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Community-based Implementation of Centers for Disease Control and Prevention's Recommended Screening for Sexually Transmitted Infections Among Youth at High Risk for HIV Infection in Los Angeles and New Orleans

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Abstract

We examined whether the implementation of the Centers for Disease Control and Prevention's recommended screening of *Chlamydia trachomatis*/*Neisseria gonorrhoeae* with proactive follow-up among high-risk youth recruited from community and clinic settings reduced future *C. trachomatis*/*N. gonorrhoeae* diagnoses. After the Centers for Disease Control and Prevention's recommendations demonstrated a 41% decline in sexually transmitted infections; 3 tests in 1 year resulted in a 10% decline.

Of the estimated 19 million new cases of sexually transmitted infections (STIs) that occur each year, young people aged 15 to 24 years are disproportionately affected by STIs, accounting for approximately half of all cases each year.^{1,2} In 2018, rates of reported *Neisseria gonorrhoeae* (NG) and *Chlamydia trachomatis* (CT) cases continued to be highest among adolescents and young adults.¹ Since 2013, reported NG has increased 67% among young people and 22% for CT, with the highest rates among black and Latino youth.² Reducing those STI among young people is critical, especially as we aim to eliminate HIV infections.

To concurrently reduce STI and HIV we must target youth at highest risk for both infections: (1) young men who have sex with men (MSM), who reflect 21% of the US HIV epidemic¹ and only 2% of the population of young people,² and (2) youth with multiple problem

behaviors and risks (i.e., substance use, sexual risk behaviors, housing insecurity, criminal justice system contact, and mental health challenges).³ This article examines a low-cost strategy for reducing STIs for 12 months among high-risk youth: repeat testing of NG and CT and HIV infection at 4-month intervals.

The Centers for Disease Control and Prevention (CDC) recommends that high-risk MSM and transgender (TG) youth be tested for CT/NG at least annually, with every 3 to 6 months being the preferred schedule if youth are engaging in risk behaviors.⁴ However, implementation of those recommendations has not been evaluated. There has been a systematic review of research relevant to this topic,⁵ concluding the need for additional evaluations and cost analysis for strategies to manage STIs and HIV infection.

Given that routine repeated screening for CT/NG in all youth might not be cost-effective,⁶ targeted screening of asymptomatic youth is warranted. We examined whether the implementation of the CDC's recommended repeat screening for CT/NG with proactive follow-up among high-risk youth recruited from community and clinic settings reduced future CT/NG diagnoses.

METHODS

We recruited youth aged 12 to 24 years from homeless shelters, clinics, social networking apps, and organizations serving lesbian, gay, bisexual, TG, queer youth in Los Angeles, California, and New Orleans, Louisiana, from May 2017 to March 2018. Only youth with at least 7 of the following risk factors in the last year met the screening criteria: gay or bisexual identity, MSM, TG, gender nonconforming (GNC), jailed/incarcerated homeless, hospitalized for mental health disorder, condomless sex with a person living with HIV rape or traumatic assault, positive for alcohol or drugs on rapid diagnostic tests, suicide attempt, transactional sex, African American, or Latinx/Hispanic. Screening and follow-up interviews were conducted every 4 months for 12 months. All youth received point-of-care pharyngeal, rectal, and urethral/vaginal CT/NG testing using self-collected specimens and the Xpert CT/NG Assay (Cepheid Sunnyvale, CA), a qualitative, Food and Drug Administration–approved 90-minute polymerase chain reaction test.⁷ The University of California Los Angeles Institutional Review Board approved this study (IRB No. 16-001674), with registration at [ClinicalTrials.gov](https://clinicaltrials.gov) (No. [NCT03134833](https://clinicaltrials.gov/ct2/show/study/NCT03134833)).

The covariate we consider is a binary gender identity and sexual behavior variable, which categorizes participants as either MSM/TG/GNC or cis-gender heterosexual/lesbian (CHL), with the former representing the group at highest risk for HIV infection and most likely to be routinely tested annually or more frequently under CDC guidelines.

To account for longitudinal data correlations, we applied logistic mixed models with a random intercept. We modeled the variance between an individual's assessments using an autoregressive first order process, with a reasonable assumption that subsequent assessments are linearly correlated with previous ones. To account for nonlinear trends in CT/NG diagnoses over time, we modeled time categorically. Gender identity categories showed

different baseline prevalence of CT/NG and different longitudinal trends; therefore, we included an interaction term for the gender/sexual identity variable by time.

RESULTS

At baseline, there were 437 youth screened for CT and NG, and 294, 292, and 293 youth were rescreened at 4-, 8-, and 12-month follow-up visits, respectively. Over the 12-month observation period, 52.8% of youth were tested 4 times, at each 4-month interval; 22.6% were tested 3 times; 11.3% were tested twice; and 13.2% were tested only at baseline. cis-Gender heterosexual/lesbian youth were 74% African American, 13% Latino/a, and 12% white or other. Among MSM/TG/GNC youth, 43% were black, with 26% Latino, 9% Asian, and 16% white, non-Latino. Sociodemographic and lifetime risk factors between CHL youth ($n = 331$) and MSM/TG/GNC youth ($n = 107$) were comparable, with the exception of MSM/TG/GNC youth reporting higher lifetime rates of exchanging sex. We found no difference in baseline sexual risk behaviors between youth with and without completing every 4-month follow-up assessment.

When comparing the frequencies of CT/NG diagnoses between CHL (10.3% at baseline) and MSM/TG/GNC youth (18.9% at baseline), we observed a significant decline in diagnoses among MSM/TG/GNC youth from baseline (18.9%) to 4 months (4.1%), with an 80% lower adjusted odds (adjusted odds ratio, 0.20; 95% confidence interval, 0.07–0.61), and from baseline to 12 months (7.8%) with approximately 60% lower odds (adjusted odds ratio, 0.38; 95% confidence interval, 0.15–0.94).

Figure 1 shows the percentage of positive STI test results based on the number of follow-up assessments. Youth with assessments every 4 months for 1 year demonstrate a 41% decline in STIs; 3 tests in 1 year result in a 10% decline. Youth with only 2 assessments (baseline and 12 months) show a doubling of the STI frequency; however, this reflects only 15 youth.

DISCUSSION

As CT/NG rates continue to rise, there is an urgent need to demonstrate the potential benefit of regular screening among asymptomatic high-risk youth. Implementation of CDC's recommended CT/NG screening at targeted community settings using point-of-care testing with same-day treatment may be effective in reducing the prevalence CT/NG infections and preventing new infections among high-risk youth. Based on the results of this study, MSM/TG/GNC seem to benefit from repeated CT/NG screening and same-day treatment every 4 months. A limitation, however, is that the youth who completed all assessments present self-selection bias relative to their peers. If similar trends are observed among larger samples, there may be sufficient evidence to support routine implementation of more frequent STI screening with proactive outreach and follow-up and same-day treatment among high-risk youth at targeted community and clinic settings.

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REFERENCES

1. Centers for Disease Control and Prevention. Sexually Transmitted Disease Surveillance 2018. Atlanta, GA: U.S. Department of Health and Human Services, 2019. doi:10.15620/cdc.79370.
2. Satterwhite CL, Torrone E, Meites E, et al. Sexually transmitted infections among US women and men: Prevalence and incidence estimates, 2008. *Sex Transm Dis* 2013; 40:187–193. [PubMed: 23403598]
3. Gerassi L, Jonson-Reid M, Drake B. Sexually transmitted infections in a sample of at-risk youth: Roles of mental health and trauma histories. *J Child Adolesc Trauma* 2016; 9:209–216. [PubMed: 27746853]
4. Oster AM, Miles IW, Le BC, et al. HIV testing among men who have sex with men—21 cities, United States, 2008. *MMWR Morb Mortal Wkly Rep* 2011; 60:694–699. [PubMed: 21637183]
5. DiNenno EA, Prejean J, Delaney KP, et al. Evaluating the evidence for more frequent than annual HIV screening of gay, bisexual, and other men who have sex with men in the United States: Results from a systematic review and CDC expert consultation. *Public Health Rep* 2018; 133:3–21. [PubMed: 29182894]
6. Workowski KA, Bolan GA, Centers for Disease Control and Prevention. Sexually transmitted diseases treatment guidelines, 2015. *MMWR Recomm Rep* 2015; 64(RR-03):1–137. Erratum in *MMWR Recomm Rep*. 2015; 64:924. Available at: <https://www.cdc.gov/mmwr/preview/mmwrhtml/rr6403a1.htm>.
7. Cepheid. Xpert CT/NG Assay. Available at: <http://www.cepheid.com/us/cepheid-solutions/clinical-ivd-tests/sexual-health.xpert-ct-ng>. Archived a: <http://www.webcitation.org/6ykmz0Nnk>.

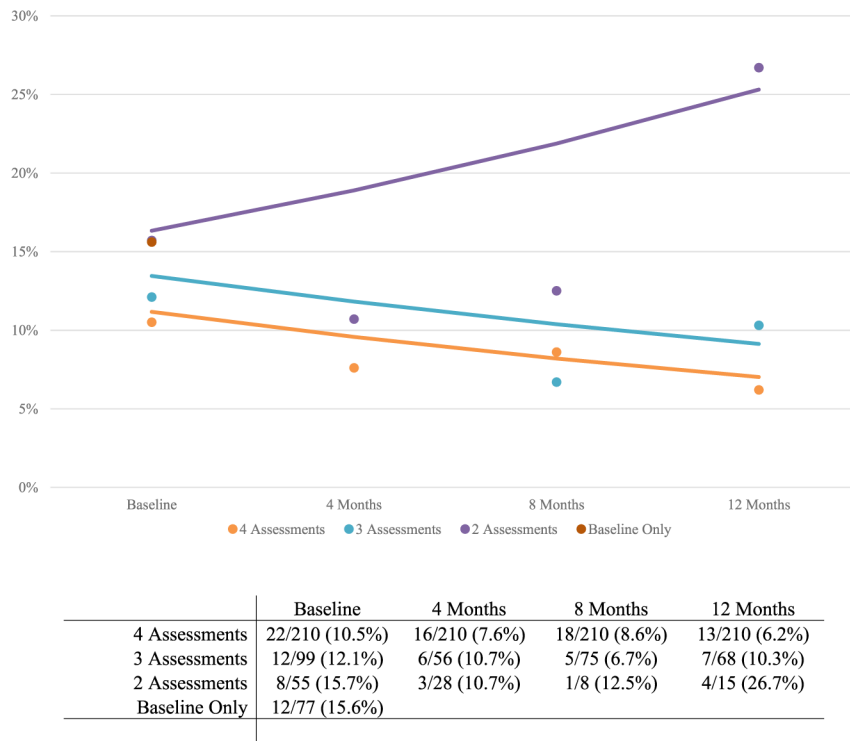


Figure 1. The percentage of positive STI test results based on the number of follow-up assessments.