

Chlamydia and Gonorrhea: Epidemiology, Diagnosis, and Management

**Satellite Conference and Live Webcast
Wednesday, July 25, 2012
10:00 a.m. – 12:00 p.m. Central Time**

**Produced by the Alabama Department of Public Health
Video Communications and Distance Learning Division**

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Disclosures

- **Consulting**
 - Warner Chilcott Pharmaceuticals
 - ActivBiotics Pharma LLC
 - SGS North America Inc.
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 - Warner Chilcott Pharmaceuticals
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Chlamydia and Gonorrhea: Current Epidemiology

Chlamydia Epidemiology

- **Public health problem worldwide**
- **Incidence in the U.S. increasing and at highest rates ever**
 - >1.3 million cases reported in 2010
 - Previously estimated >3 million new cases annually
- **Majority of men and women with chlamydia are asymptomatic**

Chlamydia Epidemiology

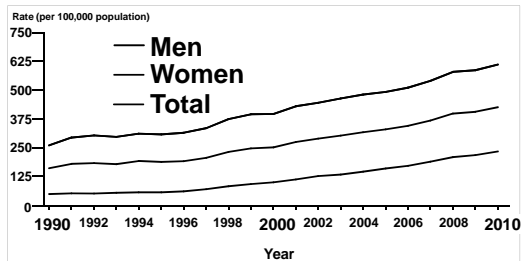
- **Highest rates in younger people**
 - Age < 30 years
- **Highest rates in the Southeast U.S.**
- **Rates 8x higher in African Americans vs. Caucasians**
- **Reinfection common within months (10-20%)**

Chlamydia Epidemiology

- Significant morbidity
 - Especially in women
- Costly disease

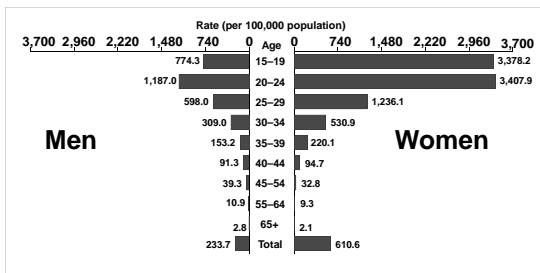
– CDC STD Surveillance, 2010 Report

Chlamydia—Rates by Sex, United States, 1990–2010



NOTE: As of January 2000, all 50 states and the District of Columbia have regulations that require the reporting of chlamydia cases.

Chlamydia – Rates by Age and Sex, United States, 2010

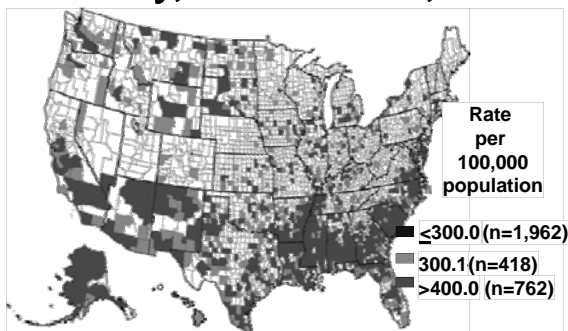


Chlamydia – Rates by State, United States and Outlying Areas, 2010

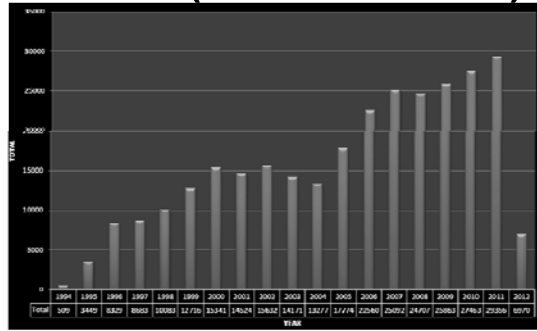


NOTE: The total rate of chlamydia for the United States and outlying areas (Guam, Puerto Rico, and Virgin Islands) was 422.6 per 100,000 population.

Chlamydia – Rates by County, United States, 2010



Reported Chlamydia – Alabama (1994 - March 2012)



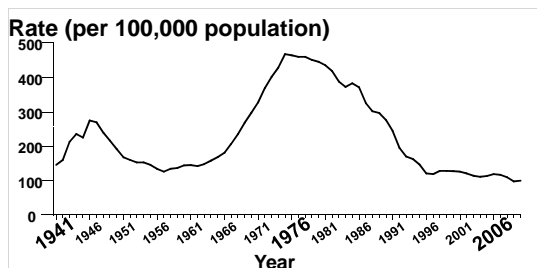
Gonorrhea Epidemiology

- Incidence in the U.S. declined in the 80's and 90's, and has remained relatively stable since
 - 309,000 cases reported in 2010
 - Previously estimated > 600,000 new cases annually
- Majority of women with gonorrhea are asymptomatic

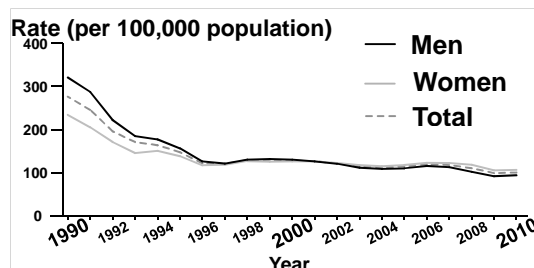
Gonorrhea Epidemiology

- Significant morbidity
 - Especially in women
- Highest rates in younger people
 - Age < 30 years
- Rates 18x higher in African Americans vs. Caucasians
- Highest rates in the Southeast, and in inner cities

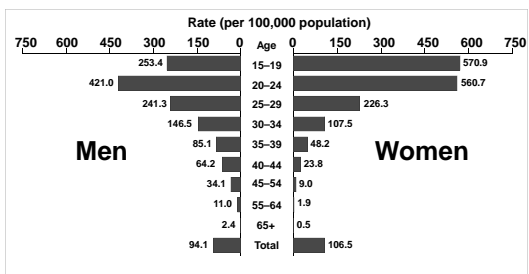
Gonorrhea – Rates, United States, 1941–2010



Gonorrhea – Rates by Sex, United States, 1990–2010



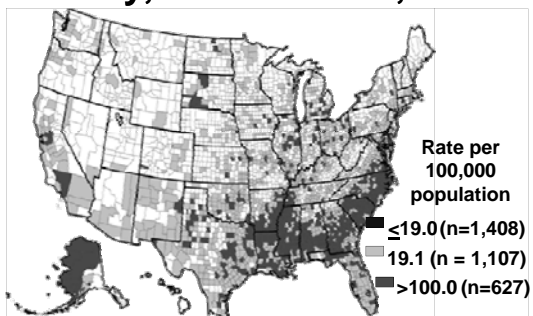
Gonorrhea – Rates by Age and Sex, United States, 2010



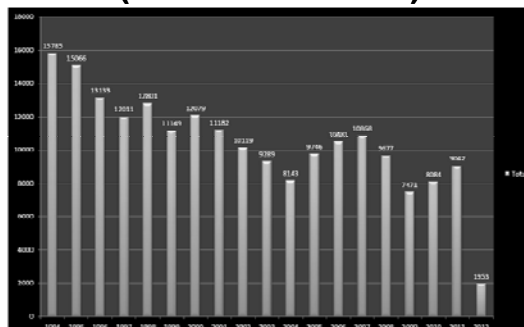
Gonorrhea – Rates by State, United States and Outlying Areas, 2010



Gonorrhea – Rates by County, United States, 2010



Reported Gonorrhea – Alabama (1994 - March 2012)



Chlamydia and Gonorrhea: Clinical Presentation

Uncomplicated Chlamydia or Gonorrhea: Males

- Urethritis
 - Most common manifestation
 - Other uncomplicated manifestations include conjunctivitis, pharyngitis [GC] and proctitis

Uncomplicated Chlamydia or Gonorrhea: Males

- Chlamydia usually asymptomatic
 - Over 50%
- Acute gonorrhea often symptomatic
- Co-infection with gonorrhea and chlamydia common

Uncomplicated Chlamydia or Gonorrhea: Males

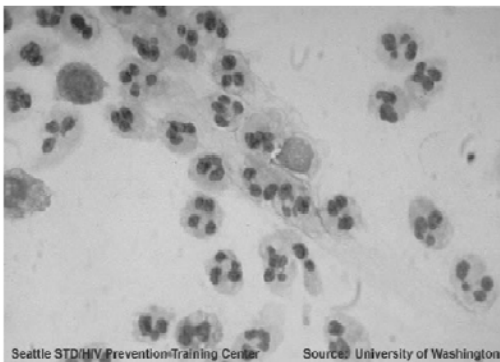
- Symptoms and signs
 - Urinary discomfort
 - Urethral discharge
 - > 5 PMNs/oif on urethral Gram stain

Uncomplicated Chlamydia or Gonorrhea: Males

- Intracellular Gram-negative diplococci on urethral Gram stain
- Presumptive GC diagnosis

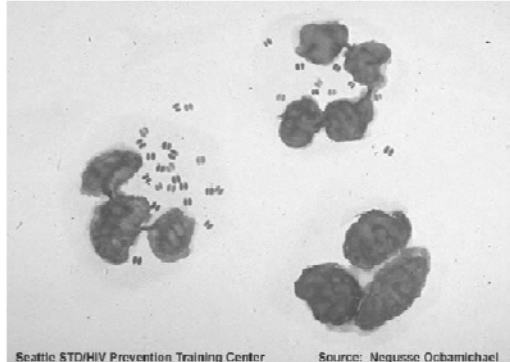


Urethral Discharge



Seattle STD/HIV Prevention Training Center Source: University of Washington

NGU (e.g. Chlamydia)



Seattle STD/HIV Prevention Training Center Source: Negusse Ocbamichael

Gonorrhea

Uncomplicated Chlamydia or Gonorrhea: Females

- Cervicitis
 - Most common manifestation
 - Other uncomplicated manifestations include urethritis, Bartholinitis, proctitis, conjunctivitis, and pharyngitis [GC]

Uncomplicated Chlamydia or Gonorrhea: Females

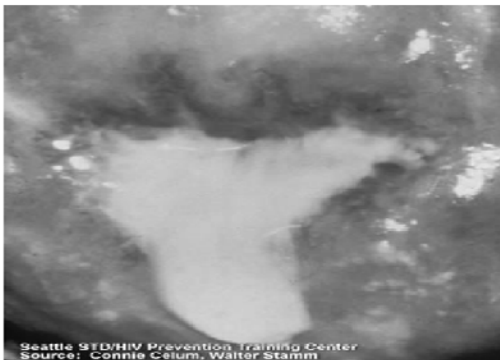
- Majority are asymptomatic
 - Over 75% for chlamydia
- Symptoms nonspecific
 - Vaginal discharge
 - Intermenstrual bleeding
 - Painful sex

Uncomplicated Chlamydia or Gonorrhea: Females

- Abdominal pain
- Dysuria

Uncomplicated Chlamydia or Gonorrhea: Females

- Cervicitis
 - Signs
 - Cervical examination usually normal
 - Mucopurulent discharge from endocervix
 - Easily induced endocervical bleeding



Seattle STD/HIV Prevention Training Center
Source: Connie Cairum, Walter Stamm

Cervicitis



Seattle STD/HIV Prevention Training Center
Source: Claire E. Stevens

Normal

Complications

- Upper Genital Tract Infection
 - Pelvic Inflammatory Disease (PID) in women
 - Epididymitis in men

Complications

- Complications from Upper Genital Tract Infection
 - Infertility
 - Women and men
 - Ectopic pregnancy

Complications

- Other complications
 - Reactive arthritis (Chlamydia)
 - Disseminated infection (Gonorrhea)
 - Increase in HIV transmission/acquisition risk

Chlamydia and Gonorrhea: Screening Recommendations and Diagnostic Testing

Screening Considerations: Chlamydia

- Routine annual chlamydia screening for all sexually active females <25yo and those >25yo with risk factors (new or multiple sex partners) is recommended by the CDC
 - Screening 15-25yo females is a HEDIS measure

Screening Considerations: Chlamydia

- Routine chlamydia screening in males not recommended
 - CDC recommends screening males in high chlamydia prevalence venues or when resources permit

Screening Considerations: Chlamydia

- Compliance with screening recommendations is low
 - This can be significantly improved with availability of nucleic acid amplification tests (NAATs) that can be performed on urine or vaginal swabs

Screening Considerations: Chlamydia

- Screening, universal or selective, can have a dramatic impact on prevalence and complications of chlamydia

– Marrazzo et al. Sex Transm Dis 1997;24
 – Scholes et al. N Engl J Med 1996;334

Screening Considerations: Gonorrhea

- Gonorrhea screening recommended in subjects with risk factors and in areas of high gonorrhea prevalence
- Most nucleic acid amplification tests include gonorrhea testing along with chlamydia testing

Chlamydia and Gonorrhea Diagnosis

- Nucleic Acid Amplification Test (Chlamydia and Gonorrhea)
 - CDC recommended test for diagnostic or screening purposes
 - Highly sensitive (>90%) and specific (98-99.9%) test on urogenital specimens

Chlamydia and Gonorrhea Diagnosis

- Can be performed on first void urine, genital swabs, rectal swabs, or oropharyngeal swabs
 - Not FDA approved for rectal or oropharyngeal swabs
- Facilitates screening, especially when exam not feasible

Chlamydia and Gonorrhea Diagnosis

- CDC recommends the following specimens for routine screening:
 - First-void urine in men
 - Vaginal swab in women
 - Patient or provider-collected

Chlamydia and Gonorrhea Diagnosis

- Gram Stain of Genital Swab Specimen (Gonorrhea)
 - Useful in symptomatic men for presumptive GC diagnosis
 - 95% sensitivity
 - Limited utility (low sensitivity) in asymptomatic men

Chlamydia and Gonorrhea Diagnosis

- Culture (Gonorrhea)
 - Performed on anogenital or oropharyngeal swab specimens, not urine
 - Less sensitive (detects less infection) than NAAT
 - Useful if antimicrobial susceptibility testing desired

Chlamydia and Gonorrhea: Treatment

2010 CDC STD Treatment Guidelines

- **Uncomplicated chlamydia:
nonpregnant**
 - **Recommended:**
 - **Azithromycin 1 g PO single dose**
 - OR**
 - **Doxycycline 100 mg BID 7 days**

2010 CDC STD Treatment Guidelines

- **Alternative:**
 - **Erythromycin base 500 mg
QID 7 days**
 - **Ofloxacin 300 mg BID 7 days**
 - **Levofloxacin 500 mg daily 7 days**
 - **Quinolones approved for
adolescents >45kg**

2010 CDC STD Treatment Guidelines

- **Uncomplicated chlamydia in
pregnancy**
 - **Recommended:**
 - **Azithromycin 1 g PO single dose**
 - OR**
 - **Amoxicillin 500 mg PO TID x 7
days**

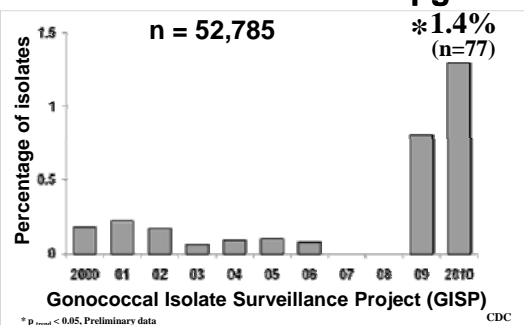
2010 CDC STD Treatment Guidelines

- **Alternative:**
 - **Erythromycin base 500 mg
QID 7 days**

Gonococcal Isolate Surveillance Project (GISP)



Proportion of Isolates with MICs to Cefixime ≥ 0.25 $\mu\text{g/ml}$



Gonococcal Isolate Surveillance Project (GISP)

- Since 2000, GISP reported 20 isolates with decreased susceptibility to cefixime
 - MICs of 0.5 $\mu\text{g/ml}$

Gonococcal Isolate Surveillance Project (GISP)

- 9 isolates with decreased susceptibility to cefixime were reported in 2010
 - 7 were from the West
 - Honolulu, Los Angeles, Portland, and San Francisco

Gonococcal Isolate Surveillance Project (GISP)

- 2 were from the Midwest
 - Chicago and Cleveland
- 8 were from MSM

2010 CDC STD Treatment Guidelines

- Uncomplicated Gonorrhea
 - Ceftriaxone 250 mg IM

PLUS

 - Azithromycin 1 g OR Doxycycline 100 mg BID x 7d

2010 CDC STD Treatment Guidelines

- If Ceftriaxone IM not an option, then Cefixime 400 mg PO is an alternative choice
 - Do not use cefixime if GC pharyngitis suspected
- For patients with severe PCN allergy, azithromycin 2 g is an alternative choice

Other Treatment Issues

- No test of cure in non-pregnant persons unless symptoms persist or re-exposed
- Test of cure with NAATs > 3 weeks post-therapy in pregnant women

Other Treatment Issues

- Re-screen all patients with chlamydia or gonorrhea in about 3 months post-treatment
 - Due to high recurrence rate
- Repeat positive tests most likely due to reinfection
 - Untreated or new partner

Other Treatment Issues

- Sexual partners should be evaluated and treated
 - Recommend abstinence until patient and partner treated

Partner Treatment

- Self-referral
 - Expedited Partner Therapy (EPT)
 - Patient-delivered or provider-delivered
 - Consider for partners of heterosexual patients with chlamydia and/or gonorrhea
 - Not yet standard of care

Partner Treatment

- Has advantages and disadvantages
- Legal issues

Treatment

2011 Guidelines

Expedited Partner Therapy

Legal Status of EPT

Medical Record Storage

Archive

About the Division of STD Prevention

any implications when the information they change, and there may be links or links to the page that no longer work as usual.

We welcome your suggestions for making the site more useful to you and your patients. We are always looking for ways to improve our communications in an ever-changing world.

We also welcome updates from you about changes in your state or local laws.

For comments, feedback and updates, please send an email to: stdprevention@cdc.gov

<http://www.cdc.gov/std/ep/legal/default.htm>

EPT is permissible in 30 states	EPT is potentially allowable in 13 states	EPT is prohibited in 7 states
Alaska	Arkansas	Alabama
Arizona	California	Florida
California	Colorado	Georgia
Colorado	Connecticut	Idaho
Connecticut	Delaware	Illinois
Delaware	District of Columbia	Indiana
District of Columbia	Florida	Iowa
Florida	Georgia	Kansas
Georgia	Hawaii	Kentucky
Hawaii	Idaho	Louisiana
Idaho	Illinois	Maine
Illinois	Indiana	Massachusetts
Indiana	Iowa	Michigan
Iowa	Kansas	Minnesota
Kansas	Kentucky	Mississippi
Kentucky	Louisiana	Montana
Louisiana	Maine	Nebraska
Maine	Massachusetts	Nevada
Massachusetts	Michigan	New Hampshire
Michigan	Minnesota	New Mexico
Minnesota	Mississippi	New York
Mississippi	Montana	North Carolina
Montana	Nebraska	North Dakota
Nebraska	Nevada	Ohio
Nevada	New Hampshire	Oklahoma
New Hampshire	New Mexico	Pennsylvania
New Mexico	New York	Rhode Island
New York	North Carolina	Tennessee
North Carolina	North Dakota	Texas
North Dakota	Ohio	Utah
Ohio	Oklahoma	Vermont
Oklahoma	Pennsylvania	Virginia
Pennsylvania	Rhode Island	Washington
Rhode Island	Tennessee	West Virginia
Tennessee	Texas	Wisconsin
Texas	Utah	Wyoming
Utah	Vermont	
Vermont	Virginia	
Virginia	Washington	
Washington	West Virginia	
West Virginia	Wisconsin	
Wisconsin	Wyoming	
Wyoming		

Summary

- **The majority of chlamydia-infected individuals are asymptomatic**
- **Sexually active adolescents and young adults are at highest risk for chlamydia and gonorrhea**
 - **Annual chlamydia screening is recommended for this population**

Summary

- **Repeat chlamydia screening recommended 3 months post-therapy**
- **Compliance with chlamydia screening is low**

Summary

- **NAATs are the recommended test**
 - **Both chlamydia and gonorrhea testing performed**
 - **Testing can be performed on noninvasive specimens, which could improve compliance with screening**

Summary

- **Cephalosporin resistance is a future concern in GC treatment**
- **Partner treatment is crucial for preventing re-infection**
 - **EPT is an evolving strategy for partner treatment**