

“SYPHILIS EDUCATION TODAY”
Local Outbreaks: How to Contain One
in your Area and Syphilis and
Pregnancy, a Growing Concern

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Disclosure

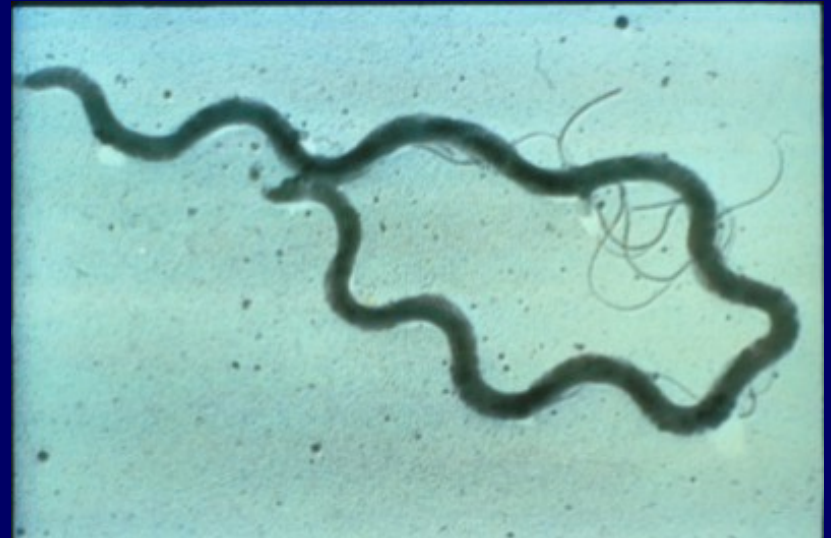
- **Dr. Klausner is an employee of the City & County of San Francisco and a Faculty member of the University of California, San Francisco**

In the past 12 months:

- **The NIH, CDC, California HIV Research Program and Gen-Probe, Inc., Focus Technologies, and Cerexa provided research funding to Dr. Klausner**
- **Communications Strategies, Inc. , CSI Medical Education and King Pharmaceuticals, Inc. supported Dr. Klausner to conduct various educational programs**

Syphilis Biology

- *Treponema pallidum*
a spirochete
bacterium spread
through sexual
contact—oral, anal
or vaginal sex
- Humans only host
- Facilitates HIV
transmission



Primary syphilis—chancres



Primary syphilis—chancres



anorectal



finger

Secondary syphilis



Mucous patches



Rash



Condylomata lata

Secondary syphilis—annular rashes



palms

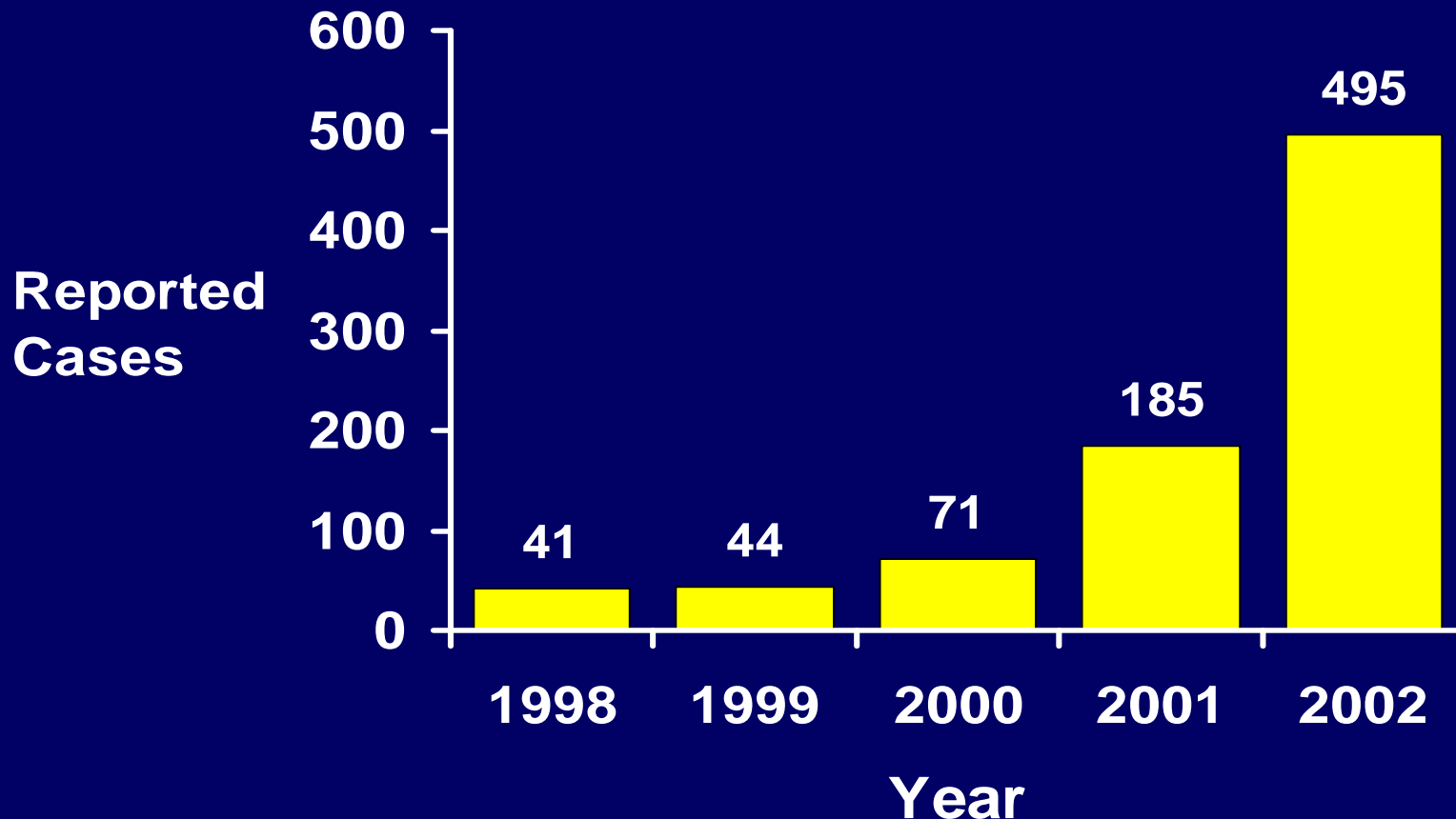


scrotum

Case 1-- Outbreak

Early Syphilis Cases

San Francisco, 1998–2002



Case-control studies identified factors associated with syphilis, San Francisco

- Male same-sex behavior
- HIV-infection/ HAART
- Decreased concern about HIV/AIDS
- Increased number of sex partners
- Increased proportion with multiple partners
- Methamphetamine use
- Viagra use
- Internet use

Public Health Response

Enhanced surveillance

- Quarterly blinded syphilis testing at anonymous HIV testing sites
- Monthly review of syphilis results at clinics, hospitals, emergency rooms, jails
- Weekly case review
- Neurosyphilis case review

Expanded screening and clinical services

- Targeted screening programs in care settings
- Easy, free online testing service www.stdtest.org
- City STD Clinic prioritized cases and persons exposed to syphilis
- Community prevention center (MAGNET)
- Provider Bicillin distribution program

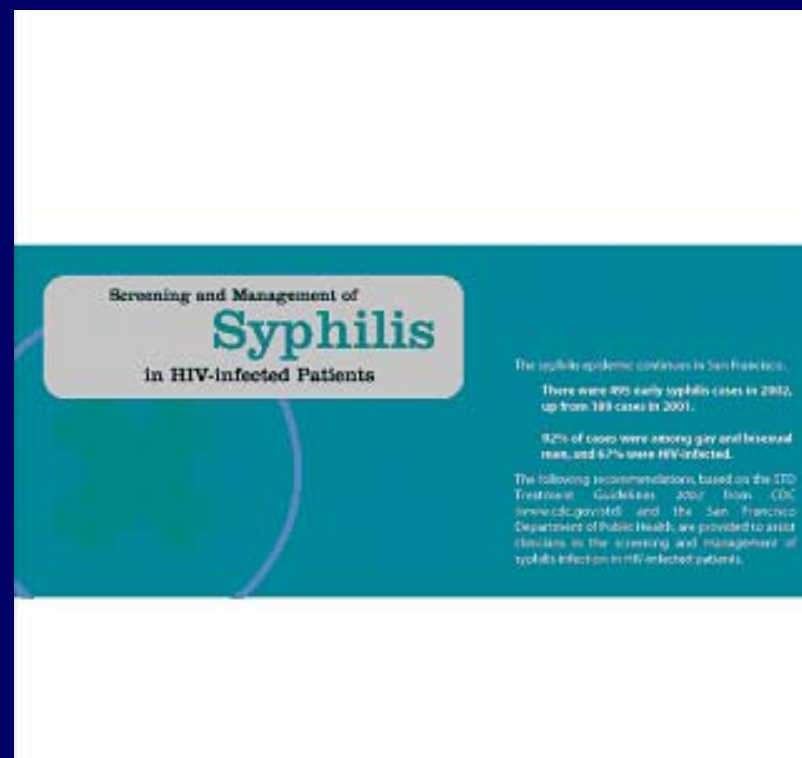
Prophylactic syphilis treatment for adults

- Penicillin G benzathine (Bicillin® L-A)* 2.4 million units (MU) intramuscular (IM) once
- **Penicillin-allergic:**
 - Non-Pregnant:
Doxycycline 100 mg PO BID x 14 days
 - Pregnant:
Test for hypersensitivity, desensitize, treat with penicillin G benzathine 2.4 MU IM once
- * Do not substitute Bicillin® C-R for Bicillin® L-A in the treatment of syphilis. Bicillin® C-R is NOT indicated for the treatment of syphilis.



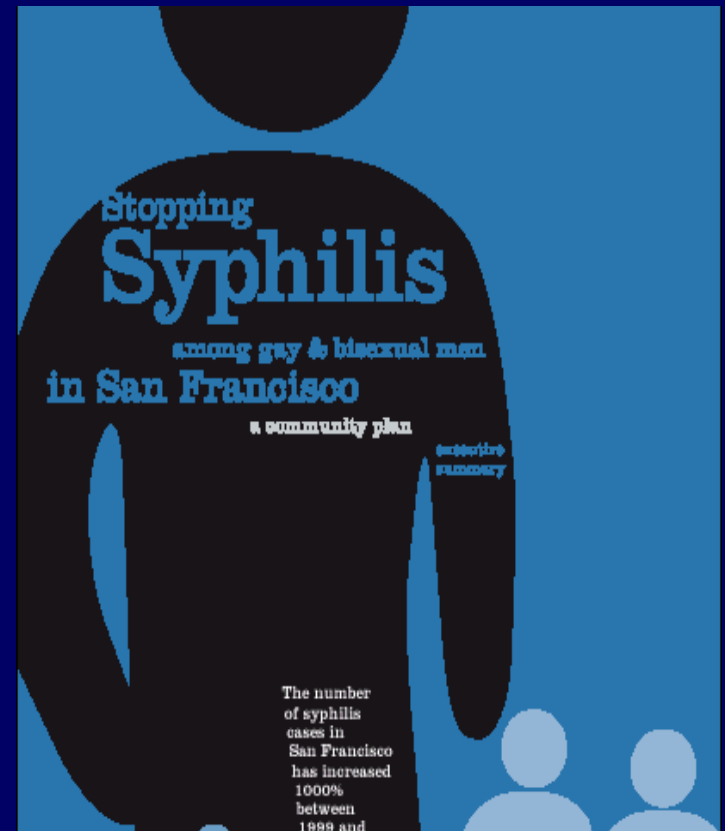
Expanded health provider education

- Grand rounds, noon conferences
- Mailings, education packets, website
- Strong encouragement of partner notification and prophylactic treatment
- Provider visits

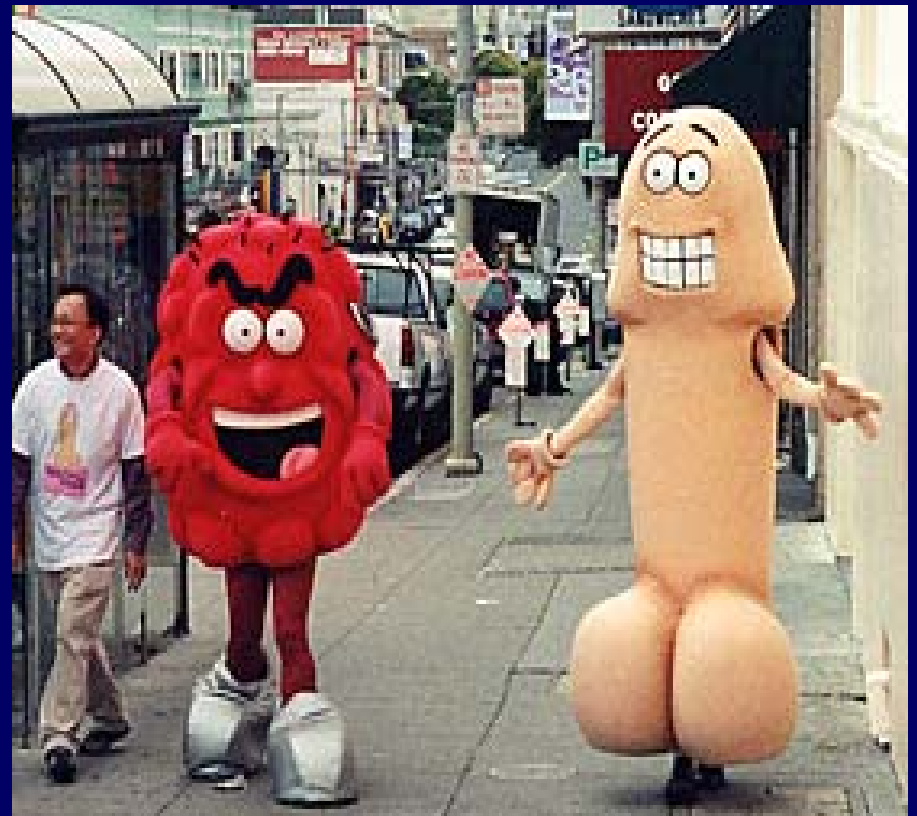


Expanded health promotion

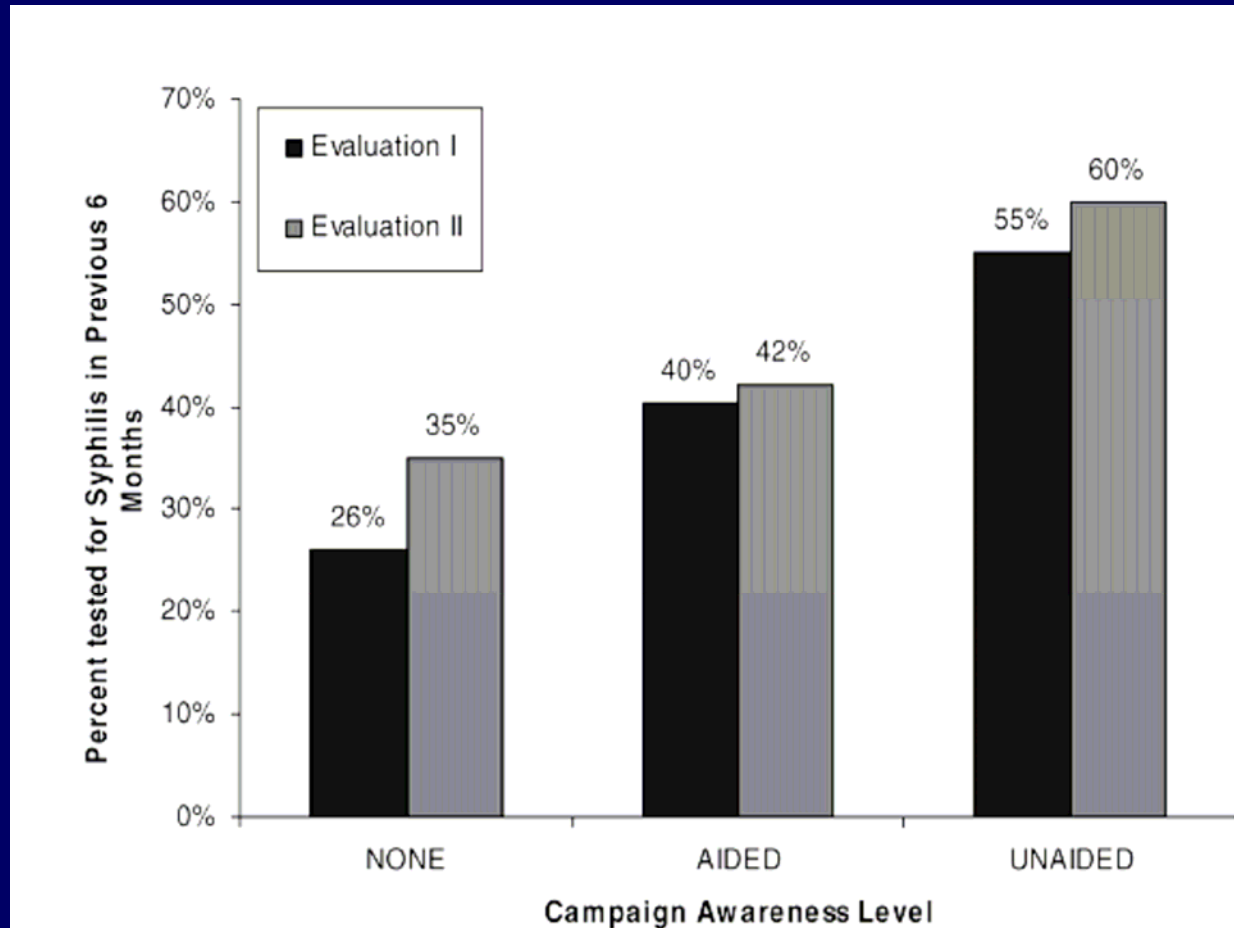
- Coalition development
- Venue notification & outreach
- Social marketing
- Internet



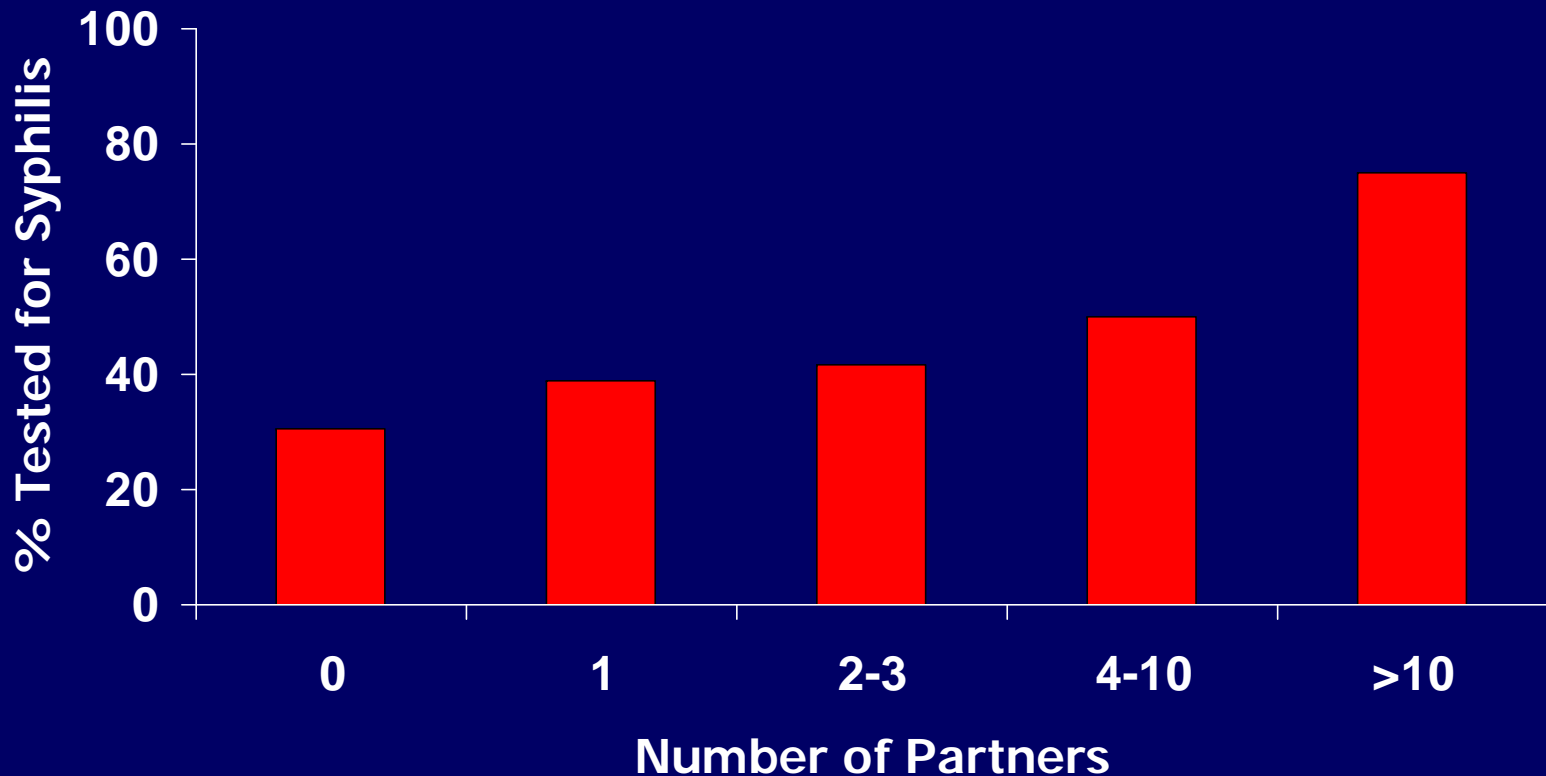
Healthy Penis 2002-2003



Healthy Penis Campaign awareness and syphilis testing, 2003 and 2005



Proportion Tested for Syphilis in Prior 6 Months by Number of Sex Partners, 2003

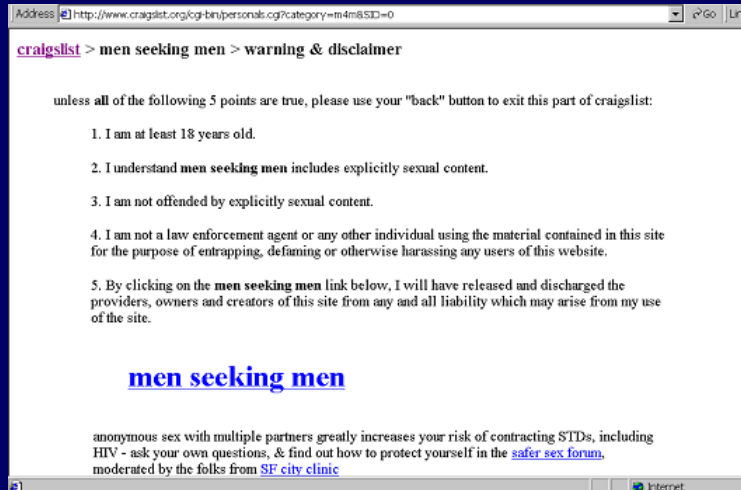


Viagra use

- Research demonstrated strong association between Viagra use and new syphilis cases
- Public Health advocacy
 - Pfizer
 - FDA
 - Media
 - CDC

Role of the Internet

- Collaborated with major Internet social network providers to increase awareness and education
- Linked Internet sex-seeking sites to prevention and testing services



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 [SEARCH](#)

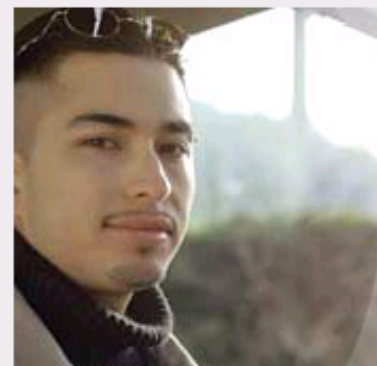
- * HOME
- ABOUT YOU
- ABOUT US
- OUR SERVICES
- SYPHILIS TESTING
- STD BASICS
- ASK DR. K.
- FOR PROVIDERS

We're a drop-in clinic providing free and low-cost diagnosis & treatment of sexually transmitted diseases for more than 50 years.

Use the pull-down menus at right to find out about lifestyle choices & STDs that could concern you.

ABOUT YOU

[GET INFO >>](#)



356 7th Street
San Francisco, CA 94103
415-487-5500

DROP-IN HOURS
8:00-4:00 M-W-F
1:00-6:00 Tuesday
1:00-4:00 Thursday
[more >>](#)

SYPHILISTESTING

Print a lab form, have your blood tested at any Unilab/Quest Diagnostics office in San Francisco, then access your results online.

[MORE >>](#)

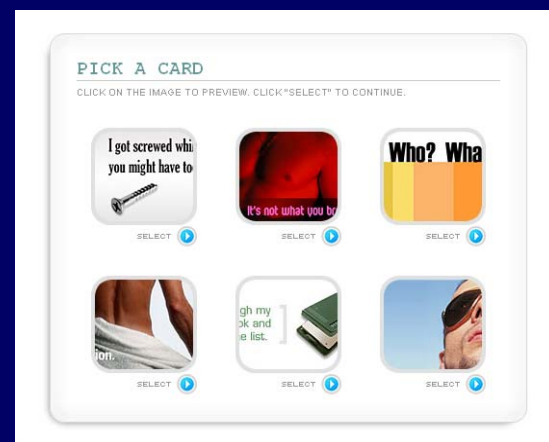
ASKDR.K

When giving a man a blow job, am I any safer (STD-wise) if I spit instead of swallow his ejaculate?

[MORE >>](#)

Partner Notification

- Enabled disease investigators to use Internet for partner notification
- Created online peer-to-peer notification system
 - Empowers community
 - Provides choice—anonymous vs. confidential disclosure



**Crystal methamphetamine use associated with more
STDs, increased number of sex partners,
San Francisco, 2002-2003.**

**Methamphetamine
use increases HIV
incidence**

Loeb et al, XIV International
AIDS Conference, Bangkok, 2004

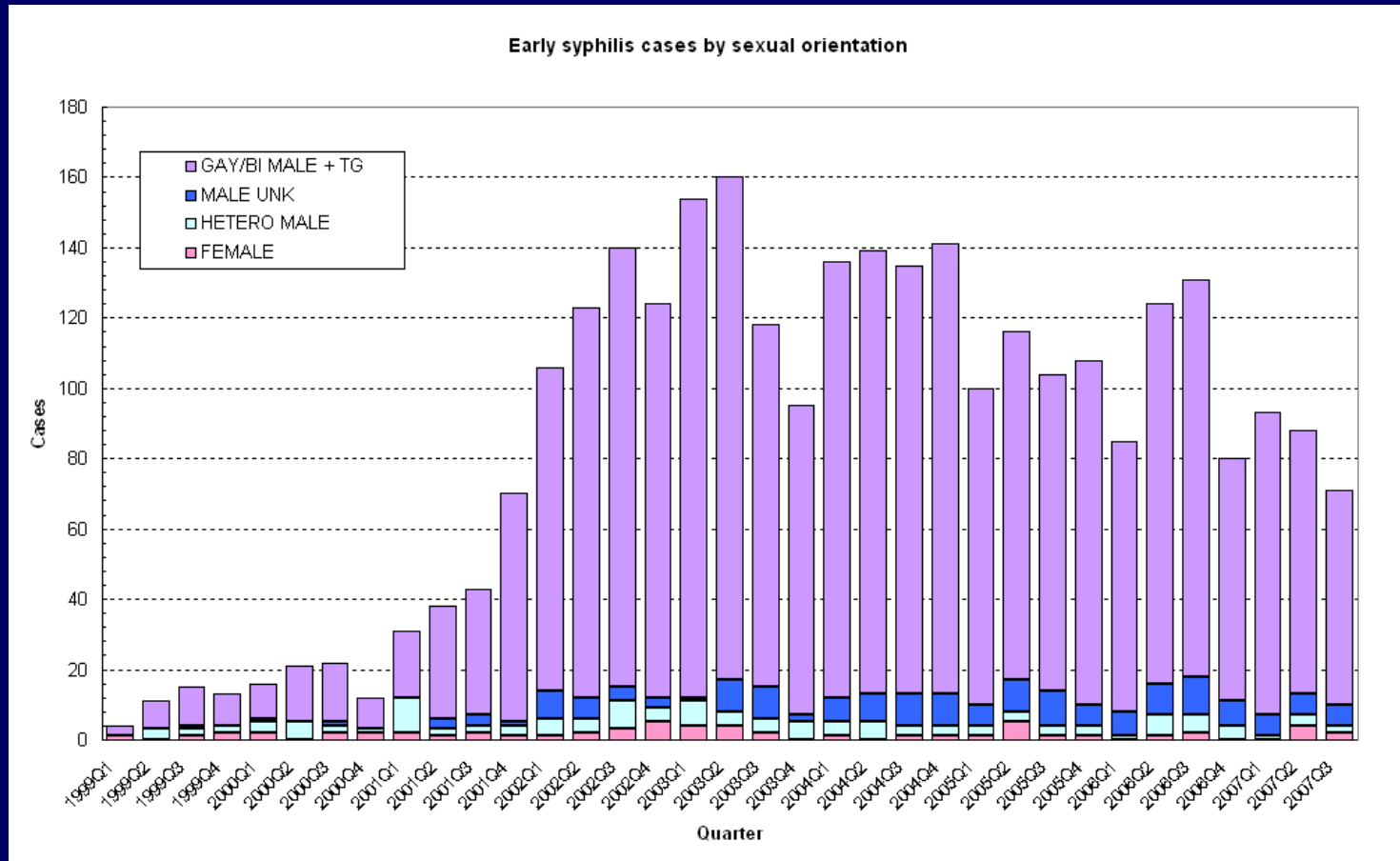


- Harm reduction
- Fund and create new treatment programs with STD screening and sexual risk reduction

Syphilis cases by quarter

January 1999 – October 2007

San Francisco



CONGENITAL SYPHILIS

Special Thank You to:

Dr. Stephanie Taylor

Louisiana State University Health Sciences Center
Department of Medicine, Section of Infectious Diseases

New Orleans, LA

Congenital Syphilis

- **Congenital Syphilis (CS) occurs when the spirochete *Treponema pallidum* is transmitted from a pregnant woman to her fetus**
- **Untreated syphilis during pregnancy can lead to stillbirth, neonatal death, and infant disease**
- **Worldwide more than 1 million babies are born with CS each year – two to three times more than the number of babies born with HIV infection.**

TRANSMISSION

- **Most fetal infections result from hematogenous spread of the organism from an infected mother**
- **Transmission from contact with infectious genital lesions at time of delivery can also occur**
- **Transmission nearly 100% if mother has early syphilis**

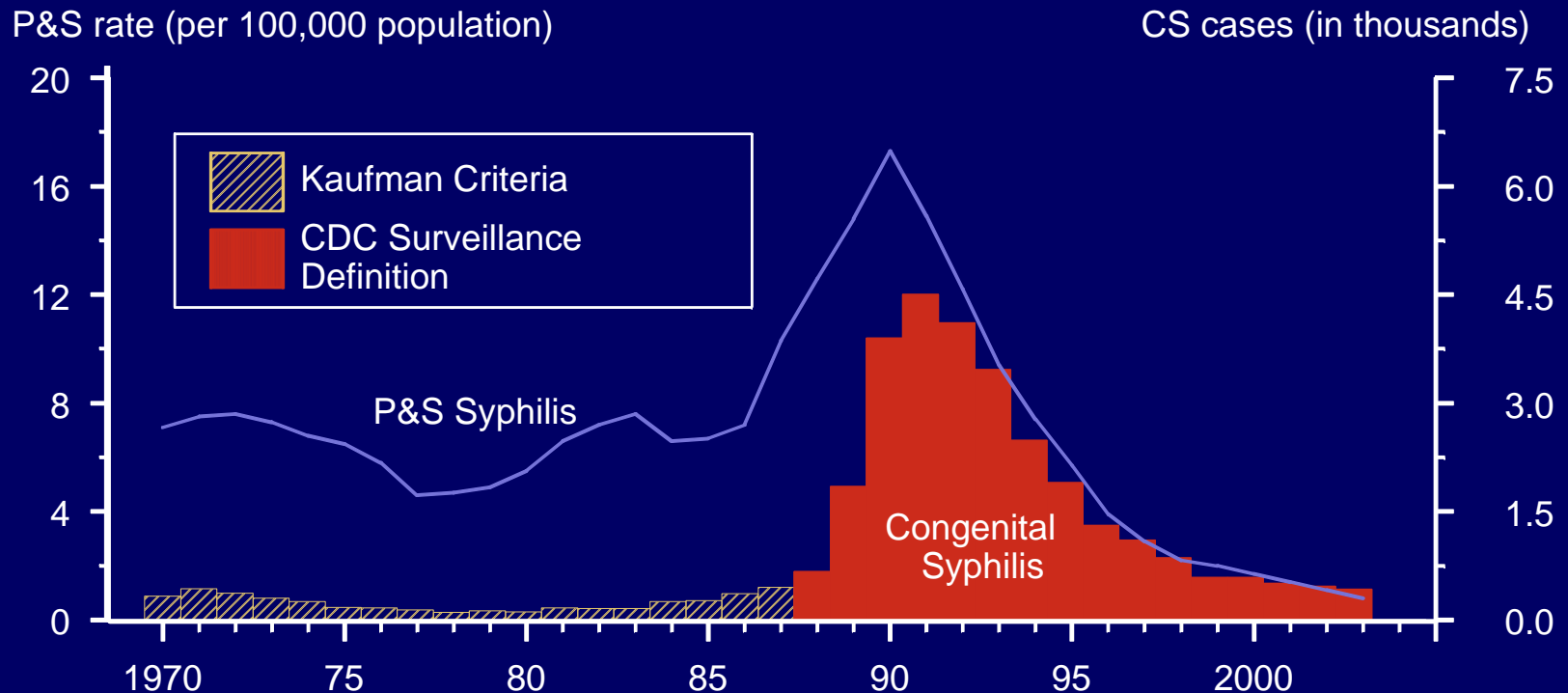
TRANSMISSION

- **Risk of congenital syphilis is directly related to the stage of maternal syphilis during pregnancy**
 - **Primary, secondary syphilis has greatest risk**
- **Also related to the duration of exposure in utero**
- **Highest risk during the first 4 years after acquisition of syphilis**

OUTCOME AND STAGE OF MATERNAL SYPHILIS

Outcome	1° and 2°	Early Latent	Late Latent	No Syphilis
Pre-Maturity	50%	20%	9%	8%
Perinatal Death	0	20%	11%	1%
Congenital Syphilis	50%	40%	10%	0
Healthy Child	0	20%	70%	90%

Congenital Syphilis — Reported cases for infants <1 year of age and rates of primary and secondary syphilis among women: United States, 1970–2003

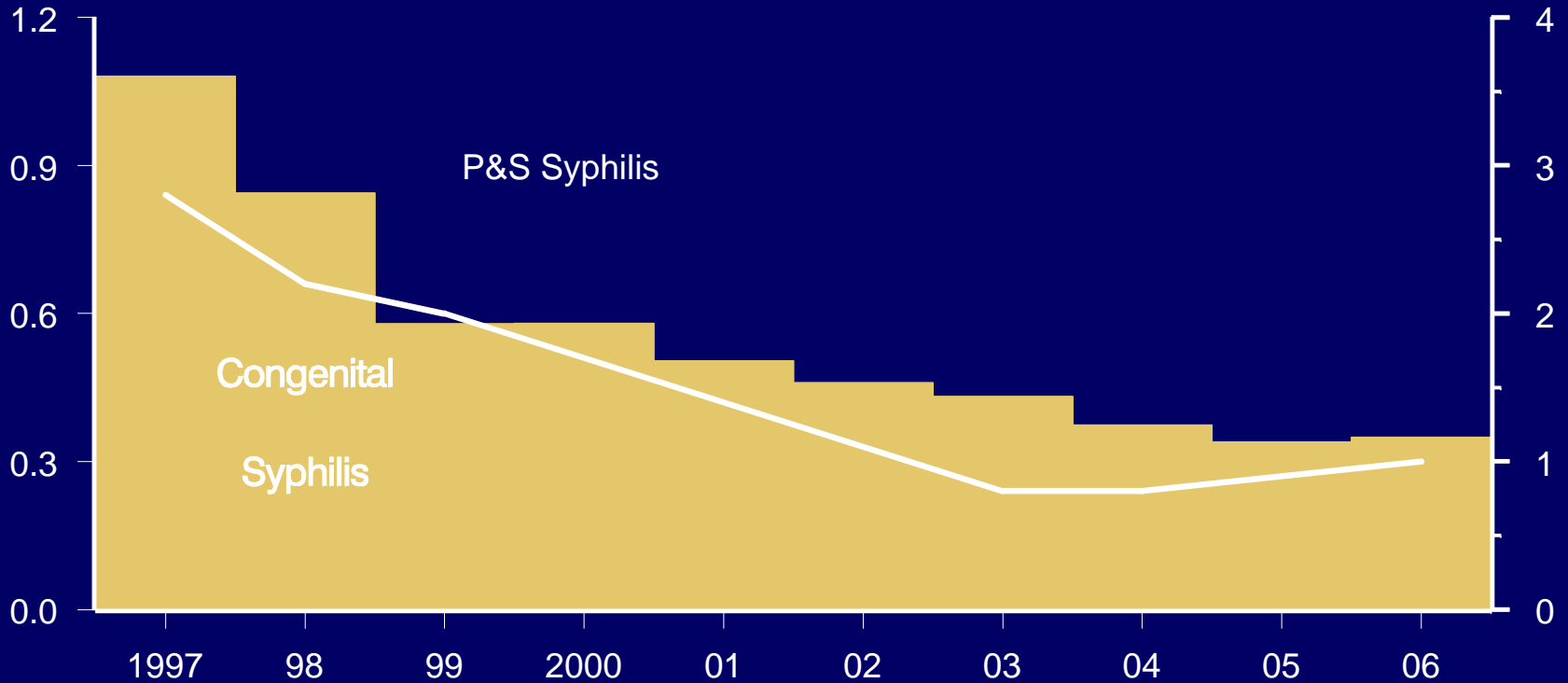


Note: The surveillance case definition for congenital syphilis changed in 1988.

Reported Cases of Congenital Syphilis and Rates of Primary and Secondary Syphilis among Women: U.S., 1997–2006

CS cases (in thousands)

P&S rate (per 100,000 women)



Provisional data courtesy of Centers for Disease Control

Case #2

- **23 year old delivered at 35 weeks**
- **One pre-natal care visit at 28 weeks**
- **VDRL 1:16 – Treated with Bicillin 2.4 MU x 1**
- **At delivery – Maternal VDRL still 1:16**

Management of Suspect Congenital Syphilis

- **Test infant with serum RPR or VDRL**
 - **umbilical cord blood can become contaminated with maternal blood and could yield a false-positive result**
 - **Treponemal test (i.e., TP-PA or FTA-ABS) on a newborn's serum is not necessary**
 - **No commercially available immunoglobulin (IgM) test can be recommended**
 - **4-fold ratio of infant:maternal titer suggests infection**

Management of Suspect Congenital Syphilis

- **Examine RPR/VDRL+ infants thoroughly for evidence of congenital syphilis (e.g., edema/ascites, jaundice, hepatosplenomegaly, rhinitis, skin rash, and/or pseudoparalysis of an extremity)**
- **Examine the placenta or umbilical cord by using specific fluorescent antitreponemal antibody staining**
- **Perform darkfield microscopic examination or DFA staining of suspicious lesions or body fluids (e.g., nasal discharge)**

Infants with proven or highly probable disease

Further Evaluation

- **CSF analysis for VDRL, cell count, and protein**
- **Complete blood count (CBC) and differential and platelet count**
- **Other tests as clinically indicated (e.g., long-bone radiographs, chest radiograph, liver-function tests, cranial ultrasound, ophthalmologic examination, and auditory brainstem response)**

Treatment Regimens for Congenital Syphilis

- **Aqueous crystalline penicillin G 50,000 units/kg/dose IV every 12 hours during the first 7 days of life and every 8 hours thereafter for a total of 10 days**
- **Procaine penicillin G 50,000 units/kg/dose IM in a single daily dose for 10 days**
 - **If > 1 day of therapy is missed, the entire course should be restarted.**
 - **Data are insufficient regarding the use of other antimicrobial agents (e.g., ampicillin)**

EARLY CONGENITAL SYPHILIS

- **Osteochondritis** 55%
- **Snuffles** 40%
- **Rash** 40%
- **Anemia** 30%
- **Hepatosplenomegaly** 20%
- **Jaundice** 20%
- **Neurologic signs** 20%
- **Lymphadenopathy** 5%
- **Mucous Patches** 5%

Occurrence of Congenital Syphilis After Maternal Treatment With Azithromycin During Pregnancy

- 5 pregnant women syphilis (1:8 to 1:128) and penicillin allergy treated with azithromycin
- 5 babies born with skin rashes; 4 hepatomegaly and 1 osteochondritis
 - All had + FTA-ABS-19-sIgM



LATE CONGENITAL SYPHILIS

Saddle Nose

Short Maxillas

Intersitial Keratitis

High Palatal Arch

Mulberry Molars

Saber Shins

Sternoclavicular Thickening

Frontal Bossing

Protruding mandible

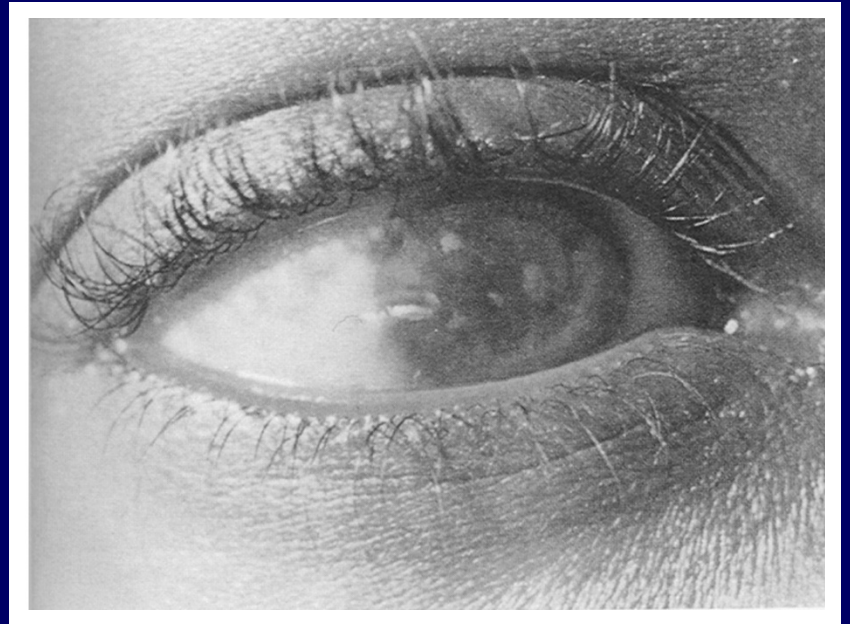
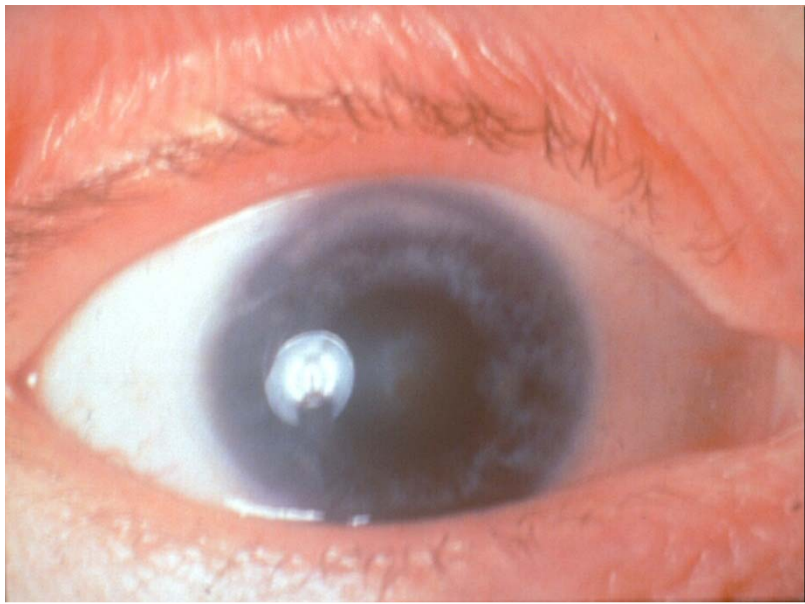
8th Nerve Deafness

Hutchinson's Teeth

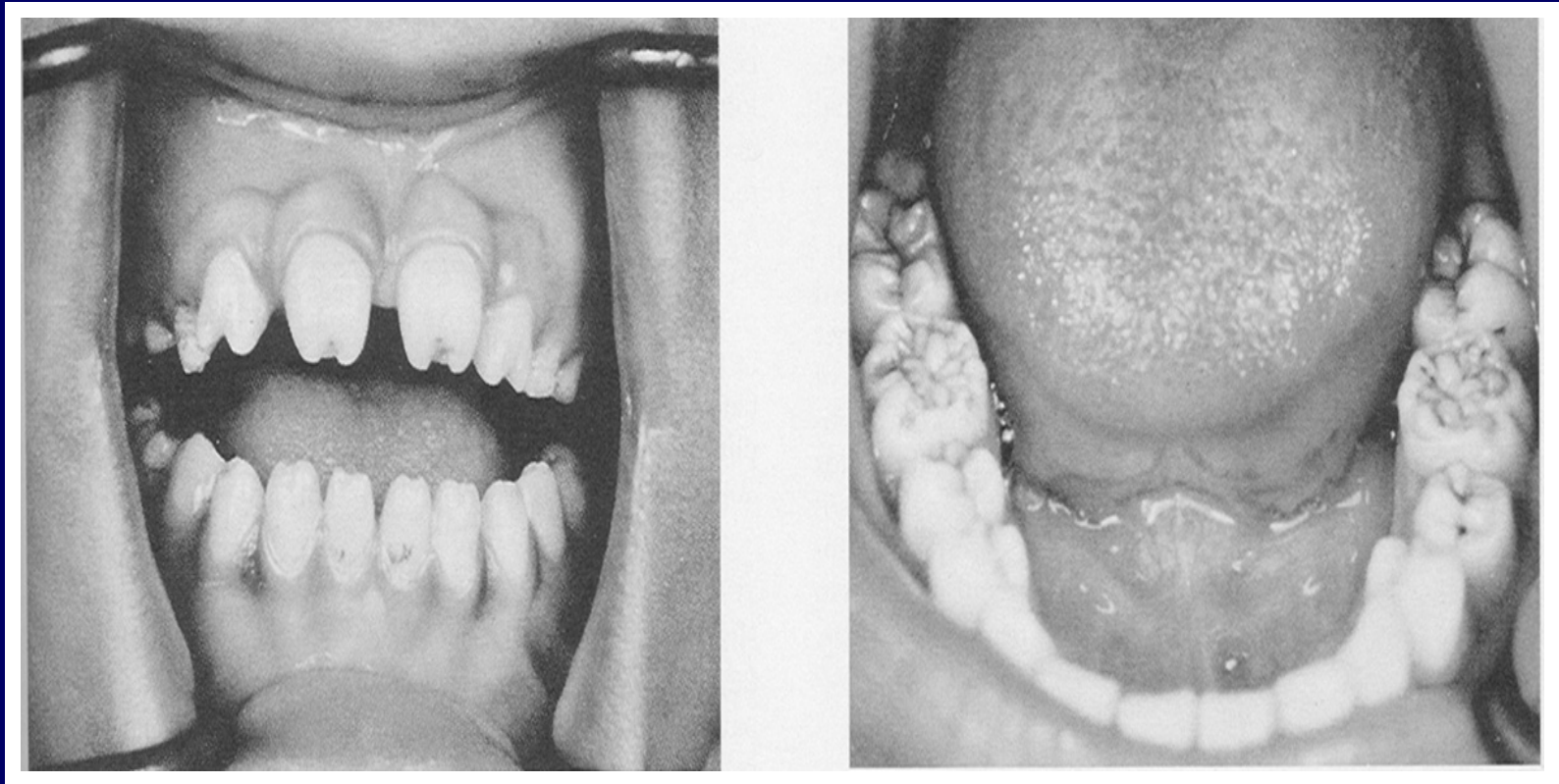
Clutton's Joints

Flaring Scapulas

INTERSTITIAL KERATITIS



HUTCHINSON'S TEETH AND MULBERRY MOLARS



SADDLE NOSE DEFORMITY



CDC Guidelines

Syphilis in Pregnancy

- **Screen for syphilis at first prenatal visit; repeat RPR/VDRL third trimester/delivery for those at high risk (women with > 1 partner) or high prevalence areas (Southern US)**
- **Treat for the appropriate stage of syphilis**
- **Management and counseling may be facilitated by sonographic fetal evaluation for congenital syphilis in the second half of pregnancy**

Primary, Secondary or Early Syphilis Treatment for Pregnant Women

- Penicillin G benzathine (Bicillin® L-A) 2.4 million units (MU) intramuscular (IM) once
- **Penicillin-allergic:**
Test for hypersensitivity, desensitize, treat with penicillin G benzathine
- **Do not substitute** Bicillin® C-R for Bicillin® L-A in the treatment of syphilis.
- Bicillin® C-R is NOT indicated for the treatment of syphilis.



Syphilis Prevention in Medical Settings

- Routinely obtain sexual history on all patients
- Counsel patients with > 1 partner on risk for STDs including syphilis
- Advise patients on importance of consistent and correct use of condoms for all types of sexual activity
- Regular screening is recommended for persons who have more than one sex partner and every 3-6 months in gay men and other men who have sex with men who have multiple partners

Klausner JD, Patient-Centered Care: A Model for Managing Sexually Transmitted Infections. John Hopkins Advanced Studies in Medicine. 2006 April;6(4):89-90.

San Francisco City Clinic Web site www.dph.sf.ca.us/sfcityclinic/stdbasics/syphilis.asp (accessed August 15, 2007)

Summary

- **Syphilis is increasing in the U.S. requiring enhanced disease prevention and control efforts**
- **Treatment of syphilis requires use of penicillin G benzathine (Bicillin[®] L-A)**
 - *Bicillin[®] C-R is not indicated for syphilis*
- **Congenital syphilis is a serious but preventable disease**

More information and questions!



- **SFDPH City Clinic**
 - www.sfcityclinic.org
 - Jeff.Klausner@sfdph.org
- **State of CA STD Branch**
 - www.ucsf.edu/castd
- **CDC STD Treatment Guidelines 2006**
 - <http://www.cdc.gov/std>
- www.Bicillin.net

