

# Health Services Advisory Board

## STD Recommendations to the San Diego County Board of Supervisors

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July 2019

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Inquiries regarding the San Diego County Health Services Advisory Board 2019 STD Recommendations to the San Diego County Board of Supervisors may be directed to:

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This paper was developed under the General Management System of the County of San Diego, and in support of the *Live Well San Diego* vision.

July 2019

**SAN DIEGO COUNTY HEALTH SERVICES ADVISORY BOARD**  
**2019 STD RECOMMENDATIONS TO THE SAN DIEGO COUNTY BOARD OF SUPERVISORS**

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## *Executive Summary*

### **Introduction**

Rates of sexually transmitted diseases (STDs), including chlamydia, gonorrhea, and syphilis, are increasing in San Diego County, in California, and throughout the United States (U.S.). These STDs are associated with significant health disparities. Chlamydia disproportionately affects young women of color (i.e., Black/African American and Hispanic/Latina women) who, without treatment, are vulnerable to long-term deleterious effects on reproductive health. While gonorrhea can have similar effects if not treated, it is more common among men in their third and fourth decades of life, with highest rates among Black/African American men. Syphilis, which can result in blindness and, if transmitted from mother to child, multiple birth defects and fetal demise, also primarily affects men in their third and fourth decades of life, particularly men of color (i.e., Black/African American and Hispanic/Latino men). It also is highly concentrated among gay, bisexual, and other men who have sex with men (MSM). All three infections are associated with increased risk of human immunodeficiency virus (HIV) acquisition and transmission. The purpose of this report is to describe the STD epidemic in San Diego County, why it is important, and share existing approaches and challenges to STD prevention and control in the region. This report also will provide a set of recommendations from the Health Services Advisory Board (HSAB) to the San Diego County Board of Supervisors to decrease the impact of STDs on San Diego County residents.

### **STD Overview and Epidemiology**

Syphilis, while being the least common of the bacterial STDs, has the largest potential for severe complications (e.g., blindness, neurological disease, birth defects, and fetal demise) and is the priority disease for STD control programs throughout the U.S. Despite record low rates in the late 1990s, the rate of early (infectious) syphilis increased by over 3,000% in San Diego County from the year 2000 to 2017. Cases of congenital syphilis, a potentially catastrophic but completely preventable condition, have increased by over 700% in California since 2012. Gonorrhea primarily causes localized infection, although a small subset of infections can cause disseminated infection and complications such as arthritis, endocarditis, and meningitis. Also, untreated gonorrhea in women can result in pelvic inflammatory disease, tubal scarring and infertility. The rate of gonorrhea in San Diego County increased by 181.2% from the year 2000 to 2017. This is particularly concerning, given the threat of antibiotic-resistant gonorrhea, reports of failure of first-line gonorrhea treatment abroad, and the paucity of new antibiotics in the pipeline to treat the infection. The most common of these three infections, chlamydia, has the lowest potential for invasive infection but can have similar reproductive health complications in untreated women, who bear the disproportionate

burden of disease (particularly women of color). The rate of chlamydia in San Diego County increased by 104.8% from 2000 to 2017. As a generalized epidemic, chlamydia is primarily managed in primary care and general medical clinics, given strong national recommendations for routine screening of young women, low rates of resistance, and ease of treatment with oral antibiotics.

**Syphilis**, as mentioned previously, has a lower incidence than either gonorrhea or chlamydia but has the biggest potential for serious complications during early and late stages of disease. Since the year 2000, there has been a resurgence of syphilis in San Diego County that has disproportionately affected MSM. In 2017, a total of 1,130 cases of early/infectious (i.e., primary, secondary, and early latent) syphilis were reported, with a rate of 34.1 cases per 100,000 persons (an increase of 14.4% from 2016 and 3,310% from 2000). MSM accounted for 85.5% of all early syphilis cases in 2017, and 55% of MSM early syphilis cases also had HIV infection. The rates of early syphilis observed among Black/African American and Hispanic/Latino men were 1.7 and 1.6 times the rate observed among White men, respectively. Syphilis can invade the central nervous system (neurosyphilis) and ocular structures (ocular syphilis) during any stage of infection and cause stroke and visual loss. Also, after years of untreated infection, syphilis can cause severe neurological complications, cardiovascular disease, and destructive lesions of the bone and skin. Congenital syphilis, which results from transmission of syphilis from mother to child *in utero* or during delivery, can be a catastrophic condition that can result in fetal death, birth defects, blindness, and hearing loss. Since 2012, reported cases of congenital syphilis have increased by over 700% in California, particularly in the Central Valley and in Los Angeles County. Although such sharp increases in congenital syphilis have not been observed in San Diego County, there is a trend toward increasing syphilis rates among women of childbearing potential and pregnant women, and five stillbirths (fetal deaths) were reported from 2013 through 2017. Congenital syphilis is completely preventable through timely diagnosis and treatment of pregnant women with syphilis.

**Gonorrhea** has increased at the fastest rate in recent years, with 5,947 cases reported in 2017 and a rate of 179.7 cases per 100,000 persons (an increase of 18.4% from 2016 and 181.2% from 2000). The rate in men is 2.7 times the rate in women, and the rate in Black/African American men is 3.8 and 2.8 times the rates among White and Hispanic/Latino men respectively. Extragenital (i.e., throat and rectal) infections are common and, since they usually are asymptomatic, are likely fueling the spread of gonorrhea, particularly among MSM. They also can be harder to eradicate than urogenital infections and are often missed due to lack of screening at these sites. Untreated gonorrhea can cause pelvic inflammatory disease (PID) and long-term reproductive health complications, such as infertility, increased risk of ectopic pregnancy, tubal scarring, and chronic pelvic pain. While invasive infection is relatively



rare, in a very small subset of cases, it can spread via the bloodstream and cause infectious arthritis, endocarditis, and meningitis. Antibiotic-resistant gonorrhea is an urgent public health threat, due to decreasing sensitivity of the causative bacteria to recommended first-line antibiotics and reports of treatment failures abroad.

**Chlamydia** is the most common reportable STD, with 20,801 cases reported in San Diego County in 2017 and a rate of 628.5 cases per 100,000 persons (an increase of 9.3% from 2016 and 104.8% from 2000). The rate in women is 1.6 times the rate in men, and the highest rate was observed among young women aged 20 to 24 years. Women of color (i.e., Hispanic/Latina and particularly Black/African American women) are disproportionately impacted by chlamydia. In 2013, the rate of chlamydia among Black/African American women in San Diego County was 4.9 times the rate observed among White women and 1.9 times the rate observed among Hispanic/Latina women. The rate of chlamydia among Hispanic/Latina women was 2.5 times the rate observed among White women. Although untreated chlamydia can cause similar reproductive health complications as untreated gonorrhea, it is easily treated with oral antibiotics, and resistance to antibiotics is not a major issue. Also, there is a recommendation from the U.S. Preventive Services Task Force (USPSTF) for chlamydia and gonorrhea screening in sexually active women aged 24 years and younger, and regular screening for chlamydia in this age group is a Health Plan Employer Data and Information Set (HEDIS) measure. Given these recommendations, and the fact that chlamydia is a generalized epidemic, most chlamydia testing and treatment occurs in local healthcare systems.

**STDs Among Youth:** Youth, defined for the purposes of this report as persons aged 15 to 24 years of age, accounted for 48.4% of overall reported STD cases (i.e., early syphilis, gonorrhea, and chlamydia cases) and 54.8% of reported chlamydia cases. Among the 11,403 chlamydia cases reported among youth in 2017, 8,076 (70.8%) were female. This is likely due to the USPSTF recommendation for regular chlamydia and gonorrhea screening of young women. Young male chlamydia cases are likely underestimated. Youth accounted for smaller proportions of reported cases of gonorrhea (32.2%) and early syphilis (15.3%) in 2017. Most of the reported gonorrhea and early syphilis cases among youth were male (61.5% and 93.1% respectively). Ensuring that youth are educated about STD prevention and have access to services is a critical component of STD prevention and control.

**STDs in Rural Areas:** Infectious syphilis is highly concentrated in the urban and suburban areas of the coastal County of San Diego Health and Human Services Agency (HHSA) administrative regions. Gonorrhea involves more regions of San Diego County but still primarily impacts urban and suburban areas. Chlamydia is a more generalized epidemic that affects most of the San Diego County, except for the most rural areas in the eastern third of the San Diego County. Some rural zip codes in the

northern and eastern parts of the San Diego County have significant chlamydia morbidity. As STD-related resources tend to be more concentrated in more densely populated areas, the regional approach to STD prevention and control should ensure that education and services are available throughout the San Diego County.

### Implications of These Data

While improved diagnostic testing (primarily for gonorrhea and chlamydia) and more thorough screening practices have likely contributed to increases in reported STDs, the observed increases in both symptomatic and asymptomatic infections indicate that there is increasing transmission of STDs in San Diego County and increasing burden of disease on the community and on the healthcare system. Increased STD incidence means that more San Diego County residents are vulnerable to complications and long-term effects of these conditions, which warrants a proactive approach to prevention, early detection, and timely treatment of STDs in the region.

The sustained increases in STD cases and rates observed in recent years are not unique to San Diego County. A total of 2,294,821 cases of STDs were reported nationwide in 2017. These include 1,708,569 cases of chlamydia, 555,608 cases of gonorrhea, and 30,644 cases of primary and secondary syphilis. Rates of gonorrhea increased 75.2% from a historic low in 2009 to 2017, and rates of primary and secondary syphilis increased by 72.7% from 2013 to 2017. As in San Diego County, increases in national gonorrhea rates among men were significant and nearly doubled between 2013 and 2017 (increase of 86.3%), and most (68.2%) of primary and secondary syphilis cases, for which gender of sexual partners was known, were MSM. The highest cases of chlamydia were observed among women aged 15 to 24 years.

In California, a total of 218,728 cases of chlamydia were reported in 2017, which is the highest number of cases reported since chlamydia reporting began in 1990, and 53.4% of cases occurred among people aged 15 to 24 years. The rate of chlamydia increased by 9.4% from 2016 to 2017. A total of 75,372 cases of gonorrhea were reported statewide in 2017. This is the highest number of cases reported since 1988. The rate of gonorrhea increased by 15.8% from 2016 to 2017, and the rate of gonorrhea among men was twice that among women. A total of 13,719 cases of early syphilis were reported statewide in 2017. This is the highest number of cases reported since 1987. The rate of early syphilis increased by 21.4% from 2016 to 2017, and rates were highest among African Americans.

The HIV, STD, and Hepatitis Branch (HSHB), of HHS Department of Public Health Services, has identified the following priorities, which are aligned with those of the Centers for Disease Control and Prevention (CDC) and other STD programs throughout California and the U.S.:



- Prevent congenital syphilis.
- Prevent complications of syphilis, including neurosyphilis, ocular syphilis, and tertiary syphilis.
- Prevent the development and spread of antibiotic-resistant gonorrhea.
- Prevent reproductive health complications of untreated chlamydia and gonorrhea.
- Integrate HIV prevention into STD case investigations and management by ensuring that HIV-positive STD cases are receiving HIV care and treatment and that HIV-negative or HIV-unknown STD cases are aware of available prevention methods, including pre-exposure prophylaxis (PrEP). **These activities are aligned with Getting to Zero**, which is a comprehensive initiative approved by the San Diego County Board of Supervisors that seeks to eliminate all new HIV infections in San Diego County within 10 years. Getting to Zero is comprised of three primary strategies to help end the epidemic (Test, Treat, and Prevent). More information is available at <https://getting2zerosd.com/>.
- Ensure that STD testing and treatment services are available to those who need them, particularly disproportionately affected and underserved populations.
- Ensure that local healthcare providers are aware of and practicing evidence-based STD screening and treatment recommendations.

## Recommendations

To combat the rise in STDs, reduce their impact on San Diego County residents, and address the health disparities associated with them, a community-wide effort involving public health personnel, local healthcare providers and systems, and community leaders is needed. Increasing awareness of STDs among San Diego County residents, reducing stigma, ensuring the availability and utilization of STD prevention, testing, and treatment services, and providing the necessary resources for the local public health department to perform its unique functions of surveillance and disease intervention activities are essential to address this important issue. Based on data presented to the HSAB by HSHB leadership and subsequent discussion, the HSAB has developed the following five recommendations to the San Diego County Board of Supervisors to address increasing STD rates and to advance STD prevention and control efforts in the region:

- **Recommendation 1:** Identify additional resources for STD prevention and control that are reflective of the increasing rates of infection and allow for continuation of core STD program activities (e.g., surveillance, disease intervention), as well as implementation of innovative and evidence-based approaches to outreach and screening, with an emphasis on sustainability.

- **Recommendation 2:** Engage local healthcare systems and health plans in addressing the increase in STD rates, and increase provider awareness of important public health issues (e.g., antibiotic-resistant gonorrhea and congenital syphilis), current screening and treatment recommendations, and available resources.
- **Recommendation 3:** Increase general community awareness of STDs through a targeted outreach campaign in order to decrease stigma and ensure that the San Diego County public and vulnerable populations are aware of the local increases in STD rates, recommendations for prevention and screening, and resources available for STD testing and treatment.
- **Recommendation 4:** Support collaborations within HHSA to improve case management of pregnant women with syphilis.
- **Recommendation 5:** Support policies that promote access to culturally competent and inclusive healthcare services for all San Diego County residents and remove barriers to utilization of preventive, testing, and treatment services for STDs.

### **Rationale for Recommendations**

This section provides a brief overview of the rationale behind each of the five HSAB recommendations. More detailed supporting information is available in the body of this report.

**Recommendation 1: Identify additional resources for STD prevention and control that are reflective of the increasing rates of infection and allow for continuation of core STD program activities (e.g., surveillance, disease intervention), as well as implementation of innovative and evidence-based approaches to outreach and screening, with an emphasis on sustainability.**

Increasing STD morbidity and limited resources available for STD prevention and control at the national level are threatening the ability of HSHB to maintain its core functions of STD surveillance and disease intervention. HSHB already has had to scale back the number of male infectious syphilis cases that are investigated by Communicable Disease Investigators (CDIs), resulting in missed opportunities for prevention of onward transmission of both syphilis and HIV. Reductions in federal funding for special programs threaten the sustainability of a highly effective screening program for chlamydia and gonorrhea for women in the juvenile detention facility. Although these reductions have, for the time being, been offset by a one-time increase in funding from the California state legislature, long-term sustainability without identification of an additional funding source is unclear and may exacerbate existing health disparities associated with chlamydia and gonorrhea. Furthermore, for the last

several years, HSHB has not had the capacity to enter all incoming data from provider reports on an ongoing basis, specifically for chlamydia (due to the high volume of reported cases). Although HSHB has identified a temporary solution to retroactively enter missing provider reports for chlamydia for 2017 and 2018, this will continue to be an ongoing challenge. Increased funding is needed for HSHB to continue to maintain its core functions, to ensure completeness of STD surveillance data to guide local programs, and to develop innovative and data-driven approaches to STD prevention and control. In order to develop long-term sustainable solutions, rather than one-time, increases in funding are urgently needed. Therefore, it is recommended that the County of San Diego support state and federal legislation that provides long-term and sustained increases in funding to STD programs that are reflective of the current burden of STDs throughout the nation, in California, and in San Diego County.

**Recommendation 2: Engage local healthcare systems and health plans in addressing the increase in STD rates, and increase provider awareness of important public health issues (e.g., antibiotic-resistant gonorrhea and congenital syphilis), current screening and treatment recommendations, and available resources.**

Much of STD prevention and control occur in local healthcare systems. This is particularly true for chlamydia, which is a generalized epidemic and for which there is a strong recommendation for regular screening in sexually active women aged 24 years and younger that also has been adopted as a quality assurance indicator. Healthcare providers need to be aware of recommendations for STD screening in different populations and to take routine sexual histories from patients in order to identify those who would benefit from more frequent screening. Frequent screening for STDs reduces the time between infection and treatment and the potential for onward transmission. Therefore, frequent screening for STDs in populations that are vulnerable to STDs is a form of prevention. Also, providers need to be familiar with gonorrhea treatment recommendations in order to limit the development and dissemination of antibiotic-resistant gonorrhea. Extragenital (i.e., throat and/or rectal) testing for gonorrhea and chlamydia in MSM is important, as urine/urethral screening only would miss the majority of gonorrhea and chlamydia infections in this population. The County of San Diego can ensure that healthcare providers are adhering to best practices for STD prevention, diagnosis, and treatment by engaging healthcare systems and health plans regarding their importance and making healthcare providers aware of resources available through HSHB, the State of California, the CDC, and other organizations.

**Recommendation 3: Increase general community awareness of STDs through a targeted outreach campaign in order to decrease stigma and ensure that the San**



**Diego County public and vulnerable populations are aware of the local increases in STD rates, recommendations for prevention and screening, and resources available for STD testing and treatment.**

Stigma associated with STDs is a barrier to open communication about STDs and sexual health and may affect people's knowledge about how to protect themselves against STDs, the high rates of asymptomatic STDs and importance of testing, and where and how to access STD prevention, testing, and treatment services. It also may impact the comfort levels of both patients and providers to discuss vulnerability to STDs, the willingness of providers to offer STD testing, and the ability of patients to advocate for themselves and seek needed services. The County of San Diego can reduce stigma by emphasizing STDs as an important local public health issue and educating communities about STDs, the importance of testing, and local resources for testing and treatment. The County of San Diego also can support efforts to secure additional resources for education of the public about services available through HSHB and a targeted outreach campaign to vulnerable populations. This recommendation supports Getting to Zero.

**Recommendation 4: Support collaborations within HHSA to improve case management of pregnant women with syphilis.**

Given the complex needs of pregnant women with syphilis and the limited capacity of HSHB CDIs to follow pregnant women with syphilis throughout the duration of pregnancy, collaborations that draw on existing resources within HHSA are important to ensure that these women receive the support that they need to avoid reinfection and adverse infant health outcomes. A current example of such collaboration is involvement of Public Health Nurses (PHNs) in the case management of pregnant women with syphilis. Intra-Agency collaborations also may be necessary to maintain surge capacity and allow HHSA to respond to an STD-related public health crisis (e.g., an outbreak of antibiotic-resistant gonorrhea).

**Recommendation 5: Support policies that promote access to culturally competent and inclusive healthcare services for all San Diego County residents and remove barriers to utilization of preventive, testing, and treatment services for STDs.**

Most complications of STDs can be prevented through access to healthcare and timely access to testing and treatment in the case of both symptomatic and asymptomatic disease. However, many of the populations disproportionately affected by STDs (e.g., MSM, Blacks/African Americans) have experienced discrimination and trauma and have had experiences that result in mistrust of the medical community. Poverty, transportation issues, housing instability, fear of arrest or deportation, mental health issues, substance abuse, and child care issues also may impede people with or

vulnerable to STDs from accessing the services that they need. These issues affect many aspects of health, and not just STD prevention, and require a communitywide effort to address. The County of San Diego can improve STD control by supporting policies and actions that address these barriers and provide access to healthcare services to all San Diego County residents.

## *Introduction*

Since March of 2017 the County of San Diego Health Services Advisory Board (HSAB) has taken an interest in the increasing rates of sexually transmitted diseases (STDs) within the State and San Diego County. Members of the HSAB view the rapidly increasing STD rates with concern. Though not always an easy topic to discuss or increase awareness, HSAB felt strongly about taking the time to learn more about the issue. As a result, the HSAB has received several presentations from the County of San Diego by Dr. Winston Tilghman, Medical Director of the HIV, STD, and Hepatitis Branch (HSHB), and Patrick Loose, HSHB Branch Chief. As a result, the HSAB decided to make STDs an area of focus with the intent of making proactive recommendations to the Board of Supervisors. Based on data received from HSHB, which is part of the County of San Diego Health and Human Services Agency (HHSA) Public Health Services (PHS), HSAB is presenting this document, which outlines recommendations that may assist with addressing this growing public health issue and providing value-added information to the Board of Supervisors. Because of our new-found knowledge, HSAB has a purposeful commitment to increasing awareness to address the increase in STD rates in San Diego County. Further, HSAB supports the advancement of STD prevention and control efforts, by making five recommendations to the San Diego County Board of Supervisors.

These recommendations are necessary because the acute and chronic complications of STDs are an increasing concern for the health of San Diego County residents. At the end of 2017, the last calendar year for which complete case data are available, rates of all three of the main reportable bacterial STDs (i.e., syphilis, gonorrhea, and chlamydia) had steadily increased for three consecutive years and reached their highest levels in the last 20 years. STDs are associated with significant health disparities, which vary by disease. Syphilis and gonorrhea primarily affect men in their third and fourth decades of life, particularly men of color (i.e., Black/African American and Hispanic/Latino men) and gay, bisexual, and other men who have sex with men (MSM). Chlamydia disproportionately affects young women of color (i.e., Black/African American and Hispanic/Latina women).

Addressing these rising rates and preventing complications of these infections require a coordinated response involving local public health officials, health care providers, and the community at large. Such a response must be data-driven, incorporate evidence-based practices, and ensure that necessary services are provided to the populations that are most affected. Data must also be available on factors that are associated with health inequities in order to make data-driven decisions to assess and track these inequities among vulnerable populations. The HSAB has raised this as a priority and PHS developed a temporary solution to address these concerns and enter missing surveillance data for 2017 and 2018. The HSAB will continue to monitor and receive updates regarding the status of data completeness. As data becomes more complete,



the County of San Diego will be integrating additional data, including data on race and ethnicity of chlamydia cases, into regular STD reports on a continuing basis.

This document includes: 1) an overview of the clinical manifestations, management, and complications of syphilis, gonorrhea, and chlamydia; 2) the most recent case counts and rates of these infections in San Diego County, California, and the United States (U.S.); 3) an outline of public health priorities and threats posed by STDs; and 4) recommendations from the HSAB that facilitate a proactive regional approach to STD prevention and control in San Diego County.

## *STD Overview and Epidemiology*

This section will provide an overview of the STD epidemics in San Diego County, including overall impacts of syphilis, gonorrhea, and chlamydia as well as the effects of these conditions on different populations (e.g., racial/ethnic groups, age cohorts, geographic regions). Both reported case counts and rates will be provided in this section and the corresponding figures. Case counts refer to the actual numbers of cases of STDs reported to the local health department for a group or population. Rates take into account the size of a population and indicate the impact of STDs on a group or population. In this report, rates are expressed as the number of cases per 100,000 persons in a group or population.

According to the U.S. Census Bureau, in 2016, approximately 33.1% of the population of San Diego County was Hispanic/Latinx, 46.7% was White, 4.7% was Black/African-American, 11.8% was Asian/Pacific Islander (including Native Hawaiian), and 3.7% was classified as Other (including American Indian or Alaska Native). There was some regional variability with respect to the racial/ethnic composition of the population in the different HHSA Regions (see **Figure 1**).<sup>1</sup> Although the population of Blacks/African-Americans in San Diego County is relatively small overall (4.7%) and in the different HHSA service regions (2.0-11.0%) compared to other groups, STDs have a higher impact on Blacks/African-Americans than they do on other groups. More details about these racial/ethnic disparities will be provided in the disease-specific sections of this report.

**Syphilis** rates reached record lows in the late 1990s but have progressively increased since the turn of the millennium. In 2017, a total of 1,130 cases of early (i.e., primary, secondary, and early latent) syphilis were reported in San Diego County, with a rate of 34.1 cases per 100,000 persons. The overall rate of early syphilis increased by 14.4% from 2016 to 2017 and by 3,310% since 2000 (see **Figure 2**). The resurgence in syphilis has disproportionately affected MSM, who accounted for 85.5% of early syphilis cases in 2017. Although the highest numbers of cases were reported among Hispanic/Latino (454), followed by White (416) men (see **Figure 3**), the rates of early syphilis were significantly higher among Black/African-American and Hispanic/Latino men than among White men (see **Figure 4**).<sup>2</sup> The rates of early syphilis observed among Black/African-American and Hispanic/Latino men were 1.7 and 1.6 times the rate observed among White men. The Central Region is the area of highest early syphilis morbidity, followed by the North Central and South Regions (see **Figure 5**).<sup>2</sup>

Without treatment, syphilis progresses through distinct stages that are based on typical clinical manifestations. Primary syphilis is characterized by one or more ulcers at the site of initial contact with the causative bacteria. Secondary syphilis is characterized by rash, wart-like lesions in mucosal areas, patchy hair loss, fever, chills, and enlarged lymph nodes. Even without treatment, symptoms usually will resolve, and patients may remain without symptoms for years. Bacterial invasion of the central nervous system

(neurosyphilis) and ocular structures (ocular syphilis) can occur during any stage of infection. Complications can include visual loss and stroke, and deficits may be permanent. After years to decades of untreated infection, syphilis can lead to severe neurologic complications, cardiovascular disease, and destructive lesions of the bone, skin, and internal organs.

Syphilis is associated with high risk of HIV transmission and acquisition. Of the early syphilis cases reported among MSM in 2017, 55% were co-infected with HIV.<sup>2</sup> Therefore, HIV-negative men with syphilis are highly vulnerable to HIV infection and would benefit from HIV prevention services such as pre-exposure prophylaxis (PrEP).

Furthermore, when syphilis is transmitted from mother to child during pregnancy or delivery, it can result in multiple complications, including birth defects, neurological disease, visual loss, hearing loss, and fetal demise. Without treatment, affected children are at risk for complications throughout childhood and even into puberty. Congenital syphilis is completely preventable through timely and appropriate treatment of pregnant women with syphilis, although treatment recommendations are more stringent for pregnant women than for non-pregnant adults, and treatment must be initiated at least 30 days prior to delivery. Although screening for syphilis is legally mandated during the first prenatal care visit, which allows plenty of time for diagnosis and treatment of maternal infection, many women experience barriers to accessing prenatal care.

Reported cases of congenital syphilis in California have increased by over 700%, since 2012, with the Central Valley and Los Angeles County accounting for the largest increases. In 2017, a total of 283 congenital syphilis cases were reported statewide, including 30 stillbirths (fetal deaths).<sup>3</sup> Many of these cases were associated with late or no prenatal care and substance use. Although increases of this magnitude have not been observed in San Diego County, there is a trend toward increased syphilis rates among women of childbearing potential and pregnant women as well. There also have been several cases of congenital syphilis (i.e., infants born to women with untreated or inadequately treated syphilis at the time of delivery) over the last few years and five stillbirths between 2013 and 2017.<sup>2</sup> Uncontrolled syphilis epidemics among men (including MSM) have the potential to spread to other segments of the population, including women and, consequently, children.

Treatment of syphilis is well-established, and a long-acting form of penicillin is recommended for most stages of syphilis and is the only medication that has been demonstrated to prevent congenital syphilis. Despite decades of use of penicillin to treat syphilis, there has not been a single documented case of penicillin-resistant *Treponema pallidum* (the causative bacterium of syphilis). However, many clinics do not carry the specific formulation of penicillin that is recommended for most stages of syphilis, and



recently there was a nationwide shortage of this formulation (now resolved). Neurosyphilis, including ocular syphilis, requires treatment with intravenous penicillin.<sup>4</sup>

**Gonorrhea** is the STD for which the highest year-to-year rate increases have been observed over the last several years. A total of 5,947 cases of gonorrhea were reported in San Diego County in 2017, with a rate of 179.7 cases per 100,000 persons. The overall rate of gonorrhea increased by 18.4% from 2016 to 2017 and by 181.2% from 2000 to 2017 (see **Figure 6**).<sup>2</sup> The rate of gonorrhea among men in 2017 was almost three times the rate among women and increased by 57.6% from 2015 to 2017. In San Diego County, although the highest numbers of reported gonorrhea cases were among White (1,033) and Hispanic/Latino (956) men (see **Figure 7**), the highest rate of gonorrhea was observed among Black/African-American men (494.5 cases per 100,000 Black/African-American men compared to 131.5 cases per 100,000 White men and 174.4 cases per 100,000 Hispanic/Latino men). In other words, the rate of gonorrhea among Black/African American men in 2017 was 3.8 and 2.8 times the rates observed among White and Hispanic/Latino men respectively (see **Figure 8**). MSM likely account for a significant proportion of gonorrhea cases and increases in gonorrhea rates, based on the increasing number of reported male rectal and pharyngeal gonorrhea cases being reported (1,583 in 2017). The areas of highest gonorrhea morbidity are the Central, North Central, and South Regions, and there are areas of intermediate morbidity in the North Coastal, North Inland, and East Regions as well (see **Figure 9**).<sup>2</sup>

Most cases of gonorrhea are localized to the site of initial contact with the bacteria, which typically is the urethra in men and the cervix in women. Rectal and throat gonorrhea infections are common, particularly among MSM, and most of these infections do not cause symptoms. Gonorrhea can have long-term effects on reproductive health in women who do not receive treatment. Without treatment, gonorrhea can migrate from the cervix to the upper reproductive organs (i.e., uterus, Fallopian tubes, and ovaries), a condition known as pelvic inflammatory disease, and this can cause tubal scarring, infertility, and chronic pelvic pain. It also can increase the risk of ectopic pregnancy (i.e., a pregnancy occurring outside the uterus), which can be life-threatening. Also, in a small subset of cases, gonorrhea can spread through the bloodstream and cause arthritis and dermatitis. More serious complications, such as meningitis and endocarditis, are rare but possible. Gonorrhea is associated with increased risk of HIV transmission and acquisition, with rectal gonorrhea being the STD associated with the highest risk of acquiring HIV infection within one year of diagnosis.<sup>5-</sup>

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Gonorrhea is more difficult to treat than chlamydia, and antibiotic-resistant gonorrhea was designated as an urgent public health threat by the Centers for Disease Control and Prevention (CDC) in 2013.<sup>7</sup> Historically, gonorrhea has developed resistance to the major classes of antibiotics used to treat it, including penicillin antibiotics and

fluoroquinolones. Based on antibiotic susceptibility data from the main County of San Diego STD clinic, 55.9% of gonorrhea is resistant to fluoroquinolones such as ciprofloxacin.<sup>8</sup> As gonorrhea drug resistance has evolved, CDC treatment recommendations for this infection have become progressively stringent. Currently, only one major class of antibiotics (third generation cephalosporins) is effective against gonorrhea, and dual treatment with injectable (ceftriaxone) and oral (azithromycin) antibiotics is recommended for all cases of gonorrhea.<sup>4</sup> Furthermore, a cluster of gonorrhea cases with decreased susceptibility to ceftriaxone and high-level resistance to azithromycin was identified in Hawaii in 2016.<sup>9</sup> Although all of these cases responded to standard first-line treatment, this was the first time that decreased susceptibility to both first-line antibiotics was identified in the U.S. More recently, cases of ceftriaxone treatment failure have been reported in the United Kingdom<sup>10</sup> and Australia.<sup>11</sup> These cases, in the setting of rapidly increasing rates of gonorrhea and a paucity of new antibiotics in the pipeline to treat it, are a call to action to control the development and spread of antibiotic-resistant gonorrhea.

**Chlamydia** is the most common reportable communicable disease in San Diego County, California, and the U.S. as a whole. In 2017, a total of 20,801 cases of chlamydia were reported in San Diego County, with an overall rate of 628.5 cases per 100,000 persons. This represents a 9.3% rate increase compared to 2016 and a 104.8% increase compared to 2000 (see **Figure 10**). Highest rates were observed among females aged 15-24 years (4,455.9 cases per 100,000 women aged 20-24 years and 2,769.9 cases per 100,000 women aged 15-19 years in 2017). The rate of chlamydia among women aged 15-19 years was 4.5 times the rate among men in this age cohort.<sup>2</sup> This is likely, at least in part, a reflection of higher screening rates in women due to well-established national recommendations for regular screening for chlamydia in sexually active women aged 24 years and younger<sup>12</sup> and a higher likelihood of young women to access healthcare services compared to young men. Although current data regarding race/ethnicity of chlamydia cases are limited (due to large amounts of missing data for 2017 and 2018 that currently are being entered into the surveillance system), historically women of color (i.e., Black/African American and Latina women) have been disproportionately affected by chlamydia. In 2013, the highest numbers of chlamydia cases were reported for Hispanic/Latina (2,790) and White (1,501) women respectively (see **Figure 11**). However, the rate of chlamydia among Black/African American women in San Diego County was 4.9 times the rate observed among White women and 1.9 times the rate observed among Hispanic/Latina women. The rate of chlamydia among Hispanic/Latina women was 2.5 times the rate observed among White women (see **Figure 12**).<sup>13</sup> Unlike gonorrhea and syphilis, which are concentrated in certain populations, chlamydia is a generalized epidemic with areas of intermediate or high morbidity in all HHSA administrative regions. The areas of highest

morbidity are the Central, North Central, and North Coastal Regions, followed by the South Region (see **Figure 13**).<sup>2</sup>

As with gonorrhea, most cases of chlamydia are localized to the site of initial contact with the bacteria (i.e., typically the cervix in women and the urethra in men). Rectal infections also can occur, particularly with specific types of chlamydia that can cause a condition known as lymphogranuloma venereum or LGV. Chlamydia is easily treatable with oral antibiotics, with a single dose of azithromycin being the most commonly used regimen. A one-week course of twice-daily doxycycline also can be used.<sup>4</sup> Chlamydia does not cause widespread infection and is not fatal. However, without treatment, it can have the same deleterious reproductive health effects on women as untreated gonorrhea (i.e., pelvic inflammatory disease, tubal scarring, chronic pelvic pain, increased risk of ectopic pregnancy).

The threat of these complications and higher incidence of chlamydia in young women of reproductive potential highlight the importance of timely diagnosis and treatment of chlamydia. This prompted the U.S. Preventive Services Task Force (USPSTF) to issue a Grade B recommendation for chlamydia [and gonorrhea] screening for sexually active women aged 24 years and younger (meaning that the USPSTF recommends the service and has high certainty that the net benefit is moderate or there is moderate certainty that the net benefit is moderate to substantial).<sup>12</sup> This recommendation has led to the inclusion of regular chlamydia screening in this age group as a Health Plan Employer Data and Information Set (HEDIS) measure.<sup>14</sup> Therefore, young women who access healthcare services are likely to receive chlamydia screening and education on a regular basis.

**STDs Among Youth:** Youth, defined for the purposes of this report as young people aged 15 to 24 years, accounted for 48.4% of the total number of early syphilis, gonorrhea, and chlamydia cases reported in San Diego County in 2017. Most of the STD cases reported among this age cohort were chlamydia, for which youth accounted for 54.8% of the 20,801 reported cases. Among the 11,403 chlamydia cases reported among youth in 2017, 8,076 (70.8%) were female.<sup>2</sup> This is likely due to the USPSTF recommendation for annual chlamydia and gonorrhea screening of women in this age cohort mentioned previously,<sup>12</sup> and the 3,327 chlamydia cases reported among male youth likely underestimate the true incidence of chlamydia among young men. Most chlamydia infections among men are asymptomatic and may resolve spontaneously in some cases, and men are less likely to seek medical care than women in the absence of symptoms. As stated previously, young women of color (i.e., Black/African American and Hispanic/Latina women) are disproportionately affected by chlamydia.

Youth accounted for smaller proportions of reported cases of gonorrhea and early syphilis. In 2017, 32.2% of the 5,947 reported gonorrhea cases were youth, and 1,178



(61.5%) of these cases were men. Youth accounted for 15.3% of the 1,130 early syphilis cases reported in 2017, and 93.1% of reported early syphilis cases among youth were male.<sup>2</sup>

Outreach and education to youth are very important components of STD prevention and control, given the high incidence of chlamydia and gonorrhea among this population and the potential for long-term reproductive health complications if these infections are not detected and treated in a timely manner. It is also critical for all youth to have access to STD prevention, testing, and treatment services and for different racial/ethnic groups to have the same access to STD knowledge and quality clinical services. HSHB activities that focus on youth and health disparities are described in the **Recommendations and Rationale** section of this document.

**STDs in Rural Areas:** Syphilis is highly concentrated in the densely populated urban and suburban areas of the Central, North Central, and South Regions, and most zip codes outside of these regions had fewer than five total reported cases in 2017 (see **Figure 5**). Gonorrhea is less concentrated than syphilis but still tends to affect people residing in urban and suburban areas, primarily in the Central, North Central, and South Regions. However, several zip codes in the North Coastal, North Inland, and East regions have moderately high rates of gonorrhea, including the Oceanside/Camp Pendleton area, Escondido, and El Cajon, and other more rural zip codes in these regions had relatively low but significant rates of reported infection (see **Figure 9**). Chlamydia, the most generalized of these epidemics, affected similar areas as gonorrhea plus several rural areas in the North Inland and East regions, including Pala and rural zip codes on the Mexican border in the East Region, that had moderately to very high rates of reported infection (see **Figure 13**).<sup>2</sup>

Although most STD morbidity is concentrated in the western third of San Diego County in urban and suburban areas, these areas also have more access to STD prevention, testing, and treatment services. However, the regional approach to STD prevention and control should ensure that quality sexual health education and prevention, testing, and treatment services are available throughout the County of San Diego and should take into account that most of San Diego County, with the exception of the most sparsely populated areas of the eastern third of the County of San Diego, are affected to some extent by STDs.

### *Implications of These Data*

While improved diagnostic testing (primarily for gonorrhea and chlamydia) and more thorough screening practices have likely contributed, at least in part, to increases in reported STDs, the observed increases in both symptomatic and asymptomatic infections indicate that there is increasing transmission of STDs in San Diego County and increasing burden of disease on the community and on the healthcare system. Increased STD incidence means that more San Diego County residents are vulnerable to complications and long-term effects of these conditions, which warrants a proactive approach to prevention, early detection, and timely treatment of STDs in the region.

The sustained increases in STD cases and rates observed in recent years are not unique to San Diego County. A total of 2,294,821 cases of STDs were reported nationwide in 2017. These include 1,708,569 cases of chlamydia, 555,608 cases of gonorrhea, and 30,644 cases of primary and secondary syphilis. Rates of gonorrhea increased 75.2% from a historic low in 2009 to 2017, and rates of primary and secondary syphilis increased by 72.7% from 2013 to 2017. As in San Diego County, increases in national gonorrhea rates among men were significant and nearly doubled between 2013 and 2017 (increase of 86.3%), and most (68.2%) of primary and secondary syphilis cases, for which gender of sexual partners was known, were MSM. The highest cases of chlamydia were observed among women aged 15 to 24 years.<sup>15</sup>

In California, a total of 218,728 cases of chlamydia were reported in 2017, which is the highest number of cases reported since chlamydia reporting began in 1990, and 53.4% of cases occurred among people aged 15 to 24 years. The rate of chlamydia increased by 9.4% from 2016 to 2017. A total of 75,372 cases of gonorrhea were reported statewide in 2017. This is the highest number of cases reported since 1988. The rate of gonorrhea increased by 15.8% from 2016 to 2017, and the rate of gonorrhea among men was twice that among women. A total of 13,719 cases of early syphilis were reported statewide in 2017. This is the highest number of cases reported since 1987. The rate of early syphilis increased by 21.4% from 2016 to 2017, and rates were highest among African Americans.<sup>3</sup>

Given the high STD burden in San Diego County and limited resources available for STD prevention and control, HSHB has identified the following priorities to minimize the impact of STDs on San Diego County residents. These priorities are aligned with those of the CDC and other STD programs throughout the State and the nation:

- Prevent congenital syphilis.
- Prevent complications of syphilis, including neurosyphilis, ocular syphilis, and tertiary syphilis.
- Prevent the development and spread of antibiotic-resistant gonorrhea.

- Prevent reproductive health complications of untreated chlamydia and gonorrhea.
- Integrate HIV prevention into STD case investigations and management by ensuring that HIV-positive STD cases are receiving HIV care and treatment and that HIV-negative or HIV-unknown STD cases are aware of available prevention methods, including pre-exposure prophylaxis (PrEP). These activities are aligned with the Getting to Zero initiative to end the HIV epidemic in San Diego County.
- Ensure that STD testing and treatment services are available to those who need them, particularly disproportionately affected and underserved populations.
- Ensure that local healthcare providers are aware of and practicing according to evidence-based STD screening and treatment recommendations.

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## *Health Services Advisory Board Recommendations*

As stated previously, since March of 2017 the County of San Diego HSAB has taken an interest in STDs as an important public health issue. Members of HSAB view the rapidly increasing rates of STDs and the health disparities associated with STDs in the region with concern. As a result of data presented by Dr. Winston Tilghman and Mr. Patrick Loose of HSHB, the HSAB developed the following five recommendations to the San Diego County Board of Supervisors:

- **Recommendation 1:** Identify additional resources for STD prevention and control that are reflective of the increasing rates of infection and allow for continuation of core STD program activities (e.g., surveillance, disease intervention), as well as implementation of innovative and evidence-based approaches to outreach and screening, with an emphasis on sustainability.
- **Recommendation 2:** Engage local healthcare systems and health plans in addressing the increase in STD rates, and increase provider awareness of important public health issues (e.g., antibiotic-resistant gonorrhea and congenital syphilis), current screening and treatment recommendations, and available resources.
- **Recommendation 3:** Increase general community awareness of STDs through a targeted outreach campaign in order to decrease stigma and ensure that the San Diego County public and vulnerable populations are aware of the local increases in STD rates, recommendations for prevention and screening, and resources available for STD testing and treatment.
- **Recommendation 4:** Support collaborations within HHSA to improve case management of pregnant women with syphilis.
- **Recommendation 5:** Support policies that promote access to culturally competent and inclusive healthcare services for all San Diego County residents and remove barriers to utilization of preventive, testing, and treatment services for STDs.

The following section will provide the rationale for each recommendation.



## *Recommendations and Rationale*

**Recommendation 1: Identify additional resources for STD prevention and control that are reflective of the increasing rates of infection and allow for continuation of core STD program activities (e.g., surveillance, disease intervention), as well as implementation of innovative and evidence-based approaches to outreach and screening, with an emphasis on sustainability.**

There is a critical need for increased resources for STD prevention and control. Without sustained increases in funding and investment in STD prevention by the federal government, state and local health departments will be unable to mitigate continued rises in STD morbidity. In order to reduce STDs and to address the health disparities associated with them, data-driven innovative and evidence-based approaches to outreach and screening are needed. In addition, there needs to be a continuation of core surveillance and disease intervention activities that are designed to reduce complications and prevent onward transmission of both STDs and HIV in the population.

However, not only has funding for STD prevention and control failed to keep up with rises in morbidity, but anticipated reductions in funding for STD prevention and control in San Diego County may put existing programs and services in jeopardy. For example, federal funding for categorical STD programs and projects ended on December 31, 2018. This included funding for a chlamydia and gonorrhea screening program in the juvenile detention facility. The Chlamydia Screening Project, or ClaSP, is a collaborative project between HSHB and the Probation Department that provides chlamydia and gonorrhea screening to females who are detained in the Kearny Mesa Juvenile Detention Facility. The program has consistently exceeded the State goal of screening 80% of female detainees, as 95-100% of female detainees are screened in San Diego. From January 1, 2017 through March 31, 2018, the average quarterly positivity rate was 13.9% (range 12.0-17.6%), meaning that more than one out of every ten females detained in juvenile hall had chlamydia that may not have been detected if they did not have access to this program. Therefore, reductions in funding threaten the sustainability of this program that provides screening and treatment to a population at high risk for chlamydia who may have barriers to receiving such services elsewhere. Given the fact that untreated chlamydia and gonorrhea can result in long-term reproductive health complications, including tubal scarring, infertility, and chronic pelvic pain, termination of these services could exacerbate the health disparities that already exist for chlamydia and gonorrhea.

Continued rises in STD morbidity and relatively stable staffing levels have challenged the ability of HSHB to maintain its core public health functions. Two of these core functions are STD surveillance and disease intervention. STD surveillance involves reporting of chlamydia, gonorrhea, and syphilis cases to the California Department of

Public Health (CDPH) via an electronic database called the California Reportable Disease Information Exchange (CalREDIE). The data for these reports are derived primarily from mandated laboratory and provider reports. Although most laboratories submit positive test results for these infections directly into the system through an electronic interface, many positive laboratory tests, particularly for syphilis, require interpretation and some investigation, as they may not be associated with a new case of disease. Reports from medical providers are typically received via fax and must be entered manually by HSHB personnel. As provider reports contain important information that is not included in laboratory reports, such as race/ethnicity, gender identity, gender of sexual partners, and treatment information, inclusion of these reports is necessary in order to have a complete surveillance dataset that provides a comprehensive picture of STD trends, who is affected by STDs, and treatment practices in the region.

Some community providers do not send case reports at all or send incomplete case reports. However, HSHB currently does not have the capacity to follow up with provider offices regarding missing and incomplete reports. Since 2014, due to the large and increasing number of incoming chlamydia reports, HSHB has not had the capacity to enter all data from chlamydia provider reports into CalREDIE and has relied on temporary assistance to ensure that all gonorrhea and chlamydia cases are captured in the surveillance database. Therefore, although case counts are accurate, there are missing data that limit HSHB's ability to fully utilize surveillance data to guide its programs and activities, set priorities, identify, track, and address health inequities, and evaluate the impact of its programs and activities. For example, since 2014, HSHB has been unable to report race/ethnicity data for chlamydia, due to the large amount of missing data in the surveillance system. Since HSAB has identified generating this data as a priority, , HSHB has implemented a temporary solution to enter the backlog of reports and data for 2017 and 2018 into the system, to get a current snapshot of the significant health disparities associated with chlamydia. HSHB also is committed to entering these data into the surveillance system on an ongoing basis in the future. However, as STD case numbers continue to increase, ongoing chlamydia data entry will continue to be a challenge at current staffing levels without additional resources. While electronic case reporting is likely to mitigate this issue in the future, it will take at least several years for it to be fully implemented and to have a significant effect.

Disease intervention is another core activity that utilizes specially trained personnel, known as communicable disease investigators (CDIs), to investigate cases of STDs in order to verify appropriate diagnosis and treatment, prevent reinfection, elicit exposed partners, confidentially notify partners of exposure, and link those partners to testing and/or preventive treatment. STD disease intervention also provides the opportunity to ensure that patients are tested for HIV, are aware of their HIV status and to link patients

to appropriate HIV treatment or prevention services as needed. These efforts support the County of San Diego's Getting to Zero initiative.

Syphilis is the investigative priority of STD programs due to its potential to cause both acute and chronic serious complications and congenital syphilis. Syphilis also presents opportunities to prevent the spread of infection, due to the long period between infection and development of symptoms/complications (10-90 days) and limited/defined periods of infectivity (i.e., only when symptoms are present). Sexual transmission of syphilis only occurs during the first year of infection; therefore, primary, secondary, and early latent syphilis are the stages during which there is risk for sexual transmission of *T. pallidum* to others.

Due to the potential for congenital syphilis, women of childbearing potential (i.e., women aged 15 to 49 years) are the highest investigative priority, regardless of clinical factors. Syphilis cases of all stages that occur among women of childbearing potential could result in congenital syphilis. Prior to 2015, HSHB also conducted full disease investigation of all primary, secondary, and early latent syphilis cases among men and older women in order to limit onward sexual transmission. However, continued rises in syphilis morbidity without compensatory changes in staffing levels have resulted in progressively higher caseloads and hindered HSHB's ability to continue timely investigation of all cases (see **Figure 14**). As of 2017, HSHB no longer investigates male early latent syphilis cases, except for those who are known, based on case reports, to have female sexual partners. Therefore, although appropriate staging and treatment are verified for all syphilis cases, partners of potentially infectious MSM syphilis cases are not receiving preventive services. This limits the ability of HSHB to curb the syphilis epidemic among MSM, who are disproportionately affected by the resurgence in syphilis and account for the majority of syphilis cases in San Diego County.

Although there have been some increases in funding for STD prevention and control to the CDPH STD Control Branch (STD CB) from the California state legislature for distribution to local health jurisdictions such as San Diego County, these have been one-time temporary increases. For example, San Diego County received \$427,649 of additional funds to be spent during fiscal years (FYs) 2016-2017, 2017-2018, and 2018-2019 and received an additional funding increase of \$175,891 during FY2018-2019. While these temporary increases are helpful to support specific one-time activities or projects with defined endpoints, they do not allow San Diego County to address the chronic staffing shortage that challenges HSHB's ability to maintain its core functions for STD prevention and control and to mitigate the continuing rises in STD morbidity. Also, a portion of the latest one-time funding increase was used to offset funding reductions from other sources. For example, part of the new one-time funds was allocated to continue support of the ClaSP program due to the end of federal funding for this project,



limiting the number of new and innovative activities that this funding increase could support.

Therefore, it is recommended that the County of San Diego support state and federal legislation that provides long-term and sustained increases in funding to STD programs that are reflective of the current burden of STDs throughout the nation, in California, and in San Diego County.

**Recommendation 2: Engage local healthcare systems and health plans in addressing the increase in STD rates, and increase provider awareness of important public health issues (e.g., antibiotic-resistant gonorrhea and congenital syphilis), current screening and treatment recommendations, and available resources.**

Reducing the burden of STDs in San Diego County requires a collaborative effort involving the local health department, healthcare systems and providers, and health plans. While certain functions (e.g., disease surveillance and syphilis case investigations) are the purview of the local health department STD program, there are many ways that healthcare providers and systems can and should contribute to STD prevention in the region. However, multiple competing priorities, limited time with patients, lack of awareness of most recent guidelines, and reimbursement issues may prevent providers from conducting appropriate sexual history, STD screening and treatment, and education.

For sexually active MSM, the CDC recommends screening at least annually for syphilis, HIV (unless already known to be HIV-positive), gonorrhea, and chlamydia. For gonorrhea, screening is recommended at all possible sites of exposure (i.e., urethra and, if indicated based on sexual history, throat and rectum). For chlamydia, urethral and, if indicated based on sexual history, rectal screening is recommended. More frequent screening (i.e., every 3 to 6 months) is recommended for those with factors that make them more vulnerable to STDs (i.e., multiple or anonymous partners, drug use, partner(s) with risk factors).<sup>4</sup>

Frequent screening based on vulnerability and screening at all potential sites of exposure can reduce the burden of STDs among MSM in San Diego County by detecting infections earlier, reducing the time that someone may transmit infection(s) to someone else, and identifying asymptomatic throat and rectal infections. Recent increases in gonorrhea among men are likely fueled by transmission by MSM with asymptomatic throat and rectal gonorrhea. Unless they are getting regular testing, people with asymptomatic infections will not know that they are infected and may not take the necessary precautions to avoid transmitting the infection to others. A research study of a large cohort of MSM in San Francisco demonstrated that approximately 95%



of gonorrhea cases would have been missed if screening were limited to the urethra or a urine sample only.<sup>16</sup> Therefore, it is important for providers to take sexual histories from their patients and to test for gonorrhea and chlamydia at all possible sites of exposure. The recent approval by the U.S. Food and Drug Administration of two diagnostic tests for gonorrhea and chlamydia for use on throat and rectal specimens should decrease barriers to multi-site testing. It also is important for healthcare systems and providers to provide a welcoming and nonjudgmental environment in which patients feel comfortable discussing their sexual health. Patients who do not feel comfortable discussing their sexual practices with their providers may not provide all of the information needed for the provider to ensure that all recommended screening takes place.

Providers also play an important role in limiting the development and spread of antibiotic-resistant gonorrhea by providing dual therapy for all cases of gonorrhea. The most recent CDC STD treatment guidelines, which were released in 2016, included significant changes in gonorrhea treatment recommendations. In those guidelines, all recommended and alternative gonorrhea treatment regimens include a combination of an injectable antibiotic plus a second oral antibiotic. Regimens that involve a single antibiotic or only oral antibiotics are no longer recommended due to the threat of antibiotic-resistant *Neisseria gonorrhoeae*.<sup>4</sup>

Pharyngeal (throat) gonorrhea, in particular, is unlikely to be eradicated by oral antibiotics alone and also may lead to the development of drug resistance due to other bacteria in the throat that can pass drug resistance genes to *N. gonorrhoeae*. Failure to treat pharyngeal gonorrhea with dual therapy that includes an injectable antibiotic and/or failure to detect pharyngeal gonorrhea in the first place (due to lack of extragenital screening) increases the risk of drug-resistant gonorrhea. This is a major public health threat, since there are very few antibiotics effective against gonorrhea in the pipeline should cephalosporin antibiotics, such as ceftriaxone and cefixime, no longer be effective against the bacteria. In fact, patients in the United Kingdom who were infected with multi-drug-resistant gonorrhea required intravenous antibiotics to eradicate pharyngeal gonorrhea after failing outpatient treatment.<sup>11</sup> This is an indicator of the potential for gonorrhea treatment to become much more complicated and expensive and place more of a burden on the healthcare system in the future if drug-resistant gonorrhea becomes more common and outpaces development of new antibiotics that are effective against *N. gonorrhoeae*.

Since chlamydia is more of a generalized epidemic than syphilis and gonorrhea in San Diego County, the vast majority of chlamydia prevention, screening, and management occur in local healthcare settings. For example, in 2017, only 4% of reported chlamydia cases were diagnosed in County-operated STD clinics (versus 14% of gonorrhea and 27% of primary and secondary syphilis cases).<sup>2</sup> The sheer number of chlamydia cases

reported each year (more than all other reportable communicable diseases combined and in excess of 20,000 cases in 2017) precludes public health intervention in all reported chlamydia cases. However, despite the potential for complications of untreated infection, current tests for chlamydia are very sensitive, and most chlamydia infections are easily treated with oral antibiotics alone. This means that, in general, chlamydia can be easily managed by general practitioners and primary care providers.

Routine screening for chlamydia is more institutionalized than screening for other STDs, particularly for women. The USPSTF issued a Grade B recommendation for chlamydia (and gonorrhea) screening in all sexually active women aged 24 years and younger and in older women who are more vulnerable to infection (i.e., new or multiple sexual partners, a partner with concurrent partners, a partner who was diagnosed with an STD, exchange of sex for money or drugs, inconsistent condom use if not in a mutually monogamous relationship, or being part of a high-prevalence population such as incarcerated persons).<sup>12</sup> The CDC recommends annual screening of women aged up to 24 years and older women with risk factor(s) for chlamydia and gonorrhea.<sup>4</sup> Based on the strength of these recommendations, annual screening of sexually active females aged 15 to 24 years for chlamydia is a HEDIS measure, which sets it as a quality measure for which health plans are evaluated.<sup>14</sup> Such measures do not exist for chlamydia screening in men (due to lack of cost-effectiveness data) or for gonorrhea or syphilis screening.

Health plans can play a role in STD prevention by covering the costs of multi-site gonorrhea and chlamydia testing and frequent STD screening for MSM, if indicated by a patient's risk factors. Some health plans may only pay for one gonorrhea and chlamydia test during a certain period, which could provide a disincentive for providers to follow screening guidelines and test patients at all potential sites of infection and test frequently those who are more vulnerable to STDs. Education of health plan decision makers regarding the importance of extragenital/multi-site gonorrhea and chlamydia testing and frequent testing in certain populations (e.g., MSM) may result in policy changes that facilitate STD testing practices that are in accordance with evidence-based national guidelines.

Using a portion of new one-time funds earmarked for STD prevention and control by the California state legislature and allocated to local health jurisdictions by the CDPH STD STDCB, HSHB hired a temporary expert professional to implement a public health detailing program. Public health detailing is a form of provider outreach by local health departments that is based on pharmaceutical detailing and involves provider-focused campaigns on specific topics, scheduled and unscheduled visits to healthcare practices, meeting with healthcare providers and other essential personnel, and provision of resources and information regarding topics of public health importance. Priority topics for this initiative will include congenital syphilis prevention and HIV PrEP, the latter of

which will be supported by one-time HIV funds. Future topics for detailing may include prevention of antibiotic-resistant gonorrhea, syphilis diagnosis and treatment, and STD screening guidelines. Surveillance data will be used to identify providers who serve populations who are disproportionately affected by STDs, and these providers will be prioritized for detailing. Although HSHB currently does not have staffing capacity to support a public health detailing program, the one-time funds, available for expenditure through the end of FY2018-19, will allow HSHB to employ a temporary staff member to start the program. Once the program is developed, sustainability will depend on additional resources being allocated for STD prevention and control (see **Recommendation 1**). The County of San Diego can support sustainability of public health detailing and establishment of long-term partnerships between public health and health care providers by supporting sustained increases in funding for STD prevention and control.

Providers also would benefit from knowledge of the resources available through the County of San Diego, the State of California, the CDC, and other organizations. The County of San Diego operates four categorical STD clinics that can provide testing and treatment for STDs (see next section) and also has a pager service for expert STD consultation to assist providers who are managing challenging or complex cases or are not familiar with STD management. The County of San Diego can provide clinical protocols for STDs. Evidence-based STD testing and treatment recommendations also are available through the CDC and CDPH. Finally, the County of San Diego disseminates regular and as-needed publications that provide essential STD-related information to providers, other stakeholders, and the public. HSHB publishes monthly data reports that show trends in STD incidence and include editorial notes about timely STD- and HIV-related topics. HSHB also produces annual surveillance data slides, and, if needed for urgent issues, disseminates health alerts that keep providers informed about the latest developments related to STDs and best practices.

**Recommendation 3: Increase general community awareness of STDs through a targeted outreach campaign in order to decrease stigma and ensure that the San Diego County public is aware of the local increases in STD rates, recommendations for prevention and screening, and resources available for STD testing and treatment.**

Education is a cornerstone of STD prevention and control, as people cannot make well-informed decisions to protect themselves against STDs without knowing what puts them at risk, what actions they can take to reduce their risk of acquiring these infections, what services they should receive from their healthcare provider, how often they should receive those services, and where those services can be accessed. For example, many young people may not be aware that chlamydia is most common among women aged 15 to 24 years and that testing is recommended for sexually active women aged 24



years and younger. They may not know to ask their provider for testing if it is not offered to them. They may not know that untreated chlamydia or gonorrhea may affect their ability to conceive a child in the future. People may not be aware that many STDs can be asymptomatic, and that absence of symptoms does not equal absence of disease. People for whom multi-site testing for gonorrhea and chlamydia is recommended may not be aware that they can have infections in the throat and rectum and may not expect testing at those sites if it is not offered. An educated public is better equipped to demand the services that it needs and to protect itself against these infections.

HSHB already performs community outreach in order to educate vulnerable populations about STDs and available resources for STD prevention, testing, and treatment. Supported by one-time STD funds, a digital campaign is underway to increase knowledge about chlamydia and gonorrhea among young women (with a focus on young women of color) and increase awareness of the Don't Think, Know home testing program (described later in this section). This project ended on June 30, 2019. Also, in collaboration with CDPH and the San Diego County Office of Education, HSHB provides technical assistance to schools that are in the process of implementing sexual education curricula that provide accurate and evidence-based STD and HIV prevention education in order to meet the standards of the California Healthy Youth Act.

HSHB is conducting a series of activities to engage the MSM population in order to determine the attitudes, beliefs, and needs of this population with respect to STDs and identify drivers of increasing STD rates among MSM. These efforts took place through the utilization of a contractor and were supported by one-time STD funding that ended on June 30, 2019. Based on input obtained from focus groups with different segments of the MSM population and a group of transgender women, there is a need for an awareness campaign to inform the community of the increasing rates of STDs, the high concentration of syphilis and gonorrhea in the MSM population, and the need for frequent and complete STD testing. Therefore, HSAB recommends targeted outreach to MSM in the form of an STD awareness campaign, similar to the previous HIV campaigns that proved to be effective. The goal of the STD awareness campaign would be to provide necessary education, reduce stigma, and increase testing in the MSM population. If this outreach effort is approved, HSAB recommends that the HSHB receives the additional resources necessary to sustain campaign efforts.

Free and open communication between sexual partners and between patients and their healthcare providers is also necessary to ensure that appropriate prevention strategies are utilized; that people are aware of their partners' and their own status with respect to STDs and HIV; and that providers are aware of their patients' actual vulnerability to STDs. Provision of safe, welcoming, and nonjudgmental environments that allow people to comfortably discuss sexual health is important, and only possible when people are informed and educated. However, there is significant stigma associated with STDs, and



many people are comfortable talking about sexual health and STDs. There are a number of cultural, religious, and socioeconomic factors that may affect people's comfort levels with these issues. Stigma may impact the ability of the public to make well-informed choices and to access needed services.

To provide an alternative means of accessing annual testing for chlamydia and gonorrhea to women who experience barriers to the service in general healthcare settings, the County of San Diego operates a web-based home testing program for chlamydia and gonorrhea for women aged 25 years and younger. This program, called Don't Think, Know, sends a home testing kit consisting of a vaginal swab, educational/instructional materials, and a stamped pre-addressed envelope for specimen shipment to the address entered by the requestor. The requestor collects the vaginal swab specimen herself, places it in the pre-addressed envelope, and places it in the mail. It is shipped automatically to the San Francisco Public Health Laboratory, where the test is performed. The results are available in one week via a password-protected website portal, and women with a positive test result are directed to where they can receive treatment. This program is also designed to address the high incidence of chlamydia in young women and the disproportionate impact it has on young women of color (i.e., Black/African American and Hispanic/Latina women).

Although over 800 test kits have been distributed in San Diego County through the Don't Think, Know program since its inception in 2013, utilization of the program could be improved by increasing community awareness of it as a resource for young women. There was a limited budget of \$13,560 for marketing during the launch of the program in San Diego County, which resulted in some bus and Trolley ads, but there has not been a sustained source of funding for marketing of the program to the population of interest. Much of the awareness of this program has been a product of word of mouth, collaborations between HSHB staff and school nurses, and press releases about STDs that include a description of the program. As described above, a portion of one-time funds for STD prevention and control currently is being used to develop and implement a marketing campaign for Don't Think, Know, which is utilizing digital media in addition to the printed marketing materials that have always been used. However, this funding ceased at end of FY2018-19. It is unclear at this time if funding will be available in the future for this and similar awareness campaigns. The HSAB believes that finding additional sustainable funding for these campaigns is critical during this time of rapidly increasing STD rates.

The County of San Diego also operates four categorical STD clinics that provide confidential testing and treatment for these and other STDs at low or no cost to patients. These clinics are strategically located in areas with high morbidity for one or more of these infections and provide confidential services to anyone who needs them, regardless of insurance status or ability to pay for the services. The clinics will soon

offer an option for express or “drop-in” testing for individuals who seek routine testing (i.e., are not having symptoms or known to be in contact with someone who has an STD). Express visits will allow patients to come to the clinic without an appointment, self-collect urine and swab specimens, and have blood drawn by a non-clinician provider. This program is expected to expand access to frequent STD testing for those at high risk of infection. Frequent testing by those at highest risk of infection shortens delays in treatment and decreases the amount of time that people may transmit the infection to others. It also offers opportunity for HIV testing and prevention, which supports the Getting to Zero Initiative.

**Recommendation 4: Support collaborations within HHSA to improve case management of pregnant women with syphilis.**

Given the catastrophic effects of congenital syphilis, including fetal demise, and the recent increases in congenital syphilis cases in California, the County of San Diego is taking a proactive approach to prevent congenital syphilis from becoming a major problem in the region. Although the syphilis epidemic among MSM continues unabated, with the potential to affect other populations, the number of female syphilis cases has remained relatively low, although there is an overall trend toward increases in female and congenital syphilis cases over the last five years. Further, other California counties that previously did not observe significant numbers of congenital syphilis cases (e.g., San Bernardino County), have recently observed increases in congenital syphilis. Therefore, a proactive approach is warranted.

In FY2019-20, HSHB will experience a reduction in baseline funding for core STD services due to revisions in the state funding formula for local health jurisdictions that places higher weight on congenital syphilis morbidity. Despite this, HSHB has developed a congenital syphilis action plan that is based on existing resources and a portion of one-time funds from the California state legislature. One component of the plan is inclusion of more detailed female and congenital syphilis data in annual STD data slides and reports, which was accomplished in the 2017 STD data slide set. Also, in collaboration with the California STD/HIV Prevention Training Center, HSHB conducted a clinical update for physicians and nurses that was focused on syphilis and congenital syphilis in particular. HSHB collaborated with the Maternal, Child, and Family Health Services (MCFHS) Branch of PHS to extend this training opportunity to obstetricians, pediatricians, neonatologists, and other providers who work with pregnant women and newborns and may not normally attend STD clinical training events. Congenital syphilis also will be a priority topic for the public health detailing program that HSHB will implement as stated above (see **Recommendation 2**).

HSHB also has engaged with MCFHS, the HHSA Chief Nursing Officer, and the Medical Care Services Division to involve Public Health Nurses (PHNs) in the case

management of pregnant women with syphilis. HSHB CDIs work closely with these women to ensure that they receive syphilis treatment and to provide assistance with partner evaluation and possible preventive treatment for syphilis. However, they do not have the capacity to follow these women throughout the entire duration of pregnancy to ensure that they receive appropriate follow-up, take precautions to avoid reinfection, and have positive outcomes after delivery. This collaboration will deploy PHNs to follow pregnant syphilis cases after completion of treatment, throughout the remainder of the pregnancy, and after delivery. Many pregnant syphilis cases already qualify for existing programs and would benefit from the support provided by PHNs. This collaboration will draw on the different skillsets of STD CDIs and PHNs to provide high-risk pregnant women with the resources and support that they need to protect their babies from congenital syphilis.

HSAB and County leaders can help to improve health outcomes with respect to STDs by supporting collaborations between HSHB and other Agency Departments as needed to prevent complications of STDs and to augment HSHB's capacity to respond to public health threats posed by STDs. In addition to supporting the plan to deploy PHNs to provide case management services to pregnant syphilis cases, there also could be a need to utilize personnel from other branches in the future (e.g., to maintain surge capacity in the case of an outbreak of antibiotic-resistant gonorrhea).

**Recommendation 5: Support policies that promote access to culturally competent and inclusive healthcare services for all San Diego County residents and remove barriers to utilization of preventive, testing, and treatment services for STDs.**

The ability to access both primary and specialty healthcare services is essential, not only for STD prevention and sexual/reproductive health but also for general health and wellbeing. However, not everyone has equal access to culturally competent and inclusive healthcare services, and not everyone feels comfortable seeking those services. The populations most affected by STDs in San Diego County (i.e., MSM, Hispanic/Latinx individuals and Blacks/African Americans) have experienced significant trauma and have been victims of discrimination, stigma, and violence. Many individuals in these populations also have had negative experiences with the healthcare system that can result in mistrust of the medical community and reluctance to seek services. Societal factors (e.g., religious and cultural factors) also may affect the willingness of people to seek STD testing and to provide accurate and complete information regarding their vulnerability to STDs with providers.

Poverty, transportation issues, housing instability, fear of arrest or deportation, mental health issues, substance abuse, and child care issues also may impede people who are vulnerable to STDs from accessing the services that they need. Individuals who have multiple challenges in their lives may not be able to prioritize going to see their

healthcare providers and seeking routine testing and therefore may not seek medical care until they are symptomatic and/or have developed complications. While the impact of each of these individual factors on STD morbidity is not completely clear, all of them likely contribute to the disparities observed among different populations and in different regions throughout the County. Addressing these issues is not trivial but is important to ensure health equity and improve the lives of all San Diegans.

Most STD prevention and management efforts take place in the community in general healthcare facilities. As mentioned previously, as a result of the USPSTF recommendation for screening for chlamydia and gonorrhea in sexually active women aged 24 years and younger<sup>12</sup> and the HEDIS measure for chlamydia screening in this age group,<sup>14</sup> any young woman who accesses medical care services should receive screening for these infections. Furthermore, since testing for syphilis during the first prenatal medical visit is legally mandated in the State of California, any pregnant woman who accesses prenatal care during the first trimester should receive testing for syphilis with plenty of time for treatment to at least be initiated, if not completed, at least 30 days prior to delivery if the test is positive. MSM who are seen in primary care settings also should receive at least annual screening for STDs, and those who receive HIV PrEP or have additional vulnerability may be screened every three to six months.

Timely access to medical services also is of particular importance for STD prevention and control. Unlike patients who seek routine screening for STDs, due to the acute nature of STDs, patients who develop symptoms are not able to schedule appointments to be seen by a provider weeks to months in advance. To decrease onward transmission, healthcare systems should have infrastructure to allow for same-day or sick patient visits to ensure timely testing and treatment of people who have symptom(s) suggestive of an STD. Otherwise, treatment may be delayed, increasing the risk of complications for the patient and onward transmission in the community.

Complications of STDs often occur when people do not access the services that they need. For example, many of the congenital syphilis cases that have resulted in stillbirths in California have occurred in women who either did not access prenatal care at all or accessed prenatal care late in pregnancy. As stated above, there are many reasons why people may not access needed services. Substance abuse, including methamphetamine, has been associated with many of the congenital syphilis cases in California in recent years.

Policies and actions that remove barriers such as this and address the social determinants of health that increase vulnerability to STDs and other negative health outcomes are important to ensure that all populations in all regions of San Diego County enjoy the same quality of life and have access to the same levels of services. Ensuring universal access to healthcare and utilization of it is a task that is more than any



individual program or group can achieve. This requires a community effort to ensure that all communities in San Diego County are healthy, safe, and thriving and that the *Live Well, San Diego* vision is achieved for all.

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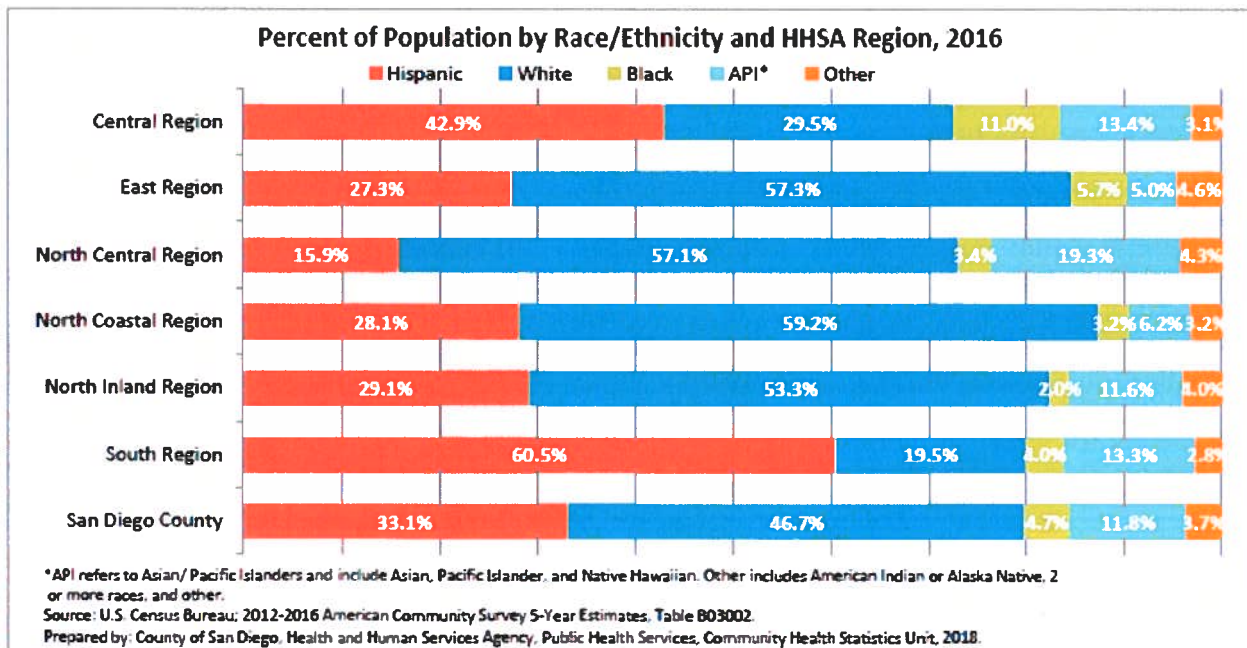
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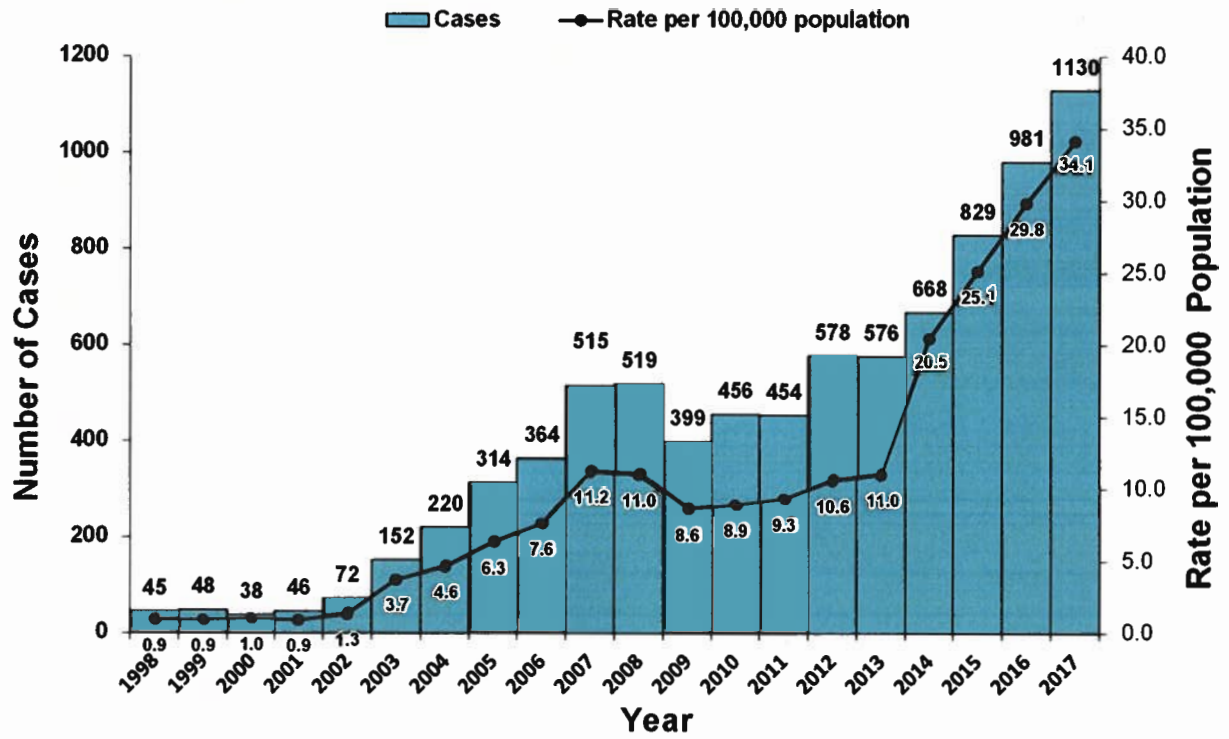
**Figure 1: Percent of Population by Race/Ethnicity and HHSA Region, San Diego County, 2016\***



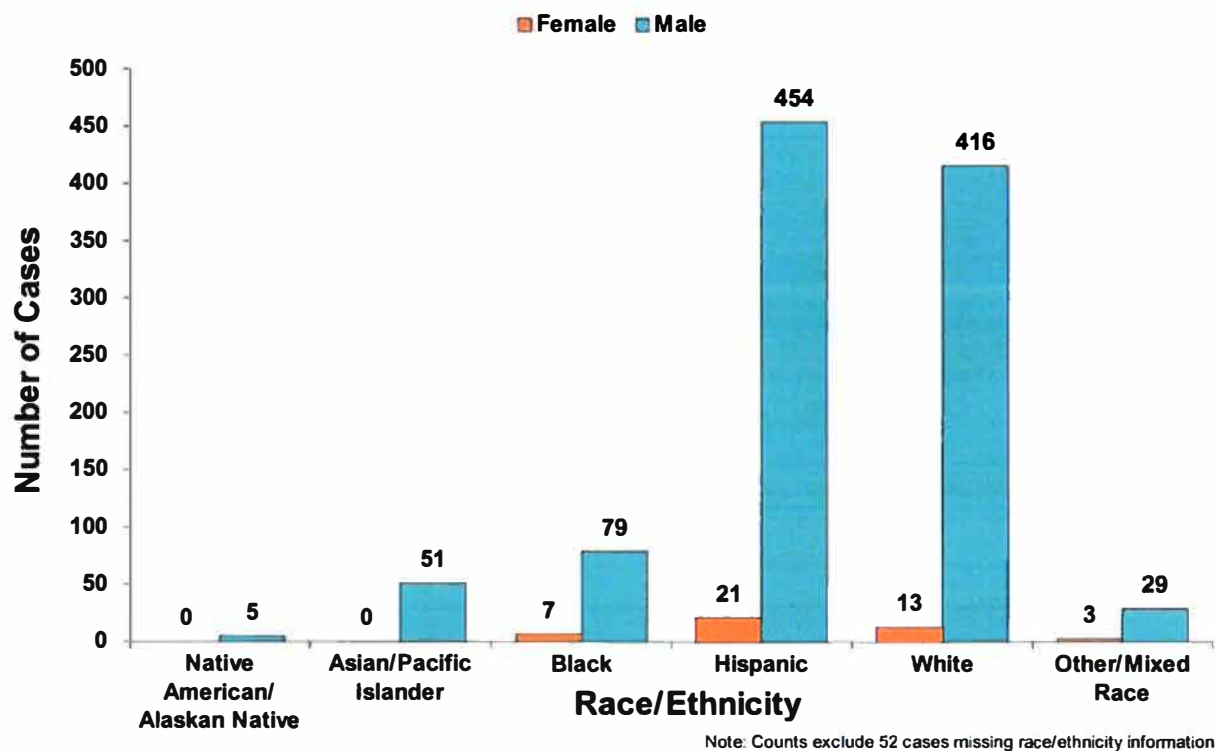
\*Totals of percentages may not add up to 100% due to rounding.



**Figure 2: Early Syphilis Cases and Rates by Year, San Diego County, 1998-2017<sup>2</sup>**

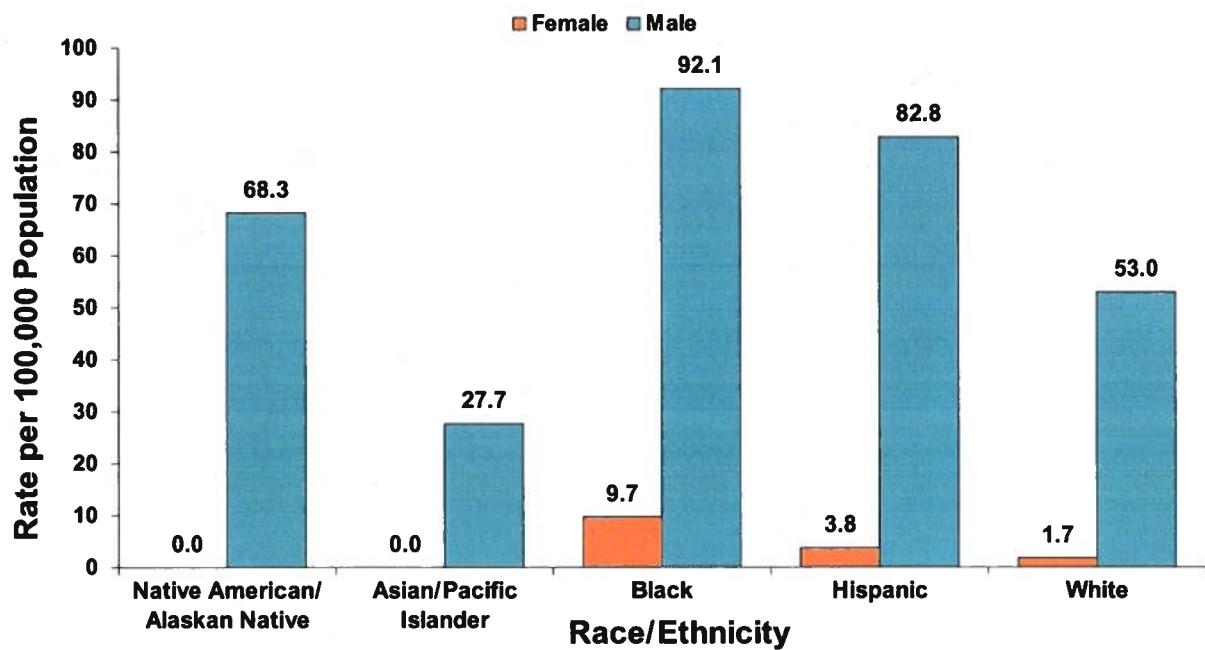


**Figure 3: Early Syphilis Cases by Gender and Race/Ethnicity, San Diego County, 2017<sup>2</sup>**



\*For the 52 cases that were missing race/ethnicity information, this information was not included in the case report received by the HIV, STD, and Hepatitis Branch.

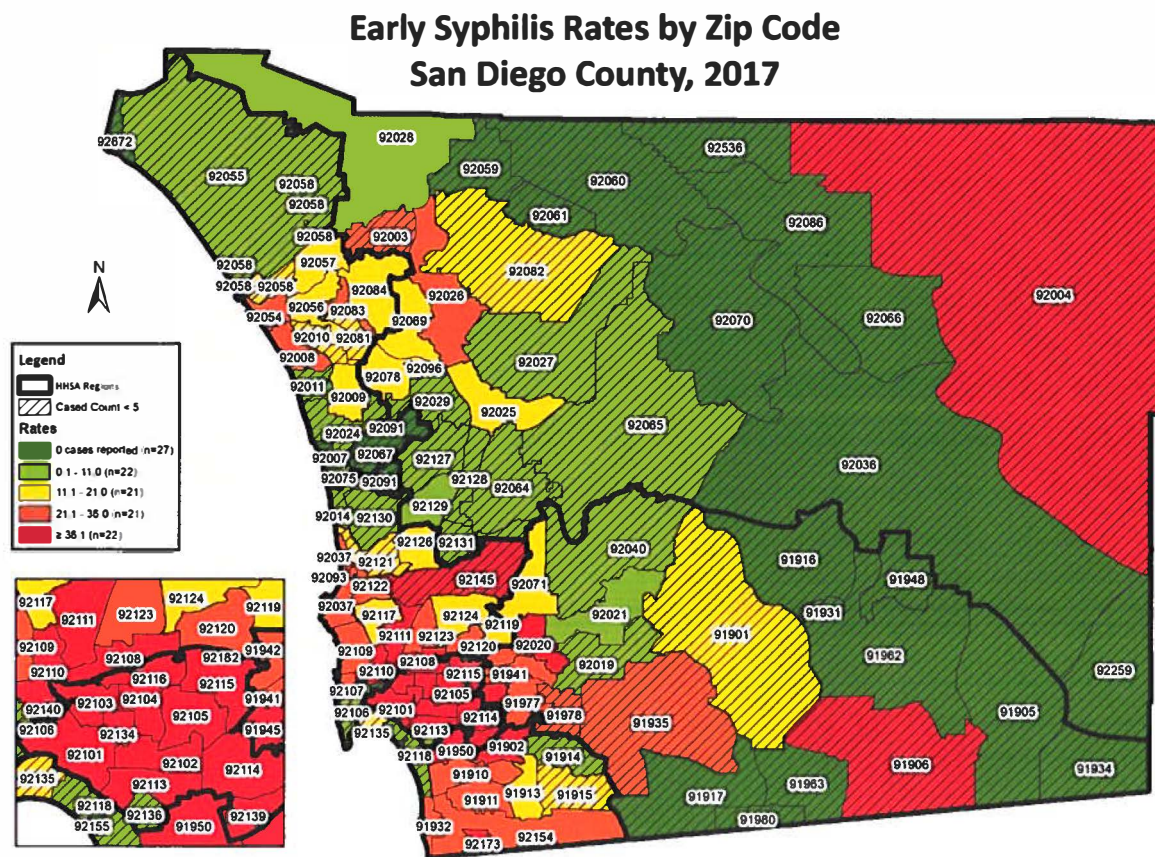
**Figure 4: Early Syphilis Rates by Gender and Race/Ethnicity, San Diego County, 2017\***



Note: Rates exclude 52 cases missing race/ethnicity information and 32 cases with other/mixed race designations. Rates calculated using preliminary 2017 population estimates provided by the Community Health Statistics Unit.

\*For the 52 cases that were missing race/ethnicity information, this information was not included in the case report received by the HIV, STD, and Hepatitis Branch.

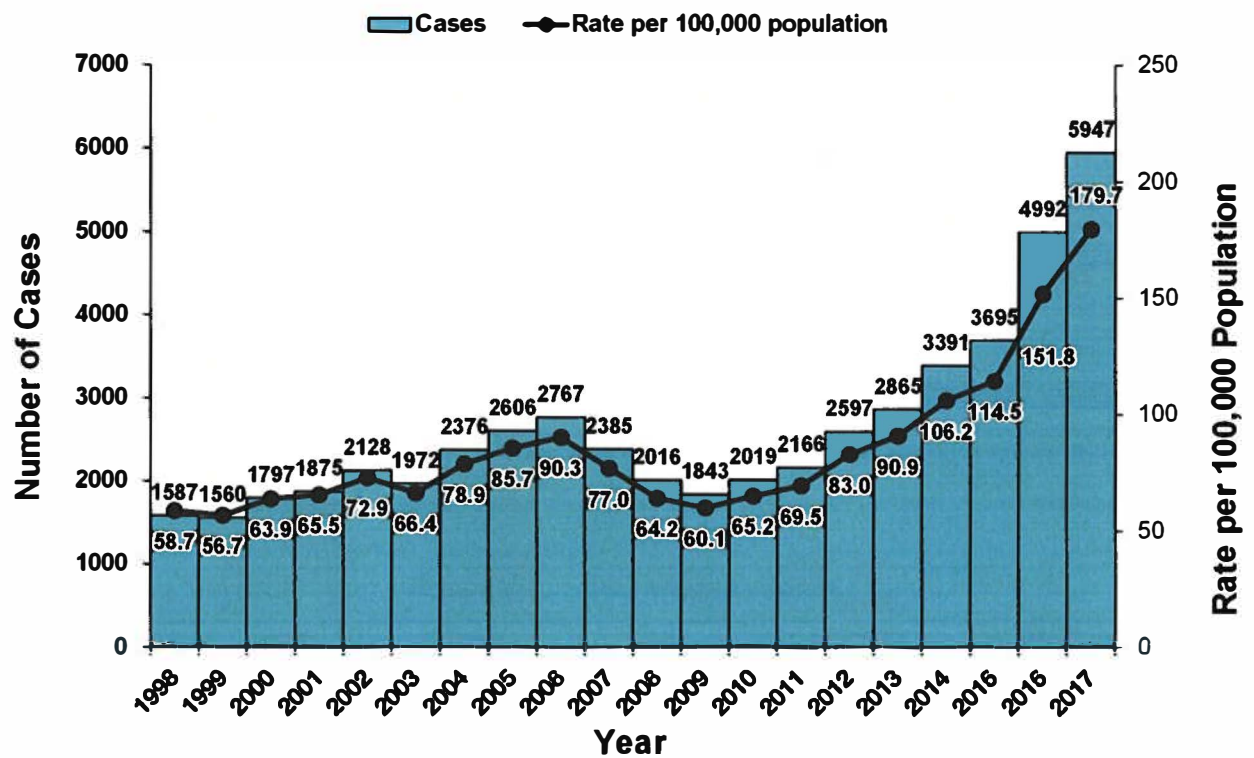
**Figure 5: Early Syphilis Rates by Zip Code, San Diego County, 2017<sup>2</sup>**



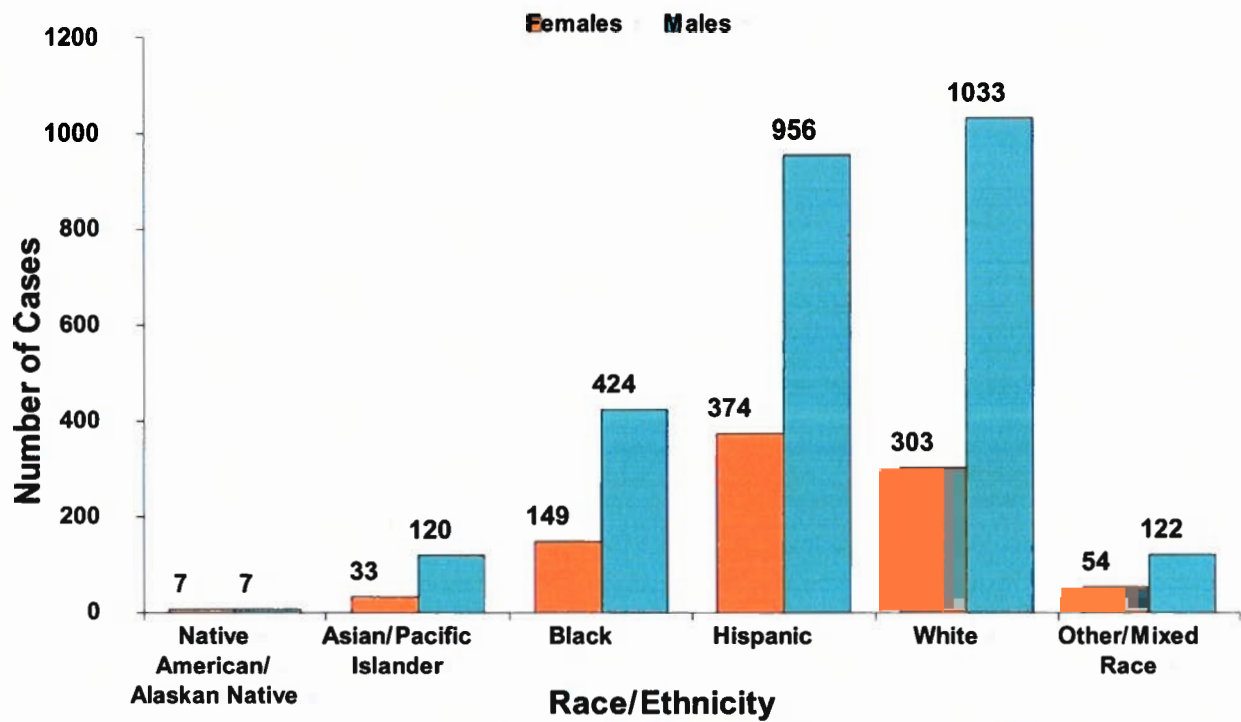
Source: County of San Diego, Health and Human Services Agency, HSHB (HIV, STD, Hepatitis Branch), CalREDIE Database  
 Map Date: July 5, 2018  
 Contact: Lawrence Wang



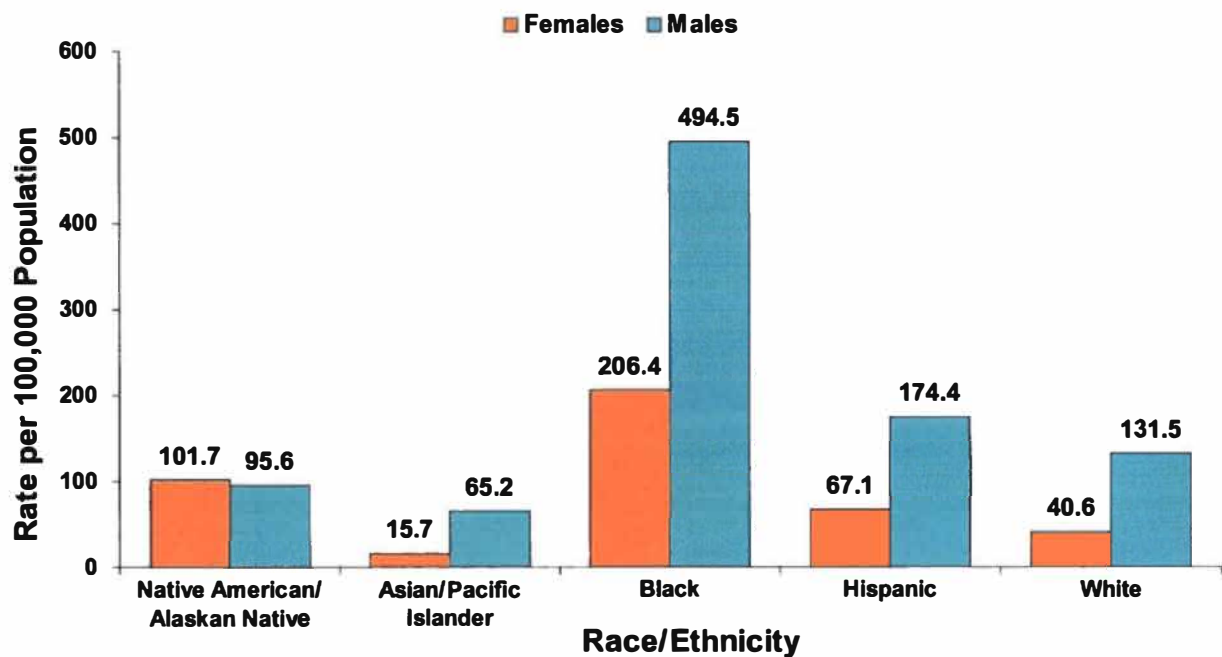
**Figure 6: Gonorrhea Cases and Rates by Year, San Diego County, 1998-2017<sup>2</sup>**



**Figure 7: Gonorrhea Cases by Gender and Race/Ethnicity, San Diego County, 2017<sup>2</sup>**

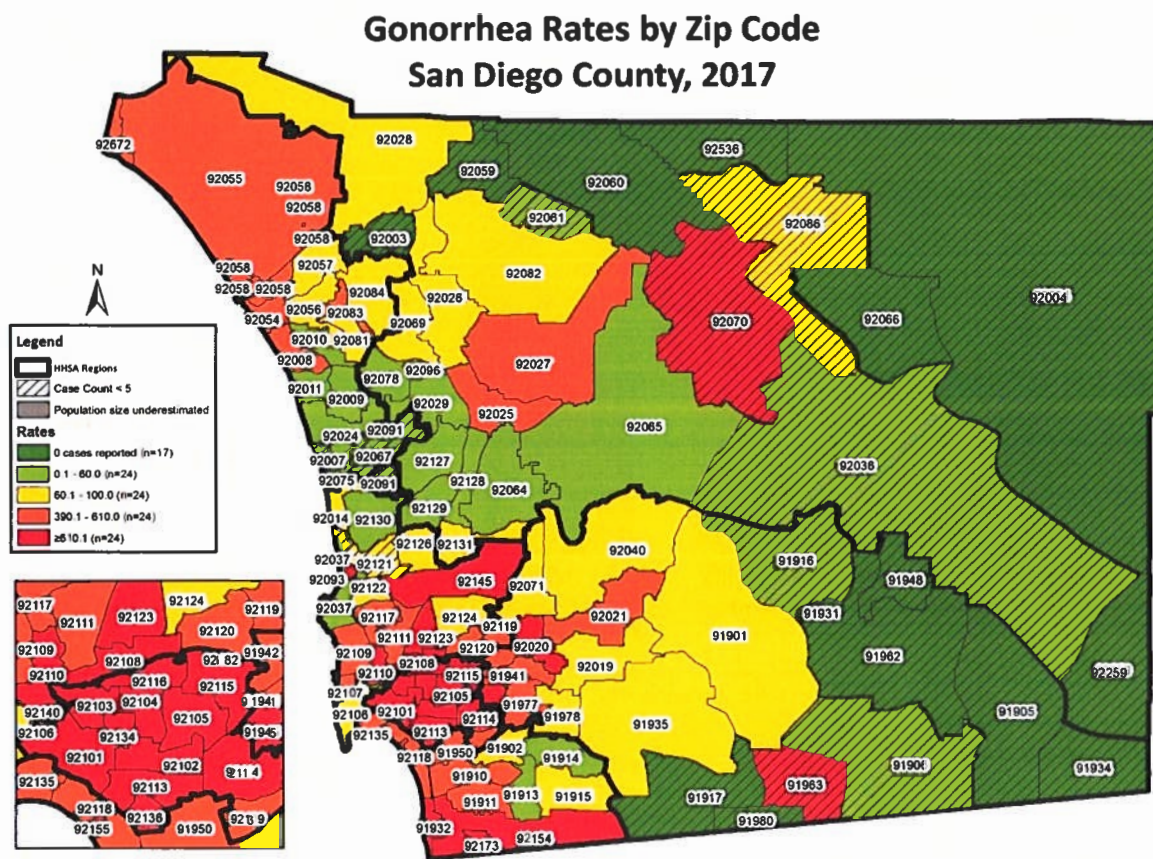


**Figure 8: Gonorrhea Rates by Gender and Race/Ethnicity, San Diego County 2017<sup>2</sup>**



Note: 39.8% of cases are missing race/ethnicity and are not included in rates above.  
Rates calculated using preliminary 2017 population estimates provided by the Community Health Statistics Unit.

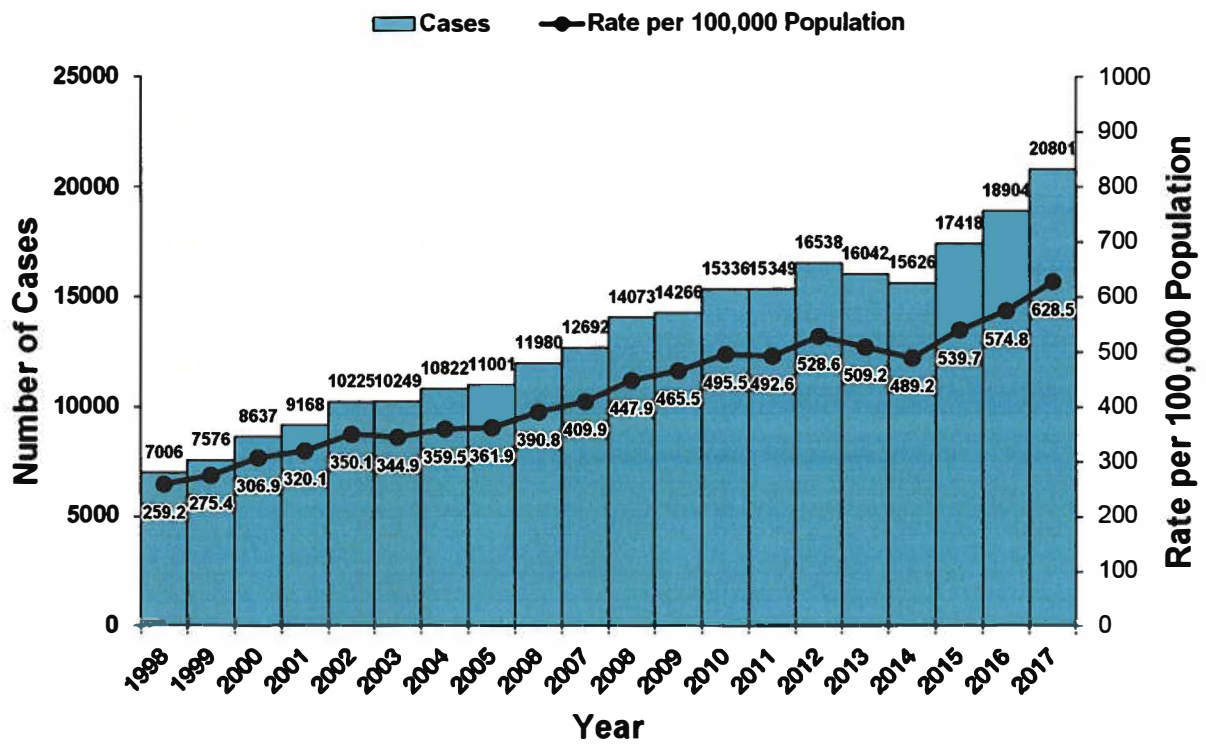
**Figure 9: Gonorrhea Rates by Zip Code, San Diego County, 2017<sup>2</sup>**



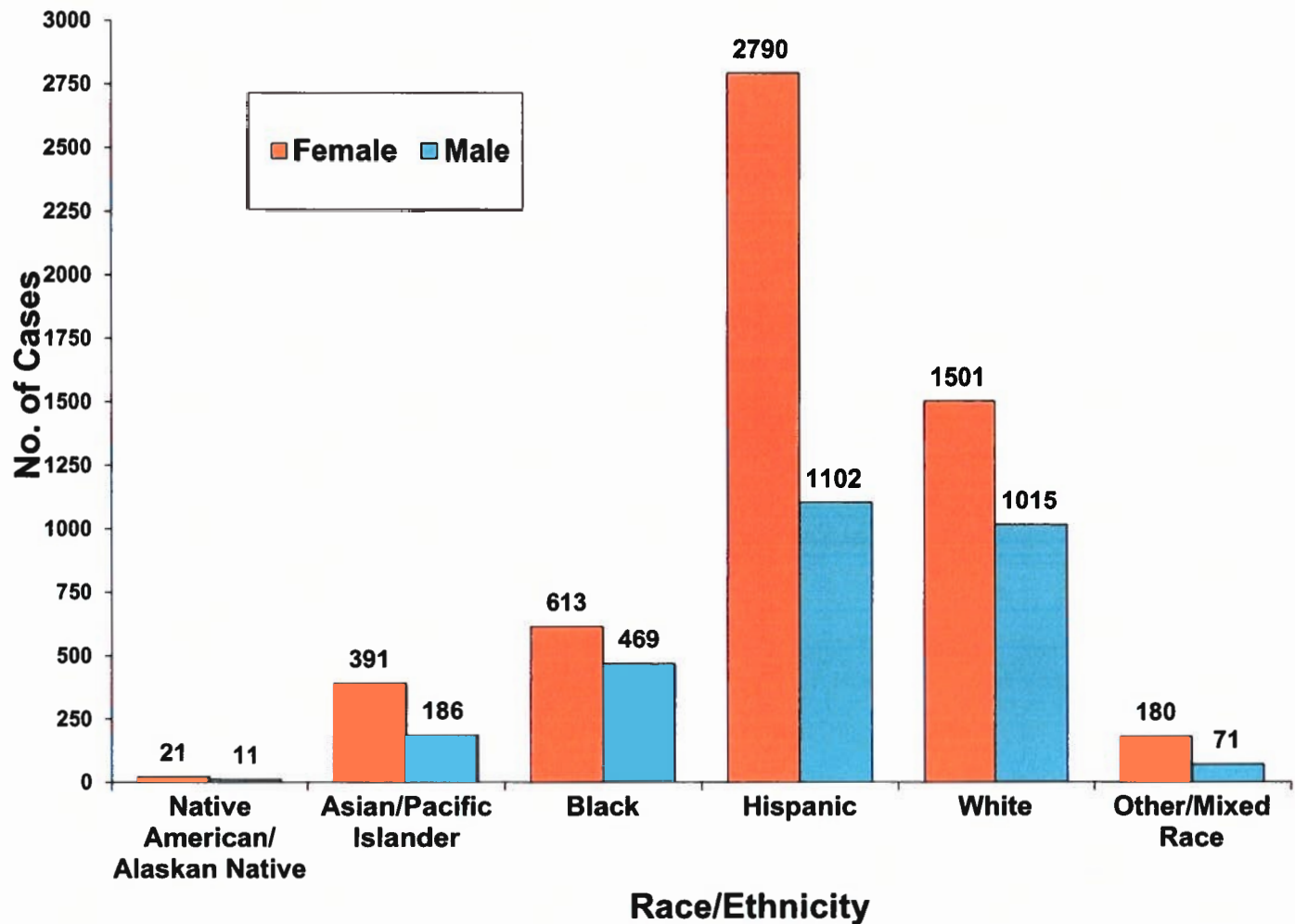
Source: County of San Diego, Health and Human Services Agency, HSHB (HIV, STD, Hepatitis Branch), CalREDIE Database  
 Map Date: July 5, 2018  
 Contact: Lawrence Wang



**Figure 10: Chlamydia Cases and Rates by Year, San Diego County, 1998-2017<sup>2</sup>**



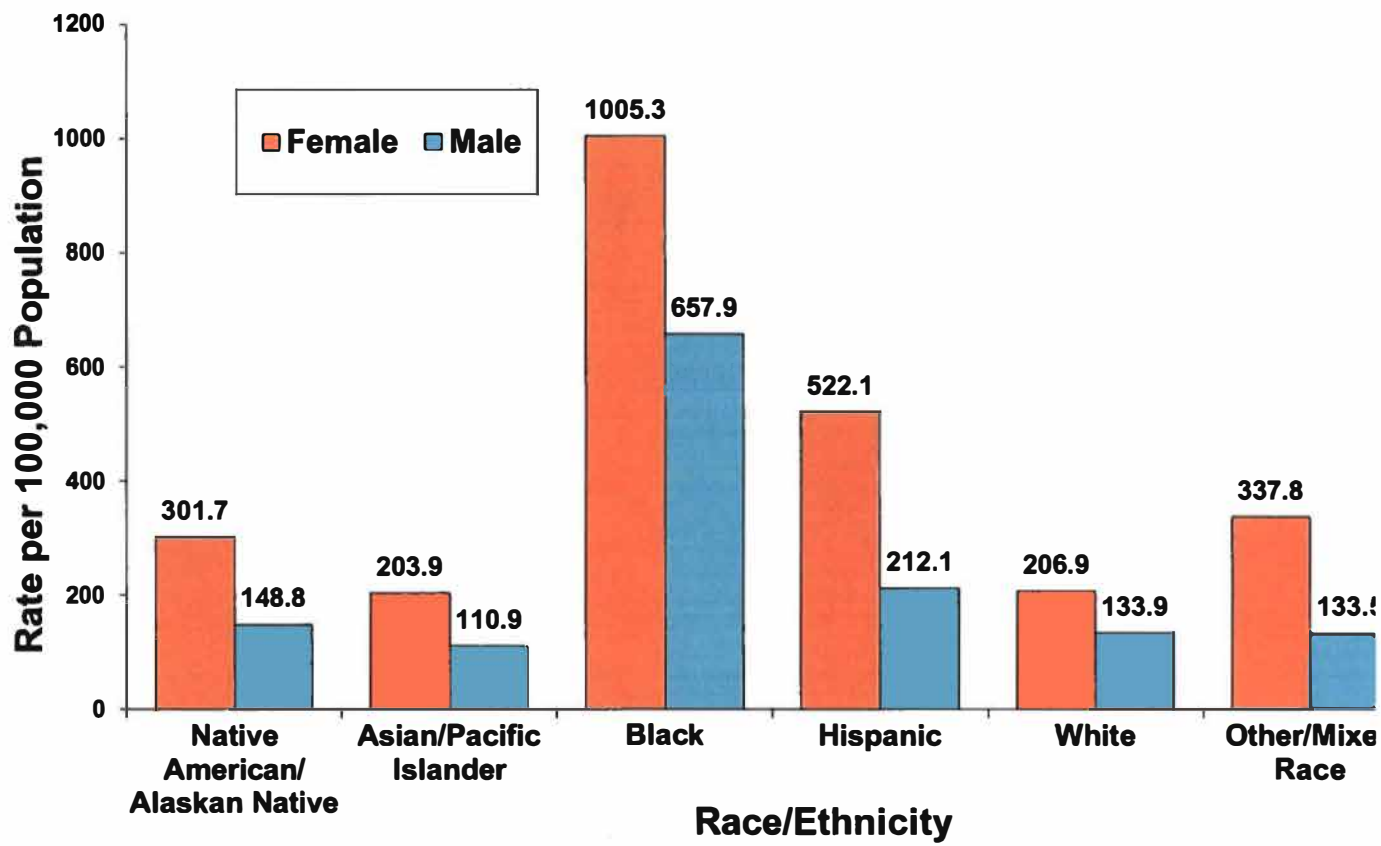
**Figure 11: Chlamydia Cases by Gender and Race/Ethnicity, San Diego County, 2013<sup>13\*</sup>**



\*48% of cases are missing race/ethnicity and are not included in rates above. Estimated using proportions from data Jan-Sep 2013.

§\*Cases of chlamydia by gender and race/ethnicity currently are not available for 2017 and 2018, due to large amounts of missing race/ethnicity data. However, these data are in the process of being entered into the surveillance system and will be available in the future.

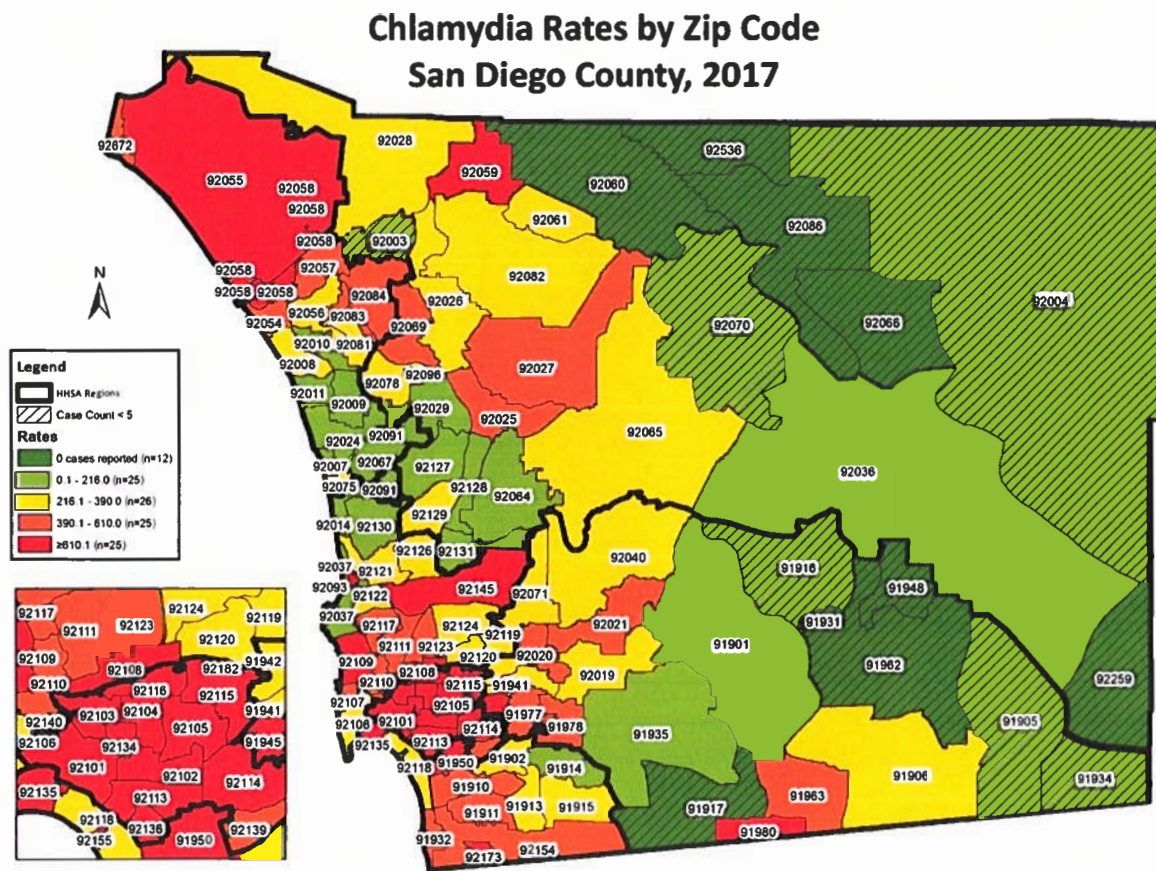
**Figure 12: Chlamydia Rates by Gender and Race/Ethnicity, San Diego County, 2013<sup>13\*</sup>**



\*48% of cases are missing race/ethnicity and are not included in rates above. Estimated using proportions from data Jan-Sep 2013.

§\*Rates of chlamydia by gender and race/ethnicity currently are not available for 2017 and 2018, due to large amounts of missing race/ethnicity data. However, these data are in the process of being entered into the surveillance system and will be available in the future.

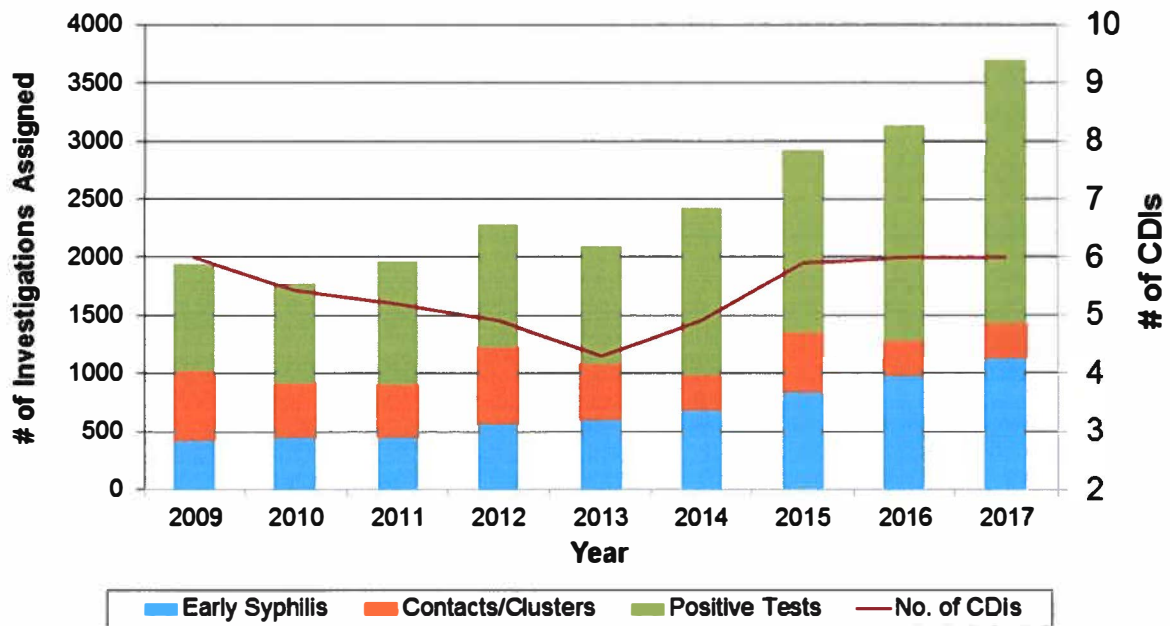
**Figure 13: Chlamydia Rates by Zip Code, San Diego County, 2017<sup>2</sup>**



Source: County of San Diego, Health and Human Services Agency, HSHB (HIV, STD, Hepatitis Branch), CalREDIE Database  
 Map Date: July 5, 2018  
 Contact: Lawrence Wang



**Figure 14: HSHB STD Communicable Disease Investigator Workload for Syphilis, 2009-2017\***



\*Positive tests refer to all incoming positive STD tests. Positive syphilis tests may be due to active disease (i.e., a new or existing case), a test done for follow-up of syphilis after treatment, or a false-positive test and therefore require work-up by HSHB personnel and contribute to CDI workload.

