Sexually Transmitted Infections

2018 ANNUAL REPORT

MARYLAND DEPARTMENT OF HEALTH
Center for STI Prevention

Center for STI Prevention
Maryland Department of Health
500 N Calvert St, 5th Floor

May 2019

Dear Marylanders,

The Maryland Department of Health (MDH) Center for STI Prevention (CSTIP) is pleased to present the 2018 Maryland STI Annual Report. This report aims to inform policymakers, health care providers and the public on the impact of three reportable sexually transmitted infections (STIs): chlamydia, gonorrhea and syphilis. CSTIP collects information on these STIs and monitors their trends over time in order to: (a) measure the burden of infections; (b) design effective prevention programs to address sexual health disparities; (c) educate health care providers and the public about local infection rates; and, (d) advocate for resources for people disproportionately affected by STIs.

Chlamydia, gonorrhea and syphilis rates have been increasing for the past five years nationally and in Maryland. The increasing public health, medical and economic burden of STIs is cause for concern. The good news is that bacterial STIs like chlamydia, gonorrhea and syphilis are preventable through routine screening and timely treatment.

While the exact causes for the increases in chlamydia, gonorrhea and syphilis across the country are unknown, they are likely multi-factorial, and reflect in part, a public health infrastructure that has faced shrinking resources over a period of years. CSTIP is addressing these increases by collaborating with other Maryland Department of Health (MDH) programs and enhancing partnerships with national, state and local agencies, health care providers, medical associations and policy makers. We hope the information in this report will help inform partner agencies in the design and implementation of state and local interventions to improve the sexual and reproductive health of all Marylanders.

CSTIP would like to recognize the efforts of local health department personnel throughout the state who play a critical role in protecting the sexual and reproductive health of Marylanders through case investigation, data collection, assuring and providing appropriate STI screening and treatment and conducting community outreach and education.

Sincerely,

Kenneth Ruby III, LCSW-C, MBA
Chief, Center for STI Prevention

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Maryland Department of Health
Center for STI Prevention

Mission
The mission of the Center for STI Prevention (CSTIP) is to prevent and reduce sexually transmitted infections (STIs) in Maryland. Preventing STIs and their complications is essential for improving both sexual and reproductive health.

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*Staff listed include existing personnel who contributed to the 2018 report.

Background

Reporting Requirements

The regulations governing reporting were last updated effective October 1, 2008. The full text of the regulations can be found in COMAR (online at http://www.dsd.state.md.us/COMAR/ComarHome).

Maryland's Confidential Morbidity Report Form can be found here: http://bit.ly/MarylandMorbForm.

Chancroid:

- Laboratory evidence of *Haemophilus ducreyi* must be reported within one working day

Chlamydia:

- Laboratory evidence of *Chlamydia trachomatis*, including lymphogranuloma venereum (LGV), must be reported within one working day

Gonorrhea:

- Laboratory evidence of *Neisseria gonorrhoeae* must be reported within one working day

Syphilis:

- Laboratory evidence of *Treponema pallidum* must be reported within one working day and providers and laboratories should submit any treponemal or non-treponemal results that are qualitative or quantitative if the results are:
    - Positive
    - Reactive
    - Inconclusive
    - Any negative or non-reactive results associated with the positive, reactive or inconclusive results

Sources of Data

Health care providers and laboratories are legally required to report confirmed cases of chlamydia, gonorrhea and syphilis to their local health departments. Information on STI diagnoses, including residence at the time of diagnosis, age, race/ethnicity, sex at birth, current gender, HIV coinfection and associated test results are from CSTIP's STI surveillance system, Patient Reporting Investigation Surveillance Manager (PRISM). National data are from the 2017 Centers for Disease Control and Prevention (CDC) Surveillance Report and the CDC website. Population data are from the Maryland Department of Planning. Incidence rates for 2018 are calculated using 2017 population estimates.

Race Reporting

Individuals listed in the "Other" racial group include Native Hawaiian/Pacific Islander, American Indian/Alaska Natives and Multi-Racial groups. Beginning in 2017, race reporting variables were changed to allow for cases to have multiple race responses (such as selecting both Black/African-American and White) in addition to self-identifying as "Multi-Racial." As a result, the sharp increase in the number of STI cases classified as "Other" between 2016 and 2018 may be an artifact of changing data collection methodology rather than a true increase in morbidity among this subpopulation. These changes should be taken into consideration when interpreting race-specific case data.

MDH Non-Discrimination Statement

MDH complies with applicable federal civil rights laws and does not discriminate on the basis of race, color, national origin, age or disability in its health programs and activities.

Maryland Profile: Executive Summary

The state of Maryland is comprised of 24 jurisdictions (23 counties and the city of Baltimore), each of which has its own local health department.

CSTIP is responsible for conducting surveillance of STIs in Maryland, 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 among those impacted. Additionally, CSTIP provides epidemiological, technical and programmatic consultation services to local health departments, health care providers and organizations throughout the state to increase public awareness and reduce transmission of STIs.

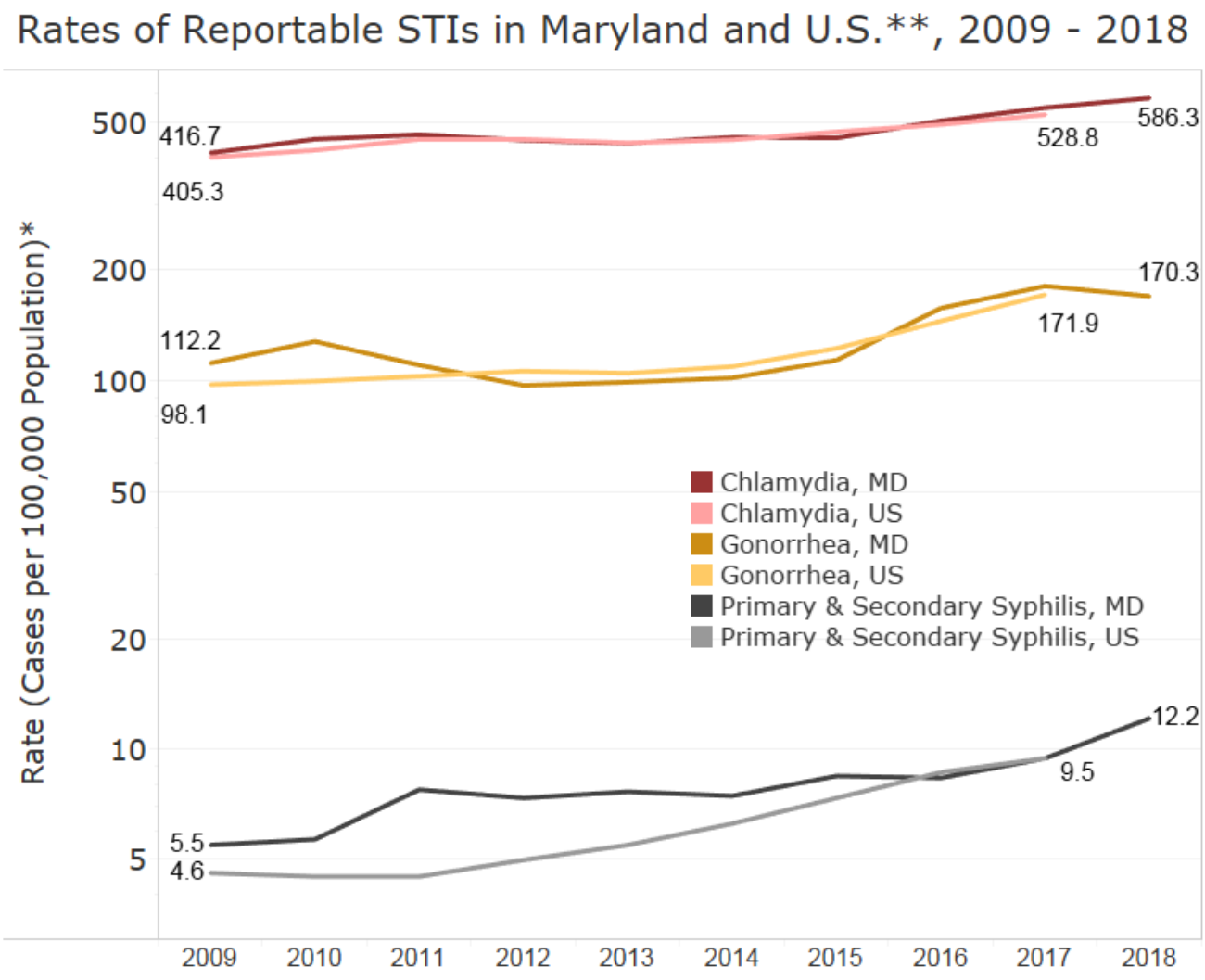
CSTIP monitors reported cases of chlamydia, gonorrhea and syphilis. While there are many differences in the impact of these infections across the state, every jurisdiction is affected. Furthermore, STIs are serious infections that can lead to severe and life-long health problems, including scarring and inflammation of the reproductive organs, pelvic inflammatory disease, infertility and complications during pregnancy.[1] Thus, timely screening and treatment of women of childbearing age is especially important.

While all STIs that CSTIP monitors can cause complications during pregnancy, syphilis is the most concerning because untreated pregnant women are at higher risk for having a miscarriage or stillbirth. For untreated newborns, congenital syphilis can affect the skin, bones, eyes, ears, heart and brain. This can lead to developmental problems and even death shortly after delivery.[2] This is especially relevant in Maryland, which ranked in the top seven states in the country for congenital syphilis rates between 2012 and 2017.[3]

STI Cases and Rates in Maryland, 2018

	Chlamydia		Gonorrhea		Primary & Secondary Syphilis		Early Latent Syphilis		Late/Unknown Duration Syphilis		Congenital Syphilis	
County	**Cases**	**Rates**	**Cases**	**Rates**	**Cases**	**Rates**	**Cases**	**Rates**	**Cases**	**Rates**	**Cases**	**Rates**
Allegany	242	337.9	41	57.3	1	1.4	0	0.0	2	2.8	0	0.0
Anne Arundel	2,316	404.0	544	94.9	27	4.7	33	5.8	64	11.2	2	29.0
Baltimore County	4,463	536.1	1,309	157.2	103	12.4	84	10.1	135	16.2	4	40.7
Calvert	269	294.0	68	74.3	3	3.3	4	4.4	4	4.4	0	0.0
Caroline	83	250.1	20	60.3	1	3.0	2	6.0	0	0.0	0	0.0
Carroll	407	242.6	93	55.4	7	4.2	3	1.8	8	4.8	0	0.0
Cecil	336	327.0	91	88.6	2	1.9	4	3.9	4	3.9	0	0.0
Charles	1,103	690.7	258	161.6	14	8.8	14	8.8	19	11.9	0	0.0
Dorchester	206	640.5	64	199.0	1	3.1	0	0.0	1	3.1	0	0.0
Frederick	844	334.9	131	52.0	13	5.2	9	3.6	23	9.1	0	0.0
Garrett	38	130.0	6	20.5	0	0.0	0	0.0	0	0.0	0	0.0
Harford	973	385.9	191	75.7	5	2.0	15	5.9	15	5.9	0	0.0
Howard	1,170	364.4	256	79.7	25	7.8	23	7.2	27	8.4	0	0.0
Kent	73	376.6	7	36.1	0	0.0	1	5.2	0	0.0	0	0.0
Montgomery	4,410	416.5	660	62.3	66	6.2	94	8.9	122	11.5	2	15.8
Prince George's	8,013	877.9	2,020	221.3	153	16.8	242	26.5	247	27.1	4	32.2
Queen Anne's	124	249.1	9	18.1	2	4.0	2	4.0	1	2.0	0	0.0
Saint Mary's	504	447.3	165	146.4	5	4.4	4	3.6	3	2.7	0	0.0
Somerset	187	721.5	69	266.2	2	7.7	0	0.0	0	0.0	0	0.0
Talbot	103	277.6	16	43.1	1	2.7	1	2.7	0	0.0	0	0.0
Washington	573	380.5	242	160.7	22	14.6	17	11.3	11	7.3	1	61.0
Wicomico	835	811.3	388	377.0	5	4.9	8	7.8	6	5.8	0	0.0
Worcester	197	381.1	61	118.0	2	3.9	3	5.8	1	1.9	0	0.0
MD Counties	27,469	504.9	6,709	123.3	460	8.5	563	10.3	693	12.7	13	20.4
Baltimore City	8,013	1,310.1	3,596	587.9	277	45.3	294	48.1	220	36.0	16	201.6
MD State	35,482	586.3	10,305	170.3	737	12.2	857	14.2	913	15.1	29	40.5

Rates = Cases per 100,000 Population;
Congenital syphilis rates calculated per 100,000 live births (2017 MD Dept of Planning Annual Report)



*Logarithmic Scale
**2018 national data has not yet been released

- The total number of cases of chlamydia, gonorrhea and primary and secondary syphilis reported in Maryland increased 53 percent from 2009 to 2018
- From 2009 to 2018, the rate of primary and secondary syphilis infections increased from 5.5 cases per 100,000 to 12.2 cases per 100,000, a 222 percent increase overall
- The increasing rate of STIs observed in Maryland over the past 10 years mirrors the increases occurring nationwide

Chlamydia

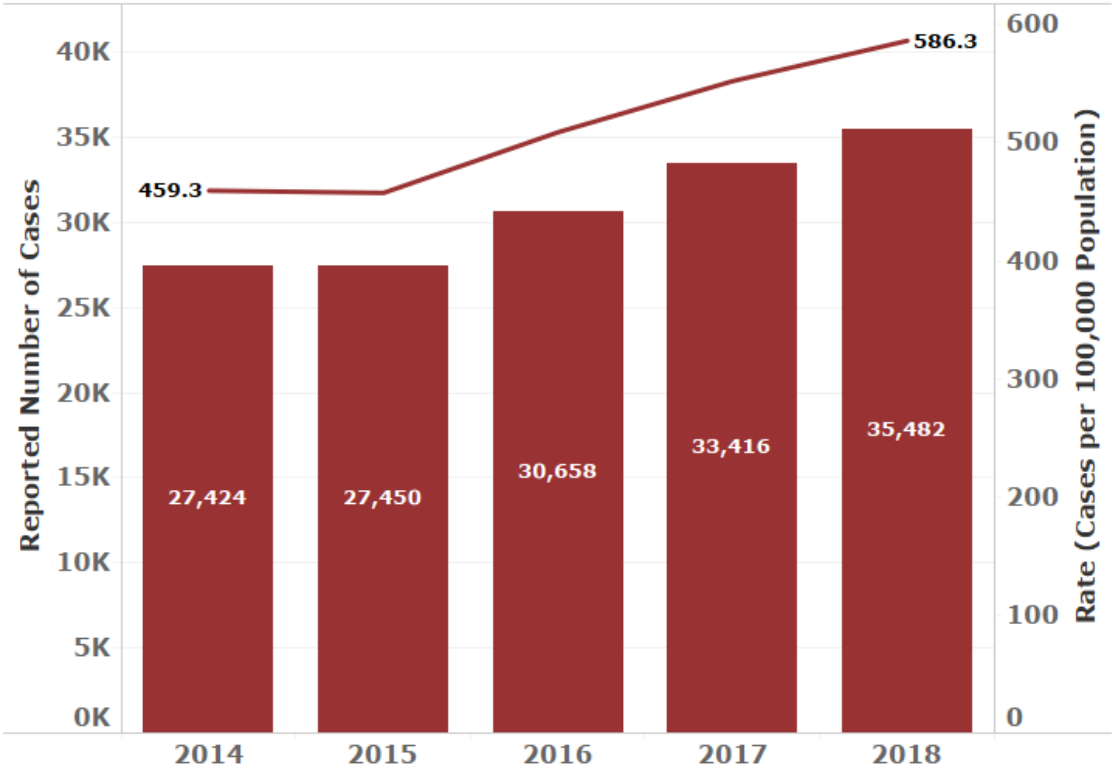
Chlamydia is a bacterial infection and the most common reportable disease in the United States. According to the CDC, there were 1,708,569 cases of chlamydia reported in 2017. Although chlamydia is easy to diagnose and treat, it usually produces no symptoms. Therefore, many infections go undetected and the number of reported cases is likely a significant underestimate of actual cases. If infected individuals are not screened, chlamydia infections go undiagnosed, unreported and untreated, furthering the spread of infection within the community.

Women are at greatest risk for complications associated with chlamydia because the infection is usually asymptomatic and untreated infections can lead to pelvic inflammatory disease (PID), which is a major cause of chronic pelvic pain, infertility and ectopic pregnancy. Pregnant women infected with chlamydia can pass the infection to their infants during childbirth which can result in blindness and pneumonia for the newborn.[4]

Although young people, especially young women, experience more chlamydia infections than those in older age groups, every sexually active person is at risk for contracting chlamydia. The CDC recommends annual screenings for chlamydia in all sexually active females 25 years or younger and in older women with additional risk factors such as new or multiple sex partners or a partner who has a sexually transmitted infection. Sexually active men who have sex with men (MSM) should be screened at least once a year.[5]

Maryland ranked 15th highest in the nation for chlamydia infection rate in 2017.[6]

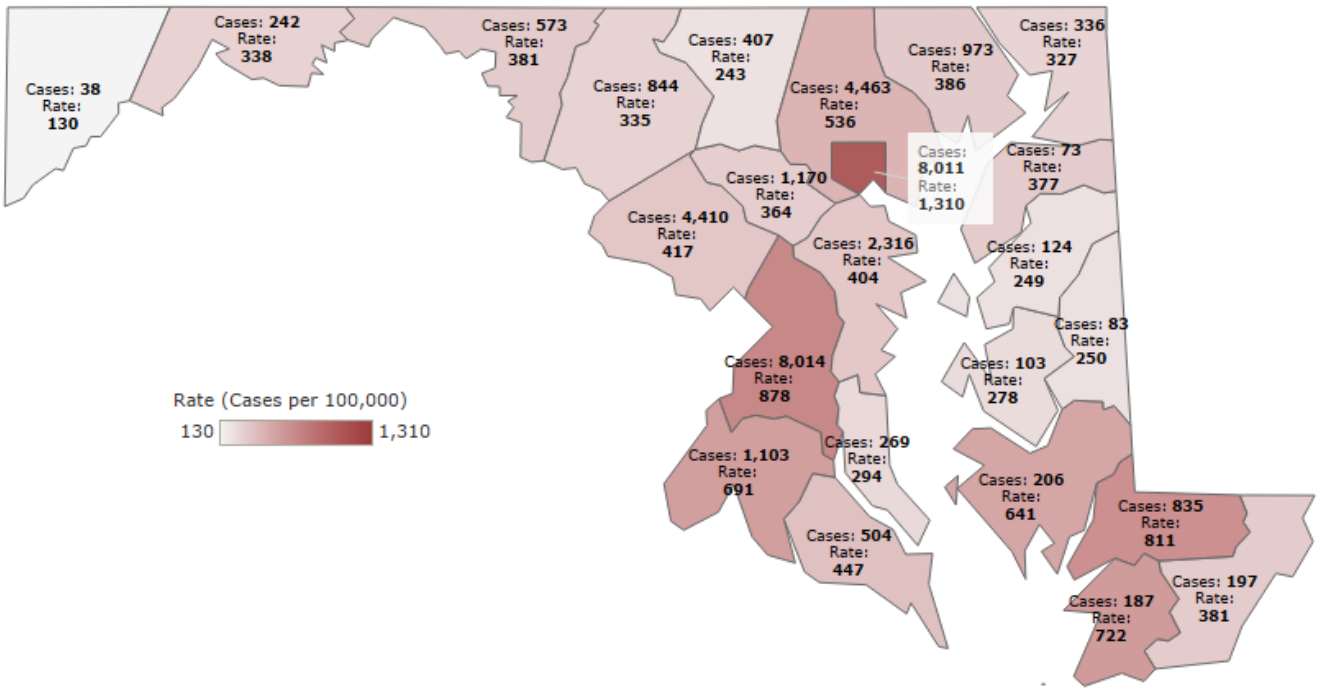
Chlamydia - Reported Cases and Rates, Maryland, 2014 - 2018



- 35,482 cases of chlamydia were reported to MDH in 2018, a six percent increase from 2017

- From 2014 to 2018, the rate of chlamydia infections increased from 459.3 cases per 100,000 to 586.3 cases per 100,000, a 28 percent increase overall

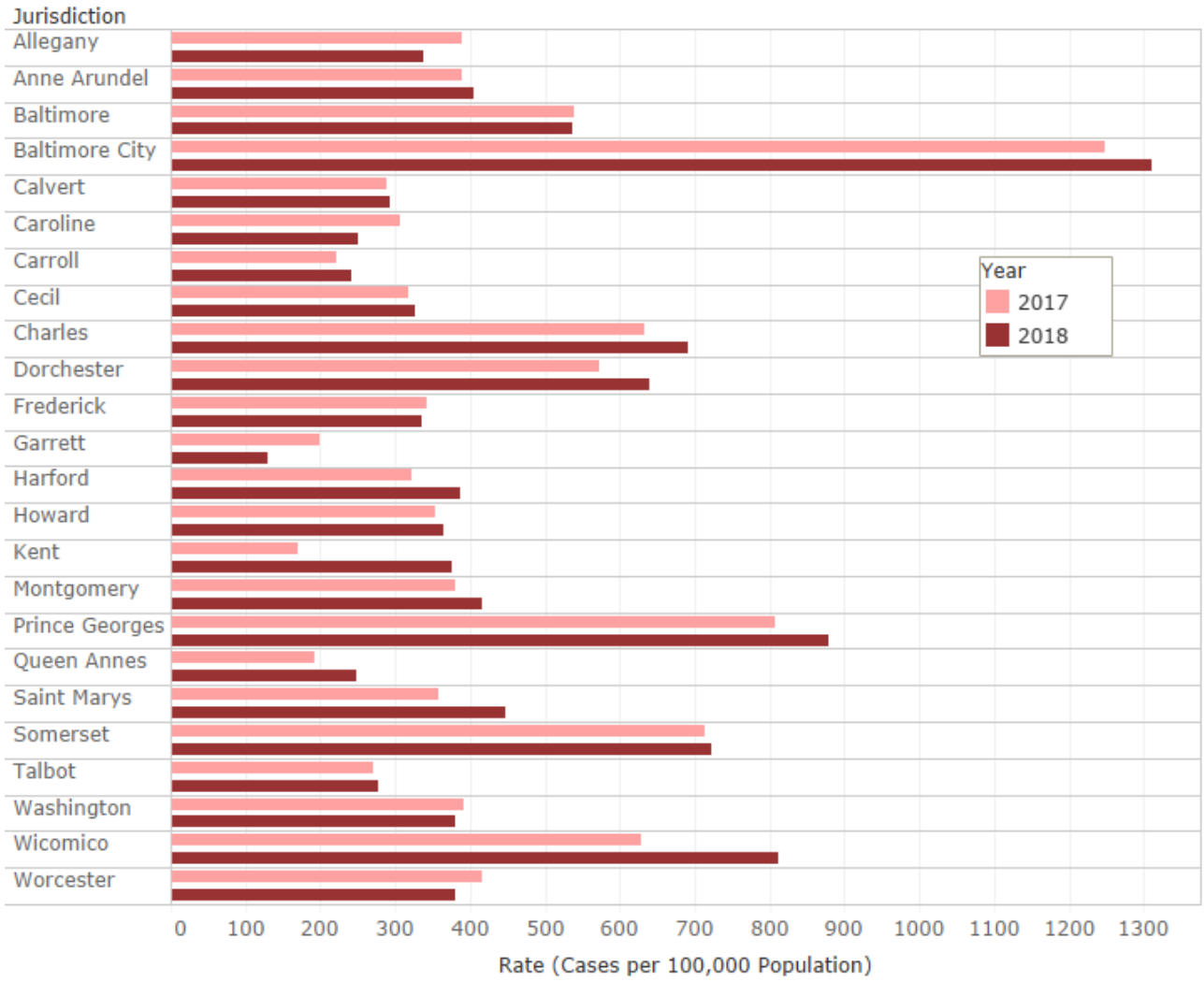
Chlamydia - Reported Cases and Rates by Jurisdiction, Maryland, 2018



- Baltimore City reported the most cases and had the highest rate of chlamydia among Maryland jurisdictions in 2018

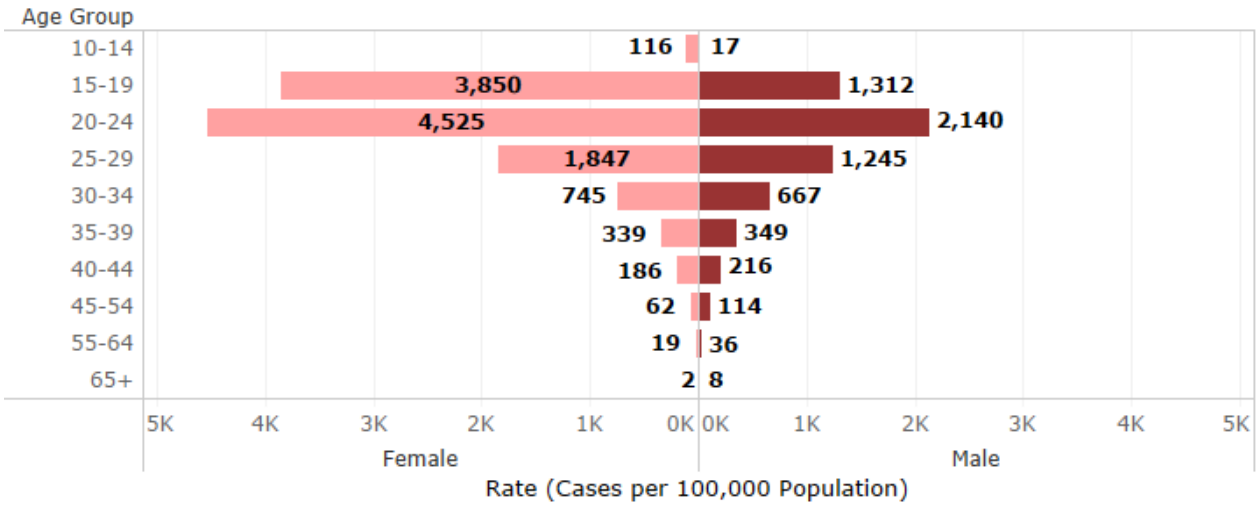
- Chlamydia cases were reported from every jurisdiction in Maryland in 2018, with the highest rates reported in the DC and Baltimore metropolitan areas, as well as Maryland's lower shore region

Chlamydia - Rates of Reported Cases by Jurisdiction, Maryland, 2017 - 2018



- Chlamydia rates increased between 2017 and 2018 in 17 of 24 jurisdictions in Maryland
- Kent County recorded the highest increase in chlamydia rates (121 percent) from 2017 to 2018
- The greatest decrease in chlamydia rates was in Garrett County (34 percent)

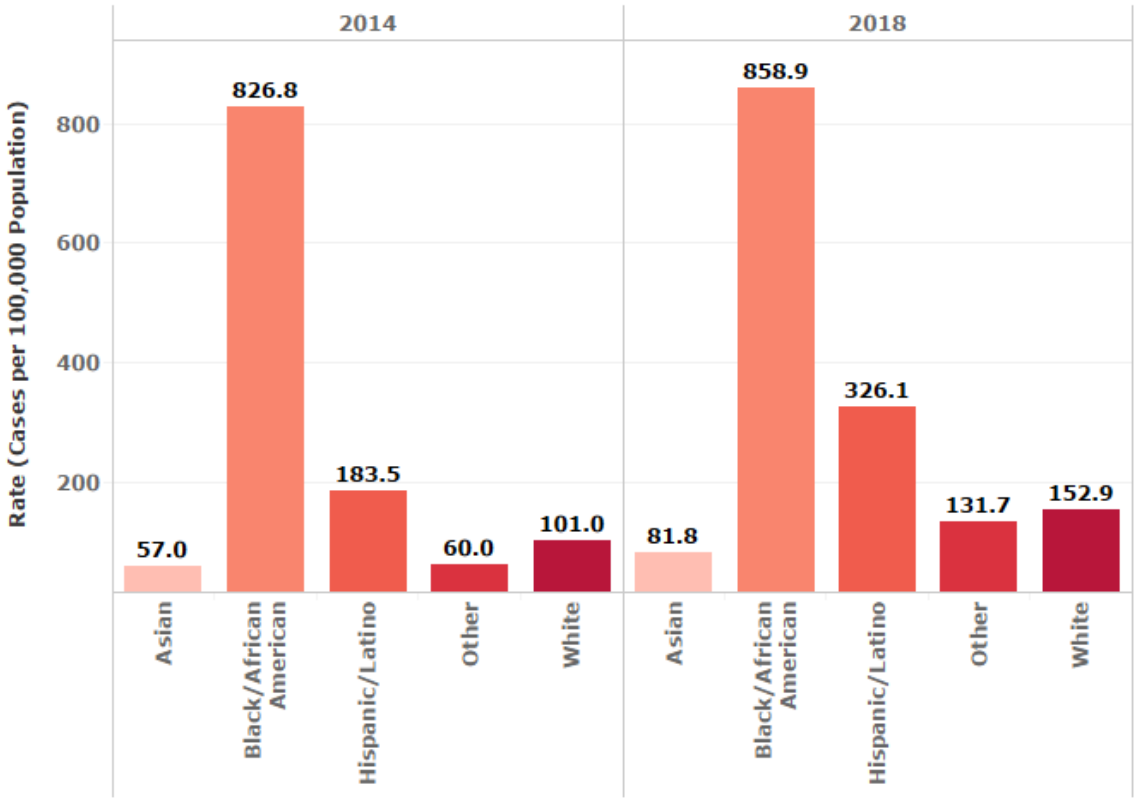
Chlamydia - Rates of Reported Cases by Age and Sex, Maryland, 2018



- Females under the age of 35 are disproportionately affected by chlamydia in Maryland, although males over 35 had higher chlamydia rates than females over 35 in 2018

- The highest rate of chlamydia overall was reported among females aged 20-24 (4,525 cases per 100,000 population)

Chlamydia - Rates of Reported Cases by Race*, Maryland, 2014 - 2018



*Excludes cases with unknown race

- The rate of chlamydia infection increased for every racial group in Maryland between 2014 and 2018
- Black residents continued to have the highest rate of chlamydia infection among racial groups in Maryland in 2018, at 858.9 cases per 100,000 population

Gonorrhea

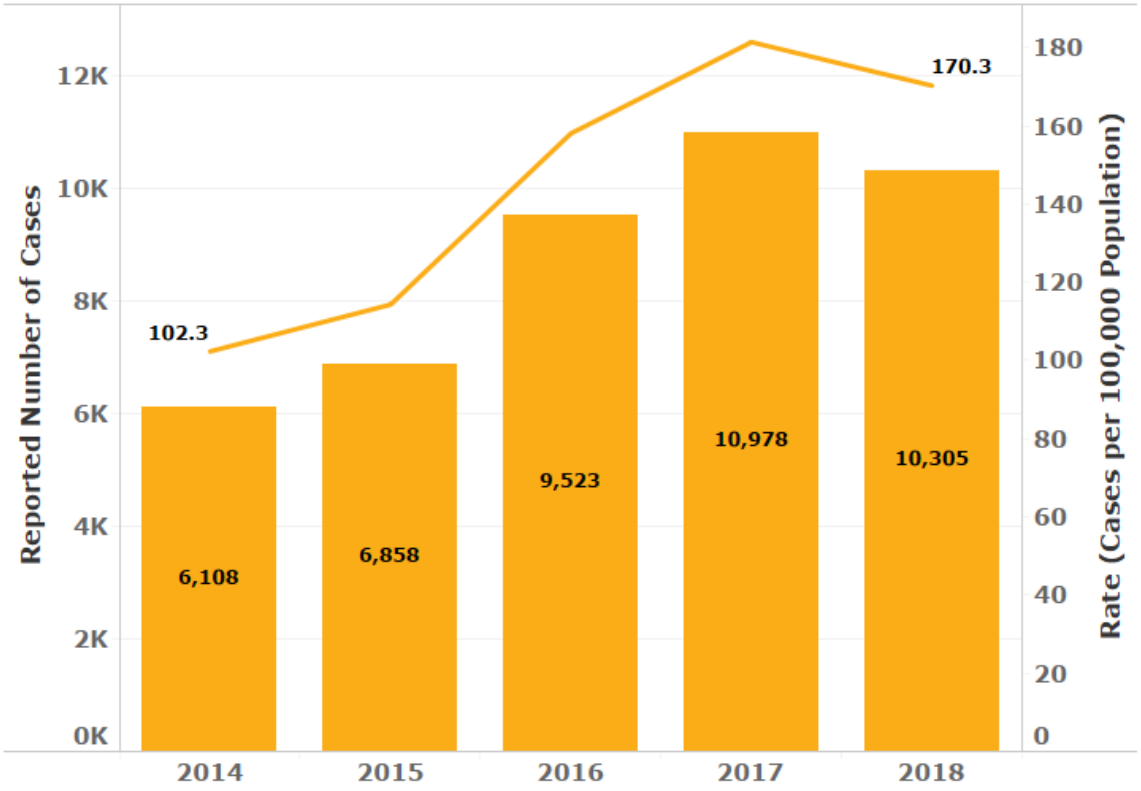
Gonorrhea is an infection cause by the *Neisseria gonorrhoeae* bacteria which usually infects the reproductive tracts and urethra in women and men. However, infections of the mouth, throat and rectum (collectively referred to as extragenital infections) are also possible. Though not as common as chlamydia, gonorrhea is the second most frequently reported infectious disease nationwide, with 555,608 cases reported in 2017. This number was likely half the actual number of infections as infected individuals are frequently asymptomatic and therefore remain undiagnosed.[7]

If untreated, gonorrhea can cause serious complications in both men and women. Like chlamydia, gonorrhea can affect the uterus and fallopian tubes and cause PID in women. PID can lead to chronic pelvic pain and increase the risk of infertility or ectopic pregnancy. Complications from gonorrhea can also cause epididymitis in men and, in rare cases, infertility. While gonorrhea typically affects the mucosa, in rare instances the infection spreads to the bloodstream. Disseminated gonococcal infection usually requires consultation with an infectious disease specialist and hospitalization.[8]

Sexually active individuals should be tested for gonorrhea even if they do not have any symptoms. Extragenital testing is important for those who engage in oral and/or anal sexual contact. Rectal gonorrhea infections are asymptomatic 85 percent of the time and urine-only STI testing misses 70-80 percent of infections in MSM.[9] CDC recommends annual testing for sexually active women younger than 25 and older women with risk factors such as new or multiple partners, anonymous sex partners or a partner who has a sexually transmitted infection. Individuals diagnosed with gonorrhea should also be tested for other STIs.[5] Extragenital testing for gonorrhea should be offered to anyone who reports anal or oral sexual activity, not just MSM.

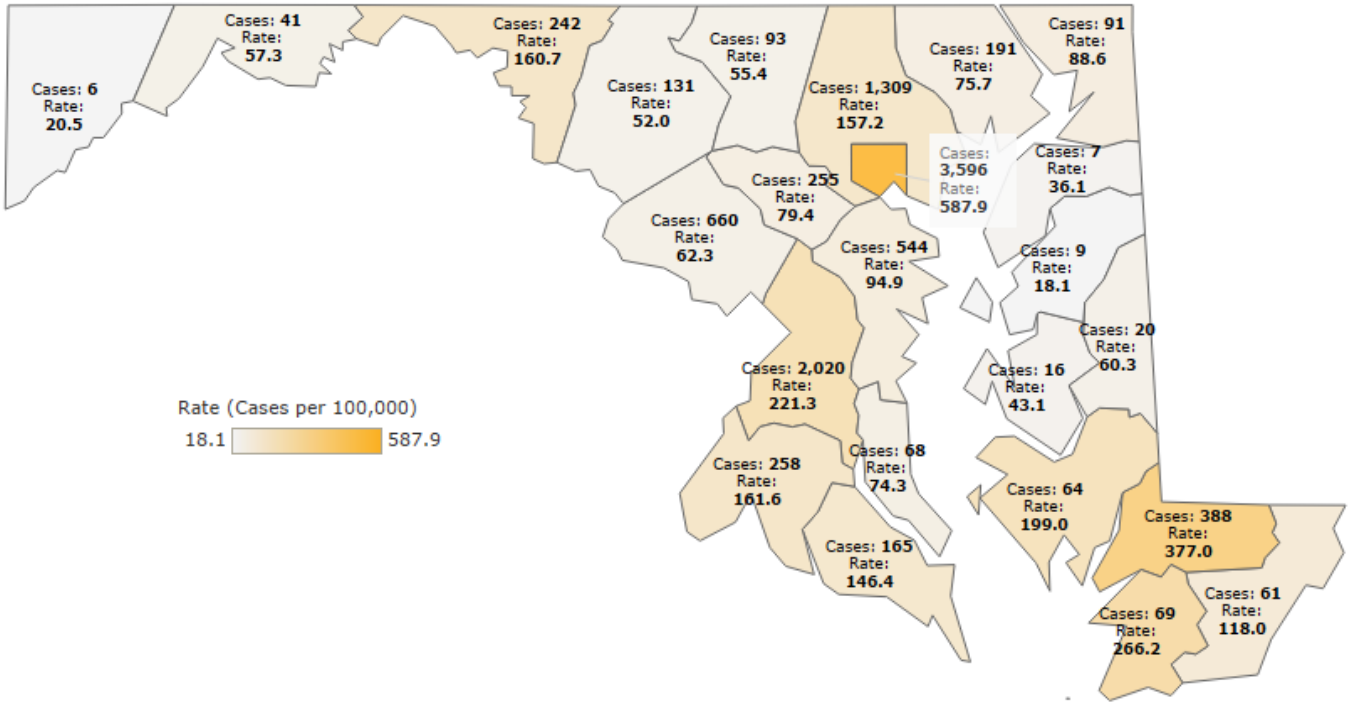
Maryland ranked 18th highest in the nation for gonorrhea infection rate in 2017.[10]

Gonorrhea - Reported Cases and Rates, Maryland, 2014 - 2018



- 10,305 cases of gonorrhea were reported to MDH in 2018, a six percent decrease from 2017
- From 2014 to 2017, the rate of gonorrhea infections increased from 102.3 cases per 100,000 to 181.4 cases per 100,000, a 77 percent increase overall
- Despite the decrease in 2018, the current rate of gonorrhea in Maryland is still 66 percent higher than in 2014

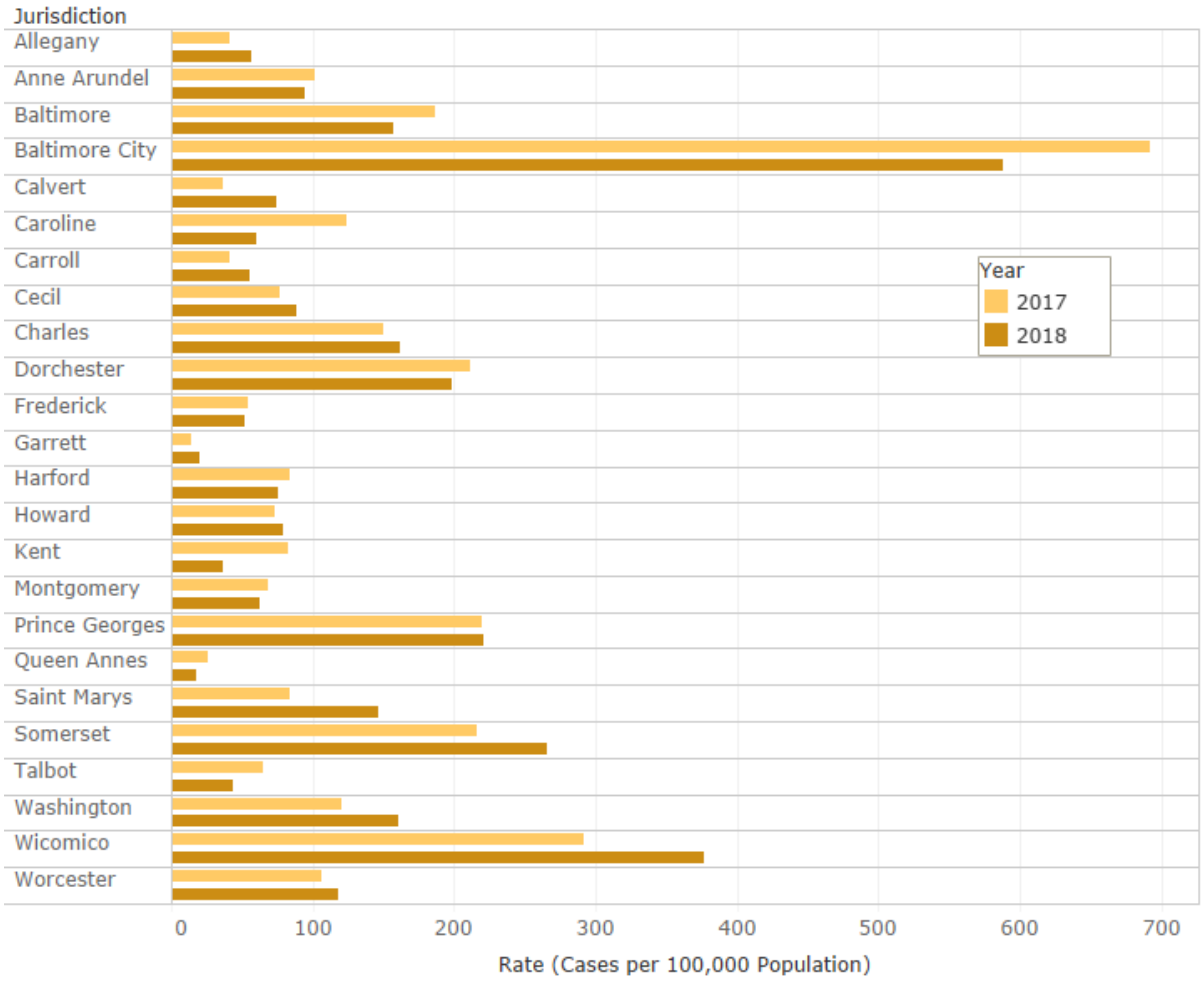
Gonorrhea - Reported Cases and Rates by Jurisdiction, Maryland, 2018



- Baltimore City reported the most cases and had the highest rate of gonorrhea among Maryland jurisdictions in 2018

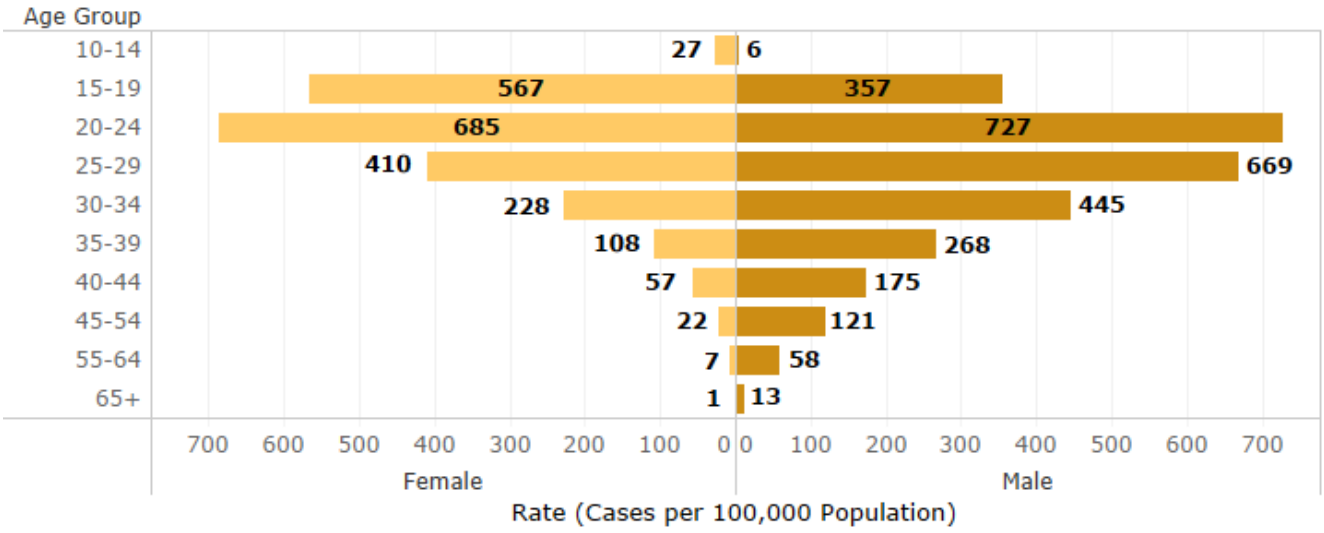
- Gonorrhea cases were reported from every jurisdiction in Maryland in 2018, with the highest rates reported in the DC and Baltimore metropolitan areas, as well as Maryland's lower shore region

Gonorrhea - Rates of Reported Cases by Jurisdiction, Maryland, 2017 - 2018



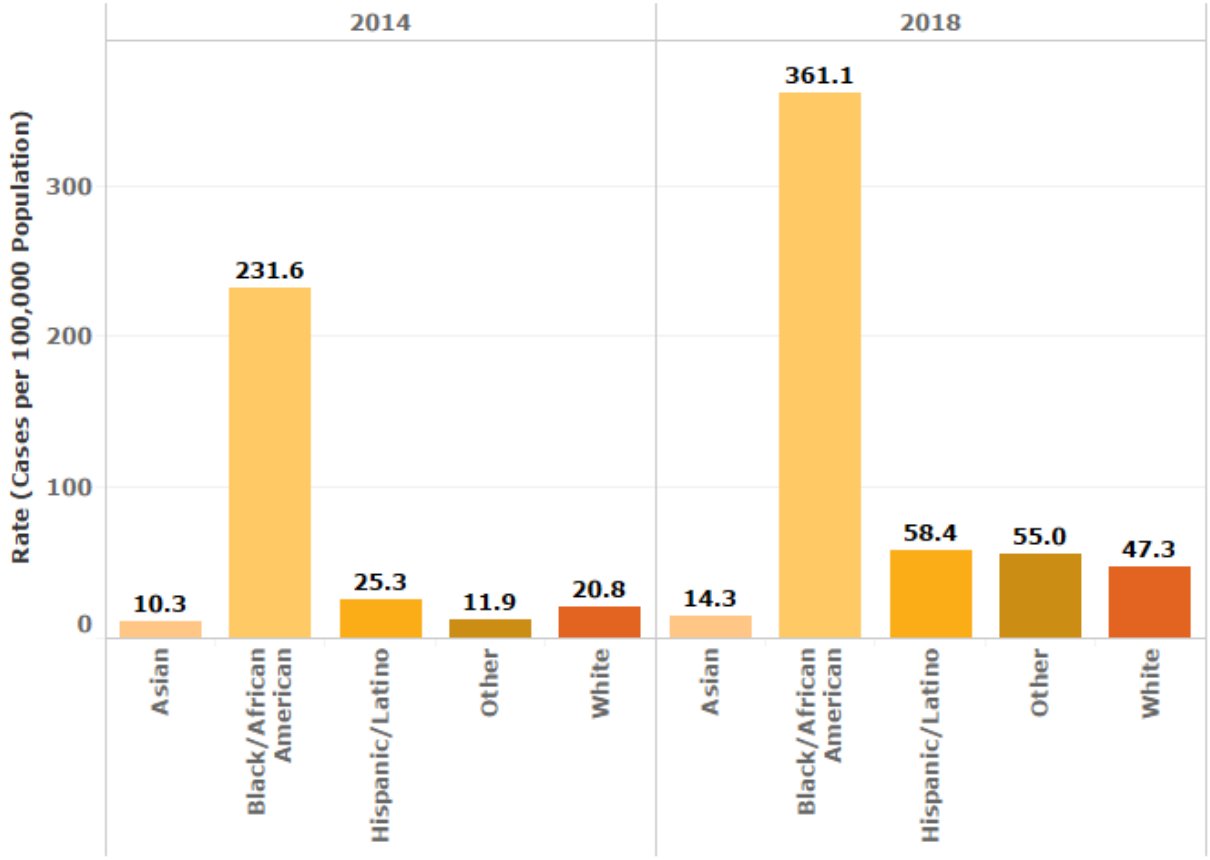
- Gonorrhea rates increased between 2017 and 2018 in 13 of 24 jurisdictions in Maryland; however, many of the most populous counties experienced decreases in gonorrhea rates

Gonorrhea - Rates of Reported Cases by Age and Sex, Maryland, 2018



- Gonorrhea rates are highest among individuals between the ages of 20 and 24
- Females under the age of 20 have higher rates than males, but for all age groups 20 and older, males have higher rates
- The highest rate of gonorrhea overall was reported among males aged 20-24 (727 cases per 100,000 population)

Gonorrhea - Rates of Reported Cases by Race*, Maryland, 2014 - 2018



*Excludes cases with unknown race

- Black residents continued to have the highest rate of gonorrhea infection among racial groups in Maryland in 2018, at 361.1 cases per 100,000 population
- Gonorrhea rates increased for all racial groups from 2014-2018, though black residents saw the largest increase (129.5 cases per 100,000)

Syphilis

Syphilis is a bacterial STI that can remain dormant for years. Syphilis has been called "The Great Imitator" because it has symptoms that mimic those of many other diseases. The progression of the infection can last weeks, months or years. Primary and secondary (P&S) syphilis are the infectious stages of syphilis, although pregnant women can transmit the infection to their unborn babies during any stage of infection. There were 30,644 P&S syphilis cases reported nationally in 2017. Initial symptoms include painless chancres or sores that can be in or around the genitals, anus or mouth. Syphilis is transmitted from person to person by direct contact with a syphilitic chancre.[11]

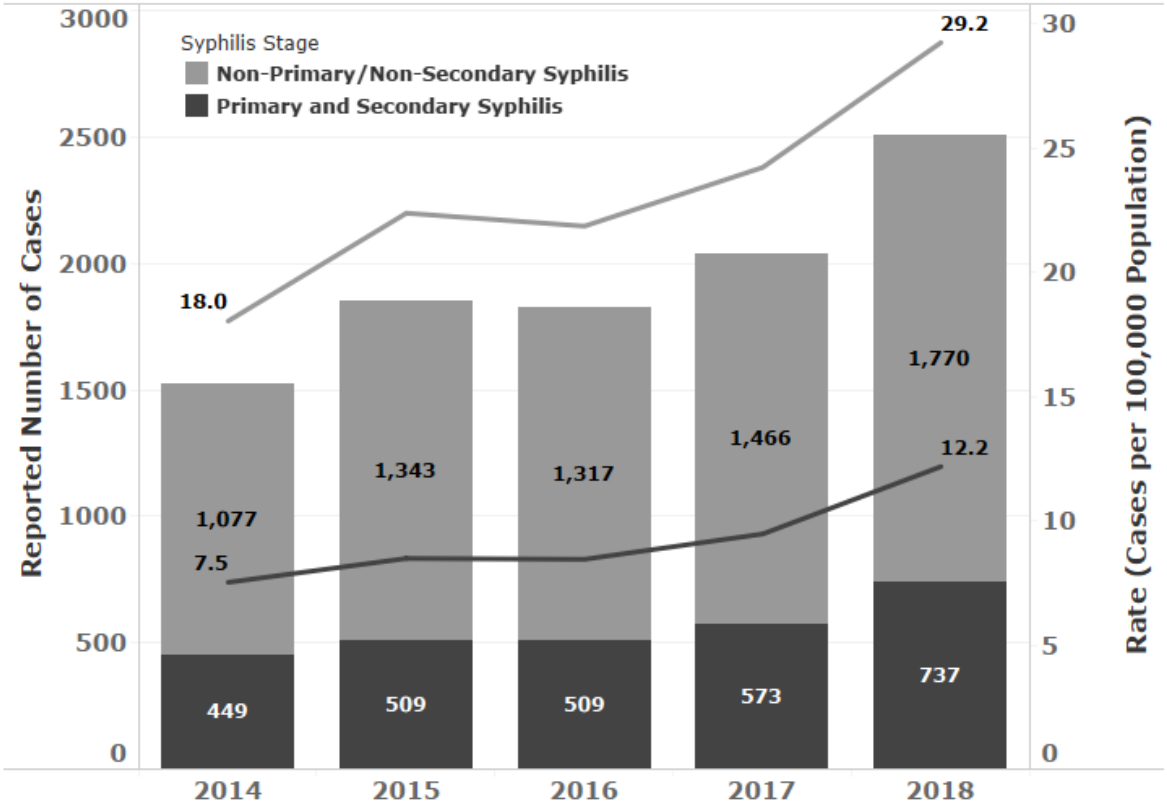
The majority of syphilis diagnoses are among men, only one out of 10 reported infections are among women. In Maryland, 76 percent of P&S syphilis infections reported in men were among MSM. Over half of reported infections in men are among black MSM. Half of all cases of P&S syphilis in Maryland are under 30 years old.

Later stages of syphilis beyond P&S are important to track as well, as these cases contribute to overall syphilis morbidity in Maryland. Though not infectious or symptomatic, latent syphilis that goes untreated can lead to major health complications later in life. When syphilis invades the nervous system, it can cause a wide range of symptoms including headaches, behavioral changes and blindness. Neurosyphilis and ocular syphilis can occur at any stage of infection; though not common, Maryland has between 15 and 25 reported cases per year. These infections can lead to blindness, dementia and even death if not adequately treated in a timely manner.[12]

Syphilis infections can be transmitted to unborn babies if a pregnant woman is not treated at least 30 days prior to delivery. See "Congenital Syphilis" for more information.

Maryland ranked 11th highest in the nation for primary and secondary syphilis rate in 2017.[13]

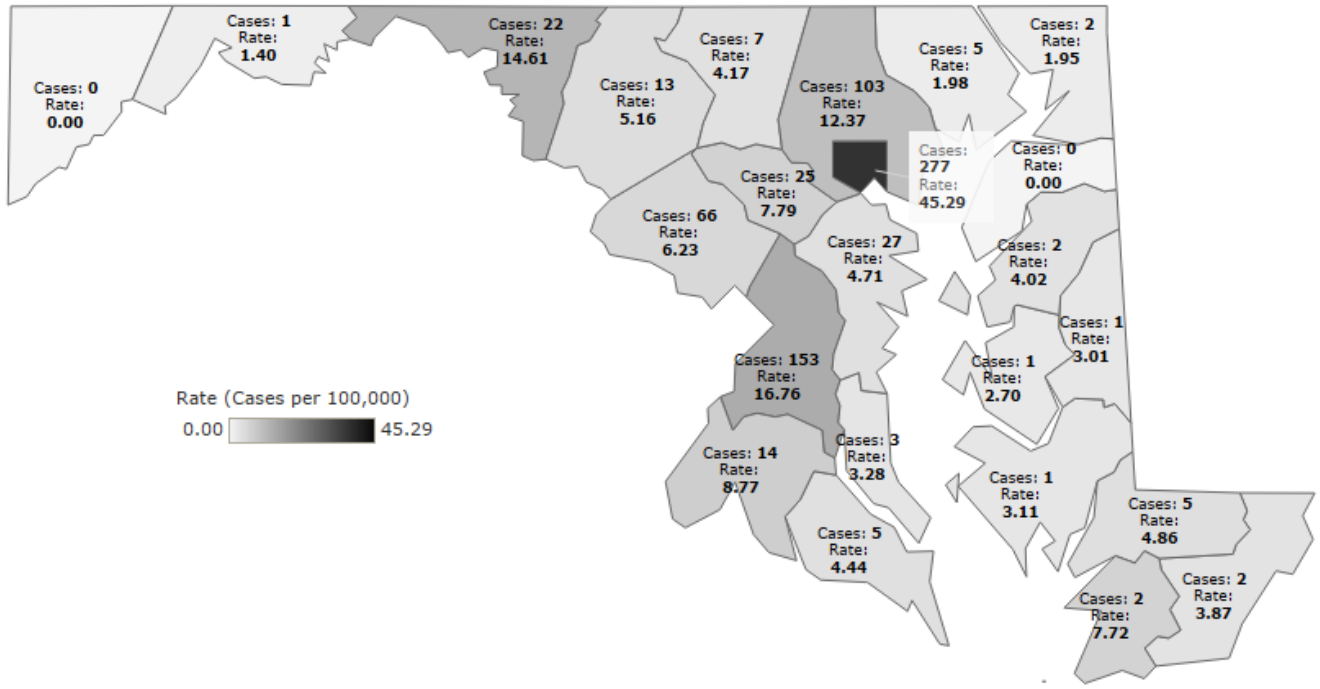
Syphilis - Reported Cases and Rates, Maryland, 2014 - 2018



- 737 cases of P&S syphilis were reported to MDH in 2018, a 29 percent increase from 2017

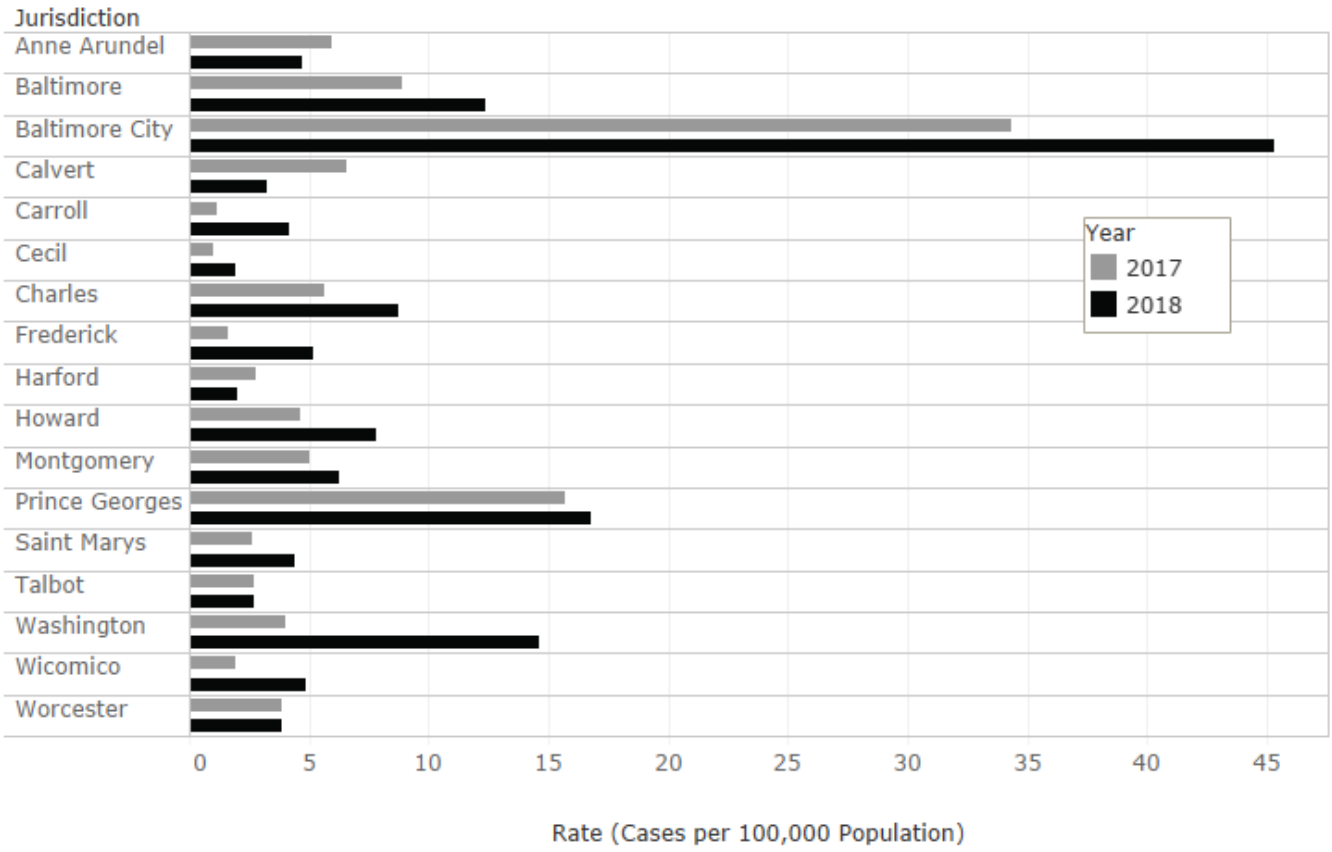
- From 2014 to 2018, the rate of P&S syphilis infections increased from 7.5 cases per 100,000 to 12.2 cases per 100,000, a 63 percent increase overall

Primary and Secondary Syphilis - Reported Cases and Rates by Jurisdiction, Maryland, 2018



- Baltimore City reported the most cases and had the highest rate of P&S syphilis among Maryland jurisdictions in 2018
- P&S syphilis cases were reported in 22 of Maryland's 24 jurisdictions in 2018
- Prince George's County had the second highest rate of P&S syphilis cases in Maryland (16.8 cases per 100,000 population compared to a rate of 45.3 in Baltimore City)

Primary and Secondary Syphilis - Rates of Reported Cases by Jurisdiction, Maryland, 2017 - 2018

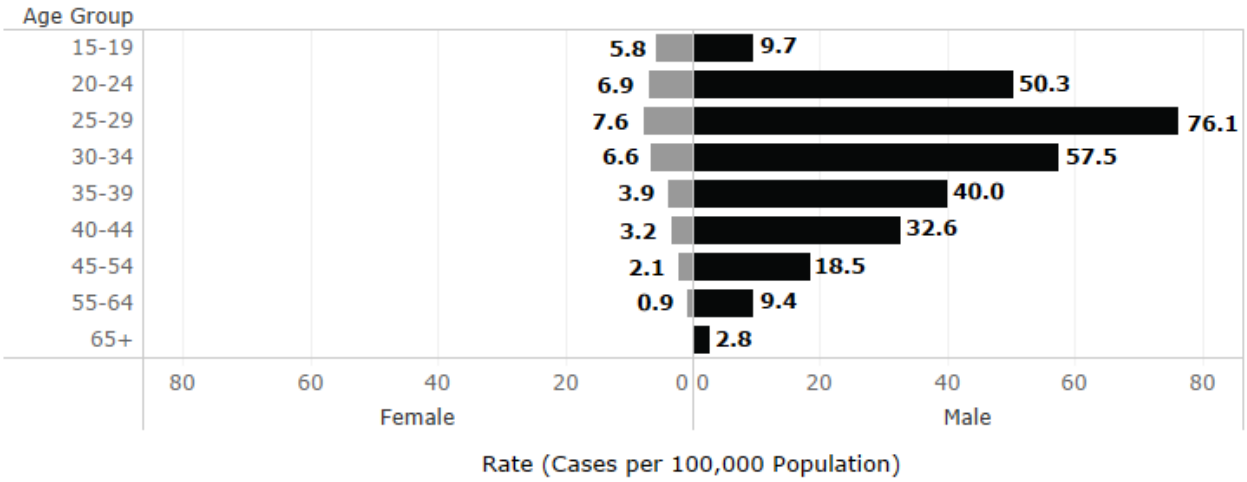


*Includes only jurisdictions with primary or secondary syphilis cases reported in both 2017 and 2018

- Of the 17 jurisdictions that reported cases of P&S syphilis for both 2017 and 2018, Washington County had the highest rate increase (367 percent)

- In total, 12 counties had increased P&S rates for this time period

Primary and Secondary Syphilis - Rates of Reported Cases by Age and Sex, Maryland, 2018

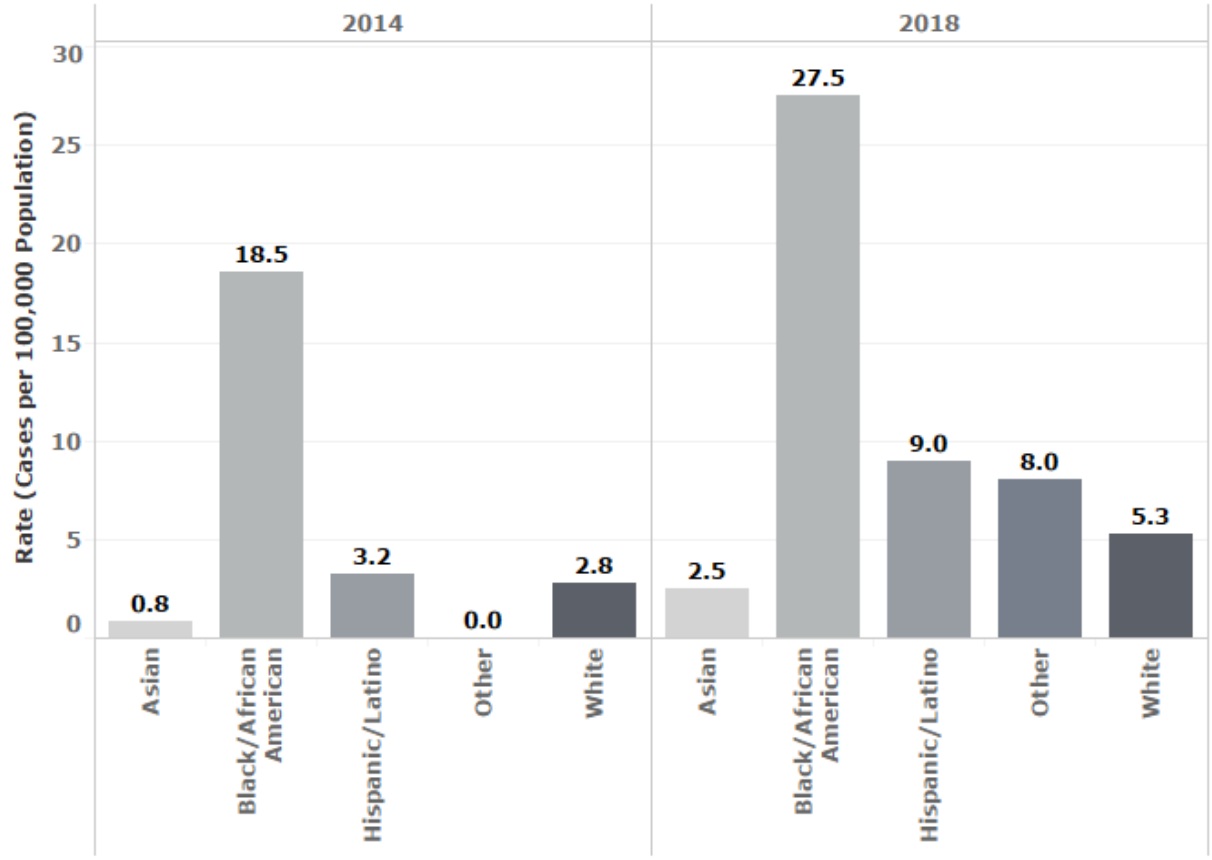


- P&S syphilis disproportionately impacts males in Maryland, with 89 percent of all P&S syphilis cases reported in 2018 identifying as male

- Males between 25 and 29 years old had the highest rate of P&S syphilis in Maryland (76.1 cases per 100,000 population); the national rate for this demographic is 51.9 per 100,00012

- P&S syphilis rates are much lower for females and do not follow the same age distribution seen in male cases

Primary and Secondary Syphilis - Rates of Reported Cases by Race*, Maryland, 2014 - 2018



*Excludes cases with unknown race

- In 2018, the P&S syphilis rate among black residents was over three times the rate of all other racial groups, however, large increases in rate for all racial groups have decreased the racial disparities in P&S incidence since 2014, when blacks were infected at over five times the rate of all other racial group

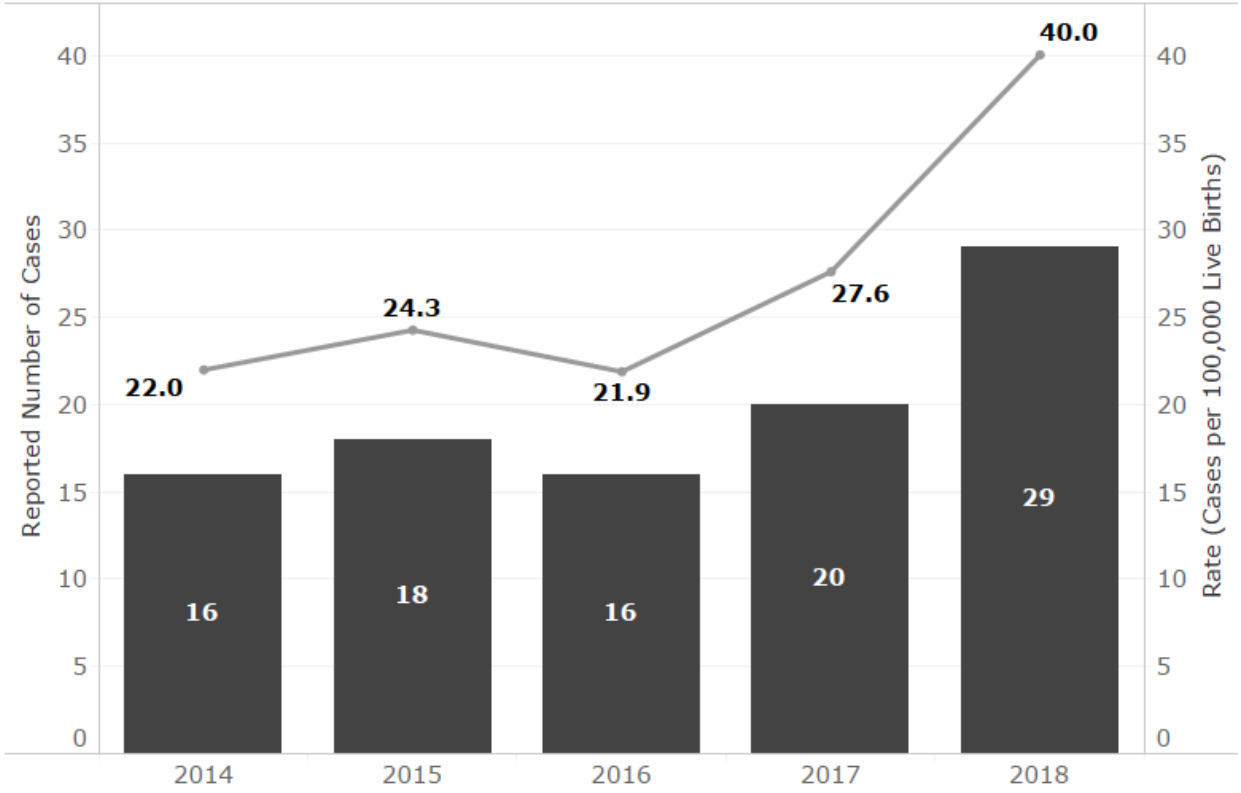
Congenital Syphilis

It is important for all pregnant women to be tested for syphilis and other STIs during pregnancy. Congenital syphilis (CS) is an infection that can occur when a pregnant woman with untreated syphilis transmits the infection to her unborn baby during pregnancy. CS can cause complications such as miscarriage, stillbirth, prematurity or death shortly after birth. Babies born with CS can suffer from deformed bones, anemia, jaundice, physical and intellectual disabilities and other serious health problems, though not all babies will show signs of CS at birth. If a pregnant woman tests positive for syphilis, timely treatment during pregnancy can prevent transmission. If transmission occurs, immediate treatment of the baby must take place in order to prevent serious health problems.[2]

Though CS rates remain low, there was an increase in reported cases in Maryland between 2017 and 2018 and the national rate has also increased 153.3 percent since 2013. The 2017 national CS rate was 23.3 per 100,000 live births. For comparison, the 2017 rate in Maryland was 27.6 per 100,000 live births.[14]

Maryland ranked 7th highest in the nation for congenital syphilis rate in 2017.[15]

Congenital Syphilis - Reported Cases and Rates, Maryland, 2014 - 2018



- After several years of little change in CS case rates, sharp increases beginning in 2017 have led to a near doubling in CS rates statewide in just two years
- The number of CS cases in 2018 (29) is the highest number reported in Maryland since 2009
- Fifty-five percent of CS cases in 2018 were reported from Baltimore City

Special Focus Profiles

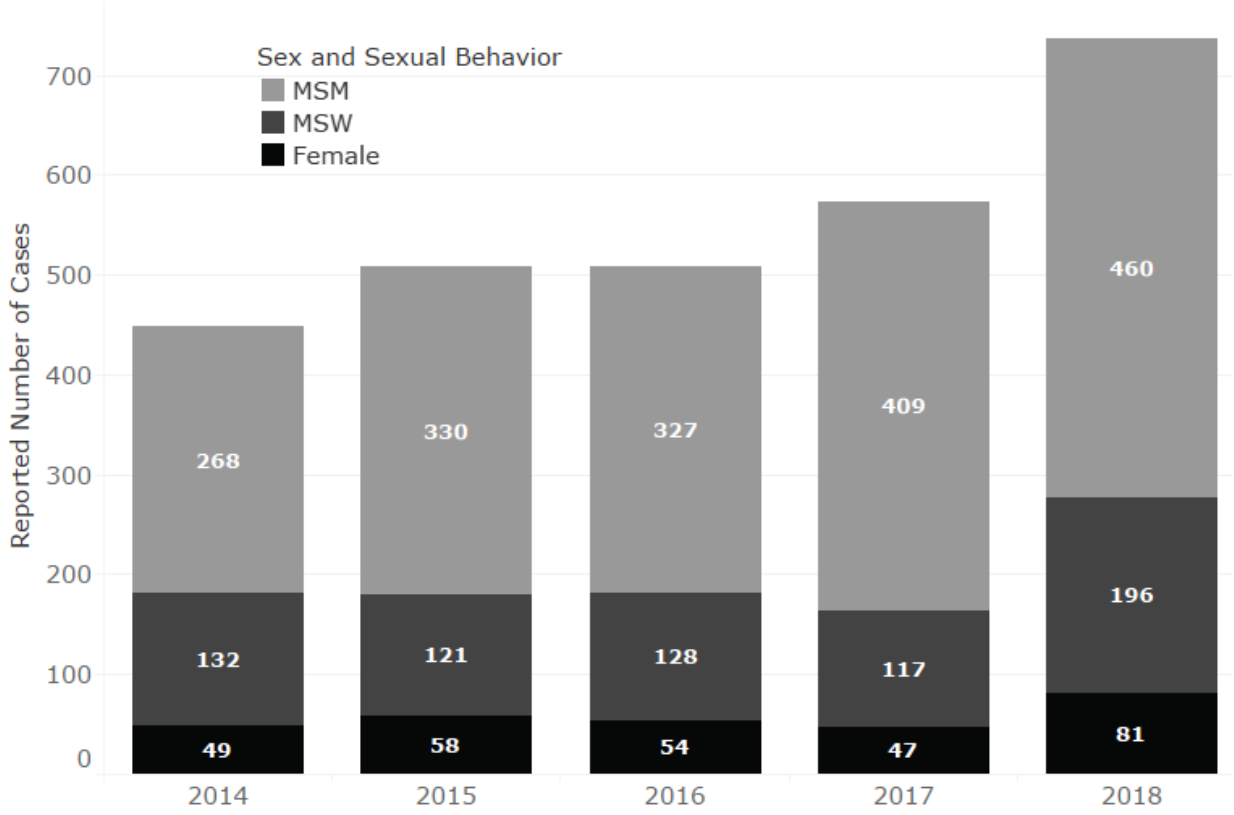
The special focus profiles highlight trends and distribution of STIs in populations of particular interest to Maryland's STI prevention program, including gay, bisexual and other men who have sex with men (collectively referred to as MSM), adolescents and young adults, and reinfections and HIV coinfections.

Men Who Have Sex with Men

The burden of STIs is greater among MSM than among women, and men who have sex with women only (MSW). Though information on sex of sex partner is very limited for gonorrhea and chlamydia cases in Maryland, interviews are attempted for all cases of P&S syphilis and sex of sex partner is consistently collected. In Maryland in 2018, 62.4 percent of P&S syphilis cases were among MSM. This is an increase from 2014, when the proportion of MSM in reported P&S syphilis was 59.7 percent. It is important to note that the overall increase of P&S syphilis from 2014 to 2017 was only in the MSM population. The rates of reported P&S syphilis in both MSW and women decreased during that time period. However, from 2017 to 2018, MSM, MSW and females all experienced increases in P&S.

In addition to symptoms associated with untreated STIs, there is also an elevated risk of subsequent coinfection with HIV.[16] In Maryland, nearly 50 percent of MSM with P&S syphilis also have HIV. Reflecting the disparities observed in the general population, black MSM experience higher rates of STIs, and particularly P&S syphilis, than other groups. Where race and sex of sex partner are known, black MSM represent the largest proportion of reported P&S syphilis cases, 38 percent. White MSM represent just 12 percent. Young, black MSM are an important sub-group of converging vulnerabilities. Over half of newly diagnosed P&S syphilis in black MSM are among those under 30 years old and black MSM under 30 represent 21 percent of reported cases of P&S syphilis.

Primary and Secondary Syphilis - Reported Cases by Sex and Sexual Behavior, 2014 - 2018



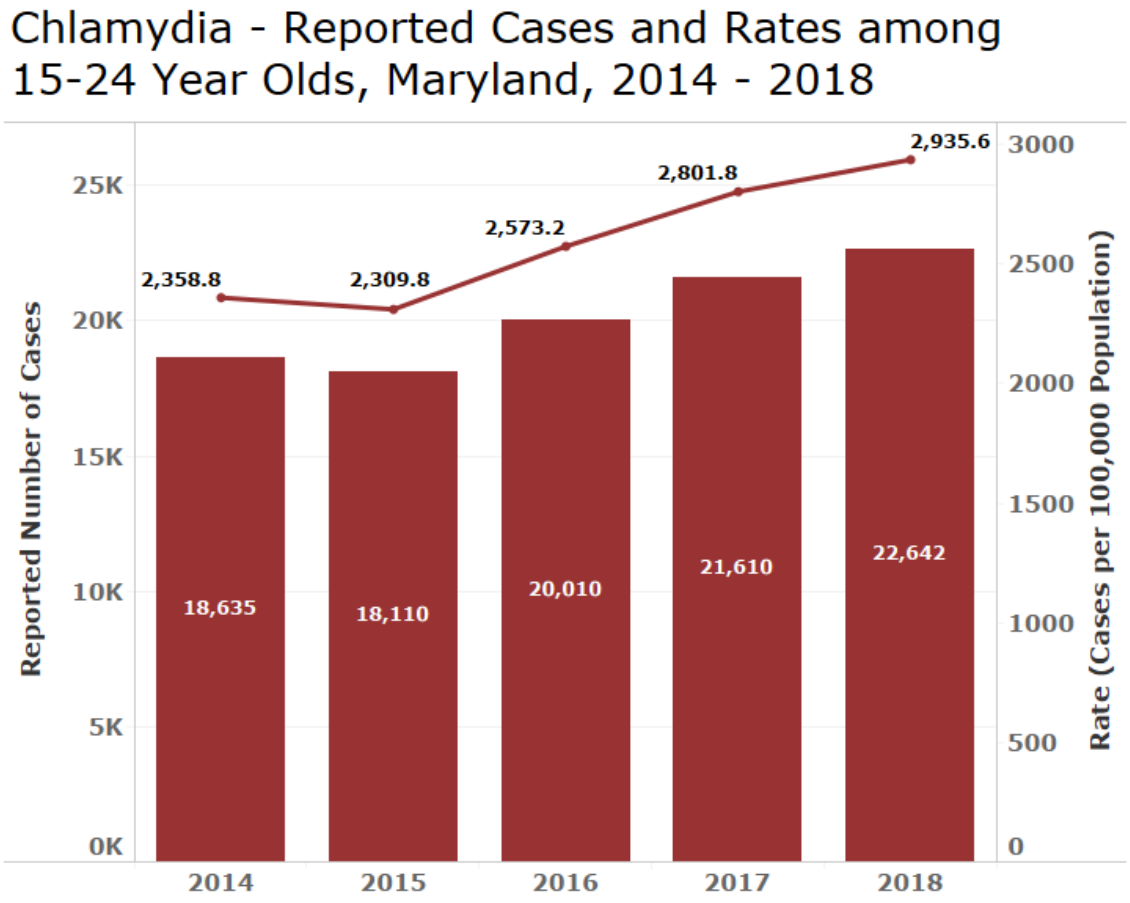
- MSM represent a majority of the population infected with P&S syphilis and in 2018, 62.4 percent of cases were among MSM

- Increases in P&S cases were seen across all sex and sexual behavior groups in 2018, but larger increases among MSW and females led to a decrease in the proportion of P&S cases attributed to MSM populations

Adolescents and Young Adults

Teens and young adults are disproportionately affected by STIs in Maryland, specifically youth ages 15 to 24. Though this age group represents just 13 percent of Maryland's total population, 64 percent of reported chlamydia cases and 44 percent of reported gonorrhea cases were among young adults ages 15 to 24 in 2018. The chlamydia rate in Maryland is five times higher for 15-24 year olds than the rate for all ages and the gonorrhea rate is almost four times higher among this age group.

A combination of social, behavioral and biological factors contribute to the higher rate of STIs in young people compared to older adults. Social factors placing youth at risk include concerns about confidentiality and lack of easy access to health care, while behavioral factors include a lower likelihood of being in a monogamous relationship and a higher likelihood of engaging in drug or alcohol use, which can affect condom negotiation and correct condom use. Biologically, young women also have immature cervical cells that are more vulnerable to infection. Finally, many young women do not receive the recommended STI screening from their health care providers.[17]

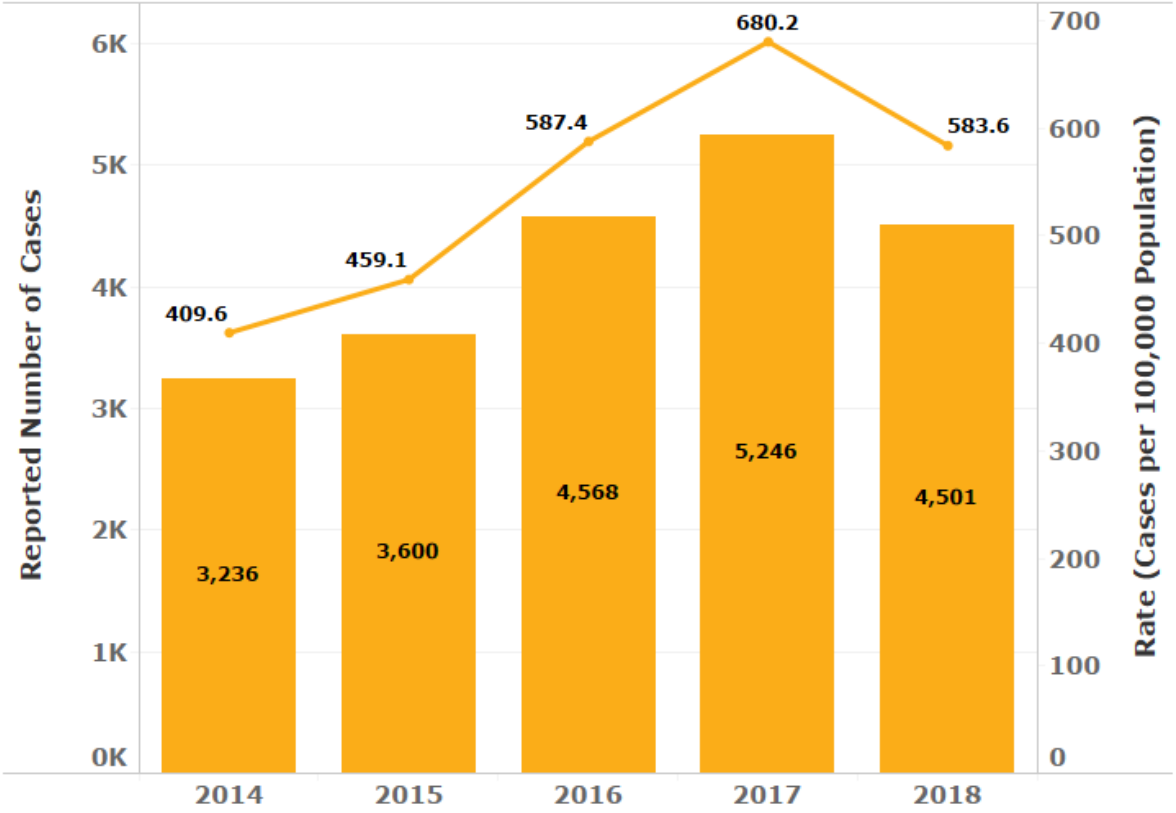


- From 2017 to 2018, there was a five percent increase in chlamydia cases among 15-24 year olds in Maryland

- Over the five-year period from 2014 to 2018, there was a 22 percent increase in chlamydia cases among 15-24 year olds in Maryland

- Sixty-four percent of all chlamydia cases reported for 2018 occurred among Marylanders ages 15 to 24

Gonorrhea - Reported Cases and Rates among 15-24 Year Olds, Maryland, 2014 - 2018



- From 2017 to 2018, gonorrhea cases decreased by 14 percent among 15-24 year olds in Maryland; however, there was a 39 percent increase in gonorrhea cases among 15-24 year olds from 2014 to 2018

- Gonorrhea cases among 15-24 year olds represented 44 percent of all gonorrhea cases reported in Maryland in 2018

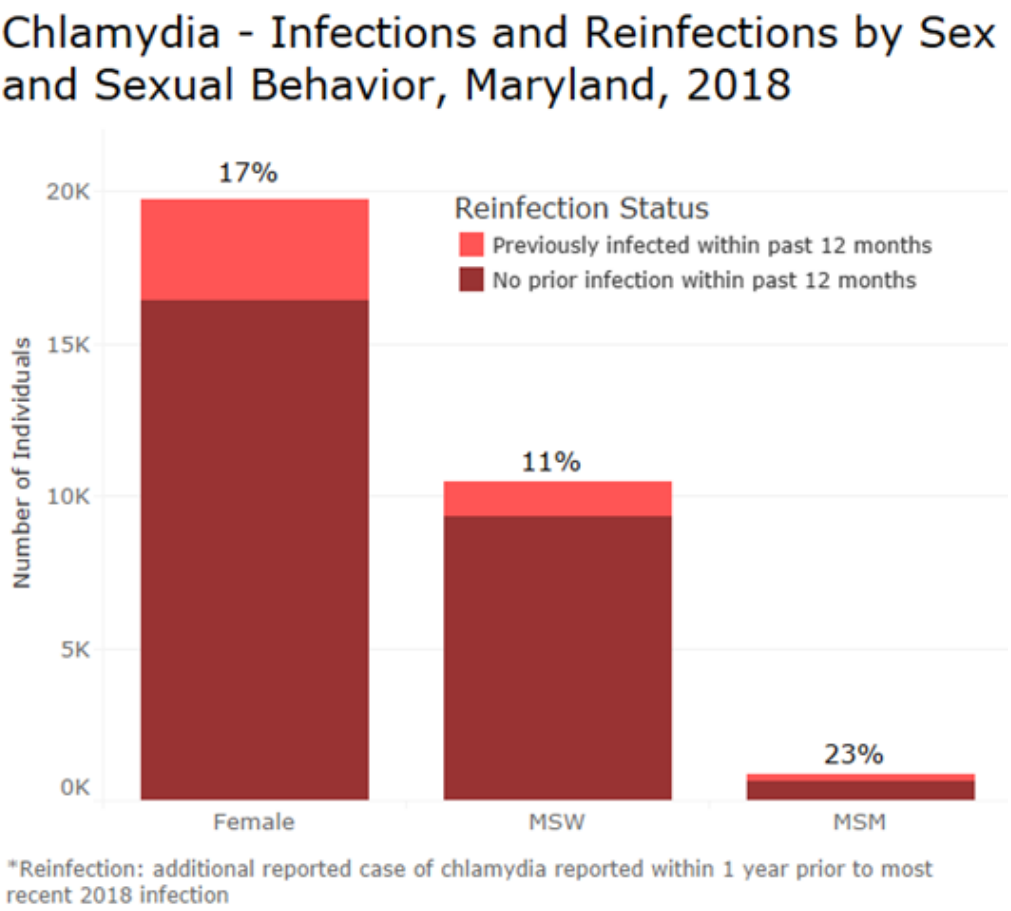
Reinfections and HIV Coinfections

Reinfection is common in people diagnosed with chlamydia and/or gonorrhea. In Maryland, HIV and syphilis cases receive comprehensive follow-up that includes further testing, treatment and interviews to work with individuals to notify partners that may have been exposed and need testing (known as "Partner Services").[18] This is not so for chlamydia and gonorrhea, as the number of cases is too great to provide partner services for all reported cases. Thus, even if a person is treated for their chlamydia or gonorrhea infection, they often risk being reinfected because their partners may remain untreated. Persistent and frequent infections can cause long term health problems and infertility.[1] In Maryland in 2018, 17 percent and 11 percent of female and male chlamydia infections, respectively, had a prior chlamydia infection within the past 12 months. Gonorrhea reinfection affects a similar proportion of males and females.

Successful treatment of a chlamydia or gonorrhea infection should include treatment of partners. When a partner is unwilling or unable to come to the clinic for testing, Expedited Partner Therapy (EPT), in which antibiotic therapy is provided to a person diagnosed with an STI to give to their partner, is an effective treatment option.[19]

People who have an STI are at an increased risk for acquiring HIV. This is due to both social and biological factors. Behaviors that lead to an STI infection (not using condoms, many partners, anonymous partners) also put a person at risk for contracting HIV. Inflammation or sores from an STI allow HIV to more easily infect a person than if the skin were intact. Similarly, a person who already has HIV is more likely to pass the infection to another person if they also have an STI, as shedding of the virus is more likely when a person has urethritis or a genital lesion or ulcer.[20]

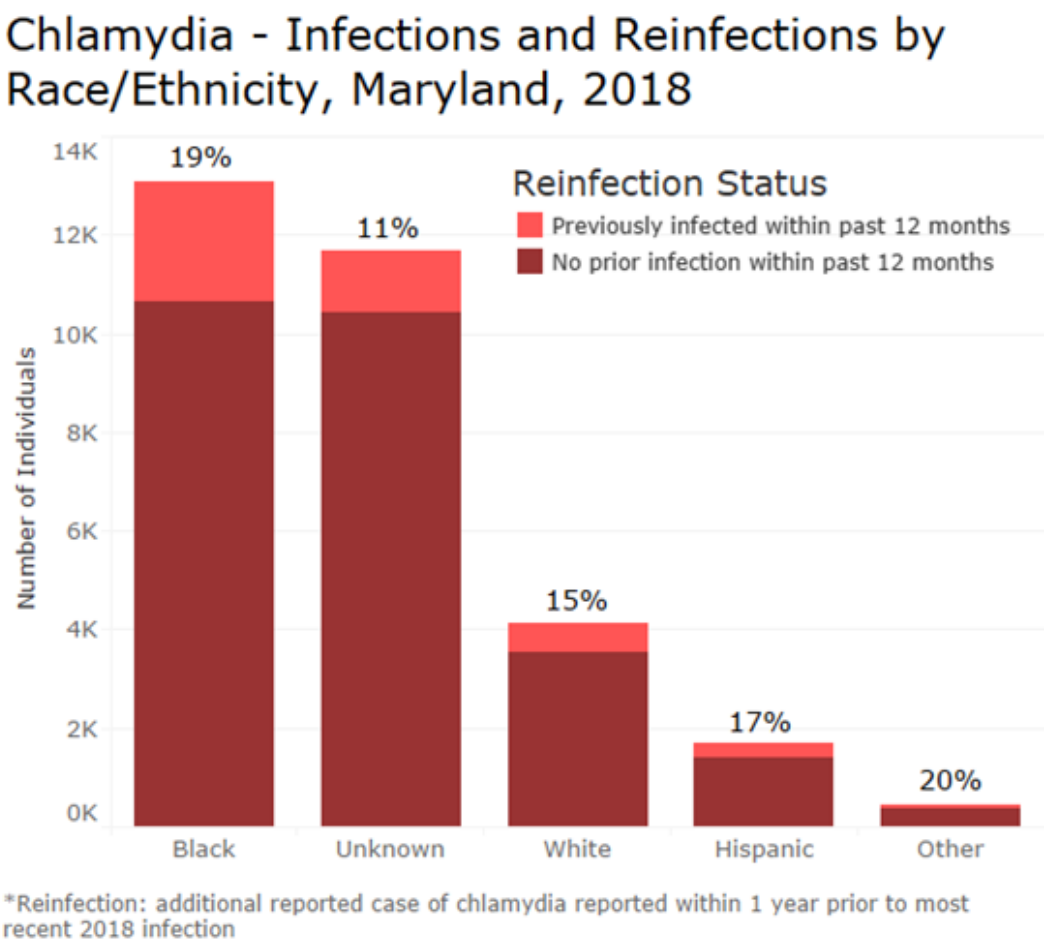
In Maryland, syphilis is the most common STI to be diagnosed with HIV. Forty percent of syphilis diagnoses in 2018 were coinfected with HIV. Chlamydia and gonorrhea coinfection with HIV is less common than syphilis, but still affects some, mainly older age groups. For example, fewer than 5 percent of 20-24 year olds diagnosed with gonorrhea in 2018 were coinfected with HIV, whereas nearly 20 percent of 45-54 year olds diagnosed with gonorrhea that year were coinfected with HIV.



- Over 3,000 female cases of chlamydia (17 percent of the total female cases) were reinfections

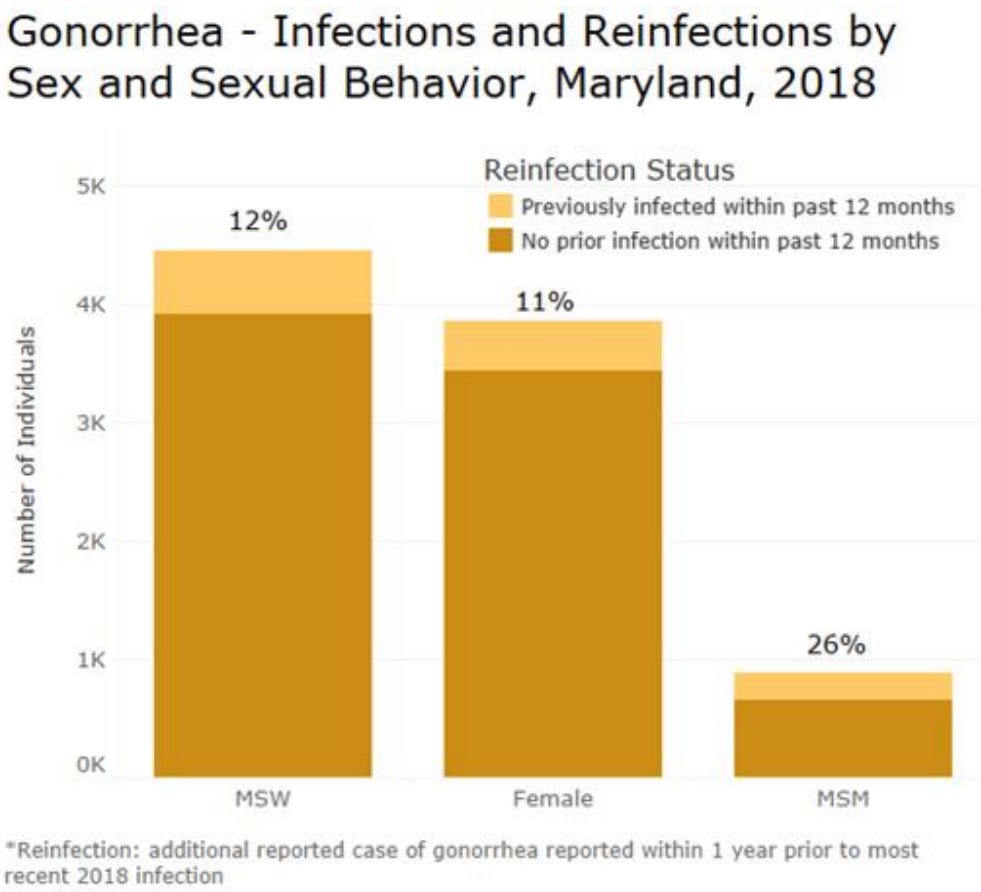
- 23 percent of chlamydia infections among MSM were reinfections of chlamydia, but these represented a much smaller overall case burden (840 cases) compared to females and men who have sex with women only

- Since information on sex of sex partner is obtained less often for chlamydia cases, it is likely that the proportion of cases identified as MSM is a significant underestimate



- 19 percent of cases among black residents and 20 percent of other racial groups were documented as chlamydia reinfections; however, there were many more cases overall among black residents

- 37 percent of the total chlamydia cases in 2018 had unknown race/ethnicity, 11 percent of which were reinfections

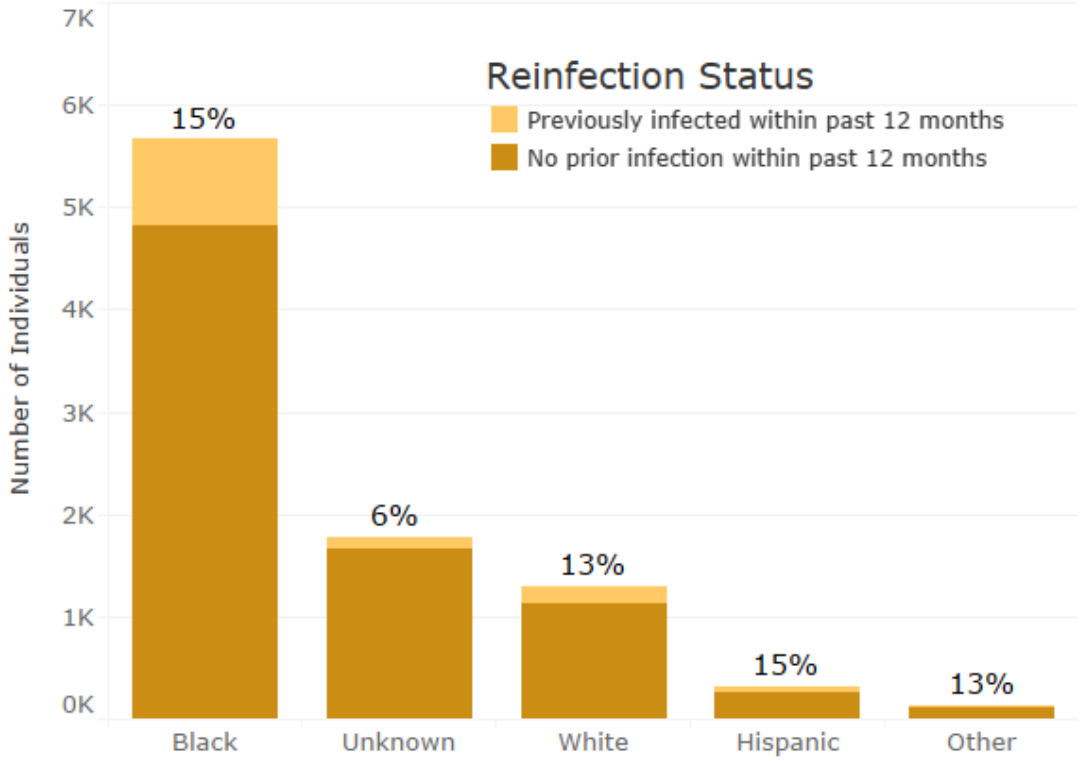


- Of the reported gonorrhea cases among men who have sex with women only, 538 (12 percent of the total MSW cases) were reinfections within one person-year

- MSM had the highest percentage of reinfections (26 percent), but these represented a much smaller overall case burden (886 cases) than other risk groups

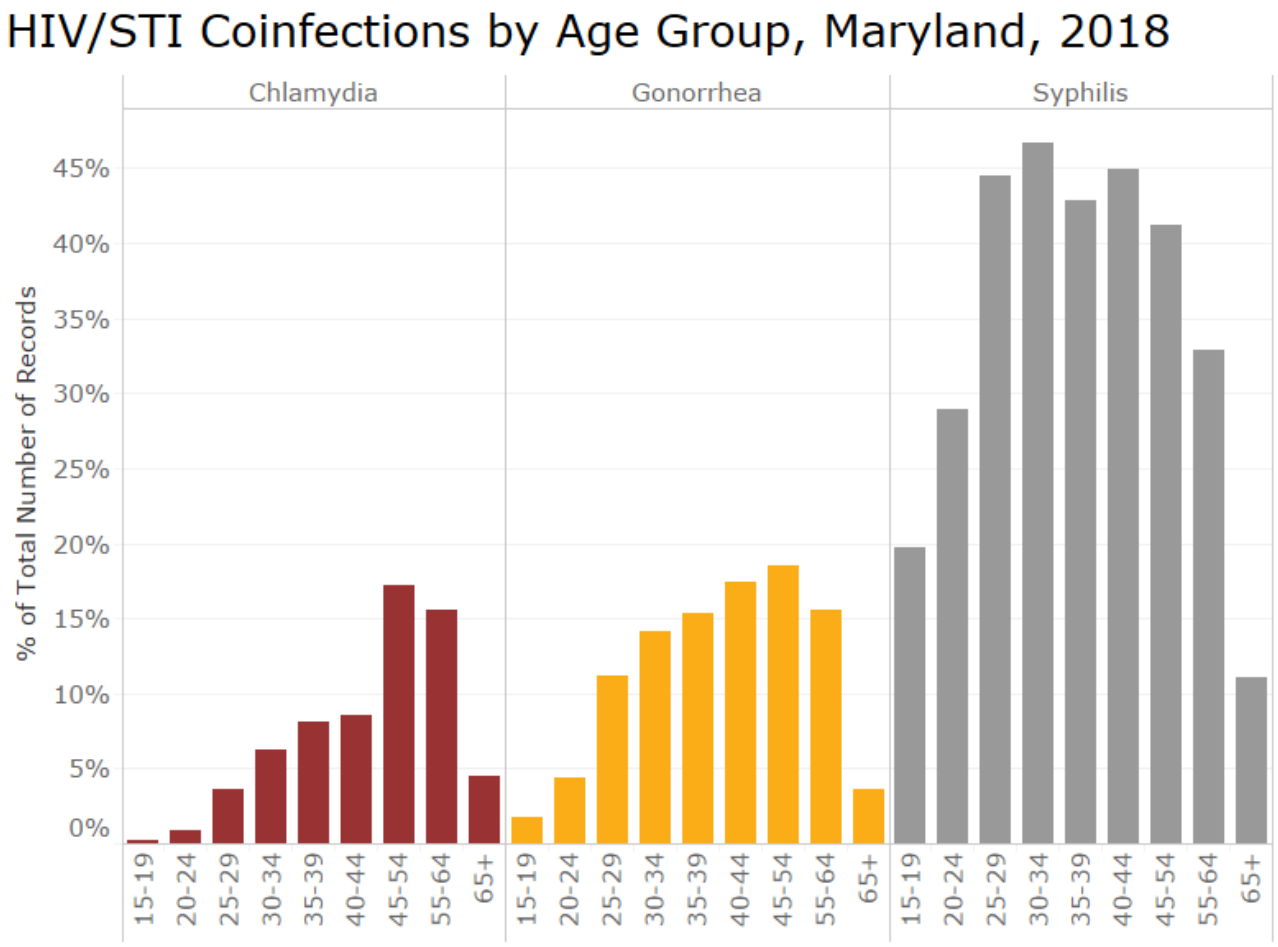
- Due to the high volume of gonorrhea cases, local health department staff are unable to investigate all reported cases and it is therefore likely that the proportion of cases identified as MSM is a significant underestimate

Gonorrhea - Infections and Reinfections by Race/Ethnicity, Maryland, 2018



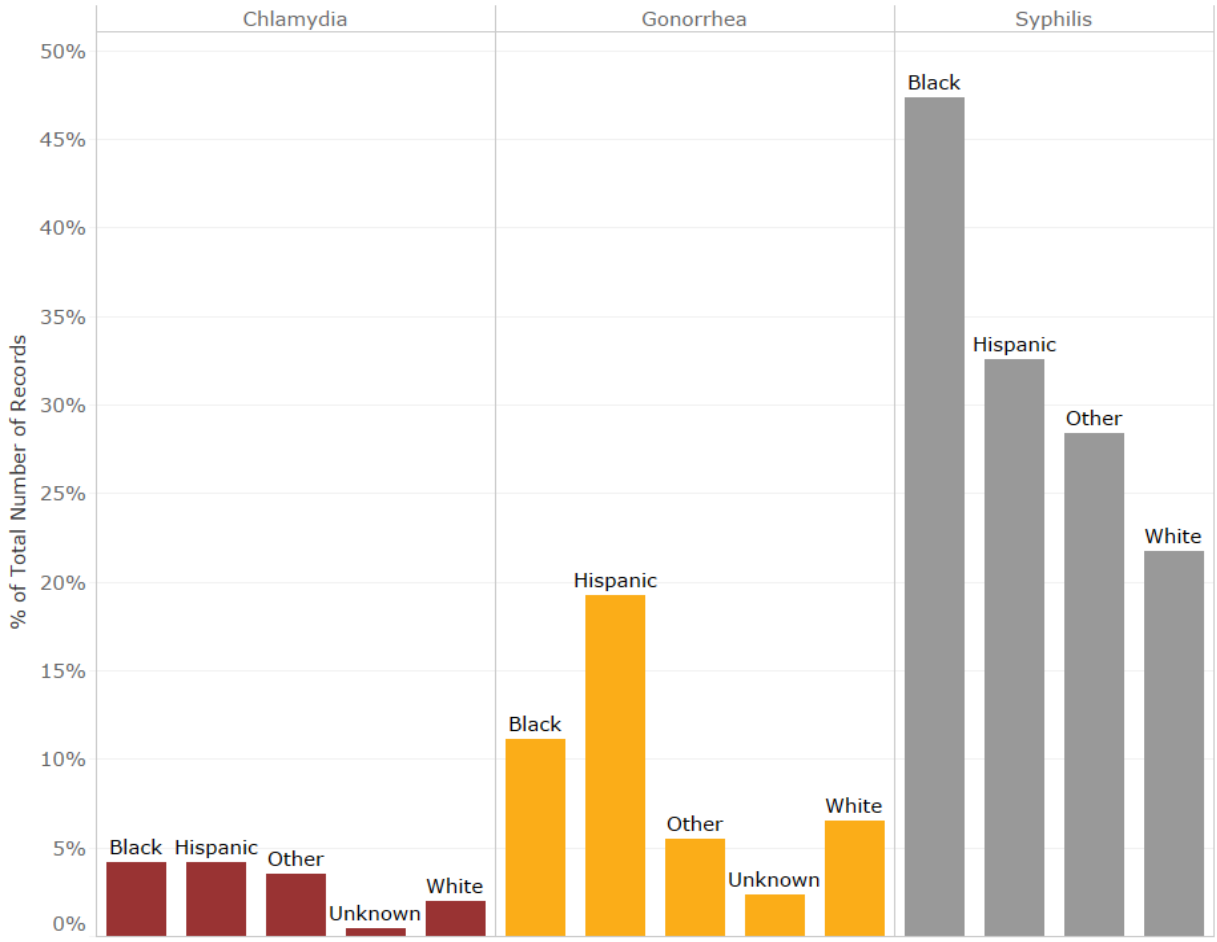
*Reinfection: additional reported case of gonorrhea reported within 1 year prior to most recent 2018 infection

- 15 percent of gonorrhea infections among black residents were reinfections
- Similar to chlamydia, the overall case burden for gonorrhea is also high in Maryland; however, race/ethnicity is more often investigated than with chlamydia. As a result, only 18 percent of gonorrhea cases have unknown race/ethnicity



- For gonorrhea and chlamydia, the proportion of cases with HIV coinfections generally increases with age
- For syphilis, the increase peaks between the ages of 30-34 and then slowly declines
- Nearly half (47 percent) of all syphilis cases among 30-34 year olds were HIV coinfected in 2018
- Overall, 40 percent of syphilis cases across all age groups were HIV coinfected

HIV/STI Coinfections by Race/Ethnicity, Maryland, 2018



- Black residents were much more likely to be coinfected with HIV and at least one other STI than other racial groups
- Coinfections among blacks represented 76 percent of all HIV/STI coinfections in 2018
- Among the three reportable STIs, syphilis is the most common STI to be diagnosed among individuals infected with HIV

Conclusion

Chlamydia, gonorrhea and syphilis rates in Maryland have been increasing steadily for the past several years. There are many reasons that this is cause for concern, including the increased risk of transmitting or becoming infected with HIV and the risks that STIs pose to sexual and reproductive health, especially for pregnant women and their babies.

CSTIP is committed to addressing STIs and will continue to promote STI prevention statewide. We hope this report provides useful and pertinent data that promotes dialogue about sexual health, appropriate screening and treatment practices to improve the sexual and reproductive health of all Marylanders.

Resources

Maryland Department of Health, Center for STI Prevention:
https://phpa.health.maryland.gov/OIDPCS/CSTIP/Pages/Home.aspx

CDC STD Resources:
https://www.cdc.gov/std/default.htm

Expedited Partner Therapy:
https://phpa.health.maryland.gov/OIDPCS/CSTIP/Pages/Expedited%20Partner%20Therapy.aspx

MSM/LGBTQ Resources:
https://phpa.health.maryland.gov/OIDPCS/CSTIP/Pages/MSM-LGBTQ.aspx

PrEP Maryland:
https://prepmaryland.org/

I WANT THE KIT – order a free home-collection STI testing kit:
https://www.iwantthekit.org/

CDC Treatment Guidelines:
https://www.cdc.gov/std/tg2015/default.htm

Local Health Departments Offering Free or Low-Cost STI/HIV Testing and Treatment:
https://phpa.health.maryland.gov/OIDPCS/CSTIP/CSTIPDocuments/LHDs_County_Map.pdf

Reportable Diseases – Resources:
https://phpa.health.maryland.gov/Pages/what-to-report.aspx

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2. Congenital Syphilis - CDC Fact Sheet. (2017, September 26). Retrieved from https://www.cdc.gov/std/syphilis/stdfact-congenital-syphilis.htm

3. Table 40. Congenital Syphilis — Reported Cases and Rates of Reported Cases by State, Ranked by Rates, United States, 2017. (2018, July 24). Retrieved from https://www.cdc.gov/std/stats17/tables/40.htm

4. Sexually Transmitted Diseases Surveillance 2017: Chlamydia. (2018, July 24). Retrieved from https://www.cdc.gov/std/stats17/chlamydia.htm.

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6. Table 2. Chlamydia – Reported Cases and Rates of Reported Cases by State, Ranked by Rates, United States, 2017. (208, July 24). Retrieved from https://www.cdc.gov/std/stats17/tables/2.htm

7. Sexually Transmitted Diseases Surveillance 2017: Gonorrhea. (2018, July 24). Retrieved from https://www.cdc.gov/std/stats17/Gonorrhea.htm

8. Gonorrhea - CDC Fact Sheet (Detailed Version). (2017 September 26). Retrieved from https://www.cdc.gov/std/gonorrhea/stdfact-gonorrhea-detailed.htm

9. Patton M.E. et al.; (2014, March 18). Extragenital Gonorrhea and Chlamydia Testing and Infection Among Men Who Have Sex With Men-STD Surveillance Network, United States, 2010–2012. Retrieved from https://academic.oup.com/cid/article/58/11/1564/2895546

10. Table 13. Gonorrhea — Reported Cases and Rates of Reported Cases by State, Ranked by Rates, United States, 2017 (2018, July 24). Retrieved from https://www.cdc.gov/std/stats17/tables/13.htm

11. Syphilis - CDC Fact Sheet (Detailed). (2017, November 30). Retrieved from https://www.cdc.gov/std/syphilis/stdfact-syphilis-detailed.htm

12. Sexually Transmitted Diseases Surveillance 2017: Syphilis. (2018, July 24). Retrieved from https://www.cdc.gov/std/stats17/syphilis.htm

13. Table 26. Primary and Secondary Syphilis — Reported Cases and Rates of Reported Cases by State, Ranked by Rates, United States, 2017. (2018, July 28). Retrieved from https://www.cdc.gov/std/stats17/tables/26.htm

14. Table 41. Congenital Syphilis — Reported Cases and Rates of Reported Cases by Year of Birth, State/Area, and Region in Alphabetical Order, United States and Outlying Areas, 2013–2017. (2018, July 24). Retrieved from https://www.cdc.gov/std/stats17/tables/40.htm

15. Table 40. Congenital Syphilis — Reported Cases and Rates of Reported Cases by State, Ranked by Rates, United States, 2017. (2018, July 24). Retrieved from https://www.cdc.gov/std/stats17/tables/40.htm

16. STDs in Men Who Have Sex with Men. (2018, July 24). Retrieved from https://www.cdc.gov/std/stats17/msm.htm

17. STDs in Adolescents and Young Adults. (2018, July 24). Retrieved from https://www.cdc.gov/std/stats17/adolescents.htm

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20. STDs and HIV – CDC Fact Sheet. (2014, December 16). Retrieved from https://www.cdc.gov/std/hiv/stdfact-std-hiv-detailed.htm

Appendices

Definitions/Acronyms

Anemia – A condition in which you don't have enough healthy red blood cells to carry adequate oxygen to the body's tissues. Having anemia may make you feel tired and weak.

Antibiotic resistance – Antibiotic resistance occurs when bacteria develop the ability to defeat the drugs designed to kill them. When bacteria become resistant, antibiotics become ineffective and the infection cannot be treated.

Asymptomatic – Producing or showing no symptoms.

Burden – Also known as disease burden. The impact of a health problem as measured by financial cost, mortality, morbidity, or other indicators.

Case – An instance of a disease that meets the Case Definitions laid out by CDC and CSTE (see Case Definition).

Case Definition - In epidemiology, set of criteria used in making a decision as to whether an individual has a disease or health event of interest.

CDC – Centers for Disease Control and Prevention.

Chancre – A painless ulcer, particularly one developing on the genitals as a result of a sexually transmitted infection.

Chlamydia – Infection with *Chlamydia trachomatis* may result in urethritis, epididymitis, cervicitis, acute salpingitis, or other syndromes when sexually transmitted; however, the infection is often asymptomatic in women.

CSTIP – The Center for STI Prevention at the Maryland Department of Health.

DC – District of Columbia.

Early Latent Syphilis – A subcategory of latent syphilis (a stage of infection caused by *Treponema pallidum* in which organisms persist in the body of the infected person without causing symptoms) when initial infection has occurred within the previous 12 months.

Ectopic pregnancy – A complication of pregnancy in which the embryo attaches outside the uterus.

Epididymitis – Inflammation of the tube at the back of the testicle that stores and carries sperm.

Ethnicity – The common characteristics of a group of people, especially regarding ancestry, culture, language or national experiences.

Extragenital – Situated or originating outside the genital region or organs.

Fallopian tubes – The fallopian tubes, also known as uterine tubes or salpinges (singular salpinx) are uterine appendages, lined from inside with ciliated simple columnar epithelium, leading from the ovaries of female mammals into the uterus, via the uterotubal junction.

Gender – The range of characteristics pertaining to, and differentiating between, masculinity and femininity. Depending on the context, these characteristics may include biological sex (i.e., the state of being male, female, or an intersex variation), sex-based social structures (i.e., gender roles), or gender identity. Traditionally, people who identify as men or women or use masculine or feminine gender pronouns are using a gender binary system whereas those who exist outside these groups fall under the umbrella terms non-binary or genderqueer.

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

HIV – Human Immunodeficiency Virus, the virus that causes Acquired Immunodeficiency Syndrome (AIDS).

Infectious – Able to be transmitted to people, organisms, etc.

Infertility – Not being able to get pregnant despite having frequent, unprotected sex for at least a year for most couples.

Jaundice – A medical condition with yellowing of the skin or whites of the eyes, arising from an excess of the pigment bilirubin and typically caused by obstruction of the bile duct, by liver disease, or by excessive breakdown of red blood cells.

Jurisdiction – A country or area in which a particular legal system operates.

Live births – In human reproduction, a live birth occurs when a fetus, whatever its gestational age, exits the maternal body and subsequently shows any sign of life, such as voluntary movement, heartbeat, or pulsation of the umbilical cord, for however brief a time and regardless of whether the umbilical cord or placenta are intact.

Miscarriage – Also known as spontaneous abortion and pregnancy loss. The natural death of an embryo or fetus before it is able to survive independently.

Morbidity – The condition of being diseased. Often in public health, morbidity is referred to as the amount of disease in a population.

Mortality – Death.

MSM – Men who have sex with men. This terminology is used to describe reported risk behaviors and should not be confused with sexual orientation.

MSW – Men who have sex with women only. This terminology is used to describe reported risk behaviors and should not be confused with sexual orientation.

P&S – Primary and secondary syphilis. When referring to "P&S syphilis", case counts are the sum of both primary and secondary cases, and "rate of P&S syphilis" refers to this sum per unit population.

PID – Pelvic inflammatory disease.

Premature – Born before the end of the full term of gestation, especially three or more weeks before.

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

Race – A grouping of humans based on shared physical or social qualities into categories generally viewed as distinct by society.

Rate – Also known as an incidence rate. The number of new cases per population at risk in a given time period. In this report, rates are calculated as the number of cases per 100,000 people in one year.

Rectum – The final section of the large intestine, terminating at the anus.

Reproductive tract – Composed of the ovaries, oviducts, uterus, cervix, and vagina.

Secondary Syphilis – A stage of infection caused by *Treponema pallidum* characterized by localized or diffuse mucocutaneous lesions (e.g., rash – such as non-pruritic macular, maculopapular, popular, or pustular lesions), often with generalized lymphadenopathy. Other symptoms can include mucous patches, condyloma lata, and alopecia. The primary ulcerative lesion may still be present.

Sex – Sex refers to the biological differences between males and females, such as the genitalia and genetic differences.

Stillbirth – The birth of an infant that has died in the womb (strictly, after having survived through at least the first 28 weeks of pregnancy, earlier instances being regarded as abortion or miscarriage).

Surveillance – Disease surveillance is an information-based activity involving the collection, analysis and interpretation of large volumes of data originating from a variety of sources. The collated information is then used to:

- Evaluate the effectiveness of control and preventative health measures
- Monitor changes in infectious agents e.g. trends in development of antimicrobial resistance
- Support health planning and the allocation of appropriate resources within the healthcare system
- Identify high risk populations or areas to target interventions
- Provide a valuable archive of disease activity for future reference

Symptomatic – Exhibiting characteristics of an illness or other medical condition.

Urethra – The duct by which urine is conveyed out of the body from the bladder, and which in males also conveys semen.

Uterus – A major female hormone-responsive secondary sex organ of the reproductive system in humans and most other mammals.

Data Tables

Chlamydia - Reported Cases and Rates, Maryland, 2014 - 2018

	2014		2015		2016		2017		2018	
Jurisdiction	Cases	Rates	Cases	Rates	Cases	Rates	Cases	Rates	Cases	Rates
Allegany	260	355.9	239	329.7	244	338.0	279	389.6	242	337.9
Anne Arundel	1,745	311.4	1,751	310.2	2,030	356.8	2,234	389.7	2,316	404.0
Baltimore	3,450	417.4	3,614	435.7	4,190	504.0	4,480	538.2	4,463	536.1
Calvert	259	286.0	269	297.3	261	286.5	264	288.5	269	294.0
Caroline	106	325.6	95	291.2	108	328.4	102	307.3	83	250.1
Carroll	277	165.5	324	193.9	342	204.6	372	221.7	407	242.6
Cecil	259	253.3	289	282.1	285	277.5	326	317.3	336	327.0
Charles	762	493.3	722	463.4	826	524.7	1,009	631.8	1,103	690.7
Dorchester	248	762.8	207	638.7	152	471.1	184	572.1	206	640.5
Frederick	647	265.4	571	232.6	689	278.0	862	342.0	844	334.9
Garrett	57	192.3	42	142.8	39	132.9	58	198.4	38	130.0
Harford	473	189.6	702	281.2	802	320.2	812	322.0	973	385.9
Howard	716	232.6	798	255.4	948	299.1	1,136	353.8	1,170	364.4
Kent	59	298.4	35	177.7	58	295.1	33	170.2	73	376.6
Montgomery	2,737	265.7	3,015	290.1	3,428	327.0	4,029	380.5	4,410	416.5
Prince Georges	6,130	679.9	6,153	677.4	6,753	741.1	7,364	806.8	8,013	877.9
Queen Annes	89	182.3	99	201.9	123	250.1	96	192.9	124	249.1
Saint Marys	287	260.9	351	315.9	308	275.4	404	358.6	504	447.3
Somerset	150	586.2	188	731.7	226	874.8	185	713.8	187	721.5
Talbot	125	332.6	76	202.6	89	239.2	100	269.5	103	277.6
Washington	454	304.5	496	332.4	511	341.1	590	391.8	573	380.5
Wicomico	575	566.2	499	488.9	667	650.2	646	627.7	835	811.3
Worcester	214	414.9	187	363.4	185	359.1	215	415.9	197	381.1
MD Counties	20,079	375.6	20,722	385.3	23,264	430.2	25,780	473.9	27,469	504.9
Baltimore City	7,345	1,177.0	6,728	1,079.9	7,394	1,198.5	7,636	1,248.4	8,013	1,310.1
Maryland	27,424	459.3	27,450	457.5	30,658	508.9	33,416	552.1	35,482	586.3

Rates = Cases per 100,000 population

Gonorrhea - Reported Cases and Rates, Maryland, 2014 - 2018

	2014		2015		2016		2017		2018	
Jurisdiction	Cases	Rates	Cases	Rates	Cases	Rates	Cases	Rates	Cases	Rates
Allegany	46	63.0	49	67.6	48	66.5	30	41.9	41	57.3
Anne Arundel	332	59.2	360	63.8	586	103.0	583	101.7	544	94.9
Baltimore	708	85.7	1,017	122.6	1,321	158.9	1,549	186.1	1,309	157.2
Calvert	32	35.3	19	21.0	38	41.7	33	36.1	68	74.3
Caroline	16	49.1	44	134.9	33	100.3	41	123.5	20	60.3
Carroll	27	16.1	32	19.1	41	24.5	70	41.7	93	55.4
Cecil	70	68.5	35	34.2	94	91.5	79	76.9	91	88.6
Charles	126	81.6	132	84.7	163	103.5	239	149.7	258	161.6
Dorchester	68	209.1	124	382.6	58	179.8	68	211.4	64	199.0
Frederick	88	36.1	85	34.6	99	39.9	138	54.8	131	52.0
Garrett	5	16.9	3	10.2	1	3.4	4	13.7	6	20.5
Harford	75	30.1	129	51.7	156	62.3	211	83.7	191	75.7
Howard	106	34.4	110	35.2	195	61.5	235	73.2	256	79.7
Kent	5	25.3	10	50.8	14	71.2	16	82.5	7	36.1
Montgomery	417	40.5	386	37.1	563	53.7	726	68.6	660	62.3
Prince Georges	1,276	141.5	1,282	141.1	1,832	201.1	2,001	219.2	2,020	221.3
Queen Annes	17	34.8	28	57.1	21	42.7	13	26.1	9	18.1
Saint Marys	48	43.6	38	34.2	127	113.6	95	84.3	165	146.4
Somerset	46	179.8	38	147.9	53	205.2	56	216.1	69	266.2
Talbot	17	45.2	25	66.7	26	69.9	24	64.7	16	43.1
Washington	158	106.0	179	120.0	224	149.5	181	120.2	242	160.7
Wicomico	188	185.1	168	164.6	232	226.2	300	291.5	388	377.0
Worcester	43	83.4	62	120.5	64	124.2	55	106.4	61	118.0
MD Counties	3,914	73.2	4,355	81.0	5,989	110.7	6,747	124.0	6,709	123.3
Baltimore City	2,194	351.6	2,503	401.7	3,534	572.8	4,231	691.7	3,596	587.9
Maryland	6,108	102.3	6,858	114.3	9,523	158.1	10,978	181.4	10,305	170.3

Rates = Cases per 100,000 population

Primary and Secondary Syphilis - Reported Cases and Rates, Maryland, 2014 - 2018

	2014		2015		2016		2017		2018	
Jurisdiction	Cases	Rates	Cases	Rates	Cases	Rates	Cases	Rates	Cases	Rates
Allegany	0	0.0	0	0.0	0	0.0	0	0.0	1	1.4
Anne Arundel	26	4.6	31	5.5	23	4.0	34	5.9	27	4.7
Baltimore	46	5.6	79	9.5	78	9.4	74	8.9	103	12.4
Calvert	1	1.1	0	0.0	1	1.1	6	6.6	3	3.3
Caroline	0	0.0	1	3.1	1	3.0	0	0.0	1	3.0
Carroll	2	1.2	1	0.6	3	1.8	2	1.2	7	4.2
Cecil	4	3.9	1	1.0	2	1.9	1	1.0	2	1.9
Charles	5	3.2	9	5.8	6	3.8	9	5.6	14	8.8
Dorchester	0	0.0	0	0.0	2	6.2	0	0.0	1	3.1
Frederick	3	1.2	12	4.9	8	3.2	4	1.6	13	5.2
Garrett	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Harford	7	2.8	4	1.6	17	6.8	7	2.8	5	2.0
Howard	9	2.9	16	5.1	13	4.1	15	4.7	25	7.8
Kent	0	0.0	0	0.0	1	5.1	1	5.2	0	0.0
Montgomery	31	3.0	38	3.7	33	3.1	53	5.0	66	6.2
Prince Georges	111	12.3	81	8.9	110	12.1	143	15.7	153	16.8
Queen Annes	0	0.0	0	0.0	1	2.0	0	0.0	2	4.0
Saint Marys	2	1.8	3	2.7	1	0.9	3	2.7	5	4.4
Somerset	1	3.9	2	7.8	4	15.5	0	0.0	2	7.7
Talbot	1	2.7	0	0.0	0	0.0	1	2.7	1	2.7
Washington	5	3.4	10	6.7	4	2.7	6	4.0	22	14.6
Wicomico	3	3.0	7	6.9	1	1.0	2	1.9	5	4.9
Worcester	0	0.0	2	3.9	3	5.8	2	3.9	2	3.9
MD Counties	257	4.8	297	5.5	312	5.8	363	6.7	460	8.5
Baltimore City	192	30.8	212	34.0	197	31.9	210	34.3	277	45.3
Maryland	449	7.5	509	8.5	509	8.4	573	9.5	737	12.2

Rates = Cases per 100,000 population

Early Non-Primary/Non-Secondary Syphilis - Reported Cases and Rates, Maryland, 2014 - 2018

	2014		2015		2016		2017		2018	
Jurisdiction	Cases	Rates	Cases	Rates	Cases	Rates	Cases	Rates	Cases	Rates
Allegany	0	0.0	1	1.4	1	1.4	0	0.0	0	0.0
Anne Arundel	19	3.4	27	4.8	36	6.3	26	4.5	33	5.8
Baltimore	56	6.8	71	8.6	69	8.3	89	10.7	84	10.1
Calvert	1	1.1	5	5.5	4	4.4	3	3.3	4	4.4
Caroline	0	0.0	0	0.0	3	9.1	0	0.0	2	6.0
Carroll	3	1.8	6	3.6	4	2.4	3	1.8	3	1.8
Cecil	4	3.9	2	2.0	0	0.0	2	1.9	4	3.9
Charles	11	7.1	20	12.8	13	8.3	13	8.1	14	8.8
Dorchester	0	0.0	0	0.0	1	3.1	2	6.2	0	0.0
Frederick	4	1.6	10	4.1	8	3.2	9	3.6	9	3.6
Garrett	0	0.0	0	0.0	0	0.0	2	6.8	0	0.0
Harford	2	0.8	7	2.8	12	4.8	9	3.6	15	5.9
Howard	7	2.3	8	2.6	12	3.8	13	4.0	23	7.2
Kent	3	15.2	3	15.2	1	5.1	0	0.0	1	5.2
Montgomery	47	4.6	52	5.0	45	4.3	88	8.3	94	8.9
Prince Georges	157	17.4	142	15.6	149	16.4	209	22.9	242	26.5
Queen Annes	2	4.1	0	0.0	0	0.0	0	0.0	2	4.0
Saint Marys	2	1.8	2	1.8	3	2.7	3	2.7	4	3.6
Somerset	1	3.9	1	3.9	1	3.9	2	7.7	0	0.0
Talbot	0	0.0	1	2.7	4	10.8	3	8.1	1	2.7
Washington	0	0.0	6	4.0	3	2.0	4	2.7	17	11.3
Wicomico	2	2.0	4	3.9	2	1.9	5	4.9	8	7.8
Worcester	1	1.9	1	1.9	2	3.9	1	1.9	3	5.8
MD Counties	322	6.0	369	6.9	373	6.9	486	8.9	563	10.3
Baltimore City	207	33.2	225	36.1	225	36.5	197	32.2	294	48.1
Maryland	529	8.9	594	9.9	598	9.9	683	11.3	857	14.2

Rates = Cases per 100,000 population

Late or Unknown Duration Syphilis - Reported Cases and Rates, Maryland, 2014 - 2018

	2014		2015		2016		2017		2018	
Jurisdiction	Cases	Rates	Cases	Rates	Cases	Rates	Cases	Rates	Cases	Rates
Allegany	1	1.4	2	2.8	4	5.5	1	1.4	2	2.8
Anne Arundel	26	4.6	33	5.8	42	7.4	37	6.5	64	11.2
Baltimore	61	7.4	87	10.5	87	10.5	125	15.0	135	16.2
Calvert	2	2.2	6	6.6	3	3.3	3	3.3	4	4.4
Caroline	1	3.1	0	0.0	0	0.0	2	6.0	0	0.0
Carroll	2	1.2	5	3.0	2	1.2	2	1.2	8	4.8
Cecil	4	3.9	6	5.9	5	4.9	1	1.0	4	3.9
Charles	12	7.8	10	6.4	14	8.9	14	8.8	19	11.9
Dorchester	1	3.1	8	24.7	1	3.1	1	3.1	1	3.1
Frederick	6	2.5	8	3.3	11	4.4	18	7.1	23	9.1
Garrett	0	0.0	0	0.0	0	0.0	1	3.4	0	0.0
Harford	8	3.2	12	4.8	6	2.4	5	2.0	15	5.9
Howard	9	2.9	22	7.0	19	6.0	26	8.1	27	8.4
Kent	3	15.2	1	5.1	1	5.1	0	0.0	0	0.0
Montgomery	68	6.6	133	12.8	110	10.5	86	8.1	122	11.5
Prince Georges	172	19.1	232	25.5	230	25.2	248	27.2	247	27.1
Queen Annes	1	2.0	2	4.1	2	4.1	1	2.0	1	2.0
Saint Marys	3	2.7	3	2.7	0	0.0	1	0.9	3	2.7
Somerset	0	0.0	3	11.7	0	0.0	3	11.6	0	0.0
Talbot	0	0.0	2	5.3	0	0.0	1	2.7	0	0.0
Washington	8	5.4	11	7.4	6	4.0	4	2.7	11	7.3
Wicomico	6	5.9	7	6.9	6	5.8	8	7.8	6	5.8
Worcester	0	0.0	1	1.9	1	1.9	2	3.9	1	1.9
MD Counties	394	7.4	594	11.0	550	10.2	590	10.8	693	12.7
Baltimore City	154	24.7	155	24.9	169	27.4	193	31.6	220	36.0
Maryland	548	9.2	749	12.5	719	11.9	783	12.9	913	15.1

Rates = Cases per 100,000 population

Sexually Transmitted Infections - Reported Cases and Rates by Sex, Maryland, 2014 - 2018

		2014		2015		2016		2017		2018	
Disease	Sex	Cases	Rates	Cases	Rates	Cases	Rates	Cases	Rates	Cases	Rates
Chlamydia	Female	19,174	623.0	18,650	603.0	20,167	649.6	21,957	704.2	22,912	734.8
	Male	8,250	285.2	8,800	302.6	10,491	359.2	11,449	390.2	12,539	427.3
Gonorrhea	Female	2,798	90.9	3,095	100.1	3,945	127.1	4,631	148.5	4,227	135.6
	Male	3,310	114.4	3,763	129.4	5,578	191.0	6,344	216.2	6,074	207.0
Primary and Secondary Syphilis	Female	49	1.6	58	1.9	54	1.7	47	1.5	81	2.6
	Male	400	13.8	451	15.5	455	15.6	526	17.9	656	22.4
Early Non-Primary/ Non-Secondary Syphilis	Female	84	2.7	94	3.0	95	3.1	96	3.1	133	4.3
	Male	445	15.4	500	17.2	503	17.2	587	20.0	724	24.7
Late or Unknown Duration Syphilis	Female	212	6.9	237	7.7	226	7.3	245	7.9	271	8.7
	Male	336	11.6	512	17.6	493	16.9	538	18.3	642	21.9

Rates = Cases per 100,000 Population

Chlamydia - Reported Cases and Rates by Age, Maryland, 2014 - 2018

	2014		2015		2016		2017		2018	
Age Group	Cases	Rates	Cases	Rates	Cases	Rates	Cases	Rates	Cases	Rates
10-14	302	80.2	227	60.6	238	63.7	230	61.1	249	66.1
15-19	7,937	2,049.4	7,461	1,932.7	8,453	2,187.9	9,233	2,399.0	9,837	2,556.0
20-24	10,698	2,656.3	10,649	2,675.5	11,557	2,953.7	12,377	3,203.0	12,805	3,313.7
25-29	4,664	1,121.8	4,961	1,185.4	5,657	1,344.7	6,081	1,442.9	6,515	1,545.8
30-34	1,847	452.5	2,053	499.0	2,365	571.7	2,629	631.3	2,945	707.1
35-39	899	240.2	994	258.9	1,123	285.1	1,349	335.0	1,390	345.2
40-44	432	109.9	492	128.9	506	136.7	603	164.4	737	201.0
45-54	444	50.5	442	50.8	561	65.3	681	80.7	737	87.3
55-64	110	14.3	125	15.9	163	20.5	189	23.4	218	27.0
65+	27	3.3	33	3.9	26	3.0	38	4.2	45	5.0

Rates = Cases per 100,000 Population

Gonorrhea - Reported Cases and Rates by Age, Maryland, 2014 - 2018

	2014		2015		2016		2017		2018	
Age Group	Cases	Rates	Cases	Rates	Cases	Rates	Cases	Rates	Cases	Rates
10-14	71	18.8	67	17.9	55	14.7	85	22.6	61	16.2
15-19	1,311	338.5	1,431	370.7	1,772	458.7	2,076	539.4	1,769	459.6
20-24	1,925	478.0	2,169	545.0	2,796	714.6	3,170	820.3	2,732	707.0
25-29	1,161	279.3	1,398	334.0	2,115	502.7	2,374	563.3	2,278	540.5
30-34	615	150.7	677	164.5	1,076	260.1	1,305	313.4	1,393	334.5
35-39	354	94.6	404	105.2	651	165.3	688	170.9	750	186.3
40-44	224	57.0	236	61.8	343	92.7	397	108.3	419	114.3
45-54	316	35.9	339	39.0	504	58.7	583	69.1	589	69.8
55-64	99	12.9	108	13.8	175	22.0	244	30.2	251	31.1
65+	16	1.9	25	2.9	32	3.6	48	5.3	56	6.2

Rates = Cases per 100,000 Population

Primary and Secondary Syphilis - Reported Cases and Rates by Age, Maryland, 2014 - 2018

	2014		2015		2016		2017		2018	
Age Group	Cases	Rates	Cases	Rates	Cases	Rates	Cases	Rates	Cases	Rates
10-14	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
15-19	24	6.2	22	5.7	19	4.9	30	7.8	30	7.8
20-24	88	21.9	87	21.9	76	19.4	102	26.4	112	29.0
25-29	106	25.5	125	29.9	126	30.0	146	34.6	177	42.0
30-34	76	18.6	97	23.6	90	21.8	95	22.8	132	31.7
35-39	35	9.4	48	12.5	56	14.2	58	14.4	87	21.6
40-44	40	10.2	33	8.6	29	7.8	47	12.8	64	17.5
45-54	56	6.4	62	7.1	71	8.3	52	6.2	84	10.0
55-64	21	2.7	30	3.8	30	3.8	38	4.7	40	5.0
65+	3	0.4	5	0.6	12	1.4	5	0.6	11	1.2

Rates = Cases per 100,000 Population

Early Non-Primary/Non-Secondary Syphilis - Reported Cases and Rates by Age, Maryland, 2014 - 2018

	2014		2015		2016		2017		2018	
Age Group	Cases	Rates	Cases	Rates	Cases	Rates	Cases	Rates	Cases	Rates
10-14	0	0.0	2	0.5	0	0.0	0	0.0	0	0.0
15-19	41	10.6	25	6.5	23	6.0	18	4.7	26	6.8
20-24	145	36.0	85	21.4	72	18.4	98	25.4	140	36.2
25-29	121	29.1	133	31.8	143	34.0	154	36.5	195	46.3
30-34	67	16.4	106	25.8	122	29.5	130	31.2	182	43.7
35-39	45	12.0	66	17.2	68	17.3	81	20.1	116	28.8
40-44	24	6.1	57	14.9	41	11.1	59	16.1	52	14.2
45-54	51	5.8	93	10.7	89	10.4	103	12.2	101	12.0
55-64	28	3.6	21	2.7	34	4.3	35	4.3	36	4.5
65+	5	0.6	6	0.7	6	0.7	5	0.6	9	1.0

Rates = Cases per 100,000 Population

Late or Unknown Duration Syphilis - Reported Cases and Rates by Age, Maryland, 2014 - 2018

	2014		2015		2016		2017		2018	
Age Group	Cases	Rates	Cases	Rates	Cases	Rates	Cases	Rates	Cases	Rates
10-14	0	0.0	1	0.3	0	0.0	0	0.0	1	0.3
15-19	13	3.4	13	3.4	20	5.2	20	5.2	25	6.5
20-24	66	16.4	82	20.6	88	22.5	90	23.3	89	23.0
25-29	66	15.9	93	22.2	105	25.0	136	32.3	178	42.2
30-34	66	16.2	104	25.3	100	24.2	125	30.0	166	39.9
35-39	50	13.4	83	21.6	75	19.0	97	24.1	112	27.8
40-44	65	16.5	68	17.8	81	21.9	64	17.5	73	19.9
45-54	123	14.0	167	19.2	136	15.8	137	16.2	153	18.1
55-64	72	9.4	89	11.4	75	9.4	71	8.8	73	9.0
65+	26	3.2	49	5.8	39	4.4	43	4.8	43	4.8

Rates = Cases per 100,000 Population

Chlamydia - Reported Cases and Rates by Race/Ethnicity, Maryland, 2014 - 2018

	2014		2015		2016		2017		2018	
Race/Ethnicity	Cases	Rates	Cases	Rates	Cases	Rates	Cases	Rates	Cases	Rates
Asian	210	57.0	167	44.0	226	58.0	254	63.5	326	81.5
Black/African American	14,510	826.8	11,611	655.4	12,788	716.5	13,168	732.3	15,421	857.5
Hispanic/Latino	1,017	183.5	1,030	179.7	1,273	214.5	1,366	222.4	1,952	317.8
Other	91	60.0	52	33.5	45	28.4	111	68.6	305	188.6
White	3,173	101.0	3,160	101.2	3,812	123.0	4,580	148.8	4,688	152.3
Unknown	8,423		11,430		12,514		13,937		12,790	

Rates = Cases per 100,000 Population

Gonorrhea - Reported Cases and Rates by Race/Ethnicity, Maryland, 2014 - 2018

	2014		2015		2016		2017		2018	
Race/Ethnicity	Cases	Rates	Cases	Rates	Cases	Rates	Cases	Rates	Cases	Rates
Asian	38	10.3	30	7.9	54	13.9	80	20.0	57	14.3
Black/African American	4,065	231.6	4,189	236.4	5,806	325.3	6,514	362.2	6,471	359.8
Hispanic/Latino	140	25.3	141	24.6	212	35.7	294	47.9	348	56.7
Other	18	11.9	12	7.7	13	8.2	41	25.3	124	76.7
White	652	20.8	768	24.6	1,143	36.9	1,285	41.7	1,451	47.1
Unknown	1,195		1,718		2,295		2,764		1,854	

Rates = Cases per 100,000 Population

Primary and Secondary Syphilis - Reported Cases and Rates by Race/Ethnicity, Maryland, 2014 - 2018

	2014		2015		2016		2017		2018	
Race/Ethnicity	Cases	Rates	Cases	Rates	Cases	Rates	Cases	Rates	Cases	Rates
Asian	3	0.8	6	1.6	9	2.3	15	3.8	10	2.5
Black/African American	325	18.5	320	18.1	314	17.6	351	19.5	494	27.5
Hispanic/Latino	18	3.2	21	3.7	28	4.7	40	6.5	54	8.8
Other	0	0.0	0	0.0	2	1.3	6	3.7	16	9.9
White	88	2.8	122	3.9	145	4.7	109	3.5	161	5.2
Unknown	15		40		11		52		2	

Rates = Cases per 100,000 Population

Early Non-Primary/Non-Secondary Syphilis - Reported Cases and Rates by Race/Ethnicity, Maryland, 2014 - 2018

	2014		2015		2016		2017		2018	
Race/Ethnicity	Cases	Rates	Cases	Rates	Cases	Rates	Cases	Rates	Cases	Rates
Asian	6	1.6	7	1.8	6	1.5	7	1.8	16	4.0
Black/African American	403	23.0	392	22.1	421	23.6	421	23.4	560	31.1
Hispanic/Latino	29	5.2	33	5.8	38	6.4	73	11.9	74	12.0
Other	0	0.0	0	0.0	0	0.0	2	1.2	18	11.1
White	82	2.6	106	3.4	122	3.9	131	4.3	185	6.0
Unknown	9		56		11		49		4	

Rates = Cases per 100,000 Population

Late or Unknown Duration Syphilis - Reported Cases and Rates by Race/Ethnicity, Maryland, 2014 - 2018

	2014		2015		2016		2017		2018	
Race/Ethnicity	Cases	Rates	Cases	Rates	Cases	Rates	Cases	Rates	Cases	Rates
Asian	8	2.2	8	2.1	17	4.4	25	6.3	20	5.0
Black/African American	361	20.6	428	24.2	462	25.9	483	26.9	590	32.8
Hispanic/Latino	67	12.1	56	9.8	95	16.0	98	16.0	128	20.8
Other	4	2.6	0	0.0	1	0.6	4	2.5	17	10.5
White	61	1.9	101	3.2	122	3.9	128	4.2	150	4.9
Unknown	47		156		22		45		8	

Rates = Cases per 100,000 Population