

**SCREENING FOR SEXUALLY TRANSMITTED DISEASES DURING THE DOMESTIC MEDICAL EXAMINATION  
FOR NEWLY ARRIVED REFUGEES**

U.S. Department of Health and Human Services

Centers for Disease Control and Prevention

National Center for Emerging and Zoonotic Infectious Diseases

Division of Global Migration and Quarantine

February 28, 2017

# Screening for Sexually Transmitted Diseases during the Domestic Medical Examination for Newly Arrived Refugees

---

## UPDATES – February 2017

- Syphilis screening for all refugees  $\geq 15$  years of age if no overseas results available

## Contents

### Background

### Medical Screening

#### *Overseas Pre-Departure Screening and Testing*

#### *Recommendations for Post-Arrival Screening and Evaluation*

### Clinical Presentations and Diagnostic Testing for Specific STDs

#### *Syphilis*

Clinical Presentation

Serology

Cerebrospinal Fluid Examination

Other Diagnostic Tests

#### *Other Treponema pallidum Infections*

#### *Chlamydia*

Clinical Presentation

Diagnostic Testing

#### *Gonorrhea*

Clinical Presentation

Diagnostic Testing

#### *Chancroid*

Clinical Presentation

Diagnostic Testing

#### *Granuloma Inguinale/Donovanosis*

Clinical Presentation

Diagnostic Testing

#### *Lymphogranuloma Venereum*

Clinical Presentation

Diagnostic Testing

#### *Genital Herpes*

Clinical Presentation

Diagnostic Testing

#### *Genital Warts*

Clinical Presentation

Diagnostic Testing

#### *Trichomoniasis*

Clinical Presentation

Diagnostic Testing  
***Counseling and HIV Testing***

**References**

**Table 1. Interpretation of Syphilis Serology Tests**

**Background**

Sexually transmitted diseases (STDs) are major causes of acute illness and infertility worldwide. The World Health Organization (WHO) estimates 499 million new cases of curable STDs occur annually worldwide in adults aged 15-49 years. The largest number of new infections occurs in Southeast Asia, followed by sub-Saharan Africa, Latin America, and the Caribbean. In low-income countries, STDs rank in the top 5 disease categories for which adults seek healthcare.

The prevalence of STDs in refugee populations is not well characterized and likely varies among populations. It is important to consider STDs in refugees in order to minimize or prevent acute and chronic sequelae, as well as prevent transmission to others.

These domestic STD screening guidelines are intended for state public health departments and medical providers in the United States who conduct the initial medical screening for newly arrived refugees. These guidelines are based on current medical knowledge and the advice of experts in refugee health, and are meant to provide healthcare providers with best practices for diagnosing sexually transmitted diseases in refugees.

**Medical Screening**

***Overseas Pre-Departure Screening and Testing***

For all refugees ≥15 years of age, clinical evaluation and treatment for identified infection are mandatory for the following STDs:

- Syphilis (laboratory testing required)
- Gonorrhea
- Note: *Chlamydia trachomatis* testing is not required (not considered a disease of public health significance under 42 Code of Federal Regulations part 34); however, many panel physicians use test kits that screen for both chlamydia and gonorrhea. When these tests are used, panel physicians are directed by CDC to document the test results in the remarks section of the DS 3026 (Medical History and Physical Examination Worksheet). If a refugee applicant for U.S. admission tests positive, the treatment provided should also be listed on the remarks section of the DS 3026 and the applicant should be given a “Class B Other” classification for chlamydia infection.

The medical history and physical examination should include a search for symptoms or lesions consistent with these diseases; however, many sexually transmitted infections can be asymptomatic. Routine laboratory testing for syphilis is performed for all applicants ≥15 years of age. Applicants younger than 15 years of age must be tested if there is reason to suspect infection or if there is a history of syphilis. Syphilis serologic testing is done according to the [CDC Technical Instructions for Syphilis for Panel Physicians](#). Further testing is performed, as necessary, to confirm a suspected syphilis diagnosis.

All applicants  $\geq 15$  years of age must also be tested for gonorrhea. Applicants  $< 15$  years of age must be tested if there is a history of gonorrhea or reason to suspect infection. Testing should be done according to the CDC [Technical Instructions for Gonorrhea for Panel Physicians](#), effective as of October 1, 2016.

In January 2010, [HIV was removed from the list of excludable infections](#), and is no longer routinely tested for overseas. Refugees who are diagnosed with syphilis or gonorrhea prior to departure are offered HIV testing. As of March 28, 2016, chancroid, lymphogranuloma venereum, and granuloma inguinale were also removed from the list of communicable diseases of public health significance. Therefore, evaluation for these three diseases is no longer required as part of the U.S. immigration medical screening process. For additional information, please see [Part 34 Final Rule](#), issued on January 26, 2016.

### ***Recommendations for Post-Arrival Screening and Evaluation***

The following STDs should be considered during the post-arrival medical examination:

- Syphilis
- Chlamydia
- Gonorrhea
- Chancroid
- Granuloma inguinale/donovanosis
- Lymphogranuloma venereum
- Genital herpes
- Genital warts
- Trichomoniasis
- HIV

A complete evaluation for all STDs includes a thorough medical history, physical examination, and, for specific infections, testing, as many infections are asymptomatic.

The optimal medical history includes asking about sexual history, including any contact with a person who has, or had, a known STD, and asking about any history of signs or symptoms suggestive of an STD. Common signs and symptoms of infection include urethral, vaginal, or rectal discharge; dysuria; rash; sores on the genitals, anus, or mouth; or a rash on the palms or soles of the feet.

Pertinent elements of the physical examination for STDs include palpation for enlarged or tender lymph nodes, inspection of skin and oral mucosa, and an external anal and genital examination, including inspection for discharge, ulcers, or rashes. In refugees who previously experienced trauma (e.g., sexual assault victims), the anal and genital examination may be postponed until the refugee establishes a trusting relationship with a provider.

The following summarizes the currently recommended testing:

- Screening syphilis testing should be performed routinely for refugees in the following categories:
  - All refugees  $\geq 15$  years of age, if no overseas results are available
  - Children  $< 15$  years of age who are at risk for congenital syphilis (e.g., mother who tests positive for syphilis), who are sexually active, or have been sexually assaulted should be evaluated

according to the Congenital Syphilis section of the [CDC Sexually Transmitted Diseases Treatment Guidelines, 2015](#).

Nontreponemal testing (e.g., Venereal Disease Research Laboratory [VDRL] and Rapid Plasma Reagin [RPR]): Refugees with a positive nontreponemal screening test (e.g., VDRL or RPR) should have confirmatory treponemal testing (e.g., fluorescent treponemal antibody absorbed [FTA-ABS], *Treponema pallidum* passive particle agglutination assay [TP-PA], various enzyme-linked immunosorbent assays [EIAs or ELISAs], chemiluminescence immunoassays). The use of a “reverse screening” algorithm (e.g., initial screening with a treponemal test, followed by nontreponemal testing) is another option for serologic testing when it is being used as a local standard of care.

Further evaluation, including evaluation for neurosyphilis, and treatment should be instituted in persons with a positive screening test, according to the CDC Sexually Transmitted Diseases Treatment Guidelines, 2015.

- Chlamydia: Nucleic acid amplification tests
  - Female refugees <25 years old who are sexually active or female refugees ≥25 years who have risk factors (e.g., new sex partner or multiple sex partners, sex partner with concurrent partners, sex partner who has a sexually transmitted infection) who do not have documented pre-departure testing
  - Female refugees with abnormal vaginal or rectal discharge, intermenstrual vaginal bleeding, or lower abdominal or pelvic pain
  - Male refugees with urethral discharge, dysuria, or rectal pain or discharge
- Gonorrhea: Nucleic acid amplification tests
  - Female refugees <25 years old who are sexually active or females ≥25 years who have risk factors (e.g., new sex partner or multiple sex partners, sex partner with concurrent partners, sex partner who has a sexually transmitted infection) who do not have documented pre-departure testing
  - Female refugees with abnormal vaginal or rectal discharge, intermenstrual vaginal bleeding, or lower abdominal or pelvic pain
  - Male refugees with urethral discharge, dysuria, or rectal pain or discharge.

NOTE: Consider testing any refugee who has a history of sexual assault for these STDs; management and evaluation of sexually assaulted children requires consultation with an expert ([CDC Sexually Transmitted Diseases Treatment Guidelines](#)).

HIV testing is also strongly encouraged in newly arriving refugee populations according to current [CDC guidelines for Screening for HIV Infection During the Refugee Domestic Medical Examination](#). Testing for HIV is particularly important and encouraged for any refugee with another confirmed STD.

The most current information on STDs, including treatment and laboratory guidelines, is available at:

- CDC STD website (<http://www.cdc.gov/STD/>)
- CDC STD Treatment website (<http://www.cdc.gov/std/tg2015/default.htm>)

- CDC Sexually Transmitted Diseases Treatment Guidelines, MMWR 2015 (<http://www.cdc.gov/mmwr/preview/mmwrhtml/rr6403a1.htm>)
- U.S. Preventive Services Task Force Recommendations for STI Screening (<http://www.uspreventiveservicestaskforce.org/Page/Name/uspstf-recommendations-for-sti-screening>)
- Screening for Chlamydia and Gonorrhea: U.S. Preventive Services Task Force Recommendation Statement (<https://www.uspreventiveservicestaskforce.org/Page/Document/RecommendationStatementFinal/chlamydia-and-gonorrhea-screening>)
- Screening for Syphilis Infection in Nonpregnant Adults and Adolescents: U.S. Preventive Services Task Force Recommendation Statement (<https://www.uspreventiveservicestaskforce.org/Page/Document/RecommendationStatementFinal/syphilis-infection-in-nonpregnant-adults-and-adolescents>)

### **Clinical Presentations and Diagnostic Testing for Specific STDs**

Clinical presentation, screening, and diagnostic aspects of STDs that may be encountered in refugees are discussed in this document. These STD screening guidelines are intended for state public health departments and medical providers in the United States. These guidelines are based on current medical knowledge and the advice of experts in refugee health, and are meant to provide healthcare providers with currently accepted best practices. Treatment is not discussed in this document. HIV is discussed in a separate section of the [domestic guidelines](#).

#### ***Syphilis***

Clinical Presentation:

Syphilis, which is caused by the bacterium *Treponema pallidum*, has often been called the “great imitator” because many of its signs and symptoms are indistinguishable from those of other diseases. Many refugees who are infected do not recall ever having had symptoms. Asymptomatic latent infection is detected through serologic screening.

Typical signs and symptoms of syphilis, listed by stage, include the following:

- Primary stage (generally occurs 10-90 days after exposure):  
Ulcer or chancre at the inoculation site (usually the genitals, rectum, tongue, or lips)
- Secondary stage (generally occurs 2-10 weeks after the chancre appears):  
Skin rash marked by red or reddish-brown macules on the palms and soles or other parts of the body; mucocutaneous lesions; lymphadenopathy; anorexia; fever; headaches; weight loss; fatigue
- Latent stage (early latent and late latent, begin when primary or secondary symptoms disappear and may last for years):  
No signs or symptoms present
- Tertiary stage (generally occurs 10-20 years after infection):  
Cardiac manifestations (e.g., aortitis), ocular manifestations (e.g., optic atrophy, uveitis, pupillary disorder), auditory abnormalities (e.g., asymmetric deafness, tinnitus), neurologic manifestations (e.g., tabes dorsalis, meningitis, dementia), gumma

### Neurosyphilis:

Signs and symptoms of neurosyphilis include motor or sensory deficits, cranial nerve dysfunction, meningitis, stroke, acute or chronic altered mental status, loss of vibration sense, and auditory or ophthalmic abnormalities. Neurosyphilis may occur at any stage of disease.

### Congenital syphilis:

Congenital syphilis may present as nonimmune hydrops, jaundice, hepatosplenomegaly, rhinitis, skin rash, or pseudoparalysis of an extremity. In older children, signs of untreated congenital infection include interstitial keratitis (5-20 years of age), cranial nerve deafness (10-40 years of age), Hutchinson teeth (peg-shaped, notched central incisors), anterior bowing of the shins, frontal bossing, mulberry molars, saddle nose, rhagades (linear scars around the mouth), and Clutton's joints (symmetric, painless swelling of the knees). Prevention and detection of congenital syphilis depends on identification of syphilis in pregnant women by serology. For specific more information on congenital syphilis see [CDC congenital syphilis](#).

### Syphilis Serology:

Serologic tests for syphilis require the use of two tests: nontreponemal tests that use a nonspecific cardiolipin antigen and confirmatory tests that use specific *T. pallidum* antigens (Table 1). A nontreponemal test, such as VDRL or RPR, may be used for screening. Positive results on these nontreponemal tests should be confirmed using a treponemal test (e.g., FTA-ABS, TP-PA, EIAs, chemiluminescence immunoassays). The use of only one type of test is insufficient for diagnosis, since all tests have limitations, including the possibility of false-positive test results. False-positive nontreponemal test results can be associated with various medical conditions unrelated to syphilis, including autoimmune disorders, older age, and injection drug use.

Screening tests, such as the VDRL and RPR, are relatively simple to perform and provide rapid results. Both VDRL and RPR quantitative titer usually correlate with disease activity, and are used to monitor the effect of treatment. If treatment is successful, the antibody titer gradually declines. A four-fold change in titer (e.g., from 1:16 to 1:4) is necessary to demonstrate a clinically significant difference between two nontreponemal tests. Sequential nontreponemal tests should be performed by using the same testing method, because quantitative results from the two tests cannot be compared directly; RPR titers are often slightly higher than VDRL titers. The timing of follow-up testing is dictated by the clinical presentation and stage of infection, as well as the HIV status of the refugee, and is detailed in the current treatment guidelines (1).

Unlike nontreponemal tests, treponemal tests (e.g., FTA) do not usually revert to nonreactivity after successful treatment of syphilis. Screening with treponemal tests is not recommended in high-prevalence settings, because these tests will be reactive in people with previous successful treatment, as well as those with untreated or incompletely treated infection.

Recently, some clinical laboratories have begun using a "reverse screening" algorithm. The use of this algorithm is acceptable when it is considered the local standard of care. This method can identify persons previously treated for syphilis, those with untreated or incompletely treated syphilis, and persons with false-positive results. Persons with a positive treponemal screening test should have a standard nontreponemal test, with titer performed reflexively by the laboratory to guide patient management decisions. If the nontreponemal test is negative, the laboratory should perform a different treponemal test (preferably one based on different antigens

than the original test) to confirm the results of the initial test. If a second treponemal test is negative and the epidemiologic risk and clinical probability for syphilis are low, the initial treponemal test is considered a false positive and further evaluation or treatment is not indicated. People with a history of previous treatment require no further management unless sexual history suggests likelihood of re-exposure. In this instance, a repeat nontreponemal test in 2–4 weeks is recommended to evaluate for early infection. Those without a history of treatment for syphilis should be offered treatment. Unless history or results of a physical examination suggest a recent infection, previously untreated persons should be treated for late latent syphilis. For more information, refer to [CDC Sexually Transmitted Diseases Treatment Guidelines](#).

#### Cerebrospinal Fluid Examination:

Involvement of the central nervous system can occur during any stage of syphilis; therefore, any person who has syphilis and signs or symptoms of neurologic or ophthalmic involvement should have a cerebrospinal fluid (CSF) evaluation. The diagnosis of neurosyphilis depends on a combination of CSF tests (elevated cell count or protein and a reactive CSF-VDRL), with reactive serologic tests and neurologic signs or symptoms. The treatment guidelines provide in-depth information on diagnosis and treatment, and expert consultation may be needed when deciding how to evaluate an individual or interpret testing (1).

#### Other Diagnostic Tests:

Because early treatment decreases the possibility of transmission, presumptive treatment of suspected infectious syphilis is recommended on the basis of clinical presentation and epidemiologic circumstances (high incidence of disease among populations or communities and travel history).

Syphilis in children (either congenital or acquired) must be properly evaluated. The diagnosis of congenital syphilis is complicated by transplacental transfer of maternal nontreponemal and treponemal IgG antibodies to the fetus, making it difficult to interpret reactive serologic tests for syphilis in newborns born to mothers seropositive for syphilis. Further information on evaluation for congenital syphilis is available in published guidelines, including a section in [CDC's STD Treatment Guidelines \(2015\)](#) and the [American Academy of Pediatrics Red Book](#). Infants >1 month of age and children who have a reactive serology should be examined, and have maternal serology and records reviewed to assess whether they have congenital or acquired syphilis.

#### **Other *Treponema pallidum* infections**

Infection with other *T. pallidum* subspecies (i.e., *T. pallidum* subsp. *pertenue*, *T. pallidum* subsp. *endemicum*, and *T. carateum*) is acquired through contact with infected skin. These may result in a simple rash, but may progress and cause disfiguring skin lesions. Unlike syphilis, these infections are not considered sexually transmitted. Long-term infection can lead to deformation of bone and nasopharyngeal tissue. Infection with any of these subspecies can also cause seroreactivity for treponemal and nontreponemal tests used for diagnosis of syphilis; therefore, it is important to obtain a history of sexual and nonsexual exposures and consider *T. pallidum* subspecies in persons from areas where these infections are endemic.

#### ***Chlamydia***

##### Clinical Presentation:



Chlamydia, caused by the bacterium *Chlamydia trachomatis*, is the most frequently reported STD in the United States. The highest prevalence of infection is observed in persons 15-25 years of age. Asymptomatic infection is common. Screening of sexually active refugee women <25 years old, or of women ≥25 years old with risk factors (e.g., new sex partner or multiple sex partners, sex partner with concurrent partners, sex partner who has a sexually transmitted infection), is recommended in the United States. In women, untreated infection can cause pelvic inflammatory disease, ectopic pregnancy, and infertility. Rarely, genital chlamydia infection can cause arthritis that may be accompanied by skin lesions and inflammation of the eye and urethra (reactive arthritis or Reiter's syndrome) (2). There are few published data regarding prevalence rates of chlamydia in refugee populations arriving in the United States, although one study of more than 2,500 refugees found a rate of 0.6%, which is substantially lower than U.S. prevalence rates (3).

Asymptomatic infection is common; however, women may report abnormal vaginal discharge or a burning sensation when urinating. Other symptoms include abdominal pain, lower back pain, nausea, fever, pain during intercourse (dyspareunia), or bleeding between menstrual periods. Men with signs or symptoms may have penile discharge; an itching or burning sensation when urinating; rectal pain, discharge, or bleeding; or epididymitis. Autoinoculation may occur in men or women, and can be associated with conjunctivitis.

*Chlamydia trachomatis* infection in infants occurs perinatally and most frequently presents as conjunctivitis that develops 5-12 days after birth. It can also cause an afebrile pneumonia, with onset 1-3 months after birth. Signs of *C. trachomatis* pneumonia include a repetitive staccato cough with tachypnea and hyperinflation and bilateral diffuse infiltrates on chest radiograph.

#### Diagnostic Testing:

Diagnosis of *C. trachomatis* urogenital infection in women can be made by testing first catch urine or cervical or vaginal swab specimens. Urethral *C. trachomatis* infection in men can be diagnosed by testing first catch urine specimens.

Nucleic acid amplification tests are the most sensitive tests available for detection of *C. trachomatis*. Further information on diagnostic testing can be obtained from existing [guidelines](#).

### **Gonorrhea**

#### Clinical Presentation:

Gonorrhea, caused by the bacterium *Neisseria gonorrhoeae*, is the second most common bacterial STD in the United States. The majority of gonococcal urethral infections in men produce symptoms. However, among women, more than 30% of infections are asymptomatic; untreated infection can result in complications such as pelvic inflammatory disease (PID), infertility, and ectopic pregnancy. Similar to chlamydia, there are little published data regarding prevalence rates of gonococcal infection in refugee populations arriving in the United States. The single publication on reporting rates of STDs in newly arriving refugees found that out of more than 2,500 refugees, only 0.2% were infected (3).

Signs and symptoms of gonorrhea may appear 1-14 days after a person is exposed to an infected person.

In men, signs and symptoms may include:

- Pain or burning sensation when urinating
- Penile discharge
- Epididymitis
- Rectal discharge, anal itching, soreness, bleeding, or painful bowel movements

In women, signs and symptoms may include:

- Pain or burning sensation when urinating
- Vaginal discharge
- Intermenstrual bleeding
- Rectal discharge, anal itching, soreness, bleeding, or painful bowel movements
- Lower abdominal pain and dyspareunia

Other sites of infection include the eyes (gonococcal conjunctivitis) and pharynx. Disseminated gonococcal infection is associated with arthritis, tenosynovitis, skin lesions, fever or a combination of these findings. Skin changes range from maculopapular or pustular to hemorrhagic rashes and lesions. Arthritis and tenosynovitis most typically affect the wrists, knees, and ankles.

Gonococcal infection among infants usually results from exposure to infected cervical exudate at birth. Typically, an acute illness develops 2-5 days after birth, and may present as ophthalmia neonatorum, which may be complicated by a perforation of the globe of the eye and result in blindness. Other manifestations in infants are scalp abscesses, rhinitis, vaginitis, urethritis, arthritis, meningitis, and sepsis.

#### Diagnostic Testing:

Specific diagnostic testing for gonorrhea may be performed on endocervical, vaginal, male urethral, or urine specimens. For screening purposes, urine samples tested by nucleic acid amplification tests are highly sensitive and specific. A Gram stain of discharge, or a urethral swab showing intracellular gram-negative diplococci, supports the diagnosis and may be sufficient to confirm gonorrhea in symptomatic men.

Because nonculture-based tests do not permit antimicrobial susceptibility testing, in cases of persistent gonococcal infection following treatment, both bacterial culture and antimicrobial susceptibility testing should be assessed. Refugees infected with *N. gonorrhoeae* are frequently co-infected with *Chlamydia trachomatis*.

### **Chancroid**

#### Clinical Presentation:

Chancroid is caused by the bacterium *Haemophilus ducreyi* and results in painful, superficial ulcers, often with regional lymphadenopathy. Chancroid occurs in Asia, Africa, and the Caribbean, and is an important cofactor of HIV transmission. The genital ulcer from chancroid is painful, tender, and nonindurated. Symptoms usually occur 4-10 days after exposure. The lesion at the site of infection is, initially, a pustule that breaks down to form a painful, soft, ulcer with a necrotic base and irregular borders. Multiple lesions and inguinal adenopathy often develop. With lymph node involvement, fever, chills, and malaise may also develop. Other symptoms of chancroid include painful urination, vaginal discharge, rectal bleeding, pain with bowel movements, and dyspareunia.

#### Diagnostic Testing:

The combination of a painful genital ulcer and tender suppurative inguinal adenopathy suggests the diagnosis of chancroid. A probable diagnosis of chancroid can be made if:

- One or more painful genital ulcers (regional lymphadenopathy is also typical)
- No evidence of *T. pallidum* infection by darkfield examination of ulcer exudate or by syphilis serologic testing performed at least 7 days after onset of ulcers
- Test for herpes simplex virus performed on the ulcer exudate is negative

A definitive diagnosis of chancroid requires the identification of *H. ducreyi* on special culture media. However, culture media for chancroid are not widely available. Nucleic acid amplification tests can be performed in clinical laboratories that have developed their own tests.

#### ***Granuloma Inguinale/Donovanosis***

##### Clinical Presentation:

Granuloma inguinale is a chronic, relapsing, granulomatous anogenital infection caused by the bacterium *Klebsiella granulomatis* (formerly known as *Calymmatobacterium granulomatis*), which is endemic in tropical and developing areas, including India, Guyana, New Guinea, central Australia, and southern Africa. Symptoms usually occur 1-12 weeks after infection. The infection begins with the appearance of relatively painless nodules that break down into shallow, sharply demarcated ulcers with a beefy-red friable base of granulation tissue. The lesions may occur on the skin, genitalia, or perineal areas, and slowly spread to the lower abdomen and thighs. The lesions may develop secondary bacterial infection and can co-exist with other sexually transmitted infections.

##### Diagnostic Testing:

Diagnosis requires visualization of Donovan bodies (numerous bacilli in the cytoplasm of macrophages demonstrated with Giemsa or Wright's stain) in smears of scrapings from the ulcer base or histologic sections. Culture of *C. granulomatis* is difficult to perform and not routinely available.

#### ***Lymphogranuloma Venereum***

##### Clinical Presentation:

Lymphogranuloma venereum (LGV) is caused by three subtypes of *C. trachomatis*: serovars L1, L2, or L3. It is most often seen in tropical areas of Asia, Africa, South America, and the Caribbean. Symptoms appear 3-30 days after infection, and usually present as a painless ulcer or papule at the site of inoculation. Inguinal and femoral lymphadenopathy may also occur. Rectal exposure can result in mucoid or hemorrhagic rectal discharge, painful bowel movements, and constipation. Late manifestations include rectal and perirectal inflammation that can lead to rectal strictures and rectovaginal and perianal fistulas. Constitutional symptoms, such as fever, may occur.

##### Diagnostic Testing:

Diagnosis is based on clinical suspicion, epidemiologic information, and *C. trachomatis* testing. Genital and lymph node specimens (e.g., lesion swab, aspirate) may be tested for *C. trachomatis* by culture, direct immunofluorescence, or nucleic acid detection. To differentiate LGV from non-LGV *C. trachomatis*, special testing is generally necessary (e.g., genotyping) and may necessitate consultation with laboratory experts. Chlamydia serology (complement fixation titers >1:64 or microimmunofluorescence titers >1:256) can support the diagnosis in the appropriate clinical context.

### **Genital Herpes**

#### Clinical Presentation:

Genital herpes is a chronic, lifelong infection caused by herpes simplex virus (HSV) type 1 and type 2. Most cases of recurrent genital herpes are caused by HSV-2. Many persons with genital herpes have mild or unrecognized infections but intermittently shed the virus in the genital tract. When the ulcers do occur, they appear typically as one or more blisters on or around the genitals, rectum, or mouth. The blisters break, leaving tender ulcers that may take 2-4 weeks to heal the first time they occur. Other symptoms, such as fever, headache, muscle aches, malaise, and swollen lymph glands, may occur before appearance of the lesions. After the first episode of genital herpes, symptoms usually recur, but they tend to be milder and briefer. After the lesions erupt, they typically heal in 6-10 days.

Neonatal herpes is a rare but serious condition occurring among infants exposed to HSV during birth. Although the disease may be limited to skin, eyes, or mucus membranes, disseminated disease involving the lungs, liver, adrenal glands, and central nervous system disease (encephalitis), may also occur and are associated with serious consequences.

#### Diagnostic Testing:

Isolation of HSV in cell culture or nucleic acid amplification tests such as polymerase chain reaction (PCR) are the preferred tests in persons with genital lesions; however, the sensitivity of the culture is low, especially for recurrent lesions. Viral culture isolates can be typed to determine if HSV-1 or HSV-2 is the cause of the infection. PCR for HSV DNA is considered more sensitive, and results are available sooner, than viral culture (3).

Type-specific serologic tests may be useful:

- in clinical diagnosis of genital herpes without laboratory confirmation;
- for recurrent genital symptoms or atypical symptoms with negative HSV culture;
- when a sex partner has known genital herpes.

### **Genital Warts**

#### Clinical Presentation:

Genital warts are the most recognized sign of genital human papillomavirus (HPV) infection. HPV types 6 and 11 are usually associated with genital warts. Other HPV types that affect the anogenital region (i.e., types 16, 18, 31, 33, and 35) are associated with cervical neoplasia.

Genital warts are usually flat, papular, or pedunculated growths on the genital mucosa, and often occur in clusters. They can appear on the penis, vulva, vagina, cervix, groin, or thigh within weeks or months after sexual contact with an infected person.

#### Diagnostic Testing:

Diagnosis of genital warts is made by visual inspection. Biopsy may confirm the diagnosis, but is generally needed only when the lesions do not respond to appropriate therapy or worsen during therapy.

### ***Trichomoniasis***

#### Clinical Presentation:

Trichomoniasis, caused by the protozoan *Trichomonas vaginalis*, is the most common curable STD in sexually active women.

Approximately 70% of people with trichomoniasis will have no symptoms. In women, a malodorous, yellow-green vaginal discharge with vulvar irritation can occur. In men, trichomoniasis can cause urethral discharge or dysuria.

#### Diagnostic Testing:

Diagnosis of vaginal trichomoniasis is commonly performed by microscopy of vaginal secretions, although this method has a sensitivity of only approximately 60-70%, and requires evaluation of a wet preparation slide for optimal results. Other FDA-cleared tests for trichomoniasis in women include immunochromatographic capillary flow dipstick tests that can be performed at the point of care. Culture for *T. vaginalis* is also considered a sensitive and specific method of detection, and is commonly used when microscopy is negative. Among women, nucleic acid amplification testing is the most sensitive and specific test available for diagnosis.

### ***Counseling and HIV testing***

Healthcare providers should provide counseling to all persons with STDs, and recommend evaluation and treatment for their sex partners. Information should be provided about preventative measures and risk reduction interventions for STDs, including HIV, and should be tailored to each individual's risk behavior (4). Although [HIV screening is recommended](#) as a routine component of the newly arrived refugee medical screening examination, it is particularly important to offer HIV testing to refugees found to have other STDs.

Further information on the prevention of STDs is available at the [CDC Sexually Transmitted Diseases website](#) and the [2015 STD Treatment Guidelines](#).

### **References**

1. Workowski KA, Bolan GA; Centers for Disease Control and Prevention (CDC). Sexually transmitted diseases treatment guidelines, 2015. MMWR Mortal Morb Wkly Rep 2015;64(RR-03):1-137.
2. LeFevre ML; U.S. Preventive Services Task Force. Screening for Chlamydia and Gonorrhea: U.S. Preventive Services Task Force Recommendation Statement. Ann Intern Med 2014;161(12):902-10.

3. Stauffer WM, Painter J, Mamo B, et al. Sexually transmitted infections in newly arrived refugees: is routine screening for *Neisseria gonorrhoeae* and *Chlamydia trachomatis* infection indicated? *Am J Trop Med Hyg* 2012;86(2):292-5.

4. O'Connor EA, Lin JS, Burda BU, Henderson JT, Walsh ES, Whitlock EP; U.S. Preventive Services Task Force. Behavioral sexual risk-reduction counseling in primary care to prevent sexually transmitted infections: a systematic review for the U.S. Preventive Services Task Force. *Ann Intern Med*. 2014;161(12):874-83.

**Table 1. Interpretation of Syphilis Serology Tests**

<b>Nontreponemal test (e.g., RPR, VDRL)</b>	<b>Treponemal (specific) test (e.g., FTA-ABS, TPPA)</b>	<b>Likely interpretations and comments</b>
Nonreactive*	Nonreactive	No evidence of syphilis
Reactive	Reactive	<ul style="list-style-type: none"> <li>• Untreated syphilis OR</li> <li>• Previously treated late syphilis OR</li> <li>• Other spirochetal diseases</li> </ul>
Reactive	Nonreactive	False-positive result may be seen in certain acute or chronic infections (e.g., tuberculosis, hepatitis, malaria, early HIV infection), autoimmune diseases (e.g., systemic lupus, rheumatoid arthritis), injection drug use, pregnancy, and following vaccination (e.g., smallpox, MMR).
Nonreactive	Reactive	<ul style="list-style-type: none"> <li>• Very early untreated syphilis OR</li> <li>• Previously treated syphilis OR</li> <li>• Very late untreated syphilis</li> </ul> <p>Note: After successful treatment, a positive nontreponemal test usually becomes negative, whereas the treponemal test usually remains positive for life.</p>

\*Note: Nontreponemal testing may have a false-negative result during primary syphilis in the very early stages or tertiary syphilis in the very late stages. Suggest presumptive treatment, and retesting if clinical suspicion is high. See [CDC Sexually Transmitted Diseases Treatment Guidelines](#).

Acronyms: Rapid plasma reagin (RPR); venereal disease research laboratory (VDRL) test; fluorescent treponemal antibody absorption (FTA-ABS); treponema pallidum particle agglutination (TPPA) assay.