

Sexually Transmitted Disease Surveillance 2008-2017

December 2018



UTAH DEPARTMENT OF
HEALTH

Acknowledgements

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Sexually transmitted disease data for Utah are published by the UDOH Bureau of Epidemiology. Please direct questions or comments to:

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Guide to Acronyms and Abbreviations

STDs Sexually Transmitted Diseases

LHDs Local Health Departments

MSM Men who have sex with men

PID Pelvic Inflammatory Disease

HIV Human Immunodeficiency Virus

P&S Primary and Secondary [stages of syphilis]

PrEP Pre-Exposure Prophylaxis

Executive Summary

Sexually Transmitted Disease Surveillance, Utah, 2008-2017, is a summary of surveillance data for the following reportable sexually transmitted diseases (STDs) in Utah: chlamydia, gonorrhea, and primary and secondary (P&S) syphilis. Of the more than 75 Utah reportable communicable diseases, chlamydia was the most frequently reported disease in 2017 with 10,135 cases. Gonorrhea was second with 2,541 cases.¹

In collaboration with the 13 local health departments (LHDs) throughout the state, each STD case is investigated and partner services are provided. Disease investigation specialists (DIS) benefit public health by promoting prompt treatment of the patient and prompt partner notification and treatment of partners; both activities contribute to interrupting the chain of disease transmission. DIS also promote HIV testing, provide HIV pre-exposure prophylaxis (PrEP) referrals and sexual health education, and collect the data used to compile this report. The findings in this report should be utilized to identify priority populations for sexual health interventions. Among the findings of this report, the following are of particular note:

- 2017 rates of chlamydia, gonorrhea, and P&S all represent 10-year highs
- The majority of infections are reported along the more populous Wasatch Front and includes: 84% of chlamydia infections, 92% of gonorrhea infections, and 91% of P&S syphilis infections in 2017
- Racial and ethnic minorities continue to shoulder a disproportionate burden of STDs in Utah
- The rate of chlamydia has increased 44% since 2008 to a rate of 326 cases per 100,000 persons
- Almost two-thirds of the chlamydia cases reported in 2017 were among people aged 15-24 years
- The rate of gonorrhea has increased 735% since 2011 (the lowest rate reported in the time frame)
- In 2017, 61% of gonorrhea cases were among people aged 20-34 years
- The rate of syphilis has increased 311% since 2008 to a rate of 3.7 cases per 100,000 persons
- Since 2009, more than 80% of P&S syphilis cases in men have been among men who have sex with men (MSM)

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Introduction

This report consists of five sections: One section each for chlamydia, gonorrhea, and P&S syphilis; a section specific to chlamydia and gonorrhea in adolescents aged 15 to 19 and young adults aged 20 to 24; and a section with tables. Each disease-specific section contains text and figures that summarize data and display trends. The “Adolescents and Young Adults” section takes a more detailed look at the chlamydia and gonorrhea incidence in this vulnerable age group. The “Tables” section includes data for STDs by age group, sex, race/ethnicity, geography, sexual orientation in males, and testing data. Finally, the appendix contains a map of the 13 LHDs and a table listing the counties in each district’s service area.

Technical Notes

The Utah Communicable Disease Rule requires health care providers and laboratories report cases of chlamydia, gonorrhea, and syphilis to their LHD or the Utah Department of Health (UDOH), Bureau of Epidemiology within three working days of identification.¹ Upon receipt, these reports are entered into UT-NEDSS, a secure statewide disease surveillance system which was launched in 2009. This database, along with STD*MIS (Sexually Transmitted Disease Management Information System), a

legacy database provided by the Centers for Disease Control and Prevention (CDC), is the source for much of the data provided in this report. The variable “men who have sex with men (MSM)” was introduced into UT-NEDSS in 2009; therefore, charts and tables pertaining to this variable begin in 2009. The cases in this report are classified by CDC’s *Morbidity and Mortality Weekly Report (MMWR)* year unless otherwise noted.

Chlamydia and gonorrhea testing data referenced in this report are limited to data provided by the UDOH’s Utah Public Health Laboratory (UPHL). The UPHL data includes testing conducted at adult and youth correctional facilities, community and family planning clinics, LHDs, a small number of private providers, and student health centers throughout the state. Testing data from other laboratories is not included in this report but will be analyzed in future reports.

Population data used to calculate rates were obtained from the Population Estimates Query Module from the UDOH, Center for Health Data and Informatics, Indicator-Based Information System for Public Health (IBIS-PH). Population estimates are provided by the National Center for Health Statistics (NCHS) through a collaborative agreement with the U.S. Census Bureau.

In this report, missing and unknown age group, sex, and race/ethnicity data were not redistributed; therefore, incidence rates may be underestimated, particularly rates by race/ethnicity.

¹Utah Code Annotated. R386-702 Communicable Disease Rule.
<http://www.rules.utah.gov/publicat/code/r386/r386-702.htm>

Chlamydia

Background

Chlamydia trachomatis infections continue to be the most frequently reported communicable disease in both Utah and the United States.² In 2017, 10,135 cases of chlamydia were reported in Utah. Between 2008 and 2017, Utah's chlamydia rate was an average of 59% of the U.S. rate (Figure 1).³ Utah's chlamydia rate increased 44% from 226.1 cases per 100,000 population in 2008 to 326.7 cases per 100,000 population in 2017. The increase in chlamydia rates may be an actual increase in disease trends or due to increased screening efforts, use of increasingly sensitive diagnostic tests, increased reporting by providers and laboratories, and/or improved information systems for reporting.

Over the past 10 years, chlamydia rates in females in Utah have averaged twice that of males in Utah (Figure 2), most likely a result of higher rates of screening in women for this usually asymptomatic infection. Females with chlamydial infection are at risk for developing pelvic inflammatory disease (PID), and both men and women may become infertile as a result of untreated chlamydial infections. Susceptibility to more serious infections, such as the human immunodeficiency virus (HIV), increases when an individual is infected with chlamydia. In addition, pregnant women with chlamydia can pass the infection to their infants during delivery, potentially resulting in pneumonia or neonatal ophthalmia.

Chlamydia by Age Group

During the 2008-2017 time period in Utah, chlamydia rates increased in all age groups between 15-64 years old with rate increases ranging from 30% in the 15 to 19 year old age group to more than 400% in all age groups between 55-64 years old (Table 2). Although the rates in older adults are not as high as in younger age groups, this demonstrates the need to target prevention messages to a wide range of age groups.

Chlamydia by Sex

Nearly two-thirds of the chlamydia cases reported in Utah in 2017 were among people aged 15-24. The highest rates of infection were reported among females aged 20-24 (2,015.5 cases per 100,000 population) and aged 15-19 (1,699.8 cases per

100,000 population). The highest rate of infection reported in males was among men aged 20-24 (856.8 cases per 100,000 population) (Figure 3).

Chlamydia by Region

In 2017, four LHDs in Utah had chlamydia rates higher than the state rate: Salt Lake County Health District (466.1 cases per 100,000 population), San Juan Health District (390.7 cases per 100,000 population), Weber-Morgan Health District (330.0 cases per 100,000 population), and Davis County Health District (324.2 cases per 100,000 population) (Figure 4). Similar to prior years, the majority of chlamydial infections were identified in the four counties along the Wasatch Front: Salt Lake (52.2% of cases), Utah (11.5% of cases), Davis (11.1% of cases), and Weber-Morgan (8.7% of cases).

Chlamydia by Race/Hispanic Ethnicity

In 2017, the highest chlamydia rates among the major racial and ethnic groups in Utah were reported among persons who are non-Hispanic Blacks (1,343.5 cases per 100,000 population) and persons who are Pacific Islanders (950.3 cases per 100,000 population), followed by persons who are Hispanics and American Indian/Alaska Natives (576.6 and 520.1 cases per 100,000 population, respectively) (Figure 5). Racial/ethnic minorities continued to be disproportionately affected by chlamydia in 2017. In comparison, rates among persons who are non-Hispanic Whites were 233.3 cases per 100,000 population.

Chlamydia Testing

Chlamydia screening tests administered by adult and youth correctional facilities, community and family planning clinics, LHDs, a small number of private providers, and student health centers throughout the state are processed at the UPHL. The number of chlamydia results reported by the UPHL increased 72% between 2008 and 2017 (Figure 6). Consistent with screening recommendations, 40% more chlamydia tests during this ten-year period were administered to female patients compared with male patients and males have consistently had a higher positivity rate than females. Testing data from other laboratories are currently unavailable.

²Utah Department of Health (2016). [Top 10 Communicable Diseases Report, Utah, 2016](http://health.utah.gov/epi/data/topdiseases/2016_Top_10.pdf). http://health.utah.gov/epi/data/topdiseases/2016_Top_10.pdf.

³Centers for Disease Control and Prevention. *Sexually Transmitted Disease Surveillance 2016*. Atlanta: U.S. Department of Health and Human Services; 2017.

Figure 1. Chlamydia Rates, Utah and United States, 2008-2017

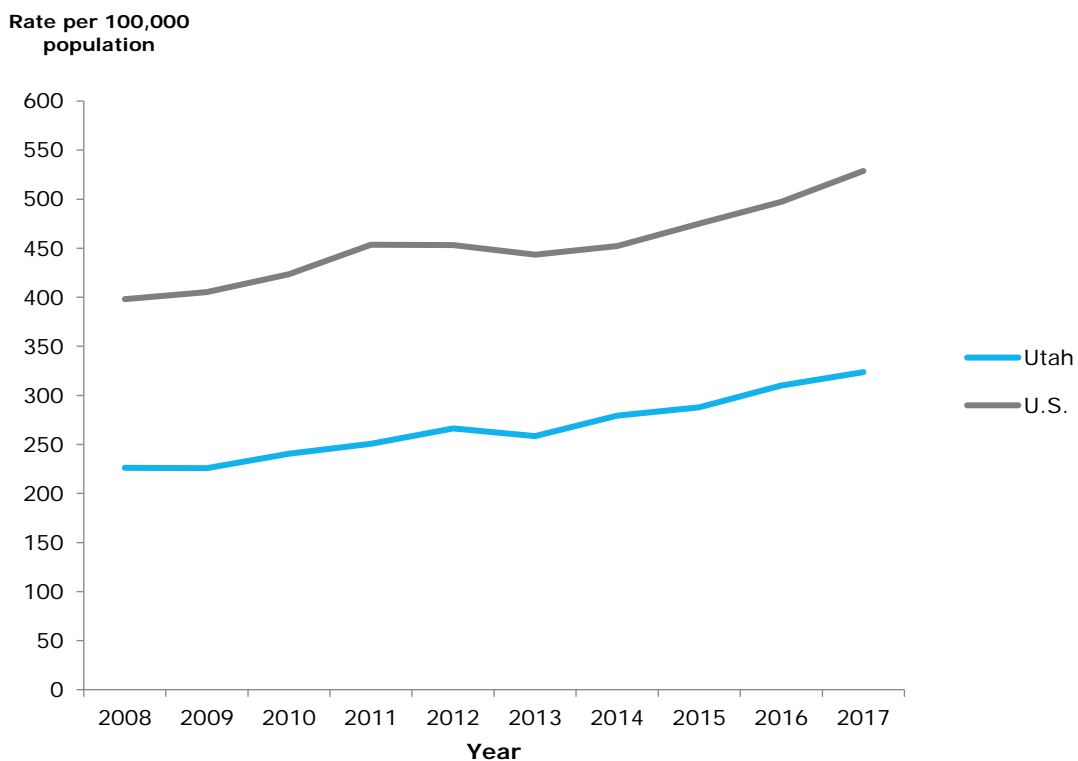
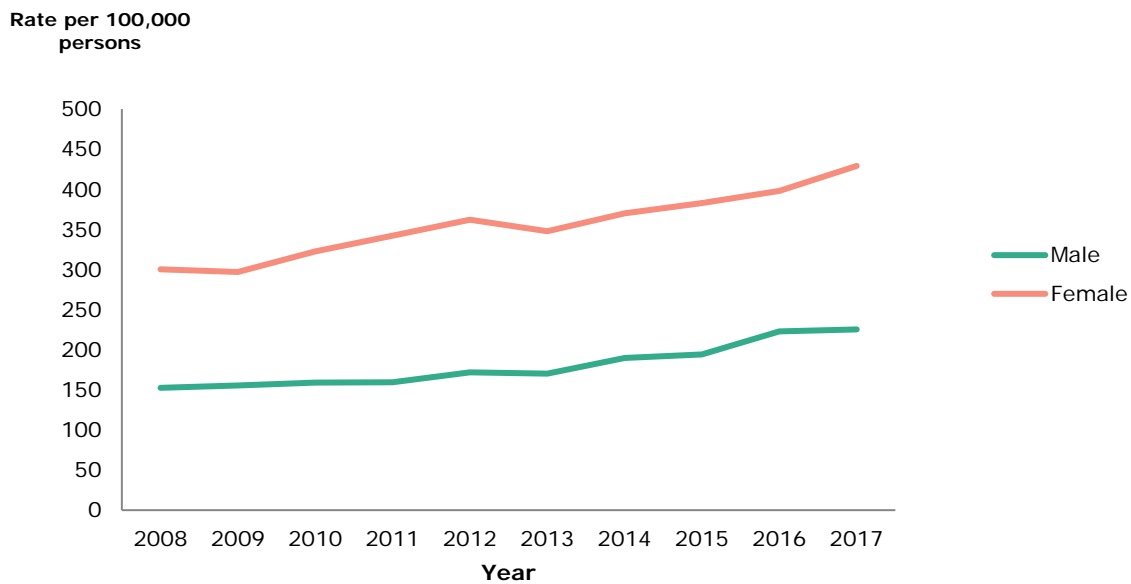


Figure 2. Chlamydia Rates by Sex, Utah, 2008-2017



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Among Persons Aged >= 10 Years, Utah, 2017**

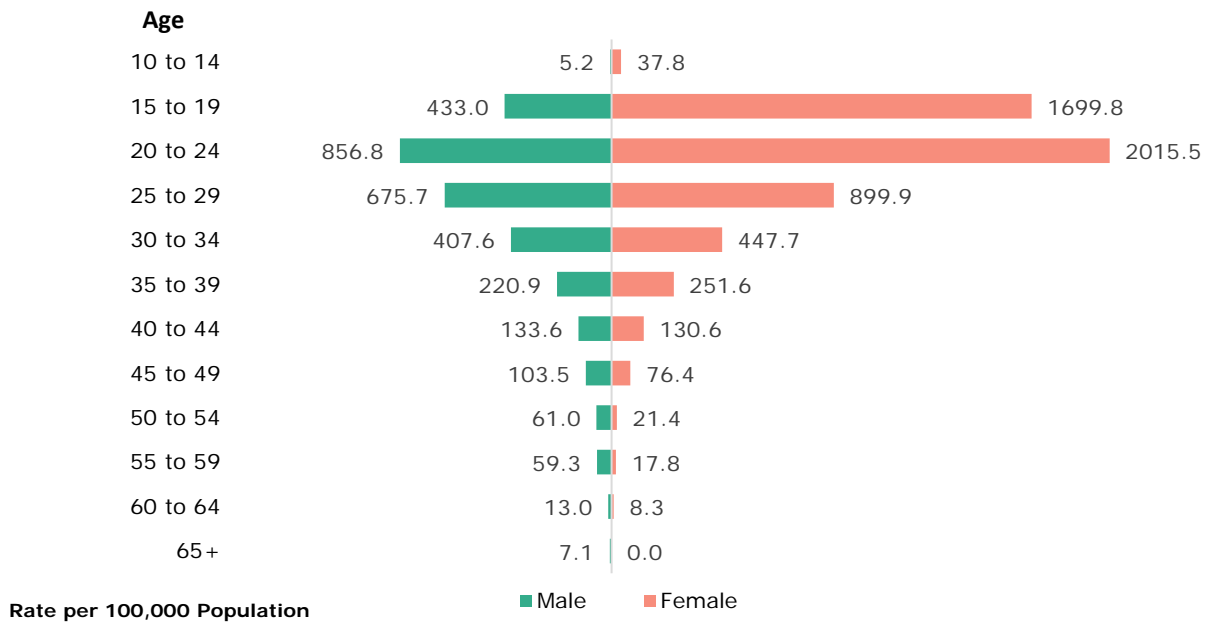
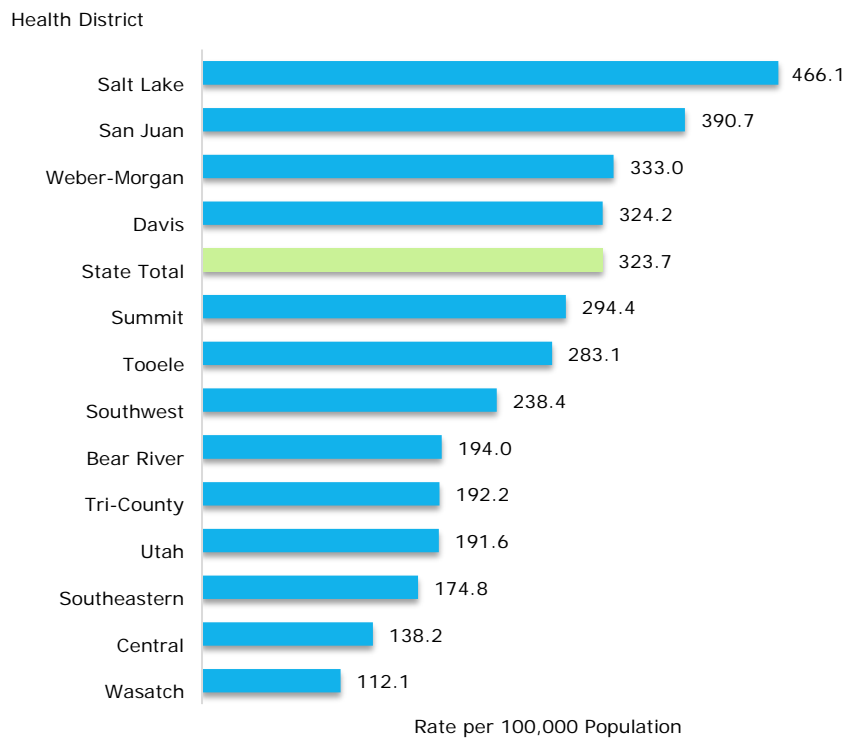


Figure 4. Chlamydia Rates by Local Health District, Utah, 2017



Map of Chlamydia Rates by Local Health District, Utah, 2017

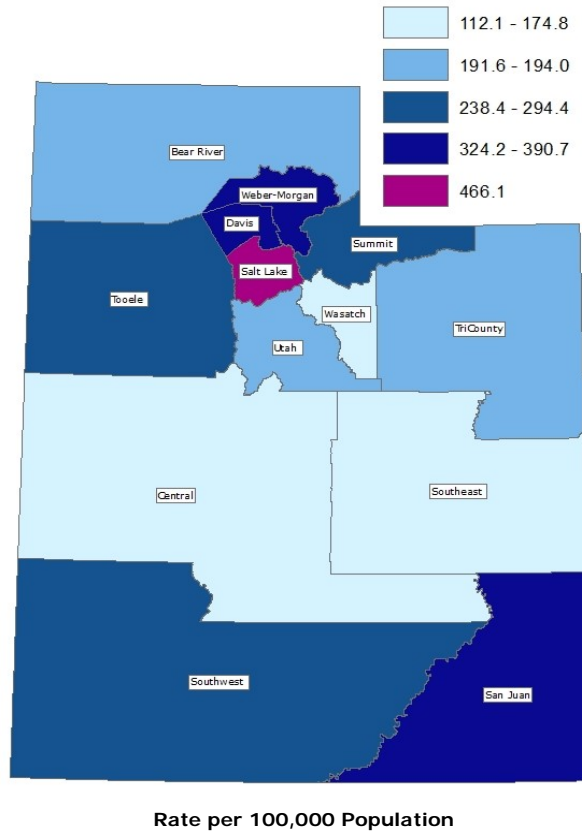


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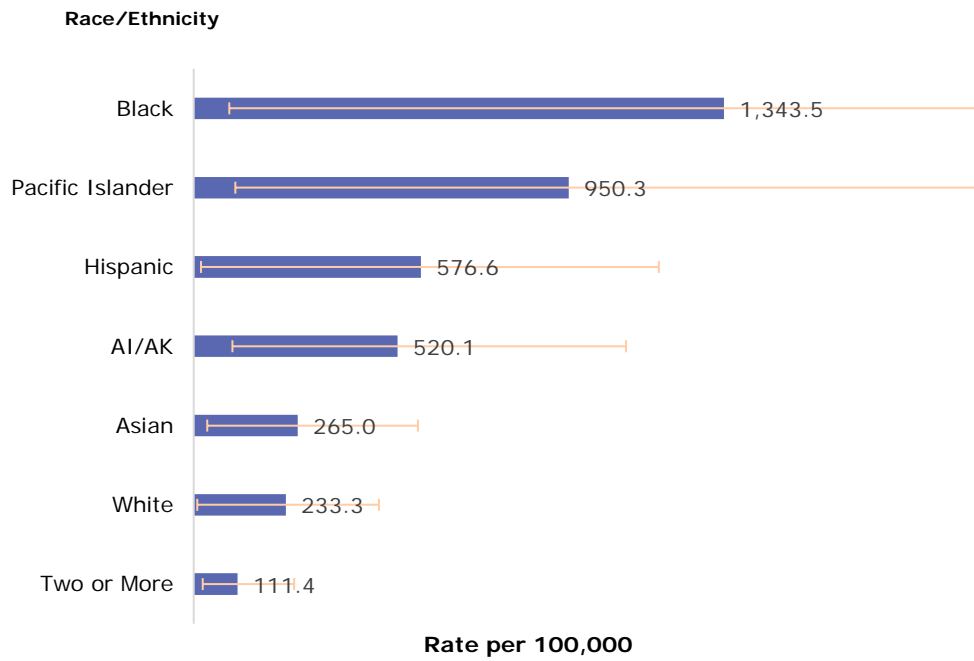
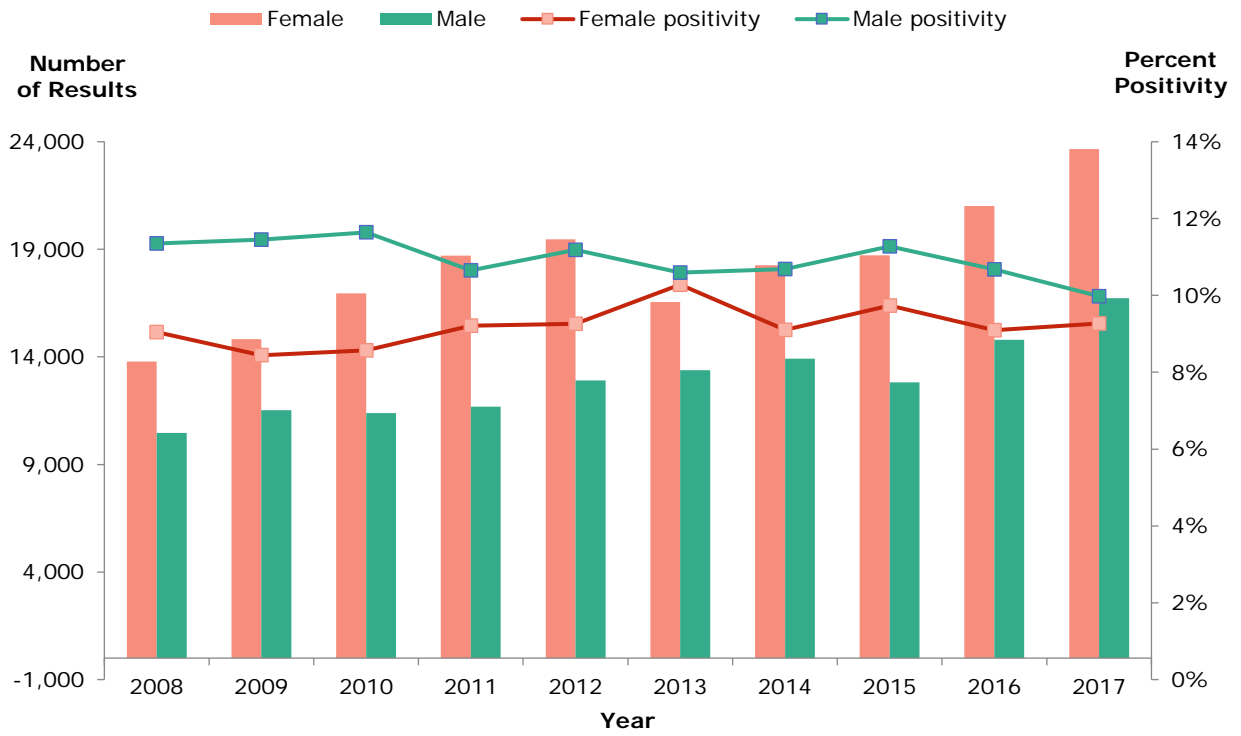


Figure 6. Number of Chlamydia Test Results and Percent Positivity by Sex, Utah Public Health Laboratories, Utah, 2008-2017



Gonorrhea

In 2017, 2,541 cases of gonorrhea were reported in Utah. Gonorrhea was the second most frequently reported communicable disease in Utah and in the United States.^{4, 5} Utah's gonorrhea rate was 47.6% the U.S. rate in 2017, up from 9.5% of the U.S. rate in 2011 (Figure 7). Following a 40% increase of Utah's gonorrhea rate between 2004 and 2006 when the rate peaked at 35.2 cases per 100,000 population, Utah's gonorrhea rate decreased annually to the lowest rate reported of 9.8 in 2011. The rate increased to 81.9 cases per 100,000 population in 2017, an increase of 735.7% from the 2011 rate.

Gonorrhea by Sex

Gonorrhea rates among males in Utah have consistently been higher than among females over the past 10 years (Figure 8); from 2008 to 2012, males had rates at least 2.5 times higher than females. However, in 2013 and 2014, rates among males were only 1.5 times higher due to a large increase of gonorrhea in females. Rates among males were about two times higher than females from 2015 to 2017. Two-thirds of male gonorrhea cases in 2009 and 2010 were among men who have sex with men (MSM). This percentage has decreased from 62% in 2011 to 38% in 2017; however, the percentage of cases associated with unknown sexual orientation has increased from 15% in 2011 to 28% in 2017 (Figure 12).

Adverse Health Effects from Gonorrhea

Untreated gonorrhea infections can damage the reproductive system in both males and females. Females with gonorrhea infection are at risk for developing pelvic inflammatory disease (PID). Gonorrhea can spread to joints and become systemic (disseminated gonorrhea). Susceptibility to infections, such as the human immunodeficiency virus (HIV), increases in individuals infected with gonorrhea. Furthermore, pregnant women with gonorrhea can pass the infection to their infant during delivery, potentially resulting in ophthalmia neonatorum.

Gonorrhea by Age

In 2017, 60.9% of the reported gonorrhea cases in Utah were among people aged 20-34. In males, the highest rates of infection were in the 25-29 year old age group (317.1 cases per 100,000 population) followed by the 20-24 year old age group and the

30-34 year old age group (275.1 and 249.5 cases per 100,000 population, respectively) (Figure 9). In females, the highest rate of infection was among 20-24 year olds (170.3 cases per 100,000 population). Although the rates were lower, the largest percentage rate increase from 2014 to 2015 was among people aged 65 and older.

Gonorrhea by Local Health District

In 2017, two local LHDs in Utah had gonorrhea rates higher than the state rate: Salt Lake County Health District (142.2 cases per 100,000 population) and Weber-Morgan Health District (99.4 cases per 100,000 population) (Figure 10). Similar to prior years, the majority of cases were identified in four LHDs along the Wasatch Front: Salt Lake (63.6%), Weber-Morgan (10.3%), Utah (7.7%), and Davis (7.1%).

Gonorrhea by Race/Ethnicity

In 2017, the highest gonorrhea rate among the major racial and ethnic groups in Utah was reported among persons who are non-Hispanic Blacks (545.6 cases per 100,000 population), followed distantly by non-Hispanic Pacific Islanders, Hispanics, and non-Hispanic American Indians/Alaska Natives (164.0, 132.2, and 101.3 cases per 100,000 population, respectively) (Figure 11).

Gonorrhea Testing

Gonorrhea screening tests administered by adult and youth correctional facilities, community and family planning clinics, LHDs, a small number of private providers, and student health centers throughout the state are processed at the UPHL. The lab adopted a dual chlamydia/gonorrhea test in late 2004. The number of gonorrhea results reported by the UPHL increased 59% between 2008 and 2017 (Figure 13). Consistent with screening recommendations, 41% more tests were administered to women compared with men in 2017. Males had positivity rates that are consistently higher than females in this 10 year time period. In 2017, males and females had positivity rates of 4.6% and 1.3% respectively. Testing data from other laboratories are currently unavailable.

To address Utah's increasing gonorrhea case rate, the UDOH, in conjunction with five local health departments (LHDs), implemented an electronic gonorrhea outbreak investigation form utilizing

⁴Utah Department of Health (2017). *Top 10 Communicable Disease Report, Utah, 2016*. http://health.utah.gov/epi/data/topdiseases/2016_Top_10.pdf

⁵Centers for Disease Control and Prevention. *Sexually Transmitted Disease Surveillance 2017*. Atlanta: U.S. Department of Health and Human Services; 2017.

Utah's integrated electronic surveillance system, UT-NEDSS.

The gonorrhea outbreak investigation form was implemented in April of 2014 and concluded in October of 2014. Additional interview questions gathered information regarding symptoms, health insurance status, student status, places sex partners were met, anonymous sex partners, drug and alcohol use, sex work, and the sex of partners.

Results from these analyses showed that programmatic activities should be targeted to individuals who are known or suspected drug users and those who have been incarcerated or have had a sex partner who has been incarcerated in the past 12 months.

Further investigation is needed to better understand the rise in gonorrhea rates.

Figure 7. Gonorrhea Rates, Utah and United States, 2008-2017

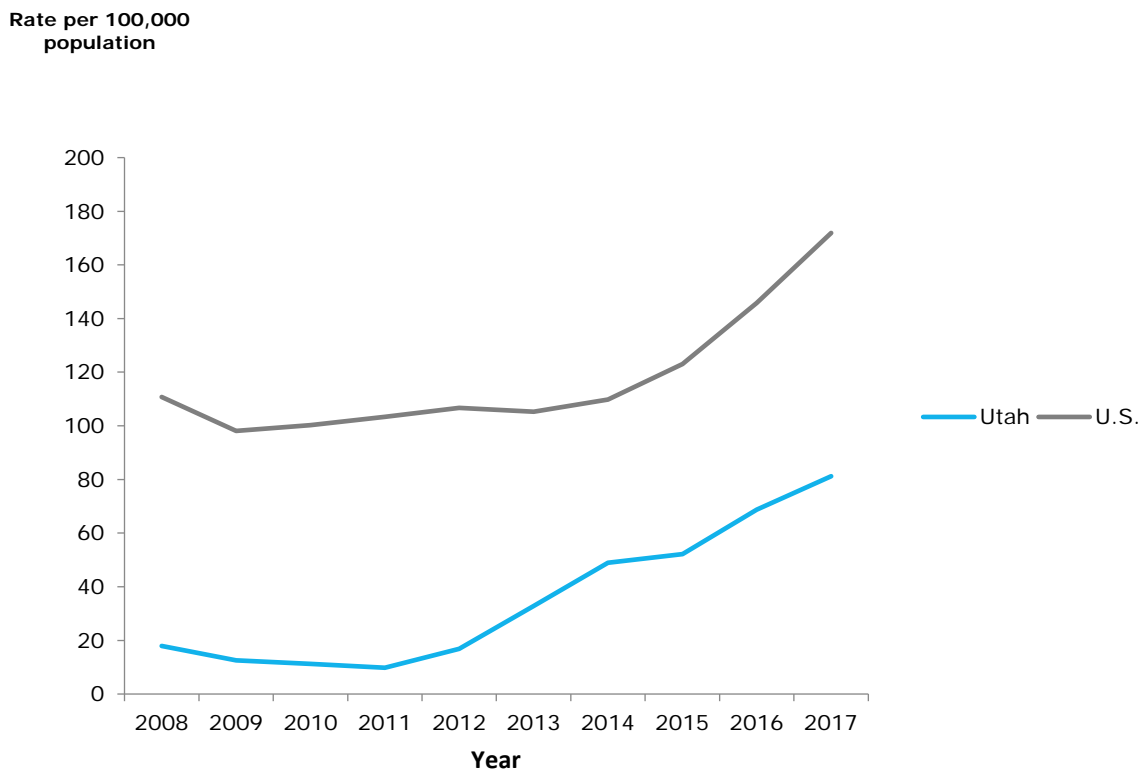
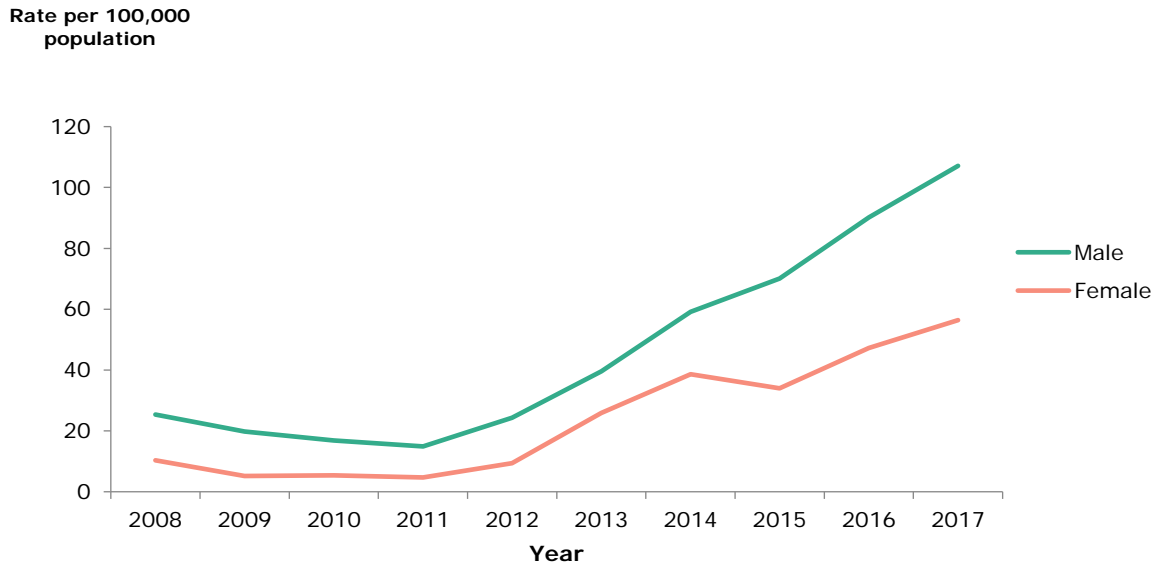
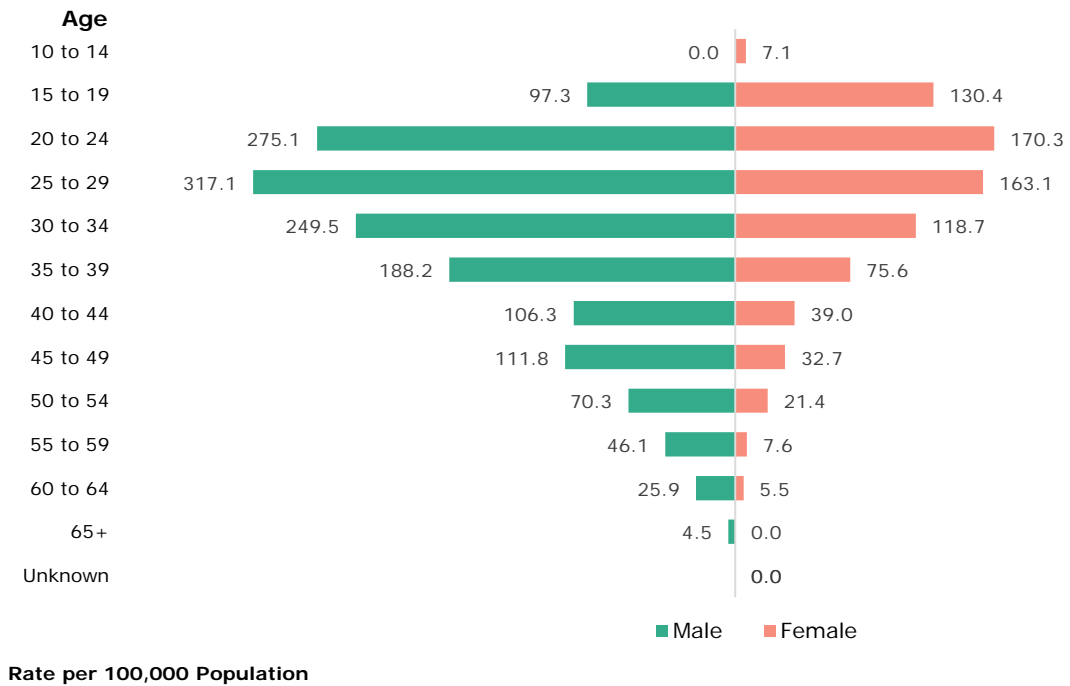


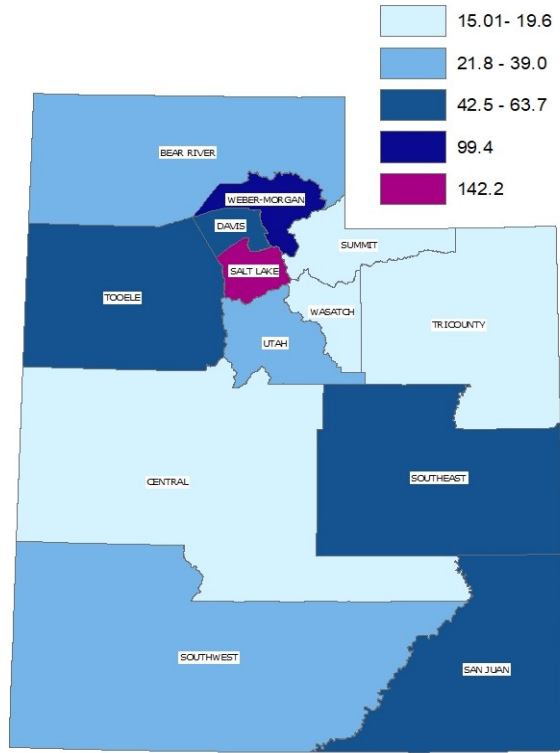
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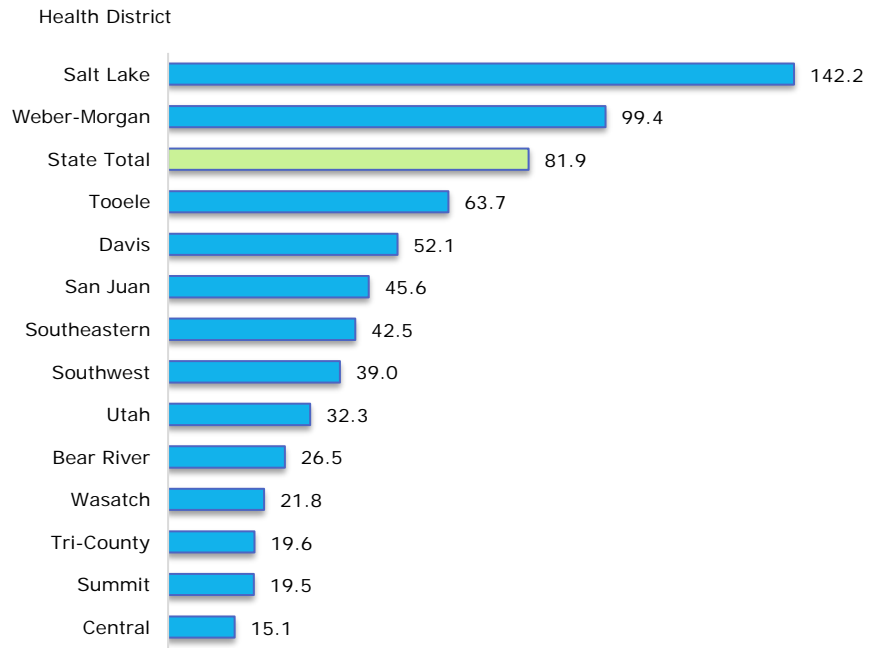


Map of Chlamydia Rates by Local Health District, Utah, 2017



Rate per 100,000 Population

Figure 10. Gonorrhea Rates by Local Health District, Utah, 2017



Rate per 100,000 population

Figure 11. Gonorrhea Rates by Race/Ethnicity, Utah, 2017

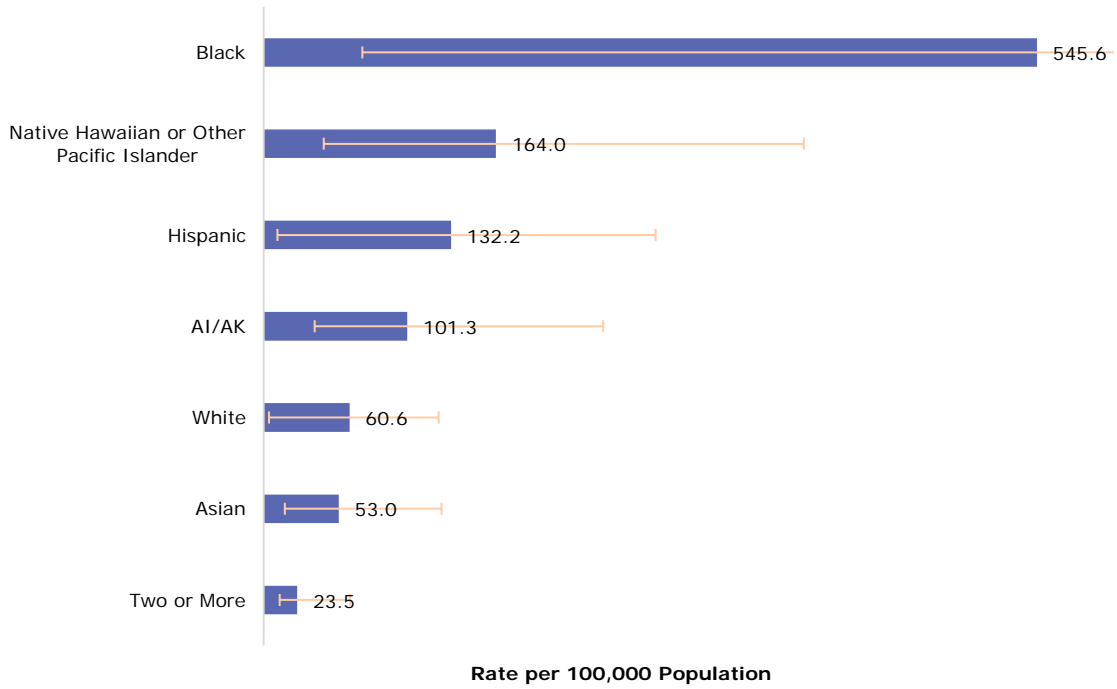
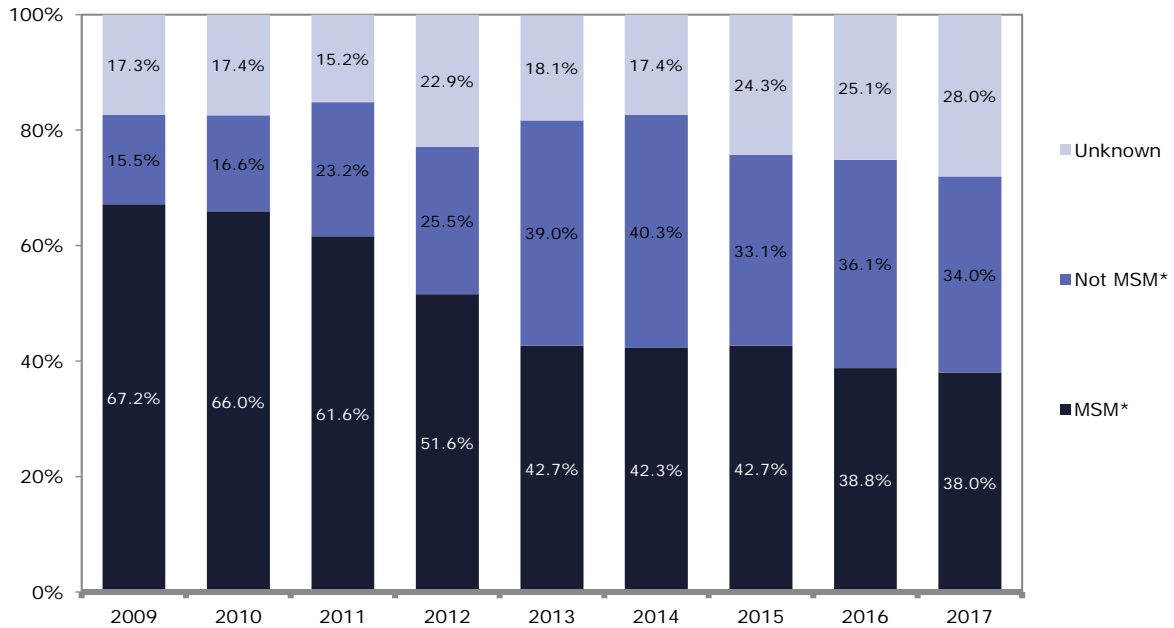
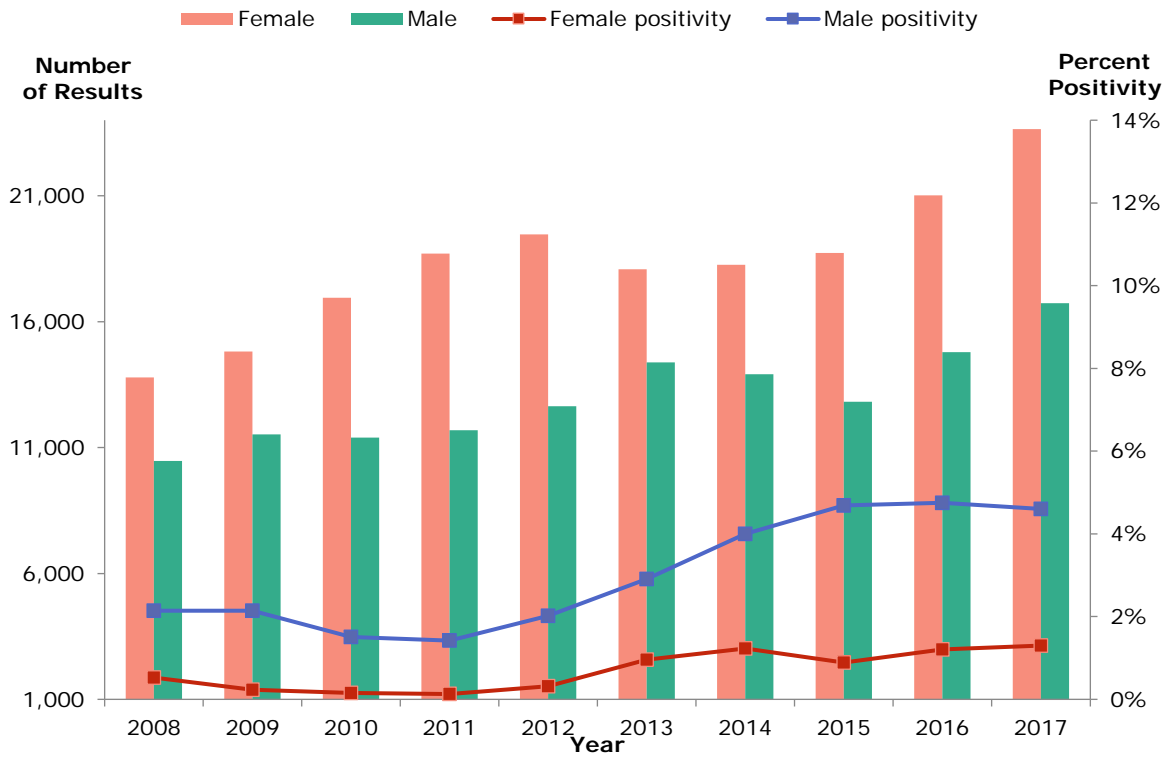


Figure 12. Percent of Male Gonorrhea Rates by Sexual Orientation, Utah, 2009-2017



*MSM = Men Who Have Sex with Men

Figure 13. Number of Gonorrhea Test Results and Percent Positive by Sex, Utah Public Health Laboratories, Utah, 2008-2017



Primary and Secondary Syphilis

Background

Syphilis is a complex sexually transmitted disease comprised of several stages throughout the duration of infection. The initial stage, primary syphilis, is characterized by a highly infectious, painless open sore at the site of infection called a chancre.

Syphilis is passed from person to person through direct contact with the chancre. Sexual transmission can also occur during the secondary stage of syphilis during which there is widespread hematogenous spread of the organism throughout the body. An infant can acquire syphilis through the placenta if the mother is infected, and untreated syphilis in pregnant women may result in stillbirth and perinatal death. In later stages of the disease, the bacteria move throughout the body, damaging many organs over time. Significant complications typically occur when syphilis is untreated. Due to the open nature of the syphilitic sores, untreated syphilis facilitates the transmission of the human immunodeficiency virus (HIV).

The primary and secondary (P&S) stages of syphilis are considered to be the most infectious stages and are the focus of this report. In 2017, 117 cases of primary and secondary syphilis were reported in Utah compared with 93 cases in 2016. The P&S syphilis rate in Utah in 2017 was 3.7 cases per 100,000 population.

Rates in Utah

The P&S syphilis rate in Utah has risen and fallen over the past 10 years. The rate of P&S syphilis in Utah increased from 0.9 cases per 100,000 population in 2008 to 2.3 in 2010. The increase was particularly steep from 2008 to 2010, which was inconsistent with the national trend during the same time period when rates leveled off (Figure 14). In 2011, the rate decreased to 0.5 cases per 100,000 population but has increased since. In 2017, the rate increased to 3.7 cases per 100,000 population, the highest in the past 10 years. In 2017, Utah's P&S syphilis rate was 38% the national rate.

Syphilis by Sex

P&S syphilis rates in males were significantly higher than in females throughout the past decade in Utah (Figure 15). No cases of P&S syphilis were diagnosed among females in four of the past 10 years.

Syphilis by Age Group

The highest P&S syphilis rates in Utah in 2017 were among men aged 20-24 (18.5 cases per 100,000 population) and men aged 25-29 years (Figure 16). P&S syphilis cases were reported in all age groups 15-65+ years old. This highlights the need to target prevention messages to a wide range of age groups.

Syphilis by Local Health District

In 2017, nine LHDs in Utah reported P&S syphilis cases: Salt Lake County Health District, Utah County Health District, Davis County Health District, Southwest Utah Health District, Southeast Utah Health District, Weber-Morgan Health District, Bear River Health District, Tri-County Health District, and Summit County Health District (Figure 17). Salt Lake County Health District accounted for three fourths of the P&S cases in Utah in 2017 with a rate of 7.6 cases per 100,000 population.

Syphilis by Race/Ethnicity

Of the 117 cases of P&S syphilis reported in Utah in 2017, the breakdown among racial and ethnic groups was as follows: 77 cases (72.0%) were among persons who are non-Hispanic White; 23 cases (17.2%) were among persons who are Hispanics; 7 cases (4.3%) were among persons who are non-Hispanic Black, and 1 to 3 cases each among persons who are non-Hispanic Asian, non-Hispanic American Indian or Alaska Natives, non-Hispanic Pacific Islanders, and the other/unknown category.

Syphilis by Sexual Orientation

Since 2009, more than 80% of the P&S cases in men have been among men who have sex with men (MSM) (Figure 18). In 2017, 81% of P&S cases in men were among men who have sex with men.

Figure 14. Syphilis Rates, Utah and United States, 2008-2017

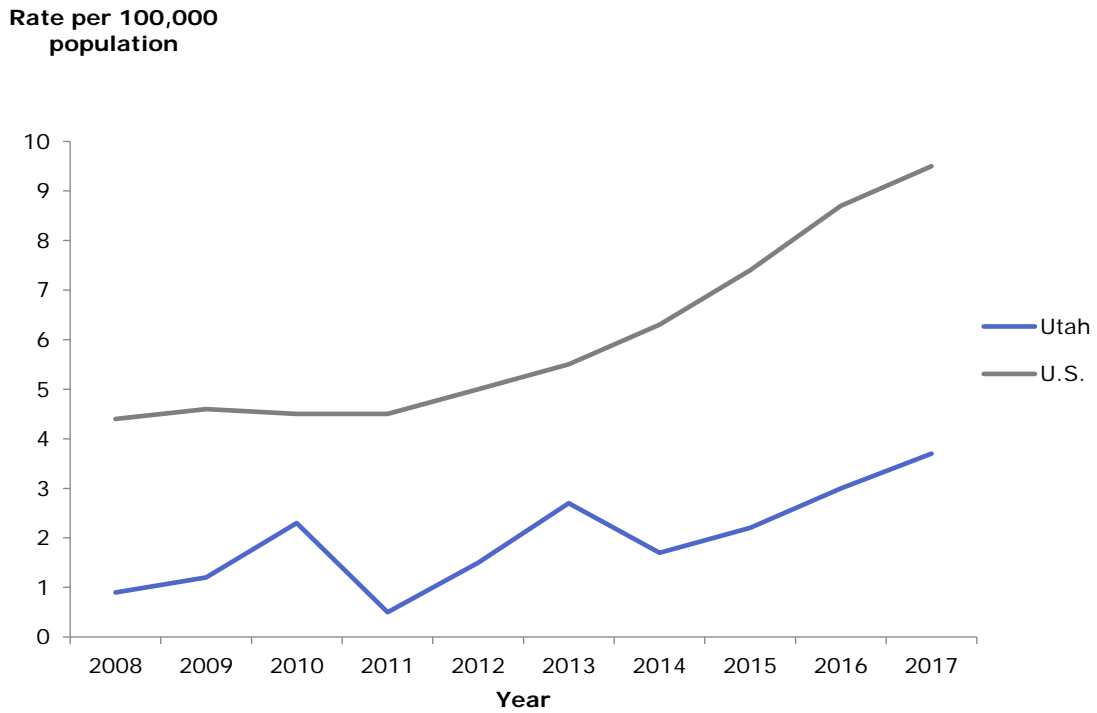


Figure 15. Syphilis Rates by Sex, Utah, 2008-2017

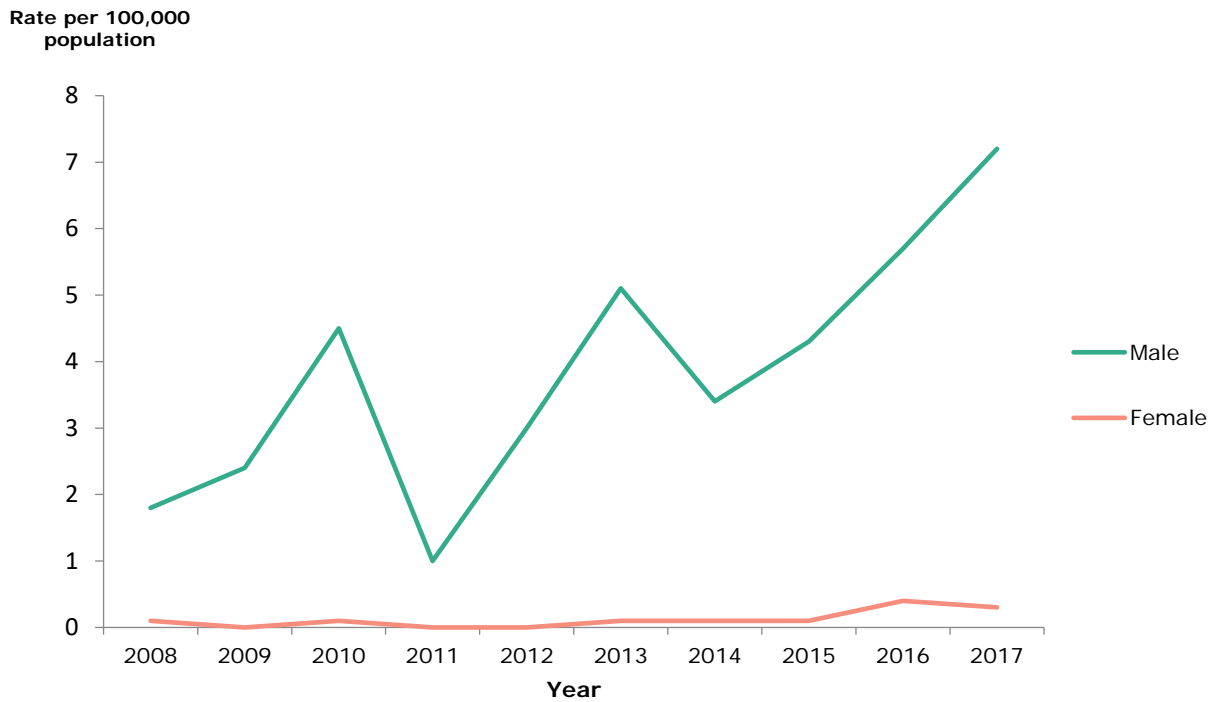


Figure 16. Primary and Secondary Syphilis Rates in Males by Age Group, Utah, 2017

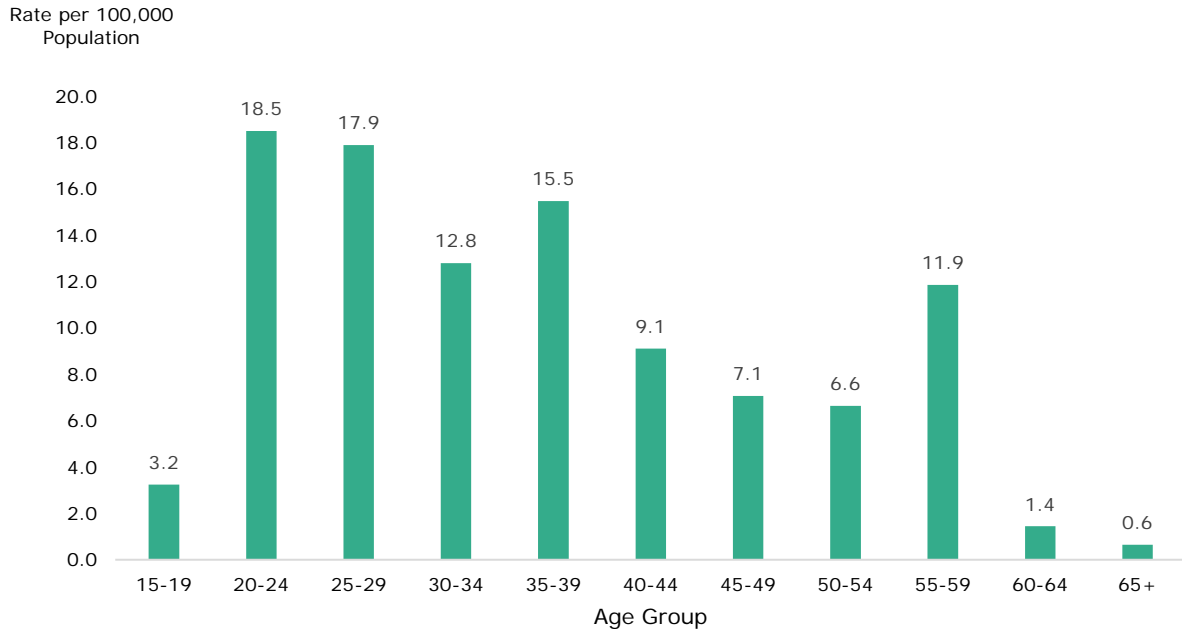
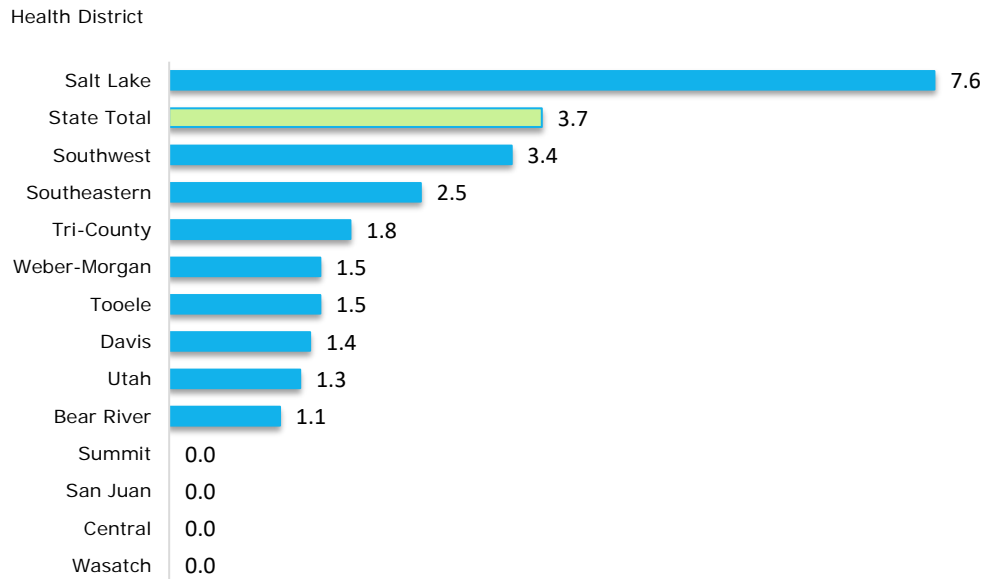


Figure 17. Primary and Secondary Rates by Local Health District, Utah, 2017



Rates per 100,000 population

Map of Primary and Secondary Syphilis Rates by Local Health District, Utah, 2017

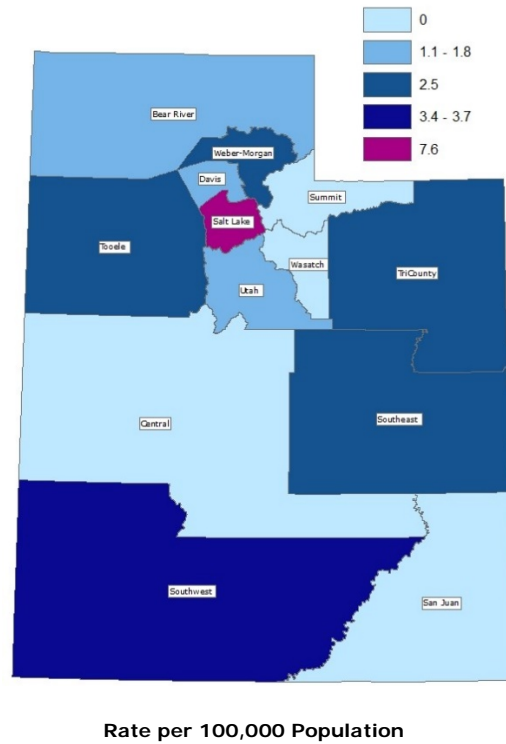
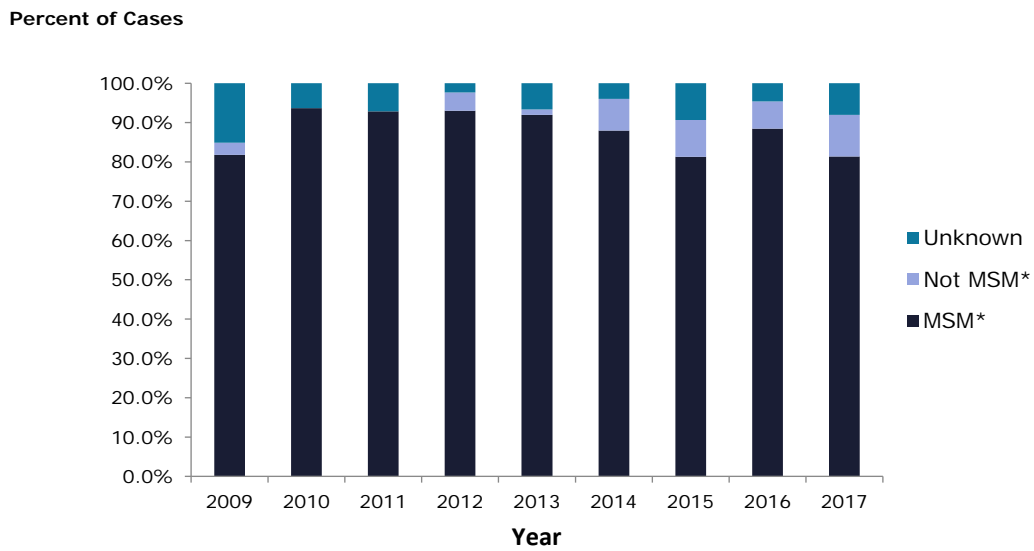


Figure 18. Percent of Male Primary and Secondary Rates by Sexual Orientation, Utah, 2008-2017



*MSM = Men Who Have Sex with Men

Chlamydia and Gonorrhea in Adolescents and Young Adults

In both Utah and the United States, adolescents 15 to 19 years of age and young adults aged 20 to 24 years have higher incidences of chlamydia and gonorrhea. In 2017, people aged 15 to 24 represented 16% of Utah's population; yet, this population accounted for 60% of reported chlamydia cases and 33% of gonorrhea cases. The increased rate of STDs can be attributed to increased risky sexual behavior among adolescents and young adults, anatomical vulnerabilities that increase transmission rates, and increased screening among this age group.

Chlamydia

Chlamydia trachomatis infection rates steadily increased in people aged 15-19 and 20-24 from 2008 to 2017 (Figure 19). During this 10-year period, the chlamydia rate increased 30% in males aged 15-19, 28% in males aged 20-24, 30% in females aged 15-19, and 57% in females aged 20-24. Throughout this period, the rate in females aged 15-19 was about four times that in males of the same age; and in people aged 20-24, the female rate was about twice that of males.

In 2017, the distribution of morbidity in adolescents and young adults varied by age. Adolescents 15 and 16 years old had the lowest rates of chlamydia in both males and females (Figure 20). The rates increased with age and peaked in females at age 19 (2,950.9 cases per 100,000 population) and in males at age 20 (1,130.6 cases per 100,000 population). The rate of chlamydia in females was greater than that of males at every age; and the rate ratios generally decreased with age. Females had rates about five times higher than males in 18-year-olds, four times higher in 15- and 16-year-olds, three times higher in 17- and 19-year-olds, and about two times higher in 20- to 24-year-olds.

Gonorrhea

Gonorrhea rates peaked in 2008 for those aged 20-24 (62.0 cases per 100,000 population) and 15-19 (31.6 cases per 100,000 population) (Figure 21). Since then, both age groups declined steadily until 2012, when rates in both age groups increased. Rates continued to increase in both age categories from 2012 through 2017; rates in both 15-19 year olds and 20-24 year olds increased more than 700%. From 2016 to 2017, male rates in 15-19 year olds and 20-24 year olds increased 31% and 26% respectively. During this same time frame, the rates increased 22% in females aged 15-19 and 18% in females aged 20-24.

Rates among males and females 15-19 years old have remained steady in the past 10 years (Figure 21). The rates between the sexes in this age group were similar between 2008 and 2010; males had a rate twice that of females in 2012; and females had higher rates from 2013 to 2017. Among males and females aged 20-24, males have consistently had higher rates of gonorrhea. Between 2008 and 2011, male rates in this age group were two to three times that of female rates; however, in 2013, the gonorrhea rate of females aged 20-24 doubled, rendering the male and female rates similar. Since 2013, rates in females in this age group have not increased at the same rate as males. Consequently, in 2017, rates among males were 1.6 times higher than the rates among females.

In 2017, the distribution of morbidity in adolescents and young adults varied by age (Figure 22). Adolescent males and females aged 15-17 had the lowest gonorrhea rates. Rates in males were higher than in females of the same age in people 20 years or older. The highest rate in males was among adolescents 22 years old (259.3 cases per 100,000 population) and the highest rate in females was among young women 19 years old (232.2 cases per 100,000 population).

Figure 19. Chlamydia Rates by Age Group and Sex in Adolescents and Young Adults, Utah, 2008-2017

*Adolescents: Includes ages 15-19 years

*Young adults: Includes ages 20-24 years

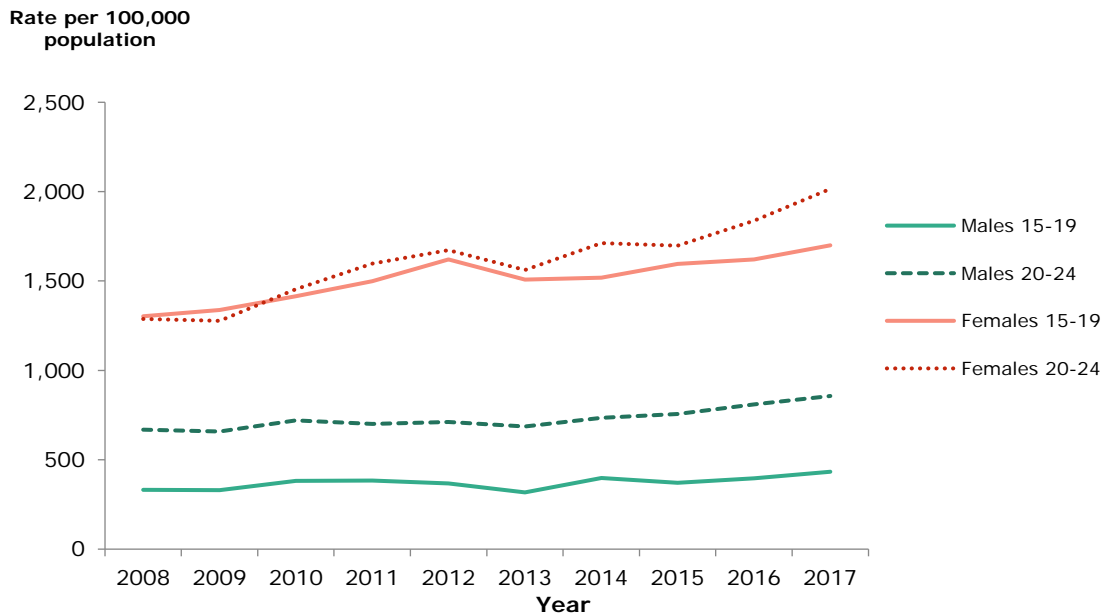


Figure 20. Chlamydia Rates by Age and Sex in Adolescents and Young Adults, Utah, 2017

*Adolescents: Includes ages 15-19 years

*Young adults: Includes ages 20-24 years

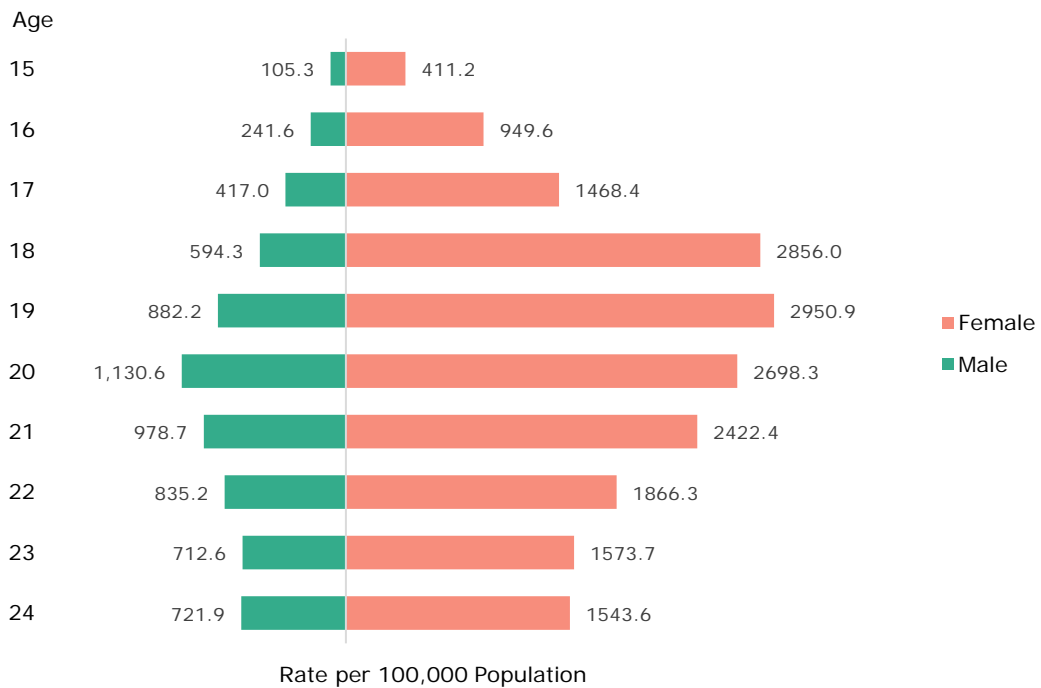


Figure 21. Gonorrhea Rates by Age Group and Sex in Adolescents and Young Adults, Utah, 2008-2017

*Adolescents: Includes ages 15-19 years

*Young adults: Includes ages 20-24 years

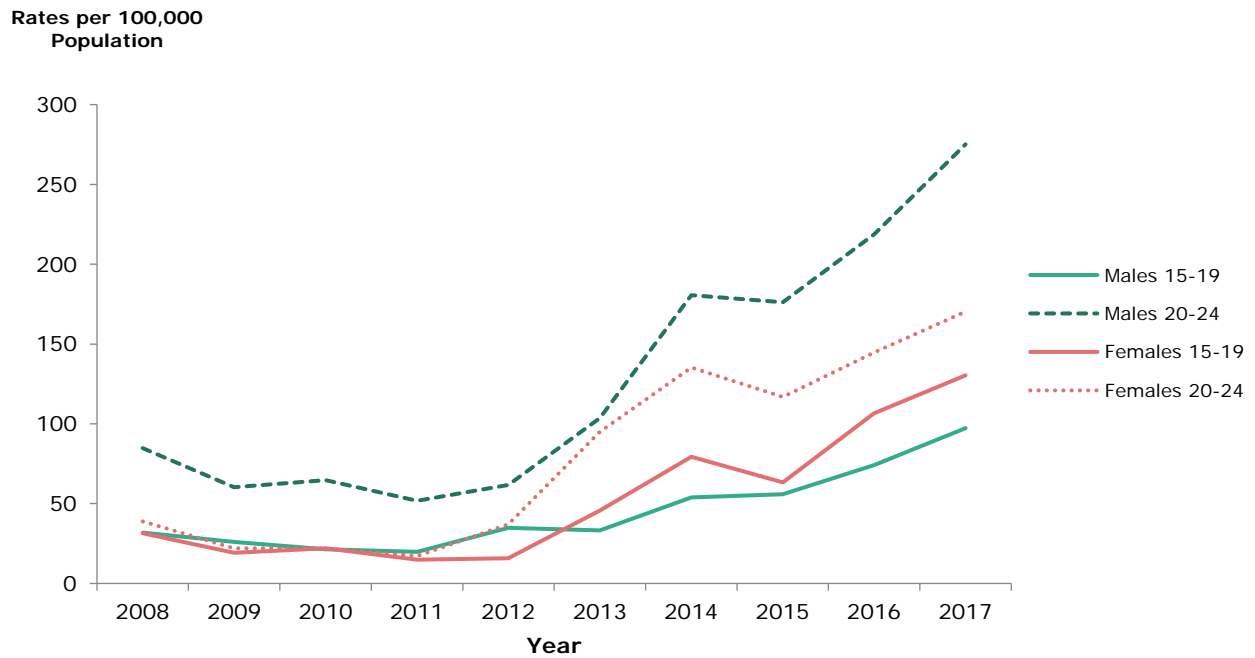
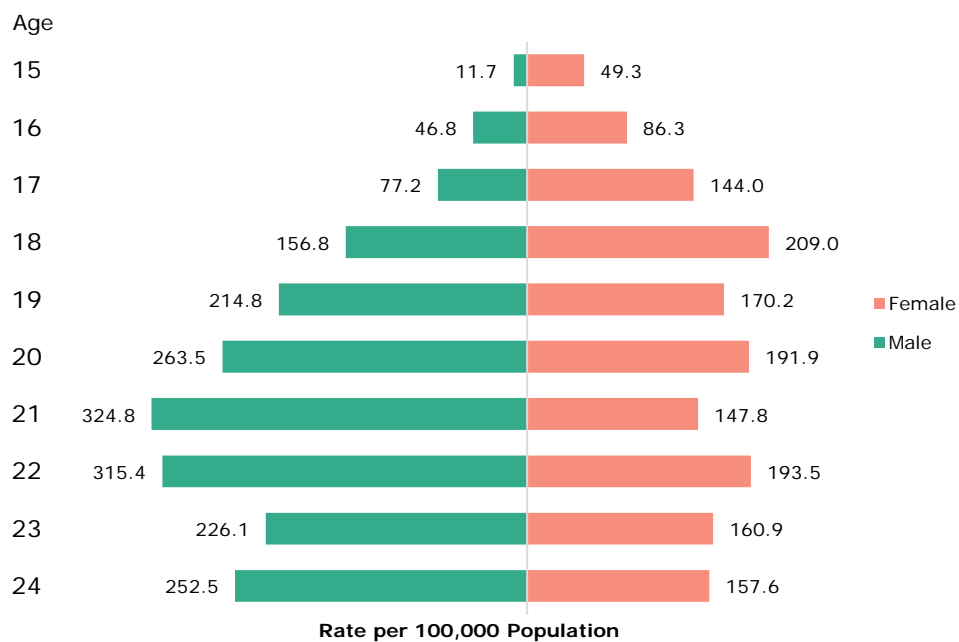


Figure 22. Gonorrhea Rates by Age and Sex in Adolescents and Young Adults, Utah, 2017

*Adolescents: Includes ages 15-19 years

*Young adults: Includes ages 20-24 years



TABLES

Table 1. Cases of Sexually Transmitted Diseases and Rates per 100,000 Population, Utah and United States (U.S.), 2008-2017

Year	Chlamydia			Gonorrhea			Primary and Secondary Syphilis		
	Utah		U.S.	Utah		U.S.	Utah		U.S.
	Cases	Rate	Rate	Cases	Rate	Rate	Cases	Rate	Rate
2008	6,021	226.1	398.1	477	17.9	110.7	25	0.9	4.4
2009	6,149	225.8	405.3	341	12.5	98.1	33	1.2	4.6
2010	6,676	240.5	423.6	310	11.2	100.2	65	2.3	4.5
2011	7,055	250.5	453.4	277	9.8	103.3	14	0.5	4.5
2012	7,607	266.4	453.3	483	16.9	106.7	43	1.5	5.0
2013	7,501	258.4	443.5	951	32.8	105.3	77	2.7	5.5
2014	8,217	279.3	452.2	1,439	48.9	109.8	51	1.7	6.3
2015	8,611	287.9	475.0	1,560	52.2	123.0	66	2.2	7.4
2016	9,459	310.0	497.3	2,100	68.8	145.8	93	3.0	8.7
2017	10,135	323.7	528.8	2,541	81.2	171.9	116	3.7	9.5

Note: Cases were classified by Morbidity and Mortality Weekly Report (MMWR) year.

Sources: Utah Cases - Bureau of Epidemiology, Utah Department of Health; US Rates - Centers for Disease Control and Prevention; Population Estimates - National Center for Health Statistics (NCHS) through a collaborative agreement with the U.S. Bureau of the Census.

Table 2. Chlamydia Cases and Rates by Age Group and Sex, Utah, 2008-2017

Sex	Age Group (years)	Cases										Rates per 100,000 Population									
		2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
M A L E	<1	4	3	2	3	5	2	0	0	1	1	-	-	-	19.5*	-	0.0	0.0	-	-	
	1 to 9	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	10 to 14	7	5	6	5	5	4	2	8	10	7	6.3*	4.4*	5.1*	4.1*	4.1*	3.2*	-	6.2*	7.6*	5.2*
	15 to 19	366	367	426	426	410	362	458	439	481	534	332.3	330.4	381.8	383.9	367.0	317.5	398.1	371.6	396.7	433
	20 to 24	774	753	824	824	875	866	935	979	1,060	1,112	669.1	658.2	720.9	699.8	712.0	685.7	733.9	756.5	810.7	856.8
	25 to 29	445	516	494	512	545	616	655	646	760	831	381.4	441.4	419.6	448.8	498.1	575.0	607.9	590.3	657.3	675.7
	30 to 34	210	251	237	249	321	316	335	357	464	446	203.6	230.0	213.1	218.8	278.2	272.0	290.6	313.0	416.1	407.6
	35 to 39	116	117	113	114	149	161	194	218	292	257	135.2	131.5	123.5	121.3	151.8	156.9	181.5	196.3	254.5	220.9
	40 to 44	50	49	58	70	71	79	112	121	159	132	66.0	63.9	73.1	84.6	83.4	90.4	125.1	131.9	168.2	133.6
	45 to 49	36	34	22	35	49	45	56	64	92	88	46.2	43.6	28.5	45.9	64.7	59.4	73.3	80.8	111.3	103.5
	50 to 54	20	21	21	14	26	20	44	48	63	46	27.3	28.2	27.7	18.2	33.7	25.9	57.0	62.8	83.3	61
	55 to 59	6	5	9	1	8	5	13	33	22	45	9.8*	7.8*	13.5*	-	11.3*	6.9*	17.7	44.2	29.0	59.3
	60 to 64	1	3	4	3	2	5	3	9	14	9	-	-	-	-	8.4*	-	13.9*	-	20.8	13.0*
65+	1	1	0	1	0	3	1	3	7	11	-	-	0.0	-	0.0	-	-	-	4.7*	7.1*	
Unknown	3	0	3	0	0	0	0	0	0	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Male Total	2,039	2,125	2,219	2,257	2,466	2,484	2,808	2,925	3,425	3,519	152.5	155.3	159.2	159.5	171.8	170.1	189.8	194.3	223.0	225.3	
F E M A L E	<1	4	2	1	0	1	1	0	2	0	1	-	-	-	0.0	-	0.0	-	0.0	-	
	1 to 9	2	1	1	0	1	1	0	0	0	0	-	-	-	0.0	-	0.0	0.0	0.0	0	
	10 to 14	40	51	43	47	55	37	49	47	52	48	38.4	47.1	38.5	41.1	47.3	31.0	40.4	38.1	41.5	37.8
	15 to 19	1,410	1,457	1,540	1,611	1,742	1,651	1,684	1,816	1,899	2,020	1,302.9	1,337.3	1,414.7	1,498.6	1,620.4	1,508.1	1,519.0	1,596.1	1,621.5	1,699.8
	20 to 24	1,457	1,445	1,652	1,861	1,992	1,890	2,087	2,078	2,246	2,497	1,287.0	1,277.3	1,454.2	1,598.1	1,673.3	1,562.0	1,711.6	1,698.2	1,837.6	2,015.5
	25 to 29	641	647	712	739	706	773	793	871	914	1,054	575.7	578.2	642.0	677.8	662.9	734.9	754.0	814.9	814.5	899.9
	30 to 34	248	245	295	294	374	382	458	477	473	483	252.5	238.5	277.2	269.1	337.5	342.1	411.7	432.6	432.0	447.7
	35 to 39	106	101	123	145	156	161	187	224	249	283	128.0	118.1	139.4	160.3	165.2	163.1	182.1	209.6	225.0	251.6
	40 to 44	44	48	61	62	66	78	93	89	122	124	60.2	65.0	80.1	78.1	80.8	92.7	107.9	100.8	134.1	130.6
	45 to 49	18	14	19	29	22	24	36	42	46	63	23.1	17.9	24.6	38.4	29.6	32.6	48.5	55.0	57.6	76.4
	50 to 54	5	8	8	7	16	13	14	27	20	16	6.7*	10.6*	10.4*	9*	20.4	16.5	17.9	34.9	26.3	21.4
	55 to 59	1	2	2	3	6	6	6	11	6	14	-	-	-	-	8.3*	8.1*	7.9*	14.3*	7.7*	17.8
	60 to 64	1	0	0	0	2	0	2	1	3	6	-	0.0	0.0	0.0	-	0.0	-	-	-	8.3*
65+	4	1	0	0	2	0	0	1	2	0	-	-	0.0	0.0	-	0.0	0.0	-	-	0	
Unknown	1	2	0	0	0	0	0	0	0	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Female Total	3,982	4,024	4,457	4,798	5,141	5,017	5,409	5,686	6,032	6,609	300.4	296.9	322.7	342.3	362.0	347.7	370.0	382.7	398.1	429.1	
T O T A L	<1	8	5	3	3	6	3	0	2	1	2	15.4*	9.4*	-	-	12.1*	-	0.0	-	-	
	1 to 9	2	1	1	0	1	1	0	0	0	0	-	-	-	0.0	-	0.0	0.0	0.0	0	
	10 to 14	47	56	49	52	60	41	51	55	62	55	21.9	25.1	21.4	22.1	25.1	16.8	20.5	21.8	24.1	21
	15 to 19	1,776	1,824	1,966	2,037	2,152	2,013	2,142	2,255	2,382	2,554	813.4	828.9	891.9	932.4	981.6	900.7	948.1	972.4	999.3	1,054.7
	20 to 24	2,231	2,198	2,476	2,685	2,867	2,756	3,022	3,057	3,306	3,612	974.7	966.0	1,086.4	1,146.5	1,185.0	1,114.5	1,212.0	1,214.2	1,306.8	1,423.9
	25 to 29	1,086	1,163	1,206	1,251	1,251	1,389	1,448	1,517	1,674	1,887	476.3	508.3	527.4	560.7	579.4	654.2	680.1	701.3	734.7	785.9
	30 to 34	458	496	532	543	695	698	793	834	937	929	227.5	234.1	244.4	243.4	307.3	306.3	350.1	371.8	424.0	427.5
	35 to 39	222	218	236	259	305	322	381	442	541	542	131.6	124.9	131.3	140.4	158.4	159.9	181.8	202.8	240.0	236.9
	40 to 44	94	97	119	132	137	157	205	210	281	256	63.2	64.4	76.5	81.5	82.1	91.6	116.7	116.6	151.5	132.1
	45 to 49	54	48	41	64	71	69	92	106	138	151	34.7	30.8	26.5	42.2	47.3	46.2	61.1	68.1	84.9	90.2
	50 to 54	25	29	29	21	42	33	58	75	83	62	17.0	19.3	19.0	13.6	27.0	21.2	37.3	48.8	54.8	41.3
	55 to 59	7	7	11	4	14	11	19	44	28	59	5.6*	5.4*	8.2*	2.9*	9.8	7.5*	12.7	29.0	18.2	38.1
	60 to 64	2	3	4	3	4	5	5	10	17	15	-	-	3.7*	-	3.4*	4.1*	3.9*	7.6*	12.4	10.6
65+	5	2	0	1	2	3	1	4	9	11	2.1*	-	0.0	-	-	-	-	1.3*	2.8*	3.3*	
Unknown	4	2	3	0	0	0	0	0	0	7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Total Cases	6,021	6,149	6,676	7,055	7,607	7,501	8,217	8,611	9,459	10,142	226.1	225.8	240.5	250.5	266.4	258.4	279.3	287.9	310.0	326.7	

Note: Cases were classified by Morbidity and Mortality Weekly Report (MMWR) year.

Sources: Cases - Bureau of Epidemiology, Utah Department of Health; Population Estimates - National Center for Health Statistics (NCHS) through a collaborative agreement with the U.S. Bureau of the Census.

* Use caution in interpreting, the estimate has a relative standard error greater than 30% and does not meet UDOH standards for reliability.

Note: Rate estimates with relative standard errors greater than 50% have been suppressed

Table 3. Chlamydia Cases and Rates by Local Health District, Utah, 2008-2017

Local Health District	Cases										Rates per 100,000 Population									
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Bear River	190	177	239	274	299	249	267	345	353	351	120.6	109.3	144.2	163.6	177.5	146.2	155.3	197.9	198.1	194.0
Central	77	54	83	65	70	75	105	88	82	110	104.1	71.9	109.6	85.5	92.4	98.6	137.5	114.0	104.4	138.2
Davis	569	747	685	720	837	874	930	877	947	1,127	192.4	247.4	222.4	230.7	264.7	270.8	282.3	261.2	276.7	324.2
Salt Lake	3,415	3,251	3,489	3,606	3,903	3,667	4,242	4,504	5,072	5,293	341.7	319.7	337.7	343.9	366.7	339.3	388.7	407.7	452.3	466.1
San Juan	N/A	N/A	N/A	N/A	N/A	N/A	N/A	55	53	60	N/A	N/A	N/A	N/A	N/A	N/A	350.2	313.7	390.7	
Southeastern	76	96	74	90	142	165	125	70	68	70	138.8	172.7	131.0	159.7	251.9	294.7	223.6	173.8	169.2	174.8
Southwest	274	243	329	339	353	369	424	404	450	562	138.1	120.7	161.5	163.7	168.0	173.3	194.8	181.8	196.5	238.4
Summit	62	56	68	59	68	78	94	90	121	121	176.0	156.3	186.5	157.7	179.6	203.2	241.0	228.0	300.2	294.4
Tooele	83	109	126	136	118	141	143	164	158	191	148.5	190.5	215.3	229.5	197.1	232.1	232.1	260.8	243.7	283.1
TriCounty	71	68	86	90	91	116	132	113	126	112	143.7	129.5	165.1	169.4	166.1	203.9	226.2	189.3	218.0	192.2
Utah	518	614	710	774	780	765	936	968	1,007	1,162	106.2	121.6	136.5	145.9	144.4	138.5	166.8	168.4	170.0	191.6
Wasatch	29	33	28	32	39	36	32	28	45	36	131.1	144.2	118.5	131.1	153.6	135.3	115.2	96.0	147.4	112.1
Weber-Morgan	657	675	687	792	843	801	731	807	910	878	282.2	284.3	284.2	325.0	342.1	322.0	291.0	317.0	351.4	333.0
Unknown	0	26	72	78	64	165	56	98	67	62	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
State Total	6,021	6,149	6,676	7,055	7,607	7,501	8,217	8,611	9,459	10,135	226.1	225.8	240.5	250.5	266.4	258.4	279.3	287.9	310.0	326.7

Note: Cases were classified by *Morbidity and Mortality Weekly Report (MMWR)* year. San Juan County has been an independent LHD since 2015. Prior to 2015, it was served by the Southeastern Utah LHD
Sources: Cases - Bureau of Epidemiology, Utah Department of Health; Population Estimates - National Center for Health Statistics (NCHS) through a collaborative agreement with the U.S. Bureau of the Census.

Table 4. Chlamydia Cases and Rates by Race/Ethnicity, Utah, 2008-2017

Race/Ethnicity	Cases										Rates per 100,000 Population									
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
AI/AK Native	105	112	104	170	192	195	166	148	158	154	389.4	411.5	382.0	620.8	699.4	700.1	586.1	511.7	522.8	520.1
Asian	98	77	90	89	118	120	135	131	178	200	190.9	143.9	162.6	153.8	195.6	190.5	205.2	189.0	243.0	265
Black	190	230	238	282	300	319	349	319	424	458	775.4	888.5	899.6	1035.2	1,061.0	1,087.8	1,158.7	1,026.1	1,307.2	1343.5
Hispanic [†]	1,488	1,648	1,640	1,777	1,968	1,971	1,923	2,094	2,333	2,504	449.9	474.1	454.7	480.5	520.8	508.4	485.6	513.9	554.9	576.6
White	4,009	3,837	4,377	4,545	4,857	4,697	5,074	4,715	5,373	5,680	185.2	174.3	195.9	201.1	212.5	202.9	216.9	199.1	223.4	233.3
Pacific Islander	125	130	138	139	142	142	188	186	224	284	558.7	555.7	566.8	562.4	559.7	541.8	701.3	666.8	770.6	950.3
Multiple	5	6	8	10	23	23	31	29	41	71	11.9	13.4	17.0	20.4	45.0	43.2	56.1	50.3	67.2	111.4
Other/Unknown	1	109	81	43	7	34	351	989	728	784	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0
State Total	6,021	6,149	6,676	7,055	7,607	7,501	8,217	8,611	9,459	10,135	226.1	225.8	240.5	250.5	266.4	258.4	279.3	287.9	310.0	326.7

[†] Includes persons of Hispanic ethnicity regardless of race.

Note: Cases were classified by *Morbidity and Mortality Weekly Report (MMWR)* year.

Sources: Cases - Bureau of Epidemiology, Utah Department of Health; Population Estimates - U.S. Bureau of the Census.

Table 5. Chlamydia Test Results and Percent Positivity by Sex, Utah Public Health Laboratories, Utah, 2008-2017

Year*	Female			Male			Total**		
	Positive Results	Total Results	Percent Positive	Positive Results	Total Results	Percent Positive	Positive Results	Total Results	Percent Positive
2008	1,247	13,788	9.04%	1,188	10,463	11.35%	2,577	25,647	10.05%
2009	1,251	14,819	8.44%	1,320	11,525	11.45%	2,621	26,846	9.76%
2010	1,453	16,951	8.57%	1,326	11,391	11.64%	2,821	28,756	9.81%
2011	1,723	18,704	9.21%	1,245	11,690	10.65%	3,011	30,711	9.80%
2012	1,803	19,468	9.26%	1,443	12,900	11.19%	3,278	32,708	10.02%
2013	1,701	16,544	10.28%	1,417	13,375	10.59%	3,170	30,308	10.46%
2014	1,662	18,260	9.10%	1,487	13,915	10.69%	3,183	32,537	9.78%
2015	1,824	18,726	9.74%	1,446	12,819	11.28%	3,289	31,754	10.36%
2016	1,911	21,016	9.09%	1,580	14,794	10.68%	3,522	36,147	9.74%
2017	2,194	23,660	9.27%	1,669	16,726	9.98%	3,897	40,818	9.55%

* Results reported by calendar year.

** Totals include results where the gender is unknown.

Source: Utah Public Health Laboratories, Utah Department of Health.

Table 6. Gonorrhea Cases and Rates by Age Group and Sex, Utah, 2008-2017

Sex	Age Group (years)	Cases										Rates per 100,000 Population									
		2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
M A L E	<1	1	0	0	0	0	0	0	0	0	0	-	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	1 to 9	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	10 to 14	1	1	0	1	0	2	0	1	3	0	-	-	0.0	-	0.0	-	0.0	-	-	0.0
	15 to 19	35	29	24	22	39	38	62	66	90	120	31.8	26.1	21.5	19.8	34.9	33.3	53.9	55.9	74.2	97.3
	20 to 24	98	69	74	61	76	131	230	228	286	357	84.7	60.3	64.7	51.8	61.8	103.7	180.5	176.2	218.7	275.1
	25 to 29	78	88	49	54	65	133	200	265	312	390	66.9	75.3	41.6	47.3	59.4	124.1	185.6	242.2	269.8	317.1
	30 to 34	43	29	34	33	60	100	150	163	257	273	41.7	26.6	30.6	29.0	52.0	86.1	130.1	142.9	230.4	249.5
	35 to 39	29	17	24	19	34	60	97	122	170	219	33.8	19.1	26.2	20.2	34.6	58.5	90.8	109.9	148.1	188.2
	40 to 44	19	12	17	10	27	41	49	70	111	105	25.1	15.6	21.4	12.1*	31.7	46.9	54.7	76.3	117.4	106.3
	45 to 49	17	9	7	9	26	29	40	45	80	95	21.8	11.6*	9.1*	11.8*	34.3	38.3	52.4	56.8	96.8	111.8
	50 to 54	11	14	3	1	12	33	28	51	38	53	15*	18.8	-	-	15.5	42.7	36.2	66.8	50.2	70.3
	55 to 59	4	2	2	1	10	9	12	35	25	35	-	-	-	14.1*	12.4*	16.3	46.9	33.0	46.1	-
	60 to 64	1	1	1	0	0	2	7	4	11	18	-	-	-	0.0	-	11.2*	6.28*	16.4*	25.9	-
	65+	0	0	0	0	0	0	0	5	2	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.5*	-	4.5*
Unknown	3	0	0	0	0	0	0	0	0	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Male Total	340	271	235	211	349	578	875	1,055	1,385	3,689	25.4	19.8	16.9	14.9	24.3	39.6	59.1	70.1	90.2	236.2	
F E M A L E	<1	1	0	0	0	0	0	1	0	0	-	0.0	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	
	1 to 9	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	10 to 14	3	2	1	1	3	1	5	6	5	9	-	-	-	-	-	4.1*	4.9*	4.0*	7.1*	
	15 to 19	34	21	24	16	17	50	88	72	125	155	31.4	19.3	22.0	14.9	15.8	45.7	79.4	63.3	106.7	130.4
	20 to 24	44	25	25	20	44	115	165	143	177	211	38.9	22.1	22.0	17.2	37.0	95.0	135.3	116.9	144.8	170.3
	25 to 29	28	15	15	15	23	82	119	109	159	191	25.1	13.4	13.5	13.8	21.6	78.0	113.1	102.0	141.7	163.1
	30 to 34	13	2	7	6	24	57	102	81	130	128	13.2	-	6.6*	5.5*	21.7	51.0	91.7	73.5	118.7	118.7
	35 to 39	8	1	2	6	11	35	52	55	60	85	9.7*	-	-	6.6*	11.7*	35.5	50.6	51.5	54.2	75.6
	40 to 44	0	2	1	1	4	12	18	20	34	37	0.0	-	-	-	4.9*	14.3	20.9	22.6	37.4	39.0
	45 to 49	4	1	0	1	4	4	9	13	16	27	-	-	0.0	-	5.4*	-	12.1*	17.0	20.0	32.7
	50 to 54	0	0	0	0	4	11	4	5	7	16	0.0	0.0	0.0	0.0	-	14.0*	-	6.5*	9.2*	21.4
	55 to 59	1	1	0	0	0	3	1	1	1	6	-	-	0.0	0.0	0.0	-	-	-	-	7.6*
	60 to 64	0	0	0	0	0	3	0	0	1	4	0.0	0.0	0.0	0.0	0.0	-	0.0	0.0	-	-
	65+	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Unknown	1	0	0	0	0	0	0	0	0	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Female Total	137	70	75	66	134	373	564	505	715	869	10.3	5.2	5.4	4.7	9.4	25.9	38.6	34.0	47.2	56.4	
T O T A L	<1	2	0	0	0	0	0	1	0	0	-	0.0	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	
	1 to 9	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	10 to 14	4	3	1	2	3	3	5	7	8	9	1.9*	-	-	-	-	2.0*	2.8*	3.1*	3.4*	
	15 to 19	69	50	48	38	56	88	150	138	215	275	31.6	22.7	21.8	17.4	25.5	39.4	66.4	59.5	90.2	113.6
	20 to 24	142	94	99	81	120	246	395	371	463	568	62.0	41.3	43.4	34.6	49.6	99.5	158.4	147.4	183.0	223.9
	25 to 29	106	103	64	69	88	215	319	374	471	581	46.5	45.0	28.0	30.9	40.8	101.3	149.8	172.9	206.7	242.0
	30 to 34	56	31	41	39	84	157	252	244	387	401	27.8	14.6	18.8	17.5	37.1	68.9	111.2	108.8	175.1	184.5
	35 to 39	37	18	26	25	45	95	149	177	230	304	21.9	10.3	14.5	13.6	23.4	47.2	71.1	81.2	102.0	132.9
	40 to 44	19	14	18	11	31	53	67	90	145	142	12.8	9.3	11.6	6.8*	18.6	30.9	38.1	50.0	78.2	73.3
	45 to 49	21	10	7	10	30	33	49	58	96	122	13.5	6.4*	4.5*	6.6*	20.0	22.1	32.5	37.3	59.1	72.8
	50 to 54	11	14	3	1	16	44	32	56	45	69	7.5*	9.3	-	-	10.3	28.2	20.6	36.4	29.7	46.0
	55 to 59	5	3	2	1	10	12	13	36	26	41	4.0*	-	-	-	7.0*	8.2	8.7	23.7	16.9	26.5
	60 to 64	1	1	1	0	0	5	7	4	12	22	-	-	-	0.0	0.0	4.1*	5.5*	-	8.7	15.5
	65+	0	0	0	0	0	0	0	5	2	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.6*	-	2.1*
Unknown	4	0	0	0	0	0	0	0	0	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Total Cases	477	341	310	277	483	951	1,439	1,560	2,100	2,541	17.9	12.5	11.2	9.8	16.9	32.8	48.9	52.2	68.8	81.9	

Note: Cases were classified by *Morbidity and Mortality Weekly Report (MMWR)* year.

Sources: Cases - Bureau of Epidemiology, Utah Department of Health; Population Estimates - National Center for Health Statistics (NCHS) through a collaborative agreement with the U.S. Bureau of the Census.

* Use caution in interpreting, the estimate has a relative standard error greater than 30% and does not meet UDOH standards for reliability.

Note: Rate estimates with relative standard errors greater than 50% have been suppressed

Table 7. Gonorrhea Cases and Rates by Local Health District, Utah, 2008-2017

Local Health District	Cases										Rates per 100,000 Population									
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Bear River	3	6	7	3	8	7	35	17	27	48	-	3.7*	4.2*	-	4.7*	4.1*	20.4	9.8	15.2	26.5
Central	0	0	3	0	3	3	7	7	10	12	0.0	0.0	-	0.0	-	-	9.2*	9.1*	12.7*	15.1
Davis	24	38	38	18	41	64	103	94	131	181	8.1	12.6	12.3	5.8	13.0	19.8	31.3	28.0	38.3	52.1
Salt Lake	334	239	197	196	336	680	995	1034	1424	1615	33.4	23.5	19.1	18.7	31.6	62.9	91.2	93.6	127.0	142.2
San Juan	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3	6	7	N/A	N/A	N/A	N/A	N/A	N/A	-	35.5*	45.6*	
Southeastern	2	5	5	6	5	4	7	6	6	17	-	9.0*	8.8*	10.6*	8.9*	-	12.5*	14.9*	14.9*	42.5
Southwest	14	11	6	10	14	16	23	53	55	92	7.1	5.5*	2.9*	4.8*	6.7	7.5	10.6	23.9	24.0	39
Summit	4	2	2	2	3	6	9	10	13	8	11.4*	-	-	-	-	15.6*	23.1*	25.3*	32.3	19.5*
Tooele	10	1	6	1	3	7	22	27	29	43	17.9	1.7	10.3	1.7	5.0	11.5	35.7	42.9	44.7	63.7
TriCounty	2	0	0	2	5	7	7	12	7	11	4.0	0.0	0.0	-	9.1*	12.3*	12.0*	20.1	12.1	19.6*
Utah	13	16	24	19	17	65	97	130	158	196	-	3.2	4.6	3.6	3.1	11.8	17.3	22.6	26.7	32.3
Wasatch	0	0	0	0	0	1	2	3	7	7	0.0	0.0	0.0	0.0	0.0	-	-	-	22.9*	21.8*
Weber-Morgan	71	21	20	17	43	84	126	144	212	262	30.5	8.8	8.3	7.0	17.5	33.8	50.2	56.6	81.9	99.4
Unknown	0	2	2	3	5	7	6	20	15	42	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
State Total	477	341	310	277	483	951	1,439	1,560	2,100	2,541	17.9	12.5	11.2	9.8	16.9	32.8	48.9	52.2	68.8	81.9

Note: Cases were classified by *Morbidity and Mortality Weekly Report (MMWR)* year. San Juan County has been an independent LHD since 2015. Prior to 2015, it was served by the Southeastern Utah LHD
Sources: Cases - Bureau of Epidemiology, Utah Department of Health; Population Estimates - National Center for Health Statistics (NCHS) through a collaborative agreement with the U.S. Bureau of the Census.

* Use caution in interpreting, the estimate has a relative standard error greater than 30% and does not meet UDOH standards for reliability.
Note: Rate estimates with relative standard errors greater than 50% have been suppressed

Table 8. Gonorrhea Cases and Rates by Race/Ethnicity, Utah, 2008-2017

Race/Ethnicity	Cases										Rates per 100,000 Population									
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
AI/AK Native	5	2	6	5	14	20	16	23	22	30	18.5*	-	22.0*	18.3*	51.0	71.8	56.5	79.5	72.8	101.3
Asian	10	4	2	2	3	13	21	22	30	40	19.5*	7.5*	-	-	-	20.6	31.9	31.7	41.0	53
Black	41	26	9	20	58	71	101	137	180	186	167.3	100.4	34.0*	73.4	205.1	242.1	335.3	440.7	555.0	545.6
Hispanic [†]	88	60	35	41	84	171	322	301	466	574	26.6	17.3	9.7	11.1	22.2	44.1	81.3	73.9	110.8	132.2
White	331	236	253	206	317	666	928	884	1,199	1,475	-	-	-	-	-	28.8*	39.7*	37.3*	49.9	60.6
Pacific Islander	2	3	3	3	5	7	18	22	38	49	-	12.8*	12.3*	12.1*	19.7*	26.7	67.1	78.9	130.7	164
Multiple	0	1	0	0	1	3	6	4	6	15	0.0	2.2	0.0	0.0	2.0	5.6	10.8	6.9	9.8	23.5
Other/Unknown	0	9	2	0	1	0	27	167	159	172	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
State Total	477	341	310	277	483	951	1,439	1,560	2,100	2,541	17.9	12.5	11.2	9.8	16.9	32.8	48.9	52.2	68.8	81.9

[†] Includes persons of Hispanic ethnicity regardless of race.
Note: Cases were classified by *Morbidity and Mortality Weekly Report (MMWR)* year.
Sources: Cases - Bureau of Epidemiology, Utah Department of Health; Population Estimates - U.S. Bureau of the Census.

* Use caution in interpreting, the estimate has a relative standard error greater than 30% and does not meet UDOH standards for reliability.
Note: Rate estimates with relative standard errors greater than 50% have been suppressed

Table 9. Gonorrhea Cases and Percent Among Males by Sexual Orientation, Utah, 2009-2017

Year	MSM*		Not MSM*		Unknown		Total
	Cases	Percent	Cases	Percent	Cases	Percent	Cases
2009	182	67.2%	42	15.5%	47	17.3%	271
2010	155	66.0%	39	16.6%	41	17.4%	235
2011	130	61.6%	49	23.2%	32	15.2%	211
2012	180	51.6%	89	25.5%	80	22.9%	349
2013	247	42.7%	226	39.0%	105	18.1%	579
2014	370	42.3%	353	40.3%	152	17.4%	875
2015	450	42.7%	349	33.1%	256	24.3%	1055
2016	537	38.8%	500	36.1%	348	25.1%	1385
2017	635	38.0%	569	34.0%	468	28.0%	1672

*MSM=Men Who Have Sex with Men

Note: Cases were classified by Morbidity and Mortality Weekly Report (MMWR) year.

Source: Bureau of Epidemiology, Utah Department of Health.

Table 10. Gonorrhea Test Results and Percent Positivity by Sex, Utah Public Health Laboratories, Utah, 2008-2017

Year*	Female			Male			Total**		
	Positive Results	Total Results	Percent Positive	Positive Results	Total Results	Percent Positive	Positive Results	Total Results	Percent Positive
2008	72	13,788	0.52%	224	10,463	2.14%	337	25,647	1.31%
2009	34	14,819	0.23%	247	11,525	2.14%	296	26,846	1.10%
2010	26	16,951	0.15%	172	11,392	1.51%	211	28,757	0.73%
2011	24	18,704	0.13%	166	11,690	1.42%	208	30,711	0.68%
2012	62	19,468	0.32%	255	12,645	2.02%	328	32,708	1.00%
2013	174	18,077	0.96%	418	14,384	2.91%	607	32,887	1.85%
2014	224	18,260	1.23%	556	13,915	4.00%	798	32,537	2.45%
2015	167	18,726	0.89%	601	12,819	4.69%	780	31,754	2.46%
2016	254	21,016	1.21%	703	14,794	4.75%	973	36,147	2.69%
2017	310	23,651	1.31%	764	16,735	4.57%	1,095	40,826	2.68%

* Results reported by calendar year.

** Totals include results where the gender is unknown.

Source: Utah Public Health Laboratories, Utah Department of Health.

Table 11. Primary and Secondary Syphilis Cases and Rates by Age Group and Sex, Utah, 2008-2017

Sex	Age Group (years)	Cases										Rates per 100,000 Population									
		2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
M A L E	<1	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	1 to 9	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	10 to 14	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	15 to 19	1	1	0	0	0	0	1	3	6	4	-	-	0.0	0.0	0.0	-	-	4.9*	-	-
	20 to 24	3	3	11	2	6	10	7	7	15	24	-	-	9.6*	-	4.9*	7.9*	5.5*	5.4*	11.5	18.5
	25 to 29	5	9	13	1	10	14	9	15	12	22	4.3*	7.7*	11.0	-	9.1*	13.1	8.4*	13.7	10.4	17.9
	30 to 34	2	10	8	3	9	10	11	8	10	14	-	9.2*	7.2*	-	7.8*	8.6*	9.5*	7.0*	9.0*	12.8
	35 to 39	1	6	10	3	5	12	6	9	13	18	-	6.7*	10.9*	-	5.1*	11.7	5.6*	8.1*	11.3	15.5
	40 to 44	3	1	9	0	4	6	4	7	9	9	-	-	11.3*	0.0	-	6.9*	4.5*	7.6*	9.5*	9.1*
	45 to 49	2	1	3	2	5	5	2	4	5	6	-	-	-	-	6.6	6.6*	-	5.1*	6.0*	7.1*
	50 to 54	4	1	2	1	1	8	7	5	12	5	5.5	-	-	-	-	10.3*	9.1*	6.5*	15.9	6.6*
	55 to 59	2	1	4	1	3	7	2	4	4	9	-	-	-	-	-	9.7*	-	5.4*	5.3*	11.9*
	60 to 64	1	0	2	1	0	2	1	1	0	1	-	0.0	-	-	0.0	-	-	-	0.0	-
65+	0	0	1	0	0	1	0	1	1	1	0.0	0.0	-	0.0	0.0	-	0.0	-	-	-	
Unknown	0	0	0	0	0	0	0	0	0	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Male Total	24	33	63	14	43	75	50	64	87	113	1.8	2.4	4.5	1.0	3.0	5.1	3.4	4.3	5.7	7.2	
F E M A L E	<1	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	1 to 9	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	10 to 14	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	15 to 19	0	0	1	0	0	1	0	1	1	0	0.0	0.0	-	0.0	0.0	-	0.0	-	-	0.0
	20 to 24	0	0	1	0	0	0	1	0	2	3	0.0	0.0	-	0.0	0.0	0.0	-	0.0	-	-
	25 to 29	1	0	0	0	0	0	0	0	0	1	-	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-
	30 to 34	0	0	0	0	0	0	0	1	0	0	0.0	0.0	0.0	0.0	0.0	0.0	-	0.0	0.0	
	35 to 39	0	0	0	0	0	1	0	0	1	0	0.0	0.0	0.0	0.0	0.0	-	0.0	0.0	-	0.0
	40 to 44	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	45 to 49	0	0	0	0	0	0	0	0	1	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-	0.0
	50 to 54	0	0	0	0	0	0	0	0	1	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-	0.0
	55 to 59	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	60 to 64	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
65+	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Unknown	0	0	0	0	0	0	0	0	0	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Female Total	1	0	2	0	0	2	1	2	6	4	0.1	0.0	0.1	0.0	0.0	0.1	0.1	0.1	0.4	0.3	
T O T A L	<1	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	1 to 9	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	10 to 14	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	15 to 19	1	1	1	0	0	1	1	4	7	4	-	-	-	0.0	0.0	-	-	-	2.9*	-
	20 to 24	3	3	12	2	6	10	8	7	17	27	-	-	5.3	-	2.5*	4.0*	3.2*	2.8*	6.7	10.6
	25 to 29	6	9	13	1	10	14	9	15	12	23	2.6*	3.9*	5.7	-	4.6*	6.6	4.2*	6.9	5.3	9.6
	30 to 34	2	10	8	3	9	10	11	9	10	14	-	4.7*	3.7*	-	4.0*	4.4*	4.9*	4.0*	4.5*	6.4
	35 to 39	1	6	10	3	5	13	6	9	14	18	-	3.4*	5.6*	-	2.6*	6.5	2.9*	4.1*	6.2	7.9
	40 to 44	3	1	9	0	4	6	4	7	9	9	-	-	5.8*	0.0	2.4*	3.5*	2.3*	3.9*	4.9*	4.6*
	45 to 49	2	1	3	2	5	5	2	4	6	6	-	-	-	-	3.3*	3.3*	-	2.6*	3.7*	3.6*
	50 to 54	4	1	2	1	1	8	7	5	13	5	-	-	-	-	-	5.1*	4.5*	3.3*	8.6	3.3*
	55 to 59	2	1	4	1	3	7	2	4	4	9	-	-	3.0*	-	-	4.8*	-	-	2.6*	5.8*
	60 to 64	1	0	2	1	0	2	1	1	0	1	-	0.0	-	-	0.0	1.6	-	-	0.0	-
65+	0	0	1	0	0	1	0	1	1	1	0.0	0.0	-	0.0	0.4	0.0	-	-	-	-	
Unknown	0	0	0	0	0	0	0	0	0	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Total Cases	25	33	65	14	43	77	51	66	93	117	0.9	1.2	2.3	0.5	1.5	2.7	1.7	2.2	3.0	3.8	

Note: Cases were classified by *Morbidity and Mortality Weekly Report (MMWR)* year.

Sources: Cases - Bureau of Epidemiology, Utah Department of Health; Population Estimates - National Center for Health Statistics (NCHS) through a collaborative agreement with the U.S. Bureau of the Census.

* Use caution in interpreting, the estimate has a relative standard error greater than 30% and does not meet UDOH standards for reliability.

Note: Rate estimates with relative standard errors greater than 50% have been suppressed

Table 12. Primary and Secondary Syphilis Cases and Rates by Local Health District, Utah, 2008-2017

Local Health District	Cases										Rates per 100,000 Population									
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Bear River	0	0	0	0	2	0	0	1	2	2	0.0	0.0	0.0	0.0	-	0.0	0.0	-	-	-
Central	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Davis	1	1	3	1	1	6	2	5	5	5	-	-	-	-	-	1.9*	-	1.5*	1.5*	1.4*
Salt Lake	22	28	53	9	35	66	39	50	70	86	2.2	2.8	5.1	0.9*	3.3	6.1	3.6	4.5	6.2	7.6
San Juan	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.0	0.0	0.0
Southeastern	0	0	0	0	0	0	0	0	0	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-
Southwest	0	0	2	1	1	0	0	1	5	8	0.0	0.0	-	-	-	0.0	0.0	-	2.2*	3.4*
Summit	0	0	0	0	0	0	0	0	1	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-	0.0
Tooele	1	0	0	0	0	1	1	0	0	1	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	-
TriCounty	0	0	0	0	0	1	0	0	0	1	0.0	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-
Utah	1	1	3	0	3	0	2	6	6	8	-	-	-	0.0	-	0.0	-	1.0*	1.0*	1.3*
Wasatch	0	0	0	0	0	0	1	0	0	0	0.0	0.0	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0
Weber-Morgan	0	3	2	3	1	3	5	3	4	4	0.0	-	-	-	-	-	2.0*	1.2	1.5	1.5
Unknown	0	0	2	0	0	0	1	0	0	1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
State Total	25	33	65	14	43	77	51	66	93	117	0.9	1.2	2.3	0.5	1.5	2.7	1.7	2.2	3.0	3.8

Note: Cases were classified by *Morbidity and Mortality Weekly Report (MMWR)* year. San Juan County has been an independent LHD since 2015. Prior to 2015, it was served by the Southeastern Utah LHD
 Sources: Cases - Bureau of Epidemiology, Utah Department of Health; Population Estimates - National Center for Health Statistics (NCHS) through a collaborative agreement with the U.S. Bureau of the Census.
 * Use caution in interpreting, the estimate has a relative standard error greater than 30% and does not meet UDOH standards for reliability.
 Note: Rate estimates with relative standard errors greater than 50% have been suppressed

Table 13. Primary and Secondary Syphilis Cases and Rates by Race/Ethnicity, Utah, 2008-2017

Race/Ethnicity	Cases										Rates per 100,000 Population									
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
AI/AK Native	2	0	0	1	1	1	0	0	2	3	-	0.0	0.0	-	-	0.0	0.0	-	-	-
Asian	0	0	0	0	2	3	1	1	1	1	0.0	0.0	0.0	0.0	-	-	-	-	-	-
Black	2	0	2	0	1	3	6	2	4	7	-	0.0	-	0.0	-	-	19.9*	-	-	20.5*
Hispanic†	2	7	9	1	3	9	8	20	16	23	-	2.0*	2.5*	-	-	2.3*	2.0*	4.9	3.8	5.3
White	19	25	53	12	36	60	34	43	67	77	-	-	-	-	-	-	-	-	-	-
Pacific Islander	0	1	1	0	0	0	1	0	1	1	0.0	-	-	0.0	0.0	0.0	-	0.0	-	-
Multiple	0	0	0	0	0	0	1	0	2	3	0.0	0.0	0.0	0.0	0.0	0.0	1.8	0.0	3.3	4.7
Other/Unknown	0	0	0	0	0	1	0	0	0	2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
State Total	25	33	65	14	43	77	51	66	93	117	0.9	1.2	2.3	0.5	1.5	2.7	1.7	2.2	3.0	3.8

† Includes persons of Hispanic ethnicity regardless of race.
 Note: Cases were classified by *Morbidity and Mortality Weekly Report (MMWR)* year.
 Sources: Cases - Bureau of Epidemiology, Utah Department of Health; Population Estimates - U.S. Bureau of the Census.
 * Use caution in interpreting, the estimate has a relative standard error greater than 30% and does not meet UDOH standards for reliability.
 Note: Rate estimates with relative standard errors greater than 50% have been suppressed

Table 14. Primary and Secondary Syphilis Cases and Percent Among Males by Sexual Orientation, Utah, 2009-2017

Year	MSM*		Not MSM*		Unknown		Total
	Cases	Percent	Cases	Percent	Cases	Percent	Cases
2009	27	81.8%	1	3.0%	5	15.2%	33
2010	59	93.7%	0	0.0%	4	6.3%	63
2011	13	92.9%	0	0.0%	1	7.1%	14
2012	40	93.0%	2	4.7%	1	2.3%	43
2013	69	92.0%	1	1.3%	5	6.7%	75
2014	44	88.0%	4	8.0%	2	4.0%	50
2015	52	81.3%	6	9.4%	6	9.4%	64
2016	77	88.5%	6	6.9%	4	4.6%	87
2017	92	81.4%	12	10.6%	9	8.0%	113

*MSM=Men Who Have Sex with Men

Note: Cases were classified by Morbidity and Mortality Weekly Report (MMWR) year.

Source: Bureau of Epidemiology, Utah Department of Health.

Table 15. Chlamydia Cases and Rates per 100,000 Population by Age and Sex in Adolescents and Young Adults, Utah, 2017

Age	Males		Females		Total	
	Cases	Rates	Cases	Rates	Cases	Rates
15	27	105.3	100	411.2	127	254.1
16	62	241.6	231	949.6	293	586.2
17	108	417.0	357	1,468.4	465	926.1
18	144	594.3	656	2,856.0	800	1,694.9
19	193	882.2	676	2,950.9	869	1,940.4
20	236	1,130.6	661	2,698.3	897	1,977.0
21	232	978.7	590	2,422.4	822	1,710.3
22	233	835.2	463	1,866.3	696	1,320.5
23	208	712.6	401	1,573.7	609	1,114.0
24	203	721.9	382	1,543.6	585	1,106.5

Note: Cases were classified by *Morbidity and Mortality Weekly Report (MMWR)* year.

Sources: Cases - Bureau of Epidemiology, Utah Department of Health; Population Estimates - National Center for Health Statistics (NCHS) through a collaborative agreement with the U.S.

Table 16. Gonorrhea Cases and Rates per 100,000 Population by Age and Sex in Adolescents and Young Adults, Utah, 2017

Age	Males		Females		Total	
	Cases	Rates	Cases	Rates	Cases	Rates
15	3	-	12	49.3	15	30.0
16	12	46.8	21	86.3	33	66.0
17	20	77.2	35	144.0	55	109.5
18	38	156.8	48	209.0	86	182.2
19	47	214.8	39	170.2	86	192.0
20	55	263.5	47	191.9	102	224.8
21	77	324.8	36	147.8	113	235.1
22	88	315.4	48	193.5	136	258.0
23	66	226.1	41	160.9	107	195.7
24	71	252.5	39	157.6	110	208.1

Note: Cases were classified by *Morbidity and Mortality Weekly Report (MMWR)* year.

Sources: Cases - Bureau of Epidemiology, Utah Department of Health; Population Estimates - National Center for Health Statistics (NCHS) through a collaborative agreement with the U.S. Bureau of the Census.

* Use caution in interpreting, the estimate has a relative standard error greater than 30% and does not meet UDOH standards for reliability.

Note: Rate estimates with relative standard errors greater than 50% have been suppressed