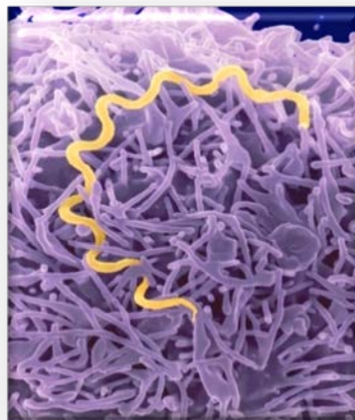


Eliminating Congenital Syphilis in California

Heidi M. Bauer, MD MS MPH
Chief, STD Control Branch,
California Department of Public Health

Syphilis Summit, January 9-10, 2017

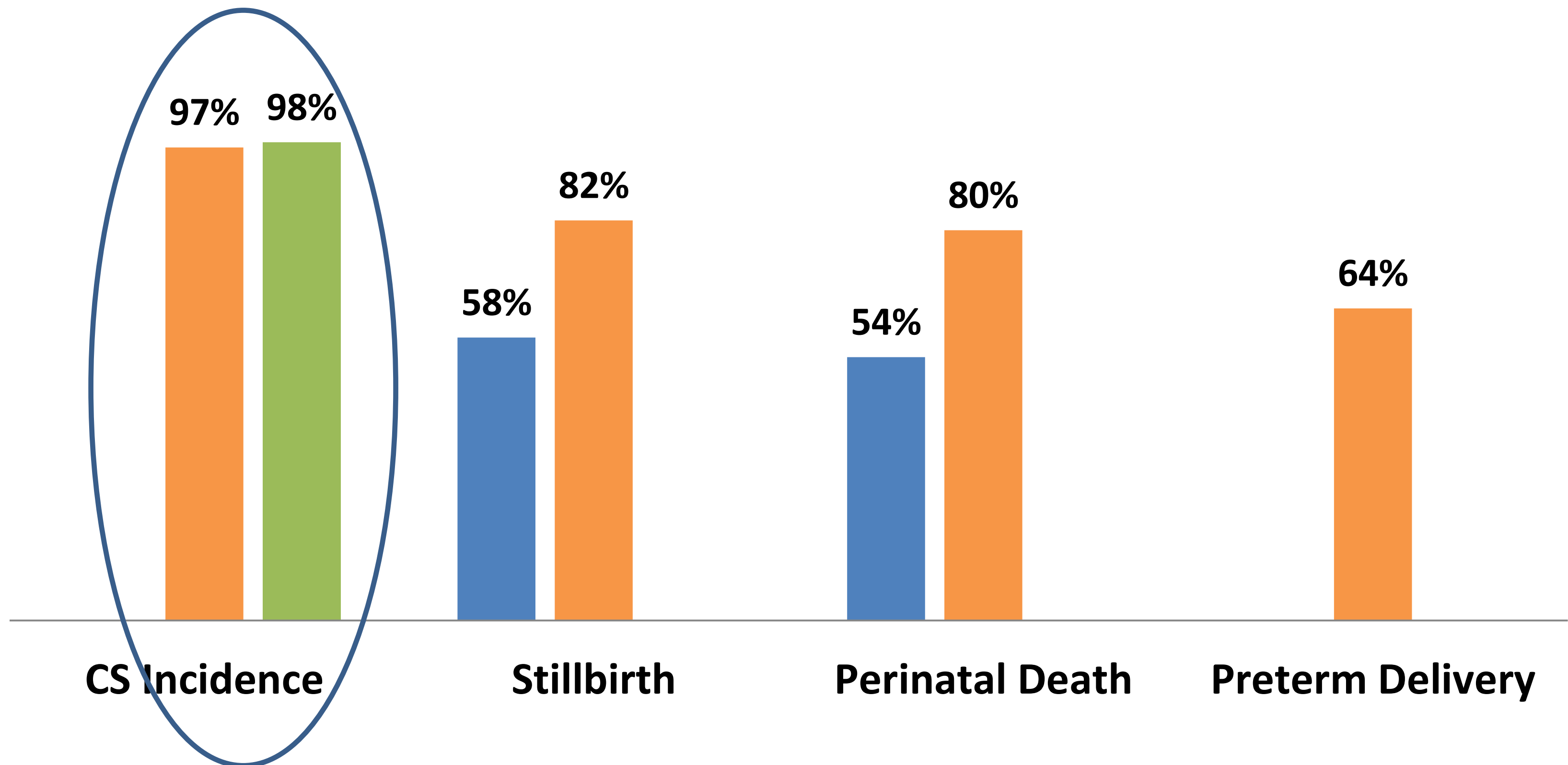
CDPH California Department of Public Health

Goals of the Presentation

1. Describe the current situation
2. Explore potential contributing factors
3. Highlight traditional and innovative prevention strategies

CDPH California Department of Public Health

Early Prenatal Care, Screening, & Treatment is 98% Effective



What are common pathways that a women delivers a baby with CS?

Woman acquires syphilis **prior** to pregnancy

Not diagnosed, not tested

AND/OR

Not adequately treated

AND

SHE BECOMES PREGNANT

She acquires syphilis **during** pregnancy

Not diagnosed

(late to prenatal care or no prenatal care, early screen negative and not repeated, seroconverted afer birth)

AND/OR

Not treated

(treatment not ordered, lost to follow up)

OR

Late to treatment

(treatment initiated <30 days prior to delivery)

OR

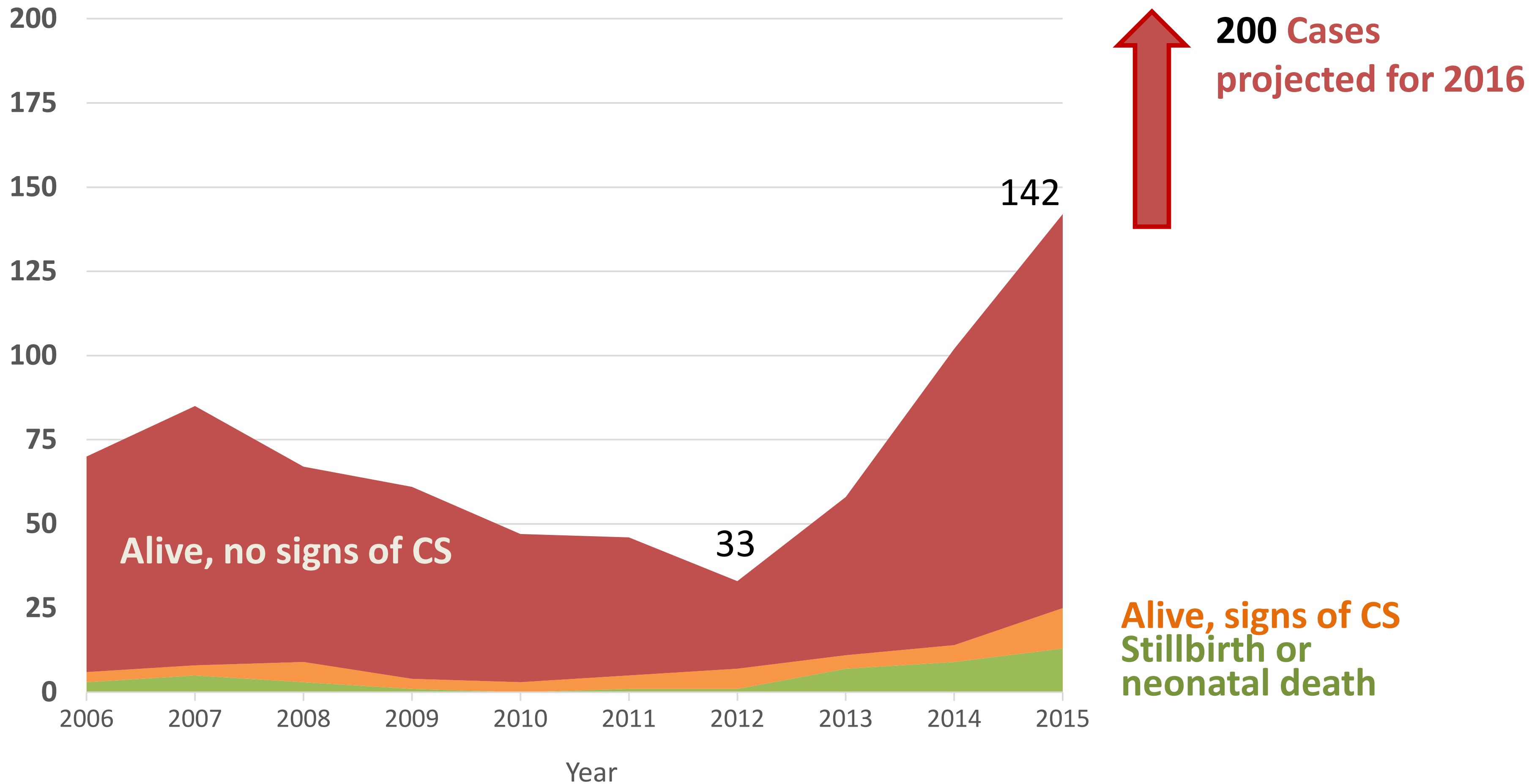
Inadequate treatment

(wrong drug or dose, lack or delay in 2nd or 3rd shots for late latent syphilis)

RARELY, among those diagnosed and treated:

- Maternal treatment failure
- Fetal demise
- Permanent fetal damage prior to treatment

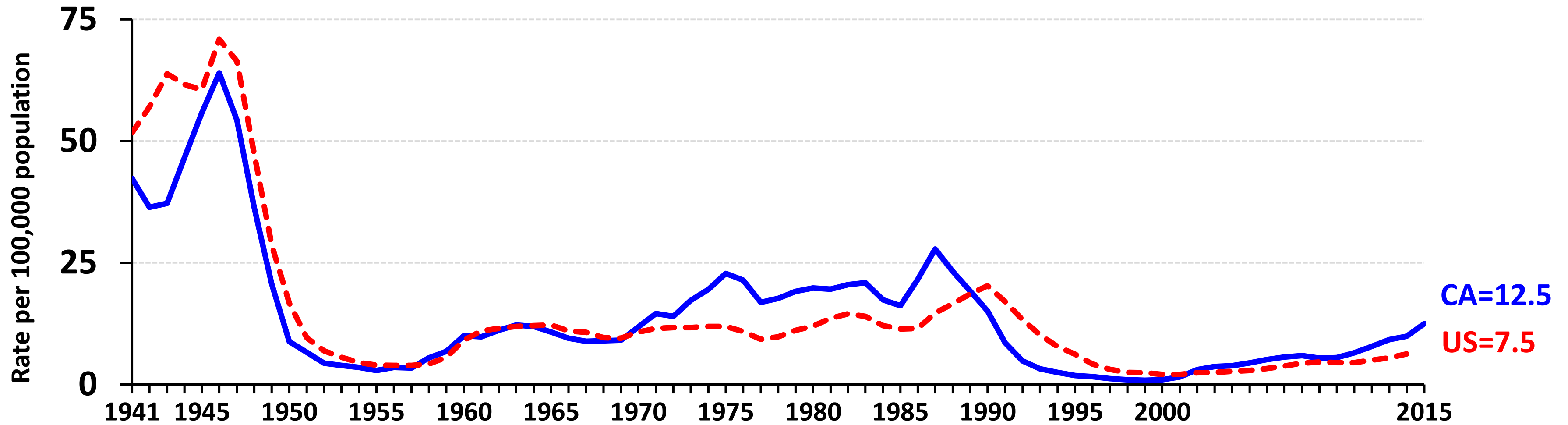
Congenital Syphilis Cases by Vital Status and Presence of Signs, California, 2006–2015

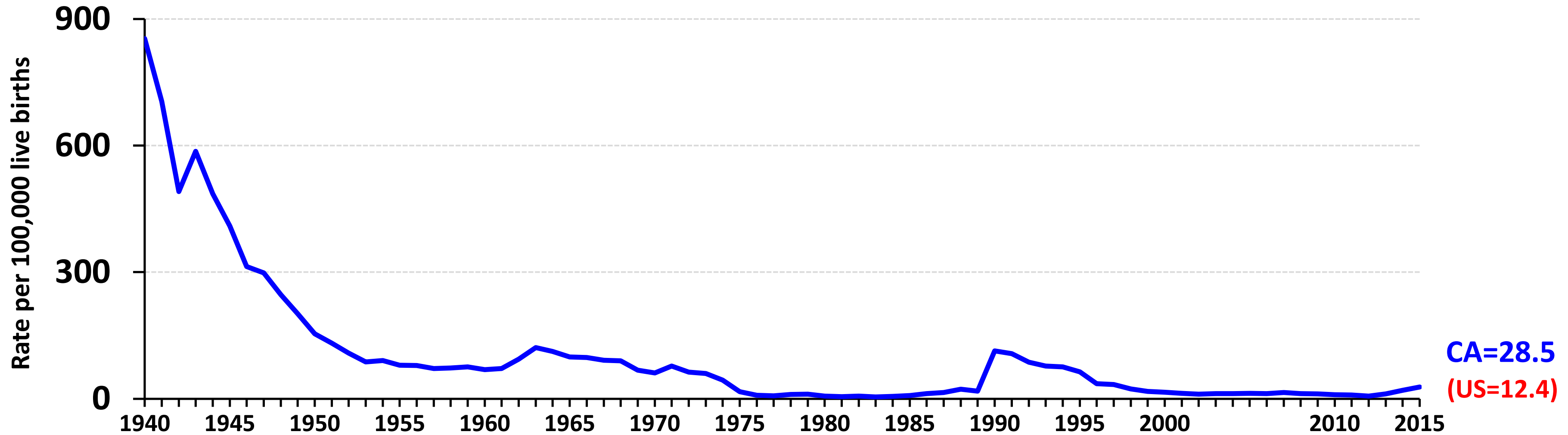


CDPH California Department of Public Health

Note: Alive, no signs includes alive with missing documentation on signs/symptoms.
Of 142 total cases in 2015, 117 alive w no signs, 12 alive with signs of CS, 13 stillbirth or neonatal death.

Primary & Secondary Syphilis (TOP) and Congenital Syphilis (BOT), Incidence Rates, California versus United States, 1940–2015

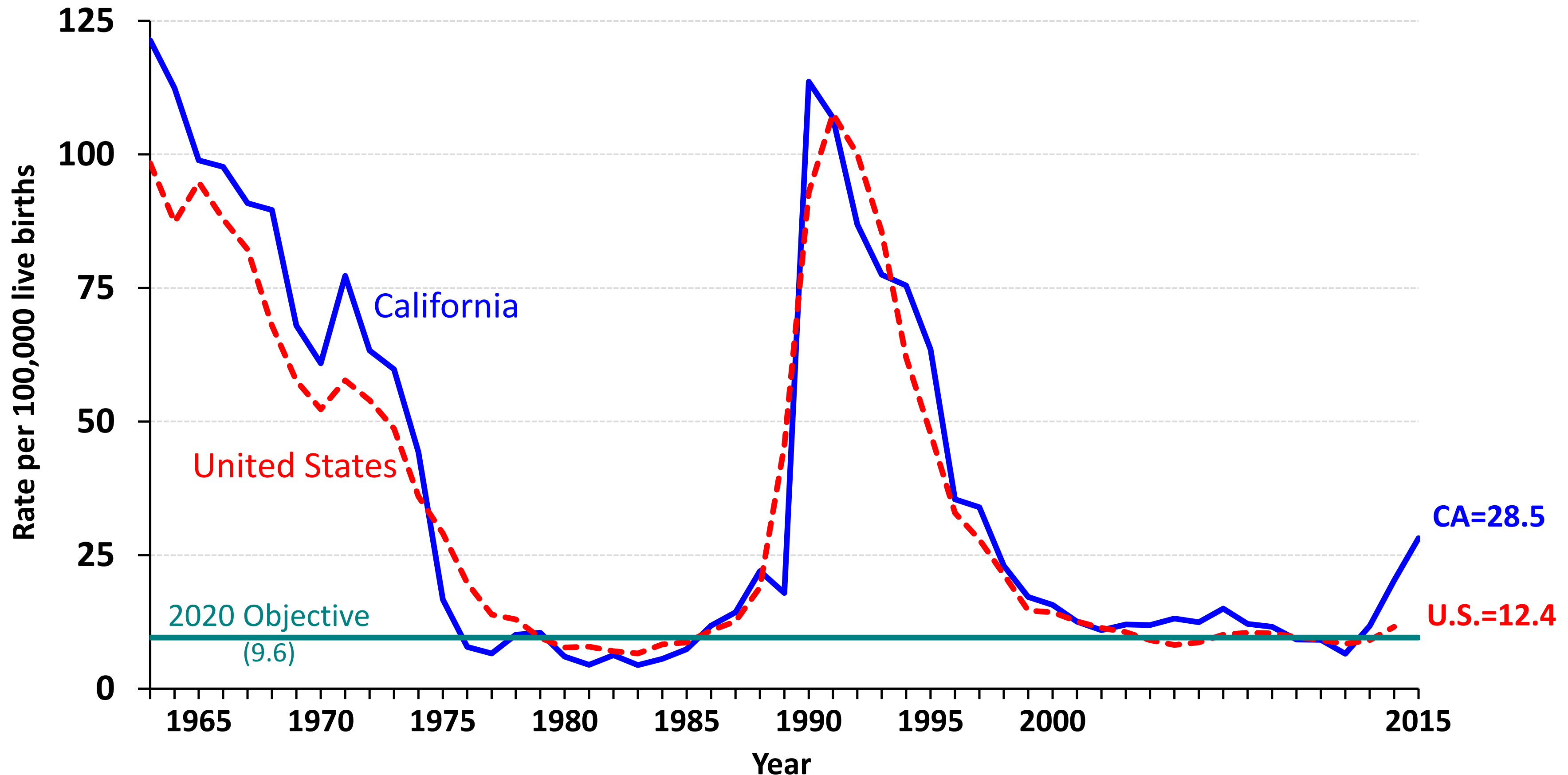




CDPH
California Department of
PublicHealth

Congenital Syphilis

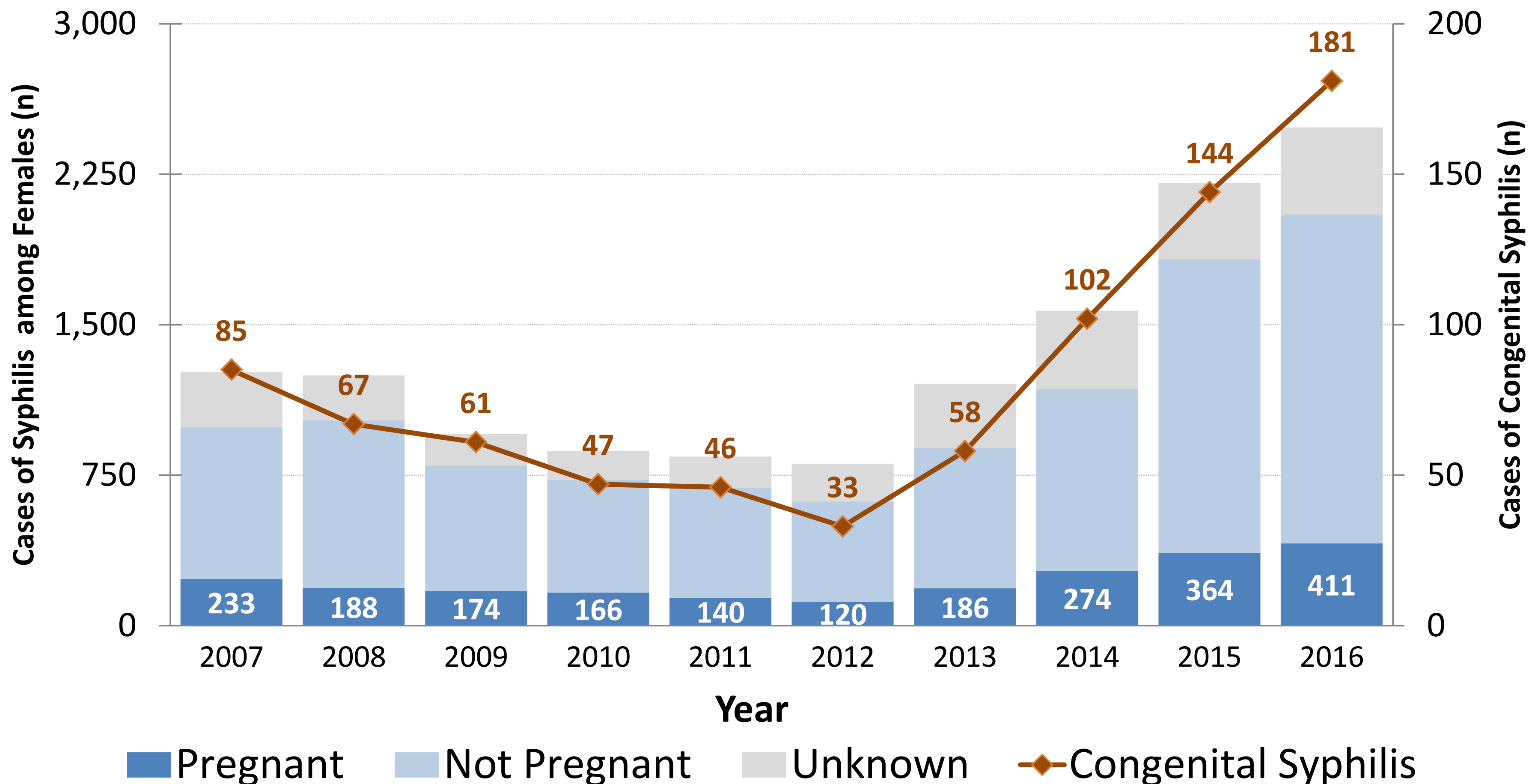
California versus United States Incidence Rates, 1963–2015



Note: The Modified Kaufman Criteria were used through 1989. The CDC Case Definition (MMWR 1989; 48: 828) was used effective January 1, 1990. California data prior to 1985 include all cases of congenital syphilis, regardless of age.

CDPH California Department of Public Health

Congenital Syphilis Cases versus Female Syphilis* Cases by Pregnancy Status California, 2007–2016

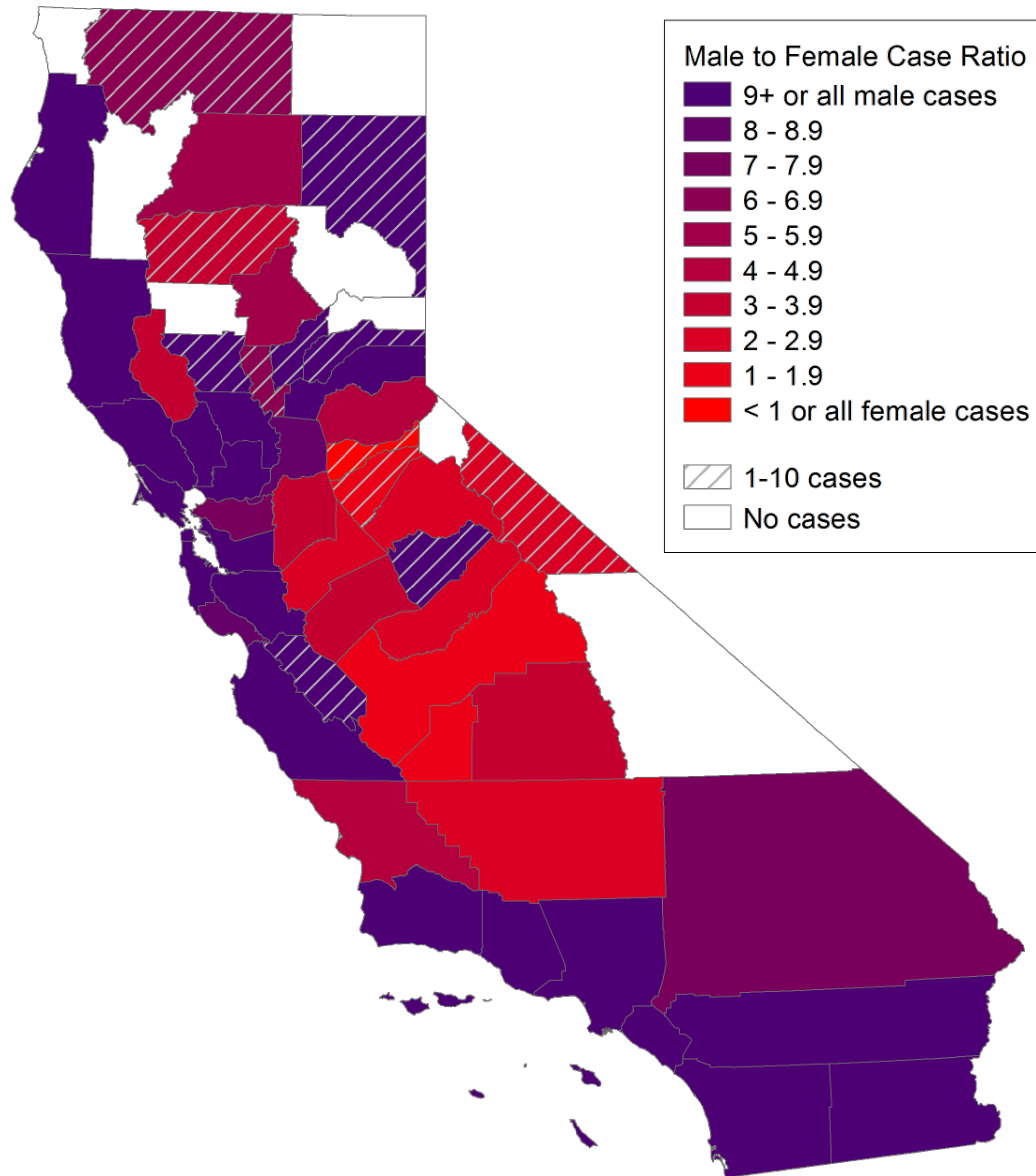


CDPH California Department of Public Health

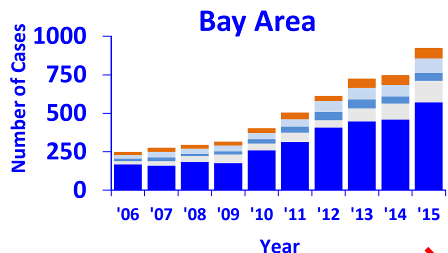
* Includes primary, secondary, early latent, and late latent/unknown duration syphilis.

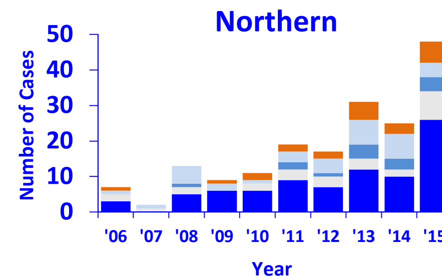
Rev. 1/2017

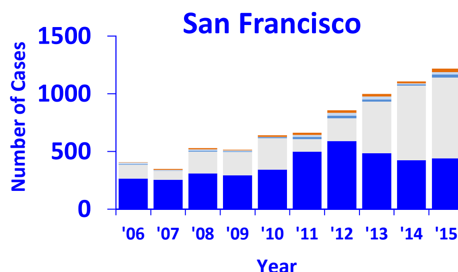
Early Syphilis*, Male to Female Case Ratios by County California, 2013-2015 Combined

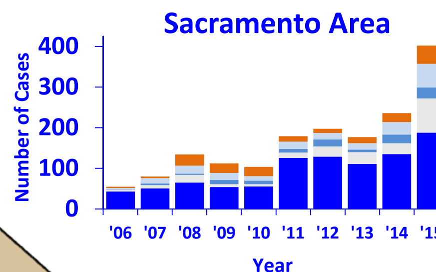


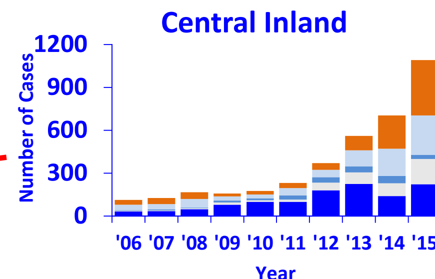
Number of Early Syphilis* Cases by Region, Sexual Orientation, and Year California, 2006–2015

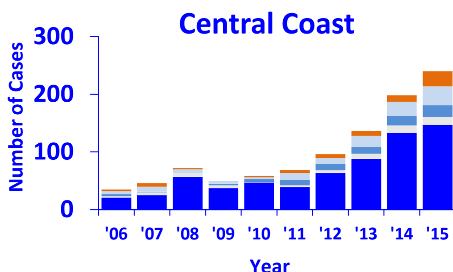


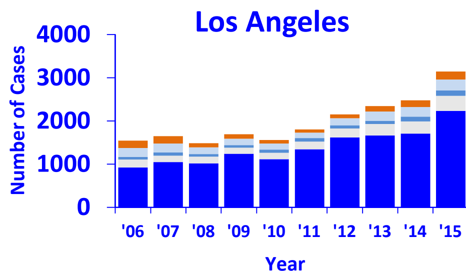


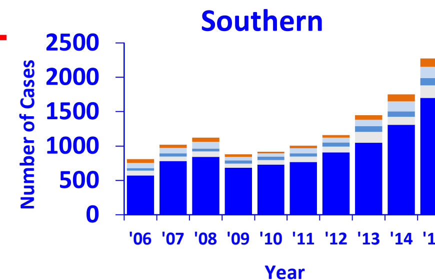


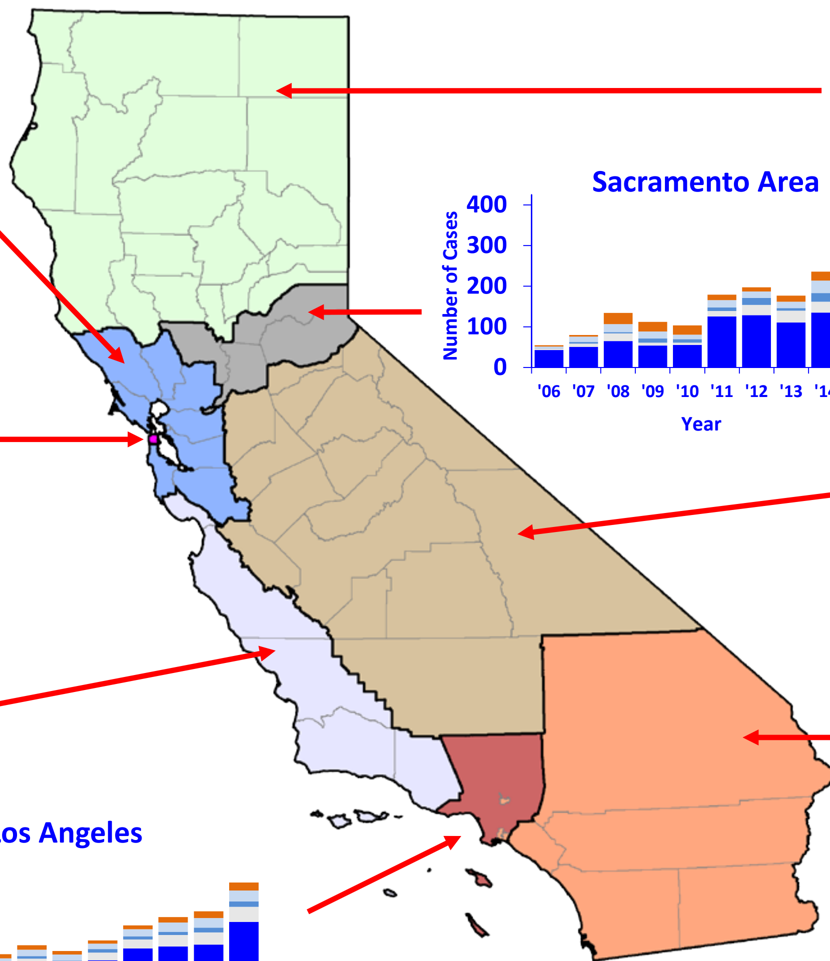










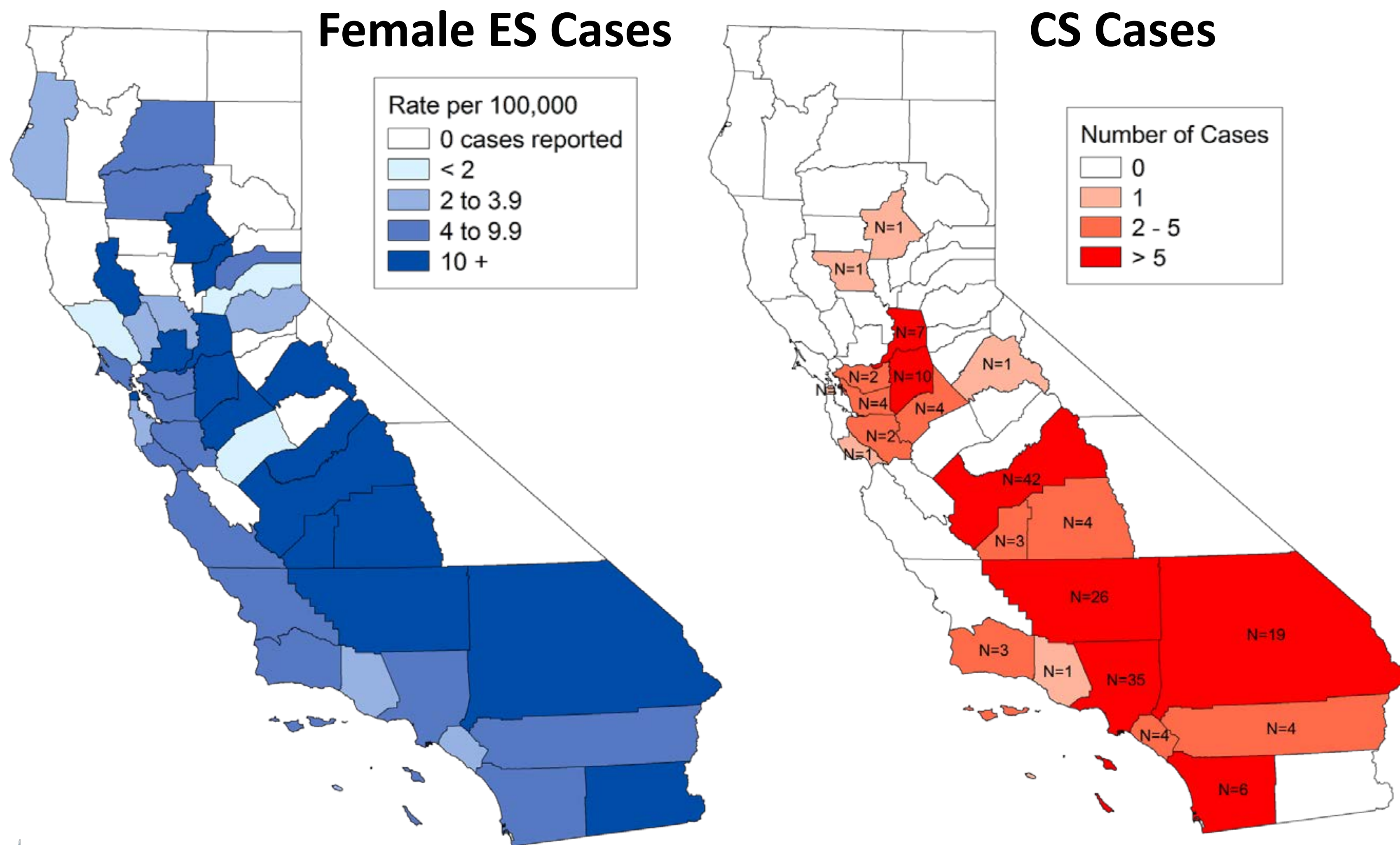


MSM MSUnk MSM&W MSW Female

* Includes primary, secondary, and early latent syphilis.
MSM=Men who have sex w/men, MSW=Men who have sex w/women, MSUnk=Men of unknown sexual orientation

Rev. 7/2016

Early Syphilis* among Females of Childbearing Age (15-44) AND Congenital Syphilis, Number of Cases by County, California, 2016

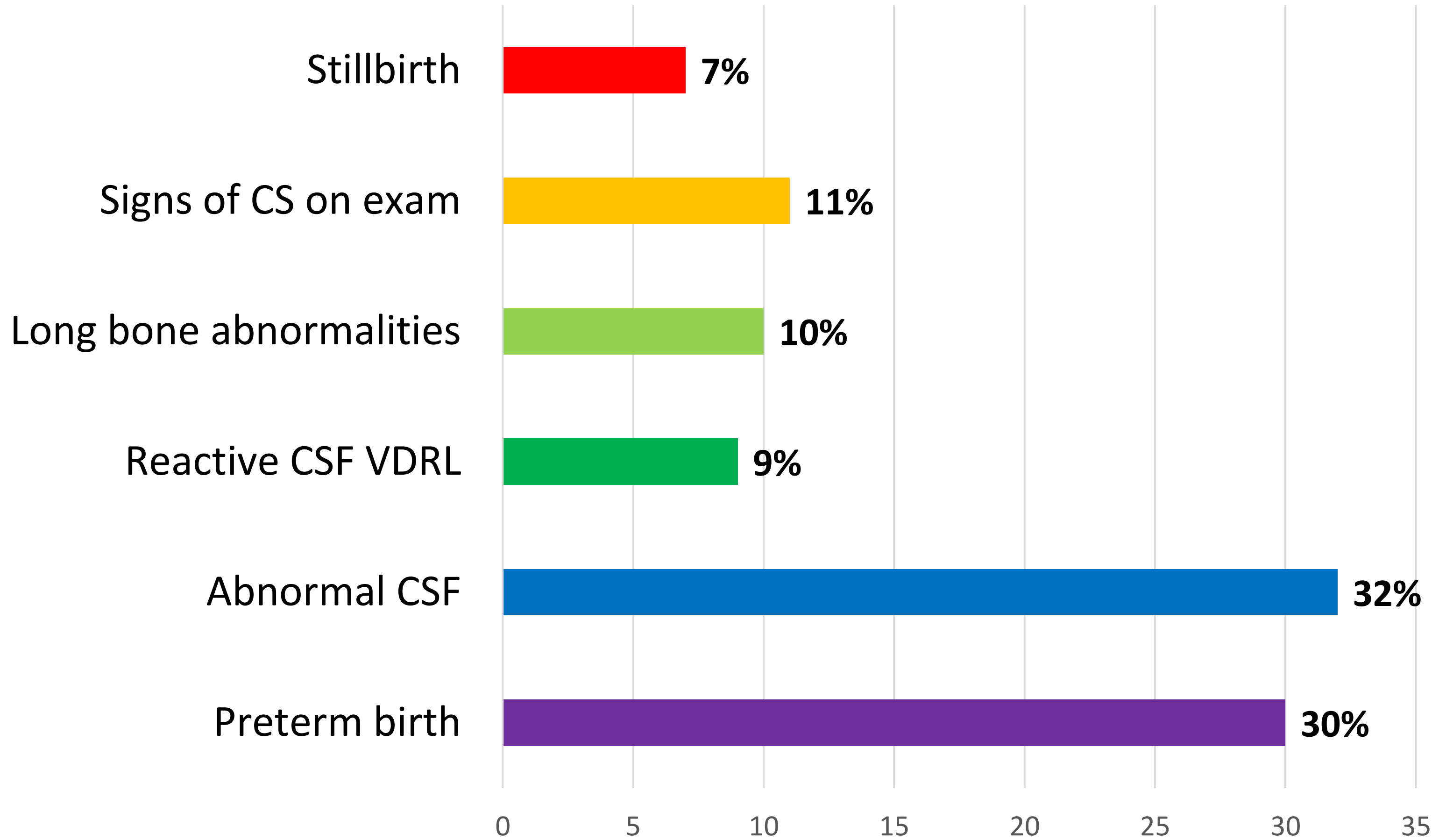


* Includes primary, secondary, and early latent syphilis.

Total= 142 CS cases

CDPH California Department of Public Health

What do we know about the cases? California Project Area CS Cases 2007-2015: Infant Characteristics (n=391)

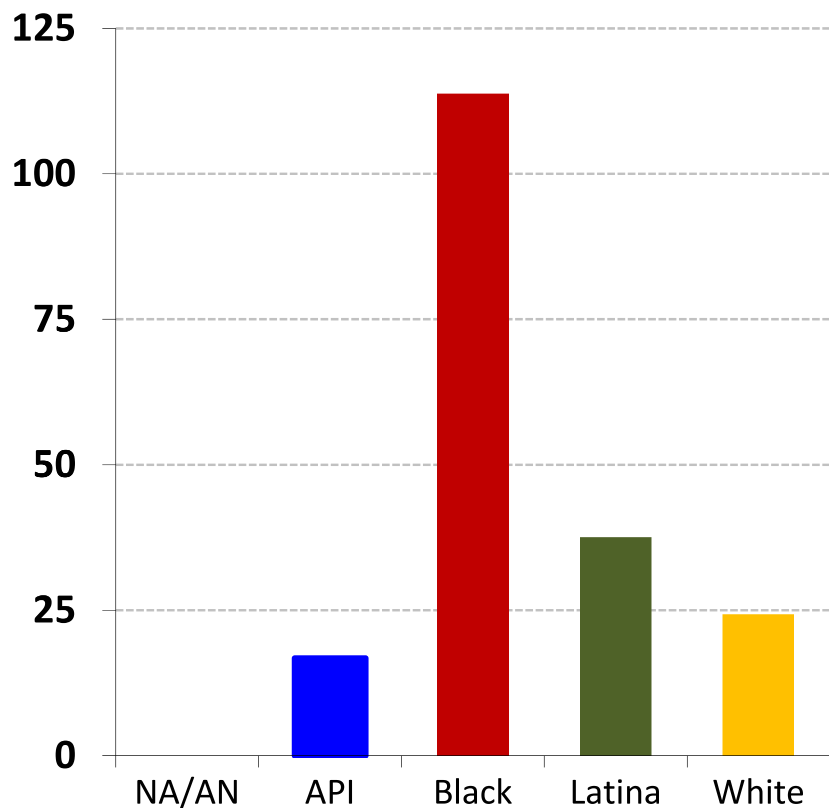


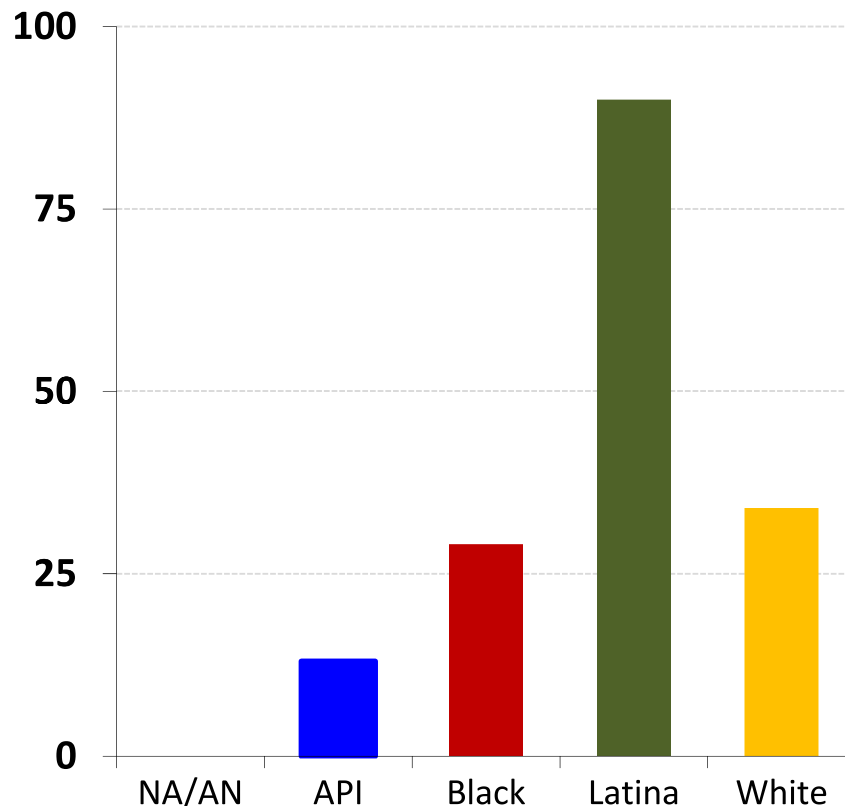
CDPH California Department of Public Health

Credits: Stoltey, Ng

Congenital Syphilis

Incidence Rates per 100,000 (L) and Number of Cases (R) by Race/Ethnicity of Mother, California, 2016

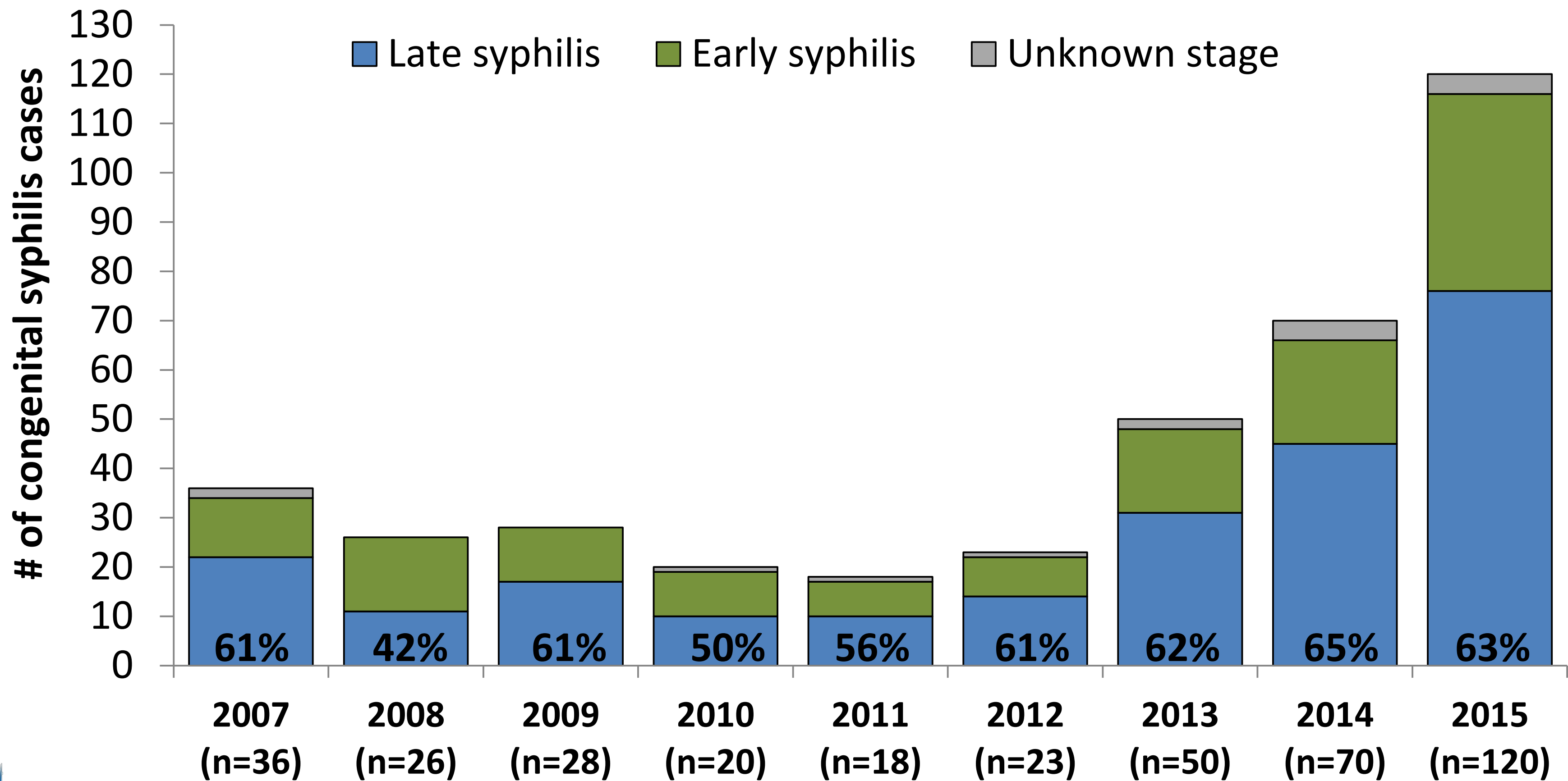




CDPH California Department of Public Health

Rev. 1/2017

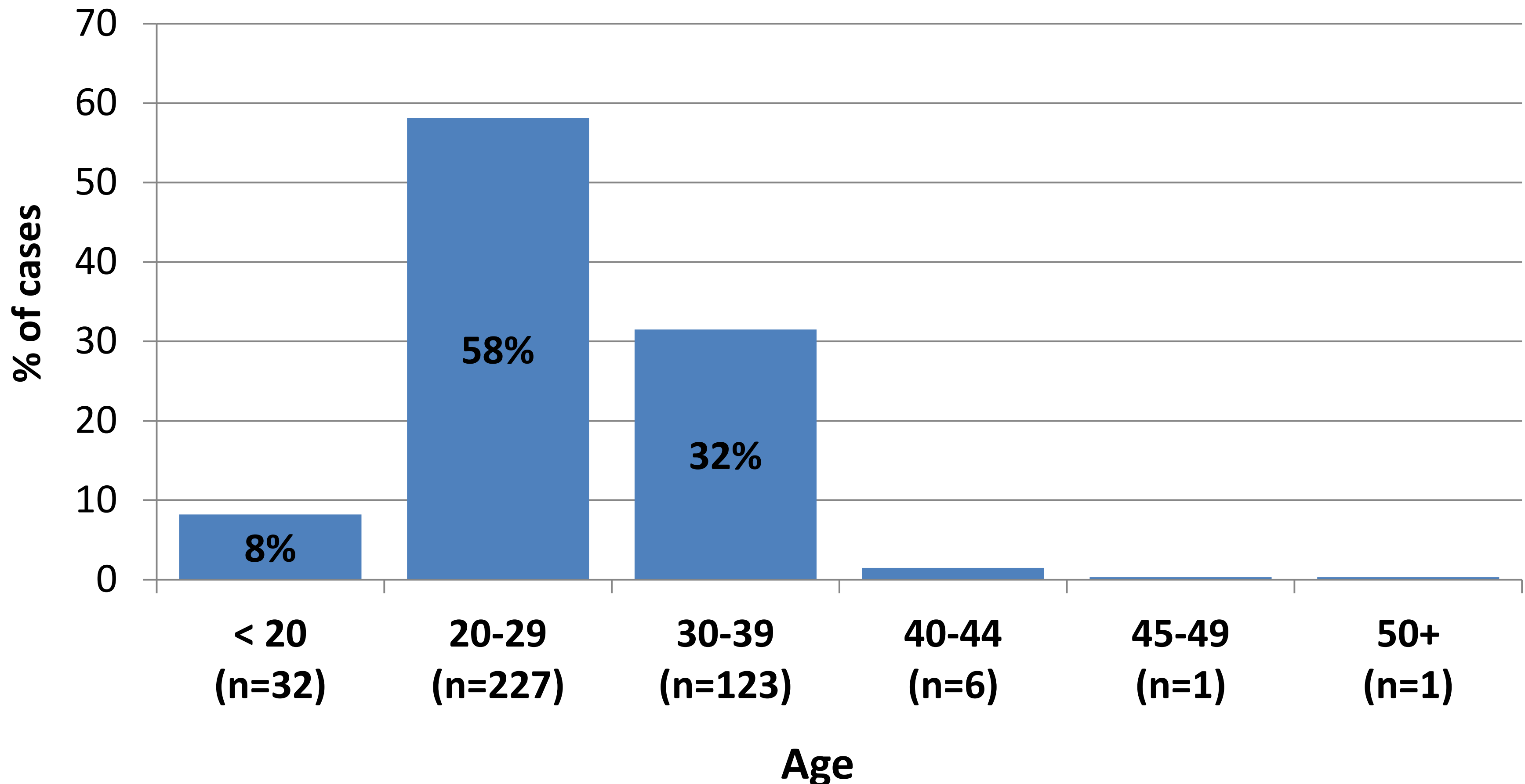
Number of congenital syphilis cases, by maternal stage: Majority of mothers had late syphilis



CDPH California Department of Public Health

Credits: Stoltey, Ng

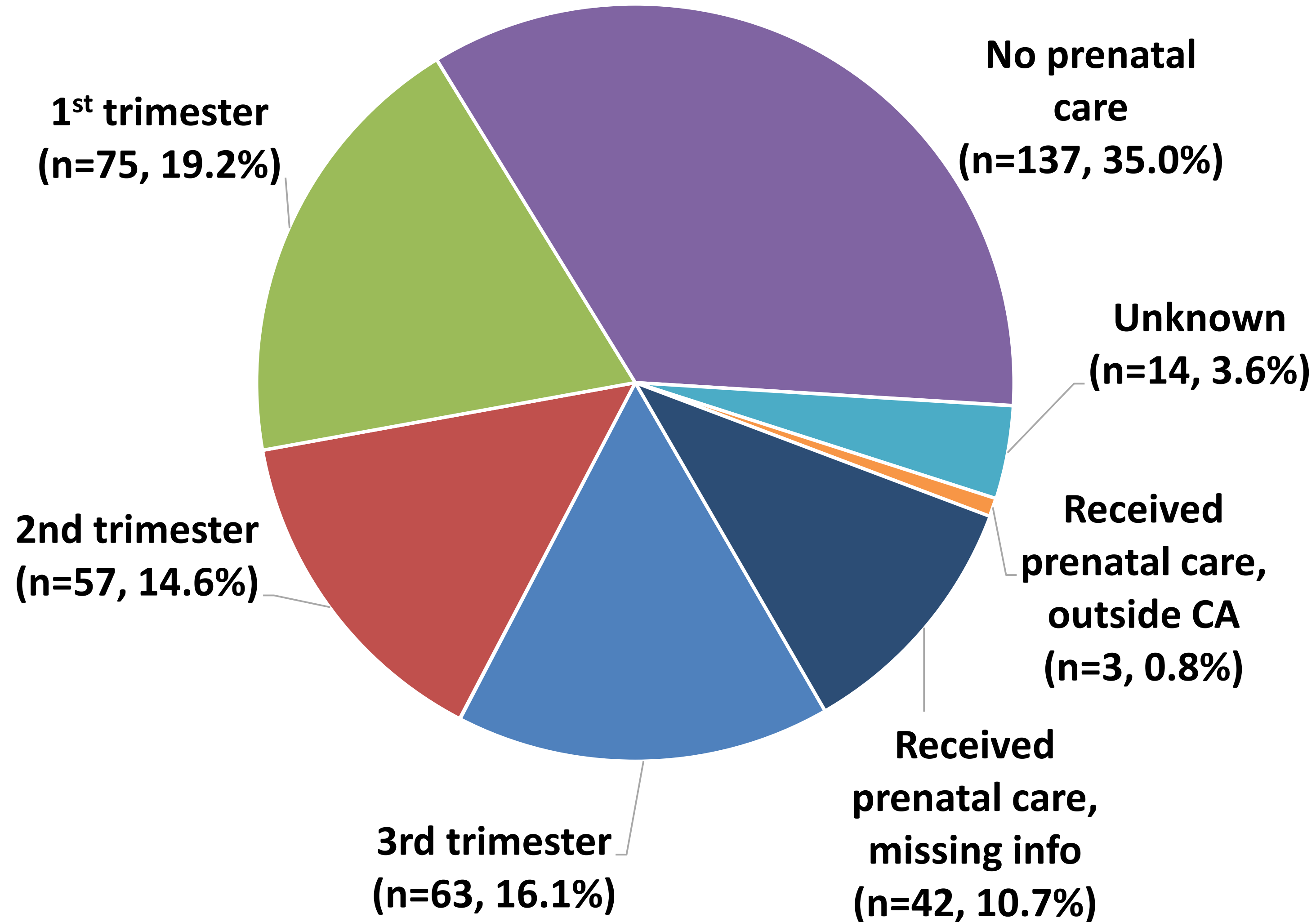
Percent of congenital syphilis cases, by maternal age at delivery:
Majority of mothers were ages 20-29



CDPH California Department of Public Health

Credits: Stoltey, Ng

When did mother initiate prenatal care? Over half of mothers initiated prenatal care only in 3rd trimester or not at all



CDPH California Department of Public Health

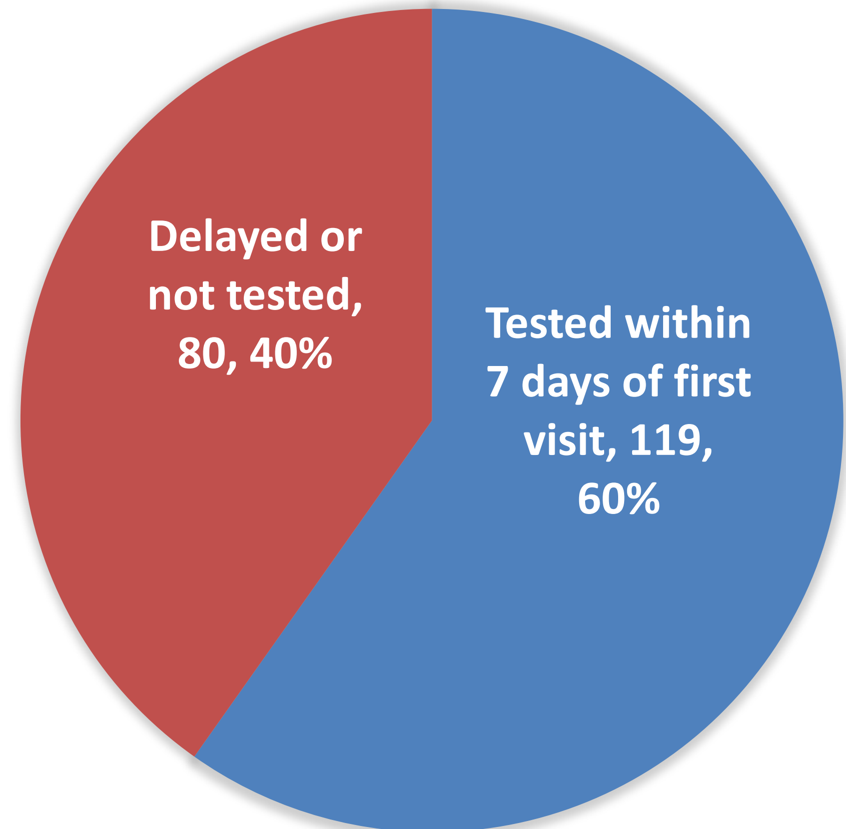
Nationally, 74% initiate in 1st Trimester; only 6% after 2nd Trimester (CDC, 2011)

Syphilis screening at first prenatal care visit

Among 199 mothers with documented first prenatal visit:

Reasons for delay:

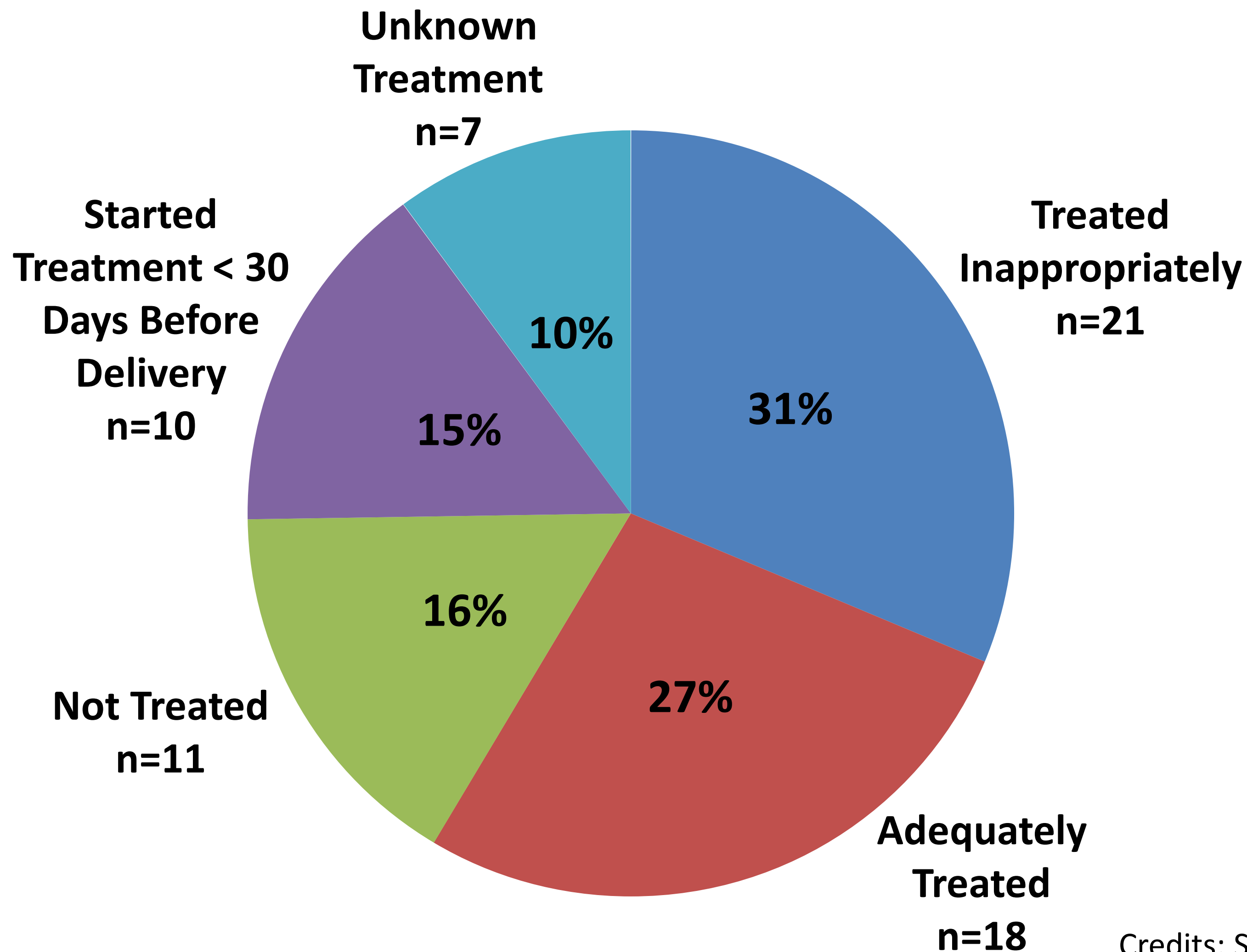
- Provider error
- Lab off-site
- Patient lost to follow-up and labs never drawn
- Surveillance data incomplete



CDPH California Department of Public Health

Credits: Stoltey, Ng

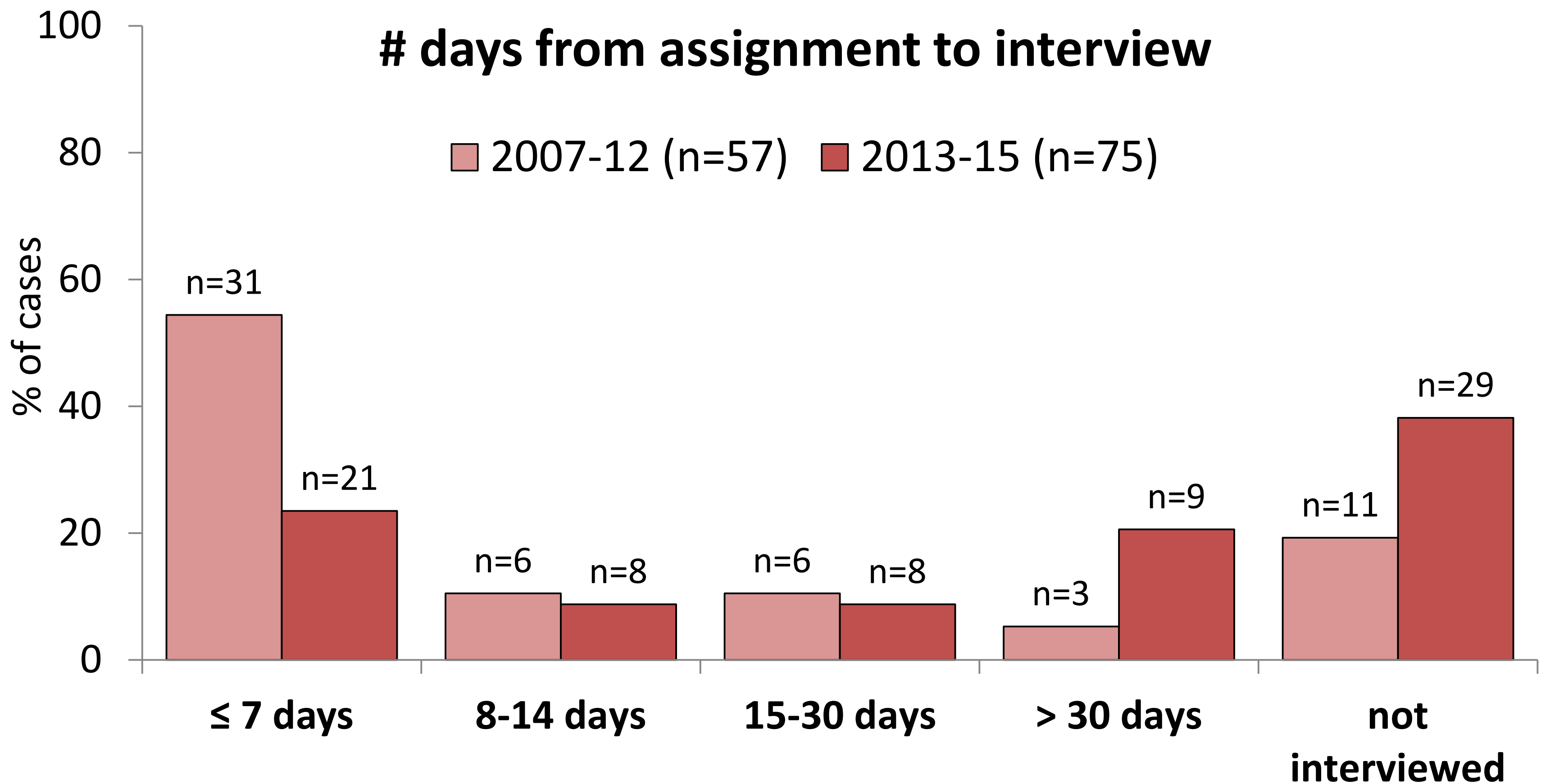
Treatment of mothers accessing prenatal care in 1st/2nd trimester with reactive test ≥ 30 days prior to delivery (n=67)



CDPH California Department of Public Health

Credits: Stoltey, Ng

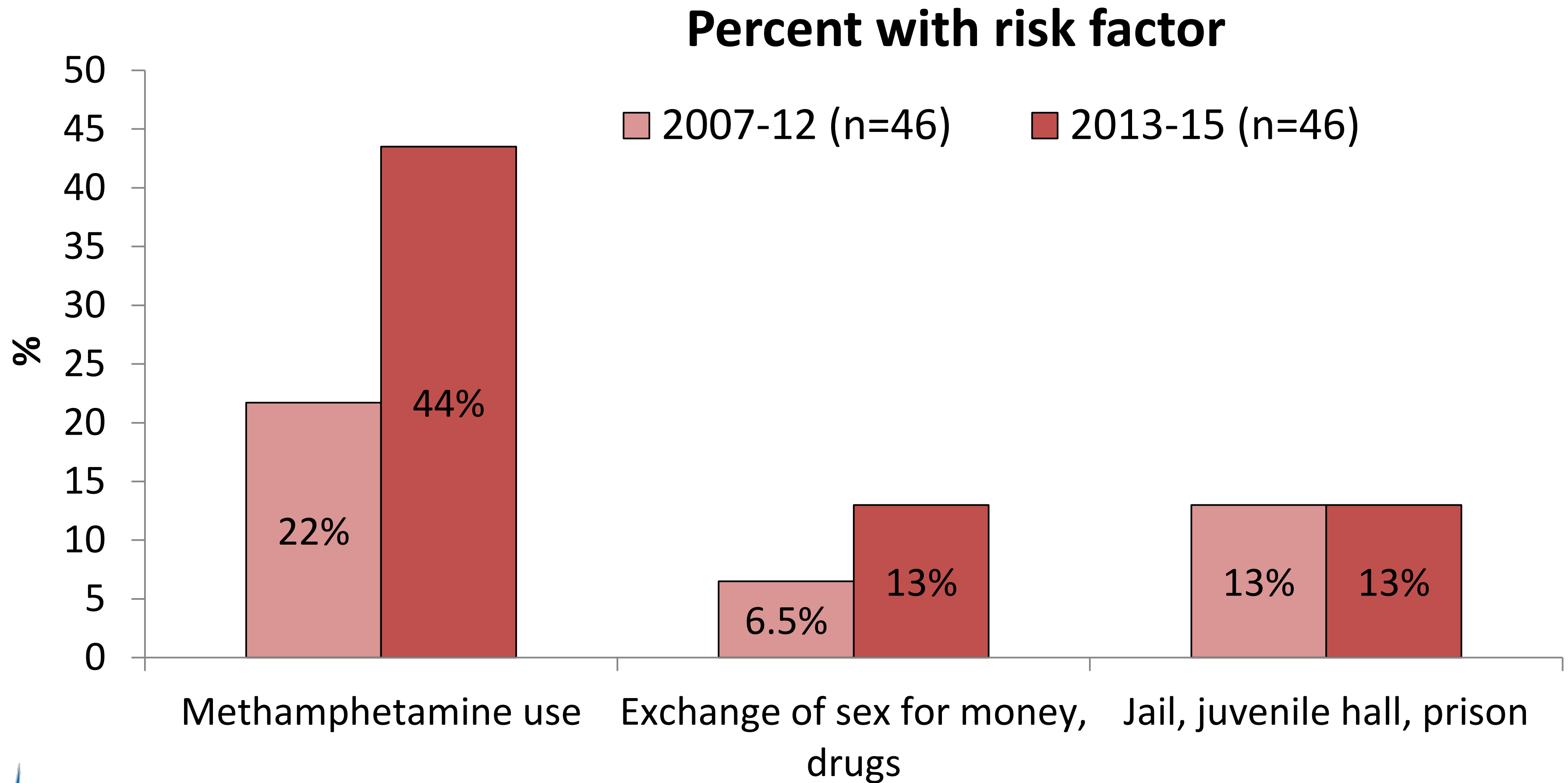
Timeliness of health department follow-up of early syphilis cases



CDPH
California Department of Public Health

Credits: Stoltey, Ng

Maternal risk characteristics for interviewed early syphilis cases (n=92)



CDPH California Department of Public Health

Credits: Stoltey, Ng

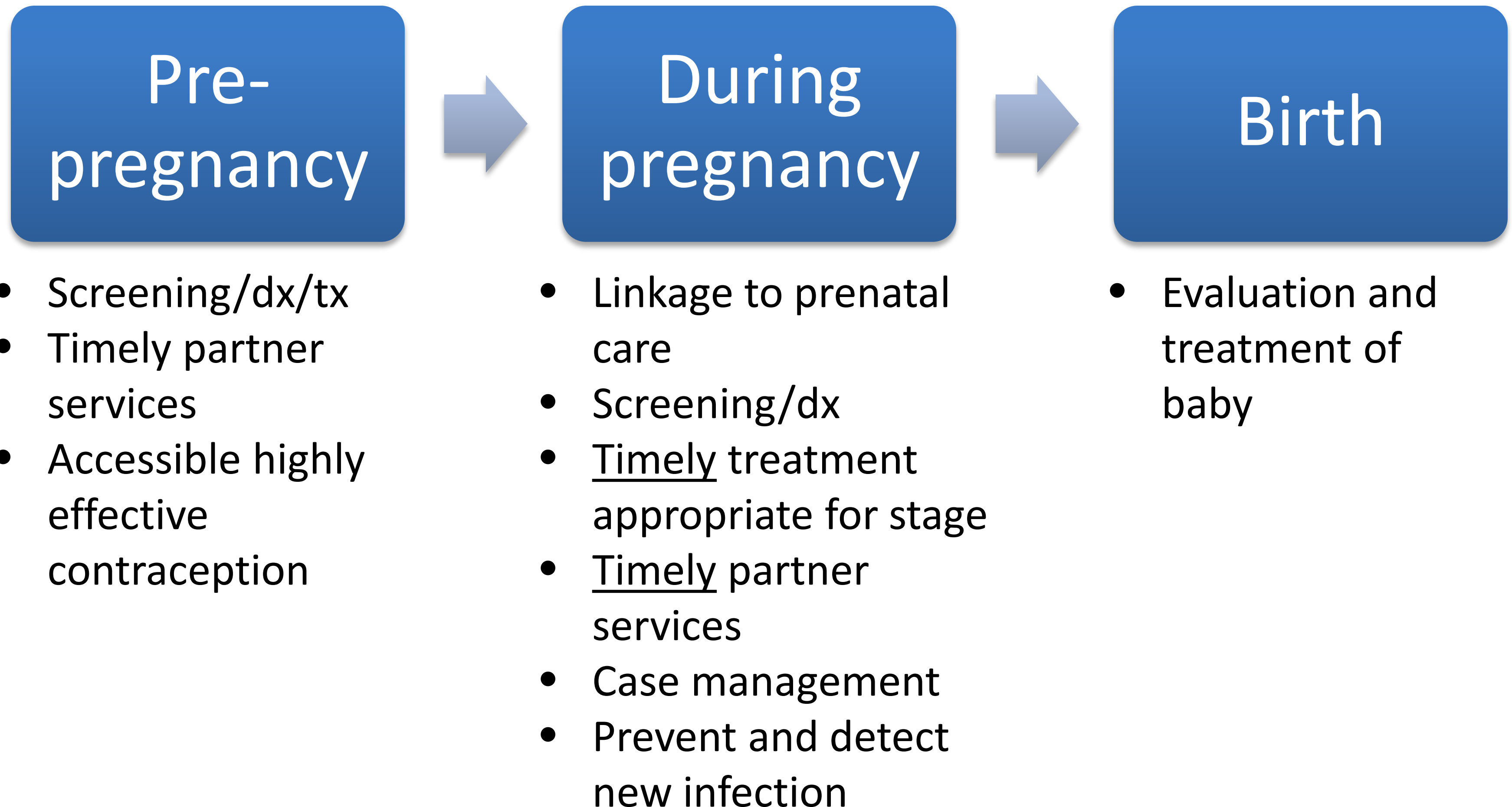
What will it take to eliminate CS?

- Response requires customized strategies →

Previous Outbreaks in the U.S.
Crack cocaine, exchange for sex, NYC 1986-88
Rural South, South Carolina 1991-1993
Indian reservation, Arizona 2007-2009
Chinese birth tourism, Los Angeles 2014

- How can we use the epi data to drive program?
- What additional data would be helpful?
- How do we prioritize congenital syphilis prevention?
- What partnerships should be leveraged?
- How can we measure our effectiveness?
- Are there policy solutions?

Public Health Response: Points of Intervention to Prevent CS

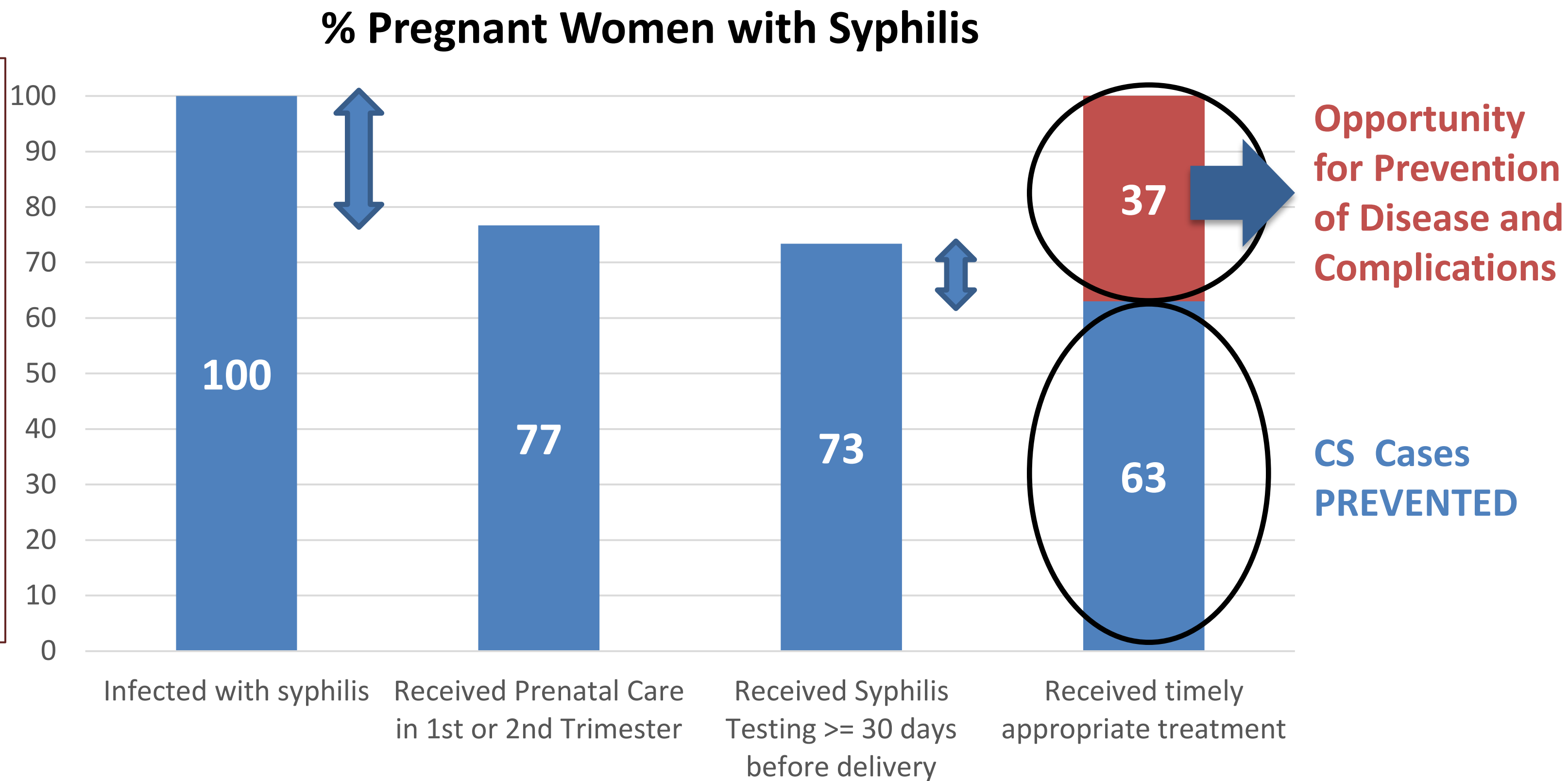


Partnerships:
Shared Responsibility, Aligned Resources

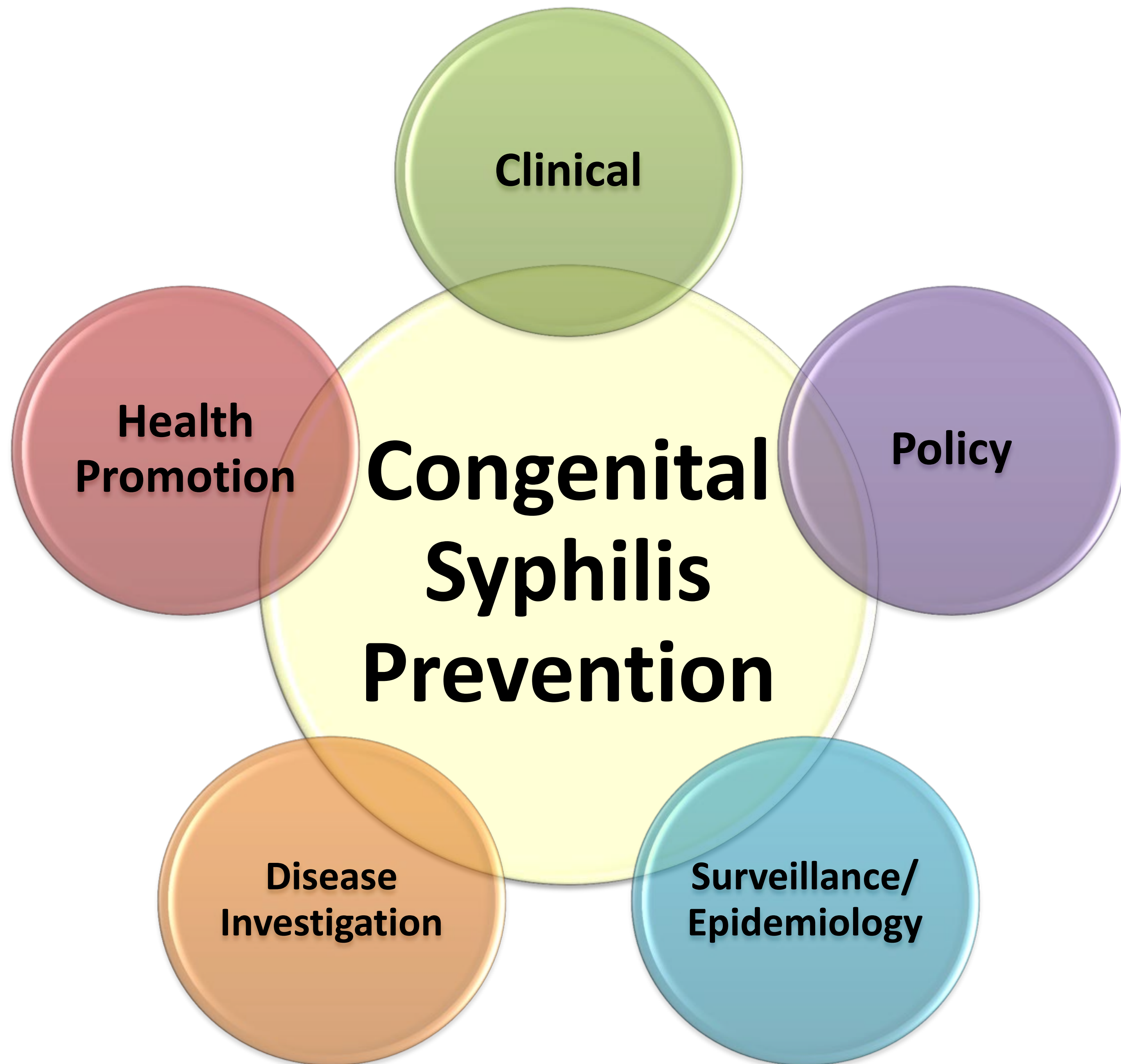
FOCUS	
Congenital syphilis	MCAH, Fetal death prevention, Birth defects prevention, MTCT of HIV prevention Health insurance providers, PNC providers, EDs Corrections, Drug Treatment
Women	Family planning, pregnancy prevention, MCAH Health insurance providers, Ob/gyns
Drug users	Corrections CBOs and drug treatment

CDPH
California Department of
PublicHealth

Congenital Syphilis Prevention Cascade, California Project Area 2007-2014



CDPH
California Department of Public Health


Clinical
Health
Promotion
Congenital
Syphilis
Prevention
Policy
Disease
Investigation
Surveillance/
Epidemiology

Patient Education Materials

Protect Yourself and Your Baby from Syphilis

What is Congenital Syphilis?

Syphilis is a sexually transmitted disease (STD).

Congenital syphilis occurs when a pregnant woman with syphilis passes the infection to her unborn child.

This can cause serious problems like premature birth, low birth weight, birth defects and stillbirth.

What are Symptoms of Syphilis?

Most people with syphilis have symptoms such as a sore or rash. Even if they do, they may not notice them.

The only way to know for sure is to get tested!

Getting tested for syphilis is part of routine prenatal care.

Who Should Get Tested?

If you are pregnant or might get pregnant, it is important to get routine prenatal care.

Getting tested for syphilis and other STDs is part of routine prenatal care.

Pregnant women should get syphilis testing at the first prenatal visit.

Be sure to get your syphilis test results and follow any medical advice at that time.

These clinics offer FREE or LOW-COST STD testing and treatment and pregnancy planning services.

Clinic Name1 Street Address City Phone: xxx.xxx.xxxx Clinic hours (M-F, xx-xx)	Clinic Name4 Street Address City Phone: xxx.xxx.xxxx Clinic hours (M-F, xx-xx)
Clinic Name2 Street Address City Phone: xxx.xxx.xxxx Clinic hours (M-F, xx-xx)	Clinic Name5 Street Address City Phone: xxx.xxx.xxxx Clinic hours (M-F, xx-xx)
Clinic Name3 Street Address City Phone: xxx.xxx.xxxx Clinic hours (M-F, xx-xx)	Clinic Name6 Street Address City Phone: xxx.xxx.xxxx Clinic hours (M-F, xx-xx)

For a complete list of free or low-cost clinics near you, visit https://gettested.cdc.gov/ or call Public Health at xxx-xxx-xxxx.

County Health Department logo here

Protecting Yourself and Your Baby from Syphilis

Get Yourself Tested!

You can get syphilis and other STDs more than once.

If you need to get tested or would like more information on protecting yourself and your baby, talk to your health care provider, or visit a local clinic.

These clinics offer FREE or LOW-COST STD testing and treatment and pregnancy planning services.

Clinic Name1 Street Address City Phone: xxx.xxx.xxxx Clinic Hours (M-F, xx-xx)	Clinic Name4 Street Address City Phone: xxx.xxx.xxxx Clinic Hours (M-F, xx-xx)
Clinic Name2 Street Address City Phone: xxx.xxx.xxxx Clinic Hours (M-F, xx-xx)	Clinic Name5 Street Address City Phone: xxx.xxx.xxxx Clinic Hours (M-F, xx-xx)
Clinic Name3 Street Address City Phone: xxx.xxx.xxxx Clinic Hours (M-F, xx-xx)	Clinic Name6 Street Address City Phone: xxx.xxx.xxxx Clinic Hours (M-F, xx-xx)

For a list of free or low-cost clinics near you, go to https://gettested.cdc.gov/ or call Public Health at xxx-xxx-xxxx.

County Public Health logo here

How is Syphilis Treated?

yphilis can be cured, even during pregnancy. roper treatment will help prevent your baby om becoming infected.

e sure to inform your sex partner(s) because hey will need to be tested and treated too. This vill help them stay healthy, avoid infecting thers and avoid reinfecting you.

is part of routine prenatal care.

Pregnant women should get tested for syphilis at the first prenatal visit.

Be sure to get your syphilis test results and follow any medical advice at that time.

The clinics listed on the front of this brochure offer FREE or LOW-COST STD testing and treatment and pregnancy planning services.

If you would like to customize and distribute within your LHJ, contact Anna Steiner at Anna.Steiner@cdph.ca.gov

Watch Out!

Don't hook-up with syphilis

Syphilis is spreading in our community

Syphilis is a sexually transmitted infection that can have very serious complications when left untreated.

Get Tested. Get Treated.

Call 559-600-3434 for more information

Update for Health Care Providers

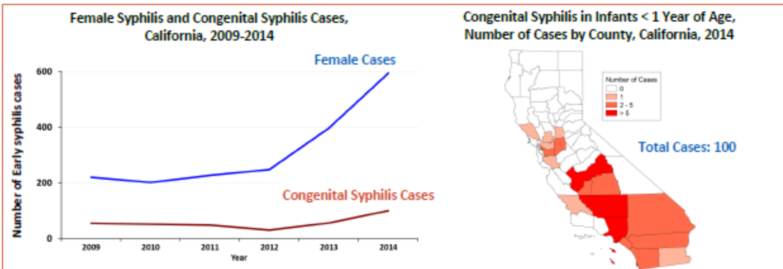
Concerning Increases in Syphilis in Women and Congenital Syphilis:

An Update for California Health Care Providers

The Problem: Increasing Congenital Syphilis in California

California has had a concerning increase in syphilis among women over the past two years. This has been accompanied by a tripling of congenital syphilis cases from 2012 to 2014. In 2014, most female early syphilis cases and congenital syphilis cases in California were reported from the Central Valley and Los Angeles County.[1] Most women who gave birth to babies with congenital syphilis received prenatal care late in pregnancy or not at all.

This increase in numbers of congenital syphilis cases in California is an important public health problem requiring immediate attention from medical providers caring for pregnant women and women of reproductive age.



What Is Congenital Syphilis?

Congenital syphilis occurs when syphilis is transmitted from an infected mother to her fetus during pregnancy. It is a potentially devastating disease that can cause severe illness in babies including premature birth, low birth weight, birth defects, blindness and hearing loss. It can also lead to stillbirth and infant death.[2]

Congenital Syphilis Can Be Prevented!

Congenital syphilis can be prevented with early detection and timely and effective treatment of syphilis in pregnant women and women who could become pregnant. Preconception and interconception care should include screening for HIV and sexually transmitted diseases (STDs), including syphilis, in women at risk, in addition to access to highly effective contraception.

Prenatal Screening: It's the Law!

All pregnant women should receive routine prenatal care which includes syphilis testing. **In California, it is required by law that pregnant women get tested for syphilis at their first prenatal visit.**[3]

Syphilis testing should be repeated during the third trimester (28-32 weeks gestational age) and at delivery in women who are at high risk for syphilis or live in areas with high rates of syphilis,[4] particularly among females. Routine risk assessment should be conducted throughout pregnancy to assess the risk factors highlighted in the box on page 2; this should inform the need for additional testing.

Infants should not be discharged from the hospital unless the syphilis serologic status of the mother has been determined at least once during pregnancy and, for at-risk women, again at delivery.

1. California Department of Public Health (CDPH) Sexually Transmitted Diseases Control Branch Congenital Syphilis Prevention Guidance http://www.cdph.ca.gov/programs/std/Documents/Bauer_CA_STD_Controllers_Letter_Congenital%20_Syphilis_04_01_15.pdf.
2. Centers for Disease Control and Prevention Syphilis Fact Sheet http://www.cdc.gov/std/syphilis/stdfact-syphilis.htm.
3. California State Code http://www.leginfo.ca.gov/cgi-bin/displaycode?section=hsc&group=120001-121000&file=120675-120715.
4. Centers for Disease Control and Prevention 2015 Treatment Guidelines for Syphilis in Pregnancy http://www.cdc.gov/std/tg2015/syphilis-pregnancy.htm.

Version 1 (August 11, 2015)

omen Who Would Benefit from Additional Syphilis sting in the Third Trimester (28-32 Weeks) and at elivery Include Those Who:

Have signs and symptoms of syphilis infection.
Live in areas with high rates of syphilis, particularly among females.
Receive late or limited prenatal care.
Did not get tested in the first or second trimester.
Have partners that may have other partners, or partners with male partners.
Are involved with substance use or exchange sex for money, housing, or other resources.

Common Mistakes

Not reporting syphilis cases to local health departments within 24 hours.

Not strictly adhering to treatment guidelines for pregnant women with syphilis.

Not properly conducting routine risk assessment throughout pregnancy to determine need for additional testing.

iagnosing Syphilis

hilis is diagnosed by reviewing patient history, taking a sexual risk assessment, physical exam, and blood tests. king the diagnosis of syphilis requires interpretation of both treponemal and non-treponemal serology tests results. guidance on interpreting syphilis test results, refer to the CDPH screening and diagnostic guide listed in the *ources for Health Care Providers* section.

yphilis Treatment

atment for a pregnant woman is based on the stage of her infection. To prevent adverse pregnancy outcomes, sicians should treat patients as soon as possible.[5] Treating a pregnant woman infected with syphilis also treats her us.[6]

Treatment for Early Syphilis (determined to *be less than one year's duration*)
enzathine penicillin G 2.4 million units by intramuscular injection in a single dose

OR

Treatment for Late Latent Syphilis or Unknown Duration
Benzathine penicillin G 2.4 million units by intramuscular injection every 7 days for 3 weeks (7.2 million units total)

pregnancy, penicillin is the only recommended therapy. Pregnant women with penicillin allergies should be ensitized and treated with penicillin.[7] There are no alternatives.

pregnant women, benzathine penicillin doses for treatment of late latent syphilis must be administered at 7-day ervals; if a dose is missed or late, the entire series must be restarted.

artner Treatment and the Role of Local Health Departments

ause sex with an untreated partner can cause re-infection, it is especially important to ensure that the partner(s) eive treatment and to inform pregnant women about the risk to their infants if they have sex with an untreated tner. Local health departments are key collaborators in the prevention of congenital syphilis, and can assist with tner treatment.

ifornia law requires that all syphilis infections be reported to the local health department where the patient ides within 24 hours of diagnosis. Contact information for local health department staff working on syphilis vention and reporting can be found here: *http://www.cdph.ca.gov/HealthInfo/Documents/ D_CD_Contact_Info.doc*

esources for Health Care Providers

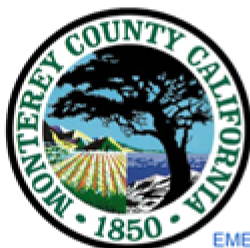
ters for Disease Control and Prevention: *http://www.cdc.gov/std/syphilis*

ifornia Department of Public Health (CDPH): *http://www.cdph.ca.gov/programs/std*

PH, Use of Treponemal Immunoassays for Screening and Diagnosis of Syphilis *http://www.cdph.ca.gov/ sforms/Guidelines/Documents/Treponemal_Immunoassays_for_Syphilis_Screening_and_Diagnosis.pdf*

C 2015 STD Treatment Guidelines Syphilis During Pregnancy http://www.cdc.gov/std/tg2015/syphilis-pregnancy.htm.
e Santis, M., De Luca, C., Mappa, I., Spagnuolo, T., Licameli, A., Straface, G., & Scambia, G.(2012). Syphilis infection during pregnancy: Fetal risks and clinical nagement. *Infectious Diseases in Obstetrics and Gynecology, 2012.*

Version 1 (August 11, 2015)



MONTEREY COUNTY

DEPARTMENT OF HEALTH Elsa Jimenez, Interim Director

ADMINISTRATION
EMERGENCY MEDICAL SERVICES

BEHAVIORAL HEALTH
ENVIRONMENTAL HEALTH/ANIMAL SERVICES
PUBLIC ADMINISTRATOR/PUBLIC GUARDIAN

CLINIC SERVICES
PUBLIC HEALTH

Health Update

May 3, 2016

From: Edward L. Moreno, MD, MPH
Health Officer 831-755-4585

Kristy Michie, MS
Epidemiologist 831-755-4503

Syphilis Incidence Increasing Steadily in Monterey County

The Congenital Syphilis Multidisciplinary Case Examination Toolkit

A Prevention Tool for Local STD Programs

This toolkit is intended for use by local health jurisdictions to conduct in-depth multidisciplinary examinations of congenital syphilis cases to identify missed opportunities for prevention and potential upstream interventions to prevent future cases.

CDPH California Department of Public Health

Public Health Response

- Confirm pregnancy status on lab reports (females)
- Prioritization by age, gender, pregnancy status
- Ensure timely treatment of pregnant women
- Contact tracing, partner testing and treatment
- Field testing sexual/social contacts, pregnancy
- Ensure adequate work up and treatment of neonates

California's Highest Priority for Prevention:

- Pregnant women with syphilis, any stage – ensure timely treatment and partner treatment, follow up with baby to ensure appropriate management
- Babies born with congenital syphilis
- Children and adolescents with syphilis
- Women of child-bearing age with syphilis – determine pregnancy status, ensure treatment, PS if effective
- Males with female partners (MSW+MSWM) with syphilis – ensure treatment and partner treatment
- Other syphilis cases based on:
  - risk to community,
  - benefit to individual (neuro/ocular syphilis),
  - HIV prevention needs, or
  - effectiveness of contact tracing

CDPH California Department of Public Health

California Syphilis Reactor Alert System

FEMALES

Age	Biological False Positive	Qual. or + Conf. only	Titer						+ Darkfield
			1:1	1:2	1:4	1:8	1:16	≥1:32	
Prenatal (any age)									
0-44									
45-49									
50-59									
60+									
Unknown									

MALES

Age	Biological False Positive	Qual. or + Conf. only	Titer						+ Darkfield
			1:1	1:2	1:4	1:8	1:16	≥1:32	
0-19									
20-29									
30-39									
40-49									
50-59									
60+									
Unknown									

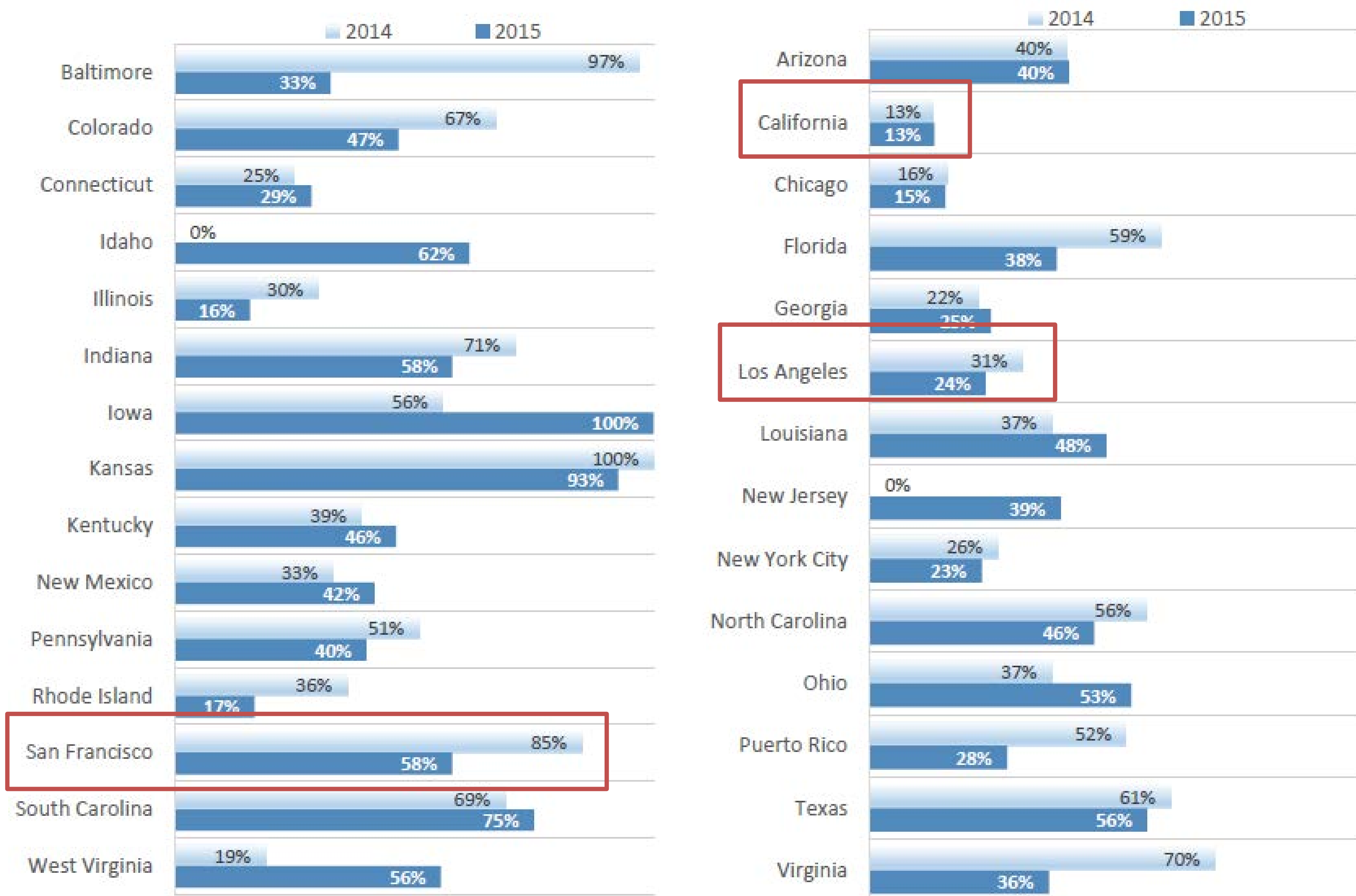
Alert Code	Is Syphilis History Report necessary?	Action
	YES	If reactor meets Criteria for Assignment*, create new incident in CalREDIE and assign to investigator within 1 working day.
	YES	If reactor meets Criteria for Assignment*, create new incident in CalREDIE and assign to investigator within 2 working days.
	YES	If reactor meets Criteria for Assignment*, more info required to rule out early syphilis infection. Initiate follow-up with provider. Phone call/query letter within 3 working days.
	NO	Administrative closure, based on age and titer.
	NO	Administrative closure, based on a negative treponemal test.

Criteria for Assignment:* 1) No records of previous serology, **OR 2) ≥ 4-fold titer increase (e.g. RPR 1:4 to 1:16), **OR** 3) history of negative serologic test for syphilis within past 12 months. See Step #3 of the California Syphilis Reactor Processing Algorithm.

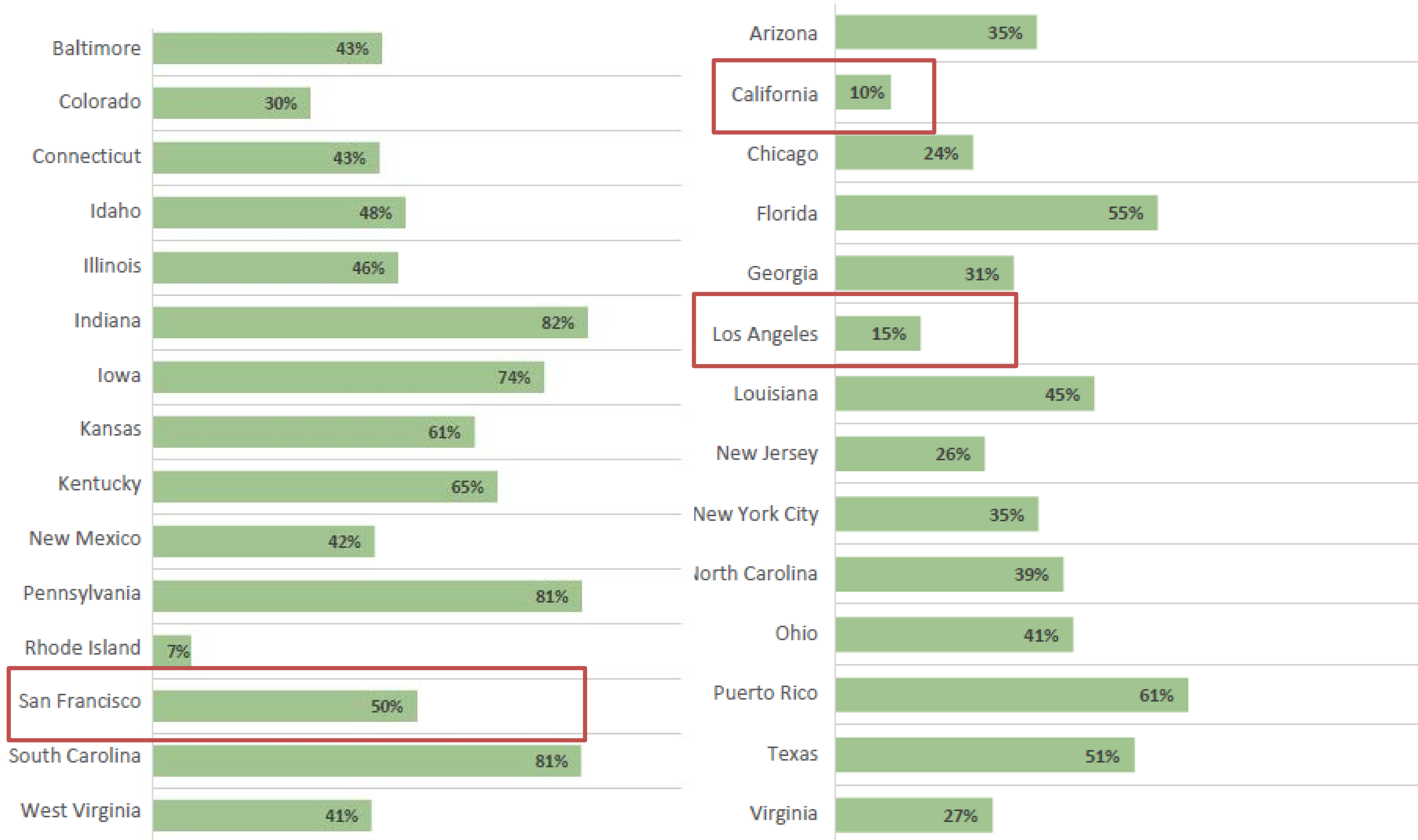
April 2015

For any questions contact the California STD Control Branch at (510) 620-3400

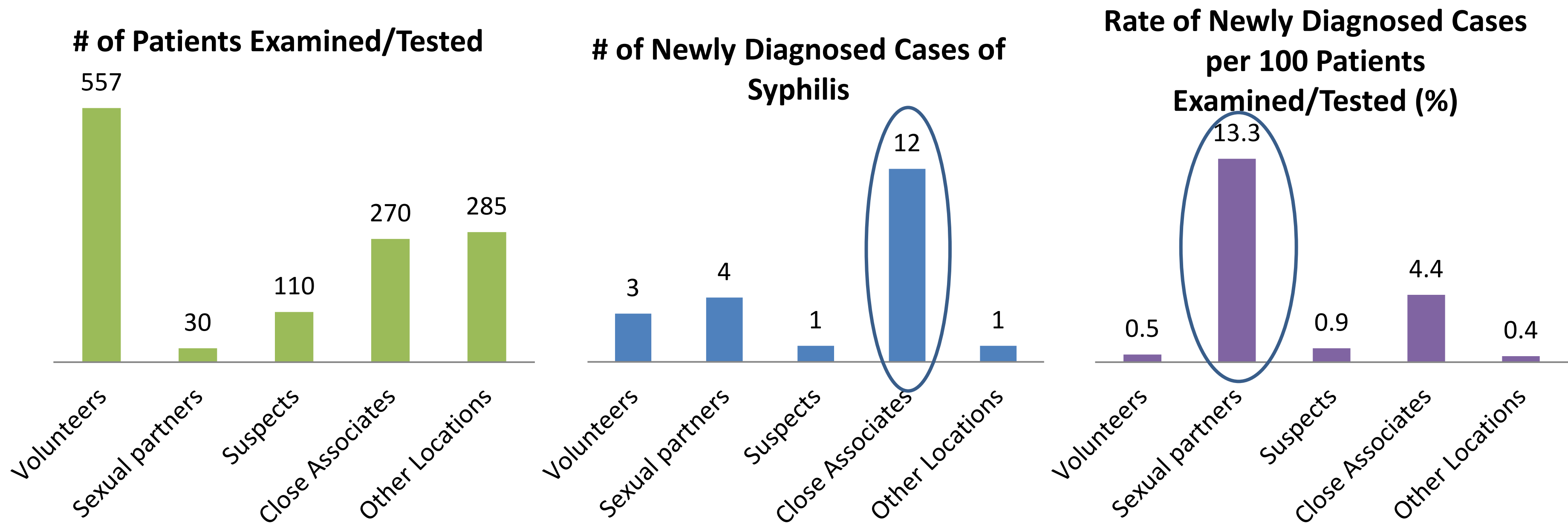
Public health partner services outcome: Percent of female cases with at least one partner treated, 2014-2015



Public health partner services outcome: Percent of MSW/MSMW cases with at least one female partner treated, 2014-2015



DIS + Screening: High yield from testing "associates"



Gerber, A. R., et al. (1989). "An outbreak of syphilis on an Indian reservation: descriptive epidemiology and disease-control measures." Am J Public Health **79**(1): 83-85.

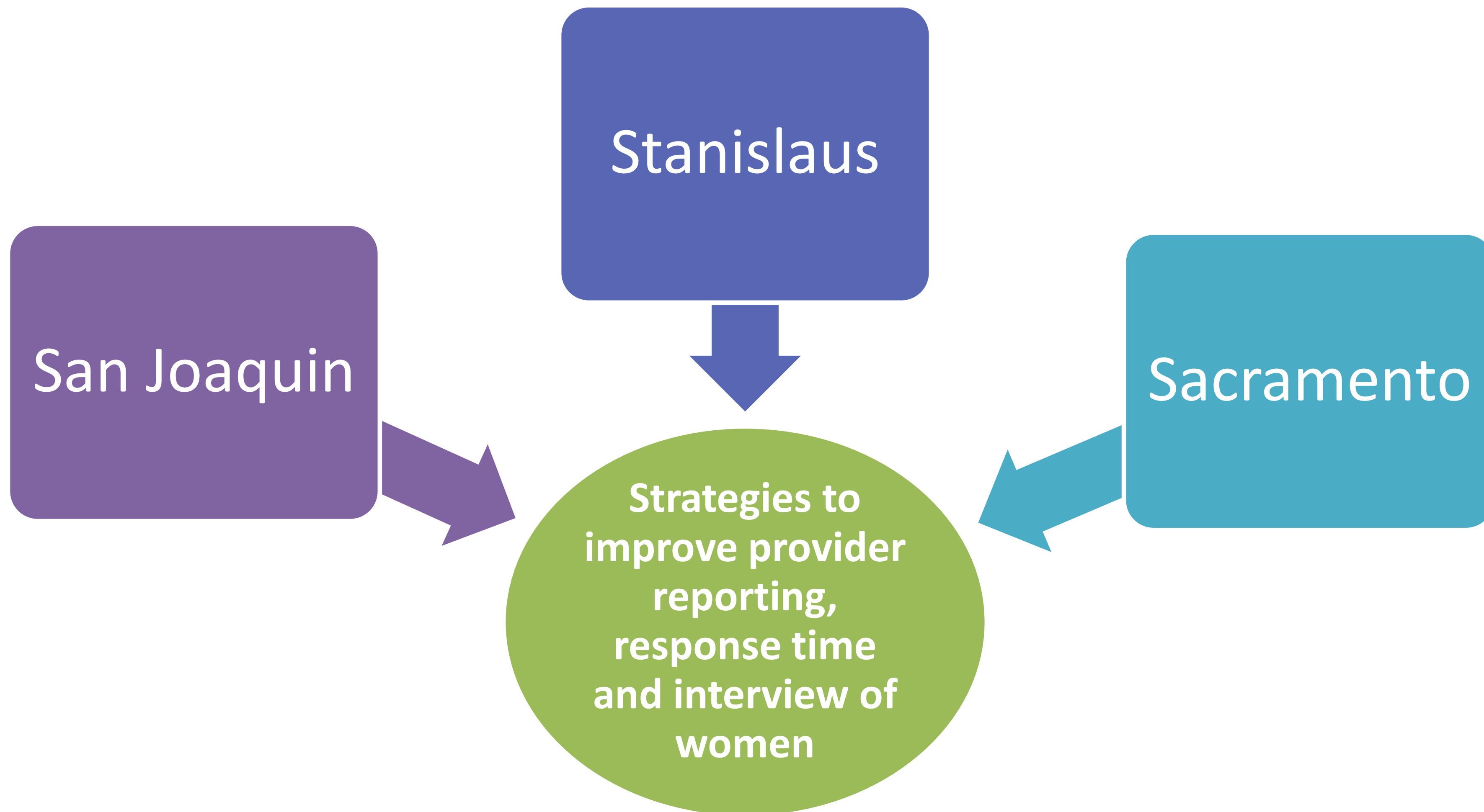
Prevention Effectiveness Measure: CS Prevention Ratio

LHJ	Number of CS cases	Number of pregnant female cases with any syphilis diagnosis	CS Prevention Ratio	Proportion of all female syphilis cases, age 15-44, with pregnancy variable completed
CPA	195	607	0.68	85%
High morbidity				
Alameda	9	17	0.47	43%
Fresno	67	154	0.56	84%
Kern	41	99	0.59	96%
Orange	4	36	0.89	66%
Riverside	3	20	0.85	76%
Sacramento	6	21	0.71	90%
San Bernardino	12	43	0.72	83%
San Diego	7	42	0.83	95%
San Joaquin	11	23	0.52	89%
Santa Barbara	3	11	0.73	97%
Santa Clara	4	17	0.76	73%
Stanislaus	12	25	0.52	83%
Tulare	2	13	0.85	96%

CDPH California Department of Public Health

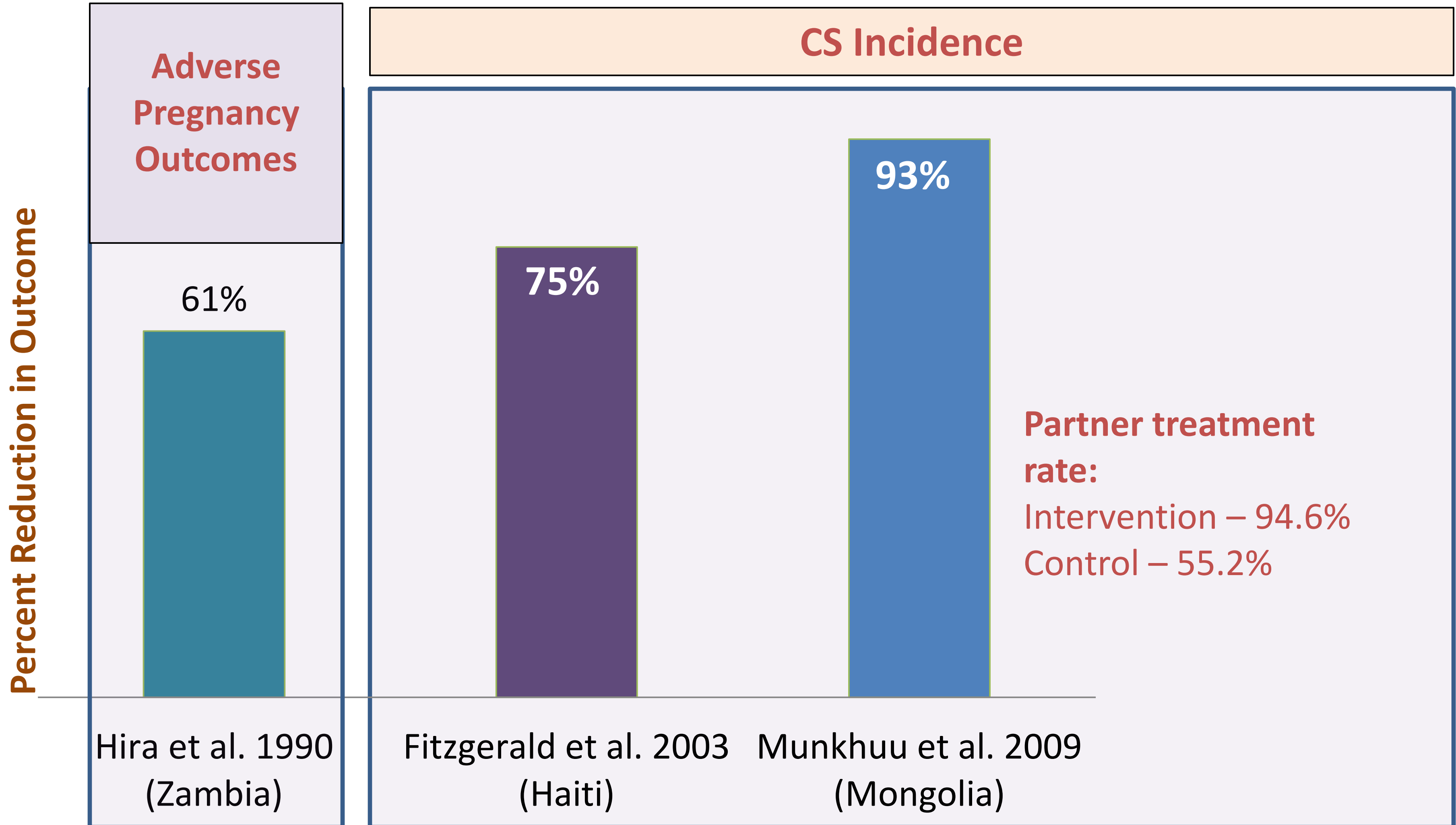
Data are entirely provisional

CDPH 2017 Targeted Evaluation Plan to Increase CS Prevention Ratio



CDPH
California Department of
PublicHealth

Prevention Impact of One-Stop-Shop: POC + Treatment



Pre-pregnancy Prevention & Screening Strategies

Pregnancy prevention (LARC)	Pregnancy testing	Drug and mental health treatment
Venue-based Screening (Corrections*)	Syphilis screening & treatment in non-pregnant women	Syphilis screening & treatment of MSW

Screening Adult Females in Correctional Settings: A Promising Approach

INTERVENTION:

→ Qualitative (or STAT) RPR testing → Search syphilis case registry database → Treatment at the time of medical evaluation

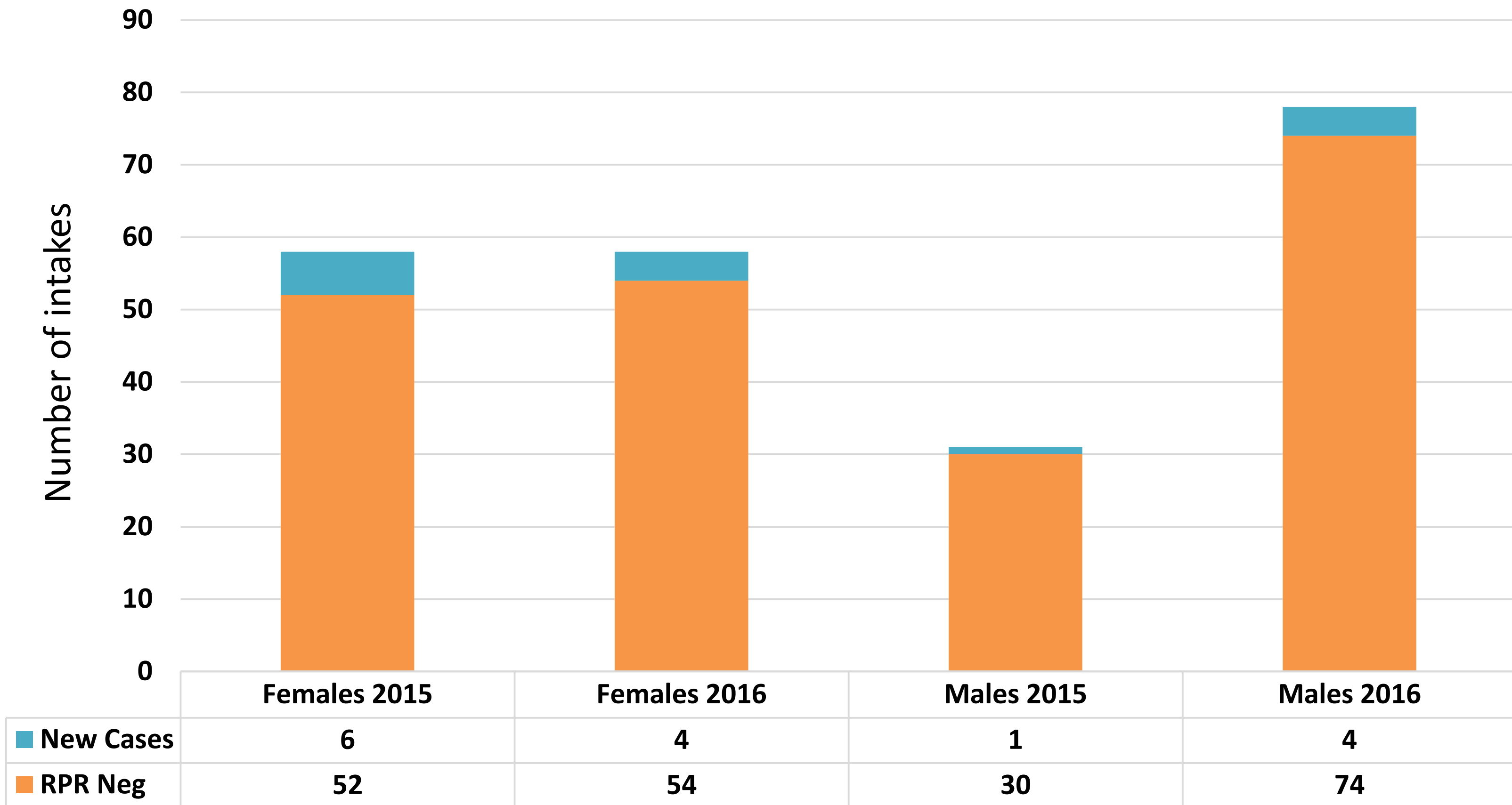
OUTCOMES:

- Treatment indicated for 190/760 (26%)
- Increased syphilis treatment from 7% to 84%
- Prevented 7 out of 8 potential congenital syphilis cases because mother was treated before discharge from correctional facility
- Cost: $8,200 to hook up STAT RPR equipment and registry and $0.25 per STAT RPR screening test

Blank, S., et al. (1997). "New approaches to syphilis control. Finding opportunities for syphilis treatment and congenital syphilis prevention in a women's correctional setting." *Sex Transm Dis* ***24****(4): 218-226.*

Kings County Jail Screening, 2015-2016

- Testing provided on request: 6% of females, 2% of males tested
- 10 females (8.6%) and 5 (4.6%) adult males newly diagnosed
- 17-year old female in juvenile detention newly diagnosed (8 tested)



	Females 2015	Females 2016	Males 2015	Males 2016
New Cases	6	4	1	4
RPR Neg	52	54	30	74

Courtesy Dr. James Spolsdoff, Kings County PHL

Policy Opportunities

Realm	Strategy
Data	• Reporting – timeliness, enforcement • Pregnancy status on CMR, ELR, and ECR • Access to vital stats and health services data
Clinical	• Prenatal screening – HEDIS measure, state mandate, local policy, screening in third trimester and delivery • POC test development • Correctional screening mandates • BIC availability, coverage, pricing • Infant hospital discharge requirements • Amnesty for pregnant drug users
Disease intervention	• Field testing • Certification

- **BARRIERS TO HEALTHCARE/PRENATAL CARE**
- **ROOT CAUSES = POVERTY, METH, HOMELESSNESS, SURVIVAL SEX**

State Policies on Substance Use During Pregnancy

STATE	SUBSTANCE USE DURING PREGNANCY CONSIDERED:		WHEN DRUG USE SUSPECTED, STATE REQUIRES:		DRUG TREATMENT FOR PREGNANT WOMEN		
	Child Abuse	Grounds For Civil Commitment	Reporting	Testing	Targeted Program Created	Pregnant Women Given Priority Access In General Programs	Pregnant Women Protected From Discrimination In Publicly Funded Programs
Alabama	X[*]					X	X
Alaska			X				
Arizona	X		X			X	
Arkansas	X		X		X	X	
California			X		X		
Colorado	X				X[ξ]		
Connecticut					X		
Delaware						X	
District Of Columbia	X		X			X	
Florida	X				X		X
Georgia						X	
Illinois	X		X		X[ξ]	X	X
Indiana	X[†]			X	X		
Iowa	X		X	X		X	X
Kansas						X	X
Kentucky			X	X	X	X	X
Louisiana	X		X	X			
Maine			X			X	
Maryland	X		X		X		
Massachusetts			X				
Michigan			X				
Minnesota	X	X	X	X	X		
Missouri	X[Ω]				ξ	X[‡]	X
Montana			X				
Nebraska							
Nevada	X		X				
New York					X		
North Carolina					X		
North Dakota	X		X	X			
Ohio			X		X		
Oklahoma	X		X			X	X
Oregon					ξ		
Pennsylvania			X		X		
Rhode Island	X		X	X			
South Carolina	X[*]				X		
South Dakota	X	X					
Tennessee					X[ξ]	X	X
Texas	X						
Utah	X		X			X	
Virginia	X		X		X[ξ]		
Washington	X				X[ξ]		
West Virginia						X[θ]	
Wisconsin	X	X	X		X	X[β]	
TOTAL	23+DC	3	23+DC	7	19	16+DC	9

CDPH
California Department of Public Health

Guttmacher Institute, 2017

Media

How Syphilis Came Roaring Back

The 18th-century ailment was on the brink of elimination before budget cuts helped resurrect it.

OLGA KHAZAN AND RUSSELL BERMAN | JUN 28, 2016 | HEALTH

In recent months, newspapers around the country have published stories that sound like they could have been written 100 years ago. Indiana's syphilis cases skyrocketed by 70 percent in a single year. Texas' Lubbock county was under a "syphilis alert." Various counties face shortages of the medication used to treat syphilitic pregnant women.

THANK YOU!

Heidi.Bauer@cdph.ca.gov

510 620 3178