

**Protecting Women's Reproductive Health: Optimizing Your STD Management**

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**Overview of Optimizing Your STD Clinical Management**

- Risk Screening
  - Screening to identify asymptomatic infection
- GC treatment
- PID and cervicitis clinical management
- Expedited Partner Treatment (EPT)
- HPV testing

**STI Morbidity California (2006) and United States (2005)**

	California reported cases	US reported cases	US estimated incidence*	US estimated prevalence* (millions)
Chlamydia	136,124	976,445	2,800,000	1.9
Gonorrhea	33,768	339,593	675,000	NA
Syphilis (P&S)	1,829	8,724	21,000	NA
Congenital syphilis	67	329	NA	NA
HPV	NA	NA	6,200,000	20
HSV	NA	NA	1,600,000	45
Trichomoniasis	NA	NA	7,400,000	NA
AIDS	3,448	41,120	45,000	0.56
HIV	NA	NA	40,000	0.85
Hepatitis B	442	5,119	60,000	0.75
Total	175,678	1,371,330	18,841,000	69.1

\* 2004 US estimates

**Risk Screening Issues**

- Sexual history taking and risk reduction client centered counseling including the 5 P's
  - Partners
  - Practices
  - Past History of STDs
  - Protection for STDs
  - Pregnancy prevention
- Patients should be informed about which STDs they are tested for (and which not) and if positive which must be reported to the local HD

**Clinic-based Chlamydia Screening Recommendations- Non Pregnant Women**

**US Preventive Services Task Force, 2007**

- Sexually active women age 24\* and younger should be screened annually
- Women age 25\* and older should be screened "if increased risk"
  - Risk factors: Previous CT or other STDs, new or multiple partners, inconsistent condom use, sex work
  - Demographics: African Americans and Hispanics

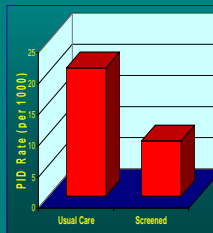
**CDC and Family PACT, 2006**

- Sexually active females 25 years or younger annually
- Older women with risk factors
  - New or multiple sex partners

\* In 2001, the age cut off was 25 years

**CT Screening Prevents PID: Clinical trial, Seattle HMO, 1990-1992**

- Randomized controlled trial
- 1009 high risk women 18-34 assigned to intervention (invitation to get tested) & 1598 to usual care



Among intervention group, 64% were tested and 7% were positive and treated

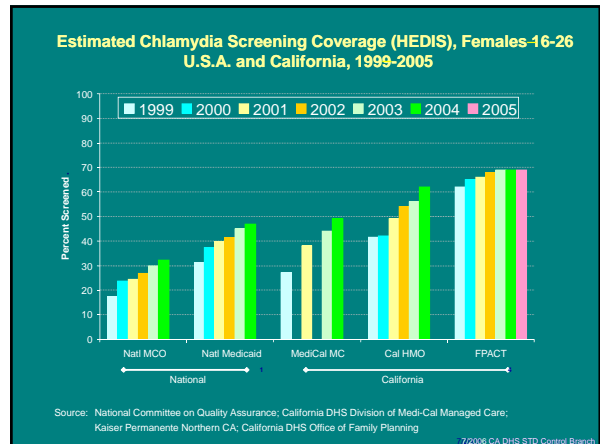
Outcome of PID w/i 1-year: 9 cases in screening group, 33 cases in usual care group (RR=0.44 (0.20-0.90))

*Scholes et al., NEJM, 1996; 334:1362-6*

## Chlamydia Test Performance

	<u>Sensitivity</u>	<u>Specificity</u>
EIA	40-60%	> 99%
DNA probe <i>GenProbe PACE 2</i>	40-65%	> 99%
DFA	50-70%	> 99%
Culture	50-90%	> 99%
NAATs *	>90%	> 99%
Roche <i>Amplikor</i> (PCR) **		
GenProbe <i>Aptima</i> (TMA) **		
B-D <i>ProbeTec</i> (SDA)		

\* Able to use urine and vaginal swabs specimens  
\*\* FDA cleared for liquid pap transport media



## What is the most common reason you obtain a chlamydia test in a woman over the age of 25?

1. Patient requests the test
2. Patient is about to start a new relationship
3. Patient has multiple partners
4. Patient is concerned partner has another partner
5. I test all sexually active women for chlamydia

## What is the cost-effective prevalence threshold for chlamydia screening in a clinic setting?

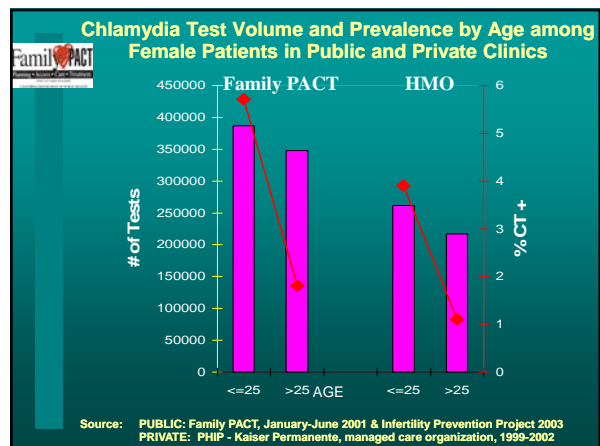
1. .5 percent
2. 1 percent
3. 3 percent
4. 5 percent
5. 10 percent

## Are we screening the wrong women?

- Some women in the target age range (24 and younger) are NOT being screened

*Meanwhile*

- A large proportion of current testing is being done for women over age 24
- Guidelines for screening women over 25 are not specific
  - Other women “at risk” such as prior history of CT or other STDs, new or multiple partners, or inconsistent condom use



**Factors to Consider when Designing a Cost-effective Screening Program**

- Prevalence of disease in population
- Sensitivity and specificity of screening criteria
- Test performance characteristics of diagnostic test
- Cost of test
- Cost of treatment and complications

**The Over 25 Evaluation Results (Age 26-44):**  
CT Prevalence & Proportion of Cases by Clinical Presentation

Total CT-tested Participants  
N = 2,634 n<sub>CT+</sub> = 83  
3.2% CT+

Patients with clinical indications for CT testing:	Patients screened for CT:
N = 346 n <sub>CT+</sub> = 24 6.9% CT+	N = 2,287 n <sub>CT+</sub> = 59 2.6% CT+
<ul style="list-style-type: none"> <li>• STD contacts</li> <li>• Cervicitis or PID</li> <li>• New STD dx</li> </ul>	<ul style="list-style-type: none"> <li>• No STD contact</li> <li>• No cervicitis or PID</li> <li>• No new STD dx</li> </ul>
29% of CT Cases 13% of Pop. Tested	71% of CT Cases 87% of Pop. Tested

**Implications for Screening Recommendations for Non-Pregnant Women > Age 25**

1. Partner(s) possibly having had other concurrent partners (during past 12 mos) was the strongest predictor of CT in these research projects;
2. Other fairly consistent behavioral predictors of CT included:
  - > 1 partner in past 12 mos
  - New partner in past 2-3 mos
3. Younger age, specifically age 26-30, was a strong demographic predictor of CT

**Proposed CT Diagnostic Guidelines for Women > Age 25 in California**

- **Testing based on clear clinical indications:**
  - Current contact (exposure) to any STD
  - Clinical signs of cervicitis or PID
  - Newly confirmed or presumptively treated other STD dx
- **Targeted Screening based on risk factors:**
  - Partner possible other partners during past 12 mos!!!
  - More than 1 partner during past 12 mos
  - New partner during past 2-3 mos
- **Additional discussion:** higher CT risk often associated with younger age – emphasis on prioritizing age 26-30

*The Over 25 Study*

**“Partner possible other partners” Actual Question Studied:**

Q: At anytime within the past 12 months\*, did any of your male partners have sex (of any type) with someone else while they were still in a sexual relationship with you?

A:  Yes, definitely  
 Not sure, it is possible  
 No, it is very unlikely

} Answers combined

\* Also asked about the past 3 months in a separate question.

**Chlamydia Treatment Adolescents and Adults**

Recommended regimens:

- ◆ Azithromycin 1 g PO x 1
- ◆ Doxycycline 100 mg PO BID x 7 d

Alternative regimens:

- ◆ Erythromycin base 500 mg PO QID x 7 d
- ◆ Erythro ethylsuccinate 800 mg PO QID x 7 d
- ◆ Ofloxacin 300 mg PO BID x 7 d
- ◆ Levofloxacin 500 mg PO QD x 7 d

**\*\* NO CHANGES FOR 2006 GUIDELINES \*\***

**Clinic-based Gonorrhea Screening Recommendations**

US Preventive Services Task Force, 2005

- Sexually active women including pregnant women at the first prenatal visit should be screened "if increased risk"
  - Age 24 or younger
  - Risk Factors: Previous GC or other STDs, new or multiple partners, inconsistent condom use, sex work, drug use
  - Demographics: African Americans
- Pregnant women with continued risk or new risk should be screened in the 3<sup>rd</sup> trimester

CDC Treatment Guidelines, 2006

- Follows the US Preventive Services Task Force Recommendations
- All pregnant women at risk for gonorrhea or living in an area in which the prevalence of GC is high should be screened at the first prenatal visit and in the third trimester if continued risk

**California Gonorrhea Screening and Diagnostic Testing Guidelines for Non-Pregnant Female Patients**

Annual Screening\*

- All sexually active females 25 years and younger

Targeted Screening based on risk factors if over 25 yrs of age

- Hx of GC in 2 yrs, multiple partners in 12 mos, partner with other partner, African American women 26-30

Diagnostic Testing

- When clinical exam findings indicate gonococcal infection: cervicitis, pelvic inflammatory disease, or disseminated gonococcal infection.

Contact Testing

- For patients who report contact/exposure to any sexually transmitted disease (STD)

Testing for Co-Infections

- For patients with a newly diagnosed STD

Repeat Screening

- Three to six months after treatment, patients should have a repeat test for re-infection.

\* Only if the prevalence is at least 1%.

**What is the recommended treatment regimen for gonorrhea?**

- Cefpodoxime 400 mg po x 1
- Ceftriaxone 125 mg IM x 1
- Ofloxacin 400 mg PO x 1
- Azithromycin 2 gm PO x 1

**Update to CDC's Sexually Transmitted Diseases Treatment Guidelines, 2006: Fluoroquinolones No Longer Recommended for Treatment of Gonococcal Infections**

In the United States, gonorrhea is the second most commonly reported notifiable disease, with 339,513 cases documented in 2005 (1). Since 1953, fluoroquinolones (i.e.,



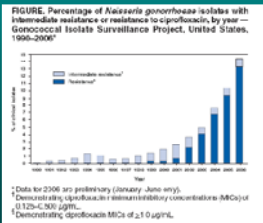




FIGURE. Percentage of *Neisseria gonorrhoeae* isolates with intermediate resistance or resistance to ciprofloxacin, by year—Gonococcal Isolate Surveillance Project, United States, 1998–2006\*

\* Data for 2006 are preliminary (January–June only).  
 † Demonstrating significant intermediate resistance (concentration MIC50 of 1128–1,500 µg/mL).  
 ‡ Demonstrating significant MICs of ≥1.0 µg/mL.

**Gonorrhea Treatment, 2007**

Recommended regimens:


- Ceftriaxone 125 mg IM x 1
- Cefixime 400 mg PO x 1
  - Currently available only as suspension
- ~~Ciprofloxacin 500 mg PO x 1~~
- ~~Ofloxacin 400 mg PO x 1~~
- ~~Levofloxacin 250 mg PO x 1~~

Alternative regimens:

- \* Cefpodoxime 400 mg po x 1
- \* Cefuroxime 1 g po x 1
- \* Spectinomycin 2 g IM x 1; not available
- \* Single-dose injectable cephalosporin regimens
- \* Azithromycin 2 gm PO

Co-treat for chlamydia unless ruled out with highly sensitive test (NAAT)

MMWR April 13, 2007; 56 (14)



**Efficacy Data for Agents with Activity Against GC Infection**

Agent, dose, route	Site	Studied	Cured	% Cure (95%CI)
Ceftriaxone 125 IM	SS	442	438	99.1 (98.7, 99.8)
	PH	63	59	93.7 (84.5, 98.2)
Cefixime 400mg PO	SS	344	336	97.7 (96.1, 99.3)
	PH	19	15	78.9 (54.5, 94.0)
Cefpodoxime 200 PO (*)	SS	284	274	96.5 (94.3, 98.6)
	PH	19	15	78.9 (54.5, 94.0)
Cefpodoxime 400 PO (**)	SS	316	305	96.5 (93.9, 98.2)
	SS §	287	281	97.9 (95.5, 99.2)
	PH	35	26	74.3 (56.7, 87.5)
Cefuroxime 1 gm PO	SS	469	454	96.8 (95.2, 98.4)
	PH	29	16	55.2 (37.1, 73.3)

Site: SS - single urogenital or rectal; PH - pharynx; MS - multiple or unspecified. SS § - urogenital, with sex in treatment interval excluded

John Moran, William Levine. CID 1995; 20 (Suppl 1): S47-65  
 \* Novak et al., Antimicrob Agents Chemother 1992; 36: 1764-6  
 \*\* Hall et al., ISSTD 2007, Abstract P-459



## Gonorrhea – Treatment Issues

- Limited options in cephalosporin allergic patients:
  - Spectinomycin is no longer manufactured
  - CDC recommends desensitization
  - Could be a special case to consider azithromycin, but
    - Requires 2 grams; GI tolerance issues
    - Resistance to azithro likely increasing and treatment failures have been seen
  - If fluoroquinolones are the only option, obtain culture if possible prior to treatment to document FQ sensitivity; if not possible, obtain test-of-cure (3-5 days if culture, 3 weeks if NAAT)



## California Case-based Gonorrhea Surveillance: Any Fluoroquinolone Use to Treat GC by High Morbidity Health Jurisdiction - 2004

	Use of Fluoroquinolones
Alameda	5%
Fresno	6%
Kern	12%
Long Beach	11%
Orange	12%
San Bernardino	8%
Santa Clara	21%



## Pelvic Inflammatory Disease Issues

- Newest etiologic agent: *Mycoplasma genitalium*
  - Pathogenesis unclear
  - No recommendation for Mg testing
- If no evidence of cervicitis and no WBCs on wet mount the diagnosis of PID is unlikely
- Modify minimal criteria for presumptive treatment:
  - CMT **OR** uterine tenderness **OR** adnexal tenderness
- Clarify use of metronidazole\*:
  - Treatment to cover anaerobes should be considered
  - If BV is present or cannot be ruled out, add metronidazole\*
- Azithromycin treatment mentioned “outside the box”

\* Discussed at the 2006 Guidelines Meeting



## Discussed PID: Oral Treatment Regimens \*

### Recommended Regimens \*:

- Ofloxacin 400 mg PO BID x 14 d
- Levofloxacin 500 mg PO QD x 14 d
- Ceftriaxone 250 mg IM (or other parenteral 3rd generation cephalosporin) x 1
- plus**
- Doxycycline 100 mg PO BID x 14 d
- Cefoxitin 2 g IM *and* probenecid 1 g PO x 1
- plus**
- Doxycycline 100 mg PO BID x 14 d

\* Plus metronidazole if BV or BV cannot be ruled out

\* Discussed at the 2006 Guidelines Meeting



## With or Without Metronidazole???

- BV associated with PID and other upper tract abnormalities
- Assess for BV
  - Wet mount or POC; use metronidazole if BV present
  - If no lab confirmation available, use metronidazole



## PID: Oral Treatment Regimens

### Oral regimen A:

- Ofloxacin\* 400 mg PO BID\*\* x 14 d *or*
- Levofloxacin\* 500 mg PO QD x 14 d
- plus (with or without)**
- Metronidazole 500 mg PO BID x 14 d

\*Contraindicated pregnant or nursing women and in CA, if GC documented and fluoroquinolone is used need TOC culture

\*\* typographical error in guidelines- not once daily

**PID: Oral Treatment Regimens Continued**

Oral regimen B:

- Ceftriaxone 250 mg IM (or other parenteral 3rd generation cephalosporin) x 1 *or*
- Cefoxitin 2 g IM *and* probenecid 1 g PO x 1 *plus*
- Doxycycline\* 100 mg PO BID x 14 d *with or without*
- Metronidazole 500 mg PO BID x 14 d

\*Contraindicated pregnant or nursing women

**PID Oral Treatment Challenges**

- Fluoroquinolones
  - Always use NAAT for GC
  - If GC is confirmed:
    - Retest with culture and get sensitivity
    - Change to non-FQ regimen
- Azithromycin not recommended
  - monotherapy versus combo therapy

**Diagnosis of Cervicitis**

Symptoms: nonspecific and insensitive


- vaginal discharge
- intermenstrual/postcoital bleeding

• Signs: specific, but insensitive

- easily induced endocervical bleeding
- mucopurulent discharge: swab test
- other previously used signs non specific and of limited usefulness
  - Erythema/edema or elevated # of WBCs on endocervical Gram stain

• Diagnostic tests

- CT and GC NAAT
- Evaluate for BV and trichomoniasis
- Quantify WBC in vaginal fluid
  - >5-10 WBC/HPF in vaginal fluid strongly associated with cervical CT/GC



**Empiric Therapy of Cervicitis**

- Age- and risk-based empiric therapy:
  - Age > 25, treat for Ct based on risk factors and likelihood of follow-up, otherwise await Ct/GC test result
  - Age < 25, treat for Ct and (usually) GC
  - GC treatment should be based on risk, likelihood of follow-up, local (patient group/clinic/neighborhood) prevalence > 5%
- For lower-risk women can try 1 course of antibiotics
  - Choice of antibiotic unclear
  - Azithromycin 1 gm po has been used
- Treat for BV and trichomoniasis, if present
- If treatment is deferred, use NAAT results to direct future treatment for CT/GC

**Chronic or Persistent Cervicitis**

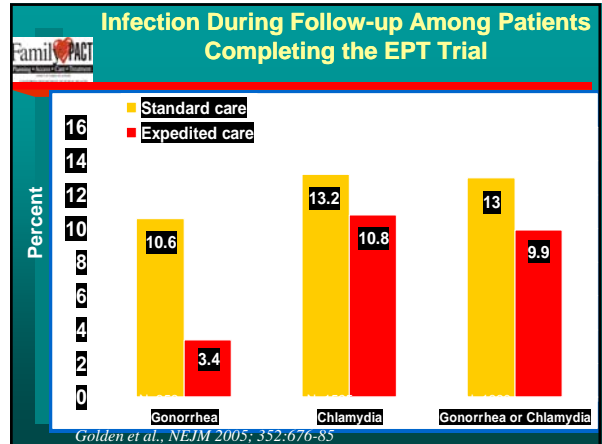
- Prevalence, incidence, etiology, natural history and clinical significance are unknown
- Re-evaluate for all potentially associated organisms at least once
- The patient should be treated with azithromycin at least once
- Be sure partner was treated
- Ablative treatment (laser or cryotherapy) is often used, and is anecdotally successful; no data in literature
- No data on prolonged antibiotic use (2+ weeks) but some experts provide it

**In your clinic setting, what is the most common method you use to treat partners?**

1. Encourage the patient to bring their partner(s) in with them when they return for treatment
2. Give the patient extra medication to give to their partner(s)
3. Give the patient a prescription for their partner(s)
4. Counsel the patient about the need to self refer their partner(s) for treatment
5. Call the Health Department for assistance with partner services
6. Other method

## Partner Treatment Options

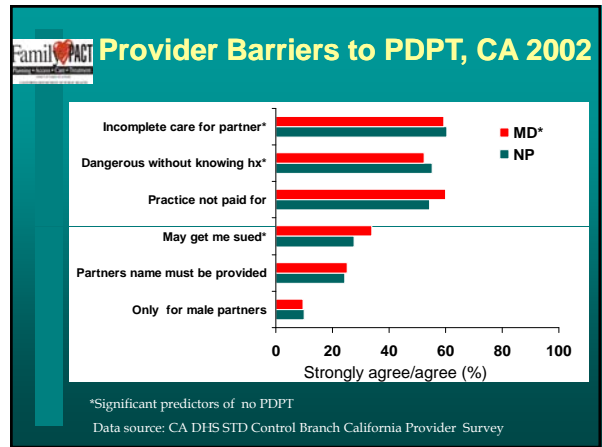
- Patient referral
- Provider or clinic referral
- Health department referral
- Expedited Partner Treatment (EPT)
  - Patient-delivered partner therapy (PDPT)
  - Health department-delivered therapy
  - Pharmacy-delivered therapy



## Chlamydia and Gonorrhea Expedited Partner Treatment

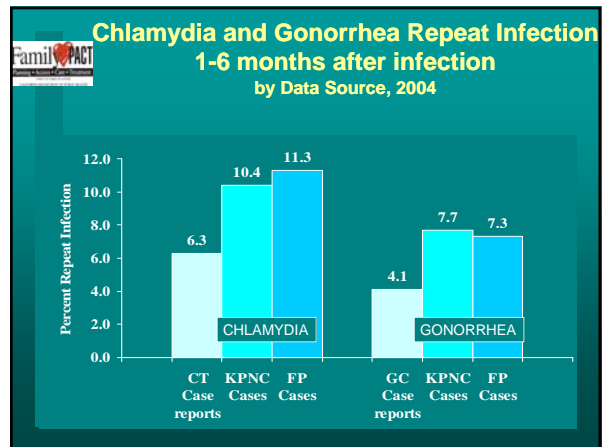
Expedited Partner Treatment (EPT) or Patient Delivered Partner Treatment (PDPT)

- Option for partner management for heterosexual men and women
  - Written materials should accompany medication and specially mention concern about PID in female partners
- **First line management is clinical evaluation**
- Not recommended in MSM because of concern regarding co-morbidities (e.g., HIV and other STDs)
- CDC has developed separate guidance on EPT/PDPT



## Partner Services in 8 Family Planning Clinics, California, 2005-2006

Partner Service	Percent of clients offered the service (n)	Partner treated by patient report
Traditional Patient referral	54 (521)	44
Patient brings partner to clinic	14 (131)	81
PDPT	20 (193)	79
Provider or clinic referral	.1 (1)	NA
HD DIS referral	0	NA



**Recommendations for Chlamydia and Gonorrhea Re-Testing after Treatment**


- Prefer “re-testing” to “re-screening”
- High rates of re-infection after treatment and for GC may confer an elevated risk of PID
- Consider re-testing of females; some experts suggest re-testing of males for CT and consider re-testing of males for GC
- Time frame: 3 months after treatment and for GC whenever seek care within 12 months if did not return at 3 months
- No test of cure except in pregnant women with CT and for GC if treated initially with a fluoroquinolone and symptoms persist or recur after treatment

**California CT and GC Recommendations**

- Screen females age 24 and under annually for CT and GC
- Screen females age 25 and older for CT and GC “if increased risk by specific factors”
- Use NAATs for screening
- PDPT (EPT) for males and females
- Re-test both males and females 3 months after treatment

**HPV DNA Test**

RNA probe cocktails to the most common cancer-associated HPV types:



16, 18,  
31, 33, 35, 39, 45,  
51, 52, 56, 58, 59, & 68

*Digene Hybrid Capture II*

**Genital HPV Infection in the U.S.**

- 20 million people currently infected
- 6.2 million new infections annually
- Up to 80% of sexually active people acquire HPV at some point in their lives

W. Cates, STD 1999; Weinstock, Persp Sexual Repro Health 2004

**Clinical Indications for HPV DNA Testing**

**FDA-cleared for:**


- Triage of ASCUS
- Adjunct screening in women age 30 and over

**Supported by research:**

- 12-month f/u of LSIL in adolescents
- Follow-up management of:
  - ♦ No CIN on colpo
  - ♦ Biopsy-proven CIN I
  - ♦ Post treatment CIN II & III

**NO ROLE for HPV DNA Testing**

- ✗ Screening in women under 30
- ✗ Diagnosis of genital warts
- ✗ Testing in males
- ✗ Triage of ASC-H, LSIL or higher grade lesions
- ✗ Evaluation of sexually active female prior to vaccination
- ✗ Patients diagnosed with non-HPV STD
- ✗ Partners of patients with warts or non-HPV STD





## STD Resources

California STD/HIV Prevention Training Center

[www.stdhivtraining.org](http://www.stdhivtraining.org)

California STD Control Branch

[www.std.ca.gov](http://www.std.ca.gov)

CDC STD Program

[www.cdc.gov/std](http://www.cdc.gov/std)



## Q & A



## Processing Forms

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