

## GONORRHEA

### 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, start date, and whether antibiotic resistance is suspected.

### AGENT

*Neisseria gonorrhoeae* (*N. gonorrhoeae*), is a gram-negative diplococcal bacterium.

### CASE DEFINITION

#### Clinical Description

A sexually transmitted infection commonly manifested by urethritis, cervicitis, proctitis, salpingitis, or pharyngitis. Infection may be asymptomatic.

#### Laboratory Criteria for Diagnosis

- Observation of gram-negative intracellular diplococci in a urethral smear obtained from a male or an endocervical smear obtained from a female, or
- Isolation of typical gram-negative, oxidase-positive diplococci (presumptive *N. gonorrhoeae*) from a clinical specimen *or*
- Demonstration of *N. gonorrhoeae* in a clinical specimen by detection of antigen or nucleic acid

#### Case classification

Suspect: A clinically compatible case without laboratory or medical confirmation.

Probable: A clinically compatible case where there is:

- Demonstration of gram-negative intracellular diplococci in a urethral smear obtained from a male or an endocervical smear obtained from a female

Confirmed: A person with laboratory isolation of typical gram-negative, oxidase-positive diplococci by culture (presumptive *Neisseria gonorrhoeae*) from a clinical specimen, or demonstration of *N. gonorrhoeae* in a clinical specimen by detection of antigen or detection of nucleic acid via nucleic acid amplification (e.g., Polymerase Chain Reaction [PCR]) or hybridization with a nucleic acid probe.

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**

Gonorrheal infection may be symptomatic or asymptomatic. When symptomatic, men usually have dysuria, urinary frequency, and/or purulent urethral discharge. Women may have abnormal vaginal discharge, dysuria, and/or vaginal bleeding between menstrual periods. Diffuse pelvic inflammatory disease (PID) may cause fever along with pain and tenderness of the pelvic organs and lower abdomen. Pharyngeal infection and anorectal infection in men and women may be asymptomatic. Symptoms of anorectal infection may include discharge, anal itching, soreness, bleeding, or painful bowel movements. The symptom of pharyngeal infection is a sore throat, but pharyngeal infection is usually asymptomatic.

## **DIAGNOSIS**

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

In conjunction with the above tests, the diagnosis of PID is made on the basis of clinical signs and symptoms. Clinical diagnosis of PID may be made if the patient has acute lower abdominal pain and two or more of the following signs and symptoms: abnormal vaginal discharge, fever, vomiting, menstrual irregularities, urinary symptoms, proctitis symptoms, marked tenderness of the pelvic organs on bimanual examination, palpable adnexal mass or swelling and an erythrocyte sedimentation rate more than 15 mm/hr.

## **EPIDEMIOLOGY**

### **Source**

Humans, sexually transmitted in most cases.

### **Occurrence**

The incidence of gonorrhea is partly dependent on age: 83% of reported cases in the United States occur in persons 15-29 years of age, with 38% of cases 20-24 years of age.

Gonorrhea continues to be one of the most common sexually transmitted diseases despite the ability to cure it in most instances. Its spread is continuing because of increased sexual activity with multiple partners, high rates of reinfection, the emergence of resistant strains, and the increased frequency of asymptomatic infections.

### **Mode of Transmission**

The risk of transmission of gonorrhea is dependent upon the anatomic site(s) exposed and infected. The risk of acquiring urethral infection for a man following a single episode of vaginal intercourse with an infected woman is about 20%; the risk increases to 60% - 80% after four exposures. The prevalence of infection in women named as secondary sex contacts of men with gonococcal urethritis has been reported to be about 90%, but no published studies have controlled for number of exposures. It is probable that the single-exposure transmission risk from male to female is higher than from female to male. The risk of transmission by other types of sexual contact is not well defined. Use of hormonal contraception by women may or may not increase the risk of acquiring gonorrhea. Transmission by fomites or by nonsexual personal contact probably accounts for some cases of gonorrhea in infants but is extremely rare in other settings.

**Period of Communicability**

Indefinite, until patient is adequately treated and cured. Carriers may be asymptomatic.

**Incubation Period**

Incubation is generally 3-8 days, with a range of 1-14 days in men and within 10 days for women.

**PUBLIC HEALTH MANAGEMENT****Case**Investigation

All cases should be reported to the local health jurisdictions, who then report to ODH. Any case of antibiotic-resistance gonorrhea should be reported to the OHD STD Prevention Program and also referred to a Disease Intervention Specialist (DIS) for further investigation.

Treatment

Consult the most recent CDC-published "STD Treatment Guidelines" for recommended therapy at the CDC Web Site (<http://www.cdc.gov/std/treatment/>). Patients who have symptoms that persist after treatment should be evaluated by culture for *N. gonorrhoeae*, and any gonococci isolated should be tested for antimicrobial susceptibility.

Dual therapy is recommended for the treatment of *N. gonorrhoeae*. The recommended regimen is ceftriaxone 250 mg IM in a single dose PLUS azithromycin 1g orally in a single dose. As dual therapy, ceftriaxone and azithromycin should be administered together on the same day, preferable simultaneously and under direct observation. If ceftriaxone is unavailable, cefixime 400 mg orally in a single dose may be used as an alternative.

A test-of-cure is not needed for persons who receive diagnosis of uncomplicated urogenital or rectal gonorrhea who are treated with any of the recommended or alternative regimens; however, any person with pharyngeal gonorrhea who is treated with an alternative regimen should return 14 days after treatment for a test-of-cure using either culture or NAAT. If the NAAT is positive, effort should be made to perform a confirmatory culture before retreatment. All positive cultures for test-of-cure should undergo antimicrobial susceptibility testing.

**Antimicrobial-Resistant *N. gonorrhoeae***

Gonorrhea treatment is complicated by the ability of *N. gonorrhoeae* to develop resistance to antimicrobial therapies. Quinolone-resistant *N. gonorrhoeae* strains are now widely disseminated throughout the United States and the world. As of April 2007, quinolones are no longer recommended in the United States for the treatment of gonorrhea and associated conditions, such as PID. Consequently, only one class of antimicrobials, the cephalosporins, is recommended and available for the treatment of gonorrhea in the United States.

Clinicians who diagnose *N. gonorrhoeae* infection in a patient with suspected cephalosporin treatment failure should perform culture and susceptibility testing of relevant clinical specimens, consult a specialist for guidance in clinical management, and report the case to CDC through state and local public health authorities. Health departments should prioritize partner notification and contact tracing of patients with *N. gonorrhoeae* infection thought to be associated with cephalosporin treatment failure or associated with patients whose isolates demonstrate decreased

susceptibility to cephalosporin.

#### Isolation

None.

#### **Contacts**

Effective clinical management of patients with treatable STDs requires treatment of the patients' recent sex partners to prevent reinfection and curtail further transmission. Patients should be instructed to refer their sex partners for evaluation and treatment. Sex partners of patients with *N. gonorrhoeae* infection whose last sexual contact with the patient was within 60 days before onset of symptoms or diagnosis of infection in the patient should be evaluated and treated for *N. gonorrhoeae* and *C. trachomatis* infections. If a patient's last sexual intercourse was >60 days before onset of symptoms or diagnosis, the patient's most recent sex partner should be treated. Patients should be instructed to abstain from sexual intercourse until therapy is completed and until they and their sex partners no longer have symptoms.

#### **Prevention and Control**

Latex male condoms, when used consistently and correctly, can reduce the risk of getting or giving gonorrhea. The surest way to avoid gonorrhea 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 Gonorrhea Infection Among Children**

Sexual abuse must be considered a cause of gonorrhea infection in preadolescent children. For preadolescent girls, vaginitis is the most common manifestation of this infection; gonococcal-associated PID after vaginal infection is likely less common in preadolescents than adults. Among sexually abused children, anorectal and pharyngeal infections with *N. gonorrhoeae* are common and frequently asymptomatic. 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 gonorrhea?**

Gonorrhea is a sexually transmitted disease (STD) caused by a bacterium. Gonorrhea can grow 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, annually, 820,000 people in the United States get new gonorrhea infections and less than half of these infections are detected and reported to CDC. CDC estimates that 570,000 of them were among young people 15-24 years of age. In 2011, 321,849 cases of gonorrhea were reported to CDC.

**How do people get gonorrhea?**

People get gonorrhea by having sex with someone who has the disease. "Having sex" means anal, vaginal, or oral sex. Gonorrhea can still be transmitted via fluids even if a man does not ejaculate. Gonorrhea can also be spread from an untreated mother to her baby during childbirth.

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

**Who is at risk for gonorrhea?**

Any sexually active person can be infected with gonorrhea. It is a very common STD. In the United States, the highest reported rates of infection are among sexually active teenagers, young adults, and African Americans.

**What are the symptoms of gonorrhea?**

Some men with gonorrhea may have no symptoms at all. However, common symptoms in men include a burning sensation when urinating, or a white, yellow, or green discharge from the penis that usually appears 1 to 14 days after infection. Sometimes men with gonorrhea get painful or swollen testicles.

Most women with gonorrhea do not have any symptoms. Even when a woman has symptoms, they are often mild and can be mistaken for a bladder or vaginal infection. The initial symptoms in women can 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, even if symptoms are not present or are mild.

Symptoms of rectal infection in both men and women may include discharge, anal itching, soreness, bleeding, or painful bowel movements. Rectal infections may also cause no symptoms. Infections in the throat may cause a sore throat, but usually cause 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 can spread into the uterus (womb) or fallopian tubes (egg canals) and cause pelvic inflammatory disease (PID). The symptoms may be 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 chronic (long-lasting) pelvic pain. PID can damage the fallopian tubes enough that a woman will be unable to have children. It also can increase her 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 a painful condition called epididymitis in the tubes attached to the testicles. In rare cases, this may prevent a man from being able to father children.

If not treated, gonorrhea can also spread to the blood or joints. This condition can be life threatening.

### **What about gonorrhea and HIV?**

Untreated gonorrhea can increase a person's risk of acquiring or transmitting HIV—the virus that causes AIDS.

### **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 serious health problems for the baby. Treating gonorrhea as soon as it is detected in pregnant women will make these health outcomes less likely. Pregnant women should consult a health care provider for appropriate examination, testing, and treatment, as necessary.

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

Any sexually active person can be infected with gonorrhea. Anyone with genital symptoms such as discharge, burning during urination, unusual sores, or rash should stop having sex and see a health care provider immediately.

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.

Some people should be tested for gonorrhea even if they do not have symptoms or know of a sex partner who has gonorrhea. Anyone who is sexually active should discuss his or her risk factors with a health care provider and ask whether he or she should be tested for gonorrhea or other STDs.

People who have gonorrhea should also be tested for other STDs.

### **How is gonorrhea diagnosed?**

Most of the time, a urine test can be used to test for gonorrhea. However, if a person has had oral and/or anal sex, swabs may be used to collect samples from the throat and/or rectum. In some cases, a swab may be used to collect a sample from a man's urethra (urine canal) or a woman's cervix (opening to the womb).

### **What is the treatment for gonorrhea?**

Gonorrhea can be cured with the right treatment. It is important to take all of the medication prescribed to cure gonorrhea. Medication for gonorrhea should not be shared with anyone. Although medication will stop the infection, it will not repair any permanent damage done by the disease. Drug-resistant strains of gonorrhea are increasing, and successful treatment of gonorrhea is becoming more difficult. If a person's symptoms continue for more than a few days after receiving treatment, he or she should return to a health care provider to be reevaluated.

**What about partners?**

If a person has been diagnosed and treated for gonorrhea, he or she should tell all recent anal, vaginal, or oral 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. A person with gonorrhea and all of his or her sex partners must avoid having sex until they have completed their treatment for gonorrhea and until they no longer have symptoms.

**How can gonorrhea be prevented?**

Latex condoms, when used consistently and correctly, can reduce the risk of getting or giving gonorrhea. The most certain way to avoid gonorrhea is to not have 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)