

Chlamydia Additional Information

In some settings, the fact that both Neisseria and Chlamydia testing can be performed on the same specimen, testing for both can be an effective strategy. Because nucleic acid amplification (NAA) tests are more sensitive than conventional culture methods and nonculture tests, the CDC recommendations stressed the potential for false-positives and the impact of low incidence on the positive predictive value of a test. For this reason, they recommend that all non-culture methods should be considered as 'presumptively' positive. In those cases where a positive result is thought to be incorrect, they suggested that treatment should be offered while awaiting the results of additional testing. Only another NAA test was recommended as follow up testing after an initial suspect positive test and a test with an alternate target was the first choice of additional testing. Culture continued to be the method recommended for all medicolegal cases. Testing of children was actively discouraged because of the potentially low positive predictive value of the tests in low incidence populations.

Chlamydia trachomatis is recognized as the leading agent of sexually transmitted disease worldwide. Although only 30% of states designate Chlamydia a reportable disease, in the United States more than four million new cases of Chlamydia infection are reported annually. The asymptomatic nature of a large proportion of chlamydial infections leads to under-diagnosis of chlamydial infection and consequent health problems. Approximately 75% of infections in the female and approximately 50% of male infections are asymptomatic. Women are most severely affected due to the correlation between untreated Chlamydia infection and ectopic pregnancy and infertility. Rapid detection and diagnosis of chlamydial infection is critical in controlling not only the spread of disease but also the devastating sequel. Partner evaluation to prevent reinfection is also an important aspect of controlling the spread of the disease.

The diagnosis of Chlamydia trachomatis infections has traditionally relied on culture technology; however, the time-consuming nature of culture techniques catalyzed the development of direct antigen and nucleic acid detection methods. Conventional techniques such as culture and fluorescent antibody staining have demonstrated limited sensitivity. The development of targeted nucleic acid amplification techniques provide the means by which direct detection methodologies could achieve requisite sensitivity while maintaining excellent specificity. Clinical studies have shown that amplified methods detect about 15% more chlamydial infections than other non-culture with a

specificity >99%. In addition, the test is able to utilize specimens, including bloody specimens and male urine, that are not compatible with culture. A variety of transport devices have been validated for use with the nucleic acid amplification test for Chlamydia, including TriPath SurePath liquid cytology medium. Gonorrhea manifests as acute urethritis in males and as cervicitis in females. *N. gonorrhoea* can be detected from asymptomatic females. Detection and treatment of these individuals is critical because if it is left untreated, gonorrhea can result in serious complications, including pelvic inflammatory disease, sterility, and ectopic pregnancy. It is very important to control the spread of this disease between sexual partners; thus, the use of a quick reliable test system is essential.

The current definitive method of detection for *N. gonorrhoea* is the culture of the microorganism; however, this organism is especially fastidious. It can be difficult to grow in culture. Negative cultures due to overgrowth of contaminating microorganisms occur or due to the organism rendered nonviable during transport due to the incorrect transport being used or the correct transport used incorrectly. At least one study has demonstrated that a significant proportion of negative cultures received in a public health lab had evidence of *N. gonorrhoea* by nucleic acid testing but were negative by culture. The nucleic acid amplification test for the presence of *N. gonorrhoea* provides the sensitivity and a specificity equal to traditional methods of organism isolation and identification. The major disadvantage at the present time is that antibiotic sensitivity testing cannot be done on these specimens. Guidelines for antibiotic susceptibility testing of *N. gonorrhoea* have been published; however, this microorganism is not routinely tested for antibiotic sensitivities.