

It has been important to leadership that RNs feel empowered when implementing the sepsis and other Non-Patient Specific Orders. At this time, utilization targets are not purposefully set. The RN SOS is a tool for RNs to work at the top of their license when clinically appropriate, which currently is challenging to measure. The RN SOS workflow facilitates RN and provider timely communication about potential or actual septic patients,

which in of itself is a very important outcome. Over the coming months the continued impact of the RN SOS utilization on sepsis bundle compliance as well as outcome metrics will be assessed.

Future Implication on Nursing Order Legislation

With continued success in early detection of critical clinical conditions and reduction in delays in care delivery, the nurs-

ing professional community continues to support the expansion of Non-patient Specific Orders for the advancement of nursing practice and will continue to be advocated for within the NYS legislation process. ■

STI Reduction Bundle in Primary Care Clinic: A Literature Review

Author: James Lauren, AGPCNP-BC

Introduction

Syphilis, *Neisseria gonorrhoeae* (GC), and *Chlamydia trachomatis* (CT) are three treatable bacterial sexually transmitted infections (STI) that cause health and economic burden worldwide (*STI Incidence, Prevalence, Cost Estimates* | CDC, 2022). Often asymptomatic, they must be appropriately screened for to be properly treated. Chlamydia and gonorrhea are among the most common STIs in the US. Over 600,000 cases of gonorrhea and over 1.8 million cases of chlamydia were reported to the CDC in 2019 (Davidson, et al., 2021). There is a reported increase of sexually transmitted infections (STIs) in New York City and the United States over the past few years. Chlamydia among men increased 13.2% in NYC from 2020-2021, and among women 5.2% (Health Department Releases New STI Data - NYC Health, 2023), while nationwide incidence of gonorrhea increased by 3%, and cases of syphilis increased by 32% over the same time period (U.S. STI Epidemic Showed No Signs of Slowing in 2021 – Cases Continued to Escalate, 2023).

The burden of STIs is significant, especially for the lesbian, gay, bisexual, transgender, and queer/questioning (LGBTQ+) population and for those assigned female

at birth (AFAB). One objective of Healthy People 2030 is to reduce syphilis in the population of men who have sex with men (MSM) as this group represents a disproportionate rate of syphilis infections. Syphilis can cause long term health problems including damage to eyes and the brain, and also makes one more likely to acquire HIV (*Healthy People 2030, n.d.*). Syphilis in the MSM population is also associated with a 4 fold increase in HIV seroconversion (Bernstein et al., 2010). For AFAB people, there is also an increased risk of HIV infection in women who were previously infected with syphilis, chlamydia, gonorrhea, and mycoplasma genitalium (Barker et al., 2022). Chlamydia when left untreated is associated with pelvic inflammatory disease, ectopic pregnancy, chronic pain, infertility, ectopic pregnancy, and ovarian cancer (Hosseinasab-nodoushan et al., 2022) DNA damage, and pelvic inflammatory disease (PID; Manavi, 2006; Xia et al., 2020). Gonorrhea in the AFAB population is linked with poor pregnancy outcomes including preterm birth, premature rupture of membranes, perinatal mortality, low birth weight, and ophthalmia neonatorum (Valley et al., 2021).

Despite long standing CDC guidelines,

multiple cases of STIs are missed at clinics, some due to low rates of extragenital screening of gonorrhea and chlamydia at the oral and anal sites (deVoux et al., 2019). Clinicians must be educated regarding bacterial STI screening in order to improve these rates (Middlebrook & Ruud, 2020). Providing a self-administered electronic screening tool that will integrate into the workflow at the primary care clinic is a feasible way to help identify and treat more bacterial STIs, slow their proliferation, and decrease their associated burden (Reed et al., 2020). Teaching patients to do oral and anal GC/CT swabs themselves has been shown to be efficient and effective (Yared et al., 2018) easy, rapid and potentially cost-effective method for increasing diagnosis and treatment of STIs. Methods—We conducted a systematic review of articles assessing self-collection of anal, oral, or genital swab samples among adult men for detection of STIs and/or human papillomavirus (HPV). In addition, there is a new strategy for bacterial STIs prevention that should be taught to healthcare providers to further reduce the burden of these infections. This new STI prevention strategy is the use of the antibiotic doxycycline in a single 200mg dose taken within 72 hours of sexual contact as post

exposure prophylaxis against syphilis, GC, and CT, hereafter abbreviated as doxy-PEP (Luetkemeyer et al., 2023). This review focuses on STI screening and management. The PICOT question is: In the patient population at a primary care clinic, will introducing a 'Sexually Transmitted Infections (STI) Reduction Bundle' consisting of a confidential electronic STI screening tool, DoxyPEP eligible patient identification, clinician education, and patient self-swabbing for specimen collection, increase STI screening, increase the number of doxy-PEP prescriptions being written, and decrease the prevalence of STIs?

Search Strategy

A literature search was conducted from December 2023 through March 2024 using CINAHL and PubMed. The search was limited to English language publications. The key words and terms searched include 'Sexually transmitted infection' OR 'sexually transmitted disease' OR 'STI' OR 'STD' AND 'chlamydia OR gonorrhea OR syphilis AND 'screening' OR 'assessment tool OR questionnaire' AND 'electronic OR confidential'. Other key words included 'Sexually transmitted infection OR sexually transmitted disease OR STI OR STD AND 'chlamydia OR gonorrhea' AND 'self-swab OR self-collection' OR patient collected specimen, 'Sexually transmitted infection OR sexually transmitted disease OR STI OR STD' AND 'prevention' AND 'chlamydia OR gonorrhea OR syphilis' AND 'doxycycline post-exposure prophylaxis'. The search yielded 139 results comprising studies about general STI data, self-swabbing and doxy-PEP. Of these total 139 search results, 14 were relevant and useable for this review. Of these, 3 are systematic reviews, 6 are randomized control trials, and 5 are observational studies.

Electronic Self-Administered STI Screening Tool

A common theme included electronic or web based screening tools, which allowed for patients to feel more comfortable reporting sexual activity (Ahmad et al., 2019; Goyal et al., 2017; Stalgaitis & Glick, 2014).

Stalgaitis and Glick et al. (2014), Ahmad et al. (2019), and Goyal et al. (2017) advocated for self-screening tools and particularly Stalgaitis and Glick et al. (2014) demonstrated that web-based diaries were shown to be an effective way to gather sexual risk behavior data for adolescents, which could then guide screening recommendations. Moreover, Ahmad et al. and Goyal et al. (2017) found that patients who used self-screening tools were highly satisfied, and it was highly effective. Electronic screening tools had a further advantage over face-to-face, and that was the efficiency for providers. Not having to ask sensitive intimate questions in the middle of appointments made these interventions easy to uptake and integrate into the workflow. In addition, Ahmad et al. (2023) found that both patients and clinicians found electronic screening tools efficient, effective, and fitting a need. Furthermore, Chapman et al. found that participants preferred anonymous electronic screening over face-to-face, and when implementing the electronic survey, people felt more comfortable reporting extragenital sexual activity. Notably, half of the total chlamydia and gonorrhea cases identified were from extragenital sites (Chapman et al., 2022).

Self-Swab for Specimen Collection

Self-swabbing and specimen collection for anal and oral STI screening was shown to be preferred by patients over clinicians performing the swabbing (Chapman et al., 2022; Haddad et al., 2021). Wilson et al. (2021) found that there was no significant difference in diagnostic accuracy between clinician collecting swabs and patients doing their own swab for STI screening specimen collection. Yared et al. (2018) also found that self-swabs were feasible, acceptable, and valid. Offering this method of specimen collection to patients was shown to increase uptake of STI screening (Ogale et al., 2019).

Doxy-PEP

Recent published research studies asso-

ciated with the use of doxy-PEP have included new guidelines of its use, which is becoming rapidly widespread throughout the world. Moreover, a few studies have been conducted and published regarding doxy-PEP's efficacy. Luetkemeyer et al. (2023), and Molina et al. (2018), found that the use of doxy-PEP was associated with a statistically significant decreased in the incidence of CT, GC, and syphilis. A recent Kenyan study found that there was not a statistically significant reduction of bacterial STIs in cisgender women (Stewart et al., 2023). They found that random hair samples from the study participants showed a lower than expected presence of doxycycline, which could point to an adherence issue rather than one of efficacy, however without further information most guidelines recommend not offering this intervention to AFAB people due to the lack of evidence of efficacy in this population. Furthermore, using doxycycline as pre-exposure prophylaxis yielded a reduction in GC, CT, and syphilis (Bolan et al., 2015).

Conclusion

The studies reviewed supports the use of confidential electronic STI screening for patients, and self-swabbing for extragenital STI sample collection. Doxy-PEP is an effective intervention for STI prevention in the MSM population, however, there is insufficient evidence to support its use for AFAB people. Teaching clinicians and support staff how to properly screen for STIs and offer prevention strategies should help reduce the overall incidence of STIs in the LGBTQ and AFAB populations of the primary care clinic, reducing health care costs and burden of disease. ■

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