Rates of appropriate treatment and laboratory follow-up of gonorrhea and chlamydia infections in an urban safety-net system

Laura McWhirter¹, Yingbo Lou², Sarah Reingold³, Sarah Warsh², Tara Thomas-Gale², Christine Haynes⁴,⁵, Deborah Rinehart⁶, Karen A. Wendel⁷,⁸, Holly M Frost⁶,⁹,¹⁰

Author affiliations:
¹ University of Colorado School of Medicine, Aurora, CO
² Denver Health Medical Center, Community Health Services, Denver, CO
³ University of Colorado School of Medicine, Department of Internal Medicine-Pediatrics, Aurora, CO
⁴ Denver Health Medical Center, Department of Internal Medicine, Denver, CO
⁵ University of Colorado School of Medicine, Department of Medicine, Division of General Internal Medicine, Aurora, CO
⁶ Denver Health Medical Center, Office of Research, Denver, CO
⁷ Denver Health Medical Center, Department of Internal Medicine, Division of Infectious Diseases, Denver, CO
⁸ University of Colorado School of Medicine, Department of Internal Medicine, Division of Infectious Diseases, Aurora, CO
⁹ Denver Health Medical Center, Department of Pediatrics, Denver, CO
¹⁰ University of Colorado School of Medicine, Department of Pediatrics, Aurora, CO
Background: Partner transmission and reinfection are common with *Neisseria gonorrhea* (GC) or *Chlamydia trachomatis* (CT). Little is known about how often patients with GC/CT receive guideline-concordant treatment and follow-up labs or which factors influence rates of treatment and follow-up.

Objective: To assess rates of guideline-concordant care for GC and CT and evaluate patient and system-level factors related to these rates.

Methods: Retrospective electronic health record data from 2018-2019 for patients aged 14-24 with a positive GC/CT nucleic acid amplification test (NAAT) from Denver Health, Denver, CO were analyzed. Guideline-concordant care following a positive GC/CT NAAT was defined as receiving Centers for Disease Control and Prevention (CDC)-recommended antibiotic treatment within 14 days, HIV and syphilis testing within 6 months, and repeat GC/CT NAAT within 60 days-6 months of a positive test. Bivariate and multivariable regression modeling were used to assess the association of thirteen different factors with guideline-concordant care.

Results: There were 27,168 GC/CT NAATs performed during the study period, which identified 484 GC infections (1.8% positivity rate) and 2125 CT infections (7.8% positivity rate). In total, 37.6% (182/484) of patients with GC and 34.9% (741/2125) of patients with CT received all four elements of guideline-concordant care.
Patients with documented condom use (aOR 1.4 (1.1, 1.9), p=0.01) or those seen in pediatric clinics (aOR 1.5 (1.1, 2.2), p=0.02) were more likely to receive guideline-concordant treatment than other patients. Patients with a history of anxiety were less likely to receive guideline concordant treatment (aOR 0.64 (0.4, 1.0); p=0.04). Patients who had CT (aOR 0.8 (0.7, 1.0), p=0.04), were older, (aOR 0.9 (0.9, 1.0), p<0.001) and were male (aOR 0.3 (0.2, 0.4), p<0.001), were less likely to have GC/CT retesting; whereas, patients with documented condom use were more likely to have GC/CT retesting (aOR 1.5 (1.3, 1.8), p<0.001).

Conclusion: The findings of this study confirm suboptimal rates of guideline-concordant management after diagnosis with GC or CT infection. These results highlight a critical need for further improvements in the management of these infections in order to decrease complications, reduce transmission, and combat the growing STI epidemic.