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Implementation of a Risk Assessment Tool to Increase Screening for Extragenital Gonorrhea and Chlamydia in Men Who Have Sex with Men

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Executive Summary

Introduction

In the United States, gonorrhea and chlamydia account for the majority of sexually transmitted infections (STI) and are estimated to cost almost $1 billion in direct medical expenses annually (Centers for Disease Control and Prevention, 2018). Oftentimes, gonorrhea and chlamydia are thought to infect only the urogenital tract; however, these infections can be harbored at extragenital sites as well, including the rectum and oropharynx. Routine extragenital screening recommendations exist for populations deemed higher risk, such as men who have sex with men (MSM). However, screening does not appear to be completed consistently despite evidence in the literature supporting its use. In many instances, STI screening may only include screening for urogenital infections in this population; therefore, MSM may be at higher risk of undiagnosed extragenital gonorrhea and chlamydia infection.

Primary care is an area of medicine focused on the prevention of many diseases and is a suitable place to perform routine extragenital screenings; yet, there is a significant mismatch between current screening rates and screening recommendations throughout the United States. The clinical site where this project was implemented did not regularly offer screening for extragenital gonorrhea and chlamydia. Prior to this project, many of the participating clinicians reported a lack of knowledge regarding who should be offered screening, how to order screening tests, and how to complete testing. Additional barriers such as clinician comfort, patient comfort, and lack of patient education were also identified. These barriers were collectively addressed through the implementation of a risk assessment tool that would allow for better screening rates of extragenital gonorrhea and chlamydia in MSM within the primary care setting.

Literature Review

Gonorrhea and chlamydia are the two most frequently diagnosed bacterial sexually transmitted infections (STI) worldwide (World Health Organization, 2015). MSM are disproportionately affected by STIs (Earnest et al., 2020; Johnson-Jones et al., 2019), and extragenital gonorrhea and chlamydia infections are common within this population. In addition, certain sexual behaviors in this population, such as condomless receptive anal intercourse and oral sex, can increase the likelihood of infection at extragenital locations (Kumar et al., 2020). The majority of gonorrhea and chlamydia cases in MSM are thought to be asymptomatic (Passaro et al., 2018; Yang et al., 2018). This includes infections at any anatomic site (urogenital, rectal, and oropharyngeal) but particularly at extragenital locations.

Research conducted through 2015 reported that prevalence ranges for rectal gonorrhea were 0.2-24% (median 5.9%) and for rectal chlamydia were 2.1-23% (median 8.9%). For oropharyngeal gonorrhea prevalence ranges were 0.5-16.5% (median 4.6%) and for oropharyngeal chlamydia were 0-3.6% (median 1.7%) (Chan et al., 2016). Additionally, high percentages of gonorrhea and chlamydia cases would have been missed if only urogenital screenings were completed (Anschuetz et al., 2020; Abara et al., 2016; Chan et al., 2016). In one study, 80% of MSM participants who tested positive for chlamydia and 77% who tested positive for gonorrhea were only positive at extragenital sites (Danby et al., 2016).

According to the Centers for Disease Control and Prevention (CDC) (2015), guidelines for STI screening in sexually active MSM include at least annual screening at all exposed anatomic sites (Johnson Jones et al., 2019). In addition, more frequent screening (every 3-6 months) is recommended for MSM at elevated risk for STIs and for those MSM taking pre-exposure prophylaxis medication (PrEP) (CDC, 2017b). Despite these recommendations, only

42% of American MSM reported any STI screening test within the past 12 months, and only 16% reported any extragenital screening (de Voux, Bernstein, Kirkcaldy, Zlotorzynska, & Sanchez, 2019). Lack of adherence to extragenital screening recommendations is likely to increase the overall disease burden of gonorrhea and chlamydia due to a higher risk of transmission that exists when asymptomatic extragenital infections go undiagnosed (Lutz, 2015). Furthermore, infections at extragenital sites can increase susceptibility to other more serious diseases such as human immunodeficiency virus (HIV) (Barbee et al., 2017; Katz, Dombrowski, Bell, Kerani, & Golden, 2016).

Project Methods

This project on screening men who have sex with men (MSM) for extragenital gonorrhea and chlamydia was inspired by a question of inquiry to improve the care, screening rates, and early identification of sexually transmitted infections (STI) in MSM. The project aim was to improve screening rates for extragenital gonorrhea and chlamydia in MSM within a primary care setting by using a risk assessment tool to address multiple barriers to screening. Institutional Review Board (IRB) approval was sought through OSF St. Joseph Medical Center and Southern Illinois University Edwardsville to evaluate current knowledge of providers and screening measures for this at-risk patient population. The research project was deemed non-human subject research by both IRBs.

The project was conducted at a large Internal Medicine office in Bloomington, Illinois. Eleven practicing clinicians (3 physicians, 2 physician assistants, and 6 nurse practitioners) participated in the project. Before project implementation, the clinicians completed an initial evaluation by filling out the “Clinician Knowledge of Extragenital STI Screening” questionnaire. Clinicians were then provided an educational session that included important background

information on extragenital STI infections and how to use the risk assessment tool properly. The risk assessment tool was adapted from the "Sexual Risk Assessment and Risk Factors for Sexually Transmitted Diseases" form currently used by the California Department of Public Health (California Department of Public Health, 2015). The adapted version, titled "STI Risk Screening Questionnaire for Men Who Have Sex with Men," was given to eligible patients identified by medical office assistants during the rooming process of all preventative and STI screening office visits.

Evaluation

The main instrument used for evaluation was a 10-item questionnaire titled "Clinician Knowledge of Extragenital STI Screening." This questionnaire was created to examine clinician knowledge on extragenital screening for gonorrhea in MSM and risk factors for transmission, comfort level with assessing a patient's risk status, and how frequently the clinician offered extragenital screening to their patients. This questionnaire was given to the clinicians prior to implementation of the risk assessment tool, "STI Risk Screening Questionnaire for Men Who Have Sex with Men," and seven weeks after implementation of the tool. In the follow-up questionnaire one additional question was added to better assess the effectiveness of the screening tool as a way to improve extragenital screening rates. The additional item read, "After implementation of the risk assessment screening tool, how likely are you to regularly offer screening for extragenital gonorrhea and chlamydia when appropriate?"

Prior to project implementation, 73% of clinicians reported no knowledge or only slight knowledge of extragenital STI screening recommendations for MSM, and 82% of clinicians reported no knowledge or only slight knowledge of subsequent health risks after extragenital STI. Regarding comfort, 91% of clinicians reported only slight or moderate comfort taking

detailed sexual history with MSM patients, and 82% of clinicians reported only slight or moderate comfort explaining the importance of extragenital STI screening to those patients. Finally, 73% of clinicians reported rarely offering or never offering extragenital screening as part of preventative exam, and only 18% sometimes offered extragenital screening as part of that exam. When patients sought STI screening 64% of clinicians reported rarely offering or never offering extragenital screening, and only 18% reported sometimes offering it. When a patient reported possible STI exposure, 55% of clinicians reported rarely offering or never offering extragenital screening and only 18% reported sometimes offering extragenital screening.

In the follow-up questionnaire, 82% of clinicians now reported being moderately or very knowledgeable regarding extragenital STI screening recommendations for MSM. Similarly, 82% of clinicians now reported being moderately or very knowledgeable regarding subsequent health risks after extragenital STI, while the remaining 18% reported being extremely knowledgeable. Regarding comfort, 82% of clinicians now reported being moderately or very comfortable taking a detailed sexual history with MSM patients and also with explaining the importance of extragenital STI screening to those patients. In both instances, the remaining 18% reported feeling extremely comfortable.

Finally, now only 45% of clinicians reported rarely offering or never offering extragenital screening as part of preventative exam, while 55% reported sometimes or frequently offering extragenital screening as part of that exam. When patients sought STI screening 64% of clinicians now reported sometimes or frequently offering extragenital screening, and one clinician reported always offering it. The same ratings were reported by clinicians when a patient reported possible STI exposure.

Perhaps the most important reported finding from the follow-up questionnaire had to do with the additional item that was added. Due to the narrow population focus and limited number of times the risk assessment tool could be used in practice during the seven weeks of the study, this item served as a way to gather clinicians' overall feelings of usefulness and effectiveness for the tool. With use of the risk assessment tool in practice, 45% of clinicians reported being moderately or very likely to offer extragenital screening for gonorrhea and chlamydia when appropriate; an additional 45% of clinicians reported being extremely likely.

After implementing the educational session and the risk assessment tool, clinicians had an improved knowledge base with extragenital STIs and were reportedly more comfortable discussing and offering to screen when appropriate. More importantly, clinicians reported being more likely to offer extragenital screenings with use of the risk assessment tool in place. The risk assessment tool seemed to have addressed numerous barriers that were previously preventing extragenital STI screening from taking place, including lack of clinician knowledge, lack of clinician comfort, and ease of identifying and offering screenings to eligible patients. This process and risk assessment tool allows eligible patients to be identified efficiently and risk-stratified so screening can be offered when appropriate. The clinician now has an opportunity to more easily and comfortably engage in a conversation regarding sexual health with their patients.

Several limitations exist in this project. Firstly, this project was limited by the number of clinicians participating. Since the project was implemented in a single primary care office, the number of participants was limited to 11. While results were promising among this sample, the project conclusions may not be generalizable to a larger group of clinicians. Secondly, the results of the questionnaire, particularly the initial questionnaire, may have been limited by the phrasing of the questions. A few clinicians may have incorrectly interpreted the questions on the survey as

being about general STI screening and not extragenital screening alone. This may have slightly misrepresented just how few extragenital screenings were being completed prior to implementation of the risk assessment tool. Finally, as previously mentioned, the project is limited in its narrow population focus. Since the project focused only on MSM attending preventative or STI screening visits, which collectively represented a very small number of patients, the risk assessment tool had limited ability to be used and assessed for its effectiveness.

Impact on Practice

The implementation of a risk assessment tool has allowed clinicians to better identify MSM at high risk of extragenital gonorrhea and chlamydia. As a result, clinicians are better able to offer screening to their patients when appropriate and feel more comfortable discussing the risks and benefits of routine screening. On a larger scale, performing more frequent extragenital gonorrhea and chlamydia screening in MSM will help reduce the transmission burden, especially in asymptomatic carriers. Additionally, MSM patients will now be better educated on the importance of extragenital STI screening and may be more inclined to pass that information onto their partners or other close friends. Finally, providing more comprehensive STI screening through this process may reduce susceptibility to HIV and create opportunities to more consistently discuss and offer HIV prevention options such as PrEP.

Continued use of the risk assessment tool should allow for long-term success and sustainability with this practice change. It is important that MOAs continue to ask the basic sexual health history questions so, the risk assessment tool will consistently be given to appropriate patients. Over time, clinicians may gain confidence and comfort in discussing a patient's sexual health history, assessing extragenital infection risk, and offering screening without the use of the risk assessment tool. This project can be considered successful and

sustainable even if the risk assessment tool is not used long-term. Whether the risk assessment tool continues to be used if patients are consistently risk-stratified and offered extragenital STI screening when appropriate, this project should be considered a success.

Conclusions

Implementation of a risk assessment tool was shown to increase the likelihood that clinicians would routinely offer extragenital screening for gonorrhea and chlamydia in MSM. Tools such as the one used in this project may be beneficial in addressing many of the barriers which currently prevent screening rates from meeting CDC recommendations for screening. With increased screening rates for extragenital STIs in MSM, population health will be improved through reduced transmission rates of gonorrhea and chlamydia as well as the possibility of decreasing susceptibility to HIV infection. In the future, this project can be expanded beyond the MSM population to include others who might be susceptible to extragenital infection, including any individual engaging in receptive anal intercourse or receptive oral sex regardless of their gender. Furthermore, other screenings with poor compliance, such as rectal HPV, which is known to contribute to the development of rectal cancer, could be improved by using this project as a model.

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