



Syphilis Elimination Effort Strategic Plan, 2011-2015

California Department of Public Health,
Sexually Transmitted Disease Control Branch

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1. Introduction

The Syphilis Elimination Effort (SEE) was launched by the Centers for Disease Control and Prevention (CDC) with the release in 1999 of the *National Plan to Eliminate Syphilis* from the United States. Syphilis elimination, defined as the absence of sustained transmission of syphilis in the United States, was considered plausible because of historically low rates of infection in the United States, geographically limited disease incidence, and the availability of inexpensive and effective diagnostic tests and therapy.¹

In 2000, syphilis infections in California and the United States began to increase, with infections becoming increasingly common among men who have sex with men (MSM). The National Plan was revised in 2006, to address these and other issues, and to highlight programmatic activities with evidence of success.¹

Because California has the highest number of primary and secondary syphilis cases in the United States, with 2,064 cases in 2010, and ranks ninth in the nation according to rate of disease, with 5.2 cases reported per 100,000 population, California is directly funded to carry out local syphilis elimination efforts.^{2,3} The California Syphilis Elimination Strategic Plan was developed to outline state and local activities that can be carried out over the next five years to reduce the burden of syphilis on California citizens.

This Plan is intended to be used as an educational aid to help public health professionals plan syphilis control programs. The ultimate judgment regarding program planning should be made by the public health professional in light of available data and alternative options. This Plan is intended to be a list of possibilities for syphilis control efforts and is not intended to be comprehensive of all possible activities. Ideally, national, state and local input on the plan would be preferred, but that was not feasible during its development.

¹ CDC. *National Plan to Eliminate Syphilis*. www.cdc.gov/stopsyphilis/SEEPlan2006.pdf

² California Department of Public Health. *California Syphilis Elimination Surveillance Data, 2010*. www.std.ca.gov

³ CDC. *Sexually Transmitted Disease Surveillance 2010*. www.cdc.gov/std/stats10/default.htm

Syphilis Elimination Strategic Planning Process

During 2010, an interdisciplinary team of epidemiologists, program managers, and field investigation managers at the CDPH Sexually Transmitted Disease Control Branch met monthly to discuss the application to and utility of each of the activities outlined in the National Plan in California, given local epidemiology and experience. Current and potential future activities were listed and prioritized.

Additional activities were gathered during an all-staff meeting, which included field staff from many different counties across California to discuss statewide strengths, weaknesses, opportunities and threats, with a focus on syphilis among men who have sex with men. Concerns and activities discussed in that meeting were incorporated as activities listed in this Plan.

Activities that arose from discussions about the National Plan and the statewide meeting were organized into five Strategic Directions, and included recommendations for how CDPH and local organizations may approach syphilis control in California over the next five years.

Mission and goals

Mission

The mission of the California Syphilis Elimination Effort is to prevent and control syphilis infections in California, and to reduce their complications.

Goals

In this strategic plan, state and local health officials, service providers, community leaders, and individuals affected by syphilis will find specific, practical recommendations to help them realize the following goals:

- Identify infectious and latent cases of syphilis among individuals who do not know they are infected
- Reduce secondary transmission of syphilis to sexual contacts
- Reduce the incidence of congenital syphilis in California
- Reduce HIV transmission to sexual contacts of syphilis cases

How to use this document

Organization

This strategic plan provides an overview of syphilis transmission, clinical features, diagnosis, treatment, and epidemiology to provide a better understanding of syphilis as a public health problem in the lives of individuals and communities. With this foundation, the plan outlines five strategic directions, each of which describes a major area of focus for achieving the goals in this plan. Within each strategic direction is a set of specific, numbered recommendations for approaching the strategic direction. Under each recommendation is a set of possible program activities.

The recommendations in this plan were developed by a collaborative group of state and local partners. Some of its recommendations will apply more to one particular audience, such as clinicians, while other recommendations will apply more to another audience, such as the state or local health department. However, each recommendation moves forward a key step toward achieving a larger practical vision. For that reason, this plan should be read as a whole and implemented, wherever possible, by a multi-disciplinary group, which can decide which of its members can best tackle a particular action step. Along the way, the group can provide a space for each partner to share successes and challenges, learn from others, and coordinate efforts.

Where to Start

Successful implementation of the recommendations in this plan requires collaboration among multiple partners. To this end, local policymakers should convene working groups that include local health officials, service providers, community groups, and individuals at risk for syphilis infection. (For more potential collaborative partners, see Table 1.) Several communities have already established syphilis task forces as well as HIV prevention planning councils and other community advisory boards. These existing groups can provide a useful structure for building upon existing resources, identifying additional partners, and developing the kind of broad coalition needed to achieve the goals outlined in this plan.

Working groups should begin with review of statewide and local data, and then identify community resources and gaps for syphilis prevention, testing, treatment and partner notification. Based on this assessment, the working group should identify and prioritize action steps that are feasible with existing resources.

Members of the working group can look to state or other local programs and national models for examples of successful initiatives for increasing access to care and improving quality of care, improving partner services, public awareness raising and integration of syphilis messages into existing programs/activities. Finally, the group can develop a strategy for leveraging additional resources for more ambitious projects.

Table 1. Potential Collaborative Partners

State Officials

- California Department of Public Health representatives, including the Syphilis Elimination Coordinator
- California Department of Corrections and Rehabilitation representatives
- State legislators and their staffers

Local Officials

- Local health officials (e.g., local health officers, STD controllers, communicable disease controllers, local AIDS directors, border health directors, public health laboratory directors, healthcare administrators, correctional facility directors)
- Drug and alcohol administrators

Service Providers and Professional Associations

Public Health

- Disease Intervention Specialists
- Health educators
- Outreach workers
- Drug treatment providers

Clinical

- Medical schools, medical associations, and other professional associations
- Community health centers
- HIV Community health clinics
- Hospitals
- Managed care organizations
- Pharmacists
- Primary care providers

Laboratory

- Private and public laboratory directors

Individuals and Community Groups

- Individuals living with and at risk for HIV or syphilis
- Members of local, statewide, and national community task forces
- Community planning groups and other community groups representing at-risk adults
- Social/Sexual networking website owners
- Bathhouses or sex clubs

Prepared by the California Department of Public Health

2. Syphilis Overview

Syphilis is a serious infectious disease caused by the spirochete *Treponema pallidum*. Transmission occurs by direct contact with infectious lesions of the skin or mucous membranes of infected persons during sexual contact, or during pregnancy, when the bacterium crosses the placenta and cause congenital syphilis. Congenital syphilis can result in fetal death or permanent neurologic damage to the baby.

Natural History of Syphilis⁴

The natural history of syphilis is well documented and is characterized by symptomatic, infectious stages punctuated by latent stages. Patients co-infected with HIV and syphilis may present with multiple stages simultaneously. Many people infected with syphilis do not have symptoms for years, yet remain at risk for late complications if they are not treated. Although transmission occurs from persons with sores who are in the primary or secondary stage, many of these sores are unrecognized. Thus, transmission may occur from persons who are unaware of their infection.

Primary Stage

The primary stage of syphilis is usually marked by the appearance of a single sore (called a chancre), but there may be multiple sores. The time between infection and symptom onset can range from 10 to 90 days (average 21 days). The chancre is usually firm, round, small, and painless, and appears at the site of exposure. The chancre lasts 3 to 6 weeks, and heals without treatment. Without adequate treatment the infection progresses to the secondary stage.

Secondary Stage

Skin rash and mucous membrane lesions characterize the secondary stage. This stage typically starts with the development of a rash on one or more areas of the body. The rash usually does not cause itching. Rashes associated with secondary syphilis can appear as the chancre is healing or several weeks afterwards. Additional symptoms of secondary syphilis may include fever, swollen lymph glands, sore throat, patchy hair loss, headaches, weight loss, muscle aches, and fatigue. Signs and symptoms will resolve with or without treatment, but without treatment, the infection will progress to the latent and potentially late stages of disease.

Latent Stage

The latent stages of syphilis begin when primary and secondary symptoms disappear. Without treatment, the infected person will continue to have syphilis even though there are no signs or symptoms. A person is classified as an early latent case during the year following their initial infection. Early latent cases are of public health importance for disease investigation and case follow-up, as they may have infected recent partners during their recent infectious stages.

Late Stage

The late stages of syphilis develop in about 15 percent of people who have not been treated for syphilis, and can appear 10–20 years after infection was first acquired. In the late stages of syphilis, the disease may damage the internal organs, including the brain, nerves, eyes, heart, blood vessels, liver, bones, and joints. Signs and symptoms of the late stage of syphilis include difficulty coordinating muscle movements, paralysis, numbness, gradual blindness, and dementia. This damage may be serious enough to cause death. Late syphilis symptoms are rare in the US, and are considered a clinical issue rather than a public health issue, since late syphilis is not infectious.

⁴ Modified from the Syphilis - CDC Fact Sheet. www.cdc.gov/std/syphilis/STDFact-Syphilis.htm

Neurosyphilis

Neurosyphilis refers to a site of infection involving the nervous system. Neurosyphilis can occur during any stage of syphilis infection, and can be characterized by visual loss, hearing loss, cranial nerve palsies, meningitis, stroke or cognitive dysfunction.

Syphilis during pregnancy

Treponema pallidum can infect a fetus during pregnancy. Depending on how long a pregnant woman has been infected, she may have a high risk of having a stillbirth or of giving birth to a baby who dies shortly after birth. An infected baby may be born without signs or symptoms of disease. If not treated immediately, the baby may develop serious problems within a few weeks, and may become developmentally delayed, have seizures, or die.

Relationship between syphilis and HIV

Chancres caused by syphilis make it easier to transmit and acquire HIV infection sexually. There is an estimated two- to five-fold increased risk of acquiring HIV if exposed to that infection when syphilis is present.⁵

Ulcerative STDs that cause sores, ulcers, or breaks in the skin or mucous membranes, such as syphilis, disrupt barriers that provide protection against infections. The genital ulcers caused by syphilis can bleed easily, and when they come into contact with oral and rectal mucosa during sex, increase the infectiousness of and susceptibility to HIV. Having other STDs is also an important predictor for becoming HIV infected because STDs are a marker for behaviors associated with HIV transmission.

Screening, Diagnosis and Treatment of Syphilis

Screening is important for groups at high risk for syphilis (i.e., MSM) and for whom the risk of adverse outcome is high (i.e., pregnant women). Screening for latent or asymptomatic syphilis is crucial in providing comprehensive medical care to MSM and to pregnant women during their first prenatal visit.⁶ Screening usually begins with a non-treponemal antibody test (RPR/VDRL) and is confirmed with a treponemal test (TP-PA/FTA-Abs/EIA/CIA). Laboratories have been increasingly using treponemal screening tests (EIA/CIA), and following up with a non-treponemal antibody test (RPR/VDRL) to identify active infection and provide information needed for follow-up and case management.

Additional tests for diagnosis of active primary infection are the darkfield microscope (rarely found outside of STD clinic settings), or a genital ulcer disease PCR test, both of which are obtained through scraping or swabbing the chancre itself.

⁵ Fleming DT, Wasserheit JN. *From epidemiological synergy to public health policy and practice: the contribution of other sexually transmitted diseases to sexual transmission of HIV infection.* Sex Transm Infect. 1999 Feb;75(1):3-17

⁶ CDC. *Sexually Transmitted Diseases Treatment Guidelines, 2010.* www.cdc.gov/std/treatment/

In the 2010 STD Treatment Guidelines, the CDC asserts that syphilis treatment is the same for HIV-infected and HIV-uninfected individuals. Summary of treatment recommendations is described in Table 2. More extensive information about treatment is available on the CDC website, www.cdc.gov/treatment.

Table 2. Syphilis treatment recommendations by stage^{a,b}

Stage	Recommended Regimen for Adults	Alternative Therapies
Primary, Secondary, and Early Latent	Benzathine penicillin G 2.4 million units IM in a single dose	<ul style="list-style-type: none"> • Doxycycline^c 100 mg po bid x 14 d or • Tetracycline^c 500 mg po qid x 14 d or • Ceftriaxone^c 1 g IM or IV qd x 8-10 d
Late Latent and Latent of Unknown duration	Benzathine penicillin G 7.2 million units total, administered as 3 doses of 2.4 million units IM each at 1 week intervals	<ul style="list-style-type: none"> • Doxycycline^c 100 mg po bid x 28 d or • Tetracycline^c 500 mg po qid x 28 d
Neurosyphilis ^d	Aqueous crystalline penicillin G 18-24 million units per day, administered as 3-4 million units IV every 4 hours for 10-14 days	<ul style="list-style-type: none"> • Procaine penicillin G, 2.4 million units IM qd x 10-14 d plus Probenecid 500 mg po qid x 10-14 d or • Ceftriaxone^c 2 g IM or IV qd x 10-14 d
Pregnant Women^e		
Primary, Secondary, and Early Latent	Benzathine penicillin G 2.4 million units IM in a single dose	• None
Late Latent and Latent of Unknown duration	Benzathine penicillin G 7.2 million units total, administered as 3 doses of 2.4 million units IM each at 1 week intervals	• None
Neurosyphilis ^d	Aqueous crystalline penicillin G 18-24 million units per day, administered as 3-4 million units IV every 4 hours for 10-14 days	<ul style="list-style-type: none"> • Procaine penicillin G, 2.4 million units IM qd x 10-14 d plus Probenecid 500 mg po qid x 10-14 d

a Benzathine penicillin G (generic name) is the recommended treatment for syphilis not involving the central nervous system and is available in only one long-acting formulation, Bicillin® L-A (the trade name) which contains only benzathine penicillin G. Other combination products, such as Bicillin® C-R, contain both long- and short-acting penicillins and are not effective for treating syphilis.

b Persons with HIV infection should be treated according to the same stage-specific recommendations for primary, secondary, and latent syphilis as used for HIV-negative persons. Available data demonstrate that additional doses of benzathine penicillin G, amoxicillin, or other antibiotics in early syphilis do not result in enhanced efficacy, regardless of HIV status.

c Alternates should only be used for penicillin-allergic patients because efficacy of these therapies has not been established. Compliance with some of these regimens is difficult, and close follow-up is essential. If compliance or follow-up cannot be ensured, the patient should be desensitized and treated with benzathine penicillin.

d Some specialists recommend 2.4 million units of benzathine penicillin G q week for up to 3 weeks after completion of neurosyphilis treatment.

e Pregnant women allergic to penicillin should be treated with penicillin after desensitization.

Prepared by the California Department of Public Health

Management of Sex Partners⁷

Sexual transmission of *Treponema pallidum* is thought to occur only when syphilitic lesions are present. Although such manifestations are uncommon after the first year of infection, persons exposed sexually to a patient who has syphilis in any stage should be evaluated clinically and serologically and treated with a recommended regimen, according to the following recommendations:

- Persons who were exposed within the 90 days preceding the diagnosis of primary, secondary, or early latent syphilis in a sex partner might be infected even if seronegative; therefore, such persons should be treated presumptively.
- Persons who were exposed >90 days before the diagnosis of primary, secondary, or early latent syphilis in a sex partner should be treated presumptively if serologic test results are not available immediately and the opportunity for follow-up is uncertain.
- For purposes of partner notification and presumptive treatment of exposed sex partners, patients with syphilis of unknown duration who have high nontreponemal serologic test titers (i.e., >1:32) can be assumed to have early syphilis. For the purpose of determining a treatment regimen, however, serologic titers should not be used to differentiate early from late latent syphilis.

Sexual partners of infected patients should be considered at risk and provided treatment if they have had sexual contact with the patient within 3 months plus the duration of symptoms for patients diagnosed with primary syphilis, 6 months plus duration of symptoms for those with secondary syphilis, and 1 year for patients with early latent syphilis.

Epidemiology of Syphilis in California

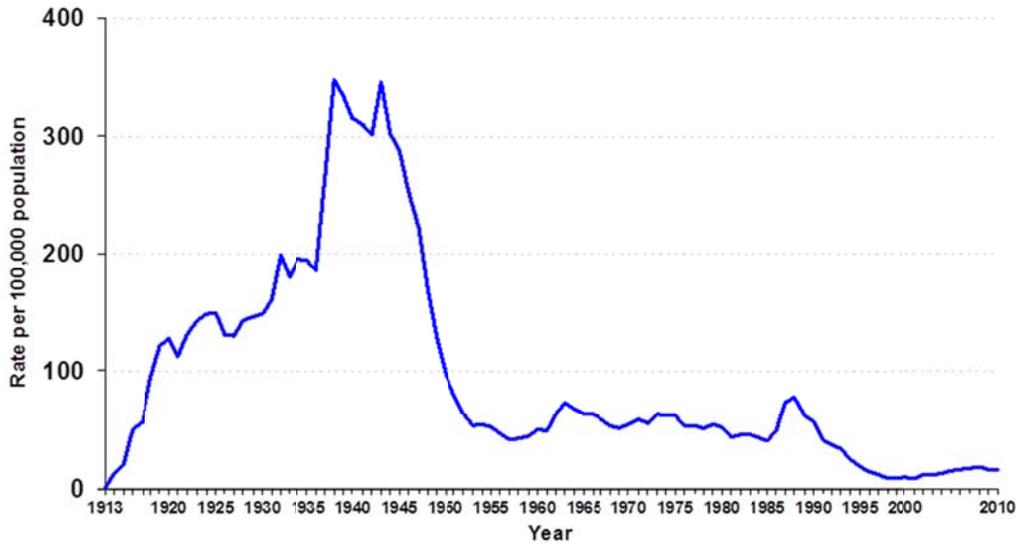
The history of syphilis infection in California is rich, with very high rates documented in the pre-penicillin era followed by drastic declines that began in the late 1940s after penicillin was identified as an effective treatment for syphilis (Figure 1). In 1999, the *National Plan to Eliminate Syphilis* from the United States was published.

California began collecting enhanced surveillance data on early syphilis cases in 1999. What had primarily been a heterosexual epidemic began to shift in the early 2000s, with data indicating transmission was occurring primarily among MSM (Figure 2). In 2010, 2,064 cases of primary and secondary syphilis cases were reported in California⁸. Males made up 96.3 percent of primary and secondary syphilis cases, with 84.9 percent of males reporting sex with men. HIV co-infection was high among primary and secondary syphilis cases, with 50 percent of cases overall and 54.6 percent of MSM cases reporting HIV co-infection. The internet was the most commonly reported venue used for meeting sex partners among interviewed MSM primary and secondary syphilis cases, with the proportion of MSM who reported meeting sex partners online at 42.1 percent in 2010.

⁷ CDC. *Sexually Transmitted Diseases Treatment Guidelines, 2010*. www.cdc.gov/std/treatment/

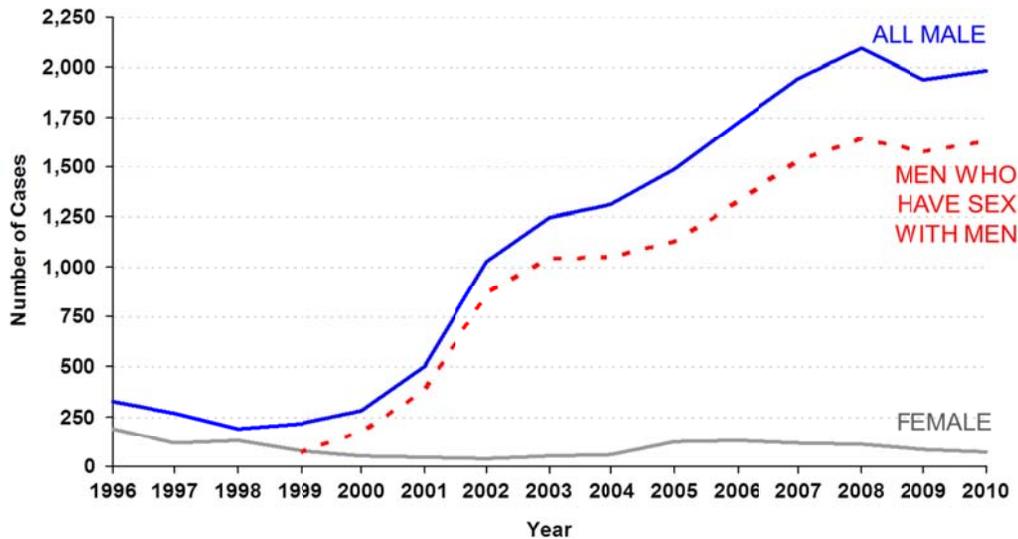
⁸ CDPH. *California Syphilis Elimination Surveillance Data, 2010*. www.std.ca.gov

Figure 1. Total Syphilis (all stages), California Rates 1913-2010



Prepared by the California Department of Public Health

Figure 2. Primary and secondary syphilis cases by gender, California, 1999-2010



Prepared by the California Department of Public Health⁹

CDPH publishes a report of California Syphilis Elimination Surveillance Data each year, which is available online at www.std.ca.gov. From this report we can discern differences in risk categories in different areas in California which may be relevant to local program planning. The report also provides aggregate data on risk behaviors

⁹ CDPH. *Sexually Transmitted Diseases in California, 2010*. www.cdph.ca.gov/data/statistics/Documents/STD-Data-2010-Report.pdf

including drug use, anonymous sex partners, incarceration, and specific internet sites used for meeting sex partners.

3. Strategic Directions, Recommendations and Action Steps

SD1. Provide statewide leadership and program planning.

- SD1.1. Develop and publish policies and guidelines for effective state and local syphilis control programs.
- a. Identify coordinators for high priority issues related to syphilis elimination, including an Internet Partner Services Coordinator, Border Health Liaison, statewide and local Syphilis Elimination Coordinators, and a Congenital Syphilis Coordinator.
 - b. Develop clinical guidance on interpretation of emerging test technologies for syphilis.
 - c. Develop or revise guidelines for syphilis control programs (see Table 3).

Table 3. Possible guidelines for disease control programs

Guideline document	Audience
Congenital Syphilis Case Management Guidelines	State and LHJ disease intervention staff
Data and Security Standards	State and LHJ managers
Early Syphilis Case Management Standards	State and LHJ disease intervention staff
Guidelines for non-syphilis disease intervention (e.g., HIV, gonorrhea, chlamydia, other diseases)	State and LHJ disease intervention managers
Guidelines for Syphilis Case Review	State and LHJ disease intervention managers
Guidelines for syphilis case management in correctional settings	State and LHJ disease intervention staff; public health partners in correctional settings
Inter/Intra-County Communication Record (ICCR) Guidelines	State and LHJ programs
Internet Partner Services Guidelines	State and LHJ disease intervention managers and staff
Provider visitation guidelines	State and LHJ disease intervention staff
Recommendations for conducting field investigation	State and LHJ disease intervention managers and staff

Prepared by the California Department of Public Health

- d. Convene interdisciplinary teams to develop protocols for clinical management of cases, health department notification of sexual partners, and condom distribution in correctional settings.

- e. Develop document with strategies for local syphilis control efforts to assist local health jurisdictions.
- f. Consider inclusion of pregnancy or prenatal status on laboratory requisition forms to be included on laboratory reports sent to local health departments
- g. Document policy for public health management of cases from correctional settings, including state prisons.

SD1.2. Improve communication with local health jurisdictions

- a. Convene regular meetings to provide information and obtain feedback from local health jurisdictions on programmatic activities.
- b. Convene quarterly meetings to discuss state and local syphilis elimination efforts, and to facilitate peer-to-peer communication.
- c. Produce reports with epidemiologic or programmatic information that may assist local programs with program planning, including the California Syphilis Elimination Surveillance Report and the California Syphilis Elimination Evidence-based Action Plan.
- d. Assess and report on local and state Syphilis Elimination activities, including contact information to facilitate peer-to-peer communication.
- e. Analyze local data and report performance indicators to local programs to inform programmatic activities, twice per year.

SD1.3. Improve communication with national stakeholders

- a. Provide detailed feedback regarding the *National Plan to Eliminate Syphilis* to the Centers for Disease Control and Prevention.
- b. Attend national meetings and webinars addressing syphilis elimination activities in other states and project areas, and communicate important issues to local health jurisdictions.
- c. Publish reports and journal articles about syphilis elimination program activities to share information about successes and challenges.
- d. Collaborate with the National Coalition of STD Directors (NCSDD) to provide information about the effects of national policies and regulations on local syphilis control activities.
- e. Communicate the importance of STD control to the Department of Health and Human Services and Centers for Disease Control and Prevention.

SD2. Assess, monitor and evaluate programs

SD2.1. Collect, maintain and report surveillance data on all stages of syphilis cases in California.

- a. Collect enhanced surveillance data on primary, secondary and early latent syphilis cases, to include gender of sex partners, drug use, venues for meeting sex partners, etc.
- b. Assure data completeness, quality, and timeliness of reporting from local health jurisdictions, including adherence to case definitions.

- c. Provide timely reports of risk data through a confidential shared network (i.e., Extranet) to inform local programmatic action.
 - d. Assess local use of current surveillance reports and identify ways to make reports most useful to local program planning activities.
- SD2.2. Assess statewide programmatic activities and infrastructure
- a. Conduct biannual surveys of laboratories to monitor trends in use of testing technology.
 - b. Survey local health jurisdictions to assess infrastructure, including clinical services and staff.
 - c. Conduct cost/benefit analysis of congenital syphilis case follow-up to inform revision of forms and procedures.
 - d. Use Medi-Cal billing data to measure proportion of patients with HIV medications with simultaneous syphilis serologies.
 - e. Evaluate effectiveness of Border Health program.
- SD2.3. Assess and evaluate medical provider behavior related to sexual history taking, screening, clinical management and public health reporting.
- a. Quantify clinical mismanagement and identify target provider populations through record review.
 - b. Identify and collaborate with existing audits to include measures related to sexual history taking and screening for syphilis among providers in HIV Care or other settings.
 - c. Evaluate syphilis screening among targeted populations, including prison reception centers and HIV care settings.
 - d. Analyze partner services outcomes to identify target providers or provider types that may need more information about partner services to pass on to their patients.
 - e. Use data from Medi-Cal or other data sources to evaluate prenatal screening rates for syphilis.
- SD2.4. Evaluate state and local program activities to consider impact and cost-effectiveness
- a. Develop and share evidence-based action plans for statewide syphilis elimination interventions.
 - b. Evaluate San Diego's "We All Test" campaign to identify effectiveness and determine whether to expand to other health jurisdictions.
 - c. Evaluate workload of disease intervention staff to quantify time and resources required to conduct reactor searches, field investigations, provider visitation, and other activities conducted by disease intervention staff.
 - d. Analyze data to prioritize and improve disease intervention activities (see Table 4 for sample analyses of interest).

Table 4. Analyses to support prioritization of disease intervention activities

- Evaluation of impact of reactor coordinator on timely primary and secondary syphilis case interviews
- Evaluation of cases missed if subpopulations are not followed
- Analysis of reactor grid to maximize effective case follow-up based on gender, titer and age combinations
- Effectiveness of Internet Partner Services (e.g., How many additional partners treated as a result of internet partner notification?)
- Evaluate number of full time employees dedicated to syphilis case follow-up per primary and secondary syphilis case, and impact on performance measures
- STD and HIV Case Registry Matching to Estimate STD-HIV Co-infection

Prepared by the California Department of Public Health

SD3. Increase access to and improve quality of care

SD3.1. Provide current and accurate information about screening, diagnosis, treatment and public health reporting to medical providers.

- a. Disseminate guidelines and provide technical assistance and materials to local health jurisdictions to conduct effective provider visitation programs, to include toolkits for screening, diagnosis and treatment of STD among men who have sex with men.
- b. Communicate syphilis public health reporting trends and requirements, and the impact of delayed reporting on partner management.
- c. Collaborate with California STD/HIV Prevention Training Center to provide training online or in-person in areas with high morbidity and/or consistent clinical mismanagement.
- d. Develop and disseminate clinical fact sheets summarizing California incidence, risk data, interpretation of test results, and signs and symptoms of syphilis.
- e. Promote online clinical resources, such as STDCheckup.com, through banner ads or other technology.
- f. Collaborate with medical associations to publish articles about syphilis in newsletters, Medical Action Reports, Dear Colleague letters, and other communications.
- g. Collaborate with medical associations, local hospitals, and other organizations to conduct training updates and Grand Rounds.
- h. Communicate provider-specific feedback on reporting, treatment and other measures to providers to improve their performance.

SD3.2. Identify and implement clinical, administrative and structural interventions for improving access to timely diagnosis and treatment of syphilis and other STDs.

- a. Collaborate with local and national programs to ensure accurate and complete listing of STD testing and clinical services in California.
- b. Disseminate protocols for local health department delivery of benzathine penicillin G to medical providers unable to keep the treatment in stock.
- c. Collaborate with HIV care, family planning, and community-based organizations to provide testing and treatment in the absence of categorical STD clinics.
- d. Expand the use of a multiplex PCR test for genital ulcer disease to identify primary syphilis in high volume settings.
- e. Promote use of low cost, evidence-based interventions such as “Safe in the City” for STD clinics.
- f. Assure quality of care in clinics providing specialty services for STD, including wait times, cost for services, and proportion of at-risk patients screened for syphilis.
- g. Collaborate with local specialty clinics in migrating to electronic medical record systems.

SD4. Improve partner services as an intervention for syphilis control

SD4.1. Improve local and state infrastructure for partner services.

- a. Designate provider liaisons to communicate and collaborate with high morbidity providers and establish systems for complete and timely case reporting.
- b. House staff in high morbidity health jurisdictions, or cities within health jurisdictions, to aid timely follow-up of cases.
- c. Explore the embedded disease intervention staff model: housing, employing, or supervising disease intervention staff in high morbidity community-based organizations or medical provider offices.
- d. Build local health jurisdiction capacity for conducting partner services through mentorship, training and technical assistance.
- e. Provide state safety-net support to local health jurisdictions during outbreaks or other times when local staff are unable to manage morbidity.
- f. Collaborate with correctional settings to develop protocols for partner notification of incarcerated persons.

SD4.2. Publish standards for disease intervention activities and workload

- a. Ensure standard reports can be generated at the local level to manage workload and evaluate individual worker performance.
- b. Conduct interviewer audits and other quality assurance activities to identify training needs and provide mentorship/supervision to maximize partner treatment outcomes.
- c. Develop and publish standards for partner services programs, to include reasonable field investigative work volume per full time employee.

SD4.3. Provide training and tools to state and local disease intervention staff.

- a. Develop partner services promotional material to provide to medical providers and patients.
- b. Provide technical assistance and training on how to conduct Chalk Talks to facilitate local communication and identification of sexual networks.
- c. Collaborate with the California STD/HIV Prevention Training Center to provide training about how to work with medical providers for local and state staff.
- d. Utilize interjurisdictional working groups to ensure staff and local health jurisdictions are aware of SEE activities and recommendations.
- e. Provide technical assistance and training for internet partner notification, including finalization of guidelines.
- f. Identify and train select staff for phlebotomy certification to enable testing and follow-up in the field for syphilis and emergency preparedness.
- g. Promote self-referral among syphilis cases that are uninterested in partner services, including InSPOT.org.

SD4.4. Improve partner services outcomes

- a. Report state and local data on performance measures and submeasures related to timely case interview and partner treatment.
- b. Provide technical assistance to local health jurisdictions to improve timeliness of assignment and interview of primary and secondary syphilis cases, including local and CDPH action steps.
- c. Conduct assessments of local systems and infrastructure to identify inefficiencies and provide recommendations.
- d. Provide technical assistance to local health jurisdictions to improve reporting from poor performing laboratories.

SD5. Increase public awareness of syphilis and integrate syphilis messages into existing programs/activities

SD5.1. Increase public awareness of syphilis symptoms and testing through social marketing campaigns.

- a. Ensure use of racially diverse and culturally appropriate materials.
- b. Share existing campaigns with local health jurisdictions to increase syphilis testing behavior among men who have sex with men (e.g., stdcheckup.org, wealltest.org).
- c. Develop statewide internet-based intervention using data from National Internet Survey to target interventions based on user, public health, and website owner responses.
- d. Consider utilization of mobile phone applications, social networking sites, and other new media to promote testing for syphilis among men who have sex with men.

SD5.2. Collaborate with state and local HIV health department programs

- a. Offer integrated syphilis and HIV partner services to all co-infected cases.
- b. Integrate Hepatitis messages and information into provider resources and partner services activities.

- c. Develop guidance or policy statement recommending syphilis testing with each quarterly CD4 count among HIV-infected persons at risk.
- d. Collaborate with State Office of AIDS to integrate STD-related data elements in the ARIES system, such as sexual risk history, STD screening or coinfection, and partner services.
- e. Incorporate syphilis testing and sexual history screening indicators into existing Ryan White audits in HIV care settings.
- f. Collaborate with State Office of AIDS, Adult Viral Hepatitis Program Coordinator, and the Tuberculosis Control Branch to identify ways to integrate client-level services.

SD5.3. Collaborate with local community-based organizations

- a. In compliance with cooperative agreements with the CDC, ensure that 15-30 percent of syphilis elimination funds provided to local health jurisdictions are directly invested in community-based organizations to conduct syphilis elimination activities.
- b. Explore local involvement of STD program staff into existing HIV advisory groups and Community Planning Groups to integrate syphilis messages into outreach and other activities.
- c. Compile a list of community-based organizations in California, including Gay and Lesbian Centers, HIV care facilities, and other that offer services to target populations.
- d. Communicate with community-based organizations and service providers to provide current data and activities relevant to the populations they serve.
- e. Collaborate with community-based organizations to gain input on current and future initiatives and ensure that messages are appropriate for populations they serve.
- f. Collaborate with community-based organizations to integrate syphilis messages into existing HIV outreach activities.
- g. Determine feasibility and utility of syphilis-specific community taskforces in local health jurisdictions with high syphilis morbidity.
- h. Collaborate with advocacy organizations to provide accurate lists of “LGBT-friendly” medical providers for persons who are uncomfortable disclosing sexual behaviors.

4. Evaluation

The California Syphilis Elimination strategic plan outlines many strategies and action steps for achieving its goals. Assessing, in five years, how much closer California is toward these goals will require collecting information throughout the process of the plan's implementation. Many partners will contribute to the implementation of the strategic plan, including state health officials, local health officials, and community-based service providers. CDPH will take the lead in evaluating those action steps within the plan that fall within the Department's scope of work, primarily utilizing existing data sources. This will include evaluating progress toward meeting Healthy People 2020 goals related to syphilis (see Appendix C).

Local health jurisdictions, community-based organizations, and other community partners may want to develop additional measures for evaluating the success of their efforts, as well.

Development of evaluation plans for goals and activities will require identification of the outcomes needed to answer the question, available sources of that data, and staff with the capacity to conduct data analysis. The Syphilis Elimination Coordinator is available to provide technical assistance in evaluation planning.

5. Conclusion

Syphilis prevention and control is an important public health issue and considered a priority in California by the CDPH STD Control Program. This strategic plan outlined five major areas of focus for addressing syphilis control among Californians, with specific recommendations and action steps that state and local health officials and community-based organizations can use to achieve its goals. Some of the action steps in this plan will take place at the state level. Other action steps will require coordination among local health officials, community-based organizations, private partners, and affected individuals, who will select the recommendations most relevant to their communities.

Many communities and local health jurisdictions are already conducting syphilis prevention and control programs, and integrating with local HIV programs to target messages. Improving the effectiveness of existing programs, and the development of new, innovative programs are needed to reduce morbidity among Californians. Medical providers, public health workers, researchers, community organizers and others will be crucial to developing an effective public health response to syphilis in California.

This strategic plan is intended as a guide to California local STD Control programs and their community-based partners in developing programs for syphilis control. Program managers should strategically consider the options listed here in formulating local plans. If you have questions, concerns or comments about the Plan, or would like assistance with establishing syphilis control activities in your organization, please contact the Syphilis Elimination Coordinator.

Appendices

- Appendix A. Summary Table of Strategic Directions and Recommendations
- Appendix B. CDC Strategic framework for Syphilis Elimination
- Appendix C. Healthy People 2020 Objectives and California Goals
- Appendix D. California Evidence-based Action Plan, 2012
- Appendix E. List of Acronyms
- Appendix F. Resources

Appendix A. Summary Table of Strategic Directions and Recommendations

Strategic Direction	Recommendation
1. Provide statewide leadership and program planning	SD1.1. Develop and publish policies and guidelines for effective state and local syphilis control programs.
	SD1.2. Improve communication with local health jurisdictions.
	SD1.3. Improve communication with national stakeholders
2. Assess, monitor and evaluate programs	SD2.1. Collect, maintain and report surveillance data on primary and secondary syphilis cases in California
	SD2.2. Assess statewide programmatic activities and infrastructure
	SD2.3. Assess and evaluate medical provider behavior related to sexual history taking, screening, clinical management, and public health reporting.
	SD2.4. Evaluate state and local program activities to consider impact and cost-effectiveness.
3. Increase access to and improve quality of care	SD3.1. Provider current and accurate information about screening, diagnosis, treatment, and public health reporting to medical providers.
	SD3.2. Identify and implement structural interventions for improving access to timely diagnosis and treatment of syphilis and other STDs.
4. Improve partner services as an intervention for syphilis control.	SD4.1. Improve local and state infrastructure for partner services.
	SD4.2. Publish standards for disease intervention activities and workload.
	SD4.3. Provide training and tools to state and local disease intervention staff.
	SD4.4. Improve partner services outcomes.
5. Increase public awareness of syphilis and integrate syphilis messages into existing programs/activities	SD5.1. Increase public awareness of syphilis symptoms and testing through social marketing campaigns.
	SD5.2. Collaborate with state and local HIV health department programs.
	SD5.3. Collaborate with local community-based organizations.

Prepared by the California Department of Public Health

Appendix B. CDC strategic framework for Syphilis Elimination

Syphilis Elimination Goal	Syphilis Elimination Strategies
<p>1. Investment in, and enhancement of, public health services and interventions. Public health services will achieve excellence in the diagnosis, management and reporting of syphilis and its adverse outcomes, especially those at greatest risk of health disparities.</p>	<ol style="list-style-type: none"> 1. Improve and enhance syphilis surveillance and outbreak response 2. Improve and quality assure clinical and partner services 3. Improve and quality assure laboratory services
<p>2. Prioritization of evidence-based, culturally competent interventions. Public health services will improve the advocacy, acceptability, and appropriateness of their response to syphilis epidemics through the creation of productive and proactive partnerships with external stakeholders.</p>	<ol style="list-style-type: none"> 1. Mobilization of affected communities 2. Tailoring intervention strategies for affected populations 3. Mobilization of and creating alliances with local health care providers
<p>3. Accountable services and interventions. Public health services will improve the effectiveness of their interventions by improving accountability for their planning, implementation, and evaluation.</p>	<ol style="list-style-type: none"> 1. Training and staff development 2. Evidence-based action planning, monitoring, and evaluation 3. Research and development

From the National Plan to Eliminate Syphilis. www.cdc.gov/stopsyphilis/SEEPlan2006.pdf

Appendix C. Healthy People 2020 Objectives and California Goals

Healthy People 2020 Objectives		Healthy People 2020, US Goals ¹	US Rates, 2009	California Goals, 2020 ²	California Goals, 2015 ³	California Rates, 2009
STD-7.1.	Reduce sustained domestic transmission of P&S syphilis among females (rate per 100,000 population)	1.4	1.4	0.36	0.38	0.4
STD-7.2.	Reduce sustained domestic transmission of P&S syphilis among males (rate per 100,000 population)	6.8	7.8	9	9.5	10
STD-8.	Reduce congenital syphilis (rate per 100,000 live births)	9.1	10	8.8	9.3	9.8

¹ Calculated as 10% reduction in rates from 2008 US surveillance data. www.cdc.gov/std/stats08/default.htm

² Calculated as 10% reduction in rates from 2009 California Surveillance data. www.std.ca.gov

³ Calculated as 5% reduction in rates from 2009 California Surveillance data. www.std.ca.gov

Prepared by the California Department of Public Health

Appendix D. California Evidence-based Action Plan, 2012

As part of the Cooperative Agreement with the CDC, Project Areas receiving Syphilis Elimination Funding are expected to submit Evidence-based Action Plans for interventions being implemented.¹⁰ The California Project Area¹¹ Evidence-Based Action Plan is included below for reference.

1. Provider visitation program

- a. Objective: To implement provider visitation programs in high syphilis morbidity LHJs, to improve syphilis screening, management, and reporting in California.
- b. Target Population: Providers in high morbidity health jurisdictions who meet one of the following criteria: (1) high volume of syphilis cases, (2) infrequent or late reporting, (3) see MSM, (4) in HIV Care facilities.
- c. Intervention: Targeted providers are visited by local disease intervention staff, who provide resources to improve STD screening, clinical management and public health reporting.
- d. Implementation Plan: Analysis of high-reporting providers was conducted for P&S syphilis and for gonorrhea. These are being finalized and will be shared with at least 5 LHJs to inform targeted provider visitation, and technical assistance will be provided.
- e. Process Evaluation and Performance Indicators: In San Diego during the current reporting period, 5 visits were conducted to 6 providers. Resources distributed during those visits included information about disease reporting, 2010 STD Treatment Guidelines, and syphilis educational materials. Provider reporting in San Diego County has improved, with 70 percent of providers reporting to the health department within 7 days of specimen collection during July-December 2010, compared to 62 percent during the same period in 2009.
- f. Expected Outcomes: (a) Increased provider awareness of the need for routine STD screening for MSM at risk, (b) more timely reporting of syphilis cases to LHJ, (c) increased routine syphilis testing among targeted providers.
- g. Examine and Evaluate the Data and Reconsider the Intervention: Data as described above suggest that the program is successful at improving provider reporting in San Diego.

2. We All Test initiative

- a. Objective: To encourage gay men and other MSM to test regularly for syphilis, through text/email alerts through the campaign website, wealltest.org.
- b. Target Population: Gay men/MSM living in San Diego County, with possibility to expand to additional counties pending evaluation.
- c. Intervention: Gay men/MSM are encouraged to sign-up to receive email and/or text syphilis testing reminders every 3 or 6 months. Implementation

¹⁰ Guidance for the development of Evidence-Based Action Planning is available through the CDC SEE website: <http://www.cdc.gov/stopsyphilis/SEEEvidence-basedGuidance.pdf>

¹¹ The California Project Area excludes San Francisco and Los Angeles, which receive separate funding for Syphilis Elimination Programs.

- Plan: Due to low enrollment for the reminders (less than 100 in 2010), a survey assessing the appropriateness of the intervention was implemented in November 2010. Two-hundred seventy-two surveys were returned and nearly 40 percent of respondents said that they would sign up to receive reminders. The intervention was adjusted on January 7, 2011, to enable men to sign up on paper at the STD clinic and HIV counseling and testing venues, rather than requiring them to visit the website themselves. Men are now able to sign up at the local STD clinic and several key providers.
- d. Process Evaluation and Performance Indicators: As of June 1, 2011, 669 men have signed up to receive reminders in San Diego. Evaluation of men receiving the survey was revised due to low response during the first phase of the project, and will be sent to assess whether reminders helped them to get tested.
 - e. Expected Outcomes: In both 2009 and 2010 40 percent of early syphilis reported in San Diego County was identified in the early latent stage. More frequent screening among MSM can lead to an increase in the number of cases identified in earlier stages, which can lead to decreases in transmission.
 - f. Examine and Evaluate the Data and Reconsider the Intervention. Data suggest that there is community interest and acceptability of the project in San Diego. Effectiveness data are not yet available.
3. Genital Ulcer Disease Multiplex Polymerase Chain Reaction (PCR) Test
- a. Objective: To provide PCR test to patients with genital ulcer disease, for the detection of herpes, syphilis, and chancroid. Ultimately to make this test available to private providers without darkfield capacity for syphilis diagnosis.
 - b. Target Population: Patients seeking STD services in San Diego, with genital lesions. Expansion to San Francisco will be conducted in 2012.
 - c. Intervention: Test patients with genital lesions for herpes, syphilis and chancroid. The County of San Diego Public Health Laboratory covers labor costs, and CDPH purchases supplies for running the herpes and syphilis tests. Cost for supplies is approximately \$12.33 per test x 600 tests, totaling \$7,398 per year.
 - d. Process evaluation and Performance Indicators: Of the 289 specimens tested during this reporting period, 258 were negative, 29 were positive, and 2 were indeterminate for *Treponema pallidum*. Of the specimens with positive PCR tests and corresponding darkfield results, 2/17 were positive on darkfield and negative on PCR and 6/17 were negative on darkfield and positive on PCR. Clinical information on discordant results has not yet been evaluated.
 - e. Expected Outcomes: Detection of syphilis in cases with primary syphilis that may not be detected otherwise, increasing detection of infectious syphilis and reducing transmission in the community.
 - f. Examine and Evaluate the Data and Reconsider the Intervention. San Diego Public Health Laboratory continues to validate the Genital Ulcer Disease PCR test in the laboratory. Following validation of the test, San Diego is interested in expanding to additional clinical sites in 2012. Evaluation of use in private

settings will be more valuable than in STD clinic settings where it is currently being used.

Appendix E. List of Acronyms

AIDS	Acquired Immune Deficiency Syndrome
CDC	Centers for Disease Control and Prevention
CDPH	California Department of Public Health
CIA	Chemoluminescent Immunoassay
EIA	Enzyme Immunoassay
FTA-Abs	Fluorescent treponemal antibody absorption test
HIV	Human Immunodeficiency Virus
MSM	Men who have sex with men
PCR	Polymerase Chain Reaction
RPR	Rapid Plasma Reagin
SEE	Syphilis Elimination Effort
STD	Sexually Transmitted Disease
TPPA	Treponema Pallidum Particle Agglutination Assay
VDRL	Venereal Disease Research Laboratory Test

Appendix F – Resources

California Local Health Department Contact Information for Disease Reporting
www.cdph.ca.gov/healthinfo/documents/lhd_cd_contact_info.pdf

California Department of Public Health STD Control Branch: www.std.ca.gov

- Syphilis Elimination Surveillance Data and Reports
- California STD Screening Recommendations, 2010
- California STD Treatment Guidelines for Adults and Adolescents, 2010
- California Guidelines for STD Screening and Treatment in Pregnancy, 2008

Centers for Disease Control and Prevention

- Syphilis Elimination Page: www.cdc.gov/STOPSYPHILIS/
- Sexually Transmitted Diseases: www.cdc.gov/std
- 2010 STD Treatment Guidelines: <http://www.cdc.gov/std/treatment/>
- Recommendations for Partner Services Programs for HIV Infection, Syphilis, Gonorrhea, and Chlamydial Infection, *MMWR* 2008;57(RR-9);1-83.
<http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5709a1.htm>

Guidelines for Care of Lesbian, Gay, Bisexual and Transgender Patients

http://www.glma.org/data/n_0001/resources/live/GLMA%20guidelines%202006%20FINAL.pdf

Clinicians Resource for STDs in MSM: www.stdcheckup.org/provider

California HIV/STD Prevention Training Center: www.stdhivtraining.org

Gay and Lesbian Medical Association: www.glma.org