

Benefits of Universal Opt-Out Chlamydia Screening in Adolescents: A Review

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Introduction

According to the Centers for Disease Control and Prevention (CDC), rates of chlamydia and gonorrhea infections are highest among both sexes during adolescence and young adulthood (ages 15-24 years). Chlamydia is the most common sexually transmitted disease in the US. Routine screening for *Chlamydia trachomatis* and *Neisseria gonorrhoeae* infections is recommended on an annual basis for all sexually active females aged under 25 years. There is currently insufficient evidence to recommend routine chlamydia and gonorrhea screening for sexually active young men. However, chlamydia screening is recommended for sexually active young men identified to be at increased risk, such as in high-prevalence areas. Annual screening should also be offered to all young males who have sex with males (US Preventive Services Task Force, 2021).

Women with chlamydial and gonococcal infections are often asymptomatic, which is why routine screening is so important. Untreated infection can lead to pelvic inflammatory disease and further complications such as infertility and ectopic pregnancy. Thus, screening is important to reduce these risks. Men can also be asymptomatic or present with urethritis, epididymitis, or proctitis (US Preventive Services Task Force, 2021).

Screening rates for sexually transmitted infections (STIs) among adolescents remain low. This can be due to various factors, such as decreased preventive care visits in general or lack of access to a primary care provider, barriers to accessing sexual health services, knowledge gaps about the need or importance of screening, failure to disclose sexual activity, or concerns and fears surrounding privacy and stigmatization.

In this paper we explore the current understanding of STI testing, the factors affecting testing distribution (uptake or reach), and current models of testing as reported in recent literature. The aim of this review is to increase understanding of the importance or relevance of STI screening in adolescents based on current recommendations. The objective is to find within the current literature, evidence to support or deny universal opt-out testing for young adults, regardless of risk factors.

Methodology

There are two issues associated with the aim and objective of this review. Firstly, we are interested in the causes of low testing screening rates, and secondly, in the factors that affect testing screening rate. Specifically, whether the literature supports the notion that an opt-out screening initiative could improve screening rates.

The methods used in this paper included an extensive literature review for articles on the factors affecting low STI screening rates. We also looked for articles that analyzed the benefits of opt-out screening initiatives.

PubMed was searched using the following search terms ‘STI testing’, ‘chlamydia’, ‘gonorrhoea’, ‘opt-out testing and screening rates’. This produced a large number of articles beyond the scope of this paper. Therefore, the search results were restricted to articles published in the US between 2016 and 2023, risk factors, opt-out screening, publications which were indexed in the PubMed, and publications in peer reviewed journals, which resulted in eight articles of interest.

Results

The selected studies provided insight into the prevalence, barriers, and facilitators of STI screening, as well as the impact of different screening models on testing rates and health outcomes.

The literature review highlighted three key areas: (1) Barriers to STI screening, including stigma, confidentiality concerns, and disparities in healthcare access; (2) Effectiveness of universal opt-out screening, which has been shown to significantly increase testing rates, reduce stigma, and identify asymptomatic infections that would otherwise be missed in risk-based screening models; and (3) Alternative testing locations, such as emergency departments and school-based programs, which have demonstrated potential in expanding access to STI screening for adolescents, particularly for those with limited healthcare access.

Several studies demonstrated the effectiveness of opt-out screening in increasing adolescent STI testing rates. A primary care clinic in North Carolina reported an increase in screening rates from 23.3% to 61.4% after implementing universal opt-out screening (Allison et al., 2022). Additionally, a survey of adolescents in Denver found that 93% of participants preferred opt-out testing over risk-based testing due to reduced stigma and increased privacy (Reingold et al., 2023).

Racial and ethnic disparities in STI screening were also evident, with studies showing that Black and Hispanic youth were more likely to receive STI testing in emergency departments or federally qualified health centers compared to White youth, who primarily received testing in primary care settings (Douglas et al., 2023). This highlights the need for targeted interventions to address healthcare inequities.

Lastly, alternative screening locations, such as emergency departments and schools, were identified as promising avenues for increasing STI testing. Studies showed that adolescents frequently access healthcare through emergency departments, making them a strategic location for routine STI screening. Similarly, school-based screening programs in Detroit were associated with a decline in chlamydia prevalence over five years (Dunville et al., 2018).

Overall, the literature supports universal opt-out screening as an effective strategy for increasing STI testing rates among adolescents, reducing stigma, and addressing healthcare disparities. Expanding screening locations beyond traditional primary care settings may further improve accessibility and early detection of infections, ultimately reducing the burden of STIs in this population.

Discussion

Universal opt-out gonorrhea and chlamydia testing appears to be one of the most effective ways to increase STI testing rates (Tomcho et al, 2022). In a survey of adolescents and emerging adults in primary care clinics in Denver, Colorado, 93% of participants preferred opt-out gonorrhea and chlamydia testing compared to 6% of participants who preferred risk-based testing (Reingold et al, 2023). The survey showed that opt-out testing was related to decreased STI-related stigma and feeling of discrimination compared with the risk-based testing. Fear of stigmatization and confidentiality concerns contribute to low STI testing rates in adolescents, despite routine screening guidelines (Reingold et al, 2023). Risk-based testing is only effective if adolescents feel comfortable enough to report sexual activity to their healthcare providers, but often they do not. Opt-out testing has also been shown to significantly reduce testing inequities and stigmatization in the setting of race, gender, language preferences, and types of health insurance (Tomcho et al, 2022). In a primary care clinic in North Carolina that transitioned to universal opt-out screening, their screening rate of adolescents increased from 23.3% to 61.4%, a statistically significant increase (Allison et al, 2022). They also noted that almost half of the screenings that came back positive for chlamydia were in adolescents that reported no sexual activity. These adolescents would have otherwise been missed in a risk-based screening model and time to treatment would have been much longer (Allison et al, 2022). If the preference in how adolescents are tested can contribute to lower STI-related stigma and alleviate confidentiality concerns, offering opt-out testing could lead to improved patient satisfaction, reduced health inequities, and increased gonorrhea and chlamydia testing rates.

To address disparities in STI testing, it is necessary to learn where adolescents receive these services. In a recent study of Medicaid-insured youth that analyzed the relationship between an adolescent's race/ethnicity and the locations where they received gonorrhea and chlamydia testing, most tests were ordered at medical offices regardless of the adolescent's race/ethnicity (Douglas et al, 2023). However, white youth (49.3%) had a greater proportion of testing ordered in a medical office compared with black youth (37.6%) and Hispanic youth (37.3%). The study revealed that the emergency department was the second most common location where testing occurs. Black youth (19.6%) were more likely to receive testing in the emergency department compared with white youth (13.1%) and Hispanic youth (10.6%) Douglas and colleagues (Douglas et al 2023) reported that Hispanic youth (19.0%) had a higher proportion of tests ordered at Federally Qualified Health Centers (FHQCs) compared with white youth (5.3%) and black youth (6.3%). Douglas and colleagues argue that there are racial/ethnic disparities among adolescents for where they receive chlamydia and gonorrhea testing. The information related to racial disparities can potentially be used to promote and increase STI testing among adolescents by helping to close the health equity gap. The data that points out how different ethnic groups seek out care related to STIs doctors can customize interventions that adjust to these factors and therefore might be more effective in these populations.

Adolescents frequently use the emergency department for healthcare services (in the US 15% of all ED visits are adolescents) and as mentioned above, it is the second most common location where gonorrhea and chlamydia testing occurs outside of a primary care office. Given this, the emergency department can be a beneficial resource for adolescents in the diagnosis and treatment of STIs. There are currently no guidelines or recommendations for emergency department-based gonorrhea and chlamydia screening and screening in this setting is not typically routine. A study in an urban pediatric emergency department where gonorrhea and chlamydia screening was performed on consented adolescents who presented

with a non-genitourinary chief complaint, showed that 10% of these asymptomatic adolescents were positive for gonorrhea and/or chlamydia (Schneider et al, 2016). This again highlights the importance of screening to prevent continued community spread and reduce the risk of any long-term complications from infection. This study also showed that non-white adolescents were more likely to have a positive screen, something that the CDC has also previously reported where rates of infection in adolescent black females are 5 times higher than that of white adolescent females. The same holds true for black adolescent males, who have 9.5 times the infection rate of white adolescent males (Schneider et al, 2016). Nearly 90% of the adolescents who agreed to participate in this study reported that they do have a Primary Care Physician (PCP), which creates an area of opportunity to increase screenings during preventive care visits. Interestingly, this study did not show an increased refusal of STI screening when parents or other people were present in the room. The authors speculated that since they did not ask participants about sexual activity, adolescents felt more comfortable agreeing to the screening even with parents in the room (Schneider et al, 2016). In another study where adolescents and their parents were interviewed in two pediatric emergency departments regarding their attitudes about the potential benefits of offering STI screening to all adolescents who present to the emergency department, 93% of adolescents and 98% of parents supported offering the screenings in the emergency department (Reed et al, 2017).

To help improve screening rates in an era of decreasing adolescent preventive care visits, there needs to be other ways for adolescents to access sexual health services outside of the traditional primary care setting and emergency department. School-based screening events in four public high schools in Detroit, Michigan showed that over the span of 5 years, the prevalence of *C. trachomatis* infections decreased from 10.24% to 6.27%. These adolescents had otherwise very limited access to public STD testing (Dunville et al, 2018). This shows that schools can play an important role in providing access to STD screening for adolescents and potentially contribute to decreasing infection rates in this population and reducing time to treatment. School-based STI screening programs can also help with potential transportation and cost restraints related to seeing a healthcare provider in the primary care office (Ronn et al, 2020). School-based screening can also provide an opportunity for STI education, especially for those adolescents who do not have a PCP or for those who otherwise do not have access to healthcare services.

Conclusion

The literature review reported in this paper suggests that screening rates for gonorrhea and chlamydia continues to remain low and there are a number of factors that may be affecting it. These factors include confidentiality concerns, stigmatization, disparities in STI testing, lack of access to healthcare services, and inadequate knowledge of the reasons for screening. Universal opt-out screening has demonstrated an increase in overall testing rates and can lead to a decrease on the effect of STI-related stigma since adolescents prefer this method over risk-based screening. A potential downside to opt-out screening in the primary care setting can be an overall decrease in discussing sexual health during preventive health visits. Most gonorrhea and chlamydia tests are ordered in the outpatient primary care office, with the emergency department being the second most common testing location. Preferred screening location provides the focus needed to develop screening guidelines for the emergency department in order to achieve a decrease health equity gap due to differentials in race and gender. Increased testing in the emergency department can lead to decreased community spread and reduce the risk of complications given that adolescents with positive screening tests are often asymptomatic and might have otherwise been overlooked. School-based STI

screening appears to be an important tool in offering greater and ease of access to sexual health services for adolescents. This can also lead to a decrease in community infection rates and provide opportunities for education. Future research on educating adolescents about their own risk of STI and the complications of an untreated infection would be beneficial to see if this will lead to adolescents feeling more comfortable about having discussions of sexual health with healthcare providers and hopefully lead to an increase in screening rates.

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