STI 2016: Where We Need to Go

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Sexually Transmitted Infection Update 2016
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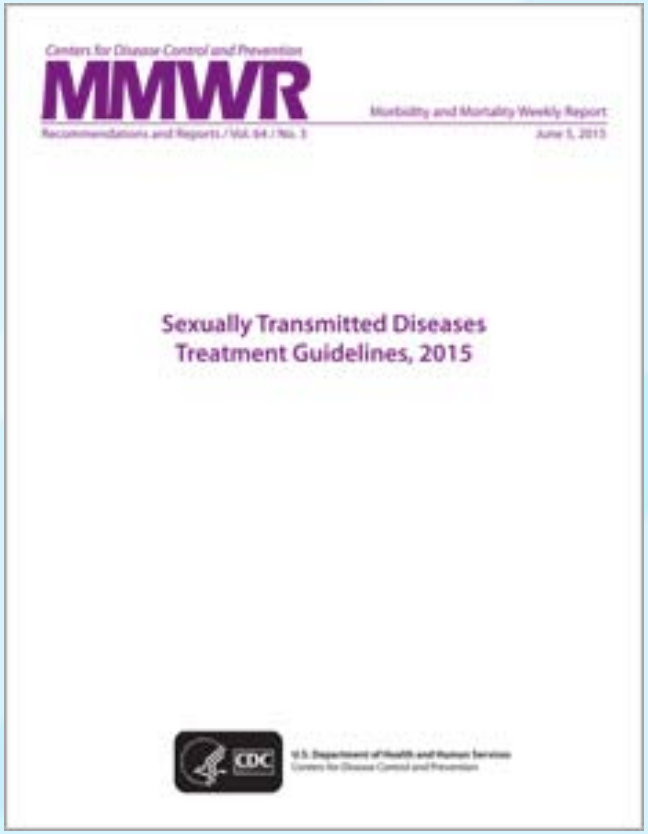
No conflicts of interest

Overview

- STD treatment guidelines history
- Changing landscape of STDs in the United States
- What's hot in STD treatment and management
  - USPSTF chlamydia screening for young females
  - Treatment concerns for gonorrhea
  - Syphilis in pregnancy
  - Emerging Issues:
    - Genital Herpes
    - *Trichomonas vaginalis*
    - *Mycoplasma genitalium*
- Provision of quality STD clinical services



2015 STD TREATMENT GUIDELINES

Clinical Practice Guidelines We Can Trust

Robin Graham, Michelle Mancher, Dianne Miller Wolman, Sheldon Greenfield, and Earl Steinberg, Editors; Committee on Standards for Developing Trustworthy Clinical Practice Guidelines; Institute of Medicine

ISBN: 0-309-16423-0, 300 pages, 6 x 9, (2011)

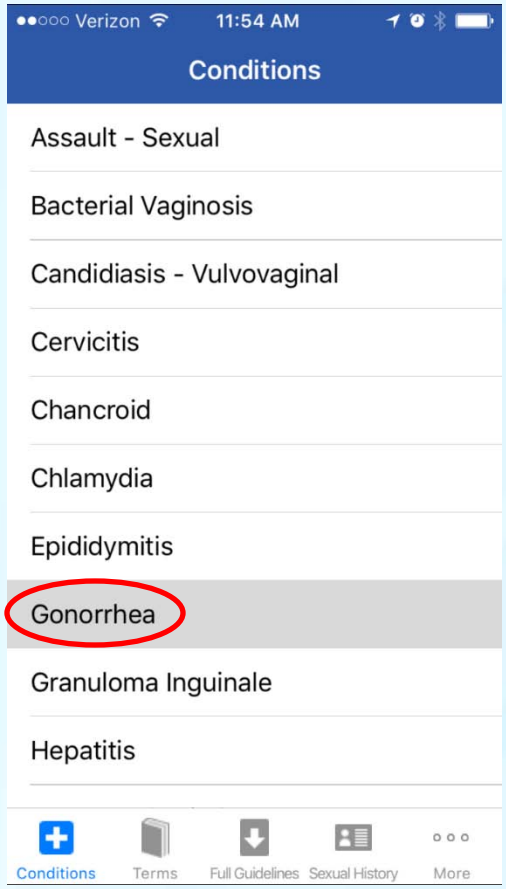
- Be based on a systematic review of the existing evidence;
- Be developed by a knowledgeable, multidisciplinary panel of experts and representatives from key affected groups;
- Consider important patient subgroups and patient preferences, as appropriate;
- Be based on an explicit and transparent process that minimizes distortions, biases, and conflicts of interest;
- Provide a clear explanation of the logical relationships between alternative care options and health outcomes, and provide ratings of both the quality of evidence and the strength of recommendations; and
- Be reconsidered and revised as appropriate when important new evidence warrants modifications of recommendations.

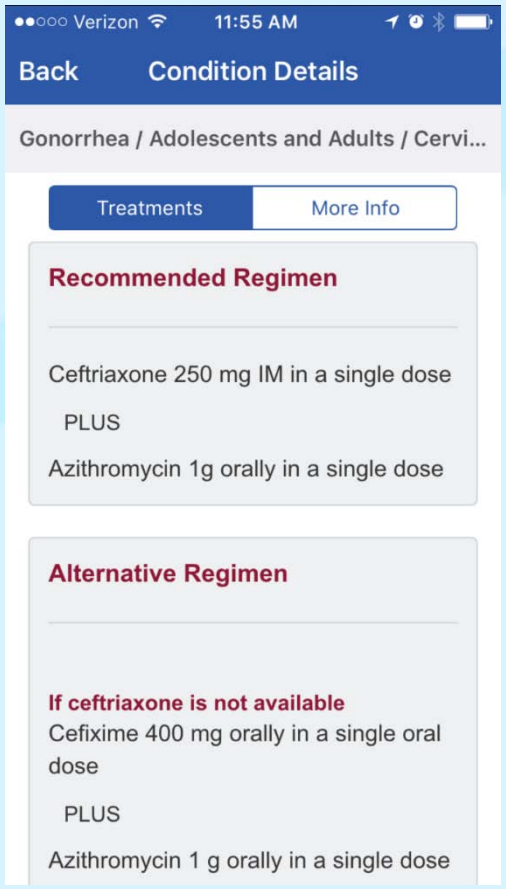
Want to know about 2015 STD Treatment Guidelines?

There's an app for that.

- CDC Treatment Guidelines App for Apple and Android
- Available now, FREE!
  - (accept no competitors)

STD Tx Guide Mobile app – New look



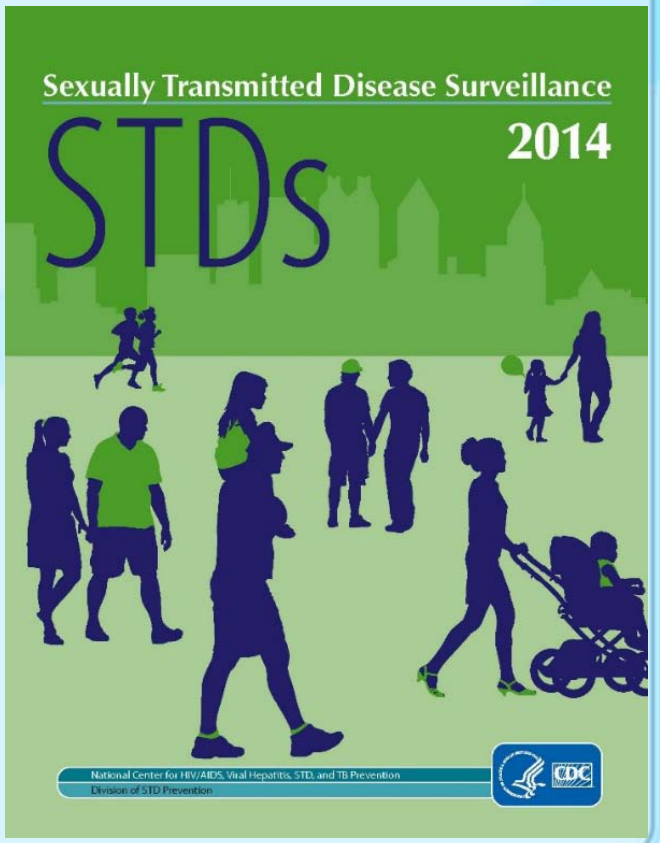


CHANGING LANDSCAPE OF STDS IN THE UNITED STATES

2014 Surveillance Report Overview

Main Messages:

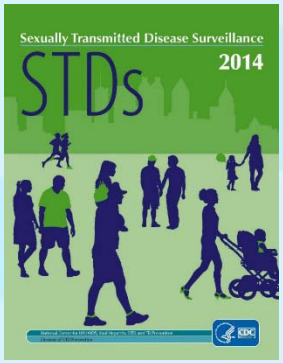
1. CDC's annual STD report finds that overall reported cases for chlamydia, gonorrhea and syphilis are increasing; some at an alarming rate
2. Young people are still at the highest risk of acquiring an STD and most vulnerable to their damaging effects
3. Greater awareness and action is needed at all levels to ensure good health for the nation's youth and others disproportionately impacted by STDs



2014 Surveillance Report Overview

Case rate increases seen from 2013 - 2014:

- Chlamydia: 2.8% with 1,441,789 cases reported in 2014
  - Driven by a 6.8% increase among men
  - 1.3 % increase among women
- Gonorrhea: 5% with 350,062 cases reported in 2014
  - Driven by a 10.5% increase among men
  - 0.4% decrease among women



- P & S syphilis: 15.1% with 19,999 cases reported in 2014
  - Increases seen in MSM, MSW, women
  - MSM accounted for 83% of P&S cases
- Congenital syphilis: total of 458 cases
  - Decreased from 2008-2012, increased slightly in 2013 and then rose by 27.5% in 2014
  - Increased in all regions with largest increases in the NE and West

WHAT'S HOT IN STD TREATMENT AND MANAGEMENT

STD Prevention – Key Principles

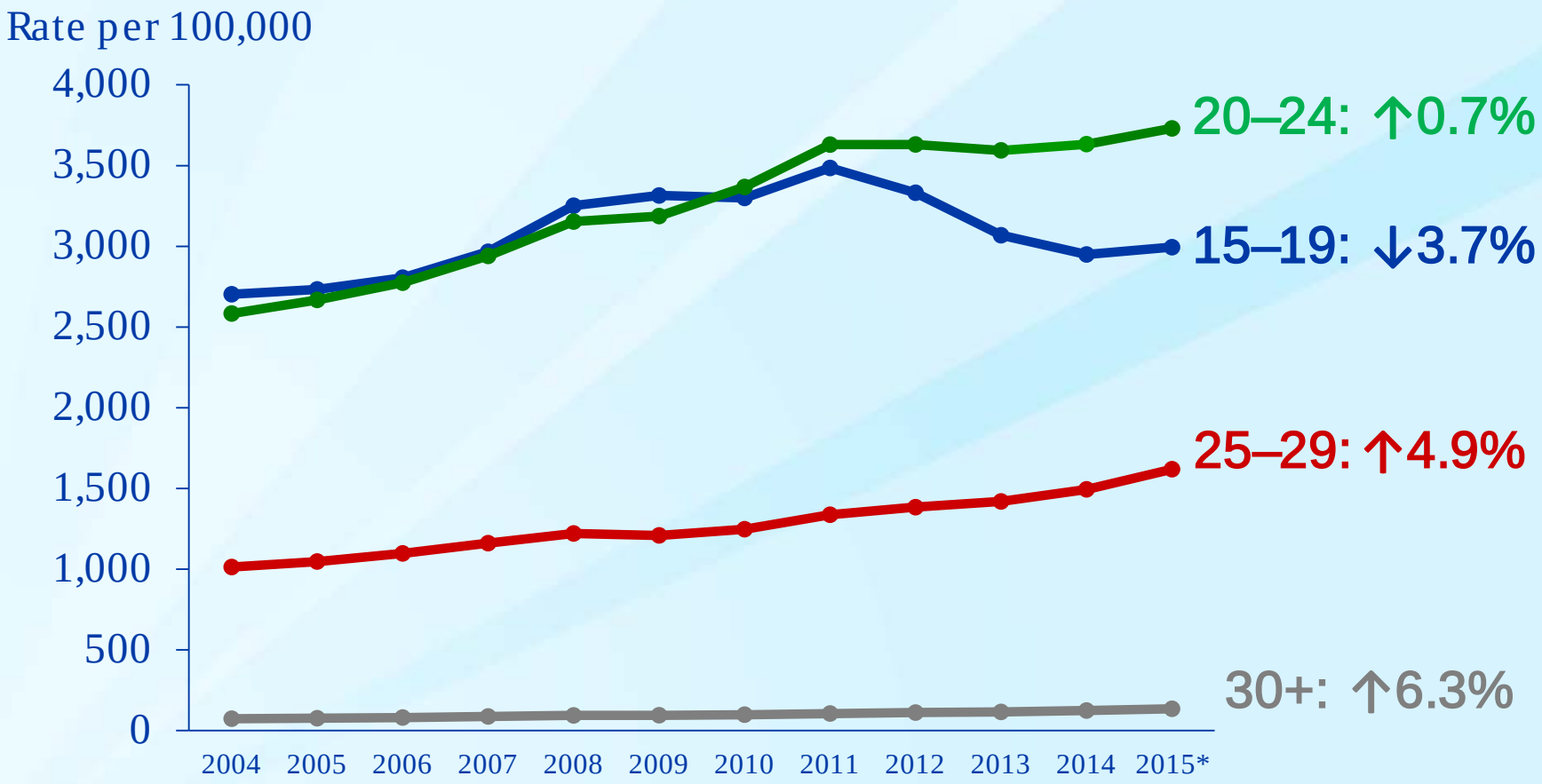
- Risk Assessment and counseling to reduce STD acquisition
- Screening of asymptomatic persons
- Diagnosis and treatment of symptoms
- Management of sex partners
- Vaccination
  - HPV
  - Hepatitis A & B

STD Prevention - The Clinicians' Role

- A welcoming environment
- Routine sexual history and risk assessment
- Screen, appropriately
  - Appropriate anatomic sites with recommended tests
  - Alcohol, drug use, tobacco, depression, intimate partner violence
- Assure appropriate vaccination status (HPV, HBV/HAV)
- Prevention messages--condoms, HIV pre- and post-exposure prophylaxis (PrEP, PEP)
- Diagnosis and treatment
- Provide or refer partner services
- Report cases in accordance with state and local statutory requirements; keep reports confidential

Chlamydia—Rates of Reported Cases Among Women by Age Group, 2004–2015*

Average annual percent change during 2011–2015

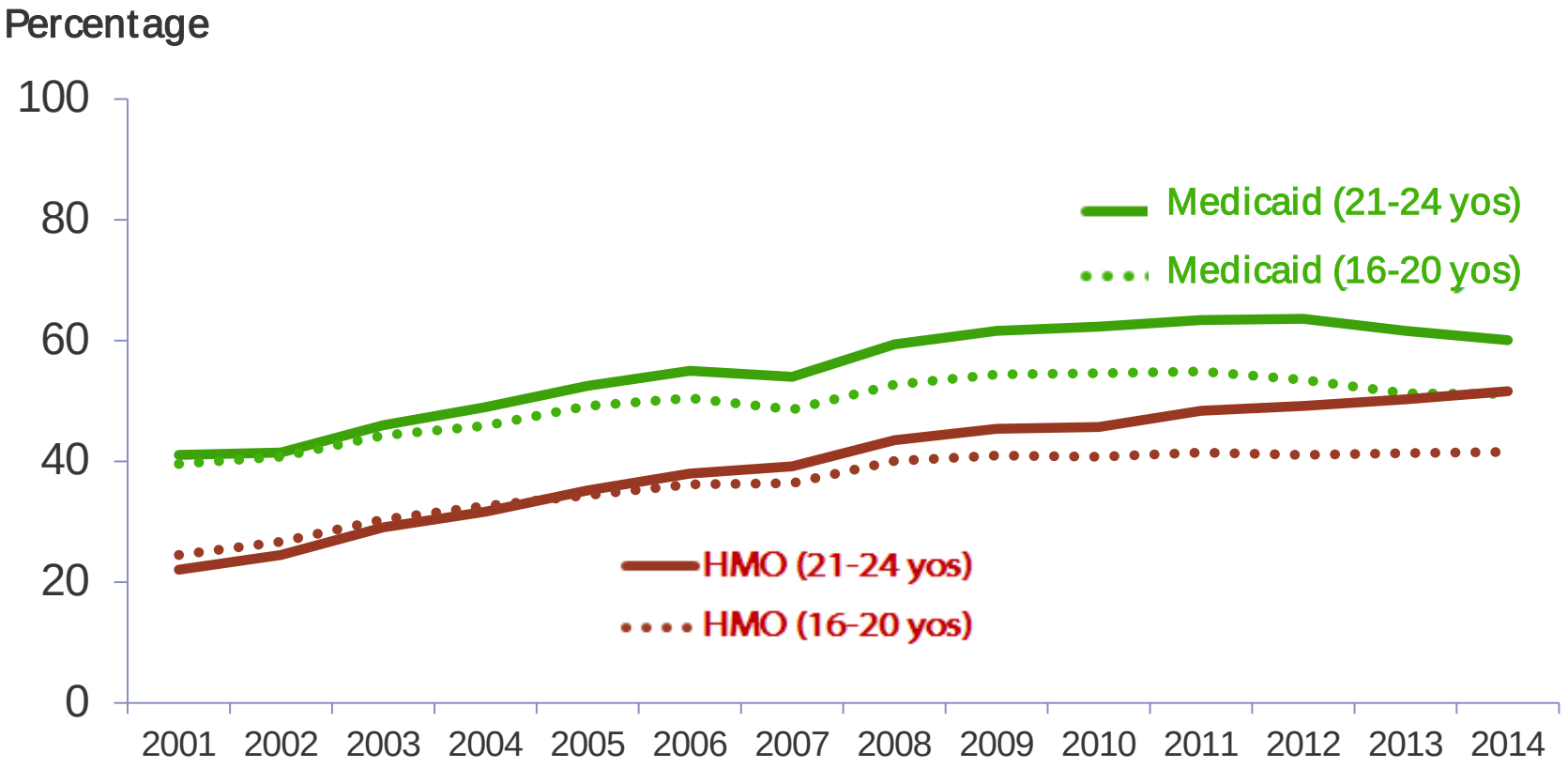


*2015 data preliminary as of July 18, 2016

Possible explanations for declining rates of Chlamydia among females 15-19 yrs old

- Less clinical visits to screen because of:
  - Changes in Pap smear recommendations
  - Increase in LARC use
- Less access to free screening because of co-pays when females < 26 yrs are on parents health plans
- Less testing by providers b/c not considered a priority clinical prevention service
- Reduction in incidence of CT

Chlamydia — Screening Coverage Trends Among Sexually-Active Women,* by Age and Plan, HEDIS, 2001–2014

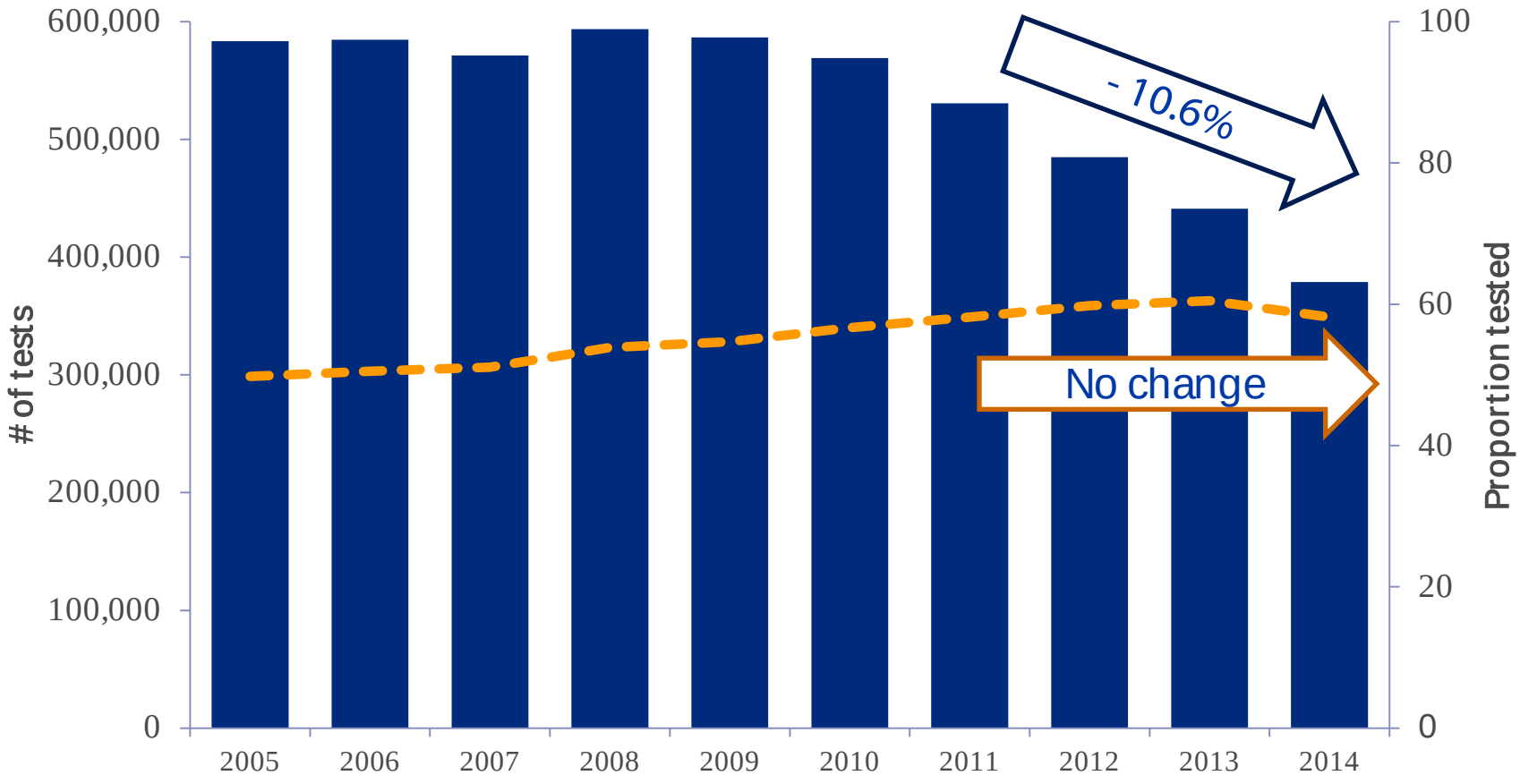


*Among women enrolled in commercial or Medicaid plans who had a visit where they were determined to be sexually active

SOURCE: The State of Healthcare Quality, 2015

Number of female family planning users aged 15–19 years tested for chlamydia and proportion tested, Title X Family Planning, 2005–2014

Average annual percent change during 2011–2014



STD Screening for Adolescent and Young Females

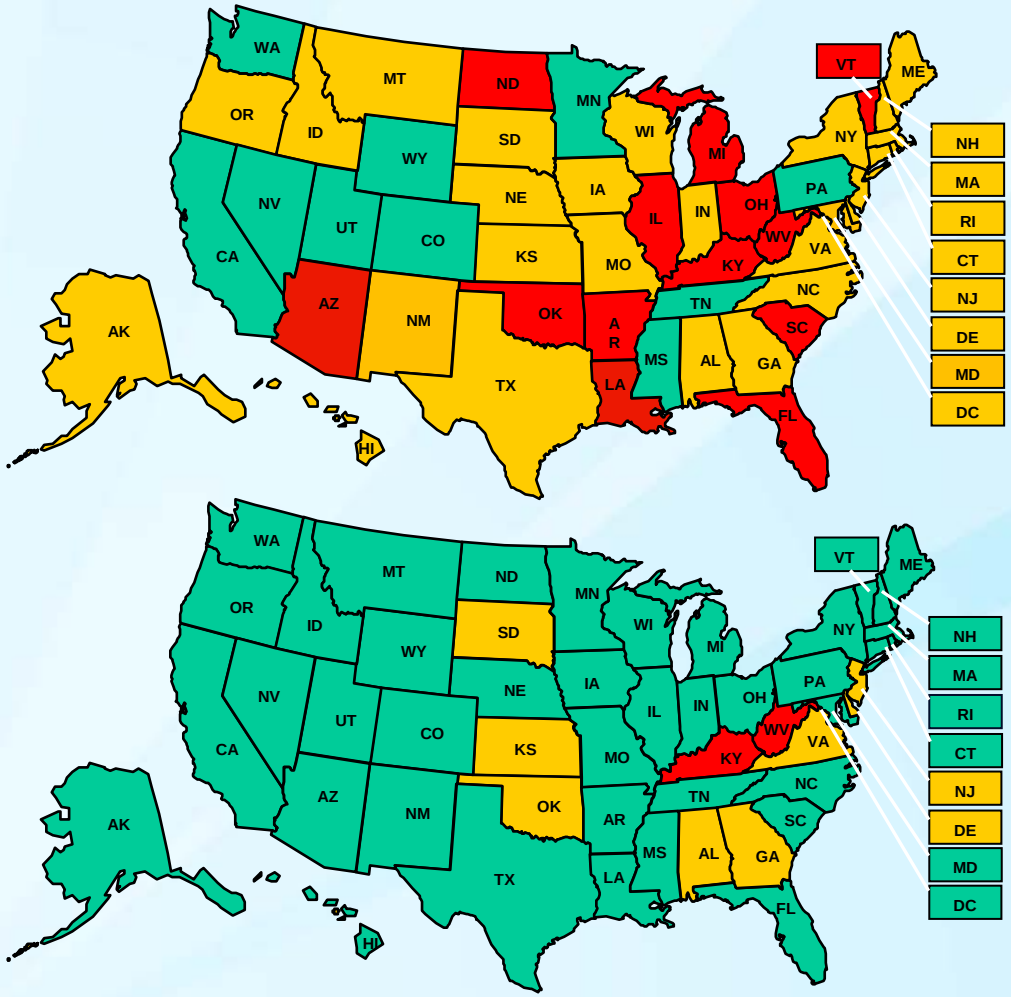
- **Sexually active adolescents & women < age 25**
  - ✓ Annual chlamydia and gonorrhea screening
  - ✓ HIV serology if no previous test and annual if risk
  - ✓ Syphilis serology if risk (high community prevalence)
  - ✓ Consider HSV type-specific serology if partner with genital herpes
  - ❖ No routine screening for trich, MG, BV, or HPV recommended
- **What about screening older women?**
  - If increased risk: New or multiple sex partners, partner with concurrent partners, or partner with an STI
  - If increased clinic or community prevalence

CDC 2015 STD Tx Guidelines and USPSTF 2014

What About Screening Heterosexual Men?

- **Screening men**
  - No documented substantial secondary prevention in women
  - Costly
  - Consider in certain venues with high prevalence: corrections, STD clinics, teen clinics
- **Highest risk: Partners of chlamydia-infected females**
  - Focus is on partner services

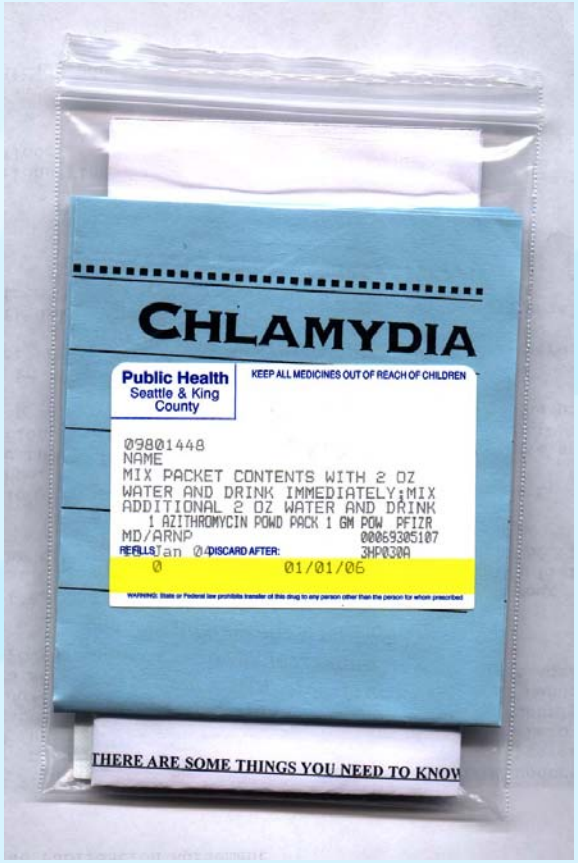
Evolving Landscape of EPT, 2006 – July 2016: Legal Status Summary



EPT Packs in WA State

Information provided with EPT

- Information about medications, allergies & STD
- Advice about complications and need for care (e.g. PID)
- Where to seek care



Or Send a Love Letter…

Notification of STD/STI Exposure

A past sexual partner may have exposed you to ...

Genital Warts | Pubic Lice (Crabs)

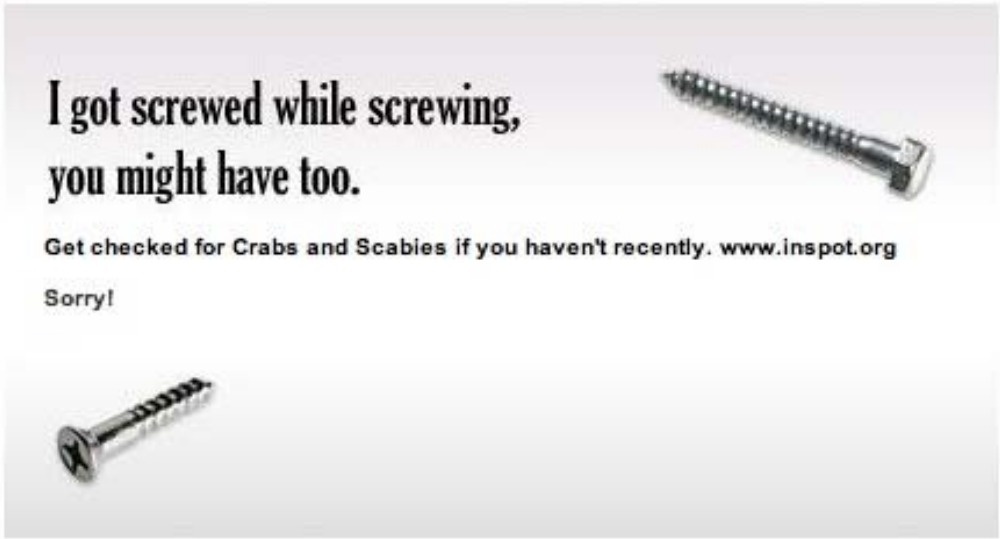
Time of exposure reported as **1 week ago**

e-Card from a concerned friend re: your health - via inSPOT

getchecked@inspot.org

Sent: Thursday, February 26, 2015 2:18 PM

To: hliss@uw.edu



www.inspot.org
www.dontspreadit.com

Chlamydia & Gonorrhea Diagnostic Tests

- Nucleic acid amplification tests (NAAT) recommended for men & women
- Optimal specimen: first-catch urine in men and vaginal swabs in women
- NAAT optimal for rectal and pharyngeal testing; not FDA approved but commercially available & validation protocols available for local labs
- Limitations: no antibiotic resistance testing with NAAT (need culture)

http://www.cdc.gov/mmwr 2014

Chlamydia Treatment

- Effectiveness of azithromycin may be less than doxycycline
  - Systematic review (Kong FY *Clin Infect Dis* 2015):
    - Possible small increased efficacy of up to 3% for doxy compared with azithro for treatment of urogenital chlamydia
    - 7% increased efficacy for doxycycline for treatment of symptomatic urethral infection in men
  - Double-blind, placebo-controlled trials needed
- Doxycycline delayed release 200 mg tablets
- Amoxicillin moved to alternative regimen in pregnancy
  - In vitro studies: Penicillin induces persistent viable noninfectious chlamydia that can revert to a replicative form
  - Early amoxicillin studies in pregnancy had major limitations
  - RCT by Kacmar et al showed higher test of cure using azithromycin vs. amoxicillin (95% vs. 80%)

TREATMENT CONCERNS FOR GONORRHEA

Antibiotic Resistance Threats in the U.S., 2013

Seven Threat Assessment Criteria:

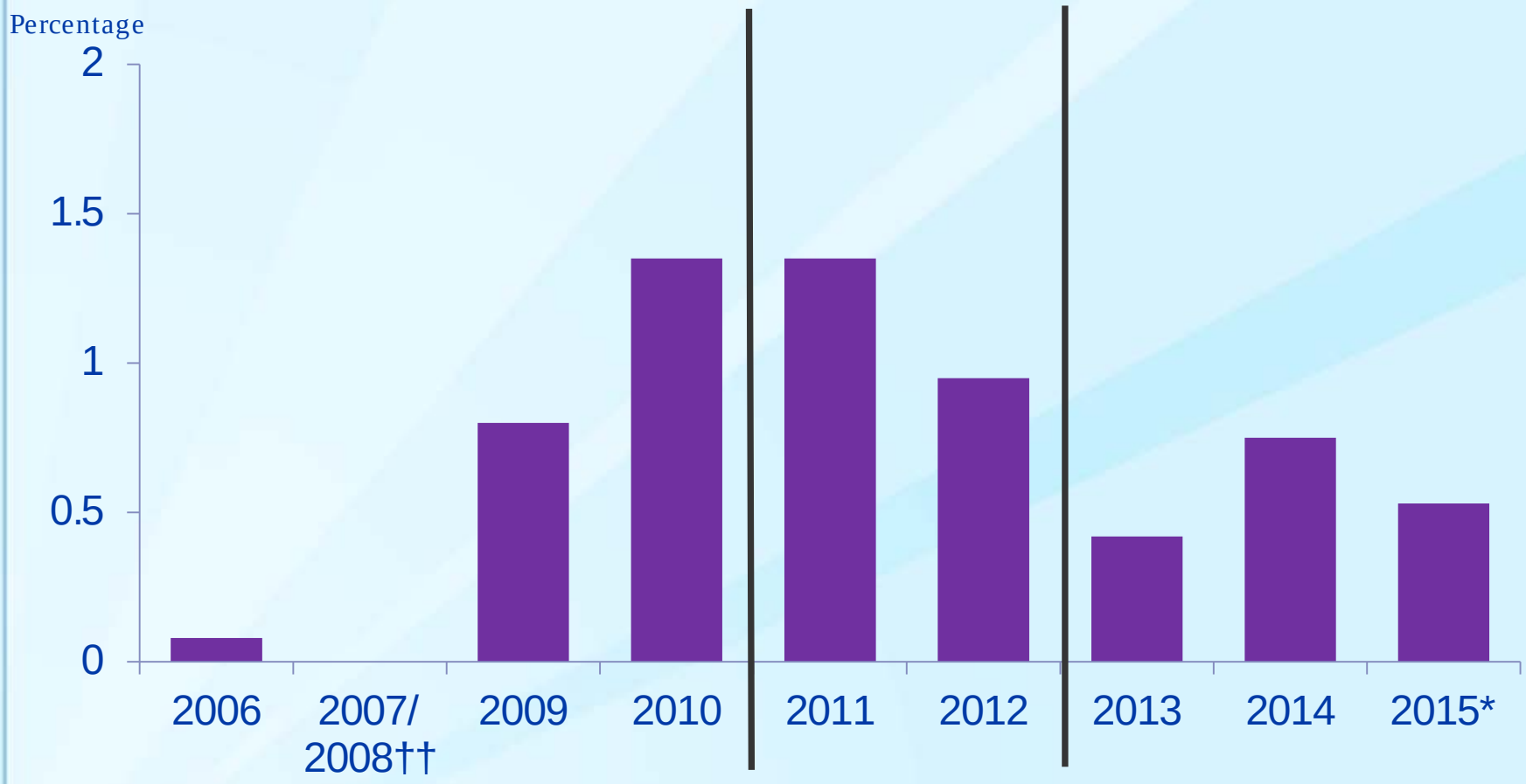
- Clinical impact
- Economic impact
- Incidence
- 10-year projection of incidence
- Transmissibility
- Availability of effective antibiotics
- Barriers to prevention

Three Urgent Threats:

- *Clostridium difficile*
- *Carbapenem-resistant Enterobacteriaceae*
- Drug-resistant *Neisseria gonorrhoeae*

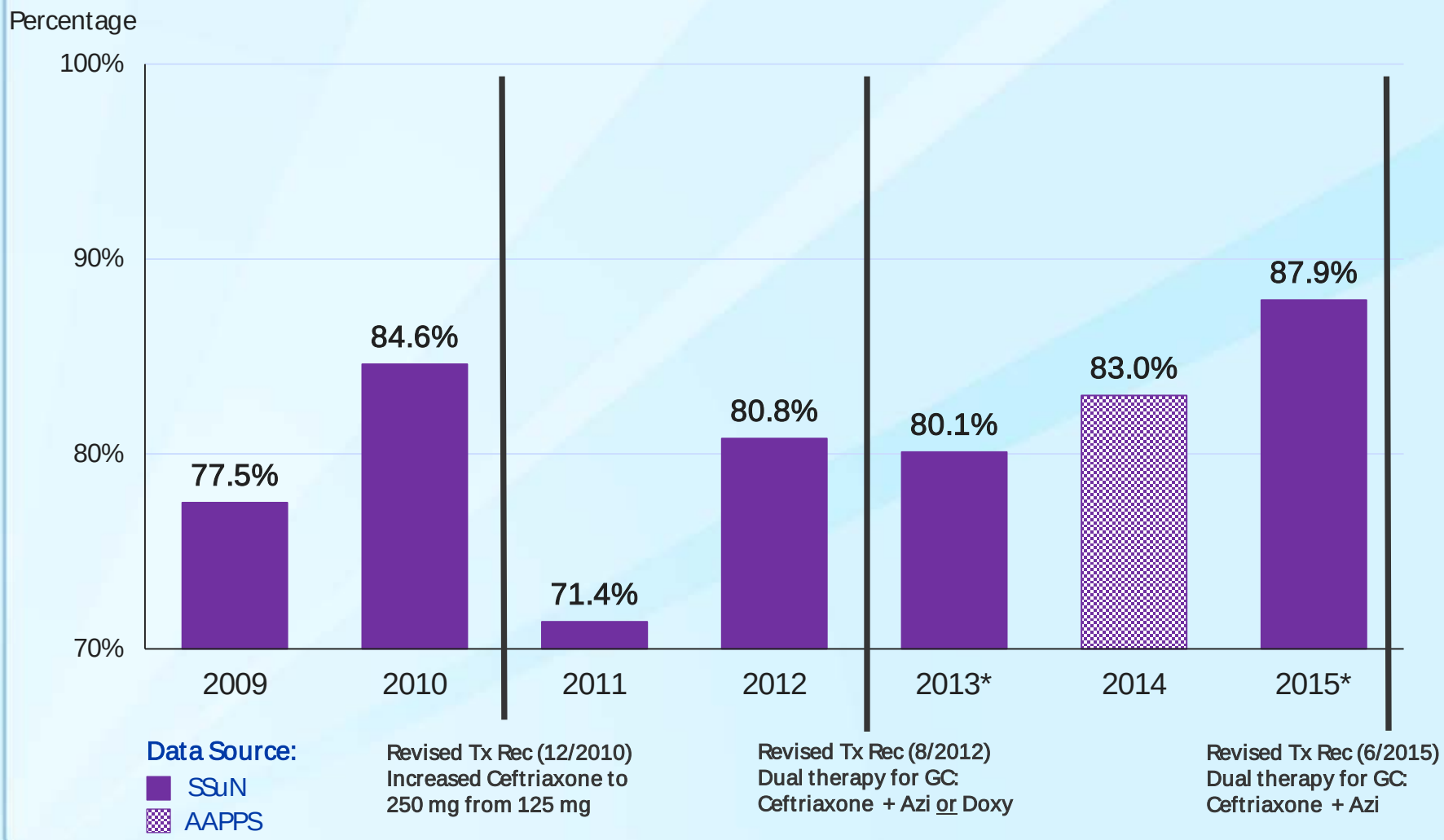
Percentage of *Neisseria gonorrhoeae* isolates with reduced cefixime susceptibility†

Gonococcal Isolate Surveillance Project (GISP), 2006–2015*



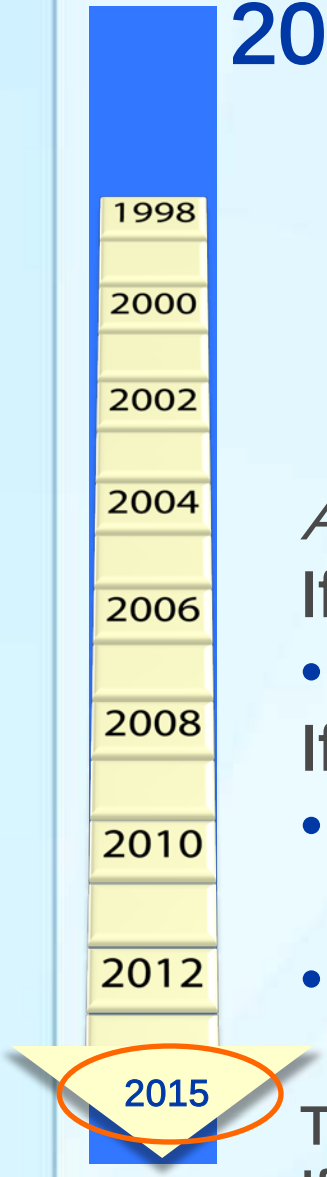
†Minimum inhibitory concentration (MICs) ≥0.25 µg/ml
*2015 data are preliminary as of March 7, 2016
†† Cefixime susceptibility not tested in 2007 and 2008

Proportion of Gonorrhea-Infected Patients treated with a CDC-Recommended Antibiotic Regimen for Gonorrhea



*Based on 6 months of data

2015 CDC Treatment Recommendations for Gonococcal Infections



- **Ceftriaxone 250 mg IM x 1**

PLUS

- **Azithromycin 1 g po x 1**

Alternatives

If ceftriaxone not available or for EPT:

- Cefixime PLUS azithromycin 1 g

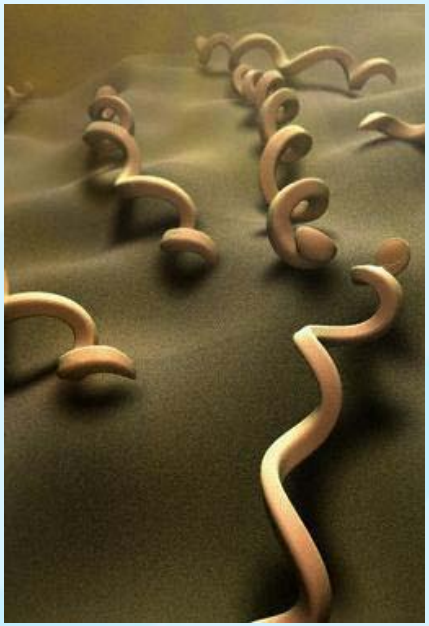
If cephalosporin allergy:

- Gentamicin (240mg IM or 5 mg/kg IM) /azithro 2 g PO

or

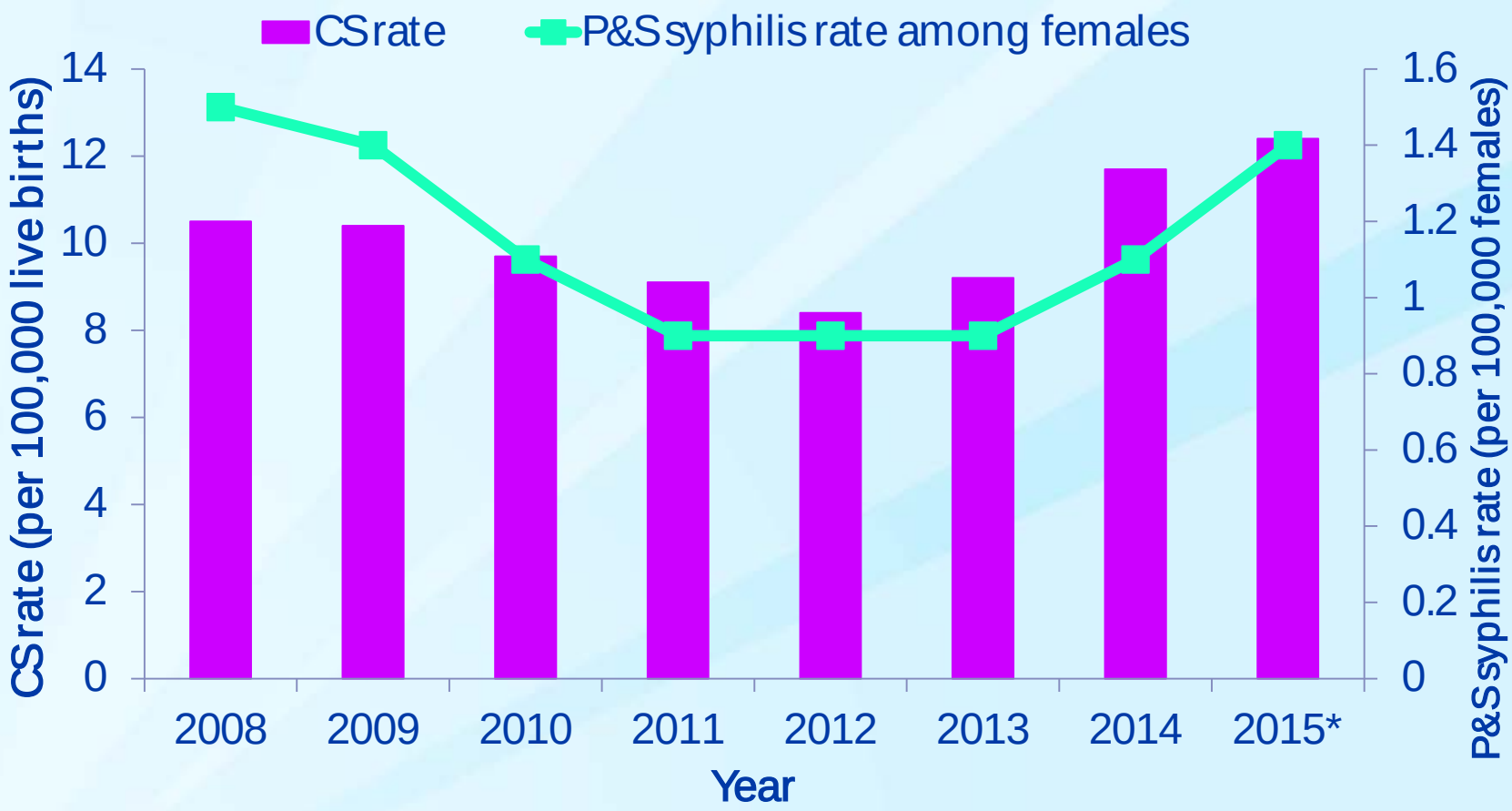
- Gemifloxacin 320 mg PO /azithro 2 g PO

TOC if alternative regimen used for pharyngeal GC at ~14 days
If treatment failure, perform culture, AST and retreat



SYPHILIS IN PREGNANCY

Congenital Syphilis (CS) Rate and Rate of Primary and Secondary (P&S) Syphilis Among Females, United States, 2008–2015*



*2015 data are preliminary as of July 18, 2016

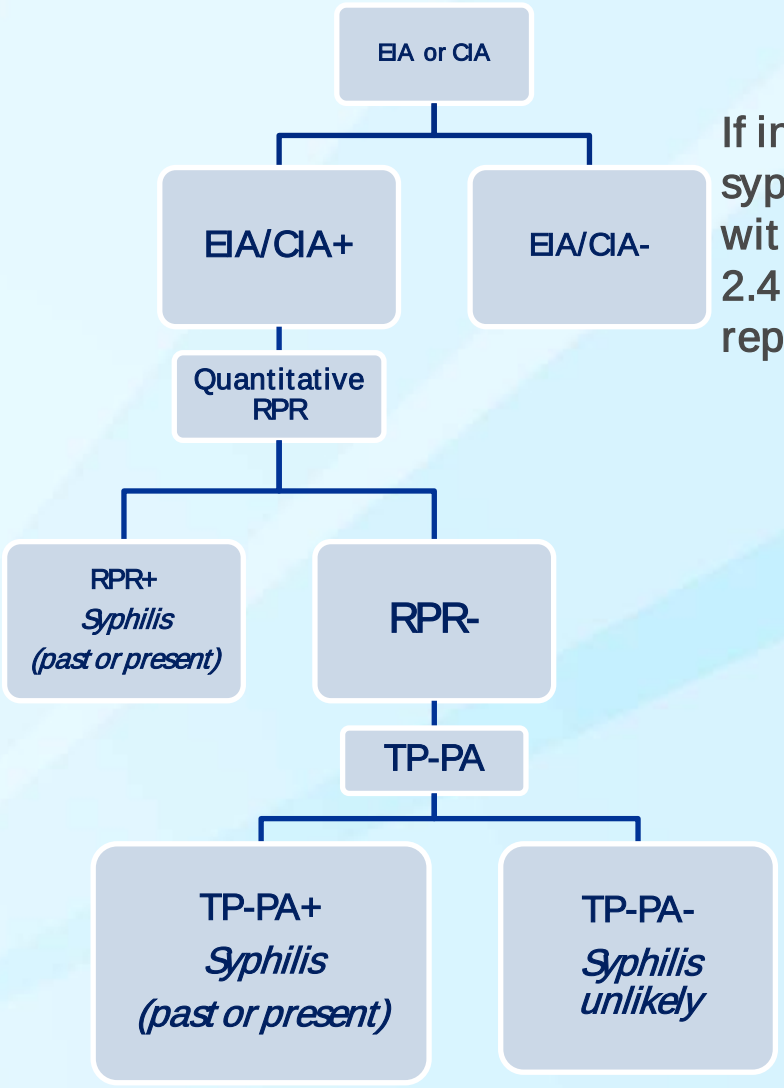
Characteristics of Mothers Who Gave Birth to Infants with Congenital Syphilis, United States, 2014

	Number (N=458)	Percent
Did not receive prenatal care	100	21.8%
Received prenatal care (N=314, 68.6%)		
No treatment	135	29.5%
Treated <30 days prior to delivery	78	17.0%
Non-penicillin therapy	3	0.7%
Inadequate regimen for stage	13	2.8%
Adequate treatment	43	9.4%
Unknown treatment status	42	9.2%
Unknown prenatal care status	44	9.6%

Characteristics of Mothers Who Gave Birth to Infants with Congenital Syphilis and Did Not Receive Treatment, United States, 2014

Mothers with prenatal care but no treatment	Number (N=135)	Percent
Never tested during pregnancy	21	15.6%
1st test negative, later test positive	52	38.5%
Positive test, but not treated	62	45.9%

Algorithm for reverse sequence syphilis screening



If incubating or primary syphilis is suspected, treat with benzathine penicillin G 2.4 million units IM x 1 and/or repeat in 1-2 weeks

Evaluate clinically, determine if treated for syphilis in the past, assess risk of infection, and administer therapy according to CDC's STD Treatment Guidelines if not previously treated

If at risk for syphilis, repeat RPR in 2 to 4 weeks

Syphilis Treatment
Primary, Secondary, Early Latent

- Penicillin treatment of choice +/- HIV
  - Benz PCN 2.4 mu IM x 1
- Penicillin is the only recommended treatment in pregnancy
- PCN alternatives in non-pregnant patients
  - Doxycycline, ceftriaxone
  - Azithromycin 2 gm (A2058G mutation/tx failure)
    - MSM>MSW
    - Do not use azithromycin in MSM or pregnancy
- PCN shortages

EMERGING ISSUES:

GENITAL HERPES

TRICHOMONAS VAGINALIS

MYCOPLASMA GENITALIUM

Genital Herpes

- Increasing proportion of anogenital infections HSV-1 (young females, MSM)
- IgM testing not useful
- Type specific serologic tests
  - HerpeSelect HSV-2 ELISA may be false + at low index values (1.2-3.5)- confirmed with Biokit or WB
  - HerpeSelect HSV-1 ELISA insensitive for HSV-1 (80%)
- No change in recommended therapy
  - Famiclovir is out of alphabetical

Genital Herpes

- Increasing proportion of anogenital infections are HSV-1
  - Young females and MSM
- Type specific PCR is the preferred GUD diagnostic test
- IgM testing not useful
- Type specific serologic tests indicated for:
  - Recurrent or atypical genital symptoms with negative HSV PCR
  - Clinical diagnosis of genital herpes without lab confirmation
  - Partner with genital herpes
  - HerpeSelect HSV-2 ELISA may be false + at low index values (1.2-3.5)- confirm with Biokit or Western Blot
  - HerpeSelect HSV-1 ELISA insensitive for HSV-1 (80%)
- No change in recommended therapy
  - Famiclovir is out of alphabetical

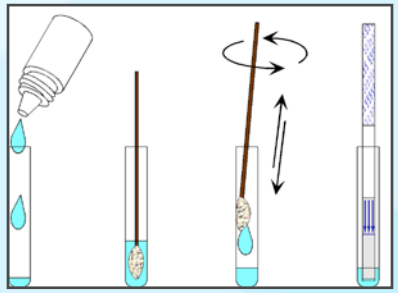
Trichomonas vaginalis

- Test in women with vaginal discharge
- Consider screening in high prevalence settings
  - STD clinics, corrections
  - No data if screening/treatment reduces adverse health events or reduces community burden of infection
- Retesting 3 months after treatment
- Treatment: Metronidazole or Tinidazole 2 gm
- Management of persistent infection
  - Up to 17% at 3 months
  - Reinfection from untreated partner is common
  - Infection with MTZ-resistant strain: ~4-10%
    - Tinidazole-resistant ~1%
    - No clear relationship to clinical treatment failure
  - Susceptibility testing if resistance suspected (404-718-4141)

"New" Testing Options for Trich

- Rapid antigen test (Genzyme)
  - Significantly better than wet mount
  - Results in 10 minutes

Test	Sensitivity	Specificity
OSOM	83.3%	98.8%
Wet prep	71.4%	100%



- Nucleic Acid Amplification Test* (Gen-Probe)
  - May use same specimen type as used with CT/GC NAAT for females
  - Not FDA cleared for use in men

Specimen	Sensitivity	Specificity
Urine	95.2%	98.9%
Vaginal/cervical swab	100%	99.0% to 99.6%

- Consider a molecular test-resolved algorithm (negative wet prep followed by NAAT)

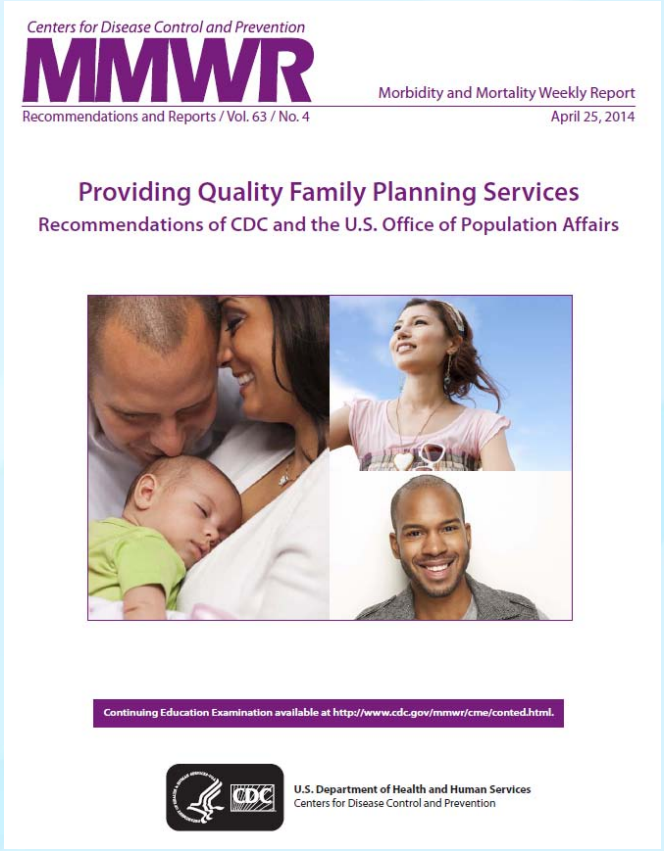
* Schwebke, J Clin Micro 2011

Trichomonas and HIV

- TV increases genital shedding of HIV
  - Increased risk of preterm birth, PID, vertical HIV transmission
  - Treatment of TV decreases HIV genital shedding
- Routine screening of HIV infected women
  - At entry to care
  - Annually if sexually active
  - At first prenatal visit if pregnant
  - Rescreen 3 months after therapy
- Treatment issues
  - Single dose MTZ 2 g PO not as effective as 500 mg PO BID x 7 days
  - Preferred regimen is 7 day course

Role of *Mycoplasma genitalium*

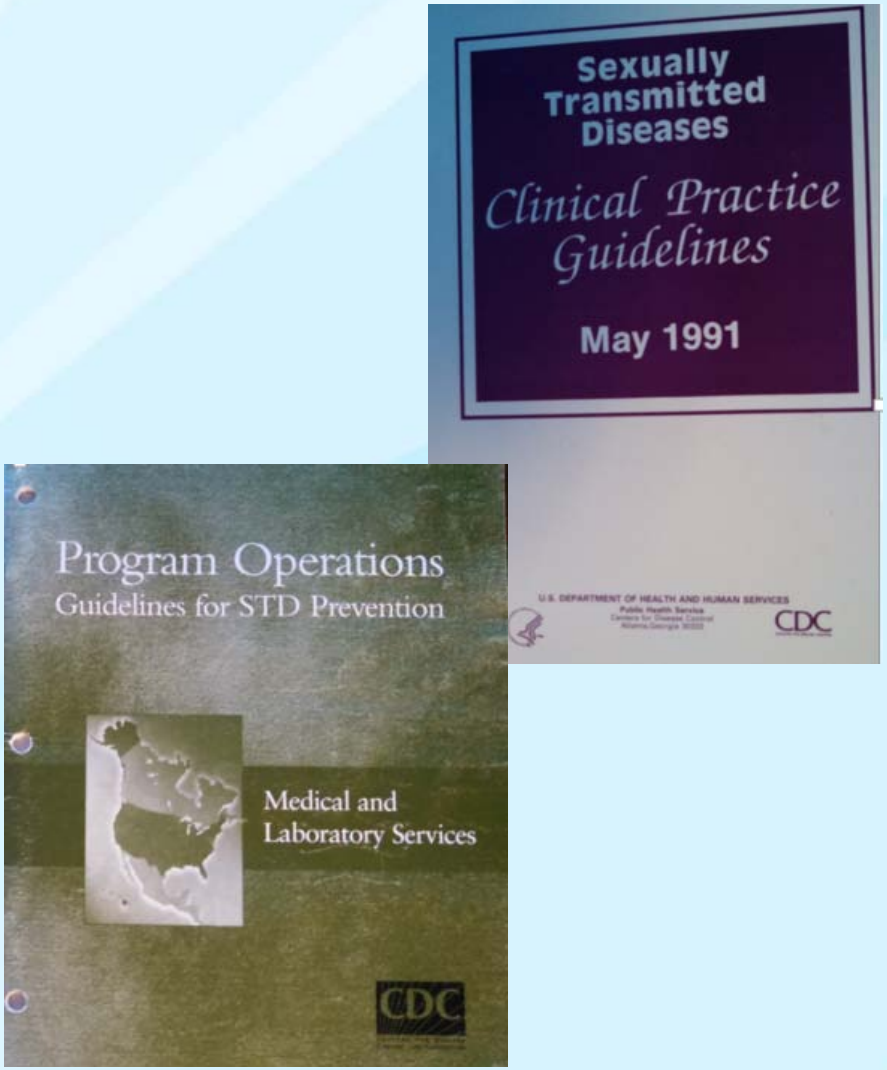
- Good evidence for role in urethritis (20%)
- May play role in cervicitis, PID, infertility, preterm delivery
- No commercially-available test for *M. genitalium* (in house NAATs)
- Treatment implications
  - Azithromycin is better than doxycycline because of resistance to doxycycline but new concerns of emerging resistance to Az
  - Conflicting data on single dose vs extended dosing
  - Moxifloxacin 400 mg po for 7-14 days has been studied as an alternative (cure rates 85-100%)



Guidelines for the Provision of Quality STD Clinical Services

History of STD Clinical Practice Guidelines

- 1991 STD Clinical Practices Guidelines
- 2005 Program Operation Guidelines: Medical and Laboratory Services
- Focus was on STD clinics and programs



Levels of STD Clinical Care Definitions

- **Basic STD Care:** Delivery of basic recommended STD clinical preventive services:
  - RA, screening and treatment of those with asymptomatic infection
  - Basic partner services (BYOP, EPT) and counseling, as needed
  - Treatment of patients with non-complex symptomatic infection
- **Specialized STD Care:** Delivery of more confidential, comprehensive and complex STD clinical services- including basic care plus:
  - On-site stat diagnosis (e.g. Gram stain, RPR)
  - Advanced diagnostics (e.g. gonorrhea culture, extra genital GC/CT NAATS)
  - On site injectable antibiotics to treat syphilis and gonorrhea
  - Offers same day service for those likely to be infected (those with symptoms suggestive of an acute STD and those who report a partner with an acute STD)
  - Offers culturally expert care to those at highest risk of STD (youth and LGBT)
  - Ensures protection of confidentiality

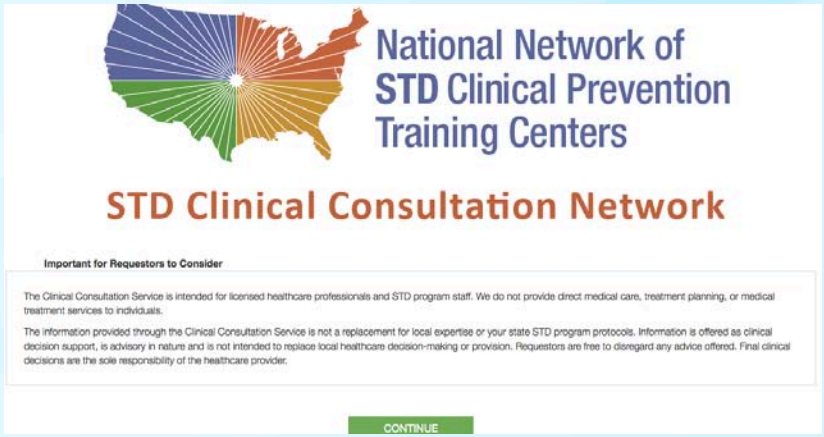
More to Come…Stay Tuned!

- HIV Pre-exposure Prophylaxis (PrEP)
  - Ipergay study showed promise with peri-coital dosing
  - Long acting depo formulations
  - Vaginal microbicides & vaginal rings
- GC
  - Molecular tests with resistance markers
- Syphilis
  - Rapid testing
- HPV testing instead of Pap?
- Extra-genital screening in women?
- Rectal Chlamydia resistance to Azithromycin?
- HSV and CT vaccines?
- Living STD Treatment Guidelines document?

Know your STD Clinical PTC

STD Clinical Consultation Network (STDCCN)

- Provides STD clinical consultation services within 1-3 business days, depending on urgency, to healthcare providers nationally
- Your consultation request is linked to your regional PTC's expert faculty
- Just a click away! **www.STDCCN.org**



Take-Home Messages

- **Screen, appropriately!**
- **Rescreen for chlamydial and gonococcal infections 3 months after treatment**
- **Be aware of antibiotic-resistant GC**
- **Syphilis: it's not going away and know about the EIA syphilis test**
- **Sexual health**
  - Vaccinate for HPV (but continue Pap test screening) and HBV
  - Prevention messages including condoms
  - PrEP

Save the Date!

2016 STD Prevention Conference

Thank you!

gyb2@cdc.gov

For more information please contact Centers for Disease Control and Prevention

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Telephone, 1-800-CDC-INFO (232-4636)/TTY: 1-888-232-6348
E-mail: cdcinfo@cdc.gov Web: www.cdc.gov