CDC Call to Action

Let's Work Together to Stem the Tide of Rising Syphilis in the United States

April 2017

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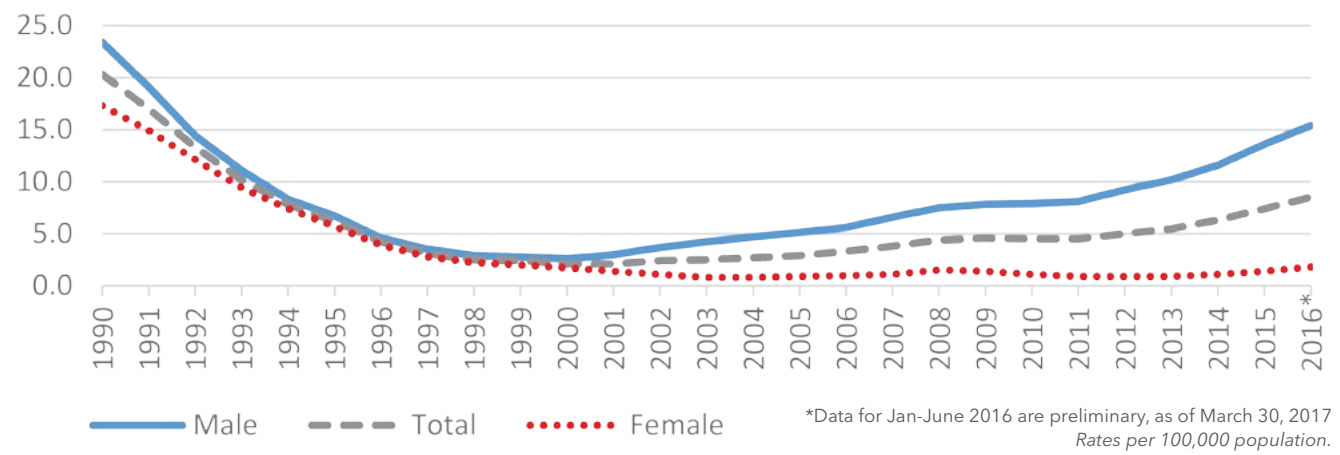
CALL TO ACTION: Syphilis rates are increasing among women and their babies, and men throughout the United States. Untreated syphilis can cause severe medical issues. Efforts are needed to create new tools to detect and treat syphilis, increase testing, control the further spread of syphilis, and improve electronic medical records in order to improve patient outcomes.

The U.S. Centers for Disease Control and Prevention's Division of STD Prevention provides national leadership; funds and works with state, territorial and local STD programs; conducts program research and evaluation; and disseminates scientific information to prevent STDs and their complications.

OVERVIEW

Primary and Secondary Syphilis–Rate of Reported Cases by Sex, United States, 1990–June 2016*



*Data for Jan-June 2016 are preliminary, as of March 30, 2017
Rates per 100,000 population.

Syphilis Is Preventable and Treatable

Syphilis is a sexually transmitted disease that can have very serious complications when left untreated, but it is simple to prevent and can be cured with the right treatment. Penicillin has been used to treat syphilis since 1943 and remains the best drug for treating the infection. When not adequately treated, syphilis can lead to visual impairment, hearing loss, stroke, and other neurological problems. Syphilis infection can also increase a person's risk for getting HIV or giving it to others. All 50 states require that syphilis cases be reported to the state or local public health agency so that it can take action to find and treat exposed persons. This prevents others from becoming infected and also prevents the adverse health outcomes of untreated syphilis.

Syphilis Rates Are Increasing in Men, Women, and some Newborns

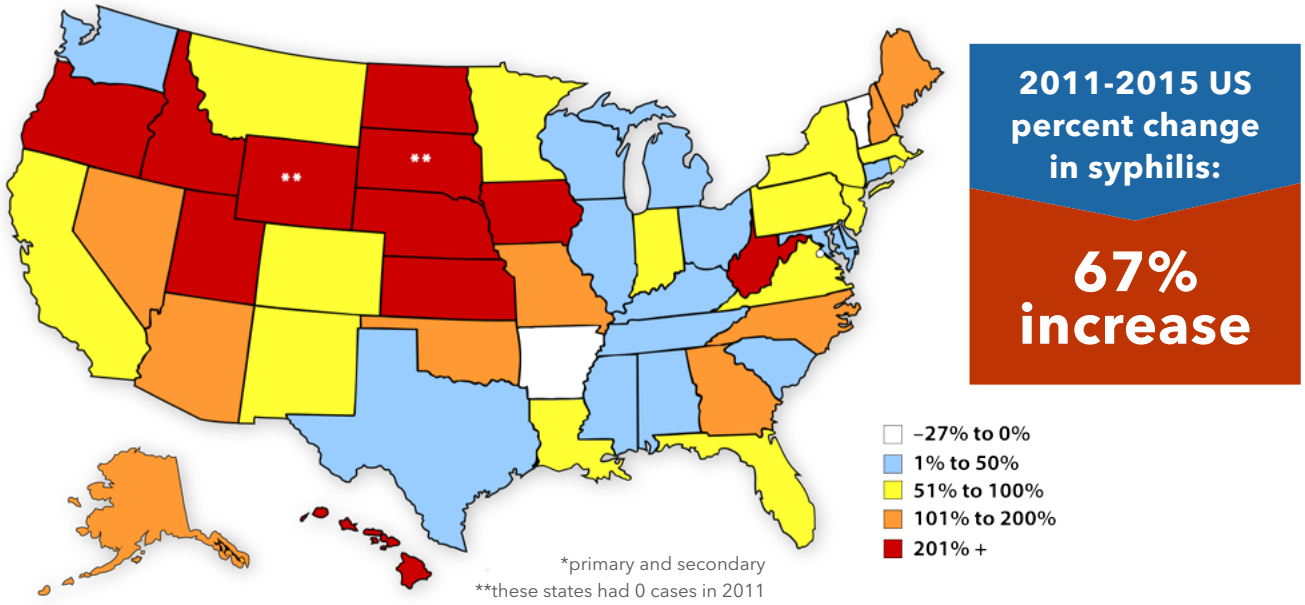
Recent data show that syphilis rates are on the rise. Rates of primary and secondary (P&S) syphilis—the most infectious stages of the disease—increased a troubling 19% between 2014 and 2015. Preliminary data show a similar rate of increase in the first 6 months of 2016.

While rates have increased among both men and women, men account for more than 90% of all P&S cases. Gay, bisexual, and other men who have sex with men (MSM) account for 82% of male cases where the sex or gender of the partner is known.

Likewise, increases in congenital syphilis (CS) have paralleled the national increase in P&S syphilis among women of reproductive age. CS, which can cause miscarriage, stillbirth, early infant death, or severe illness in those infants who survive, increased each year from 2012 through 2015. Preliminary data show further increases in 2016. A pregnant woman with untreated syphilis can infect her fetus through the bloodstream during any stage of syphilis.

CDC is working with other federal agencies and national partners to reverse increasing trends of both congenital syphilis and syphilis among MSM. To achieve these goals, CDC needs the support of various sectors of society, including health care providers, public health departments, decision-makers, academic institutions, researchers, industry, and, most importantly, those members of society who are at higher risk.

Percent change in syphilis* rate from 2011 to 2015



-27% - 0%: AK, VT **1% - 50%:** WA, TX, MS, AL, TN, KY, SC, IL, OH, WI, MI, MD, DE, CT **51% - 100%:** CA, MT, CO, NM, LA, FL, MN, IN, NY, PA, VA, MA, RI **101% - 200%:** NV, AZ, AK, OK, MO, GA, NC, NH, ME **201%+:** OR, ID, UT, WY, ND, SD, NE, KS, IA, WV, HI

The United States Needs New Tools for Syphilis Prevention and Control to Supplement Those in Use Since the 1940s

Fortunately, penicillin still works to treat syphilis. However, it is the only known antibiotic to treat syphilis during pregnancy. So for pregnant women with a severe allergy to penicillin, or when there is a drug shortage, there are no alternative treatment regimens to turn to. The rest of our treatment and prevention tools are outdated.

The most commonly used tests do not confirm syphilis on the spot. Instead, they require at least two sequential antibody tests in blood, rather than directly detecting the presence of syphilis-causing bacteria. These tests are cumbersome and may lead to treatment delays. Results can be hard to interpret. Existing tests cannot diagnose an early infection. There is a critical need for modernized test development. For example, if we could look at the proteins or at genetics-based technologies, test results would be fast and specific.

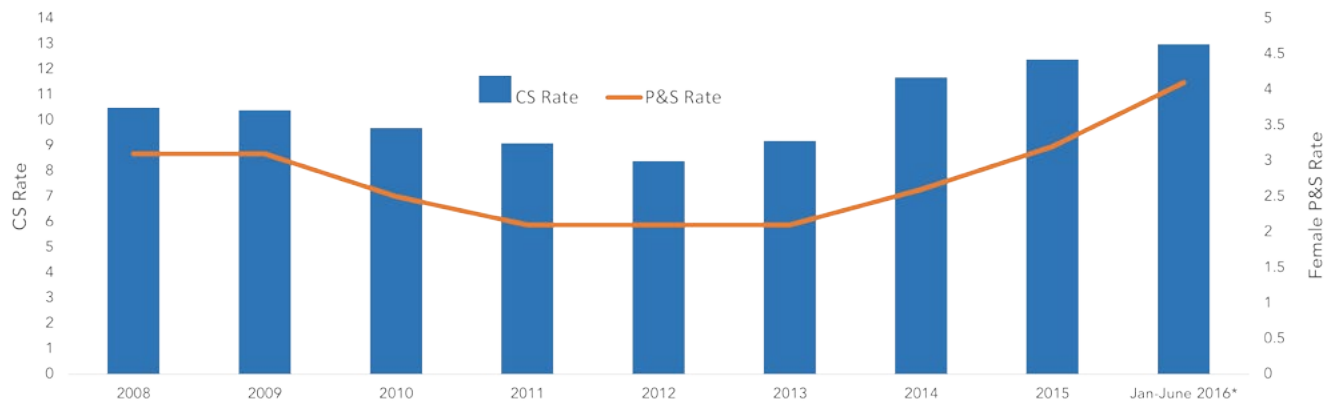
Treatment options need to be expanded, especially for pregnant women, CS, ocular syphilis, and neurosyphilis. Research is also needed to better identify the stage of disease and determine appropriate management of syphilis, factors associated with the development of neurosyphilis and ocular syphilis, and treatment for syphilis disease in individuals living with HIV.

There is no syphilis vaccine, despite early work demonstrating that vaccination could potentially protect from syphilis disease. Additionally, very few biomedical scientists have entered the field, and in the 21st century many clinicians are not familiar with the appropriate diagnosis and management of syphilis.

Screening and Treating Women with Syphilis Can Prevent Congenital Syphilis

There has been a sharp increase in the number of babies born with CS in the U.S., despite CDC recommendations that all pregnant women get tested for syphilis at their first prenatal visit. After a steady decline from 2008 to 2012, cases of CS increased by 46% between 2012 and 2015, and preliminary data suggest that CS increased again in 2016. This increase parallels a national increase in P&S syphilis among women of reproductive age during the same time period.

Congenital Syphilis (CS) Rate and Rate of Primary and Secondary (P&S) Syphilis Among Females Age 15-44 Years, 2008 - June 2016*



*Data for Jan-June 2016 are preliminary, as of March 30, 2017
CS rate per 100,000 live births; female P&S rate per 100,000 women

A pregnant woman with untreated syphilis can infect her fetus through the bloodstream at any stage of syphilis. Up to 40% of babies born to women with untreated syphilis may be stillborn or die from the infection as a newborn. Infants born with CS might have health problems, including skin rashes, yellowing of the skin or whites of the eyes (jaundice), enlarged liver and spleen, or severe anemia. Untreated babies that survive the newborn period can develop problems later on, such as developmental delays and bone and joint abnormalities.

The resurgence of CS points to missed opportunities for prevention. One quarter of CS cases are due to a lack of prenatal care. But even among those receiving some prenatal care, the detection and treatment of maternal syphilis often occur too late to prevent CS. Of women who gave birth to an infant with CS, 42% were not tested in time to be treated to prevent CS.

Syphilis Screening Needs to Increase among Men Who Have Sex with Men

MSM account for only 4% of the U.S. male population, but they account for about two thirds of reported P&S syphilis cases. Although CDC recommends that sexually active MSM be tested at least yearly for syphilis, many MSM are not screened annually. The current situation is stark—reported syphilis among MSM increased 56% from 2011 to 2015. In 2015, the rate of syphilis in MSM was 106 times higher than the syphilis rate among men who have sex with only women, and half of MSM diagnosed with syphilis also have HIV.

Addressing syphilis among men is challenging. Syphilis epidemics vary by geography, race/ethnicity, age, and HIV serostatus. Syphilis prevention has historically relied on partner notification to interrupt disease transmission, which has been difficult to scale up to levels that would reduce new infections at an MSM population level. Dramatic improvements in access to and effectiveness of HIV treatment have resulted in changes in sexual behavior and social norms that may reduce the risk of HIV but have little impact on syphilis risk reduction, such as treatment as prevention, pre-exposure prophylaxis (PrEP), seroadaptive behaviors, and reduced reliance on condoms.

ACTIONS FOR SPECIFIC POPULATIONS

Pregnant Women

Increases in CS have paralleled the national increase in P&S syphilis. After a steady decline from 2008 to 2012, cases of CS increased by 46% between 2012 and 2015.

What Pregnant Women Can Do

- ***Go to Your Doctor.*** If you think you may be pregnant, see a health care provider as soon as possible to be sure that you and your baby are healthy during your pregnancy. Prenatal care is important for every pregnancy. Even if you've been pregnant before, it's important to ensure that THIS pregnancy is healthy. All pregnant women should be tested for syphilis, ideally at their first doctor visit. Make sure to ask your doctor about getting tested at your first visit.
- ***Ask for the Results of Your Syphilis Test.*** If you test positive for syphilis during pregnancy, be sure to get treatment right away. Doctors can treat pregnant women who have syphilis with an injectable form of penicillin G.
- ***Complete Follow-Up Visits with Your Doctor.*** Continue to visit your doctor regularly during your pregnancy to be sure that you and your baby stay healthy. If you learn that one of your sexual partners has or may have syphilis, tell your doctor right away so you and your partner can be treated, and your baby can be protected. If you live in an area where syphilis cases are occurring among women of reproductive age, retesting at the beginning of the third trimester and at delivery are recommended. Ask your doctor if you should be retested during your pregnancy and at delivery.

To learn more about CS, visit CDC's Fact Sheet on Congenital Syphilis

Gay, Bisexual, and Other Men Who Have Sex with Men

Syphilis rates are increasing among gay, bisexual, and other MSM. They comprise 82% of all syphilis cases among men (who comprise 90% of all cases of P&S syphilis).

What Gay, Bisexual, and Other Men Who Have Sex with Men Can Do

- ***Talk to Your Doctor.*** Have an honest and open talk with your health care provider about your sexual history and ask to be tested for syphilis and other STDs at anatomic sites for exposure. Testing is the only way to be sure that you do not have syphilis, because many men do not have symptoms. If you are HIV negative and have syphilis, ask your health care provider about PrEP.
- ***Protect Yourself and Your Partner.*** If you are sexually active, doing the following can lower your chances of getting syphilis: (1) being in a long-term, mutually monogamous relationship with a partner who has been tested and has negative STD test results and (2) using latex condoms the right way every time you have sex. If you have sex with more than one partner, don't use condoms, or engage in risky sex behaviors, then you should get tested more frequently (e.g. every 3 to 6 months).

To learn more about syphilis among gay, bisexual, and other MSM, visit CDC's Fact Sheet on Syphilis & MSM

Health Care Providers

Health care providers can play important roles in reducing CS and in reducing syphilis in MSM.

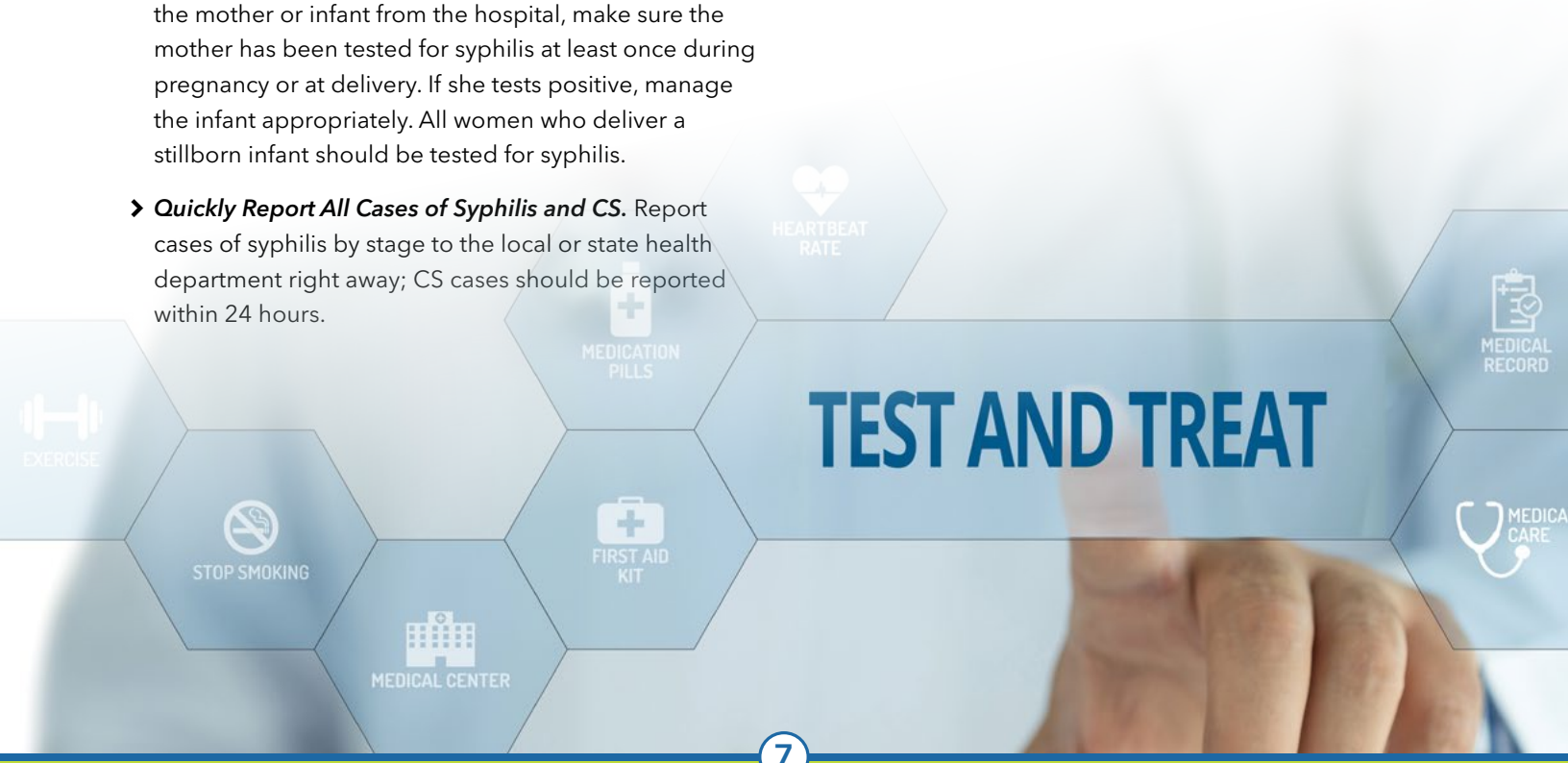
Health Care Providers: Take Action to Reduce Congenital Syphilis

- ***Complete a Sexual History for Your Patients.*** Have an honest and open talk with your patients about their sexual history. STD counseling should be provided to those at risk for STDs, and contraceptive counseling should be provided to those at risk of unintended pregnancy.
- ***Test All Pregnant Women for Syphilis.*** This should occur at the first prenatal visit or at the time pregnancy is confirmed. Repeat screening for pregnant women at high risk and in areas of high prevalence at the beginning of the third trimester and at delivery.
- ***Treat Women Infected with Syphilis Immediately.*** If a woman has syphilis or suspected syphilis, treat her immediately with long-acting penicillin G, especially if she is pregnant, according to CDC's STD Treatment Guidelines. Test and treat the infected woman's sex partner(s) to avoid reinfection. If you have challenges obtaining penicillin G, contact your state or local health department.
- ***Confirm Syphilis Testing at Delivery.*** Before discharging the mother or infant from the hospital, make sure the mother has been tested for syphilis at least once during pregnancy or at delivery. If she tests positive, manage the infant appropriately. All women who deliver a stillborn infant should be tested for syphilis.
- ***Quickly Report All Cases of Syphilis and CS.*** Report cases of syphilis by stage to the local or state health department right away; CS cases should be reported within 24 hours.

Health Care Providers: Take Action to Reduce Syphilis in Men Who Have Sex with Men

- ***Complete a Sexual History for Your Patients.*** Have an honest and open talk with your patients about their sexual history. Order CDC-recommended tests based on age, gender, sex or gender of sex partners, anatomic sites of exposure, and risk.
- ***Test.*** Perform a syphilis test for sexually active MSM, including those with HIV infection, at least annually, and as frequently as every 3 to 6 months if there are multiple sex partners or substance use.
- ***Immediately Treat and Report Syphilis Cases.*** Stage and treat syphilis cases according to CDC's STD Treatment Guidelines. Presumptively treat all MSM with signs or symptoms suggestive of primary or secondary syphilis and all MSM who are sexual contacts to a case of syphilis at the initial visit. If you have challenges obtaining penicillin G, contact your state or local health department. Report all syphilis cases by stage to your state or local health department.

To find clinician resources related to syphilis, visit CDC's Syphilis Treatment and Care Guidelines



Public Health Departments

Public health partners work across the spectrum of public health, from surveillance, to partner outreach, to working with health care providers in order to reduce CS and syphilis in MSM.

Public Health Departments: Take Action to Reduce Congenital Syphilis

- ***Partner with Health Care Providers.*** Offer resources for providers on how to properly screen, interpret results, and diagnose and treat syphilis. Work with the National Network of STD Clinical Prevention Training Centers (NNPTC) to train and educate providers. Address policy and other barriers to obtaining early and adequate prenatal care for the most vulnerable pregnant women in the community. Work together to conduct targeted screening in various settings.
- ***Work Together with State and Local STD and Maternal and Child Health Programs.*** CS should be addressed through collaboration between these two programs to make the most impact. Infant morbidity review boards could include CS cases to identify missed opportunities in the health care and public health systems.
- ***Conduct Partner Services and Increase Screening.*** Prioritize partner services for syphilis cases among pregnant women and women of reproductive age, their sex partners, and men who have sex with women.
- ***Partner with Patient Advocacy Groups.*** Work together to engage communities and develop and promote programs directed towards their residents.
- ***Improve CS Surveillance.*** Work to eliminate data gaps. This could include working with providers and labs to obtain pregnancy status along with epidemiologic and clinical data on female syphilis cases.

Public Health Departments: Take Action to Reduce Syphilis in Men Who Have Sex with Men

- ***Improve Syphilis Surveillance.*** Syphilis surveillance should capture HIV serostatus, gender of sex partners, use of HIV PrEP, ocular and neurological manifestations, and sexual and social network characteristics. Syphilis and HIV surveillance systems and registries should be aligned and coordinated. Barriers to data sharing between STD and HIV programs should be addressed.
- ***Implement Standing Orders in STD and other Clinics Serving MSM.*** Implement standing orders for a sexual health panel of laboratory tests for all MSM seeking clinical services.
- ***Partner with Health Care Providers.*** Offer resources for providers on how to properly screen, interpret results, and diagnose and treat syphilis among MSM, including those living with HIV. Work with the NNPTCs to train and educate providers. Address barriers to obtaining care and work together to conduct targeted screening in various settings.
- ***Work Together with State and Local STD and HIV Prevention Programs.*** Syphilis among MSM should be addressed through collaboration between these two programs to make the most impact.
- ***Partner with Patient Advocacy Groups.*** Work together to engage communities and develop and promote programs directed towards their residents.

Decision-makers and Community Leaders

Reducing CS and syphilis requires strong public health policy and leadership.

Decision-makers and Community Leaders: Take Action to Reduce Congenital Syphilis

- ***Talk to the STD Program Professionals in Your Jurisdiction.*** Find out what the local syphilis trends are and what public health programs are doing to address them.
- ***Address Any Policy Barriers.*** Support the availability of appropriate resources for CS prevention programs. Ensure that policies are supportive of pregnant women seeking or obtaining prenatal services and recommended screening and treatment for syphilis.

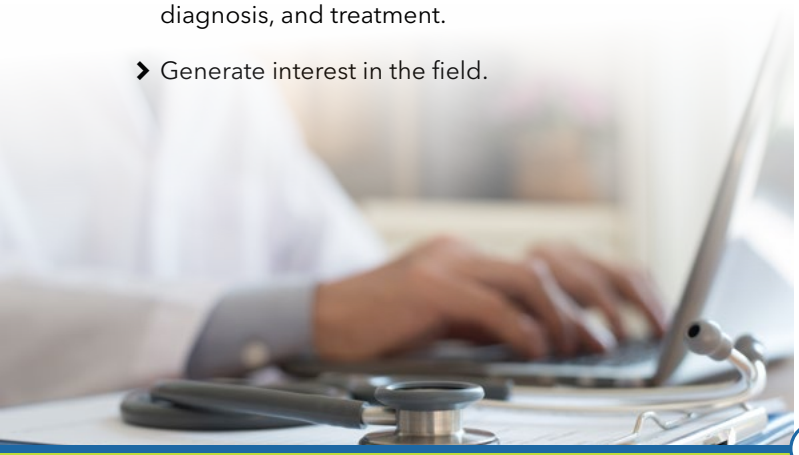
Decision-makers and Community Leaders: Take Action to Reduce Syphilis in Men Who Have Sex with Men

- ***Talk to the STD Program Professionals in Your Jurisdiction.*** Find out about local syphilis trends and what public health programs are doing to address them.
- ***Address Any Policy Barriers.*** Support the availability of appropriate resources for comprehensive screening and treatment services for MSM. Ensure that policies do not prevent MSM from seeking or obtaining recommended screening and treatment for syphilis.

Biomedical Scientists

Current tools have been used since the 1940s. We need new ones to prevent, detect, diagnose, and treat syphilis.

- Develop new tools for syphilis prevention, detection, diagnosis, and treatment.
- Generate interest in the field.



Universities and Industry

Research and support are needed to develop new tools and to improve existing biomedical tools to reduce all forms of syphilis.

- Develop and bring to market novel syphilis tests to rapidly diagnose active infection (i.e., CS in infants and all disease stages in adults).
- Conduct clinical research to improve clinical management of all disease stages, including research on complications from treatment non-response, repeat infection, ocular and neurosyphilis, and HIV co-infection.
- Research effective vaccine design, acceptability, cost, and potential impact.
- Stimulate training of biomedical and clinical researchers and address basic biological research questions (e.g., genetics, immune response, pathogenesis) in order to galvanize future technological advances in diagnostics, therapeutics, and vaccines.

Electronic Medical Record (EMR) Developers

Current EMRs may not support syphilis screening and treatment in patients.

- Ensure that EMRs support syphilis screening and treatment in patients.

EMR Vendors

Patient outcomes could be improved by enhancing EMRs.

- Support clinical data systems that capture a patient's sexual history, including sexual orientation, gender identity, gender of sex partners, and sites of exposure.
- Incorporate accurate, updated STD screening and treatment recommendations into EMRs and clinical decision support systems.
- Develop data systems that easily interface with STD program data and laboratory data to enhance surveillance and support a better understanding of syphilis transmission and adverse health outcomes.

New Tools Are Needed for Syphilis Prevention and Control

There is an urgent need for new tools to prevent, diagnose, treat, and manage syphilis. This will allow people to protect themselves from getting syphilis or learn quickly and easily if they have it; and help health care professionals monitor, and assure effective treatments for years to come.

0 NUMBER OF VACCINES AVAILABLE TO PREVENT SYPHILIS

0 NUMBER OF TESTS TO DIAGNOSE ACTIVE SYPHILIS INFECTION

75 NUMBER OF YEARS CURRENT SYPHILIS TREATMENTS HAVE BEEN IN USE

74,702 NUMBER OF CASES OF SYPHILIS DIAGNOSED IN 2015

GOAL

Create New Tools to Detect and Treat Syphilis

Syphilis is treatable, but the medicine used to treat the disease has been in use for 75 years. There is no rapid test for syphilis, so individuals must undergo a blood test and wait days for the results.

WHAT CAN BE DONE?

CDC Will

- Develop and disseminate laboratory guidelines.
- Create and make the syphilis specimen repository available for technological developments in diagnostics, therapeutics and vaccines.
- Evaluate existing and new technologies and incorporate findings into diagnostic guidelines.
- Develop novel diagnostic tools and better molecular surveillance tools, including strain surveillance.

Biomedical Scientists Can

- Develop new tools for syphilis prevention, detection, diagnosis, and treatment.
- Generate interest in the field.

Universities and Industry Can

- Develop and bring to market novel syphilis tests to rapidly diagnose active infection in all disease stages.
- Conduct clinical research to improve clinical management of all disease stages, including complications from treatment non-response, repeat infection, neuro- and ocular syphilis, and HIV co-infection.
- Research effective vaccine design, acceptability, cost, and potential impact.
- Stimulate training of biomedical and clinical researchers and address basic biological research questions (e.g., genetics, immune response, pathogenesis) in order to galvanize future technological advances.

GOAL

Improve Electronic Medical Records (EMRs)

Syphilis is a reportable disease that is increasing across the country. Keeping records of screenings, diagnoses, and treatment are vital to managing it and to enhancing surveillance efforts. Current EMRs may not include syphilis screening and treatment or have treatment guidelines available for easy access.

WHAT CAN BE DONE?

CDC Will

- Implement a cloud-based application to make STD Treatment Guidelines available to all EMR systems.

Electronic Medical Record (EMR) Developers Can

- Ensure that EMRs support syphilis screening and treatment in patients.

EMR Vendors Can

- Support clinical data systems that include a patient's sexual history, including sexual orientation, gender identity, and gender of sex partners.
- Incorporate accurate, updated STD screening and treatment recommendations into EMRs and clinical decision support systems.
- Develop data systems that easily interface with STD program and laboratory data to enhance surveillance and support a better understanding of syphilis transmission.

WHAT CDC WILL DO

To reduce the numbers of women and their babies who are infected with syphilis, CDC will

- Work to improve CS data through an enhanced CS surveillance system to capture stillbirths, infant morbidity, and cases prevented.
- Investigate all CS cases in states to identify missed opportunities and improve services.
- Develop tools and evaluate high-impact prevention services, such as syphilis screening; timely treatment; partner services; and linkage to contraceptive counseling, behavioral health, and pregnancy case management programs.
- Develop CS prevention guidelines for health care providers and health departments.
- Identify and share best practices, such as infant morbidity review boards, assessment approaches to identify missed opportunities, and implementation of system level changes.
- Support health care providers to implement recommended syphilis screening and treatment of pregnant women and women of reproductive age through training, guidelines, tools, and resources.

To reverse this increasing trend of syphilis among MSM, CDC will

- Work to harmonize STD/HIV screening recommendations and prevention messages related to sexual health services for MSM.
- Support health care providers to implement recommended STD screening, treatment, and vaccination services through training, guidelines, tools, and resources.
- Improve syphilis surveillance among gay, bisexual, and other MSM.
- Conduct epidemiologic studies to better understand factors associated with syphilis adverse outcomes, such as neurosyphilis and ocular syphilis, and transmission networks.
- Identify and share best practices.

CDC encourages health care providers; public health departments; decision makers; community leaders; scientists; universities; EMR developers and vendors; pregnant women; and gay, bisexual, and other MSM to take action.

SOURCES

- Centers for Disease Control and Prevention. Sexually Transmitted Diseases Treatment Guidelines, 2015. MMWR Recomm Rep 2015; 64(No. RR-3): 1-137.
- Centers for Disease Control and Prevention. Sexually Transmitted Disease Surveillance 2015. Atlanta: U.S. Department of Health and Human Services; 2016.
- CDC Syphilis & MSM Fact Sheet
- CDC Congenital Syphilis Fact Sheet
- CDC November 12, 2015 Dear Colleague Letter from Gail Bolan, Director, Division of STD Prevention
- National STD Curriculum
- CDC AtlasPlus: Use this interactive, surveillance-based tool to view maps, charts, and tables of syphilis rates by age and sex.