

STD and HIV Screening and Treatment

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Overview

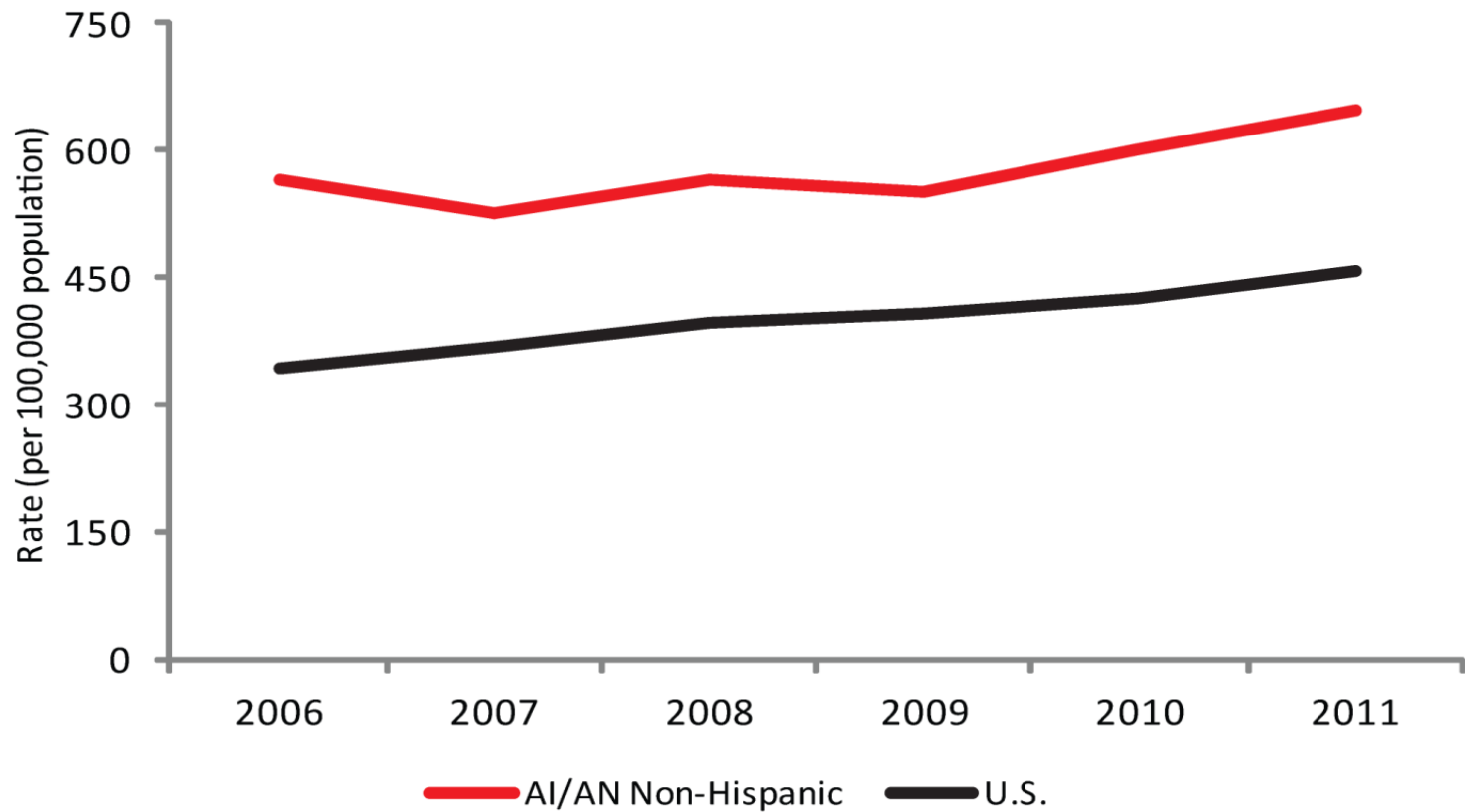


- ❑ **STD Surveillance**
 - National STD impact among AI/AN
- ❑ **Screening Recommendations**
- ❑ **Case Presentations**
 - Clinical Updates
- ❑ **Best Practices**
 - IHS Service Units

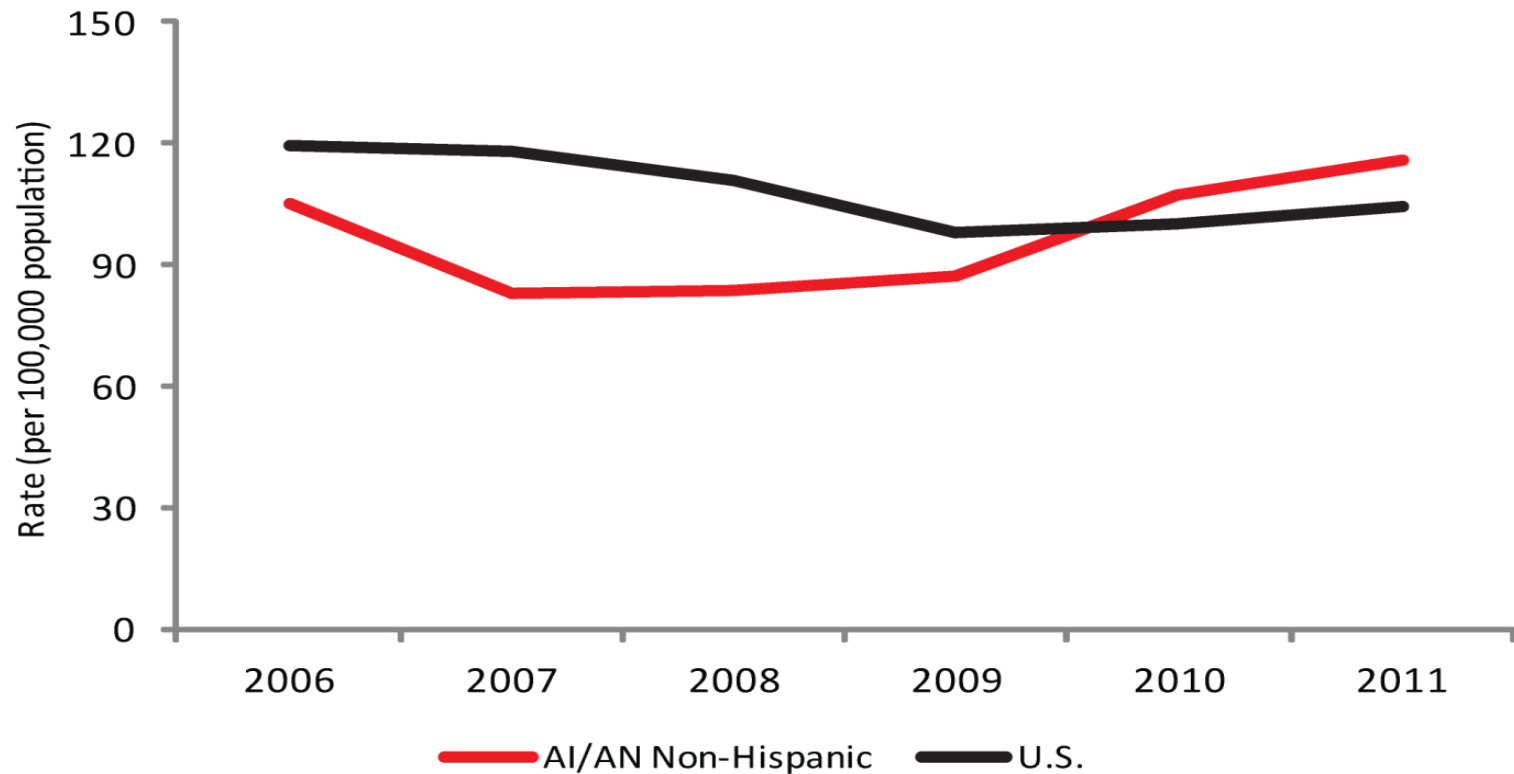


STD Surveillance Among AI/AN

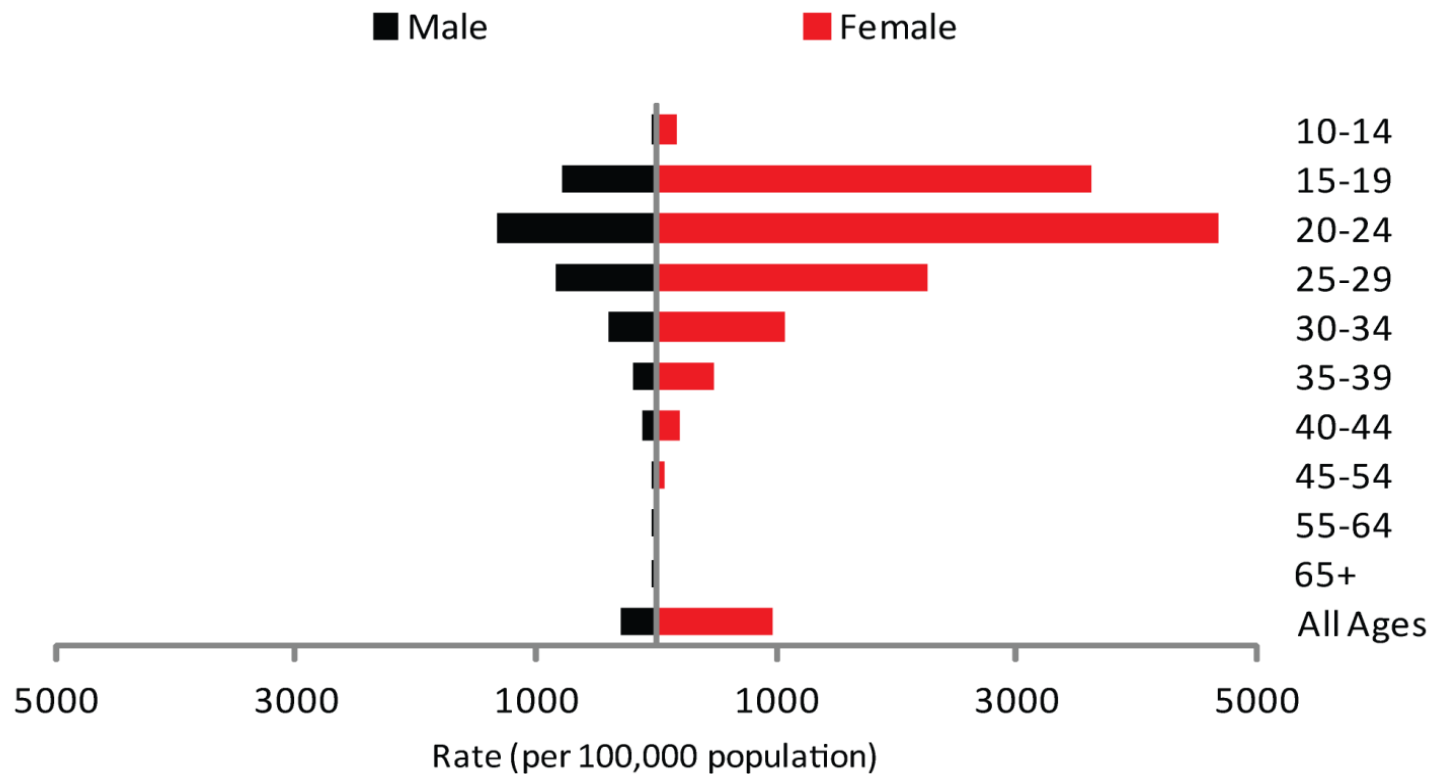
Total Chlamydia Rates, AI/AN Non-Hispanic and U.S., 2006-2011



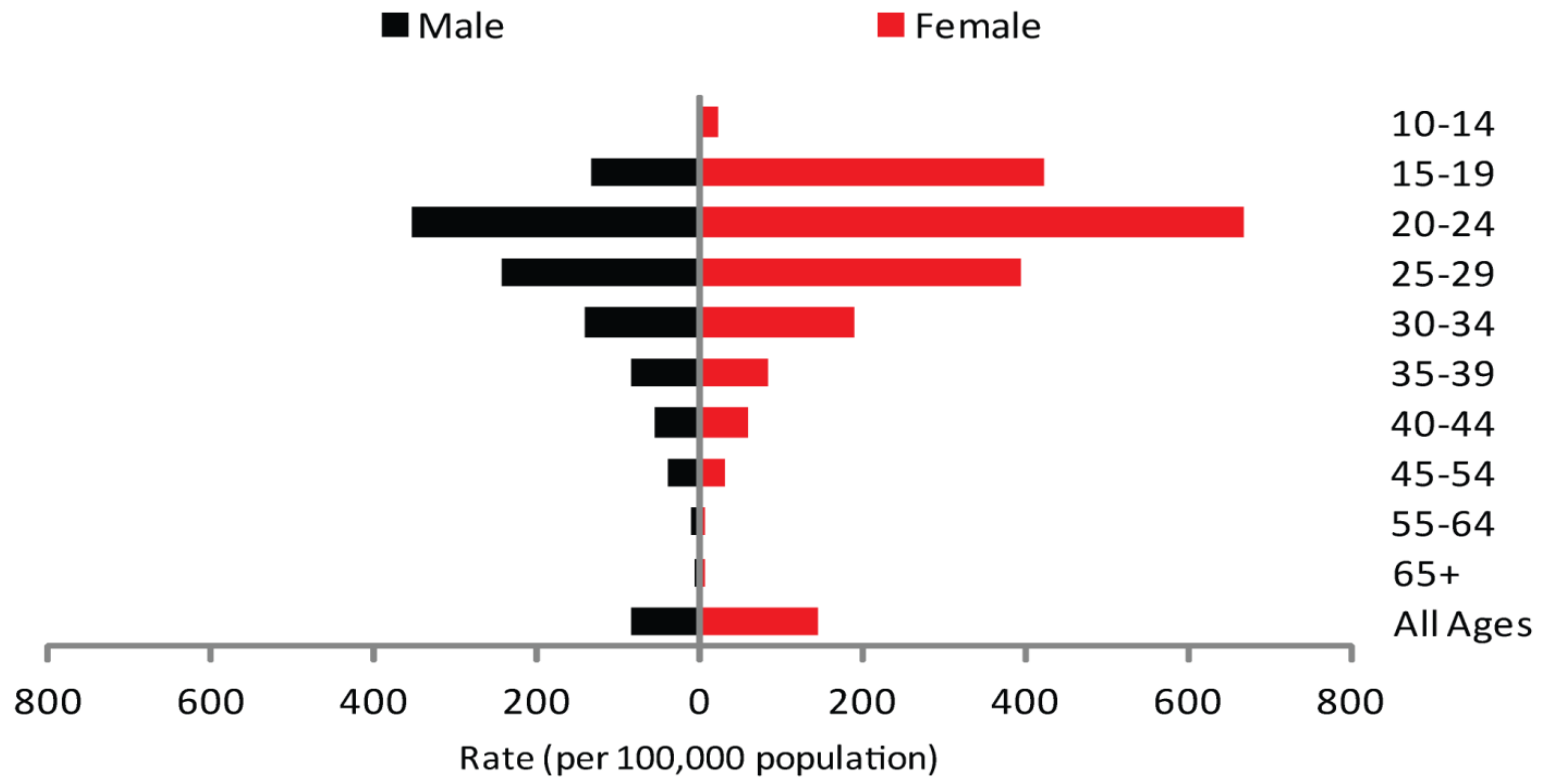
Total Gonorrhea Rates, AI/AN Non-Hispanic and U.S., 2006-2011



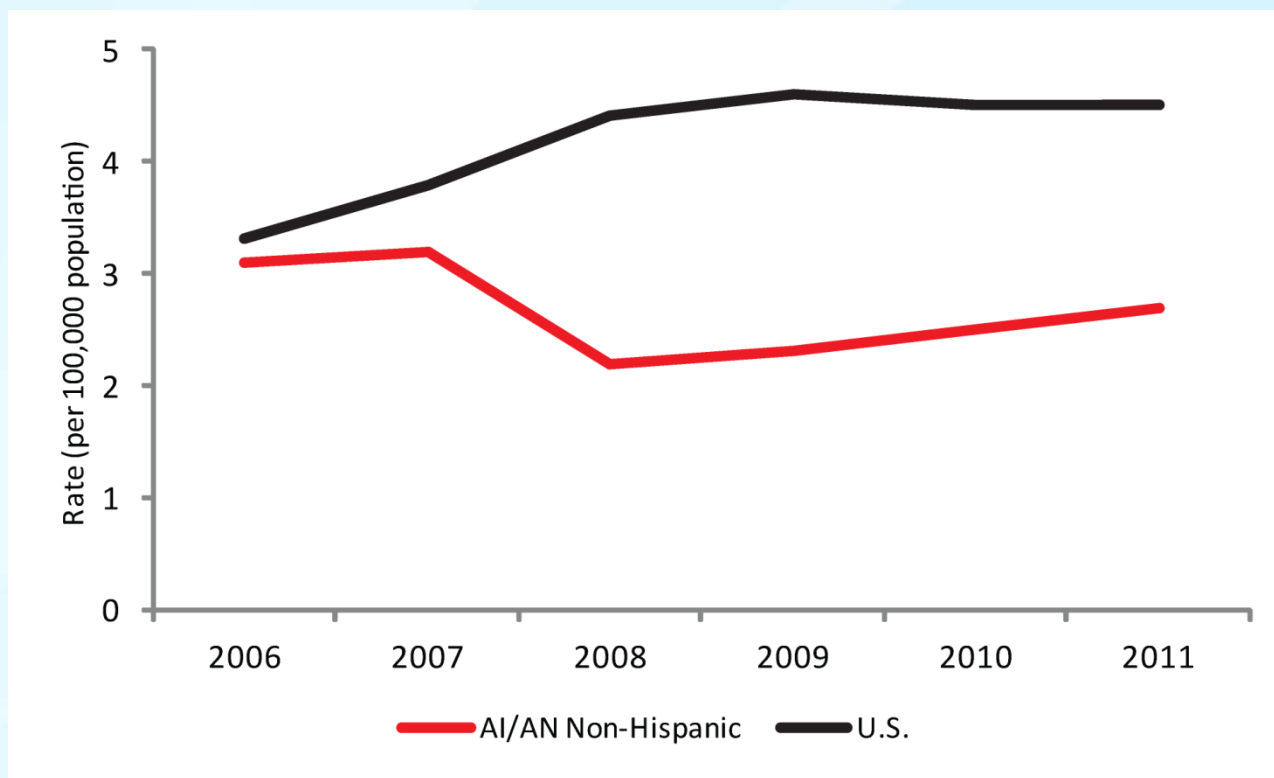
Chlamydia Rates by Sex and Age, AI/AN Non-Hispanic, 2011



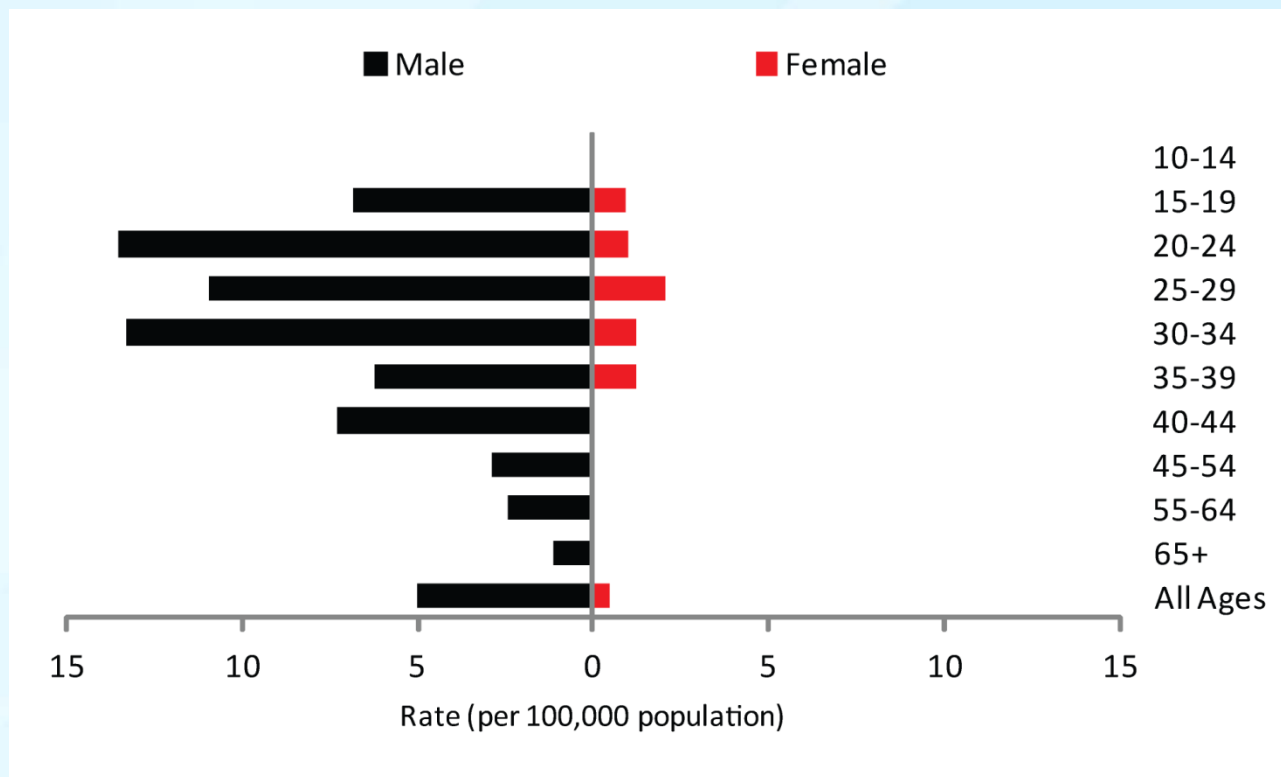
Gonorrhea Rates by Sex and Age, AI/AN Non-Hispanic, 2011



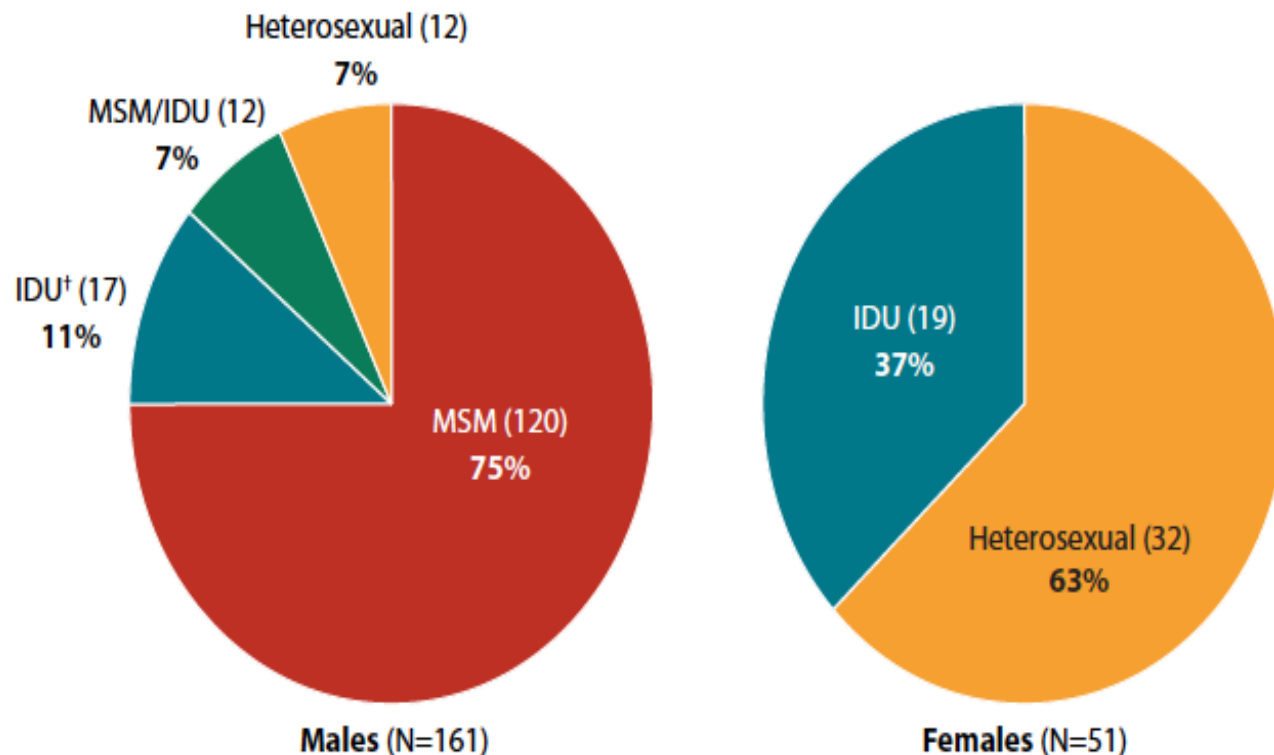
Total P&S Syphilis Rates, AI/AN Non-Hispanic and U.S., 2006-2011



P&S Syphilis Rates by Sex and Age, AI/AN Non-Hispanic, 2011



Estimated Diagnoses of HIV Infection among Adult and Adolescent American Indians/Alaska Natives by Transmission Category and Gender, United States, 2011*



*Because of rounding, the percentages do not equal 100%. Because the estimated total (N) was calculated independently of the values of the subpopulation, the subpopulation values do not sum to the total. †Injection drug use.

SCREENING

STD Screening for Women

- Sexually Active adolescents & up to age 25
Routine chlamydia and gonorrhea screening
Others STDs and HIV based on risk
- Women over 25 years of age
STD/HIV testing based on risk
Corrections
- Pregnant women
Chlamydia
Gonorrhea (<25 years of age or risk)
HIV
Syphilis serology
HepB sAg
Hep C (if high risk)

Findings from PIMC Chlamydia Screening Audit

- 2010 Most women overdue for CT screen had medical visits, but not screened (62%)
- Many missed opportunities that standing orders/clinical reminders may be able to address
 - Urinalysis
 - Urine Pregnancy Testing
 - Pregnancy
 - Family Planning
 - Vaccination

First Void vs. Clean Catch Urine

- *Annals of Family Medicine. 2012;10 (1); 50-53.*
- 100 women with first void urine positive for chlamydia also provided a mid-stream sample
- 96 (96%) had a positive mid-stream specimen
- Suggests a suitable sensitivity for testing mid-stream urines
- Opportunities for batching CT/GC testing with urine pregnancy testing

STD Screening for MSM

- HIV
- Syphilis
- Urethral GC and CT
- Rectal GC and CT (if RAI)
- Pharyngeal GC (if oral sex)
- HSV-2 serology (consider)
- Hepatitis B (HBsAg)
- Anal Pap (consider for HIV+)

* At least annually, more frequent (3-6 months) if at high risk (multiple/anonymous partners, drug use, high risk partners)

Chlamydia Screening Among Men

- Evidence is insufficient to recommend routine chlamydia screening in sexually active young men because of several factors (feasibility, efficacy, cost),
- Screening of sexually active young men should be considered in clinical settings with a high prevalence of chlamydia
- CDC STD Treatment Guidelines. 2010. www.cdc.gov/std

HIV Screening Recommendation

- Routine HIV screening for
 - All patients aged 13-64
 - Patients seeking treatment for STDs
 - Patients initiating TB treatment

- Repeat HIV screening for
 - Persons at high risk
 - Persons starting a new sexual relationship
 - Others based on clinical judgment

- IV drug users & their sex partners
- Persons exchanging sex for money
- Sex partners of HIV infected persons
- Persons who had more than one sex partner since their last HIV test



Clinical Case Presentations

Case 1: Jonathan, 20yo



- Presents with complaints of burning with urination and urethral discharge x 1 day
- 3 female sex partners during the past year—did not use condoms with these partners
- No known prior STDs, but last check up over 1 year ago
- Exam: yellow pus noted at urethral meatus, but no epididymitis, no inguinal adenopathy, and no systemic symptoms

Urethritis Diagnosis

Exam findings:

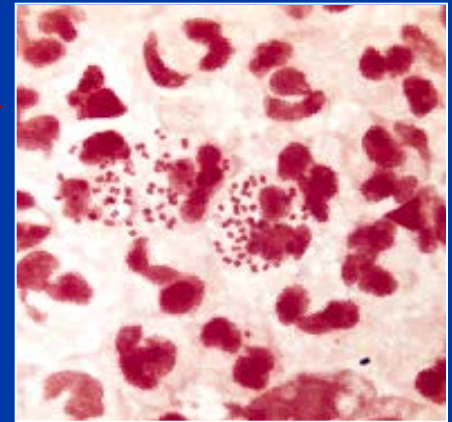
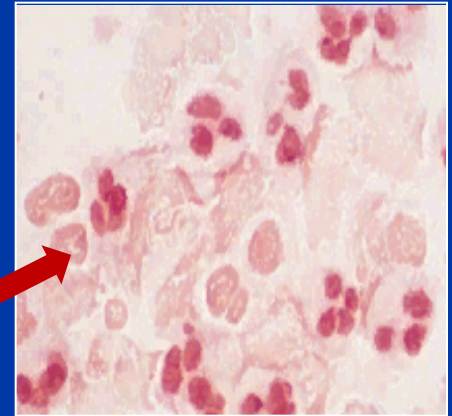
- Purulent discharge

Stat laboratory:

- ≥ 5 WBC/HPF on gram stain of exudate
- Gram stain for intracellular GNDC
- Positive LE on urine dip
- ≥ 10 WBCs/HPF on first void urine

Laboratory tests:

- GC and CT testing
- Screen for syphilis, offer HIV

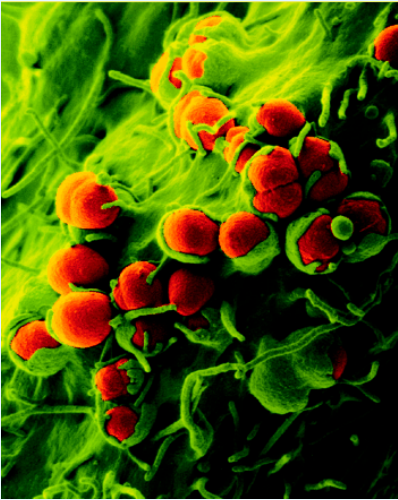


How would you treat him?

1. Ceftriaxone 125 mg IM
2. Ceftriaxone 250 mg IM
3. Ceftriaxone 250 mg IM
+ azithromycin 1 g PO
4. Azithromycin 1 g PO



Gonorrhoea



- ❑ **Diagnostic issues: Extra-genital NAAT testing**
- ❑ **Treatment issues:**
 - Dual treatment regardless of chlamydia test result
- ❑ **Partner treatment: EPT option, BYOP**
- ❑ **Repeat testing 3 months after treatment: women and men infected with chlamydia or gonorrhoea**

Gonorrhea Treatment

Uncomplicated Genital/Rectal Infections

Ceftriaxone 250 mg IM
in a single dose

PLUS*

OR, if not an option:

Cefixime 400 mg orally
in a single dose

Azithromycin
1 g orally
or
Doxycycline
100 mg BID x
7 days

* Regardless of CT test result

What should I do if I suspect a cephalosporin-related treatment failure?

- Culture and susceptibility testing
- Rx ceftriaxone 250 mg IM, if oral regimen used
- Consult a specialist for treatment guidance
- Report case to CDC through state and local HD
- Ensure partner evaluation and treatment
- See CDC or state health department websites for most current information

Case 2: Erica



- Erica is a 16-year-old female who presents with dysuria.
- What additional information do you need?
 - History of present illness
 - Sexual history

History of Present Illness

- Onset and duration of symptoms
- Description of symptoms
- Associated symptoms
 - Nausea
 - Vomiting
 - Fever
 - Chills
 - Back pain
 - Sores, lumps, bumps
 - Discharge

Sexual History: The 5 Ps

- ***Partners***
 - Gender(s), Number (3 months, Lifetime)
- ***Prevention of pregnancy***
 - Contraception, EC
- ***Protection from STIs***
 - Condom use
- ***Practices***
 - Types of sex: anal, vaginal, oral
- ***Past history of STIs***

Case: Erica

- Erica informs you that she has had several episodes of unprotected sex in the last few weeks with 1 male partner.
- Do you need to do a pelvic exam?



Pelvic Exam?

- Yes... Why?
 - Erica is symptomatic and sexually active.
 - A pelvic exam in this case is a diagnostic exam not an asymptomatic screening.
 - If Erica had been asymptomatic, would you perform a speculum exam?

Case: Erica

- Erica tells you she has burning with urination and a discharge.
- She denies abdominal pain and fever and reports no bumps or lesions.
- What is your differential diagnosis?

Differential Diagnosis

Dysuria

```
graph TD; A[Dysuria] --> B[Urinary Tract Infection]; A --> C[Genital Tract Infection]; A --> D[Skin Related Abnormalities/ Mucosal Perineal]; C --> E[•Cervicitis]; C --> F[•Vaginitis]; D --> G[•Herpes]; D --> H[•Trauma];
```

Urinary Tract Infection

Genital Tract Infection

- Cervicitis
- Vaginitis

Skin Related Abnormalities/
Mucosal Perineal

- Herpes
- Trauma

Differential Diagnosis

- After doing a genital exam, you observe discharge in the cervical os but not in the vault.
- How does this affect your differential?



Differential Diagnosis

Genital Tract
Infection

```
graph TD; A[Genital Tract Infection] --> B[Cervicitis]; B --> C[Chlamydia]; B --> D[Gonorrhea];
```



Cervicitis



Chlamydia



Gonorrhea

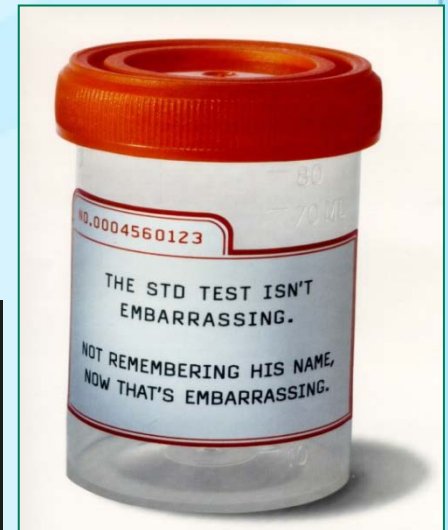
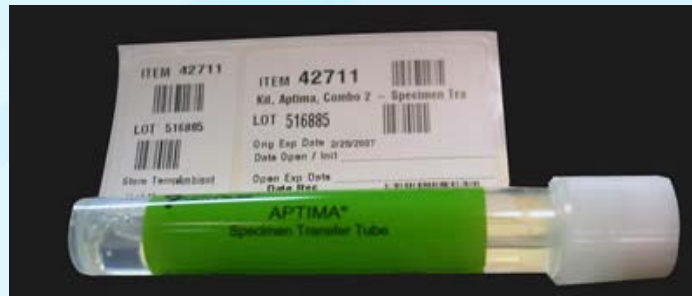
Case: Evaluating Cervicitis

How do you evaluate
Erica for cervicitis?



Nucleic Acid Amplification Tests

- Highest sensitivity for Chlamydia/Gonorrhea
 - Able to detect 30-40% more infections
- Less dependent on specimen collection and handling
 - Self-collected vaginal swabs
 - Urine
 - Rectal



Erica: Case Continued

- You collect a specimen and order a NAAT test for both gonorrhea and chlamydia.
- You administer a pregnancy test which is negative.
- What else would you do?



Chlamydia Treatment

Azithromycin
1 g orally x 1

Doxycycline
100 mg twice
daily x 7 days

When available,
single-dose
treatment
preferable

<http://www.cdc.gov/std/treatment/>

Gonorrhea Treatment

Uncomplicated Genital/Rectal Infections

Ceftriaxone 250 mg IM in
a single dose

ALTERNATIVE
if injection not an option:

Cefixime 400 mg orally
in a single dose

PLUS*

Azithromycin 1 g
orally

or

Doxycycline 100
mg BID x 7 days

Chlamydia and Gonorrhea *Retesting*:

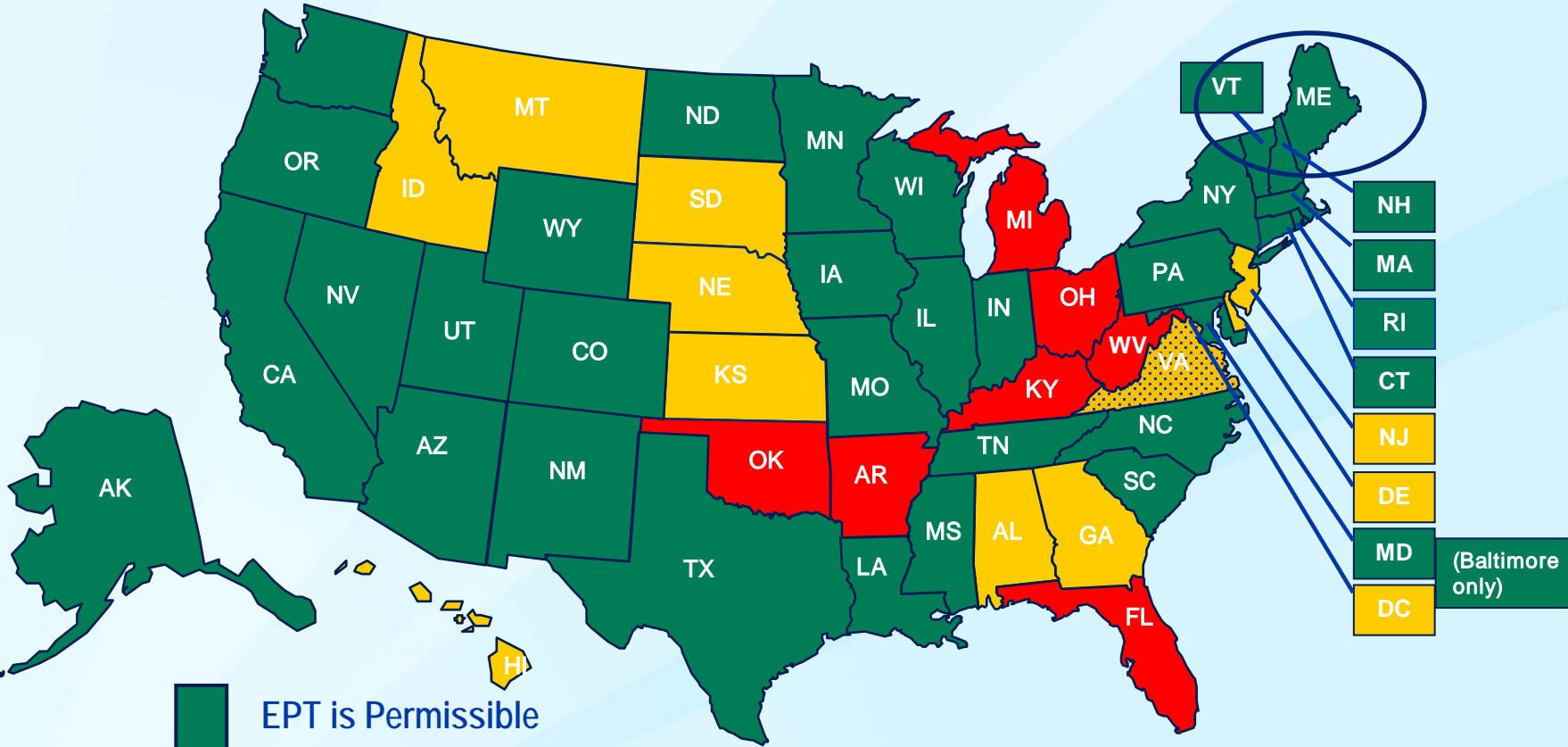
- Infected patients should be retested approximately 3 months after treatment
- If retesting at 3 months is not possible, clinicians should retest whenever persons next present for medical care in the 12 months following initial treatment.
- Re-infection is common due to untreated partners

CDC STD Treatment Guidelines. 2010. www.cdc.gov/std









Expedited Partner Therapy

- Depending on your state, consider writing a prescription for the sexual partner for expedited partner therapy (EPT).
- What is Expedited Partner Therapy (EPT)?

Expedited Partner Therapy Legal Status as of October 2011



-  EPT is Permissible
-  EPT is Likely Prohibited
-  EPT is Potentially Allowable
-  Legislation Introduced

-  NH
-  MA
-  RI
-  CT
-  NJ
-  DE
-  MD (Baltimore only)
-  DC

What to prescribe for EPT

- For partners of chlamydia cases:
 - Azithromycin 1 gram PO X 1 dose
- For partners of gonorrhea cases
 - Cefixime 400 mg PO X 1 dose
 - PLUS Azithromycin 1 gram PO X 1 dose
- Medication or prescriptions should be accompanied by partner information sheets

Expedited Partner Therapy

- Ideal settings
 - Women's Clinic
 - Primary care medical clinics
 - STD clinics
- Opportunities
 - Pharmacy EHR option for EPT
 - Azithromycin 2 grams, one gram each for patient and partner
 - Follow-up of empirically treated cases
 - Urgent care
 - ER

Case 3: Jeff



- Malaise, truncal and palmar rash for two weeks
- MSM
- Meth 3X/week
- On exam, maculopapular rash on abdomen chest, palms and soles of feet.
- What diagnostic tests should be performed?
- What treatment should he receive?

Case 3: MSM with rash



Test Results



- ❑ Syphilis EIA positive
- ❑ RPR positive 1:512
- ❑ HIV negative
- ❑ Treatment with Benzathine PCN provided on the day of testing.
- ❑ His case is reported to the public health department to initiate partner elicitation and referral
- ❑ What additional followup is needed?
 - Repeat RPR 6, 12 months to assess treatment response

Diagnosis of Syphilis



- Serology
 - Non-treponemal (non-specific, cardiolipin-based)
 - RPR or VDRL
 - Treponemal (specific to *Treponema pallidum*)
 - TP-PA, FTA-abs, EIA, CIA
- Darkfield microscopy
- Polymerase Chain Reaction

Why switch to EIA/CLIA for Syphilis Screening?

- Automated
- Low cost in high volume settings
- Less lab occupational hazard (pipetting)
- More objective results
- No false negatives due to prozone reaction

180 tests per hour, no manual pipetting



Syphilis Treatment

Primary, Secondary & Early Latent:

- ❖ Benzathine penicillin G 2.4 million units IM in a single dose

Late Latent and Unknown Duration:

- ❖ Benzathine Penicillin G 7.2 million units total, given as 3 doses of 2.4 million units each at 1 week intervals

Neurosyphilis:

- ❖ Aqueous Crystalline Penicillin G 18-24 million units IV daily administered as 3-4 million IV q 4 hr for 10 -14 d

****** No enhanced efficacy of additional doses of BPG, amoxicillin or other antibiotics even if HIV infected***

Case 4: Craig

23yo male with fever rash



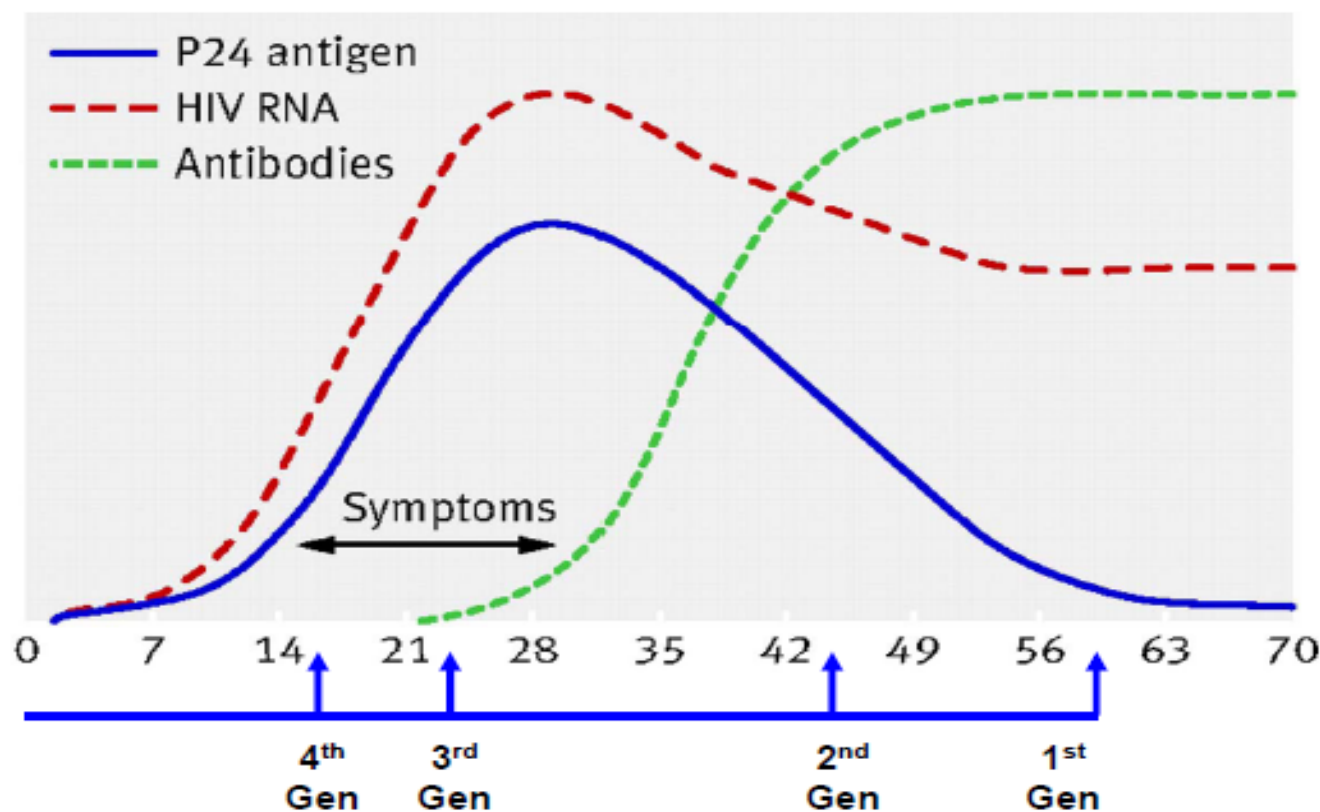
- Seen in ER 2days ago given NSAIDS
- Seen in primary care 3 days later, history revealed:
 - Meth use
 - MSM
 - Unprotected sex with multiple partners
- HIV EIA positive, Western Blot negative
- Is additional testing needed?

Evolution of the EIA

- Designed for *sensitivity*
- Reactive result is considered “preliminary positive”
 - Supplemental testing needed to confirm
- EIAs have become more sensitive with each new generation
 - 1st/2nd gen EIA: HIV-1 IgG
 - 3rd gen EIA/CIA: HIV-1/HIV-2; IgM + IgG Ab
 - 4th gen EIA/CIA: HIV-1 Ag, HIV-1/HIV-2 Ab

Reduction of Window Period

Viral and antibody levels



BMJ

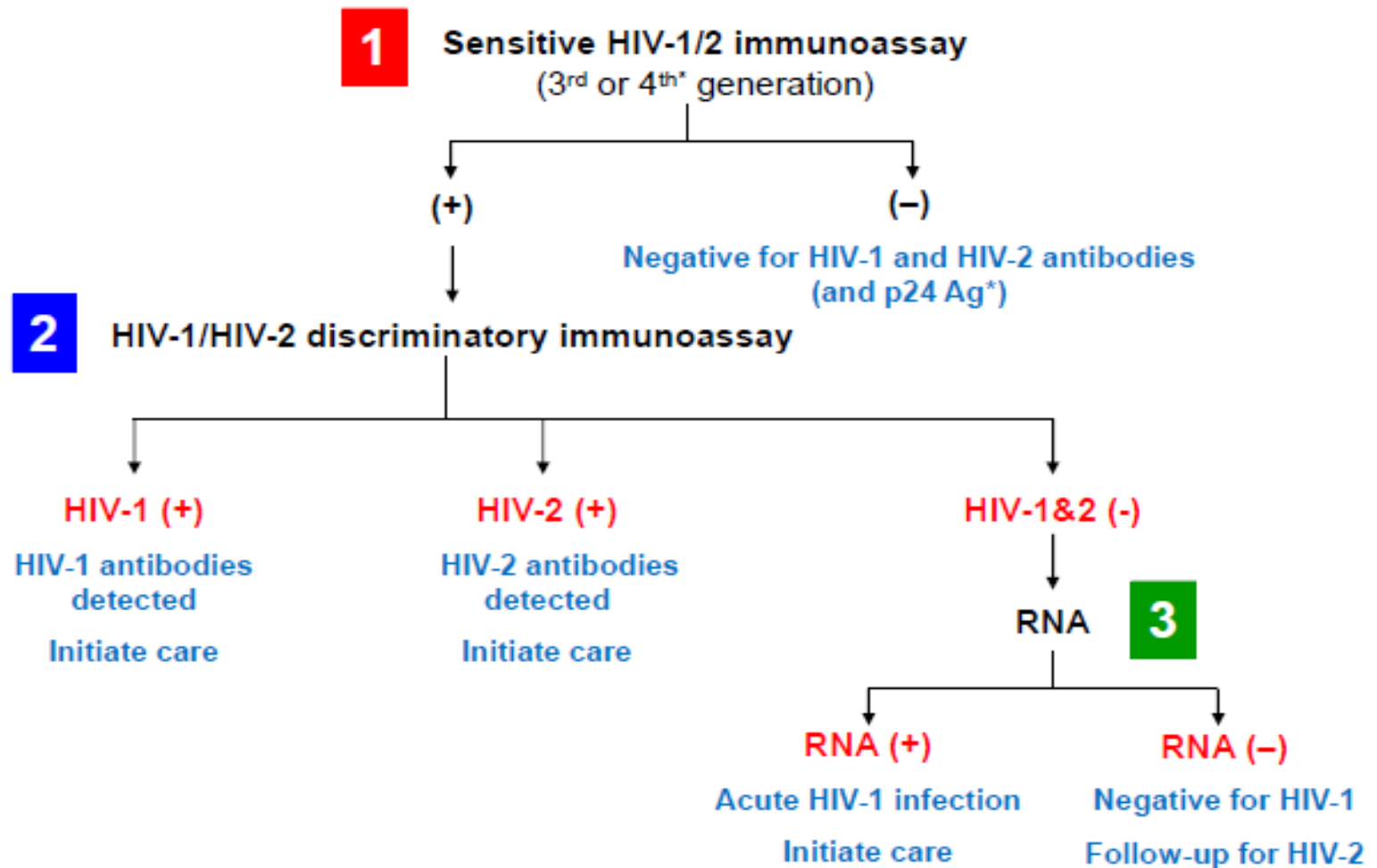
Das G et al. BMJ 2010;341:bmj.c4583

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Western blot (WB)

- Designed for *specificity*
- Must meet specific criteria for a positive result
- Indeterminate results occur for a variety of reasons
 - Early infection, late infection, HIV-2 infection, other
- Western blot technology has not advanced
 - Newer EIA and CIA tests are more sensitive than WB
- Lack of sensitivity can lead to false negative and inconclusive results

New HIV Testing Algorithm

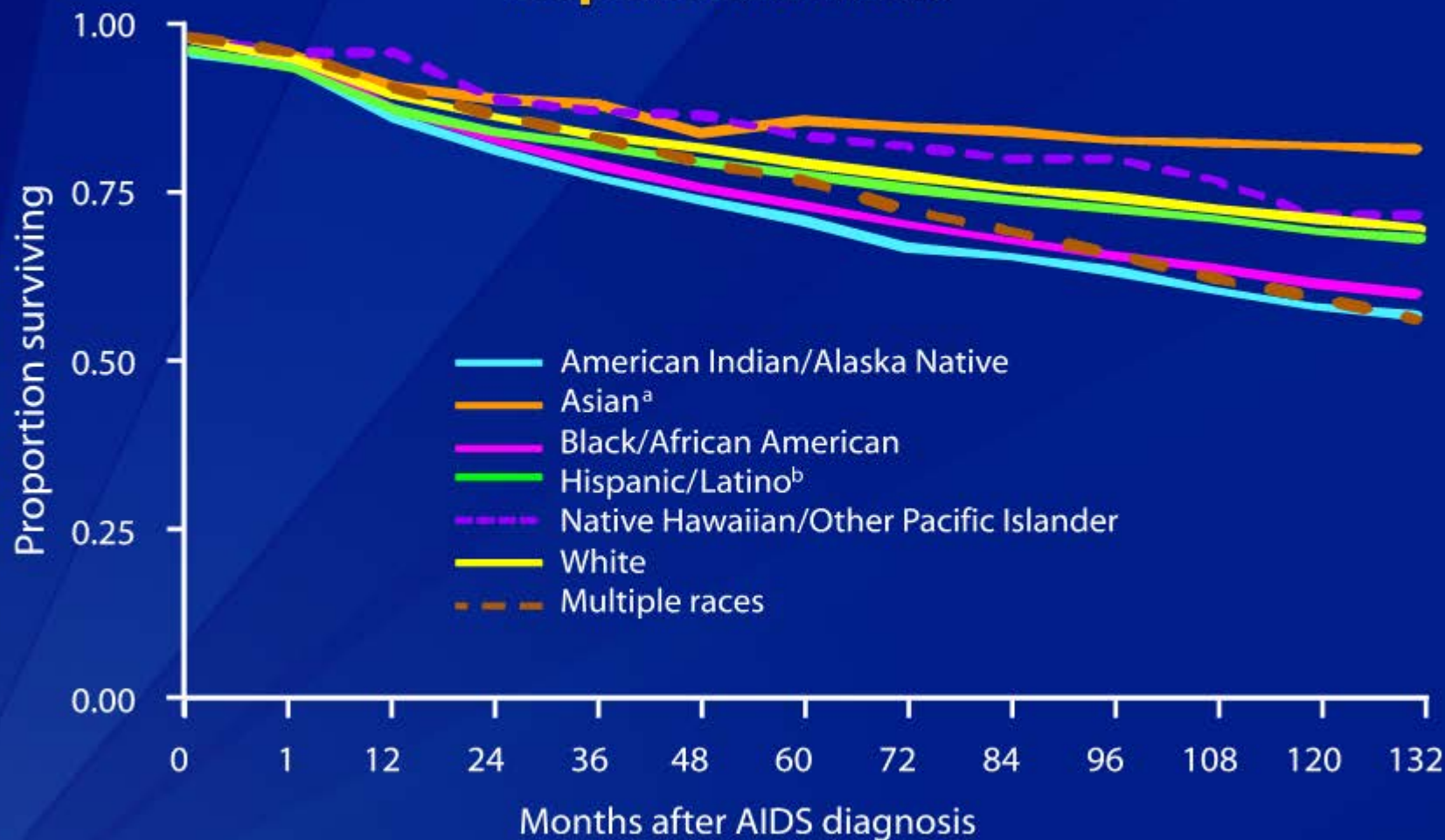


Case 5: Mary, 35 yo female with HA, elevated glucose, weakness



- ❑ Asthma, diabetes
- ❑ Monogamous relationship for 15yrs, 5 children
- ❑ 10 more visits during next 6 months for similar symptoms
- ❑ Workups negative
- ❑ Patient labeled as pain seeking, depression, non-compliance
- ❑ Month 7, visited a neurologist and was diagnosed with cryptococcal meningitis
- ❑ She was diagnosed with AIDS, husband HIV+

Survival after an AIDS Diagnosis during 1998–2005, by Months Survived and Race/Ethnicity— United States and Dependent Areas

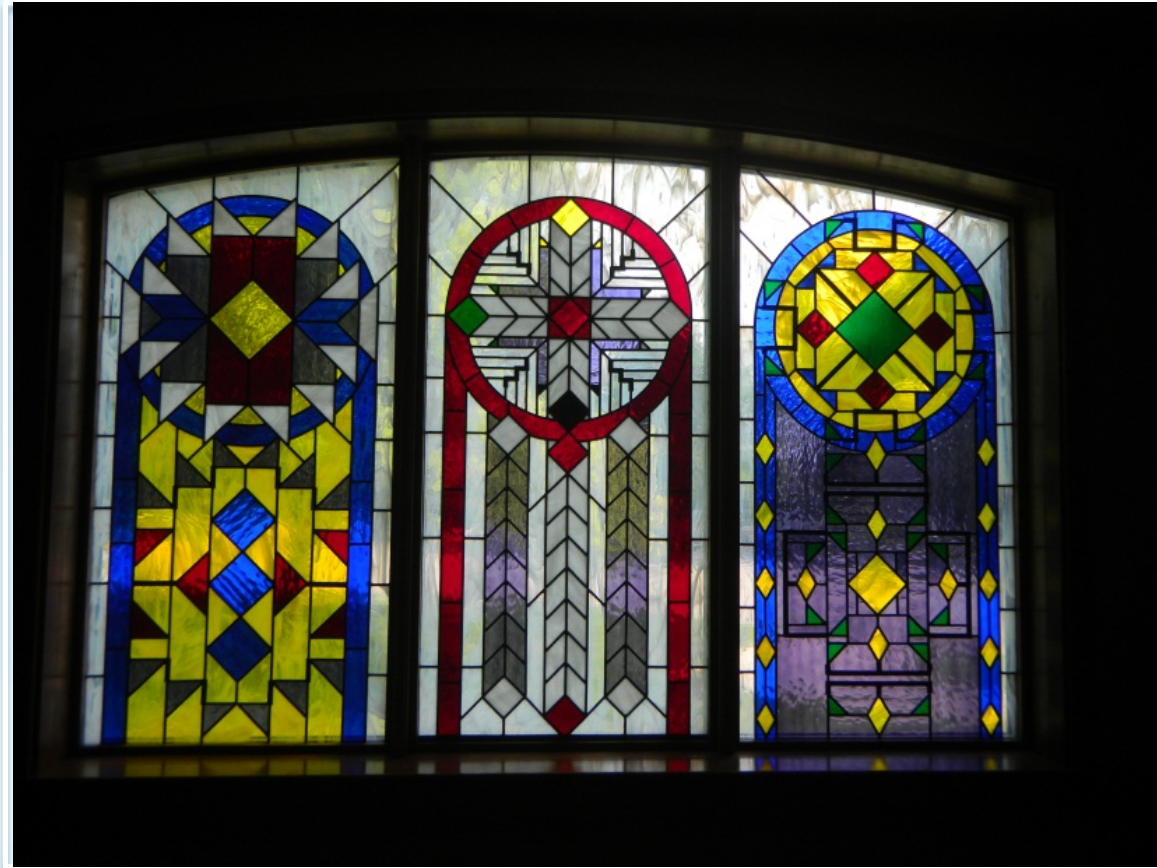


Note. Data exclude persons whose month of diagnosis or month of death is unknown.

^a Includes Asian/Pacific Islander legacy cases.

^b Hispanics/Latinos can be of any race.





**Best Practices
STD Screening/treatment
Indian health service**

Best Practices: Sells

- ❑ Epidemic response (Syphilis)
- ❑ Widespread annual screening (ages 12-55)
- ❑ Protocol driven STD screening
- ❑ E H R flags (CAC)
 - Patients needing retesting
- ❑ **Community screening: schools, detention facilities**
- ❑ **Central PHN tracking patients needing treatment**
 - Able to provide EPT
 - Able to empirically treat contacts
 - Use of quick order for patient and partner treatment
 - Field delivered DOT

Best Practices: White River

- ❑ **Outbreak response (Gonorrhea)**
- ❑ **Standing protocols for nursing to perform STD/HIV screening**
- ❑ **Quick pick (STD bundle) in E H R (CAC)**
- ❑ **OB/GYN visits batch ALL GC/CT testing with urine pregnancy tests**
- ❑ **OB/GYN offers walk-in visits for urine GC/CT/HCG tests**
 - **7am-5pm**
 - **Call back line available for results**
- ❑ **PHN field delivered DOT**
- ❑ **STD patients receive a letter for retesting 30-90 days after treatment**

Best Practices: Pine Ridge

- ❑ **Standing protocol for STD testing performed by nursing**
- ❑ **STD screening incorporated into school physicals**
- ❑ **Pregnancy tests combined with GC/CT tests**
- ❑ **Presumptive treatment of partners**
- ❑ **EPT**

Best Practices of IHS Service Units, Summary

- Broad STD/HIV screening that includes males
 - Based on local morbidity
 - Protocol driven
- Presumptive partner treatment
- Expedited Partner Therapy (Pharmacy quick pick)
- STD PHN staff
- Field delivered therapy
- Lab only visits
- E H R
 - Screening reminders
 - quick picks for testing and treatment

Thank you



MDT7@CDC.GOV

For more information please contact Centers for Disease Control and Prevention

1600 Clifton Road NE, Atlanta, GA 30333

Telephone: 1-800-CDC-INFO (232-4636)/TTY: 1-888-232-6348

E-mail: cdcinfo@cdc.gov Web: <http://www.cdc.gov>

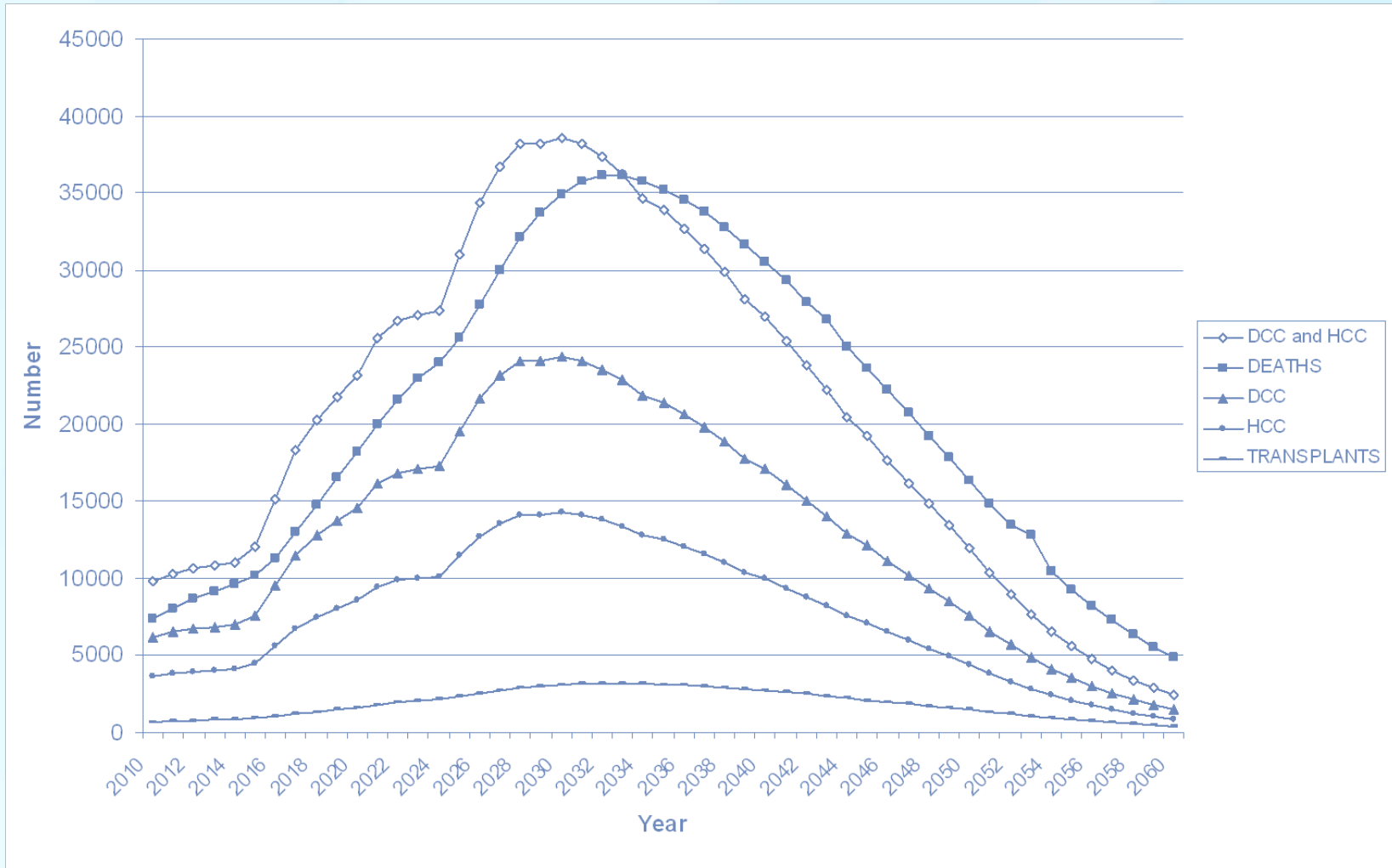
The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.



For which patient(s) is HSV-2 serology testing recommended?

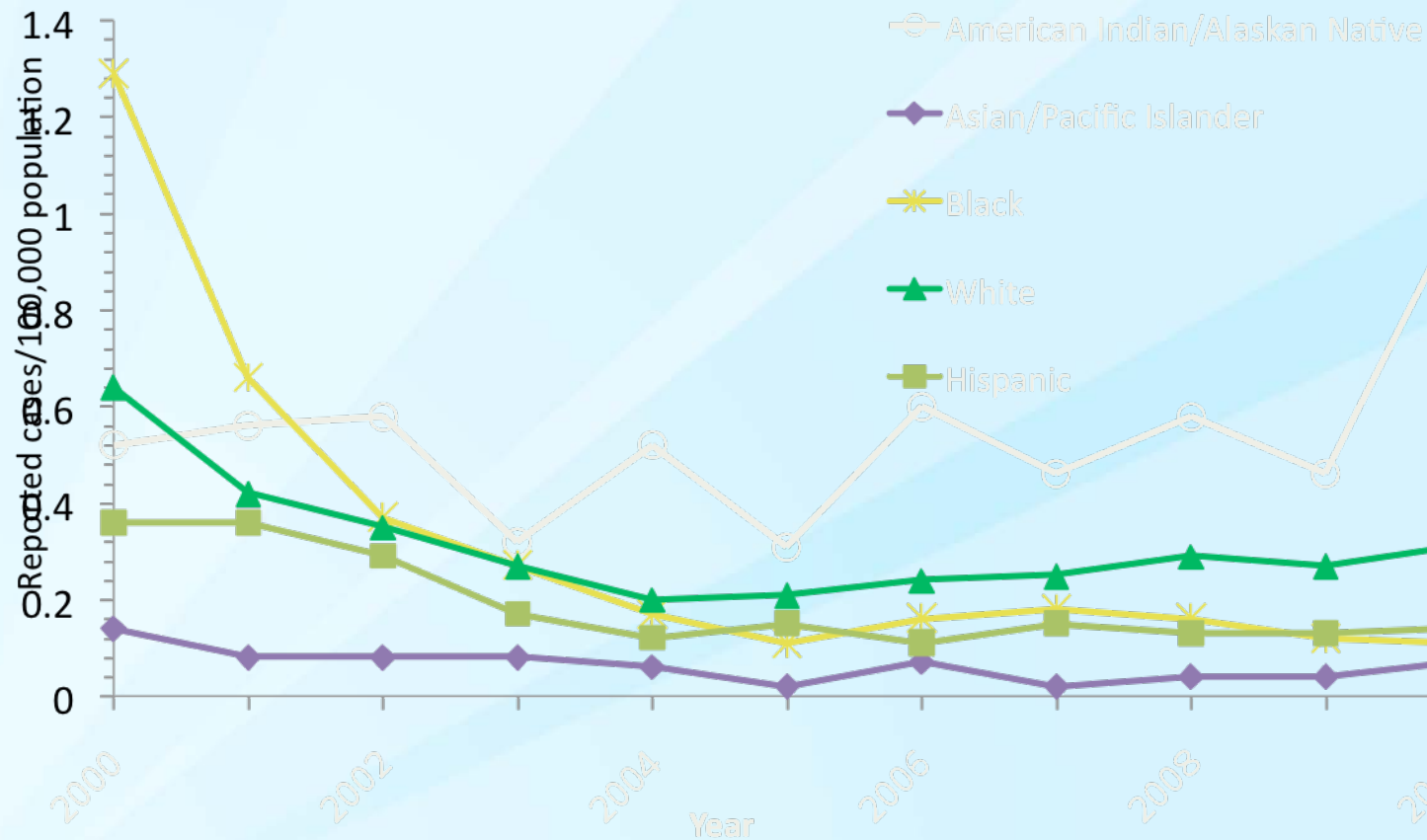
1. 20-year-old male college student starting a new relationship
2. Female recently diagnosed with genital warts
3. Client with undiagnosed recurrent genital symptoms
4. Prenatal patient with history of chlamydia
5. All of the above
6. None of the above

Forecasted Annual Incident Cases of Decompensated Cirrhosis (DCC), Hepatocellular Carcinoma (HCC), Liver Transplants, and Deaths Associated with Persons with Chronic Hepatitis C Infection and No Liver Cirrhosis in the United States in 2005



Rein, DB, Wittenborn, JS, Weinbaum, CM Sabin, M, Smith, BD, Lesesne, SB. Forecasting the Mortality and Morbidity Associated with Pre-Cirrhotic Chronic Hepatitis C Infections in the United States. Journal of Digestive Liver Diseases 2010.

Figure 4.4. Incidence of acute hepatitis C, by race/ethnicity — United States, 2000–2010



Source: National Notifiable Diseases Surveillance System (NNDSS)

Forecasting HCV Morbidity and Mortality

- Of 2.7 M HCV infected persons in primary care
 - 1.47 M will develop cirrhosis
 - 350,000 will develop liver cancer
 - 897,000 will die from HCV-related complications