

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 Haynes^{4,5}, Deborah Rinehart⁶, Karen A. Wendel^{7,8}, Holly M Frost^{6,9,10}

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 gonorrhoea* (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.