

# Syphilis and Congenital Syphilis in Arizona

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# Overview

- Epidemiology of syphilis
- Clinical overview of syphilis
- Epidemiology of congenital syphilis
- Clinical overview of congenital syphilis
- Congenital syphilis prevention

# Syphilis: History

- *Syphilus Sive Morbus Gallicus* (Syphilis or the French Disease)
- *De Contagionibus* (On Contagious Diseases)
- Syphilus cursed by Apollo for defiance; first to contract the disease
- Prior to 1530
  - French disease (by the Germans and the Italians)
  - Italian disease (by French)
  - Spanish disease (by Dutch)
  - Polish disease (by Russians)
  - Christian disease (by Turks)

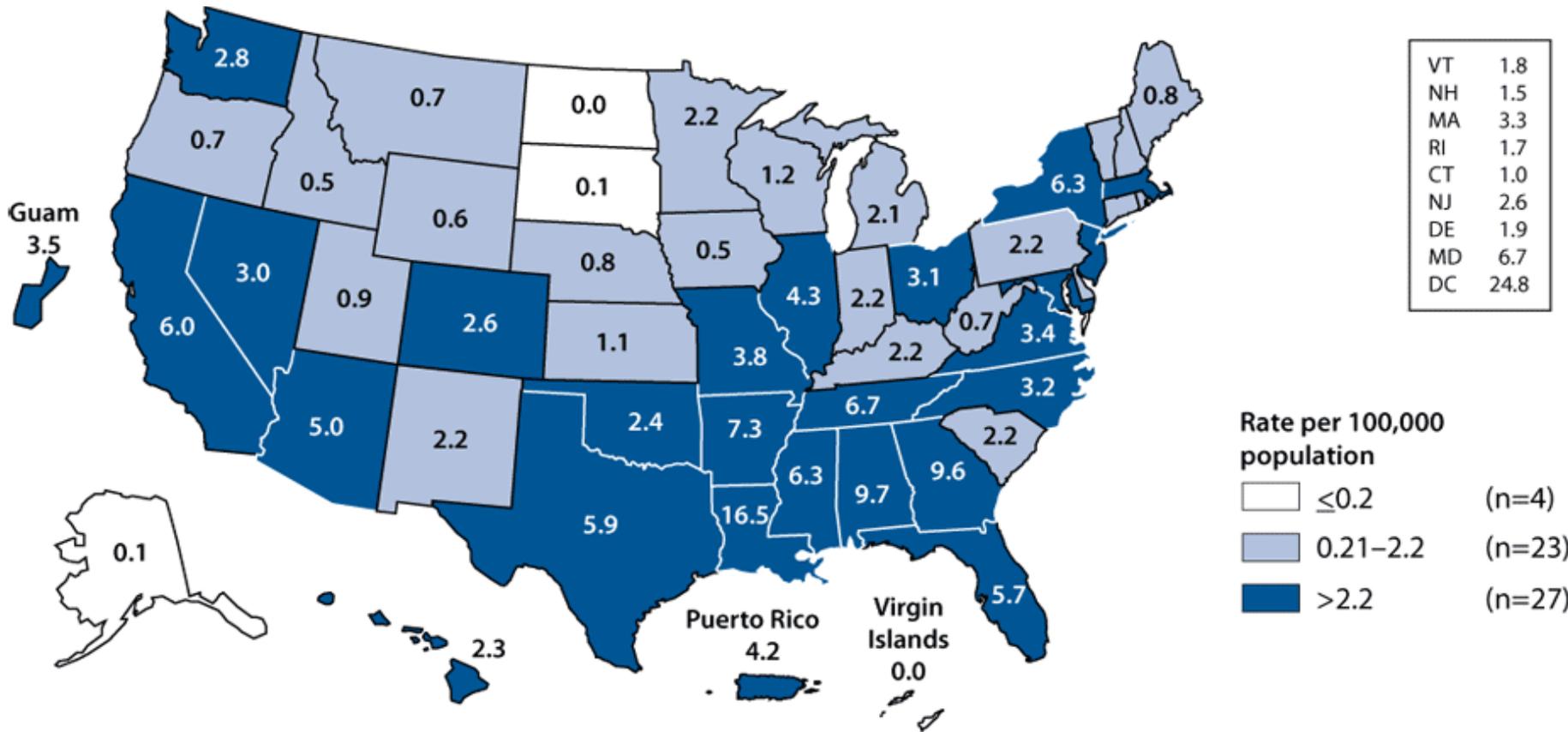
# Syphilis: The Great Pox

- 1495 Naples fell to Charles VIII
- Plague broke out among the French troops and spread throughout Europe
- 1<sup>st</sup> recorded epidemic of syphilis
- Wide spread devastation
- Shortly after the return of Columbus from the New World

# Famous Syphilis Patients

- Al Capone
- Adolf Hitler
- Ivan the Terrible
- Vladimir Lenin
- Friedrich Nietzsche
- Martin Pinson
- Idi Amin
- Paul Gauguin
- Scott Joplin
- Edouard Manet
- Franz Schubert
- Henri de Toulouse-Lautrec
- Oscar Wilde

# Primary and Secondary Syphilis-Rates by State: United States and Outlying Areas, 2008

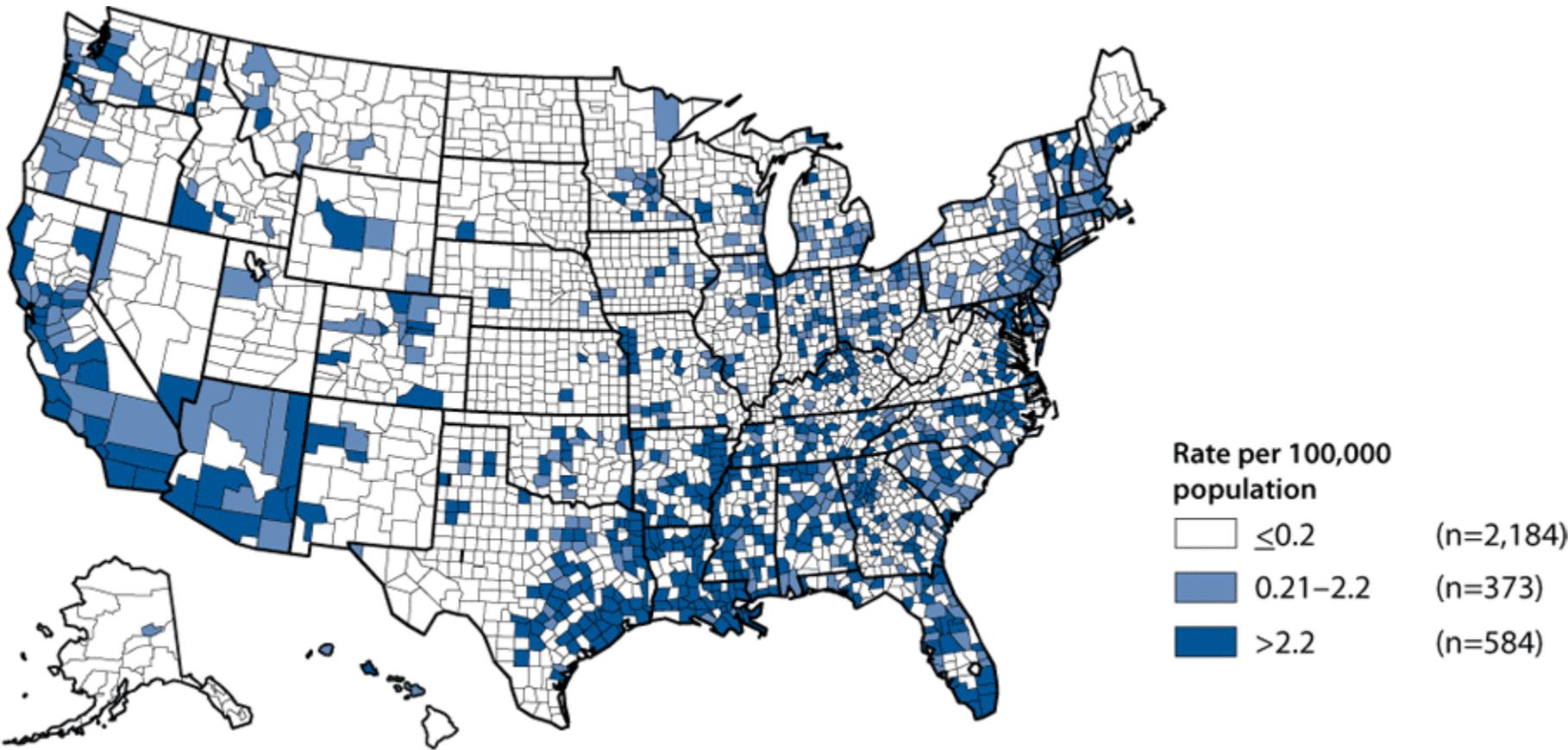


<http://www.cdc.gov/std/stats08/figures/33.htm>

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# Primary and Secondary Syphilis-Rates by County: United States, 2008

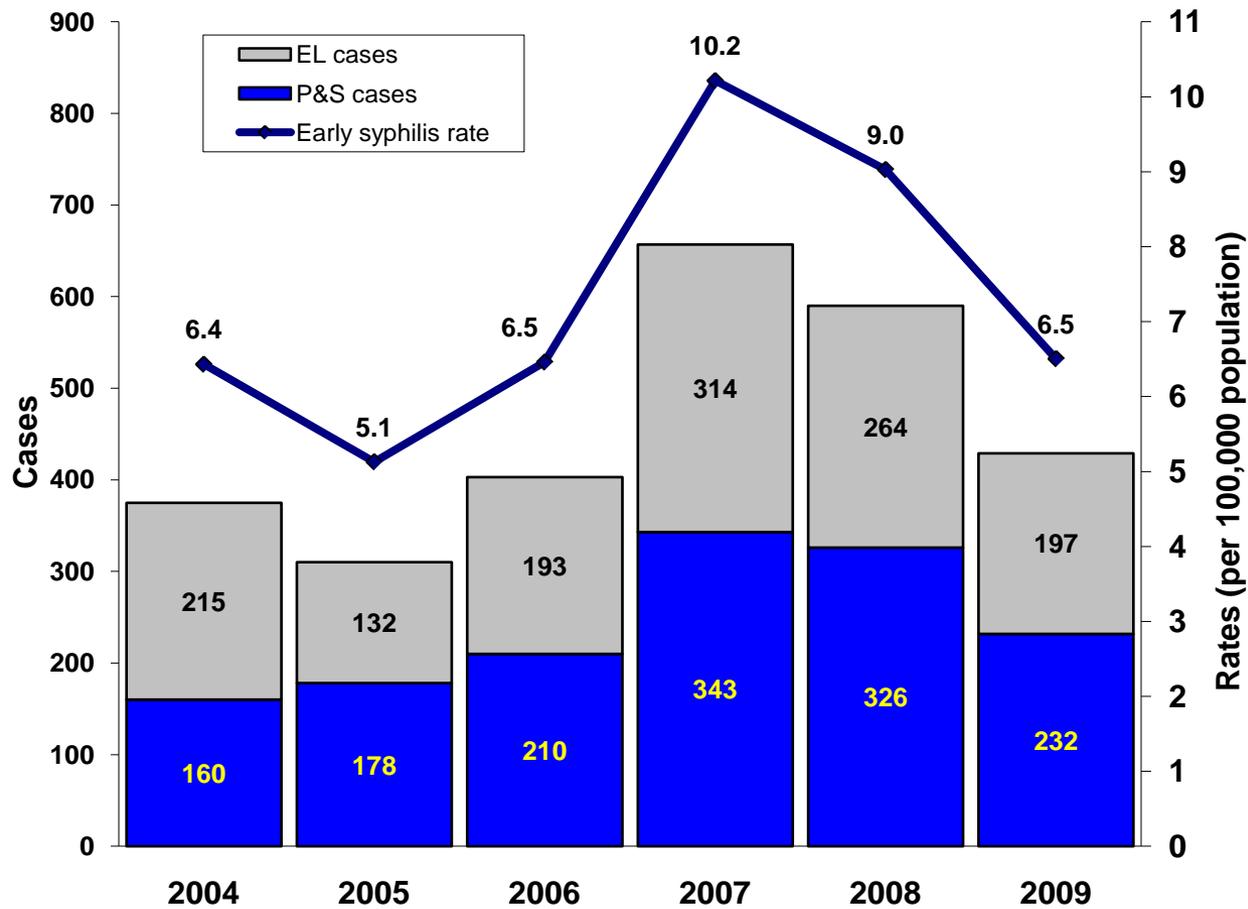


<http://www.cdc.gov/std/stats08/figures/34.htm>

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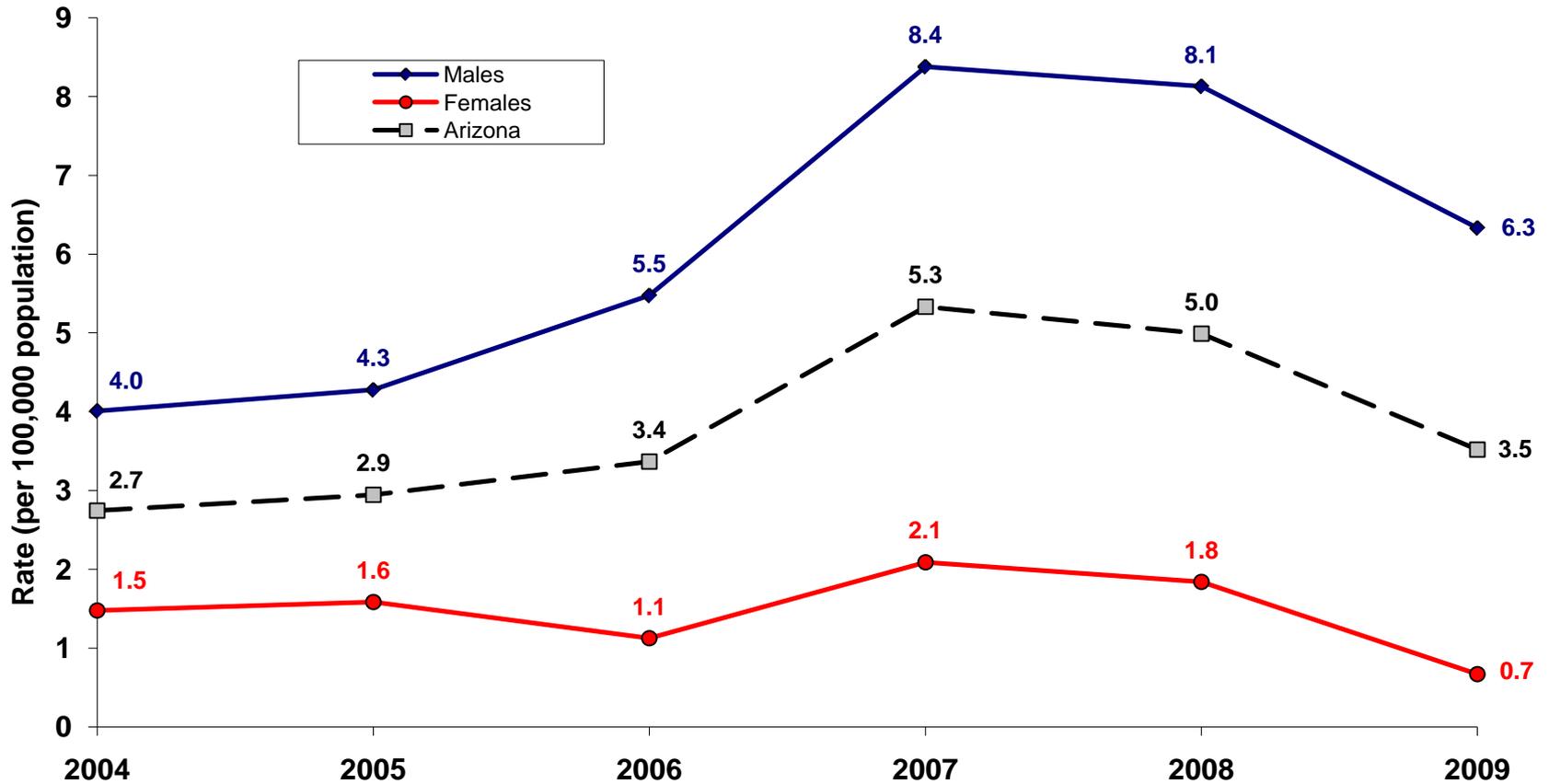
## Reported Early Syphilis Cases and Case Rates by Stage per 100,000 Population, Arizona 2004-2009



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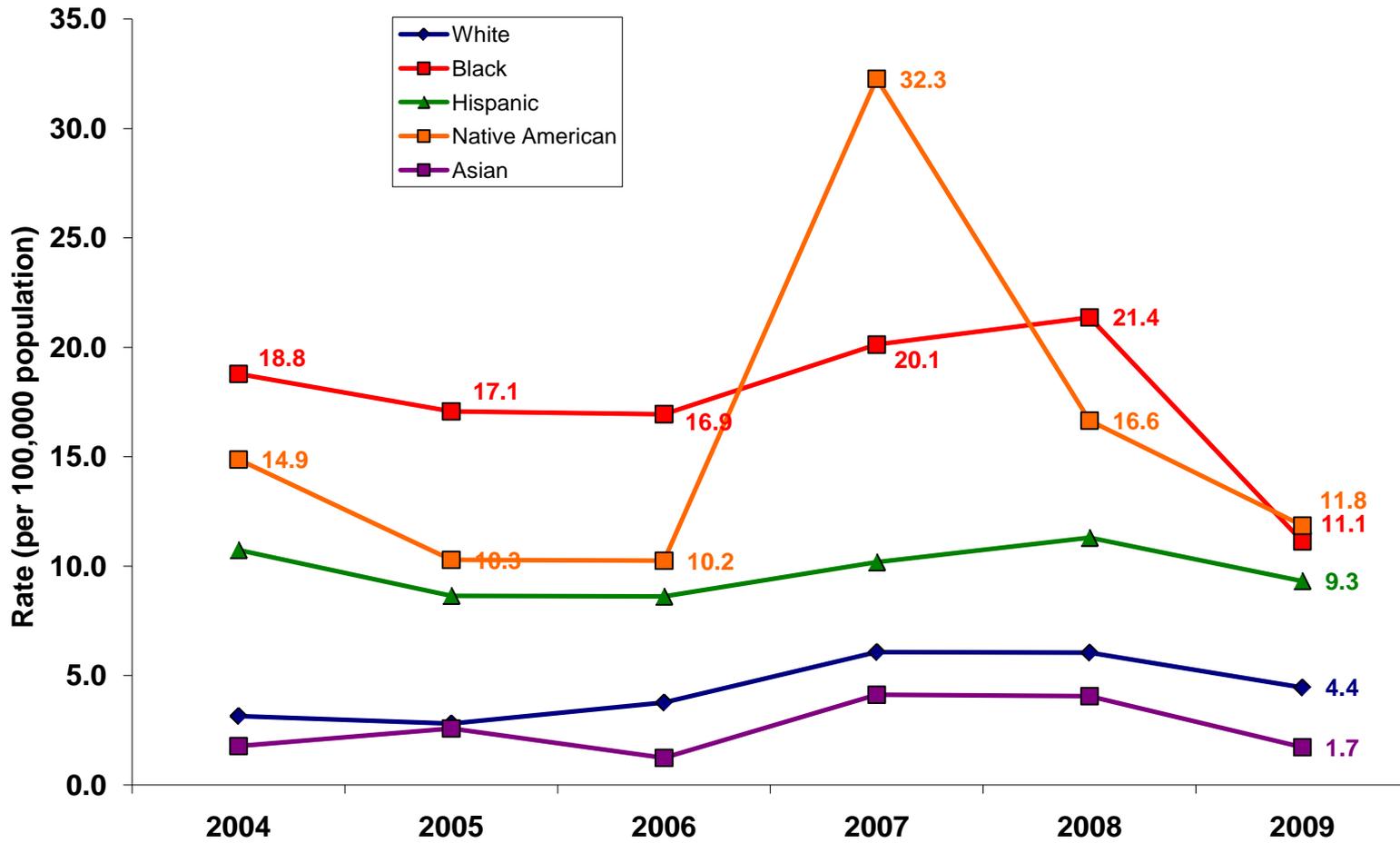
## Reported Primary and Secondary Syphilis Case Rates per 100,000 Population by Gender, Arizona 2004-2009



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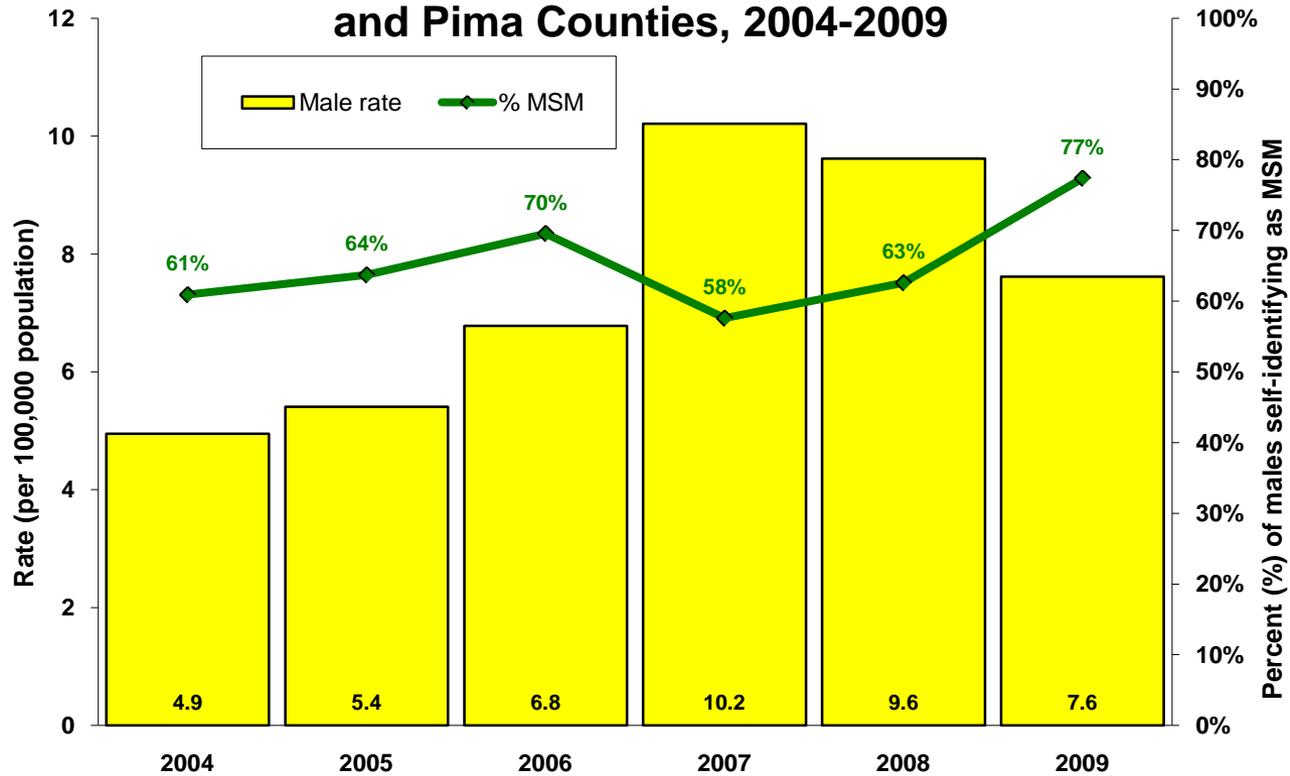
# Reported Early Syphilis Cases by Race/Ethnicity, Arizona 2004-2009



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## Reported Primary and Secondary Syphilis Case Rates per 100,000 Population among All Males and the Percentage of Male Cases that Self-Identify as Men who Have Sex with Men (MSM), Maricopa and Pima Counties, 2004-2009



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# Syphilis

- Systemic disease caused by *Treponema pallidum*
- Divided into 4 stages: Primary, secondary, latent, tertiary

# Transmission

- Vaginal sex
- Anal sex
- Oral sex
- Digital contact with infectious lesions (rare)
- Vertical transmission from mother to infant
- Blood transfusion, needle sharing (rare)

# Primary/Secondary Syphilis

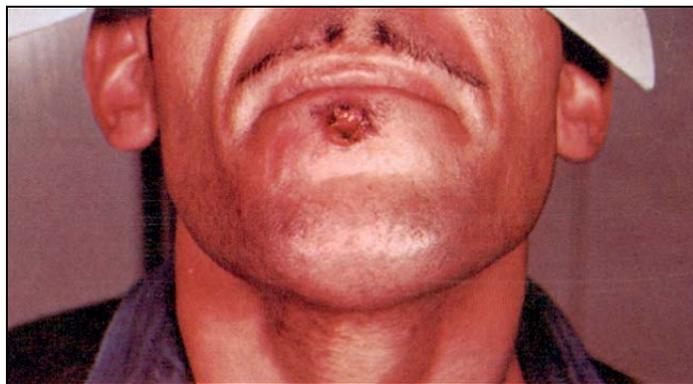
- **Primary:** Characterized one or more painless chancres or ulcers at the site of infection developing 1-3 weeks after exposure
- **Secondary:** Characterized by skin rash, mucocutaneous lesions, lymphadenopathy, occurring 1-3 months after exposure

# Primary Chancre

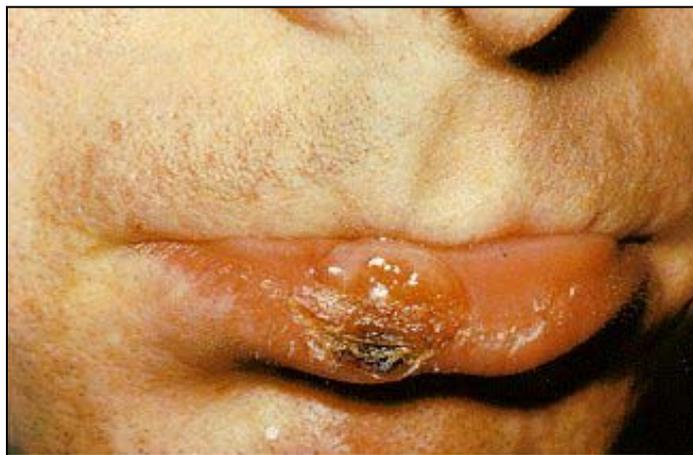




**Primary Chancre  
of the Buttocks**



**Primary Chancre  
of the Lip**



**Primary Chancre  
of the Eyelid**



# Secondary Rash



**Palmar Lesions**



**Plantar Rash**



**Body Rash**

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# Non-treponemal Tests (Screen)

## RPR and VDRL

- Fourfold change in titer (ie 1:4 to 1:16) indicates a clinical difference or treatment response
- Cannot compare RPR and VDRL
- Can remain positive after treatment
- False positives occur due to other clinical conditions

# Treponemal Testing (Confirm)

## FTA-ABS and TP-PA

- Required confirmatory test
- Generally remain positive for life (15-25% revert to seronegative)
- Cannot be used to gauge clinical response

# Treatment of Primary, Secondary and Early Latent

## Benzathine penicillin G:

**2.4 million units IM x 1 dose**

- Alternatives:
- Doxycycline 100mg PO BID x 2 weeks OR
- Tetracycline 500 mg PO QID x 2 weeks OR
- Ceftriaxone 1 gm IM/IV QD x 8-10 days OR

(2006 CDC Treatment Guidelines)

# Treatment of Late Latent and Unknown Duration

## Benzathine Penicillin G:

- **2.4 million units IM x 3 doses spaced one week apart (Total 7.2 million units)**
- Alternatives:
- Doxycycline 100mg PO BID x 4 weeks OR  
(2006 CDC Treatment Guidelines)

# Neurosyphilis

- **Can occur at any stage**
- Meningitis type symptoms common with cranial nerve palsies
- Positive CSF VDRL is diagnostic if non-bloody tap
- CSF leukocyte count is elevated  $>5$  WBCs/mm
- Consider FTA-ABS on CSF (high sensitivity)

# Indications for Lumbar Puncture

- Any patient with reactive syphilis serology and neurologic symptoms (including visual)
- Late latent (>1 year duration) or syphilis of unknown duration in a patient with HIV
- Treatment failure in non-neurologic syphilis
- Active tertiary syphilis

# Treatment of Neurosyphilis

- Aqueous crystalline penicillin G 18-24 million units per day administered as 3-4 million units IV every 4 hours OR
- Continuous infusion for 10-14 days
- (2006 CDC Treatment Guidelines)

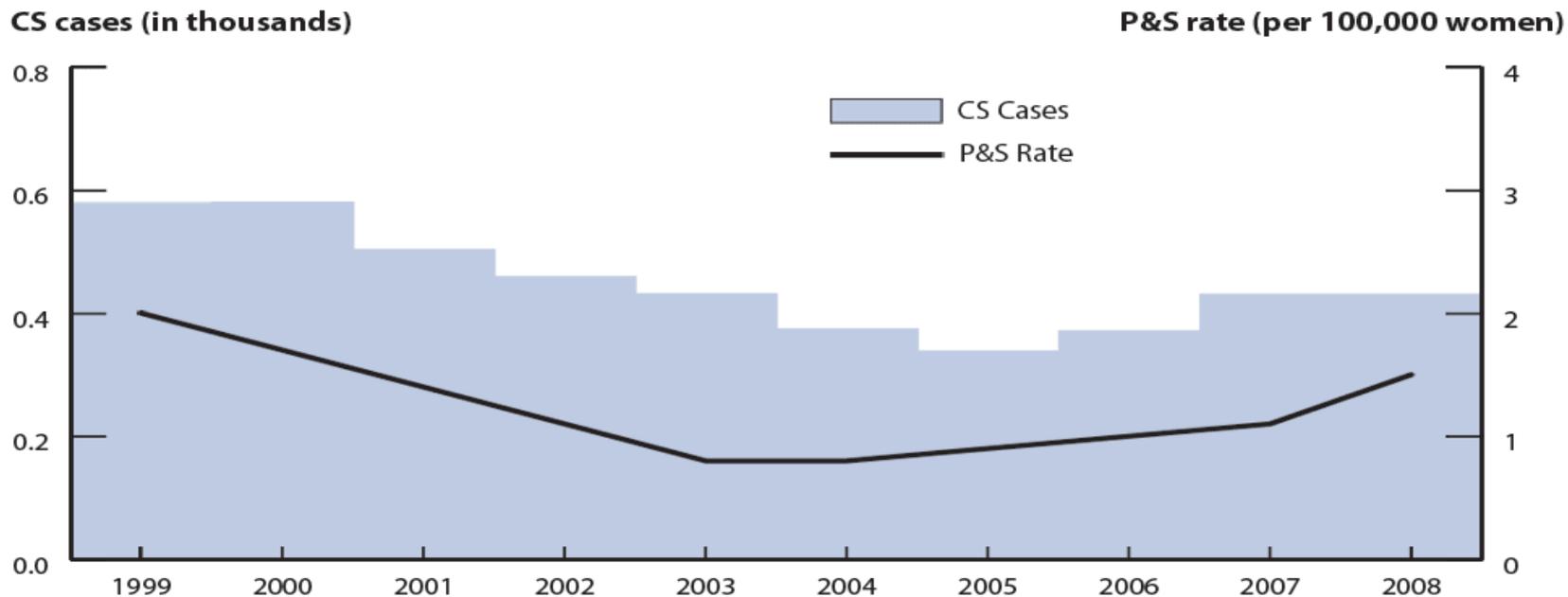
# Risks for HIV Transmission

- Persons with a genital ulcer disease are at 2-5 times greater risk for HIV acquisition
- HIV-infected persons are more likely to transmit HIV if co-infected with a genital ulcer disease
- Integrated testing is recommended

# 32 yo female

- Presents to Phoenix ER in summer 2008
- Genital lesions
- 23 weeks pregnant
- Treated with acyclovir
- No syphilis testing performed
- Delivered stillbirth infant at 34 weeks
- RPR titer 1:64

# Congenital Syphilis (CS) – Reported Cases for Infants < 1 Year of Age and Rates of Primary and Secondary Syphilis Among Women: United States, 1998-2008



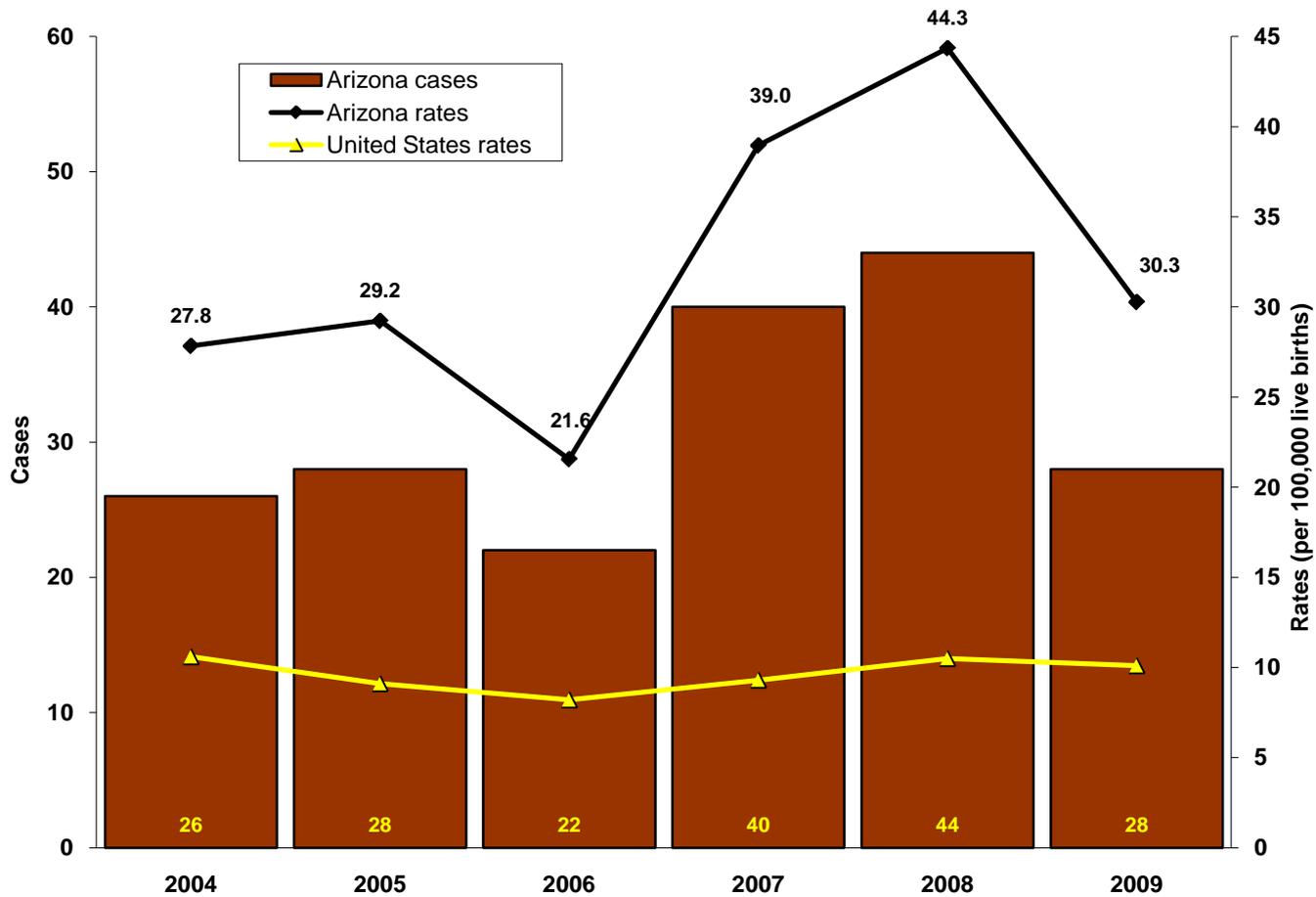
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# Congenital Syphilis Facts

- Arizona has been in the top 5 states with the highest rates of congenital syphilis for 5 of the 7 previous years
- Congenital syphilis can result in stillbirth and negative birth outcomes
- Congenital syphilis is preventable with early prenatal care that includes syphilis testing at multiple intervals during pregnancy

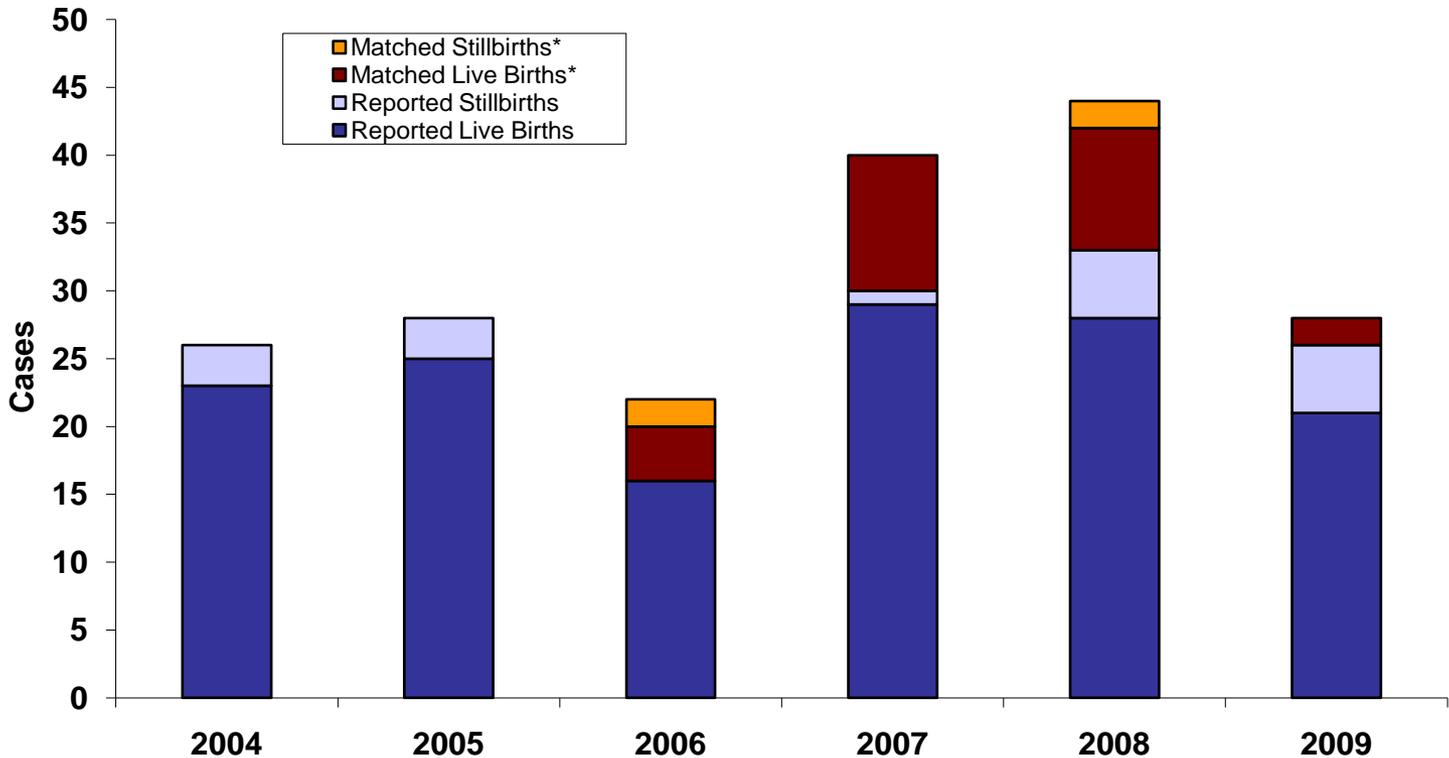
# Reported Congenital Syphilis Cases and Case Rates per 100,000 Live



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## Reported and Matched Congenital Syphilis Cases (by Birth Year) in Arizona by Live Birth and Stillbirth, 2004-2009



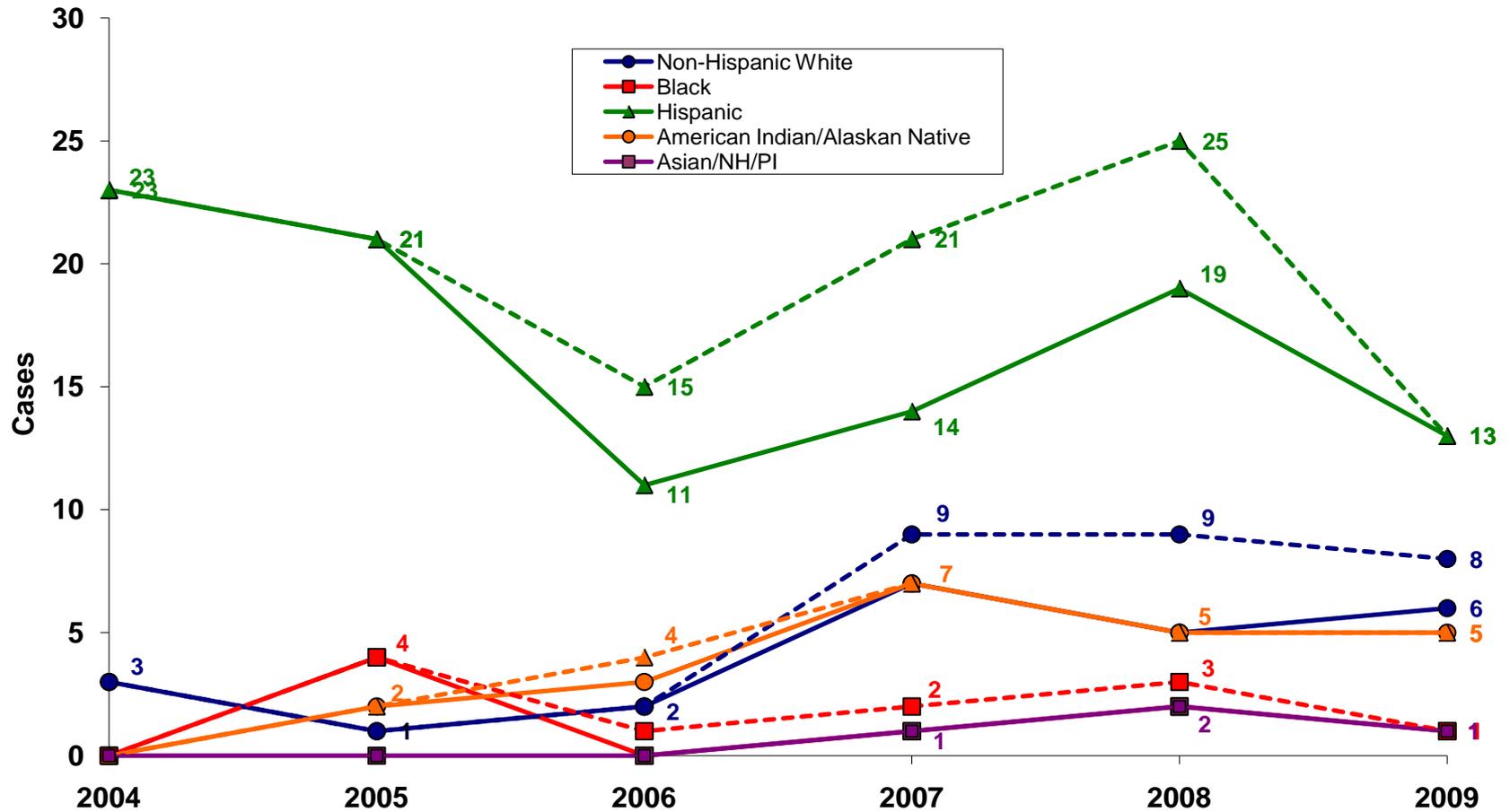
\*Matched live births and stillbirths identified with cross match of Arizona live birth and still birth records with reported positive syphilis labs

\*\* 2009 evaluation for unreported cases has not yet been completed

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## Reported and Case Match Identified Congenital Syphilis (by Birth Year) Cases by Race/Ethnicity, Arizona 2004-2009



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Su bebé es un



Protéjalo  
de la sífilis.

El tratamiento  
temprano en las  
embarazadas puede  
disminuir la posibilidad  
de complicaciones  
serias en los bebés.

Obtenga cuidado  
prenatal desde  
el principio y pídale  
a su médico el  
examen de la sífilis.

Llame al 800-833-4642  
para más información  
sobre como obtener  
cuidado prenatal.



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Your baby is a



Protect it.

Early treatment of syphilis can help block the chance of serious complications with your baby. Make sure you get early prenatal care and have your doctor test you for syphilis.

Call 800-833-4642  
today to be  
referred for early  
prenatal care.



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# Congenital Syphilis

- Infection can be transmitted to the fetus through placenta or by contact with infectious lesion at delivery
- *T. pallidum* is able to invade the fetal compartment at any time during gestation
- Risk of prematurity, perinatal death and congenital infection directly related to maternal stage of syphilis during pregnancy

# Syphilis Transmission during Pregnancy

- Transmission rate by stage of maternal infection:
  - Primary: 70-100%
  - Secondary: 90%-100%
  - Latent: 10-30%
- Outcome in untreated early syphilis:
  - 25% intrauterine death
  - 25% perinatal death
  - 50% congenital syphilis (50% asymptomatic)

# Delivery Outcomes

- Stillborn
- Low birth weight (IUGR)
- Premature delivery
- Birth defects
- Non-immune hydrops fetalis
- Spontaneous abortion

# Congenital Syphilis

## Case Definition

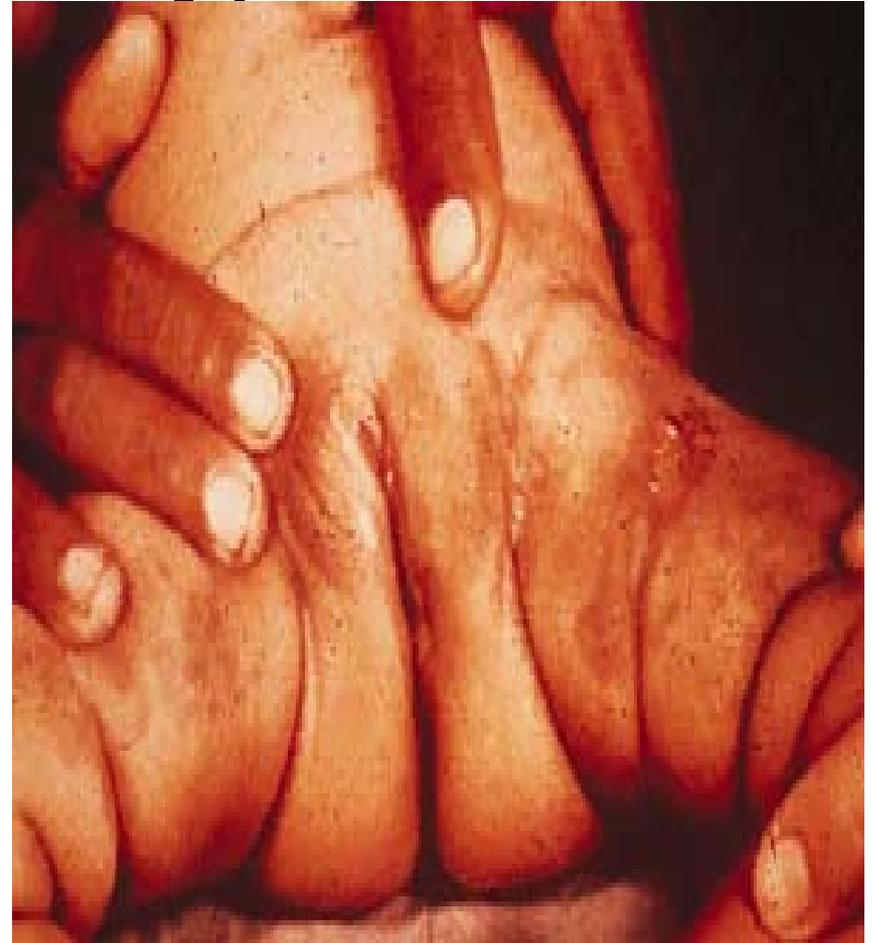
- Syphilitic stillbirth
  - ( $\geq 20$  wks or  $\geq 500$  grams)
- Confirmed cases
  - Tissue/lab confirmed
- Presumptive cases

# Early Congenital Syphilis

## Signs and Symptoms

- Skin lesions
- Mucous membrane lesions
- Long bone abnormalities
- Anemia
- Hepatosplenomegaly
- Central nervous system
- Rhinitis (rare)

# Congenital Syphilis

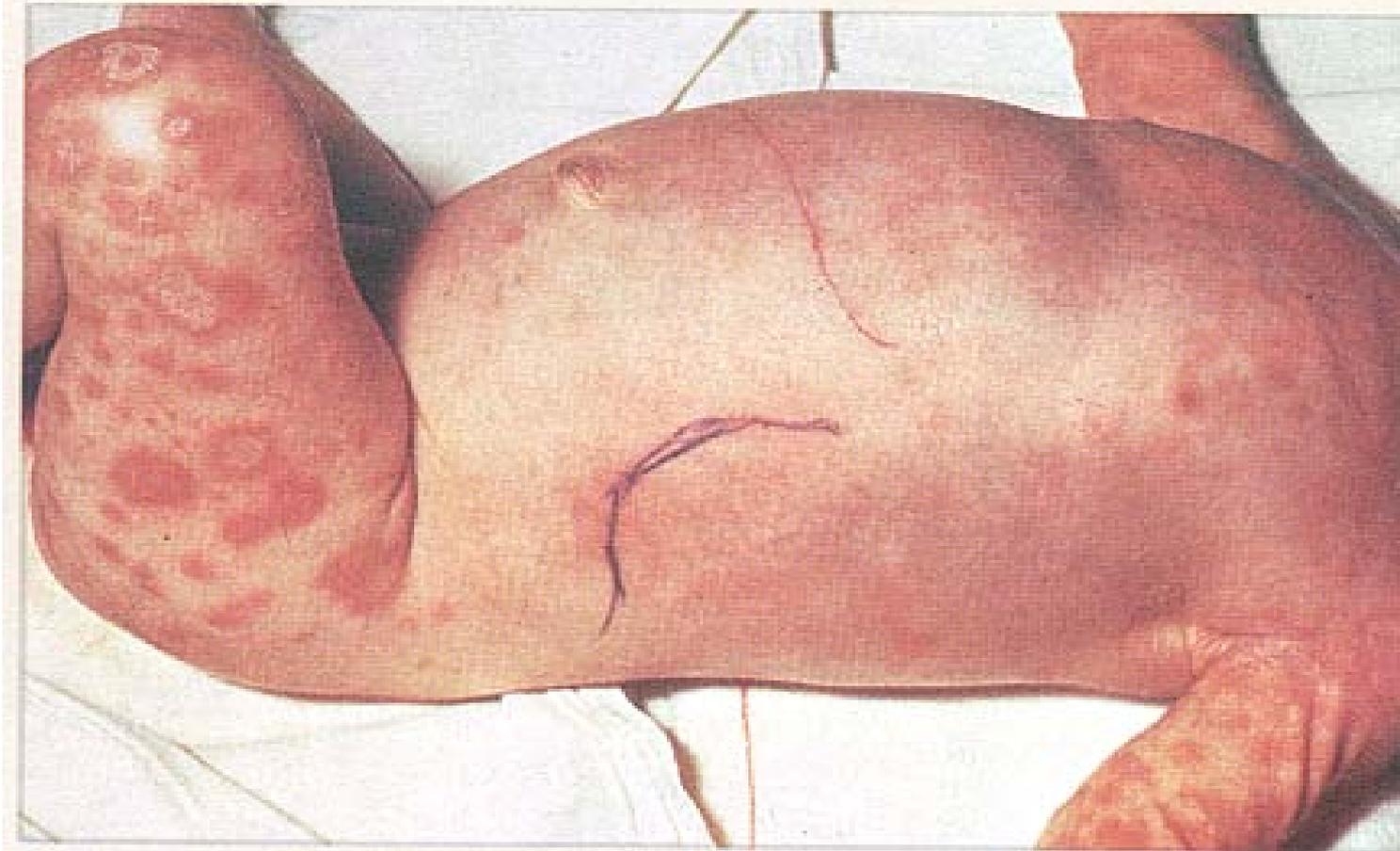


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# Congenital Syphilis

(Hepatosplenomegaly & skin lesions)



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# Mucous Patches



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# Rhinitis/Snuffles



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# Diagnostic Considerations

- Identification of syphilis in the mother
- Adequacy of maternal treatment
- Presence of clinical, laboratory, or radiographic evidence of syphilis
- Comparison of the infant's nontreponemal test (RPR) results with those of mother

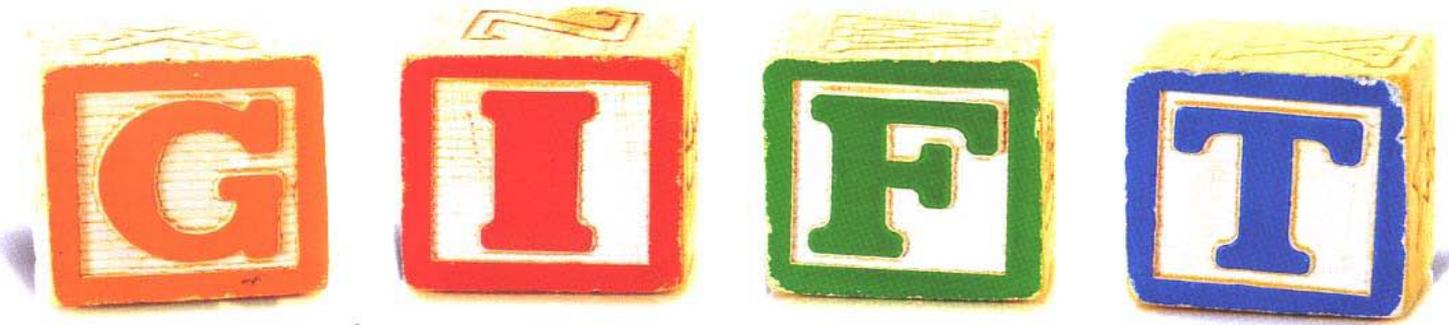
# Prevention Recommendations

- Test mother for syphilis
  - First prenatal visit
  - During third trimester
  - At delivery (cord blood)
- Treatment history of sex partners
- HIV testing

# Current Syphilis Screening Recommendations for Pregnant Women in Maricopa County

- Maricopa County
  - Arizona Statute 36-693: “A physician shall at the time of the first prenatal examination take a standard blood test for syphilis”.
  - Requests that all physicians and midwives providing obstetrical services in Maricopa County perform a third trimester blood sample for syphilis between 24 and 32 weeks gestation.
  - Require that all newborns in Maricopa County have blood drawn for syphilis testing.

Every baby is a



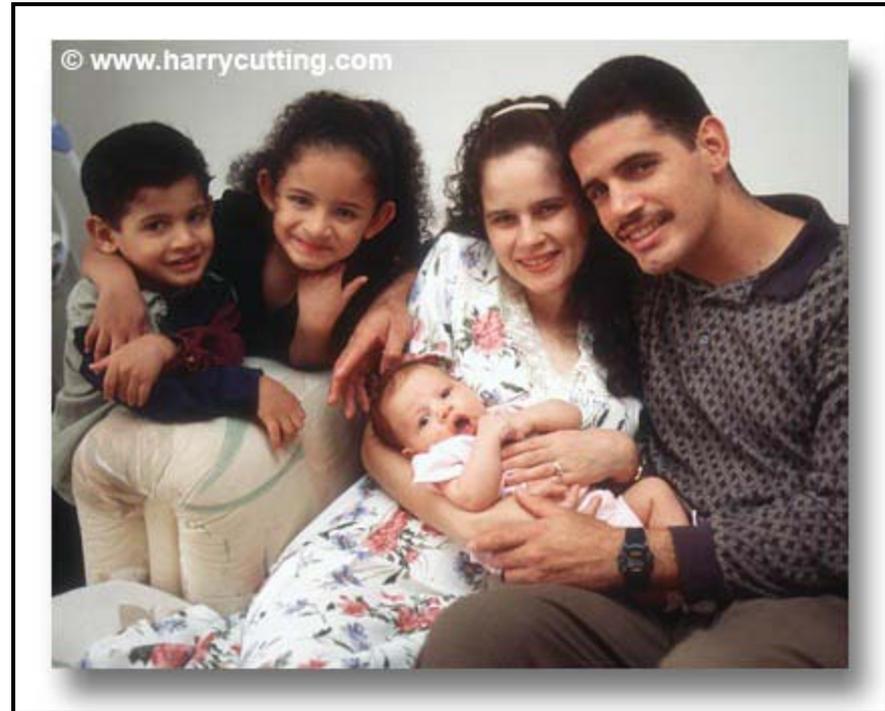
Help your patients protect theirs.

Remember to test all expectant mothers for syphilis.

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Your baby is a



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# Arizona STD Information

- 2009 STD Annual Report
- 2009 STD Arizona Youth Report
- Congenital syphilis education materials

<http://www.azdhs.gov/phs/oids/std/index.htm>

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# Questions

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