

HIV and Other Sexually Transmitted Infections in Rhode Island: Trends, Disparities, and Health Equity

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ABSTRACT

Over the past 10 years, sexually transmitted infections (STIs) have seen a significant resurgence in the United States despite the availability of effective treatments and reliable prevention methods. Rhode Island has experienced a similar uptick in the incidence of syphilis, chlamydia and gonorrhea, with many cases occurring among gay, bisexual, men who have sex with men (GBMSM), which coincides with a recent concerning rise in congenital syphilis cases. We reviewed the most recent STI trends for the state of Rhode Island in 2022. During this year, 6,883 cases of STIs were reported to the Department of Health (N=5,199 chlamydia, 1,444 gonorrhea, and 240 infectious syphilis cases). Compared to 2012, this represented a 21%, 185%, and 253% increase in chlamydia, gonorrhea, and syphilis infections, respectively. Since 2020, eight cases of congenital syphilis have been reported. Prior to 2020, no cases of congenital syphilis were reported since 2009. This resurgence is mainly attributed to shifting social and behavioral trends, particularly among younger individuals and shared sexual networks across diverse groups.¹ Further efforts and resources are needed to effectively address these concerning trends in STIs.

BACKGROUND

Sexually transmitted infections (STIs) are on the rise in the United States (US), including in Rhode Island. According to preliminary data from the Centers for Disease Control and Prevention (CDC), there were more than 2.5 million new cases of syphilis, chlamydia, and gonorrhea reported in the US in 2022.² Syphilis infections saw a substantial 26% increase, reaching levels not observed since the 1950s. Increases among males and females, all age groups, and most racial/ethnic groups have been observed. Syphilis may be diagnosed at an infectious (primary, secondary, or early non-primary, non-secondary) stage, or at a latent/unknown stage of infection. In 2000 and 2001, total syphilis incidence (all stages) reached historic lows nationally,² but since then, rates have increased every year, with the greatest increases observed in the non-Hispanic American Indian or Alaska Native population.

Gay, bisexual, and other men who have sex with men (GBMSM) are disproportionately impacted by syphilis. In 2021, nearly half of all infectious male cases in the US were reported in this population. Women are generally impacted less by syphilis. However, between 2017–2021, there was a 217.4% increase in reported female cases, highlighting a growing epidemic in heterosexual populations. Congenital syphilis (CS) is a growing concern nationally. The national congenital syphilis rate of 102.5 cases per 100,000 live births in 2022 represents a 30.6% increase compared to 2021 and is the highest reported rate since 1991. In 2022, nearly all US states reported at least one case of CS.²

Chlamydia is the most common STI in the US. Rates of reported chlamydia continue to increase annually among both males and females, most age groups, and all racial/ethnic groups, with the highest rates occurring among adolescents and young adults aged 15–24 years. Gonorrhea is the second most common STI in the US. Similar to chlamydia, rates of gonorrhea continue to increase annually among both males and females, most age groups, and most racial and ethnic groups. In 2009, gonorrhea reached a historic low, but as of 2021, national rates have increased by 118%. Case increases among men and the higher frequency of extra-genital testing in recent years likely reflect cases being identified both among GBMSM and heterosexual males.

ANALYSIS OF RHODE ISLAND SURVEILLANCE DATA ON STIS

Following national trends, syphilis increases have been observed annually in Rhode Island since 1998, with a record high occurring in 2021 with 565 total cases reported (all stages). Rates of infectious syphilis in Rhode Island have been highest in males, non-Hispanic Black/African American and Hispanic populations, and among those aged 25–34 years. Syphilis disproportionately impacts GBMSM. However, the incidence is also increasing in women of reproductive age. Untreated syphilis in pregnant individuals can lead to stillbirth and/or adverse outcomes, including death. This highlights the need to focus on timely treatment for congenital syphilis prevention. From 2020–2022, the Rhode Island Department of Health received eight reports of congenital syphilis, with most cases meeting the CDC's maternal criteria of diagnosis (i.e., inadequate treatment prior to delivery).

Before 2020, the most recent report of congenital syphilis was in 2009.

Gonorrhea is the second most common STI in Rhode Island. In 2021 a record high of 1,681 (159.4 cases per 100,000) gonococcal infections were reported, with the highest rates observed in males, those aged 20–34 years, and non-Hispanic Black/African American populations. Although a slight decrease in total incidence was observed in 2022, preliminary 2023 data suggests a continuing overall upward trend in gonorrhea infection in Rhode Island. Efforts at the RIDOH State Health Laboratory and other testing facilities have focused on the ability to detect antimicrobial resistance among cases suspected of meeting resistance criteria. Fortunately, to date, Rhode Island has not confirmed any cases of ceftriaxone-resistant gonorrhea.

Chlamydia is the most common STI in Rhode Island, with over 5,000 cases reported annually since 2017. Rates are highest among females, individuals aged 20–34 years, and in non-Hispanic Black/African American and Hispanic populations. In the last 10 years (2013–2022), rates of chlamydia have increased 68.3% in those aged 15–24 years old. Complications of both chlamydia and gonorrhea can include pelvic inflammatory disease, ectopic pregnancy, infertility, and chronic pain.

The number of newly diagnosed cases of HIV in Rhode Island has decreased overall in the last 10 years, from 79 cases in 2013 to 65 cases in 2022. However, this decline has not been consistent across all demographic groups, with certain populations experiencing a greater impact. When compared to non-Hispanic Whites, in 2022, the rate of HIV was four times higher among non-Hispanic Black/African Americans and Hispanic populations. Similarly, there were almost three times as many cases of HIV among GBMSM when compared to females, male heterosexuals, and people who inject drugs, combined. Rates among individuals ages 20–24 and 25–34 have remained consistently high compared to other groups. For a detailed description of trends, please see the Rhode Island 2021 HIV, STI, Viral Hepatitis, and Tuberculosis Surveillance Report.³

DISPARITIES IN STI OUTCOMES: A GLIMPSE INTO SPECIAL POPULATION GROUPS

Various social determinants of health impact outcomes and disparities related to STIs. These determinants encompass conditions at individual and structural levels that influence the prevention, diagnosis, and treatment of STIs. Although STI rates have increased across all populations in the US, marginalized groups – youth and young adults, women, GBMSM, and Black/African American and Hispanic/Latino people – continue to experience a disproportionate share of STI cases. Disparities in disease trends within each population group are particularly evident for some diseases (Figures 1–3). In addition, estimates of sexual behaviors that impact

Figure 1. Rates of Gonorrhea, by Racial and Ethnic Group, Rhode Island, 2018–2022

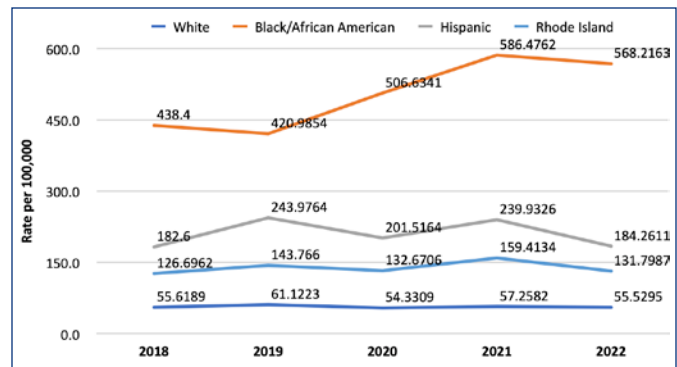


Figure 2. Number of Chlamydia Cases, by Sex, Rhode Island, 2013–2022

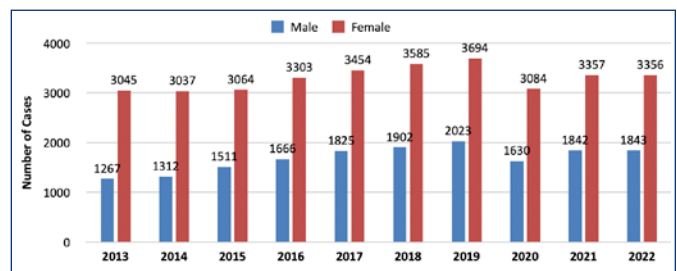
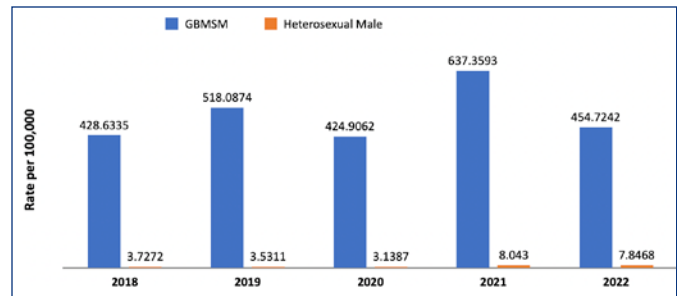
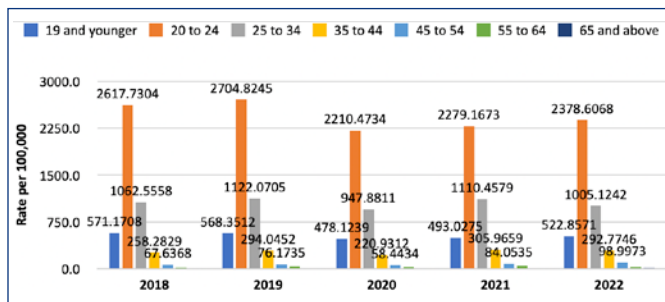


Figure 3. Rates of Infectious Syphilis in Males, by Sexual Orientation, Rhode Island, 2013–2022



STI trends are also reported as part of the Rhode Island Youth Behavioral Risk Survey (YRBS) and the Rhode Island Behavioral Risk Factor Surveillance System (BRFSS). The YRBS is an anonymous and voluntary survey of Rhode Island high school students. In 2021, 21% of students reported being currently sexually active, and among these students, 57% used a condom at their last sexual encounter. The BRFSS is a random digit telephone survey among Rhode Island adults aged 18–65. In 2022, 9% of adults reported having two or more sexual partners in the past year, and among them, 53% used a condom at their last sexual encounter.

In terms of gonorrhea, diagnoses have increased in the last 10 years and disproportionately affect minority populations (Figure 1). In 2022, gonorrhea rates among the Black/African American population were more than 10 times higher than

Figure 4. Rates of Chlamydia Cases, by Age, Rhode Island, 2018–2022

among the non-Hispanic White population and three times higher than among the Hispanic/Latino population. Most chlamydia cases in the last 10 years have been diagnosed in females. In 2022, nearly twice as many cases were diagnosed in females compared to males (**Figure 2**). This difference is likely due to two factors. First, women generally access routine healthcare and subsequent screening more than men. Second, men who have chlamydia often do not have symptoms and do not seek health care for screening and treatment. Between 2018–2022, the highest rates of chlamydia were observed in the 20–24-year-old age group, followed by those in the 25–34 years-old age group (**Figure 4**).

In the last five years, the rates of infectious syphilis cases among GBMSM have been substantially higher compared to heterosexual men (**Figure 3**). In the GBMSM population, the rate of infectious syphilis cases in 2022 was 58 times higher compared to the rate of infectious syphilis cases among heterosexual men. According to the CDC, transgender and gender diverse people often experience high rates of stigma and socioeconomic and structural barriers to care that negatively affect healthcare usage and increase susceptibility to HIV and STIs (**Table 1**). As defined by the CDC, persons who are transgender have a gender identity that differs from the sex that they were assigned at birth.⁴

Pregnant people who are diagnosed with HIV, syphilis, and hepatitis C can pass these infections to their newborns. While the number of babies born with these infections remains low in Rhode Island, the health consequences of these infections can be severe. HIV and syphilis screening are now incorporated into routine prenatal care. People who are diagnosed with HIV or syphilis during pregnancy receive medical case management from RIDOH nursing

Table 1. Reported Cases of Selected Diseases Among Transgender People, Rhode Island, 2021–2022

HIV	<5
Infectious Syphilis	9
Latent or Unknown Duration Syphilis	5
Gonorrhea	10
Chlamydia	19

staff to promote healthy outcomes for their newborns. In 2022, among the 10,709 births in Rhode Island, there were five infants diagnosed with congenital syphilis and one with HIV. Before 2020 no cases of congenital syphilis or perinatal HIV were reported in more than 10 years.

PROGRAMS AND INITIATIVES BY THE RHODE ISLAND DEPARTMENT OF HEALTH

In recent years, the Rhode Island Department of Health (RIDOH) has implemented many innovative and evidence-based strategies to prevent and control STIs and HIV. A full description of clinical and community services offered by RIDOH can be found in the resource guide and are briefly outlined below.⁵

CASE INVESTIGATION AND CONTACT TRACING

As part of surveillance activities, all new HIV diagnoses and high-priority syphilis cases are interviewed by RIDOH staff to conduct contact tracing and ensure testing of close contacts. High-priority syphilis cases in order of workup priority include:

- Cases with signs or symptoms of syphilis as reported by patient or provider indicative of syphilis infection;
- All pregnant women and women of childbearing age (<45 years);
- Any child under 18 years of age;
- Any case with test results indicative of a new infection (four-fold increase in titer or a negative titer in the last 12 months);
- Cases with late or unknown duration infection (no symptoms and no negative titer in prior 12 months to suggest recent infection).

NEEDLE EXCHANGE AND HARM REDUCTION SERVICES

Needle exchange programs, often called “syringe services programs (SSPs),” provide a full spectrum of services to individuals who use drugs, including safe injection kits, sharps disposal containers, naloxone, fentanyl test strips, condoms, rapid HIV and hepatitis C testing, and referrals to mental health and social services as appropriate. AIDS Care Ocean State (ACOS), Project Weber/RENEW, and Parent Support Network operate SSPs throughout Rhode Island through a multi-faceted approach, including three fixed sites, mobile/street-based outreach in core cities, home-delivered services, and most recently, harm reduction vending machines which are co-located in places that serve high-risk individuals. Further, sterile syringes can be purchased without a prescription at retail pharmacies in Rhode Island.

CONDOM ACCESS

In the beginning of the COVID-19 pandemic, many individuals experienced increased barriers to accessing condoms, as many of the community distribution locations were closed or limited to the public. Starting in August 2020, individuals can request RIDOH to mail a small package with approximately 15 condoms to their home. Since program inception, RIDOH has provided condoms to over 3,200 individuals representing all 39 cities and towns. RIDOH plans to continue the Condoms by Mail program as there is a consistent demand, reaching a population with an otherwise unmet need.

RAPID HIV AND HEPATITIS C TESTING IN COMMUNITY SETTINGS

RIDOH-funded community-based organizations, including AIDS Care Ocean State (ACOS), Project Weber/RENEW, and AIDS Project Rhode Island (APRI), conduct community-based rapid HIV screening tests. APRI also offers home test kits where individuals can fill out an online form and receive a rapid HIV test kit in the mail. In 2022, there were 1,457 community-based rapid HIV tests conducted. Approximately 85% of all community-based rapid HIV tests conducted were among individuals who are at high risk of contracting HIV, demonstrating that we are reaching those most in need of testing.

TESTING 1-2-3 PROGRAM

Testing 1-2-3 is a program created by RIDOH to help asymptomatic Rhode Islanders get easily tested for HIV and other STIs. Individuals who want to be tested complete a registration form online at www.testing123ri.com, go to the lab of their choice to provide samples, and then receive their results and follow-up for positive cases. Using this service, individuals can be tested for HIV, chlamydia, gonorrhea, and syphilis. In 2022, 110 individuals received STI testing through this program.

EDUCATION AND AWARENESS FOR YOUTH AND ADOLESCENTS

RIDOH, in collaboration with Planned Parenthood of Southern New England (PPSNE), conducts sexual and reproductive health education to schools via assemblies/workshops, which are centered around STIs, contraception, gender identity and sexual orientation, etc. In the next phase of this collaboration, professional development will be offered to teachers, nurses, and other relevant school staff, which will focus on teaching teens about STIs, HIV prevention, testing and treatment, stigma, and addressing barriers to accessing care. Lastly, this partnership includes a parent-child communication program called LiFT, that increases parent-child communication and youth self-efficacy.

SEXUAL AND REPRODUCTIVE ONLINE WEBSITES AND APPS

RIDOH released the Right Time app in 2019 to include information about sexual health and well-being in Rhode Island.⁶ RIDOH is also developing the Right to Know website and app to provide resources and information specific to adolescents. RIDOH is committed to promoting prevention, testing, and engagement in care for STIs and HIV with a focus on health equity. Fully addressing STIs and HIV in Rhode Island requires collaboration and commitment across public health, clinical, academic, and community-based organizations and institutions.

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Disclosures

All authors report no conflicts of interest.

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