COMMON URINE and REPRODUCTIVE TRACT INFECTIONS in PREGNANCY

A Systems Approach to Optimize Screening, Treatment, and Follow-up

May 2011
ACKNOWLEDGEMENTS

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OVERVIEW

The aims of this toolkit are to

- Increase awareness and knowledge about urine and reproductive tract infections as preventable sources of pregnancy complications and adverse outcomes;
- Enhance the ability of clinical providers and their staff to identify and care for women with common urinary and reproductive tract infections; and
- Support recommended screening, treatment and follow-up for genitourinary infections by increasing the knowledge and skills to design efficient and effective office systems.

The toolkit represents the synthesis of a range of information and materials, including: academic literature explaining the link between infection and pregnancy complications; clinical recommendations for screening, treatment and follow-up; examples and resources intended for use by healthcare providers and their staff; continuing educational materials that target clients; and recommendations for ensuring efficient office processes are in place to support optimal prenatal care.

Objectives

Review of this toolkit will enhance knowledge, skills, and clinical systems.

**KNOWLEDGE**
- List the ways that urine and reproductive tract infections can impact the course of pregnancy and infant health.
- Identify sources for current screening and treatment guidelines.
- List infections that have mandated reporting requirements.
- Describe the systems that need to be in place within your agency to effectively provide care for women with urine and reproductive tract infections.

**SKILLS**
- Describe recommended tests for diagnosis of common reproductive tract infections.
- Describe key components of a sexual history.
- Ask questions in a culturally sensitive way.
- Apply the “teach back” method to gauge clients' understanding of health information.

**SYSTEM DESIGN**
- Describe process for treatment and follow-up for common reproductive tract infections.
- Describe process for mandated reporting.
- Arrange recommended follow-up for women with common reproductive tract infections.
- Assess current office systems, identify areas needing improvement and design improvement plans.
- Establish effective and efficient systems to support optimal care for women during pregnancy.
- Establish mechanisms for routine monitoring of clinical practice, focused on improvement and maintenance of practice performance goals.
KEY RECOMMENDATIONS

These recommendations for screening pregnant women for infection during pregnancy are based upon a thorough review of current literature, and incorporate the highest care quality standards and procedures:

- Include assessment and screening for immunizations, and common infections in preconception counseling visits.
- Screen as early as possible during pregnancy (i.e., first prenatal visit), using recommended procedures and tests.
- Use a full urine culture to screen for possible infection in ALL pregnant women.
- Use nucleic acid amplification technology (NAAT) tests to screen for gonorrhea and chlamydia.
- Ensure labeling of ALL pregnant women’s samples as PRENATAL. This ensures that laboratories use the correct procedures, and that results can be accurately evaluated by doctors and clinical staff.
- Establish clinic office system to review laboratory results and provide treatment within two weeks in the event of positive test results.
- Treat based on test results and established antibiotic safety during pregnancy.
- Perform tests of cure as recommended for all treatments.
- Facilitate partner treatment(s) as recommended for specific infections.
- Re-screen at 28 weeks, or sooner, as recommended, to detect recurrent/re-infections.
- Monitor your practice to ensure that evidence based guidelines are being used.

The recommended tests and timing for preconception and prenatal infection screening are shown in Table 1.
### Table 1 Pre-conception and Gestational Age-Specific Perinatal Infection Screening Recommendations

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<td>2. Repeat HIV screening before 36 weeks if at risk for infection</td>
</tr>
</tbody>
</table>

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**Notes:**
- Recommended by LA Best Babies Network
CHECKLIST OF COMMON ERRORS

POTENTIAL GAPS IN CARE

Gaps in care can occur in the clinic setting, both during the process of screening for infections, and during treatment for detected infections. Gaps may also occur during handling and processing of the samples by the laboratory.

The following are areas for potential “Gaps in Care” that can be corrected using office systems quality improvement techniques to put recommended protocols and practices in place.

- Use of “dipstick” as a replacement for initial prenatal urine culture
- Not labeling specimens “PRENATAL”
- Allowing treatment delays
- Not completing “Tests of Cure” (at 1 month)
- No partner(s) treatment for sexually transmitted infections
- Not screening “at risk” patients for infection/re-infection in early third trimester
- Prenatal records and/or lab results not available on labor and delivery at time of admission

7 EASY STEPS TO CHECK YOUR RESULTS FOR THESE COMMON ERRORS

A) Pull 10 prenatal charts for patients at approximately 36 weeks gestation.

B) Use the data collection form on page 146:
   1. Count and record the number of charts that have urine culture results recorded.
   2. Count and record the number of charts with recommended reproductive tract infection tests recorded.
   3. Count the number of days between receiving positive results and the patient receiving treatment. Count the number of charts where the patient was treated within two weeks.
   4. Count and record the number of charts that have a “test of cure” date and results recorded.
   5. Count and record the number of charts that have documentation of partner treatment or referral for treatment.
   6. Count and record the number of at-risk clients who have documentation of re-screening for recommended infections in the early third trimester.

C) Review 5 in-patient charts; count and record the number that have prenatal records with laboratory information.
BACKGROUND

Genitourinary tract infections are responsible for a sizable portion of potentially preventable preterm births and other complications in pregnancy. Adverse outcomes related to these infections include: preterm births, preterm premature rupture of the membranes, amniotic fluid infection, postpartum intrauterine infections (endometritis), pyelonephritis, sepsis and maternal death. In addition to preterm birth and amniotic fluid infections, infants are at risk for congenital infection, conjunctivitis, pneumonia, neonatal sepsis, mental retardation, cerebral palsy, and fetal and infant death. Research suggests that infection and inflammation are directly related to at least 40% of preterm birth.1,2 Before 30 weeks gestation, there is evidence that between 60 and 80% of births are related to bacterial infection.3,4

Easily identifiable reproductive tract infections (RTIs) including gonorrhea, chlamydia, bacterial vaginosis, urinary tract infections, and asymptomatic bacteriuria (UTI/ASB) are major preventable causes of potential poor birth outcomes and their sequelae. Literature and guidelines from both the American College of Obstetrics and Gynecology and the Centers for Disease Control and Prevention support the rationale for improving pregnancy outcomes by screening and treating infection during pregnancy. Results from research trials suggest that one preterm birth can be prevented for every 21 women who receive treatment for asymptomatic bacteriuria, every 10 women who receive treatment for chlamydia or bacterial vaginosis, and for every 3 women treated for gonorrhea.5,6,7,8 Yet, gaps exist between recommendations and actual practice. These gaps result when women at risk are not screened at recommended intervals during pregnancy, when the screening tests employed lack optimal sensitivity and specificity for the condition, when treatment for positive results is delayed, and when recommendations for partner treatment and tests of cure are not followed.

The impact of potentially preventable infection related adverse pregnancy outcomes are shown in Table 2.

Table 2 Estimated impact of various infections on adverse pregnancy outcomes^ through their effect on preterm birth.9 (Assuming 4,000,000 births per year)

<table>
<thead>
<tr>
<th>Maternal infection/organism</th>
<th>Approx. maternal prevalence</th>
<th>Mothers infected (no.)</th>
<th>Estimated increase in PTB^</th>
<th>Estimated excess PTB^</th>
<th>Adverse outcomes linked to PTB^</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Perinatal death (no.)</td>
</tr>
<tr>
<td>Bacterial vaginosis</td>
<td>20.0%</td>
<td>800,000</td>
<td>2X</td>
<td>80,000</td>
<td>4000</td>
</tr>
<tr>
<td>Chlamydia</td>
<td>5.0%</td>
<td>200,000</td>
<td>2X</td>
<td>20,000</td>
<td>1000</td>
</tr>
<tr>
<td>Gonorrhea</td>
<td>1.0%</td>
<td>40,000</td>
<td>3X</td>
<td>8,000</td>
<td>400</td>
</tr>
<tr>
<td>Syphilis</td>
<td>0.12%</td>
<td>4,800</td>
<td>2X</td>
<td>480</td>
<td>24</td>
</tr>
<tr>
<td>Trichomonas</td>
<td>2.0%</td>
<td>80,000</td>
<td>1.3X</td>
<td>2,400</td>
<td>120</td>
</tr>
</tbody>
</table>

^ Based on best available data in untreated women
^ Assuming a baseline preterm rate of 10%
^ Assuming 5% deaths and 5% neurologic sequelae
URINARY TRACT INFECTIONS

Urinary tract infections occur as a result of bacteria commonly found in the rectum colonizing the opening to the vagina (introitus) and urethra, and ascending to the bladder. Urinary tract infections may involve the urethra and bladder alone (lower urinary tract), the kidneys and ureters (upper urinary tract), or both. Urinary tract infections may or may not cause symptoms. During pregnancy approximately 1% of women experience symptomatic urinary infections (acute cystitis), while asymptomatic bacteriuria, sometimes called ASB, occurs among 2-7% of pregnant women.

Complications in Pregnancy

Up to 40% of pregnant women with asymptomatic bacteriuria develop kidney infection or pyelonephritis. Some of the physiologic changes which occur in pregnancy are thought to increase the risk of developing pyelonephritis when ASB is present. These pregnancy-related changes include changes in the immune response to causative bacteria, smooth muscle relaxation and resulting dilation of the ureters, and pressure on the bladder from the growing fetus. Most cases of pyelonephritis occur in the second and third trimesters. Complications such as maternal sepsis, acute respiratory distress syndrome, and renal dysfunction occur among 20% of women who develop pyelonephritis. In pregnant women with pyelonephritis, preterm birth occurs among 20 to 50% of women. Cerebral palsy is linked to both preterm birth and UTI/ASB.

Prevention of Complications

Treatment for ASB reduces the occurrence of pyelonephritis by over 75%. According to a Cochrane review, treatment for ASB can reduce the occurrence of low birthweight by nearly 40%. In other words, treating 21 women for ASB can prevent one low birthweight birth.
Screening for Asymptomatic Bacteriuria

The U.S. Preventive Services Taskforce and the American Academy of Family Physicians currently recommend screening ALL pregnant women with a urine culture early in pregnancy. The most recent edition of Infectious Diseases in Obstetrics and Gynecology (2009) also recommends screening ALL pregnant women for ASB with a urine culture.

Previous guidelines from the American College of Obstetricians and Gynecologists (ACOG) recommend screening all pregnant women early in pregnancy, using either a culture, or a urine leukocyte and esterase test followed by a urine culture if the urine dip is positive. However, there are problems with the urine dip as a test for ASB. Multiple studies show low sensitivity (ability to detect the infection when present) and negative predictive values (confidence that the infection is not present when the test is negative) for current urine dip screening tests. In spite of this evidence, and the proven efficacy of urine cultures, many providers continue to use the sub-optimal dip test to detect ASB in pregnancy, due to cost concerns. The example in Table 3 shows the number of infections missed by using a test of low sensitivity and the potential impact on pregnancy outcome.

Given the complications associated with ASB and the frequency with which it occurs in pregnancy, it is critical to use the most sensitive test available so that pregnant women with ASB can be identified early in pregnancy, and receive recommended antimicrobial treatment and test of cure follow-up.

Diagnosis

The clinical diagnosis of asymptomatic bacteriuria is made when a single positive clean-catch urine culture shows pathogen levels of $10^5$ colony-forming units (≥10 CFUs) per milliliter, or greater.

The urine culture should be clearly marked as a prenatal specimen. This should prompt the lab to report detection of group B streptococcus (GBS) in ANY amount. Finding GBS in the urine indicates that the patient is colonized vaginally with high levels of GBS. The mother should be considered GBS positive and the chart should be flagged for group B streptococcus prophylaxis in labor.

A 2003 CDC survey of laboratory practices, including 26 laboratories in California, found that 17% of laboratories reported GBS only if the colony count was $\geq10^5$ cfu/mL, and only a third of laboratories included information about pregnancy status on requisition forms. Important opportunities to prevent invasive neonatal GBS disease/damage continue to be missed as a result of these practices. It is critical for clinical practices to ensure and recheck reliable mechanisms for communicating recommended guidelines to their laboratories.

Urine culture is the gold standard for screening for asymptomatic bacteriuria during pregnancy...No currently available tests have a high enough sensitivity and negative predictive value in pregnant women to replace urine culture as the preferred screening test.

In all pregnant women a urine culture should be performed for asymptomatic bacteriuria independent of symptoms, because of the 2-7% prevalence, combined with the significant sequelae of asymptomatic bacteriuria in pregnancy...Dipsticks are not adequate for UTI diagnosis in pregnancy. Cultures are recommended and should be used to guide therapy.

Infectious Diseases in Obstetrics and Gynecology. A Systematic Approach to Management, ACOG, 2009

U.S. Preventive Services Taskforce, 2008
Table 3 Number of Women with Asymptomatic Bacteriuria Missed by Using the Leukocyte Esterase & Nitrite Dipstick Tests Followed by Culture

<table>
<thead>
<tr>
<th>Positive Leukocyte and Esterase Test (81% Sensitivity; 97% Specificity)(^i)</th>
<th>Positive Urine Culture (ASB) 5% Prevalence</th>
<th>Negative Urine Culture</th>
<th>Total Number of Prenatal Clients per Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive Leukocyte and Esterase Test (81% Sensitivity; 97% Specificity)(^i)</td>
<td>202</td>
<td>142</td>
<td></td>
</tr>
<tr>
<td>Negative Leukocyte/Esterase Test</td>
<td>48</td>
<td>4608</td>
<td></td>
</tr>
<tr>
<td></td>
<td>250</td>
<td>4750</td>
<td>5,000</td>
</tr>
</tbody>
</table>

The reported sensitivity of the urine dipstick for leukocyte esterase and nitrites for detecting asymptomatic bacteriuria ranges from 53 to 92%.\(^i\) The example above uses a mid-range sensitivity of 81% to illustrate the potential errors resulting from using a screening test with low sensitivity.

The shaded cells show women who were incorrectly classified using the dipstick test.

- 142 women were incorrectly designated as positive (false positives); and
- 48 women were incorrectly designated as negative (false negatives).

The false negative tests for ASB are especially concerning, given the strong association between ASB, pyelonephritis and preterm birth. Smaill estimated the number of women that would have to be treated in order to prevent one preterm birth, and found that one preterm birth could be prevented for every 21 women treated for ASB.\(^i\) Thus, in this example, **two preterm births might have been prevented if all women received recommended urine culture screening and treatment** instead of the leukocyte esterase/nitrites test. The false positive tests would be corrected by completing a urine culture for all women with a positive dipstick test. Without follow-up culture for positive urine dip-sticks, 142 women would receive unnecessary treatment.


\(^vi\) Smaill F. Antibiotics for asymptomatic bacteriuria in pregnancy. Cochrane Database of Systematic Reviews. 2001
GUIDELINES FOR ASYMPTOMATIC BACTERIURIA IN PREGNANCY

Treatment

Treatment of ASB is empirical since in vitro susceptibility testing is generally not recommended for the initial positive culture. However, the duration of treatment remains somewhat controversial since a Cochrane review concluded that there was insufficient evidence to recommend a specific antimicrobial therapy regimen for pregnant women out of the single-dose, 3-day, 4-day, and 7-day treatment regimens. Many experts prefer the 7-day approach. Since Escherichia coli is the most common pathogen, the selection of the antimicrobial agent is dictated by the local antibiogram of that microorganism. The most commonly used antibiotics for ASB include nitrofurantoin, short-acting sulfonamides, and trimethoprim-sulfamethoxazole. The empiric selection of ampicillin or amoxicillin should be questioned because of the high resistance rates of E. coli to ampicillin in the United States (>30%). Fluoroquinolones are to be avoided in pregnancy and should only be used for resistant microorganisms; in such cases, short 3-day courses of ciprofloxacin 250 mg twice daily or levofloxacin 250 mg daily may be used. Sulfonamide medications should be avoided close to delivery as they may cause kernicterus at lower bilirubin levels.

It is important to treat for GBS in the urine even if the pathogen levels are less than 10^5. A prospective, randomized, double-blind study demonstrated a significant decrease in the rate of preterm labor (5.4% vs. 38%) when patients with low-level asymptomatic GBS bacteriuria were treated with penicillin antepartum versus placebo at 27-31 weeks.

Recurrent ASB during pregnancy requires suppressive therapy with nitrofurantoin 100 mg, at bedtime, for the duration of pregnancy, as well as monthly urine cultures with sensitivities. Recurrent ASB, particularly with the same microorganism that is sensitive to the antibiotic used, may warrant an evaluation for possible renal calculi.

Table 4 outlines the key principles for best practices in screening, treating, and providing follow-up for asymptomatic bacteriuria in pregnancy.
### Table 4 Key Principles of Best Practices for Screening, Treatment and Follow-up for Asymptomatic Bacteriuria in Pregnancy

<table>
<thead>
<tr>
<th>Screening</th>
<th>Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Urine</strong></td>
<td><strong>Treat based on culture results and antibiotic safety in pregnancy</strong>&lt;sup&gt;20&lt;/sup&gt;</td>
</tr>
<tr>
<td>• Culture all pregnant women for urinary tract infection/asymptomatic bacteriuria (UTI/ASB) at the 1&lt;sup&gt;st&lt;/sup&gt; PNV.</td>
<td>• 3-day or 7-day treatment Nitrofurantoin 100 mg, 2 times daily; Sulfasoxazole 2 gm initially, then 1 gm, 4 times daily; Trimethoprim-sulfamethoxazole 160/800 mg 2 times daily; Ampicillin 250 mg, 4 times daily; Amoxicillin 500 mg, 3 times daily; Cephalexin 250-500 mg, 4 times daily; Any level of colony count for GBS in urine should be treated during pregnancy</td>
</tr>
<tr>
<td>➢ Label specimen as prenatal urine to assist lab processing and reporting of group B streptococcus results (GBS).&lt;sup&gt;19&lt;/sup&gt;</td>
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<tr>
<td>➢ Lab report should include reporting for GBS and other gram positive bacteria.</td>
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</tr>
<tr>
<td><strong>Follow-up</strong></td>
<td><strong>Treatment</strong></td>
</tr>
<tr>
<td>• Test of Cure (TOC) culture 1 month after treatment.</td>
<td>• Treat based on culture results and antibiotic safety in pregnancy</td>
</tr>
<tr>
<td>• Re-screen women with a past positive urine culture in the current pregnancy at 20 weeks.</td>
<td>• Recurrent ASB during pregnancy requires suppressive therapy with nitrofurantoin 100 mg, at bedtime, for the duration of pregnancy, as well as monthly urine cultures with sensitivities.</td>
</tr>
</tbody>
</table>
PATIENT EDUCATIONAL MATERIALS

In this section you will find examples of patient education materials for urinary tract infections and asymptomatic bacteriuria.

Please see the links below for the most up-to-date patient education materials.

**American Congress of Obstetricians and Gynecologists:**
- **Urinary Tract Infection Fact Sheet**

**American Academy of Family Physicians:**
- **Urinary Tract Infection Fact Sheet**

**Medline Plus- US National Library of Medicine, National Institutes of Health**
- **Urinary Tract Infection**
- **Asymptomatic Bacteriuria**
Patient Instructions for Collection of a Mid-Stream Clean Catch Urine Specimen

- Wash your hands thoroughly with soap and water.
- Tear open 3 sterile cleansing towelettes, and put them on the table so that you can reach them with one hand.
- Open the lid of the urine container carefully; avoid touching the inside of the container.
- Stand astride the toilet and use the fingers of one hand to separate and hold open the folds of skin (labia) around your vagina.
- Using the first towelette, starting in the front, wipe the urinary opening and labia moving from front to back.
- Discard the towelette.
- Keep holding the labia open so that they do not touch and repeat this cleansing with each towelette.
- Keep holding your labia open and begin urinating into the toilet bowl. After the urine has flowed for a few seconds into the toilet, put the sterile urine cup into the flow of urine to catch the urine flow in the cup. When the cup is approximately one-half full, remove the cup and finish urinating into the toilet.
- Place the lid on the container and screw it on tightly.
- Wipe the outside of the container with a paper towel.
- Wash your hands thoroughly with soap and water.
- Check the specimen label to assure that it contains your correct identification information.
SHARE WITH WOMEN

URINARY TRACT INFECTIONS

Urinary tract infections (UTIs), often called bladder infections, are a common problem for women. The information in this handout will help you learn what causes UTIs and list some good practices that can help prevent them.

What Causes UTIs?

Most UTIs are caused by bacteria (germs) that are normally present in your intestines or on your skin around your anus and vagina where they do not cause harm. About 8 of every 10 UTIs are caused by the bacteria E. coli. The bacteria can get into your urethra when you wipe yourself after urinating or when you have sex. They travel up the urethra to the bladder, where they attach to the walls and grow. After 24 to 48 hours, you start to get the symptoms of a UTI.

What Are the Symptoms of a UTI?
The symptoms of a UTI include the following:

- Burning or pain when you urinate
- A feeling of pressure in your bladder
- A feeling like you have to urinate, but when you try, there is little or no urine
- Cloudy urine
- Bad smelling urine

Is a UTI a Sexually Transmitted Disease (STD)?

UTIs are not STDs because you do not get the bacteria from your partner. However, having sex is one of the most common ways the bacteria are moved from the skin around your anus and vagina forward to the urethra. Having sex can also cause a little bruising of your urethra, which may make you feel like you have a UTI. Bruising in the urethra can make it easier for bacteria to travel up the urethra into the bladder.

Why Am I More Likely to Get a UTI If I Am Pregnant?

- Pregnancy makes the urethra and bladder more relaxed (open) and easier for bacteria to enter.
- Pregnancy makes your immune system act slower.
- During pregnancy, women often have a small amount of urine in the bladder even after urinating, which can help bacteria grow.

What Is Asymptomatic Bacteriuria?

Health care providers often test a urine sample early in pregnancy to see if you have bacteria in your bladder. “Asymptomatic bacteriuria” is the name used when you have bacteria in the bladder but no pain or problems urinating. About 1 of every 4 women with asymptomatic bacteriuria in pregnancy will go on to have a painful UTI. A few will get kidney infections—a serious infection during pregnancy. Asymptomatic bacteriuria increases your risk of having preterm labor. If you have asymptomatic bacteriuria during pregnancy, your health care provider will give you a prescription for an antibiotic. Fortunately, there are several antibiotics for UTIs that are safe to take during pregnancy.
Preventing a UTI

• Drink lots of water every day (6–8 glasses per day). This helps flush out your bladder.
• Urinate several times each day (every 2 hours). Don’t hold urine in when you feel the urge to urinate; go right away. When you urinate often, the bacteria don’t have time to “stick” to the wall of your bladder and begin growing.
• Urinate soon (within 30 minutes) after having sex. This helps flush out any bacteria that may have been moved up to your urethra. It may also help to use a water-based vaginal lubricant when you have sex. This can help to avoid bruising of your urethra.
• Wipe from FRONT to BACK after urinating or having bowel movements. This will help keep bacteria away from your urethra (See Picture).
• Eat well, get enough sleep, and exercise regularly. A healthy body will have a stronger immune system. This will help you avoid all kinds of infections, including UTIs.
• Drink cranberry juice. Drink 1 glass of cranberry juice, or take a cranberry tablet (available in most stores) every 8 hours. Cranberry juice helps by making it hard for bacteria to stick to the lining of your bladder. Cranberry juice may help prevent UTIs, but it is not helpful once you have a UTI.
• Antibiotics: If your health care provider gave you a prescription for antibiotics to treat a UTI, be sure to take ALL of the medicine! If you skip pills or only take some of the medicine, you may get another UTI that is more serious than the first one.

FOR MORE INFORMATION

National Women’s Health Information Center
http://www.4woman.gov/faq/Easyread/uti-etr.htm#6

National Institute of Health, “Urinary Tract Infections in Adults”

American Pregnancy Association web site
http://www.americanpregnancy.org/pregnancycomplications/utiduringpreg.html

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GROUP B STREPTOCOCCUS

The bacteria *Streptococcus agalactiae* or group B streptococcus (GBS) colonizes the vagina or rectum without causing symptoms in 10 to 30% of pregnant women.\(^{22,23}\) Colonization rates in women vary by geographic location, age, the number of prior pregnancies, and ethnicity. Young women and African American women are more often colonized than women of other ethnic groups.

The gastrointestinal tract is the natural reservoir for GBS and serves as the source of colonization of the perineum, vagina, cervix, urethra and urine. Colonization can be transient, chronic, or intermittent, and is not altered by pregnancy.\(^{22,23}\) Transmission from mother to infant during pregnancy, labor or birth (called vertical transmission) can result in serious illness, long-term health problems, and/or death of the infant. Nearly two-thirds of infants born to colonized mothers are colonized with GBS on their skin and mucous membranes. Most colonized infants are asymptomatic. However, between 1 and 2% of infants from colonized mothers develop early onset neonatal infection (see below).\(^{23}\) Women with GBS detected from the cervix or urine are considered heavily colonized and their infants are at increased risk for developing serious GBS disease.

Guidelines for the prevention of perinatal GBS disease were established in 2002 by the Centers for Disease Control and Prevention, American College of Obstetrics and Gynecology and the American Academy of Pediatrics and updated in 2010.\(^{23}\) The 2010 guidelines continue to recommend:

- **Universal screening of pregnant women by rectovaginal culture at 35 to 37 weeks of pregnancy, and**
- **Use of prophylactic antibiotics during labor and birth for women with:**
  - Positive GBS cultures (including positive urine culture with any amount of GBS);
  - Risk factors for neonatal sepsis; and
  - An unknown GBS status.

**Infant Disease**

**Early Onset Disease:** onset of symptoms within 7 days following birth. Symptoms are noted in over 60% within the first 24 hours.\(^{23}\)

- Transmission is generally vertical, from mother to infant, during pregnancy, labor or birth.
- Symptoms: respiratory grunting, rapid breathing, apnea, cyanosis, hypotension, lethargy, poor feeding, low body temperature or fever, pallor, jaundice.

**Late Onset Disease:** Onset of symptoms between 7 and 89 days (average 36 days) after birth is considered late-onset disease.

- Transmission may be vertical, or from other environmental sources (family, hospital staff, other infants).
- Symptoms: fever, irritability, and/or lethargy, poor feeding, upper respiratory symptoms, middle ear infections, or other localized infections.

**Maternal Disease**

- Urinary tract infection
- Chorioamnionitis/Amnionitis/Amniotic Fluid Infection
- Preterm Premature Rupture of Members
- Preterm Birth
- Stillbirth
- Postpartum endometritis
- Wound infection
- Sepsis
- Meningitis
Since the adoption of the guidelines in 2002 the overall rates of neonatal sepsis have declined nationally. However, African American infants born to colonized mothers continue to suffer disproportionately high rates of neonatal sepsis. Rates of neonatal sepsis among African American infants declined initially in 2003, but by 2005, had returned to the pre-guideline rate. Health care improvement efforts to track adherence to recommended screening, treatment and prophylaxis guidelines should help reduce this disparity.

**Figure 2. Rate\textsuperscript{*} of early-onset\textsuperscript{1} invasive group B streptococcal disease, by race and year — Active Bacterial Core surveillance system, United States, 2000–2005\textsuperscript{5}\textsuperscript{,8}**

![Graph showing rate of early-onset invasive group B streptococcal disease by race and year.](image)

\textsuperscript{*} Per 1,000 live births. Occurring in infants aged 0–6 days.
\textsuperscript{1} Rates for 2000–2005 correspond to surveillance areas participating since 2000, with the addition of Colorado in 2001. New Mexico, where surveillance began in 2004, is not included in comparison of incidence over time.

**Complications of GBS in Pregnancy**

GBS can cause serious infections in both pregnant women and newborns. During pregnancy, GBS can rise from the cervix and infect the uterus and fetal tissues. GBS is associated with preterm premature rupture of membranes, preterm birth, amniotic fluid infection, stillbirth, postpartum endometritis, wound infection, maternal sepsis and meningitis. Among infants, GBS is a leading cause of neonatal sepsis, pneumonia and meningitis. Survival rates for GBS disease are high, and decline with gestational age. At term, 98% of infants survive; this decreases to 90% among infants born at 34 to 36-weeks, and 70% for infants born at less than 33 weeks gestation. Babies who survive face possible hearing or vision loss, learning disabilities, cerebral palsy, and other neurological sequelae.
GUIDELINES for Universal Prenatal Screening for Group B Streptococcus to Prevent Neonatal Infection

Screening for GBS by culture is recommended at 35 to 37 weeks gestation for ALL pregnant women.\[23\]

- If a woman has previously been identified as having GBS in her urine in this pregnancy, she should be considered GBS positive, and does not need to be rescreened at 35-37 weeks.
- If a woman has previously had an infant with GBS disease, she should be considered positive, and does not need to be rescreened at 35-37 weeks.
- Even if a woman plans to have a cesarean delivery, prenatal screening is recommended because labor or membrane rupture may occur before scheduled surgery.
- If more than 4 weeks passes before delivery, the vaginal/rectal screening should be repeated.\[23\]

Specimen Collection

Please see instructions on page 20 for the collection of a genital swab for the detection of GBS.

If the patient is **allergic to penicillin**, it is important to request that the lab do susceptibility testing for clindamycin and erythromycin, if the screen is positive for GBS. **Attach a special note to the specimen.**

Follow-up for GBS-positive Pregnant Women\[23\]

Medical records should be prominently labeled as GBS positive. If the woman is penicillin allergic, susceptibility testing for clindamycin and erythromycin should be prominently recorded as well.

Education: Women should be informed of their GBS status, and provided educational materials about GBS in pregnancy.

- Advise women to go to hospital as soon as labor begins, when fetal membranes rupture (with or without labor), or for signs and symptoms of infection
- Advise women to notify their pediatric healthcare provider of GBS status, either prenatally or immediately after birth.

**Process for GBS Culture**

**Collecting the sample:** insert a swab into the lower vagina (vaginal introitus), then place the same swab, or a separate swab, through the anal sphincter to swab the rectum. NOTE: Cervical culture and speculum are neither necessary nor recommended.

**Transplanting the sample:** Place the swab or swabs into one vial of a nonnutritive transport medium (Amies or Stuart’s without charcoal). NOTE: GBS will remain viable in transport media for up to 4 days at room temperature or refrigeration.

**Label sample** “Prenatal for GBS,” identify if the patient is allergic to penicillin, and indicate specific susceptibility testing for clindamycin and erythromycin on GBS isolates.

---

Universal prenatal screening for GBS, followed by intrapartum prophylaxis for colonized women or those with unknown status, prevents more cases of early-onset GBS disease than providing intrapartum prophylaxis to women at high risk for GBS disease.

—Schrag SJ et al. NEJM 2002\[24\]
Further Recommendations

**Antepartum Treatment** for GBS Asymptomatic Bacteriuria (any colony count level) IS recommended.

**Antepartum Treatment** for Colonization is NOT recommended. Antepartum antibiotics for maternal colonization with GBS is NOT recommended, NOT shown to reduce early-onset GBS disease, and may cause adverse consequences.

**Antenatal Obstetrical Practices**: Since the practice of “stripping membranes” has little benefit in starting labor, and has been shown to introduce bacteria into the lower uterine segment, LA Best Babies Network recommends against “stripping membranes” in GBS colonized women, because of the potential for introducing bacteria into the lower uterine segment, and because it is not effective for starting labor. The CDC’s position is that there is insufficient evidence of harm to recommend against this practice.

**Intrapartum Antibiotic Prophylaxis Protocols**: CDC and ACOG guidelines for intrapartum antibiotic prophylaxis should be followed.

Figure 3 presents an algorithm for management of GBS in pregnancy.
Antenatal Algorithm to Prevent Group B Streptococcal Early Onset Neonatal Disease

ALL Pregnant women at onset of care

Positive GBS

Urine Culture

Negative GBS

Prior Infant with GBS Disease

Yes

No

ALL Other Pregnant Women

<37 wks

≥37 wks

Labor / ROM
unknown GBS
Status

Labor / ROM
unknown GBS
Status

Pos Vaginal/
Rectal GBS

35-37 weeks
GBS Vaginal/
Rectal Culture

Negative GBS

Test of Cure

Urine Culture 4
wks after

treatment

Treatment for GBS Bacteriuria (any colony count amount)
• Ampicillin 250 mg, 4 times daily x 7 days OR
• Amoxicillin 500 mg, 3 times daily x 7 days
If PCN Allergic- treat based on susceptibilities to
erythromycin or clindamycin
Education- GBS in pregnancy; Treatment; Labor
precautions; Intrapartum antibiotics

Label Medical Record
• Provide Patient Education about GBS in
pregnancy, labor / membrane rupture
precautions, Intrapartum antibiotics
• Instruct mother to notify pediatric provider

* NOTE: For General Management of urine culture results see
Asymptomatic Bacteriuria section

≥37 wks

≥37 wks

Centers for Disease Control and Prevention. Prevention of Perinatal Group B Streptococcal Disease
MMWR 2010; 59(RR-10).
Instructions for the collection of a genital swab for the detection of a group B streptococcus (GBS)

1. Remove swab from packaging. Insert swab 2cm into vagina, (front passage). Do not touch cotton end with fingers.

2. Insert the swab 1cm into anus. (back passage).

3. Remove cap from sterile tube.

4. Place swab into tube. Ensure cap fits firmly.

5. Make sure swab container is fully labelled with name, u.r. number, date and time of collection. Place swab container into transport bag and hand it to a staff member.

PATIENT EDUCATIONAL MATERIALS

In this section you will find examples of patient education materials for group B streptococcus in pregnancy.

Please also consult the links below for the most up-to-date patient education materials.

**American Congress of Obstetricians and Gynecologists:**
- Group B Streptococcus Infection Fact Sheet

**American Academy of Family Physicians**
- Group B Streptococcus Fact Sheet

**Centers for Disease Control and Prevention:**
- Protect Your Baby from Group B Strep!
- About Group B Strep
  - [http://www.cdc.gov/groupbstrep/about/index.html](http://www.cdc.gov/groupbstrep/about/index.html)
GROUP B STREP WHAT YOU NEED TO KNOW

1. What is group B strep?
Group B strep (streptococcus) is a type of bacteria that can cause serious illness and death in newborns. Until recent prevention efforts, hundreds of babies died from group B strep every year. This type of bacteria can also cause illness in adults, especially the elderly, but it is most common in newborns.

2. Why do I need to get tested for group B strep during each pregnancy?
Group B strep bacteria can be passed from a mom who is a carrier for the bacteria (tests positive) to her baby during labor. Since the bacteria can come and go in your body, you need to be tested for group B strep every time you are pregnant, whether you tested negative or positive during the last pregnancy.

3. What happens to babies born with the group B strep bacteria?
Group B strep is the most common cause of sepsis (blood infection) and meningitis (infection of the fluid and lining around the brain) in newborns. Most newborn disease happens within the first week of life, called "early onset" disease. In the year 2001, there were 1,700 early-onset cases in the U.S.

4. How can group B strep disease in babies be prevented?
Most early onset group B strep disease in newborns can be prevented by giving antibiotics (medicine) through the vein (IV) during labor to women who tested positive during their pregnancy. Because the bacteria can grow quickly, giving antibiotics before labor has started does not prevent the problem. Any woman who has a positive test for group B strep during this pregnancy should get antibiotics. Also, any pregnant woman who has had a baby in the past with group B strep disease, or who now has a bladder urinary tract infection caused by group B strep should get antibiotics during labor.

5. What if I’m allergic to some antibiotics?
Women who are allergic to some antibiotics, such as penicillin, can still get other types of antibiotics. If you think you are allergic to penicillin, talk with your doctor.

6. How does someone get group B strep?
Anyone can be a "carrier" for group B strep. The bacteria are found in the gastrointestinal tract (guts) and may move into the vagina and/or rectum. It is not a sexually transmitted disease (STD). About 1 in 4 women carry these bacteria. Most women would never have symptoms or know that they had these bacteria without a test during pregnancy.

7. If I know that I’m a group B strep carrier, why can’t I just take some antibiotics now?
For women who are group B strep carriers, antibiotics before labor are not a good way to get rid of group B strep. Because they naturally live in the gastrointestinal tract (guts), the bacteria often come back after antibiotic treatment. Antibiotics during labor are effective at protecting your baby because they greatly reduce the amount of bacteria the baby is exposed to during labor. Even if you had IV antibiotics for your last baby, you may not need them for this pregnancy if you are not a carrier now. That’s why it’s important to get tested during every pregnancy.

8. What do I need to do during pregnancy or labor if I’m group B strep positive?
Talk with your doctor and create a labor plan that includes getting antibiotics for group B strep prevention in your newborn. When your water breaks, or when you go into labor, make sure to get to the hospital at least four hours before delivery to make sure there is enough time for the antibiotics to work. When you get to the hospital, remind the staff that you are group B strep positive.

For more information, go to the Centers for Disease Control and Prevention (CDC) website at <www.cdc.gov/groupbstrep>, or ask your doctor.
Ask your doctor for a GBS test when you are 35 to 37 weeks pregnant (in your 9th month). The test is an easy swab of the vagina and rectum that should not hurt.

Finding the GBS bacteria does not mean that you are not clean, and it does not mean that you have a sexually transmitted disease. The bacteria are not spread from food, sex, water, or anything that you might have come into contact with. They can come and go naturally in the body.

The medicine to stop GBS from spreading to your baby is an antibiotic given during labor. The antibiotic (usually penicillin) is given to you through an IV (in the vein) during childbirth.

It does not work to take antibiotics for GBS before labor. The bacteria can grow back so fast that taking the medicine before you begin labor does not prevent the bacteria from spreading to your baby during childbirth.

My doctor explained that I should not take antibiotics now. To protect my baby, I have to wait until my labor starts.

I talked with my doctor and made a plan for labor. It helps put my mind at ease to be prepared.

Talk to your doctor or nurse if you have any questions. You can also get information from the CDC website: www.cdc.gov/groupbstdrep

Protect your baby from group B strep!
Protect your baby from group B strep!

If you are pregnant, you need to know about group B strep. This type of bacteria is very common to all types of women and can be passed on to your baby during childbirth. Your baby can get very sick and even die if you are not tested and treated.

Group B strep (sometimes called GBS) is a type of bacteria that is often found in the vagina and rectum of healthy women. In the United States, about 1 in 4 women carry this type of bacteria. Women of any race or ethnicity can carry these bacteria.

Being a carrier for these bacteria does not mean you have an infection. It only means that you have group B strep bacteria in your body, usually living in the rectum or vagina. You would not feel the bacteria or have symptoms like a yeast infection. These bacteria are usually not harmful to you — only to your baby during labor.

I found out that my girlfriend had to have IV antibiotics when she had her son. He's a healthy toddler now, which makes me feel better about all this GBS stuff.

The antibiotic is only given during labor — you do not need to worry about getting it for yourself before labor. Other people in the house, including kids, are not at risk of getting sick from GBS.

Your baby’s doctor will check on the baby once he or she is born. There is no need for the baby to get extra antibiotics or other medicine after he or she is born, unless the doctor tells you that they are needed.

If you are allergic to penicillin, there are still other choices to help treat you during labor. Talk with your doctor and nurses about it.

Each time you are pregnant, you need to be tested for GBS. It doesn’t matter if you did or did not have this type of bacteria before — each pregnancy is different.

If you think you might have a C-section or go into labor early (premature), talk with your doctor or nurse about your personal GBS plan.

I never heard of GBS before, but my doctor told me anyone could carry these bacteria.

What you can do before you go into labor:

- Ask your doctor for a GBS test when you are 35 to 36 weeks pregnant (9th month).
- If you are allergic to penicillin or other antibiotics, make sure to tell your doctor or nurse about any reactions you have had.
- If your test shows that you carry the bacteria, talk with your doctor about a plan for labor.
- Continue your regular check-ups, and always call your doctor or nurse if you have any problems.

When your water breaks or when you go into labor:

If you have not had your GBS test when labor starts, remind the staff that you do not know your GBS status.

If you are a GBS carrier:

- Go to the hospital. The antibiotics work best if you get them at least 4 hours before you deliver.
- Tell the labor and delivery staff at the hospital that you are a group B strep carrier.
- Speak up if you are allergic to penicillin.
- Expect to get IV antibiotics (medicine through the vein) during labor.
- It is fine to breastfeed after your baby is born.

Talk to your doctor or nurse if you have any questions. You can also get information from the CDC website: www.cdc.gov/groupbstrept
¿Estás embarazada?

Pídele a tu médico que te haga una prueba de GBS a las 35 - 37 semanas de embarazo (9° mes). La prueba es fácil y no duele. Consiste en tomar una muestra de la vagina y del recto con un hisopo.

La presencia de la bacteria estreptococo del grupo B (o GBS) no significa que no seas una persona limpia, ni tampoco que tengas una enfermedad de transmisión sexual. La bacteria GBS no se transmite a través de los alimentos, las relaciones sexuales, el agua ni de ninguna otra cosa con la que hayas estado en contacto, sino que puede entrar y salir del cuerpo de manera natural.

La medicina que evita la transmisión de la bacteria GBS al bebé es un antibiótico que se administra durante el trabajo de parto. El antibiótico (por lo general, penicilina) es administrado a la madre por vía intravenosa (IV, por sus siglas en inglés) antes de que nazca el bebé.

De nada sirve tomar el antibiótico contra esta bacteria antes de que comience el trabajo de parto. La misma se reproduce nuevamente con tanta velocidad que tomar la medicina antes de comenzar el trabajo de parto no evita que sea transmitida al bebé durante el parto.

Hablé con mi médico y preparamos un plan para el momento del parto. Estar preparada me hizo sentir más tranquila.

Hablé con tu médico o enfermera si tienes alguna pregunta. También puedes conseguir información en el sitio web de los CDC: www.cdc.gov/groupBstrep

Para más información

Protege a tu bebé contra la bacteria GBS

From: http://www.cdc.gov/groupBstrep/resources/print-materials.html
Protege a tu bebé contra la bacteria GBS

GBS es la forma abreviada de referirse en inglés a la bacteria estreptococo del grupo B (Group B Strep).

Si estás embarazada, es necesario que sepas de la existencia de esta bacteria y sus consecuencias que puede tener en tu bebé.

La bacteria GBS es muy común en todos los tipos de mujeres, y las madres pueden transmitirla a sus bebés en el momento de su nacimiento. El bebé puede ponerse muy mal y hasta morir si no se hacen las pruebas necesarias y no reciben tratamiento.

La bacteria GBS se encuentra en el vello y el recto de mujeres sanas. En los Estados Unidos, cerca de 1 de cada 4 mujeres es portadora de este tipo de bacteria. La bacteria puede vivir en cualquier tipo de mujer, sin importar su raza o grupo étnico.

Ser portadora de la bacteria GBS no significa que estés infectada. Solamente significa que la tienes en el cuerpo, usualmente en el recto o en el vello. Más aún, no sentirás su presencia ni tendrás síntomas como los de la infección por levadura (yeast infection, en inglés). Por lo general, esta bacteria no te causará ningún daño a ti, pero sí podría afectar a tu bebé durante el parto.

**Nunca había oído hablar de la GBS en el pasado, pero mi médico me dijo que es una bacteria que cualquiera puede tener.**

El antibiótico es administrado solamente durante el trabajo de parto, por lo que no tienes que preocuparte por recibir el medicamento antes del trabajo de parto. Las otras personas que viven contigo, entre ellas los niños, no corren ningún riesgo de enfermarse con la bacteria GBS.

El médico del bebé le hará un chequeo general una vez que haya nacido. **No es necesario administrar el bebé ningún otro antibiótico ni medicina después de que nazca**, a menos que el doctor indique que sí lo necesite.

Si eres alérgica a la penicilina, existen otras opciones de tratamiento que se te pueden aplicar durante el trabajo de parto. Habla con tu médico y enfermera sobre este tema.

**Es necesario que te hagan la prueba de GBS siempre que estés embarazada.** No importa si has tenido o no esta bacteria en el pasado porque cada embarazo es diferente.

Si crees que vas a tener tu bebé por cesárea o que se te adelante el parto (prematuramente), habla con tu médico o enfermera acerca de tu plan personal para controlar la bacteria GBS.

Te cuento que a una amiga tuvieron que ponerle antibióticos por la vena cuando nació su hijo. Y el niño está en lo sano. Eso me tranquiliza porque tengo muchas dudas acerca de esa fulana bacteria GBS.

**Qué hacer antes de que comience el trabajo de parto
- Pídele al médico que te haga la prueba de GBS a las 35 – 37 semanas de embarazo (9ª mes).
- Si eres alérgica a la penicilina u otros antibióticos, no dejes de informarle al médico o a la enfermera acerca de las reacciones que has tenido en el pasado.
- Si la prueba indica que eres portadora de la bacteria GBS, habla con tu doctor para que preparen un plan para el trabajo de parto.
- Sigue con tu control habitual y no dejes de llamar al médico o a la enfermera si tienes algún problema.**

**Cuando rompe tuero o cuando comienza el trabajo de parto.
- Si todavía no te han hecho la prueba de GBS para cuando comience el trabajo de parto, recórdale al personal médico que no sabes si tienes la bacteria GBS.
- Si eres portadora de la bacteria GBS,
  - Ve para el hospital. Los antibióticos son más eficaces si se toman por lo menos 4 horas antes del parto.
  - Informa al doctor o a la enfermera que te asiste en el hospital durante el trabajo de parto que eres portadora de la bacteria GBS.
  - Si eres alérgica a la penicilina, asegúrate de informar al médico.
  - No te sorprendas cuando te administren los antibióticos por vía intravenosa durante el trabajo de parto.
  - Puedes amamantar a tu bebé sin problema.**

**Para más información.**

Habla con tu médico o enfermera si tienes alguna pregunta. También puedes conseguir información en el sitio web de los CDC: http://www.cdc.gov/groupBstrep/resources/print-materials.html.
CHLAMYDIA

Chlamydia is the most commonly reported bacterial sexually transmitted infection. It occurs when the bacteria *Chlamydia trachomatis* infects the columnar epithelial cells that line the cervix, uterus and fallopian tubes, urethra and anus.

Chlamydia is transmitted sexually and can be transmitted from an infected mother to her infant during labor and birth. Nationally, rates of chlamydia infection increased between 2007 and 2008, but this can largely be attributed to increased screening with sensitive tests. Among young pregnant women (ages 15-24) rates of chlamydia infection range from 3.4 to 24.1%, depending on the state and type of clinic. Over 70% of chlamydia infections among women are asymptomatic, detected only by specific screening.

**Complications from Chlamydia**

*C. trachomatis* causes infection and damage to reproductive organs in women and, infrequently, men. Untreated chlamydia causes pelvic inflammatory disease (PID) in 10 to 20% of non-pregnant women, with some studies suggesting rates as high as 40% (Figure 4). Because it infects the uterus and fallopian tubes, chlamydia is a leading cause of preventable subfertility, infertility, ectopic pregnancy and chronic pelvic pain. Additionally, women with chlamydia are five times more likely to acquire HIV if exposed.

In pregnancy, chlamydia is associated with ectopic pregnancy, preterm premature rupture of membranes, preterm birth, and postpartum endometritis. Mothers can pass a chlamydia infection to their newborn during labor and birth. Eye infections (chlamydia conjunctivitis) affect 20 to 50% of untreated infants exposed to chlamydia during birth (Figure 4). Similarly, 10 to 20% of exposed infants develop congenital pneumonia. Topical antibiotics given at the time of birth can prevent the development of chlamydia conjunctivitis. Congenital pneumonia can only be prevented through prenatal detection and treatment of the mother.
Figure 4 Frequency of Complications Associated with Untreated Chlamydial Infection Among Women.

Genital Chlamydia

Non-Pregnant Women
- 10-40% untreated infections
  - Pelvic Inflammatory Disease
    - Ectopic Pregnancy
      - 6%
      - (43% of ectopics associated with C. trachomatis)
    - Chronic Pelvic Pain
      - 18%
    - Infertility
      - 20%

Pregnant Women
- ↑HIV Transmission/
  - ↑Acquisition
  - 50-60% Exposed infants colonized
  - Vertical Transmission to Newborn
    - Conjunctivitis
      - 14%
    - Asymptomatic Vaginal/rectal infection
      - 20-50%
    - Congenital Pneumonia
      - 10-20%

- Preterm Birth/ Low Birthweight
- Postpartum Endometritis
- Untreated Infertility
- Pelvic Inflammatory Disease
- 18%

Exposed infants colonized

Untreated infections

Exposed infants colonized

Exposed infants colonized

Exposed infants colonized
SCREENING IN PREGNANCY

Screening in Pregnancy

**ALL** pregnant women should be screened for *C. trachomatis* at the onset of prenatal care, using a nucleic acid amplification technology (NAAT) test (see Table 6). NAAT tests detect 20% more chlamydia infections than non-NAAT tests.

Follow-up

**Partner Treatment**: All partners of women with chlamydia need to receive treatment to prevent reinfection and to reduce the chance of infecting other individuals. Partner treatment can be facilitated in a number of ways. Please see the section on partner treatment (page 88).

**Test of Cure**: A test of cure is recommended one month following CDC recommended treatment for all pregnant women who were initially positive.

**Third Trimester Screening**: Re-screening at the beginning of the third trimester is recommended by the CDC for the following pregnant women:

- Age 25 or less
- Single marital status
- New or multiple sexual partners
- History of chlamydia within the past 12 months

LA Best Babies Network also recommends chlamydia re-screening for:

- Women with HIV and/or HCV infections, and
- Women using alcohol or substances during pregnancy.

Re-infection from untreated partners is common and occurs among 15 to 39% of young women. Re-screening in the third trimester and subsequent treatment are crucial to preventing congenital chlamydia infections.
Table 5 Key Principles of Best Practices for Screening, Treatment and Follow-up for Chlamydia During Pregnancy

<table>
<thead>
<tr>
<th>Screening</th>
<th>Treatment</th>
</tr>
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</table>
| • Test for *C. trachomatis* (PCR test preferred over other nucleic acid based tests)  
  ➢ Perform Test of Cure 3 to 4 weeks after CDC-P recommended treatment.  
• During the 3rd trimester (28 weeks) retest women at risk for re-infection:  
  ➢ i.e., Age ≤25; new partner, more than 1 partner, prior treatment during pregnancy, and uncertain treatment of partner. | CDC-P Recommended Regimens:  
• Azithromycin 1 g orally (single dose); OR  
• Amoxicillin 500 mg orally three times daily for seven days;  
Alternate therapy* NOTE: gastrointestinal side effects are common with erythromycin and can result in non-compliance with these regimens.  
• Erythromycin base 500 mg orally 4 times daily for 7 days; OR  
• Erythromycin base 250 mg. orally 4 times a day for 14 days; OR  
• Erythromycin ethylsuccinate 800 mg. orally 4 times a day for 7 days; OR  
• Erythromycin ethylsuccinate 400 mg. orally 4 times a day for 14 days.  
• Partner(s) (in past 60 days or less) should receive treatment; or the last partner if this was more than 60 days. |

*Erythromycin estolate is contraindicated in pregnancy, due to drug-related hepatotoxicity

Figure 5 Screening, Treatment, Follow-up for Chlamydia
Screening, Treatment, Follow-up for *Chlamydia trachomatis* Reproductive Tract Infection in Pregnancy

Screen all pregnant women the first prenatal physical exam

Test using NAAT¹

Positive

- Treatment (CDC)
  - Azithromycin 1 g orally (single dose); OR
  - Amoxicillin 500 mg orally three times daily for seven days;
  - Alternate therapy:
    - Erythromycin base 500 mg orally 4 times daily for 7 days; OR
    - Erythromycin base 250 mg orally 4 times daily for 14 days; OR
    - Erythromycin ethylsuccinate 800 mg orally 4 times daily for 7 days; OR
    - Erythromycin ethylsuccinate 400 mg orally 4 times daily for 14 days.
  - Abstain from sexual intercourse for 7 days or until completion of multi-dose regimen
  - Partner(s) Treatment: (All < 60 days or less; last partner even if > 60 days)
  - Education: Chlamydia in pregnancy;
  - Ways to reduce risk of infection; Meds

Negative

- Education on STIs in pregnancy
- Ways to reduce risk for infection

Re-screen if patient becomes symptomatic or begins preterm labor, or has new partner

- Re-screen at 28 wks if at risk for infection:
  - age 25 or less
  - single
  - New or multiple partners in pregnancy
  - Hx CT in past 12 mos.
  - Using alcohol/substances²
  - HIV/HCV infection²

Test of Cure 4 wks after CDC Rx

Positive

- CDC-strongly encourages re-screening all women 3-12 mos after initial Rx.

Re-screen - 28 wks

Negative

- Re-screen if patient becomes symptomatic or begins preterm labor, or has new partner

[¹] NAAT = Nucleic Acid amplification tests; examples include: Ligase Chain Reaction (LCR)-LCx (Abbott); Polymerase Chain Reaction (PCR)-AmpliCor (Roche); Transcription Mediated Amplification (TMA)-APTIMA (GenProbe); Strand Displacement Amplification (SDA)-BD ProbeTec (Becton Dickinson)

[²] LA Best Babies Network recommends considering these groups high risk for STI infection

Centers for Disease Control and Prevention. Sexually Transmitted Diseases Treatment Guidelines—MMWR 2010; 59(RR-12).
Table 6 Comparison of Chlamydia Testing Technologies

<table>
<thead>
<tr>
<th>Test type and brand name</th>
<th>Nucleic acid amplification technology (NAAT)</th>
<th>Cell culture</th>
<th>Direct fluorescent antibody (DFA)</th>
<th>Enzyme immunoassay (EIA)</th>
<th>Nucleic acid probe</th>
<th>Point of Care Tests</th>
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<tr>
<td></td>
<td>Ligase chain reaction (LCR)-</td>
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<td>DNA probe</td>
<td>Direct observation antigen hybridization</td>
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<td>hybridization</td>
<td>- PACE 2 (GenProbe)</td>
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<td>Hybrid capture</td>
<td>- Clearview (Inverness)</td>
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<td>- QuickVue Chlamydia test</td>
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<td>- APTIMA (Gen Probe)</td>
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<td>(Quidel)</td>
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<td>(Digene)</td>
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<td></td>
<td>- BD ProbeTec (Becton Dickinson)</td>
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<td>Preferred Test YES</td>
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<tr>
<td>Collection Site</td>
<td>Urine-female and male; Endocervical &amp; urethral swabs</td>
<td></td>
<td>Endocervical, urethral, conjunctival</td>
<td></td>
<td>Endocervical, urethral, conjunctival</td>
<td>Endocervical, self-collected, vaginal</td>
</tr>
<tr>
<td>Test Specimen</td>
<td>Vaginal Swab-including self collected</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sensitivity</td>
<td>Cervical: 84-91% Female Urine: 79-83%</td>
<td>Cervical: 60-80%</td>
<td>Cervical: 65-75%</td>
<td>Cervical: 60-75%</td>
<td>Cervical: 65-75%</td>
<td>Cervical: 49-87%</td>
</tr>
<tr>
<td>Specificity</td>
<td>&gt;98%</td>
<td>&gt;99%</td>
<td>97-99%</td>
<td>97-99%</td>
<td>98-99%</td>
<td>97-99%</td>
</tr>
</tbody>
</table>

| Test Advantages          | More sensitive.                            |              | Less sensitive.                   |                           |                   | Results available within 15-20 minutes. |
|                          | Non-invasive urine specimens and self collected vaginal swabs |               | Longer time-to-results.           |                           |                   | CLEA- Moderately Complex. |
|                          | For some of these tests:                   |              | Technically difficult.            |                           |                   | Requires minimal training to perform and no special equipment. |
|                          | Refrigeration during transport not required.|              | Specimen transport, storage times and temperatures critical. |                   |                   |                     |
|                          | Single specimen for testing Chlamydia and gonorrhea |               | Labor intensive.                  |                           |                   |                     |
|                          | Recommended test when child abuse is suspected or for treatment failure. | | Internally controlled for specimen adequacy. Refrigeration during transport not required. | |                   |                     |
|                          | Automated test. Refrigeration during transport not required. | | | |                   |                     |
| Test Disadvantages       | Contamination possible if specimen not handled properly in clinic or lab. | | Less sensitive. Poor sensitivity. QA for specimen adequacy required. Confirmatory testing recommended. | |                   | Unacceptably low sensitivity (compared to NAAT). |
|                          | May have delay in receiving results.       |              | Technically difficult.            |                           |                   |                     |
|                          | More costly.                               |              | Labor intensive.                  |                           |                   |                     |
|                          | | | | | | |


Sensitivity may be somewhat lower for urine compared to swab specimens in NAAT, thus if a pelvic exam is being performed a cervical specimen should be collected for NAAT.

Not all NAATs are currently FDA-cleared for gonorrhea testing of both male and female urine specimens. Check with your laboratory for details.

Sensitivity- the proportion of patients who truly have chlamydia for whom the test is positive.
PATIENT EDUCATIONAL MATERIALS

In this section you will find examples of patient education materials chlamydia infections among women

Please also consult the links below for the most up-to-date patient education materials.

Centers for Disease Control and Prevention

Patient Handout—Chlamydia The Facts available in English and Spanish
http://www.cdc.gov/std/healthcomm/the-facts.htm

Chlamydia Fact Sheet
http://www.cdc.gov/std/chlamydia/STDFact-Chlamydia.htm

STDs In Pregnancy Fact Sheet
http://www.cdc.gov/std/pregnancy/STDFact-Pregnancy.htm

California STD/HIV Prevention Training Center:

Chlamydia Fact Sheet—6-8th grade reading level, 8/4/2009

American Congress of Obstetricians and Gynecologists

Gonorrhea, Chlamydia and Syphilis Fact Sheet
http://www.acog.org/publications/patient_education/

American Academy of Family Physicians

Sexually Transmitted Diseases—Fact Sheets
http://familydoctor.org/online/famdocen/home/common/sexinfections.html

Medline Plus-US National Library of Medicine, National Institutes of Health

Chlamydia Facts
http://vsearch.nlm.nih.gov/vivisimo/cgi-bin/query-meta?v%3Aproject=medlineplus&query=chlamydia
What is chlamydia?

Chlamydia is a common sexually transmitted disease (STD) caused by the bacterium, *Chlamydia trachomatis*, which can damage a woman’s reproductive organs. Even though symptoms of chlamydia are usually mild or absent, serious complications that cause irreversible damage, including infertility, can occur “silently” before a woman ever recognizes a problem.

Chlamydia also can cause discharge from the penis of an infected man.

How common is chlamydia?

Chlamydia is the most frequently reported bacterial sexually transmitted disease in the United States. In 2006, 1,030,911 chlamydial infections were reported to CDC from 50 states and the District of Columbia. Under-reporting is substantial because most people with chlamydia are not aware of their infections and do not seek testing. Also, testing is often not done if patients are treated for their symptoms. An estimated 2,291,000 non-institutionalized U.S. civilians ages 14-39 are infected with chlamydia based on the U.S. National Health and Nutrition Examination Survey. Women are frequently re-infected if their sex partners are not treated.

How do people get chlamydia?

Chlamydia can be transmitted during vaginal, anal, or oral sex. Chlamydia can also be passed from an infected mother to her baby during vaginal childbirth.

Any sexually active person can be infected with chlamydia. The greater the number of sex partners, the greater the risk of infection. Because the cervix (opening to the uterus) of teenage girls and young women is not fully matured and is probably more susceptible to infection, they are at particularly high risk for infection if sexually active. Since chlamydia can be transmitted by oral or anal sex, men who have sex with men are also at risk for chlamydial infection.

What are the symptoms of chlamydia?

Chlamydia is known as a “silent” disease because about three quarters of infected women and about half of infected men have no symptoms. If symptoms do occur, they usually appear within 1 to 3 weeks after exposure.

In women, the bacteria initially infect the cervix and the urethra (urine canal). Women who have symptoms might have an abnormal vaginal discharge or a burning sensation when urinating. When the infection spreads from the cervix to the fallopian tubes (tubes that carry fertilized eggs from the ovaries to the uterus), some women still have no signs or symptoms; others have lower abdominal pain, low back pain, nausea, fever, pain during intercourse, or bleeding between menstrual periods. Chlamydial infection of the cervix can spread to the rectum.

Men with signs or symptoms might have a discharge from their penis or a burning sensation when urinating. Men might also have burning and itching around the opening of the penis. Pain and swelling in the testicles are uncommon.

Men or women who have receptive anal intercourse may acquire chlamydial infection in the rectum, which can cause rectal pain, discharge, or bleeding. Chlamydia can also be found in the throats of women and men having oral sex with an infected partner.

What complications can result from untreated chlamydia?

If untreated, chlamydial infections can progress to serious reproductive and other health problems with both short-term and long-term consequences. Like the disease itself, the damage that chlamydia causes is often “silent.”
In women, untreated infection can spread into the uterus or fallopian tubes and cause pelvic inflammatory disease (PID). This happens in up to 40 percent of women with untreated chlamydia. PID can cause permanent damage to the fallopian tubes, uterus, and surrounding tissues. The damage can lead to chronic pelvic pain, infertility, and potentially fatal ectopic pregnancy (pregnancy outside the uterus). Women infected with chlamydia are up to five times more likely to become infected with HIV, if exposed.

To help prevent the serious consequences of chlamydia, screening at least annually for chlamydia is recommended for all sexually active women age 25 years and younger. An annual screening test is also recommended for older women with risk factors for chlamydia (a new sex partner or multiple sex partners). All pregnant women should have a screening test for chlamydia.

Complications among men are rare. Infection sometimes spreads to the epididymis (the tube that carries sperm from the testes), causing pain, fever, and, rarely, sterility.

Rarely, genital chlamydial infection can cause arthritis that can be accompanied by skin lesions and inflammation of the eye and urethra (Reiter’s syndrome).

How does chlamydia affect a pregnant woman and her baby?

In pregnant women, there is some evidence that untreated chlamydial infections can lead to premature delivery. Babies who are born to infected mothers can get chlamydial infections in their eyes and respiratory tracts. Chlamydia is a leading cause of early infant pneumonia and conjunctivitis (pink eye) in newborns.

How is chlamydia diagnosed?

There are laboratory tests to diagnose chlamydia. Some can be performed on urine, other tests require that a specimen be collected from a site such as the penis or cervix.

What is the treatment for chlamydia?

Chlamydia can be easily treated and cured with antibiotics. A single dose of azithromycin or a week of doxycycline (twice daily) are the most commonly used treatments. HIV-positive persons with chlamydia should receive the same treatment as those who are HIV negative.

All sex partners should be evaluated, treated, and treated. Persons with chlamydia should abstain from sexual intercourse until they and their sex partners have completed treatment, otherwise re-infection is possible.

Women whose sex partners have not been appropriately treated are at high risk for re-infection. Having multiple infections increases a woman’s risk of serious reproductive health complications, including infertility. Retesting should be encouraged for women three to four months after treatment. This is especially true if a woman does not know if her sex partner received treatment.

How can chlamydia be prevented?

The surest way to avoid transmission of STDs is to abstain from sexual contact, or to be in a long-term mutually monogamous relationship with a partner who has been tested and is known to be uninfected.

Latex male condoms, when used consistently and correctly, can reduce the risk of transmission of chlamydia.

CDC recommends yearly chlamydia testing of all sexually active women age 25 or younger, older women with risk factors for chlamydial infections (those who have a new sex partner or multiple sex partners), and all pregnant women. An appropriate sexual risk assessment by a health care provider should always be conducted and may indicate more frequent screening for some women.

Any genital symptoms such as an unusual sore, discharge with odor, burning during urination, or bleeding between menstrual cycles could mean an STD infection. If a woman has any of these symptoms, she should stop having sex and consult a health care provider immediately. Treating STDs early can prevent PID. Women who are told they have an STD and are treated for it should notify all of their recent sex partners (sex partners within the preceding 60 days) so they can see a health care provider and be evaluated for STDs. Sexual activity should not resume until all sex partners have been examined and, if necessary, treated.

FOR MORE INFORMATION:
Division of STD Prevention (DSTD P)
Centers for Disease Control and Prevention
http://www.odo.gov/std/

CDC-INFO Contact Center
1-800-CDC-INFO (1-800-232-4636)
Email: odoinfo@odo.gov

American Social Health Association (ASHA)
1-800-783-9877
www.ashastd.org

CONTENT UPDATED: DECEMBER, 2007
Chlamydia is a Sexually Transmitted Disease (STD) caused by a type of bacteria called *Chlamydia trachomatis*. Chlamydia can infect men, women, and newborns. Chlamydia is the most common bacterial STD in the United States.

**Q: How is chlamydia spread?**

**A:** Chlamydia passes from one person to another during vaginal and anal sex. It also passes to the throat through oral sex (penis in mouth) – or from the throat to the penis. A pregnant woman can pass chlamydia to her baby during birth, causing serious eye infections and pneumonia (a serious lung infection).

**Q: What are the signs and symptoms of chlamydia?**

**A:** Most WOMEN with chlamydia have NO SYMPTOMS!
If you do have symptoms, they could include:
- Fluid from the vagina that smells, looks, or feels different;
- Bleeding from the vagina or the anus that is not normal;
- Pain with urination;
- Lower stomach pain, especially when having sex.

Most MEN with chlamydia have NO SYMPTOMS!
If you do have symptoms, they could include:
- Fluid from the head of the penis or the anus that is not normal;
- Pain or itching on the head of the penis;
- Pain with urination.

**EF** EVEN WITHOUT SYMPTOMS, A PERSON WITH CHLAMYDIA CAN GIVE CHLAMYDIA TO A SEX PARTNER(S).

**Q: Is chlamydia serious?**

**A:** Yes! Even without symptoms, chlamydia can cause serious health problems.

- **Women** who have chlamydia can get pelvic inflammatory disease (PID), a very bad infection in the lower abdomen. PID happens when the bacteria move up into the womb, female organs, and surrounding areas. PID can cause scars and other damage that make women infertile (unable to have children). PID can also make women more likely to have a “tubal pregnancy”, which can cause death.
- **Men** can sometimes develop an infection of the testicles that causes pain and swelling.
- **Newborns** can develop serious eye and lung infections.

**EF** PLUS, A PERSON WITH CHLAMYDIA HAS A GREATER CHANCE OF GIVING OR GETTING HIV.
Q: How is chlamydia treated?
A:
- Your health care provider will give you medicine to cure chlamydia infection.
- If you have chlamydia, your partner(s) must be treated, even if they have no symptoms.
  If they are not treated, they can give the infection back to you, or infect others.
- It is important to get tested again for chlamydia about 3 months after your treatment.
- If you are pregnant or think you may be pregnant, be sure to tell your doctor or nurse.

Q: How can I avoid getting chlamydia?
A:
- Abstinence (not having sex) is the only sure way to avoid infection.
- Plan Ahead: Think about protecting yourself. Talk with your sex partner(s) about STDs and the need
to protect yourself. Then, you can choose not to have sex (abstinence), or decide to:
  - Use a male condom with each sex partner.
  - Use a female condom when a male condom cannot be used.

HIV IS ALSO A STD!
When you catch chlamydia, you could also be getting HIV.
Birth control pills or a birth control shot cannot protect you against chlamydia or other STDs.

Using latex condoms correctly every time you have sex can reduce the chance for
transmission of chlamydia, HIV, and other STDs.

Q: Where can I get more information about STDs and referrals for STD testing?
A:
- Phone: Talk to a trained operator who can answer your questions and provide information about
  STD testing. In English and Espanol 24 hours/day, 7 days/week: Toll-free: 1-800-CDC-INFO
  (1-800-232-4636); TTY for the Deaf and Hard of Hearing: 1-888-232-6348
- Internet: Centers for Disease Control and Prevention: http://www.cdc.gov/std/
  http://www.cdc.gov/std/healthcomm/fact_sheets.htm

Talk to your own health care provider, or call your county health department by looking for the
telephone number in the phone book (white pages) under county government. Ask to speak to
someone in the STD clinic or STD program for more information about chlamydia.
GONORRHEA

Gonorrhea is the second most common bacterial, sexually transmitted infection that requires reporting to the public health department. Infection is caused by *Neisseria gonorrhoeae* and may involve the cervix and/or upper reproductive tract, as well as, depending on sexual practices, the urethra, anus and pharynx. In 2008, for women aged 15-24, the median rate of gonorrhea infection was 1 to 5% depending on where they lived. Up to 50% of infected women have no symptoms, and infection can be detected only by specific screening.

Complications from Gonorrhea

Complications from gonorrhea are similar to those for chlamydia. Infection may involve the cervix, resulting in cervicitis, and ascend to cause pelvic inflammatory disease involving the uterus, fallopian tubes and peritoneal cavity, among 10-20% of non-pregnant women. Upper reproductive tract infection with gonorrhea has sequelae similar to chlamydia.

During pregnancy gonorrhea is associated with septic abortion, chorioamnionitis, preterm premature rupture of membranes, preterm birth, and postpartum endometritis. Infants can acquire the infection during labor and birth and develop neonatal ophthalmia and congenital pneumonia.
GUIDELINES FOR GONORRHEA IN PREGNANCY

Screening in Pregnancy
Screening for *N. gonorrhoeae* should be conducted among pregnant women at increased risk for having gonorrhea, using a nucleic acid amplification technology (NAAT) test, at the onset of prenatal care. The key principles of best practices for screening, treatment and follow-up are outlined in Table 7, and in Figure 6.

Risk factors for gonorrhea include:

- Age less than 25 years
- Prior gonorrhea infection (Nearly 40% of pregnant women found to have gonorrhea have a past history of the disease)
- Other sexually transmitted infections
- New, or more than one, sexual partner
- Inconsistent condom use
- Commercial sex work
- Substance use
- Partner treated for gonorrhea in past 12 months

Follow-up

**Partner Treatment:** All partners of women with gonorrhea need to receive treatment to prevent re-infection and to reduce the chance of infecting other individuals. Partner treatment can be facilitated in a number of ways. Please see the section on partner treatment (page 88).

**Test of Cure:** a test of cure is recommended, at one month after CDC-recommended treatment, for all pregnant women who were initially positive.

**Third Trimester Screening:** Re-screening at the beginning of the third trimester is recommended, by the CDC, for pregnant women with an initial positive infection during pregnancy, and any of the above risk factors.

**LA Best Babies Network also recommends re-screening for:**

- Women with HIV and/or HCV infections, and
- Women using alcohol or substances during pregnancy.

Re-infection from untreated partners is common and occurs among 11% of young women.

Re-screening in the third trimester and subsequent treatment is necessary to prevent congenital gonococcal infections.
Table 7 Key Principles of Best Practices for Screening, Treatment and Follow-up for Gonorrhea During Pregnancy\textsuperscript{35}

<table>
<thead>
<tr>
<th>Screening</th>
<th>Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Test for \textit{N. gonorrhea} for symptomatic women, plus those at risk, or women living in areas in which prevalence is high.</td>
<td>• Check most current CDC-P treatment recommendations at <a href="http://www.cdc.gov/std/gisp">www.cdc.gov/std/gisp</a></td>
</tr>
<tr>
<td>• (PCR test preferred over other nucleic acid based tests)</td>
<td>• 2010 CDC-P recommended treatments are shown in Figure 6</td>
</tr>
<tr>
<td> Test of Cure (TOC) at one month post-treatment.</td>
<td>• \textbf{In 2010 the recommended dosage of ceftriaxone was increased to 250 mg}</td>
</tr>
<tr>
<td> Retest during third trimester (28 weeks) for those with initial positive tests and high risk.</td>
<td>• Pregnant women \textbf{should not} receive quinolones or tetracyclines.</td>
</tr>
<tr>
<td></td>
<td>• Ensure all partner(s) in past 60 days are also evaluated and treated for both gonorrhea and chlamydia. If the last sexual contact was more than 60 days, then the last partner should be evaluated and treated.</td>
</tr>
</tbody>
</table>

Table 8 Comparison of \textit{N. gonorrhoeae} Testing Technologies\textsuperscript{35,36}

<table>
<thead>
<tr>
<th>NAAT</th>
<th>Nucleic Acid Probe</th>
<th>Culture</th>
<th>Gram Stain</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Test type</strong></td>
<td>DNA probe hybridization</td>
<td>PACE 2 (GenProbe)</td>
<td></td>
</tr>
<tr>
<td>• Ligase chain reaction (LCR)- LCx (Abbott)</td>
<td>• Hybrid capture with signal amplification</td>
<td>• Hybrid Capture II (Digene)</td>
<td></td>
</tr>
<tr>
<td>• Polymerase chain reaction (PCR)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Amplicor (Roche)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Transcription Mediated Amplification (TMA)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• APTIMA (GenProbe)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Strand Displacement (SDA)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BD ProbeTec (Becton Dickinson)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Preferred Test</strong></td>
<td>PCR Preferred</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td><strong>Collection Site</strong></td>
<td>Endocervix, conjunctiva</td>
<td>Endocervix, rectal, conjunctival, nasopharyngeal</td>
<td>Endocervix</td>
</tr>
<tr>
<td>Urine-female</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Endocervical swabs</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vaginal Swab-including self collected</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Check product inserts as specimen types that have been FDA-cleared for use vary by test.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Sensitivity</strong></td>
<td>Female urine: 50-95%</td>
<td>86%</td>
<td>40-60%</td>
</tr>
<tr>
<td><strong>Specificity</strong></td>
<td>99-100%</td>
<td>96%</td>
<td>95-100%</td>
</tr>
</tbody>
</table>
Screening, Treatment, Follow-up for *Neisseria gonorrhoeae* Reproductive Tract Infection in Pregnancy

**Test using NAAT**

- Education on STIs in pregnancy
- Ways to reduce infection

**CDC-P Recommended Treatments**
- Cefixime 400 mg orally (single dose)
- **OR**
- Another Single-dose injectible cephalosporin regimens
- **PLUS**
  - Azithromycin 1 g orally in a single dose
  - OR
  - Alternate regimen for chlamydia

**Abstain from sexual intercourse until Rx’s Partner(s) Treatment:** (All < 60 days or less; last partner even if > 60 days)

**Education:** gonorrhea in pregnancy; Ways to reduce risk of infection; Meds

**Screened pregnant women at risk for infection at the first prenatal physical exam, and as clinically indicated.**

**Negative**

- Re-screen if patient becomes symptomatic or begins preterm labor, or new partner

**Positive**

- Re-screen at 28 wks if high risk for infection:
  - age 25 or less
  - single
  - New or multiple partners
  - Hx GC in past 12 mos.
  - Using alcohol/substances
  - HIV/HCV infection

- Test of Cure
  - 4 wks after CDC Rx

- Re-screen - 28 wks

---

[1] NAAT = Nucleic Acid amplification tests; examples include: Ligase Chain Reaction (LCR)-LCx (Abbott); Polymerase Chain Reaction (PCR)-Amplicor (Roche); Transcription Mediated Amplification (TMA)-APTIMA (GenProbe); Strand Displacement Amplification (SDA)-BD ProbeTec (Becton Dickinson)

[2] LA Best Babies Network recommends considering these groups high risk for STI infection

[3] LA Best Babies Network suggests completing a Test of Cure 4 wks following treatment of pregnant women. This would identify women with treatment failure or re-infection.

Centers for Disease Control and Prevention. Sexually Transmitted Diseases Treatment Guidelines. MMWR 2010; 59(RR-12).
PATIENT EDUCATIONAL MATERIALS

In this section you will find examples of patient education materials for gonorrhea infections during pregnancy.

Please also consult the links below for the most up-to-date patient education materials.

Centers for Disease Control and Prevention
Patient Handout, Gonorrhea - The Facts available in English and Spanish
http://www.cdc.gov/std/healthcomm/the-facts.htm

Gonorrhea Fact Sheet
http://www.cdc.gov/std/gonorrhea/STDFact-gonorrhea.htm

STDs In Pregnancy Fact Sheet
http://www.cdc.gov/std/pregnancy/STDFact-Pregnancy.htm

California STD/HIV Prevention Training Center
Gonorrhea Fact Sheet – 6-8th grade reading level 8/4/2009

American Congress of Obstetricians and Gynecologists
Gonorrhea, Chlamydia and Syphilis Fact Sheet
http://www.acog.org/publications/patient_education/

American Academy of Family Physicians
Sexually Transmitted Diseases- Fact Sheets
http://familydoctor.org/online/famdocen/home/common/sexinfections.html

Medline Plus-US National Library of Medicine, National Institutes of Health
Gonorrhea Facts
http://vsearch.nlm.nih.gov/vivisimo/cgi-bin/query-meta?v%3Aproject=medlineplus&query=gonorrhea
Gonorrhea

What is gonorrhea?
Gonorrhea is a sexually transmitted disease (STD). Gonorrhea is caused by *Neisseria gonorrhoeae*, a bacterium that can grow and multiply easily in the warm, moist areas of the reproductive tract, including the cervix (opening to the womb), uterus (womb), and fallopian tubes (egg canals) in women, and in the urethra (urine canal) in women and men. The bacterium can also grow in the mouth, throat, eyes, and anus.

■ How common is gonorrhea?
Gonorrhea is a very common infectious disease. CDC estimates that more than 700,000 persons in the U.S. get new gonorrheal infections each year. Only about half of these infections are reported to CDC. In 2006, 358,366 cases of gonorrhea were reported to CDC. In the period from 1975 to 1997, the national gonorrhea rate declined, following the implementation of the national gonorrhea control program in the mid-1970s. After several years of stable gonorrhea rates, however, the national gonorrhea rate increased for the second consecutive year. In 2006, the rate of reported gonorrheal infections was 120.9 per 100,000 persons.

■ How do people get gonorrhea?
Gonorrhea is spread through contact with the penis, vagina, mouth, or anus. Ejaculation does not have to occur for gonorrhea to be transmitted or acquired. Gonorrhea can also be spread from mother to baby during delivery.

People who have had gonorrhea and received treatment may get infected again if they have sexual contact with a person infected with gonorrhea.

■ Who is at risk for gonorrhea?
Gonorrhea is known as a “silent” disease because any sexually active person can be infected with gonorrhea. In the United States, the highest reported rates of infection are among sexually active teenagers, young adults, and African Americans.

■ What are the signs and symptoms?
Some men with gonorrhea may have no symptoms at all. However, some men have signs or symptoms that appear two to five days after infection; symptoms can take as long as 30 days to appear. Symptoms and signs include a burning sensation when urinating, or a white, yellow, or green discharge from the penis. Sometimes men with gonorrhea get painful or swollen testicles.

In women, the symptoms of gonorrhea are often mild, but most women who are infected have no symptoms. Even when a woman has symptoms, they can be so nonspecific as to be mistaken for a bladder or vaginal infection. The initial symptoms and signs in women include a painful or burning sensation when urinating, increased vaginal discharge, or vaginal bleeding between periods. Women with gonorrhea are at risk of developing serious complications from the infection, regardless of the presence or severity of symptoms.

Symptoms of rectal infection in both men and women may include discharge, anal itching, soreness, bleeding, or painful bowel movements. Rectal infection also may cause no symptoms. Infections in the throat may cause a sore throat but usually causes no symptoms.

■ What are the complications of gonorrhea?
Untreated gonorrhea can cause serious and permanent health problems in both women and men.
In women, gonorrhea is a common cause of pelvic inflammatory disease (PID). About one million women each year in the United States develop PID. The symptoms may be quite mild or can be very severe and can include abdominal pain and fever. PID can lead to internal abscesses (pus-filled “pockets” that are hard to cure) and long-lasting, chronic pelvic pain. PID can damage the fallopian tubes enough to cause infertility or increase the risk of ectopic pregnancy. Ectopic pregnancy is a life-threatening condition in which a fertilized egg grows outside the uterus, usually in a fallopian tube.

In men, gonorrhea can cause epididymitis, a painful condition of the ducts attached to the testicles that may lead to infertility if left untreated.

Gonorrhea can spread to the blood or joints. This condition can be life threatening. In addition, people with gonorrhea can more easily contract HIV, the virus that causes AIDS. HIV-infected people with gonorrhea can transmit HIV more easily to someone else than if they did not have gonorrhea.

How does gonorrhea affect a pregnant woman and her baby?
If a pregnant woman has gonorrhea, she may give the infection to her baby as the baby passes through the birth canal during delivery. This can cause blindness, joint infection, or a life-threatening blood infection in the baby. Treatment of gonorrhea as soon as it is detected in pregnant women will reduce the risk of these complications. Pregnant women should consult a healthcare provider for appropriate examination, testing, and treatment, as necessary.

How is gonorrhea diagnosed?
Several laboratory tests are available to diagnose gonorrhea. A doctor or nurse can obtain a sample for testing from the parts of the body likely to be infected (cervix, urethra, rectum, or throat) and send the sample to a laboratory for analysis. Gonorrhea that is present in the cervix or urethra can be diagnosed in a laboratory by testing a urine sample. A quick laboratory test for gonorrhea that can be done in some clinics or doctor’s offices is a Gram stain. A Gram stain of a sample from a urethra or a cervix allows the doctor to see the gonorrhea bacteria under a microscope. This test works better for men than for women.

What is the treatment for gonorrhea?
Several antibiotics can successfully cure gonorrhea in adolescents and adults. However, drug-resistant strains of gonorrhea are increasing in many areas of the world, including the United States, and successful treatment of gonorrhea is becoming more difficult. Because many people with gonorrhea also have chlamydia, another STD, antibiotics for both infections are usually given together. Persons with gonorrhea should be tested for other STDs.

It is important to take all of the medication prescribed to cure gonorrhea. Although medication will stop the infection, it will not repair any permanent damage done by the disease. People who have had gonorrhea and have been treated can get the disease again if they have sexual contact with persons infected with gonorrhea. If a person’s symptoms continue even after receiving treatment, he or she should return to a doctor to be reevaluated.

How can gonorrhea be prevented?
The surest way to avoid transmission of STDs is to abstain from sexual intercourse, or to be in a long-term mutually monogamous relationship with a partner who has been tested and is known to be uninfected.

Latex condoms, when used consistently and correctly, can reduce the risk of transmission of gonorrhea.

Any genital symptoms such as discharge or burning during urination or unusual sore or rash should be a signal to stop having sex and to see a doctor immediately. If a person has been diagnosed and treated for gonorrhea, he or she should notify all recent sex partners so they can see a health care provider and be treated. This will reduce the risk that the sex partners will develop serious complications from gonorrhea and will also reduce the person’s risk of becoming re-infected. The person and all of his or her sex partners must avoid sex until they have completed their treatment for gonorrhea.

FOR MORE INFORMATION:
Division of STD Prevention (DSTDHP)
Centers for Disease Control and Prevention
http://www.cdc.gov/std/

CDC-INFO Contact Center
1-800-CDC-INFO (1-800-232-4636)
Email: cdcinfo@cdc.gov

American Social Health Association (ASHA)
1-800-783-9877
www.ashastd.org

CONTENT UPDATED: DECEMBER, 2007
Gonorrhea is a Sexually Transmitted Disease (STD) caused by a type of bacteria called *Neisseria gonorrhoeae*. Gonorrhea can infect men, women, and newborns. Gonorrhea is one of the most common bacterial STDs in the United States.

**Q:** How is gonorrhea spread?

**A:** Gonorrhea passes from one person to another during vaginal and anal sex. It also passes to the throat through oral sex (penis in mouth) – or from the throat to the penis. A pregnant woman can pass gonorrhea to her baby during birth, causing serious eye infections.

---

**Q:** What are the signs and symptoms of gonorrhea?

**A:** Most WOMEN with gonorrhea have NO SYMPTOMS!
If you do have symptoms, they could include:
- Fluid from the vagina that smells, looks, or feels different;
- Bleeding from the vagina or the anus that is not normal;
- Pain with urination (pee-ing);
- Lower stomach pain, especially when having sex.

Most MEN with gonorrhea have NO SYMPTOMS!
If you do have symptoms, they could include:
- Fluid from the head of the penis or the anus that is not normal;
- Pain or itching on the head of the penis;
- Pain with urination. (pee-ing)

**CAUTION:** EVEN WITHOUT SYMPTOMS, A PERSON WITH GONORRHEA CAN GIVE GONORRHEA TO A SEX PARTNER(S).

---

**Q:** Is gonorrhea serious?

**A:** Yes! Even without symptoms, gonorrhea can cause serious damage.

*Women* who have gonorrhea can get pelvic inflammatory disease (PID), a very bad infection in the lower abdomen. PID happens when the bacteria move up into the womb, female organs, and surrounding areas. PID can cause scars and other damage that make women infertile (unable to have children). PID can also make women more likely to have a “tubal pregnancy”, which can cause death.

*Men* can sometimes develop an infection of the testicles that causes pain and swelling.

*Newborns* can develop serious eye infections.

**CAUTION:** PLUS, A PERSON WITH GONORRHEA HAS A GREATER CHANCE OF GIVING OR GETTING HIV.
Q: How is gonorrhea treated?
A: • Your health care provider will give you medicine to cure gonorrhea infection.
  • If you have gonorrhea, your partner(s) must be treated even if they have no symptoms.
  • If they are not treated, they can give the infection back to you, or infect others.
  • It is important to get tested again for gonorrhea about 3 months after your treatment.
  • If you are pregnant or think you may be pregnant, be sure to tell your doctor or nurse.

Q: How can I avoid getting gonorrhea?
A: • Abstinence (not having sex) is the only sure way to avoid infection.
  • Plan Ahead: Think about protecting yourself. Talk with your sex partner(s) about STDs and the need
    to protect yourself. Then, you can choose not to have sex (abstinence), or decide to:
    • Use a male condom with each sex partner.
    • Use a female condom when a male condom cannot be used.

HIV IS ALSO A STD!

When you catch gonorrhea, you could also be getting HIV.
Birth control pills or a birth control shot cannot protect you against gonorrhea or other STDs.

Using latex condoms correctly every time you have sex can reduce the chance for
transmission of gonorrhea, HIV, and other STDs.

Q: Where can I get more information about STDs and referrals for STD testing?
A: • Phone: Talk to a trained operator who can answer your questions and provide information about
  STD testing. In English and Espanol 24 hours/day, 7 days/week: Toll-free: 1-800-CDC-INFO
  (1-800-232-4636); TTY for the Deaf and Hard of Hearing: 1-888-232-6348
  • Internet: Centers for Disease Control and Prevention: http://www.cdc.gov/std/
    http://www.cdc.gov/std/healthcomm/fact_sheets.htm

Talk to your own health care provider, or call your county health department by looking for the
telephone number in the phone book (white pages) under county government. Ask to speak to
someone in the STD clinic or STD program for more information about gonorrhea.

Prepared by the California Department of Public Health, STD Control Branch.
SYphilis

Syphilis is a chronic systemic infection caused by the spirochete Treponema pallidum. This sexually transmitted, genital ulcerative disease causes significant complications if untreated, and facilitates the transmission of HIV. Untreated syphilis in pregnant women results in perinatal death in up to 40% of cases and, if acquired during the four years preceding pregnancy, may lead to infection of the fetus in 80% of cases.43 Although the rate of primary and secondary (P&S) syphilis in the United States declined 89% between 1990 and 2000, the rate of P&S syphilis increased annually between 2001 and 2008. These increases were primarily among men (increasing from 3.0 cases per 100,000 population to 7.6 cases per 100,000 population). After persistent declines from 1992 to 2003, the rate of P&S syphilis among women increased from 0.8 cases per 100,000 population in 2004, to 1.5 cases per 100,000 population in 2008. The rate of P&S syphilis is highest in persons aged 20-24 years and 25-29 years (11.4 and 10.7 cases per 100,000 population, respectively). Syphilis remains an important problem in the South and in urban areas in other U.S. regions.

Figure 7 Average rates of syphilis for U.S. men and women of different age ranges for the years 2004-2008.

In 2008 California ranked tenth among 50 States; Washington, DC; and three territories in P&S syphilis rates, with 6 cases per 100,000 population. The rate among males was 11.4 per 100,000 population while the rate among females was 0.6 per 100,000. In California, the race/ethnicity adjusted rates per 100,000 population were: 6.2 among whites, 15.1 among blacks, 5.6 among Hispanics, 2.2 among Asian/Pacific Islanders, and 3.0 among American Indians/Alaska Natives. In 2008, the rate of P&S syphilis in Los Angeles County was 8.3 per 100,000.
After declining for 14 years, the congenital syphilis rate in the United States among infants aged <1 year increased 23%, from 8.2 cases per 100,000 live births, in 2005, to 10.1 in 2008. This increase followed a 38% increase in the P&S syphilis rate among females aged >10 years between 2004 and 2007. During 2005-2008, congenital syphilis rates increased primarily in the South (from 9.6 per 100,000 live births to 15.7) and among infants born to black mothers (from 26.6 per 100,000 live births to 34.6). The figure below shows the congenital syphilis rate among infants aged <1 year, and rate of P&S syphilis among females aged ≥10 years.

**Figure 8** Primary and Secondary Syphilis Among Women age 10 and above and Rates of Congenital Syphilis among infants under age 1 year.

**Figure 9** Rates of Primary and Secondary Syphilis and Congenital Syphilis in California

### California, 2008

**Primary and secondary syphilis**
- **CASES:** California reported 2,204 cases in 2008.
- **RATES:** California ranked 10 among 50 states; Washington, D.C.; and 3 territories with 6 cases per 100,000 population compared to the U.S. rate of 4.5 cases per 100,000 population.

**Rates of primary and secondary syphilis, by sex**
- In California, the rate among males was 11.4 per 100,000 population compared to the U.S. male rate of 7.8 per 100,000.
- The rate among females was 0.6 per 100,000 compared to the U.S. female rate of 1.5 per 100,000.

**Rates of primary and secondary syphilis, by race/ethnicity**
- In California, the race/ethnicity adjusted rates per 100,000 population were 6.2 among whites, 15.1 among blacks, 5.6 among Hispanics, 2.2 among Asian/Pacific Islanders, and 3.0 among American Indians/Alaska Natives.
- The rate among blacks was 2.4 times that of whites.

**Congenital syphilis**
- **CASES:** California reported 62 cases in 2008.
- **RATES:** California ranked 12 among 26 states; Washington, D.C.; and 1 territory reporting congenital syphilis cases with a rate of 11.0 cases per 100,000 live births compared to the U.S. rate of 10.1 cases per 100,000.
Complications in Pregnancy

Pregnancy does not have an effect on the clinical course of syphilis. On the other hand, syphilis adversely affects pregnancy, and untreated syphilis may cause spontaneous abortion, nonimmune hydrops, preterm delivery, IUGR, stillbirth, and perinatal death or long-term morbidity. The incidence of congenital syphilis reflects the rate of syphilis in women of childbearing age. Many congenital syphilis cases develop because the mother had no prenatal care, no penicillin treatment, or inadequate treatment before or during pregnancy. Among women with untreated early syphilis, 40% of pregnancies result in spontaneous abortion.

The risk of congenital syphilis is directly related to the stage of syphilis in the mother, and the risk is extremely high for the first four years after maternal acquisition of infection. Maternal P&S syphilis are associated with a 50% probability of congenital syphilis and a 50% rate of perinatal death; early latent disease, with a 40% risk of congenital syphilis and a 20% perinatal mortality rate; and late latent syphilis, with a 10% risk of congenital syphilis. Transplacental transmission can occur at any time during gestation, even as early as 6 weeks, but typically occurs during the second half of pregnancy.35,45

Screening

All pregnant women should be screened for syphilis at their first prenatal visit. In populations with a high prevalence of syphilis, like Los Angeles County, or for patients at high risk (i.e., drug use, multiple sexual partners, history of STDs), repeat serologic testing should take place at 28-32 weeks gestation and at delivery.35 The CDC also suggests that any woman delivering a stillborn after 20 weeks’ gestation be screened for syphilis. Furthermore, no infant should be discharged from the hospital without knowing the maternal serologic status.35

Diagnosis

The most specific and sensitive method of diagnosing syphilis is demonstration of *T. pallidum* in fresh specimens obtained from the lesions of infected individuals with primary or secondary syphilis. Dark-field examination and direct fluorescent antibody tests are the definitive methods of diagnosing early syphilis.

The majority of women who are diagnosed with syphilis are asymptomatic and in the latent stage. Therefore, a presumptive diagnosis is based on the use of two types of serologic tests: A nontreponemal test, such as VDRL (Venereal Disease Research Laboratory) or RPR (rapid plasma reagin), is used for screening because the test is sensitive but not specific. These tests are inexpensive, rapidly performed, and provide quantitative results, which are helpful indicators of disease activity, and are used to monitor response to treatment. If the nontreponemal test is positive, confirmatory testing is performed with a specific treponemal test, such as the microhemagglutination test for *T. pallidum* (MHA-TP) or the fluorescent treponemal antibody absorption (FTA-ABS). These latter tests are not quantitative and, once positive, will remain so for life, even after successful treatment.
The risk of congenital syphilis is directly related to the stage of syphilis in the mother, and the risk is extremely high for the first four years after maternal acquisition of infection.

Clinical Manifestations of Syphilis

Virtually all new syphilis infections are sexually acquired, except for cases of congenital syphilis resulting from vertical transmission (i.e., acquired in utero or during delivery). Syphilis is very efficiently transmitted during sexual contact in the early stages of disease (P&S syphilis); 50-60% of partners are infected following a single exposure to an infected individual. Transmission requires exposure to open lesions in which organisms are present. The spirochetes enter the new host through any break in the skin or via microscopic tears in mucosal surfaces of the genital tract. The incubation period averages 21 days (10-90 day range).

Primary syphilis The first manifestation of syphilis is a papule which is typically painless at the site of inoculation. This soon ulcerates to produce the classic chancre of primary syphilis, a 1-2 cm painless ulcer with a raised, indurated margin. The ulcer is typically associated with bilateral regional lymphadenopathy. Chancres heal spontaneously within 3-6 weeks, even without treatment, and typically do not leave a scar.

Secondary syphilis Secondary syphilis is a disseminated systemic disease that begins 6 weeks to 6 months after the appearance of the chancre in 25% of untreated patients. A nonpruritic, bilaterally symmetrical, generalized maculopapular skin rash involving the palms and soles and mucous membranes but usually sparing the face is characteristic of this stage of infection. Generalized lymphadenopathy accompanies the skin rash. Additional clinical features include malaise, fever, pharyngitis, anorexia, myalgias, arthralgias, alopecia, and large genital lesions called condylomata lata. The alopecia is characterized by patchy hair loss of the scalp and facial hair, including eyebrows. Condylomata lata are painless, highly infectious, gray-white raised plaques located on adjacent folds of skin in moist areas. The rash of secondary syphilis resolves spontaneously within 2-6 weeks.
Latent syphilis Following resolution of the rash of secondary syphilis, the patient enters the latent phase in which there are no clinical manifestations of disease. Individuals with primary, secondary, or early latent (up to one year) syphilis have replicating treponemal organisms and are capable of transmitting syphilis to susceptible hosts. On the other hand, syphilis is rarely transmitted during the late latent (>one year) phase, with the exception of perinatal transmission during pregnancy. The risk of congenital syphilis is directly related to the stage of syphilis in the mother, and the risk is extremely high for the first four years after maternal acquisition of infection when spirochetemia is present in pregnancy.

Tertiary syphilis Without therapy about one third of patients develop tertiary syphilis that is characterized by slowly progressive damage to the central nervous system (neurosyphilis), cardiovascular system, or musculoskeletal system and/or involvement of various organ systems, with granulomatous lesions called gummas. Such manifestations usually develop 5 to 20 years after the disease became latent. The pathogenesis of tertiary syphilis is based on tropism of *T. pallidum* for arterioles, resulting in obliterative endarteritis and subsequent tissue destruction.

For illustrations of selected clinical findings, please see http://www2a.cdc.gov/stdtraining/ready-to-use/Manuals/Syphilis/syphilis-slides-handouts-2009.pdf. If the link does not connect please go to www.cdc.gov and search for “syphilis slides”.

**Table 9 Summary of Clinical Manifestations of Syphilis**

<table>
<thead>
<tr>
<th>Stage</th>
<th>Clinical Manifestations</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Primary syphilis</strong></td>
<td>Painless ulcer (chancre) at site of inoculation, adenopathy</td>
</tr>
<tr>
<td><strong>Secondary syphilis</strong></td>
<td>Rash, mucocutaneous lesions, adenopathy, hepatitis, arthritis, glomerulonephritis, patchy alopecia, condylomata lata</td>
</tr>
<tr>
<td><strong>Latent syphilis</strong></td>
<td>Asymptomatic</td>
</tr>
<tr>
<td>Early latent (&lt;1 year after infection)</td>
<td></td>
</tr>
<tr>
<td>Late latent (&gt;1 year after infection)</td>
<td></td>
</tr>
<tr>
<td><strong>Tertiary syphilis</strong></td>
<td>Gummatous lesions, Aortic aneurysm, aortic insufficiency, Tabes dorsalis, Argyll-Robertson pupils, paresis, seizures, subtle psychiatric manifestations, dementia. May be asymptomatic</td>
</tr>
</tbody>
</table>

Congenital syphilis Two-thirds of live-born neonates with congenital syphilis are asymptomatic at birth and do not develop evidence of active disease for 3-8 weeks. Overt infection can manifest in the fetus, the newborn, or later in childhood. Clinical manifestations after birth are divided arbitrarily into early (≤2 years of age) and late (>2 years of age). The stigmata of late congenital syphilis result from scarring induced by early lesions or reactions to persistent inflammation.
Table 10 Summary of Clinical Manifestations of Congenital Syphilis

<table>
<thead>
<tr>
<th></th>
<th>Clinical Manifestations</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Fetus</strong></td>
<td>Hydrops fetalis, stillbirth (25% of affected infants); perinatal mortality (50%)</td>
</tr>
<tr>
<td><strong>Early congenital syphilis</strong></td>
<td>IUGR, reticuloendothelial abnormalities, mucocutaneous lesions, bone abnormalities, ocular abnormalities, CNS abnormalities</td>
</tr>
<tr>
<td><strong>Late congenital syphilis</strong></td>
<td>Neurologic abnormalities, dental abnormalities, skeletal abnormalities, facial abnormalities</td>
</tr>
</tbody>
</table>
GUIDELINES FOR SYPHILIS IN PREGNANCY

Table 11 Key Principles of Best Practices for Screening, Treatment and Follow-up for Syphilis in Pregnancy

<table>
<thead>
<tr>
<th>Screening</th>
<th>Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Screen all pregnant women for syphilis with either VDRL or RPR at the first PNV.</td>
<td>• Parenteral penicillin G is the preferred drug for treating all stages of syphilis. The preparation used (benzathine, aqueous procaine, or aqueous crystalline), the dosage and length of treatment depend on the stage and clinical manifestations of the disease.</td>
</tr>
<tr>
<td>• Rescreen pregnant women from a high prevalence population or at high risk for acquiring a sexually transmitted infection at 28-32 weeks’ gestation and again at delivery.</td>
<td>• Parenteral penicillin G is the only therapy with documented efficacy for syphilis during pregnancy.</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

See CDC guidelines for treatment

<table>
<thead>
<tr>
<th>Diagnosis</th>
<th>Follow-up</th>
</tr>
</thead>
<tbody>
<tr>
<td>• If the screening test is positive, promptly have a quantitative nontreponemal test and a confirmatory treponemal test performed.</td>
<td>• Repeat quantitative nontreponemal serologic tests (VDRL or RPR) at 6, 12, and 24 months.</td>
</tr>
<tr>
<td>• Inquire whether the patient was ever treated for syphilis and attempt to obtain those records from the local public health department.</td>
<td>• Consider retreatment if titers increase fourfold or if an initially high titer (&gt;1:32) fails to decline at least fourfold (i.e., two dilutions) within 12-24 months of therapy.</td>
</tr>
<tr>
<td>• Syphilis is a reportable disease</td>
<td>• In pregnancy, ensure that clinical and antibody responses are appropriate for the stage of syphilis. However, most women will deliver before their serologic response to treatment can be determined definitively.</td>
</tr>
<tr>
<td></td>
<td>• Monthly serologic titers may be necessary for women at high risk for re-infection or in regions with high prevalence;</td>
</tr>
<tr>
<td></td>
<td>• Maternal treatment is considered inadequate If:</td>
</tr>
<tr>
<td></td>
<td>o Birth occurs within 30 days of treatment,</td>
</tr>
<tr>
<td></td>
<td>o Clinical signs of syphilis are present at time of birth;</td>
</tr>
<tr>
<td></td>
<td>o Maternal antibody titer at birth is fourfold higher than pretreatment titer</td>
</tr>
</tbody>
</table>
Table 12 CDC Recommended Treatments for Syphilis in HIV-Negative Adults

<table>
<thead>
<tr>
<th>Syndrome</th>
<th>Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary &amp; Secondary Syphilis</td>
<td>Benzathine penicillin G 2.4 million units IM in a single dose</td>
</tr>
<tr>
<td>Early Latent Syphilis*</td>
<td>Benzathine penicillin G 2.4 million units IM in a single dose</td>
</tr>
<tr>
<td>Late Latent Syphilis or Latent</td>
<td>Benzathine penicillin G 7.2 million units total, administered as 3</td>
</tr>
<tr>
<td>Syphilis of Unknown Duration*</td>
<td>doses of 2.4 million units IM each at 1-week intervals</td>
</tr>
<tr>
<td>Tertiary Syphilis**</td>
<td>Benzathine penicillin G 7.2 million units total, administered as 3</td>
</tr>
<tr>
<td></td>
<td>doses of 2.4 million units IM each at 1-week intervals</td>
</tr>
<tr>
<td>Neurosyphilis</td>
<td>Aqueous crystalline penicillin G 18-24 million units per day,</td>
</tr>
<tr>
<td></td>
<td>administered as 3-4 million units IV every 4 hr or continuous infusion, for</td>
</tr>
<tr>
<td></td>
<td>10-14 days ** OR</td>
</tr>
<tr>
<td></td>
<td>Procaine penicillin 2.4 million units IM once daily ** PLUS</td>
</tr>
<tr>
<td></td>
<td>Probenecid 500 mg po qid, both for 10-14 days **</td>
</tr>
</tbody>
</table>

*Persons with latent syphilis should be evaluated for evidence of tertiary disease (e.g., aortitis and gumma) and syphilitic ocular disease (e.g., iritis and uveitis). Patients who have syphilis and who demonstrate any of the following should have a prompt cerebrospinal fluid (CSF) examination:

- Neurology or ophthalmic signs or symptoms,
- Evidence of active tertiary syphilis,
- Treatment failure, or
- HIV infection with late latent syphilis or syphilis of unknown duration

**Patients with symptomatic tertiary syphilis should have a CSF examination before therapy is initiated.

Management of Sexual Partners

Sexual transmission of *T. pallidum* occurs only when mucocutaneous syphilitic lesions are present; such manifestations are uncommon after the first year of infection. However, persons exposed sexually to a patient with syphilis in any stage should be evaluated clinically and serologically, and treated with a recommended regimen, according to the recommendations outlined in Figure 10.
### Key Components of Evaluation

- History
- Clinical exam
- Syphilis serology
- HIV serology & other STI testing
- Follow-up: 6 & 12 mos. Plus 24 months (for latent or unknown duration)

### Identification of At-Risk Sexual Partners

**All those with sexual contact within**

- 3 months + duration of symptoms for primary syphilis
- 6 months + duration of symptoms for secondary syphilis
- 1 year for early latent syphilis

### Exposure

- ≤90 days of partner diagnosed with:
  - Primary
  - Secondary or
  - Early Latent
- >90 days of partner diagnosed with:
  - Primary
  - Secondary or
  - Early Latent
- Partner diagnosed with syphilis of unknown duration & late latent syphilis

#### Evaluation

- Presumptive Treatment even if serology is negative
- Positive Clinical Exam
  - Treat
  - Pts. Serologic Results Immediately Available
    - Yes, Follow-up is certain
    - No, Presumptive Treatment
- Negative Clinical Exam
  - Assume exposed to early syphilis
  - Yes, Exposure to person with titer ≥1:32
  - No, Presumptive Treatment

#### Follow-up

- If uncertain that follow-up will be complete, may require more frequent visits than those listed

**For Primary, Secondary and Early Latent**

- Repeat Clinical and Serologic evaluation at 6 and 12 months post treatment;

**For Latent or Unknown duration**

- Repeat clinical and serologic testing at 24 months as well;

Non-treponemal test titers are expected to decline fourfold within 6 to 12 months after treatment. If titers do not decline, retest for HIV and consult for optimal management.

### Benzathine Penicillin G

**2.4 million units IM in a single dose**

- ≤90 days of partner diagnosed with:
  - Primary
  - Secondary or
  - Early Latent

- >90 days of partner diagnosed with:
  - Primary
  - Secondary or
  - Early Latent

- Partner diagnosed with syphilis of unknown duration & late latent syphilis

- Benzathine penicillin G
  - 7.2 million units total, administered as 3 doses of 2.4 million units IM each at 1-week intervals

### Management & Counseling

- Counseling
- Reporting
- Contact tracing

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Centers for Disease Control and Prevention. Sexually Transmitted Diseases Treatment Guidelines —MMWR 2010:59(RR-12) 56
PATIENT EDUCATIONAL MATERIALS

In this section you will find examples of patient education materials for syphilis in pregnancy.

Please also consult the links below for the most up-to-date patient education materials.

Centers for Disease Control and Prevention

Patient Handout- Syphilis - The Facts Available in English and Spanish
http://www.cdc.gov/std/healthcomm/the-facts.htm

Syphilis Fact Sheet
http://www.cdc.gov/std/syphilis/facts-brochures.htm

STDs In Pregnancy Fact Sheet
http://www.cdc.gov/std/pregnancy/STDFact-Pregnancy.htm

California STD/HIV Prevention Training Center

Syphilis Fact Sheet

American Congress of Obstetricians and Gynecologists

Gonorrhea, Chlamydia and Syphilis Fact Sheet
http://www.acog.org/publications/patient_education/

American Academy of Family Physicians

Sexually Transmitted Diseases- Fact Sheets
http://familydoctor.org/online/famdocen/home/common/sexinfections.html

Medline Plus-US National Library of Medicine, National Institutes of Health

Syphilis Facts
http://vsearch.nlm.nih.gov/vivisimo/cgi-bin/query-meta?v%3Aproject=medlineplus&query=syphilis
CDC Fact Sheet

Syphilis

What is syphilis?
Syphilis is a sexually transmitted disease (STD) caused by the bacterium Treponema pallidum. It has often been called “the great imitator” because so many of the signs and symptoms are indistinguishable from those of other diseases.

How common is syphilis?
In the United States, health officials reported over 36,000 cases of syphilis in 2006, including 9,756 cases of primary and secondary (P&S) syphilis. In 2006, half of all P&S syphilis cases were reported from 20 counties and 2 cities; and most P&S syphilis cases occurred in persons 20 to 39 years of age. The incidence of P&S syphilis was highest in women 20 to 24 years of age and in men 35 to 39 years of age. Reported cases of congenital syphilis in newborns increased from 2003 to 2006, with 339 new cases reported in 2005 compared to 349 cases in 2006.

Between 2005 and 2006, the number of reported P&S syphilis cases increased 11.8 percent. P&S rates have increased in males each year between 2000 and 2006 from 2.6 to 5.7 and among females between 2004 and 2006. In 2006, 64% of the reported P&S syphilis cases were among men who have sex with men (MSM).

How do people get syphilis?
Syphilis is passed from person to person through direct contact with a syphilis sore. Sores occur mainly on the external genitals, vagina, anus, or in the rectum. Sores also can occur on the lips and in the mouth. Transmission of the organism occurs during vaginal, anal, or oral sex. Pregnant women with the disease can pass it to the babies they are carrying. Syphilis cannot be spread through contact with toilet seats, doorknobs, swimming pools, hot tubs, bathtubs, shared clothing, or eating utensils.

What are the signs and symptoms?
Many people infected with syphilis do not have any symptoms for years, yet remain at risk for late complications if they are not treated. Although transmission occurs from persons with sores who are in the primary or secondary stage, many of these sores are unrecognized. Thus, transmission may occur from persons who are unaware of their infection.

Primary Stage: The primary stage of syphilis is usually marked by the appearance of a single sore (called a chancre), but there may be multiple sores. The time between infection with syphilis and the start of the first symptom can range from 10 to 90 days (average 21 days). The chancre is usually firm, round, small, and painless. It appears at the spot where syphilis entered the body. The chancre lasts 3 to 6 weeks, and it heals without treatment. However, if adequate treatment is not administered, the infection progresses to the secondary stage.

Secondary Stage: Skin rash and mucous membrane lesions characterize the secondary stage. This stage typically starts with the development of a rash on one or more areas of the body. The rash usually does not cause itching. Rashes associated with secondary syphilis can appear as the chancre is healing or several weeks after the chancre has healed. The characteristic rash of secondary syphilis may appear as rough, red, or reddish brown spots both on the palms of the hands and the bottoms of the feet. However, rashes with a different appearance may occur on other parts of the body, sometimes resembling rashes caused by other diseases. Sometimes rashes associated with secondary syphilis are so faint that they are not noticed. In addition to rashes, symptoms of secondary syphilis may include fever, swollen lymph glands, sore throat, patchy hair loss, headaches, weight loss, muscle aches, and fatigue. The signs and symptoms of secondary syphilis will resolve with or without treatment, but without treatment, the infection will progress to the latent and possibly late stages of disease.

Late and Latent Stages: The latent (hidden) stage of syphilis begins when primary and secondary symptoms disappear. Without treatment, the infected person will continue to have syphilis even though there are no signs or symptoms; infection remains in the body. This latent stage can last for years. The late stages of syphilis can develop in about 15% of people who have not been treated for syphilis.
and can appear 10-20 years after infection was first acquired. In the late stages of syphilis, the disease may subsequently damage the internal organs, including the brain, nerves, eyes, heart, blood vessels, liver, bones, and joints. Signs and symptoms of the late stage of syphilis include difficulty coordinating muscle movements, paralysis, numbness, gradual blindness, and dementia. This damage may be serious enough to cause death.

■ How does syphilis affect a pregnant woman and her baby?
The syphilis bacterium can infect the baby of a woman during her pregnancy. Depending on how long a woman has been infected, she may have a high risk of having a stillbirth (a baby born dead) or of giving birth to a baby who dies shortly after birth. An infected baby may be born without signs or symptoms of disease. However, if not treated immediately, the baby may develop serious problems within a few weeks. Untreated babies may become developmentally delayed, have seizures, or die.

■ How is syphilis diagnosed?
Some health care providers can diagnose syphilis by examining material from a chancre (infectious sore) using a special microscope called a dark-field microscope. If syphilis bacteria are present in the sore, they will show up when observed through the microscope.

A blood test is another way to determine whether someone has syphilis. Shortly after infection occurs, the body produces syphilis antibodies that can be detected by an accurate, safe, and inexpensive blood test. A low level of antibodies will likely stay in the blood for months or years even after the disease has been successfully treated. Because untreated syphilis in a pregnant woman can infect and possibly kill her developing baby, every pregnant woman should have a blood test for syphilis.

■ How are syphilis and HIV linked?
Genital sores (chancres) caused by syphilis make it easier to transmit and acquire HIV infection sexually. There is an estimated 2- to 5-fold increased risk of acquiring HIV if exposed to that infection when syphilis is present.

Ulcerative STDs that cause sores, ulcers, or breaks in the skin or mucous membranes, such as syphilis, disrupt barriers that provide protection against infections. The genital ulcers caused by syphilis can bleed easily, and when they come into contact with oral and rectal mucosa during sex, increase the infectiousness of and susceptibility to HIV. Having other STDs is also an important predictor for becoming HIV infected because STDs are a marker for behaviors associated with HIV transmission.

■ What is the treatment for syphilis?
Syphilis is easy to cure in its early stages. A single intramuscular injection of penicillin, an antibiotic, will cure a person who has had syphilis for less than a year. Additional doses are needed to treat someone who has had syphilis for longer than a year. For people who are allergic to penicillin, other antibiotics are available to treat syphilis. There are no home remedies or over-the-counter drugs that will cure syphilis. Treatment will kill the syphilis bacterium and prevent further damage, but it will not repair damage already done.

Because effective treatment is available, it is important that persons be screened for syphilis on an ongoing basis if their sexual behaviors put them at risk for STDs.

Persons who receive syphilis treatment must abstain from sexual contact with new partners until the syphilis sores are completely healed. Persons with syphilis must notify their sex partners so that they also can be tested and receive treatment if necessary.

■ Will syphilis recur?
Having syphilis once does not protect a person from getting it again. Following successful treatment, people can still be susceptible to re-infection. Only laboratory tests can confirm whether someone has syphilis. Because syphilis sores can be hidden in the vagina, rectum, or mouth, it may not be obvious that a sex partner has syphilis. Talking with a health care provider will help to determine the need to be re-tested for syphilis after being treated.

■ How can syphilis be prevented?
The surest way to avoid transmission of sexually transmitted diseases, including syphilis, is to abstain from sexual contact or to be in a long-term mutually monogamous relationship with a partner who has been tested and is known to be uninfected.

Avoiding alcohol and drug use may also help prevent transmission of syphilis because these activities may lead to risky sexual behavior. It is important that sex partners talk to each other about their HIV status and history of other STDs so that preventive action can be taken.

Genital ulcer diseases, like syphilis, can occur in both male and female genital areas that are covered or protected by a latex condom, as well as in areas that are not covered. Correct and consistent use of latex condoms can reduce the risk of syphilis, as well as genital herpes and chancroid, only when the infected area or site of potential exposure is protected.

Condoms lubricated with spermicides (especially Nonoxynol-9 or N-9) are no more effective than other lubricated condoms in protecting against the transmission of STDs. Use of condoms lubricated with N-9 is not recommended for STD/HIV prevention. Transmission of an STD, including syphilis, cannot be prevented by washing the genitals, urinating, and/or douching after sex. Any unusual discharge, sore, or rash, particularly in the groin area, should be a signal to refrain from having sex and to see a doctor immediately.

■ FOR MORE INFORMATION:
Division of STD Prevention (DSTD)
Centers for Disease Control and Prevention
http://www.cdc.gov/std/

CDC-INFO Contact Center
1-800-232-4636
Email: cdcinfo@cdc.gov

American Social Health Association (ASHA)
1-800-783-9877
www.ashastd.org

CONTENT UPDATED: DECEMBER, 2007
¿Qué es la sífilis?

La sífilis es una enfermedad de transmisión sexual (ETS) causada por la bacteria Treponema pallidum. A menudo se le ha llamado "la gran imitadora" porque muchos de sus signos y síntomas no se distinguen fácilmente de otras enfermedades.

¿Qué tan frecuente es la sífilis?

En los Estados Unidos, las autoridades de salud registraron más de 36,000 casos de sífilis en el 2006, de los cuales 9,756 eran de sífilis primaria y secundaria. Asimismo, la mitad de todos los casos de sífilis primaria y secundaria en el 2006 se reportaron en 20 condados y 2 ciudades, y en su mayoría correspondían a personas de 20 a 39 años de edad. La incidencia más alta de sífilis primaria y secundaria se registró en mujeres de 20 a 24 años de edad y en hombres de 35 a 39 años. Los casos de sífilis congénita reportados en recién nacidos aumentaron de 339 casos nuevos en el 2005 a 349 en el 2006.

Entre el 2005 y el 2006, el número de casos reportados de sífilis primaria y secundaria aumentó en un 11.8%. Entre el 2000 y el 2006 las tasas de sífilis primaria y secundaria en hombres se incrementaron anualmente de 2.6 a 5.7, mientras que en las mujeres esto mismo ocurrió entre el 2004 y el 2006. En el 2006, el 64% de los casos reportados de sífilis primaria y secundaria correspondieron a hombres que tienen relaciones sexuales con hombres (HSH).

¿Cómo se contrae la sífilis?

La sífilis se pasa de una persona a otra a través del contacto directo con una úlcera sífilítica. Las úlceras aparecen principalmente en los genitales externos, la vagina, el ano o el recto. También pueden salir en los labios y en la boca. La transmisión de la bacteria ocurre durante las relaciones sexuales vaginales, anales u orales. Las mujeres embarazadas que tienen esta enfermedad pueden pasársela a los bebés que llevan en el vientre. La sífilis no se propaga por el contacto con los inodores, las manjacas de las puertas, las piscinas, las bañeras normales o de hidromasaje, ni por compartir ropa o cubiertos.

¿Cuáles son los signos y síntomas?

Muchas personas que tienen sífilis no presentan síntomas durante años, pero aun así enfrentan el riesgo de tener complicaciones en la fase avanzada si no se tratan la enfermedad. Las personas que están en la fase primaria o secundaria de la enfermedad transmiten la infección aunque muchas veces las úlceras sífilíticas no se puedan reconocer. Por lo tanto, las personas que no saben que están infectadas pueden contagiar la enfermedad.

Fase primaria: La fase primaria de la sífilis suele estar marcada por la aparición de una sola úlcer (llamada chancro), pero puede que haya muchas. El tiempo que transcurre entre la infección por sífilis y la aparición del primer síntoma puede variar de 10 a 90 días (con un promedio de 21 días). Por lo general, el chancro es firme, redondo, pequeño e indoloro. Aparece en el sitio por donde la sífilis entró al organismo. El chancro dura de 3 a 6 semanas y desaparece sin ser tratado. Sin embargo, si no se administra el tratamiento adecuado la infección avanza a la fase secundaria.

Fase secundaria: La fase secundaria se caracteriza por erupciones en la piel y lesiones en las membranas mucosas. Esta fase suele comenzar con la aparición de una erupción de la piel en una o más áreas del cuerpo, que por lo general no produce picazón. Las erupciones de la piel asociadas a la sífilis secundaria pueden aparecer cuando el chancro se está curando o varias semanas después que se haya curado. La erupción característica de la sífilis secundaria puede tomar el aspecto de puntos rugosos, de color rojo o marrón rojizo, tanto en la palma de las manos como en la planta de los pies. Sin embargo, en otras partes del cuerpo también pueden aparecer erupciones de aspecto distinto, o que son similares a las causadas por otras enfermedades. Algunas veces, las erupciones asociadas a la sífilis secundaria son tan leves que pasan desapercibidas. Además, puede que se presenten otros síntomas durante la fase secundaria de la sífilis, como fiebre, inflamación de los ganglios linfáticos, dolor de garganta, caída del cabello en algunas áreas, dolor de cabeza, pérdida de peso, dolores musculares y fatiga. Los signos y síntomas de la sífilis secundaria desaparecen aun si no son tratados, pero si no se administra tratamiento la infección progresará a la fase latente y posiblemente hasta la última fase de la enfermedad.

Fases latente y terciaria: La fase latente (oculta) de la sífilis comienza con la desaparición de los síntomas de las fases primaria y secundaria. Sin tratamiento, la persona infectada seguirá teniendo sífilis aun cuando no presente signos o síntomas ya que la infección permanece en el cuerpo. Esta fase latente puede durar años. En el 15% de las personas que no reciben tratamiento para la sífilis, la enfermedad puede avanzar hasta las fases latente y terciaria, que pueden aparecer de 10 a 20 años después de haberse adquirido la infección.

En esta fase avanzada la sífilis puede afectar posteriormente órganos internos como el cerebro, los nervios, los ojos, el corazón, los vasos sanguíneos, el hígado, los huesos y las articulaciones.
Los signos y síntomas de la fase temprana de la sífilis incluyen dificultad para coordinar los movimientos musculares, parálisis, entumecimiento, ceguera gradual y demencia. El daño puede ser grave y causar la muerte.

**¿Qué efectos tiene la sífilis en la mujer embarazada y en su bebé?**

La bacteria de la sífilis puede infectar al bebé durante el embarazo. Dependiendo de cuánto tiempo una mujer embarazada ha estado infectada, puede enfrentar un alto riesgo de tener un bebé que nazca muerto o de dar a luz un bebé que nazca muy bajo después de haber nacido. Un bebé infectado puede que nazca sin los signos y síntomas de la enfermedad. Sin embargo, si no es sometido a tratamiento de inmediato, el bebé puede presentar serios problemas al cabo de unas cuantas semanas. Si estos bebés no reciben tratamiento, pueden sufrir de retraso en el desarrollo, convulsiones o morir.

**¿Cómo se diagnostica la sífilis?**

Algunos médicos pueden diagnosticar la sífilis mediante el análisis de una muestra líquida del chancre (la úlcera infecciosa) en un microscopio especial llamado microscopio de campo oscuro. Si las bacterias de la sífilis están presentes en la úlcera, se observarán en el microscopio.

Otra manera de determinar si una persona tiene sífilis es mediante un análisis de sangre. Poco después de que una persona se infecte comienza a producir anticuerpos contra la sífilis que pueden ser detectados mediante una prueba de sangre segura, precisa y económica. El cuerpo presentarà niveles bajos de anticuerpos en la sangre durante meses o incluso años después de que se haya completado el tratamiento de la enfermedad. Dado que la sífilis no tratada en una mujer embarazada puede infectar y posiblemente provocar la muerte de su bebé, toda mujer embarazada debe hacerse un análisis de sangre para detectar la sífilis.

**¿Cómo se relaciona la sífilis con el VIH?**

Las úlceras genitales (chancros) producidas por la sífilis hacen que sea más fácil contraer la infección por el VIH y transmitirla por vía sexual. Se calcula que el riesgo de contraer la infección por el VIH es de 2 a 5 veces mayor cuando la persona expuesta al virus tiene sífilis.

Las ETS ulcerosas que producen llagas, úlceras o rupturas de la piel o de las membranas mucosas, tales como la sífilis, rompen las barreras que protegen contra las infecciones. Las úlceras generadas por la sífilis pueden sangrar fácilmente y cuando entran en contacto con la mucosa bucal o rectal durante la relación sexual aumentan las probabilidades de infección y la susceptibilidad al VIH. El tener otras ETS también puede ser un factor importante para predecir una posible infección por el VIH, ya que las ETS son un marcador de las conductas asociadas a la transmisión del VIH.

**¿Cuál es el tratamiento para la sífilis?**

La sífilis es fácil de curar en sus fases iniciales. Si una persona ha tenido sífilis durante menos de un año, la enfermedad se curará con una sola inyección intramuscular de penicilina, que es un antibiótico, y si ha tenido sífilis por más de un año, necesitará dosis adicionales. Existen otros antibióticos para tratar la sífilis en personas que son alérgicas a la penicilina. La sífilis no puede curarse con remedios caseros ni con medicinas que se venden sin receta médica. El tratamiento matará a la bacteria que causa la sífilis y evitará futuras lesiones, pero no remediará las lesiones ya ocasionadas.

Ya que existe un tratamiento eficaz contra la sífilis, es importante que periódicamente las personas se hagan las pruebas de detección de esta enfermedad si practican conductas sexuales que las ponen a riesgo de contraer ETS. Las personas que están tratándose contra la sífilis deben abstenerse de tener contactos sexuales con parejas nuevas hasta que las úlceras sífilíticas se hayan curado por completo. Las personas que tienen sífilis deben avisar inmediatamente a sus parejas para que se sometan a pruebas y reciban tratamiento si es necesario.

**¿La sífilis es recurrente?**

El hecho de que una persona haya tenido sífilis una vez no la protege de tenerla de nuevo. Una persona puede seguir siendo susceptible a la reinfección una cuando se haya curado con el tratamiento. Solamente las pruebas de laboratorio pueden confirmar si una persona tiene sífilis. Dado que las úlceras sífilíticas pueden estar ocultas en la vagina, el recto o la boca, puede que un solo examen no se entere de que su pareja sexual tiene sífilis. El médico le ayudará a determinar si es necesario hacer nuevas pruebas de detección de la sífilis después de que haya concluido el tratamiento.

**¿Cómo puede prevenirse la sífilis?**

La manera más segura de evitar contraer enfermedades de transmisión sexual, incluida la sífilis, es abstenerse del contacto sexual o tener una relación estable y mutuamente monógama con una pareja que se haya hecho las pruebas y que se sienta que no tiene ninguna infección. Abstenerse de consumir alcohol y drogas puede también ayudar a evitar la transmisión de la sífilis, ya que estas actividades pueden llevar a una conducta sexual peligrosa. Es importante que las parejas sexuales hablen entre ellas sobre si tienen el VIH o si en el pasado han tenido otras ETS, de manera que puedan tomar acciones preventivas.

Las enfermedades genitales ulcerosas, como la sífilis, pueden aparecer tanto en las áreas genitales masculinas como las femeninas que hayan estado cubiertas o protegidas con un condón de latex, así como en áreas que no estuvieron cubiertas durante la relación sexual. El uso correcto y habitual de los condones de latex puede reducir el riesgo de contraer sífilis, herpes genitales y chancros, solamente si el área infectada o el área de posible contacto está cubierta.

Los condones lubricados con espermicidas (especialmente el Nonoxynol-9 o N-9) no son más eficaces para prevenir la transmisión de las ETS que los otros condones lubricados. El uso de condones lubricados con N-9 no se recomienda para prevenir la infección de las ETS o del VIH. La transmisión de una ETS, incluida la sífilis, no puede prevenirse con lavarse los genitales, ofrir o darse una ducha vaginal después de la relación sexual. Cualquier secreción, úlcera o irritación anormal, en particular en el área de la ingle, debe considerarse como un signo para dejar de tener relaciones sexuales y consultar a un médico de inmediato.
Syphilis (Si-fil-hiss) is a Sexually Transmitted Disease (STD) caused by a type of bacteria called Treponema pallidum. Syphilis can infect men, women, and newborns.

Q: How is syphilis spread?
A: Syphilis is spread from person to person during vaginal, oral, or anal sex. A pregnant woman can pass syphilis to her baby.

Q: What are the signs and symptoms of syphilis?
A: Some people do not get any symptoms when they have syphilis.
Symptoms of PRIMARY STAGE SYphilis: (10 to 90 days after becoming infected):
• A skin sore called a chancre (shank-er)
  Chancres are typically round, firm, and not painful. They are usually on the penis, scrotum, vaginal lips, anus, or mouth.
• Women may not notice the painless sores because they can be inside the vagina.
• Lymph glands near the sore may be swollen but are usually not painful.

**EVEN WITHOUT TREATMENT, THESE SORES WILL GO AWAY -- BUT YOU ARE STILL INFECTED!**

Symptoms of SECONDARY STAGE SYphilis may develop after the primary stage. Symptoms of secondary syphilis are different from person to person.
• Skin rash, which can be widespread all over the body: the rash can be on the palms of the hands and soles of the feet, and is usually not itchy. Sometimes the rash can be hard to notice.
• Bumps (like warts) or flat, white patches in the mouth, on the genitals, or in the rectal area
• Flu-like illness with sore throat, headache, and fever
• Patchy hair loss on the head (not balding)
• Nervous system symptoms are rare but possible. They include headaches, hearing loss, and visual changes.

**EVEN WITHOUT TREATMENT, THESE SYMPTOMS WILL GO AWAY -- BUT YOU ARE STILL INFECTED!**

Q: Is syphilis serious?
A: Yes! Without treatment, syphilis can cause brain damage, blindness, heart disease, and other health problems. These health problems may take 5 to 20 years or more to develop.
• A pregnant woman can pass syphilis to her unborn baby, causing serious illness or death. If you are pregnant or think you may be pregnant, be sure to tell your doctor or nurse.
• A person with an open sore caused by syphilis has a greater chance of giving or getting HIV, the virus that causes AIDS.
Q: How is syphilis treated?
A: • Your doctor or nurse will give you medicine that cures syphilis infection.
  • If you have syphilis, your partner(s) must be treated, even if they have no symptoms.
  • If they are not treated, they can give the infection back to you, or infect others.
  • Your health care provider will give you medicine to cure syphilis infection.
  • If you are pregnant or think you may be pregnant, be sure to tell your doctor or nurse.
  • Ask your doctor about the need for follow-up tests.

Q: How do I avoid getting syphilis?
A: Abstinence (not having sex) is the only sure way to avoid infection.
  • Plan Ahead: Think about protecting yourself. Talk with your sex partner(s) about STDs and the need
to protect yourself. Then, you can choose not to have sex (abstinence), or decide to:
  • Use a male condom with each sex partner.
  • Use a female condom when a male condom cannot be used.

HIV IS ALSO A STD!
When you catch syphilis, you could also be getting HIV.
Birth control pills or a birth control shot cannot protect you against syphilis or other STDs.

USBING LATEX CONDOMS CORRECTLY EVERY TIME YOU HAVE SEX CAN REDUCE THE CHANCE
FOR TRANSMISSION OF SYPHILIS ONLY IF THE INFECTED AREAS ARE COVERED OR PROTECTED BY
THE CONDOM.

Q: Where can I get more information about STDs and referrals for STD testing?
A: • Phone: Talk to a trained operator who can answer your questions and provide information about
  STD testing. In English and Español 24 hours/day, 7 days/week: Toll-free: 1-800-CDC-INFO
  (1-800-232-4636); TTY for the Deaf and Hard of Hearing: 1-888-232-6348
  • Internet: Centers for Disease Control and Prevention: http://www.cdc.gov/std/
  http://www.cdc.gov/std/healthcomm/fact_sheets.htm
  Talk to your own health care provider, or call your county health department by looking for the
  telephone number in the phone book (white pages) under county government. Ask to speak to
  someone in the STD clinic or STD program for more information about syphilis.
BACTERIAL VAGINOSIS

Bacterial vaginosis (BV) is a common vaginal condition occurring in 12-40% of pregnant women.45 **Up to 80% of these women may be unaware of the presence of bacterial vaginosis.** When recognized, the most commonly reported symptoms are increased thin vaginal discharge, and a sharp or fishy odor. The odor is often especially noted after sexual intercourse or during menses. Bacterial vaginosis is not a sexually transmitted infection. However, it is considered sexually associated since it is more common among women who participate in vaginal intercourse with men and/or other women.46

Bacterial vaginosis is not caused by a single bacteria. Rather it is a condition which occurs when the bacteria (*Lactobacillus* spps., especially hydrogen peroxide producing *L. jensenini*), which are normally present in high numbers in the vagina, are decreased, or absent, while potentially pathogenic bacteria, most notably *Prevotella* spps. (formerly *Bacteroides* spps.), *Peptococcus*, and *Mobiluncus* species, along with *Gardnerella vaginalis*, *Mycoplasma hominis*, and *Ureaplasma urealyticum* are present in high (10^8 or greater) concentrations.46 In addition, the biochemical properties of the bacterial vaginosis-associated vaginal fluid exhibit important alterations.47 These changes include elevated pH and increased vaginal fluid concentrations of enzymes and organic compounds. The increased levels of enzymes and compounds may overcome host defense mechanisms, and can also act directly on the cervical mucus amniochorion and decidua to facilitate the entrance of microorganisms into the upper reproductive tract.50 These misplaced microorganisms can contribute to the initiation of preterm labor.48,49,50

Complications in Pregnancy

Bacterial vaginosis is consistently linked to adverse pregnancy outcomes in well controlled research studies. Adverse outcomes include: spontaneous late or second trimester miscarriage, preterm birth, preterm rupture of membranes, low birthweight, chorioamnionitis, postpartum endometritis, cesarean section wound infection, stillbirth, cerebral palsy and post abortion endometritis.1-4,7,8,36,46

**Figure 11.** Microscopic Wet Prep view of vaginal epithelial “Clue Cell” (Left) used in clinical diagnosis of bacterial vaginosis and normal vaginal epithelial cells (right).
Diagnosis

The diagnosis of BV can be made using so called “point of care” tests, done within the exam room, or clinic or laboratory based tests. Some tests are more accurate than others.

For several decades, the clinical gold standard for diagnosing BV required observing 3 of 4 clinical criteria. These clinical criteria are:

- presence of a homogeneous, thin, grey or milky vaginal discharge that is adherent to the vaginal walls;
- vaginal fluid pH >4.5;
- release of amine (fishy) odor when vaginal fluid is mixed with a few drops of potassium hydroxide; and
- microscopic examination of vaginal fluid mixed with a few drops of saline to reveal the presence of bacterial coated vaginal epithelial or “clue” cells (shown in figure 11). More than 20% of the vaginal epithelial cells should be “clue” cells in order to be classified as positive for “clue” cells.

A variety of other techniques have been developed for the diagnosis of bacterial vaginosis in order to decrease the subjectivity of the diagnosis. These include: gram stains of vaginal fluid with systematic microscopic examination and counts for specific types of bacteria, DNA probes for high concentrations of G. vaginalis, and biochemical analysis for sialidase levels. Gram stain interpretation is not readily available for clinical care. Commercially available diagnostic tests are described in Table 13.

Figure 12 Gram stain view of normal vaginal epithelial cells (left) with lactobacillus morphotypes present, and bacterial vaginosis “clue” cells (right). Note increased numbers of small bacteria and reduced or absent lactobacillus morphotypes on the right.
Table 13 Bacterial Vaginosis Diagnostic Tests: Sensitivity & Specificity

<table>
<thead>
<tr>
<th>Test Type</th>
<th>BVBlue&lt;sup&gt;*&lt;/sup&gt;</th>
<th>Affirm&lt;sup&gt;™&lt;/sup&gt; VPIII Microbial Identification Tests</th>
<th>pHem-Alert&lt;sup&gt;*&lt;/sup&gt;</th>
<th>Wet Prep</th>
<th>Amsel Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Vendor</strong></td>
<td>Genzyme Diagnostics</td>
<td>Becton Dickenson</td>
<td>Gynex</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Collection Site</strong></td>
<td>Lower third of the vaginal wall</td>
<td>Mid-Lower vaginal wall</td>
<td>Outer third of the vagina</td>
<td>Mid-lower vaginal wall</td>
<td>Mid-lower vaginal wall</td>
</tr>
<tr>
<td><strong>Sensitivity</strong></td>
<td>90.3%*</td>
<td>95.1%*</td>
<td>90.3%*</td>
<td>35-77.4%*</td>
<td>35-88%*</td>
</tr>
<tr>
<td><strong>Specificity</strong></td>
<td>96.6%*</td>
<td>83.3%*</td>
<td>65.1%*</td>
<td>55- 85%*</td>
<td>55-96%*</td>
</tr>
<tr>
<td><strong>Test Advantages</strong></td>
<td>Easy to use point of care test; Results in 10 minutes-color change; Can use self collected swabs; High sensitivity and specificity;</td>
<td>Tests for BV, TV, yeast and GC simultaneously; High sensitivity and specificity;</td>
<td>Easy to use</td>
<td>Quick and easy with skilled provider and working microscope.</td>
<td>Quick and easy with skilled provider and working microscope.</td>
</tr>
<tr>
<td><strong>Test Disadvantages</strong></td>
<td>10 minute incubation at room temperature</td>
<td>Laboratory based; Incubation time;</td>
<td>Assists in the vaginal examination, but is not meant to be the sole basis for a therapeutic decision; Low Specificity for BV, but high Sensitivity.</td>
<td>Requires a working microscope. Inconsistent training on identification of “clue” cells; Potentially low sensitivity and specificity depending on skill of individual reviewing slides.</td>
<td>Inconsistent use of 3 of 4 criteria; or 2 of 3 criteria (omitting homogeneous discharge); A working microscope is required. Requires pH paper to detect pH range 3.0 to 7.0; Nitrazine paper is inappropriate for this use.</td>
</tr>
<tr>
<td><strong>Cost [may vary]</strong></td>
<td>$159.85/ 25 test kits</td>
<td>$ 55.00/test</td>
<td>$36.00/ box of 12</td>
<td>Cost of wet prep, slides and cover slips</td>
<td>Cost of wet prep, pH paper, and KOH, slides and cover slips</td>
</tr>
</tbody>
</table>

*Sensitivity and Specificity are compared with Gram Stain
GUIDELINES FOR BACTERIAL VAGINOSIS

Women with symptoms of vaginal infections should be screened for bacterial vaginosis as well as other common causes of vaginal/cervical infections.

Recommendations for screening for BV among women without symptoms vary, largely because of differing results from clinical research studies. The various studies used different antibiotics, different dosing regimens of the same antibiotic, and different routes of delivery. Studies also varied according to the gestational age at time of treatment, and some of the studies examined the effect of antibiotic treatment among women with no evidence of bacterial vaginosis or other infections. The following consistent findings are noted:

- Research studies that screened all asymptomatic women and treated BV with clindamycin regimens early in pregnancy (before 20 weeks gestation) demonstrated reduced rates of preterm birth,
- Intravaginal clindamycin later in pregnancy (after 20 weeks) was not associated with reduced rates of preterm birth, and in some studies increased rates of preterm birth.
- Most research studies among women with risk factors for preterm birth, which examined oral metronidazole regimens (given before 24-weeks gestation) showed reduced rates of preterm birth. However, the largest U.S. study that examined oral metronidazole after 20-weeks gestation, and other studies treating women in late second or third trimester, have not shown reduced rates of preterm birth in either low- or high-risk women.

The CDC and the American College of Obstetricians and Gynecologists hold that there is insufficient evidence to support screening asymptomatic pregnant women. The U.S. Preventive Services Taskforce recommends against screening for bacterial vaginosis among asymptomatic pregnant women who are at low risk for preterm birth.

**Table 14** Key Principles of Best Practices for Screening, Treatment and Follow-up of Bacterial Vaginosis During Pregnancy.

<table>
<thead>
<tr>
<th>Screening</th>
<th>Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Inform women about bacterial vaginosis and risks in pregnancy.</td>
<td>For bacterial vaginosis- (Figure 13) One week course of either:</td>
</tr>
<tr>
<td>• Screen vaginal pH; if &gt;4.5, then test using appropriate sensitive and</td>
<td>• Oral clindamycin (300 mg twice daily) OR</td>
</tr>
<tr>
<td>specific tests for vaginitis and bacterial vaginosis (BV); conducted</td>
<td>• Intravaginal clindamycin cream 2%, one applicator-full at bedtime for 7 days (if</td>
</tr>
<tr>
<td>for all pregnant women. (BV: vaginal fluid pH &gt; 4.5; “whiff test”, “wet</td>
<td>before 20 weeks gestation)</td>
</tr>
<tr>
<td>prep” for “clue” cells; Amsel’s Criteria if microscope not available, use</td>
<td></td>
</tr>
<tr>
<td>appropriate sensitive and specific bedside or laboratory test for BV)</td>
<td></td>
</tr>
<tr>
<td>➢ Test of cure 1-month following treatment</td>
<td></td>
</tr>
<tr>
<td>➢ Check vaginal pH at 20 wks and re-test for BV if pH &gt;4.5</td>
<td></td>
</tr>
</tbody>
</table>

LA Best Babies Network recommends the following algorithm for detecting and managing bacterial vaginosis in pregnancy (Figure 13).
Screening, Treatment, Follow-up for Bacterial Vaginosis in Pregnancy

Screen all pregnant women the first prenatal physical exam

Options for Tests
Clinical Criteria:
- Wet Prep - > 20% Clue Cells
- Whiff Test
- PH
- Affirm BV
- BV Blue

Negative
- Education on bacterial vaginosis signs and symptoms
- Re-screen if patient becomes symptomatic or begins preterm labor

Positive

Treatment
1st Choice - Oral Clindamycin 300mg twice daily for 7 days
2nd Choice - Oral Metronidazole 250mg three times daily for 7 days OR Oral Metronidazole 500 mg twice daily for 7 days OR
Education on BV: potential impact on pregnancy, signs and symptoms, Medication risks/benefits

Test of Cure - 1 month after treatment retreat if positive (CDC)

NOTE:

CDC-2010 STD Guidelines
- Treatment for pregnant women with symptomatic BV
- Insufficient evidence to recommend screening women at risk for preterm birth to reduced risk for preterm birth

Cochrane Review - Sangkomkamhang US. 2009—Evidence to support infection screening programs may reduce preterm birth.

Literature Review
9 studies providing recommended treatment regimens before 22 weeks demonstrate reduced preterm birth.
3 studies providing non-CDC recommended dosing regimens between 24-32 weeks did not reduce preterm birth and in one study increased rates were noted among treated women.

Updated for the Healthy Births Care Quality Collaborative – January 1, 2011
PATIENT EDUCATIONAL MATERIALS

In this section you will find examples of patient education materials for bacterial vaginosis in pregnancy.

Please also consult the links below for the most up-to-date patient education materials.

**American Academy of Family Physicians:**
- Bacterial Vaginosis Fact Sheet

**Centers for Disease Control and Prevention:**
- **Patient Handout** *Bacterial Vaginosis—The Facts*
  Available in English and Spanish

  - Bacterial Vaginosis Fact Sheet
    [http://www.cdc.gov/std/BV/STDFact-Bacterial-Vaginosis.htm](http://www.cdc.gov/std/BV/STDFact-Bacterial-Vaginosis.htm)

  - STDs In Pregnancy Fact Sheet
What You Should Know About Bacterial Vaginosis

What’s the most common vaginal infection? Nope, it’s not a yeast infection! Bacterial vaginosis (BV) is the most frequent cause of abnormal vaginal discharge. But unlike the more familiar terms “vaginitis” or “yeast infection,” many women still do not recognize the term BV or understand the infection that it signifies.

All Vaginitis Is Not Alike
The word “vaginitis” is a general term meaning vaginal infection, or inflammation (irritation and swelling) of the vaginal tissue. Many bacteria live in your vagina. Most of them are good bacteria, including important ones called lactobacilli, but a few are bad. Sometimes conditions inside the vagina change, shifting the balance of good and bad bacteria. The result can be one of the following types of vaginitis: Yeast Infection.—This is caused by one of the usual vaginal residents, a fungus called Candida. Certain conditions, such as diabetes, pregnancy, or human immunodeficiency virus (HIV); or medications such as steroids or antibiotics, can cause these fungi to grow and multiply. The result is itching, irritation, and sometimes a discharge often described as looking like cottage cheese. Trichomoniasis.—This is sometimes called “trich,” and is caused by the sexually transmitted parasite Trichomonas vaginalis. Women who have trichomoniasis often have a frothy, yellow discharge and irritation or burning. Bacterial Vaginosis.—This is caused by a mixture of bacteria that come from your skin and bowel. When the balance of good and bad bacteria is altered by such things as douching, changing sexual partners, or sexually transmitted infections (STIs), conditions are right for these bacteria to flourish. Although BV is not considered an STI (the bacteria come from your own body, not from a sexual partner), it occurs more often in women who are having sex than those who are abstinent.

Although some women with BV don’t know they have it, many experience unpleasant symptoms such as itching, irritation, and a vaginal discharge with a bad odor, often described as “fishy.” Bacterial vaginosis is treatable and curable. It is particularly important that pregnant women be tested and treated, since women with BV are more likely to have miscarriages or premature labor and birth. Bacterial vaginosis has been linked to pelvic inflammatory disease, which can cause scarring in the fallopian tubes. It may also make it more difficult to become pregnant and easier to acquire HIV.

Diagnosing Bacterial Vaginosis
There are many products available without a prescription to treat yeast infections. So when women develop vaginal discomfort, they may think they have a yeast infec-

It is particularly important that pregnant women be tested and treated, since women with BV are more likely to have miscarriages or premature labor and birth.

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Bacterial Vaginosis

Contrary to popular belief, pregnant women do not typically develop vaginitis. If you have a first-time vaginal infection, or if you have the symptoms described earlier, resist the temptation to do this. Remember, BV, not yeast, is the most common vaginal infection—and yeast infection treatments do not cure BV. Instead, call your health care provider and make it clear that you need an appointment within a few days. You may be asked to speak with your health care provider or office staff for a “telephone diagnosis.”

Because the symptoms of different vaginal infections can overlap, it’s hard for health care providers to know what you have just by asking questions over the phone. Tell the office staff you want to have your infection diagnosed in person.

At your appointment, your health care provider will ask about your symptoms and examine your vulva and vagina. This includes taking a sample of discharge to determine the pH (acid/base balance), or a DNA test; checking for the fishy odor which is characteristic of BV; and examining the sample under a microscope. Do not assume that your health care provider is taking a Papanicolaou (Pap) smear or testing you for STIs; these tests are not automatically done during an exam for vaginal infections. If you have recently changed sexual partners, or if you are aged 25 years or younger, request specific tests for STIs. If your health care provider doesn’t tell you exactly what tests are being done, ask her or him.

Treating Bacterial Vaginosis

Two antibiotics, clindamycin and metronidazole, can cure BV, and both are available either as oral tablets or as vaginal creams. Clindamycin also comes as a vaginal suppository. Pregnant women should take oral medications since creams and suppositories don’t work as well for preventing the harmful effects of BV during pregnancy. Neither antibiotic is considered harmful to the fetus.

If you take oral metronidazole you will be instructed not to drink alcohol during treatment because the combination causes severe nausea and vomiting. Oral clindamycin can cause severe persistent diarrhea; if you develop diarrhea while using it, notify your health care provider. Vaginal creams have fewer side effects, although some women find them a bit messy to use. Sexual partners do not need to be treated.

Bacterial vaginosis ordinarily goes away with treatment, but it may persist or return. If your symptoms do not clear up, or if they come back, you should return to your health care provider to verify the presence of BV. Using an extended regimen of twice weekly metronidazole vaginal cream may clear up persistent or recurrent BV.

You may have heard that eating yogurt, or using lactobacillus capsules or suppositories can help prevent vaginal infections, including BV; however, there is no good scientific evidence that this works. Using condoms, practicing sexual abstinence, having one rather than multiple sexual partners, and avoiding douching all help keep the vagina healthy and less prone to BV.

In Summary

Bacterial vaginosis, the most common vaginal infection, is not sexually transmitted, and it is treatable and curable. If you have symptoms, having an in-office examination, rather than buying an OTC product or having a telephone consultation is the best way to get an accurate diagnosis and the most appropriate treatment.

Resources

- The National Women’s Health Information Center
  US Department of Health and Human Services
  Office on Women’s Health
  http://4women.gov/faq/stdbv.htm
  1-800-994-9662
- American Social Health Association
  http://www.ashastd.org/learn/learn_vag_trich.cfm

This Patient Handout was prepared by Diane E. Judge, APN/
CNP, using materials from Sexually Transmitted Diseases
Guidelines 2002, MMWR Recommendations and Reports,
May 10, 2002; 51(RR06).
Lo que Usted debe Saber sobre la Vaginosis Bacteriana

Cuál es la infección vaginal más común? ¡No, no es la candidiasis! La vaginosis bacteriana (VB) es la causa más frecuente de una secreción vaginal anormal. En contraste con los términos familiares como la “vaginitis” o la “infección candidiasis”, muchas mujeres todavía no identifican el término VB ni entienden la infección que ésta representa.

Todas las Vaginitis no son Iguales
La palabra “vaginitis” es un término general que significa una infección vaginal o una inflamación (irritación y hinchazón) del tejido vaginal. Muchas bacterias viven en la vagina, la mayoría de ellas son bacterias benignas incluyendo bacterias importantes como los lactobacilos, pero algunas de ellas, son perjudiciales. En ocasiones, la condición de la parte interior de la vagina cambia, lo cual modifica el balance de las bacterias benignas y perjudiciales. Como resultado, la mujer puede padecer uno de varios tipos de vaginitis:

- Infección Candidiasis.—Es causada por un hongo que vive generalmente en la vagina llamado Candida. Ciertas condiciones como la diabetes, el embarazo, el virus de inmunodeficiencia humana (VIH); o medicamentos tales como esteroides o antibióticos pueden causar que dicho hongo crezca y se multiplique. El resultado es comezón, irritación y a veces una secreción que es normalmente descrita como queso cottage.

- Tricomoniasis.—A veces es llamado “trich” y es causado por un parásito transmitido sexualmente llamado Trichomonas vaginalis. Las mujeres que padecen de tricomoniasis, frecuentemente padecen de una secreción espumosa y amarillenta y de irritación o ardor.

Vaginosis Bacteriana.—Es causada por una mezcla de bacterias que provienen de la piel y materia fecal. Cuando el balance de las bacterias benegas y las bacterias perjudiciales es alterado por cosas como duchas vaginales, cambio de pareja sexual o enfermedades transmitidas sexualmente (ETS), las condiciones se vuelven ideales para que la bacteria se multiplique. Aunque la VB no está considerada como una ETS (la bacteria proviene del propio cuerpo, no de una pareja sexual), se presentan más frecuentemente en mujeres que tienen coito que en las que se abstienen.

Aunque algunas mujeres que padecen de VB, no saben que la tienen, muchas sufren de síntomas incómodos tales como comezón, irritación y una secreción vaginal que huele mal la cual es normalmente descrita como “olor a pescado”.

La vaginosis bacteriana puede ser tratada y curada. Es particularmente importante que las mujeres embarazadas sean evaluadas y tratadas, ya que las mujeres que sufren de VB tienen un riesgo mayor de padecer de un aborto espontáneo o dar a luz prematuramente. La VB está relacionada con la enfermedad inflamatoria pélvica la cual puede causar costuras en las trompas de Falopio. También, puede causar que sea más difícil embarazarse y más fácil contraer el VIH.

Diagnostando la Vaginosis Bacteriana
Existen muchos productos que pueden ser comprados sin receta médica para

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Vaginosis Bacteriana

curar las infecciones causadas por la Candida. Cuando las mujeres sienten incomodidad vaginal, creen que tienen una infección causada por la Candida y simplemente usan un medicamento sin receta médica. Si Ud. padece por primera vez de una infección vaginal o si padece de los síntomas anteriormente especificados, resista la tentación de recetarse a sí misma. Recuerde que la VB, no la candidiasis, es la infección vaginal más común y los tratamientos para la candidiasis no curan la VB. Hable con su proveedor de atención médica y aclárele que necesita de una cita dentro de unos días. Es posible que le aconsejen que hable con el médico o con el personal de la oficina para “diagnosticarla” por teléfono. Ya que los síntomas de las diferentes infecciones vaginales se pueden presentar simultáneamente, es difícil para los médicos diagnosticar la enfermedad al hacer sólo preguntas por teléfono. Comuníquelo al personal de la oficina que Ud. prefiere obtener un diagnóstico en persona.

Durante la cita, su médico le hará preguntas sobre sus síntomas y examinará su vulva y su vagina y tomará una prueba de la secreción para determinar el pH (balance acidez/base) o una prueba “ADN” y revisará si está presente el olor a pescado el cual es característico de la VB. También, observará la muestra bajo un microscopio. No suponga que su médico está haciendo la prueba del Papanicolaou o pruebas de ETS. Dichas pruebas no son automáticamente realizadas durante un examen para detectar infecciones vaginales. Si Ud. ha cambiado recientemente de pareja sexual o si Ud. tiene 25 años o menos, pida por las pruebas específicas para las ETS. Si su médico no le informa sobre las pruebas que está haciendo, pregúntele.

Tratamiento para la Vaginosis Bacteriana
Existen dos antibióticos que pueden curar la VB, la clindamicina y el metronidazol y ambos están disponibles ya sea como pildoras orales o cremas vaginales. La clindamicina está disponible como supositorio vaginal. Las mujeres embarazadas deben tomar medicamentos orales ya que las cremas o los supositorios no son tan eficaces en prevenir los efectos dañinos de la VB durante el embarazo. Ninguno de estos antibióticos están considerados dañinos al feto.

Si Ud. toma el metronidazol oral, no debe beber bebidas alcohólicas durante el tratamiento ya que dicha combinación causa una nausea y vómito severo. La clindamicina oral puede causar una diarrea severa y persistente; si Ud. padece de esto, avíselo a su médico. Las cremas vaginales poseen menos efectos secundarios, pero algunas mujeres creen que son sucias. Sus parejas sexuales no necesitan tratamiento.

Generalmente, la VB desaparece con el tratamiento pero es posible que persista o regrese. Si sus síntomas no desaparecen, o si regresan, vuelva a visitar a su médico para verificar la presencia de la VB. Un tratamiento extensivo de dos veces por semana de la crema metronidazol vaginal puede curar la VB persistente o recurrente.

Es probable que Ud. haya escuchado que el yogourt o el uso de las cápsulas o supositorios de lactobacilos pueden ayudar a prevenir las infecciones vaginales, incluyendo la VB; sin embargo, no existe una evidencia científica sólida que confirme esto. El uso de los condones, el abstenerse de tener coito, el tener sólo una pareja sexual en vez de varias y el evitar las duchas vaginales, le ayudarán a mantener una vagina saludable y menos propensa a la VB.

En Conclusión
La vaginosis bacteriana es el tipo más común de infección vaginal, no es transmitida sexualmente y puede ser tratada y curada.

Fuentes Informativas

• El Centro Nacional de Información sobre la Salud de la Mujer, La Oficina del Departamento de los Estado Unidos de Servicios de Salud de la Mujer. http://4women.gov/faq/Spanish/vaginosis.htm 1-800-994-9662
• Asociación Americana de Salud Social http://www.ashastd.org/learn/learn_vag_trich.cfm

Este informe para la paciente fue redactado por Diane E. Judge, APN/CNP, usando contexto de: La Guía sobre las Enfermedades Transmitidas Sexualmente 2002. Recomendaciones e Informes “MMWR”, 10 de mayo de 2002; 51 (RR06).

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GENITAL HERPES

Genital herpes is a chronic, lifelong, sexually transmitted disease caused by herpes simplex virus type 1 (HSV-1) and type 2 (HSV-2). HSV-1 typically causes small, painful, fluid-filled, orolabial lesions, i.e., cold sores or fever blisters on lips. It can even be acquired from contact with apparently normal skin that is shedding the virus. Historically, HSV-2 caused the majority of cases of genital herpes, but an increasing percentage of cases are now caused by HSV-1 (10%). Historically, HSV-2 caused the majority of cases of genital herpes, but an increasing percentage of cases are now caused by HSV-1 (10%). The natural history of genital herpes includes first-episode infection of the skin and mucous membranes, establishment of latency in the dorsal root ganglion, and subsequent reactivation. The majority of genital infections are transmitted by persons who are either unaware they are infected with HSV-2 or are asymptomatic when transmission occurs. Efficiency of sexual transmission is greater from men to women than from women to men. Moreover, the likelihood of transmission declines with increased duration of infection. A recent CDC study documented that the seroprevalence of HSV-2 in the United States among persons aged 14-49 years was 16.2% overall. Seroprevalence was highest among women (20.9% vs. 11.5% for men) and non-Hispanic blacks (39.2%). Seropositivity increases with age from 1.4% in adolescence to 26.1% in the fourth decade and with number of reported lifetime sex partners (3.9% with one to 26.7% with ≥10). Importantly, of those who were seropositive for HSV-2, 81.1% had not received a diagnosis.

81.1% of HSV-2 infections are asymptomatic or unrecognized.

Figure 14 HSV-2 seroprevalence among persons aged 14-49 years by sex.
Complications in Pregnancy

HSV is acquired by approximately 2% of susceptible women during pregnancy. The risk of acquisition during pregnancy is relatively uniform—30% in the first trimester, 30% in the second, and 40% in the third. Importantly, only a third of these seroconversions are associated with symptoms, while two-thirds are subclinical or asymptomatic. Seroconversion during pregnancy is not associated with an increased risk of low birthweight, prematurity, IUGR, stillbirth, or neonatal death. However, women who acquire HSV during pregnancy may develop disseminated disease with pneumonitis, hepatitis, and encephalitis. The risk of neonatal transmission is also higher among women who seroconvert during pregnancy, especially those who acquire the infection in the third trimester. This is related to an increased likelihood of recurrences (average within four months) and viral shedding within the first two years after acquiring the infection as well as the shortened time available for the infant to acquire potentially protective maternal HSV antibodies to cross the placenta.

The neonate may acquire herpes infection either in utero, or during, or immediately after birth. The former route (intrauterine or transplacental infection) is rare; the latter (perinatal infection) is more common. Transplacental HSV infection is a consequence of primary maternal HSV infection during pregnancy and is often devastating for the infant. Infants develop skin lesions at a rate of 92%, and 92% will also develop central nervous system lesions, including microcephaly, hydranencephaly and microphthalmia. Death occurs in 31% of cases, and neurologic sequelae develop in nearly all survivors, even with the use of antiviral chemotherapy.

Perinatal acquisition of HSV by the neonate is usually the result of contact with the infected, maternal lower genital tract during delivery. It may also be acquired from maternal or paternal oral-labial infection or from a hospital worker with herpetic whitlow (herpetic lesions on the fingers or around the fingernails). Several factors influence the transmission of HSV from mother to neonate: HSV type, the
mother’s clinical stage of infection, anatomic site of viral shedding, use of fetal scalp electrode, and the specificity of passively transferred HSV antibodies from mother to infant.

The risk of transmission to the neonate is high (30-50%) among women who acquire genital herpes near the time of delivery. On the other hand, the risk of neonatal herpes from an asymptomatic mother with a history of recurrent genital HSV is less than 1 in 1,000. However, because more women have asymptomatic recurrent HSV than acquire HSV during pregnancy, the majority of neonatal HSV infections are acquired from mothers with recurrent HSV. Viral shedding from the cervix is associated with an increased risk of transmission. The passive transfer of HSV-2 antibodies (but not HSV-1), from mother to fetus, appears to be protective.

Neonatal HSV infection has three forms: Disseminated (25% of cases); CNS (30% of cases); and skin-, eye- or mouth-only. Disseminated disease is manifested by coagulopathy, liver dysfunction, pulmonary failure, and often death, even when current antivirals are used. Neonatal HSV infection of the CNS is manifested by seizures, lethargy, irritability, temperature instability, and bulging fontanelle, and has a lower mortality rate, but a high rate of morbidity. Skin-, eye-, or mouth-only infection has both a low mortality and morbidity rate when antiviral agents are used.

Prevention of Neonatal Herpes

All Pregnant Women: All pregnant women should be asked carefully about their personal history of genital and oral HSV and that of their partner. At the onset of labor or rupture of membranes—whichever comes first—all women should be asked about the symptoms of genital herpes and prodormal symptoms. In addition, all women should be examined carefully for herpetic lesions at the onset of labor or rupture of membranes. Use of rapid tests or expert inspection may be useful.

Women with a history of recurrent HSV: Many experts also recommend empiric acyclovir prophylaxis for women with a history of recurrent genital HSV infection from 36 weeks gestational age until delivery. Patients should be counseled to notify their provider if they have prodormal symptoms or genital lesions at the onset of labor and/or membrane rupture. In general, the routine use of fetal scalp electrodes during labor is discouraged for women with a history of genital herpes.

Women without known HSV: Women without a history of HSV should be counseled to abstain from intercourse and receptive oral sex with partner(s) known or suspected of having genital or oral HSV respectively. Some specialists recommend offering type-specific serologic tests to uninfected women whose partners have HSV. Serologic results are helpful in guiding counseling regarding risk of acquiring infection during pregnancy and the use of antiviral therapy.

Symptomatic women (recurrent or first episode) at time of birth: In order to prevent neonatal herpes, it is currently recommended that women with either symptomatic, recurrent, or first-episode genital herpes at the time of delivery receive a cesarean delivery. However, if an infant inadvertently delivers vaginally to a mother with genital lesions, it is recommended that cultures for HSV be obtained from eyes, nasopharynx, mouth, and rectum, at 24 to 48 hours of life, and that empiric treatment be given with acyclovir, for 7-10 days, while closely observing the infant for signs and symptoms of disease. These infants should be followed with close consultation with a pediatric infectious disease specialist.
Screening

ACOG does not recommend routine HSV seroscreening, but does acknowledge that it may be beneficial in selected populations of couples. For example, seroscreening should generally be offered to women whose partners are infected with HSV, to HIV-positive women, and possibly to those diagnosed with other STDs.

Diagnosis

The clinical manifestations of genital HSV occur as four distinct syndromes. A person’s prognosis and the type of counseling needed depends whether the person has HSV-1 or HSV-2. In addition, pregnancy counseling and management varies with the clinical syndrome. The characteristics of the four clinical syndromes are compared in Figure 16.

PCR is 3 to 5 times more sensitive than viral culture for detecting HSV, and is now the preferred diagnostic technique because of the relative ease of specimen handling, its improved sensitivity for detecting virus in both active lesions and asymptomatic shedding, and because of its faster turnaround time. Viral culture and typing can be available within 48 to 72 hours, and when vesicle or pustule lesions are present, 80-90% of viral cultures will be positive. However, ulcers and crusted lesions are less likely to be culture positive. Non-culture tests, such as direct fluorescent antibody (DFA) and enzyme immunoassay (EIA), are fairly sensitive (>85%) and rapid (2 to 12 hour) methods, particularly for detecting HSV in healing lesions where cultures are likely to be negative. Only the DFA can differentiate HSV-1 and HSV-2. Cytology, using either the Tzanck test or Papanicolaou smear, is insensitive and nonspecific, and should not be relied on for HSV diagnosis.

Type-specific HSV serology tests are very useful in determining whether an initial clinical episode of genital herpes is a primary or non-primary infection. Type-specific antibodies to HSV develop during the first several weeks to a few months following infection and persist indefinitely. The presence of the HSV-2 antibody indicates anogenital infection. However, the presence of HSV-1 does not distinguish anogenital from orolabial infection. Type-specific serologic testing is indicated in the following situations: Suspicious lesions are culture negative; suspicious lesions are too late or too dry to culture; atypical presentations of genital herpes; recurrent undiagnosed genital ulcers; acquisition more than 6 weeks prior to examination; and a sex partner with herpes.

Third trimester serial cultures for HSV are NOT recommended in asymptomatic women with a history of HSV. However, all pregnant women should be examined for evidence of genital herpes upon admission to the hospital or birthing center for delivery.
## GUIDELINES FOR GENITAL HERPES

### Table 15 Key Principles of Best Practices for Screening, Treatment and Follow-up for Genital Herpes in Pregnancy

<table>
<thead>
<tr>
<th>Screening</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type-specific HSV antibody testing for:</td>
</tr>
<tr>
<td>• HIV-positive women</td>
</tr>
<tr>
<td>• Asymptomatic pregnant women with partners with genital HSV infection</td>
</tr>
<tr>
<td>• + women with other STDs</td>
</tr>
</tbody>
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<table>
<thead>
<tr>
<th>Treatment</th>
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</thead>
<tbody>
<tr>
<td>Indications:</td>
</tr>
<tr>
<td>• First episode primary or non-primary infection</td>
</tr>
<tr>
<td>• Episodic treatment of recurrent episodes</td>
</tr>
<tr>
<td>• <strong>Suppression from 36 week GA until delivery, to reduce risk of perinatal transmission, for women with first episode primary and non-primary and recurrent infection</strong></td>
</tr>
<tr>
<td>• For women who are seropositive with no clinical history of HSV, suppression therapy is not currently recommend.35,69</td>
</tr>
<tr>
<td>• Anti-viral suppressive therapy for the infected male partner of a seronegative monogamous woman is plausible, but has not been studied and is not currently recommended by the CDC.35</td>
</tr>
</tbody>
</table>

See CDC treatment recommendations

### Diagnostic Testing

| For first clinical episode or recurrent undiagnosed infection:           |
| Type-specific HSV antibody testing                                      |
| PCR                                                                     |
| Viral culture of fresh lesion or DFA/EIA from healing lesion            |

### Counseling to Include

<p>| • Natural history of disease,                                           |
| • Sexual and perinatal transmission, and                               |
| • Methods to reduce transmission:                                      |
|   • Abstain from sex when prodormal symptoms or lesions are present, and in third trimester for seronegative women with an infected partner |
|   • Consistently use latex condoms for intercourse when asymptomatic, and |
|   • Late third trimester suppressive antiviral therapy for women       |
| • Instruct patient to alert healthcare provider if she has prodormal symptoms or lesions at the time of membrane rupture or onset of labor |</p>
<table>
<thead>
<tr>
<th>Antiviral</th>
<th>1st clinical GH episode (mg x 7-10 d)</th>
<th>Recurrent Genital Herpes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Episodic (mg, days)</td>
</tr>
<tr>
<td>Acyclovir</td>
<td>400 tid 200 5x/d</td>
<td>400 tid x 5 d</td>
</tr>
<tr>
<td>Famiclovir(^{iii})</td>
<td>250 tid</td>
<td>125 bid x 5 d</td>
</tr>
<tr>
<td>Valacyclovir(^{iii})</td>
<td>1000 bid</td>
<td>500 bid x 3 d</td>
</tr>
</tbody>
</table>

\(^{i}\) Treatment can be extended if healing is incomplete after 10 days of therapy.

\(^{ii}\) Dosage and duration of treatment varies for HIV infected individuals

\(^{iii}\) There is insufficient data on the safety of famciclovir and valacyclovir during pregnancy, therefore acyclovir is recommended for use in pregnancy.
PATIENT EDUCATIONAL MATERIALS

In this section you will find examples of patient education materials for genital herpes in pregnancy.

Please also consult the links below for the most up-to-date patient education materials.

Centers for Disease Control and Prevention

   Patient Handout—*Genital Herpes—The Facts*
   Available in English and Spanish
   [http://www.cdc.gov/std/healthcomm/the-facts.htm](http://www.cdc.gov/std/healthcomm/the-facts.htm)

   STDs In Pregnancy Fact Sheet

California STD/HIV Prevention Training Center:

   Herpes Fact Sheet—6-8th grade reading level—8/4/2009

American Congress of Obstetricians and Gynecologists

   Genital Herpes Fact Sheet

Medline Plus-US National Library of Medicine, National Institutes of Health

   Genital Herpes Fact Sheet
   [http://vsearch.nlm.nih.gov/vivisimo/cgi-bin/query-meta?%5B%5D%7Bproject=medlineplus&query=genital+herpes](http://vsearch.nlm.nih.gov/vivisimo/cgi-bin/query-meta?%5B%5D%7Bproject=medlineplus&query=genital+herpes)
Genital Herpes

What is genital herpes?
Genital herpes is a sexually transmitted disease (STD) caused by the herpes simplex viruses type 1 (HSV-1) or type 2 (HSV-2). Most genital herpes is caused by HSV-2. Most individuals have no or only minimal signs or symptoms from HSV-1 or HSV-2 infection. When signs do occur, they typically appear as one or more blisters on or around the genitals or rectum. The blisters break, leaving tender ulcers (sores) that may take two to four weeks to heal the first time they occur. Typically, another outbreak can appear weeks or months after the first, but it almost always is less severe and shorter than the first outbreak. Although the infection can stay in the body indefinitely, the number of outbreaks tends to decrease over a period of years.

How common is genital herpes?
Results of a nationally representative study show that genital herpes infection is common in the United States. Nationwide, 16.2%, or about one out of six, people 14-49 years of age have genital HSV-2 infection. Over the past decade, the percentage of Americans with genital herpes infection in the U.S. has remained stable.

Genital HSV-2 infection is more common in women (approximately one out of five women 14-49 years of age) than in men (about one out of nine men 14-49 years of age). Transmission from an infected male to his female partner is more likely than from an infected female to her male partner.

How do people get genital herpes?
HSV-1 and HSV-2 can be found in and released from the sores that the viruses cause, but they also are released between outbreaks from skin that does not appear to have a sore. Generally, a person can only get HSV-2 infection during sexual contact with someone who has a genital HSV-2 infection. Transmission can occur from an infected partner who does not have a visible sore and may not know that he or she is infected. HSV-1 can cause genital herpes, but it more commonly causes infections of the mouth and lips, so-called “fever blisters.” HSV-1 infection of the genitals can be caused by oral-genital or genital-genital contact with a person who has HSV-1 infection. Genital HSV-1 outbreaks recur less regularly than genital HSV-2 outbreaks.

What are the signs and symptoms of genital herpes?
Most people infected with HSV-2 are not aware of their infection. However, if signs and symptoms occur during the first outbreak, they can be quite pronounced. The first outbreak usually occurs within two weeks after the virus is transmitted, and the sores typically heal within two to four weeks. Other signs and symptoms during the primary episode may include a second crop of sores, and flu-like symptoms, including fever and swollen glands. However, most individuals with HSV-2 infection never have sores, or they have very mild signs that they do not even notice or that they mistake for insect bites or another skin condition.
People diagnosed with a first episode of genital herpes can expect to have several (typically four or five) outbreaks (symptomatic recurrences) within a year. Over time these recurrences usually decrease in frequency. It is possible that a person becomes aware of the “first episode” years after the infection is acquired.

**What are the complications of genital herpes?**

Genital herpes can cause recurrent painful genital sores in many adults, and herpes infection can be severe in people with suppressed immune systems. Regardless of severity of symptoms, genital herpes frequently causes psychological distress in people who know they are infected.

In addition, genital HSV can lead to potentially fatal infections in babies. It is important that women avoid contracting herpes during pregnancy because a newly acquired infection during late pregnancy poses a greater risk of transmission to the baby. If a woman has active genital herpes at delivery, a cesarean delivery is usually performed. Fortunately, infection of a baby from a woman with herpes infection is rare.

Herpes may play a role in the spread of HIV, the virus that causes AIDS. Herpes can make people more susceptible to HIV infection, and it can make HIV-infected individuals more infectious.

**How is genital herpes diagnosed?**

The signs and symptoms associated with HSV-2 can vary greatly. Healthcare providers can diagnose genital herpes by visual inspection if the outbreak is typical, and by taking a sample from the sore(s) and testing it in a laboratory. HSV infections can be diagnosed between outbreaks by the use of a blood test. Blood tests, which detect antibodies to HSV-1 or HSV-2 infection, can be helpful, although the results are not always clear-cut.

**Is there a treatment for herpes?**

There is no treatment that can cure herpes, but antiviral medications can shorten and prevent outbreaks during the period of time the person takes the medication. In addition, daily suppressive therapy for symptomatic herpes can reduce transmission to partners.

**How can herpes be prevented?**

The surest way to avoid transmission of sexually transmitted diseases, including genital herpes, is to abstain from sexual contact, or to be in a long-term mutually monogamous relationship with a partner who has been tested and is known to be uninfected.

Genital ulcer diseases can occur in both male and female genital areas that are covered or protected by a latex condom, as well as in areas that are not covered. Correct and consistent use of latex condoms can reduce the risk of genital herpes.

Persons with herpes should abstain from sexual activity with uninfected partners when lesions or other symptoms of herpes are present. It is important to know that even if a person does not have any symptoms he or she can still infect sex partners. Sex partners of infected persons should be advised that they may become infected and they should use condoms to reduce the risk. Sex partners can seek testing to determine if they are infected with HSV. A positive HSV-2 blood test most likely indicates a genital herpes infection.

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**FOR MORE INFORMATION:**

Division of STD Prevention (DSTD)
Centers for Disease Control and Prevention
http://www.cdc.gov/std/

CDC-INFO Contact Center
1-800-CDC-INFO (1-800-232-4636)
Email: cdcinfo@cdc.gov

American Social Health Association (ASHA)
1-800-783-9877
www.ashastd.org

National Herpes Hotline
(919) 361-8484

National Herpes Resource Center
http://www.ashastd.org/hre
What You Should Know About Genital Herpes

Genital herpes is a sexually transmitted disease caused by the herpes simplex virus (HSV-1 or HSV-2). Herpes infection is very common in the United States, affecting about 1 in 5 people aged 12 and older, most of them women. Unfortunately, many do not know they have the virus. As high as those numbers are, however, genital herpes due to type 2 is on the decline. One of the reasons is better education about herpes and how it is spread.

How sexual transmission happens
Although herpes is called a sexually transmitted disease, it is not passed only through sexual intercourse but also by skin-to-skin contact. Two main types of the herpes virus can cause genital herpes: HSV type 1 (HSV-1) and HSV type 2 (HSV-2). HSV-1 can cause genital herpes but it more commonly causes “fever blisters,” which are infections of the mouth and lips. Most commonly, genital herpes is transmitted from a person who has a genital HSV-2 infection to a partner who does not. However, genital herpes due to HSV-1 can be spread by oral-genital sex.

Before the blisters appear, you might have symptoms that signal an outbreak: sensitive skin, tingling, burning, itching, or pain where the blisters will develop.

Know these symptoms
The most recognized symptoms of genital herpes are small painful blisters in the genital and rectal area. However, genital herpes lesions can occur anywhere in the ‘boxer shorts’ area. Before the blisters appear, you might have symptoms that signal an outbreak: sensitive skin, tingling, burning, itching, or pain where the blisters will develop. With an initial infection, symptoms can include fever, muscle aches, fatigue, and reduced appetite. Women may also have vaginal discharge and painful urination.

When the blisters break, they can leave sores that can be very painful. The sores eventually crust over and heal, but it can take between a week (for recurrent outbreaks) and up to 3 weeks with the first outbreak.

The first outbreak is usually the worst. It is most likely to happen within 2 weeks after the virus is transmitted. Symptoms, if they exist, are generally more troublesome during the first episode. Typically, another outbreak occurs weeks or months after the first but is less severe and does not last as long. However, up to 70% of people can be infected with the virus and not have symptoms for a long time (months to years), and people can be infected with the virus for years before the herpes infection is diagnosed.

Diagnosis and treatment
Because the symptoms can vary widely and be quite subtle, genital herpes is often misdiagnosed in women. It may be diagnosed, for example, as a yeast infection, hemorrhoids, urinary tract infection, or vaginitis.

The virus can be detected by a laboratory test called a culture, in which the health care provider swabs a suspected herpes sore, but it is possible to have a culture that does not show HSV even if you have it. A blood test is more definite.
So far, there is no cure for genital herpes. However, antiviral medicine can be taken for each outbreak. This relieves the pain and heals sores faster. To get the most benefit from treatment, you should start it as soon as you notice the early symptoms of tingling, burning, or itching. Warm baths can help relieve the pain. People with frequent outbreaks may prefer daily suppressive therapy. To help reduce your chances of spreading herpes to another person, daily antiviral therapy is also recommended.

You may get more outbreaks
The herpes virus stays in your nerve cells for the rest of your life. If the virus is reactivated, it travels along the nerves to your skin. Sometimes reactivation causes symptoms and sometimes it does not, yet the virus is still present and can be spread to others.

Various conditions can trigger a recurrence, such as fatigue, illness, menstruation, and physical and emotional stress. Sexual activity may also trigger an attack. Recurrent attacks can be as seldom as once a year, or you might never have another one. The average is about 2 to 5 per year. Over time, the outbreaks usually become milder and less frequent.

If your immune system is weakened by an illness such as AIDS or by chemotherapy or steroid treatment, outbreaks can be more severe and long-lasting.

Herpes is very contagious
One of the reasons herpes is so contagious is the person who has it often does not know it. Symptoms can be very subtle. Another reason is that the virus can be shed (released) not only from the visible sores, but between outbreaks as well, even when sores are not visible.

Women need to be very aware of the risk of herpes during the childbearing years. Transmitting HSV to a baby during birth is rare, but women with active genital herpes are often advised to have a cesarean delivery to help reduce the risk. If you are pregnant and infected with genital herpes, your health care provider may recommend taking antiviral therapy during the last month of your pregnancy to reduce your chances of having an outbreak.

Women who have herpes have a greater risk of getting HIV, perhaps because of the open sores or because of factors related to the immune system. HIV-positive people with HSV-2 may also be more contagious.

The only way to be sure of not getting the infection is to not have sex, or to be in a long-term relationship with a partner who has been tested and has no infection. Latex condoms, used correctly, can help reduce the risk. Anyone who has herpes should not have sex with an uninfected partner when any sores are visible, of course, but it is also important to remember that sores do not have to be visible for the infection to be spread. To be on the safer side, do not have sexual contact from the time of your first genital symptoms until they are completely gone. Consider using daily antiviral therapy to reduce the risk of transmitting herpes. Also avoid touching the infected area during an outbreak and wash your hands if you do touch an infected area.

Living with herpes
Genital herpes is not life-threatening, but it can be life-altering if you don’t know how to cope with it. Genital herpes can increase your risk of becoming infected with HIV and can be passed along to your child during delivery. If you or your partner has genital herpes, it is extremely important to honestly discuss the situation. Counseling can help you deal with the disease and its effects on your life. It can be a shock to be diagnosed with genital herpes, but once you know what to do about it, you can learn to live with it.

RESOURCES
- Centers for Disease Control and Prevention
  www.cdc.gov/std/Herpes/STDFact-Herpes.htm
- American Social Health Association
  www.ashastd.org/herpes/herpes_learn.cfm
- American College of Obstetricians and Gynecologists
  www.acog.org/publications/patient_education/bp054.cfm

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Lo que Usted Debe Saber sobre el Herpes Genital

El herpes genital es una enfermedad sexualmente transmitida causada por el virus herpes simple (HSV-1 o HSV-2). En los Estados Unidos, la infección del herpes es muy común, afectando aproximadamente 1 de cada 5 personas, de 12 años o más de edad, la mayoría de estas personas son mujeres. Desafortunadamente, muchas de las personas no saben que padecen de este virus. Las estadísticas son muy altas, sin embargo, el herpes genital derivado del tipo 2 está declinando. Una de las razones de esta disminución es una mejor educación sobre el herpes y la manera en que se transmite.

Antes de que aparezcan las ampollas, Ud. puede tener síntomas que indiquen un brote: sensibilidad en la piel, hormigueo, ardor, picazón o dolor en donde las ampollas aparecerán.

De que manera sucede la transmisión sexual
Aunque el herpes es llamado una enfermedad sexualmente transmitida, no sólo es transmitida a través del coito sino también a través del contacto cutáneo. Dos tipos principales del virus del herpes pueden causar el herpes genital: HSV Tipo 1 (HSV-1) y HSV-Tipo 2 (HSV-2). El HSV-1 puede causar el herpes genital pero más comúnmente causa "ampollas febriles," las cuales son infecciones de la boca y los labios. Más comúnmente, el herpes genital es transmitido por una persona que padece de la infección genital HSV-2 a una pareja que no la tiene. Sin embargo, el herpes genital derivado del HSV-1 puede ser diseminado por el contacto genital-oral.

Conozca los síntomas
Los síntomas del herpes genital más fáciles de reconocer son las pequeñas ampollas dolorosas en el área genital y rectal. Sin embargo, las lesiones del herpes genital pueden presentarse en cualquier área de los "calzóncillos." Antes de que aparezcan las ampollas, Ud. puede tener síntomas que indiquen un brote: sensibilidad en la piel, hormigueo, ardor, picazón o dolor en donde las ampollas aparecerán. En la infección inicial, los síntomas pueden incluir fiebre, dolor muscular, fatiga y falta de apetito. Las mujeres también pueden tener una secreción vaginal y dolor al orinar.

Cuando las ampollas se revientan, pueden dejar úlceras las cuales pueden ser muy dolorosas. Las úlceras, finalmente desarrollan costras y sanan, pero este proceso puede tomar una semana (para los brotes recurrentes) y hasta 3 semanas en el primer brote.

Normalmente, el primer brote es el peor. Lo más común es que se presente dentro de dos semanas después de la transmisión del virus. Los síntomas, si existen, son más molestos durante el primer episodio. Tipicamente, el siguiente brote ocurre semanas o meses después del primer brote pero es más leve y dura menos tiempo. Sin embargo, hasta 70% de las personas pueden estar infectadas con el virus y no padecer de ningún síntoma por mucho tiempo (meses o años) y también, las personas pueden estar infectadas con el virus por años antes de ser diagnosticadas con la infección del herpes.

Diagnostico y tratamiento
Ya que los síntomas pueden variar mucho y ser muy leves, el herpes genital es frecuentemente mal diagnosticado en las mujeres. Puede ser diagnosticado, por ejemplo, como una infección por levadura, hemorroides, infección del tracto urinario o vaginitis.
El virus puede ser detectado por una prueba de laboratorio llamada cultivo, en donde el proveedor de atención médica toma una muestra de una úlcera sospechosa de herpes, pero es posible obtener un cultivo que no demuestre el HSV, aunque la persona lo tenga. Una prueba de sangre es más precisa.

Hasta ahora, no existe curación para el herpes genital. Sin embargo, el paciente puede tomar en cada brote, medicamento contra los virus. Esto alivia el dolor y sana más rápidamente las ampollas. Para obtener el mayor beneficio del tratamiento, Ud. debe comenzarla tan pronto como se dé cuenta de los síntomas tempranos de hormigueo, ardor o comezón. Los baños en agua tibia pueden ayudar a aliviar el dolor. Es probable que las personas que padecen de brotes frecuentes, prefieran la terapia cotidiana de control. También, recomendamos la terapia cotidiana antiviral con el fin de reducir la posibilidad de contagiar a otra persona con el herpes.

Ud. puede padecer de más brotes
El virus del herpes permanece en sus células nerviosas por el resto de su vida. Si el virus es reactivado, viaja a través de los nervios a la piel. A veces la reactivación causa síntomas y a veces no los causa, pero el virus continúa estando presente y puede ser diseminado a otros.

Muchas condiciones pueden causar una reaparición, tales como la fatiga, enfermedades, menstruación y el estrés físico y emocional. Las relaciones sexuales también pueden causar un brote. La reaparición de ataques pueden ocurrir tan rara vez como una vez al año o es posible que Ud. no vuelva a padecer de otro ataque. El promedio es de 2 a 5 brotes anuales. Con el pasar del tiempo, los brotes normalmente son más leves y menos frecuentes.

Si su sistema inmunológico es debilitado por una enfermedad como el SIDA, la quimioterapia o el tratamiento con esteroides, los brotes pueden ser más severos y de más larga duración.

El herpes es muy contagioso
Una de las razones por las cuales el herpes es muy contagioso es debido a que la persona que lo tiene, no lo sabe. Los síntomas pueden ser muy leves. Otra de las razones es que el virus puede ser liberado no sólo por las úlceras visibles, sino también entre los brotes, aún cuando las úlceras no son visibles.

Las mujeres necesitan ser muy conscientes del riesgo del herpes durante los años fértiles. Es rara la transmisión del HSV a un bebé, durante el parto, pero frecuentemente se les aconseja a las mujeres que padecen de herpes genital activo que den a luz a través de una cesárea con el fin de disminuir el riesgo. Si Ud. está embarazada y está infectada con el herpes genital, es probable que su médico le recomiende que tome la terapia antiviral durante el último mes de su embarazo para disminuir las probabilidades de padecer de un brote.

Las mujeres que tienen herpes tienen un riesgo más alto de contraer HIV, quizás debido a que las úlceras están expuestas o debido a factores relacionados con el sistema inmunológico. Las personas con HIV positivo que padecen de HSV-2 también pueden ser más contagiosas.

La única manera de asegurarse de no contraer la infección es no tener relaciones sexuales o permanecer por mucho tiempo con una pareja la cual ha sido examinada y no padece de la infección. Los condones de látex, cuando son usados correctamente, pueden disminuir el riesgo. Por supuesto, cualquier persona que padece de herpes no debe tener relaciones sexuales con una pareja que no está infectada, cuando alguna úlceras es visible, pero también, es importante recordar que las úlceras no tienen que ser visibles para diseminar la infección. Para estar más seguro, no tenga contacto sexual durante el período de los primeros síntomas genitales hasta que dichos desaparezcan por completo. Considere usar diariamente la terapia antiviral para disminuir el riesgo de transmitir el herpes. Además, evite tocar el área infectada durante un brote y lave sus manos si toca el área infectada.

Viviendo con el herpes
El herpes genital no es fatal, pero puede alterar su vida, si Ud. no sabe como enfrentarla. El herpes genital puede incrementar su riesgo de contraer el HIV y su bebé puede contraerlo durante el parto. Si Ud. o su pareja tienen el herpes genital, es extremadamente importante discutir honestamente la situación. Los servicios de asesoramiento pueden ayudarle a encarar la enfermedad y sus efectos en su vida. Puede ser muy impactante el ser diagnosticado con el herpes genital, pero una vez que sepa que hace, Ud. puede aprender a vivir con la enfermedad.

Fuentes Informativas
- Centros para el Control y Prevención de Enfermedades
  www.cdc.gov/std/Herpes/STDFact- Herpes.htm
- Asociación Social Americana de Salud
  www.ashastd.org/herpes/herpes_ learn.cfm
- Colegio Americano de Obstetras y Ginecólogos
  www.acog.org/publications/patient_ education/bp054.cfm

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PARTNER TREATMENT

All sexual partners of women infected with sexually transmitted infections (i.e., gonorrhea, chlamydia, syphilis, trichomoniasis) should receive treatment according to CDC recommendations. Bacterial vaginosis is not a sexually transmitted infection and partner treatment is not effective in preventing recurrence of bacterial vaginosis. **Partner treatment for sexually transmitted infections is important to reduce the risk of reinfection during pregnancy** and/or to reduce the chance of infecting other individuals.

**Partner notification and treatment**

Optimal treatment for pregnant women requires partner treatment. Optimal treatment for partners involves a complete clinical examination, testing for infections, counseling, and treatment by a healthcare provider.

- The provider generally counsels the patient about the importance of partner treatment and provides education materials and referrals to a healthcare provider or a public health sexually transmitted infections clinic to assist partner(s) in seeking care. Patients are expected to notify their partners.

- Providers may choose to contact partners, but this service is generally not reimbursed by health plans.

- **inSPOTLA** at [www.inspotla.org](http://www.inspotla.org) provides a public health service for partner notification. On this site, patients will find tips for talking with their partners and links to counselors who will help them plan their discussion, including the option of sending an anonymous email notification. The notification email provides links and resources for the testing and treatment of partners.

Reinfection from untreated partners occurs within six months to one year among 15 to 39% of young women with Chlamydia and 11% of women with gonorrhea.  

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There are several reasons partner notification can fail. Patients may not notify partners, or partners may not seek treatment, especially those without symptoms. Providers have the option of using “patient-delivered partner therapy” if there is a concern that the partner will not seek treatment.

**Patient-Delivered Partner Therapy (PDPT)** is the most commonly used form of expedited partner therapy, a practice that increases partner treatment and reduces re-infection rates. For partners not likely to complete a clinical appointment, patients may be given either a prescription or medication for each partner(s) within the last 60 days (or the last partner if none in the last 60 days). Referrals and educational materials, with clear instructions and warnings about the medication and worsening infection, are also provided for patients to give to their partner(s). Sample information sheets are available through the California Department of Public Health.

CDPH recommends retesting for gonorrhea and chlamydia within three months for patients given PDPT to distribute. Some insurance plans do not reimburse for patient-delivered partner therapy.

### California Law

Legislation passed in 2001 (SB 648, Ortiz, Chapter 835 Statutes of 2000) and in January 2007 (AB 2280 Leno, Chapter 771 Statutes of 2006) amended the law to allow Patient-Delivered Partner Therapy for chlamydia and gonorrhea respectively. The current law allows physicians to prescribe, and nurse-practitioners, physician-assistants, and certified nurse-midwives to dispense, antibiotic therapy for the male and female sex partners of individuals infected with *Chlamydia trachomatis* or *Neisseria gonorrhoeae*, even if they have not been able to perform an exam of the patient’s partner(s).

This legislation (Section 120582 of the Health and Safety Code) provides an exception to the Medical Practice Act, which states that the prescribing, dispensing, or furnishing of dangerous drugs, as defined, without a good-faith prior examination and medical indication, constitutes unprofessional conduct. The amended law provides that a licensee acting in accordance with provisions of the law with regard to a prescription for antibiotic therapy has not committed unprofessional conduct under this provision.

**California physicians are required by law to:**

1) Endeavor to discover the source of infection, as well as any sexual or other intimate contacts that the patient made while in the communicable stage of the disease (California Code of Regulations, Title 17, Section 2636);

2) Make an effort, through the cooperation of the patient, to bring these persons in for examination and, if necessary, treatment (California Code of Regulations, Title 17, Section 2636); and

3) Report cases to the local health officer (California Code of Regulations, Title 17, Section 2500).
PATIENT-DELIVERED PARTNER THERAPY

Note from LA Best Babies Network

The following guidelines from the California STD/HIV Prevention Training Institute are provided here because they present a thorough description for the management of partner directed therapy.

However, the document was written in 2007, and all recommended medications and dosages should be verified with the most current guidelines from the Centers for Disease Control and Prevention or the California Department of Public Health.
Patient-Delivered Partner Therapy for *Chlamydia trachomatis* and *Neisseria gonorrhoeae*: Guidance for Medical Providers in California

These guidelines were developed by:
California Department of Public Health Sexually Transmitted Diseases (STD) Control Branch in collaboration with:
California STD Controllers Association
Introduction

As of January 1, 2007, California medical providers have a new option for ensuring effective partner treatment for the sex partners of patients diagnosed with Neisseria gonorrhoeae. This new legislation expands upon the 2001 legislation allowing patient-delivered partner therapy (PDPT) for Chlamydia trachomatis.

In combination, SB 648 (Ortiz, Chapter 835, Statutes of 2000) and AB 2280 (Leno, Chapter 771, Statutes of 2006) amended current law and allow physicians to prescribe, and nurse practitioners, physician assistants, and certified nurse-midwives to dispense, antibiotic therapy for the sex partners of individuals infected with Chlamydia trachomatis and Neisseria gonorrhoeae, even if they have not been able to perform an exam of the patient’s partner(s).

This document is intended to provide guidance for clinical practice in the implementation of this California legislation (Health and Safety Code Section 120582). It replaces the June 2001 document, Patient-Delivered Therapy of Antibiotics for Chlamydia trachomatis, Guidance for Medical Providers in California.

The following guidelines are focused on PDPT strategies and provide information on the most appropriate patients, medications, and counseling procedures recommended to maximize patient and public health benefit while minimizing risk.
Summary Guidelines

Recommendations

- **Patient's diagnosis**: clinical diagnosis of *Chlamydia trachomatis* or *Neisseria gonorrhoeae*
- **First-choice partner management strategy**: Attempt to bring partners in for complete clinical evaluation, STD testing, counseling, and treatment.
- **Most appropriate patients**: those with partners who are unable or unlikely to seek timely clinical services.
- **Recommended drug regimens**
  - Patients diagnosed with chlamydia, but not gonorrhea:
    - Azithromycin (Zithromax®) 1 gram (250 mg tablets x 4) orally once
  - Patients diagnosed with gonorrhea but not chlamydia:
    - Cefpodoxime (Vantin®) 400 mg orally once
  - Patients diagnosed with both gonorrhea and chlamydia:
    - Cefpodoxime (Vantin®) 400 mg orally once, PLUS:
      - Azithromycin (Zithromax®) 1 gram (250 mg tablets x 4) orally once
- **Number of doses** is limited to the number of known sex partners in previous 60 days (or most recent sex partner if none in the previous 60 days).
- **Informational materials** must accompany medication and must include clear instructions, warnings, and referrals.
- **Patient counseling**: abstinence until seven days after treatment and until seven days after partners have been treated.
- **Patient re-testing** for gonorrhea and chlamydia is recommended for three months after treatment.
- **Adverse reactions**: The law does not protect providers from liability, as is the case for any medical treatment. To report adverse reactions, email EPT@cdph.ca.gov or call 510-620-3400.

* Use of trade names is for identification only and does not imply endorsement.
† Cefixime (Suprax®) 400 mg orally once also is appropriate.
Background and Rationale

PUBLIC HEALTH IMPORTANCE OF CHLAMYDIA AND GONORRHEA

Sexually transmitted chlamydia and gonorrhea infections are significant public health problems. More than 130,000 cases of chlamydia and 34,000 cases of gonorrhea were reported in California in 2005, making them the top two most common reportable communicable infections. Genital infections can lead to pelvic inflammatory disease (PID), chronic pelvic pain, ectopic pregnancy, and preventable infertility in women. Patients with these infections are also at increased risk of acquiring sexually transmitted HIV. Repeat gonorrhea infections, which increase the risk of complications, occur in up to 11 percent of women and men within six months after treatment. Repeat chlamydia infections occur in up to 13 percent of patients in this same time period. To prevent repeat infections, reduce complications in individuals, and reduce further transmission of infection in the community, sex partners of infected patients must be provided timely and appropriate antibiotic treatment.

BARRIERS TO EFFECTIVE PARTNER MANAGEMENT

Currently, there are considerable challenges to effective partner management. Public health efforts to notify and treat sex partners have proven successful and are considered a cornerstone of syphilis control. However, because of the high burden of infection and limited public health resources for partner notification activities, it is difficult for local health departments to provide investigation and partner notification for cases of gonorrhea and chlamydia. Thus, the standard of care for partner management for gonorrhea and chlamydia cases has become patient referral, whereby providers counsel patients about the need for partner treatment and that the responsibility for notifying partners rests with the patient.

Although providers have the option to collect the partners' contact information and notify them, there are no reimbursement mechanisms and few clinics have the resources for this activity. The effectiveness of patient referral is limited by the patient's choice in notifying the partner, as well as the partner's choice in seeking treatment. In particular, some partners may be uninsured and have limited access to medical care. Further, infected partners who are asymptomatic may be less likely to seek needed medical treatment.
CALIFORNIA LEGISLATION ALLOWING PDPT FOR CHLAMYDIA AND GONORRHEA

Expedited partner treatment (EPT) for chlamydia and gonorrhea is an alternative strategy for ensuring that sex partners get needed medication. EPT is the general term for the practice of treating sex partners of patients diagnosed with an STD without an intervening medical evaluation. PDPT is the most common type of EPT in which the patient delivers the medication to his or her sex partner(s). Other types of EPT involve alternative delivery mechanisms, such as pharmacies.

In 2001, SB 648 (Ortiz, Chapter 835 Statutes of 2000) amended California law to allow PDPT for chlamydia, and, in January 2007, AB 2280 (Leno, Chapter 771 Statutes of 2006) further amended the law to allow PDPT for gonorrhea. The current law allows physicians to prescribe, and nurse practitioners, physician assistants, and certified nurse-midwives to dispense, antibiotic therapy for the male and female sex partners of individuals infected with *Chlamydia trachomatis* or *Neisseria gonorrhoeae*, even if they have not been able to perform an exam of the patient's partner(s).

This legislation (Section 120582 of the Health and Safety Code) provides an exception to the Medical Practice Act, which states that the prescribing, dispensing, or furnishing of dangerous drugs, as defined, without a good-faith prior examination and medical indication, constitutes unprofessional conduct. The new law provides that a licensee acting in accordance with provisions of the law with regard to a prescription for antibiotic therapy has not committed unprofessional conduct under this provision. This new law provides an important means to combat a serious public health problem and prevent adverse reproductive health outcomes.

This option allowing providers to use PDPT is not intended as the first and optimal choice of treatment for partners of individuals diagnosed with gonorrhea and chlamydia. However, this strategy can serve as a useful alternative when the partner is unable or unlikely to seek care. Providers should use their best judgment to determine whether partners will or will not come in for treatment, and to decide whether or not to dispense or prescribe additional medication to the index patient.
HEALTHCARE PROVIDER RESPONSIBILITIES FOR ENSURING PARTNER TREATMENT

Patients diagnosed with chlamydia or gonorrhea infection cannot be considered adequately treated until all their partners have been treated. All sexual contacts within the previous 60 days from the onset of symptoms or diagnostic test results need to be treated.

In California, physicians are still required by law to: 1) endeavor to discover the source of infection, as well as any sexual or other intimate contacts that the patient made while in the communicable stage of the disease (California Code of Regulations, Title 17, Section 2636); 2) make an effort, through the cooperation of the patient, to bring these persons in for examination and, if necessary, treatment (California Code of Regulations, Title 17, Section 2636); and 3) report cases to the local health officer (California Code of Regulations, Title 17, Section 2500).

EVIDENCE FOR THE EFFECTIVENESS OF EPT FOR CHLAMYDIA AND GONORRHEA

Several research studies, including randomized clinical trials, have demonstrated that EPT is effective in facilitating partner notification and reducing recurrent infection among index cases. A recent meta-analysis that included five clinical trials showed an overall reduced risk (summary risk ratio 0.73, 95 percent confidence interval (CI) 0.57 to 0.93) of recurrent infection in patients with chlamydia or gonorrhea who received EPT, compared with those who received standard partner treatment methods.9

One randomized trial demonstrated that partner management strategies that included EPT as an option, compared with conventional strategies, significantly reduced recurrent gonorrhea or chlamydial infection among heterosexual men and women.10 In this study, EPT was more effective than standard referral in reducing recurrent infection among patients with gonorrhea (3 percent versus 11 percent, p = 0.01), compared with those with chlamydial infection (11 percent versus 13 percent, p = 0.17).

In a separate study, of men with urethritis, PDPT, compared with patient referral, reduced recurrent infection rates by half, from 43 percent to 23 percent.11 In another study, of women with chlamydia, PDPT reduced recurrent infection rates from 15 percent to 12 percent (p = 0.10).12

A report published by the Centers for Disease Control and Prevention (CDC) in 2006 provided a thorough review of the research literature, a discussion of programmatic issues related to EPT, and guidance for public health programs and clinicians.13
IMPLEMENTATION AND USE OF PDPT

In a national physician survey conducted in 2000, researchers at CDC found that the practice of PDPT for chlamydia and gonorrhea was not uncommon.\textsuperscript{14, 15} According to a 2002 California survey, nearly half of California physicians and nurse practitioners reported that they routinely use PDPT to treat partners of patients with chlamydia.\textsuperscript{16} A local evaluation, in San Francisco, California, demonstrated successful implementation, with 23 percent of STD patients receiving PDPT.\textsuperscript{17}

As of January 2007, the STD Control Branch had not received any reports of adverse events related to PDPT for chlamydia, despite the availability of a toll-free reporting line since 2001.

For some insurance plans in California, reimbursement for PDPT has not kept up with policy and practice changes. Because this practice provides preventive care for the patient by reducing recurrent infection and subsequent reproductive health complication, the STD Control Branch encourages public and private insurers to support this practice.

LIABILITY ISSUES

The current legislation allowing PDPT for sexually transmitted infections does not protect healthcare providers from lawsuits resulting from adverse outcomes related to the practice. This liability is no different from the liability of any other action taken by a healthcare provider, including prescribing or dispensing medicine for any medical condition, in which the provider remains liable. However, guidelines establish a standard of care, and standard of care is the primary medicolegal standard for appropriate practice. It is reassuring that, as of January 2007, the STD Control Branch had not received any reports of lawsuits related to the practice of providing PDPT.

When the prescribing physician is a public official or employee, he or she is immune from tort liability in California when acting within the scope of their authority (Government Code Section 820 and 820.2). However, immunity does not apply to acts of negligence (e.g., prescribing a dangerous or non-therapeutic regimen).

POTENTIAL PITFALLS IN USING EPT

There are several concerns about EPT. First, the medication could cause a serious adverse reaction, including allergy. Second, EPT may compromise the quality of care provided to partners, particularly if it is used as a first-line approach for partners who would otherwise seek clinical services. Appropriate care for contacts to STD includes testing for other STDs and HIV, physical examination to rule out a complicated infection, and risk-reduction counseling. Ideally, partners who receive EPT will still access these clinical services. Despite these concerns, the benefits of EPT outweigh the risks, since doing nothing for these partners is more harmful. Further, these risks may
be mitigated through patient education and written materials for partners that provide warnings and encourage visiting a healthcare provider. Additional concerns about EPT include misuse of the medication, waste if the medication is not delivered or not taken, and contribution to antibiotic resistance at the population level. Currently, there is no evidence that EPT is misused or leads to increasing antimicrobial resistance.

Guidelines for using PDPT for Chlamydia and Gonorrhea

SELECTING APPROPRIATE PATIENTS FOR PDPT

Appropriate patients are those with a clinical diagnosis of sexually transmitted chlamydia or gonorrhea infection. Laboratory confirmation of the diagnosis may include a gram stain of urethral exudate showing gram negative diplococci indicative of gonorrhea; a positive culture test for chlamydia or gonorrhea; a positive nucleic acid hybridization test for chlamydia or gonorrhea (e.g., GenProbe PACE 2™ or Digene Hybrid Capture 2™); or a positive nucleic acid amplification test (NAAT) for chlamydia or gonorrhea (e.g., GenProbe Aptima™, Beckton Dickenson ProbeTec™, Roche Amplicor™). Because of their high sensitivity, NAATs are the tests of choice for chlamydia screening and testing. In fact, only a negative NAAT negates the need for co-treatment for chlamydia in a patient with gonorrhea.17

Providing PDPT without laboratory confirmation should be considered when the provider has a high clinical suspicion for chlamydia or gonorrhea infection in the index case and there is concern about loss of follow-up.

Clinicians should attempt to bring partners in for comprehensive health care, including evaluation, testing, and treatment. Clinical services provide the opportunity to ensure treatment; confirm the diagnosis; examine the patient; test for other STDs, HIV, and pregnancy; provide needed vaccinations; and offer risk-reduction counseling and community referrals. These services constitute the standard of care for all partners of patients infected with a sexually transmitted infection.

Thus, patients most appropriate for PDPT are those with partners who are unable or unlikely to seek prompt clinical services. Factors to consider in the patient's report are that the partner is uninsured, lacks a primary care provider, faces significant barriers to accessing clinical services, or will be unwilling to seek care. Providers should also assess the acceptability of PDPT to both the patient and the partners receiving it. PDPT does not preclude clinic attempts to get partners in for care. Even if PDPT is provided, the partner should still be encouraged to seek follow-up care as soon as possible.
Providers should assess the partner's symptom status, particularly symptoms indicative of a complicated infection; pregnancy status; and risk for severe medication allergies. If the partner is pregnant, every effort should be made to contact her for referral to pregnancy services and/or prenatal care. The local health department may be of assistance for these special situations. For partners with known severe allergies to antibiotics, PDPT should not be used. The legislation permits PDPT regardless of the patient’s gender or sexual orientation. However, the use of PDPT to treat certain partners (e.g., females, and men who have sex with men (MSM)) may increase the risk of under-treating a complicated infection or missing a concurrent STD/HIV infection in the partner. Further, PDPT is not appropriate for patients co-infected with STDs not covered by PDPT medication; cases of suspected child abuse, sexual assault, or abuse; or a situation in which the patient’s safety is in doubt.

RECOMMENDED TREATMENT REGIMENS

The legislation does not mandate a specific antibiotic. The recommended antibiotic therapy for PDPT is listed in the table below.

<table>
<thead>
<tr>
<th>Infection diagnosed in index patient</th>
<th>Recommended medication for PDPT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chlamydia only</td>
<td>• Azithromycin (Zithromax*) tablets 1 gram</td>
</tr>
<tr>
<td></td>
<td>(250 mg tablets x 4) orally once</td>
</tr>
<tr>
<td>Gonorrhea only (NAAT for chlamydia negative)</td>
<td>• Cefpodoxime (Vantin*) 400 mg orally once</td>
</tr>
<tr>
<td>Gonorrhea and Chlamydia (Includes situations in which the chlamydia and/or gonorrhea test results are not yet available in a patient with clinical signs of gonorrhea/chlamydia.)</td>
<td>• Cefpodoxime (Vantin*) 400 mg orally once, PLUS</td>
</tr>
<tr>
<td></td>
<td>• Azithromycin (Zithromax*) tablets 1 gram</td>
</tr>
<tr>
<td></td>
<td>(250 mg tablets x 4) orally once</td>
</tr>
</tbody>
</table>

*Use of trade names is for identification only and does not imply endorsement.
*Cefixime (Suprax*) 400 mg orally once also is appropriate.
In 2005, 25 percent of gonococcal isolates in California were resistant to fluoroquinolones (e.g., ciprofloxacin, ofloxacin, and levofloxacin, among others). Thus, fluoroquinolones should not be used for treating gonorrhea in California. Few oral cephalosporins have been studied and found to be effective against gonorrhea. Cefixime is a recommended regimen to treat uncomplicated infections of the cervix, urethra, or rectum, thus a single dose of 400 mg is an appropriate medication for PDPT for gonorrhea infections. Limited data support the effectiveness of cefpodoxime 400 mg, which is currently listed as an alternative regimen in the California Gonorrhea Treatment Guidelines (www.std.ca.gov).

In general, oral cephalosporins are less effective in eradicating pharyngeal gonorrheal infection. Providers who are concerned that the partner is at risk for pharyngeal infection, specifically if the partner has been exposed to a male urethral infection at this site, should discuss with the patient that oral treatment may not cure pharyngeal gonorrhea in all patients and that the partner should still seek care.

Patients infected with gonorrhea have high rates (35 percent to 50 percent) of co-infection with chlamydia. Because of the high sensitivity of NAATs for chlamydial infection, a patient’s negative chlamydial NAAT result precludes the need for the patient or partner(s) to be treated for chlamydia. However, if chlamydial test results are not available or if a non-NAAT was negative for chlamydia, the patient and partner(s) should be treated for both gonorrhea and chlamydia. For PDPT, unless chlamydia infection is ruled out with the use of a NAAT, azithromycin treatment is necessary for the presumptive treatment of chlamydia in patients diagnosed with gonorrhea.

Ideally, to avoid confusion, the partner should be treated for the same infections as the patient has. However, some providers may opt to provide PDPT for chlamydia infection even if the patient’s chlamydia NAAT is negative. This approach is suggested in national guidelines. The rationale for this approach is that chlamydia has not been adequately ruled out in the partner.

Azithromycin two grams orally should not be used for PDPT. Although small studies have shown that this regimen is effective against uncomplicated gonococcal infections, it causes significant gastrointestinal distress, and may be expensive. In addition, some concerns that widespread use may lead to the emergence of antimicrobial resistance have been raised.

All sex partners in the 60 days prior to diagnosis should be considered at risk for infection and should be treated. If the last sexual encounter was more than 60 days prior to diagnosis, the most recent sexual partner should be treated. The law does not specify how many partners may be treated through this strategy. Thus, patients should be provided with the number of doses necessary to treat each at-risk partner who can
For some insurance plans in California, reimbursement for PDPT has not kept up with policy and practice changes. Because this practice provides preventive care for the patient by reducing recurrent infection and subsequent reproductive health complication, the STD Control Branch encourages public and private insurers to support this practice.

**RISK OF ADVERSE REACTIONS TO MEDICATIONS**

Adverse reactions to single-dose cefpodoxime and azithromycin, beyond mild to moderate side effects, are rare. This risk of allergy and adverse drug reactions may be best mitigated through educational materials that accompany the medication, which include explicit warnings and instructions for partners who may be allergic to penicillin, cephalosporins, or macrolides, to seek medical advice before taking the medication. Examples of partner therapy instructions and information are available in English and Spanish (see appendices).

All known adverse reactions should be reported to the California Department of Health Services, STD Control Branch, via e-mail: EPT@cdph.ca.gov; or telephone: (510) 620-3400. Known adverse reactions to cefpodoxime and azithromycin are as follows:

**Cefpodoxime**

Cefpodoxime is generally well tolerated. The most common side effects in patients receiving a single-dose regimen of 200 mg of cefpodoxime were related to the gastrointestinal system: nausea (1.4 percent) and diarrhea/loose stools (1.2 percent).\(^{21}\) No other side effects occurred with a frequency greater than one percent.

Approximately one percent to three percent of patients have a primary hypersensitivity to cephalosporins; however, rates and cross-reactivity vary, depending on the molecular structure.\(^{22}\) The risk of anaphylaxis with cephalosporin in the general population is 0.0001 percent to 0.1 percent.\(^{23,25}\) However, patients with IgE-mediated allergy to penicillin are at increased risk for severe allergic reactions to cephalosporins. Evidence of IgE-mediated allergy include anaphylaxis, hypotension, laryngeal edema, wheezing, angioedema, and/or urticaria.

Approximately 10 percent of patients report penicillin allergy; however, more than 90 percent of them are found not to be allergic and are able to tolerate the drug.\(^{26}\) Cephalosporins are less allergenic than penicillin. The risk of cephalosporin reaction among patients with penicillin allergy is 5 percent to 17 percent for first-generation cephalosporins, 4 percent for second-generation, and only 1 percent to 3 percent for third- and fourth-generation cephalosporins.\(^{27}\) Cefpodoxime, cefixime, and other cephalosporins recommended for the treatment of gonorrhea are all third-generation cephalosporins.

In a retrospective cohort study of patients receiving penicillin and a subsequent cephalosporin, the risk of an allergic event was about ten-fold higher among those who had had a prior allergic reaction to penicillin; however, the absolute risk of anaphylaxis
was very small: 1 in 100,000. Further, because the risk was similarly elevated among those subsequently given a sulfonamide antibiotic, cross-reactivity may not be an adequate explanation for the increased risk.

The American Academy of Pediatrics guidelines, which establish a medicolegal standard of care, state that third-generation cephalosporins can be used to treat penicillin-allergic patients as long as the penicillin reaction is not severe (i.e., not IgE-mediated). Skin testing for penicillin allergy is recommended for patients if the allergic reaction was consistent with IgE-mediated mechanism or if the history is unclear. Such partners should be brought in for treatment for gonorrhea exposure.

Azithromycin
Azithromycin is generally well tolerated. The most common side effects in patients receiving a single-dose regimen of one gram of azithromycin are related to the gastrointestinal system: diarrhea/loose stools (seven percent), nausea (five percent), abdominal pain (five percent), vomiting (two percent), and dyspepsia (one percent). Vaginitis occurs in about one percent of women taking azithromycin. No other side effects have been documented with a frequency greater than one percent. Anaphylaxis or severe allergy to macrolides generally, and to azithromycin specifically, is very rare.

RISK OF UNDER-TREATING COMPLICATED INFECTIONS AND MISSING CONCURRENT STD/HIV

Another risk of PDPT is missing concurrent STD and HIV infections. There is particular concern related to using PDPT in MSM because of the risk of missing an undiagnosed HIV infection. In a multi-site study of STD/HIV co-infection among STD patients who presented as contacts to infection, 6.3 percent of MSM had newly diagnosed HIV infection. The risk of missing new HIV infections may be less in areas with ready access to HIV screening. Thus far, research on the effectiveness of PDPT in reducing repeat infection has been limited to heterosexual populations.

Because oral cephalosporins are less effective in eradicating pharyngeal gonorrhea infection, inadequate treatment of partners with pharyngeal infection is a potential limitation of PDPT. Providers who are concerned that the partner is at risk for pharyngeal infection should discuss with the patient that oral treatment may not cure pharyngeal gonorrhea in all patients and that the partner should seek care.

Each of these risks can be mitigated through educational materials that clearly instruct all PDPT recipients that they should seek care for STD and HIV testing, regardless of whether or not they take the medication. In particular, those with specific symptoms such as pelvic pain or testicular pain should seek medical care; pregnant women should seek regular prenatal care and receive a test-of-cure (TOC); and MSM should seek HIV testing. Examples of partner therapy instructions and information are available in English and Spanish (see appendices). Assistance from the local health department also may be available for these challenging partner situations.
PDPT AND PREGNANCY

Although PDPT is not contraindicated when a patient reports that his female partner may be pregnant, providers should assess whether the pregnant partner is receiving pregnancy services or prenatal care. Every effort should be made to contact the pregnant partner and ensure appropriate care; PDPT should be considered a last resort. The local health department may be of assistance for these special situations. The need for a TOC for chlamydia and gonorrhea in pregnancy in three weeks should be emphasized. Both recommended PDPT regimens are safe in pregnancy. Doxycycline, a potential substitute for azithromycin, should not be used in pregnancy.

KEY EDUCATION AND COUNSELING

Ideally, the medications and educational material should be given to the patient to deliver to the partner. If a prescription is used, then the provider should give the patient both the educational material and the prescription, and encourage the patient to deliver both the medication and accompanying informational material to the partner. Examples of partner therapy instructions and information are available in English and Spanish (see appendices).

Providers should discuss the following key counseling messages with their patient when prescribing PDPT:

- Partners should seek a complete STD evaluation as soon as possible, regardless of whether they take the medication.
- Partners should read the informational material very carefully before taking the medication.
- Partners who have allergies to antibiotics or who have serious health problems should not take the medications and should see a healthcare provider.
- Partners who have symptoms of a more serious infection (e.g., pelvic pain in women, testicular pain in men, fever in women or men) should not take the PDPT medications and should seek care as soon as possible.
- Partners who are or could be pregnant should seek care as soon as possible.
- Patients and partners should abstain from sex for at least seven days after treatment and until seven days after all partners have been treated, in order to decrease the risk of recurrent infection.
- Partners should be advised to seek clinical services for re-testing three months after treatment.

PATIENT FOLLOW-UP AND RE-TESTING AT THREE MONTHS

To ensure the effectiveness of PDPT, providers should schedule both male and female patients to return for re-testing for gonorrhea and chlamydia three months after treatment.
Resources

CALIFORNIA EPT RESOURCES:

- PDPT partner information materials are available online at www.std.ca.gov. Materials are available in English and Spanish, and include instructions for chlamydia treatment, gonorrhea treatment, and combination treatment (both chlamydia and gonorrhea).
- Adverse reaction reporting via email: EPT@cdph.ca.gov; or telephone: (510) 620-3400
- Information on California legislation is available at www.leginfo.ca.gov. Search California Law, Health and Safety Code, Keyword “120582”.
- For information on local chlamydia and gonorrhea control efforts, please call your local STD control program, visit the California Department of Health Services STD website at www.std.ca.gov, or call the California Department of Health Services STD Control Branch at (510) 620-3400.
- The California STD/HIV Prevention Training offers courses in the clinical management of STDs, as well as partner management and counseling. Please visit the website at www.stdhivtraining.org or call (510) 625-6000.

CALIFORNIA STD CLINICAL PRACTICE GUIDELINES (ALL AVAILABLE ONLINE AT: WWW.STD.CA.GOV)

- California Gonorrhea Treatment Guidelines (revised 2006)
- California STD Treatment Guidelines for Adults and Adolescents (two-page summary, revised 2007)
- California Gonorrhea Screening Guidelines for Women in Family Planning and Primary Care Settings (2006)

CDC STD PRACTICE GUIDELINES

- Expedited Partner Therapy in the Management of Sexually Transmitted Diseases. 2006. Available online: www.cdc.gov/std/EPT.
References cited:


Examples of PDPT Partner Information Materials

ENGLISH VERSIONS:

Directions For Sex Partners Of Persons With Chlamydia
Directions For Sex Partners Of Persons With Gonorrhea
Directions For Sex Partners Of Persons With Chlamydia And Gonorrhea

SPANISH VERSIONS:

Instrucciones Para Parejas Sexuales De Personas Con Clamidia
Instrucciones Para Parejas Sexuales De Personas Con Gonorrhea
Instrucciones Para Parejas Sexuales De Personas Con Clamidia Y Gonorrhea
URGENT and PRIVATE

IMPORTANT INFORMATION ABOUT YOUR HEALTH
Directions for sex partners of persons with chlamydia

PLEASE READ THIS VERY CAREFULLY.

Your sex partner has recently been treated for chlamydia.

Chlamydia is a sexually transmitted disease (STD) that you can get from having any kind of sex (oral, vaginal, or anal) with a person who already has it. You may have been exposed. The good news is that it’s easily treated.

You are being given a medicine called azithromycin (sometimes known as “Zithromax”) to treat your chlamydia. Your partner may have given you the actual medicine, or a prescription that you can take to a pharmacy. These are instructions for how to take azithromycin.

The best way to take care of this infection is to see your own doctor or clinic provider right away. If you can’t get to a doctor in the next several days, you should take the azithromycin.

Even if you decide to take the medicine, it is very important to see a doctor as soon as you can, to get tested for other STDs. People can have more than one STD at the same time. Azithromycin will not cure other infections. Having STDs can increase your risk of getting HIV, so make sure to also get an HIV test.

SYMPTOMS

Some people with chlamydia have symptoms, but many do not. Symptoms may include pain in your testicles (balls), pelvis, or lower part of your belly. You may also have pain when you urinate (pee) or when having sex. Many people with chlamydia do not know they are infected because they feel fine.

BEFORE TAKING THE MEDICINE

Before you take the medicine, please read the following:

The medicine is very safe. However, DO NOT TAKE if any of the following are true:
- You are female and have lower belly pain; pain during sex; vomiting; or fever.
- You are male and have pain or swelling in the testicles (balls) or fever.
- You have ever had a bad reaction, rash, breathing problems, or allergic reaction after taking azithromycin or other antibiotics. People who are allergic to some antibiotics may be allergic to other types. If you do have allergies to antibiotics, you should check with your doctor before taking this medicine.
- You have a serious long-term illness, such as kidney, heart, or liver disease.
- You are currently taking another prescription medication, including medicine for diabetes.

If any of these circumstances exist, or if you are not sure, do not take the azithromycin. Instead, you should talk to your doctor as soon as possible. Your doctor will find the best treatment for you.

WARNINGS

If you do not take medicine to cure chlamydia, you can get very sick. If you are a woman, you might not be able to have children.

If you are pregnant, it is safe to take the azithromycin, but you should still get a full check-up.
HOW TO TAKE THE MEDICINE

• You can take these pills with or without food.
• You should have four pills of azithromycin. Each pill contains 250mg of the medicine. You should take all four pills with water at the same time. You need to take all four pills to be cured.
• Do NOT take antacids (such as Tums, Rolaids, or Maalox) for one hour before or two hours after taking the azithromycin pills.
• Do NOT share or give this medication to anyone else.

SIDE EFFECTS

You may experience some side effects, including:
• Slightly upset stomach;
• Diarrhea;
• Dizziness;
• Vaginal yeast infection.

These are well-known side effects and are not serious.

ALLERGIC REACTIONS

Very serious allergic reactions include:
• Difficulty breathing/tightness in the chest;
• Closing of your throat;
• Swelling of your lips or tongue;
• Hives (bumps or welts on your skin that itch intensely).

If you experience any of these, call 911 or go to the nearest emergency room immediately.

NEXT STEPS

Now that you have your azithromycin, do not have sex for the next seven days after you have taken the medicine. It takes seven days for the medicine to cure chlamydia. If you have sex without a condom, or with a condom that breaks, during those first seven days, you can still pass on the infection to your sex partners. You can also get re-infected yourself.

If you have any other sex partners, tell them you are getting treated for chlamydia, so they can get treated too.

People who are infected with chlamydia once are very likely to get it again. It is a good idea to get tested for chlamydia and other STDs three months from now to be sure you did not get another infection.

If you have any questions about the medicine, chlamydia, or other STDs, please call:
[Each local health jurisdiction (LHJ) will list its phone number here.]

All calls are confidential.

For a free STD exam, testing, and medicine, you can come to:
[Each LHJ will list local clinics here.]

CONGRATULATIONS ON TAKING GOOD CARE OF YOURSELF!

For more information on chlamydia and other STDs, please visit www.inspot.org or www.ashastd.org.
URGENT and PRIVATE

IMPORTANT INFORMATION ABOUT YOUR HEALTH

Directions for sex partners of persons with gonorrhea

PLEASE READ THIS VERY CAREFULLY.

Your sex partner has recently been treated for gonorrhea.

Gonorrhea is a sexually transmitted disease (STD) that you can get from having any kind of sex (oral, vaginal, or anal) with a person who already has it. You may have been exposed. The good news is that it's easily treated.

You are being given a medicine called cefpodoxime (sometimes known as "Vantin") to treat your gonorrhea. Your partner may have given you the actual medicine, or a prescription that you can take to a pharmacy. These are instructions for how to take cefpodoxime.

The best way to take care of this infection is to see your own doctor or clinic provider right away. If you can't get to a doctor in the next several days, you should take the cefpodoxime.

Even if you decide to take the medicine, it is very important to see a doctor as soon as you can to get tested for other STDs. People can have more than one STD at the same time. Cefpodoxime will not cure other infections. Having STDs can increase your risk of getting HIV, so make sure to also get an HIV test.

SYMPTOMS

Some people with gonorrhea have symptoms, but many do not. Symptoms may include having an unusual discharge from the penis, vagina, or anus. You may also have pain when you urinate (pee). Many people with gonorrhea do not know they are infected because they feel fine.

BEFORE TAKING THE MEDICINE

Before you take the medicine, please read the following:

The medicine is very safe. However, DO NOT TAKE if any of the following are true:

- You are female and have lower belly pain; pain during sex; vomiting; or fever.
- You are female and have lower belly pain; pain during sex; vomiting; or fever.
- You are male and have pain or swelling in the testicles (balls) or fever.
- You have one or more painful and swollen joints, or a rash all over your body.
- You have ever had a bad reaction, rash, breathing problems, or an allergic reaction to cefpodoxime or other antibiotics.
- People who are allergic to some antibiotics may be allergic to other types. If you do have allergies to antibiotics, you should check with your doctor before taking this medicine.
- You have a serious long-term illness, such as kidney, heart, or liver disease.
- You are currently taking another prescription medication, including medicine for diabetes.

If any of these circumstances exist, or if you are not sure, do not take the cefpodoxime. Instead, you should talk to your doctor as soon as possible. Your doctor will find the best treatment for you.

WARNINGS

If you performed oral sex on someone who was infected with gonorrhea, the medicine may not work as well. You should see a doctor to get stronger medicine.

If you do not take medicine to cure gonorrhea, you can get very sick. If you're a woman, it can make you unable to have children.

If you are pregnant, it is safe to take the cefpodoxime, but you should still get a full check-up.
HOW TO TAKE THE MEDICINE

- Take these pills with food. This will decrease the chances of having an upset stomach and will increase the amount your body absorbs.
- You should have two pills of cefpodoxime. Each pill contains 200 mg of the medicine. Take both pills with water at the same time. You need to take both pills to be cured.
- Do NOT take antacids (such as Tums, Rolaids, or Maalox) for one hour before or two hours after taking the medicine.
- Do not share or give the cefpodoxime to anyone else!

SIDE EFFECTS

You may experience some side effects, including:
- Slightly upset stomach;
- Diarrhea;
- Dizziness;
- Vaginal yeast infection.
These are well-known side effects and are not serious.

ALLERGIC REACTIONS

Very serious allergic reactions include:
- Difficulty breathing/tightness in the chest;
- Closing of your throat;
- Swelling of your lips or tongue;
- Hives (bumps or welts on your skin that itch intensely).
If you experience any of these, call 911 or go to the nearest emergency room immediately!

NEXT STEPS

Now that you have your cefpodoxime, do not have sex for the next seven days after you have taken the medicine. It takes seven days for the medicine to cure gonorrhea. If you have sex without a condom, or with a condom that breaks, during those first seven days, you can still pass the infection to your sex partners. You can also get re-infected yourself.

If you have any other sex partners, tell them you are getting treated for gonorrhea, so they can get treated too.

If you think you do have symptoms of a gonorrhea infection and they do not go away within seven days after taking this medicine, please go to a doctor for more testing and treatment.

People who are infected with gonorrhea once are very likely to get it again. It is a good idea to get tested for gonorrhea and other STDs three months from now, to be sure you did not get another infection.

If you have any questions about the medicine, gonorrhea, or other STDs, please call:
[Each local health jurisdiction (LHJ) will list its phone number here.]

All calls are confidential.

For a free STD exam, testing, and medicine, you can come to:
[Each LHJ will list local clinics here.]

CONGRATULATIONS ON TAKING GOOD CARE OF YOURSELF!

For more information on gonorrhea and other STDs, please visit www.inspot.org or www.ashastd.org.
IMPORTANT INFORMATION ABOUT YOUR HEALTH

Directions for sex partners of persons with chlamydia and gonorrhea

PLEASE READ THIS VERY CAREFULLY.

Your sex partner has recently been diagnosed with one or more sexually transmitted diseases (STDs). This means you may have been exposed to gonorrhea and chlamydia.

You can get gonorrhea and chlamydia from having any kind of sex (oral, vaginal, or anal) with a person who already has them. The good news is that they are easily treated.

You are being given two different types of medicine. One is called cefpodoxime (sometimes known as "Vantin"). It will cure gonorrhea. The other is called azithromycin (sometimes known as "Zithromax"). It will cure chlamydia. Your partner may have given you both medicines, or a prescription that you can take to a pharmacy. These instructions are for how to take cefpodoxime and azithromycin.

The best way to take care of these infections is to see your own doctor or clinic provider right away. If you can’t get to a doctor in the next several days, you should take both medicines.

Even if you decide to take the medicines, it is very important to see a doctor as soon as you can, to get tested for other STDs. People with gonorrhea are likely to also be infected with chlamydia. You should take the pills for both.

You may have been exposed to other STDs that cefpodoxime and azithromycin will not cure. It is still important that you get tested for other STDs. Having STDs can increase your risk of getting HIV, so make sure to also get an HIV test.

SYMPTOMS

Some people with gonorrhea and chlamydia have symptoms, but many do not. Symptoms of gonorrhea and chlamydia may include having an unusual discharge from the penis, vagina, or anus. You may also have pain when you urinate (pee), or pain in your groin, testicles, pelvis, or lower belly. Women may experience pain during sex. Many people with gonorrhea and chlamydia do not know they are infected because they feel fine.

BEFORE TAKING THE MEDICINE

Before you take the medicine, please read the following:
The medicines are very safe. However, DO NOT TAKE if any of the following are true:
• You are female and have lower belly pain, pain during sex, vomiting, or fever.
• You are male and have pain or swelling in the testicles (balls) or fever.
• You have one or more painful and swollen joints, or a rash all over your body.
• You have ever had a bad reaction, rash, breathing problems, or allergic reaction after taking cefpodoxime, azithromycin, or other antibiotics. People who are allergic to some antibiotics may be allergic to other types. If you do have allergies to antibiotics, you should check with your doctor before taking these medicines.
• You have a serious long-term illness, such as kidney, heart, or liver disease.
• You are currently taking another prescription medicine, including medicine for diabetes.

If any of these circumstances exist, or if you are not sure, do not take these medicines. Instead, you should talk to your doctor as soon as possible. Your doctor will find the best treatment for you.

WARNINGS

If you performed oral sex on someone who was infected with gonorrhea, the medicine may not work as well. You need to see a doctor to get stronger medicine.
If you do not take medicine to cure gonorrhea or chlamydia, you can get very sick. If you’re a woman, you might not be able to have children.
If you are pregnant, it is safe to take these medicines, but you should still get a full check-up.

**HOW TO TAKE THE MEDICINE**

- Take the medicines with food. This will decrease the chances of having an upset stomach, and will increase the amount your body absorbs.
- You should have two pills of cefpodoxime (200mg each), and four pills of azithromycin (250 mg each). Take all six pills with water at the same time. You need to take all six pills in order to be cured.
- Do NOT take antacids (such as Tums, Rolaids, or Maalox) for one hour before or two hours after taking the medicines.
- Do NOT share or give these medicines to anyone else!

**SIDE EFFECTS**

You may experience some side effects, including:
- Slightly upset stomach;
- Diarrhea;
- Dizziness;
- Vaginal yeast infection.
These are well-known side effects and are not serious.

**ALLERGIC REACTIONS**

Very serious allergic reactions include:
- Difficulty breathing/tightness in the chest;
- Closing of your throat;
- Swelling of your lips or tongue;
- Hives (bumps or welts on your skin that itch intensely).
If you experience any of these, call 911 or go to the nearest emergency room immediately!

**NEXT STEPS**

Now that you have your medicines, do not have sex for the next seven days after you have taken the medicines. It takes seven days for the medicines to cure gonorrhea and chlamydia. If you have sex without a condom, or with a condom that breaks, during those first seven days, you can still pass the infection to your sex partners. You can also get re-infected yourself.

If you have any other sex partners, tell them you are getting treated for gonorrhea and chlamydia, so they can get treated too.

If you think you do have symptoms of a gonorrhea infection and they do not go away within seven days after taking this medicine, please go to a doctor for more testing and treatment.

People who are infected with gonorrhea and chlamydia once are very likely to get infected again. It is a good idea to get tested for gonorrhea, chlamydia, and other STDs three months from now to be sure you did not get another infection.

If you have any questions about the medicine, gonorrhea, chlamydia, or other STDs, please call:
[Each local health jurisdiction (LHI) will list its phone number here.]

All calls are confidential.

For a free STD exam, testing, and medicine, you can also come to:
[Each LHI will list local clinics here.]

**CONGRATULATIONS ON TAKING GOOD CARE OF YOURSELF!**

For more information on gonorrhea, chlamydia, and other STDs, please visit www.inspot.org or www.ashastd.org.
URGENTE Y PRIVADO

INFORMACIÓN IMPORTANTE SOBRE SU SALUD
Instrucciones para parejas sexuales de personas con clamidia

LEA LO SIGUIENTE CON MUCHA ATENCIÓN.

Su pareja sexual ha sido tratada recientemente por clamidia.

La clamidia es una enfermedad de transmisión sexual (STD, por sus siglas en inglés) que se puede contraer al tener cualquier tipo de relación sexual (oral, vaginal o anal) con alguien que ya tiene la enfermedad. Es posible que usted haya estado expuesto. Lo bueno es que se puede tratar fácilmente.

Le van a dar un medicamento llamado azitromicina (azithromycin, a veces conocido como "Zithromax") para tratar la clamidia. Es posible que su pareja le haya dado el medicamento mismo o una receta médica para que lo pueda adquirir en una farmacia. Estas son instrucciones sobre cómo tomar la azitromicina.

Consultar de inmediato con su médico o clínica es la mejor manera de tratar estas infecciones. Si no puede hablar con un médico en los próximos días debe tomar la azitromicina.

Incluso si decide tomar el medicamento es muy importante que vea a un médico lo antes posible para que le hagan la prueba de otras enfermedades de transmisión sexual. Las personas pueden tener más de una enfermedad de transmisión sexual al mismo tiempo. La azitromicina no curará otras infecciones. Tener enfermedades de transmisión sexual puede aumentar su riesgo de contraer el VIH, así que asegúrese de hacerse también la prueba del VIH.

SÍNTOMAS

Algunas personas con clamidia tienen síntomas, pero muchas otras no. Los síntomas podrían incluir dolor en los testículos (las bolas), en la pelvis o en la parte baja del vientre. También podrían sentir dolor al orinar (hacer pipi) o al tener relaciones sexuales. Muchas personas con clamidia no saben que están infectadas porque se sienten bien.

ANTES DE TOMAR EL MEDICAMENTO

Lea lo siguiente antes de tomar el medicamento:
El medicamento es muy seguro. Sin embargo, NO LO TOME si alguna de las siguientes cosas es cierta:
- Es mujer y tiene dolor en la parte baja del vientre, dolor al tener relaciones sexuales, vómitos o fiebre.
- Es hombre y tiene dolor o hinchazón en los testículos (las bolas) o fiebre.
- Alguna vez tuvo una mala reacción, sarpullido, problemas para respirar o una reacción alérgica después de tomar la azitromicina u otros antibióticos. Las personas que son alérgicas a algunos antibióticos pueden ser alérgicas a otros tipos.
- Si es alérgico a los antibióticos hablé con su médico antes de tomar este medicamento.
- Tiene una enfermedad sería a largo plazo, como una enfermedad de las riñones, el corazón o el hígado.
- Está tomando otro medicamento recetado, incluyendo medicamentos para la diabetes.
Si existe cualquiera de estas circunstancias, o si no está seguro, no tome la azitromicina. En lugar de tomarla debe hablar con su médico lo antes posible. Su médico encontrará el mejor tratamiento para usted.

ADVERTENCIAS

Si no toma el medicamento para curar la clamidia usted se puede enfermar muy gravemente. Si es mujer, la clamidia puede hacer que no pueda tener hijos.
Si está embarazada puede tomar azitromicina sin peligro, pero aun así se debe hacer un chequeo completo.
CÓMO TOMAR EL MEDICAMENTO

- Puede tomar estas pastillas con o sin comida.
- Tiene que tomar cuatro pastillas de azitromicina. Cada pastilla contiene 250 mg del medicamento. Tiene que tomar las cuatro pastillas con agua al mismo tiempo. Para curarse tiene que tomar las cuatro pastillas.
- NO tome antácidos (como Tums, Rolaid o Maalox) una hora antes o dos horas después de haber tomado las pastillas de azitromicina.
- ¡NO comparta este medicamento con nadie ni tampoco se lo dé a nadie!

EFECTOS SECUNDARIOS

Podría tener algunos efectos secundarios, incluyendo:
- un poco de malestar estomacal,
- diarrea,
- mareos,
- infección vaginal por levaduras.
Estos son efectos secundarios bien conocidos y no son serios.

REACCIONES ALÉRGICAS

Las reacciones alérgicas muy serias incluyen:
- dificultad para respirar o sentir el pecho apretado,
- cierre de la garganta,
- hinchazón de los labios o de la lengua,
- urticaria (bultos o verdugones en la piel que pican mucho).
Si tiene alguna de estas cosas llame al 911 o vaya de inmediato a la sala de emergencias más cercana.

LO QUE DEBE HACER DESPUÉS

Ahora que tiene la azitromicina, no tenga relaciones sexuales por siete días después de tomarla. El medicamento tarda siete días en curar la clamidia. Si durante esos primeros siete días tiene relaciones sexuales sin condones, o con un condón que se rompe, puede pasar la infección a sus parejas sexuales y, además, usted también se puede volver a infectar.

Si tiene otras parejas sexuales digales que lo están tratando por clamidia para que también reciban tratamiento. Las personas que estuvieron infectadas por clamidia una vez tienen una gran probabilidad de volver a infectarse. Conviene que en los próximos tres meses se haga la prueba de la clamidia y de otras enfermedades de transmisión sexual para estar seguro de que no tiene ninguna otra infección.

Si tiene alguna duda sobre el medicamento, la clamidia u otras enfermedades de transmisión sexual, llame al: [Each local health jurisdiction (LHJ) will list its phone number here.]

Todas las llamadas son confidenciales.

Para obtener un examen gratuito de enfermedades de transmisión sexual, pruebas y medicamentos, puede ir a: [Each LHJ will list local clinics here.]

¡FELICIDADES POR CUIDARSE TAN BIEN!

Para obtener más información sobre la clamidia y otras enfermedades de transmisión sexual, visite www.inspot.org o www.aashastd.org.
INFORMACIÓN IMPORTANTE SOBRE SU SALUD
Instrucciones para parejas sexuales de personas con gonorrhea

LEA LO SIGUIENTE CON MUCHA ATENCIÓN.

Su pareja sexual ha sido tratada recientemente por gonorrhea.

La gonorrhea es una enfermedad de transmisión sexual (STD, por sus siglas en inglés) que se puede contraer al tener cualquier tipo de relación sexual (oral, vaginal o anal) con alguien que ya tiene la enfermedad. Es posible que usted haya estado expuesto. Lo bueno es que se puede tratar fácilmente.

Le van a dar un medicamento llamado cefpodoxima (cefpodoxime, a veces conocido como “Vantin”) para tratar la gonorrhea. Es posible que su pareja le haya dado el medicamento mismo o una receta médica para que los pueda adquirir en una farmacia. Estas son instrucciones sobre cómo tomar la cefpodoxima.

Consultar de inmediato con su médico o clínica es la mejor manera de tratar estas infecciones. Si no puede hablar con un médico en los próximos días debe tomar la cefpodoxima.

Incluso si decide tomar el medicamento es muy importante que vea a un médico lo antes posible para que le hagan la prueba de otras enfermedades de transmisión sexual. Las personas pueden tener más de una enfermedad de transmisión sexual al mismo tiempo. La cefpodoxima no curará otras infecciones. Tener enfermedades de transmisión sexual puede aumentar su riesgo de contraer el VIH, así que asegúrese de hacerse también la prueba del VIH.

SÍNTOMAS

Algunas personas con gonorrhea tienen síntomas, pero muchas otras no. Los síntomas podrían incluir tener una secreción inusual del pene, la vagina o el ano. También podrían sentir dolor al orinar (hacer pipi). Muchas personas con gonorrhea no saben que están infectadas porque se sienten bien.

ANTES DE TOMAR EL MEDICAMENTO

Lea lo siguiente antes de tomar el medicamento:
El medicamento es muy seguro. Sin embargo, NO LO TOME si alguna de las siguientes cosas es cierta:

• Es mujer y tiene dolor en la parte baja del vientre, dolor al tener relaciones sexuales, vómitos o fiebre.
• Es hombre y tiene dolor o hinchazón en los testículos (las bolas) o fiebre.
• Siente dolor y tiene hinchazón en una o más articulaciones o sarpullido en todo el cuerpo.
• Alguna vez tuvo una mala reacción, sarpullido, problemas para respirar o una reacción alérgica a la cefpodoxima o a otros antibióticos. Las personas que son alérgicas a algunos antibióticos pueden ser alérgicas a otros tipos. Si es alérgico a los antibióticos hable con su médico antes de tomar este medicamento.
• Tiene una enfermedad seria a largo plazo, como una enfermedad de los riñones, el corazón o el hígado.
• Está tomando otro medicamento recetado, incluyendo medicamentos para la diabetes.

Si existe cualquiera de estas circunstancias, o si no está seguro, no tome la cefpodoxima. En lugar de tomarla debe hablar con su médico lo antes posible. Su médico encontrará el mejor tratamiento para usted.

ADVERTENCIAS

Si tuvo relaciones sexuales orales con alguien que estaba infectado por gonorrhea es posible que el medicamento no funcione tan bien. Debe ver a su médico para que le dé un medicamento más fuerte.

Si no toma el medicamento para curar la gonorrhea usted se puede enfermar muy gravemente. Si es mujer, la gonorrhea puede hacer que no pueda tener hijos.

Si está embarazada puede tomar cefpodoxima sin peligro, pero aun así se debe hacer un chequeo completo.
CÓMO TOMAR EL MEDICAMENTO

- Tome estas pastillas con comida. Esto hace que sea menos probable que tenga malestar estomacal y aumentará la cantidad de medicamento que absorbe el cuerpo.
- Debe tomar dos pastillas de cefpodoxima. Cada pastilla contiene 200 mg del medicamento. Tome las dos pastillas con agua al mismo tiempo. Para curarse tiene que tomar las dos pastillas.
- NO tome antiacidos (como Tums, Rolaids o Maalox) una hora antes o dos horas después de haber tomado las pastillas de cefpodoxima.
- ¡No comparta la cefpodoxima con nadie ni tampoco se la dé a nadie!

EFECTOS SECUNDARIOS

Podría tener algunos efectos secundarios, incluyendo:
- un poco de malestar estomacal,
- diarrea,
- mareo,
- infección vaginal por levaduras.
Estos son efectos secundarios bien conocidos y no son serios.

REACCIONES ALÉRGICAS

Las reacciones alérgicas very serias incluyen:
- dificultad para respirar o sentir el pecho apretado,
- cierre de la garganta,
- hinchazón de los labios o de la lengua,
- urticaria (bultos o verdugones en piel que pican mucho).

¡Si tiene alguna de estas cosas llame al 911 o vaya de inmediato a la sala de emergencias más cercana!

LO QUE DEBE HACER DESPUÉS

Ahora que tiene la cefpodoxima, no tenga relaciones sexuales por siete días después de tomarla. El medicamento tarda siete días en curar la gonorrea. Si durante esos primeros siete días tiene relaciones sexuales sin condones, o con un condón que se rompe, puede pasar la infección a sus parejas sexuales y, además, usted también se puede volver a infectar.

- Si tiene otras parejas sexuales digales que lo están tratando por gonorrea para que también reciban tratamiento.
- Si le parece que tiene síntomas de gonorrea y no se le quitan dentro de los siete días de haber tomado este medicamento vaya a un médico para que le hagan más pruebas y le den más tratamiento.
- Las personas que estuvieron infectadas por gonorrea una vez tienen una gran probabilidad de volver a infectarse. Convienes que en los próximos tres meses se haga la prueba de la clamidia y de otras enfermedades de transmisión sexual para estar seguro de que no tiene ninguna otra infección.
- Si tiene alguna duda sobre el medicamento, la gonorrea o otras enfermedades de transmisión sexual, llame al:
  [Each local health jurisdiction (LHI) will list its phone number here.]

Todas las llamadas son confidenciales.

Para obtener un examen gratuito de enfermedades de transmisión sexual, pruebas y medicamentos, puede ir a:
  [Each LHI will list local clinics here.]

¡FELICIDADES POR CUIDARSE TAN BIEN!

Para obtener más información sobre la gonorrea y otras enfermedades de transmisión sexual, visite www.inspot.org o www.ashastd.org.
LEA LO SIGUIENTE CON MUCHA ATENCIÓN.

Su pareja sexual ha sido diagnosticada recientemente con una o más enfermedades de transmisión sexual (STD, por sus siglas en inglés). Esto quiere decir que usted puede haber estado expuesto a la gonorrea y a la clamidia.

Usted puede contraer la gonorrea y la clamidia al tener cualquier tipo de relaciones sexuales (orales, vaginales o anales) con alguien que ya tiene las enfermedades. Lo bueno es que se pueden tratar fácilmente.

Le van a dar dos medicamentos diferentes. Uno se llama cefpodoxima (cefpodoxime, a veces conocido como “Vantin”). Este medicamento cura la gonorrea. El otro se llama azitromicina (azithromycin, a veces conocido como “Zithromax”) y cura la clamidia. Es posible que su pareja le haya dado los dos medicamentos o una receta médica para que los pueda adquirir en una farmacia. Éstas son instrucciones sobre cómo tomar la cefpodoxima y la azitromicina.

Consultar de inmediato con su médico o clínica es la mejor manera de tratar estas infecciones. Si no puede hablar con un médico en los próximos días debe tomar los dos medicamentos.

Incluso si decide tomar los medicamentos es muy importante que vea a un médico lo antes posible para que le hagan la prueba de otras enfermedades de transmisión sexual. Las personas con gonorrea tienen una gran probabilidad de tener clamidia también. Es por eso que debe tomar las pastillas para las dos enfermedades.

Es posible que haya estado expuesto a otras enfermedades de transmisión sexual que ni la cefpodoxima ni la azitromicina pueden curar, así que es importante que se haga la prueba de otras enfermedades de transmisión sexual. Tener enfermedades de transmisión sexual puede aumentar su riesgo de contraer el VIH, así que asegúrese de hacerse también la prueba del VIH.

SÍNTOMAS

Algunas personas con clamidia y gonorrea tienen síntomas, pero muchas otras no. Los síntomas de gonorrea y clamidia podrían incluir tener una secreción inusual del pene, la vagina o el ano. También podrían sentir dolor al orinar (hacer pipí) o dolor en el ínге, los testículos, la pelvis o la parte baja del vientre. Las mujeres podrían sentir dolor al tener relaciones sexuales. Muchas personas con gonorrea y clamidia no saben que están infectadas porque se sienten bien.

ANTES DE TOMAR LOS MEDICAMENTOS

Lea lo siguiente antes de tomar los medicamentos:

Los medicamentos son muy seguros. Sin embargo, NO LOS TOME si alguna de las siguientes cosas es cierta:

- Es mujer y tiene dolor en la parte baja del vientre, dolor al tener relaciones sexuales, vómitos o fiebre.
- Es hombre y tiene dolor o hinchazón en los testículos (las bolas) o fiebre.
- Siente dolor y tiene hinchazón en una o más articulaciones o sarpullido en todo el cuerpo.
- Alguna vez tuvo una mala reacción, sarpullido, problemas para respirar o una reacción alérgica después de tomar la cefpodoxima, azitromicina u otros antibióticos. Las personas que son alérgicas a algunos antibióticos pueden ser alérgicas a otros tipos. Si es alérgico a los antibióticos hable con su médico antes de tomar estos medicamentos.
- Tiene una enfermedad seria a largo plazo, como una enfermedad de los riñones, el corazón o el hígado.
- Está tomando otro medicamento recetado, incluyendo medicamentos para la diabetes.

Si existe cualquiera de estas circunstancias, o si no está seguro, no tome estos medicamentos. En lugar de tomarlos debe hablar con su médico lo antes posible. Su médico encontrará el mejor tratamiento para usted.

ADVERTENCIAS

Si tuvo relaciones sexuales orales con alguien que estaba infectado por gonorrea es posible que el medicamento no tenga los efectos deseados. Debe hablar con su médico para que le recete un medicamento más fuerte.
Si no toma el medicamento para curar la gonorrea o la clamidia usted se puede enfermar muy gravemente. Si es mujer, la gonorrea puede hacer que no pueda tener hijos.

Si está embarazada puede tomar estos medicamentos sin peligro, pero aun así se debe hacer un chequeo completo.

CÓMO TOMAR LOS MEDICAMENTOS

- Tome los medicamentos con comida. Esto hace que sea menos probable que tenga malestar estomacal y aumentará la cantidad de medicamento que absorbe el cuerpo.
- Debe tomar dos pastillas de cefpodoxima (de 200 mg cada una) y cuatro pastillas de azitromicina (de 250 mg cada una). Tome las seis pastillas con agua al mismo tiempo. Para curarse tiene que tomar las seis pastillas.
- NO tome antiácidos (como Tums, Rolaids o Maalox) una hora antes de tomar los medicamentos o hasta después de dos horas de haberlos tomado.
- ¡NO comparta estos medicamentos con nadie ni tampoco se los dé a nadie!

EFECTOS SECUNDARIOS

Podría tener algunos efectos secundarios, incluyendo:
- un poco de malestar estomacal,
- diarrea,
- mareos,
- infección vaginal por levaduras.
Estos son efectos secundarios bien conocidos y no son serios.

REACCIONES ALÉRGICAS

Las reacciones alérgicas muy serias incluyen:
- dificultad para respirar o sentir el pecho apretado,
- cierre de la garganta,
- hinchazón de los labios o de la lengua,
- urticaria (bultos o verdugones en la piel que pican mucho).

¡Si tiene alguna de estas cosas llame al 911 o vaya de inmediato a la sala de emergencias más cercana!

LO QUE DEBE HACER DESPUÉS

Ahora que tiene los medicamentos, no tenga relaciones sexuales por siete días después de tomarlos. Los medicamentos tardarán siete días en curar la gonorrea y la clamidia. Si durante esos primeros siete días tiene relaciones sexuales sin condones, o con un condón que se rompe, puede pasar la infección a sus parejas sexuales y, además, usted también se puede volver a infectar.

- Si tiene otras parejas sexuales, digales que lo están tratando por gonorrea y clamidia para que también reciban tratamiento.
- Si le parece que tiene síntomas de gonorrea y no se le quitan dentro de los siete días de haber tomado este medicamento vaya a un médico para que le hagan más pruebas y le den más tratamiento.
- Las personas que estuvieron infectadas por gonorrea y clamidia una vez tienen una gran probabilidad de volver a infectarse. Conviene que en los próximos tres meses se haga la prueba de la gonorrea, de la clamidia y de otras enfermedades de transmisión sexual para estar seguro de que no tiene ninguna otra infección.
- Si tiene alguna duda sobre el medicamento, la gonorrea, la clamidia u otras enfermedades de transmisión sexual, llame al: [Each local health jurisdiction (LHJ) will list its phone number here.]
- Todas las llamadas son confidenciales.
- Para obtener un examen gratuito de enfermedades de transmisión sexual, pruebas y medicamentos, puede ir a: [Each LHJ will list local clinics here.]

¡FELICIDADES POR CUIDARSE TAN BIEN!.

Para obtener más información sobre la gonorrea, la clamidia y otras enfermedades de transmisión sexual, visite www.inspot.org o www.ashastd.org.
GUIDELINES FOR SCREENING, TREATMENT, FOLLOW-UP AND PARTNER MANAGEMENT:

Centers for Disease Control and Prevention (CDC)

- 2010 STD Treatment Guidelines - Up to date treatment guidelines for sexually transmitted infections.
- Recommendations and Guidance for HIV, Hepatitis, STD and TB Partners
  http://www.cdc.gov/nchhstp/Partners/Rec-Guide.html

California Department of Public Health- Sexually Transmitted Disease Control

- California Sexually Transmitted Disease (STD) Screening Recommendations -2010
- California STD Treatment Guidelines Table for Adults & Adolescents 2010
California Sexually Transmitted Disease (STD) Screening Recommendations – 2010

The following recommendations are based on guidelines for STD screening from the Centers for Disease Control and Prevention, United States Preventive Services Task Force, Infectious Disease Society of America, Region IX Infertility Prevention Project, and the California STD Control Branch. In populations for whom no recommendations exist, screening should be based on risk factors and on local epidemiology and prevalence of specific STDs in the particular clinical setting. All individuals diagnosed with chlamydia or gonorrhea should be re-tested for repeat infection at three months after treatment; re-testing can also be performed any time the patient returns for care in the 3 to 12 months after treatment. Other factors to consider prior to screening are summarized in the footnotes below.

<table>
<thead>
<tr>
<th>Population</th>
<th>STD Screening Recommendations</th>
<th>Frequency</th>
<th>Comments</th>
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</thead>
<tbody>
<tr>
<td>Women</td>
<td>Chlamydia (CT)........................................</td>
<td>Annually</td>
<td>CT/GC: Consider screening more frequently for those at increased risk.</td>
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<td></td>
<td>Gonorrhea (GC)...........................................</td>
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<td></td>
<td>Other STDS according to risk</td>
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<tr>
<td></td>
<td>Human Immunodeficiency virus (HIV)....................</td>
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<tr>
<td>Women over 25 years of age</td>
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<td>Targeted CT/GC screening recommended for women with risk factors.</td>
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<tr>
<td></td>
<td>Screen according to risk.</td>
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<tr>
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<td>HIV.......................................................</td>
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<tr>
<td>Pregnant women</td>
<td>CT..........................................................</td>
<td>First trimester</td>
<td>Repeat screening for CT, GC, syphilis, HIV, HBsAg in third trimester if at increased risk.</td>
</tr>
<tr>
<td></td>
<td>GC................................................................</td>
<td>First trimester</td>
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<tr>
<td></td>
<td>Syphilis..................................................</td>
<td>First trimester</td>
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<tr>
<td></td>
<td>HIV................................................................</td>
<td>First trimester</td>
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<td></td>
<td>Hepatitis B Surface Antigen (HBsAg)...................</td>
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<td>HIV-positive women</td>
<td>CT..................................................................</td>
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<td></td>
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<tr>
<td></td>
<td>GC..................................................................</td>
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<td></td>
<td>Syphilis..................................................</td>
<td>Annually</td>
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<td>Trichomonias...............................................</td>
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<td>Herpes simplex virus (HSV)-2...........................</td>
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<td>Hepatitis C................................................</td>
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<tr>
<td>Men</td>
<td>No routine screening for STDs</td>
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<td>Targeted screening for CT in high-risk settings (e.g., corrections) or DT risk factors (e.g., CT in previous 24 months).</td>
</tr>
<tr>
<td></td>
<td>Screen according to risk.</td>
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<tr>
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<td>HIV.......................................................</td>
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<td>Men who have sex with men</td>
<td>CT..........................................................</td>
<td>Annually</td>
<td></td>
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<tr>
<td>(MSM)</td>
<td>GC..................................................................</td>
<td>Annually</td>
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<tr>
<td></td>
<td>Syphilis..................................................</td>
<td>Annually</td>
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<tr>
<td></td>
<td>HIV................................................................</td>
<td>Annually</td>
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<tr>
<td></td>
<td>HBsAg......................................................</td>
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<tr>
<td>HIV-positive men</td>
<td>CT..................................................................</td>
<td>Annually</td>
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<tr>
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<td>GC..................................................................</td>
<td>Annually</td>
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<td></td>
<td>Syphilis..................................................</td>
<td>Annually</td>
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<tr>
<td></td>
<td>HSV-2........................................................</td>
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<td></td>
<td>HBsAg......................................................</td>
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<tr>
<td></td>
<td>Hepatitis C................................................</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

NOTES AND REFERENCES

2. Screening for asymptomatic HSV-2 infection should be offered to select patients, based on an assessment of their motivation to reduce their risk. Universal screening in the general population should not be offered. Screening should be offered to patients in partnerships or considering partnerships with HSV-2-infected individuals. Herpes education and prevention counseling should be provided to every patient tested or screened for HSV-2. Guidelines for the Use of Herpes Simplex Virus (HSV) Type 2 Serology – Recommendations from the California STD Control Branch and the California Department of Public Health. www.cdph.ca.gov/STD/STDvirus.html
3. Risk factors for CT or GC in women over age 25: prior CT or GC infection, particularly in previous 24 months, more than one sex partner in the previous year, suspicion that a recent partner may have had concurrent partners, new sex partner in previous 3 months, exchanging sex for drugs or money in the previous year, African American women up to age 30, and other factors identified locally, including community prevalence of infection.
4. In pregnant women with a history of injection drug use or a history of blood transfusion or organ transplantation before 1992, screening for hepatitis C should be conducted. Universal screening for HSV-2 infection in pregnancy is not recommended; consider screening with HSV-2 type-specific serology for pregnant women without a history of herpes and a partner with HSV-2 infection. California Guidelines for STD Screening and Treatment in Pregnancy. www.cdph.ca.gov/STD/STDvirus.html
5. Routine Hepatitis B vaccination is recommended for MSM. HBsAg testing should be performed at the same visit that the first vaccine dose is given; if testing is not feasible in the current setting, routine vaccination should continue. Recommendations for Identification and Public Health Management of Persons with Chronic Hepatitis B Infection. MMWR 2008; 57 (RR-8).
# California STD Treatment Guidelines Table for Adults & Adolescents 2007

These guidelines for the treatment of patients with STDs reflect the 2006 CDC STD Treatment Guidelines and the Region IX Infertility Clinical Guidelines. The focus is primarily on STDs encountered in office practice. These guidelines are intended as a source of practical advice; they are not comprehensive lists of all effective regimens and are not intended to substitute for use of the 2008 STD treatment guidelines document. The local health department in areas with high rates of syphilis, gonorrhea, or chlamydia should be consulted to determine the appropriate treatment for each condition.

## Disease

<table>
<thead>
<tr>
<th>Disease</th>
<th>Recommended Regimens</th>
<th>Dose/Route</th>
<th>Alternative Regimens: To be used if medical contraindication to recommended regimen</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chlamydia</td>
<td>Azithromycin or Doxycycline</td>
<td>1 g po 100 mg bid x 7 d</td>
<td>Erythromycin base 500 mg po qid x 7 d or Erythromycin ethylsuccinate 800 mg po qid x 7 d or Ofloxacin 300 mg bid x 7 d or Levofloxacin 500 mg po qd x 7 d</td>
</tr>
<tr>
<td>Pregnancy Women</td>
<td>Azithromycin or Doxycycline</td>
<td>1 g po 500 mg po bid x 7 d</td>
<td>Erythromycin base 500 mg po qid x 7 d or Erythromycin ethylsuccinate 800 mg po qid x 7 d or Erythromycin ethylsuccinate 400 mg po qd x 14 d</td>
</tr>
<tr>
<td>Gonorrhea</td>
<td>Ceftriaxone or Cefixime* plus A. chlamydia recommended regimen listed above if not ruled out by NAAAT</td>
<td>125 mg IM 400 mg po</td>
<td>Cefepime 400 mg po S. Spectrum 2 g IM Azithromycin 2 g po in a single dose</td>
</tr>
<tr>
<td>Pharyngeal Infections</td>
<td>Ceftriaxone* plus A. chlamydia recommended regimen listed above if not ruled out by NAAAT</td>
<td>125 mg IM</td>
<td>Azithromycin 2 g po in a single dose</td>
</tr>
<tr>
<td>Pregnancy Women</td>
<td>Ceftriaxone* or Cefixime* plus A. chlamydia recommended regimen listed above if not ruled out by NAAAT</td>
<td>125 mg IM 400 mg po</td>
<td>Cefepime 400 mg po S. Spectrum 2 g IM Azithromycin 2 g po in a single dose</td>
</tr>
<tr>
<td>Pelvic Inflammatory Disease*</td>
<td>Ceftriaxone* or Cefixime* plus A. chlamydia recommended regimen listed above if not ruled out by NAAAT</td>
<td>125 mg IM 400 mg po</td>
<td>Cefepime 400 mg po S. Spectrum 2 g IM Azithromycin 2 g po in a single dose</td>
</tr>
<tr>
<td>Pelvic Inflammatory Disease*</td>
<td>Ceftriaxone* or Cefixime* plus A. chlamydia recommended regimen listed above if not ruled out by NAAAT</td>
<td>125 mg IM 400 mg po</td>
<td>Cefepime 400 mg po S. Spectrum 2 g IM Azithromycin 2 g po in a single dose</td>
</tr>
<tr>
<td>Cervicitis</td>
<td>Azithromycin or Doxycycline* plus A. chlamydia recommended regimen listed above if not ruled out by NAAAT</td>
<td>1 g po 100 mg po bid x 7 d or 500 mg po bid x 7 d</td>
<td>Erythromycin base 500 mg po qid x 7 d or Erythromycin ethylsuccinate 800 mg po qid x 7 d or Ofloxacin 300 mg po bid x 7 d or Levofloxacin 500 mg po qd x 7 d</td>
</tr>
<tr>
<td>Nongonococcal Urethritis</td>
<td>Azithromycin or Doxycycline* plus A. chlamydia recommended regimen listed above if not ruled out by NAAAT</td>
<td>1 g po 100 mg po bid x 7 d</td>
<td>Erythromycin base 500 mg po qid x 7 d or Erythromycin ethylsuccinate 800 mg po qid x 7 d or Ofloxacin 300 mg po bid x 7 d or Levofloxacin 500 mg po qd x 7 d</td>
</tr>
<tr>
<td>Epididymitis*</td>
<td>Ceftriaxone or Doxycycline* plus A. chlamydia recommended regimen listed above if not ruled out by NAAAT</td>
<td>250 mg IM 100 mg po bid x 10 d</td>
<td>Cefotaxime 2.25 g IV q8h or ceftriaxone 1 g IV q24h</td>
</tr>
<tr>
<td>Ectopic Pregnancy*</td>
<td>Ceftriaxone or Doxycycline* plus A. chlamydia recommended regimen listed above if not ruled out by NAAAT</td>
<td>250 mg IM 100 mg po bid x 10 d</td>
<td>Cefotaxime 2.25 g IV q8h or ceftriaxone 1 g IV q24h</td>
</tr>
<tr>
<td>Non-pregnant women</td>
<td>Metrodermazole 300 mg po bid x 7 d</td>
<td>2 g po</td>
<td>Metrodermazole 500 mg po bid x 7 d</td>
</tr>
<tr>
<td>Pregnant Women</td>
<td>Metrodermazole 500 mg po bid x 7 d</td>
<td>2 g po</td>
<td>Metrodermazole 500 mg po bid x 7 d</td>
</tr>
<tr>
<td>Bacterial Vaginosis</td>
<td>Metrodermazole or Metrodermazole gel or Clindamycin crease*</td>
<td>500 mg po bid x 7 d 0.75%, one full applicator (5g) intravaginally q24h or 2%, one full applicator (5g) intravaginally q24h</td>
<td>Clindamycin 300 mg po bid x 7 d or Clindamycin ovules* 100 mg intravaginally q24h</td>
</tr>
</tbody>
</table>

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1. Annual screening for women age 25 years or younger: Nucleic acid amplification tests (NAATs) are recommended. All patients should be rescreened 3 months after treatment for chlamydia or gonococcal infections.
2. Contraindicated for pregnant and nursing women.
3. Each of these is a recommended regimen specifically for gonorrhea. The recommended drug regimen should be used only for patients whose infection is due to gonococcal infection.
4. For patients with coexisting penile, urethral, or conjunctival infection: CDC recommends considering co-trimoxazole as well.
5. If the patient is on therapy for gonorrhea, the additional use of an azithromycin regimen may be beneficial for patients who have symptoms lasting longer than 7 days.
6. In cases where there is evidence of any drug-resistant Neisseria gonorrhoeae infection, the use of an azithromycin regimen is recommended.
7. Use only if medical contraindications to a clarithromycin or a macrolide are present and when cephalosporins are not available or not indicated. Test-of-cure is not recommended because efficacy data are limited and because concern about emergence of resistance is reported by California state law.
8. Testing for gonorrhea and chlamydia is recommended to ensure specific diagnosis may improve compliance and patient management, and because these infections are reportable by California state law.
9. Evaluate for bacterial vaginosis. If present, or cannot be ruled out, also use metronidazole.
10. Test-of-cure is 72 hours after therapy is estimated to be complete or 10 days post-treatment if the patient is on therapy for gonorrhea, the additional use of an azithromycin regimen is recommended.

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*References to specific drugs and dosages are for guidance only. Local guidelines and recommendations should be followed in the absence of specific guidelines in this table.
<table>
<thead>
<tr>
<th>DISEASE</th>
<th>RECOMMENDED REGIMENS</th>
<th>DOSE/ROUTE</th>
<th>ALTERNATIVE REGIMENS: To be used if medical contraindications to recommended regimen</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHANCROID</td>
<td>• Azithromycin orally</td>
<td>1 g po</td>
<td>• Erythromycin base 500 mg po qd x 21 d or</td>
</tr>
<tr>
<td></td>
<td>• Ceftriaxone 2g</td>
<td>250 mg IM</td>
<td>• Azithromycin 1 g po qd x 3 weeks</td>
</tr>
<tr>
<td></td>
<td>• Cefuroxime 500 mg po bid x 3 d</td>
<td>500 mg po bid x 3 d</td>
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<tr>
<td></td>
<td>• Erythromycin base</td>
<td>500 mg po bid x 3 d</td>
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<tr>
<td>LYMPHOGRAVULOMALIA</td>
<td>VENEREUM:</td>
<td>100 mg po bid x 3 d</td>
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<tr>
<td>ANOGENITAL WARTS</td>
<td>• Doxycycline 100 mg po bid x 3 d</td>
<td>100 mg po bid x 3 d</td>
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<tr>
<td>External Genital</td>
<td>Performance Warts</td>
<td>Topically qhs 3 x wk up to 16 wk</td>
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<tr>
<td>Warts</td>
<td>• Imiquimod 5% cream solution or gel</td>
<td>Topically qhs 3 x wk followed by qd</td>
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<tr>
<td></td>
<td>• Podofilox 0.5% solution or gel</td>
<td>qd bid x 3 d following by qd</td>
<td></td>
</tr>
<tr>
<td>Provider Administered</td>
<td>• Cryotherapy or</td>
<td>Topically qhs 3 x wk followed by qd</td>
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<tr>
<td></td>
<td>• Podophyllotoxin resin 10-25% in</td>
<td>Topically qhs 3 x wk followed by qd</td>
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<tr>
<td></td>
<td>• Trichloracetic acid (TCA) 80% - 90% or</td>
<td>Topically qhs 3 x wk followed by qd</td>
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<tr>
<td></td>
<td>• Bleomycin (BCA) 80% - 90% or</td>
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<td>• Surgical removal</td>
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<td>Mucocele Genital Warts</td>
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<td>• Podophyllotoxin resin 10-25% in</td>
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<td></td>
<td>• Surgical removal</td>
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<td>of Herpes</td>
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<td>1 g po bid x 7-10 d</td>
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<td>400 mg po bid x 5 d</td>
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<td></td>
<td>• Valaciclovir</td>
<td>400 mg po bid x 5 d</td>
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<tr>
<td>HIV Co-Infected</td>
<td>400-600 mg po qd x tid</td>
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<td>Suspensive Therapy</td>
<td>• Acyclovir or</td>
<td>400-600 mg po qd x tid</td>
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<td>• Acyclovir or</td>
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<td>• Acyclovir or</td>
<td>400-600 mg po qd x tid</td>
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<td>• Valaciclovir</td>
<td>400-600 mg po qd x tid</td>
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<td>• Acyclovir or</td>
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<td>• Valaciclovir</td>
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<tr>
<td>SYPHILIS</td>
<td>• Benzathine penicillin G</td>
<td>2.4 million units IM</td>
<td></td>
</tr>
<tr>
<td>Primary, Secondary, and Early Latent</td>
<td>Benzathine penicillin G</td>
<td>2.4 million units IM</td>
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<td></td>
<td>• Benzathine penicillin G</td>
<td>2.4 million units IM</td>
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<tr>
<td>Late Latent and Late of Unknown duration</td>
<td>Benzathine penicillin G</td>
<td>2.4 million units IM</td>
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<tr>
<td>Neurosyphilis</td>
<td>• Aqueous crystalline penicillin G</td>
<td>18-24 million units daily, administered as 3-4 million units IV q 4 hrs x 10-14 d</td>
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</tr>
<tr>
<td>Pregnant Women</td>
<td>• Benzathine penicillin G</td>
<td>2.4 million units IM</td>
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<td>Primary, Secondary, and Early Latent</td>
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<td>Late Latent and Late of Unknown duration</td>
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<tr>
<td>Neurosyphilis</td>
<td>• Aqueous crystalline penicillin G</td>
<td>18-24 million units daily, administered as 3-4 million units IV q 4 hrs x 10-14 d</td>
<td></td>
</tr>
<tr>
<td>HIV Co-Infected</td>
<td>• Benzathine penicillin G</td>
<td>2.4 million units IM</td>
<td></td>
</tr>
<tr>
<td>Primary, Secondary, and Early Latent</td>
<td>Benzathine penicillin G</td>
<td>2.4 million units IM</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Benzathine penicillin G</td>
<td>2.4 million units IM</td>
<td></td>
</tr>
<tr>
<td>Late Latent and Late of Unknown duration with normal CSE Exam</td>
<td>Benzathine penicillin G</td>
<td>2.4 million units IM</td>
<td></td>
</tr>
<tr>
<td>Neurosyphilis</td>
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<td>18-24 million units daily, administered as 3-4 million units IV q 4 hrs x 10-14 d</td>
<td></td>
</tr>
</tbody>
</table>

17 Contraindicated in pregnancy.
18 Cervical warts should be managed by a specialist.
19 Counseling about natural history, asymptomatic shedding, and sexual transmission is an essential component of herpes management.
20 The goal of suppressive therapy is to reduce recurrent symptomatic episodes and/or to reduce sexual transmission.
21 If HSV lesions persist or recur while receiving antiviral treatment, antiviral resistance should be suspected. A viral isolate should be obtained for sensitivity testing, and consultation with an infectious disease expert is recommended.
22 Benzathine penicillin G (generic name) is the recommended treatment for syphilis not involving the central nervous system and is available in only one long-acting formulation, Bicillin L-A (the trade name) which contains only benzathine penicillin G. Other combination products, such as Bicillin C-R, contain both benzathine and short-acting penicillins and are not effective for treating syphilis.
23 Alternation should only be used for penicillin-allergic patients because efficacy of these therapies has not been established. Compliance with one of these regimens is difficult, and close follow-up is essential. If compliance or follow-up cannot be ensured, the patient should be desensitized and treated with benzathine penicillin.
24 Some specialists recommend 2.4 million units of benzathine penicillin G q 4 weeks for up to 3 weeks after completion of neuropsyphilis treatment.
25 Patients allergic to penicillin should be treated with penicillin after desensitization.

Developed by the California STD/HIV Prevention Training Center
Revised November 2007
MANDATORY REPORTING

In California, healthcare providers are required to report any chlamydia and gonorrhea diagnoses in patients under their care. California healthcare providers are also required to report diagnoses of other infectious diseases, as outlined in Title 17 of the California Code of Regulations. Failure to report a diagnosed infection is a misdemeanor and a citable offense under the Medical Board of California Citation and Fine Program.

In facilities with more than one healthcare provider, the facility should establish and oversee administrative procedures in order to assure that the appropriate, legally mandated reports are made to the local health officer.

The Confidential Morbidity Report is available at [http://publichealth.lacounty.gov/std](http://publichealth.lacounty.gov/std)

Laboratory reporting is also mandatory in California.
Title 17, California Code of Regulations (CCR), §2500, §2593, §2641-2643, and §2800-2812
Reportable Diseases and Conditions*

§ 2590. REPORTING TO THE LOCAL HEALTH AUTHORITY.
- § 2590(a) It shall be the duty of every health care provider, knowing of or in attendance on a case or suspected case of any of the diseases or conditions listed below, to report to the local health officer for the jurisdiction where the patient resides. Where no health care provider is in attendance, any individual having knowledge of a person who is suspected to be suffering from one of the diseases or conditions listed below may make such a report to the local health officer for the jurisdiction where the patient resides.
- § 2590(c) The administrator of each health facility, site, or other setting where more than one health care provider may know of a case, a suspected case or an outbreak of disease within the facility shall establish and be responsible for administrative procedures to assure that reports are made to the local officer.
- § 2590(e)(4) "Health care provider" means a physician and surgeon, a veterinarian, a podiatrist, a nurse practitioner, a physician assistant, a registered nurse, a nurse midwife, a hospital nurse, an infection control practitioner, a medical examiner, a coroner, or a dentist.

Urgency Reporting Requirements [17 CCR §2500(b)(1)]
- Report immediately by telephone (designated by a * in regulations).
- Report immediately by telephone when two or more cases or suspected cases of foodborne disease from separate households are suspected to have the same source of illness (designated by a ** in regulations).
- All other diseases/conditions should be reported by Fax, telephone, or mail within seven calendar days of identification.

Reportable Communicable Diseases §2500(a)(1), §2641-2643

- Acquired Immune Deficiency Syndrome (AIDS)
- HIV infection only. See "Human Immunodeficiency Virus"
- Anemia
- Anthrax
- Avian influenza (human)
- Atrial fibrillation
- Botulism (Infant, Foodborne, Voluntary)
- Brucevirus
- Cerebrospinal Meningitis
- Chickenpox (only hospitalizations and deaths)
- Chlamydia Infections, including Lymphogranuloma Venereum (LGV)
- Cholera
- Ciguatera Fish Poisoning
- Coxiella burnetii Disease
- Colorado Tick Fever
- Conjunctivitis, Acute Infections of the Newborn, Specify Etiology
- Cryptosporidiosis
- Cyclosporiasis or Enteritis
- Dengue
- Diarrhea of the Newborn, Outbreak
- Diphtheria
- Doxycycline
- Encephalitis, Specified Etiology: Viral, Bacterial, Fungal, Parasitic
- Enterohemorrhagic coli: stx2 toxin producing (STEC) including E. coli O157
- Foodborne Disease
- Gonorrhea
- Gonococcal Infections
- Neisseria meningitides meningococcal disease (report an incident of less than 10 years of age)
- Herpesvirus Infections
- Hepatitis A
- Hepatitis B (specify acute case or chronic)
- Hepatitis C (specify acute case or chronic)
- Hepatitis D (Delta)
- Hepatitis, other acute
- Human Immunodeficiency Virus (HIV) (§2641–2643)
- Influenza deaths (report an incident of less than 15 years of age)
- Kawasaki Syndrome (Mucocutaneous Lymph Node Syndrome)
- Legionellosis
- Leptospirosis (Leptospirosis Disease)
- Leptospirosis
- Listeriosis
- Lyme Disease
- Malaria
- Measles
- Meningitis, Specify Etiology: Viral, Bacterial, Fungal, Parasitic
- Meningococcal Infections
- Mumps
- Paralytic Shellfish Poisoning
- Pneumonia (Pneumocystis)
- Rabies
- Respiratory Disease
- Salmonella (Other than Typhoidal Fever)
- Scarlet Fever
- Shigella
- Smallpox
- Staphylococcal Infections (Outbreaks of Any Type and Individual Cases in Food Handlers and Dairy Workers Only)
- Syphilis
- Tetanus
- Tularaemia
- Typhus Fever
- Varicella
- Viral Hemorrhagic Fever (e.g., Crimean-Congo, Ebola, Lassa, and Marburg viruses)
- Water Associated Disease (e.g., Swimmer’s itch or Hot Tub Rash)
- West Nile Virus (WNV) Infection
- Yellow Fever
- Yaws
- Occurrence of Any Unusual Disease

Reportable Noncommunicable Diseases and Conditions §2800–2812 and §280360

- Disorders characterized by Lapses of Consciousness (§2800–2812)
- Pesticide-related illness or injury (known or suspected cases)**
- Cancer, including benign and benantile brain tumors, except (1) brain and squamous skin cancer unless occurring on genitalia, and (2) carcinoma in situ and CIN III of the cervix (§2808)**

Locally Reportable Diseases

- Some local health jurisdictions require reporting of additional diseases. Please check with your local health department.

* Health care providers are required to report these diseases mandated by Title 17, California Code of Regulations (CCR). Failure to report is a misdemeanor (Health and Safety Code §2650) and a civil offense under the Medical Board of California (est. §2800). Failure to report is a civil offense and subject to civil penalty (§2650) and a civil offense and subject to civil penalty (§2800). Failure to report is a civil offense and subject to civil penalty (§2650) and a civil offense and subject to civil penalty (§2800).

**This list includes all primary and secondary diagnoses (§2800) and all primary and secondary diagnoses (§2800). This list includes all primary and secondary diagnoses (§2800) and all primary and secondary diagnoses (§2800). This list includes all primary and secondary diagnoses (§2800) and all primary and secondary diagnoses (§2800). This list includes all primary and secondary diagnoses (§2800) and all primary and secondary diagnoses (§2800).
# LOS ANGELES COUNTY SEXUALLY TRANSMITTED DISEASE
CONFIDENTIAL MORBIDITY REPORT

1. DIAGNOSING MEDICAL PRACTITIONER (LAST NAME & FIRST NAME)
2. TITLE ABBREVIATION

3. FACILITY/CLINIC NAME
4. SUITE/UNIT NO.

5. FACILITY/CLINIC STREET ADDRESS
6. CLINIC STAMP

7. CITY/TOWN
8. STATE
9. OFFICE TEL.
10. OFFICE FAX.
11. ZIP CODE

12. PATIENT'S LAST NAME
13. FIRST NAME
14. M.I.

15. MEDICAL RECORD NUMBER
16. SOCIAL SECURITY NUMBER
17. OCCUPATION

18. PATIENT'S STREET ADDRESS
19. APT./UNIT NO.

20. CITY/TOWN
21. STATE
22. ZIP CODE

23. DAY TEL.
24. EVENING TEL.

25. AGE:
26. BIRTHDATE:
27. PREGNANT?
28. Yes ▶ If yes, date of LMP:

29. GENDER:
30. Male
31. Female
32. Transgender (M to F)
33. Transgender (F to M)
34. Other

35. MARITAL STATUS:
36. Single
37. Married
38. Separated
39. Divorced
40. Widowed
41. Unknown

42. RACE (X all that apply):
43. White
44. Black or African American
45. Native American or Alaska Native
46. Asian or Pacific Islander
47. Other

48. ETHNICITY (X only one):
49. Hispanic or Latino
50. Non-Hispanic/Non-Latino

51. GENDER of SEX PARTNERS:
52. Male
53. Female
54. Transgender (M to F)
55. Transgender (F to M)
56. Other
57. Unknown
58. Refused

### CHLAMYDIA (Including PID)

- **DIAGNOSIS (X one):**
  - Asymptomatic
  - Symptomatic - uncomplicated
  - Pelvic Inflammatory Disease
  - Ophthalmia neonatorum
  - Other

- **SITE / SPECIMEN(S) (X all that apply):**
  - Urine
  - Cervix
  - Vagina
  - Urethra
  - Other

- **Specimen Collection Date:**
  - [ ]
  - [ ]
  - [ ]

- **Treatment Date:**
  - [ ]
  - [ ]
  - [ ]

- **Medication & Dose:**

- **Partner Information:**
  - Number of partners: [ ]
  - Number treated: [ ]
  - Number given Patient Delivered Partner Therapy (PDPT): [ ]

### GONORRHEA (Including PID)

- **DIAGNOSIS (X one):**
  - Asymptomatic
  - Symptomatic - uncomplicated
  - Pelvic Inflammatory Disease
  - Ophthalmia neonatorum
  - Other

- **SITE / SPECIMEN(S) (X all that apply):**
  - Urine
  - Cervix
  - Vagina
  - Urethra
  - Other

- **Specimen Collection Date:**
  - [ ]
  - [ ]
  - [ ]

- **Treatment Date:**
  - [ ]
  - [ ]
  - [ ]

- **Medication & Dose:**

- **Partner Information:**
  - Number of partners: [ ]
  - Number treated: [ ]
  - Number given Patient Delivered Partner Therapy (PDPT): [ ]

### SYphilis, Congenital Syphilis, Other Reportable STDs and Reporting Information on Back Page.
SYSTEM DESIGN- QUALITY IMPROVEMENT TOOLS

The Institute of Medicine defines quality as, “The degree to which health services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge.”

This section provides tools and examples to aid clinical service providers in assessing their current systems and practices, in applying quality improvement methods to identify areas for improvement, and in bringing about incremental systems change.

In this section you will find tools to assist you in applying:

- Office Systems Inventory
- Cause and Effect Diagram
- Model for Improvement
- Plan-Do-Study-Act Cycles
- Care Model for Perinatal Health
- Measures
- Methods for Tracking Performance
OFFICE SYSTEM INVENTORY

Instructions: This office systems inventory can assist you in assessing the protocols and materials currently in place within your office practices that support:

- Appropriate screening, timely treatment, and follow-up for common urine and reproductive tract infections throughout pregnancy;
- Providing patient education; and
- Monitoring your clinical practices.
**OFFICE SYSTEMS INVENTORY**

### Planned Care & Proactive Follow-up

We have **protocols** adopted and located in the clinic that:

- Adhere to evidence-based guidelines for **screening, treatment, and follow-up** for reproductive tract infections using recommended sensitive and specific tests;
- Screen for asymptomatic bacteriuria by culture;
- Provide timely treatment, or referrals for treatment, for partners of women with STIs which should include protocols to provide “Patient Delivered Partner Treatment”;
- Show **clinical decision pathways** posted in the office/clinic for providers and staff.

We have **forms** that include places to document:

- That specimens are “Prenatal.”
- Date of test and results for screening done at the **onset of prenatal care** for:
  - Syphilis
  - Bacterial Vaginosis
  - HIV
  - Rubella
  - Hepatitis B
  - Hepatitis C (for women at risk)
  - Gonorrhea
  - Chlamydia
- Date of test and results for screening done in the **early third trimester** for at-risk women:
  - Syphilis
  - Gonorrhea
  - HIV
  - Chlamydia
- Date of test and results for group B streptococcus at 35-37 weeks gestation.
- Date of partner referral for STI treatment or Date of “Patient Delivered Partner Treatment”
- Health education that is provided.

We have **processes** in place for:

- **Patient Education** - Staff are knowledgeable and trained; materials are culturally and linguistically appropriate.
- **Staff Reminders** - A system of reminders for staff and providers to complete specific tests or assessments at time points throughout pregnancy as recommended by evidence-based guidelines.
- **Mandatory Reporting** - Process in place to report sexually transmitted infections to the Department of Public Health.

### Team Practices

**This practice:**

- Periodically evaluates providers’ and staff knowledge, attitudes, and beliefs about screening, treatment, and follow-up for urine and reproductive tract infections;
- Provides continuing education, as new guidelines are released, and to address gaps in knowledge, attitudes, or beliefs about screening, treatment, and follow-up for urine and reproductive tract infections for providers and staff;
- Has clearly defined roles and responsibilities that distribute tasks supporting clinical care and patient education among staff and providers (e.g., review of lab results, patient notification, scheduling follow-up, mandated reporting, restocking patient education materials, etc.);
- Uses counseling techniques or tools to assess the patient’s knowledge about her specific infection and her skills to follow a plan of care to complete treatment and prevent reinfection (i.e. ability to assess symptoms, follow plans of care, and reduce risks for reinfection, if appropriate).

### Care Management/Coordination

- We use easily understandable health education materials about infections and treatments, which include the importance of partner treatment and reinfection prevention for STIs, written in the most commonly encountered languages within the service area;
- We know where the health education handouts are; and
- We have systems in place for referral to programs, including case management programs for women with systemic or chronic infections such as HIV and Hepatitis C, or psychosocial needs.

### Quality Improvement

- We monitor our current practices to ensure that patients receive the recommended infection screening, treatment, follow-up and partner management;
- We have a system in place to prepare and review monthly progress reports to monitor progress toward goals; and
- We routinely review monthly progress reports with staff.
CAUSE AND EFFECT DIAGRAM

A cause and effect diagram is a useful tool that illustrates the areas within your system that may affect what you want to achieve. Considered one of the “7 Basic Tools of Quality,” this type of diagram helps you see, in increasing layers of detail, the steps you may need to take in order to achieve a specific result. This tool can help identify an area of your office system that may need improvement.

The Institute for Healthcare Improvement describes two types of cause and effect diagrams:

1. **Process type** shows the possible causes of a problem at each step in the process; and
2. **Fishbone type** shows the different possible causes of a particular outcome or event.

An example of a Fishbone Cause-Effect Diagram is shown in Figure 17.

- The desired “effect” in the example is “Healthy Mother and Infant at Birth, without Complications from Infection.” This is shown in the right side of the diagram, represented by the “head” of the fish.
- The processes that can potentially affect pregnancy-related complications from infection are grouped into categories, such as materials, methods, people, and work processes. Alternative categories can be selected depending on the problem being analyzed. These make up the large “bones” of the fish. The large bones represent the main areas where problems can occur, or in this case, that can contribute to the desired outcome. Items on the large bones are believed to be the causes of the outcome in the head of the fish.
- Detailed steps are added in each category to further identify potential problems or areas for improvement. These smaller bones, attached to the larger bones, represent the many deeper causes of potential problems or progress.

For more information please see:
www.IHI.org - Cause and Effect Diagrams
Figure 17. An example of a Fishbone Cause and Effect Diagram
Figure 18 Template for a Fishbone Cause and Effect Diagram.

Cause and Effect Diagram Template

- People
- Measurement
- Environment
- Materials
- Methods
- Equipment
- Problem/Outcome
The Model for Improvement is the foundation of the improvement approach used in a Collaborative. It is built on three fundamental questions:

1. **AIM: What are we trying to accomplish?** Improvement requires having an aim. Teams focus on answering this question during the pre-work phase to establish their aim.

2. **MEASURES: How will we know that a change is an improvement?** This question is addressed through a set of quantitative measures. Teams use ongoing, systematic data collection and analysis to track these measures over time.

3. **IDEAS: What changes can we make that will result in an improvement?** All improvement entails change, but not all changes result in improvement. Although many ideas for changes are listed in the Change Package, it is best that teams generate their own ideas specific to their environments.

* This document adapted from material provided to the Healthy Births Care Quality Collaborative June 2008.
Improvement is achieved through Plan-Do-Study-Act (PDSA) cycles. The PDSA cycle is shorthand for testing a change in a real work setting, by planning it, trying it, observing the results, and acting on what is learned. This is the scientific method used for action-oriented learning.

In the Plan phase, teams plan to test a specific application of the change concepts. This phase requires teams to choose an objective, predict what will happen if a certain change is made and why, and plan for how to test the change. The Do phase is focused on performing the test on a small scale. The Study phase is for reflection, to determine what was learned from the test. It is during this step that data are examined and results compared to predictions and the status quo.

In the Act phase, teams decide whether to continue testing or to move on to implementation, based on what was learned during the Study phase.

The PDSA cycle is used by the teams over the course of the Collaborative. At regular intervals, teams will report on their tests of change and what they have learned as a result of these cycles. The PDSA cycle can be used for a variety of purposes: testing new ideas, implementing changes that show promise for improvement, and to spread changes throughout a system.

**Question 1: What are we trying to accomplish?**

**AIM:** A specific, measurable, time-sensitive, written statement of the accomplishments expected from the team’s improvement effort. A strong, clear aim gives direction to improvement efforts, and is:

- Intentional, deliberate, planned
- Unambiguous, specific, concrete
- Measurable with a numeric goal, preferably one that motivates significant improvement
- Aligned with other organizational goals or strategic initiatives
- Agreed upon and supported by those involved in the improvement and leaders

**Different forms are useful, but should include:**

- What is expected to happen
- The system to be improved
- The setting or specific (sub-) population of patients
- Specific numeric goals
- Timeframe
- Some guidance for carrying out the work
Example

Aims Statement Focused on Urine and Infection Screening

Our organization will improve the prenatal care provided to our patients and decrease perinatal complications from common urine and reproductive tract infections. We will accomplish this by making changes in the following areas:

- Implementing recommended guidelines for screening, treatment and follow-up for urine and reproductive tract infections including:
  - Ensuring that over 95% of pregnant women have documentation in their medical records that they received education on, and were screened for, recommended infections, within four weeks of onset of care.
  - Establishing procedures to ensure that treatment for positive finding occurs within two weeks of test results and recommended test of cure procedures are followed.
  - Establishing mechanisms for appropriate partner notification and treatment.
  - Ensuring that repeat infection screening occurs at 28 weeks gestation and is documented in the medical record for over 90% of women recommended to receive repeat screening.

- Providing staff orientation and ongoing continuing education about the impact of common infections on pregnancy and infant health, proper screening, patient education, treatments and follow-up, and our office system procedures.
- Establishing procedures for provider and patient reminders when screening tests or follow-up is due.
- Establishing procedures for tracking progress towards our goals.

Explanation/Guidance: Our approach to improving prenatal care will be guided by the six components of the Care Model for Perinatal Care, with our first activities directed toward decision support and delivery system design.

We will start with small tests of change at our practice, in the area of screening and follow-up for genitourinary infections.

We will use CDC-P, ACOG, and Healthy Births Care Quality Collaborative recommendations as guidelines for screening, counseling, and treatment for urine and reproductive tract infections.

We will provide tools to assist providers and staff to implement these practices. In-services will be held to educate providers and staff about new practices and procedures.

By documenting information, we will be able to collect the necessary data that will allow us to monitor improvements in screening, counseling, treatment, and partner referral and treatment for these important components of prenatal care.

Our team will meet weekly to track what is being learned from each change tested and monitor progress.
**Question 2: How will we know that a change is an improvement?**

**MEASURES:** Measures are indicators of change. Measures are not used for judgment, but to monitor change leading to improvement.

To answer the key question, “How will we know that a change is an improvement?” several measures are usually required. Measures are used to monitor a system’s performance over time, and during PDSA cycles. Using measurement immediately after an idea or change has been tested helps determine its effect.

There are three types of measures commonly used in improvement work to track a system’s performance over time:

- **Process measures**—monitor changes to the system
- **Outcome measures**—monitor the results of system level performance
- **Balancing measures**—monitor whether changes to one part of the system cause problems in other parts of the system.

**Measure examples**

- **Process Measure**—Percent of women with urine culture performed within four weeks of onset of prenatal care.
- **Outcome Measure**—Percent of women who develop pyelonephritis during pregnancy.
- **Balancing Measure**—Patient wait time from appointment check in to being seen by provider.

In improvement, key measures and measurement should:

- clarify and be directly linked to aims or goals;
- seek usefulness over perfection;
- be integrated into daily work whenever possible;
- be graphically and visibly displayed; and
- for PDSA cycle measurement, the measures should be simple and feasible enough to accomplish in close-time proximity to tests of change.

The development of national performance measures for prenatal care has lagged behind other areas of health care. The American College of Obstetricians and Gynecologists has proposed maternity care measures, but further research is needed on the use of performance measurements to improve the quality of prenatal care and reduce perinatal disparities. ⁷₀
## Examples of Performance Measures for Urine and Infection Screening

<table>
<thead>
<tr>
<th>Measure</th>
<th>Description</th>
<th>Goal</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Perinatal infection care</strong></td>
<td>Percent of pregnant women with recommended infectious disease screenings completed at the first prenatal physical examination and treatment implemented within 2 weeks of test results. This must include all of the following documentation:</td>
<td>&gt;99%</td>
</tr>
<tr>
<td></td>
<td>(1) Screening tests:&lt;br&gt;a. Culture for asymptomatic bacteriuria,&lt;br&gt;b. Cervical NAAT* test for Chlamydia and Gonorrhea,&lt;br&gt;c. Bacterial vaginosis test&lt;br&gt;d. HIV test,&lt;br&gt;e. Syphilis serology,&lt;br&gt;f. Hepatitis B surface antigen&lt;br&gt;g. Hepatitis C antibody for high-risk women&lt;br&gt;(2) Treatment within two weeks of test results according to recommended guidelines.</td>
<td></td>
</tr>
<tr>
<td><strong>Perinatal infection care follow-up</strong></td>
<td>Percent of pregnant women with recommended infectious disease follow-up screenings completed at the recommended times in pregnancy. This must include all of the following documentation:&lt;br&gt;1. Test of cure testing for positive findings as recommended (i.e., gonorrhea, chlamydia, urine, and/or bacterial vaginosis) within 3 to 4 weeks post treatment; and&lt;br&gt;2. Re-screening high-risk women at approximately 28 weeks gestation for:&lt;br&gt;a. Cervical NAAT* test for Chlamydia and Gonorrhea,&lt;br&gt;b. Syphilis serology,&lt;br&gt;c. HIV&lt;br&gt;• Group B Streptococcus introital/rectal sample collected at 35-36 weeks gestation and documented on the record by at least 38 weeks gestation.</td>
<td>&gt;99%</td>
</tr>
</tbody>
</table>

This type of measure is an “all or none” measure. All parts must be completed in order to count as complete. Each component of this example follows national recommended guidelines. Most experts recommend being able to track the individual components of “all or none” measures as well. This allows staff to see progress from the changes they are making and to celebrate “early wins” resulting from their hard work. For example several teams in the Healthy Births Care Quality Collaborative were conducting the appropriate screening tests, but not able to show improvement on this “all or none” measures. The area needing improvement for these teams was the provision of treatment within two weeks of the positive test results. These teams needed to focus their work and track “Treatment within two weeks” as their measure.

* NAAT = Nucleic Acid amplification tests; examples include: Ligase Chain Reaction (LCR)-LCx (Abbott); Polymerase Chain Reaction (PCR)- Amplicor (Roche); APTIMA (GenProbe); BD ProbeTec (Becton Dickinson)
Examples of Measurement During PDSA
Decreasing Time from Positive Results to Treatment

**PLAN: (State question you want answered)**
Does placing a printout of the lab results in the providers’ inbox shorten the time between when the clinic receives the lab results and the patient receives treatment?

**What do you predict the results will be?**
Physicians will review the labs the day they are received, and give orders to the nurse, who will contact the patient the same day.

**Plan for change or test: Who, What, When, Where?**
On Wednesday morning, Sue, the MA will print the lab results from the new OB patients seen by Dr. Hogan on Monday, and put the list in Dr. Hogan’s inbox.

**How will you measure the outcome of the test?**
1. Count the number of patients contacted for abnormal labs on the day of the test.
2. Count the number of days between receiving the lab results at the clinic and the patient receiving treatment.

**Plan for collection of data to measure the test: Who, What, When, Where?**
At the end of the clinic on Wednesday, the team will meet. Maria, the RN, will report to the team the number of patients that she contacted about their abnormal lab results, and compare this with the number of patients with abnormal results on the lab printout.

**DO:** Conduct the test.

**STUDY:** Collect the data and review the measurement of the test.

**ACT:** The next test will then be planned.
Question 3: What changes can we make that will result in an improvement?

IDEAS: Ideas for change, or change concepts to be tested in a PDSA cycle, can come from the change package provided from expert recommendations, or can be derived from:

- Evidence - results of research/science
- Critical thinking or observation of the current system
- Creative thinking
- Theories, questions, hunches
- Extrapolations from other situations

When selecting ideas to test, consider the following:

- Direct link to the aim
- Likely impact of the change (avoid low-impact changes)
- Potential for learning
- Feasibility
- Logical sequencing
- Series of tests that will build on one another
- Scale of the test (3 patients NOT 30)
- Shortness of the cycle (1 week NOT 1 month)

Benefits of testing your ideas

Testing increases your belief that the change will result in improvement.

- Provides an opportunity for learning from “failures” without impacting performance of the whole system.
- Allows you to document how much improvement can be expected from the change.
- Allows you to learn how to adapt the change to conditions in the local environment.
- Provides an opportunity to evaluate costs and side effects of the change.
- Minimizes resistance from other staff when you move to implementation.
**Example**

**Moving from change concept to specific testable change ideas**

Change concepts are not specific enough to use directly. A change concept is a guide that can be applied to your specific situation and used to brainstorm your specific ideas for changes to test.

<table>
<thead>
<tr>
<th>General, strategic Change Concepts</th>
<th>Ensure clinical care that is consistent with scientific evidence and within the woman's informed preferences</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Change Idea</strong></td>
<td>Embed evidence-based guidelines for assessment, screening, interventions and follow-up into daily clinical practice.</td>
</tr>
<tr>
<td><strong>Specific and Actionable</strong></td>
<td>Provide care reminders for staff and providers</td>
</tr>
<tr>
<td><strong>Test</strong></td>
<td>Review and flag charts due for 28 wk re-screening</td>
</tr>
<tr>
<td></td>
<td>One MA and One MD test putting post-it note on flow sheet of patients due for 28 wk. re-screening for the following morning (½ day) clinic.</td>
</tr>
</tbody>
</table>
**MODEL FOR IMPROVEMENT**

**PDSA Planning Worksheet**

<table>
<thead>
<tr>
<th>Care Model Component</th>
<th>Self Management Support</th>
<th>Clinical Information Systems</th>
<th>Decision Support</th>
<th>Health Systems</th>
<th>Delivery System Design</th>
<th>Community</th>
</tr>
</thead>
<tbody>
<tr>
<td>TEAM NAME:</td>
<td>BV Tester</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CYCLE START DATE:</td>
<td>7/2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CYCLE END DATE:</td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

**PLAN:** (Describe the change you are testing and state the question you want to answer with this test.)

Does placing the BV test kit on the procedure tray with the Pap test increase the number of women being tested for BV at the first prenatal visit?

**What do you predict the result will be?**

Having the test ready for use will remind the provider to collect the sample.

**Plan for change or test: Who, what, when, where?**

During the Tuesday morning clinic, Sue, Dr White’s MA, will place the BV test kit next to the Pap smear, for all new prenatal patients. Dr. White will take the BV sample, read the test results, and record them in the chart.

**How will you measure the outcome of the test?**

By logging the number of BV test kits used; the number new OB patients who were screened for BV; and the number of new OB patients seen in the morning.

**Plan for collection of data: Who, what, when, where?**

The MA will place a check mark next to the patient’s name on the patient list each time the BV test kit is used. At the end of the clinic the MA will count the number of check marks.

Dr. White will review charts at the end of the clinic to see how many have BV test results recorded.

The MA and Dr. White will compare the records in the charts against the check marks indicating a test was done, and against the number of new prenatal patients.

**DO:** (Carry out the change or test; collect data and feedback. Describe what happened include reporting of any unexpected events. Begin analysis.)

**STUDY:** (Complete analysis of data; summarize what was learned; compare your results to your predictions. What did you learn? Any surprises?)

Discrepancies in the number of tests used vs. results recorded in the charts might suggest one PDSA cycle; whereas a discrepancy in the number of new patients seen vs. the number of those tested would point to a different PDSA cycle.

**ACT:** (Are you ready to implement the change you tested? Modifications or refinements for the next cycle; what will you do next? Plan for next cycle)
PDSA Planning Worksheet

Team Name: ________________________________
Cycle start date: ________ Cycle end date: ________

Care Model Component

- [ ] Self Management Support
- [ ] Decision Support
- [ ] Delivery System Design
- [ ] Clinical Information Systems
- [ ] Health Systems
- [ ] Community

PLAN: (Describe the change you are testing and state the question you want to answer with this test.)

What do you predict the result will be?

Plan for change or test: who, what, when, where

How will you measure the outcome of the test?

Plan for collection of data: Who, What, When, Where?

DO: (Carry out the change or test; collect data and feedback. Describe what happened include reporting of any unexpected events. Begin analysis.)

STUDY: (Complete analysis of data; summarize what was learned; compare your results to your predictions. What did you learn? Any surprises?)

ACT: (Are you ready to implement the change you tested? Modifications or refinements for the next cycle; what will you do next? Plan for next cycle)
Tips to make the most of PDSA cycles and tests of change:

- Think a couple of cycles ahead
- Plan multiple cycles to test and adapt change
- Scale down size of test (# of patients, location)....A “cycle of 1”
- Do more cycles, at a smaller scale and faster pace instead of fewer, bigger, slower
- Test with volunteers first
- Don’t seek buy-in or consensus for the test – particularly early on
- Be innovative and flexible to make test feasible
- Collect useful (and only just enough) data during each test
- Test over a wide range of conditions
- Learn from failures as well as successes
- Communicate what you’ve learned
- Engage leadership support
Urine and Reproductive Tract Infections Data Collection Tool

Elements:

- Recommended Screening tests completed for all prenatal patients: asymptomatic bacteriuria*; syphilis; HIV; hepatitis B; chlamydia†; Plus recommended screening tests completed for high-risk patients: gonorrhea, bacterial vaginosis, hepatitis C. Per CDC Guidelines MMWR 2006.
- Screening tests collected within 4 weeks of onset of prenatal care. Per California Comprehensive Perinatal Services Guidelines
- Treatment provided within 2 weeks of positive results.

Instructions: During the first week of the month review 5 charts for new prenatal patients who began their care during the first week of the prior month.

Numerator: Number of individual components documented on the medical record laboratory flow sheet (10 components x 5 charts=50)

Denominator: Number of possible individual components in the five charts (5 charts x 10 components= 50)

<table>
<thead>
<tr>
<th>Chart</th>
<th>Screening test</th>
<th>Collected within 4 weeks of onset of care</th>
<th>Treated within 2 weeks of positive result</th>
<th>TOTAL # components</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urine culture</td>
<td>Syphilis</td>
<td>HIV</td>
<td>Hepatitis B</td>
<td>Chlamydia</td>
</tr>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
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<td>Subtotal</td>
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</tbody>
</table>

* Recommended Test- Urine culture for asymptomatic bacteriuria
† Recommended Test- NAAT =Nucleic Acid amplification tests; examples include: Ligase Chain Reaction (LCR)-LCx (Abbott); Polymerase Chain Reaction (PCR)- Amplicor (Roche); APTIMA (GenProbe); BD ProbeTec (Becton Dickinson)
Care Model for Perinatal Health

The Care Model identifies the essential elements of a health care system that encourages high-quality care. The model includes evidence-based change concepts under each element seeking to foster productive interactions between informed clients, who take an active part in their care, and providers, who are prepared with resources and expertise. This model provides the framework for the system level improvements that will yield optimal pregnancy results.

Figure 19 Components of the Care Model for Perinatal Health

The following section describes in more detail the general change concepts for each area of the Care Model, and provides more specific change ideas, that are possible areas of action for your clinic.
**Urine and Reproductive Tract Infection Screening, Treatment, and Follow-up Change Concepts and Ideas**

<table>
<thead>
<tr>
<th>Care Focus</th>
<th>Change Concepts</th>
<th>Evidence Based Interventions &amp; Testable Change Ideas</th>
</tr>
</thead>
</table>
| **Decision Support**        | *Ensure clinical care that is consistent with scientific evidence and within the woman's informed preferences.* | **Protocols:** Review and update or establish protocols in clinical settings to adhere to evidence-based guidelines for the management of urine and reproductive tract infection during pregnancy  
  - Protocols for patient screening, treatment, and follow-up  
  - Protocols for partner contact, referral, treatment  
**Forms:** Develop/revise forms, clinical decision pathways, and care reminders to ensure adherence to recommended screening, timely treatment, follow-up and partner management |
| **Delivery System Design** | *Assure the delivery of effective, efficient, client-centered, and safe clinical care.* | **Provide Planned, Proactive Care:**  
  - **Initial Screening:** Establish processes to screen for urine and reproductive tract infections at the onset of prenatal care according to recommended protocols and using tests with optimal sensitivity and specificity  
  - **3rd Trimester Re-Screening:** Establish processes to identify women at risk for re-infection or infection and re-screen at the beginning of the third trimester according to recommended protocols  
  - **Treatment & Follow-up:**  
    - **Timely Treatment:** Establish processes to ensure that women with urine or reproductive tract infections receive treatment within 2 weeks of diagnosis  
    - **Test of Cure:** Establish processes to provide appropriate “test of cure” follow-up to ensure effective treatment  
    - **Partner Treatment:** Establish processes and protocols to provide treatment or referral of partners of women with STIs. This may include protocols to provide “Partner Directed Treatment” given to women diagnosed with lower reproductive tract STIs.  
**Use a Team Care Approach:**  
- **Roles and responsibilities:** Define staff roles and responsibilities to ensure efficient screening, treatment, education, and follow-up, according to recommended guidelines.  
  - **Communication:** Establish procedures for reviewing and documenting screening test results and treatments that are timely and accurate. |
| **Self Management Support** | *Support women and their families in the management of their health and health care, before, during and after pregnancy* | **• Use Self Management Support Strategies**  
  **• Provide easily understandable health education about infections, treatments, follow-up, need for partner treatment, and re-infection prevention for STIs**  
  **• Use verbal and written material in the woman’s preferred language and literacy level**  
  **• Document health information provided**  
  - Use “teach back” method to assess understanding of teaching.  
  - Assess potential barriers to completing treatment and recommended follow-up |
<table>
<thead>
<tr>
<th>Care Focus</th>
<th>Change Concepts</th>
<th>Evidence Based Interventions &amp; Testable Change Ideas</th>
</tr>
</thead>
</table>
| **Clinical Information Systems** | Organize data to facilitate population-based care                              | • **Create reminder systems** (electronic or paper based) for:  
  o **Providers & staff** about “Test of Cure” visits, 3 month follow-up testing for GC, CT, 3rd trimester re-screening in pregnancy  
  o **Patients** about scheduled visits  
• **Performance measures**: Select quality of care performance measures to monitor prenatal infection screening, treatment and follow-up. Report performance measures monthly review (electronic or chart audit). |
| **Health System**          | Create a culture, organization and mechanisms that promote safe, high quality care. | • **Policies** are current and promote recommended screening, treatment and follow-up for urine and reproductive tract infections, and data tracking to document compliance with policies.  
• **Culturally sensitive**: Assure that health services and patient education materials are culturally, linguistically, and literacy-level appropriate.  
• **Customer service**: Assure that services are provided in a manner that is respectful of and responsive to cultural, language, and literacy needs of the patients and families served.  
• **Staff training**: Provide access to educational programs and updates for staff to sustain knowledge and skills about infections in pregnancy, cultural sensitivity, and health promotion. |
| **Community**              | Partner with community to meet the needs of pregnant women, their families and children. | **Link to Community Resources**  
• Provide referrals to case management/home visitation programs for women with systemic or chronic infections such as syphilis, HIV, or hepatitis C  
• Refer a patient with syphilis who is allergic to penicillin to an Infectious Disease specialist for desensitization: [http://www.cdc.gov/std/treatment/2006/penicillin-allergy.htm](http://www.cdc.gov/std/treatment/2006/penicillin-allergy.htm)  
• Refer a patient with HIV to nearest perinatal treatment center: [http://hivcommission-la.info/perinatal.pdf](http://hivcommission-la.info/perinatal.pdf) |
RESOURCES

GUIDELINES FOR SCREENING, TREATMENT, FOLLOW-UP AND PARTNER MANAGEMENT:

Centers for Disease Control and Prevention (CDC)
- 2010 STD Treatment Guidelines - Up to date treatment guidelines for sexually transmitted infections.
- Recommendations and Guidance for HIV, Hepatitis, STD and TB Partners
  http://www.cdc.gov/nchhstp/Partners/Rec-Guide.html

California Department of Public Health- Sexually Transmitted Disease Control
- California Sexually Transmitted Disease (STD) Screening Recommendations -2010
- California STD Treatment Guidelines Table for Adults & Adolescents 2010

TRAINING AND CONTINUING EDUCATION

California STD/HIV Prevention Training Center
- This is part of a national network of training centers offering continuing education to enhance the knowledge and skills of medical, health and community professionals.
  http://www.stdhivtraining.org/
Taking a Sexual History: The Five Ps Approach
Partners, Prevention of Pregnancy, Protection from STDs, Practices, and Past History of STDs.

| Partners | • “Do you have sex with men, women, or both?”
|          | • “In the past 2 months, how many partners have you had sex with?”
|          | • “In the past 12 months, how many partners have you had sex with?”
|          | • “Is it possible that any of your sex partners in the past 12 months had sex with someone else while they were still in a sexual relationship with you?”

| Prevention of Pregnancy | • “What are you doing to prevent pregnancy?”

| Protection from STDs | • “What do you do to protect yourself from STDs and HIV?”

| Practices | “To understand your risks for STDs, I need to know about the kind of sex you have had recently.”
|           | • “Have you had vaginal sex, meaning ‘penis in vagina sex’?”
|           | • If yes, “Do you use condoms: never, sometimes, or always?”
|           | • “Have you had anal sex, meaning ‘penis in rectum/anus sex’?”
|           | • If yes, “Do you use condoms: never, sometimes, or always?”
|           | • “Have you had oral sex, meaning ‘mouth on penis/vagina’?”
|           | • For condom answers:
|           | • If “never:” “Why don’t you use condoms?”
|           | • If “sometimes:” “In what situations (or with whom) do you not use condoms?”

| Past History of STDs | • “Have you ever had an STD?”
|                      | • “Have any of your partners had an STD?”
|                      | Additional questions to identify HIV and viral hepatitis risk include:
|                      | • “Have you or any of your partners ever injected drugs?”
|                      | • “Have any of your partners exchanged money or drugs for sex?”
|                      | • “Is there anything else about your sexual practices that I need to know about?”

Centers for Disease Control and Prevention. Sexually Transmitted Diseases Treatment Guidelines---MMWR 2010; 59(RR-12).
GLOSSARY

Amniotic fluid infection – infection or presence of bacteria or viruses in the amniotic fluid (water that surrounds the fetus).

Asymptomatic bacteriuria (UTI/ASB) – presence of high numbers of bacteria in the urine without causing symptoms.

Bacterial vaginosis (BV) – the most common vaginal infection in women. BV is vaginal condition caused by a shift in the amount and type of bacteria living in the vagina, from the normal Lactobacillus type bacteria to greatly increased numbers and types of other bacteria that are more likely to be harmful.

Cerebral palsy – a condition or group of disorders involving the brain and nervous system such that individuals may have difficulty with movement, learning, hearing, seeing, and thinking.

Chlamydia – a sexually transmitted infection cause by the bacteria *Chlamydia trachomatis*.

Colony forming units (CFUs) – a laboratory measure for the number of live bacteria or fungi in a culture. The higher the number the more bacteria or fungi present.

Congenital infection – newborn infection from bacteria, virus, or parasite that is present at the time of birth. Some types of infections may infect the fetus before birth, by passing across the placenta (an organ that nourishes the fetus in the uterus), passing into the uterus and fetal membranes through the cervix. The fetus may also become infected during passage through the birth canal.

Conjunctivitis – infection of the outer layer of the eye and lining of the eyelids.

Ectopic pregnancy – pregnancy that implants in the fallopian tube, also called a tubal pregnancy.

Endometritis – infection of the uterus involving the cells lining the uterus (endometrium), underlying muscles of the uterine walls (myometrium), and the fibrous connective tissue and ligaments (parametrium) that support the uterus in the pelvis. This term is used for these infections among non-pregnant and postpartum women.

Gonorrhea – a sexually transmitted infection cause by the bacteria *Neisseria gonorrhoeae*

Group B streptococcus (GBS) – a bacteria that lives in the intestinal tract of some people and may also live on the perineum (area between the anus and vagina), in the bladder, vagina, and cervix without causing infection. However this bacteria causes serious, life threatening illness when babies are exposed to the bacteria during birth. Group B Streptococcus can also cause skin, bone, and joint infections, as well as postpartum maternal infections, pneumonia, and sepsis in adults.

Low birthweight birth – birthweight of five pounds and eight ounces or less (less than 2500 grams).

Lower genital tract infection – infection may involve the vulva, labia, clitoris, Bartholin’s ducts, vagina and cervix.

Low urinary tract infection – infection involving the urinary bladder and urethra.

Maternal and neonatal sepsis – potentially deadly condition that develops as the body’s immune system responds to fight an infection involving the blood, lungs, skin or other organs.
Mental retardation – generalized condition identified in childhood that involves below average mental functioning and lack of skills necessary for daily living.

Pneumonia – infection and fluid in the lungs, especially the alveoli, the small air sacs in the lungs where oxygen is absorbed into the blood. Having fluid and infection in the lungs reduces the amount of oxygen that a person can absorb.

Point-of-care test – laboratory test conducted in the examination room that provides results within a few minutes.

Prenatal Visit (PNV) – a healthcare visit during pregnancy to monitor the health of the mother and fetus.

Preterm premature rupture of membranes – Leaking or rupture of the bag of waters (fetal membranes) before 37 weeks gestation and before labor starts.

Preterm labor – regular labor pains (uterine contractions) occurring more than four times per hour and resulting in cervical changes (softening and/or dilation) before 37 weeks gestation.

Preterm birth – birth before 37 weeks gestation.

Pyelonephritis – infection of the kidneys and ureters.

Sequela – a health condition that occurs following a disease, injury, or other trauma.

Upper genital tract infection – infection that may involve the uterus, fallopian tubes and other tissues in the pelvis.

Upper urinary tract infection – infection involving the ureters (tubes that connect the bladder to the kidney) and the kidneys.

Very low birthweight birth – birthweight of three pounds five ounces or less (less than 1500 grams)
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