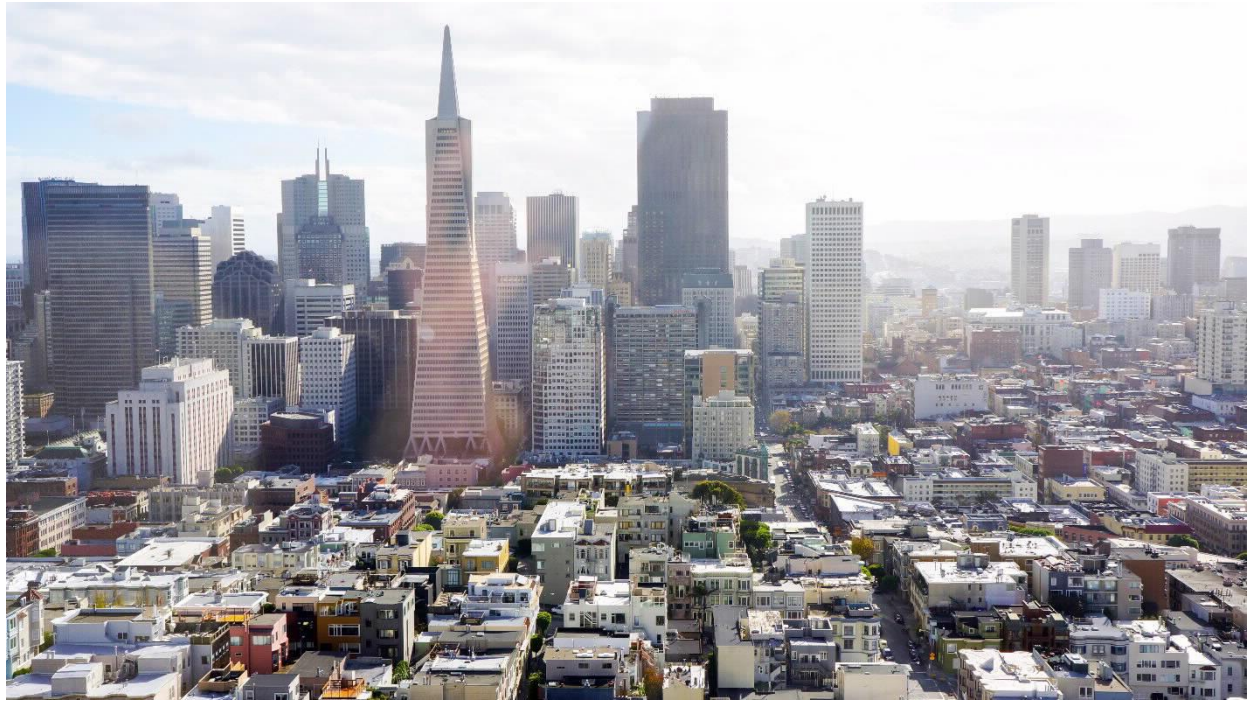

Concerning Rise of Syphilis Among Women in SF

Stephanie Cohen, MD, MPH
Medical Director
San Francisco City Clinic
Population Heath Division
San Francisco Department of Public Health

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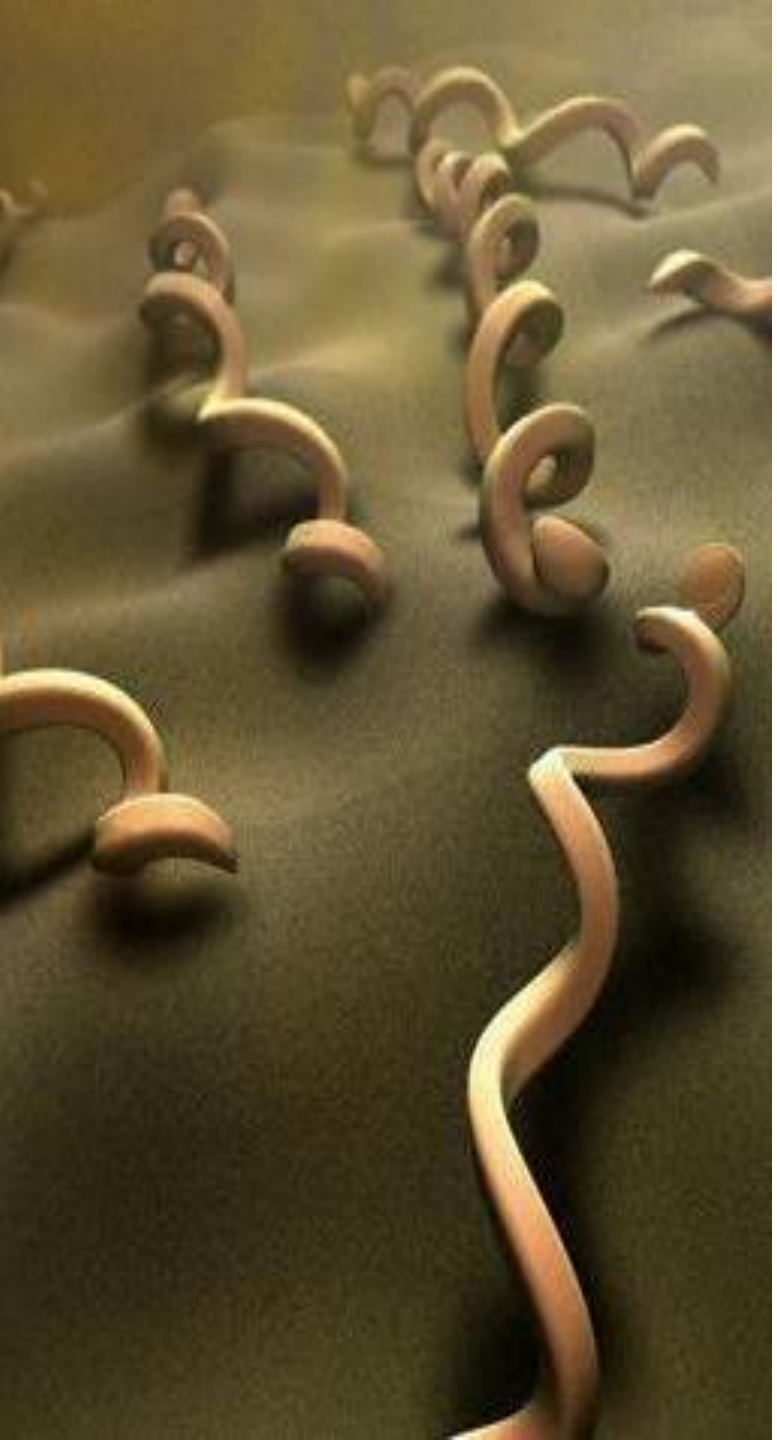
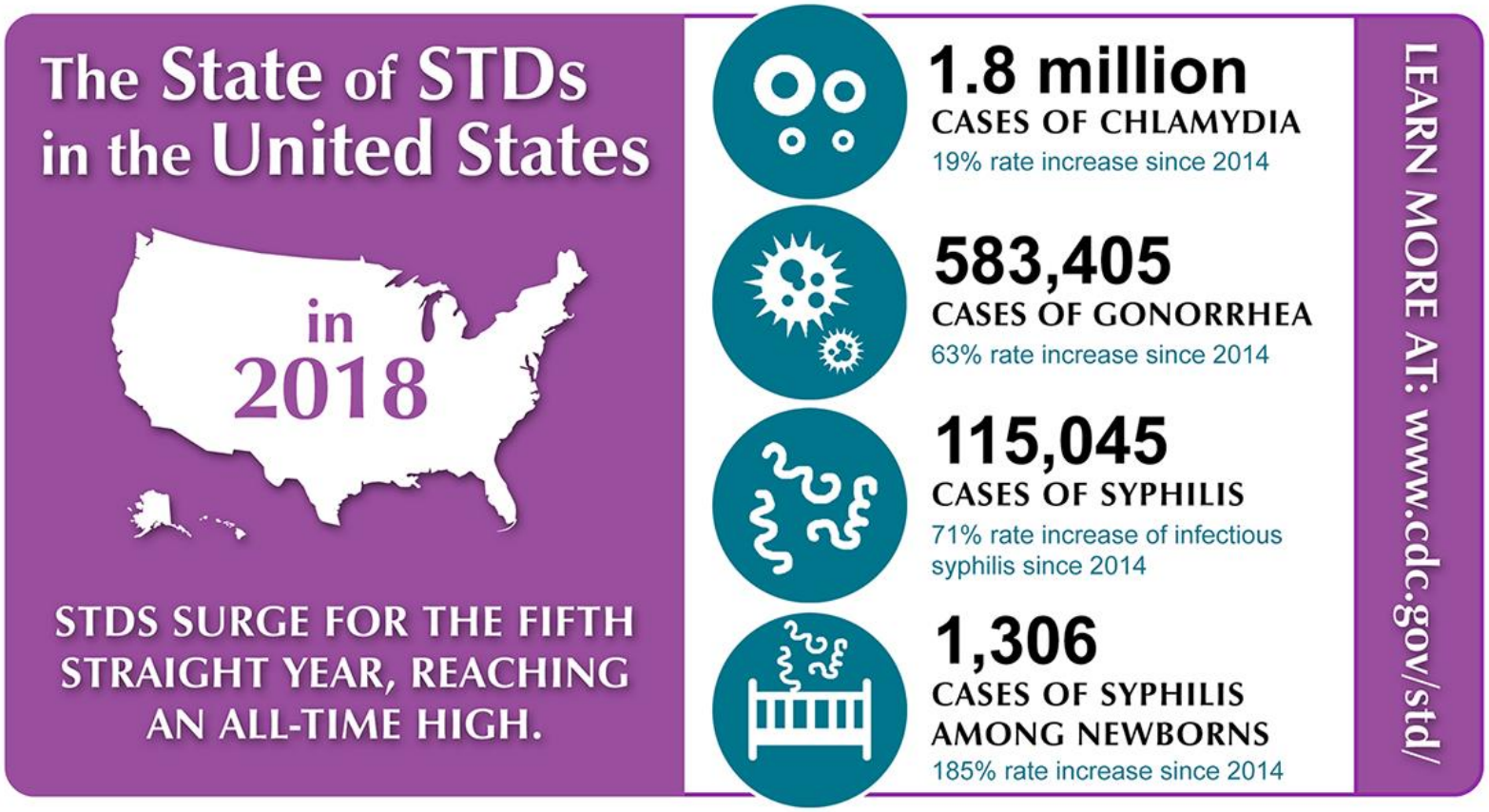


Learning objectives

- Understand epidemiology of syphilis in San Francisco
- Recognize clinical presentation and typical physical findings of primary and secondary syphilis
- Understand when to order and how to interpret diagnostic tests for syphilis
- Be able to determine syphilis stage and treatment plan
- Know how to consult SF City Clinic for assistance

The US is Experiencing Steep, Sustained Increases in Sexually Transmitted Infections



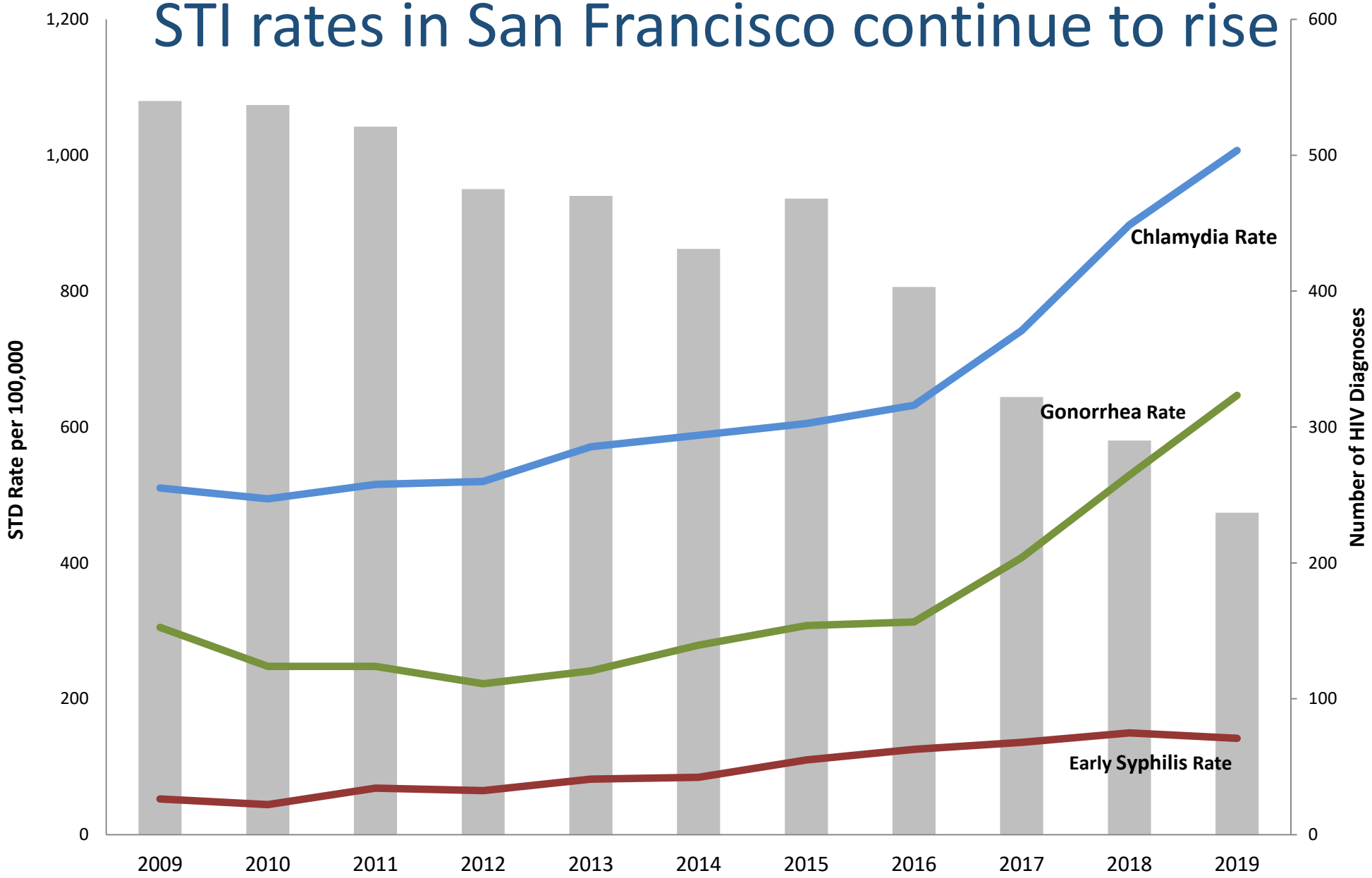
Sexually Transmitted Disease Cases Rise to Record High, C.D.C. Says

Cases of syphilis, gonorrhea and chlamydia in the United States jumped last year, and an alarming number of newborn deaths were linked to congenital syphilis.

L. Stack, New York Times 10/9/19

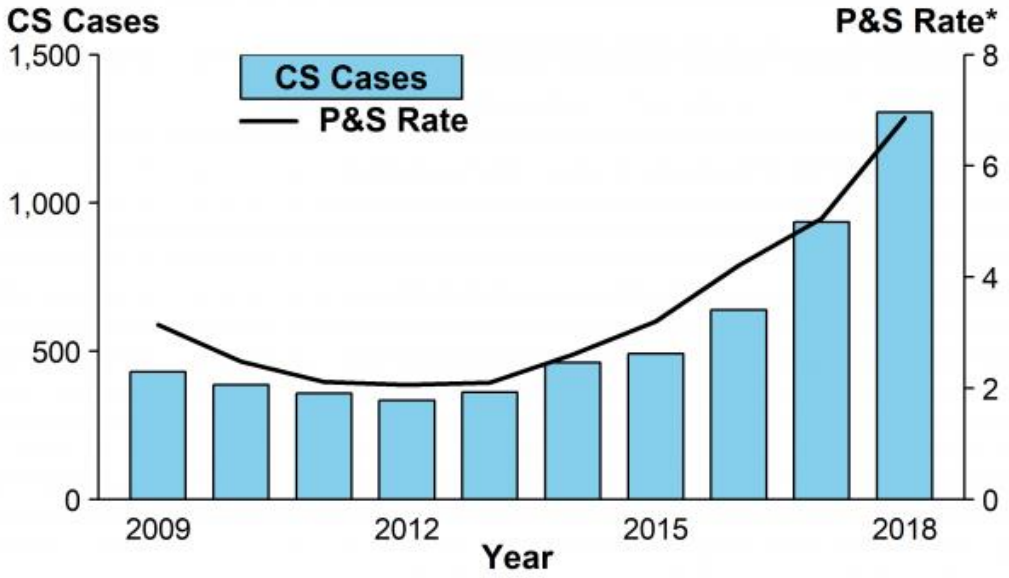
Cdc.gov/nchhstp/newsroom

STI rates in San Francisco continue to rise



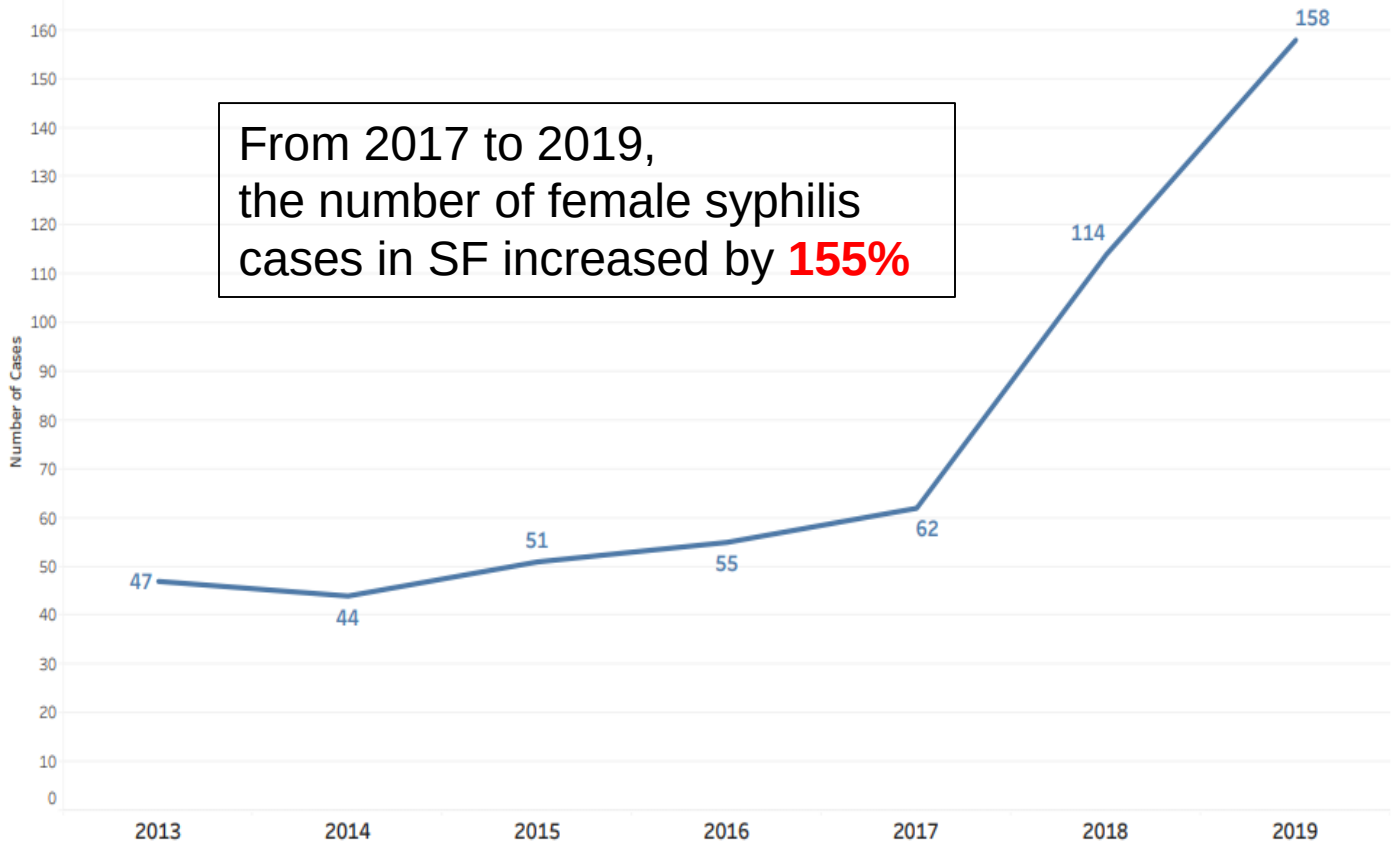
Congenital Syphilis Cases are at 15-year High

Figure 49. Congenital Syphilis — Reported Cases by Year of Birth and Rates of Reported Cases of Primary and Secondary Syphilis Among Females Aged 15–44 Years, United States, 2009–2018



* Per 100,000.
ACRONYMS: CS = Congenital syphilis; P&S = Primary and secondary syphilis.

Total Female Syphilis Cases (all stages), San Francisco Residents, 2013 - 2019



From 2017 to 2019,
the number of female syphilis cases in SF increased by **155%**

v1.0 Preliminary Data as of 9/8/2020

Women with syphilis are among the most vulnerable and marginalized in San Francisco

In 2018:

- 31% homeless
- 37% reported methamphetamine use (among interviewed cases)
- 32% diagnosed in San Francisco Health Network
- 6% diagnosed in jail

Social vulnerability

Male partner risk

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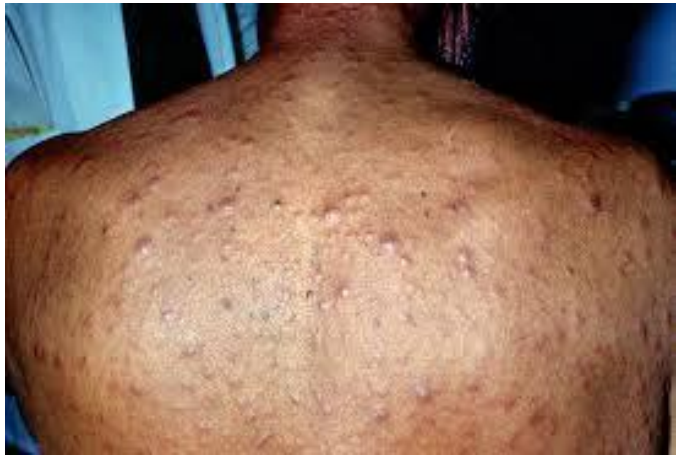
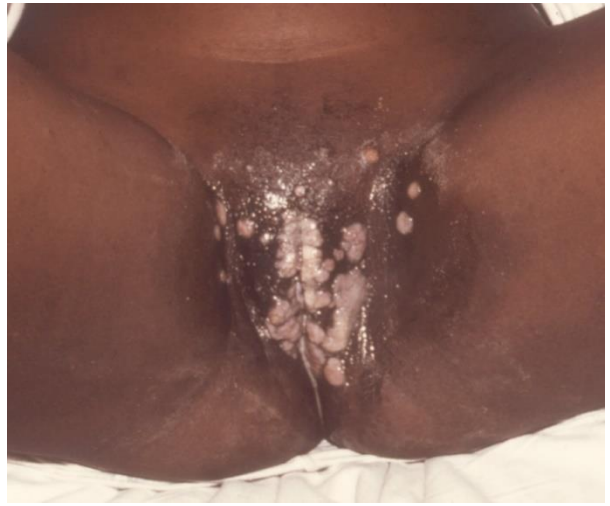
As of Jun 19, 2019

Case 1: The bumpy rash

- 29 yo F no PMHx presented to urgent care for 1 month history of fatigue followed by full body rash that started as red bumps which became itchy
- 2 weeks ago rash spread to her scalp and this is extremely painful
- Social hx: living in her car, 2 children staying with mother, + meth use

Case 1: Physical exam and labs



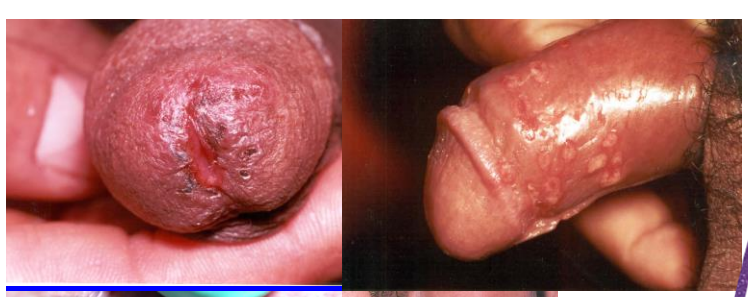


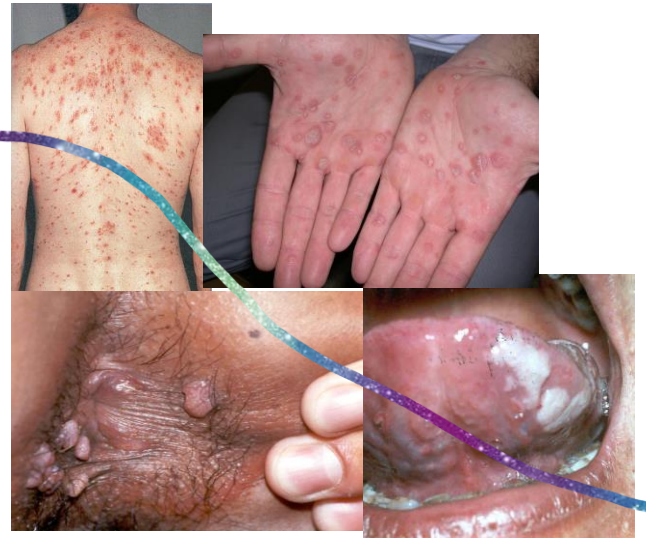
- Temp 100, HR 98, BP 100/80
- WBC 3.0, ALT 45
- CBC and Chem 7 nml
- RPR and HIV pending

Case 1: Questions

- What's on your differential diagnosis?
- What other tests would you order?
- Empiric treatment?

Syphilis Natural History





RPR Titer

1:1

Exposure → 30-50% → 1^0 → 2^0 → Early Latent

70% → Late latent

30% → Tertiary

25%

Incubation Period 3-4 weeks

2-6 weeks

After 3-8 weeks lesions disappear spontaneously

2-20 years

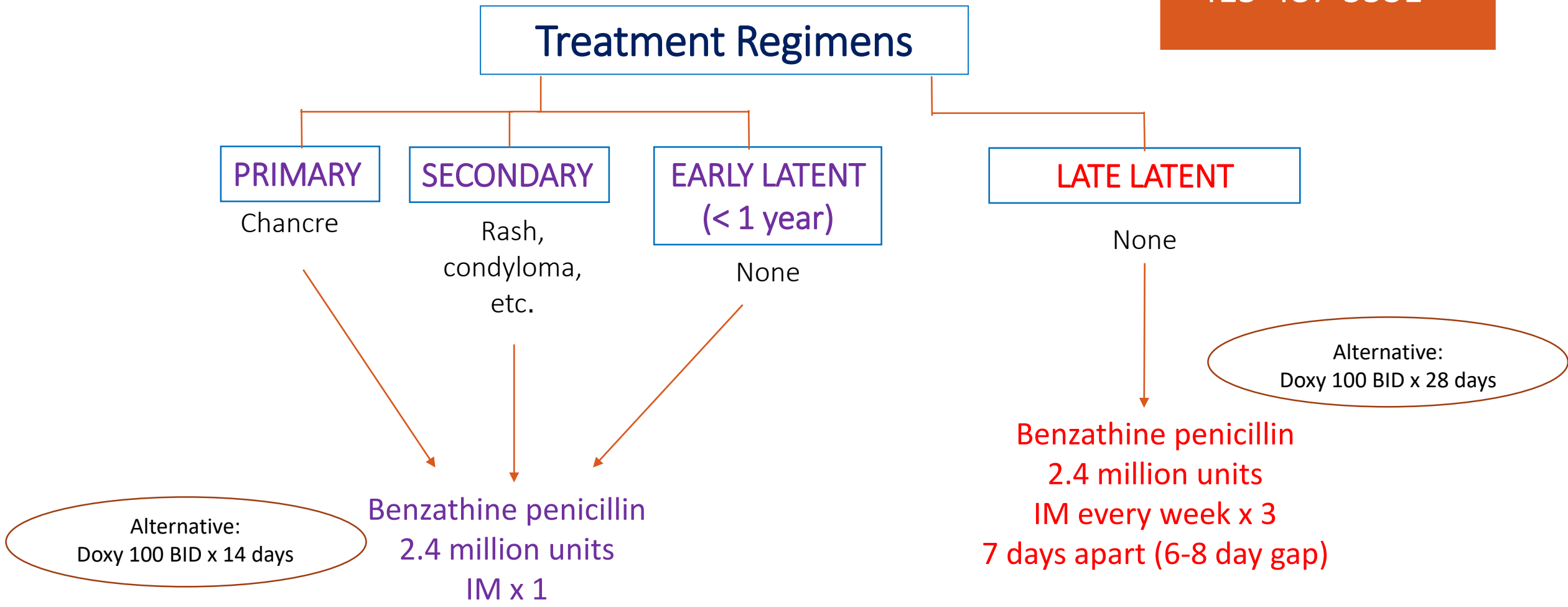
Neurosyphilis can occur at any stage

Case 1: Questions

- What's on your differential diagnosis?
  - Moist, warty lesions on vulva are condyloma lata -> **secondary syphilis**
  - Itchy papular rash?
- What other tests would you order?
  - Urine or vaginal swab for GC/CT
  - **Pregnancy test**
  - Blood cultures
- Empiric treatment?

Syphilis Treatment

For titer history:
415-487-5531



If pregnant woman is pen-allergic, desensitization is necessary

Dx: Acute HIV infection and secondary syphilis

- RPR 1:64, TPPA positive
- HIV Ag/Ab positive, HIV ½ differentiation negative, HIV VL 9 million
- Empiric treatment with bicillin 2.4 mu IM x1
- PHAST team at ZSFG and LINCS at SF City Clinic followed-up
- Started antiretroviral treatment (rapid start)
- Partner services
- Placed by LINCS into a Navigation Center

Syphilis Screening

- MSM and trans people having sex with men: q3months
- Pregnant women:
  - 1st trimester
  - 3rd trimester (28-32 weeks)
  - Delivery: unless low risk and negative in 3rd trimester

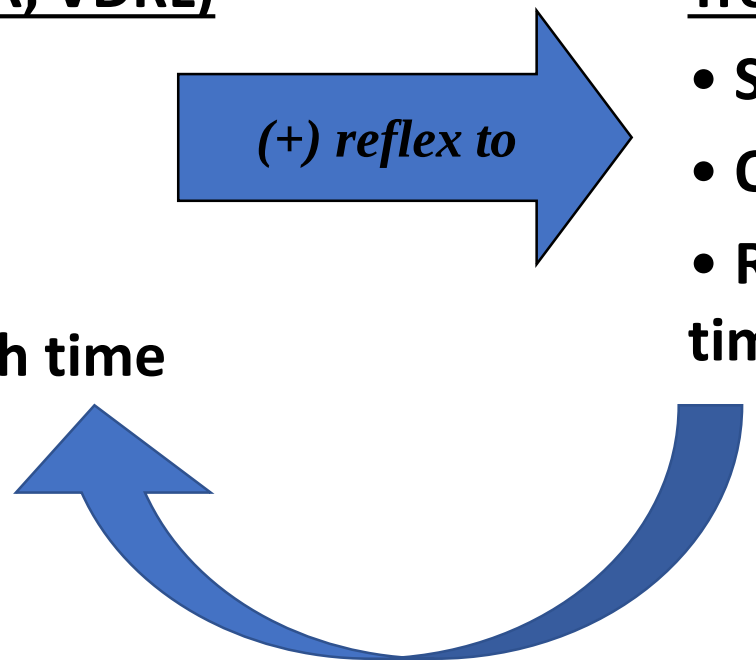
Consider syphilis screen if:

- Homelessness
- Methamphetamine use
- History of STD in the past year
- Sex work
- Intimate partner violence
- Incarceration
- Partner who is MSM, PWID or using meth

"Traditional" approach to syphilis screening

Non-treponemal tests (i.e., RPR, VDRL)

- **Non-specific to TP**
- **Quantitative (titer)**
- **Titer reflects disease activity**
- **Reactivity (titer) declines with time**



Treponemal tests (e.g. TPPA)

- **Specific to *TP***
- **Qualitative**
- **Reactivity persists over time**

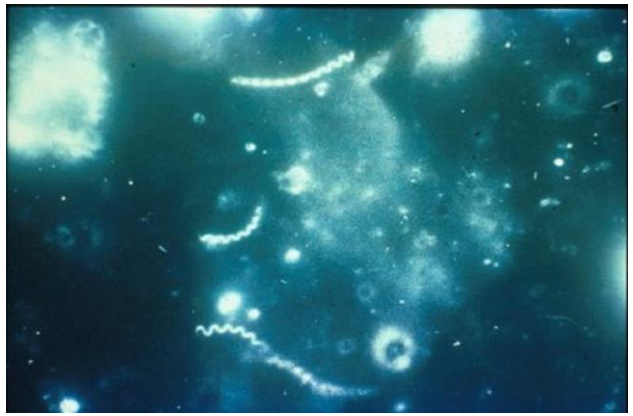
Reverse Sequence Starts with an *automated* Treponemal Test (EIA)

Syphilis testing pearls:

- Treponemal test has higher sensitivity in early disease
- Obtain an RPR titer on the day of treatment
  - Rapid, wide fluctuations early in disease

Diagnosing syphilis is tricky

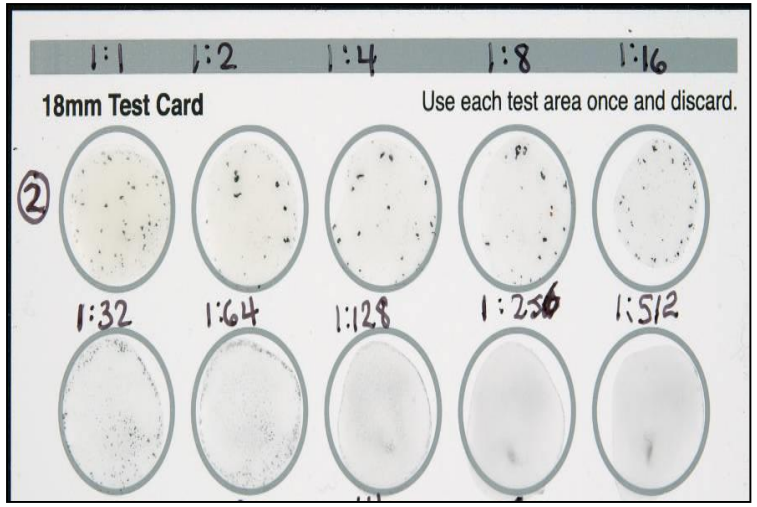
- Visible symptoms (chancre, rash, mucocutaneous findings) of early syphilis often misconstrued, or buried in body cavities
- Syphilis can't be cultured
- Darkfield microscopy is a dying art
- Serologies remain the mainstay of laboratory diagnosis: is this 2020 or 1920 (or 1906)*?



*date attributed to the Wasserman reaction (complement fixation to pulverized bull's heart extract) for syphilis diagnosis

ZSFG is implementing reverse sequence screening SOON

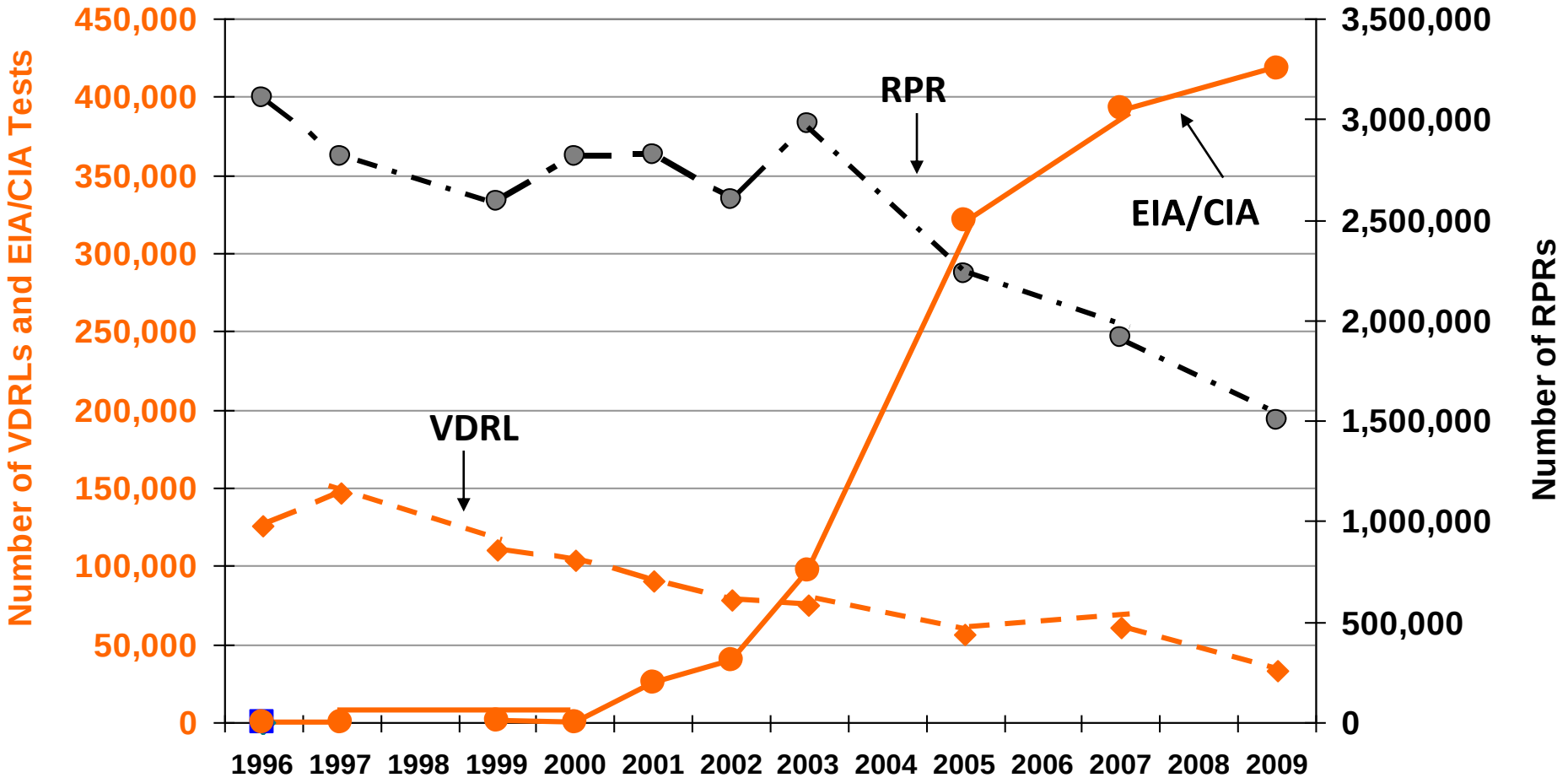
Why switch to EIA/CIA?



VS

- 180 tests per hour
- No manual pipetting
- Fast turn around time

Syphilis Tests by Test Type, 1996-2009

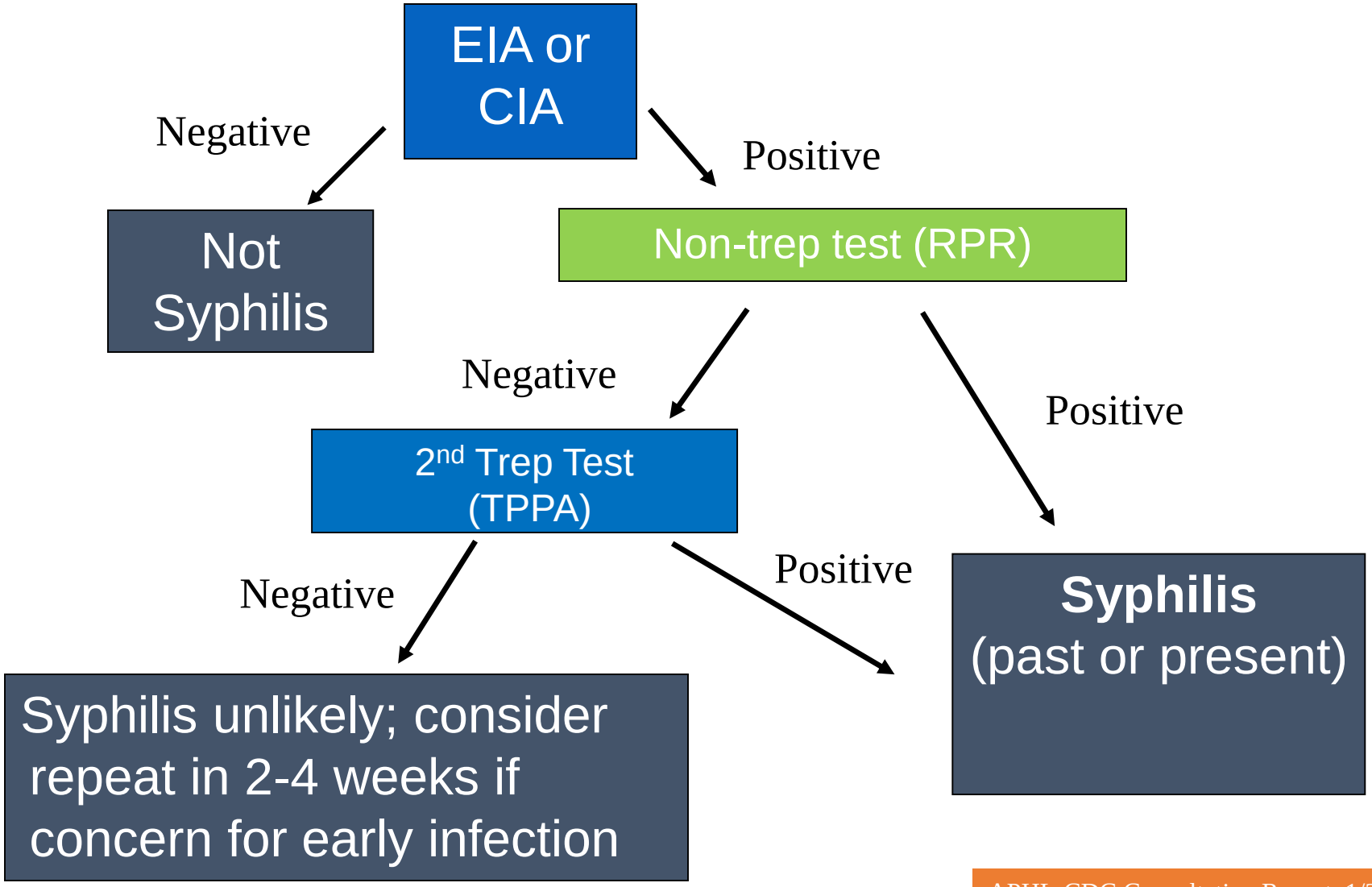


California Department of Public Health, STD Control Branch, 2009

Limitations of the Reverse Sequence Screening

- False positive EIAs, especially in low prevalence population
- If patient has a history of syphilis, starting with EIA is an extra step that could delay determining whether patient has a new syphilis infection
  - There will be an option in EPIC for “RPR for treatment monitoring”
- Discordant results can be confusing

"Reverse Sequence" Syphilis Screening: Screening with Treponemal Immunoassay



APHL-CDC Consultation Report, 1/2009 MMWR 2011/Vol 60 (5)

Reasons for discordant test results (i.e. EIA/CIA+ / RPR-)

- **False-positive EIA/CIA**
  - EIAs and CIAs are very sensitive
  - Some have lower specificity than traditional treponemal tests
- **Treated syphilis**
  - Seroreversion of nontreponemal antibodies
- **Early primary syphilis**
  - Treponemal antibody may appear slightly before nontreponemal antibody
  - EIA may appear slightly earlier than TPPA

Case 2: History of syphilis

Patient presents to urgent care and says his partner was recently diagnosed with syphilis. The patient has a prior history of syphilis, and his last RPR in EPIC is 1:4. What do you do?

- EIA will likely be positive, and starting with this test will delay the RPR result by a few days
- **Order an RPR for "treatment monitoring"** (search for RPR in EPIC)
- Empirically treat because he is a contact to syphilis

Case 3: Patient comes in for syphilis follow-up

- 33 yo gay man presented to urgent care with urethral discharge
- Empirically treated for Gonorrhea, and tested for syphilis and GC/CT (throat, rectum and urine)
- Results come back with the following:
  - Urine GC positive (urine CT negative)
  - GC/CT negative at all other sites
  - **EIA positive, RPR negative, TPPA negative**
- Patient comes back to urgent care because he saw positive EIA in MyChart
- What do you do?

EIA+/RPR-/TPPA- → Most likely a false positive EIA

- Next steps, ask the patient if:
  - They have ever had syphilis in past
  - They have any symptoms concerning for early syphilis
  - Any recent sex partners have been diagnosed with syphilis
- If concerning symptoms or contact to syphilis, TREAT for early syphilis (Bicillin 2.4 mu IM x1)
- If no symptoms or contact, likely false positive. Consider repeat screen in 2-4 weeks if concerned for early infection.

Case 4: Phone a friend

- 25 yo MSM presents to urgent care with sore throat. Physical exam reveals mild pharyngeal exudate and cervical lymphadenopathy. Rapid strep is negative. You order 3-site GC/CT screening and a syphilis screen.

- Results come back with the following:
  - Pharyngeal GC positive (rest of GC/CT tests are negative)
  - **EIA positive, RPR negative, TPPA positive**

- What do you do?

EIA+/RPR-/TPPA+

1) Untreated early syphilis (prior to RPR seroconversion)

2) Untreated late syphilis

3) Previously treated syphilis

EIA+/RPR-/TPPA+

- <u>Ask:</u> Hx of syphilis, recent symptoms, contact to syphilis?

- <u>Examine:</u> Mouth, skin, anogenital

- <u>Call:</u> SFCC if you want to consult or to confirm syphilis titer and treatment history
  - Titer history: 415-487-5531
  - Clinical consult: 415-487-5595

EIA+/RPR-/TPPA+

EVALUATION	ACTION
History of treated syphilis	- No treatment - Order RPR for routine syphilis screening moving forward
Ulcer on exam or recent (last month) contact to known case	Treat for early syphilis (Bicillin 2.4 mu IM x1)
No known history of syphilis, no recent known syphilis contacts, no findings	Treat for late latent syphilis (Bicillin 2.4 mu IM weekly x3)

Rapid point-of-care testing with Syphilis Health Check™?

- **Qualitative, rapid finger-stick assay for the detection of syphilis antibodies**
  - Visual interpretation
  - Uses blood
  - Results within 15 minutes
- **Treponemal specific test**
  - Can be used as an initial screening test → requires a confirmatory non-treponemal (RPR) lab test
  - Not an effective screening tool for those with a past history of syphilis
- Street medicine RNs are testing through street outreach
- Offered in SF jail alongside rapid HIV/HCV testing

Rapid Syphilis Testing at Urgent Care

Advantages:

- Does not require phlebotomy
- Fast turn around time

Disadvantages:

- Lower sensitivity and specificity than lab-based test
- **Positive test requires blood draw for confirmation** (and quantitative titer) – order EIA
- Not useful in someone with a history of syphilis

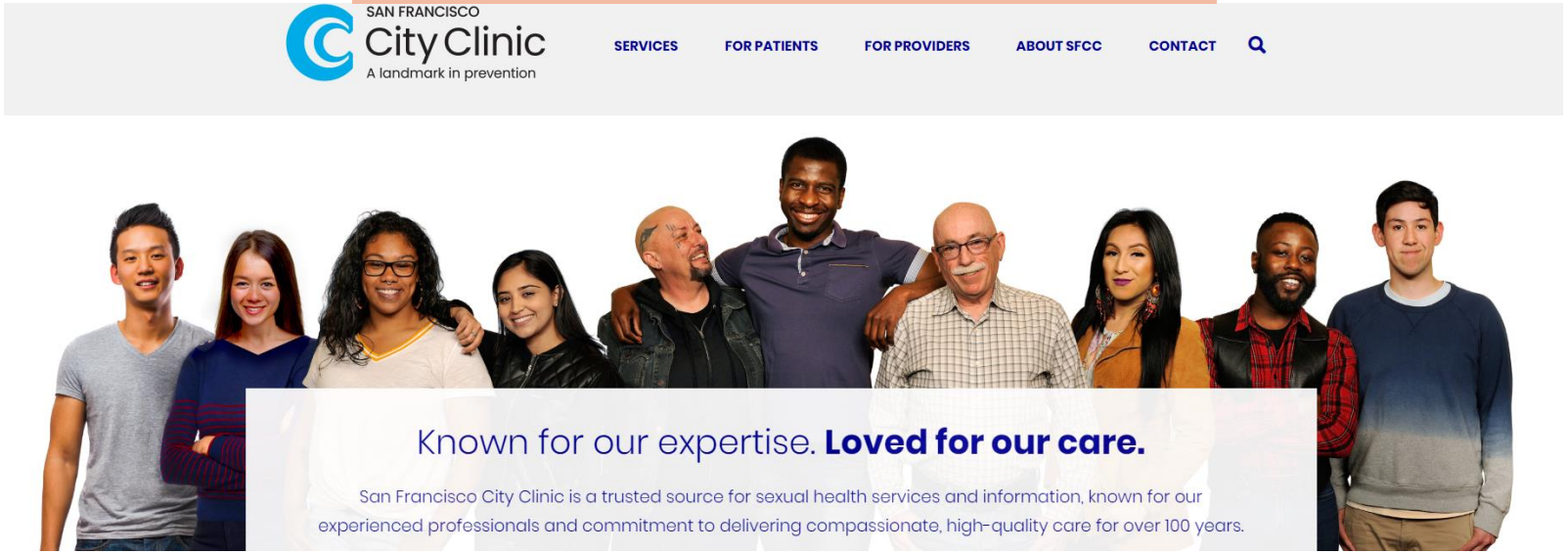
SF-wide action to prevent congenital syphilis

Screen pregnant women and at-risk women and men having sex with women

- Screen in EDs, urgent care, navigation centers and through street outreach
- **Screen at-risk women at least ANNUALLY**
  - Meth use
  - Homelessness or unstably housed
  - IPV, incarceration
  - Sex work

Consult with City Clinic and encourage patients to engage with LINCS health workers to ensure partner treatment

www.sfcityclinic.org/providers



- LINCS/Syphilis titer and treatment history: 415-487-5531
- Provider Line (8-5: M, W, Thu, Fri and 10-7 on Tues): 415-487-5595
- Clinical consultation:
  - Dr. Oliver Bacon: 415-487-5588; oliver.bacon@sfdph.org
  - Dr. Stephanie Cohen: 415-487-5503; stephanie.cohen@sfdph.org
- Fax a CMR: 415-431-5530
- LINCS team syphilis supervisor: Rebecca Shaw:
  415-487-5519; Rebecca.shaw@sfdph.org

Syphilis Key Messages

- **Screen**
  - All women and MSW who are experiencing homelessness and/or using methamphetamine annually
  - Anyone who is receiving an HIV test
  - MSM every 3 months
- Confirm all women diagnosed with syphilis have a **pregnancy test**
- **Empirically treat** patients with signs of syphilis with bicillin and patients who report recent exposure to a partner with syphilis
- Emphasize the importance of **partner treatment** and engaging with LINCS
  - Call us for titer and tx history: 415-487-5531
  - Please document updated cell phone numbers, emergency contact information and where they spend time so that LINCS can follow up

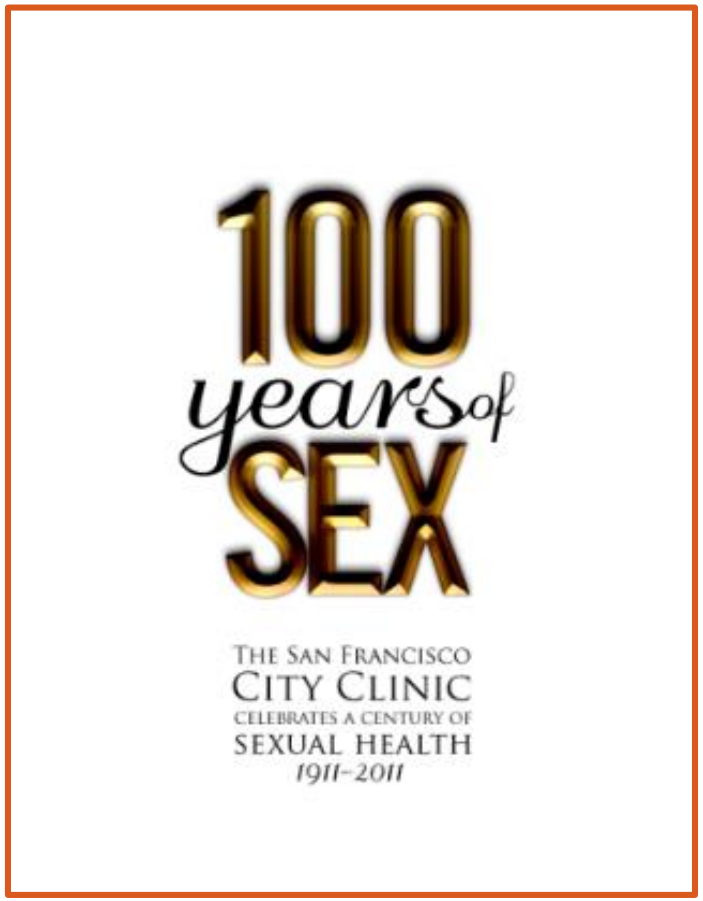
Thank You!

Stephanie Cohen

Alyson Decker

Oliver Bacon

Susan Philip



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