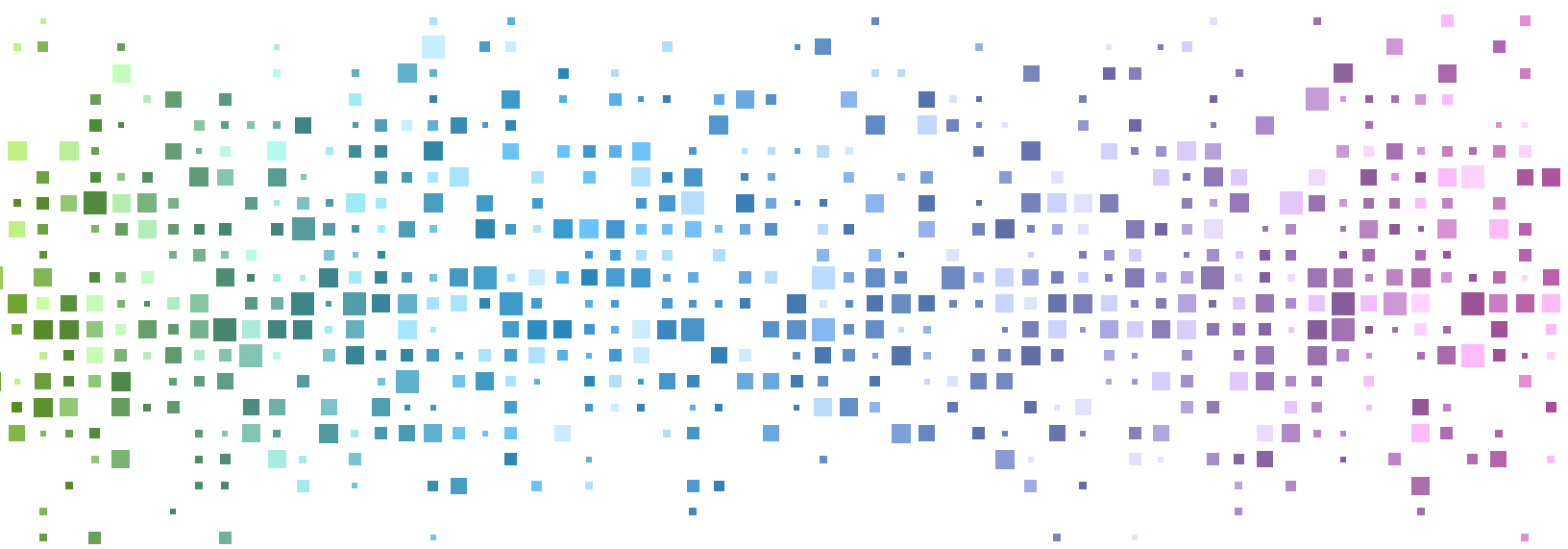




# **RHODE ISLAND**

HIV, Sexually Transmitted Diseases,  
Viral Hepatitis, and Tuberculosis  
Surveillance Report



2020

## Acknowledgments

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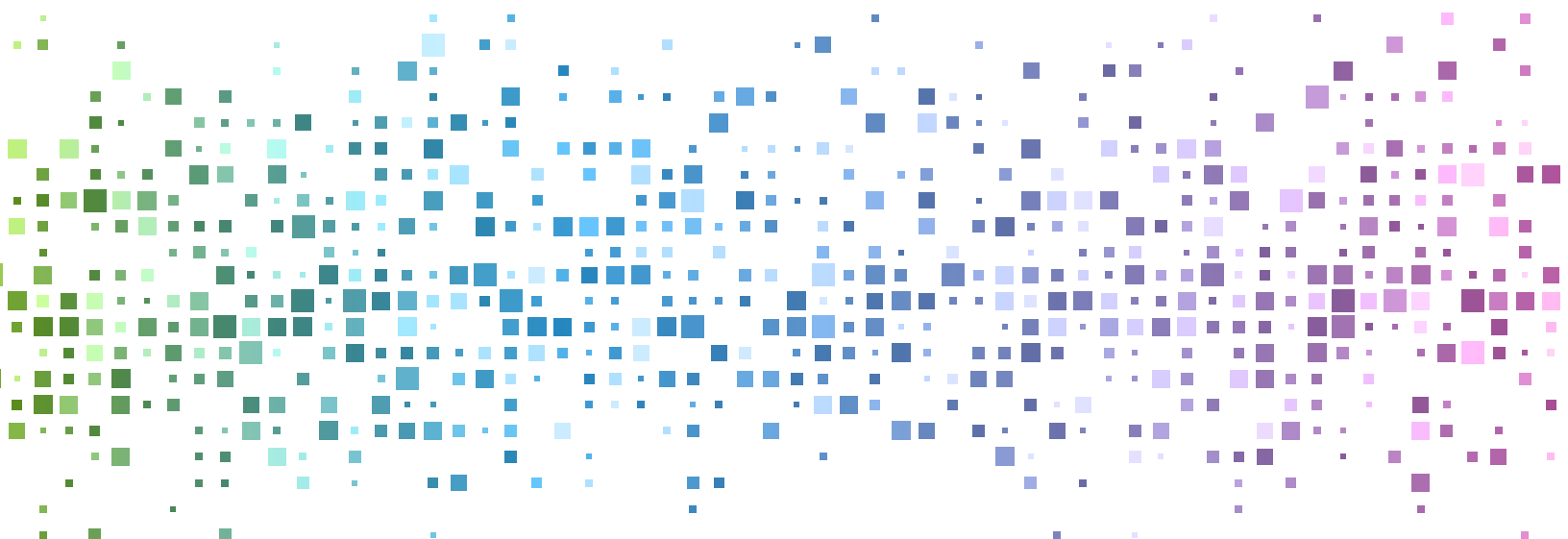
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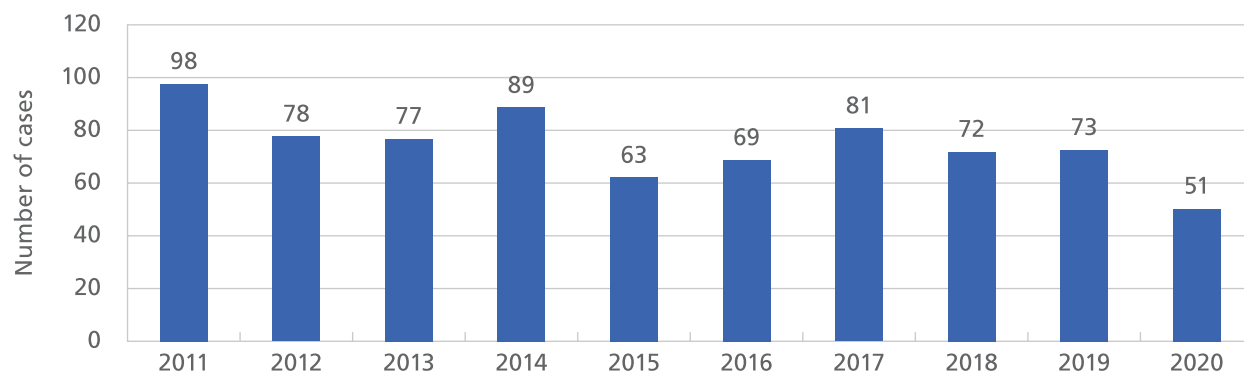
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# 01 | HIV/AIDS

The human immunodeficiency virus (HIV) is a virus that can be spread through sexual contact, needle-sharing, and from a woman to her child through pregnancy, birth, and breastfeeding. While HIV is not a curable disease, people living with HIV who are in medical care and are taking their medications can achieve an undetectable HIV viral load and have a normal life expectancy. If left untreated, HIV infection can lead to acquired immunodeficiency syndrome, or AIDS. Because the immune system is greatly weakened for people diagnosed with AIDS, those living with AIDS have an increased susceptibility to certain infections and cancers that can potentially result in death.

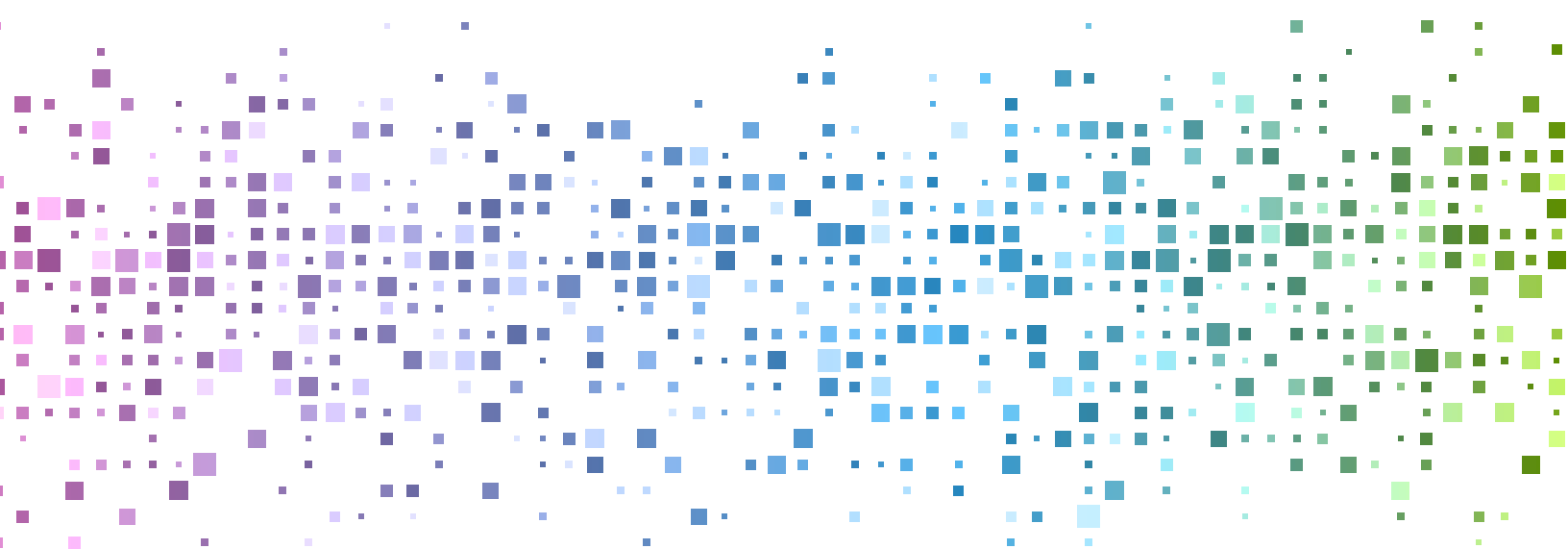
**FIGURE 1**

**Number of Newly Diagnosed Cases of HIV, Rhode Island, 2011-2020**



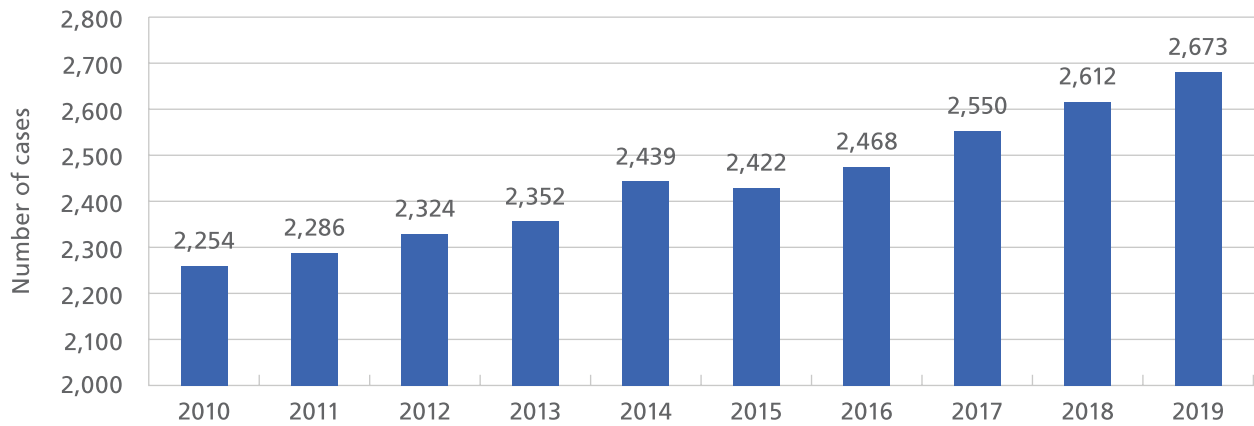
Source: Rhode Island Department of Health

Over the last 10 years, there has been an overall reduction in the number of newly diagnosed cases of HIV in Rhode Island. There has been a slight increase from 2015 through 2019, however, the number of cases in 2020 dropped significantly with the number of 2020 new diagnoses being the lowest in the past 10 years. A reduction in cases was observed in 2020, which may be attributed to the impact of COVID-19 on reduced screening by health care providers and changes in individual risk behaviors.



**FIGURE 2**

**Estimated Number of Persons Diagnosed and Living with HIV, Rhode Island, 2010-2019**



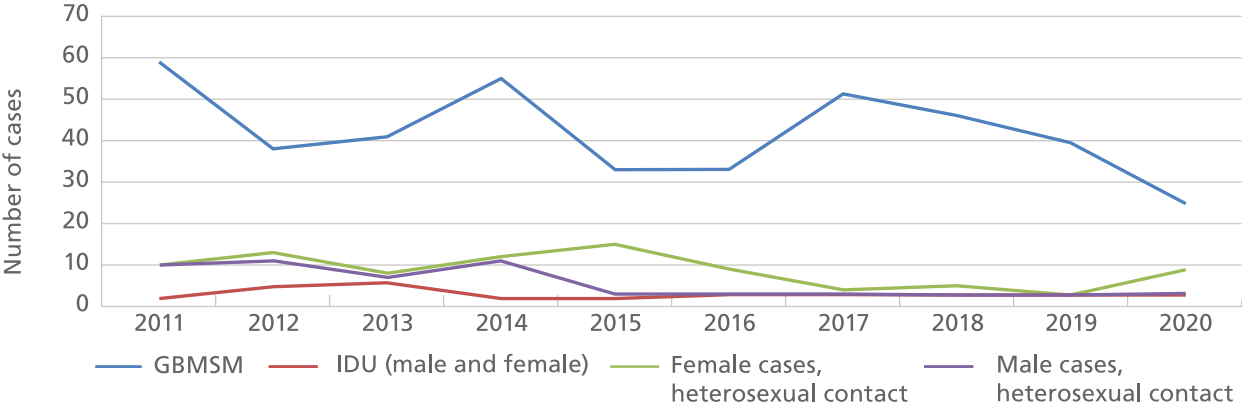
Source: Rhode Island Department of Health

There were 2,673 Rhode Islanders diagnosed with HIV through 2018 and alive through the end of 2019. It is also estimated that about 11% of individuals who are HIV-infected do not know their status, which suggests the numbers above are an underestimate of all Rhode Islanders living with HIV. Due to advances in HIV treatment, people who are HIV-positive are living longer lives and represent a growing segment of Rhode Island's population. The numbers above also reflect the migration of people living with HIV who migrate into and out of the state.

### **HIV/AIDS Deaths**

Between 1983 and 2019, a total of 1,897 deaths have occurred among Rhode Island residents diagnosed with HIV/AIDS. However, only 181 (9.5%) of those deaths occurred from 2015-2019, and deaths decreased annually in this five-year period. Between 2010 and 2019, the national age-adjusted rate of HIV-related deaths fell by nearly half. This reduction in deaths underscores the impact of improved treatment and access to care for people living with HIV.

**FIGURE 3**  
**Number of Newly Diagnosed Cases of HIV, by Mode of Exposure, Rhode Island, 2011-2020**



Source: Rhode Island Department of Health  
 People of unknown or unreported sexual orientation are not included in this data. Cases for which mode of exposure could not be determined are not included in this figure.

In the last 10 years, slightly more than half (55.6%) of newly diagnosed cases were among gay, bisexual, or other men who have sex with men (GBMSM). In the last five years, that percentage has remained at 56.2%. Meanwhile, the number of newly diagnosed cases of HIV among heterosexual males and females, as well as persons who inject drugs, has remained low. In 2020, there were almost 3 times as many cases of HIV among GBMSM when compared to females, male heterosexuals, and people who inject drugs, combined.

**Intravenous Drug Use**

HIV infection associated with intravenous drug use (IDU) has decreased substantially in the last 20 years. In 2020, only 7 newly-diagnosed cases of HIV were attributed to IDU. In the last five years, fewer than 4% of newly-diagnosed cases were attributed to IDU. A significant factor in the success of reducing IDU transmission is the ENCORE (Education, Needle Exchange, Counseling, Outreach and Referral) Program that has been operating in Rhode Island since 1995.

Source: Rhode Island Department of Health

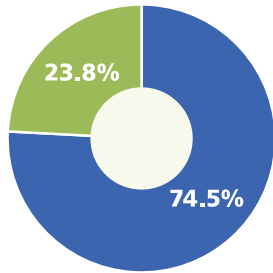
**Mother-to-child HIV Transmission**

In 2020 a case of perinatal HIV transmission was diagnosed in Rhode Island. The child was born outside of the country and was not exposed/infected in Rhode Island but was first diagnosed in Rhode Island. Apart from this single case, there have been zero reported cases of mother-to-child transmission in the last five years. A Rhode Island public health success has been the virtual elimination of HIV among babies born to mothers who are HIV positive. This success is due in large part to the routine HIV testing of pregnant women and antiretroviral therapy when indicated as part of prenatal care.

Source: Rhode Island Department of Health

**FIGURE 4**

**Percentage of Newly Diagnosed Cases of HIV, by Disease Progression at Diagnosis, Rhode Island, 2016-2020**



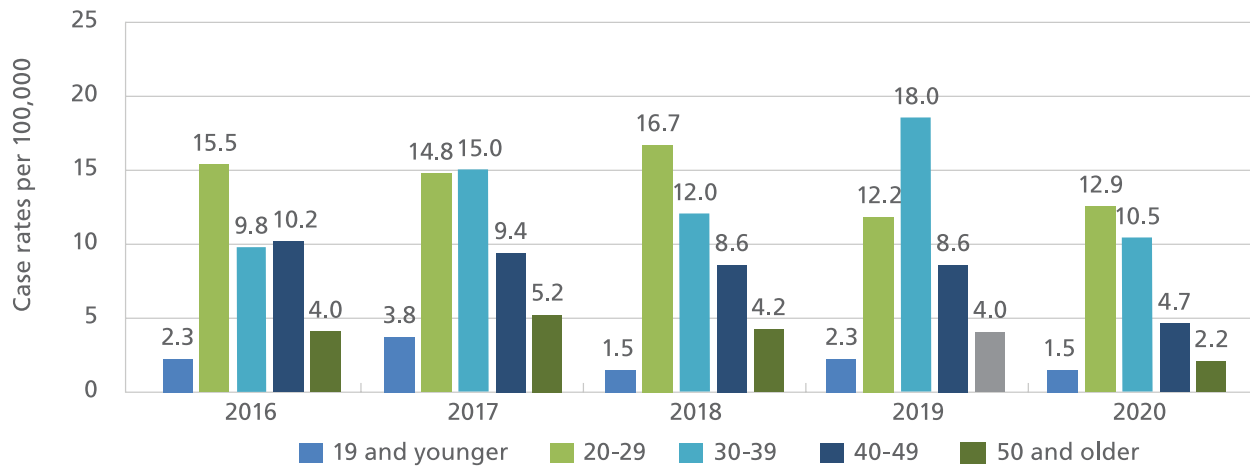
From 2016- 2020, about 24% of individuals newly diagnosed with HIV in Rhode Island also had a concurrent HIV stage 3 (AIDS) diagnosis. The average time from untreated HIV infection to development of stage 3 infection is eight years. During this time, undiagnosed HIV-positive individuals could have benefitted from treatment that would have maintained their immune function and prevented transmission to others. Because many people with HIV do not have any symptoms, undiagnosed HIV-positive individuals may unknowingly transmit HIV to others.

- HIV only diagnosis
- HIV diagnosis with progression to AIDS within 30 days

Source: Rhode Island Department of Health

**FIGURE 5**

**Rates of Newly Diagnosed Cases of HIV, by Age, Rhode Island, 2016-2020**



Source: Rhode Island Department of Health

In the past five years, the rates of newly diagnosed HIV cases were highest among Rhode Islanders in their 20s, 30s, and 40s. Rates among individuals ages 20-29 and 30-39 have remained consistently high compared to other groups. This is a continuation of a slow but consistent increase in cases in this age group over the last five years.

## 02 | RHODE ISLAND HIV CARE CONTINUUM

Rhode Island has signed on to the International Association of Providers of AIDS Care (IAPAC) Fast-Track Cities Initiative which is a global partnership with local municipalities, IAPAC, the Joint United Nations Programme on HIV/AIDS (UNAIDS), the United Nations Human Settlements Program (UN-Habitat), and the City of Paris to attain the UNAIDS 90-90-90 targets: 90% of all people living with HIV in RI will know their HIV status, 90% of all people with diagnosed HIV infection will receive sustained antiretroviral therapy (ART), and 90% of all people receiving ART will achieve viral suppression. Initially heavily focused on the 90-90-90 targets, the Paris Declaration was recently updated to establish attainment of the three 90 targets as the starting point on a trajectory towards getting to zero new HIV infections and zero AIDS-related deaths.

The Rhode Island HIV Care Continuum is a visual representation of the care status of individuals diagnosed with HIV who reside in Rhode Island. Engagement in care is used as a proxy measure for receiving sustained ART. As the Care Continuum below indicates, Rhode Island has made progress on its 90-90-90 goals: 89% of Rhode Islanders who are HIV positive know their status, 74% of Rhode Islanders living with HIV are engaged in care, and 69% of Rhode Islanders living with HIV have achieved viral suppression.

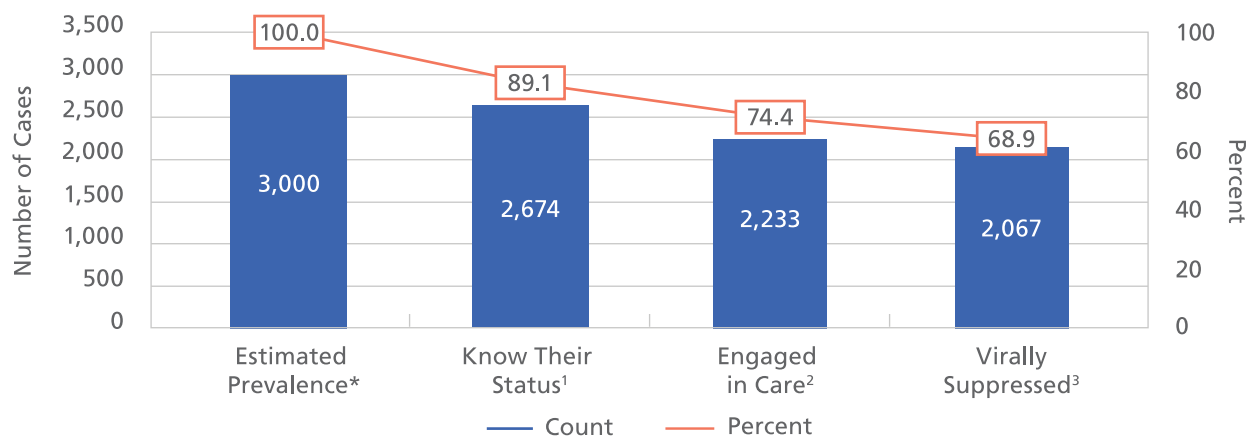
When considering only those who have been diagnosed with HIV, 83% are engaged in care and 77% are virally suppressed.

Nationally, from 2010 to 2018, the number of Americans who knew their HIV status increased from 82% to an all-time high of 86%, and the number of people with diagnosed HIV who had a suppressed viral load increased from 46% to nearly 65%. Rhode Island is currently surpassing these national averages as a result of a multifaceted approach to re-engagement and retention in care for PLWH (people living with HIV).

To help track Rhode Island's efforts and ensure accountability and transparency, RIDOH provides quarterly updates on 90-90-90 progress online at [www.health.ri.gov/909090](http://www.health.ri.gov/909090).

**FIGURE 6**

### Rhode Island HIV Care Continuum, 2020



\* Prevalence estimates derived by using HIV surveillance and CD4 data for persons aged  $\geq 13$  years at diagnosis. Estimates rounded to the nearest 100 for estimates of  $>1,000$  to reflect model uncertainty. Reflects estimated number of people living with HIV, both diagnosed and undiagnosed, at the end of 2019.

<sup>1</sup> The number of people diagnosed with HIV ("know their status") reflects persons diagnosed through 2018 and alive through the end of 2019 with most recent residence in Rhode Island.

<sup>2</sup> Receipt of care any care is defined as at least one care visit during the calendar year (2019).

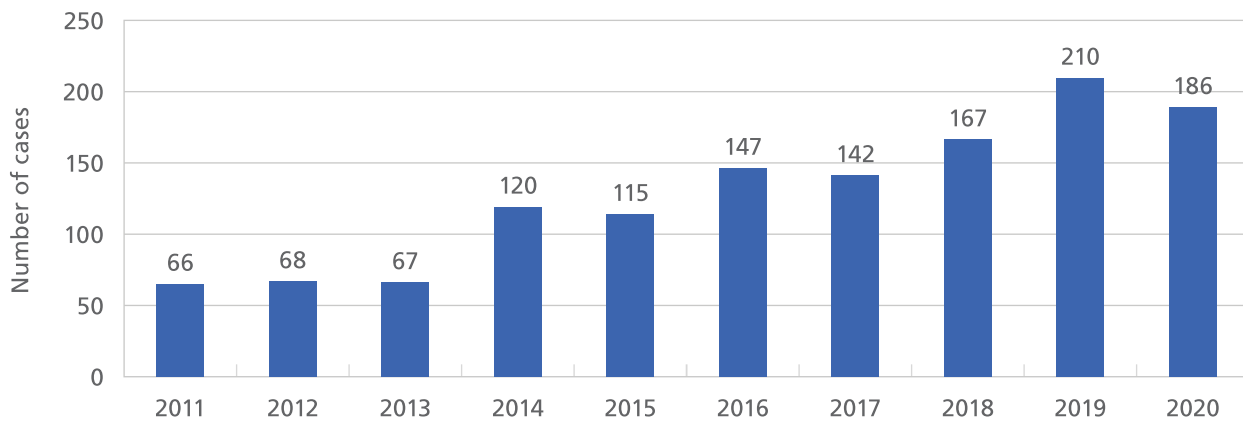
<sup>3</sup> A viral load (VL) test result of  $< 200$  copies per milliliter (c/ml) of blood represents HIV viral suppression. VL test results are from the most recent test during the specified year (2019).



## 03 | INFECTIOUS SYPHILIS

Syphilis is an infection caused by bacteria that is spread through sexual contact. While syphilis is a treatable disease, people can become re-infected if their partners are not treated. Untreated syphilis can lead to serious long-term health outcomes, including cardiac and neurological problems. Untreated syphilis in pregnant women can lead to stillbirths and infant deaths. Untreated babies may become developmentally delayed, experience seizures, and die. Once diagnosed, syphilis is curable with antibiotics.

**FIGURE 7**  
**Number of Infectious Syphilis Cases, Rhode Island, 2011-2020**

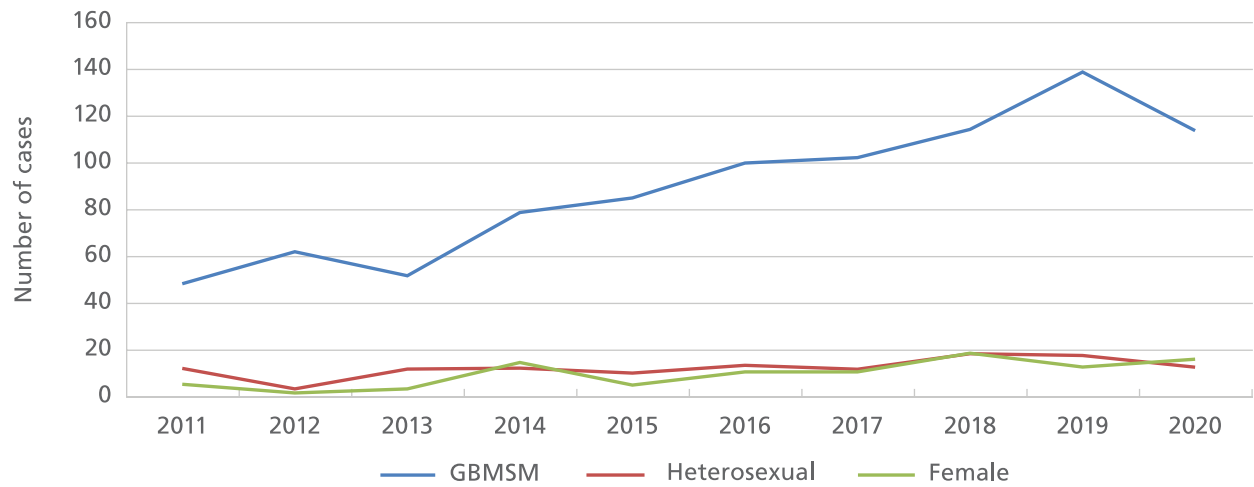


Source: Rhode Island Department of Health

Infectious syphilis is defined as infection within the past year (primary, secondary, or early latent stages) when people are most likely to transmit the infection to others. From 2011-2020, there was a 182% increase in infectious syphilis cases, from 66 cases in 2011 to 186 cases in 2020. These data represent diagnosed cases based on positive test results. A reduction in cases was observed in 2020, which may be attributed to the impact of COVID-19 on reduced screening by health care providers and changes in individual risk behaviors.

**FIGURE 8**

**Number of Infectious Syphilis Cases, by Sex and Sexual Orientation, Rhode Island, 2011-2020**

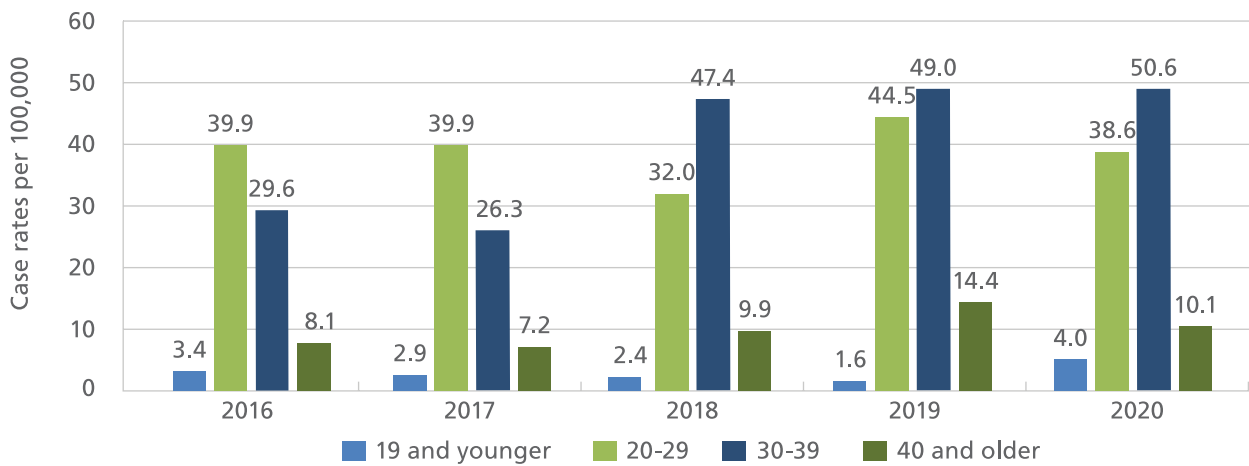


Source: Rhode Island Department of Health

Gay, bisexual, and other men who have sex with men (GBMSM) are disproportionately affected by infectious syphilis in Rhode Island. This health disparity has increased significantly in the past 10 years. In 2020 there were about 8 times as many cases of infectious syphilis among GBMSM as there were among heterosexual males and females.

**FIGURE 9**

**Rates of Infectious Syphilis Cases, by Age, Rhode Island, 2016-2020**



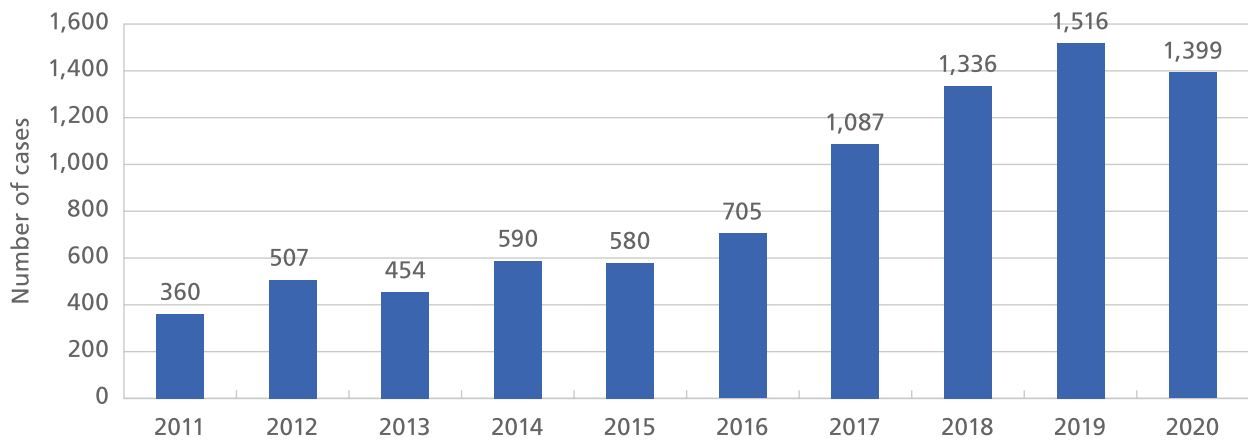
Source: Rhode Island Department of Health

From 2016-2020, people in their 20s and 30s had the highest infectious syphilis rates in Rhode Island.

## 04 | GONORRHEA

Gonorrhea is an infection caused by bacteria that is spread through sexual contact. While gonorrhea is treatable, there are increasing concerns about strains of gonorrhea in the United States that are resistant to standard medications. If left untreated, gonorrhea can have reproductive health consequences for women. Pregnant women can transmit gonorrhea to their newborn babies, resulting in health problems for the child.

**FIGURE 10**  
**Number of Gonorrhea Cases, Rhode Island, 2011-2020**

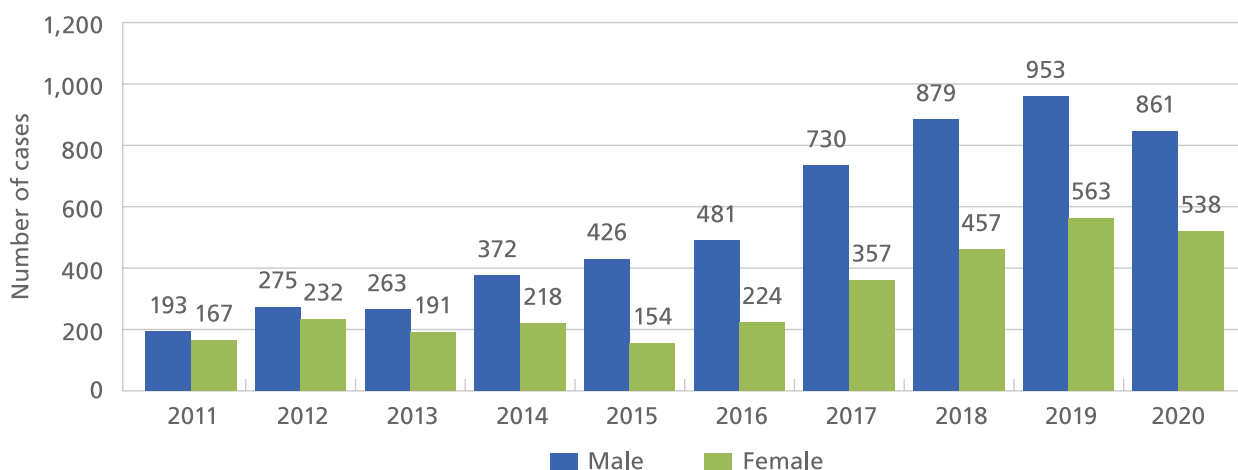


Source: Rhode Island Department of Health

Since 2011, rates of gonorrhea have increased by 289% in Rhode Island. This increase may be partially attributed to increases in extra-genital testing (i.e. testing of the throat and rectum) for gonorrhea by Rhode Island providers in recent years. These data represent diagnosed cases based on positive test results. A reduction in cases was observed in 2020, which may be attributed to the impact of COVID-19 on reduced screening by health care providers and changes in individual risk behaviors.

**FIGURE 11**

**Number of Gonorrhea Cases, by Sex, Rhode Island, 2011-2020**

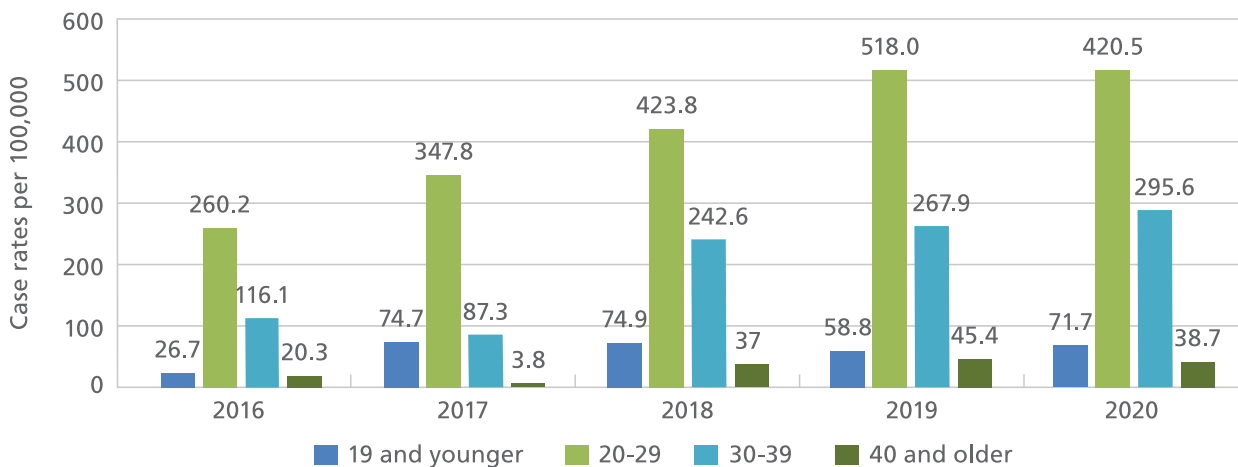


Source: Rhode Island Department of Health

In the last 10 years, more gonorrhea cases have been observed in males than in females. This is likely attributable to a rise in gonorrhea in the GBMSM population.

**FIGURE 12**

**Rates of Gonorrhea Cases, by Age, Rhode Island, 2016-2020**



Source: Rhode Island Department of Health

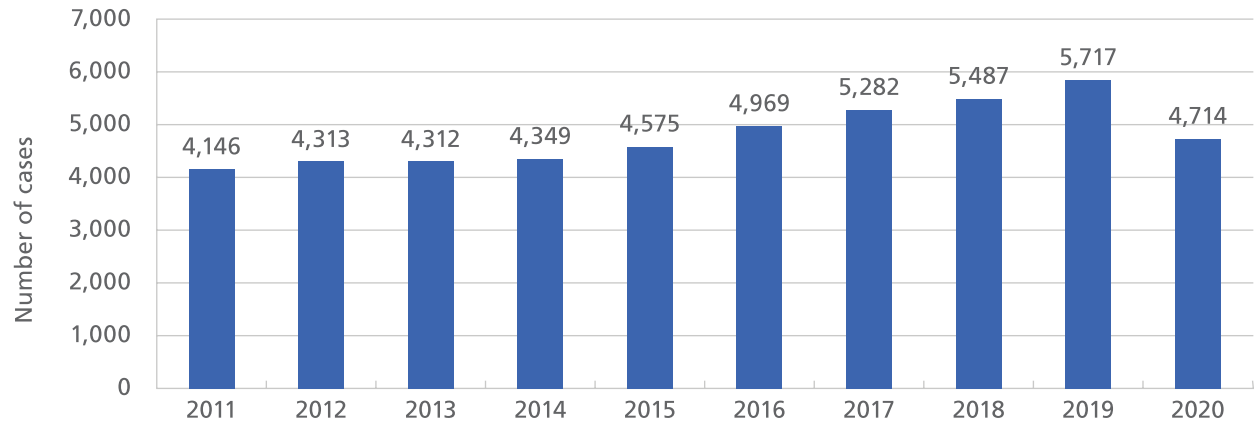
In the last five years, case rates for gonorrhea have been consistently highest among people in their 20s, followed by people in their 30s.

## 05 | CHLAMYDIA

Chlamydia is an infection caused by bacteria that is spread through sexual contact. While chlamydia is treatable, people can get re-infected if their partners are not treated. Untreated chlamydia can lead to serious health problems, especially among young women, including pelvic inflammatory disease, ectopic pregnancy, and infertility.

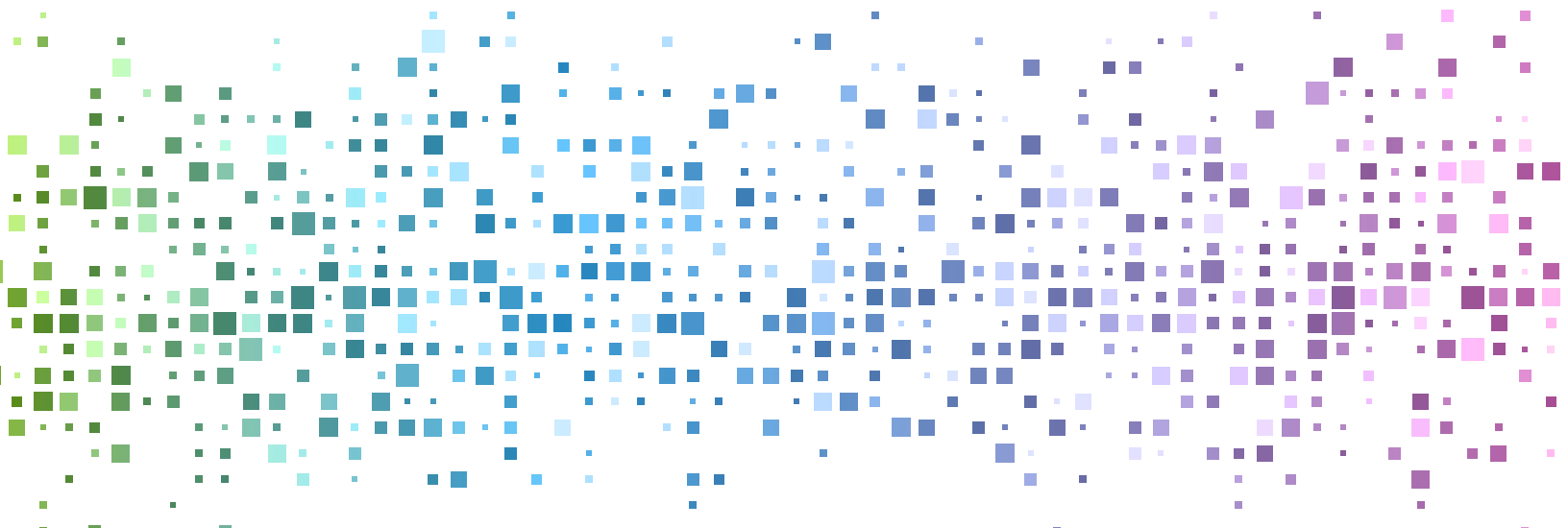
**FIGURE 13**

### Number of Chlamydia Cases, Rhode Island, 2011-2020



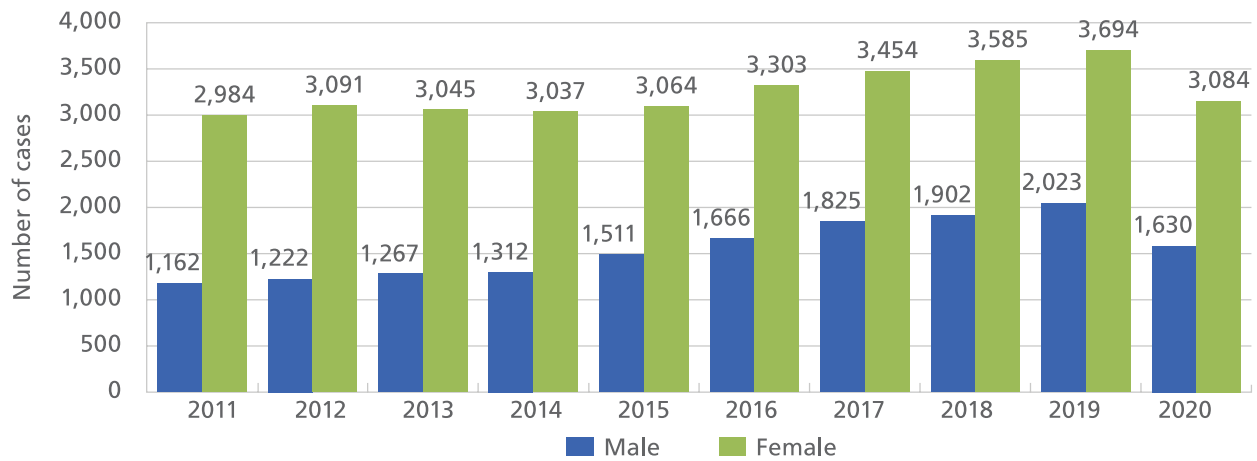
Source: Rhode Island Department of Health

In the last 10 years, the number of chlamydia cases has increased by 14% from 4,146 cases in 2011 to 4,714 cases in 2020. These data represent diagnosed cases based on positive test results. A reduction in cases was observed in 2020, which may be attributed to the impact of COVID-19 on reduced screening by health care providers and changes in individual risk behaviors.



**FIGURE 14**

**Number of Chlamydia Cases, by Sex, Rhode Island, 2011-2020**

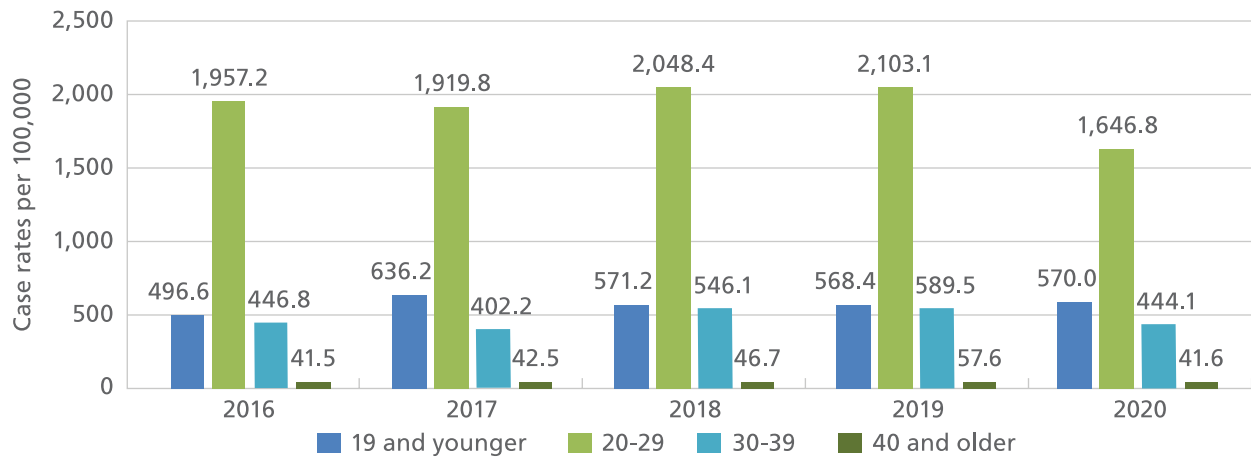


Source: Rhode Island Department of Health

Most chlamydia cases in the last 10 years have been diagnosed in females. In 2020, nearly twice as many cases were diagnosed in females than in males. This difference is likely due to two factors: women generally access routine health-care more frequently than men and are screened for chlamydia more often; also, many men who have chlamydia are often asymptomatic and therefore do not seek medical care.

**FIGURE 15**

**Rates of Chlamydia Cases, by Age, Rhode Island, 2016-2020**



Source: Rhode Island Department of Health

From 2016-2020, the highest rates of chlamydia were in people in their 20s, followed by people age 19 or younger, followed by people in their 30s.

## 06 | VIRAL HEPATITIS

Hepatitis refers to inflammation of the liver. When the liver is inflamed, or damaged, its function can be affected. Hepatitis can be caused by heavy alcohol use, toxins, some medications, and certain medical conditions. However, hepatitis is also caused by several viruses (i.e. viral hepatitis). The most common types of viral hepatitis in the United States are hepatitis A, hepatitis B, and hepatitis C. Importantly, Hepatitis C Virus (HCV) is the most common blood-borne infection in the United States. It is estimated that 3.2 million Americans are chronically infected.<sup>1</sup> Chronic HCV infection increases the risk for hepatic fibrosis, cirrhosis, and hepatocellular carcinoma and is the most common reason for needing a liver transplant.

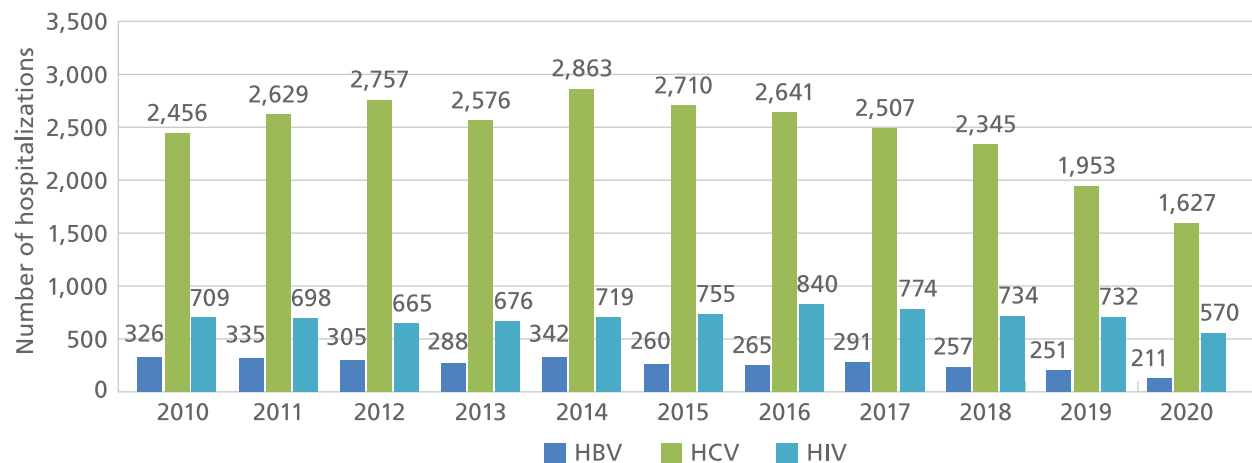
An estimated 16,603 to 22,660 people in Rhode Island (approximately 2% of Rhode Islanders) have ever been infected with HCV.<sup>2</sup> Roughly 20% of those infected with HCV will clear their infection without any treatment. The remaining 80% are at risk of developing chronic disease.

Individuals born between 1945 and 1965, known as baby boomers, bear a disproportionate share of the HCV disease burden across the nation. Baby boomers may have been exposed in the past through medical procedures, needle-sharing, or sexual contact. HCV was not identified and understood during the 1970s when many of these infections occurred. The length of time since infection, combined with an aging baby boomer population, has led to an increase in hospitalizations and an increase in deaths among those infected with HCV.

Figure 16 shows hospitalizations with any discharge diagnosis of Hepatitis B Virus (HBV), HCV, or HIV. Discharge diagnosis of HCV remained consistently higher than HIV and HBV hospitalizations during the past decade.

**FIGURE 16**

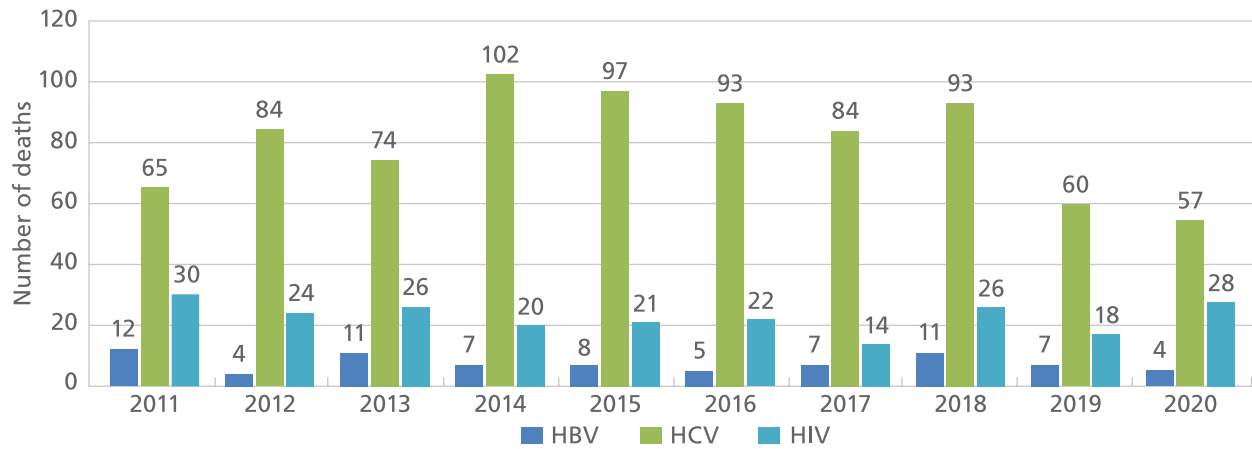
### Number of Inpatient Hospitalizations with Any Discharge Diagnosis of HBV, HCV, or HIV, Rhode Island, 2010-2020



Source: Rhode Island Department of Health

FIGURE 17

Number of Deaths Associated with HBV, HCV, and HIV, Rhode Island, 2011-2020



Source: Rhode Island Department of Health

In Rhode Island, like national trends, the annual number of deaths attributed to HCV in recent years surpassed the number of deaths attributed to HIV and 59 other nationally notifiable infectious diseases, combined.<sup>3</sup>

Over the past few years there have been advances in treatment options and improvements in healthcare access for people living with HCV infection. An increase in the availability of direct-acting antiviral (DAA) medication, which are more effective, safer, and better tolerated than previous HCV therapies, will improve cure rates for people living with HCV and reduce the morbidity and mortality associated with HCV.



## 07 | TUBERCULOSIS

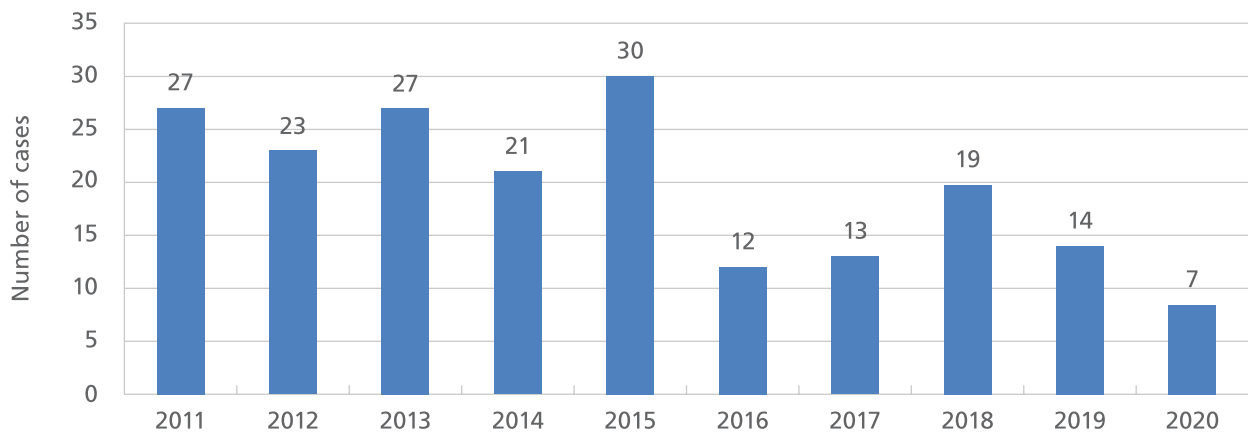
Tuberculosis (TB) is a disease caused by a bacterium called *Mycobacterium tuberculosis*. TB can be spread from one person to another through the air. When someone with active TB disease in the lungs or throat coughs, sings, or even speaks, TB bacteria can be released into the air and can stay in the air for hours.

Active TB can be within the lungs (pulmonary) or outside the lungs (extrapulmonary). Common symptoms of active TB disease are fever, cough, and weight loss. Diagnosis may involve chest imaging and sputum and/or tissue collection for smear, nucleic acid amplification (NAAT), and/or culture testing. Drug susceptibility testing is often performed to determine the best course of treatment.

Latent TB infection (LTBI) is the presence of *M. tuberculosis* in the body without signs or symptoms, radiographic, or bacteriologic evidence of TB disease. While not everyone with LTBI will develop active TB disease, about 5-10% of infected people will develop TB disease if not treated. HIV infection, injection drug use, low body weight, and other medical conditions are risk factors associated with progression from LTBI to TB disease.

**FIGURE 18**

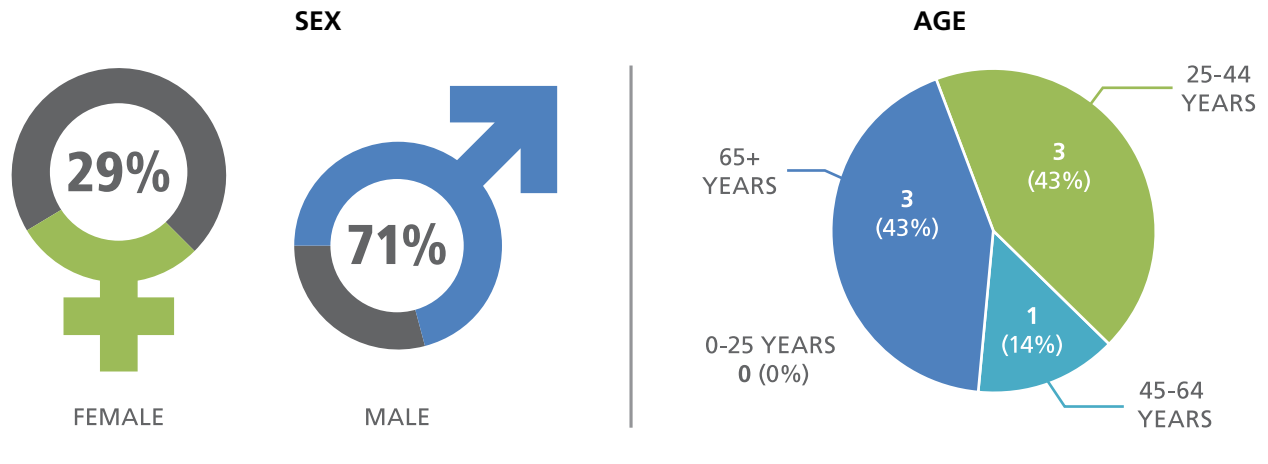
### Number of Diagnosed Cases of Active Tuberculosis, Rhode Island, 2011-2020



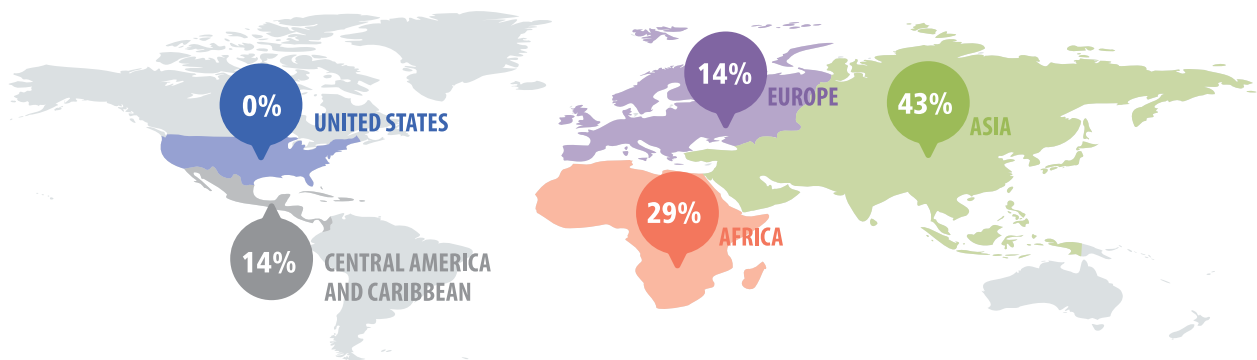
Source: Rhode Island Department of Health

Over the last ten years, the number of reported cases of active tuberculosis has remained relatively low, ranging from 7 to 30 cases. Over the last five years, the rate of active TB in Rhode Island has remained under 2 cases per 100,000 population.

## Demographic Characteristics of Active Tuberculosis Cases (n=7), 2020



## Country of Birth



### CLINICAL CHARACTERISTICS - 2020

<b>71.4%</b>	Proportion of TB cases with pulmonary disease
<b>85.7%</b>	Proportion of TB cases with a positive culture
<b>85.7%</b>	Proportion of TB cases with a positive sputum smear

### Tuberculosis Drug Resistance

TB resistance occurs when people are infected with a drug resistant strain, receive suboptimal TB medication regimens, or receive incomplete treatment. Multi-drug resistant TB (MDR-TB) and extensively-drug resistant TB (XDR-TB) is a rare and more severe kinds of TB that are also resistant to first and second-line medications such as fluoroquinolones. It is important to diagnose and treat MDR-TB appropriately to prevent further transmission of drug-resistant disease. In 2020, 86% of cases were confirmed by culture; of them, 14% were resistant to one or more drugs. There were no cases of MDR-TB in 2020.

**FIGURE 19**

**Demographic Characteristics of Active Tuberculosis Cases, Rhode Island 2011-2020**

<b>Total Number of Cases</b>	193	
<b>Race/Ethnicity</b>		
Non-Hispanic White	27	14.0%
Non-Hispanic Black	44	22.8%
Hispanic or Latino	63	32.6%
Asian	59	30.6%
Am Indian/AK Native	<5	NA
HI Native/Pacific Islander	<5	NA
<b>Sex</b>		
Female	93	48.2%
Male	100	51.8%
<b>County of Residence</b>		
Bristol	5	2.6%
Kent	12	6.2%
Newport	8	41.0%
Providence	163	84.5%
Washington	5	2.6%

<b>Country of Origin</b>		
United States	38	19.7%
Not United States	155	80.3%
<b>Age Group</b>		
0–4	5	2.6%
5–14	<5	1.6%
15–24	17	8.8%
25–44	62	32.1%
45–64	49	25.3%
65+	57	29.5%
<b>Site of disease</b>		
Pulmonary	118	61.1%
Extra-pulmonary	60	31.1%
Both	15	7.8%
<b>Sputum Smear (+)</b>	63	32.6%
<b>HIV (+)</b>	12	6.2%
<b>MDR-TB</b>	63	32.6%

Source: Rhode Island Department of Health

**RIDOH TB Directly Observed Therapy Program**

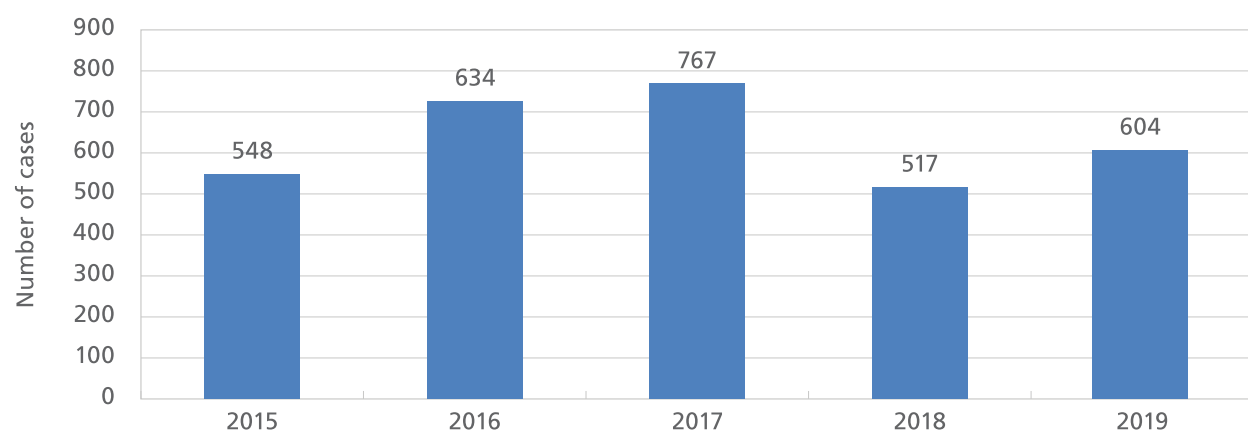
RIDOH has two over-arching priorities to prevent TB transmission in Rhode Island.

1. Treat all active cases to ensure all patients are cured and prevent transmission to others.
2. Assure adherence to therapy, which can take up to 9 months or longer, to prevent the development of antibiotic-resistant strains of TB.

To achieve these goals and assure that patients are adherent to their medications, RIDOH has a policy of universal directly-observed-therapy (DOT) through RIDOH staff visits to patients’ homes or internet-based video submission for the duration of treatment. Over the last 10 years, the DOT program has had an average medication administration success rate of 98%.

**FIGURE 20**

**Reported cases of Latent Tuberculosis Infection (LTBI), Rhode Island, 2015-2019**



Source: Rhode Island Department of Health

Data unavailable for MMWR Year 2020 due to effects of the COVID-19 pandemic.

**Latent TB Infection (LTBI)**

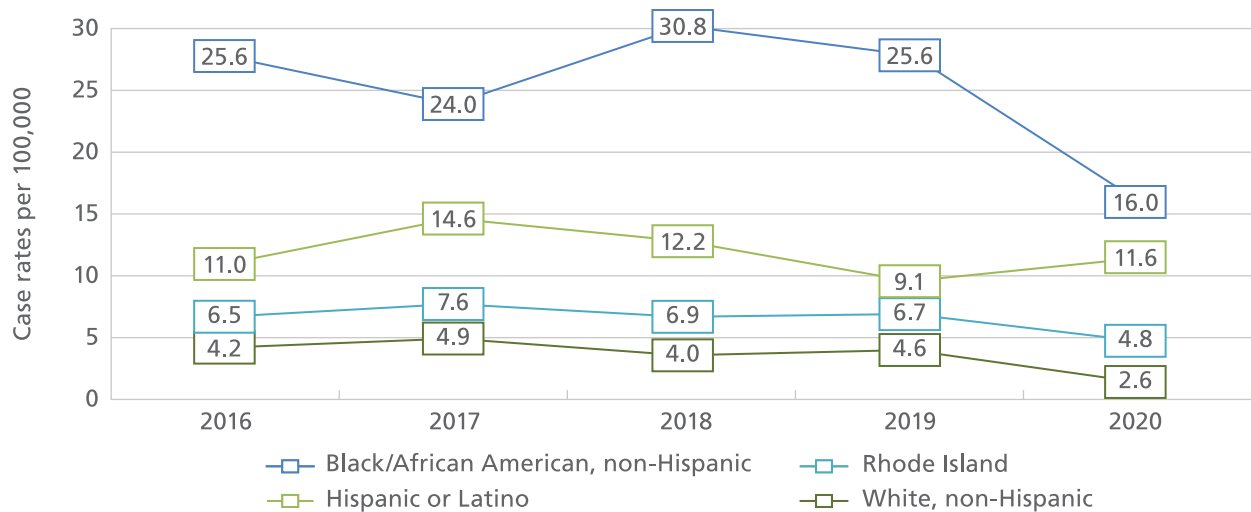
In Rhode Island it is estimated that about 15,000-20,000 individuals are living with latent TB infection (LTBI). It is important to identify LTBI cases and promote initiation and completion of treatment to reduce the number of individuals who have LTBI that subsequently become active TB cases. LTBI has been reportable in Rhode Island since 2010.

## 08 | RACIAL AND ETHNIC GROUPS

According to the CDC, acknowledging the inequities in STD and HIV rates by race and ethnicity is one of the first steps in addressing these disparities. The factors contributing to these health inequities are complex and can include poverty, income inequality, access to healthcare, and stigma/discrimination. Another contributing factor is that in communities where STD prevalence is higher, individuals face a greater chance of encountering an infected partner than those in lower-prevalence settings.

**FIGURE 21**

**Rates of Newly Diagnosed Cases of HIV, by Racial and Ethnic Group, Rhode Island, 2016-2020**

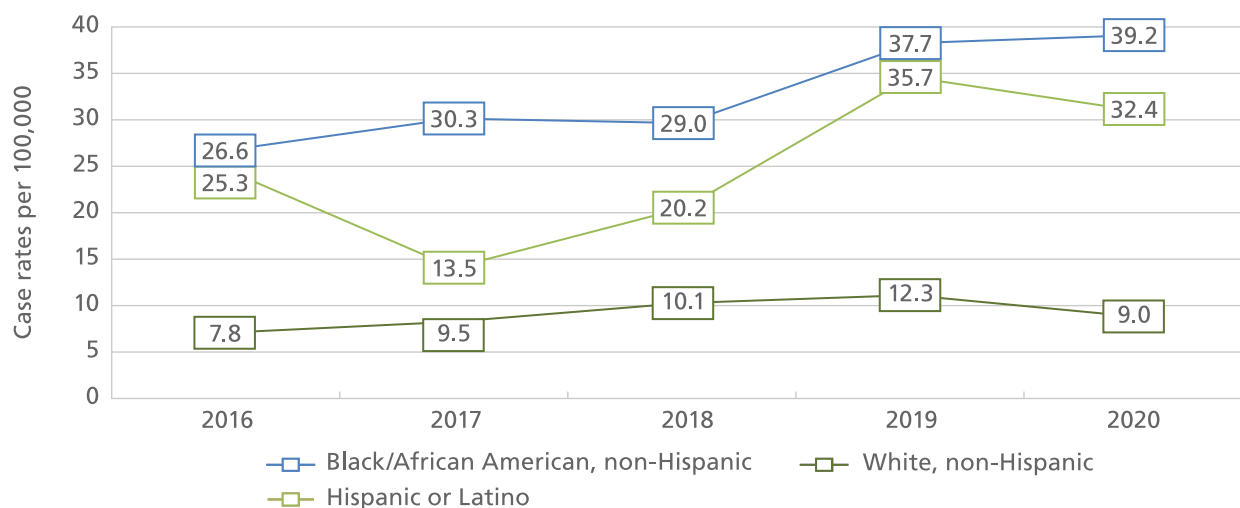


Source: Rhode Island Department of Health

While HIV diagnoses have decreased overall in the last 10 years, disparities in HIV rates among racial and ethnic groups in Rhode Island persist. When compared to whites, in 2020, the rates of HIV were over six times higher among Blacks/African Americans, and over twice as high among Hispanics/Latinos.

FIGURE 22

Rates of Infectious Syphilis, by Racial and Ethnic Group, Rhode Island, 2016-2020

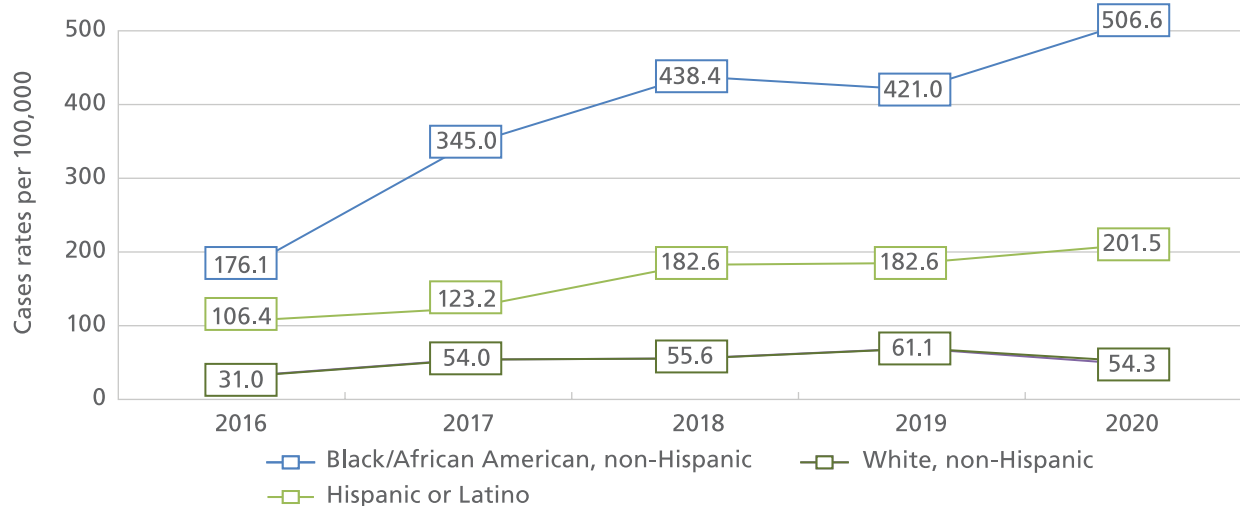


Source: Rhode Island Department of Health

Infectious syphilis diagnoses have increased in the last 10 years and disparities in rates among racial and ethnic groups in Rhode Island have grown. In 2020 the rates of infectious syphilis were three-to-four times higher among the Black/African American and Hispanic populations as compared to the non-Hispanic white population.

FIGURE 23

Rates of Gonorrhea, by Racial and Ethnic Group, Rhode Island, 2016-2020

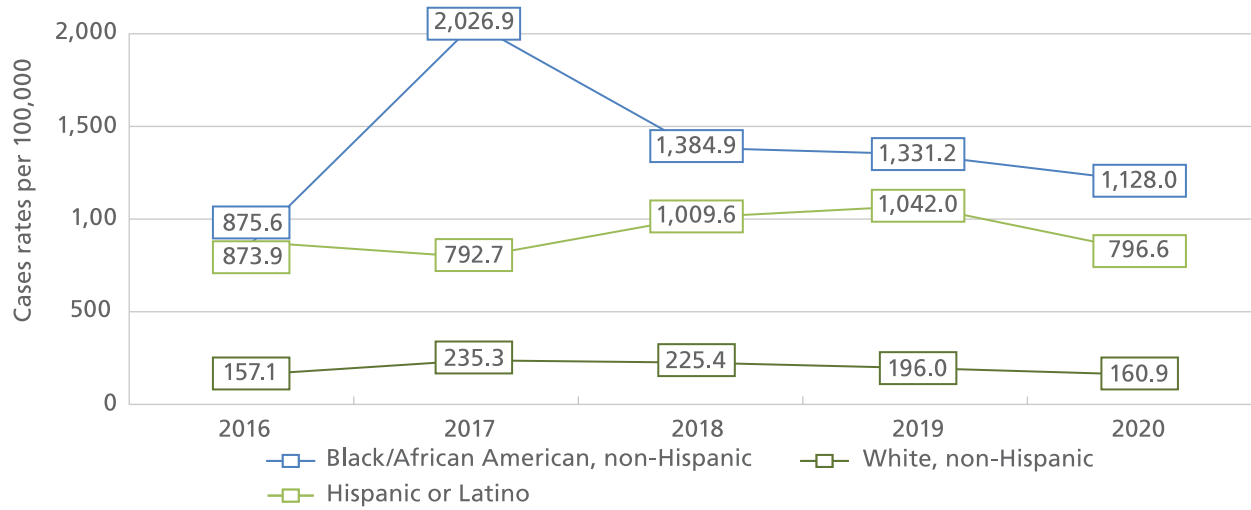


Source: Rhode Island Department of Health

Gonorrhea diagnoses have increased in the last 10 years and disproportionately affect minority populations. In 2020, gonorrhea rates among the Black/African American population were more than nine times higher than in whites; rates in the Hispanic population were nearly four times higher than in non-Hispanic white populations.

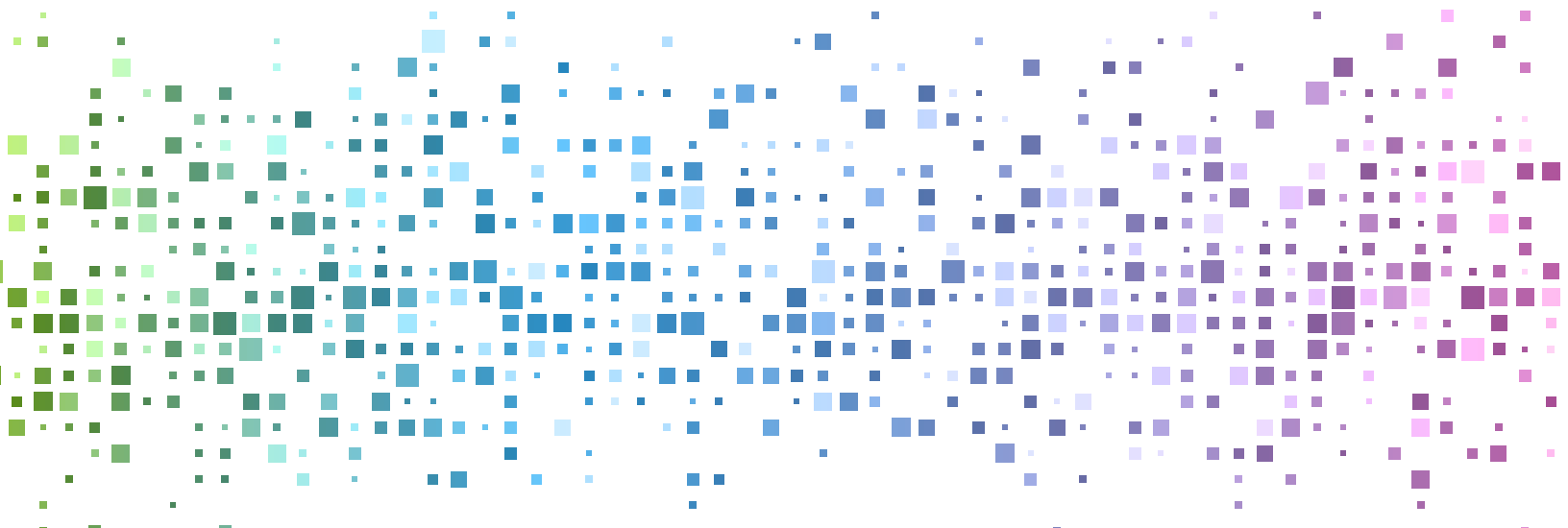
FIGURE 24

Rates of Chlamydia, by Racial and Ethnic Group, Rhode Island, 2016-2020



Source: Rhode Island Department of Health

Chlamydia diagnoses have steadily increased in the last 10 years and disproportionately affect minority populations. In 2020, chlamydia rates were seven times higher among the Black/African American population as compared to non-Hispanic whites. Of note, the rate of chlamydia doubled among Blacks/African Americans from 2016 to 2017.

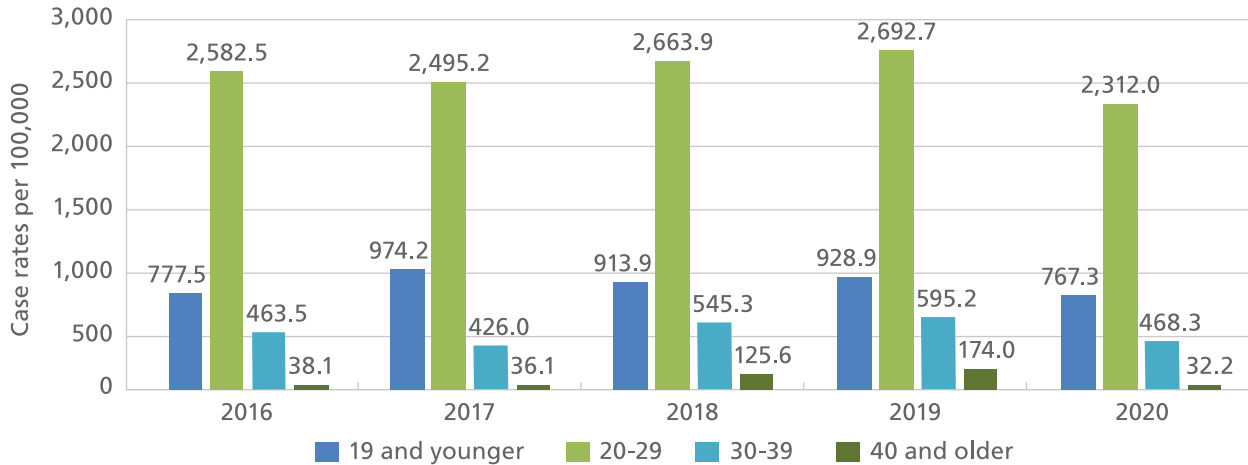


## 09 | FEMALES

In addition to the biological factors that put females at a higher risk of STDs, females may be less likely to negotiate safer sexual practices, such as condom use, than males. These social factors can significantly affect a female's sexual and reproductive health and subsequently, the health of her newborn baby.

**FIGURE 25**

### Rates of Chlamydia in Females, by Age, Rhode Island, 2016-2020



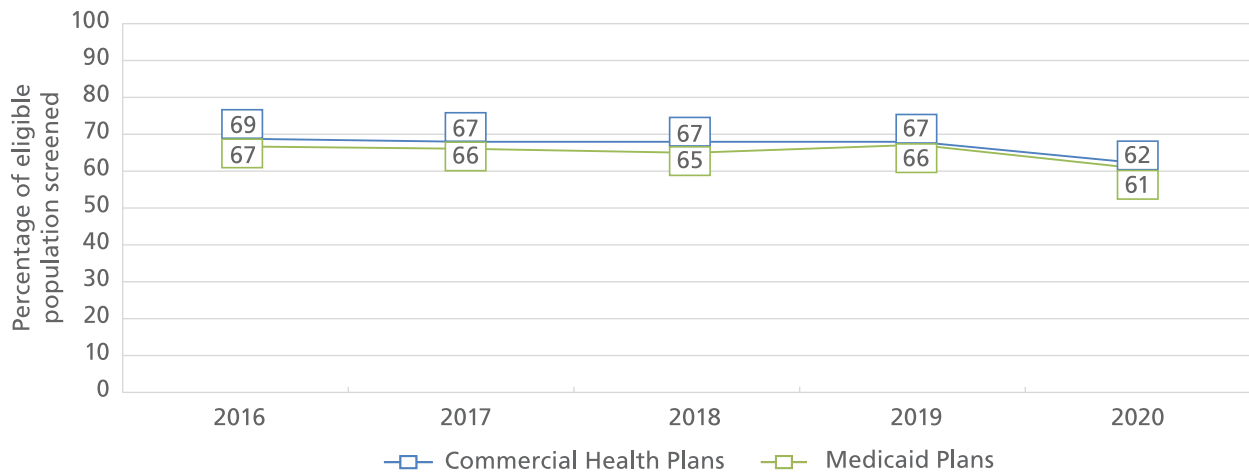
Source: Rhode Island Department of Health

Over the past five years, rates of chlamydia in females have remained highest in the 20-29 age group, followed by the 19 and younger age group. In 2020, the rate of chlamydia among females in their 20s was more than three times higher than any other age group.



**FIGURE 26**

**Screening for Chlamydia in Females Age 16-24, by Insurance Plan, Rhode Island, 2016-2020**



Source: Rhode Island Department of Health

Through the Healthcare Effectiveness and Data Information Set (HEDIS), insurance claim data are used to calculate annual estimates of the percentage of sexually active females, age 16-24, who are screened for chlamydia. Commercial Health Plans include data from Blue Cross Blue Shield of Rhode Island, United Health Care, and Neighborhood Health Plan; Medicaid plans include data from Tufts Health, Neighborhood Health Plan, and United Health Care. In 2020 in Rhode Island, 62% of women enrolled in Medicaid and 61% of women enrolled in commercial health plans were screened for chlamydia.

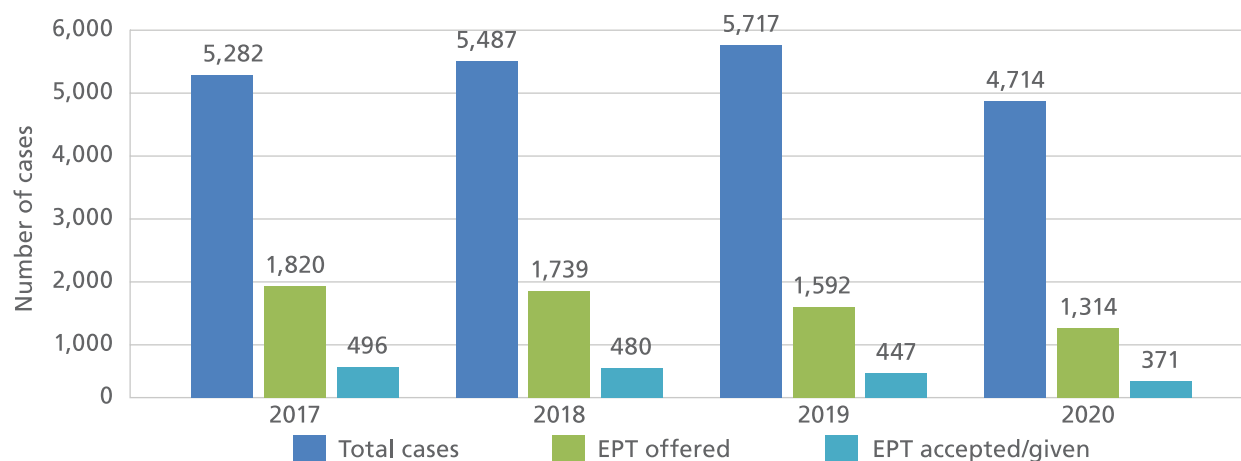
### HIV Risk Factors and Females

Characteristics of the 68 females that were newly diagnosed with HIV in Rhode Island from 2016 to 2020 include:

- Born outside of the United States: 66%
- Injected Prescription Drugs in their lifetime: 7%
- Sex with someone known to be HIV positive: 18%
- Sex with someone who injects drugs: 13%
- Sex while high or intoxicated: 12%
- History of incarceration: 12%

**FIGURE 27**

**Expedited Partner Therapy Offered/Accepted for Partners of Cases of Chlamydia, Rhode Island, 2017-2020**



Source: Rhode Island Department of Health  
Offer and acceptance of EPT based on provider report on the RIDOH STD Case Report Form

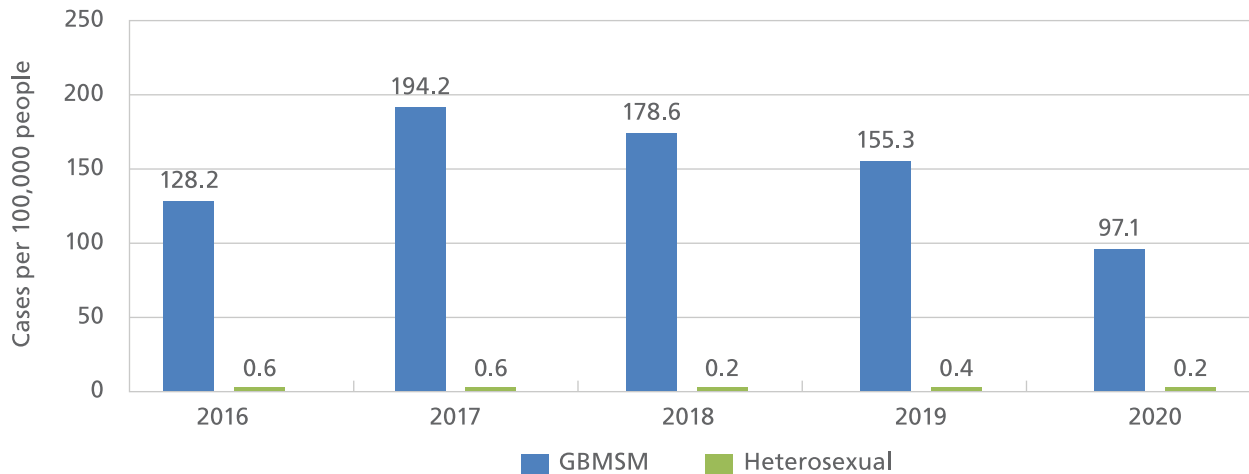
Legislation permitting Expedited Partner Therapy (EPT) was passed in Rhode Island in 2006. This legislation allows physicians to prescribe prescription drugs for a patient's sexual partners without evaluating or testing their patients' partners. The CDC recommends EPT as a useful option to facilitate partner management particularly for treatment of male partners of women with chlamydial infection.

## 10 | GAY, BISEXUAL, AND OTHER MEN WHO HAVE SEX WITH MEN (GBMSM)

The relatively high incidence of STD infection among GBMSM may be related to multiple factors, including individual behaviors and sexual network characteristics.<sup>4-6</sup> The number of lifetime or recent sex partners, rate of partner exchange, and frequency of condomless sex each influence an individual's probability of exposure to STDs.<sup>4</sup> However, GBMSM network characteristics such as high prevalence of STDs, interconnectedness and concurrency of sex partners, and possibly limited access to health care also affect the risk of acquiring an STD.<sup>4,7</sup> Furthermore, experiences of stigma – verbal harassment, discrimination, or physical assault based on attraction to men – are associated with increased sexual risk behavior among GBMSM.

**FIGURE 28**

### Rates of Newly Diagnosed Cases of HIV in Males, by Mode of Sexual Exposure, Rhode Island, 2016-2020

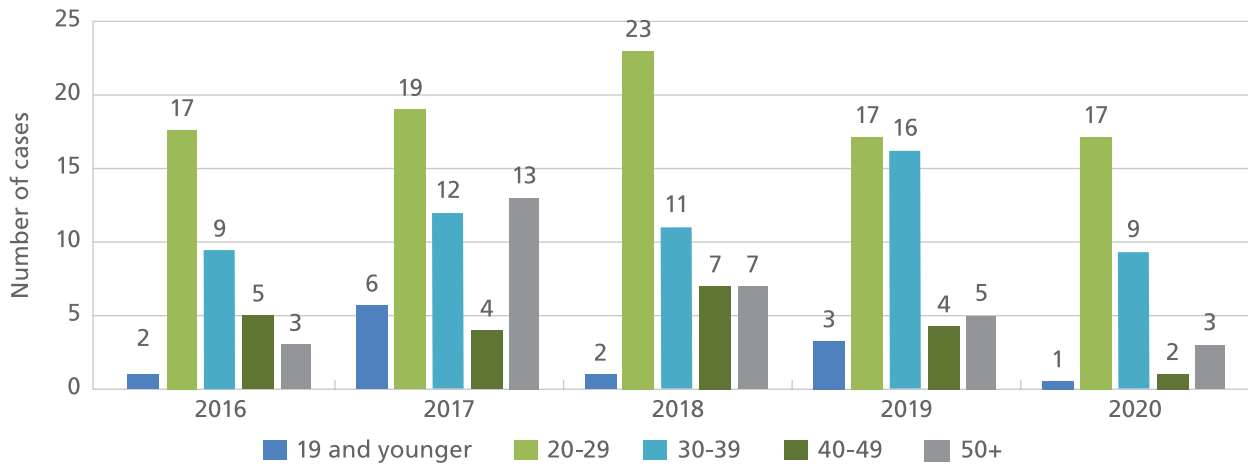


Source: Rhode Island Department of Health

In the last five years, the rates of newly diagnosed cases of HIV among GBMSM have been substantially higher than heterosexual men.

**FIGURE 29**

**Newly Diagnosed Cases of HIV in GBMSM, by Age, Rhode Island, 2016-2020**



Source: Rhode Island Department of Health

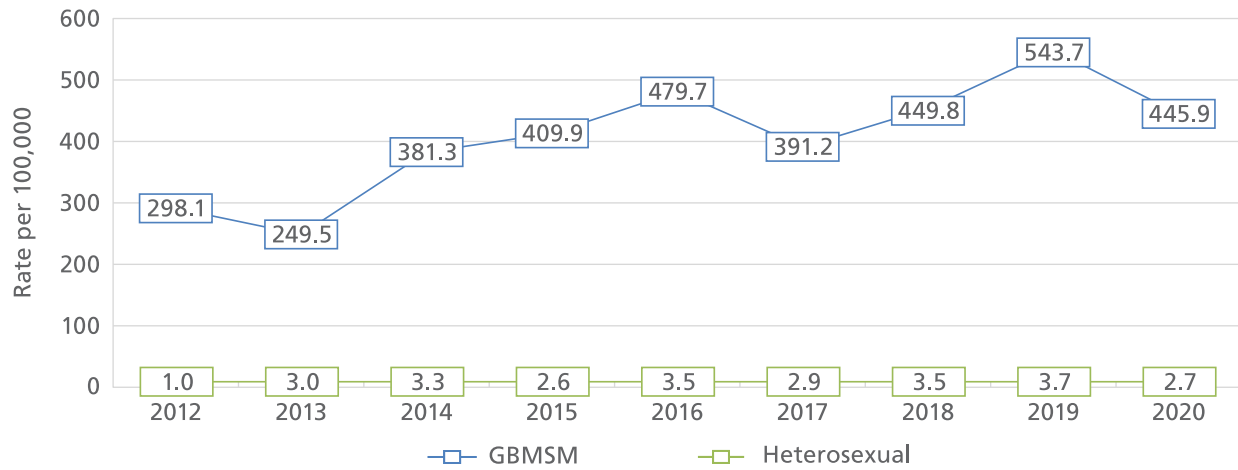
From 2016-2020, there has been an increase in the number of newly diagnosed cases of HIV in GBMSM in their 20s and 30s. Like other areas in the United States, young gay and bisexual Black/African American and Hispanic/Latino men in Rhode Island have been increasingly affected by HIV.

### Gonorrhea and the GBMSM Population

Information collected through interviews with men in Rhode Island diagnosed with gonorrhea indicates that approximately 54% of the males identified as GBMSM in 2019, compared to 35% in 2014. Some of the increase may be due to an increase in extragenital testing in GBMSM, which is detecting more gonorrhea cases that would have been missed in previous years.

**FIGURE 30**

**Rates of Infectious Syphilis in Males, by Sexual Orientation, Rhode Island, 2012-2020**



Source: Rhode Island Department of Health

Infectious syphilis was diagnosed in the GBMSM population at a rate more than 165 times higher than in the heterosexual male population in 2020. Over the last ten years this trend has been observed consistently.

**FIGURE 31**

**GBMSM with HIV and Infectious Syphilis, Rhode Island, 2016-2020**

Year	Cases identifying as GBMSM	Self-reported HIV positive	Percent HIV positive in GBMSM
2016	100	31	31.0
2017	100	24	24.0
2018	115	31	27.0
2019	139	50	36.0
2020	114	62	54.4

Source: Rhode Island Department of Health

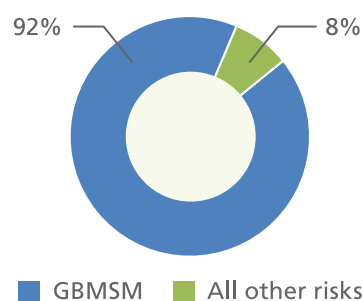
A substantial percentage of GBMSM diagnosed with infectious syphilis in recent years are also living with HIV. Of the 114 GBMSM who had infectious syphilis in 2020, 62 individuals (54.4%) were HIV-positive. HIV-positive men who are co-infected with infectious syphilis are more likely to spread HIV to their sexual partners than HIV-positive men who do not have infectious syphilis.

# 11 | YOUTH AND YOUNG ADULTS

According to the CDC, prevalence estimates suggest that young people (ages 15–24) account for half of all newly diagnosed STDs and that 25% of sexually active adolescent females have an acquired STD.<sup>8</sup> Compared with older adults, sexually active young people are at higher risk of acquiring STDs due to a combination of behavioral, biological, and cultural reasons. The higher prevalence of STDs among adolescents also may reflect multiple barriers to accessing quality STD prevention services, including inability to pay, lack of transportation, discomfort with facilities and services designed for adults, and concerns about confidentiality.

**FIGURE 32**

**Percentage of Young Adult (18-24 years) Male Newly Diagnosed Cases of HIV, by Risk, Rhode Island, 2016-2020 (Total Cases = 47)**



Between 2016-2020, among young adults, there were 7 female cases and 51 male cases. Among the 51 young adult male cases, 92% were GBMSM (N=47).

Overall, males outnumbered females in the number of newly diagnosed cases of HIV among young adults (18-24) in Rhode Island by a ratio of 7:1.

Source: Rhode Island Department of Health

**FIGURE 33**

**Rates of Chlamydia in Young Adults versus Overall Population, Rhode Island, 2016-2020**

Year	Rate Among Young adults ages 15-24 (cases per 100,000)	Rate Among Rhode Island Population (cases per 100,000)
2016	1,290	471
2017	2,333	501
2018	2,259	520
2019	2,296	542
2020	1,901	447

Source: Rhode Island Department of Health

**FIGURE 34**

**Rates of Gonorrhea in Young Adults versus Overall Population, Rhode Island, 2016-2020**

Year	Rate Among Young adults ages 15-24 (cases per 100,000)	Rate Among Rhode Island Population (cases per 100,000)
2016	110	67
2017	305	103
2018	355	127
2019	348	144
2020	338	133

The incidence of both chlamydia and gonorrhea among people ages 15-24 far exceeded the state rate for the last five years.

## Youth Risk Behavior Survey

The Youth Risk Behavior Survey (YRBS) is an anonymous and voluntary, self-administered survey conducted every two years among random samples of high school students in Rhode Island. Its purpose is to monitor risk behaviors related to the major causes of mortality, disease, injury, and social problems among youth in the United States

NOTE: 2019 is most recent data available.

**FIGURE 35**

### Sexual Risk Behavior Among High School Students in Rhode Island versus the United States, Percentage of High School Youth Responding “Yes”: 2019

Question	Rhode Island Percentage	United States Percentage
Ever had sex	41%	38%
Were currently sexually active	32%	27%
Used a condom	55%	54%

Source: CDC Youth Risk Behavior Survey, Rhode Island, 2019

In 2019, Rhode Island high school students reported more sexual risk-taking behavior than high school students nationally based on three questions included on the survey. In previous years, Rhode Island students have reported less risk-taking behaviors than high school students nationally. The 2019 United States data was reported as part of the YRBS that is administered through the CDC.

**FIGURE 36**

### Sexual Risk Behavior, by Sexual Orientation, Percentage of High School Youth Responding “Yes”

Question	Heterosexual	Gay, Lesbian, Bisexual
Ever had sex	42%	40%
Currently sexually active	33%	30%
Used a condom at last intercourse	58%	32%

Source: CDC Youth Risk Behavior Survey, Rhode Island, 2019

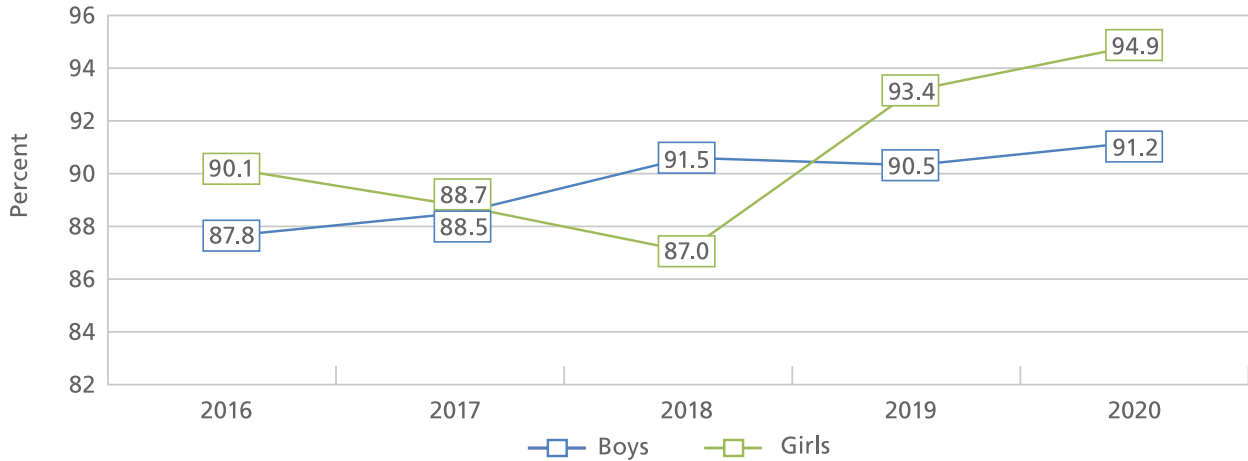
The Rhode Island high school students participating in the 2019 YRBS self-identified as follows:

- heterosexual (84%)
- gay or lesbian (3%)
- bisexual (9%)
- not sure (5%)

## Human Papilloma Virus (HPV)

FIGURE 37

### HPV Vaccination Percentages, Rhode Island, 2016-2020



Source: Rhode Island Department of Health

RIDOH began distributing human papilloma virus (HPV) vaccine for girls in 2006 and for boys in 2010. In 2020, Rhode Island had a high coverage rate for at least one dose of HPV vaccine for both boys (91.2%) and girls (94.9%) ages 13-17. HPV is transmitted through contact with infected skin, usually through sexual contact. HPV vaccine protects individuals from HPV infection, which can cause warts in the genital area or lead to abnormal cells on the cervix, vulva, anus, penis, mouth, and throat, sometimes leading to cancer. The vaccine is most effective when given before young people engage in sexual activity.

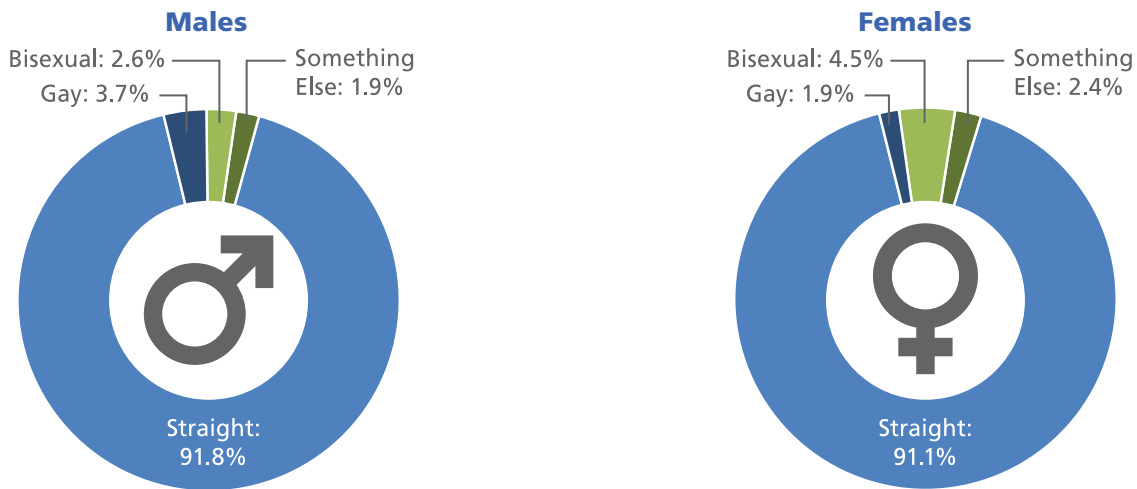


## 12 | STD BEHAVIORAL RISK FACTORS AMONG ADULTS

There are many behavioral risk factors that place a sexually active individual at risk for acquiring an STD. These behavioral factors include, but are not limited to: gender of partners, condom use, number of sexual partners, alcohol/substance abuse (in combination with sex), and type of sexual practices (oral, vaginal, anal). Trends in HIV and STD rates are often associated with changes in these behavioral risk factors. Insights into these behaviors can be obtained through findings from the Rhode Island Behavioral Risk Factor Surveillance System (BRFSS) conducted by RIDOH in collaboration with the CDC. Below are highlights from the most recent survey administered in 2019.

NOTE: 2019 is most recent data available.

**FIGURE 38**  
**Breakdown of Sexual Orientation, Rhode Island, 2019**



Source: Behavioral Risk Factor Surveillance System, 2019


### Sexual Activity of Adults (18-64) in the Past Year, Rhode Island, 2019

Out of 100 Rhode Islanders in the past 12 months:



## Characteristics of Adults (18-64) with Multiple Sex Partners, Rhode Island, 2019

**56%**   
used a condom at last  
sexual intercourse

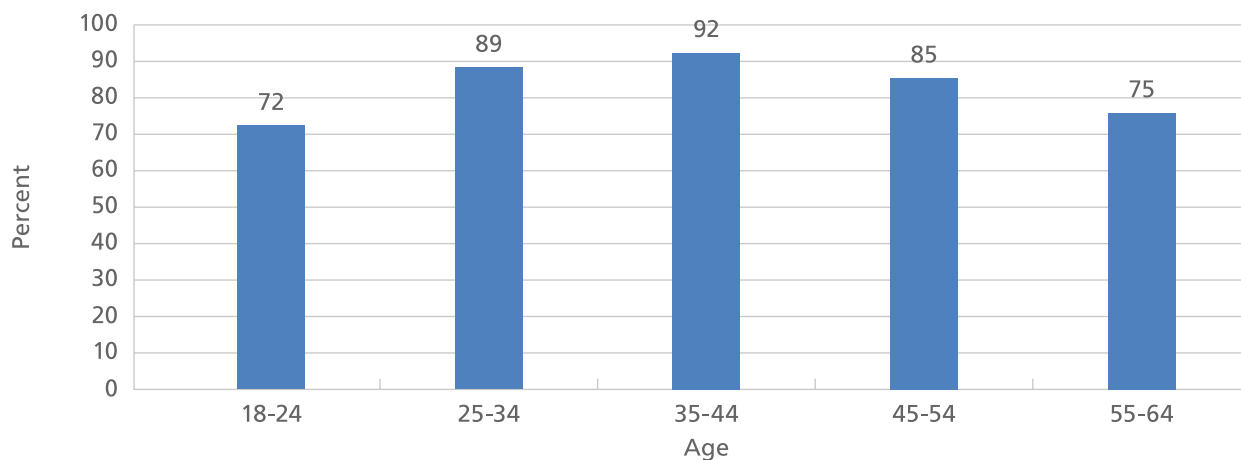
**63%**   
received an  
STD test within the past  
12 months\*

**58%**   
have ever  
received an HIV test

\*This question reads "Have you been tested for a Sexually Transmitted Disease or venereal disease in the past 12 months?"

**FIGURE 39**

### Percentage of People Who Have Had Sex in the Past 12 Months, by Age Group, Rhode Island, 2019



Source: Behavioral Risk Factor Surveillance System, 2019

## 13 | GEOGRAPHIC DISTRIBUTION OF HIV/STDs IN RHODE ISLAND

While cases of HIV and STDs have been reported in every city and town in Rhode Island, higher case counts and concentrations of HIV/STDs are generally found in more urban settings. Below is a ranking of the Rhode Island municipalities that have the highest number of cases of HIV and STDs.

**FIGURE 40**

### Top Five Ranking Municipalities, by Number of Cases of HIV, Rhode Island, 2016-2020

Municipality	Number of cases (2016-2020)	Average rate (cases per 100,000)	Municipality population estimate
Providence	97	10.85	178,851
Pawtucket	49	13.73	71,389
Cranston	42	10.39	80,882
Woonsocket	22	10.66	41,272
North Providence	21	12.99	32,333

Source: Rhode Island Department of Health

**FIGURE 41**

### Top Five Ranking Municipalities, by Number of Cases of Syphilis, Rhode Island, 2016-2020

Municipality	Number of cases (2016-2020)	Average rate (cases per 100,000)	Municipality population estimate
Providence	341	189.7	179,720
Pawtucket	98	136.5	71,798
Cranston	64	78.8	81,188
Woonsocket	44	105.9	41,567
Johnston	28	95.8	29,238

Source: Rhode Island Department of Health

**FIGURE 42****Top Five Ranking Municipalities, by Number of Cases of Gonorrhea, Rhode Island, 2020**

Municipality	Number of cases	Average rate (cases per 100,000)	Municipality population estimate
Providence	533	296.6	179,720
Pawtucket	204	284.1	71,798
Cranston	99	121.9	81,188
Woonsocket	81	194.9	41,567
Central Falls	69	354.2	19,480

Source: Rhode Island Department of Health

**FIGURE 43****Top Five Ranking Municipalities, by Number of Cases of Chlamydia, Rhode Island, 2020**

Municipality	Number of cases	Average rate (cases per 100,000)	Municipality population estimate
Providence	1,684	937.0	179,720
Pawtucket	510	710.3	71,798
Cranston	306	376.9	81,188
Woonsocket	230	553.3	41,567
South Kingstown	188	611.5	30,746

Source: Rhode Island Department of Health

For more information on the distribution of HIV and STDs in Rhode Island or for additional municipality information, please refer to *Appendix 1: Geographic Burden of HIV and STDs in Rhode Island* or contact the Center for HIV, Hepatitis, STD, and TB Epidemiology at 401-222-2577.

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## 14 | GLOSSARY OF TERMS AND DATA SOURCES

**Behavioral Risk Factor Surveillance System (BRFSS):** The BRFSS is a survey of non-institutionalized adults (age 18 years or older) and is administered by telephone to a random-digit-dialed sample of cell phones and landlines. Data from the sample are weighted to obtain state population-level estimates.

**Gay, Bisexual, and Other Men Who Have Sex with Men (GBMSM):** For the purposes of this report, GBMSM includes all men who have sex with men. This classification indicates a sexual behavior that is a risk factor for transmitting HIV and other STDs and not how individuals self-identify in terms of their sexuality.

**Extragenital testing:** Traditional methods of testing for gonorrhea and chlamydia include urine-based, cervical, or vaginal tests. STDs can infect various parts of the body and traditional tests cannot always identify infections in other areas of the body. Depending on sexual behavior, individuals may be infected in the throat or rectum. Swab-based tests of the throat and rectum can identify gonorrhea and chlamydia infections of those sites and allow for proper treatment.

**Expedited Partner Therapy (EPT):** For some chlamydia cases, a doctor may prescribe EPT for the patient's sexual partner(s) when it is unlikely the partner will be tested and treated. The CDC recommends EPT as a useful option to facilitate partner management, particularly for treatment of male partners of women with chlamydial infection.

**Healthcare Effectiveness and Data Information Set (HEDIS):** HEDIS is a dataset managed by the National Committee for Quality Assurance that is used by healthcare plans to monitor performance for certain aspects of healthcare. For STDs, this includes insurance claim data that is used to calculate yearly estimates for the percentage of sexually active females, age 16-24, that are screened for chlamydia. Medicare data from UnitedHealthcare and Neighborhood Health Plan of Rhode Island are used to calculate chlamydia screening estimates for Rhode Island. Commercial health plan data is obtained from Blue Cross & Blue Shield of Rhode Island and UnitedHealthcare. These four plans account for most health insurance providers in Rhode Island.

**HIV/AIDS and STD surveillance data:** All HIV/AIDS and STD data are collected from case and laboratory reports received from healthcare providers, laboratories, and other entities in accordance with the Rhode Island Rules and Regulations Pertaining to Reporting of Infectious, Environmental and Occupational Diseases [R23-10-DIS].

**HIV/AIDS Exposure Categories:** For each new case of HIV, risk is ascertained by medical providers and RIDOH Partner Services staff. "High Risk Heterosexual" exposure for males refers to a male whose primary risk is that he has had sex with a female who is known to have HIV or engage in intravenous drug use. "High Risk Heterosexual" exposure for females refers to a female whose primary risk is that she has had sex with a male who is known to have HIV or engage in intravenous drug use. "Presumed Heterosexual" refers to a female whose only known risk is sex with a male with unknown HIV status. When a male's only identified risk is sex with a female whose HIV status is not known, this is considered "No Reported Risk". When risk/exposure data is presented, cases with "Unknown" risk are not shown – these include cases of "No Reported Risk" and "No Identified Risk" (cases who report not having engaged in any behaviors where transmission is possible, such as sexual activity, intravenous drug use, or blood transfusions).

**HPV vaccination data source:** CDC, National Immunization Survey – Teen (NIS-Teen), 2008-2014.

**Infectious syphilis:** Includes primary, secondary, and early latent stages.

**Population-based rate calculations:** Rates are expressed as cases per 100,000 population. All rates for 2013-2017 are based on the 2017 US Census, except rates by municipality which are based on the 2016 American Communities Survey.

**Race/ethnicity:** Surveillance data is routinely collected and analyzed for all racial and ethnic groups, including American Indian/Alaskan Native, Asian, Black/African American, Hispanic or Latino, Native Hawaiian/Pacific Islander, and White. Individuals may be categorized as multi-race or other racial categories. The following conventions were used when reporting racial and ethnic data in this report:

1. Individuals classified as Hispanic or Latino represent individuals who may have also identified as another racial group.
2. Individuals classified as White or Black/African American represent only those individuals who also identified as non-Hispanic.
3. Omission of certain racial/ethnic groups (American Indian/Alaskan Native, Asian, and Native Hawaiian/ Pacific Islander) from this report has been done to protect the privacy and confidentiality of those populations that have small case counts and population sizes. Please contact RIDOH's Center for HIV, Hepatitis, STD, and TB Epidemiology for more information on these populations.

**Youth Risk Behavior Survey (YRBS):** A national, school-based survey funded by the CDC and conducted by state, territorial, and local education and health agencies and tribal governments.

## 15 | DATA LIMITATIONS

**BRFSS:** The BRFSS relies on information reported directly by the respondent, which may have a potential for bias.

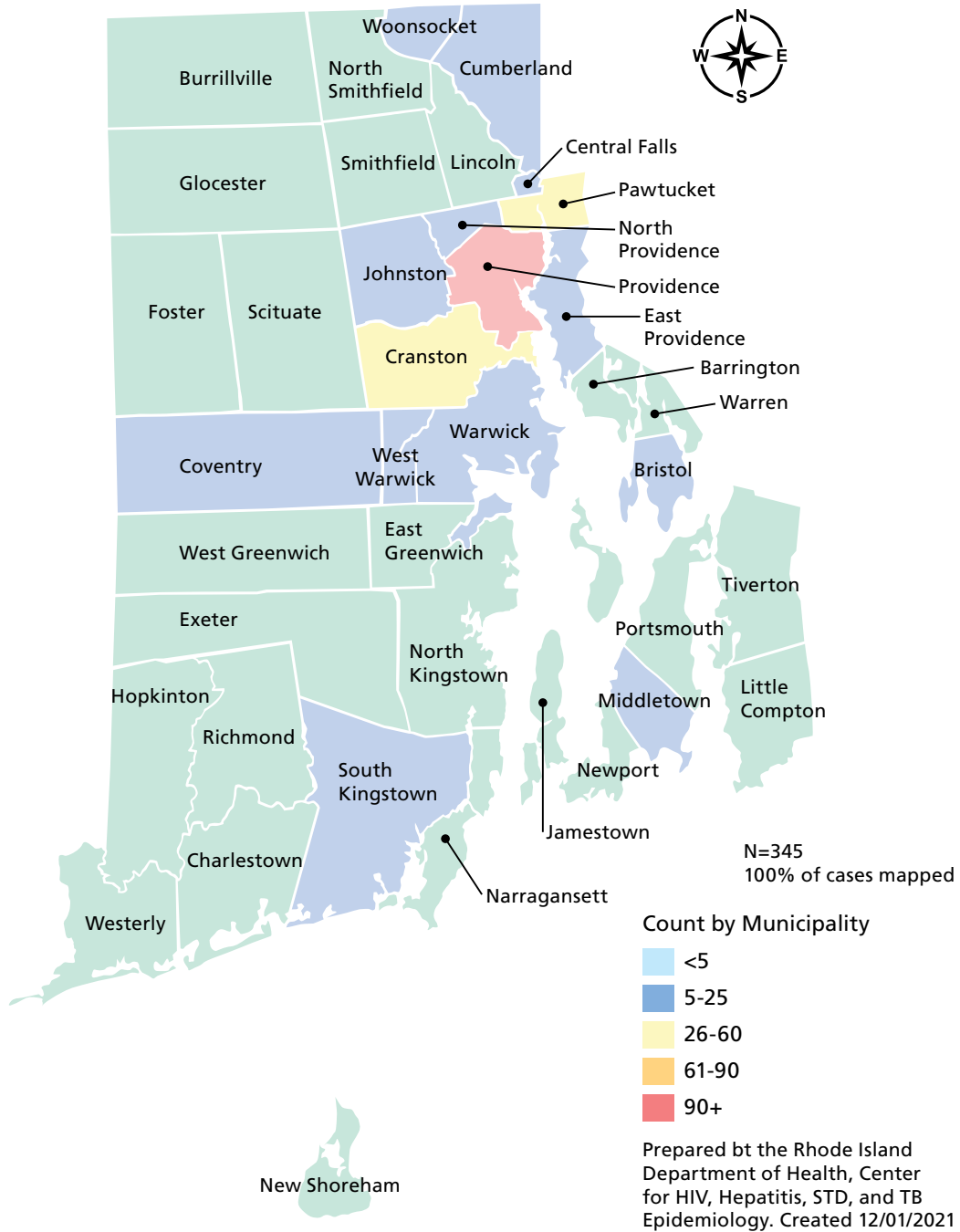
**Population estimates for GBMSM:** No standard estimate exists for the number of GBMSM that live in the United States or in an individual state. Research by Spencer Lieb et al and results from the BRFSS were used to estimate that 5% of the adult male population in Rhode Island identifies as gay or bisexual.<sup>10</sup> Rates of disease for the GBMSM population were calculated using this estimate and data from the US Census.

**Deaths attributed to HIV, HBV, and HCV:** Vital status for cases of HIV is obtained by matching information from RIDOH's Center for Vital Records, the National Death Index, and the Social Security Death Master File. Matching against national datasets is subject to availability and typically occurs one year after traditional case surveillance data are available. Thus, the most current complete death data available for this report is from 2018. HBV- and HCV-associated deaths in Rhode Island may include non-Rhode Island residents.

**HIV/AIDS prevalence:** Prevalence estimates are generated using the CDC's CD4 Depletion Model, which is subject to various assumptions about data completeness and accuracy. Estimates are calculated using CDC-supplied SAS code and are based on data supplied to CDC by Rhode Island. Rhode Island's data are based on multiple data sources. Vital status data received by RIDOH, the National Death Index, and Social Security Death Master File are used to identify individuals who are deceased, although these sources are subject to lag. Routine interstate review for duplicates is carried out semi-annually to identify cases who may have been reported in more than one jurisdiction and to ensure individuals are only counted once in the national dataset. Through a combination of duplicate review, ad-hoc record searches, and laboratory results, address information is updated on cases to better reflect current residence information, accounting for interstate and intrastate migration. In 2014, accounting for interstate migration was improved and the prevalence estimates from 2014 on have been updated with the new methodology.

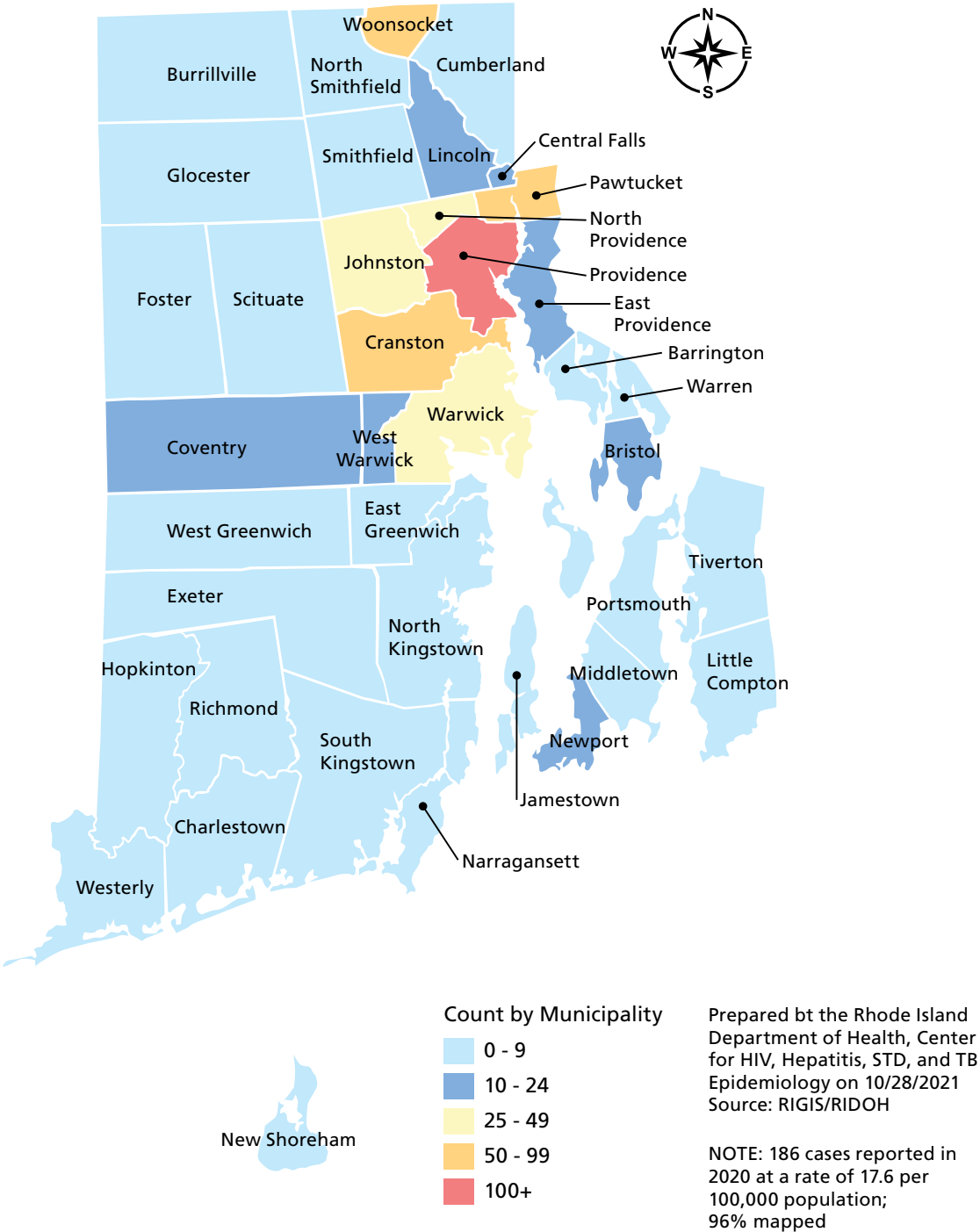
**Newly diagnosed cases of HIV versus incident cases of HIV:** The data presented in this surveillance report represents newly diagnosed cases of HIV and not trends for new infection of HIV. Rhode Island, like all states and US territories, collects and reports data on persons diagnosed with HIV infection. However, because HIV diagnosis can occur at any point after infection, these estimates may not reflect all recent infections. Prevalence estimates are calculated using CDC-provided SAS code to provide estimates that include both those diagnosed as well as undiagnosed with HIV to understand the entire burden of HIV on the state.

Newly-Diagnosed Cases of HIV, by Municipality, Rhode Island 2016-2020



Map shown is not to scale or positional accuracy

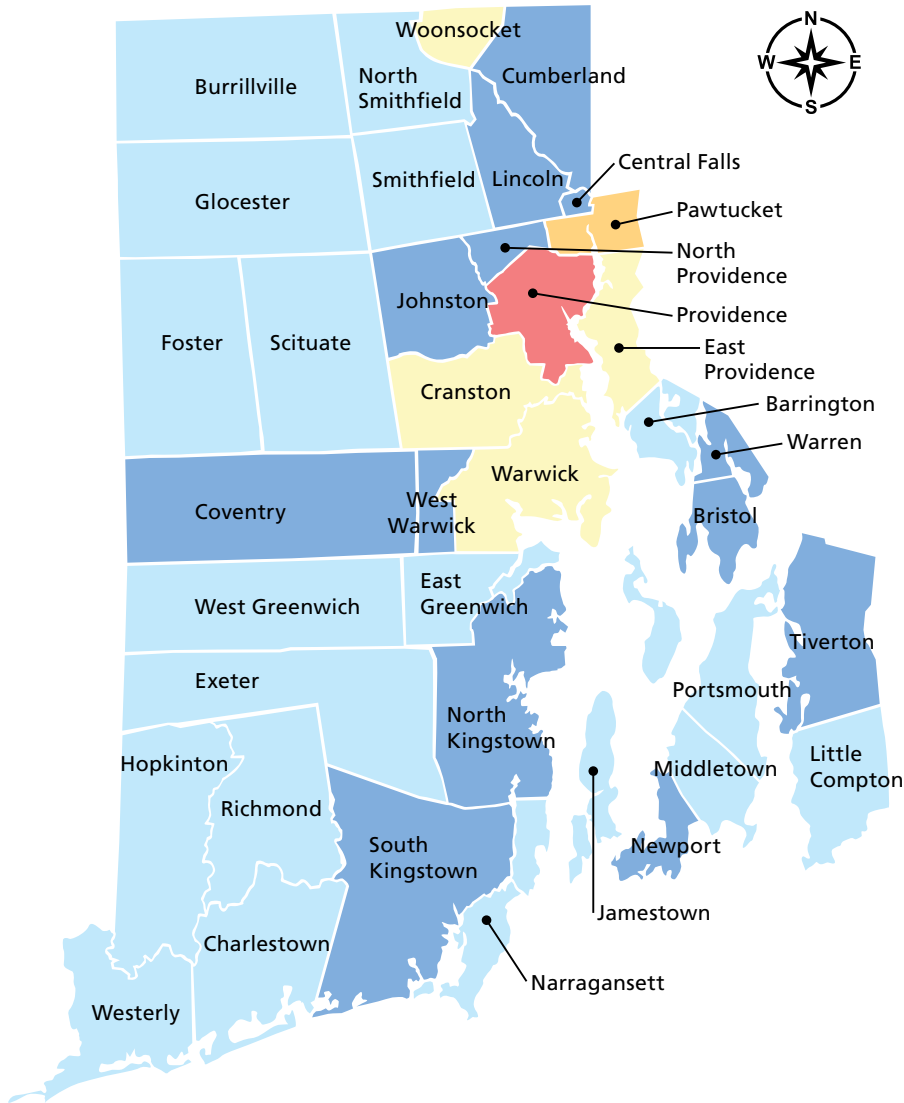
# Reported Cases of Infectious Syphilis, by Municipality, Rhode Island, 2016-2020



Map shown is not to scale or positional accuracy



## Reported Cases of Gonorrhea, by Municipality, Rhode Island, 2020



### Count by Municipality

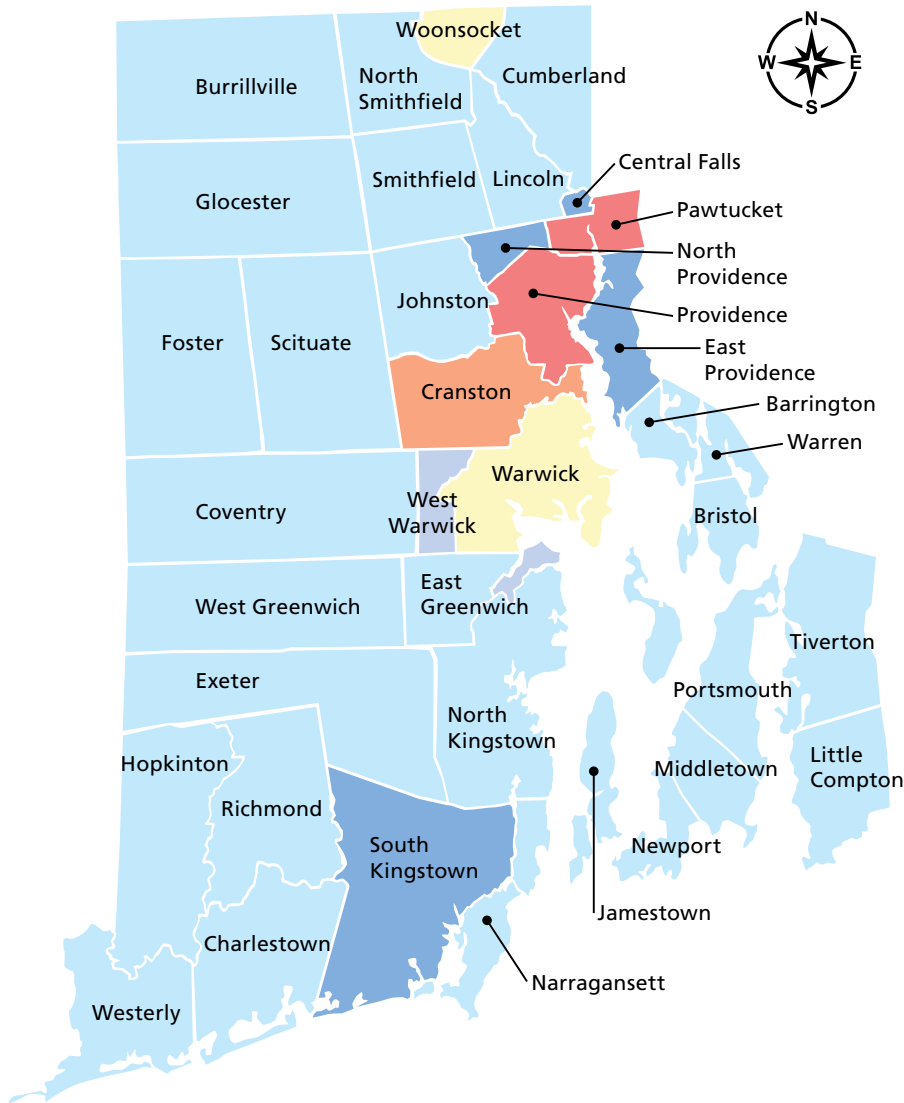
- 0 - 9
- 10 - 49
- 50 - 99
- 100 - 199
- 200+

Prepared by the Rhode Island Department of Health, Center for HIV, Hepatitis, STD, and TB Epidemiology on 10/28/2021  
Source: RIGIS/RIDOH

NOTE: 1399 cases reported at rate of 132.7 per 100,000 population; 94% mapped

Map shown is not to scale or positional accuracy

## Reported Cases of Chlamydia, by Municipality, Rhode Island, 2020



### Count by Municipality

- 0 - 99
- 100 - 199
- 200 - 299
- 300 - 399
- 400+

Prepared by the Rhode Island Department of Health, Center for HIV, Hepatitis, STD, and TB Epidemiology on 10/28/2021  
Source: RIGIS/RIDOH

NOTE: 4714 cases reported at rate of 447 per 100,000 population; 92% mapped

Map shown is not to scale or positional accuracy

## REFERENCES

- <sup>1</sup> Bosh KA, Johnson AS, Hernandez AL, et al. *Vital Signs: Deaths Among Persons with Diagnosed HIV Infection, United States, 2010–2018*. MMWR Morb Mortal Wkly Rep 2020;69:1717–1724. DOI: <http://dx.doi.org/10.15585/mmwr.mm6946a1external icon>
- <sup>2</sup> Edlin BR, Eckhardt BJ, Shu MA, Holmberg SD, Swan T. Toward a more accurate estimate of the prevalence of hepatitis C in the United States. *Hepatology*. 2015 Nov;62(5):1353–63.
- <sup>3</sup> Kinnard, E. N., Taylor, L. E., Galarraga, O., & Marshall, B. D. (2014). Estimating the true prevalence of hepatitis C in rhode island. *R I Med J* (2013), 97(7), 19-24.
- <sup>4</sup> Ly, KN, Hughes, EM, Jiles, RB, Holmberg, SD (2016). Rising Mortality Associated With Hepatitis C Virus in the United States, 2003-2013. *Clin Infect Dis*, 62(10), 1287-1288. Doi: 10.1093/cid/ciw111.
- <sup>5</sup> Glick SN, Morris M, Foxman B, et al. A comparison of sexual behavior patterns among men who have sex with men and heterosexual men and women. *J Acquir Immune Defic Syndr* 2012; 60(1):83–90.
- <sup>6</sup> Paz-Bailey G, Mendoza MCB, Finlayson T, et al. Trends in condom use among MSM in the United States: the role of antiretroviral therapy and seroadaptive strategies. *AIDS* 2016; 30(12):1985–1990.
- <sup>7</sup> Spicknall IH, Gift TL, Bernstein KT, et al. Sexual networks and infection transmission networks among men who have sex with men as causes of disparity and targets of prevention. *Sex Transm Infect* 2017; 93(5):307–308.
- <sup>8</sup> Alvy LM, McKirnan DJ, Du Bois SN, et al. Health care disparities and behavioral health among men who have sex with men. *J Gay Lesbian Soc Serv* 2011; 23(4):507–522.
- <sup>9</sup> Satterwhite CL, Torrone E, Meites E, et al. Sexually transmitted infections among US women and men: Prevalence and incidence estimates, 2008. *Sex Transm Dis*. 2013;40(3):187–193.
- <sup>10</sup> Lieb, S, Fallon SJ, Friedman, SR, Thompson, DR, Gates, GJ, Liberti, TM, Malow, RM (2011). Statewide Estimation of Ra- cial/Ethnic Populations of Men Who Have Sex with Men in the U.S. *Public Health Reports*, 126. January-February 2011, 60-72.

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