ELIMINATING CONGENITAL SYPHILIS IN LOS ANGELES COUNTY: A CALL TO ACTION

Los Angeles County Department of Public Health
Division of HIV and STD Programs

This report offers detailed background information tied to the current congenital syphilis epidemic in Los Angeles County and provides a roadmap to enhance control efforts. The report draws from best practices and recommendations shared at the national, state and local levels. As an initial catalyst for shared action, this report focuses on three goals that require traditional and non-traditional partnerships. Achieving these goals is critical to building a strong congenital syphilis control foundation – a foundation that can support additional efforts over time.

NOTE: In this plan, we use the term “woman” to describe persons assigned female gender at birth. This is with the understanding that there are people who are assigned female at birth who may not identify as women. More inclusive wording would replace “pregnant women” with “pregnant persons” and “women of reproductive age” with “persons who could get pregnant.” Unfortunately, many of the health and social services described in this plan remain oriented around cisgender and binary gender identities, and the terminology in this document reflects this.

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EXECUTIVE SUMMARY

Congenital syphilis (CS) is a serious but preventable bacterial infection transmitted from mother to fetus. In the United States (U.S.) more newborn infants are affected by CS than by many other neonatal infections, including human immunodeficiency virus (HIV). To address this public health crisis and maximize CS prevention efforts, increased awareness of the scope of the problem is needed along with a renewed commitment to address the broader syphilis epidemic among policy makers, public health officials, public-sector and private-sector health care providers, and community-based stakeholders.

The current CS crisis is complex. Not only are syphilis rates in general in Los Angeles County (LAC) rising at levels not seen in over 30 years, but increases are most stark for women, with over a 400% increase in six years. Given this sudden rise, many women at elevated risk of syphilis are unaware of their risk and may not be screened for the infection by their health care provider. Unfortunately, in LAC, two thirds of the women giving birth to newborns with CS received no or late prenatal care. Almost half report active substance use during pregnancy, one-quarter had been arrested in the previous two years, and upwards of one-fifth had experienced housing instability or homelessness. It is likely that these factors may be contributing to inconsistent, late or no prenatal care, which in turn results in a delayed or missed diagnosis of syphilis in pregnancy.

To effectively prevent and eliminate CS, we need a reinvigorated effort to identify and prevent new syphilis infections. This also includes upstream efforts to reduce the risk and prevent the spread of infectious syphilis in the general population, particularly among men, including men who have sex with men and women. CS can be eliminated through early, effective screening of women for syphilis and stage-appropriate treatment and follow-up of women diagnosed with the infection and their sexual partners. LAC health care providers must implement robust syphilis screening and treatment for pregnant women and at-risk populations within health care settings. Suboptimal syphilis screening is multi-factorial, and at-risk women should be advised of the rising rates and offered expanded opportunities to test in non-clinical settings. Lastly, delayed or inconsistent prenatal care is a common contributor to CS, which speaks to the need for alternative models of medical care and case management to help some of our society's most vulnerable women.

INTRODUCTION

Syphilis is a sexually transmitted disease that has experienced a significant resurgence across the United States (U.S.), in California and in Los Angeles County (LAC) over the last decade. In 2018, there were nearly 8,000 reported cases of syphilis in LAC. Increasing U.S. congenital syphilis (CS) rates are driven by rising trends in western and southern states, with California, in particular, contributing one third of the U.S. CS cases.[i] In LAC, CS cases increased 800% between 2012 and 2018 (from 6 reported cases in 2012 to 54 in 2018), coinciding with a similar rise in annual syphilis cases among women of reproductive age, which increased 430% from 173 cases in 2012 to 924 cases in 2018.

CS, an infection transmitted from mother to child during pregnancy and/or delivery, is a preventable disease. Untreated syphilis infection in the womb can cause potentially severe consequences for a developing fetus. CS can lead to stillbirth, neonatal death, premature birth, low birth weight, and a range of complications. Fetal infection can occur during any trimester of pregnancy. Treating a pregnant woman infected with syphilis also treats her fetus.

To address the rising CS crisis, the Centers for Disease Control and Prevention (CDC) has called on health care providers to increase screening for syphilis among pregnant women and provide immediate treatment of women diagnosed with syphilis. In 2015, the California Department of Public Health (CDPH) recommended that local health departments improve their case management and contact tracing (also referred to as "Partner Services") for female syphilis cases and improve collaborations with organizations such as maternal and child health programs, family planning providers, correctional health, and drug treatment centers.[ii] Fortunately, in LAC, many of these elements for CS prevention are in place, including 1) universal first and third trimester prenatal syphilis screening recommendations, implemented in 2018; 2) public health staff to provide case management to pregnant women and their partners to ensure prompt screening and treatment; and 3) existing collaborations with women's health, substance use disorder (SUD), and correctional health care partners.

The overarching goal of the present initiative is the elimination of CS in LAC. Elimination of CS would reduce the numbers of miscarriages, stillbirths, preterm and low-birth-weight infants, and perinatal deaths, thus contributing to the achievement of the Department of Public Health (DPH) goals related to reducing infant mortality.

Clinical Overview of Syphilis and CS: Presentation, Natural History and Range of Outcomes

CS is a multi-system infection caused by the bacteria *Treponema pallidum* in a fetus or infant, passed via vertical transmission (mother to fetus) during pregnancy. Overall risk of infection of the fetus in utero is between 60 and 80%, and fetal infection is more likely when a mother is infected with syphilis during her pregnancy, when over a third of cases lead to fetal or neonatal mortality.[iii] However, fetal infection can occur at any stage of maternal disease, which means that even syphilis infections acquired by a woman before she becomes pregnant can lead to a CS diagnosis.

Syphilis in pregnancy is associated with multiple perinatal complications such as intrauterine growth restriction, preterm labor, placental abnormalities, and stillbirth. In infected neonates, manifestations of syphilis are classified as early congenital (i.e., birth through age two years) and late congenital (i.e., after age two years). Early CS commonly manifests in the first three months of life with symptoms such as skin lesions, neurologic problems, bony malformations, and facial disfiguration. Late CS manifests after two years of age and can present as ulcers, tooth and bony deformities, blindness, deafness, and intellectual disabilities.

The CDC requires that local health departments conduct data monitoring of all syphilis cases within their jurisdiction. The CDC defines a case of CS based if one or more of the following criteria are met:

For maternal case, mother has at least (one) of the following:

- New case of syphilis diagnosed <30 days prior to delivery or at delivery;
- Untreated (diagnosed with syphilis >30 days prior to delivery);
- Inadequately treated, e.g. incomplete treatment, inappropriate intervals between doses; or
- Reinfection during pregnancy (titer increase of ≥ 4-fold).

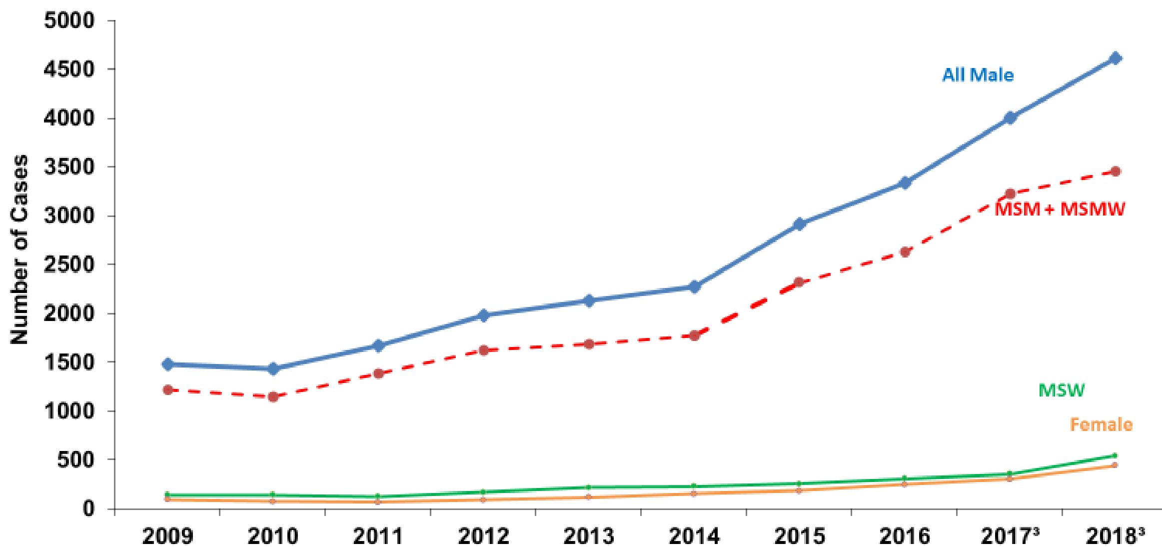
For neonatal case, neonate has at least (one) of the following

- Positive darkfield or PCR;
- Stillbirth (fetal death that occurs after 20 weeks gestation or weighing > 500g, and the mother had untreated or inadequately treated syphilis at delivery); or
- Reactive non-treponemal result, and has any one of the following: physical signs of CS, evidence of CS on long bone x-ray, reactive CSF-VDRL, or elevated CSF WBC count or protein (without other cause).

Overview of Epidemiology of Syphilis and CS in LAC, 2000-2019

A total of 7,858 cases of syphilis were reported in LAC in 2018. Two-thirds of cases were staged as early syphilis, which includes include primary, secondary, and early non-primary non-secondary syphilis, the infectious forms of syphilis (as opposed to late syphilis which is not an infectious stage). Since 2011, the number of reported early syphilis cases has risen by 195% from 1750 cases to 5171 cases in 2018. Most early cases of syphilis in 2018 were among males (89%), followed by females (9%), and individuals who identified as transgender (2%). Among males diagnosed with early syphilis in 2018, 82% of cases occurred among men who have sex with men (MSM), 4% among men who have sex with men and women (MSMW), and 14% among men who have sex with women (MSW).

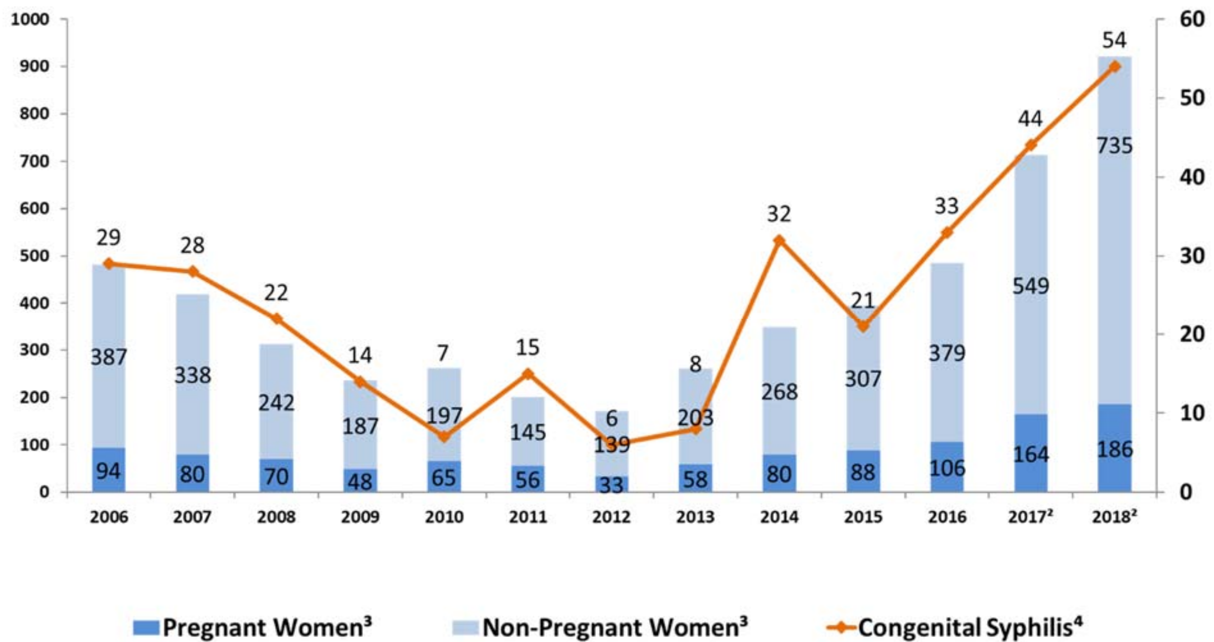
Figure 1. Early Syphilis, Number of Cases by Gender and Gender of Sex Partners, LAC, 2009-2018



Syphilis Trends in Pregnant Women and CS Cases

During the same period that LAC has experienced a rise in syphilis cases in women of reproductive age, it has also seen a significant increase in congenital syphilis cases, with an 800% increase between 2012 (6 cases) and 2018 (54 cases). Historically, cases of congenital syphilis have tracked closely to trends in syphilis cases among women of reproductive age and pregnant women, as depicted in Figure 2.

Figure 2. Number of Female Syphilis Cases (All Stages) and Congenital Syphilis Cases, LAC 2006-2018[1]



[1] Data are from STD Casewatch as of 06/16/2019 and excludes cases from Long Beach and Pasadena [2] 2017-2018 data are provisional due to reporting delay. [3] Syphilis among females of reproductive age (ages 15-44) including all cases staged as primary, secondary, early latent and late latent or unknown duration. [4] Congenital Syphilis includes syphilitic stillbirths.

After several years with no syphilitic stillbirths between 2007 to 2011, LAC has experienced one or more syphilitic stillbirth every year since 2012. In addition, in both 2017 and 2018, two neonates died within days of birth from complications that included syphilis. The stillbirths and neonatal deaths all occurred among women who became infected with syphilis during their pregnancy.

Unfortunately, the CS crisis is not isolated to LAC. In 2018, California experienced 329 cases of CS, representing a quarter of the nation's cases (1,306 CS cases). The 2018 U.S. rate of congenital syphilis was 33.1 cases per 100,000 live births, compared with 68.2 for California, and 53.6 for LAC. Within California, the jurisdictions with the highest cases are Fresno, Kern, San Bernardino, San Joaquin, and Los Angeles Counties; when adjusted for number of live births, Los Angeles has a lower rate than 16 other counties (ranked 17th of 58 counties).[iv]

Syphilis Trends in Women of Reproductive Age

In the U.S., California, and LAC, some communities experience disproportionately high rates of sexually transmitted infections. Men who have sex with men (MSM) face the largest burden of syphilis infection and certain racial/ethnic groups shoulder a disproportionate burden of sexually transmitted disease (STD), including syphilis, gonorrhea and chlamydia infections. The relationship between race/ethnicity and STDs

is multifactorial and complex. African-Americans have the highest rates of syphilis in LAC. While the rate of syphilis is higher among African-American women compared to Latinas, more cases occur among Latinas than any other group, as they make up a larger proportion of the LAC population.

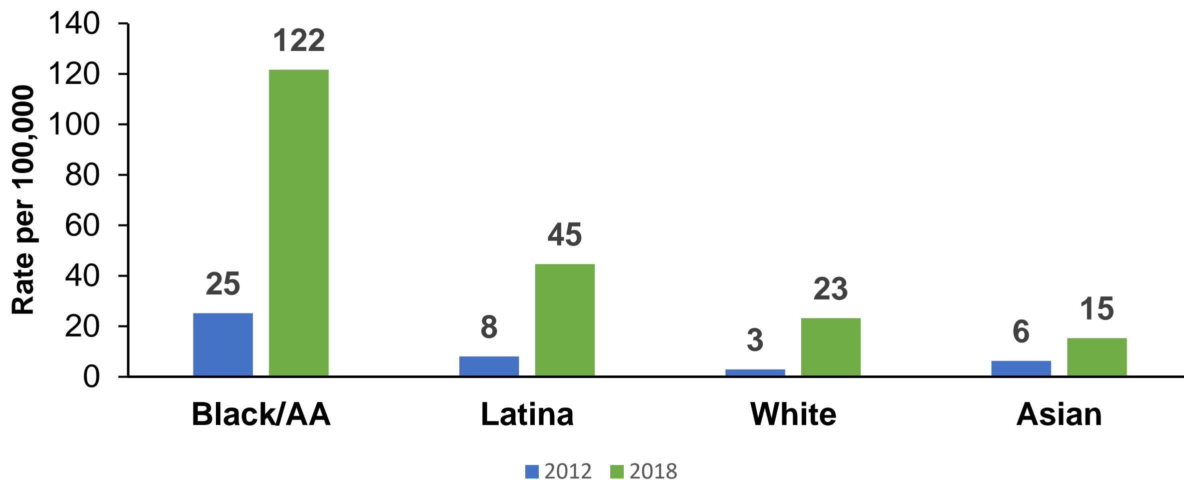
Figure 4 show syphilis case counts and rates, respectively, among women of reproductive age (15-44 years) in 2012, before the current CS crisis, and 2018, by race/ethnicity. In 2018, a total of 924 cases were reported in women in this age range. In LAC, the median age of a woman diagnosed with syphilis in 2018 was 34 years and the median age of a pregnant woman with syphilis was 27 years. In 2018, among pregnant women with syphilis, 61% were Latina, 20% were African American, 7% white, and 6% Asian.

Figure 3. Syphilis Cases among Reproductive Age Women, 15-44 years, by Race/Ethnicity, LAC, 2018[1]

Race/Ethnicity	Number of Cases (%), 2012	Number of Cases (%), 2018
Latina	86 (50)	485 (52)
Black/African American	42 (24)	201 (22)
White	14 (8)	111 (12)
Asian	18 (10)	44 (5)
Other/Missing/Unknown	13 (8)	83 (9)
TOTAL[2]	173	924

[1] 2018 data are provisional due to reporting delay. Syphilis includes all cases staged as primary, secondary, early latent and late latent or unknown duration. [2] Total includes other and missing race

Figure 4. Rate of Syphilis among Women Ages 15-44 by Race/Ethnicity, LAC, 2012 (n=160) and 2018 (N=640)[1]



[1]Total syphilis includes all cases staged as primary, secondary, early latent, late latent and late unknown duration; data for Native Hawaiians, Pacific Islanders, Native Americans, Alaska Natives, Multiple Race and Other Race are suppressed due to small numbers; 2017 data are provisional due to reporting delay and exclude cases in Long Beach and Pasadena.

In LAC, there are notable geographic variations associated with syphilis cases in women. Cases of syphilis in women are occurring throughout the County, with the greatest case counts in South Los Angeles, the San Gabriel Valley, and Metro/Downtown Los Angeles. The highest rates in 2018 occurred in the South Service Planning Area (SPA) 6, with 94 cases per 100,000 women, Antelope Valley SPA 1 with 59 per

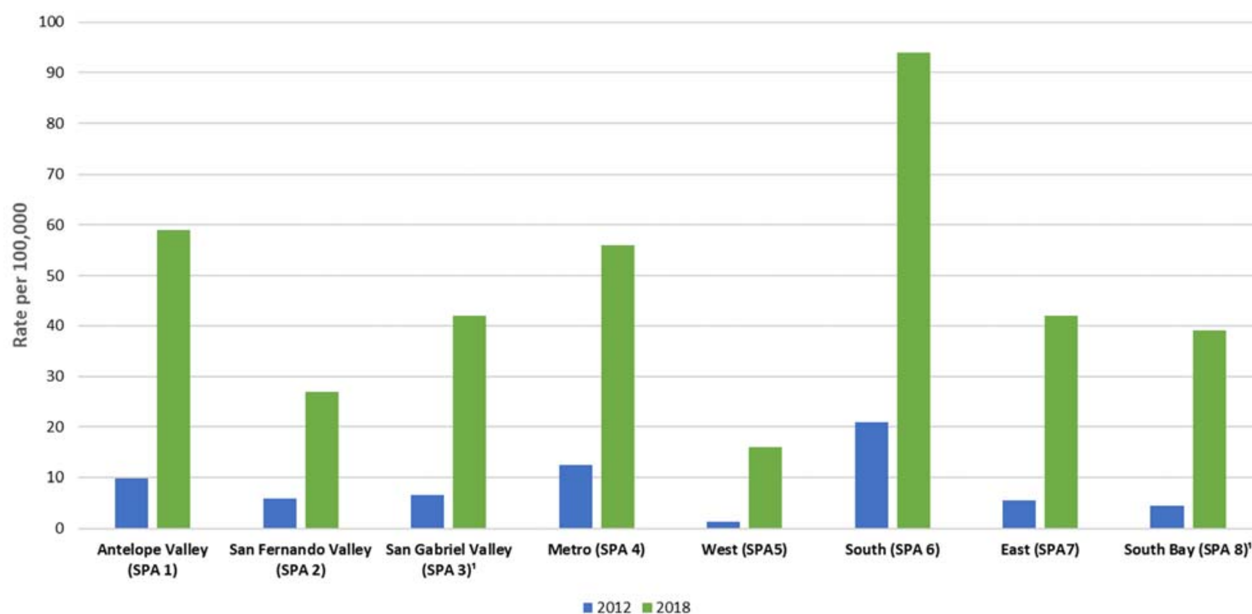
100,000 women, and Metro SPA 4, with 56 cases per 100,000 women, compared to the average LAC rate of 46 cases per 100,000 women ages 15-44 years.

Figure 5. Percentage Change in Female Syphilis Cases 2012-2018

Service Planning Area (SPA)	Female Syphilis Cases[1] 2012	Female Syphilis Cases[1] 2018	Percent Change 2012 to 2018
Antelope Valley (1)	8	50	+ 525%
San Fernando Valley (2)	27	123	+ 356%
San Gabriel (3)	22	142	+ 545%
Metro (4)	32	142	+ 344%
West (5)	2	24	+ 1100%
South (6)	50	229	+ 358%
East (7)	16	120	+ 650%
South Bay (8)	10	84	+ 740%
TOTAL[2]	173	924	+ 434%

[1] Includes female syphilis cases of reproductive age (15-44). [2] Includes cases with unknown SPA.

Figure 6. Rate of Syphilis among Women Ages 15-44 by Service Planning Area (SPA), LAC, 2012-18



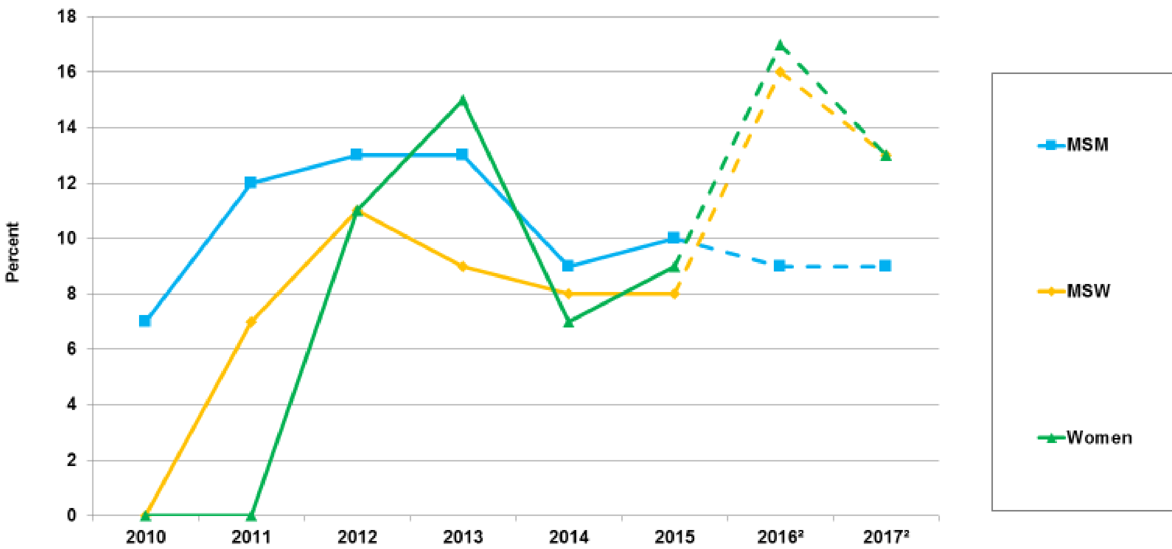
[1] SPA 3 cases do not include those in the City of Pasadena and SPA 8 do not include those in the City of Long Beach. Syphilis includes all cases staged as primary, secondary, early latent and late latent or unknown duration.[2] Total includes other and missing race.

Substance Use Disorders and Syphilis

While not directly a means of syphilis acquisition, substance use represents an important risk factor for syphilis. In a recently published Morbidity and Mortality Weekly Report, the CDC stated that a substantial percentage of the heterosexual syphilis transmission is occurring among persons who use substances (particularly methamphetamine), persons who inject drugs or have sex with persons who inject drugs, or

persons who use heroin.[v] The report highlighted that heterosexual syphilis and drug use are intersecting epidemics and that these overall trends were more acute on the west coast. In LAC, an increasing percentage of heterosexual persons with primary or secondary syphilis cases report methamphetamine use (Figure 7). During the past few years, up to two thirds of women who gave birth to babies with CS reported actively using substances (primarily methamphetamine) during pregnancy.

Figure 7. Percentage of Methamphetamine Use Among P&S Syphilis Cases by MSM, MSMW, and Women, LAC, 2010-2017[1]



[1]Primary & Secondary Syphilis cases with data on substance use in past 12 months. Excludes injection drug users. Data as of September 9, 2018.[2]2016-2017 data are provisional due to reporting delay. Source: Division of HIV and STD Programs

KEY FINDINGS FROM CS CASE REVIEWS

To better understand the missed opportunities and challenges associated with congenital syphilis cases in LAC, the DPH began conducting multidisciplinary morbidity and mortality (M&M) review boards in early 2018. These ongoing review boards provide an opportunity to closely examine each case of congenital syphilis and identify missed opportunities for CS prevention. While precise numbers vary slightly from year to year, there were some trends identified among women associated with congenital syphilis cases between 2016 and 2018, which are described below.

Clinical Findings:

- Approximately 60% of women received late (first prenatal visit in second or third trimester) (20%) or no prenatal care (40%);
- For those with early prenatal care, subsequent inconsistent prenatal care later contributed to low 3rd trimester screening;
- Almost 50% of the cases were identified by syphilis screening at delivery; of these, often women were discharged prior to the return of their syphilis test results;
- The mortality rate for CS was 9%, with two stillbirths and two neonatal deaths in both 2017 and 2018; and
- Two women in 2018 were diagnosed with both HIV and syphilis during pregnancy, with one infant being perinatally infected with HIV.

Demographics and Co-morbidities:

- Most cases occur primarily among Latina (60%) and African American (25%) women;
- Up to two-thirds of women reported active substance abuse during pregnancy, with methamphetamines alone being the most commonly report drug of choice (followed by polysubstance use of methamphetamine and heroin);
- Almost 30% of women had a history of arrest or incarceration;
- Between 10 and 20% of the women reported being homeless; and
- 30% or more of the infants with congenital syphilis were placed into the custody of the Department of Children and Family Services (DCFS) after birth.

Key contributors and opportunities for CS prevention

Three key factors appear to contribute to the growing CS crisis in LAC: the rising and **high prevalence of syphilis** in the general population, **suboptimal syphilis screening**, and **delayed or inconsistent prenatal care**.

Key Contributor: High prevalence of syphilis

In LAC, as syphilis cases continue to increase by up to 15% per year, there is a growing pool or reservoir of the infection locally. If the number of syphilis cases continues to increase at a high rate in LAC, it will be more likely that syphilis will be less concentrated and more generalized within the population. As the prevalence of syphilis infection in the overall population rise, so too will the rates among women of reproductive age. As seen in Figure **2**, the number of CS cases tracks closely with the number of syphilis cases in women of reproductive age.

GOAL 1: ROBUST SYPHILIS SCREENING AND TREATMENT FOR SYPHILIS IN AT-RISK POPULATIONS, INCLUDING WOMEN OF REPRODUCTIVE AGE AND PREGNANT WOMEN, WITHIN HEALTH CARE SETTINGS

Because syphilis infection can often be asymptomatic, screening is an important component of disease detection. When paired with timely treatment, this practice can reduce sexual transmission, prevent late-stage sequelae, and avert vertical transmission from mother to fetus for patients who become pregnant.[vi] Health care providers play a critical role in the control of syphilis given their access to patients and the fact that testing for and treatment of syphilis are two of the most effective ways to reduce future cases.

Key Contributor: Suboptimal syphilis screening

Despite rising syphilis rates in women, many women at risk may not be screened for the infection. Health care providers may not be fully aware of the extent to which syphilis is affecting their community and what local DPH clinical recommendations exist for congenital syphilis prevention. From the patient perspective, barriers to STD screening include cost, concerns about privacy, fear of judgement, and medical mistrust. [vii]

GOAL 2: INCREASE AWARENESS OF SYPHILIS AMONG WOMEN AT HIGHEST RISK WITH EXPANDED OPPORTUNITIES FOR TESTING IN NON-CLINICAL SETTINGS

To improve health outcomes in populations at risk for syphilis and CS, we must engage in activities that reduce barriers to information access, as well as screening and treatment. Culturally competent interventions should include appropriate messaging to those at risk, fostering community collaboration, and supporting the implementation of tailored intervention strategies for affected populations.

The need for new venues through which to identify and screen women for syphilis is high, and selection of setting should be guided by an understanding of how the women who are at highest risk of infection may be contacted. A recent California Department of Public Health analysis of women who birthed CS infants suggested the following as potential sites for future syphilis screening: programs for people with SUD, correctional facilities, and field outreach to homeless encampments.[viii]

Key Contributor: Delayed or inconsistent prenatal care

The most common picture painted by the DPH Morbidity & Mortality case reviews is that there are pregnant women in LAC who are at risk for syphilis who are not engaging in optimal prenatal care. A systematic review of studies examining women who do not seek prenatal care found that low valuation

of prenatal care was a common factor, second only to financial barriers.[ix] Fortunately, access to health care providers or health insurance was not noted as a significant barrier in LAC CS cases; this may be due to the fact that in California, all low-income pregnant women, regardless of their immigration status, are eligible for health care coverage through Medi-Cal for the duration of their pregnancy.

For many women, the daily stress, complications of life, and the powerful cravings and compulsions associated with substance use can result in prenatal care being a low priority.[x] Pregnant women with SUD may also fear the legal ramifications of their substance use, such as criminal prosecution or forcible removal of their children. In addition, perceptions of unfair treatment or disrespect are common among racial/ethnic minorities and have been associated with delayed care.[xi] Women in California and Louisiana involved in CS cases, interviewed by Jennifer Wagman and colleagues, shared significant mistrust of medical institutions, as summarized here[xii].

> *"Many pregnant women felt judged or as if providers were trying to rush them out, which created mistrust. Trepidations were most pronounced among active or recovered substance users, homeless women, undocumented immigrants, and women in violent relationships. Women commonly narrated fears of receiving a warrant or that child protection services would take their children away, causing some to evade prenatal care until birth."*

GOAL 3: ENHANCED CARE MODELS FOR VULNERABLE WOMEN

Appropriate and aggressive screening for syphilis is a critical intervention, but the health care system must evolve to better meet the needs of women challenged with multiple co-morbidities, such as SUD and homelessness. There is a need for disruptive innovation in health care and case management service models structured for pregnant woman in order to meet the needs of women experiencing such high levels of vulnerability, particularly women using methamphetamines.

Eliminating CS will require an intense focus on the three goals outlined above. Recommendations for specific partners to help achieve these goals are described and based on national best practices and lessons learned from other disease control efforts. However, to truly eliminate CS, we must address the upstream social, environmental and structural drivers that contribute to poor health outcomes in general, and syphilis infection. Absent these larger structural interventions to address the needs of and risks for women suffering from SUD, mental illness, and homelessness, congenital syphilis in LAC will be difficult to eliminate.

GOAL 1: ROBUST SCREENING AND TREATMENT FOR SYPHILIS IN AT-RISK POPULATIONS, INCLUDING WOMEN OF REPRODUCTIVE AGE AND PREGNANT WOMEN, WITHIN HEALTH CARE SETTINGS

Because syphilis infection can often be asymptomatic, screening is an important component of disease detection. When paired with timely treatment, this practice can reduce sexual transmission, prevent late-stage sequelae, and avert vertical transmission from mother to fetus for patients who become pregnant.[xiii] Health care providers play a critical role in the identification and control of syphilis given their access to patients and the fact that testing for and treatment of syphilis are two of the most effective ways to reduce future cases.

Primary Care and Family Planning Provider Recommendations

Primary care providers use their expertise on a range of conditions to a diverse array of patients and are therefore critical to any efforts to control congenital syphilis. Family planning clinics are ideal locations to implement aggressive syphilis screening due to their existing focus on delivering high quality sexual health care.

Aggressively screen all women of reproductive age for syphilis

Primary care and family planning providers should routinely ask sexual history questions to identify women who are at increased risk and may need more frequent testing. However, studies have shown that the frequency and consistency of sexual history taking among primary care providers is poor, with one study finding that during annual physical examinations only 58% of primary care physicians reported taking a sexual history.[xiv] As a result, DPH has moved away from risk-based syphilis screening recommendations to a universal screening recommendation that **all women ages 15 to 44 years be screened for syphilis at least once** and then more often based on risk.

The advantage of a more universal recommendation is that it is independent of providers taking a thorough sexual history, can be more readily normalized into clinical care, and more readily adopted and incorporated into order sets and clinical reminders in electronic health records.

Identify at-risk individuals for more aggressive syphilis screening

Based on analysis of syphilis patterns in LAC, the following groups of people may benefit from additional syphilis testing:

Women

- Women with a new sexual partner since her last syphilis test;
- Women whose sexual partner(s) may have other partners, especially male partners;
- Women with a substance use disorder, particularly if they inject drugs or use methamphetamines;
- Women who exchange sex for money, shelter, or other things of value to them;
- Women who have been involved in the criminal justice system;
- Women experiencing homelessness or housing instability; and
- Pregnant women who access prenatal care late or not at all.

Men

- Men who have sex with men;
- Men with a substance use disorder, particularly if they inject drugs or use methamphetamines;
- Men who exchange sex for money, shelter, or other things of value to them;
- Men with a diagnosis of HIV or risk factors for HIV acquisition; and
- Men who have been involved in the criminal justice system.

Address Upstream Factors

While prenatal care is universally covered for all pregnant women in California, obstacles to establishing and maintaining prenatal care may arise from a host of factors of which substance use as well as, unstable housing, incarceration, and poverty play roles. Women who may become pregnant in the next year who screen positive for substance use disorder (SUD) and/or mental health issues should be referred for appropriate care. Women who are at risk for unintended pregnancy who are either not using contraception or who are not satisfied with their current method should be offered or referred for the full spectrum of contraceptive options, including long acting reversible contraception. Health care providers should consider using One Degree or other community-based resources for health and wellness support for women who are pregnant or desiring pregnancy who are experiencing unstable housing, food insecurity, or other wellness needs.

Public Health Support for Primary Care and Family Planning Providers

Public Health Detailing

Many providers are not aware of the recent trends in syphilis in the County and therefore do not recognize the need for increased screening. In the recent past, syphilis rates in women were so low that many health care providers, including some family planning providers, did not test regularly for syphilis or they considered syphilis a "non-issue" for women in LAC.

To address this knowledge gap, in 2018, DPH launched a syphilis focused provider educational campaign to raise awareness of rising congenital syphilis and syphilis cases in women. An accompanying "Syphilis in Women Action Tool Kit" was developed with information on syphilis screening, staging and treatment as well as mandatory reporting guidelines, and general STD screening and treatment.[xv] This intervention was a success with a notable increase in provider self-reported use of syphilis screening; of the obstetricians included, self-reported use of third trimester screening increased from 23% at baseline to 71%.

While time and resource intensive, public health detailing has demonstrated efficacy in increasing provider knowledge and changing clinical practice. It is also a great way to reach health care providers in small or solo practice, who may not hear about new trends or clinical guideline changes as quickly as their counterparts working in larger groups or hospital-based practices. (For more information, see Appendix A).

STD Consultation Line

Syphilis diagnosis, staging, and treatment can be challenging for even the most experienced clinician. For this reason, DPH maintains an STD Consultation warmline for health care providers that operates Monday-Friday, 8a-5pm, at (213) 368-7441. Public health nurses with expertise in syphilis are available and can

query the LAC STD database to identify patients' prior syphilis lab results and treatment information to work with providers to ensure accurate staging and treatment for their patients.

Penicillin Delivery Program

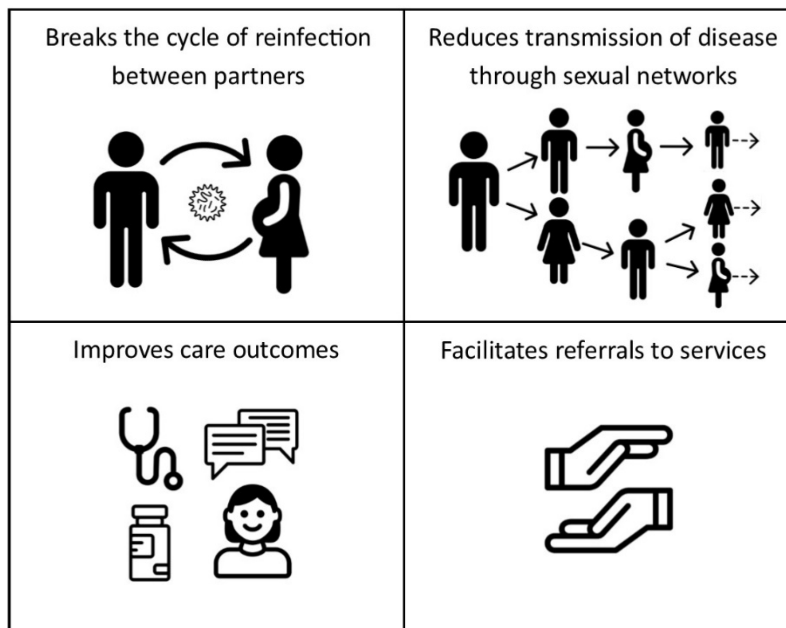
Unfortunately, many providers, particularly those working in small or solo practice, face challenges when attempting to provide treatment for patients with syphilis. The recommended treatment, penicillin, can be expensive and receiving reimbursement from health plans is challenging. In these cases, patients can be referred to one of the DPH's 11 STD clinics for treatment. Clinic locations and schedules can be found at http://publichealth.lacounty.gov/chs/Docs/ClinicSchedule.pdf.

Case Management and Partner Treatment

In LAC, all early (or infectious) cases and most late cases of syphilis, especially among women of reproductive age, are prioritized and assigned for case management. DPH staff work with the client and their provider to ensure that the client is treated for syphilis in a timely manner and referred for other services as needed. In addition, clients are asked to provide the names of their sexual partners with the idea that the DPH staff will confidentially notify them and ensure they are tested and treated for syphilis. This core public health activity, referred to as "partner services" is an evidence based public health practice that can interrupt the chain of disease transmission and is a critical component of an effective congenital syphilis prevention strategy.

Health care providers can increase the yield of "partner services" activities by letting their patients know at the time of syphilis diagnosis that they may be contacted by the health department and that any information they give to DPH staff will only be used confidentially to identify and treat people exposed to syphilis.

Figure 8. Partner Services and Congenital Syphilis



Other DPH educational resources

DPH regularly updates its website to include updated resources for providers and consumers. For providers, there is an on-demand webinar on Syphilis in Women and Congenital Syphilis available that provides free continuing medical education (CME) credits. In addition, DPH physicians with expertise in STDs are available to speak at staff meetings, in-person continuing medical education meetings, and "grand rounds" in hospitals and academic health centers.

Emergency Departments and Urgent Care Provider Recommendations

Emergency departments are a common location for patients to seek care for sexually transmitted diseases. In addition, some pregnant women who may not be in regular prenatal care can present at Emergency Departments (ED) or Urgent Care centers for pregnancy related or unrelated issues. As such, ED providers are important partners in identifying and treating cases in pregnant women and syphilis in women who do not receive health care services elsewhere.

Screening pregnant women for syphilis

It is a best practice for ED providers to confirm the syphilis status of all pregnant patients prior to discharge, either via documented test results from earlier in pregnancy, or a syphilis test in the ED if documentation is unavailable.[xvi] California Senate Bill (SB) 1152, approved in September 2018, requires that hospitals provide or refer any homeless patients they see for communicable disease testing in accordance with their local health department. In March 2019, LAC DPH's Health Officer issued a letter to local hospitals with specific screening requirements, which includes screening all homeless pregnant women for syphilis and linking them to prenatal care.[xvii]

Presumptive treatment for patients unlikely to receive follow-up care

Given the rapid turnover of patients in the ED, DPH recommends that women who test positive on one syphilis serologic test (which could include a STAT RPR and/or the point of care syphilis health check test with turnaround time of 8-15 minutes respectively) and are unlikely to receive follow-up care be treated empirically (with Benzathine penicillin G 2.4 million units IM x 1) while confirmatory syphilis serology results are pending. While syphilis diagnosis generally requires confirmatory testing, DPH believes that for these cases, the benefits of presumptive treatment far outweigh any negligible risks.

Address Upstream Factors

While prenatal care is universally covered for all pregnant women in California, obstacles to establishing and maintaining prenatal care may arise from a host of factors of which substance use as well as, unstable housing, incarceration, and poverty play roles. Women who may become pregnant in the next year who screen positive for substance use disorder (SUD) and/or mental health issues should be referred for appropriate care. Women who are at risk for unintended pregnancy who are either not using contraception or who are not satisfied with their current method should be offered or referred for the full spectrum of contraceptive options, including long acting reversible contraception. Health care providers should consider using One Degree or other community-based resources for health and wellness support for women who are pregnant or desiring pregnancy who are experiencing unstable housing, food insecurity, or other wellness needs.

Public Health Support for ED and Urgent Care Providers

STD Consultation Line

Syphilis diagnosis, staging, and treatment can be challenging for even the most experienced clinician. For this reason, DPH maintains an STD Consultation warmline for health care providers that operates Monday-Friday, 8a-5pm, at (213) 368-7441. Public health nurses with expertise in syphilis are available and can query the LAC STD database to identify patients' prior syphilis lab results and treatment information to work with providers to ensure accurate staging and treatment for their patients.

Technical Assistance

DPH provides technical assistance to EDs related to syphilis screening and treatment and to ensure their compliance to SB 1152. In cases where syphilis may have been detected earlier in a pregnant woman had she been screened in the ED, DPH will engage with the individual ED leadership to review their syphilis screening policies and protocols.

Obstetrician Recommendations

As the health care providers most likely to care for pregnant women, obstetricians and prenatal care providers have a unique role in identifying occult cases of syphilis among pregnant women.

Screen women during early third trimester and at delivery

In 2018, DPH began recommending that all pregnant women be screened for syphilis during the first trimester (or at their initial prenatal visit), and re-screened early in the third trimester (28-32 weeks) and at delivery. A detailed explanation of the rationale for these recommendations can be found in Appendix B. The California chapter of American College of Obstetrics and Gynecology (ACOG) is considering adoption of upcoming California Department of Public Health draft recommendations for universal third-trimester screening; this is important because many providers cite the ACOG guidelines as their trusted sources for the screening and treatment of pregnant women with syphilis.[xviii] This policy shift will help accelerate CS prevention efforts statewide.

Presumptive treatment in for patients unlikely to receive follow-up care

DPH recommends that pregnant or post-partum women who test positive on one syphilis serologic test and are unlikely to receive follow-up care be treated empirically (with Benzathine penicillin G 2.4 million units IM x 1) while confirmatory syphilis serology results are pending. While syphilis diagnosis generally requires confirmatory testing, DPH believes that for these cases, the benefits of presumptive treatment outweigh any negligible risks.

Address Upstream Factors

While prenatal care is universally covered for all pregnant women in California, obstacles to establishing and maintaining prenatal care may arise from a host of factors of which substance use as well as, unstable housing, incarceration, and poverty play roles. Women who may become pregnant in the next year who screen positive for substance use disorder (SUD) and/or mental health issues should be referred for appropriate care. Women who are at risk for unintended pregnancy who are either not using contraception or who are not satisfied with their current method should be offered or referred for the full spectrum of contraceptive options, including long acting reversible contraception. Health care providers should consider using One Degree or other community-based resources for health and wellness support for women who are pregnant or desiring pregnancy who are experiencing unstable housing, food insecurity, or other wellness needs.

Public Health Support for Obstetricians

STD Consultation Line

Syphilis diagnosis, staging, and treatment can be challenging for even the most experienced health care provider. For this reason, DPH maintains an STD Consultation warmline for health care providers that operates Monday-Friday, 8a-5pm, at (213) 368-7441. Public health nurses with expertise in syphilis are available and can query the LAC STD database to identify patients' prior syphilis lab results and treatment information to work with providers to ensure accurate staging and treatment for their patients.

Penicillin Delivery Program

Unfortunately, many providers, particularly those working in small or solo practice, face challenges when attempting to provide treatment for patients with syphilis. The recommended treatment, penicillin, can be expensive and receiving reimbursement from health plans is challenging. Patients can be referred to the DPH STD clinics for treatment (clinic locations and hours available here: http://publichealth.lacounty.gov/chs/Docs/ClinicSchedule.pdf), but it often makes more sense for the patient to receive treatment at her health care provider's office. On a case by case basis, DPH can supply penicillin to the provider at no cost for pregnant persons and their partners, with the goal of preventing congenital syphilis. Providers are encouraged to call the STD Consultation Line for more information.

Technical Assistance

The Comprehensive Perinatal Services Program (CPSP), a Title V program, provides a wide range of culturally competent services to Medi-Cal pregnant women, from conception through 60 days postpartum, to improve maternal and infant health outcomes. Given that half births in California occur to women whose primary medical insurance is Medi-Cal, CPSP providers are ideal for the new syphilis screening recommendations.[xix] DPH is working with the local Maternal Child Adolescent Health (MCAH) Program to educate CPSP programs on appropriate syphilis screening and treatment by these providers.

Staff Meetings and Grand Rounds

Recurring staff meetings, in-person continuing medical education meetings, and "grand rounds" in hospital and academic health centers present an opportunity for DPH staff to reach many providers at one time. In 2018, DPH conducted 24 presentations for 2170 health care providers in the top 21 CS birthing hospitals. DPH will continue to offer to present at Grand Rounds or other staff meetings for Obstetrics, Infectious Disease, Emergency Medicine, Pediatrics, and Internal Medicine departments at birthing hospitals.

In 2020, DPH will engage with all birthing hospitals that have been involved with congenital syphilis cases to survey their syphilis screening policies and protocols. DPH will subsequently provide technical assistance to each birthing hospital in LAC to encourage more rapid syphilis screening algorithms or use of rapid point-of-care syphilis testing for all pregnant women at delivery to improve timely detection and treatment of women and infants with syphilis prior to their discharge from the hospital.

Website/Webinars with CME

DPH regularly updates its website to include updated resources for providers and consumers. For providers, there is an on-demand webinar on Syphilis in Women and Congenital Syphilis available that provides free continuing medical education (CME) credits.

Birthing Hospital Recommendations

Birthing hospitals may be the only places where some pregnant patients receive medical care. Of the CS cases in Los Angeles County in 2018, over 40% were born to pregnant women who had received no prenatal care during that pregnancy. Given that LAC is designated as an area of high syphilis morbidity, it is crucial that birthing hospitals screen all pregnant women for syphilis upon delivery. Screening at delivery does not prevent CS, but it enables detection of cases and allows for prompt evaluation and treatment of the infant to prevent further sequelae. It also allows for the identification and treatment of women with syphilis to potentially prevent CS cases in future pregnancies.

Confirm syphilis status of all women and newborns prior to discharge

No newborn should leave the hospital without provider review of maternal serologic status during pregnancy, and preferably, review of maternal status at delivery. Timely syphilis serologic testing, either through rapid point-of-care syphilis testing or expedited syphilis laboratory testing, is a critical tool that should be pursued to reduce delays in discharge.

Presumptive treatment in for patients unlikely to receive follow-up care

DPH recommends that pregnant or post-partum women who test positive on one syphilis serologic test (which could include a STAT RPR and/or the point of care syphilis health check test with turnaround time of 8-15 minutes respectively) and are unlikely to receive follow-up care be treated empirically (with Benzathine penicillin G 2.4 million units IM x 1) while confirmatory syphilis serology results are pending. While syphilis diagnosis generally requires confirmatory testing, DPH believes that for these cases, the benefits of presumptive treatment far outweigh any negligible risks. For clinical questions regarding treatment of syphilis, please call the STD Consultation Line.

Report all cases of syphilis to DPH within one working day and preferably before discharge

Providers and Infection Control Personnel are asked to call the STD Consultation Line as soon as a possible syphilis case in a pregnant or post-partum woman or infant has been identified. DPH maintains an STD Consultation warmline for hospitals that operates Monday-Friday, 8a-5pm, at (213) 368-7441, public health nurses with expertise in syphilis are available and can query the LAC STD database to identify patients' prior syphilis lab results and treatment information. Discharge planning with DPH is optimal if the patient is still hospitalized, a DPH nurse can assist in real time by providing all necessary case management and treatment recommendations prior to hospital discharge.

Test any woman who has experienced a stillbirth for syphilis

Any woman who delivers a stillborn (fetal demise after 20 weeks gestation) should be evaluated for syphilis. In each of the past few years, LAC has experienced two cases of syphilitic stillbirths; it is possible that more cases were missed because the mother and infant were not tested for syphilis.

Screen for SUDs and Link women to SUD services, including Syringe Exchange Programs

Given the co-occurring conditions of SUD and syphilis infection in heterosexual men and women, identification, referral and linkage of pregnant and post-partum patients to SUD treatment and syringe exchange programs is critical. In 2020, DPH will explore models for supporting this work, which may include a roving SUD treatment counselor to serve as a resource for birthing hospitals in LAC.

Public Health Support for Birthing Hospitals

STD Consultation Line

Syphilis diagnosis, staging, and treatment can be challenging for even the most experienced health care provider. For this reason, DPH maintains an STD Consultation warmline for health care providers that operates Monday-Friday, 8a-5pm, at (213) 368-7441. Public health nurses with expertise in syphilis are available and can query the LAC STD database to identify patients' prior syphilis lab results and treatment information to work with providers to ensure accurate staging and treatment for their patients.

Technical Assistance

Of the over 140 hospitals in LAC, twenty have been identified as a hospital where infants diagnosed with congenital syphilis have been delivered in the past 4 years. DPH staff have had success in establishing strong relationships with these birthing facilities to implement recommendations for optimal clinical care of women and infants with syphilis. **Figure 9** lists hospitals in LAC that have experienced between one and fourteen cases since 2014.

Figure 9. Birthing Hospitals in LAC with Highest Cases of Congenital Syphilis Cases by Service Planning Area, 2013-2018

SPA				
SPA 1 & 2 Antelope and San Fernando Valleys	Providence Tarzana Medical Center	Providence Holy Cross Hospital	Valley Presbyterian	Antelope Valley Medical Center
SPA 3 & 4 San Gabriel and Metro	Queen of the Valley Hospital	LAC/USC Medical Center	Hollywood Presbyterian Hospital	White Memorial Medical Center
	Kaiser West Los Angeles	Good Samaritan Hospital	Pomona Valley Hospital	San Gabriel Valley Medical Center
	Monterey Park Hospital	Huntington Hospital	Citrus Valley	Garfield Medical Center
SPA 5 & 6 West and South	St. Francis Medical Center	Harbor UCLA Medical Center		
SPA 7 & 8 East and South Bay	Centinela Hospital Medical Center	St. Mary Medical Center		

Staff Meetings and Grand Rounds

Recurring staff meetings, in-person continuing medical education meetings, and "grand rounds" in hospital and academic health centers present an opportunity for DPH staff to reach many providers at one time. In 2018, DPH conducted 24 presentations for 2170 health care providers in the top 21 CS birthing hospitals. DPH will continue to reach out to Obstetrics, Infectious Disease, Emergency Medicine, Pediatrics, and Internal Medicine departments at birthing hospitals to offer to present at Grand Rounds or other staff meetings. In 2020, DPH will engage with all birthing hospitals that have been involved with congenital syphilis cases to survey their syphilis screening policies and protocols. DPH will subsequently

provide technical assistance to each birthing hospital in LAC to encourage more rapid syphilis screening algorithms or use of rapid point-of-care syphilis testing for all pregnant women at delivery to improve timely detection and treatment of women and infants with syphilis prior to their discharge from the hospital.

GOAL 2: INCREASED AWARENESS OF SYPHILIS AMONG WOMEN AT HIGHEST RISK WITH EXPANDED OPPORTUNITIES FOR TESTING IN NON-CLINICAL SETTINGS

To improve health outcomes in populations at risk for syphilis and CS, we must engage in activities that reduce barriers to information access, as well as screening and treatment. The need for new venues through which to identify and screen women for syphilis is high, and selection of setting should be guided by an understanding of how the women who are at highest risk of infection may be contacted. A recent California Department of Public Health analysis of women who birthed CS infants suggested the following as potential sites for future syphilis screening: programs for people with SUD, correctional facilities, and field outreach to homeless encampments.[xx]

SUD Treatment and Prevention Provider Recommendations

In the U.S., among women and men who have sex with women with a diagnosis of primary and secondary syphilis, reported use of methamphetamine, injection drugs and heroin more than doubled between 2013-2017.[xxi] LAC has seen a notable increase in reported methamphetamine drug use among heterosexual men and women diagnosed with syphilis in LAC (Figure 9). In 2018 in LAC, 57% of women involved in CS cases had evidence of some type of substance use, with methamphetamine being the most common. Given the co-occurring conditions of SUD and syphilis infection in heterosexual men and women, SUD prevention and treatment providers are critical partners to address recent increases in heterosexual syphilis and reduce congenital syphilis cases.

Syringe Exchange Programs (SEPs) offer people who inject drugs (PWID) new, clean syringes, allow for safe disposal of dirty, used syringes, and provide education to promote safer ways of using drugs. DPH funds 6 SEP providers who currently operate 12 sites across LAC offering a range of harm reduction services beyond clean syringe exchange. These include overdose education and naloxone as well as condoms. SEPs have the potential to connect clients to important health services such as HIV and STD screening and treatment, substance abuse counseling and therapy, drug detoxification and treatment services, and various other medical and health services.

Incorporate key STD prevention best practices into SUD Service Provision

- Distribute or make available condoms at the point of service.
- Making routine STD testing available to all patients, either through referral or onsite testing, when feasible.
- Institute "one-key question" to improve the quality of care provision to women in SUD treatment who are of reproductive age through early and recurrent identification of their reproductive health goals.
- Ensuring that all women of reproductive age (15-44 years) are offered syphilis screening, either onsite when feasible, or by referral.
- Ensure referral to prenatal care for pregnant women within 7 days of the date that pregnancy status was documented.

Public Health Support for SUD Prevention and Treatment Providers

DPH can work with SUD providers to ensure that all existing and new staff members are offered basic syphilis education that includes, prevention (including the basics of syphilis transmission and the role of condom use), screening for syphilis (screening guidelines), and potential locations to refer clients for STD

screening and treatment. DPH also supports a robust condom distribution program which can include SUD providers. DPH is also able to provide local data to agencies for them to better display the distribution and concentration of syphilis in their service area.

Correctional Facility Recommendations

The Los Angeles County jail system is one of the largest in the world and has an average daily inmate population of 17,000; 2,000 are women housed at the Century Regional Detention Center (CRDF). Eighty-three percent of the women booked into CRDF are of childbearing age (44 years and younger).[xxii]

In LAC, a significant number of pregnant women with syphilis have a history of arrest, often around the time when they likely acquired syphilis. Between 2013 and 2015, of 239 pregnant women with syphilis, 34% had a history of arrest, and 25% of women with early syphilis had been arrested in the previous year.[xxiii] In 2017, forty-six percent of the LAC's CS cases were born to mothers with a history of arrest or incarceration in the LAC jail system.

Implement LAC syphilis screening recommendations

Given the data above, expanded syphilis screening of more women by LAC Correctional Health Services could have a tremendous impact with regards to syphilis case identification and potential congenital syphilis prevention. Pregnant women are already screened for syphilis routinely and repeatedly while in custody, but women of reproductive age do not routinely or universally get screened. Jail medical services are often juggling many competing demands; considering this, one relatively low-cost intervention would be to incorporate syphilis testing into commonly used order sets within the electronic health record (EHR). Another approach would be bundled testing, meaning that a syphilis test order is added on when any woman gets an order for a blood draw for any reason.

Presumptive treatment in for patients unlikely to receive follow-up care

DPH recommends that all incarcerated women who test positive on one syphilis serologic test and are unlikely to receive follow-up care be empirically (with Benzathine penicillin G 2.4 million units IM x 1) while confirmatory syphilis serology results are pending. While syphilis diagnosis generally requires confirmatory testing, we believe that for these cases, the benefits of presumptive treatment outweigh any negligible risks. For clinical questions regarding treatment of syphilis, please call the STD Consultation Line.

Address Upstream Factors

While prenatal care is universally covered for all pregnant women in California, obstacles to establishing and maintaining prenatal care may arise from a host of factors of which substance use as well as, unstable housing, incarceration, and poverty play roles. Women who may become pregnant in the next year who screen positive for substance use disorder (SUD) and/or mental health issues should be referred for appropriate care. Women who are at risk for unintended pregnancy who are either not using contraception or who are not satisfied with their current method should be offered or referred for the full spectrum of contraceptive options, including long acting reversible contraception. Health care providers should consider using One Degree or other community-based resources for health and wellness support for women who are pregnant or desiring pregnancy who are experiencing unstable housing, food insecurity, or other wellness needs.

Public Health Support for Correctional Health Providers

DPH will continue to work with correctional health partners to implement rapid syphilis testing more universally throughout the housing pods in CRDF and explore offering testing in the jail's Inmate Reception

Center. Given the strong association among pregnant women with syphilis and the correctional system, in 2018, DPH partnered with the LAC Correctional Health Services to initiate a syphilis screening pilot using a newly FDA approved rapid syphilis test to offer point-of-care screening to women of child-bearing age incarcerated at CRDF. Between December 2018 and September 2019, DPH staff conducted approximately 1049 rapid syphilis tests with incarcerated women, and nineteen individuals were identified as having an active syphilis infection requiring treatment. The overall positivity of 1.8% indicates that this is a population at high risk for syphilis. The pilot proved that it was feasible to offer rapid syphilis testing in the CRDF pods and the women diagnosed with syphilis represent 19 potential cases of congenital syphilis averted. The testing process was well-received by the inmates and almost no women refused the opportunity to test.

Homeless Service Provider Recommendations

Homelessness is considered a risk factor for syphilis in Los Angeles County. In 2017, 27% women involved in CS cases reported homelessness. However, due to inconsistent data collection on housing status, the number who experience homelessness and housing instability is possibly higher.

Expand opportunities to pair syphilis testing with homeless service provision

Field outreach, testing, and care services can be an effective intervention to effectively locate and serve this population. Persons experiencing unstable housing can be particularly hard to reach via traditional testing and treatment methods that rely on utilization of the brick-and-mortar health care system. Persons experiencing homelessness not only have competing needs, but they may experience higher rates of medical mistrust and may be less willing to seek services in a traditional clinic setting.[xxiv-xxv] Homeless women may also experience a higher vulnerability to STDs that may relate to comorbid mental illness, SUD, or the need to engage in transactional or survival sex.[xxvi-xxvii] In addition, day-to-day concerns specific to individuals experiencing homelessness may affect their engagement in care; some homeless clients have reported reluctance to leave their encampments for fear of losing their 'spot' or having their belongings stolen.[xxviii] These considerations highlight the importance of incorporating syphilis testing into existing health care of social services provided by organizations with expertise and cultural competence in serving people experiencing homelessness.

Address Upstream Factors

While prenatal care is universally covered for all pregnant women in California, obstacles to establishing and maintaining prenatal care may arise from a host of factors of which substance use as well as, unstable housing, incarceration, and poverty play roles. Women who may become pregnant in the next year who screen positive for substance use disorder (SUD) and/or mental health issues should be referred for appropriate care. Women who are at risk for unintended pregnancy who are either not using contraception or who are not satisfied with their current method should be offered or referred for the full spectrum of contraceptive options, including long acting reversible contraception. Health care providers should consider using One Degree or other community-based resources for health and wellness support for women who are pregnant or desiring pregnancy who are experiencing unstable housing, food insecurity, or other wellness needs.

Public Health Support for Homeless Service Providers

A few initial pilot DPH field outreach and testing efforts to homeless women of reproductive age have been successful in locating, testing, and in some instances, even treating individuals in the field. Given the varied and sometimes siloed outreach activities taking place for homeless individuals in LAC, DPH has and will continue to partner with existing and established homeless or housing organizations, such as Los Angeles Homeless Service Authority (LAHSA), LA Family Housing, and Housing for Health, to identify and locate pregnant women and women of reproductive age at risk for syphilis. Field staff from these organizations often have existing relationships with clients that can be critical to establishing trust and encouraging client engagement with DPH staff.

Going forward, DPH will work with county partners to enhance coordination of field outreach and testing efforts to highly impacted populations, specifically women of reproductive age and pregnant women experiencing homelessness. This will include offering core public health services, such as STD and HIV

testing, vaccine administration, health education information, harm reduction tools (e.g., condoms, syringe exchange, medication assisted treatment for opioid use), and family planning and prenatal care services. These individuals will then be linked to care or will directly be offered services in the field. Syphilis testing will be incorporated into clinical outreach to homeless individuals for tuberculosis screening required for admission to shelters in the Metro and South regions of LA. DPH Clinic Services will also add syphilis screening for pregnant women in the Skid Row area at the SPA 4 satellite clinic which currently also offers TB evaluation. In addition, DPH will explore collaborating with community clinics or Federally Qualified Health Centers (FQHCs) that have existing homeless health services and offer rapid syphilis test kits to those organizations to screen their clients.

GOAL 3: ENHANCED CARE MODELS FOR WOMEN EXPERIENCEING INCREASED VULNERABILITY

Appropriate and aggressive screening for syphilis is a critical intervention, but the health care system must evolve to better meet the needs of women challenged with multiple co-morbidities, such as SUD and homelessness. Analysis of LAC CS cases have demonstrated an ongoing need for improving uptake of early prenatal care and removal of barriers to prenatal care if syphilis screening recommendations are to have their greatest impact. Prior poor experiences with the health care system or other institutions, in part informed by well-documented implicit biases and stigma of both women with SUD and women of color, result in delays in seeking or avoidance of health care services. [x-xii]

Prenatal Care Provider Recommendations:

Explore alternative models of prenatal care to meet the needs of patients. Organizations across the County should work together to explore and implement models of prenatal and women's health programs which are patient-centered and accommodate the unique needs of marginalized women. Despite the growing homeless population and increased resources for programs that prioritize pregnant women and families, the health care and social service systems remain fragmented and uncoordinated. The following are examples of alternative models that may better serve vulnerable women.

- *"MAMA's Neighborhood" program.* One promising model in LAC is that developed by the Department of Health Services. Their "MAMA's Neighborhood" program is a health care and parent support program that is particularly focused on assisting pregnant women experiencing medical challenges, behavioral health conditions, or complex, stressful life circumstances (e.g., homelessness, incarceration). In MAMA's Neighborhood, the frequency of home, community, and clinic-based support is customized to parents' needs.
- *"Roving OB Team."* For homeless pregnant women who have experienced severe trauma or for other reasons will not engage in traditional health or social services, another possible approach may include a "roving OB team," such as that developed recently by Zuckerberg San Francisco General Hospital's Obstetrics department.[xxix] Stated in October 2018, "Project Lily" has served 27 pregnant patients experiencing housing insecurity, active SUD, and/or mental illness. A team of an obstetrician, prenatal mental health provider, and case worker together offer patient-centered street-based prenatal care, with the goal of building trust and ultimately bringing the patient into a clinic for an ultrasound and more traditional medical care. While likely costly, such programs are a potentially effective way to offer essential health care services to women who would otherwise not receive care and are at high risk for poor health outcomes.

Enhance prenatal case management home visitation programs to meet the needs of more vulnerable patients. In LAC, there are many programs the focus on improving health outcomes for babies and mothers. These include many home visitation programs such as the Nurse Family Partnership and those conducted by First 5 LA and associates. While these well-studied interventions are successful in certain populations, it is less clear whether they are well-suited to the needs of women with active SUD, mental illness, or experiencing homelessness. These programs not only rely on relatively prescribed protocols, but they are also based on the assumption that a woman is stably housed. In order to meet the different needs of women experiencing vulnerability, modified and flexible case management programs are important.

Public Health Support to Prenatal Care Providers

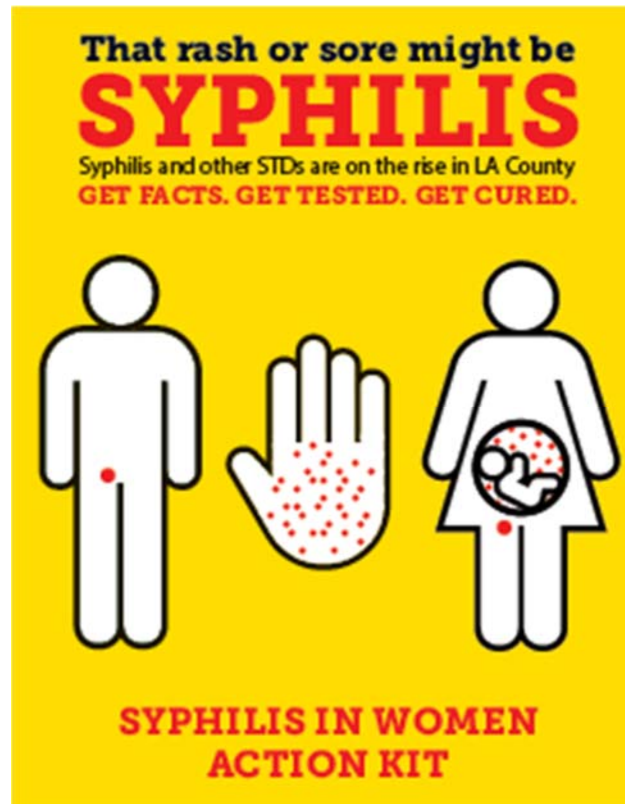
The DPH directly provides prenatal home visitation programs as well as coordinates with other county agencies, such as First 5 LA, who provide specialized programs for pregnant women and new mothers. In its coordinating role, DPH can bring relevant issues of public health importance to the attention of members of the collaborative. DPH will continue to partner with these programs to ensure that syphilis screening recommendations have been incorporated into nursing protocols and trainings.

CONCLUSIONS

The elimination of congenital syphilis as a public health problem in Los Angeles County is possible. The building blocks for CS prevention in LAC are here but dramatic enhancements are necessary. Given the complex intersection of syphilis with many other social determinants of health, efforts to reduce CS will require more than interventions focused on maternal care and should include reaching women in broad and diverse non-clinical settings. In addition, a reduction in the prevalence of syphilis in reproductive age women is a key upstream component, so simultaneous control of infectious syphilis in the general population, particularly among men is also necessary. However, absent larger structural interventions to 1) improve uptake of early prenatal care and removal of barriers to prenatal care and 2) to identify, prevent and address the needs of women suffering from SUD, mental illness, and homelessness, the congenital syphilis epidemic in LAC is likely to continue or worsen.

APPENDIX A: PUBLIC HEALTH DETAILING KEY FINDINGS

Public Health Detailing



Public Health Detailing (PHD) is a promising intervention used by local health departments to effectively communicate with health care providers about new or best practices. Like academic detailing, public health detailing builds on some of the techniques used by medical industry representatives (such as pharmaceutical representatives) to gain access to health care providers for a brief encounter and tutorial, and to advance key public health messages. New York City has a long history of PHD for a range of clinical campaigns, including colon cancer screening, tobacco cessation, and HIV pre-exposure prophylaxis (PrEP).[xxx] In 2017, LAC launched its first PHD campaign, which was focused on PrEP for HIV prevention. In 2018, DPH built on the success of the first effort by creating a first of its kind syphilis focused campaign to raise awareness of rising congenital syphilis and syphilis cases in women. An accompanying "Syphilis in Women Action Kit" was developed with information on syphilis screening, staging and treatment as well as mandatory reporting guidelines, and general STD screening and treatment.[xxxi]

The first round of PHD, conducted between May and July 2018, focused on two groups of health care providers: 1) Medi-Cal Comprehensive Perinatal Services Program providers, and 2) health care providers identified through LAC's STD database based on their diagnosis of at least one case of syphilis in a woman in the past year. Four trained and experienced representatives of the LAC DPH completed visits with health care providers 795 times within a six-week period (432 were initial visits and 363 were follow-up visits within 4-6 weeks of the initial visit). There was a notable increase in provider self-reported knowledge of recent LAC syphilis trends and screening guidelines; most significantly, self-reported use of syphilis screening for their patient population also increased at the follow-up visit. Of the obstetricians who completed follow-up in this phase, the self-reported use of third trimester screening increased from 23% at baseline to 71% after receiving detailing.

In the second phase of PHD, which was conducted between September and December of 2018, the detailing representatives reached out to primary care and urgent care providers in high syphilis morbidity areas of LAC. They completed 934 total provider visits, including 588 initial and 348 follow-up visits. Findings from the second phase were like the first phase, except that these providers reported lower baseline knowledge of trends and guidelines. Of the OB providers who completed follow-up in this phase, the self-reported use of third trimester screening increased from 23% at baseline to 71% after receiving detailing.

Figure 10. Providers Reporting 3rd Trimester Screening between 28-32 weeks

Providers Reporting 3rd Trimester Screening between 28-32 weeks[1]

COUNTY OF LOS ANGELES Public Health

Figure 3A 1st Round :CPSP†/Surveillance*
(n=220 initial; n=222 follow-up)

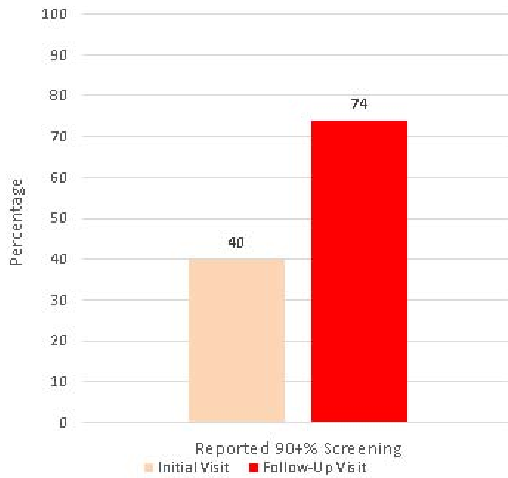
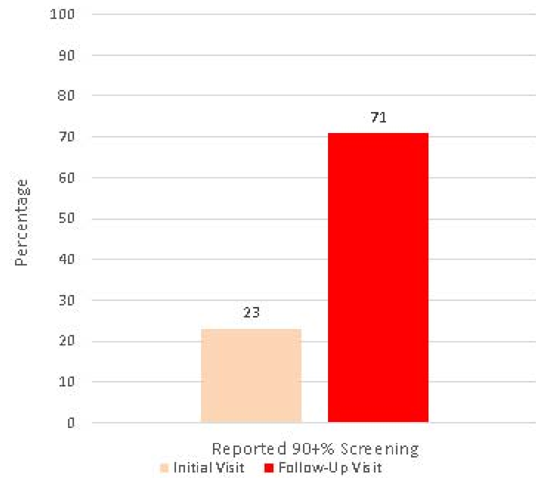


Figure 3B: 2nd Round: High Morbidity Zip Codes††/Surveillance **
(n=93 initial; n=73 follow-up)



1.Data from PHD Field Reports ; † Comprehensive Perinatal Service Program Providers; *Dx a case of syphilis in a female in 2016 or mother of CS case 2014-2016;
†† Purchased list of health care providers in high syphilis morbidity zip codes; **Dx a case of syphilis in a female in 2017-2018 and providers not reached in 1st round

While time and resource intensive, this intervention has demonstrated efficacy in increasing provider knowledge and changing clinical practice. It is also a great way to reach health care providers in small or solo practice, who may not hear about new trends or clinical guideline changes as quickly as their counterparts working in larger groups or hospital-based practices. If funding allows for additional PHD campaigns, DPH will target providers caring for women of child-bearing age in vulnerable populations. This includes providers who care for people with substance use disorders, the criminal justice-involved and homeless individuals.

APPENDIX B: RATIONALE FOR INCREASED SYPHILIS SCREENING IN PREGNANT WOMEN AND WOMEN OF REPRODUCTIVE AGE

Rationale for Increased Syphilis Screening in Pregnant Women

The value of mandated syphilis screening has been well documented, and most states require screening at least once during pregnancy. California law mandates that all pregnant women be screened for syphilis at their first prenatal visit which should be in the first trimester, although as this plan reports, that is not typically the case with women most at risk for syphilis. In 2018, in response to the CS epidemic, LAC DPH began recommending that, in addition to the first trimester screening, all pregnant women be re-screened for syphilis early in the third trimester (28-32 weeks estimated gestational age) and again at delivery. One key benefit of a transition from a risk-based assessment (as recommended by the USPSTF) to a universal recommendation of both third trimester screening and screening at delivery is that the latter approach can be more easily normalized into clinical care and can more readily be adopted and incorporated into order sets and clinical reminders in electronic health records.

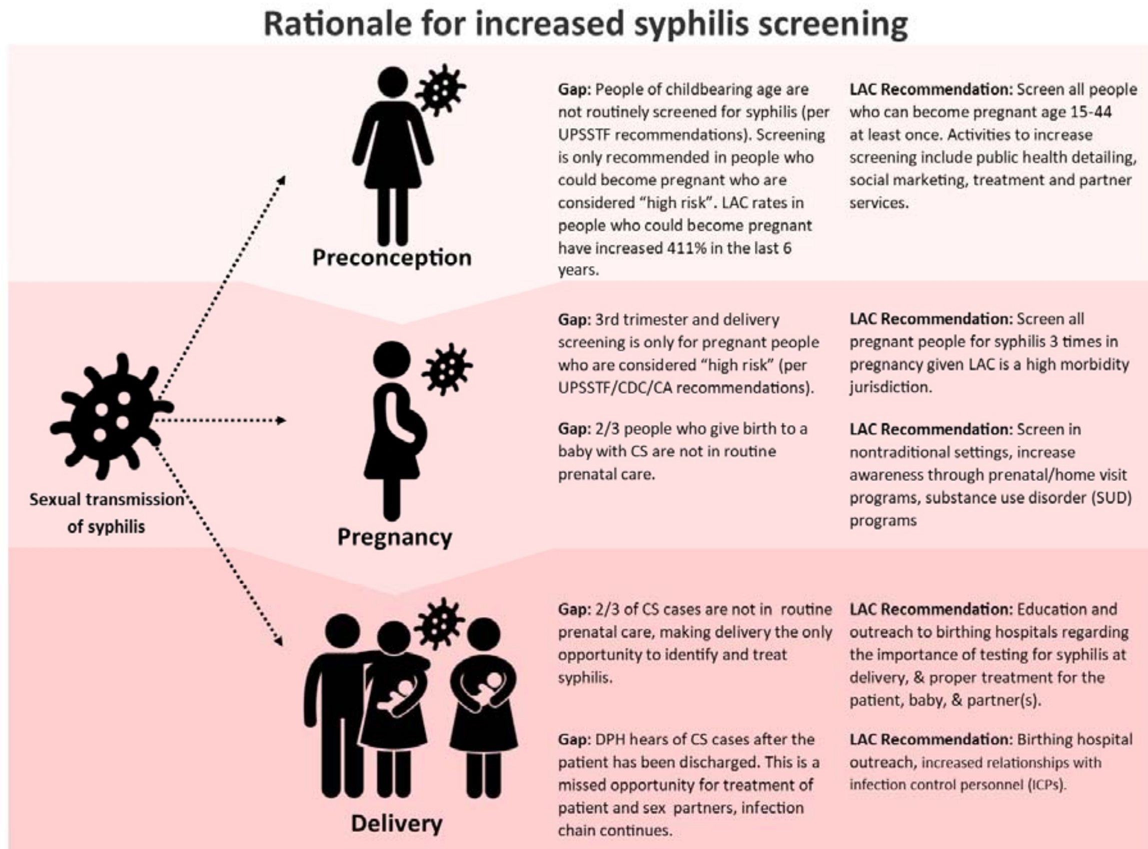
Maximizing the benefits of the recommendation for expanded pregnancy rescreening and screening women of reproductive age will require strengthening and expanding provider and patient education efforts and implementing system-wide changes already underway throughout much of California.[xxxii] Other states with third trimester and/or delivery rescreening recommendations and requirements have found mixed results. For example, benefits of third trimester rescreening rest on the premise that all pregnant patients receive comprehensive and timely prenatal care, including initial screening during first trimester. Analysis of LAC CS cases have demonstrated an ongoing need for improving uptake of early prenatal care and removal of barriers to prenatal care if these screening recommendations are to have their greatest impact.

Rationale for Increased Syphilis Screening Among Women of Reproductive Age

For non-pregnant adults, the USPSTF has had a longstanding Grade A recommendation that persons at increased risk of syphilis be screened for syphilis; this includes persons with new sexual partners, HIV positive persons, men who have sex with men, and persons residing in a high morbidity area. In 2018, considering the significant increases in syphilis among women 15 to 44 years old, LAC DPH began recommending that all health care providers screen for syphilis among ***all*** non-pregnant women at least once in their lifetime, and more often based on risk.

Expanded screening to non-pregnant women of reproductive age could identify syphilis cases that would be otherwise undetected. When paired with timely treatment, this practice could reduce sexual transmission, potential late-stage sequelae, and vertical transmission from mother to fetus for women who become pregnant.[xxxiii] Over the period 2016 through 2017, over 50% of the newborns diagnosed with CS were born from pregnancies that involved limited or no prenatal care. Identification and treatment of syphilis prior to pregnancy, along with a discussion about pregnancy intention and a referral to family planning for people who do not want to become pregnant, can prevent future cases of CS. Finally, establishing the syphilis status of women prior to pregnancy may help distinguish between early-stage versus late-latent and unknown duration stages of infection, should syphilis be detected in a future pregnancy.

Figure 11. Rationale for Increased Syphilis Screening in Los Angeles County



ACRONYMS

ACOG	The American College of Obstetricians and Gynecologists
CDC	Centers for Disease Control and Prevention
CME	Continuing Medical Education
CPSP	Comprehensive Perinatal Services Program
CRDF	Century Regional Detention Facility
CS	Congenital Syphilis
DHSP	Division of HIV & STD Programs
DPH	Department of Public Health
ED	Emergency Department
EHR	Electronic Health Record
HIV	Human Immunodeficiency Virus
LAC	Los Angeles County
M&M	Morbidity and Mortality
MAMA's	Maternity Assessment Management Access and Service Synergy
MCAH	Maternal, Child and Adolescent Health
MSM	Men who Have Sex with Men
MSW	Men Who have Sex with Women
OB	Obstetrician
PrEP	Pre-Exposure Prophylaxis
SEP	Syringe Exchange Program
SPA	Service Planning Area
STD	Sexually Transmitted Disease
USPSTF	United States Preventive Services Task Force

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