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Extragenital Testing for Sexually Transmitted Diseases

Background

Alaska's *Chlamydia trachomatis* infection (CT) and *Neisseria gonorrhoeae* infection (GC) rates are among the highest in the United States. Undiagnosed CT and GC can lead to serious health sequelae and can increase the likelihood of acquiring human immunodeficiency virus (HIV) by a factor of 2 to 5 times when having unprotected sex with an HIV-infected partner.¹

Recent reports indicate that urogenital-only testing can miss asymptomatic CT and GC infections, particularly among men who have sex with men (MSM) and heterosexuals who engage in oral and anal intercourse.^{2,3} To quantify the extent to which urogenital-only testing may be insufficient for the detection of CT and GC infection in Alaska, the Section of Epidemiology (SOE) evaluated two data sets.

Methods

Alaska State Public Health Laboratory Data Set

CT and GC specimens tested in 2014 at the Alaska State Public Health Laboratory (ASPHL) were reviewed to identify patients who had specimens submitted from more than one anatomic site and had at least one positive result. Specimens were stratified by gender and anatomic collection site, and classified as urogenital (urine, urethral, endo-cervical or vaginal) or extragenital (oropharyngeal/throat or rectal).

MSM Outreach and Screening Project

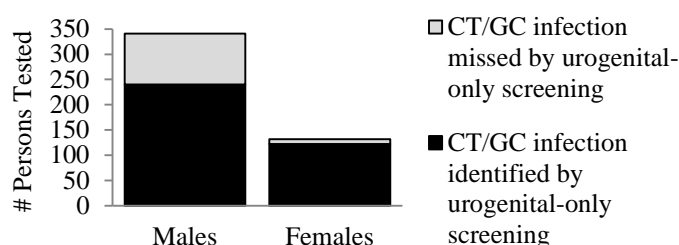
CT and GC specimen data from participants in a 2014 MSM outreach project were reviewed and classified as urogenital (urine) or extragenital (oropharyngeal or rectal). The event used online- and mobile device-based outreach to inform MSM in the Anchorage area about increases in incident cases of syphilis and HIV, and referred them to a series of free screening events where a sexual history was obtained on all participants and extragenital screening was provided, as appropriate.

Results

Alaska State Public Health Laboratory Data Set

In 2014, ASPHL reported 2,804 specimens positive for CT, GC, or both. Of those, 473 (17%) were in patients who had specimens submitted concurrently from more than one anatomic site; 341 (72%) were from males and 132 were from females. A higher proportion of males had negative urogenital and positive extragenital results than females (30% [101/341] vs. 8% [10/132], respectively; Figure 1). Of the 473 patients who received concurrent testing, urogenital-only testing would have failed to detect 27% (48/176) of CT infections and 32% (53/165) of GC infections in males, and 8% (7/93) of CT and 8% (3/39) of GC infections in females.

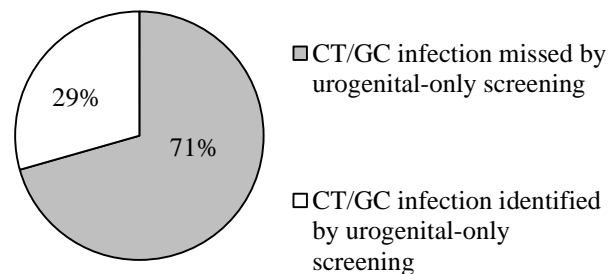
Figure 1. ASPHL Positive CT and GC Test Results among Patients who had Clinical Samples Collected from Multiple Anatomical Sites, by Site and Sex — Alaska, 2014



MSM Outreach and Screening Project

Of the 52 persons who were screened for HIV, syphilis, CT, and GC, all tested negative for syphilis and HIV and 17 (33%) tested positive for CT, GC, or both. Of these 17, 12 (71%) tested negative on urinalysis but positive at one or more extragenital site (Figure 2).

Figure 2. Proportion of CT and GC Infections by Anatomic Site among MSM (N=17) — Anchorage, 2014



Discussion

The results of this evaluation demonstrate that urogenital-only testing for CT and GC misses a substantial proportion of infections, particularly in MSM. As such, providers who take a sexual history and include appropriate extragenital testing for CT and GC will identify more infections than by only performing urogenital testing.

CDC's recently published STD treatment guidelines recommend that MSM and sexually active females aged <25 years be screened at least annually for CT and GC at all appropriate anatomic sites based on sexual history (i.e., urethral, rectal, and oropharyngeal), regardless of reported use of condoms or symptoms.⁴ CDC also recommends routine voluntary HIV screening for patients aged 13–64 years, and more frequent screening (at least annually) for those at elevated risk.⁵

The importance of taking a thorough sexual history to identify, treat, and stop transmission of CT and GC infections in both high-risk and more general risk populations cannot be overstated. Using open-ended questions posed in a non-judgmental, sensitive manner is essential in taking a good sexual history. For guidance and resources in effective risk assessment techniques, visit the SOE Sexual History Taking webpage (available at: <http://www.epi.alaska.gov/hivstd/history.htm>).

Recommendations for Health Care Providers

1. Take a complete sexual history to identify persons who are at increased risk for STD and to identify all exposed anatomic sites for CT and GC tests.
2. Offer oropharyngeal and rectal STD testing to persons who are at risk for extragenital CT and GC infection, based on their sexual history.
3. Offer extragenital STD screening to all MSM at least annually, regardless of condom use or symptoms.
4. Include HIV testing as a part of routine STD testing.
5. Providers should contact their laboratories to assess the capacity for accepting and processing specimens from extragenital anatomic sites. Many laboratories accept and process Aptima swabs for both oropharyngeal and rectal specimens.

References

1. CDC. HIV Transmission: The Basics. Available online at: <http://www.cdc.gov/actagainstaids/basics/transmission.html>
2. Patton ME et al. Extragenital gonorrhea and chlamydia testing and infection among men who have sex with men – STD Surveillance Network, United States, 2010–2012. *Clin Infect Dis* 2014;58(11):1564–70.
3. Trebach JD et al. *Neisseria gonorrhoeae* and *Chlamydia trachomatis* among women reporting extragenital exposures. *Sex Transm Dis* 2015;42(5):233–39.
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