

Gonorrhoea positivity among women aged 15–24 years in the USA, 2005–2007

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ABSTRACT

Objective To examine the epidemiology of young women screened for gonorrhoea in the USA.

Methods Data on tests for gonorrhoea among women aged 15–24 years attending family planning clinics from 2005 to 2007 were obtained through the infertility prevention project. Clinics testing 90% or more of women for gonorrhoea and sending 50 or more gonorrhoea tests per year were included. Gonorrhoea positivity on a state and county level was calculated and compared by age and race/ethnicity.

Results A total of 1 119 394 tests from 948 clinics was eligible for inclusion. Median state-specific gonorrhoea positivity was 1.3% (IQR 0.7–2.0%). Positivity was higher among women aged 15–19 years (1.4%, IQR 0.9–2.6%) than among those aged 20–24 years (1.1%, IQR 0.6–1.4%, $p=0.03$) and among non-Hispanic black women (3.8%, IQR 3.2–4.6%) than non-Hispanic white women (0.6%, IQR 0.4–0.8%, $p<0.0001$). Half of all gonorrhoea cases in these women originated from 57 of 753 counties. Among non-Hispanic white women, positivity was 2.0% or greater in 4% of counties, while 83% of counties had gonorrhoea positivity of less than 1.0%. Gonorrhoea positivity among non-Hispanic black women was 2.0% or greater in 58% of counties, and less than 1.0% in only one-third of counties. These disparities were present diffusely across the geographical areas included in this analysis.

Conclusions Gonorrhoea positivity was consistently high for young non-Hispanic black women attending family planning clinics across multiple geographical regions. A large proportion of gonorrhoea morbidity was concentrated in a relatively small number of counties in the USA among this population of young women.

Gonorrhoea is the second most commonly reported notifiable disease in the USA, with the highest case rates reported among adolescents and young women.¹ Gonorrhoea rates for black men and women are 19 times higher than for white individuals, the greatest racial/ethnic disparity of any notifiable condition. Gonorrhoea is frequently asymptomatic; thus case report data are impacted by screening practices. It is unclear, however, how differences in screening practices contribute to apparent disparities in case report data.^{1–2} Prevalence data probably provide a better estimate of racial disparities in gonorrhoea.

The US infertility prevention project (IPP) supports the screening of young women seeking services at family planning and other clinic settings for chlamydia and gonorrhoea.^{3–4} While chlamydia data are commonly presented, gonorrhoea data

have been analysed less frequently.⁵ This analysis uses national IPP data to describe gonorrhoea positivity among women aged 15–24 years who attended family planning clinics, selecting for clinics that routinely screen women for gonorrhoea, thus permitting an approximation of gonorrhoea prevalence by minimising potential screening bias.

MATERIALS AND METHODS

Data sources

Gonorrhoea test results among women aged 15–24 years who attended family planning clinics were obtained from standardised data reported by all 10 IPP regions from 1 January 2005 to 31 December 2007. Participating clinics routinely screen sexually active women aged 25 years or less for chlamydia. Clinics included in this analysis tested 90% or more of these women for gonorrhoea and conducted 50 or more gonorrhoea tests per year in each calendar year. These criteria were used to identify sites where women screened for chlamydia were also routinely screened for gonorrhoea.

Laboratory methods

Gonorrhoea testing protocols were not uniform among clinics. Nucleic acid amplification tests (NAAT) accounted for the majority (80%) of tests performed, distributed as follows: APTIMA Combo 2 (GenProbe, San Diego, California, USA) 59%; BD ProbeTec CT/GC (Becton Dickinson and Co, Franklin Lakes, New Jersey, USA) 18%; and Amplicor and COBAS (Amplicor, Roche Diagnostics Corp, Basel, Switzerland) 3%. Non-NAAT included PACE2 CT/GC, GenProbe, 10%, and culture, 0.1%. Other trial assays (nucleic acid probe, enzyme immunoassay, Gonostat (Sierra Diagnostics, Sonora, California, USA)) 10% were used primarily in 2006 by two regions.

Statistical analyses

Tests with unsatisfactory or indeterminate results (0.2%) were excluded. Positivity was calculated by dividing the number of positive gonorrhoea tests by the total number of gonorrhoea tests that were either positive or negative. Categorical values were examined using the χ^2 method. Median gonorrhoea positivity among different population groups was compared using Kruskal–Wallis tests.

RESULTS

A total of 1 119 394 of 2 390 837 (46.8%) gonorrhoea tests met the inclusion criteria. Women aged 15–19 years accounted for 43.5% of tests. Women reported their race and ethnicity as follows: 56%

non-Hispanic white; 25% non-Hispanic black; 13% Hispanic; 1.6% Asian/Pacific Islander/native Hawaiian; 0.25% American Indian/Alaska native and 4% other or unknown.

Overall gonorrhoea positivity was 1.59% (95% CI 1.57 to 1.61). Black women had the highest positivity (4.24%, 95% CI 4.16 to 4.32), followed by American Indian/Alaska native (1.25%, 95% CI 0.83 to 1.67), Asian/Pacific Islander/native Hawaiian (0.98%, 95% CI 0.84 to 1.12), white (0.65%, 95% CI 0.62 to 0.67) and Hispanic women (0.59%, 95% CI 0.55 to 0.63). Gonorrhoea positivity among women aged 15–19 years (1.9%) was higher than among women aged 20–24 years (1.3%, $p < 0.0001$). Among black women aged 15–19 years, gonorrhoea positivity was 5.3% versus 0.7% among white women of the same age ($p < 0.0001$). Among 20–24-year-olds, positivity was 3.5% among black versus 0.6% among white women ($p < 0.0001$).

State-specific gonorrhoea positivity among women aged 15–24 years ranged from 0% to 3.1% with a median positivity of 1.3% (IQR 0.7–2.0%). The highest positivity was in the southern states. Positivity was higher among women aged 15–19 years (1.4%, IQR 0.9–2.6%) than among those aged 20–24 years (1.1%, IQR 0.6–1.4%, $p = 0.03$) and among black women (3.8%, IQR 3.2–4.6%) than white women (0.6%, IQR 0.4–0.8%, $p < 0.0001$). These racial disparities were present diffusely across the geographical areas included in this analysis (Figure 1). Half of all positive gonorrhoea tests originated from 57 of 753 counties. On a county level, gonorrhoea positivity among white women was 2.0% or greater in only 4% of counties and was less than 1.0% in the vast majority of counties (83%).

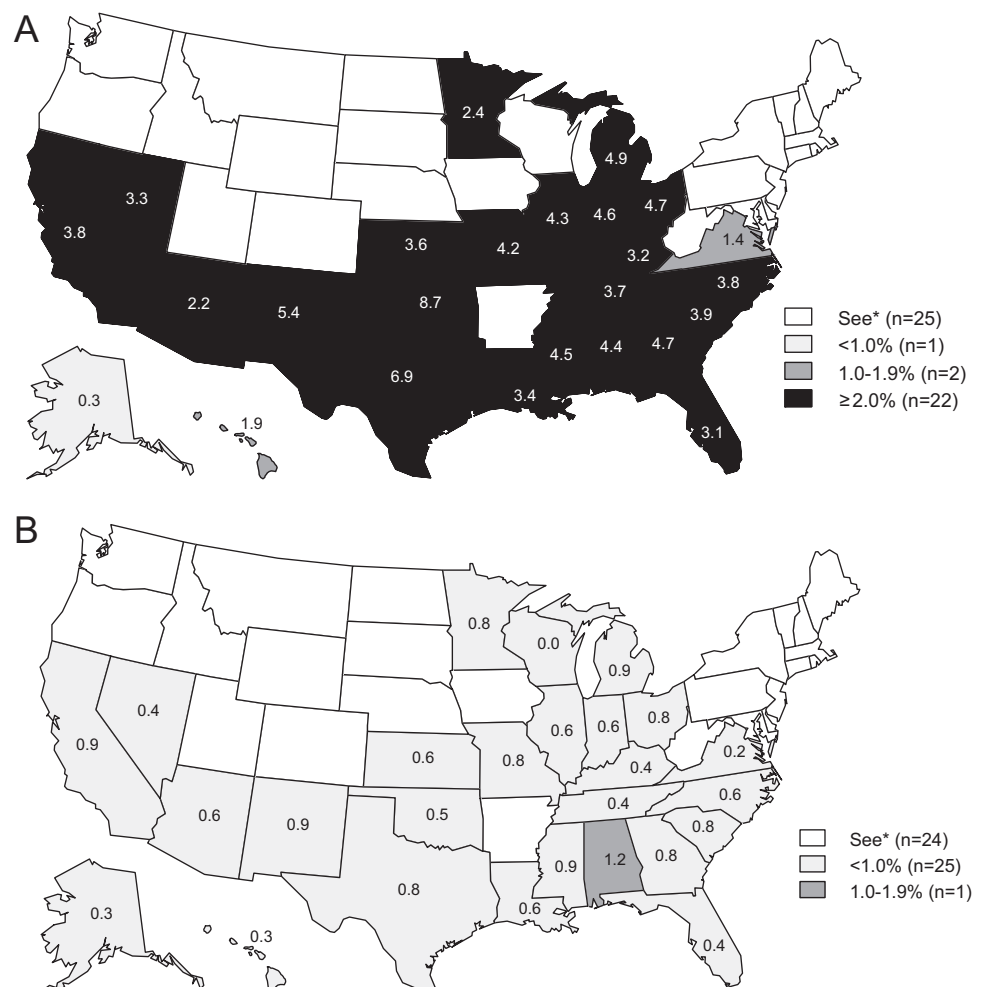
In contrast, gonorrhoea positivity among black women was 2.0% or greater in 58% of counties and less than 1.0% in only one-third of counties.

DISCUSSION

Gonorrhoea positivity among women aged 15–24 years seeking family planning services varies by age, geographical region and race/ethnicity. Young women and minority populations, particularly black women, are disproportionately affected by gonorrhoea. Gonorrhoea positivity among black women was six times higher than among white women, similar to the fourfold difference seen in population prevalence data from National Health and Nutrition Examination Survey in 1999–2006^{6 7} but lower than the 19-fold difference observed in case reporting data.¹ These disparities were widely present across the geographical areas included in this analysis.

Our analysis is subject to several limitations. These data represent a subset of young women seeking care at family planning clinics participating in IPP and are not representative of all women. Screening and testing policies could vary from site to site. We have no data on women who may present to clinic and are not offered screening. The influences of area of residence, clinic participation in the IPP and regional and facility policies on gonorrhoea screening coverage are unknown. Data on potential behavioural and sexual risk factors for sexually transmitted disease acquisition are not available within the standardised database, limiting our ability to understand observed disparities more fully. Our data are not linked to individual identifiers,

Figure 1 State-specific gonorrhoea positivity. (A) Non-Hispanic black versus (B) non-Hispanic white women aged 15–24 years seen in selected family planning clinics, 2005–7. *Clinics that did not report gonorrhoea positivity data or did not routinely screen 90% or more of the women aged 15–24 years for gonorrhoea and conduct at least 50 gonorrhoea tests per year.



limiting our ability to identify women screened repeatedly within a defined time period.

Awareness and understanding of the epidemiology of health disparities is a first step to addressing them. This analysis highlights the need for more in-depth investigation of individual, community and population-level factors contributing to disparities in gonorrhoea while highlighting potential geographical areas and populations on which to focus efforts for gonorrhoea control. There is also a need for studies on the best approach to gonorrhoea screening in the USA in order to balance the prioritisation of services for populations at greatest need with the potential negative associations of targeted screening.

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Competing interests None.

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