD cases co-infected with HIV are **Men who have Sex with Men.**



STD/HIV co-infected cases are **older** than cases that are not co-infected with HIV.



Reference

1. C. f. D. C. a. Prevention, "Chlamydia – CDC Fact Sheet (Detailed)," [Online]. Available: https://www.cdc.gov/std/chlamydia/stdfact-chlamydia-detailed.htm.

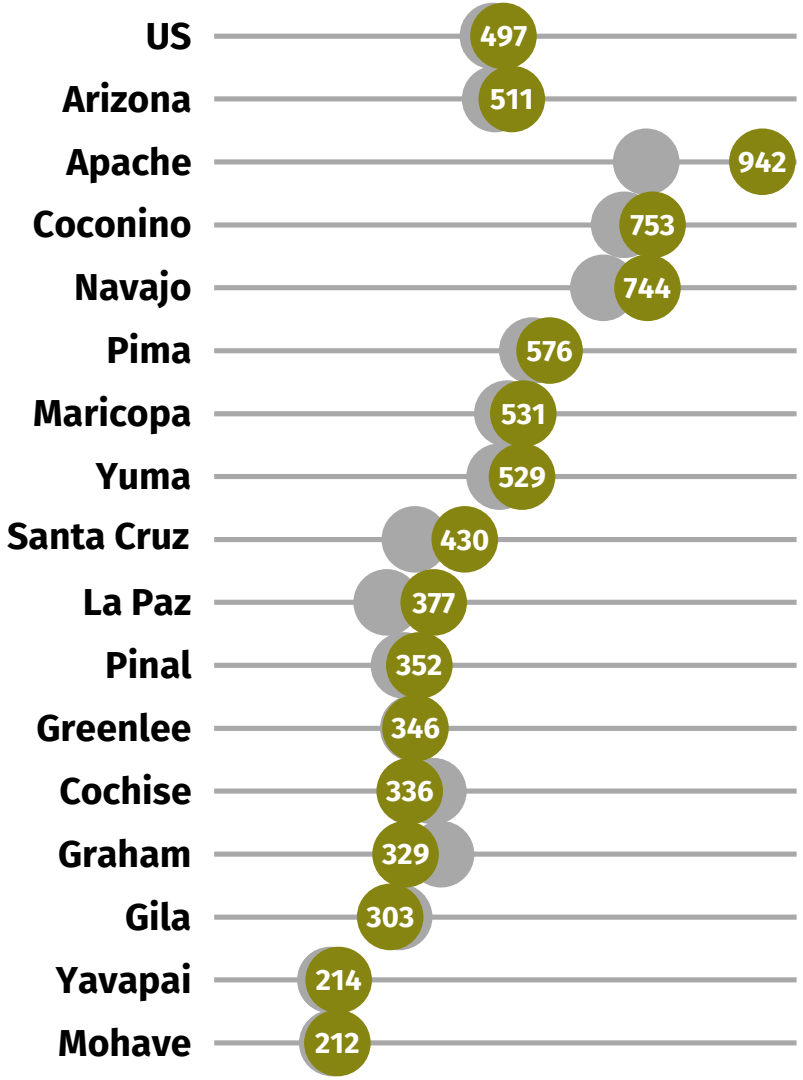
Conclusion

The sustained increase in overall STD cases in Arizona is alarming. The ADHS STDCP is committed to addressing these health disparities by collaborating across ADHS programs and reaching out to county and tribal health departments, community-based organizations, the Indian Health Service, the Centers for Disease Control and Prevention, and countless Arizona medical providers to promote STD prevention and intervention statewide. In pursuit of the mission of the ADHS STDCP, we hope that you will find that this report provides useful and pertinent data. It is important that the Arizona public and community leaders promote dialogue about sexual health and disease prevention, to promote screening, medical treatment and services, and to improve the sexual health of all Arizonans.

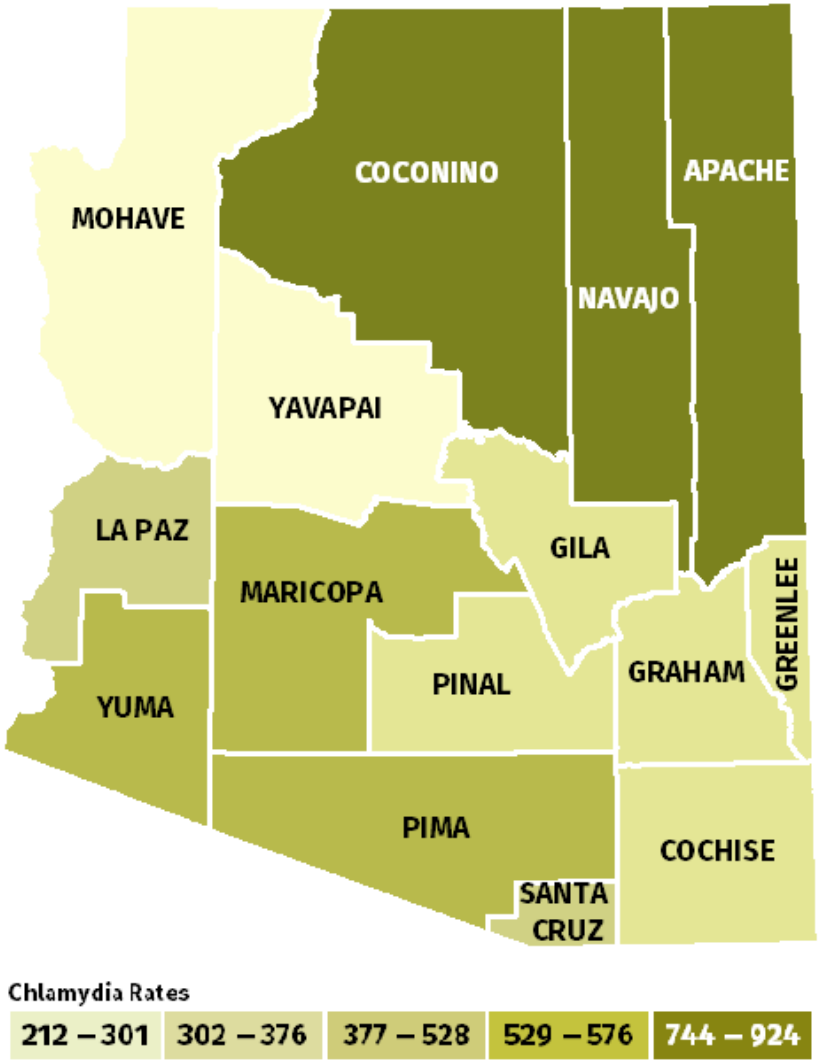
This publication was supported by the Grant or Cooperative Agreement Number, **5H25PS004368**, funded by the Centers for Disease Control and Prevention. Its contents are solely the responsibility of the authors and do not necessarily represent the official views of the Centers for Disease Control and Prevention or the Department of Health and Human Services

Appendix 1: Data Dashboards

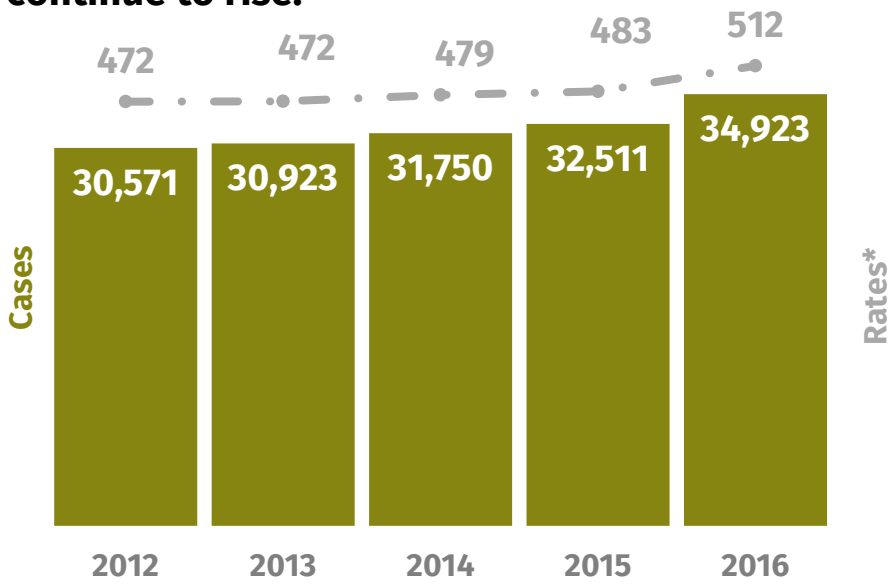
Half of all Arizona counties had higher rates of chlamydia in 2016 than in 2015.



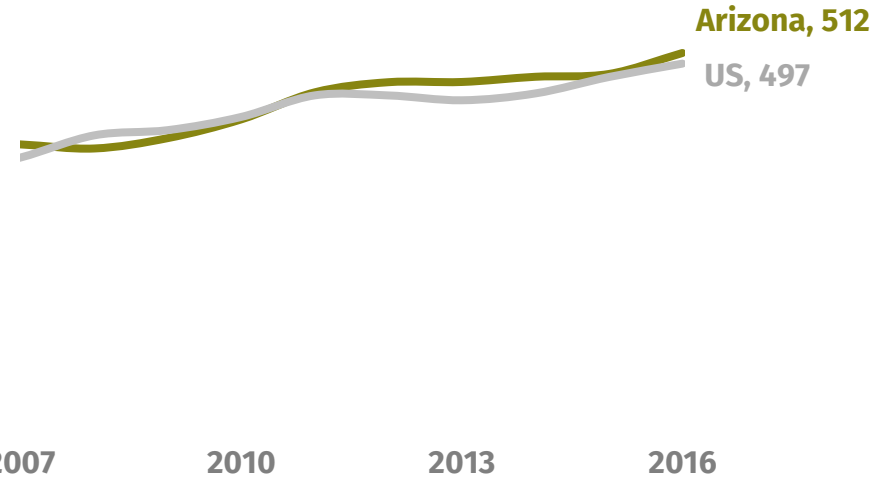
The highest chlamydia rates are in the Northeast corner of Arizona



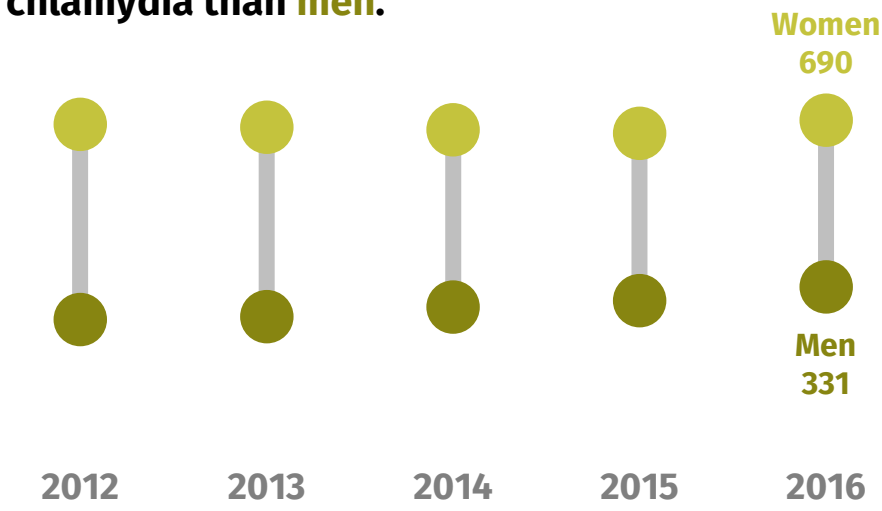
In Arizona, chlamydia cases and rates continue to rise.



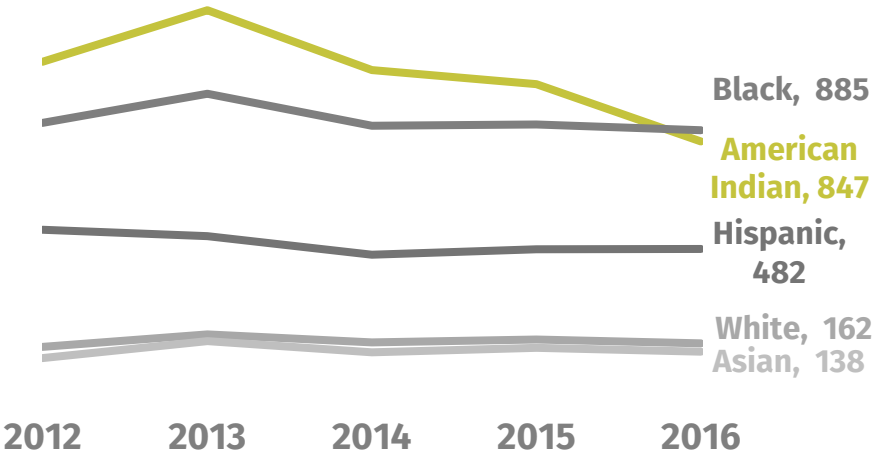
Arizona continues to have slightly higher rates of chlamydia than the United States.



Women consistantly have higher rates of chlamydia than men.

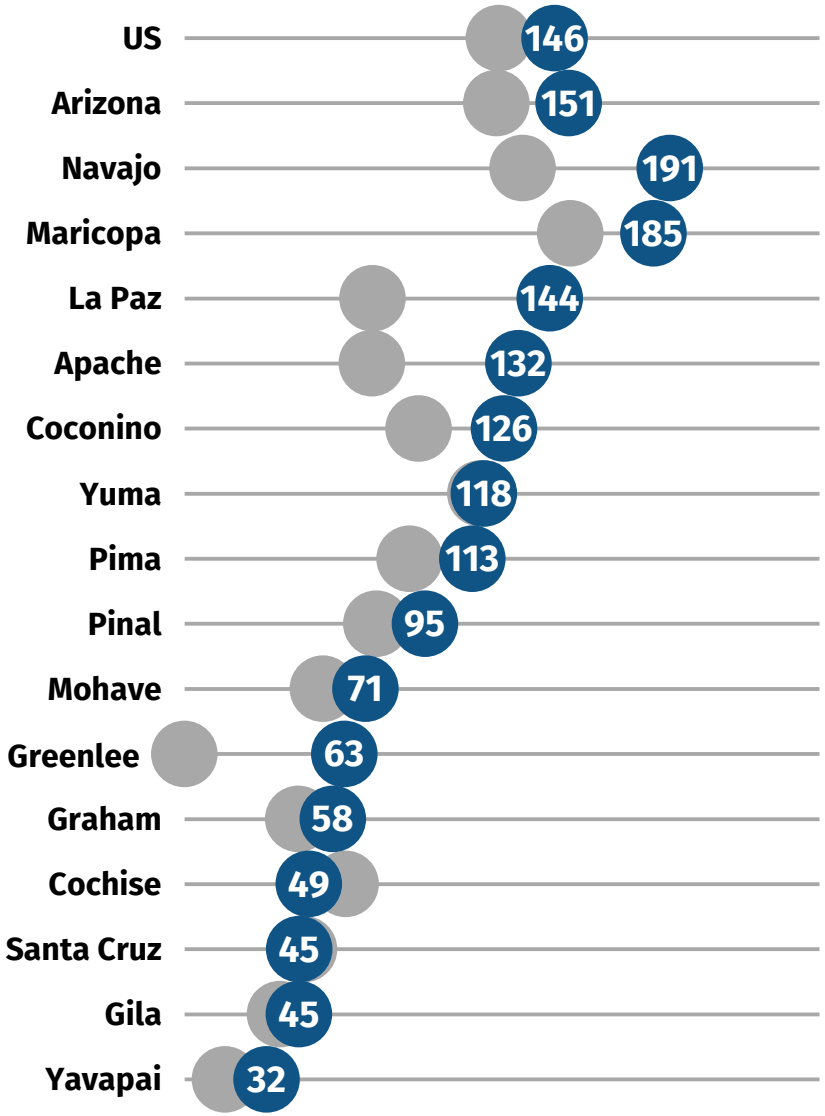


Over the past 4 years there has been a decline in rates of chlamydia among American Indians.

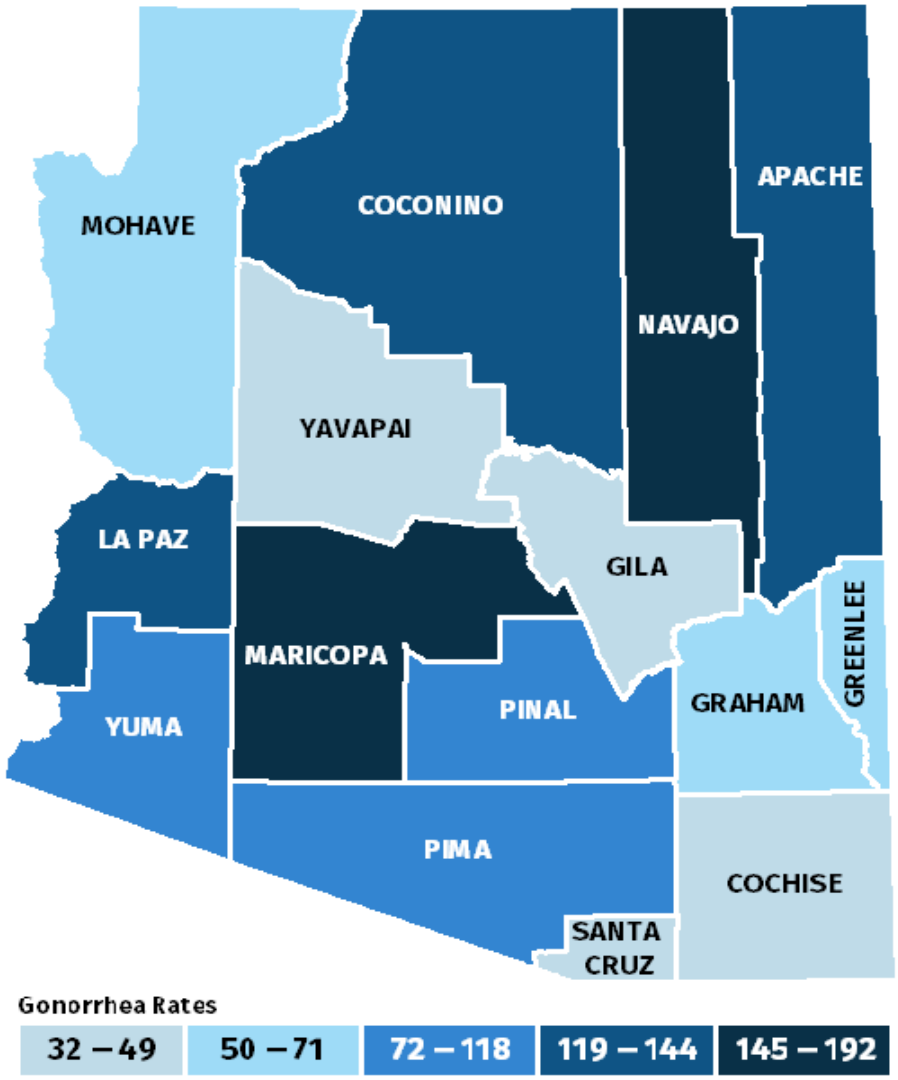


GONORRHEA DASHBOARD

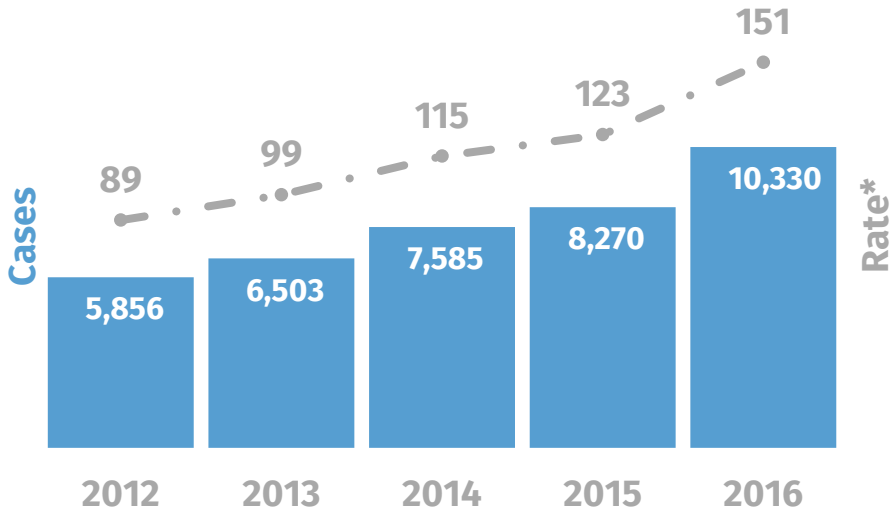
Most Arizona counties had higher rates of gonorrhea in 2016 than in 2015.



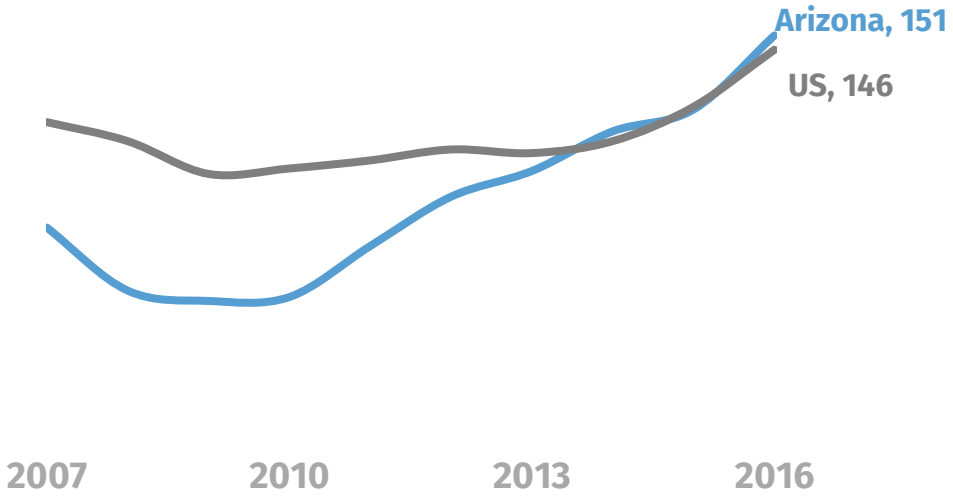
The Northeast and Southwest corners of Arizona have the highest rates of gonorrhea.



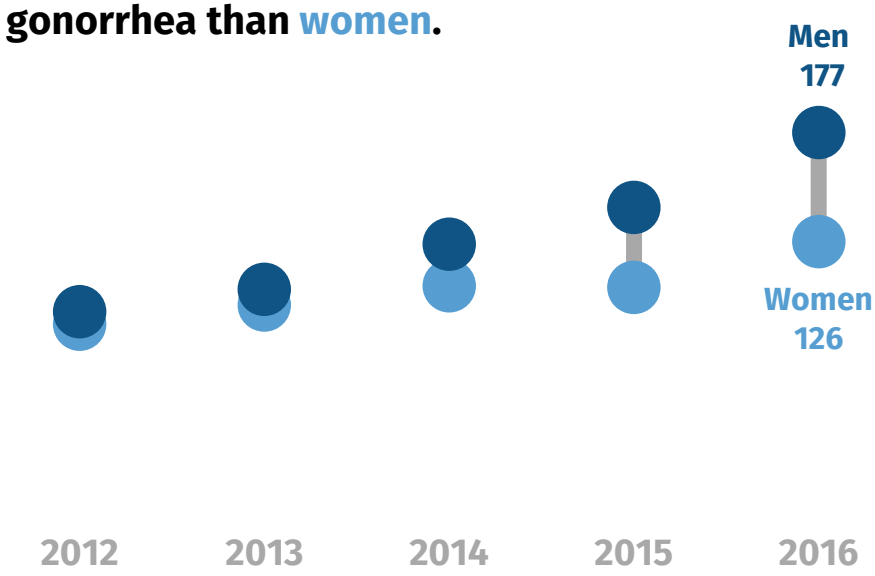
In Arizona, gonorrhea cases and rates continue to rise.



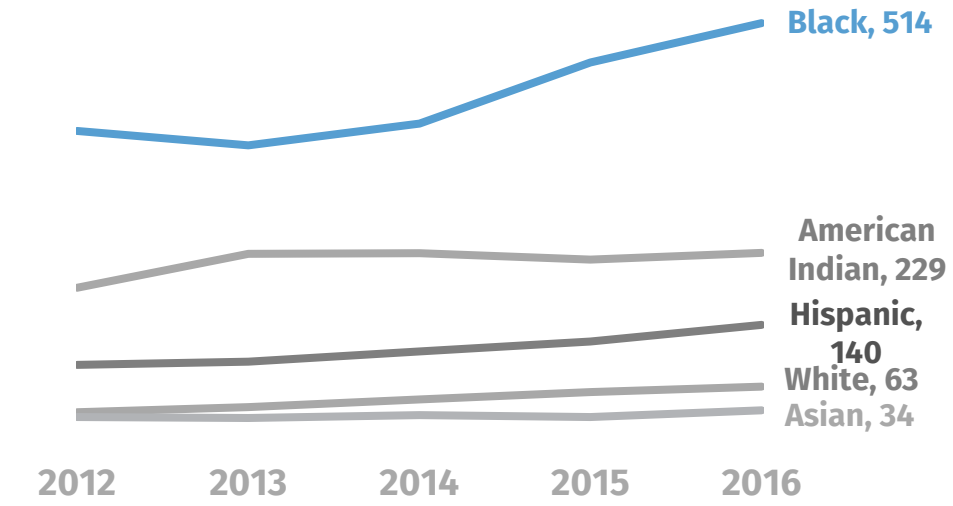
The rate of gonorrhea in Arizona has caught up with the United States rate.



Recently, men have had higher rates of gonorrhea than women.

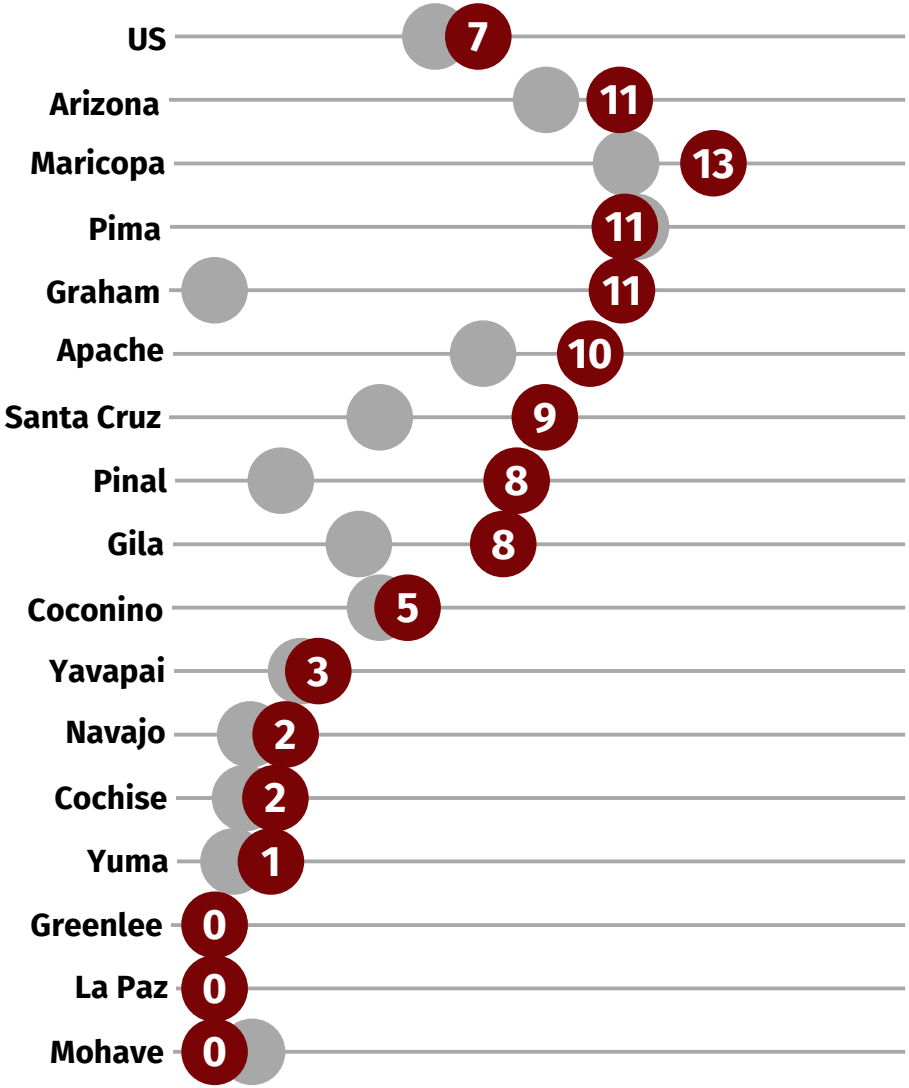


Rates of gonorrhea continue to increase in the Black population.

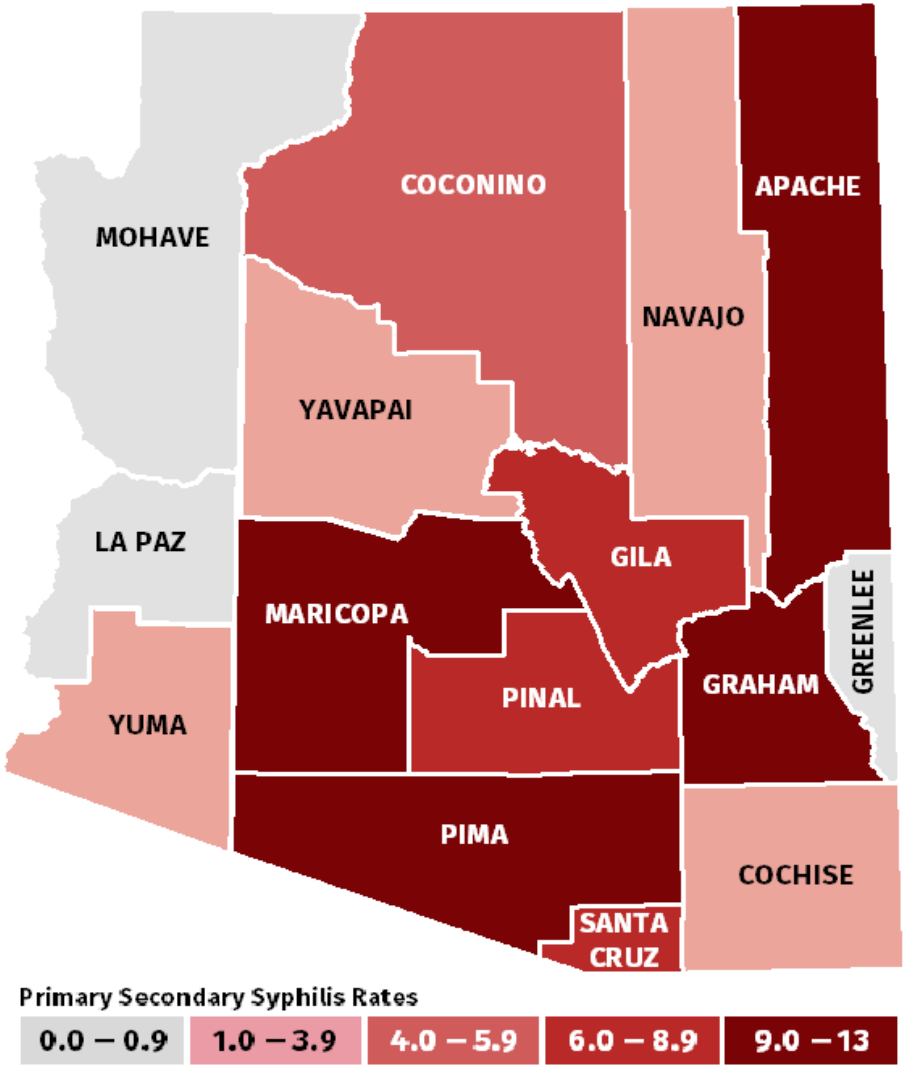


SYPHILIS DASHBOARD

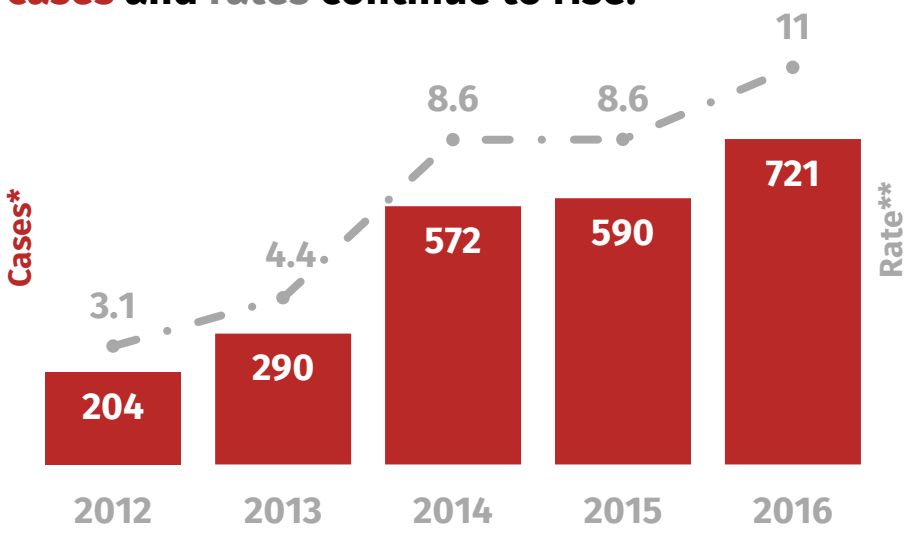
Half of all Arizona counties had higher rates of syphilis in 2016 than in 2015.



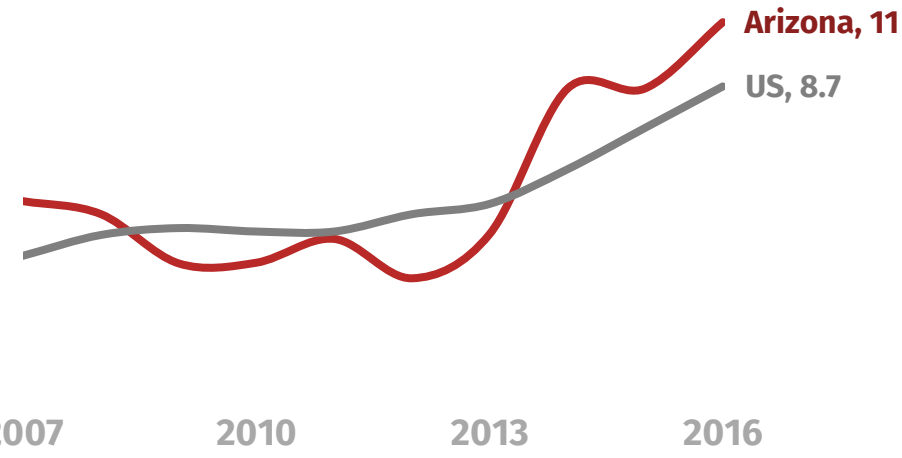
Southern Arizona has the highest rates of syphilis.



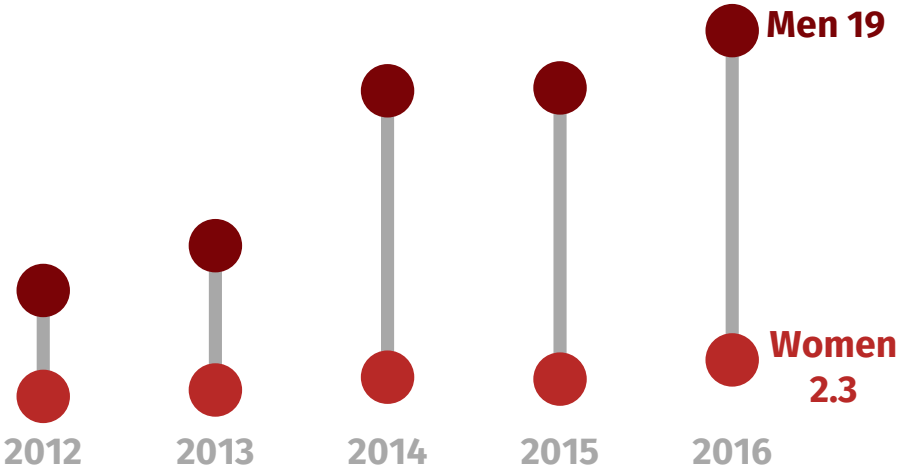
In Arizona, primary and secondary syphilis cases and rates continue to rise.



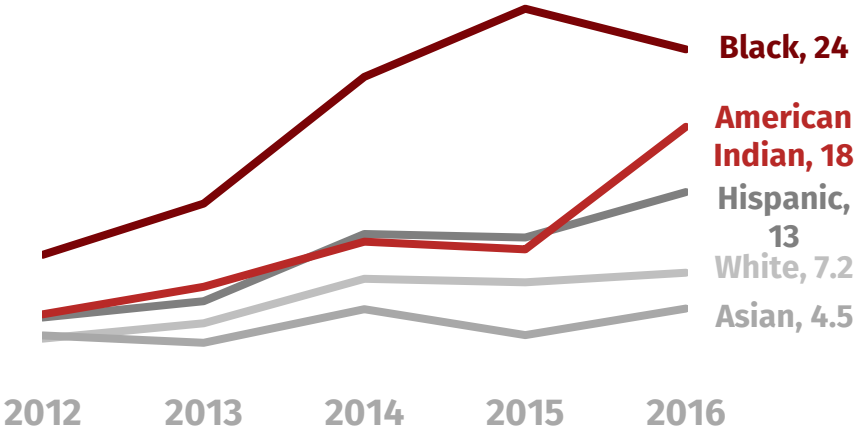
Arizona has a higher rate of syphilis than the United States.



Syphilis rates are higer in men than in women.

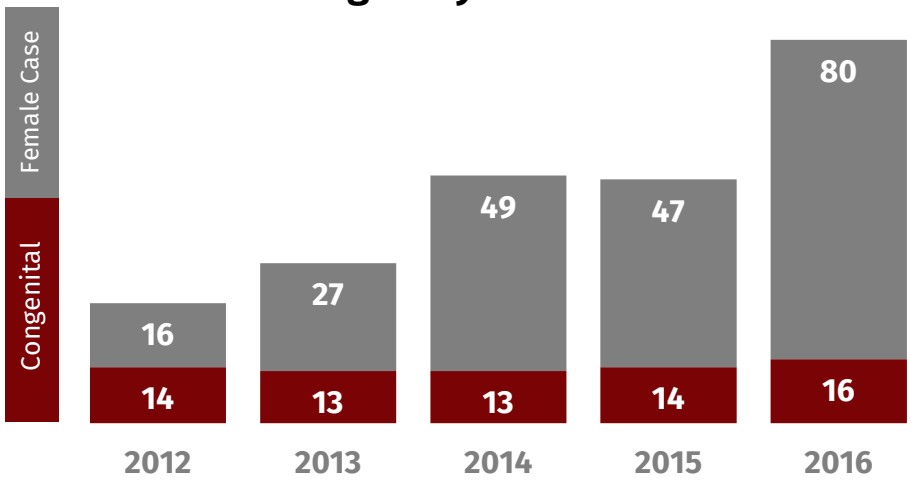


The black population was the only group to have a lower rate of syphilis in 2016. American Indians had the largest increase.



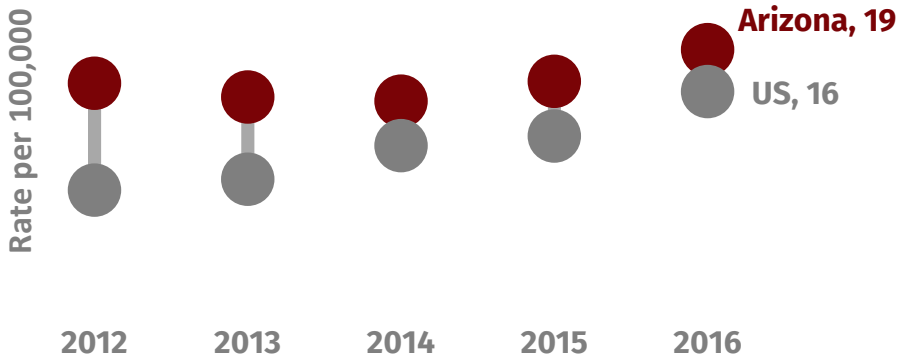
CONGENITAL SYPHILIS DASHBOARD

Syphilis is rising in women, however congenital cases are remaining fairly stable.



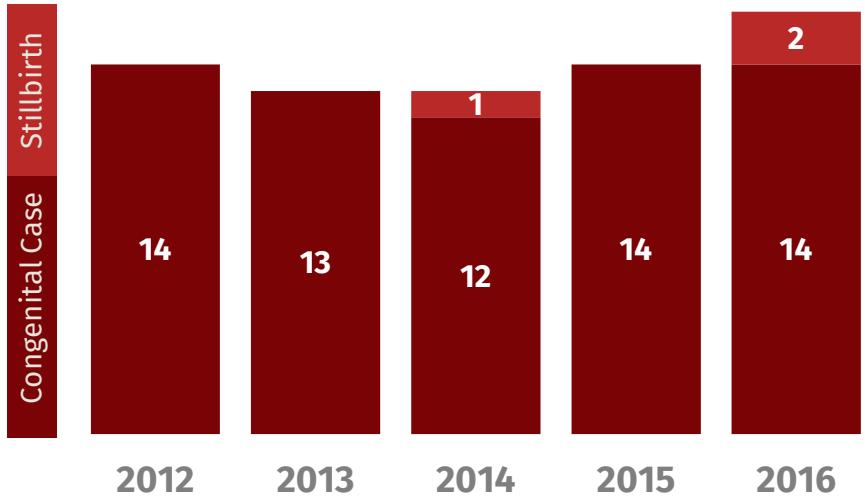
Arizona has a higher rate of congenital syphilis than the United States.

The gap is narrowing due to a nationwide increase in congenital cases.

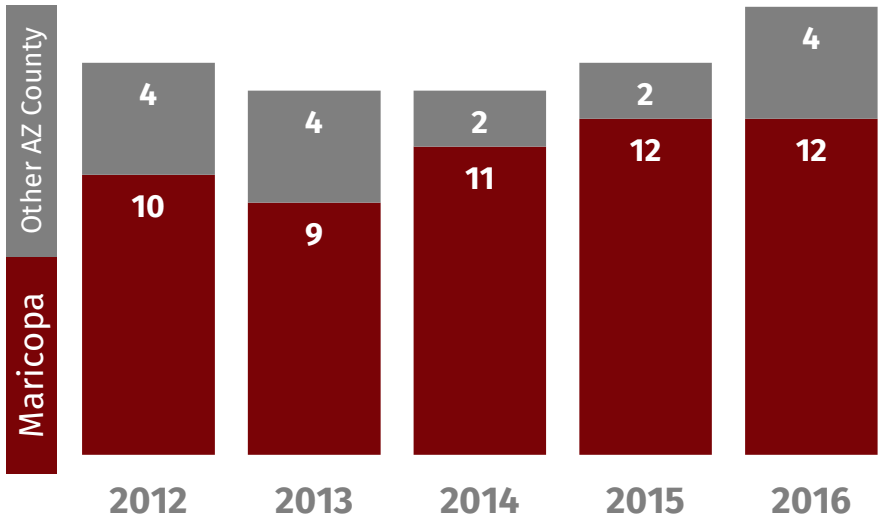


There has been a slight rise in the number of babies with syphilis since 2014.

Syphilitic stillbirths have also been on the rise.



The majority of congenital cases are in Maricopa County.



Appendix 2: Tables

Table 1

Sexually Transmitted Diseases: Cases and Rates per 100,000 by county, Arizona, 2016*

	Chlamydia		Gonorrhea		P/S Syphilis**		Congenital Syphilis***	
County	**N**	**Rate**	**N**	**Rate**	**N**	**Rate**	**N**	**Rate**
Apache	673	941.6	94	131.5	7	9.8	0	0
Cochise	425	336.2	62	49.0	*	*	0	0
Coconino	1048	753.4	175	125.8	7	5.0	0	0
Gila	161	302.9	24	45.1	8	7.5	0	0
Graham	124	329.2	22	58.4	*	*	0	0
Greenlee	33	346.3	6	63.0	0	0.0	0	0
La Paz	76	377.1	29	143.9	0	0.0	0	0
Maricopa	22134	531.1	7701	184.8	542	13.0	12	22
Mohave	434	212.0	146	71.3	0	0.0	0	0
Navajo	806	744.4	207	191.2	*	*	0	0
Pima	5819	576.1	1145	113.4	108	10.7	*	*
Pinal	1433	352.4	385	94.7	32	7.9	*	*
Santa Cruz	200	430.5	21	45.2	*	*	0	0
Yavapai	476	214.2	72	32.4	6	2.7	0	0
Yuma	1081	529.2	241	118.0	*	*	0	0
Arizona	34923	511.5	10330	151.3	721	10.6	15	16

*Case counts under 6 are excluded. Associated rates may also be excluded.
**P/S syphilis includes Primary and Secondary Syphilis.
***Congenital syphilis rates are calculated using 2015 live births as denominator.

Table 2

Chlamydia Cases and Case Rate per 100,000 by Age Group, Arizona 2014-2016

	2014		2015		2016	
Age Group	**N**	**Rate**	**N**	**Rate**	**N**	**Rate**
10-14	167	37	149	33	193	42
15-19	7,482	1,660	7,645	1,682	8,356	1,812
20-24	12,332	2,544	12,612	2,579	13,046	2,677
25-29	5,950	1,348	6,152	1,361	6,683	1,432
30-34	2,880	654	2,882	647	3,116	696
35-39	1,388	340	1,427	344	1,611	380
40-44	740	176	756	179	867	207
45-49	378	93	448	110	495	120
50-54	214	48	239	55	310	72
55-59	128	22	114	28	136	32
60-64	46	9.2	54	14	56	14
65+	42	3.1	34	3.2	45	4
Total	31,750	472	32,511	483.0	34,923	511
Age Group	**N**	**%**	**N**	**%**	**N**	**%**
Under 25	19,981	63%	20,406	63%	21,595	62%
Under 30	25,931	82%	26,558	82%	28,278	81%

Ages 0-9 not shown. Arizona rate reflects all ages. Rates are calculated per 100,000.

Table 3

Chlamydia Female Cases by Age Group and County, Arizona 2016

Age Group	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65+	Total
Apache	11	116	139	118	52	38	13	*	7	*	*	*	503
Cochise	*	103	111	43	27	18	*	*	*	*	*	*	311
Coconino	7	199	288	129	52	22	8	6	*	4	*	*	718
Gila	*	32	51	25	10	*	*	*	*	*	*	*	128
Graham	*	30	34	20	*	*	*	*	*	*	*	*	88
Greenlee	*	7	7	*	*	*	*	*	*	*	*	*	23
La Paz	*	11	23	13	*	*	*	*	*	*	*	*	59
Maricopa	92	3,842	5,704	2,660	1,160	549	314	145	96	37	6	9	14,622
Mohave	*	95	132	46	26	8	4	*	*	*	*	*	316
Navajo	10	159	190	158	61	26	17	*	*	*	*	*	626
Pima	30	1,157	1,583	673	265	143	65	36	24	9	*	*	3,993
Pinal	6	305	352	194	81	29	22	6	*	*	*	*	1,001
Santa Cruz	*	45	68	25	13	10	*	*	*	*	*	*	165
Yavapai	*	110	125	49	22	11	*	*	*	*	*	*	331
Yuma	*	174	337	172	61	29	24	*	*	*	*	*	810
Arizona	166	6,385	9,144	4,330	1,838	894	479	214	145	59	15	16	23,694

*Denotes count <6

Table 4

Chlamydia Male Cases by Age Group and County, Arizona 2016

Age Group	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65+	Total
Apache	*	29	41	36	31	12	7	6	*	*	*	*	168
Cochise	*	16	45	30	11	7	*	*	*	*	*	*	113
Coconino	*	62	147	57	41	8	8	5	*	*	*	*	329
Gila	*	11	6	9	*	*	*	*	*	*	*	*	33
Graham	*	11	12	7	*	*	*	*	*	*	*	*	36
Greenlee	*	*	*	*	*	*	*	*	*	*	*	*	10
La Paz	*	*	*	6	*	*	*	*	*	*	*	*	17
Maricopa	19	1,246	2,516	1,610	885	518	284	211	125	48	28	20	7,510
Mohave	*	25	45	20	16	*	6	*	*	*	*	*	119
Navajo	*	41	57	36	19	8	*	6	*	*	*	*	179
Pima	6	360	704	343	180	96	46	35	21	16	10	*	1,821
Pinal	*	79	161	82	46	30	17	7	*	*	*	*	431
Santa Cruz	*	11	7	8	*	*	*	*	*	*	*	*	35
Yavapai	*	28	42	30	16	12	*	*	*	*	*	*	144
Yuma	*	44	106	78	20	12	*	*	*	*	*	*	270
Arizona	26	1,967	3,898	2,352	1,276	716	388	280	165	77	41	29	11,215

*Denotes count <6

Table 5

Gonorrhea Cases and Case Rate per 100,000 Population by Age Group, Arizona 2014-2016

	2014		2015		2016	
Age Group	**N**	**Rate**	**N**	**Rate**	**N**	**Rate**
10-14	21	4.6	36	7.9	48	101
15-19	1,182	262	1,264	278	1,515	329
20-24	2,361	487	2,517	515	3,022	620
25-29	1,589	360	1,805	399	2228	478
30-34	980	223	1,091	245	1,378	308
35-39	552	135	618	149	763	180
40-44	352	84	376	89	541	129
45-49	260	64	251	62	376	91
50-54	148	35	165	38	260	60
55-59	68	17	81	20	112	26
60-64	39	11	40	11	49	13
65+	32	3.1	25	2.3	32	2.9
Total	6,495	99	8,269	123	10,330	151
	N	**%**	**N**	**%**	**N**	**%**
Under 25	3,564	55%	3,817	46%	4,585	44%
Under 30	5,153	79%	5,622	68%	6,813	66%

Ages 0-9 not shown. Arizona rate reflects all ages. Rates are calculated per 100,000.

Table 6

Gonorrhea Female Cases by Age Group and County, Arizona 2016

Age Group	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65+	Total
Apache	*	*	8	14	15	8	*	*	*	*	*	*	52
Cochise	*	10	12	*	*	*	*	*	*	*	*	*	32
Coconino	*	27	24	13	12	8	8	*	*	*	*	*	94
Gila	*	*	*	*	*	*	*	*	*	*	*	*	12
Graham	*	*	*	*	*	*	*	*	*	*	*	*	12
Greenlee	*	*	*	*	*	*	*	*	*	*	*	*	*
La Paz	*	*	*	*	*	*	*	*	*	*	*	*	15
Maricopa	28	636	1,008	625	365	169	122	72	44	14	*	*	3,094
Mohave	*	15	20	19	9	6	*	*	*	*	*	*	72
Navajo	*	20	35	30	17	*	6	*	*	*	*	*	116
Pima	*	85	153	98	68	19	20	10	*	*	*	*	464
Pinal	*	28	48	35	21	16	7	*	*	*	*	*	165
Santa Cruz	*	*	10	*	*	*	*	*	*	*	*	*	17
Yavapai	*	*	7	8	9	*	*	*	*	*	*	*	32
Yuma	*	17	51	34	12	8	*	*	*	*	*	*	135
Arizona	38	856	1,389	894	539	248	170	94	51	19	8	*	4,315

*Denotes count <6

Table 7

Gonorrhea Male Cases by Age Group and County, Arizona 2016

Age Group	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65+	Total
Apache	*	6	*	12	10	*	*	*	*	*	*	*	42
Cochise	*	*	9	6	*	*	6	*	*	*	*	*	30
Coconino	*	14	26	17	13	*	*	*	*	*	*	*	81
Gila	*	*	*	*	*	*	*	*	*	*	*	*	12
Graham	*	*	*	*	*	*	*	*	*	*	*	*	10
Greenlee	*	*	*	*	*	*	*	*	*	*	*	*	3
La Paz	*	*	*	*	*	*	*	*	*	*	*	*	14
Maricopa	9	513	1,262	995	637	407	279	224	167	*	28	19	4,607
Mohave	*	*	23	14	15	7	6	*	*	*	*	*	74
Navajo	*	10	20	23	14	9	*	*	*	*	*	*	90
Pima	*	59	180	167	104	53	35	*	26	11	10	7	681
Pinal	*	26	61	54	16	15	20	12	8	*	*	*	217
Santa Cruz	*	*	*	*	*	*	*	*	*	*	*	*	4
Yavapai	*	7	7	8	*	6	*	*	*	*	*	*	40
Yuma	*	10	26	29	15	9	6	*	*	*	*	*	106
Arizona	10	659	1,633	1,333	836	515	371	282	209	93	41	28	6,011

*Denotes count <6.

Table 8
Primary/Syphilis Cases by Age Group, Arizona 2014-2016

	2014		2015		2016	
Age Group	**N**	**Rate**	**N**	**Rate**	**N**	**Rate**
10-14	*	*	*	*	0	0
15-19	30	6.7	26	5.7	42	9
20-24	130	27	113	23	132	27
25-29	101	23	114	25	147	32
30-34	80	18	79	18	112	25
35-39	58	14	85	21	67	16
40-44	55	13	43	10	52	12
45-49	48	12	52	13	63	15
50-54	33	7.7	41	9.5	62	14
55-59	22	5.4	24	5.8	20	5
60-64	12	3.2	9.0	2.4	17	4
65+	*	*	*	*	7	1
Total	572	8.6	590	8.8	721	11
	N	**%**	**N**	**%**	**N**	**%**
Under 25	160	28%	139	24%	174	24%
Under 30	261	46%	253	43%	321	45%

Ages 0-9 not shown. Arizona rate reflects all ages. Rates are calculated per 100,000.

Table 9

Primary/Secondary Syphilis Female Cases by Age Group and County, Arizona 2016

Age Group	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65+	Total
Apache	*	*	*	*	*	*	*	*	*	*	*	*	*
Cochise	*	*	*	*	*	*	*	*	*	*	*	*	*
Coconino	*	*	*	*	*	*	*	*	*	*	*	*	*
Gila	*	*	*	*	*	*	*	*	*	*	*	*	*
Graham	*	*	*	*	*	*	*	*	*	*	*	*	*
Greenlee	*	*	*	*	*	*	*	*	*	*	*	*	*
La Paz	*	*	*	*	*	*	*	*	*	*	*	*	*
Maricopa	*	*	16	*	8	*	6	*	*	*	*	*	50
Mohave	*	*	*	*	*	*	*	*	*	*	*	*	*
Navajo	*	*	*	*	*	*	*	*	*	*	*	*	*
Pima	*	*	*	*	*	*	*	*	*	*	*	*	15
Pinal	*	*	*	*	*	*	*	*	*	*	*	*	*
Santa Cruz	*	*	*	*	*	*	*	*	*	*	*	*	*
Yavapai	*	*	*	*	*	*	*	*	*	*	*	*	*
Yuma	*	*	*	*	*	*	*	*	*	*	*	*	*
Arizona	*	7	21	7	15	9	10	*	6	*	*	*	80

*Denotes count <6

Table 10

Primary/Secondary Syphilis Male Cases by Age Group and County, Arizona 2016

Age Group	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65+	Total
Apache	*	*	*	*	*	*	*	*	*	*	*	*	6
Cochise	*	*	*	*	*	*	*	*	*	*	*	*	*
Coconino	*	*	*	*	*	*	*	*	*	*	*	*	6
Gila	*	*	*	*	*	*	*	*	*	*	*	*	*
Graham	*	*	*	*	*	*	*	*	*	*	*	*	*
Greenlee	*	*	*	*	*	*	*	*	*	*	*	*	*
La Paz	*	*	*	*	*	*	*	*	*	0	0	*	*
Maricopa	*	25	78	113	69	43	31	50	48	15	15	*	492
Mohave	*	*	*	*	*	*	*	*	*	*	*	*	*
Navajo	*	*	*	*	*	*	*	*	*	*	*	*	*
Pima	*	8	20	15	18	11	*	8	*	*	*	*	93
Pinal	*	*	7	*	*	*	*	*	*	*	*	*	26
Santa Cruz	*	*	*	*	*	*	*	*	*	*	*	*	*
Yavapai	*	*	*	*	*	*	*	*	*	*	*	*	*
Yuma	*	*	*	*	0	0	*	*	*	*	0	*	6
Arizona	*	35	111	140	97	58	42	60	56	20	17	6	642

*Denotes count <6

Table 11
Syphilis Cases by Stage, Arizona 2014-2016

	2014		2015		2016	
Stage*	**N**	**%**	**N**	**%**	**N**	**%**
Primary	199	14%	197	14%	252	14%
Secondary	374	26%	391	26%	470	25%
Early Latent	308	21%	357	24%	488	26%
Late Latent	554	38%	530	36%	679	36%
Congenital	13	0.9%	14	0.9%	15	0.8%
Total	1,448		1,489		1,904	

*Stage is an indication of where a case is at in their infection. Primary and secondary cases are symptomatic and infectious (they can spread the disease to others). Early latent cases were infected sometime within the past year and were symptomatic and infectious sometime within the last year. Late Latent cases were infected over a year ago and can no longer spread the disease to others.

Appendix 3: Staff and Contributors

Roxanne Ereth, MPH, BS, STDCP Manager with 19 years of experience in Public Health. Ms. Ereth's experience includes positions as an Epidemiologist, Manager of the Hepatitis C Program for 2 years and manager of the STDCP for the last 7 years. She has a BS in Microbiology and an MPH in Public Health with a Concentration in Community Health Practice.

Tymeckia Kendall, MPH, Senior Surveillance Epidemiologist and Data Manager, has over 1 year of experience with the STD team. Ms. Kendall has previous experience with the Georgia Department of Public Health working with HIV/AIDS surveillance data and aiding in multiple HIV studies.

Rebecca Scranton, MPH, BS, Syphilis Surveillance Epidemiologist, has 8 months of experience with the STD team. Ms. Scranton has previous experience with the Maricopa County Department of Public Health working as a Data Analyst for the Office of Epidemiology and has been involved in a range of research projects relating to the social determinants of health.

Breanne Anderson, MPH, Chlamydia/Gonorrhea Surveillance Epidemiologist, has been with the STD team for 3 months. Ms. Anderson has spent the last several years working with various women's health projects

Linda Ripley, Administrative Assistant, has been with ADHS since 2006.

Rosalinda Avila, Data Entry Specialist, has been with ADHS for 6 months.

Letty Medina, Program and Project Specialist, has been with ADHS for nearly 4 years.

The Centers for Disease Control and Prevention (CDC) has been generous in its support of the ADHS STDCP by providing assistance from the following on-site staff:

Geri Toyekoyah, MPH, BA, CDC Public Health Advisor with 25 years of experience working in state and local STD Programs (States of Florida, Louisiana, North Carolina, Oklahoma, Mississippi, and Arizona). She holds a BA in History and an MPH in Public Health Administration and Policy.

Katherine Browne, BA, CDC Public Health Advisor with 26 years of experience working in state and local STD Programs (County of Los Angeles, State of Indiana, and the State of Arizona – Maricopa County and Pima County STD Programs). Ms. Browne holds a BA in Human Biology.