

# High Prevalence of *Neisseria gonorrhoeae* Among Emergency Department “Superusers” in a Large Urban Medical Center

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## Background

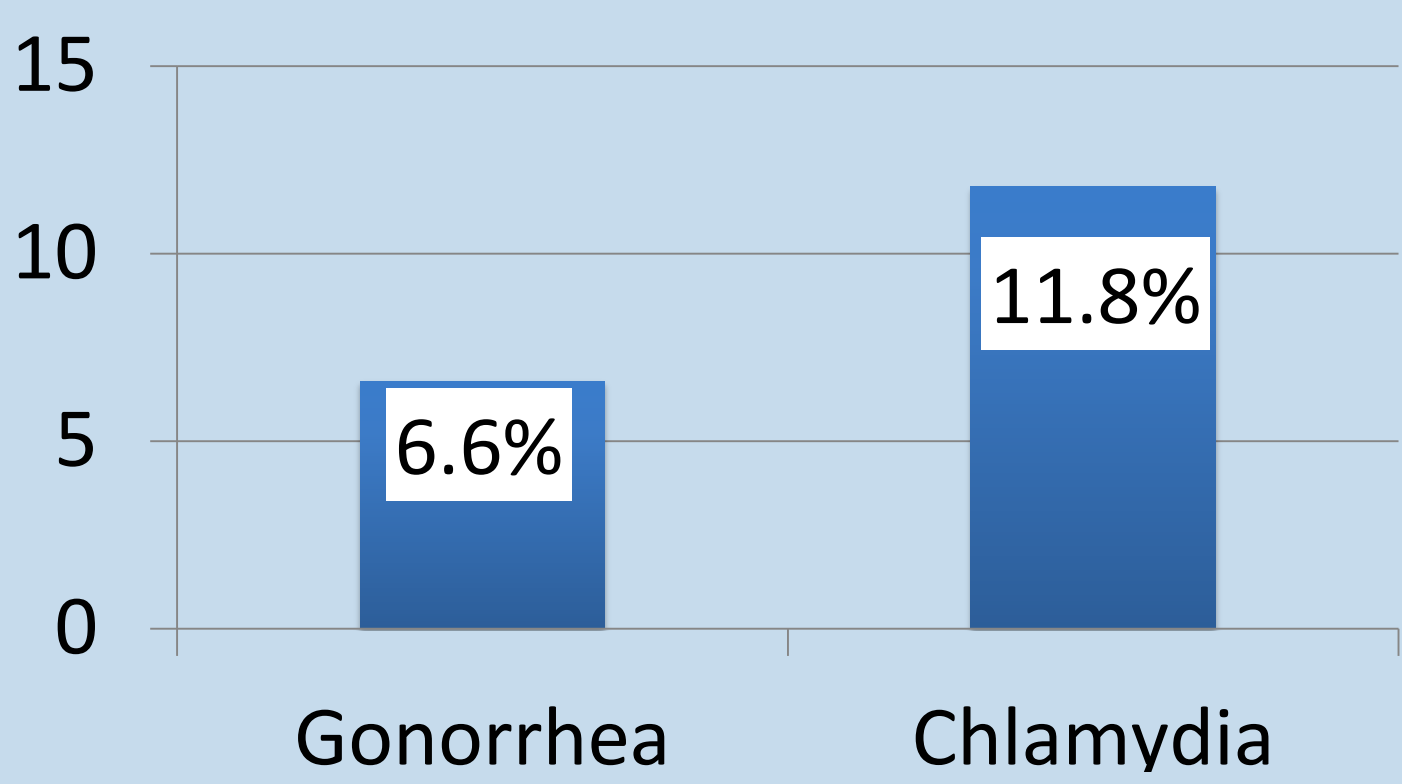
- Sexually Transmitted Infections (STIs) remain prevalent in urban populations and are often diagnosed in emergency departments (ED).
- St. Louis, Missouri has some of the highest per capita rates of STIs in the US. Approximately 20% of STI cases are diagnosed in EDs.
- With decreased public health funding and limited access to health insurance options, many patients in the St. Louis region still do not have access to regular health care.
- EDs continue to play an important roll in the care for STIs.

## Methods

- We conducted a retrospective study of all ED patients evaluated for *Neisseria gonorrhoeae* (GC) and *Chlamydia trachomatis* (Ct) infection by nucleic acid amplification testing between July 1, 2012 and June 30, 2014.
- We defined patients as “single users” if they were tested once in the study period and as “superusers” if they were tested more than once in the study period.
- Patient records were examined for demographic characteristics, diagnoses, medications administered, and testing results.
- Descriptive statistics were performed. All tests of significance were via Chi square, Fishers exact tests
- This study was approved by the WU IRB.

## Results

Fig. 1: Prevalence of GC and Ct in study population



## Results

- Approximately 183,000 ED patient visits occurred during the study period.
- Of these, 6,518 visits (3.6%) resulted in STI testing for 5,431 patients.
- ED STI prevalence rates mirrored rates in the regional STD clinic as published by the health department. (Fig. 1).
- 758 patients (14%) were tested more than once on separate visits to the ED during the study period and defined as “superusers”.
- Superusers were responsible for 28% of the visits and comprised 14% of the patients (758/5431) (Fig. 2).
- Superusers were more likely to be female, African American, and younger in age than non-superusers (Table 1).
- Superusers were more likely than non-superusers to have a positive test for GC (  $p<0.001$ ) and Ct ( $p<0.001$ ) (Fig. 3.)

Characteristics	Single Users (n=4673)	Super Users (n=758)	P Value
GENDER			
Male	1117 (23.9)	334 (18.2)	<0.001
RACE			
Black	3640 (77.9)	1625 (88.1)	<0.001
White	801 (17.3)	138 (7.5)	
AGE			
13-19 yo	507 (10.9)	254 (13.8)	<0.001
20-24 yo	1430 (30.6)	730 (39.6)	
25-29 yo	947 (20.3)	361 (19.6)	
30-39 yo	945 (20.2)	355 (19.2)	
40+	844 (18.1)	145 (7.9)	

Fig. 2: Number of visits/ tests in ED by superusers

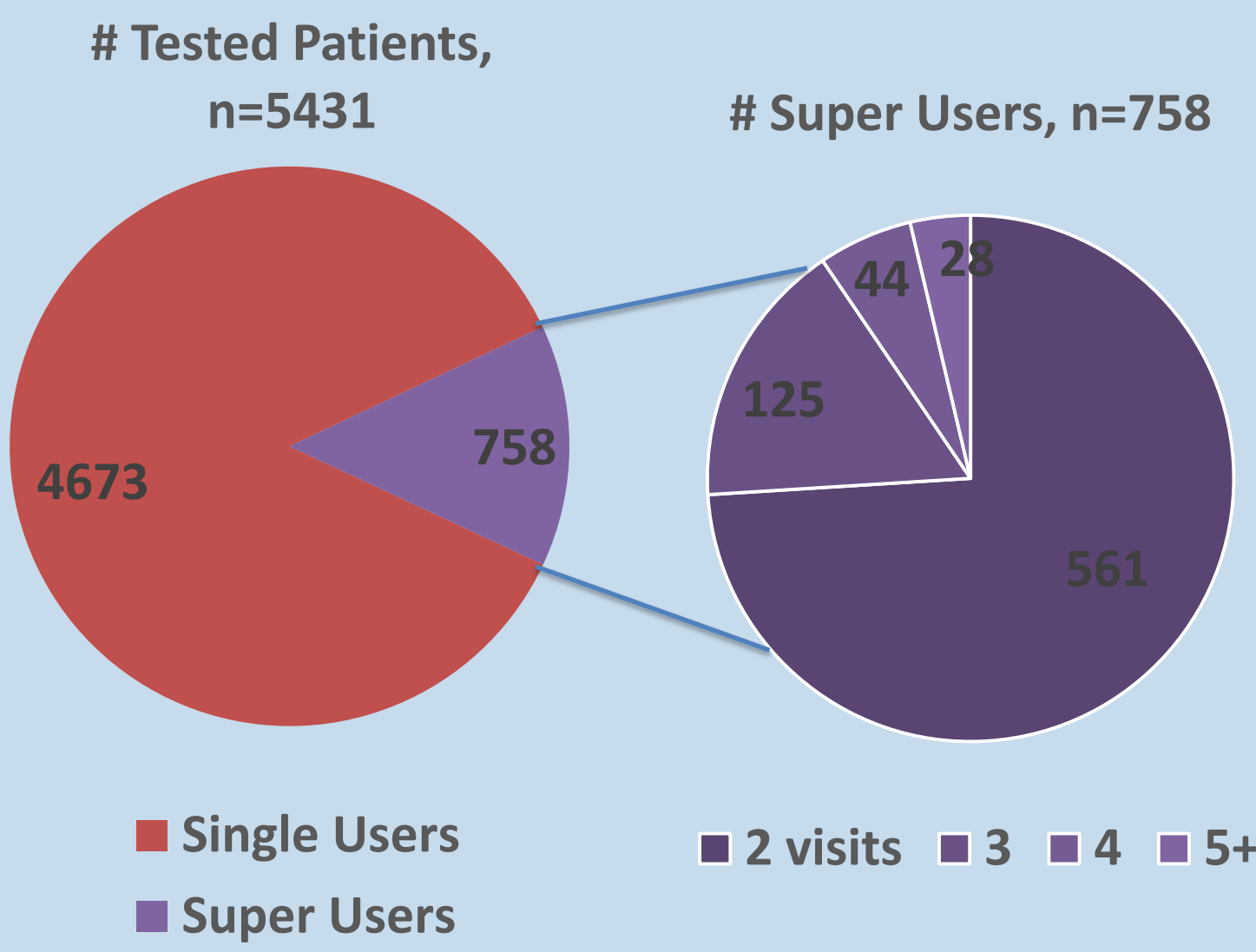
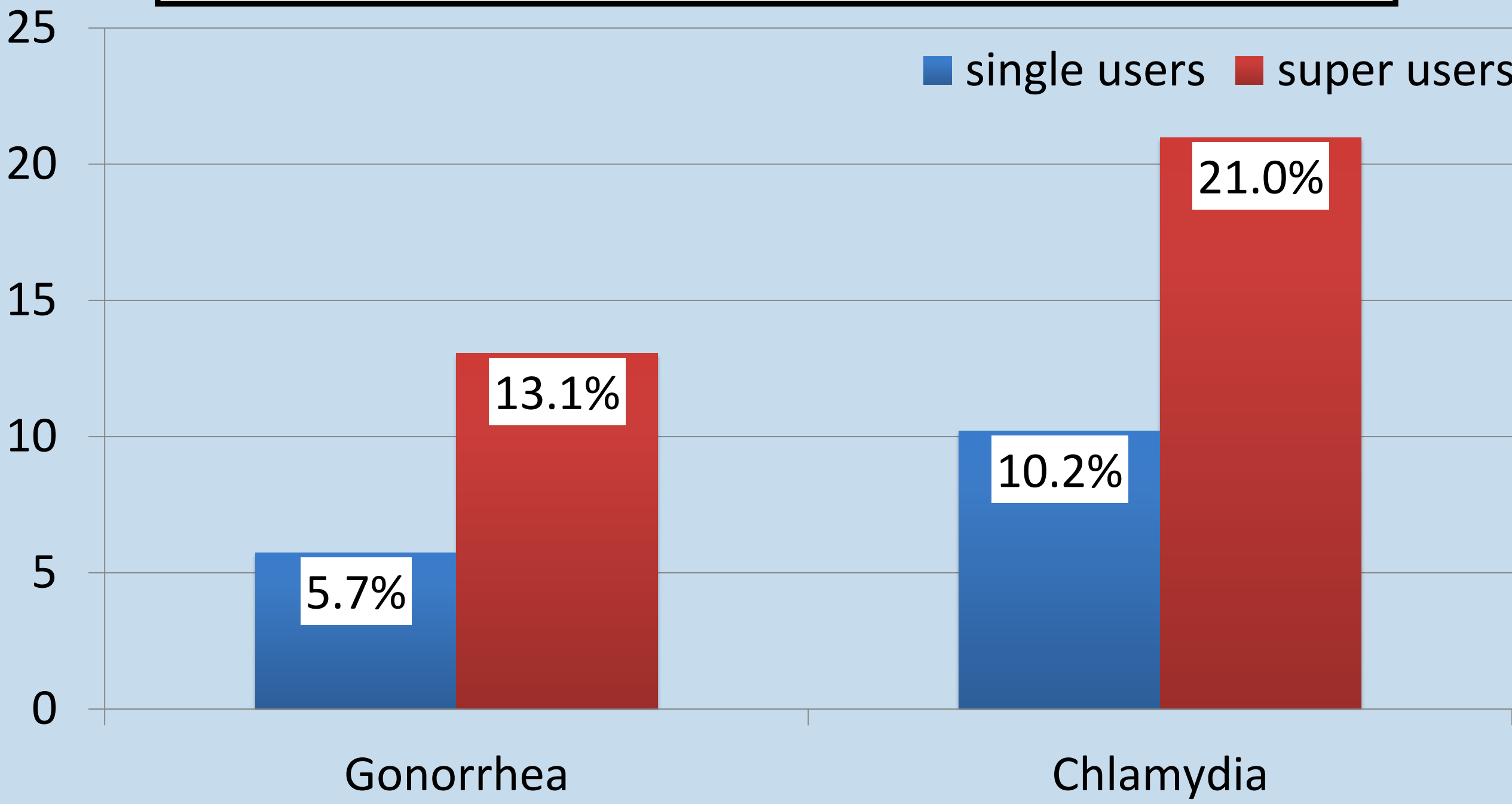


Fig 3. Infection Prevalence by User Status



## Conclusions

- Our study revealed a significant burden of STI-related diagnoses, especially GC, in the urban ED setting by both volume of patients seen and by the high prevalence of STIs.
- ED superusers, or those patients with more tests, were more likely to be young African American female patients.
  - This may reflect that superusers were more likely to be a highly tested population of patients.
  - But ED super-users were more likely to have a positive test than those tested patients only tested once, and may represent a higher risk population.
- The prevalence of GC in superusers was over twice the prevalence rate in non-superusers. This represents a significant burden of disease.

## Limitations

- Only ED visits related to STIs were examined in this study. Superusers may utilize the ER more frequently for routine healthcare and therefore be tested for STIs more often than other patient populations.
- ED superusers for other medical problems are usually defined by a greater number of visits within a year. We used a less rigorous definition of a superuser for STI care.
- Additional information has been gathered but not yet analyzed that may influence testing decisions and patient care:
  - Whether the patient presented with symptoms.
  - Insurance status.
  - History of STI.

## Contact Information

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