

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

Laura McWhirter<sup>1</sup>, Yingbo Lou<sup>2</sup>, Sarah Reingold<sup>3</sup>, Sarah Warsh<sup>2</sup>, Tara Thomas-Gale<sup>2</sup>,  
Christine Haynes<sup>4,5</sup>, Deborah Rinehart<sup>6</sup>, Karen A. Wendel<sup>7,8</sup>, Holly M Frost<sup>6,9,10</sup>

Author affiliations:

<sup>1</sup> University of Colorado School of Medicine, Aurora, CO

<sup>2</sup> Denver Health Medical Center, Community Health Services, Denver, CO

<sup>3</sup> University of Colorado School of Medicine, Department of Internal Medicine-  
Pediatrics, Aurora, CO

<sup>4</sup> Denver Health Medical Center, Department of Internal Medicine, Denver, CO

<sup>5</sup> University of Colorado School of Medicine, Department of Medicine, Division of  
General Internal Medicine, Aurora, CO

<sup>6</sup> Denver Health Medical Center, Office of Research, Denver, CO

<sup>7</sup> Denver Health Medical Center, Department of Internal Medicine, Division of Infectious  
Diseases, Denver, CO

<sup>8</sup> University of Colorado School of Medicine, Department of Internal Medicine, Division  
of Infectious Diseases, Aurora, CO

<sup>9</sup> Denver Health Medical Center, Department of Pediatrics, Denver, CO

<sup>10</sup> 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.