

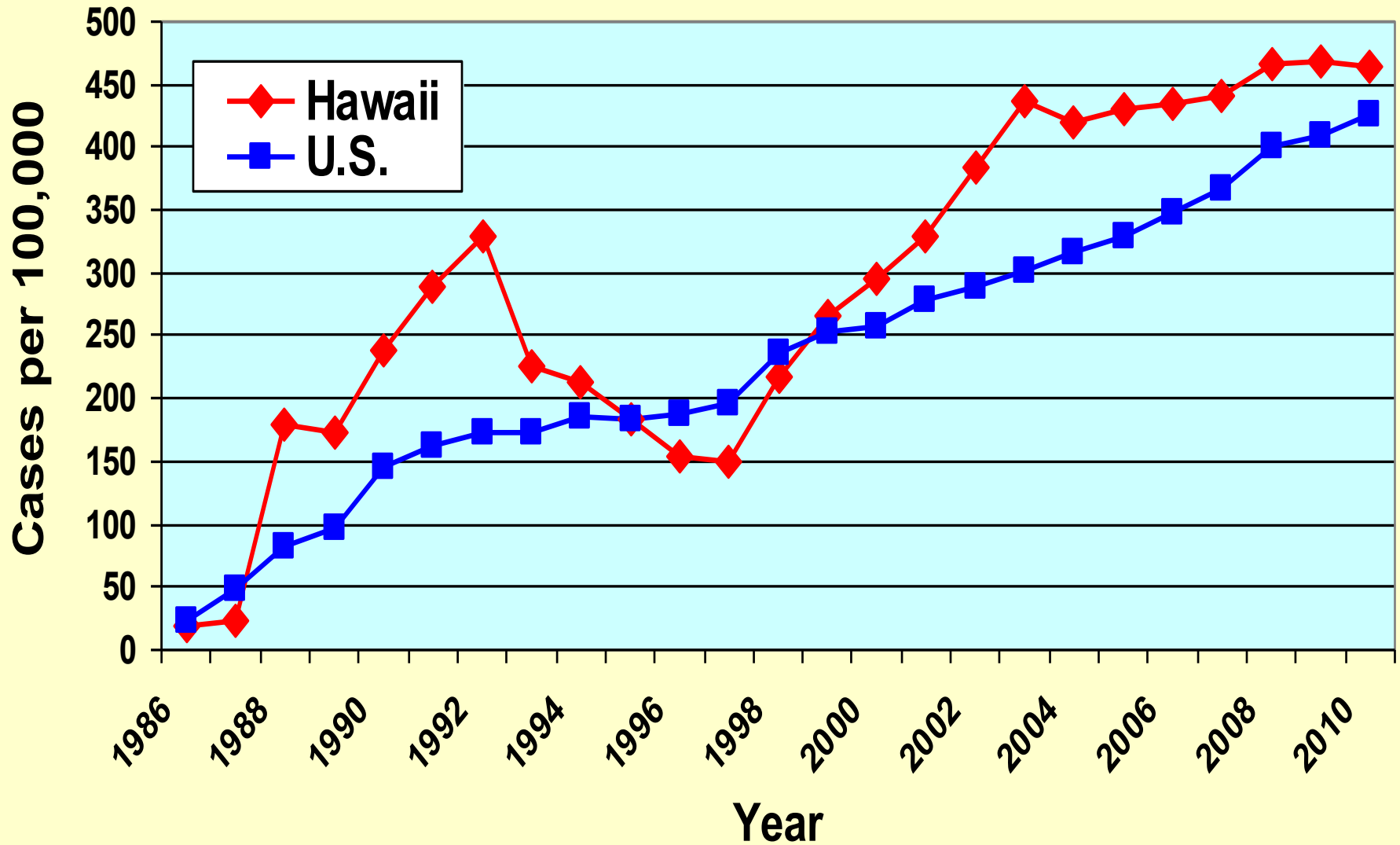
# Update on STDs: national and Hawaii perspective

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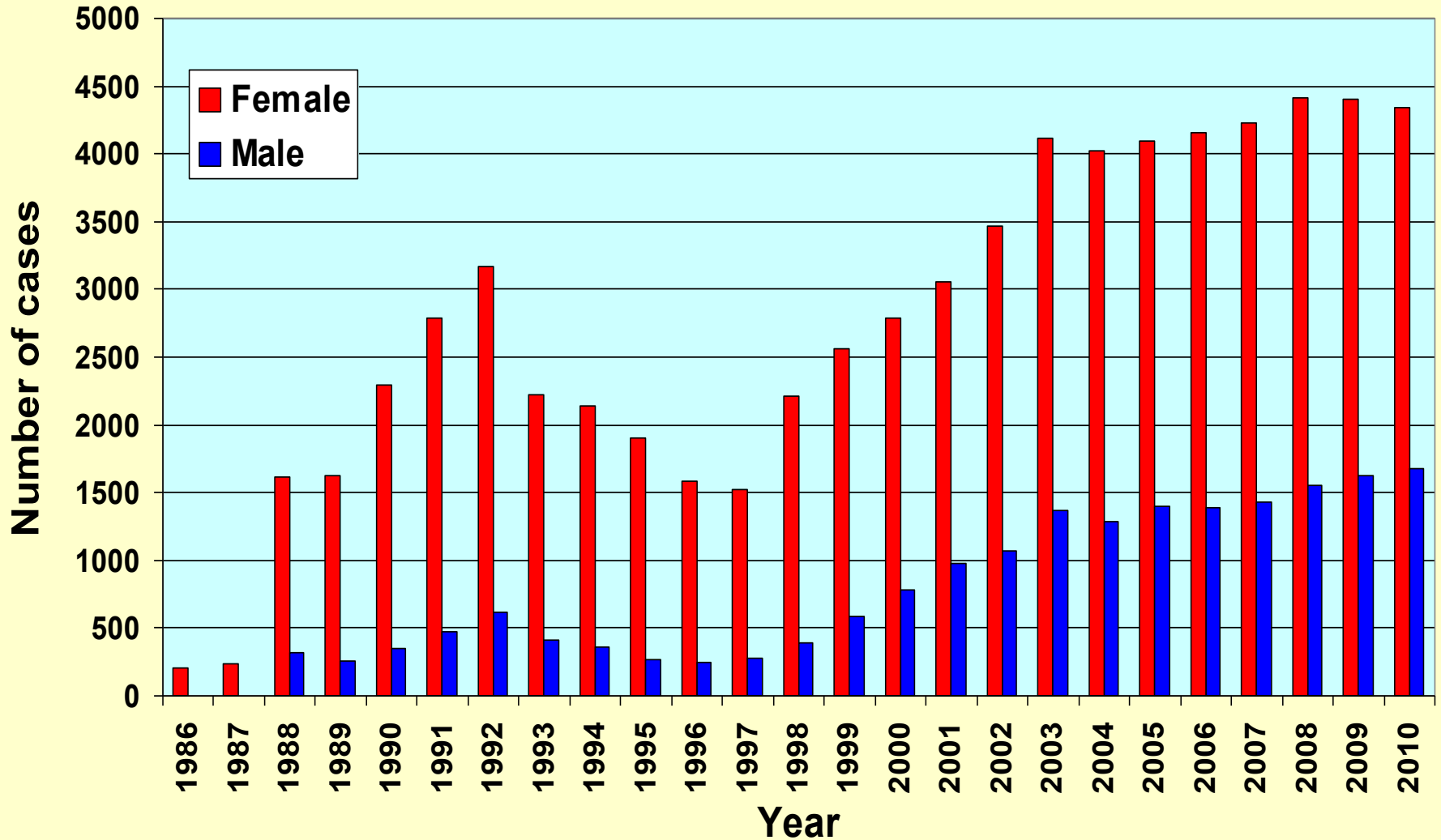
Pacific Global Health Conference

10 October 2012

# Chlamydia rates, US and Hawaii, 1986-2010



# Chlamydia cases by sex, Hawaii, 1986-2010



# Chlamydia: clinical findings

- Up to 70% of infected females and 50% of males may be asymptomatic
- Symptoms in females, when present, include: vaginal discharge from cervicitis, dysuria, and/or P.I.D.
- Symptoms in males, when present, include: dysuria and penile discharge
- Incubation period: 7-14 days

# Chlamydia: screening

Routine annual screening recommended by CDC for all sexually active women:

- $\leq 25$  years old
- or
- $> 25$  years old, if one or more risk factors present:
  - history of STD
  - inconsistent use of barrier contraception
  - new or multiple sex partners

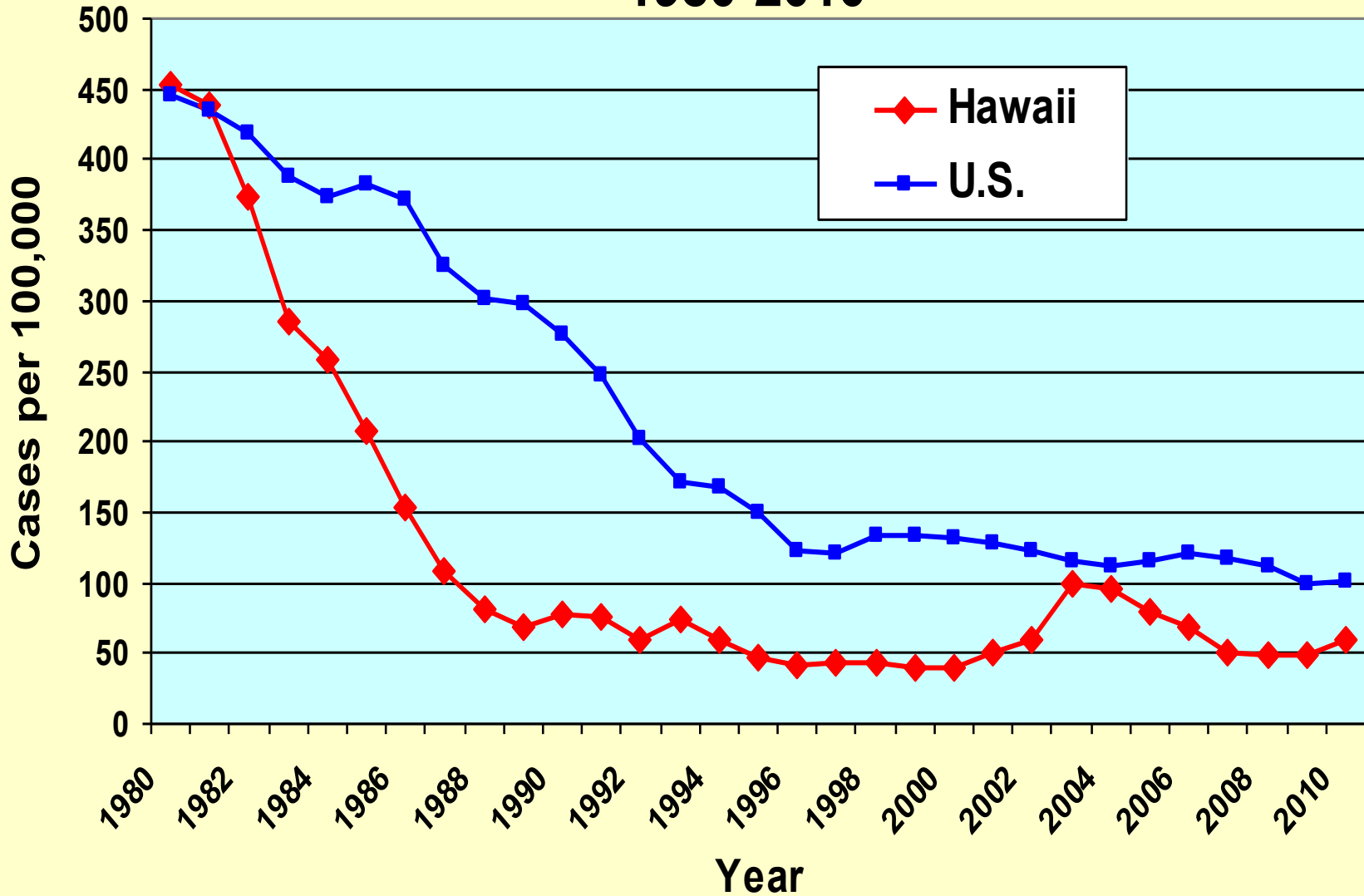
# Chlamydia: diagnosis

<u>Method</u>	<u>Sensitivity</u>	<u>Specificity</u>
• Cell culture	40-80%	100%
• EIA	60-70%	95-99%
• DFA	50-70%	95-99%
• DNA probe	60-75%	95-100%
• Nucleic acid amplification tests	93-100%	98-100%

# Chlamydia: treatment

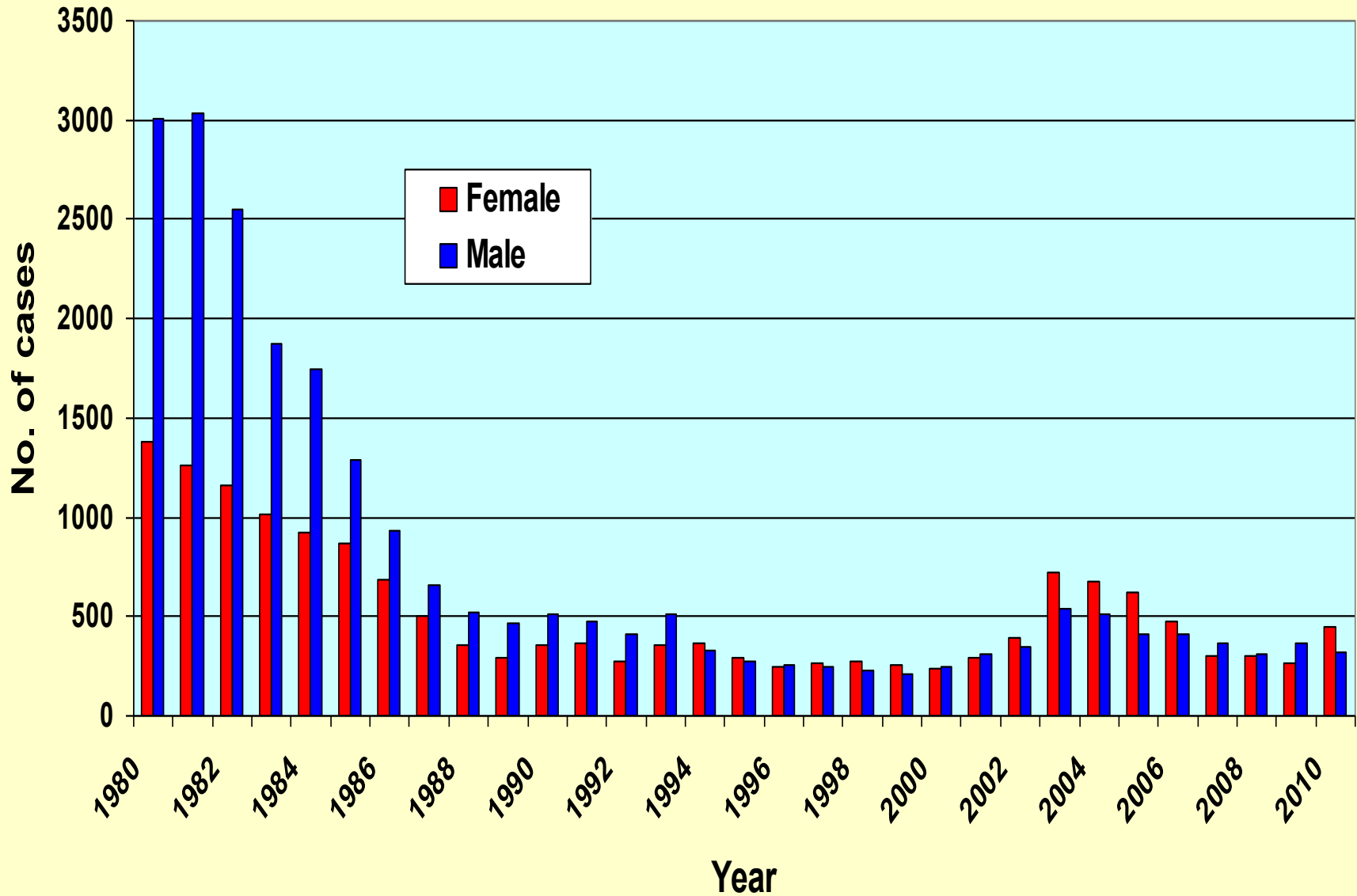
- Azithromycin 1 gm po (single dose)  
or
- Doxycycline 100 mg po bid X 7 days
- Sex partners in previous 60 days should be evaluated and treated
- Retest in 3 months

# Gonorrhea rates, US and Hawaii, by year, 1980-2010





# Gonorrhea cases by sex, Hawaii, 1980-2010



# Gonorrhoea: clinical findings

- Many infected females are asymptomatic. Symptoms, when present, include: vaginal discharge from cervicitis, dysuria, intermenstrual uterine bleeding, P.I.D., Bartholin's gland abscess
- Most infected males are symptomatic with dysuria and purulent penile discharge
- Disseminated gonococcal infection is rare
- Incubation period: 2-7 days

# Uncomplicated gonorrhoea: diagnosis

- Initial evaluation: Gram-stained smears
  - endocervical site (female):  
sensitivity = 50-70%; specificity = 95-100%
  - urethral site (symptomatic male):  
sensitivity = 90-95%; specificity = 95-100%
- Confirmation with culture  
sensitivity = 80-90%; specificity = 100%

# Emerging antimicrobial resistance of *N. gonorrhoeae*

- High level resistance to penicillin and tetracycline recognized since 1970s
- fluoroquinolones, a recommended therapy for gonorrhea in the 2006 CDC STD treatment guidelines, have been contraindicated since 2007 due to rapid spread of resistance isolates. First appearance in the U.S. was identified in Hawaii (MMWR 2007;56:332-6)

Emergence of multidrug resistant *N. gonorrhoeae* with decreased susceptibility to oral third generation cephalosporins

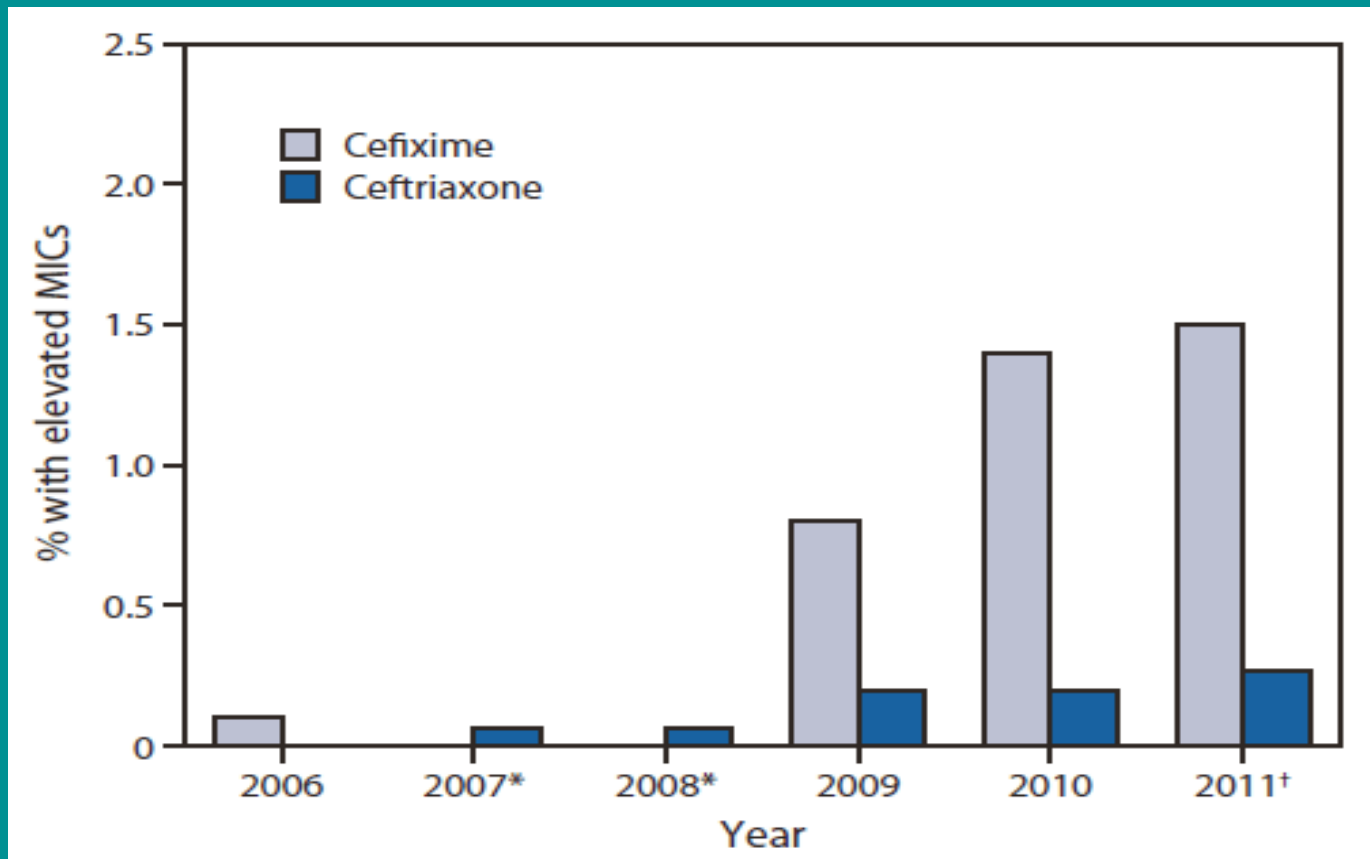
2001: First three cases of multidrug resistant gonorrhea with decreased susceptibility to cefixime in the U.S. identified in Hawaii. All three with links to Asia (Japan and Malaysia)

Clin Infect Dis 2003;37:849-52

# Emerging resistance to injectable third generation cephalosporins

- 2009: First case of multidrug resistant gonococcal isolate with resistance to ceftriaxone was identified in Japan
- In addition to ceftriaxone resistance, also resistant to pcn, cefixime, levofloxacin, and reduced susceptibility to azithromycin

Percentage of urethral *Neisseria gonorrhoeae* isolates (n = 32,794) with elevated cefixime MICs ( $\geq 0.25 \mu\text{g/mL}$ ) and ceftriaxone MICs ( $\geq 0.125 \mu\text{g/mL}$ ) — Gonococcal Isolate Surveillance Project, United States, 2006–August 2011



**Abbreviation:** MICs = minimum inhibitory concentrations.

\* Cefixime susceptibility not tested during 2007–2008.

† January–August 2011.

# Oral cephalosporins are no longer a recommended treatment for gonorrhea

- The 2010 CDC STD treatment guidelines were updated on 10 August 2012 to reflect the increase in percentage of isolates with decreased susceptibility to oral cephalosporins in the national GISP surveillance project.
- The largest increases were observed in Hawaii: from 0% in 2006 to 17% in 2009



# Resistance to azithromycin

- While not the first line recommended treatment, a single 2 gram dose of azithromycin is listed as an “alternative regimen” for persons with cephalosporin allergies
- Of note, the first isolate in the U.S. with high level resistance to azithromycin was identified in Hawaii in 2011 (Clin Infect Dis 2012;54:841-3.)

# Uncomplicated gonorrhoea: treatment

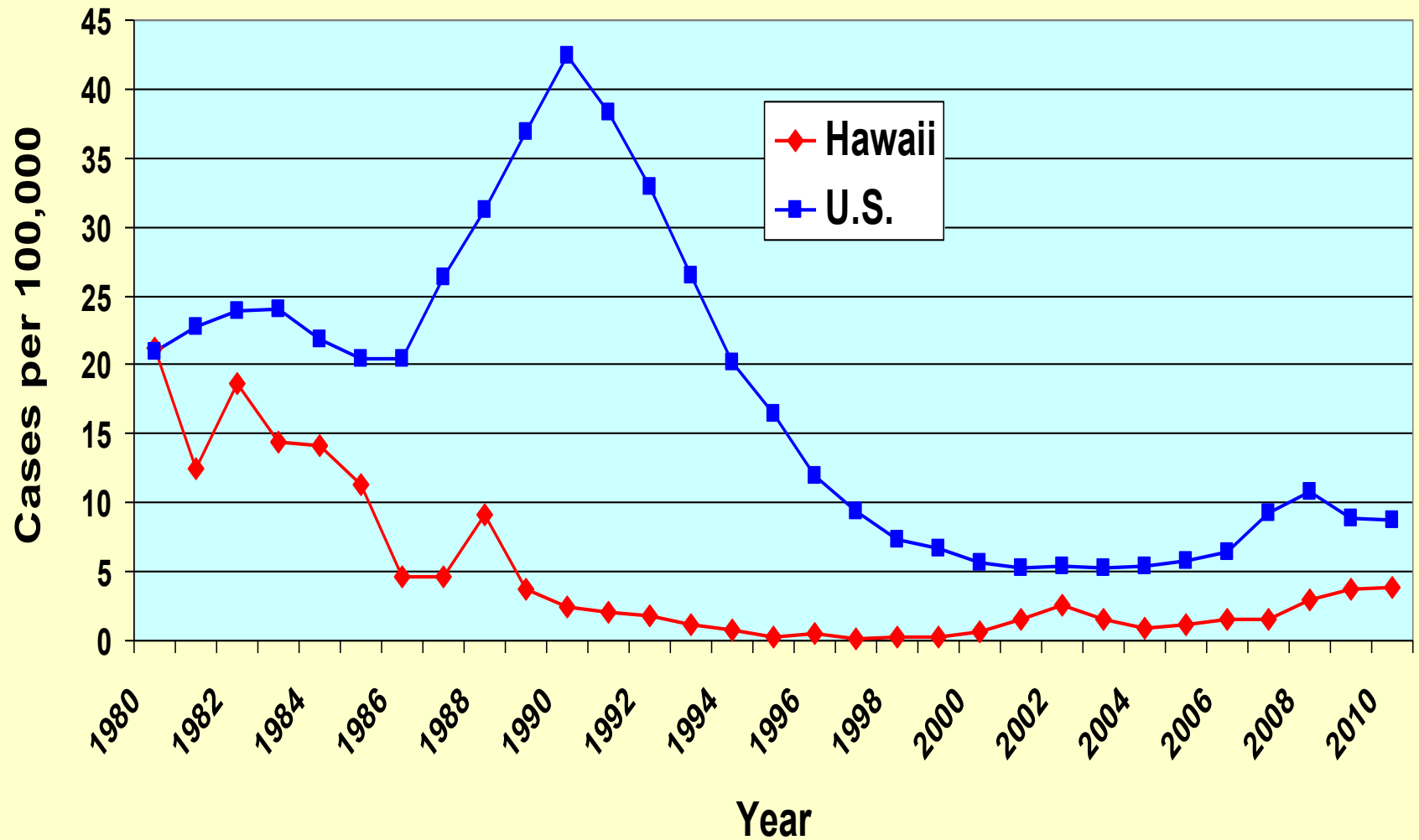
- Ceftriaxone **250 mg** IM (single dose)  
    Plus: Azithromycin 1 gm po (single dose)  
    or doxycycline 100 mg twice a day for one week
- Sex partners in previous 60 days should be evaluated and treated
- Retest in 3 months (if treatment is not with recommended regimen, test of cure in one week, preferably with culture)

# Dual therapy for all cases of gonorrhea\*

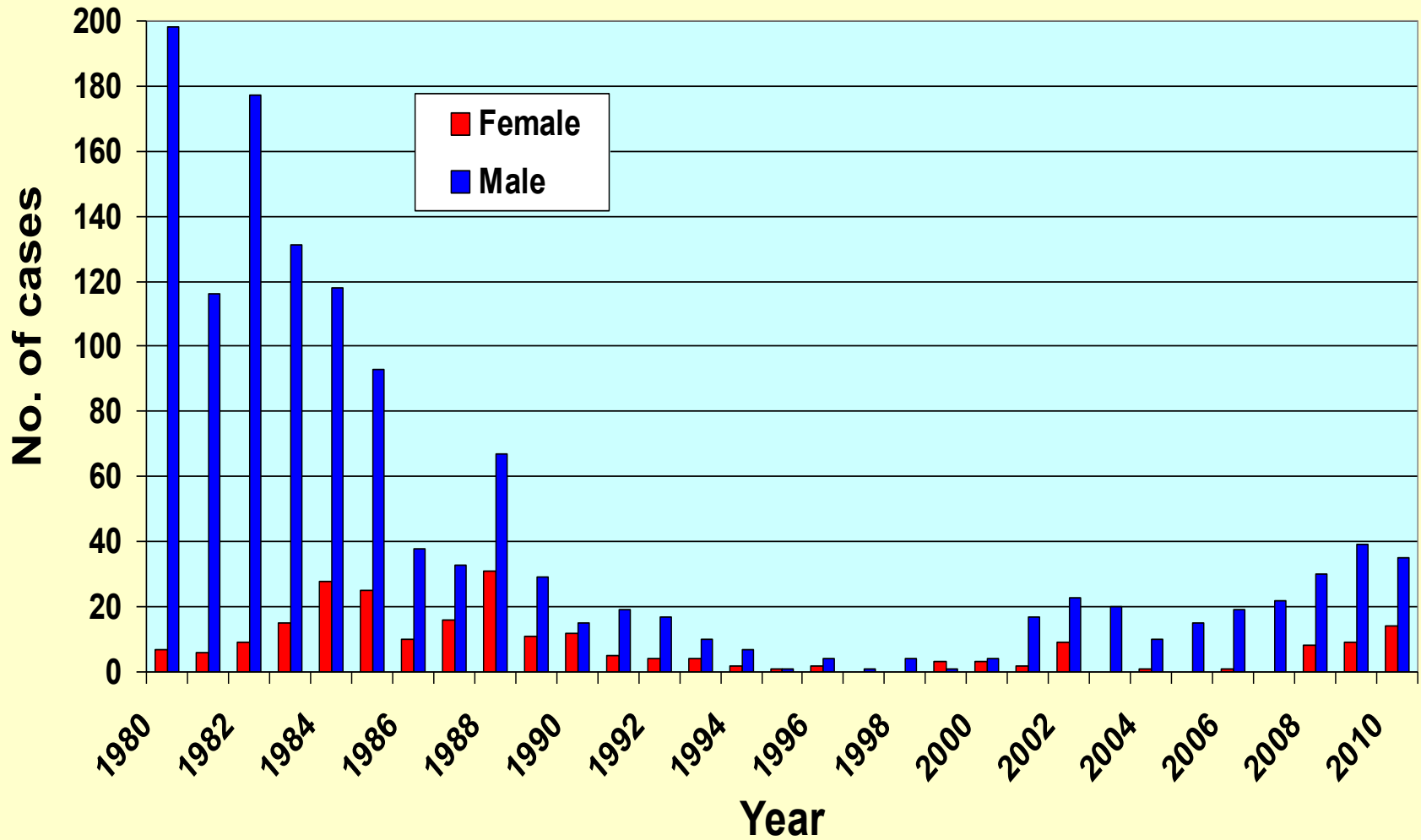
- Injectable ceftriaxone plus azithromycin (preferably) or doxycycline
  - Will cover possibility of co-infection: gonorrhea and chlamydia
  - Will help mitigate emerging cephalosporin resistance

\*Even if chlamydia has been ruled out by NAAT

# Early syphilis (primary, secondary, and early latent) rates, US and Hawaii, 1980-2010



# Early syphilis (primary, secondary, and early latent) cases by sex, Hawaii, 1980-2010



# Primary & Secondary Syphilis Profile, Hawaii 2001-2010

- Total cases = 183
- Male: 87%
- 74% of males = MSM
- Median age: 42 years
- 34% of MSM with syphilis self-disclosed they were co-infected with HIV
- Increase in proportion of females: from 4% of cases 2001-2007 to 20% of cases 2008-2010

All persons with syphilis should be tested for HIV

# Syphilis

- An acute bacterial infection with the spirochete: *Treponema pallidum*
- Manifested by a single genital ulcer or “chancre” at the infection site
- Nontender ulceration, 1-2 cm diameter, indurated margins
- Incubation period: 10-90 (mean = 21) days

# Syphilis

- Untreated 1<sup>o</sup> syphilitic chancre heals w/i 3-6 weeks
- 2<sup>o</sup> (disseminated) syphilis appears 4-10 weeks after the appearance of the chancre:
  - Fever, malaise, sore throat
  - Generalized lymphadenopathy
  - Maculopapular rash: trunk, extremities, palms and soles
  - Mucosal patches
  - Alopecia



# Syphilis

- Untreated 2<sup>0</sup> syphilis: symptoms resolve w/i 2-6 weeks: latent phase
- 25% of cases will have an exacerbation of symptoms w/i first year (“early” latent phase)
- Late latent (after one year): 2/3 of cases with no further signs of disease; 1/3 develop late (3<sup>0</sup>) syphilis with cardiovascular or CNS manifestations

# Syphilis diagnosis

- Acute lesion: positive darkfield microscopy
- 1<sup>o</sup>, 2<sup>o</sup>, or latent: serologic tests:

## Traditional approach:

- Nontreponemal assay: RPR or VDRL (quantitative) followed by:
- Treponemal-specific test: FTA-ABS, TPPA, EIA

## Newer testing algorithm:

- Start with treponemal-specific EIA
- Follow with quantitative nontreponemal test if EIA is reactive

# Syphilis treatment

- 1<sup>0</sup>, 2<sup>0</sup>, or early latent: 2.4 mU benzathine Penicillin IM
- Late latent: 2.4 mU benzathine Penicillin IM X 3 (weekly injections)
- Sex partners in previous 90 days (1<sup>0</sup>), 6 months (2<sup>0</sup>), or one year (early latent) should be evaluated and treated
- Follow-up: serology at (3,)\* 6, (9,)\* and 12 months [24 months for latent]

# Notifiable STDs, State of Hawaii:

## Hawaii Administrative Rules

### Title 11, Chapter 156

- HIV/AIDS\*
- Chlamydia\*
- Gonorrhea\*
- Syphilis\*
- Pelvic Inflammatory Disease (PID)
- Chancroid\*

\*Also “nationally notifiable”

# Reporting of STDs

Mail, fax, or phone report within 3 days of diagnosis, to:

Hawaii State Dept. of Health (DOH)

STD Prevention Branch

3627 Kilauea Ave., Room 304

Honolulu, HI 96816

733-9281 (ph); 733-9291 (fax)

# DOH Disease Intervention Specialist (DIS) Services

***Confidential*** interviews of STD patients in order to identify locatable sexual partners. Goals are to:

- Notify partners of possible STD exposure
- Evaluate and treat partners of STD patients
- Decrease probability of reinfection of the “index” case and further transmission to others