

**CALIFORNIA GUIDELINES
FOR GONORRHEA SCREENING AND DIAGNOSTIC TESTING
AMONG WOMEN IN FAMILY PLANNING AND PRIMARY
CARE SETTINGS**

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These guidelines were developed by:

**California Department of Health Services
Sexually Transmitted Diseases (STD) Control Branch**

in collaboration with

Office of Family Planning, Clinical Practice Committee,

and

California STD Controllers Association



SUMMARY GUIDELINES

Routine screening among young women

Sexually active women 25 years of age and younger should be screened for gonorrhea annually, unless the prevalence of gonorrhea in the client population is known to be less than one percent.* When practical, gonorrhea screening should be conducted in conjunction with chlamydia screening.

Targeted screening based on risk factors

Among women older than 25 years of age, routine screening is not recommended and should be targeted only to those with risk factors for gonorrhea: history of gonorrhea in the previous two years, more than one sex partner in the previous 12 months, and partner with other partners.† African American women aged 26 to 30 years are also at higher risk for gonorrhea infection.

Screening in pregnancy

Pregnant women 25 years of age and younger (and those with other risk factors for infection) should be screened for gonorrhea at the first prenatal visit. Repeat screening prior to term should be performed for those at continued risk.

Diagnostic testing

Women with clinical exam findings indicative of gonococcal infection, e.g., cervicitis or pelvic inflammatory disease (PID), should be tested for gonorrhea.

Testing of sexually transmitted disease (STD) contacts

Women who report contact to an STD, specifically gonorrhea, chlamydia, nongonococcal urethritis, epididymitis, trichomoniasis, syphilis, or HIV, should be tested for gonorrhea.

Testing among women with a new STD diagnosis

Women with a newly diagnosed STD, including chlamydia, trichomoniasis, syphilis, or HIV, should be tested for gonorrhea.

Retesting after treatment

Women treated for gonorrhea should have a repeat test for re-infection three months after treatment. A test-of-cure (TOC) at three to four weeks is not necessary if recommended treatment regimens are used.

* See further discussion on assessing clinic prevalence on page 5.

† See further discussion of risk factors on page 6.

BACKGROUND AND RATIONALE

These guidelines address gonorrhea screening for women clients in clinical settings that provide reproductive health services, including family planning, primary care, and gynecology clinics. These guidelines do not address gonorrhea screening for clients in STD clinics, correctional institutions, or school-based settings.

Rationale for gonorrhea screening

1. Because the majority of women with gonorrhea infections have no symptoms or signs, screening is essential for detecting infection.
2. Unrecognized infection with gonorrhea can lead to adverse reproductive health outcomes, including PID, chronic pelvic pain, ectopic pregnancy, and tubal infertility. Gonorrhea infection also increases the risk of transmitting and acquiring HIV.
3. Currently available diagnostic tests for gonorrhea are accurate, relatively inexpensive, and noninvasive.
4. Antibiotic therapy cures infection in the vast majority of those treated, prevents the development of complications, and interrupts further transmission to sex partners.
5. Although there are no data on the cost-effectiveness of gonorrhea screening, the benefits are likely to be analogous to those of chlamydia screening.
6. The risk of false positives, which may lead to stress, stigma, and unnecessary treatment, is considered small in populations with prevalent infection of more than one percent.

Concurrent chlamydia testing and screening

Guidelines for annual screening, diagnostic testing, testing of clients who are contacts to STDs, testing of clients with a new STD diagnosis, and retesting after treatment are similar to guidelines for chlamydial infection. Specifically, annual chlamydia screening is currently recommended for all sexually active women aged 25 years and younger.¹ When practical, gonorrhea screening should be conducted in conjunction with chlamydia screening. Combination tests for chlamydia and gonorrhea are ideal for this purpose.

Clinical aspects of gonococcal infection

Neisseria gonorrhoeae can infect urethral, cervical, rectal, and pharyngeal sites. In women, unrecognized gonococcal infection can lead to adverse reproductive health outcomes, including PID, chronic pelvic pain, ectopic pregnancy, and tubal infertility.²

Gonorrhea infection also increases the risk of transmitting and acquiring HIV.³ Infection during pregnancy can lead to postpartum infectious complications, as well as neonatal infections.

When symptomatic, cervical gonococcal infection may cause nonspecific vaginal discharge or intermenstrual vaginal bleeding. Upper tract infection with gonorrhea may present with pelvic pain or dyspareunia. Clinical evidence of cervicitis includes endocervical mucopus and cervical friability (easily induced bleeding). Signs of PID include cervical motion tenderness, uterine tenderness, and adnexal tenderness.

Because the majority of women with gonorrhea infections have no symptoms (or have nonspecific symptoms) and no clinical signs of infection, screening is essential for detecting infection.⁴

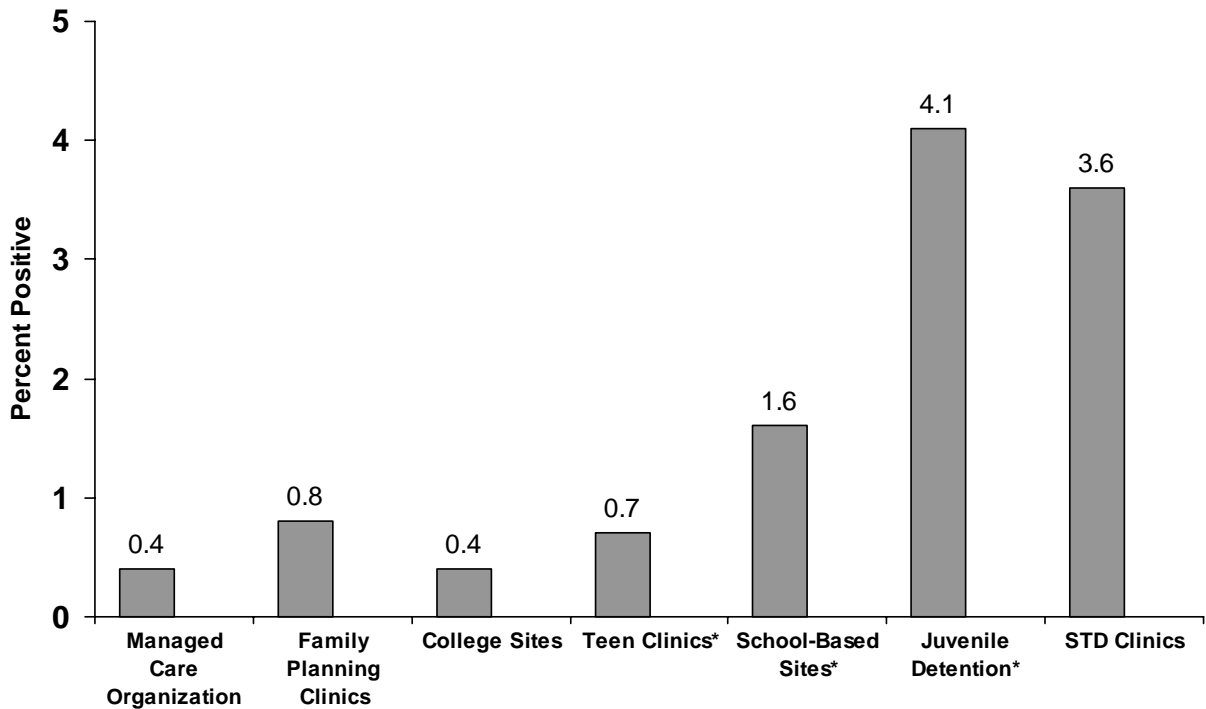
Incidence and prevalence of gonorrhea

Gonorrhea is the second most common bacterial STD in the United States, with an estimated 600,000 new cases annually. From 1975 through 1997, U.S. gonorrhea rates declined nearly 75 percent following the implementation of a national gonorrhea control program. Since 1997, rates have remained relatively stable. In 2004, the national incidence was 114 cases per 100,000 population.⁵ Healthy People 2010 established a target incidence of 19 cases per 100,000. Only seven states met this goal in 2004. In California, more than 30,000 cases of gonorrhea were reported in 2004, for an incidence rate of nearly 83 cases per 100,000.⁶ The incidence among California women aged 15 to 24 years was 338 per 100,000.

The prevalence of gonorrhea varies widely among communities and client populations. In a national sample of young women aged 18 to 26 years, gonorrhea prevalence was 0.4 percent.⁷ In contrast, national data from family planning clinics in 2000 demonstrated a gonorrhea positivity of 1.2 percent among women aged 15 to 24 years.⁸ In most reproductive health settings in California, the overall prevalence of gonorrhea among young women is less than one percent (Figure 1);⁹ however, infection rates are higher among adolescent women. According to prevalence monitoring data collected from 1998 through 2004 from the California Infertility Prevention Project family planning sites, Title X family planning clinics, and electronic laboratory reporting, the prevalence of gonorrhea ranged from 0.7 percent to 1.2 percent among adolescent women, 0.4 percent to 0.7 percent in women aged 20 to 25 years, and 0.2 percent to 0.4 percent in women over 25 years of age.¹⁰⁻¹²

According to 2004 California prevalence monitoring data from managed care settings, gonorrhea prevalence among all women was 0.4 percent: 1.0 percent among women aged 15 to 19 years, 0.4 percent among women aged 20 to 24 years, and 0.2 percent among women aged 25 years and older.⁹ In a study conducted from 1994 through 1997 in a California managed care setting, there was a gonorrhea prevalence of 1.4 percent among sexually active women aged 13 to 21 years.¹³

Figure 1. Gonorrhea prevalence among young women (aged 15 to 24 years) in different health care settings in California, 2004



*These venues serve primarily adolescents.

Source: California Department of Health Services, STD Control Branch; Los Angeles Infertility Prevention Project; and San Francisco Infertility Prevention Project

High rates of gonorrhea among women attending STD clinics continue to warrant screening in most age groups.⁹ Studies also have demonstrated that the prevalence in certain nonclinical settings, such as alternative schools, teen clinics, and juvenile corrections, warrants routine screening.¹⁴⁻¹⁶

Assessing clinic prevalence

Individual risk of gonorrhea infection depends on the local epidemiology of disease. Annual gonorrhea screening may not be necessary if the prevalence of infection is less than one percent in the client population. In fact, screening in low-prevalence populations compromises the test's positive predictive value and increases the proportion of false positives.^{17, 18} Ideally, screening should be focused on groups with the highest prevalence of infection.¹⁹ As seen with the prevalence monitoring data, even when the overall prevalence is low, the prevalence among certain groups (e.g., adolescents and those with risk factors outlined in the next section) may be high enough to warrant targeted screening.

Sources of clinic prevalence data may include laboratory reports or clinic logs. Laboratories monitor the number of tests performed in a given period of time, the test

results, and selected client demographics (e.g., age or date of birth). These data can be used to estimate prevalence and guide screening practices. If a gonorrhea screening program is terminated because of low prevalence, biannual short-term gonorrhea screening should be implemented to make certain that the number of cases in the clinic or the community has not started to increase. To establish a reliable prevalence estimate with a one-percent cutoff, at least 250 clients who are aged 25 years or younger or who have known risk factors for gonorrhea should be included in the evaluation.

Because many clinics may not be able to obtain prevalence data, it may be necessary to screen based on age and client's risk of infection. Because gonorrhea infection is less common among women older than 25 years of age, screening in women over the age of 25 years should be based on risk factors for infection as outlined in the next section.

Risk factors for gonorrhea

Understanding the demographic and behavioral risk factors for gonorrhea infection informs screening decisions. Thus, a thorough risk assessment is essential for all clients in clinical settings that provide reproductive health services. One of the most consistent risk factors for gonorrhea infection has been young age.^{10, 11, 19} In general, sexually active adolescents have the highest prevalence of infection, followed by women aged 20 to 25 years.

Another important risk for infection is a recent history (within the previous 24 months) of gonorrhea, chlamydial infection, or PID. This risk was confirmed by California Infertility Prevention Project data.¹⁰ This finding is the basis for the recommendation to re-test clients three months after treatment for gonorrhea; however, some research has found that risk of repeat infection among STD patients remains high for up to five years after the initial infection.²⁰

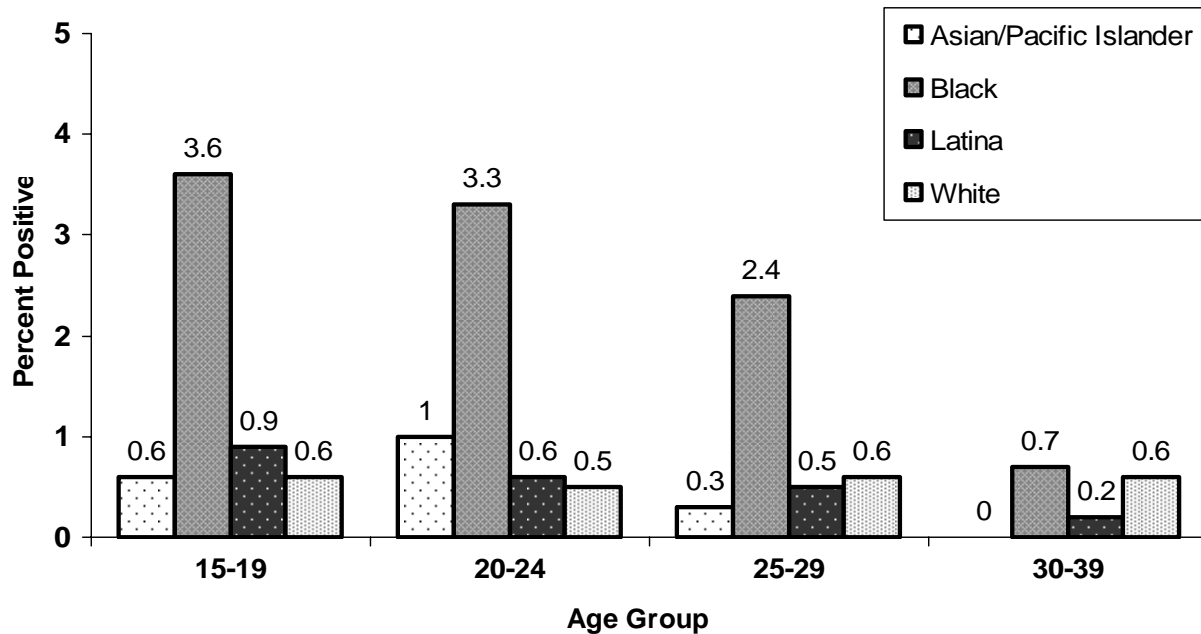
Multiple sources of data demonstrate that African American women appear to be at increased risk of gonorrhea infection. National gonorrhea rates are 20 times higher in African American women, compared to those in white women.⁵ In California, the incidence of gonorrhea infection is about 12 times higher for African American women, compared to that for white women.⁶ These racial disparities were also seen in a national sample of young women aged 18 to 26 years in 2002.⁷ California prevalence monitoring data confirm these observations.¹⁰⁻¹²

Data from California family planning clinics consistently demonstrate that the prevalence of gonorrhea is four to six times higher among African American women, compared with the prevalence among other racial/ethnic groups (Figure 2*^{9, 12}). Of note, among African American women aged 26 to 30 years, the prevalence of infection is more than two percent. In addition to poverty and poor access to medical care, high rates of infection within sexual networks likely contribute to this disparity.^{19, 21} Thus,

* These data do not include Native American/Alaskan Natives due to low test volume.

consideration should be given to population-based risk factors such as residence in an urban area or in a community with a high rate of poverty.

Figure 2. Gonorrhea prevalence among females at family planning clinics, by age group and race/ethnicity, 2004



Source: California Department of Health Services, STD Control Branch; Los Angeles Infertility Prevention Project; and San Francisco Infertility Prevention Project

Several behavioral risk factors have been associated with gonorrhea infection. Being unmarried has been found to increase risk of infection.^{10, 19} Detailed analysis of behavioral data from California family planning clinics demonstrated that having more than one partner in the previous year is associated with a higher risk of gonorrhea infection.^{10, 11} In addition, in this analysis, women who indicated their partners may have other partners were at increased risk for infection.^{10, 11} Lack of condom use has not been consistently associated with an increased risk of gonorrhea infection, likely because condoms are more often used with higher-risk partners.²² Although not well researched, most experts agree that sex workers are at high risk of infection. Because the use of certain illicit drugs is associated with high-risk sexual behavior, a client's drug history may guide screening decisions.

Although sexually transmitted gonorrhea infections may involve pharyngeal and/or rectal mucosa, because of limited data there are no current recommendations for screening these sites in asymptomatic women who report oral or rectal sex.

Testing based on clinical signs

Because the symptoms of gonococcal infection in women are relatively nonspecific, symptoms alone should not be used to direct diagnostic workup and treatment. In addition to a thorough risk assessment, symptomatic clients should receive a physical examination. Laboratory-based diagnostic testing for gonorrhea and chlamydia is warranted when clinical exam findings are indicative of infection.^{23, 24}

Clinical exam findings that are relatively specific for gonococcal infection include cervicitis, which is characterized by mucopurulent endocervical discharge or cervical friability, and PID, which is characterized by cervical motion tenderness, uterine tenderness, or adnexal tenderness. Cervical gram stain is no longer recommended in the diagnostic workup of cervicitis. Although the positive predictive value of these clinical exam findings is higher in younger women, diagnostic testing for gonorrhea and chlamydia is recommended in all age groups.²⁵ According to the Centers for Disease Control and Prevention (CDC), empiric treatment for gonorrhea and chlamydia should be considered for a patient with cervicitis if the prevalence of these infections is high in the patient population, and the patient might be difficult to locate for treatment.²⁴ PID treatment must provide empiric, broad-spectrum coverage of likely pathogens, including gonorrhea, chlamydia, anaerobes, Gram-negative facultative bacteria, and streptococci.²⁴ Importantly, all women with PID should be treated at the time of presentation.

Although women may present with common vaginal symptoms, such as discharge, testing may not be warranted unless they have other risk factors for gonorrhea. Less common syndromes caused by gonorrhea include Bartholin gland abscess, pharyngitis, proctitis, and disseminated gonococcal infections. Guidelines for the treatment of these conditions have been developed by CDC.²⁴

Testing clients who are STD contacts or who have a new STD diagnosis

Clients who report contact to an STD or who have a new STD diagnosis are at high risk for gonorrhea and chlamydial infection.²⁶ Thus, testing for gonorrhea is appropriate for clients who report contact to an STD, specifically, gonorrhea, chlamydia, nongonococcal urethritis, epididymitis, trichomoniasis, syphilis, or HIV. In addition to testing, STD contacts should be presumptively treated for the STD to which they were exposed, according to CDC guidelines.²⁴ Additionally, clients with a newly diagnosed STD, including chlamydia, trichomoniasis, syphilis, or HIV, should be tested for gonorrhea.

Retesting after treatment

Clients treated for gonorrhea are at high risk for repeat gonorrhea infection, which may increase the risk of complications. Rates of repeat infection within six months are 7 percent to 12 percent.^{12, 27} Most cases are not the result of treatment failure, but, rather, re-exposure to an untreated sex partner. Retesting three months after treatment

is expected to capture a high proportion of those re-infected. A TOC at three to four weeks is not necessary if recommended treatment regimens are used.

Diagnostic tests for gonorrhea

The most commonly used tests for gonorrhea include nucleic acid amplification tests (NAATs), nonamplified probe tests, and culture. NAATs include GenProbe Aptima™, Becton-Dickenson ProbeTec™, and Roche Amplicor™. The GenProbe PACE 2™ and Digene HC2™ are nonamplified probe tests. All nucleic acid tests offer the advantage of gonorrhea/chlamydia combination testing. Compared to other tests, NAATs are somewhat more sensitive for gonorrhea and can be used on urine and self-collected vaginal swab specimens, making a pelvic exam unnecessary. Antimicrobial susceptibility testing can be performed only on culture specimens.²⁸

Treatment of gonorrhea in California

Because of high rates of fluoroquinolone-resistant gonorrhea in California (and Hawaii),²⁹ the first-line treatments are limited to cephalosporins (ceftriaxone 125 mg IM once or cefixime 400 mg orally once).³⁰ Alternative oral cephalosporins include cefpodoxime 400 mg orally once, and cefuroxime 1 g orally once. Nationally, CDC also has advised that cephalosporins should be used to treat men who have sex with men (MSM), and persons who may have acquired the infection in a country with high rates of fluoroquinolone resistance.^{24, 31}

Clinicians who diagnose gonorrhea infection in a client who was previously treated with a recommended regimen and who is unlikely to have been re-exposed should perform culture and susceptibility testing of relevant clinical specimens and report the case to the local health department.

Co-infection with chlamydia

Clients with gonorrhea often are co-infected with chlamydia. In 2000, an estimated 43 percent of women aged 15 to 24 years in U.S. family planning settings who had been diagnosed with gonococcal infections were co-infected with chlamydia.⁸ Chlamydia co-infection rates among women in California range from 31 percent to 35 percent, depending on the clinical setting.¹² Co-infection rates among adolescent women are 41 percent in family planning settings and 54 percent in STD clinics.

Because of the high rate of co-infection, clients treated for gonococcal infection also should be treated with a regimen effective against chlamydial infection. Some experts believe that the routine use of dual therapy has resulted in substantial decreases in the prevalence of chlamydial infection.

Because of the high sensitivity of NAATs for chlamydial infection, clients with a negative chlamydial NAAT result available at time of treatment for gonorrhea do not need to be treated for chlamydia. However, if chlamydial test results are not available or if a less

sensitive non-NAAT test was used for detecting chlamydia, clients should be treated for both gonorrhea and chlamydia.

Management of sex partners

All sex partners in the 60 days prior to diagnosis should be evaluated, tested for gonorrhea and chlamydia, and treated presumptively for both gonorrhea and chlamydia. The local health department may be able to provide assistance with patients who fail to return for treatment and with partner notification and treatment.

A recent trial demonstrated that expedited partner therapy (EPT) for chlamydia and gonorrhea was equally or more effective, compared to traditional methods, in increasing partner notification and treatment and in reducing repeat infection.²⁷ EPT, which allows partners access to treatment without an intervening clinical evaluation, may facilitate treatment for partners who are unable to seek clinical services. An example of EPT is patient-delivered partner therapy (PDPT), in which the patient delivers antibiotics or a prescription for antibiotics to his or her sexual partners. The use of PDPT for gonorrhea is enabled by public health laws executed at the local level if gonorrhea is determined to be a public health problem by the local health officer. Local health departments can provide specific information about PDPT practices for gonorrhea cases within their jurisdiction.

Reporting gonorrhea cases

Gonorrhea is a reportable condition in California. The California Code of Regulations mandates that medical providers report all gonorrhea infections to their local health departments.³² Although client permission is not required for communicable disease reporting, notification is advisable, since local health department staff may contact the client to verify treatment and provide assistance with partner management.

Other guidelines

The U.S. Preventive Services Task Force (USPSTF) recommends that clinicians screen all sexually active women, including pregnant women, for gonorrhea if they are at increased risk for infection. Specified risk factors include young age (under 25 years of age), history of previous gonorrhea infection, other STDs, new or multiple sexual partners, inconsistent condom use, sex work, and drug use. The USPSTF also noted that African Americans and MSM have a higher prevalence of infection. USPSTF guidelines encourage providers to consider local epidemiology and population-based risk factors, including residence in urban communities with high rates of poverty. Furthermore, the guidelines acknowledge that low prevalence may justify more targeted screening.³³

Although CDC recommends gonorrhea screening for pregnant women and women at high risk for STDs, the exact risk factors are not specified.²⁴ CDC has developed national guidelines for STD screening in pregnant women, MSM, and sexual assault

survivors.²⁴ Guidelines for STD screening in HIV-infected clients also have been published.³⁴

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