



These handouts/slides are intended for use only as a learning aid for the *2010 STD Treatment Guidelines: An Overview by CDC and the NNPTC Webinar*.

The 2010 STD Treatment Guidelines Webinar will begin shortly

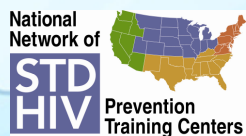
Participants are encouraged to use the audio web stream via their computer speakers or headphones to listen to the webcast as audio quality will be higher using this technology.

For those who do not have computer speakers or headphones, audio is available by calling 1.877.420.2982 and entering passcode 7488 487#

Live questions can be submitted via Adobe Connect Pro.

Due to the volume of Webinar participants and the hour we have allotted, we will not be able to provide live answers to all of the submitted questions.

We will compile and answer these questions and will post them online at www.nnptc.org and www.cdc.gov/std/treatment/2010 as soon as we can.



National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention
Division of STD Prevention





Your questions submitted during the Webinar will help determine the focus of future 2010 STD Treatment Guidelines Webinars.

Instructions on how to receive CME credits were sent along with the Webinar registration confirmation via e-mail. These instructions are also available at www.stdhivtraining.org/resource.php?id=644.

An archived version of the Webinar will be available at www.nnptc.org and www.cdc.gov/std/treatment/2010 within a few days.

If you have questions about the 2010 STD Treatment Guidelines following the Webinar you may submit them to stdtraining@cdc.gov.

CME

- This activity has been planned and implemented in accordance with the Essential Areas and policies of the Accreditation Council for Continuing Medical Education through the joint sponsorship of the University of Cincinnati and the Centers for Disease Control and Prevention. The University of Cincinnati is accredited by the Accreditation Council for Continuing Medical Education to provide continuing medical education for physicians.
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Speaker Disclosures

In accordance with the ACCME Standards for Commercial Support of CME, the speakers for the Cincinnati STD/HIV Prevention Training Center have been asked to disclose to participants any significant relationships with commercial entities that are either providing financial support for this program or whose products or services may be mentioned during their presentations. In addition, presentation material for this CME activity may not be developed by personnel employed by a pharmaceutical company.

The following relationships were disclosed:

Planning Committee Member

Blanche Collins, PhD, CHES	No Relationships
Rick Ricer, MD	No Relationships
Barb Boylan, BS	No Relationships
Barb Forney	No Relationships
Jill Huppert, MD, MPH	Grant Recipient & Speaker's Bureau (speaker honorarium) for Genzyme Diagnostics, Inc.; Unrestricted Research grant for clinical conditions of T. vaginalis (No Conflicts); Genzyme/Genprobe – Free titers & reagents (No Conflicts)

Course Director/Speaker

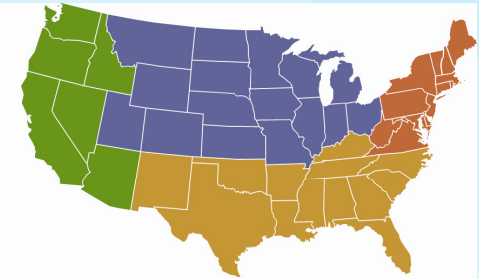
Charlotte Kent, PhD	No Relationships
Kim Workowski, MD	No Relationships
Gail Bolan, MD	No Relationships
Edward (Ned) Hook III, MD	Grant Recipient for Glaxo-Smith Kline, Gen Probe, Roche Molecular, Becton Dickinson, Seimens Molecular – Product or Service and Clinical conditions (Valacyclovir, Diagnostic Tests for gonorrhea, Chlamydia, trichomoniasis and herpes). Dr. Hook intends to reference off-Label/unapproved uses of drugs or devices in his discussion. (Resolved)
Jeanne Marrasso, MD, MPH	Consultant for Merck Sharpe & Dohme, Graceway Pharmaceuticals, and Bayer Pharmaceuticals – Clinical condition for HIV prevention and Vaginitis (No Conflicts)
Jill Huppert, MD, MPH	Grant Recipient & Speaker's Bureau (speaker honorarium) for Genzyme Diagnostics, Inc.; Unrestricted Research grant for clinical conditions of T. vaginalis (No Conflicts); Genzyme/Genprobe – Free titers & reagents (No Conflicts)

National Network of Prevention Training Centers (NNPTC)

- Dedicated to increasing and maintaining the skills and knowledge of health professionals in the areas of sexual and reproductive health
- Addresses the STD/HIV prevention training needs of public and private sector health professionals throughout the US, including health departments and community-based organizations
- Develops, delivers, & evaluates training activities on the diagnosis, treatment, and prevention of STDs and HIV
- www.nnptc.org

**National
Network of**

**STD
HIV**



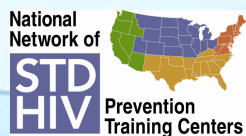
**Prevention
Training Centers**

2010 STD Treatment Guidelines Webinar:

An Overview by CDC and the NNPTC



January 13, 2011



National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention
Division of STD Prevention



Charlotte Kent, PhD

- Acting Director, Division of STD Prevention, CDC



Learning Objectives

- Describe the impact of STDs in the United States
- Discuss the role and importance of the 2010 STD Treatment Guidelines
- Identify the recommended treatment regimens for uncomplicated gonococcal infections
- Discuss antimicrobial resistance in gonorrhea and other STDs
- Identify one resource for additional training on STD prevention and treatment

Target Audience

- Providers of clinical care to persons with or at risk for STDs
- Staff in health care settings that provide clinical care for persons with or at risk for STDs

Future Webinars

- Populations
 - Men who have sex with men (MSM)
 - Adolescents
 - Persons in correctional facilities
- Audiences
 - STD Program managers
 - Providers of STD behavioral interventions and partner services
 - OB/GYNs, family practitioners, and HIV care providers

Webinar Overview

- Importance of diagnosis and treatment of STDs
- 2010 STD Treatment Guidelines
 - Clinicians' role in STD prevention
 - Highlights of key recommendations
 - Important changes from 2006 Guidelines
- Questions and Answers
- NNPTC's role in STD prevention
- Additional resources

Why Diagnose and Treat STDs?

- >19 million STDs in US annually
- Health consequences of untreated STDs
 - Women's reproductive health
 - Untreated Chlamydia (CT) or gonorrhea (GC) may lead to pelvic inflammatory disease (PID)
 - Leading infectious cause of infertility in the U.S.
 - Infant mortality/morbidity
 - Neonatal HIV, herpes simplex virus (HSV) and congenital syphilis
 - HIV transmission
- Health care cost
 - \$16.4 billion (2009)†

†Estimates incorporate minor corrections noted in Persp Sex Rep Hlth, Dec 2009.

Populations at Greatest Risk for STDs

- Youth
 - Nearly 50% of STDs estimated to occur in 15-24 year olds
- Racial/ethnic minorities
 - STDs among highest of all racial/ethnic health disparities
 - African-Americans: 71% of GC, 48% CT, 52% syphilis
 - Over last 5 years syphilis cases increased more than 150% among young African American men
- MSM
 - Account for 62% of syphilis cases in 2009
 - High rates of HIV co-infection

STD Prevention: Clinicians' Role

- Talk to patients about pre-exposure vaccination
- Provide or refer for prevention/risk-reduction counseling
- Talk to patients about testing
- Assess patients' risk and test accordingly
- Diagnose and treat infected patients
- Provide or refer for partner management/services
- Report STD/HIV and AIDS cases in accordance with state and local statutory requirements
- Keep STD/HIV reports confidential

Purpose of 2010 STD Treatment Guidelines

To advise clinicians on most effective

- Diagnostic evaluation
- Treatment regimens
- Prevention and vaccination strategies

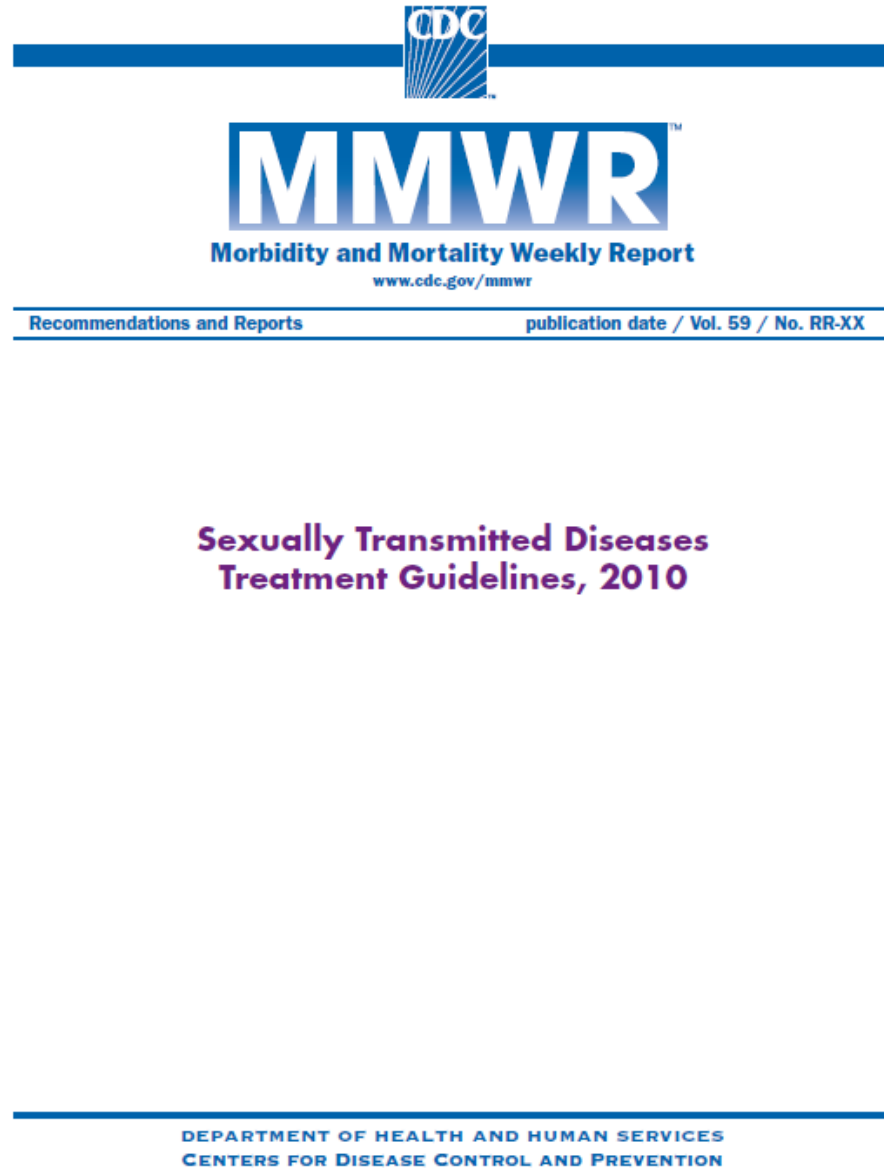


Kimberly Workowski, MD

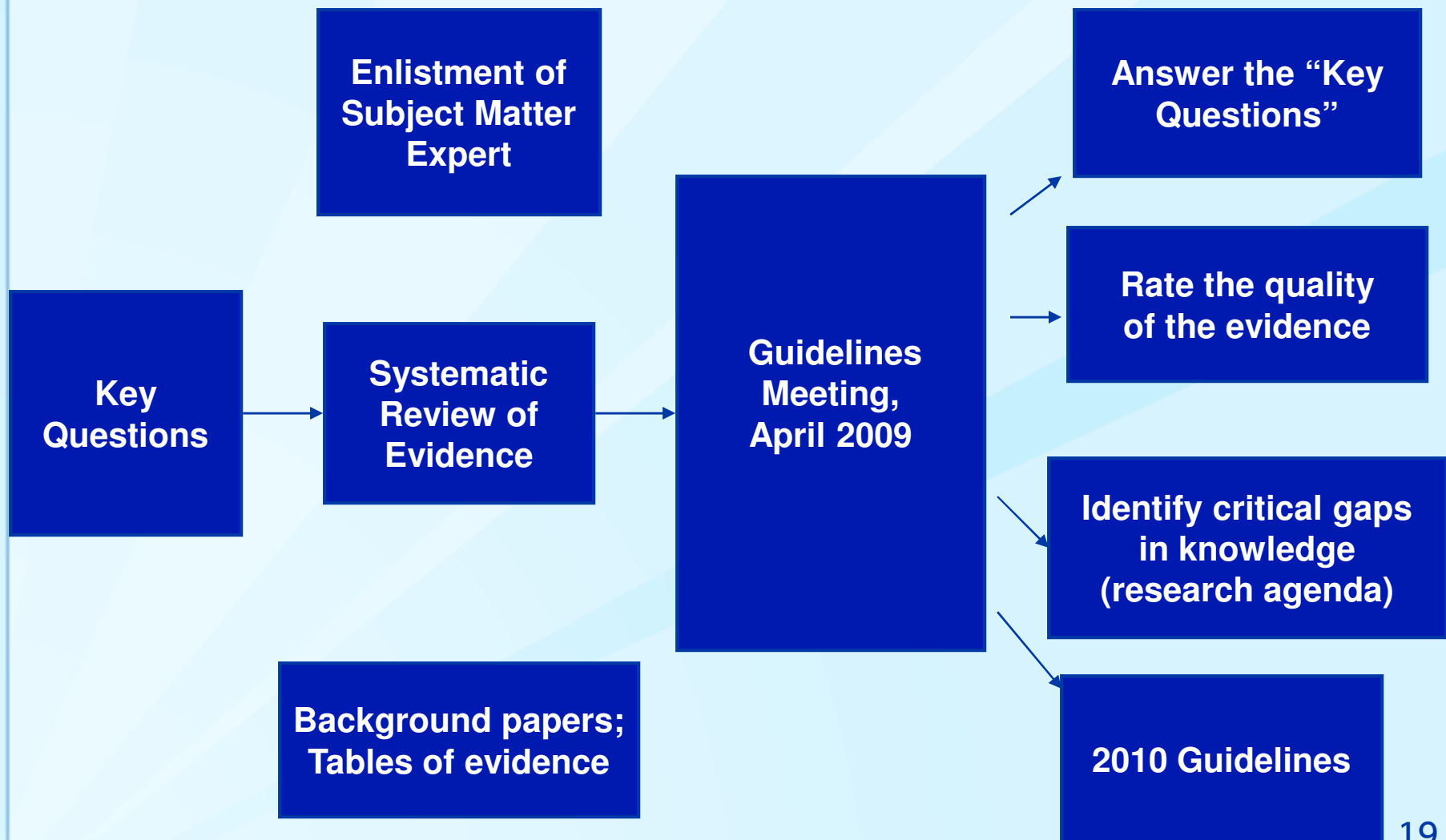
- Infectious Diseases Specialist in CDC's Division of STD Prevention
- Professor of Medicine at the Emory Clinic



- Authoritative source for STD management
- Diagnostic evaluation, treatment regimens, prevention, and vaccination strategies
- Order hard copies www.cdc.gov/std
- Wall charts, pocket guides



STD Treatment Guidelines



Special Populations

- Adolescents
- Children
- STD in pregnancy
- HIV
- MSM
- Women who have sex with women (WSW)
- **Persons in correctional facilities**
 - **CT/GC adolescent females (juvenile detention/jail), females <35**
 - **Syphilis (local/institutional prevalence)**

NAATs Extragenital Sites

- NAATs perform better than culture (rectum, pharynx)
- Commercial laboratories validated NAATs
- Most infections asymptomatic
- Self-collected vaginal swabs preferred specimen in females
- Urine preferred specimen in men

NAAT Laboratory Ordering and Billing Codes

	Company-Specific Ordering Codes for Combined GC/CT Nucleic Acid Amplified Tests (NAATs)		Company-Specific Ordering Codes for CT test only
	LabCorp*	Quest*	LabCorp
Rectal	188672	16506	188706
Pharyngeal	188698	70051	188714
NAATs are offered at (or from) any location in the country with these two codes.			

For information on specimen collection and transportation, clinicians should contact the local reference laboratory representative.

CPT Billing Codes	
CT detection by NAAT	87491
GC detection by NAAT	87591

* CDC does not endorse these laboratories, however, they represent the largest laboratories nationally. There may be other private laboratories that have verified rectal and pharyngeal testing with NAATs. Many PHLs have also verified rectal and pharyngeal testing.

STD Screening in MSM

- HBsAg testing to detect current infection
- Hepatitis A and B vaccination if nonimmune
- Hepatitis C virus (HCV) sexual transmission (HIV+ MSM)
 - HCV serology at initial visit
 - HCV RNA with unexplained alanine aminotransferase rise
 - Routine HCV testing- high-risk sexual behavior or ulcerative STDs
 - Prevention (condoms) at sites of penetration

Clinical Prevention Guidance

- High-intensity behavioral counseling (USPSTF)
- Vaccination- hepatitis A virus (HAV), hepatitis B virus (HBV), human papillomavirus (HPV) (bivalent/quadrivalent)
- Condoms
 - CDC fact sheet; female nitrile condom
- Microbicides
 - www.microbicide.org
 - Pre-exposure prophylaxis for HIV/STD
- Male circumcision
 - Reduced acquisition of HPV, genital HSV

Urethritis

- Bacterial STDs: GC (5-20%), CT (15-40%)
- Nongonococcal urethritis (NGU)
 - *Mycoplasma genitalium* 5-25%
 - *Ureaplasma* 0-20%; data inconsistent, biovars differ
 - *Trichomonas vaginalis* 5-20% (age, geography)
 - HSV 15-30%; urethritis in primary infection
 - Adenovirus, enterics, Candida, anaerobes

Mycoplasma genitalium (MG)

- Association with acute or persistent NGU
 - No role in male infertility
- Conflicting/insufficient evidence: cervicitis, PID, infertility, ectopic pregnancy, adverse birth outcomes
- Azithromycin superior to doxycycline for MG urethritis
- Moxifloxacin for persistent NGU

NGU Treatment

- Current drug regimens adequate
- Cost considerations and lack of public health impact data for MG insufficient to demote doxycycline to alternative agent
- Recurrence
 - Re-exposure from untreated partners
 - *T. vaginalis* and *M. genitalium*
 - *U. ureaplasma* may account for some failures

Cervicitis

- CT/GC NAATs-vaginal, cervical, urine
- No new antimicrobial treatment trials
- Research needed on the etiology of persistent cervicitis including the potential role of *Mycoplasma genitalium*

Chlamydia

- Primary focus of screening efforts to detect and prevent complications in women
- Selective male screening (adolescent clinics, corrections, national job training program, < 30 yrs, STD, military)
- Retest women/men 3 mo post treatment
 - CT testing in third trimester (reinfection)

Gonorrhea

- Screen sexually active women at increased risk (USPSTF)
 - <25 years
 - Previous GC or other STDs
 - Commercial sex work
 - New or multiple partners
 - Inconsistent condom use
 - Drug use
- No screening in men or women at low risk of infection (USPSTF)
- Retest women/men 3 mo after treatment

Gonorrhea Treatment Efficacy

- Anogenital
 - Ceftriaxone
 - 125 mg = 98.9%
 - 250 mg = 99.2%
 - Geographic distribution *in vitro* decreased susceptibility, ceftriaxone failures, enhanced pharyngeal efficacy, consistent guidance at all anatomic sites
- Oropharyngeal
 - Ceftriaxone
 - 125 mg = 94.1%
 - 250 mg = 98.9 %
 - Oral cephalosporins limited (poor penetration)
 - Azithromycin 2 gm = 95%
 - + oral exposure- regimen with enhanced pharyngeal efficacy

Anogenital GC Treatment

- Recommended
 - Ceftriaxone **250 mg** IM (preferred)
 - PLUS azithromycin 1 gm or doxycycline 100 mg bid x 7
 - Cefixime 400 mg PO (if ceftriaxone is not an option)
 - PLUS azithromycin 1 gm or doxycycline 100 mg bid x 7
- Alternatives
 - Cefpodoxime 400 mg or cefuroxime axetil 1 g
 - Azithromycin 2 g (penicillin allergy)

Oropharyngeal GC Treatment

- Recommended
 - Ceftriaxone **250 mg** IM
 - PLUS azithromycin 1 gm or doxycycline 100 mg bid x 7
- Alternatives
 - Azithromycin 2 g (penicillin allergy)

Cephalosporin GC Treatment Failures

- Suspected treatment failure (oral and injectable)
- Treatment failure or *in vitro* resistance
 - Infectious disease consultation
 - Culture and susceptibility
 - Ceftriaxone 250 mg IM
 - Ensure partner treatment
 - Report to CDC via state or local public health authorities

PID

- Some association with MG
- Quinolone-resistant *Neisseria gonorrhoeae* (QRNG) prevalence
 - Quinolones not recommended
 - Parenteral cephalosporin not feasible
 - Levofloxacin +/- metronidazole may be considered if community prevalence/individual risk low
 - Azithromycin 2 gm + quinolone +/- metronidazole
- Ceftriaxone 250 mg IM + azithromycin 1gm qwk x2 (short term success)
- Insufficient evidence to warrant removal of IUD

Genital, Perianal, Anal Ulcers

- History/physical examination often inaccurate
- Majority due to HSV or syphilis
 - Less common chancroid
 - Noninfectious (yeast, aphthi, fixed drug eruption, psoriasis)
- Serologic test for syphilis
- Diagnostic evaluation for HSV (culture, PCR)
- Treat for diagnosis most likely based on clinical/epidemiology
 - If syphilis is suspected, treat empirically as initial tests may be negative in primary syphilis
- Biopsy if uncertain

Syphilis

- Definitive diagnosis for early syphilis
 - darkfield microscopy; PCR
 - No commercially available *Treponema pallidum* detection tests
- Nontreponemal/treponemal serologic testing
 - Reverse serologic screening
- Management principles for HIV+ similar
 - Frequent clinical/serologic monitoring
- Neurosyphilis can occur at any stage

Evaluation of CNS Involvement

- Neurologic, ocular, auditory signs/symptoms
- CNS invasion occurs in early syphilis regardless of HIV or neurologic symptoms (protein, pleocytosis)
 - Clinical significance unknown (HIV+/-)
 - Neurosyphilis diagnosis - combination of tests
- CSF: neuro/ocular symptoms, tertiary, serologic treatment failure
 - Some studies - clinical and CSF consistent with neurosyphilis are associated with RPR \geq 1:32 and/or CD4 \leq 350
 - Unless neurologic symptoms present, CSF exam has not been associated with improved clinical outcomes

Treatment Recommendations

Primary, Secondary, Early Latent

- Penicillin treatment of choice +/-HIV
 - Benzathine penicillin 2.4 mu IM x 1
- No benefit of additional therapy
 - Enhanced treatment (IM + oral)
- Penicillin alternatives
 - Doxycycline, ceftriaxone
 - Azithromycin 2 gm (resistance/treatment failure)
 - Use only when penicillin or doxycycline not feasible
 - Do not use in MSM or pregnancy

Azithromycin

- Macrolide resistance associated with A2058G mutation in 23S rRNA gene
 - Canada, Ireland, Czech Republic, China
 - Prevalence of mutation US
 - A2058G found in 9/11 US sites (Su, ISSTD 2009)
 - MSM>MSW; no association with US region, race
- Treatment failure
 - US, Czech Republic, China

Monitoring in HIV+

- Jarisch-Herxheimer reaction in HIV+
 - Early syphilis, high RPR, prior penicillin treatment
- Immune reconstitution inflammatory syndrome uncommon
- ART use in HIV+ with syphilis
 - Reduced risk of serologic treatment failure
 - Lower risk of neurosyphilis
 - Normalization of CSF parameters with improvement in serum RPR

Syphilis in Pregnancy and Congenital Syphilis

- Treponemal screening performed with reflex nontreponemal test
- Oral step-wise penicillin dose challenge or skin testing may be helpful in identifying women at risk for acute allergy
- Erythromycin or azithromycin does not reliably cure maternal infection or infected fetus
- Insufficient data on ceftriaxone for treatment of maternal infection and prevention of CS

HSV

- IgM testing not useful
- Antiviral efficacy
 - Acyclovir, valacyclovir, famciclovir equally effective (episodic)
 - Acyclovir and valacyclovir effective for suppression
 - Famciclovir slightly less effective for suppression
 - Famciclovir 500 mg x 1, 250 mg bid x 2 d episodic
- Acyclovir resistance
 - Topical cidofovir or imiquimod
 - Less likely to develop resistance using suppressive therapy (bone marrow transplant)

Lymphogranuloma venereum (LGV)

- Proctitis presentation (HIV+ MSM)
- Diagnosis
 - Genital or lymph node aspirates-culture, DFA, nucleic acid detection (CLIA validation)
 - Genotyping required for determining LGV strains
 - Serology not validated for proctitis presentation
- Empiric treatment for appropriate clinical syndrome
 - Doxycycline 100 mg PO bid x 21 d
 - Azithromycin 1 g PO q wk x 3 wks (limited data)

Proctitis

- HSV/LGV presumptive treatment - painful perianal or mucosal ulceration
- Consider LGV treatment in MSM with anorectal Chlamydia and either proctitis (anoscope) with >10 wbcs/high-power field or HIV +

Scabies/Pediculosis

- Permethrin superior to crotamiton
- Combined treatment for crusted scabies oral/topical scabicide
- Emerging resistance to all pediculicides except malathion

Bacterial Vaginosis

- Alternative regimen
 - Tinidazole 2 g qd x 2 or 1 g qd x 5
- Management of recurrences
 - Metronidazole gel 2x weekly x 4-6 mo
 - Oral nitroimidazole followed by intravaginal boric acid and suppressive metronidazole gel
- USPSTF
 - Insufficient evidence to support screening high-risk pregnant women
 - Against screening in low risk

Trichomoniasis

- Diagnostic evaluation
 - Aptima *T. vaginalis* analyte specific reagents
 - Consider rescreen women (HIV-/HIV+) at 3 mo
- NAAT preferred diagnostic in men
- Antimicrobial resistance (5-10%)
 - No data to guide treatment of male partners
 - Metronidazole 500 mg bid x 7 or tinidazole 2 gm
- HIV and Trichomoniasis
 - Screening at entry into HIV care
 - Treatment metronidazole 500 mg bid x 7 days

HPV/Genital Warts

- Counseling messages
 - Oral transmission
- Clarification on use of HPV testing
- Genital warts treatment
 - Sinecatechins ointment (15%)
 - Vitiligo side effect of imiquimod
- HPV vaccine
 - Bivalent/quadrivalent vaccine (70% cervical cancer)
 - Quadrivalent vaccine (90% genital warts)

Sexual Assault in Children

- STD screening should be independent of symptoms (Giradet et al, Pediatrics 2009)
- Diagnostic evaluation
 - CT NAATs (SDA,TMA) on vaginal swabs/urine in girls; + specimens retained for additional testing
 - GC NAATs test dependent; potential cross-reaction between other Neisseria species/commensals (*N. meningitidis*, *N. sicca*, *N. lactamica*, *N. cinerea*, *Moraxella catarrhalis*)
 - Data insufficient for extragenital NAAT in girls
 - Data insufficient for CT/GC NAATs at any site for boys
 - HPV infection/mode remains controversial

Sexual Assault in Adults

- CT/GC NAATs -any site of penetration/attempt
- Routine preventive therapy as follow-up poor
- HIV, hepatitis B, syphilis testing individualized
 - Test results likely represent prevalent STDs
 - Some centers have opted to stop STD testing
 - Likely will not impact decision to provide prophylactic treatment
 - Testing costs may be patient's responsibility

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American College of Obstetrics and Gynecology (Jeffrey Peipert, MD)

American Medical Association (LJ Tan, PhD)

American Urological Association (Jordan Dimitrakov, MD)

American Social Health Association (Lynn Barclay)

American STD Association (Jeanne Marrasso, MD)

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Questions and Answers



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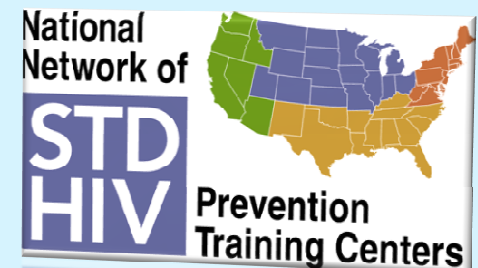


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National Network of Prevention Training Centers (NNPTC)

- STD Clinical & Laboratory Training
- HIV Prevention in Care Training
- STD/HIV Behavioral Interventions Training
- STD/HIV Partner Services and Program Support Training
- www.nnptc.org



Educational and Training Resources

- NNPTC
 - www.nnptc.org
- 2010 STD Treatment Guidelines
 - www.cdc.gov/std/treatment/2010
 - cdcinfo@cdc.gov or 800.CDC.INFO (800.232.4636)
- CDC Division of STD Prevention
 - www.cdc.gov/std/training
 - stdtraining@cdc.gov or 404.639.8360

Clinician Resources

- Condoms and STDs: Fact Sheet for Public Health Personnel
 - www.cdc.gov/condomeffectiveness/latex.htm
- Expedited Partner Therapy
 - www.cdc.gov/std/ept
- Get Yourself Tested
 - www.itsyoursexlife.com/gyt

Reminders

- Stay tuned for additional STD Treatment Guidelines Webinars in the future
 - www.nnptc.org
 - www.cdc.gov/std/treatment/2010
- Complete the CME evaluation for credit
 - Instructions are available at www.stdhivtraining.org/resource.php?id=644
- If you have questions about the 2010 STD Treatment Guidelines following the Webinar you may submit them to stdtraining@cdc.gov

Acknowledgments

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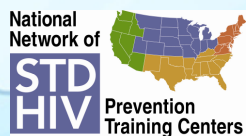
The logo features the letters 'ST&D' in a large, bold, black serif font. A green caduceus symbol is superimposed over the ampersand. Below this, the words 'Treatment Guidelines' are written in a smaller, black, sans-serif font. At the bottom, the year '2010' is displayed in a large, bold, green sans-serif font.

ST&D
Treatment Guidelines
2010

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: 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.



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Division of STD Prevention

