

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

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BACKGROUND

- Partner transmission and reinfection are common with *Neisseria gonorrhoea* (GC) and *Chlamydia trachomatis* (CT)¹.
- Little is known about how often patients with GC/CT receive appropriate treatment and follow-up labs in ambulatory settings.
- Understanding the management of these infections is critical in order to assess how to better direct public health programs to combat the growing STI epidemic.
- This project aimed to assess rates of guideline-concordant care and evaluate influencing factors.
- It was hypothesized that rates of guideline-concordant care would be sub-optimal and that a combination of patient and system level factors would contribute to these rates.

METHODS

- Data and population
 - Evaluated retrospective electronic health record data from 2018-2019
 - Ambulatory care services patients aged 14-24 with a positive GC/CT nucleic acid amplification test at Denver Health
- Assessment of guideline-concordant care using Centers for Disease Control and Prevention recommendations
 - Antibiotic treatment within 14 days
 - HIV and syphilis testing within 6 months
 - GC/CT retesting within 60 days to 6 months
- Statistical analysis
 - Bivariate and multivariable regression modeling utilized to assess the association of factors with guideline-concordant care
- This project was approved by the Colorado Multiple Institutional Review Board

RESULTS

Rates of guideline-concordant management for gonorrhea and chlamydia from 2018-2019 at Denver Health, Denver, CO.

	Gonorrhea (N=484)		Chlamydia (N=2125)	
	N	% (95% CI)	N	% (95% CI)
Appropriate treatment				
Treated day of test	150	31.0 (0.27, 0.35)	664	31.3 (0.29, 0.33)
Treated within 2-7 days of test	231	47.7 (0.43, 0.52)	1006	47.3 (0.45, 0.49)
Treated within 8-14 days of test	40	8.3 (0.06, 0.11)	184	8.7 (0.08, 0.1)
No treatment	63	13.0 (0.10, 0.16)	271	12.8 (0.11, 0.14)
Laboratory studies completed				
HIV ^a	284	58.7 (0.54, 0.63)	1127	53.0 (0.51, 0.55)
Syphilis ^b	265	54.8 (0.5, 0.59)	1041	49.0 (0.47, 0.51)
Re-testing for GC/CT ^c	205	42.4 (0.38, 0.47)	835	39.3 (0.37, 0.41)
Appropriate management completed (treatment and labs completed within time frame)	182	37.6 (0.33, 0.42)	741	34.9 (0.33, 0.37)

^a Testing completed on the day of the initial test or within 6 months after positive CT/GC NAAT

^b Testing completed on the day of the initial test or within 6 months after positive CT/GC NAAT. Syphilis enzyme immunoassay (EIA)

^c Re-testing completed between 6 months after initial GC/CT NAAT.

- Total GC/CT tests performed during study period=27,168
- Gonorrhea: 484 positive (1.8% positivity rate)
- Chlamydia: 2125 positive (7.8% positivity rate)
- Factors significantly associated with receiving elements of guideline-concordant care: aOR (95% CI)
 - Patients with documented condom use: 1.408 (1.072, 1.850), 1.276 (1.081, 1.506), 1.488 (1.252, 1.768)
 - Patients who self-identify as not heterosexual: 1.278 (1.001, 1.633)
 - Patients with a history of gonorrhea: 1.725 (1.072, 2.776), 1.754 (1.104, 2.788)

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CONCLUSIONS

- This study confirms sub-optimal rates of guideline-concordant management after diagnosis with a GC or CT infection.
 - Issues to address
 - Social determinants of health involving transportation, insurance, and other difficulties
 - Variability in care across sites and a lack of systems in place to assure follow-up
 - Consider utilization of active recall, integrated health educators, standardized ordering/documentation tools and prescribing via decision support^{2,3}.
- Empiric antibiotic use occurred in 31-31.3%. This likely results in significant antibiotic overuse⁴.
 - Ensure adequate outpatient follow-up and rapid diagnostic testing⁵.
- Study limitations
 - Lack of generalizability given data from a single-center site
 - Could not determine what portion of follow-up care issues came from patient vs. system level factors
- Untreated sexually transmitted infections lead to increased rates of transmission and may lead to serious complications, which are major causes of morbidity and mortality in reproductive-aged women^{1,6}.
- There is a critical need for further improvements in management in order to decrease complications, reduce transmission, and combat the growing STI epidemic.

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DISCLOSURES

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