

## CHLAMYDIA TRACHOMATIS

### REPORTING INFORMATION

- **Class B:** Report the case, suspected case and/or a positive laboratory result to the local public health department where the patient resides by the close of the next business day. If patient residence is unknown, report to the local public health department in which the reporting health care provider or laboratory is located.
- Health care providers and laboratories report using the following form(s) and/or mechanism: [Ohio Confidential Reportable Disease form](#) (HEA 3334, rev. 1/2009), [Positive Laboratory Findings for Reportable Disease form](#) (HEA 3333, rev. 8/2005), Ohio Disease Reporting System (ODRS), electronic laboratory reporting (ELR), or telephone.
- Local public health departments report the case, suspected case and/or a positive laboratory result to the Ohio Department of Health (ODH) via ODRS by the end of the next business day.
- Key fields for ODRS reporting include: for laboratory - date collected, test name, and result; for clinical - treatment name, dose and start date.

### AGENT

*Chlamydia trachomatis* (CT) is an obligate intracellular organism sensitive to antibiotics with other properties characteristic of bacteria. Most genital isolates belong to immunotypes D through K.

### CASE DEFINITIONS

#### Clinical Description

Infection with sexually transmitted *Chlamydia trachomatis* may result in urethritis, epididymitis, cervicitis, acute salpingitis, but is often asymptomatic in women. Perinatal infections may result in inclusion conjunctivitis and pneumonia among newborns. Other syndromes caused by *C. trachomatis* include lymphogranuloma venereum and trachoma.

#### Laboratory Criteria for Diagnosis

- Isolation of *C. trachomatis* by culture *or*
- Demonstration of *C. trachomatis* in a clinical specimen by detection of antigen or nucleic acid.

#### Case Classification

Suspect: A clinically compatible case without laboratory confirmation.

Confirmed: A clinically compatible case that is laboratory confirmed.

Not a Case: This status will not generally be used when reporting a case, but may be used to reclassify a report if investigation revealed that it was not a case

### SIGNS AND SYMPTOMS

#### Genital

In men, infection is more often asymptomatic than gonococcal urethral infection and symptoms are usually milder. Symptoms usually include dysuria, frequency, and mucoid to purulent discharge. Clinical syndromes associated with *C. trachomatis* include epididymitis, proctitis, conjunctivitis, and Reiter's syndrome.

In women, *C. trachomatis* may produce no specific symptoms. When symptoms are present, the most common are mucopurulent discharge and fragility. Clinical syndromes

associated with infection in women include acute urethral syndrome, Bartholinitis, cervicitis, cervical dysplasia, pelvic inflammatory disease (PID), conjunctivitis, perihepatitis, and arthritis.

### **Pelvic Inflammatory Disease (PID)**

The patient may present with pain and tenderness involving the lower abdomen, cervix, uterus, and adnexae, possibly combined with fever, chills, elevated white blood cell (WBC) count and erythrocyte sedimentation rate (ESR). The diagnosis is likely if the patient has multiple sexual partners, a history of PID, uses an intrauterine device (IUD) or is in the first 5-10 days of her menstrual cycle.

### **Neonatal Conjunctivitis**

Infected infants demonstrate purulent conjunctivitis 5-17 days following delivery. The clinical picture is similar to gonococcal ophthalmia neonatorum, except that the latter infection is more destructive and usually presents before the fifth day of life. Although neonatal conjunctivitis is considered to be a mild disease, evidence indicates that corneal scarring can occur if treatment is not given within the first two weeks of life.

### **Infant Pneumonitis**

Symptoms usually consist of coughing spells, dyspnea, and minimal fever within 3-16 weeks of birth.

### **Lymphogranuloma Venereum**

Initial symptom is a primary lesion, a transient papule, a small erosion, or a vesicle. It is usually painless. The lesion then ulcerates with gradual enlargement and destruction of underlying tissue. Healing occurs with scarring and can result in obstruction of the urethra and adhesions within the vagina. Lymphatic involvement is common in the drainage area of the primary lesion. Inguinal adenopathy can develop buboes, which are firm, lobulated swellings with adherent bluish-red overlying skin.

### **Ocular Trachoma**

Ocular trachoma is characterized by conjunctivitis, frequently persistent and with reinfection, resulting in corneal vascularization and conjunctival scarring. The conjunctival scarring causes trichiasis (in-turned eyelashes) and entropion (lid deformity), which lead to chronic corneal abrasion, visual impairment and blindness. Rare in the United States. *C. trachomatis* serovars A, B, Ba, and C are associated with ocular trachoma.

## **DIAGNOSIS**

See case definition.

### **Laboratory Tests**

Tissue Culture isolation rates are higher from patients with clinical symptoms. Inter-urethral specimens can be obtained for chlamydia from asymptomatic men. It is not uncommon to isolate chlamydia from asymptomatic women.

Monoclonal antibody (Micro-Trac by Syva) and ELISA (Chlamydiazyme by Abbott) tests are rapid, accurate, and available commercially for on-site usage.

Recent technological advances have provided DNA and RNA amplification tests, often urine based, thus avoiding specimen collection problems. Three methods currently approved by the FDA include Polymerase Chain Reaction (PCR), Ligase Chain Reaction (LCR), and Transcription Mediated Amplification (TMA). Amplification tests are highly sensitive to the presence of disease, with good results for specificity as well. At present, the high cost of these tests limits their usefulness to specific screening applications.

## **EPIDEMIOLOGY**

### **Source**

Humans, sexually transmitted except in cases of neonatal infection and trachoma.

### **Occurrence**

Infections caused by chlamydia are now recognized as the most prevalent of all STDs seen in the United States. An estimated 3-4 million infections occur each year. Approximately 50% of reported nongonococcal urethritis among men is due to chlamydia, 2.5 times that caused by gonorrhea. It is estimated this disease is responsible for half of the 500,000 cases of acute epididymitis each year.

In women, chlamydia infections play a major role as the chief cause of mucopurulent cervicitis (MPC), which ultimately accounts for up to one-half of the one million cases of pelvic inflammatory disease (PID) reported in the United States each year. The risk of PID is 3-4 times greater in women who use intrauterine devices (IUDs) than women who do not. Although the frequency of intercourse does not seem to increase the risk of PID, having intercourse with multiple partners is associated with an increased risk of PID.

Chlamydia infections in women are also responsible for large numbers of infant infections during pregnancy and following delivery, as well as ectopic pregnancy, urethral syndrome (dysuria-pyuria syndrome) and perihepatitis or Fitz-Hugh-Curtis syndrome.

Lymphogranuloma venereum is a sporadic disease in North America, Europe, Australia, and most of Asia and South America. It is endemic in east and West Africa, India, parts of South Asia and South America. The average reported number of cases in the United States is 595 annually. Most of the cases reported in non-endemic areas occur in sailors, soldiers, and travelers who visit or are living in endemic areas. It is more common in urban areas, among lower socioeconomic classes and those with multiple sexual partners.

### **Mode of Transmission**

Genital and oral infections are almost always sexually transmitted. Infection of neonates usually occurs at birth. Trachoma is usually transmitted through autoinoculation by the hands from genitalia to the eyes.

### **Period of Communicability**

Indefinite, until the patient is adequately treated and cured. Carriers are often asymptomatic.

### **Incubation Period**

- Adult genital infection: 7-21 days.
- PID: Most women remain asymptomatic for some time, usually until the next menstrual period.
- Conjunctivitis in infants: 5-17 days after delivery.
- Infant pneumonitis: 3-16 weeks of age.
- Lymphogranuloma venereum: 7-12 days, but may be as long as 1-12 weeks after exposure.

## **PUBLIC HEALTH MANAGEMENT**

### **Case**

#### Investigation

All cases should be reported to the local health jurisdictions, who then report to ODH.

#### Treatment

Consult the most recent CDC-published "STD Treatment Guidelines" for recommended therapy at the CDC Web Site (<http://www.cdc.gov/std/treatment/>).

Chlamydia-infected women and men should be retested approximately 3 months after treatment. If retesting at 3 months is not possible, clinicians should retest whenever persons next present for medical care in the 12 months following initial treatment.

Women aged <25 years and those at increased risk for chlamydia (i.e., women who have a new or more than one sex partner) also should be retested during the third trimester to prevent maternal postnatal complications and chlamydial infection in the infant. Pregnant women diagnosed with a chlamydial infection during the first trimester should not only receive a test to document chlamydial eradication, but also be retested 3 months after treatment.

#### Isolation

None.

### **Contacts**

Patients should be instructed to refer their sex partners for evaluation, testing, and treatment if they had sexual contact with the patient during the 60 days preceding onset of the patient's symptoms or chlamydia diagnosis. Patients should be instructed to abstain from sexual intercourse until they and their sex partners have completed treatment. Abstinence should be continued until 7 days after a single-dose regimen or after completion of a multiple-dose regimen. Timely treatment of sex partners is essential for decreasing the risk for reinfecting the index patient.

### **Prevention and Control**

Latex male condoms, when used consistently and correctly, can reduce the risk of getting or giving chlamydia. The surest way to avoid chlamydia is to abstain from vaginal, anal, and oral sex or to be in a long-term mutually monogamous relationship with a partner who has been tested and is known to be uninfected.

### **Special Consideration with Chlamydia Infection Among Children**

Sexual abuse must be considered a cause of chlamydial infection in preadolescent children, although perinatally transmitted *C. trachomatis* infection of the nasopharynx, urogenital tract, and rectum might persist for >1 year. In all cases in which an STD has been diagnosed in a child, efforts should be made to detect evidence of sexual abuse, including conducting diagnostic testing for other commonly occurring STDs. If there is a reasonable suspicion of abuse or neglect, public health officials have a responsibility to report their suspicions to the appropriate authorities as designated mandatory reporters (Ohio Revised Code 2151.421).

To assist local public health with identifying chlamydia and gonorrhea reports in young children, ODH STD Surveillance has created a queue in the ODRS. This queue, "Chlamydia and Gonorrhea Cases in Children", is published in the Public Queues in the ODRS. Contact ODH STD Surveillance at 614-752-8507 for technical assistance.

**What is Chlamydia?**

Chlamydia is a common sexually transmitted disease (STD) caused by a bacterium. Chlamydia can infect both men and women and can cause serious, permanent damage to a woman's reproductive organs.

**How common is chlamydia?**

Chlamydia is the most frequently reported bacterial sexually transmitted infection in the United States. In 2011, 1,412,791 cases of chlamydia were reported to CDC from 50 states and the District of Columbia, but an estimated 2.86 million infections occur annually. A large number of cases are not reported because most people with chlamydia do not have symptoms and do not seek testing. Chlamydia is most common among young people. It is estimated that 1 in 15 sexually active females aged 14-19 years has chlamydia.

**How do people get chlamydia?**

People get chlamydia by having sex with someone who has the infection. "Having sex" means anal, vaginal, or oral sex. Chlamydia can still be transmitted even if a man does not ejaculate. People who have had chlamydia and have been treated can get infected again if they have sex with an infected person.

Chlamydia can also be spread from an infected woman to her baby during childbirth.

**Who is at risk for chlamydia?**

Any sexually active person can be infected with chlamydia. It is a very common STD, especially among young people. It is estimated that 1 in 15 sexually active females aged 14-19 years has chlamydia.

Sexually active young people are at high risk of acquiring chlamydia for a combination of behavioral and biological reasons. Men who have sex with men (MSM) are also at risk for chlamydial infection since chlamydia can be transmitted by oral or anal sex.

**What are the symptoms of chlamydia?**

Chlamydia is known as a 'silent' infection because most infected people have no symptoms. If symptoms do occur, they may not appear until several weeks after exposure. Even when it causes no symptoms, chlamydia can damage a woman's reproductive organs.

In women, the bacteria first infect the cervix (structure that connects the vagina or birth canal to the uterus or womb) and/or the urethra (urine canal). Some infected women have an abnormal vaginal discharge or a burning sensation when urinating. Untreated infections can spread upward to the uterus and fallopian tubes (tubes that carry fertilized eggs from the ovaries to the uterus), causing pelvic inflammatory disease (PID). PID can be silent, or can cause symptoms such as abdominal and pelvic pain. Even if PID causes no symptoms initially, it can lead to infertility (not being able to get pregnant) and other complications later on.

Some infected men have discharge from their penis or a burning sensation when urinating. Pain and swelling in one or both testicles (known as "epididymitis") may also occur, but is less common.

Chlamydia can also infect the rectum in men and women, either through receptive anal sex, or possibly via spread from the cervix and vagina. While these infections often

cause no symptoms, they can cause rectal pain, discharge, and/or bleeding (known as “proctitis”).

### **What complications can result from chlamydial infection?**

The initial damage that chlamydia causes often goes unnoticed. However, chlamydial infections can lead to serious health problems.

In women, untreated infection can spread upward to the uterus and fallopian tubes (tubes that carry fertilized eggs from the ovaries to the uterus), causing pelvic inflammatory disease (PID). PID can be silent, or can cause symptoms such as abdominal and pelvic pain. Both symptomatic and silent PID can cause permanent damage to a woman’s reproductive tract and lead to long-term pelvic pain, inability to get pregnant, and potentially deadly ectopic pregnancy (pregnancy outside the uterus). In pregnant women, untreated chlamydia has been associated with pre-term delivery, and can spread to the newborn, causing an eye infection or pneumonia.

Complications are rare in men. Infection sometimes spreads to the tube that carries sperm from the testis, causing pain, fever, and, rarely, preventing a man from being able to father children.

### **What about chlamydia and HIV?**

Untreated chlamydia may increase a person’s chances of acquiring or transmitting HIV – the virus that causes AIDS.

### **How does chlamydia affect a pregnant woman and her baby?**

In pregnant women, untreated chlamydia has been associated with pre-term delivery, and can spread to the newborn, causing an eye infection or pneumonia. Screening and treatment of chlamydia during pregnancy is the best way to prevent these complications. All pregnant women should be screened for chlamydia at their first prenatal visit.

### **Who should be tested for chlamydia?**

Any sexually active person can be infected with chlamydia. Anyone with genital symptoms such as discharge, burning during urination, unusual sores, or rash should avoid having sex until they are able to see a health care provider about their symptoms. Also, anyone with an oral, anal, or vaginal sex partner who has been recently diagnosed with an STD should see a health care provider for evaluation.

CDC recommends yearly chlamydia testing for all sexually active women age 25 or younger and older women with risk factors for chlamydial infections (e.g., women who have a new or more than one sex partner), and all pregnant women. Any woman who is sexually active should discuss her risk factors with a health care provider who can then determine if more frequent testing is necessary.

Men who have sex with men (MSM) who have receptive anal sex should be tested for chlamydia each year. MSM who have multiple and/or anonymous sex partners should be tested more frequently.

HIV-infected sexually active women who are age 25 or younger or have other risk factors, and all HIV-infected patients who report having receptive anal sex should be tested for chlamydia at their first HIV care visit and then at least annually. A patient’s health care provider might determine more frequent testing is necessary, based on the patient’s risk factors.

**How is chlamydia diagnosed?**

There are laboratory tests to diagnose chlamydia. Specimens commonly used for testing include a cotton swab of the vagina (collected by the woman herself or her health care provider) or a urine sample.

**What is the treatment for chlamydia?**

Chlamydia can be easily treated and cured with antibiotics. HIV-positive persons with chlamydia should receive the same treatment as those who are HIV-negative. Persons with chlamydia should abstain from having sex for seven days after single dose antibiotics, or until completion of a seven-day course of antibiotics, to prevent spreading the infection to partners.

Repeat infection with chlamydia is common. Persons whose sex partners have not been appropriately treated are at high risk for re-infection. Having multiple chlamydial infections increases a woman's risk of serious reproductive health complications, including pelvic inflammatory disease and ectopic pregnancy. Women and men with chlamydia should be retested about three months after treatment of an initial infection, regardless of whether they believe that their sex partners were successfully treated. Infants infected with chlamydia may develop conjunctivitis (infection of the membrane lining the eyelids) and/or pneumonia. Chlamydial infection in infants can be treated with antibiotics.

**What about partners?**

If a person has been diagnosed and treated for chlamydia, he or she should tell all anal, vaginal, or oral sex partners from the past 2 months so that they can see a healthcare provider and be treated. This will reduce the risk that the sex partners will develop serious complications from chlamydia and will also reduce the person's risk of becoming re-infected. A person with chlamydia and all of his or her sex partners must avoid having sex until they have completed their treatment for chlamydia (i.e., seven days after a single dose of antibiotics or until completion of a seven-day course of antibiotics) and until they no longer have symptoms.

**How can chlamydia be prevented?**

Latex male condoms, when used consistently and correctly, can reduce the risk of getting or giving chlamydia. The surest way to avoid chlamydia is to abstain from vaginal, anal, and oral sex or to be in a long-term mutually monogamous relationship with a partner who has been tested and is known to be uninfected.

**Where can I get more information?**

Centers for Disease Control and Prevention (CDC) Division of STD Prevention (DSTDP)  
[www.cdc.gov/std](http://www.cdc.gov/std)