Title
Triple Threat Takedown: Standardizing Extra-genital Gonorrhea and Chlamydia Screening

Author
Huang, Jackson

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Triple Threat Takedown: Standardizing Extra-genital Gonorrhea and Chlamydia Screening

A dissertation submitted in partial satisfaction of the

requirements for the degree

Doctor of Nursing Practice

by

Jackson Huang

2021

ABSTRACT OF THE DISSERTATION

Triple Threat Takedown: Standardizing Extra-genital Gonorrhea and Chlamydia Screening

by

Jackson Huang

Doctor of Nursing Practice

University of California, Los Angeles, 2021

Professor Dorothy Wiley, Chair

Background: Approximately 80% of gonorrhea (GC) and chlamydia (CT) infections are missed when healthcare providers do not screen for pharyngeal and rectal (extra-genital) GC and CT infections among men who have sex with men (MSM). Some factors may include under-identification of MSM as a high-risk population, implicit biases, and under-appreciation of the problem's magnitude in this population. Undiagnosed and poor treatment of GC and CT infections in MSM may result in further spread and poor clinical outcomes for index and subsequent cases. **Objectives**: Measure knowledge, perceptions, and beliefs about screening and acceptability of an electronic medical record (EMR) *dot-phrase* template for clinician history taking. **Methods:** This observational study compared self-reported baseline knowledge and

comfort for GC and CT screening for MSM, and approval of the dot-phrase template over eight weeks between training and availability of the EMR tool. Northern California federally-qualified health center adult primary care providers were enrolled in the study. We gathered self-report for sociodemographic characteristics, practice-specific knowledge, perceptions, and beliefs about extra-genital screening in MSM patient populations using online administered, anonymous, linked surveys over the study period. **Results:** Nine participants participated in the initial training and six completed the follow-up evaluation. Physicians comprised the largest group: 6 family medicine, 1 internal medicine, 2 family nurse practitioners, of whom 56% reported 3 to 5 years of clinical experience. Most were female (77%). 33% of initial participants (3/9) believe that consistent condom use does not put a patient at risk for GC or CT. While 55% initially disagreed that GC can be transmitted via kissing, most agreed following in-service education (1 "strongly disagreed" vs. 3.5 "slightly to strongly agree"). 83% of subjects who participated in both surveys report feeling more compelled to offer extra-genital screening upon completion of the training and introduction of the dot-phrase. No provider reported being able to implement the dot-phrase protocol over the study period. **Conclusion:** A six week in-service education and structured dot-phrase history taking tool intervention improved evidence-based understanding of GC or CT transmission risk factors. Participants completing the program expressed that they felt more compelled to offer extra-genital screening in applicable patient encounters following the educational intervention.

The dissertation of Jackson Huang is approved.

Barbara Bates-Jensen

Catherine Carpenter

Paul Macey

Dorothy Wiley, Committee Chair

University of California, Los Angeles

2021

DEDICATION

This dissertation is dedicated to all healthcare providers who compassionately care for patients of the LGBTQIA+ community.

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VITA

EDUCATION

University of California, Los Angeles, Doctor of Nursing Practice Candidate, 2021
Georgetown University, Master of Science in Nursing – Family Nurse Practitioner, 2015
University of San Francisco, Bachelor of Science in Nursing, 2012

PROFESSIONAL EXPERIENCE

Sutter Health: Palo Alto Medical Foundation, Nurse Practitioner, 2019 to present
MultiCare Health Systems: Urgent Care, Nurse Practitioner, 2018-2019
Waianae Coast Comprehensive Health Center, Nurse Practitioner, 2016-2018
CVS Minute Clinic, Nurse Practitioner, 2016-2018
UCSF Benioff Children's Hospital Oakland, PICU RN II, 2015
Stanford Health Care, RN I-II, 2013 - 2015

FACULTY APPOINTMENTS

University of San Francisco, Adjunct Faculty, 2014 – 2020
Georgetown University, Clinical Faculty Advisor (Adjunct), 2019-2020
Hawai'i Pacific University, Adjunct Faculty, 2017

HONORS AND SPECIAL AWARDS

University of San Francisco Distinguished Adjunct Teaching Award, 2016
Sigma Theta Tau Honor Society of Nursing

SCHOLARLY WORKS

DNP Dissertation: *Standardizing Extra-genital Gonorrhea and Chlamydia Screening*
Chair: Dr. Dorothy "Dottie" Wiley, PhD, RN, FAAN

VOLUNTEER AND PRECEPTING ACTIVITIES

Asian Pacific Islander Wellness Center, Volunteer RN, 2012-2013
Samuel Merritt University Physician Assistant Program, Preceptor, 2019-2020
Samuel Merritt University Nurse Practitioner Program, Preceptor, 2020-2021
University of San Francisco Nurse Practitioner Program, Preceptor, 2020

CHAPTER ONE: INTRODUCTION

Gonorrhea (GC) and chlamydia (CT) are among the most common and treatable sexually transmitted infections (STIs). However, there remains a low percentage of healthcare provider who screen for pharyngeal and rectal (extra-genital) GC and CT infections among men who have sex with men (MSM). Furthermore, many providers do not adhere to extra-genital (pharyngeal and rectum) GC and CT screening guidelines in retail and urgent care clinics, and also in primary care clinics and HIV clinics despite the typical patient rapport and continuity of care. Undiagnosed and untreated GC and CT infections are prevalent in the MSM community, and can result in further spread of infection, strain on the immune system, and poor clinical outcomes.

Problem Statement

Many studies have acknowledged that providers can miss over 80% of extra-genital GC and CT in MSM patients with urogenital screening only (Danby et al., 2015; Marcus et al., 2011; Shaw & Ahmad, 2013). Gaspari et al. (2019) discussed that unprotected oral intercourse contributed to frequent GC and CT infections, and urogenital screening alone would have missed approximately 80% of cases if providers only ordered urine-based tests. Furthermore, Gaspari et al. (2019) also concluded that routine pharyngeal screening should be implemented to improve detection and prevent further infection of different anatomical sites in exposed sex partners. The Centers for Disease Control and Prevention [CDC] (2019) established extra-genital screening guidelines that recommend that all sexually active MSM be screened at least once annually. In fact, the CDC (2019) also notes that some MSM may benefit from even more frequent screening based on risk factors.

Many studies demonstrate there is a lack of screening due to barriers providers face, which ultimately harm the patients and their sexual partners (Gaspari et al., 2019; Keenan et al.,

2019). Detection and timely treatment of extra-genital infections, especially GC, is essential to prevent further clinical complications. Untreated or under-treated rectal or pharyngeal GC can contribute to antimicrobial resistant strains of GC, and thus increase the opportunity of transmission of resistant strains of GC (Abara et al., 2020; Passaro et al., 2018). In addition to the all-time high rates of both GC and CT in the US population, the uncontrolled transmission of GC serves as a threat to public health and the wellbeing of a marginalized MSM community (CDC, 2019).

PICOT Question and Planned Intervention

The PICOT question I am proposing is: In healthcare providers caring for MSM patients who report a history of engaging in receptive oral or anal intercourse and present with dysuria, penile discharge, or for routine sexually transmitted infection (STI) screening in a community-based primary care clinic setting [P], how does using an Electronic Medical Record (EMR) template to guide sexual history taking [I], compared to customary intervention [C], improve provider adherence to screening test recommendations for extra-genital gonorrhea and chlamydia infections [O] at the time of patient encounter [T]? The setting where this project will occur is in a community-based primary care clinic setting. The intervention involves implementing a dot-phrase template in the EMR that will prompt the provider in conducting a sexual history. The goal of the intervention is to inform the healthcare providers about patients' risk factors and to subsequently order appropriate screening tests based on their risk stratification.

The project consists of an educational intervention with a pre-intervention survey administered prior to the asynchronous educational session, followed by a post-intervention survey 6 weeks after conclusion of the educational intervention. One of the barriers of furthering this project is that the investigator did not have any access to patient or provider EMR data about

screening rates or frequency of use of the dot-phrase template due to recent organizational policy changes. The project aims to improve two parts: (1) primary care providers' awareness and knowledge of extra-genital infections and (2) subsequently empower primary care providers to standardize extra-genital screening among MSM patients. This study focuses on part one: increasing primary care providers' awareness and knowledge of extra-genital infections. Future studies will aim to explore true provider adherence to screening clinical guidelines for extra-genital infections. Appendix C provides a copy of the subjective, objective, assessment and plan (SOAP) note that can be used to guide history taking and medical decision making. The SOAP note was developed by the investigator and formatted as a dot-phrase for use in the EMR, used by the facility in which the project implementation would occur.

Application of the Doctor of Nursing Practice (DNP) Essentials

The DNP degree prepares nurse leaders to problem solve systems level issues by eclectically drawing from disciplines and frameworks to implement a scholarly project that aims to directly or indirectly improve patient outcomes. Experts suggest eight DNP essentials underpin the professional role. These include, scientific support for practice, leadership skills to promote quality improvement and system approaches to change, scholarship, information science approaches to analysis and dissemination, policy and advocacy expertise, interprofessional practice that promotes prevention and population health for advanced practice nurses (American Association Colleges of Nursing [AACN], 2006). Herein, components of the Los Angeles County Public Health Nursing Model support these goals, addressing gaps in practice and local policy implementation for extra-genital GC and CT infection that promote health and prevent disease in high risk populations. Promoting evidence-based practice promotes clinical scholarly inquiry and quality improvement through a systematic, organizational change. The

interdisciplinary roles of medicine and advance practice nursing converge when information technology is used to implement a dot-phrase template that guides providers to perform thorough and efficient evaluations that promote identification of people at risk for infection. Creating and implementing systems-level interventions holds the promise of maximizing both clinical prevention and population health promotion strategies.

CHAPTER TWO: THEORETICAL FRAMEWORK

The theoretical framework selected to guide this DNP scholarly project is the Los Angeles County Public Health Nursing (LAC PHN) Model, developed by Smith and Bazini-Barakat (2003). Healthcare providers not adhering to extra-genital screening guidelines create barriers to care for the MSM community, resulting in suboptimal health outcomes and further contribution to the global public health threat of antibiotic-resistant strains of GC. As such, this is a population health issue that requires a systems-level and community-level intervention to address the low rates of extra-genital screening within this population, encouraging early detection and treatment to prevent further harm. The LAC PHN framework informs the project through the PHN interventions: plan, act, and evaluate. The framework informs the 'plan' step through policy development to ensure adherence to clinical screening guidelines. The 'act' step functions through education, empowerment, and assurance of a competent workforce. Finally, the 'evaluate' step, which evaluates the services in its fulfillment of Healthy People in Healthy Communities.

While this DNP scholarly project aims to address a portion of the LAC PHN model, the Minnesota Department of Public Health Nursing acknowledges that interventions can be implemented alone or in conjunction with other interventions (Smith and Bazini-Barakat, 2003). The LAC PHN is a systems-based approach that employs several of the Minnesota Public Health

Interventions: policy development and enforcement (systems-level), social marketing (micro-community level of the clinic system), and advocacy (individuals and family level for MSM community) (Smith and Bazini-Barakat, 2003). The DNP scholarly project aims to improve assurance, through improving a competent workforce, which is one of the 10 Essential Public Health Services (CDC, 2020). Workforce competence can be achieved through staff training and implementing EMR prompts to ensure adherence to clinical guidelines. Ultimately, the LAC PHN re-focuses nurses' efforts to achieve a goal of Healthy People in Healthy Communities, and encourages nurses to evaluate the effectiveness of interventions and goal completion in the context of Healthy People in Healthy Communities (Smith and Bazini-Barakat, 2003).

CHAPTER THREE: REVIEW OF LITERATURE

PubMed and Cumulative Index of Nursing and Allied Health Literature (CINAHL) were utilized to conduct literature searches of articles used in my project that addressed the PICOT question. The terms used were screening, barriers, extragenital, rectal, throat, pharyngeal, gonorrhea, chlamydia, and MSM. The CINAHL and PubMed search results yielded articles that demonstrated an increased prevalence of extra-genital GC and CT among MSM, and how urine-based testing alone is bound to miss a large number of extra-genital GC and CT infections. Furthermore, PubMed and CINAHL contained several relevant investigations including cross-sectional prevalence studies of extragenital infections; cohort studies; literature reviews; systematic reviews; and meta-analyses describing differences between self-collected versus clinician-collected extra-genital swabs. Several original research studies described implementation of quality improvement measures that increased adherence to screening for extra-genital infections in clinic settings. A Table of Evidence (TOE), found after the appendices, summarizes five articles of interest that inform the project.

Carter et al. (2014) Investigation of Provider Barriers

Carter et al. (2014) informs the project by providing insight on barriers to screening for extra-genital infections encountered by HIV providers. This study examines the suboptimal screening for syphilis and extra-genital GC and CT in HIV-infected men, and attempts to identify provider barriers that prevent routine screening. This was a mixed methods design that evaluated self-reported demographic characteristics and semi-structured interviews from 118, and a subset of 40, HIV ambulatory-care providers and counselors, respectively, in six cities (Carter et al., 2014). Provider-perceived barriers to standard-of-care screening for extra-genital infections pointed to time constraints and lack of comfort, "We don't really have the time to sit down and really take time with the patient…" and "…I was pretty uncomfortable asking people about their private sex life" (Carter et al., 2014, p. 140). Similarly, failure to screen may be due to differences in training "…let's face it, [providers] are not trained equally or equally comfortable with sensitive topics" (Carter et al., 2014, p. 140). Overall, common themes suggest providers are uncomfortable asking about sexual behaviors and that specific diseases are easier to evaluate, such as syphilis, where the test evaluates non-genital specimens that require no sensitive conversation with patients and expedites workflow within the clinic (e.g., reflex serology testing). For example, "…syphilis we do it automatically in the blood, so it is not a problem" (Carter et al., 2014, p. 140). Interview data underscored differences between providers and counselors with starkly different training histories relative to interview-guided data collection. For instance, HIV counselors acknowledged medical physicians as less skilled in the art of sexual history taking, "MDs have a different type of training. I don't think they're as skilled…" (Carter et al., 2014, p. 140). Lastly, most medical providers stipulated competing priorities refocused their concentration from screening to disease management. Many medical

providers prioritized complex medical care for HIV medication management as their first focus, thus disregarding sexual behavior questions during the patient encounter. For example, "…a patient comes in with a T-cell count of 40, and his presentation is that he looks like he has clinical signs of PCP [pneumocystis pneumonia]. I am not going to be focused in that visit on screening or assessment for STIs…" (Carter et al., 2014, p. 140).

Ultimately, the obstacles identified were patient confidentiality concerns, language and cultural barriers, challenges in obtaining a sexual history, and competing priorities and time constraints. As such, Carter et al. (2014) recommended structural interventions to promote a cohesive workflow, such as strategic placement of GC and CT swabs in the exam room and development of standing orders to involve ancillary staff. A limitation is that not all barriers identified in this particular clinic would necessarily be true in other clinics, and this study may not have represented the on-average experience of providers due to limited quantitative and qualitative data (Carter et al., 2014).

Keenan, Thomas, & Cotler (2019) Encouraging Extra-genital Screening

Keenan et al., (2019) suggests staff education alone modestly influences providers to adopt practice change, which in this case was to screen for extra-genital infections. This study implemented a quality improvement project in an urgent care and primary care setting, which reviewed four nurse practitioners' and collectively 318 medical records during pre-intervention and 120 medical records during post-intervention phases (Keenan et al., 2019). Through academic detailing methodology, the study addressed a practice gap in screening for extra-genital infections. The intervention consisted of a didactic training session that provided updates on evidence-based screening guidelines (Keenan et al., 2019). The educational content also provided information on how to teach patients to perform self-swabbing techniques to encourage

patient comfort in obtaining extra-genital specimens (Keenan et al., 2019). The study identified that during the pre-intervention phase, 93% of STI screening was solely urine-based only, while in the post-intervention phase, 84% of all STI screening was urine-based only, demonstrating a 9% decrease (Keenan et al., 2019). The data suggests that patients' risk factors for extra-genital infections were not fully understood, as it was noted that 27.5% of the 120 patient encounter notes did not have a sexual history documented (Keenan et al., 2019). Furthermore, it was noted that while the nurse practitioners were provided with a patient questionnaire to collect a detailed sexual history, it was not consistently used in the clinic.

Despite the compelling need to understand the frequency that providers completely evaluate extra-genital CT and GC infections, these investigators did not solicit provider buy in and findings were gathered swiftly over eight weeks. Investigators failed to track history-taking frequency as a time-varying intervention exposure. Together with the simple analytic approach, violations of validity may limit the utility of study findings.

Gaspari et al. (2019) Investigation of Any Predictors to Screen

Cohort study data suggest clinician judgement to screen that relies on self-reported symptoms poorly predicts screening frequency (Gaspari et al., 2019). This study demonstrated that sexual history data increased the positive predictive power of screening tests (Parikh et al., 2008). Gaspari et al. (2019) reported 17.3% of symptomatic and asymptomatic MSM and women that reported unprotected oral-genital or -anal contact tested positive for oropharyngeal GC or CT, and 25.7% tested positive for anorectal GC or CT and reported unprotected anal intercourse (Gaspari et al., 2019; Parikh et al., 2008). However, overall, only 15% (134/893) and 4% (34/893) of the total sample tested positive for pharyngeal GC or CT, with no statistically significant difference between MSM and female populations (Gaspari et al., 2019). However,

among these, 90% of cases were asymptomatic (Gaspari et al., 2019). Thus, screening in high-risk settings may offset the ethical challenges because of asymptomatic spread of disease in the population. Through the study, it was determined that over 80% of pharyngeal infections would not have been identified if only urogenital screening was performed (Gaspari et al., 2019). Gaspari et al. (2019) also emphasizes that pharyngeal screening should be based on risk and sexual behavior, and not clinical symptoms. This further strengthens the stance that anatomic screening should be a part of routine testing to improve detection rates. Data suggest the prevalence of oropharyngeal GC or CT is high among symptomatic and asymptomatic MSM and women reporting unprotected oral-genital or oral-anal intercourse (17.3%) and among half of the patients reported unprotected anal intercourse, prevalence of anorectal GC or CT is higher yet (25.7%) (Gaspari et al., 2019). Albeit the number of STI clinic patients without oro-genital or oral-anal intercourse is uncertain, the prevalence of urethral GC or CT infections among those reporting unprotected oral exposure is 8.5% (Gaspari et al., 2019). A limitation of the study was that it did not acknowledge the exposure rate for oral-anal and oral-genital intercourse for the entire clinic. The study also does not discuss rectal sources of infection, nor does it acknowledge saliva playing a role in GC and CT transmission. Thus, these findings suggest pharyngeal GC and CT screening for high-risk populations be performed, but stops short of testing ways screening may be incorporated into clinical best practice strategies in clinical settings.

Scarborough et al. (2015) Investigation of Patient Self-Reported Risk

Comparing self-reported risk factors for GC and CT have been compared to provider-driven health history approaches as a trigger for screening (Scarborough et al., 2015). Cross-sectional EMR data for 1,100 HIV-infected patients cared for by four HIV primary care providers explored extra-genital GC and CT screening over a calendar year (Scarborough et al.,

2015). Pre-intervention screening data showed only 19.5% and 16.7% received pharyngeal or rectal GC or CT screening, respectively (Scarborough et al., 2015). A provider-focused educational intervention to employ a point-of-care self-reported screening tool to improve history taking skills was evaluated (Scarborough et al., 2015). Despite that 364 patients provided informed consent and self-reported symptom data, fewer than 50% of patients overall consented to participate (Scarborough et al., 2015). Following introduction of the self-report screening survey, pharyngeal GC or CT screening increased 1.45-fold to 28.3% and rectal GC or CT screening increased 1.27-fold to 21.2% (Scarborough et al., 2015). This study was lengthier some, three months, but the high non-completion rate among patients (47.3%) suggested data were important but the method was ineffective (Scarborough et al., 2015). Consequently, the assessment was moved to provider-collected data in the EMR and results were not reported in the study (Scarborough et al., 2015). This provided the scholarly project with insight that provider-driven interventions hold the provider accountable to ensure adherence to screening guidelines, rather than relying on patients to self-report their risks, which in this study demonstrated a high non-completion rate. As such, the study acknowledges that additional efforts are needed to determine the success of intervention to improve extra-genital screening. Incomplete data for self-report sexual behaviors limited the reliability of self-reported sexual behavioral data as a sole driver for screening assessment.

Drinkard et al. (2017) Missed Opportunities to Detect Extra-genital Infections

Drinkard et al. (2017) explored the association between extra-genital GC or CT infection in absence of genital infection, informing risk stratification approaches to screening. Drinkard et al. (2017) reported, in a large, record-based, cross-sectional study of 4,093 college-age urban-dwelling males that contributed 1.46 visits per person when evaluated at a single university

health clinic over six consecutive years showed the prevalence of CT at one or more sites was 5% (207/4093); among these only 0.7% (30/4093) tested positive at an extra-genital site. Prior to introduction of a provider-reported sexual behavior screening tool, extra-genital positivity rate for CT was 2.6% versus 4.0% in after introducing provider screening for extra-genital CT (Drinkard et al., 2017). Nearly 1.8% (72/4093) tested positive for GC at one or more sites, and 0.7% (30/4093) tested positive using extra-genital specimens (Drinkard et al., 2017). Findings suggest that the provider reported sexual behavior survey increased diagnosis of extra-genital GC positivity from 0.7% to 1.7% (Drinkard et al., 2017). As such, the study determined that testing urine alone results in a high fraction of missed diagnoses: 26.4% of extra-genital CT and 63.2% of extra-genital GC (Drinkard et al., 2017).

Investigators employed a self-report screening tool to identify at-risk patients and suggested screening tests were warranted. Clinicians hypothesized screening sensitivity for extra-genital GC or CT infections would be improved when gender of a patient's sex partner was considered, increasing screening for young MSM in an urban environment. Thus, enhancing staff training to increase extra-genital screening frequency improves detection rates (Drinkard et al., 2017; Parikh et al., 2008). Future investigation would include utilizing the EMR, in lieu of paper records, to track and collect data to support quality improvement efforts to improve screening rates. Findings may be limited by provider non-compliance due to time constraints, limited training, and poor understanding of LGBTQ communities. Herein, EMR data may be limited by the self-reported nature of the sexual history data, especially when specific sexual behaviors are highly stigmatized.

Synthesis of Literature Review

The evidence supporting extra-genital screening is compelling, however, translation of evidence to practice remains disjointed. In reviewing these articles, there was a common theme identified: healthcare providers' failure to detect GC and CT in extra-genital anatomic locations, resulting from several identified barriers. The first barrier is a failure to gather a proper sexual history or risk stratification. Gaspari et al. (2019) and Drinkard et al. (2017) both demonstrated the importance of risk stratification as a key to extra-genital screening as the studies revealed some subjects having a positive extra-genital screening result in conjunction with a negative uro-genital test. Gaspari et al. (2019) also demonstrated that more than 90% of subjects who had tested positive for a pharyngeal infection was asymptomatic, thus reinforcing the importance of history taking and risk stratification in lieu of symptom-based testing. Drinkard et al. (2017) revealed that urogenital screening alone would miss 26.4% of CT and 63.2% of GC infections in extra-genital sources, further supporting a need for clinicians to implement proper history taking and risk stratification. Qualitative data demonstrated providers reporting distress over barriers resulting in paucity of high-risk patients screened annually for STIs (Carter et al., 2014). Studies report that providers in two separate samples suggest less than 10% of patients are that when screened, a high fraction, possibly more than half of GC-affected patients, are missed due to urogenital testing alone (Carter et al., 2014; Drinkard et al., 2017).

A second obstacle contributing to providers failing to screen is a lack of systematic support to help facilitate these changes. Both Keenan et al. (2019) and Scarborough et al. (2015) developed a quality improvement project that targeted healthcare providers, both of which showed improvements in extra-genital screening rates. Keenan et al. (2019) developed an educational module and compared the pre-intervention and post-intervention rates. Pre-

intervention data revealed 93% of STI screening was uro-genital only, while post-intervention data revealed 84% of STI screening was uro-genital based (Keenan et al., 2019). Although there was a 9% decrease in uro-genital screening only practices, the findings showed only a modest improvement with provider-based education (Keenan et al., 2019). However, there was not a structural or systematic intervention to support or sustain this change, which would better reinforce the educational content and its clinical application during a patient encounter. In addition to didactic training, Scarborough et al. (2015) developed a 10-item screening risk assessment tool addressing sexual behavior and risk factors, which was administered to patients at the time of visit. While it was noted that there was an increase in screening rates after the intervention, it was also acknowledged that less than 50% of the patients who had initially agreed to report their risk factors actually followed through (Scarborough et al., 2015). As such, this demonstrates that there needs to be a structural or systematic intervention that holds healthcare providers accountable, as opposed to a patient-reported intervention. Commonly cited structural or systematic changes include EMR reminders, questionnaires, and collaboration with medical assistants or front desk staff to prepare all swabs needed or to collect relevant demographic data upon registration and intake (Carter et al., 2014; Scarborough et al., 2015). A systematic review endorses that the most successful interventions aimed at improving extra-genital CT and GC screening include systems changes such as clinic flow, specimen collection procedures, EMR reminders and prompts for providers, and social marketing interventions aimed at direct-to-patient messaging reminders for care (Taylor et al., 2016).

Both Drinkard et al. (2017) and Keenan et al. (2019) were limited by suboptimal EMR functionality, and were unable to identify patients' sexual orientation or to track provider engagement with the intervention, thus leading to concerns about validity and accuracy. Less

effective interventions often relied on patient-driven actions, such as a self-reported risk assessment (Scarborough et al., 2015). However, studies that provided an educational component in conjunction with a structural change, instead of an educational intervention alone, demonstrated superior results in improving providers' adherence to extra-genital screening, though sustainability of the quality improvement efforts remains unknown given the limited timeframe in which these studies were conducted. Thus, future research should investigate the efficacy of different structural interventions, and how effective each intervention is in promoting provider adherence to screening guidelines.

In summary, five clinical studies inform this project. Important findings include the importance of risk identification to inform screening practices, and that providers and staff might be empowered to promote extra-genital GC or CT infection screening in high-risk populations, irrespective of self-report data. Last, the importance of extra-genital infections in the absence of genital CT and GC infection is related to sexual behaviors that are often difficult for patients and providers to discuss openly. Collectively, these findings support in-depth history taking to support clinical judgement and use of structured tools to support this end and improve screening activities.

CHAPTER FOUR: METHODS

Design, Sample and Setting

The project is a quasi-experimental design evaluating provider baseline knowledge and comfort level measured before and after the educational intervention. Knowledge, perceptions and beliefs about MSM behavior and extra-genital GC and CT were measured six weeks apart (see Appendices A and B). Surveys measured sociodemographic characteristics at baseline, and knowledge, perceptions and beliefs about GC and CT screening and (patient) risk behaviors were

measured at the post-test. At the post-test, a series of statements about the epidemiology of extragenital and genital GC and CT infections, usefulness and intention to employ the dot-phrase tool in future care of MSM patients. Longitudinal survey linked by three user-created identifiers unique to each respondent (see Appendices A and B).

The sample is best described as mostly female (78%), and multi-lingual (100%) with fluency in 1 (55%) or 2 (45%) languages in addition to English. Both physicians (78%, 7/9) and nurse practitioners (22%, 2/9) compose the study group. Physicians included board-certified family medicine (6) and internal medicine (1). There were also two board-certified family nurse practitioners. More than half reported 3 to 5 years of clinical experience (56%).

For knowledge, perception and belief items surveyed at both Times 1 and 2, respondents ranked their agreement using with a statement using a 4-point Likert Scale, i.e., strongly disagree (1) , disagree (2), agree (3) and strongly agree (4). One survey item evaluated provider knowledge about the prevalence of symptomatic pharyngeal GC in MSM, at a population level (i.e., 0%-9%, 10%-30%, 31%-50%, 51%-80%, 81%-100%). Data suggests fewer than 10% of people testing positive for pharyngeal GC infection report symptoms in advance (Gaspari et al., 2019).

Sociodemographic characteristics include professional role (physician, nurse practitioner) and the sample was limited to primary care providers for patients, 18 years or older. The setting was a Federally Qualified Health Center (FQHC) located in Northern California. The quality improvement project was announced to agency providers by the site director.

Institutional Review Board Statement

The study protocol was reviewed by the University of California, Los Angeles (UCLA) Institutional Review Board (IRB) South Campus Committee, and evaluated as exempt from being considered human subjects research.

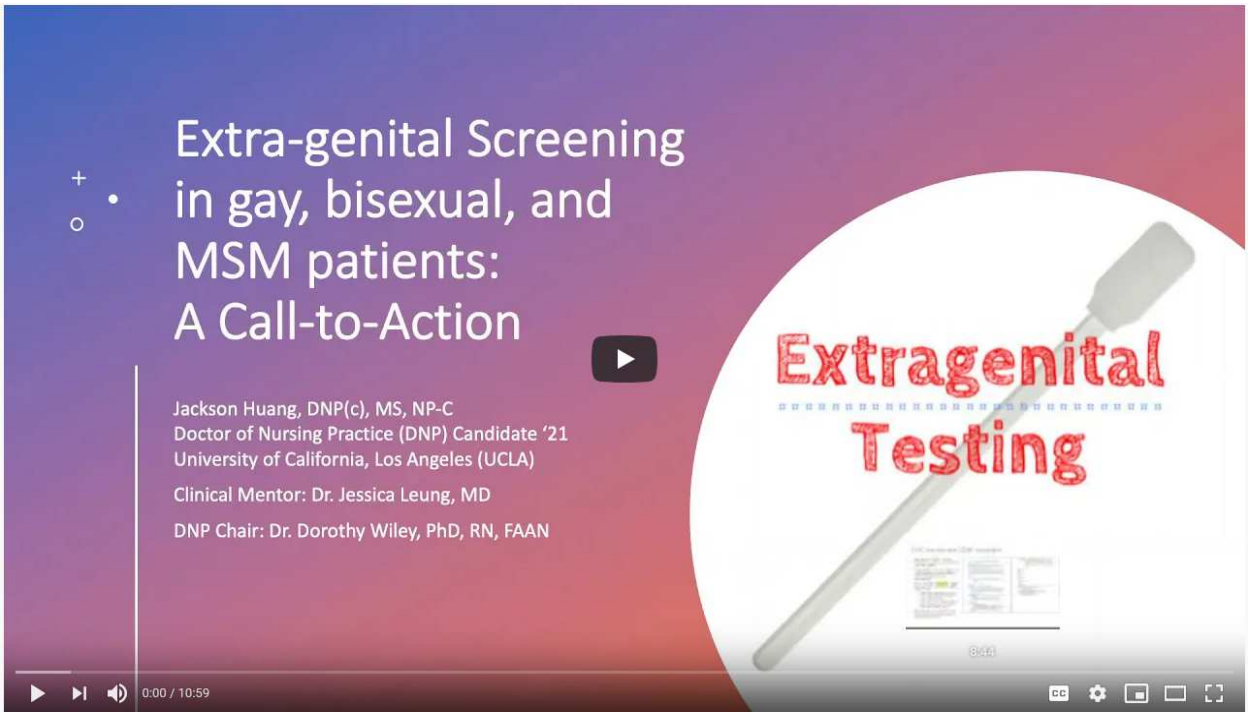
Intervention

The intervention included an asynchronous educational video lecture (seen in Figure 1) that reviewed the epidemiology of genital and extra-genital GC and CT infections and the rationale for screening in high-risk populations (see Appendix D). Specifically, education emphasized that about 80% of GC and CT infections that go undetected when providers employ urine-based screening alone (Gaspari et al., 2019). CDC screening recommendations were reviewed to set the tone for practice change. Additionally, the video lecture presented emerging evidence that saliva can serve as a vehicle for GC and CT transmission, including intimate kissing and use of saliva as lubricant during anal intercourse (Chow & Fairley, 2019; Phillips et al. 2019). The EMR dot-phrase was introduced during the lecture and subsequently made available to participants to use during patient assessments. The video lecture was available to participants for six weeks following its introduction during a provider meeting. Ten providers attended the provider meeting introduction, nine completed an initial survey, and six reported completing the video training and submitted a second survey. In total, nearly 40 providers are employed by the clinic, of whom approximately 30 provide care for adults.

An EMR dot-phrase template guides individual providers to gather targeted sexual history data that identifies MSM engaging in high risk sexual behaviors associated with extra-genital CT and GC infections (Appendix C). The dot-phrase allows providers to populate an EMR SOAP note. The dot-phrase guides sexual history focused questions for number and

characteristics of sex partners, sexual behavior (practices), behaviors that protect against STDs (e.g., condom use), and history of STDs. Collectively, these features capture the "four P's" promoted by the CDC (CDC, 2005). The dot-phrase prepopulates the SOAP *plan* with text that assists providers to determine evidence-based practices supporting rectal, pharyngeal, or urogenital GC and CT screening test at the point-of-care (see Appendix C).

Figure 1: *Asynchronous Educational In-Service Video on YouTube*



Data Collection

Pre-intervention (Time 1) and post-intervention (Time 2) survey data were collected using multiple choice options and a 4-point Likert Scale with 1 being "strongly disagree" and 4 being "strongly agree." In total, nine subjects participated in Time 1. An electronic questionnaire gathered study variables for each participant at two time points (see Appendices A and B). Individual links to a Google Forms questionnaire were distributed to the agency providers by the site director, maintaining subject anonymity to the investigator. Variables include gender, provider role, clinical experience, professional preparation (e.g., MD, NP) and specialty training

(e.g., internal medicine residency), attitudes and perceptions about gay and bisexual MSM adults. In addition, self-report for formal education (i.e., years, characteristics) and clinical training experiences, overall and specific to LGBTQ-focused care. Comfort caring for gay and bisexual MSM persons were collected at baseline.

The post-intervention survey was distributed four weeks following the educational intervention that included evaluation and documentation approaches using the EMR dot-phrase. In addition, self-report for MSM-focused assessment and care and comfort with these procedures were assessed at follow-up. While this pilot project was designed to evaluate 15 participant providers, only 9 were available during the study period.

Analysis

The survey data elements are not normally distributed, and the Time 1 and Time 2 observations are dependent samples. Unlike the Chi Square test, which often requires a larger sample size, the Fisher Exact Test is helpful for a smaller sample size (Lane, 2003). Because the data cannot be based on parametric assumptions, the Fisher's Exact Test was selected as the analytical method.

Descriptive, graphical and tabular analyses explored the data, evaluating cross-sectional (Time 1 vs. Time 2 individually) and longitudinal (merging Time 1 and Time 2, trends) data. To assess the change in self-report for knowledge, perceptions and beliefs of overall and specific to MSM-focused care, differences between Time 1 and 2 responses were evaluated using the Wilcoxon Signed Rank Test across two surveys (n=6) (Heavy, 2019). Differences between Times 1 and 2 knowledge, perceptions and beliefs variables were summarized using the Fisher's Exact Test (Lane, 2003). The Fisher's Exact Test, formed with a rows by columns table, helps to determine if there is an association between Times 1 and 2 (SAS Institute Inc., 2013). From these

data, we evaluated potential adherence to extra-genital GC and CT screening guidelines for MSM. Results are reported in chapter five, tables 1-9.

CHAPTER FIVE: RESULTS

The study group consisted of both physicians and nurse practitioners, with physicians comprising the largest group (78%). There were 6 family medicine physicians, 1 internal medicine physician, and 2 family nurse practitioners. While 67% of subjects participated in both Times 1 and 2, there remains a small sample size of six subjects that provided linked data.

Table 1: Participant Demographics

Characteristic	Frequency	Percent
Professional licensure		
MD	7	78%
NP	2	22%
PA	0	0%
Provider Sex		
Male	2	22%
Female	7	78%
Specialty		
Family Medicine	8	89%
Internal Medicine	1	11%
Characteristic	**Median**	**Interquartile Range**
Practice Experience (years of post-training)		
Median in Years	4	4 - 7.5
Number of Languages Spoken in addition to English		
Median	1	1 - 2

Comfort Talking About Sexual Practices

Pre-intervention survey data showed 33% (2/6) of respondents expressed some discomfort questioning gay and bisexual men about their sexual behaviors with partners. However, nearly 50% (3/6) stated agreement and 17% (1/6) strongly agreed with a statement that

they were comfortable interviewing MSM about their sexual behaviors with partners. When post-intervention surveys were incorporated into the analysis, Time 2 data suggested 67% (4/6) expressed agreement and 33% (2/6) strongly agreed with the statement that they were comfortable questioning MSM about their sexual behaviors with partners. When the two survey findings were compared, the distributions of responses were not statistically significantly different (Fisher Exact Test, p=1.0).

Table 2: I am comfortable talking to gay and bisexual men about their sexual practices.

	Time 2					
Time 1	Strongly Disagree	Disagree	Agree	Strongly Agree	Total *	
					Total	Percent
Strongly Disagree	0	0	0	0	0	0%
Disagree	0	0	1	1	2	33%
Agree	0	0	2	1	3	50%
Strongly Agree	0	0	1	0	1	17%
Total *	0	0	4	2	6	100%
Percent	0%	0%	67%	33%		

* Fisher Exact Test, p=1.0

Perceptions on Decreasing Rates with Improved Access to Care

Pre-intervention survey data showed 17% (1/6) strongly disagreed and 67% disagreed with the statement that GC and CT rates in the US are decreasing with increased access to care. Only 17% (1/6) agreed with the statement. When post-intervention surveys were incorporated into the analysis, Time 2 data revealed that 83% (5/6) strongly disagreed with the statement and 17% (1/6) disagreed. None of the participants agreed with the statement in Time 2, suggesting participants acquired knowledge from the education in-service about the increasing rates of GC or CT. When the two survey findings were compared, the distributions of responses were not statistically significantly different (Fisher Exact Test p=1.0).

Table 3: Gonorrhea and chlamydia rates in the US are decreasing with improved access to care.						
	Time 2					
Time 1	Strongly Disagree	Disagree	Agree	Strongly Agree	Total *	
					Total	Percent
Strongly Disagree	1	0	0	0	1	17%
Disagree	3	1	0	0	4	67%
Agree	1	0	0	0	1	17%
Strongly Agree	0	0	0	0	0	0%
Total *	5	1	0	0	6	100%
Percent	83%	17%	0%	0%		
* Fisher Exact Test, p=1.0						

Consistent Condom Use and Risk for Gonorrhea and Chlamydia

Pre-intervention survey data showed that 33% (2/6) strongly disagreed and 17% (1/6) disagreed with the statement that patients who consistently use condoms 100% of the time were not at risk for GC or CT. However, 50% agreed that patients were not a risk with consistent condom use. When post-intervention surveys were incorporated into the analysis, Time 2 data revealed 83% strongly disagreed and 17% disagreed with the statement and none agreed or strongly agreed, suggesting that participants acquired knowledge from education in-service about GC or CT transmission risk among MSM. When the two survey findings were compared, the distributions of responses were not statistically significantly different (Fisher Exact Test p=1.0).

Table 4: Patients who report using a condom 100% of sexual intercourses are not at risk for gonorrhea or chlamydia.						
Time 2						
Time 1	Strongly Disagree	Disagree	Agree	Strongly Agree	Total *	
					Total	Percent
Strongly Disagree	2	0	0	0	2	33%
Disagree	1	0	0	0	1	17%
Agree	2	1	0	0	3	50%
Strongly Agree	0	0	0	0	0	0%
Total *	5	1	0	0	6	100%
Percent	83%	17%	0%	0%		
* Fisher Exact Test, p=1.0						

Saliva as a Risk for Gonorrhea Transmission

Pre-intervention survey data showed that 67% (4/6) strongly disagreed and 17% (1/6) disagreed with the statement that patients could transmit or contract GC from kissing, while only 17% (1/6) correctly reported that they strongly agreed. When post-intervention surveys were incorporated into the analysis, Time 2 data revealed that 50% (3/6) strongly agreed and 50% agreed (3/6), suggesting that participants acquired new knowledge from education in-service about saliva and kissing as a means of GC transmission. When the two survey findings were compared, the distributions of responses were not statistically significantly different (Fisher Exact Test = 1.0).

Table 5: Patients can transmit or contract gonorrhea from kissing.						
	Time 2					
Time 1	Strongly Disagree	Disagree	Agree	Strongly Agree	Total *	
					Total	Percent
Strongly Disagree	0	0	2	2	4	67%
Disagree	0	0	1	0	1	17%
Agree	0	0	0	0	0	0%
Strongly Agree	0	0	0	1	1	17%
Total *	0	0	3	3	6	100%
Percent	0%	0%	50%	50%		
* Fisher Exact Test, p=1.0						

Transmission through Skin-to-Skin, Non-penetrative Contact

Pre-intervention survey data showed that 17% (1/6) strongly agreed and 33% (2/6) disagreed that GC and CT may be transmitted through skin-to-skin non-penetrative anal-genital contact or rubbing, while 33% (2/6) agreed and 17% (1/6) strongly agreed. When post-intervention surveys were incorporated into the analysis, Time 2 data revealed 50% (3/6) strongly disagreed, while 33% (2/6) agreed and 17% (1/6) strongly agreed. This suggests that further education is needed in the area. When the two survey findings were compared, the distributions of responses were not statistically significantly different (Fisher Exact Test p=0.0667).

Table 6: Gonorrhea or chlamydia may be transmitted through skin-to-skin non-penetrative anal-genital contact or rubbing.						
	Time 2					
Time 1	Strongly Disagree	Disagree	Agree	Strongly Agree	Total *	
					Total	Percent
Strongly Disagree	1	0	0	0	1	17%
Disagree	2	0	0	0	2	33%
Agree	0	0	2	0	2	33%
Strongly Agree	0	0	0	1	1	17%
Total *	3	0	2	1	6	100%
Percent	50%	0%	33%	17%		
* Fisher Exact Test, p=0.07						

Perceptions of Symptomatic Pharyngeal Infection

Pre-intervention survey data showed that 0% (0/6) of participants who participated in both Times 1 and 2 correctly identified that symptomatic cases makeup less than 10% of GC or CT pharyngeal infections. In Time 1, 33% (2/6) answered 10%-30%, 50% (3/6) answered 31%-50%, and 17% (1/6) answered "I do not know." When post-intervention surveys were incorporated into the analysis, Time 2 data revealed 50% (3/6) correctly answered 0%-9%, while 33% (2/6) answered 10%-30% and 17% (1/6) answered "I do not know." This suggests that most participants acquired knowledge about the low prevalence of symptomatic pharyngeal cases, compared to Time 1, and understand that symptoms alone are not a good indicator to screen for pharyngeal GC or CT infections.

Table 7: Approximately what percentage of patients with pharyngeal gonorrhea or chlamydia present with any symptoms, such as a sore throat?							
	Time 2						
Time 1	0% - 9%	10% - 30%	31% - 50%	51% - 80%	I do not know	Total *	
						Total	Percent
0% - 9%	3	2	0	0	1	0	0%
10% - 30%	0	0	0	0	0	2	33%
31% - 50%	0	0	0	0	0	3	50%
51% - 80%	0	0	0	0	0	0	0%
I do not know	0	0	0	0	0	1	17%
Total *	3	2	0	0	1	6	100%
Percent	50%	33%	0%	0%	17%		
* Fisher Exact Test, p=0.8							

"My Patients Will Tell Me What Screening Tests They Need"

Pre-intervention survey data showed that 17% (1/6) strongly disagreed and 67% (4/6) disagreed with the statement that patients will tell the provider what screening tests they will need, while 17% (1/6) agreed with the statement that patients will tell them what tests they need. When post-intervention surveys were incorporated into the analysis, Time 2 data revealed that 83% (5/6) strongly disagreed and 17% (1/6) disagreed with the statement, while none agreed or strongly agreed, suggesting that participants understand that they should not rely on patients to tell them what screening tests to order. When the two survey findings were compared, the distributions of responses were not statistically significantly different (Fisher Exact Test p=1.0).

Table 8: My patients will tell me what kind of screening tests they need.						
	Time 2					
Time 1	Strongly Disagree	Disagree	Agree	Strongly Agree	Total *	
					Total	Percent
Strongly Disagree	1	0	0	0	1	17%
Disagree	3	1	0	0	4	67%
Agree	1	0	0	0	1	17%
Strongly Agree	0	0	0	0	0	0%
Total *	5	1	0	0	6	100%
Percent	83%	17%	0%	0%		
* Fisher Exact Test, p=1.0						

Perceptions on Asking Patients About Sexual Practices

Pre-intervention survey data showed that 100% (6/6) strongly disagreed that it is not appropriate for them to ask patients about their sexual orientation or sexual practices. In Time 2, the opinions were unchanged with 100% (6/6) strongly disagreeing. Because there was no change in both Times 1 and 2, there was no Fisher Exact Test conducted.

Table 9: It is not appropriate for me to ask patients about their sexual orientation or sexual practices.						
	Time 2					
Time 1	Strongly Disagree	Disagree	Agree	Strongly Agree	Total *	
					Total	Percent
Strongly Disagree	6	0	0	0	6	100%
Disagree	0	0	0	0	0	0%
Agree	0	0	0	0	0	0%
Strongly Agree	0	0	0	0	0	0%
Total *	6	0	0	0	6	100%
Percent	100%	0%	0%	0%		
* Fisher Exact Test, N/A						

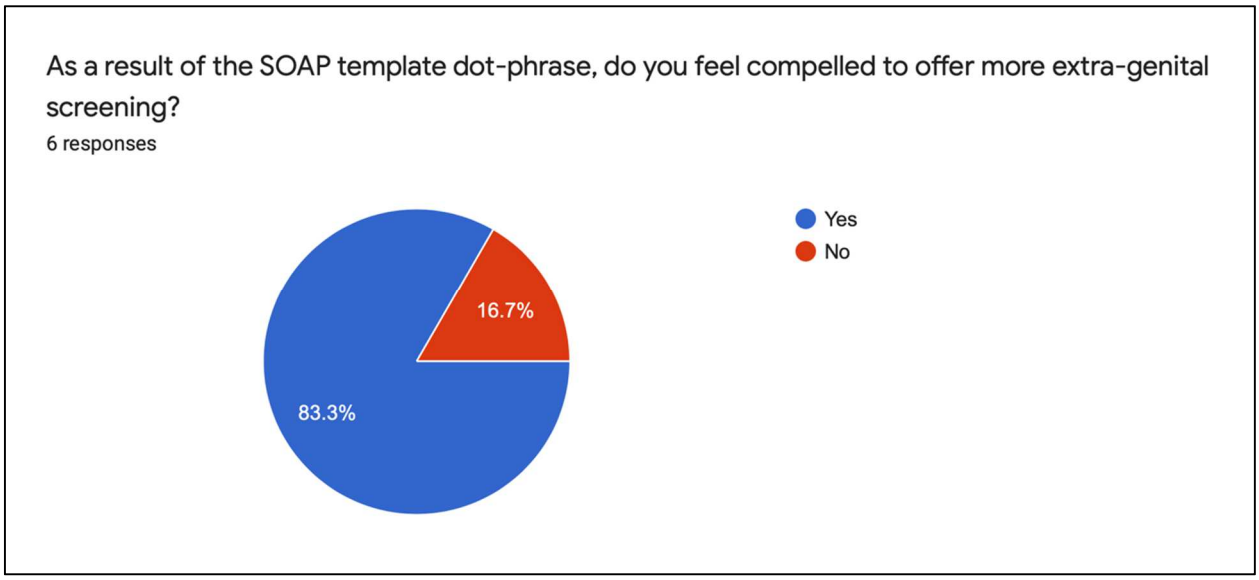
Additional Insights

In Time 1, participants were asked to state their perception on whether GC was increasingly becoming resistant to cephalosporin as a result of inadequate extra-genital

screening. The median response of participants that participated in both Times 1 and 2 surveys was a 2.5, suggesting that the participants incorrectly disagreed with the statement. However, this item was not asked in Time 2 during follow up to see if there was a shift to the "agree" or "strongly agree" spectrum.

In Time 1, participants were asked to state their opinion on whether having a SOAP note dot-phrase template on the EMR would help them focus their sexual history taking during a patient encounter. The median response on a 4-point Likert scale was a 4, indicating "strongly agree." In Time 2, the statement was restated to inquire the number of times the participants used the dot-phrase and their likelihood of using the dot-phrase in future encounters. While 0 participants reported having had the opportunity to use the dot-phrase, the participants reported a median of 4, or strongly agree, with the statement that they would be likely to use the dot-phrase during future encounters. Furthermore, at Time 2, the participants reported a median of 4 when asked about the usefulness of the asynchronous video presentation, and 83% (5/6) reported feeling more compelled to offer extra-genital screening as a result of the dot-phrase template (seen in Figure 2).

Figure 2: *Post-survey (Time 2) feeling more compelled*



CHAPTER SIX: DISCUSSION

At follow up, a total of six subjects (67%) who had initially participated in Time 1, also completed a Time 2 survey. The first survey showed 6 of 9 subjects (67%) correctly stated that consistent condom use does not decrease risk for extra-genital transmission GC or CT, and the follow-up showed all (6) completing the survey correctly stated (genital) condom use did not protect against transmission to other sites. Nearly 56% (5/9) of subjects incorrectly identified GC transmission through kissing or saliva exchange was possible and among second survey respondents, all (6/6) correctly identified the relationship. Few participants could correctly identify the prevalence (<10%) of symptomatic pharyngeal GC infection (11%, 1/9) at time 1. Interestingly, 50% (3/6) correctly identified prevalence (<10%) at the follow-up survey, none of whom had answered the first survey item correctly. Nearly 83% (5/6) subjects participating in both surveys report feeling more compelled to offer extra-genital screening to high risk patients. Also, 83% (5/6) favored using the dot-phrase history tool for future patient encounters.

Unfortunately, none of the providers completing the second survey reported using dot-phrase protocol during the six week follow-up period.

Data published by others suggest modest improvement of GC or CT screening follows educational interventions in outpatient clinical settings. Taylor et al. (2016) systematically reviewed six studies related to provider-targeted education, but only two of the studies were identified as moderately effective. The systematic review also found that in one study, provider training insignificantly increased post-intervention screening rates to 40%, a modest improvement from 31% at pre-intervention (Taylor et al., 2016). The second moderately effective study identified in the systematic review revealed that the number of patients appropriately being tested for CT was 86.7% compared to the control group 67%. (Taylor et al., 2016).

Nonetheless, while provider-targeted education alone may not be sufficient, it is necessary to support evidence-based practice. For example, Taylor et al. (2016) suggest that provider education used in conjunction with other interventions may produce highly successful outcomes (e.g., like EMR reminders and bundles). To this end, our participants perceived the effectiveness of the EMR dot-phrase nearly unanimously. Future interventions may employ effective additional strategies identified in a systematic review, including EMR reminders. For example, Taylor et al. (2016) identified both compliance and positivity rates among specimens collected improved with EMR reminders systems for CT screening in sexually-transmitted infection clinics: adherence increased, 13% to 48.9% following implementation and positivity rates increasing from 9.5% to 11.2% over the interval. Thus, questions for future quality improvement studies will focus on combining educational interventions with other evidence-based approaches to improving evaluation and screening in adults at high-risk for CT and GC.

Limitations

While pilot study data suggest providers may evidence knowledge gaps relative to extra-genital GC and CT infections and practice guidelines, the sample size precludes conclusive evidence of educational need. Future studies will evaluate associations between provider surveys using McNemar's test for paired nominal data. All survey data were self-reported and the direction of bias in self-reported data cannot be assessed. Non-differential misclassification bias across multi-level variables cannot be reliably assumed in these data (Dosemeci et al., 1990). Further, we cannot estimate the provider group's intent to change practice based on these data and organizational impacts of this in-service education approach and development of dot-phrase guidance within the EMR cannot be estimated.

CONCLUSION

The goal of this project was to improve provider awareness and encourage careful history taking that supports screening for infection. While education alone was insufficient to effect practice or provider behavior change, it is an essential first step in identifying a need for practice change. The data collected from the pre-surveys underscored the premise seen in other studies that many participants, at baseline, lacked knowledge about extra-genital infections and modes of transmission. For instance, at baseline, 50% of providers erroneously agreed that with consistent condom use at all times prevented GC or CT infection. Following education, 100% of providers correctly identified the relationship between condom use and infection risk, indicating that teaching was an effective tool to shift understanding of extra-genital infection and transmission in this sample. Another instance where the educational component demonstrated significance was when, at baseline, none (of 6) providers could identify the proportion of symptomatic pharyngeal GC infections that are expected among the affected. The repeat survey suggested half

of providers (3/6) correctly identified that 10% of adults affected by pharyngeal GC would present with symptoms.

The importance of continuing this work lies in the health of our nation. The burden of undiagnosed extra-genital GC and CT continues to affect individuals and the community that engage in receptive oral and anal intercourse. The literature demonstrates that many of these patients, particularly the MSM population, receive substandard screening, and the barrier is due to healthcare providers who are not risk stratifying these patients properly and failing to offer rectal or pharyngeal swabs to screen for these infections. Developing approaches that incorporate evidence-based practice to promote early diagnosis and treatment of extra-genital infections decreases population burden of disease, and the potential for antibiotic-resistant strains of GC. Alone, antibiotic resistance in GC costs $400 million over 10 years (CDC, 2019b). While many patients have options to receive sexual health screening in primary care, STI clinics or retail clinics, many providers continue to screen for urogenital infections alone.

As a next step, implementing a dot-phrase template in EMRs that prompts and guides healthcare providers to ask pertinent targeted questions that enhance screening for a rectal and oropharyngeal GC or CT infection is important. Evaluating effectiveness of an EMR template, such as the dot-phrase SOAP note, for sensitivity and specificity of predicting extra-genital screening and targeted risk-group stratification may improve patient care. Future quality improvement projects and studies should address implementation of effective structural interventions and best practices, testing virtual and in-person educational interventions, to sustain these changes over a prolonged period of time in order to combat the growing threat of extra-genital infections that affects the gay and bisexual MSM community.

APPENDICES

Appendix A: Pre-Survey (Time 1)

Pre-Intervention Survey

Thank you for taking your time to complete this survey. Your feedback is valuable, and we appreciate your taking time out of your busy schedule to participate.

* Required

Part 1: 3 questions to create your respondent ID

We are interested in linking your pre- and post-survey responses without linking information back to you. To do this, please ans the following questions so that we can create a respondent ID.

- Year your first car was made: _____ (Ex: 1989)
- Make of your first car : _____ (Ex: Toyota)
- The name of the first pet you remember: _____ (Ex: Lucky)

For example, your ID would be: "1989ToyotaLucky"

1. Year your first car was made: *

2. Make of your first car: *

3. The name of the first pet you remember: *

Part 2: Demographic questions

4. What is your current clinician role? *

Mark only one oval.

- ◯ Physician (MD/DO)
- ◯ Nurse Practitioner (NP)
- ◯ Physician Assistant (PA)

5. How many years of experience do you have in this role? *

Mark only one oval.

- ◯ 0-2 years
- ◯ 3-5 years
- ◯ 6-9 years
- ◯ 10+ years

6. What is your gender? *

Mark only one oval.

- ◯ Female
- ◯ Male
- ◯ Nonbinary
- ◯ Prefer not to say

7. In what clinical specialty do you work? *

Mark only one oval.

- ◯ Family Medicine
- ◯ Internal Medicine
- ◯ OB/GYN
- ◯ Other: _____

8. How many languages do you speak? *

Mark only one oval.

- ◯ English speaking only
- ◯ English and 1 other language
- ◯ English and 2 other languages

Part 3: Practice and Patients

We are interested in your thoughts, opinions and experiences.

9. I am comfortable talking to gay and bisexual men about their sexual practices. *

Mark only one oval.

	1	2	3	4	
Strongly disagree	◯	◯	◯	◯	Strongly agree

10. Gonorrhea and chlamydia rates in the US are decreasing with improved access to care. *

Mark only one oval.

	1	2	3	4	
Strongly disagree	◯	◯	◯	◯	Strongly agree

11. Patients who report using a condom 100% of sexual intercourses are not at risk for gonorrhe or chlamydia. *

Mark only one oval.

	1	2	3	4	
Strongly disagree	◯	◯	◯	◯	Strongly agree

12. Patients can transmit or contract gonorrhea from kissing. *

Mark only one oval.

	1	2	3	4	
Strongly disagree	◯	◯	◯	◯	Strongly agree

13. Gonorrhea or chlamydia may be transmitted through skin-to-skin non-penetrative anal-geni contact or rubbing. *

Mark only one oval.

	1	2	3	4	
Strongly disagree	◯	◯	◯	◯	Strongly agree

14. Approximately what percentage of patients with pharyngeal gonorrhea or chlamydia presen with any symptoms, such as a sore throat? *

Mark only one oval.

- ◯ 0% - 9%
- ◯ 10% - 30%
- ◯ 31% - 50%
- ◯ 51% - 80%
- ◯ I do not know

15. My patients will tell me what kind of screening tests they need. *

Mark only one oval.

	1	2	3	4	
Strongly disagree	◯	◯	◯	◯	Strongly agree

16. It is not appropriate for me to ask patients about their sexual orientation or sexual practices.

Mark only one oval.

	1	2	3	4	
Strongly disagree	◯	◯	◯	◯	Strongly agree

17. Gonorrhea is increasingly becoming resistant to cephalosporins due to inadequate extra-genital NAAT screening. *

Mark only one oval.

	1	2	3	4	
Strongly disagree	◯	◯	◯	◯	Strongly agree

18. Having a sexual history dot-phrase SOAP template on EPIC® will help me to focus my sexual history questions during a patient visit. *

Mark only one oval.

	1	2	3	4	
Strongly disagree	◯	◯	◯	◯	Strongly agree

19. Estimate the number of educationally-focused material (seminars, articles, podcasts) you ha ever reviewed or attended concerning lesbian, gay, bisexual, trans and queer youth and adul sexual health needs. *

Mark only one oval.

- ◯ 0
- ◯ 1-10
- ◯ 11-25
- ◯ 26+

Appendix B: Post-Survey (Time 2)

Post-intervention Survey

Thank you for taking your time to complete this survey. Your feedback is valuable, and we appreciate your taking time out of your busy schedule to participate.

* Required

Part 1: 3 questions to link your respondent ID to your pre-intervention survey

We are interested in linking your pre- and post-survey responses without linking information back to you. To do this, please ans\ the following questions so that we can create a respondent ID.

- Year your first car was made: _____ (Ex: 1989)
- Make of your first car : _____ (Ex: Toyota)
- The name of the first pet you remember: _____ (Ex: Lucky)

For example, your ID would be: "1989ToyotaLucky"

1. Year your first car was made: *

2. Make of your first car: *

3. The name of the first pet you remember: *

Part 2: Practice and Patients

We are interested in your thoughts, opinions and experiences.

4. I am comfortable talking to gay and bisexual men about their sexual practices. *

Mark only one oval.

	1	2	3	4	
Strongly disagree	◯	◯	◯	◯	Strongly agree

5. Gonorrhea and chlamydia rates in the US are decreasing with improved access to care. *

Mark only one oval.

	1	2	3	4	
Strongly disagree	◯	◯	◯	◯	Strongly agree

6. Patients who report using a condom 100% of sexual intercourses are not at risk for gonorrhea chlamydia. *

Mark only one oval.

	1	2	3	4	
Strongly disagree	◯	◯	◯	◯	Strongly agree

7. Patients can transmit or contract gonorrhea from kissing. *

Mark only one oval.

	1	2	3	4	
Strongly disagree	◯	◯	◯	◯	Strongly agree

8. Gonorrhea or chlamydia may be transmitted through skin-to-skin non-penetrative anal-genit contact or rubbing. *

Mark only one oval.

	1	2	3	4	
Strongly disagree	◯	◯	◯	◯	Strongly agree

9. Approximately what percentage of patients with pharyngeal gonorrhea or chlamydia present with any symptoms, such as a sore throat? *

Mark only one oval.

- ◯ 0% - 9%
- ◯ 10% - 30%
- ◯ 31% - 50%
- ◯ 51% - 80%
- ◯ I do not know

10. My patients will tell me what kind of screening tests they need. *

Mark only one oval.

	1	2	3	4	
Strongly disagree	◯	◯	◯	◯	Strongly agree

11. It is not appropriate for me to ask patients about their sexual orientation or sexual practices.

Mark only one oval.

	1	2	3	4	
Strongly disagree	◯	◯	◯	◯	Strongly agree

12. The YouTube presentation was an informative call to action for clinicians to screen for extra-genital infections. *

Mark only one oval.

	1	2	3	4	
Strongly disagree	◯	◯	◯	◯	Strongly agree

13. The sexual history dot-phrase SOAP template on EPIC® is helpful for me in conducting a sexu history for gay, bisexual and MSM patients. *

Mark only one oval.

	1	2	3	4	
Strongly disagree	◯	◯	◯	◯	Strongly agree

14. As a result of the SOAP template dot-phrase, do you feel compelled to offer more extra-genital screening? *

Mark only one oval.

◯ Yes
◯ No

15. In the past few weeks, how many times have you been able to use the EPIC dot-phrase, whe applicable? *

Mark only one oval.

- 0
- 1-5
- 6-10
- 10+

16. If you were not able to use the EPIC dot-phrase SOAP template yet, how likely do you think y will use the template in the future as a guide to offer more extra-genital screening?

Mark only one oval.

	1	2	3	4	
Not likely					Very likely

17. OPTIONAL: Please feel free to provide any feedback.

Appendix C: EMR dot-phrase template

History of Presenting Illness:
@NAME@ is a @AGE@ @SEX@ presenting for a routine STI screening encounter today. Patient {WILDCARD:REPORTS/DENIES} symptoms to include {DROP DOWN LIST: dysuria, urethral discharge, rectal discharge, none, ***}.
{For Clinician (remove this text after discussion with patient)
"To ensure I can provide you with the best medical care, I'd like to ask you some sensitive questions that help me understand what specific tests you may need today. Anything we talk about today, other than some exceptions, is confidential and only serves to help me understand your sexual health screening needs better. The only instance in which I will need to report our conversation to the authorities is in instances of abuse or risk of harm to yourself and others."}

Partners

1. **Is the patient currently sexually active? {WILD CARD: YES/NO}**

- **Sex and number of sex partners (each gender) during the last 12 months:**
    a. **cis-men ***
    b. **cis-women ***
    c. **trans ***

Practices

{ For Clinician (remove this text after discussion with patient)***
"I need to ask you some additional questions about sex you've had with partners over the last 12 months to better understand your risk for specific STDs."}

1. **What kind of sexual contact has the patient had? {WILD CARD: receptive genital-anal ("bottoming"), receptive genital-oral ("rimming"}, receptive oral ("fellatio"), insertive anal ("topping"), insertive oral, giving oral-anal ("rimming"}, insertive vaginal, giving oral-vaginal)**

Protection from STDs

1. **Does the patient use a condom to protect against STDs? {WILDCARD: YES/NO}**
2. **Does the patient use a dental dam to protect against STDs? {WILDCARD: YES/NO}**
    a. **If not, what is the patient's reason for not using protection? ***
3. **How often does the patient use protection? {WILDCARD: always, never, sometimes}**

Past History of STDs

1. **Has the patient ever been diagnosed with an STD? {WILD CARD: YES/NO}**
    a. **When? {WILDCARD: ***, N/A}**
    b. **What type of STD? {WILDCARD: gonorrhea, chlamydia, HIV, Hepatitis B, Hepatitis C, syphilis, herpes (genital), herpes (oral), LGV, ***, N/A}**
    c. **How was the patient treated? {***, does not recall, N/A}**
2. **Has the patient ever had any recurring symptoms or diagnoses? {WILD CARD: YES/NO}**

3. **Has the patient ever been tested for HIV or other STDs? {WILD CARD: YES/NO}**
4. **Has the patient's current partner(s) or any former partner(s) ever been diagnosed or treated for an STD? {WILD CARD: YES/NO}**
    a. **Was the patient tested for the same STDs? {WILD CARD: YES/NO/ N/A/}**
        i. **If yes, when was the patient tested? {WILD CARD: *** / does not recall / N/A}**
        ii. **If yes, what was the diagnosis? {WILD CARD: *** / does not recall / N/A}**
        iii. **If yes, how was it treated? {WILD CARD: *** / does not recall / N/A}**

REVIEW OF SYSTEMS
.ROS
@ALLERGY@
@MED1@
@PROB@
@PMH@
@SOC@

PHYSICAL EXAM:
.vs
.physicalexam

ASSESSMENT/PLAN:
@DIAG2@

{To order GC or CT RNA TMA swab, type in LP1472 under "order search" function, and be sure to specify "source"}
{Rectal GC or CT swab recommended if: ***(remove after decision making)***
* h/o receptive penile-anal ("bottoming")
* h/o receptive oral-anal ("rimming")

Pharyngeal GC or CT NAAT swab recommended if: ***(remove after decision making)***
* h/o receptive oral intercourse ("giving head" or "giving a blowjob")
* h/o giving oral-anal ("rimming")

Urine GC or CT NAAT recommended if: ***(remove after decision making)***
* h/o insertive oral intercourse
* h/o insertive anal intercourse ("topping")}

.sign

Appendix D: Asynchronous Education In-Service Slides and Transcript

Extra-genital Screening in gay, bisexual, and MSM patients: A Call-to-Action

Jackson Huang, DNP(c), MS, NP-C
Doctor of Nursing Practice (DNP) Candidate '21
University of California, Los Angeles (UCLA)

Clinical Mentor: Dr. Jessica Leung, MD

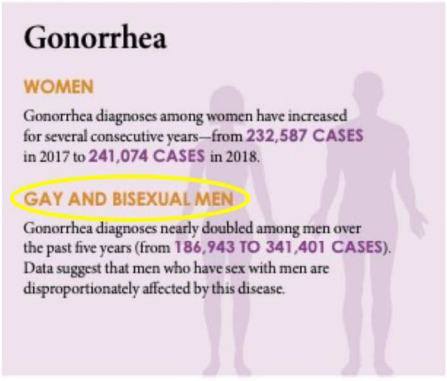
DNP Chair: Dr. Dorothy Wiley, PhD, RN, FAAN

Pre-intervention survey

- If you haven't already completed the pre-intervention survey, please be sure to **complete the survey before continuing with the video**.
- The pre-intervention survey will **stop accepting submissions** on **Monday February 1, 2021** by **9 PM** Pacific Standard Time

Introduction & background

- **Gonorrhea** increased 5% to more than 580,000 cases – also the ***highest number reported*** since 1991.
- **Chlamydia** increased 3% to more than 1.7 million cases – the ***most ever reported*** to CDC.



(CDC, 2018).

Statement of the Problem

- Many gay, bisexual and men who have sex with men (MSM) patients are **not being properly screened for gonorrhea and chlamydia** in the throat or rectum.
- Many studies have acknowledged that providers can **miss over 80% of gonorrhea and chlamydia** in MSM patients with urogenital screening only.
- Routine extra-genital screening should be implemented to improve detection and prevent further infection of different anatomical sites in exposed sex partners.
- Many providers are not screening MSM patients for extra-genital infections (throat/rectum) due to lack of comfort or time constraints.

(Keenan et al., 2019; Gaspari et al., 2019; Scarborough et al., 2015; Danby et al., 2015; Marcus et al., 2011; Shaw & Ahmad, 2013).

Saliva as a risk for gonorrhea and chlamydia transmission

- Emerging evidence that suggests saliva can serve as a vehicle for gonorrhea and chlamydia transmission.
  - Intimate kissing
  - oral-anal exposure
  - oral-genital exposure
  - using saliva has lubricant during anal intercourse


JIAS

REVIEW

The role of saliva in gonorrhoea and chlamydia transmission to extragenital sites among men who have sex with men: new insights into transmission

Eric PF Chow and Christopher K Fairley


Journal of Clinical Microbiology

Bacterial Load of *Chlamydia trachomatis* in the Posterior Oropharynx, Tonsillar Fossae, and Saliva among Men Who Have Sex with Men with Untreated Oropharyngeal Chlamydia

Chow and Fairley (2019) and Phillips et al. (2019)

Literature at-a-glance

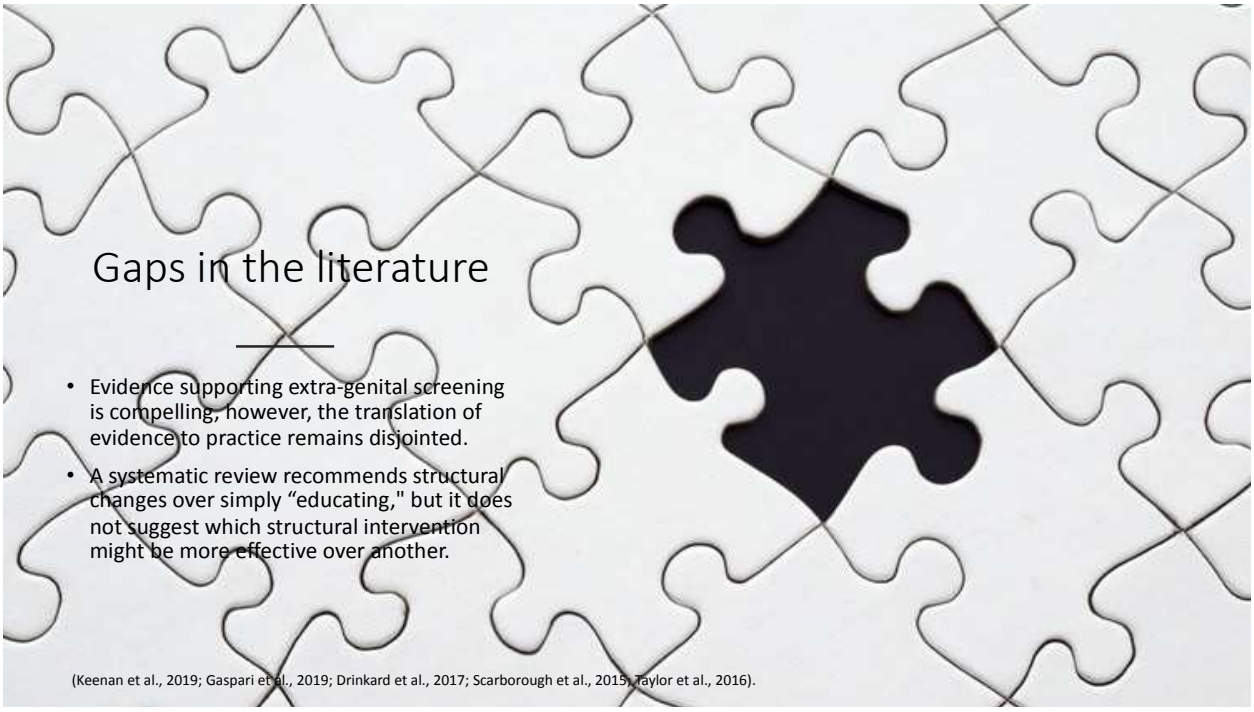
- Obstacles exist that prevent extra-genital screening, such as confidentiality concerns, language/cultural barriers, and challenges in obtaining sexual history.
- More than 90% of pharyngeal infections were asymptomatic – symptoms alone are not a good indicator to screen.
- Sexual risk assessment tools and staff training are potential approaches to increasing extra-genital screening.

(Keenan et al., 2019; Gaspari et al., 2019; Drinkard et al., 2017; Scarborough et al., 2015; Carter et al., 2014).

Significance: Antibiotic Resistance

- Gonorrhea is the second most common reported notifiable disease in the US.
- Half of all infections each year are resistant to at least one antibiotic.
- Only **one recommended treatment option left.**

(CDC, 2019).

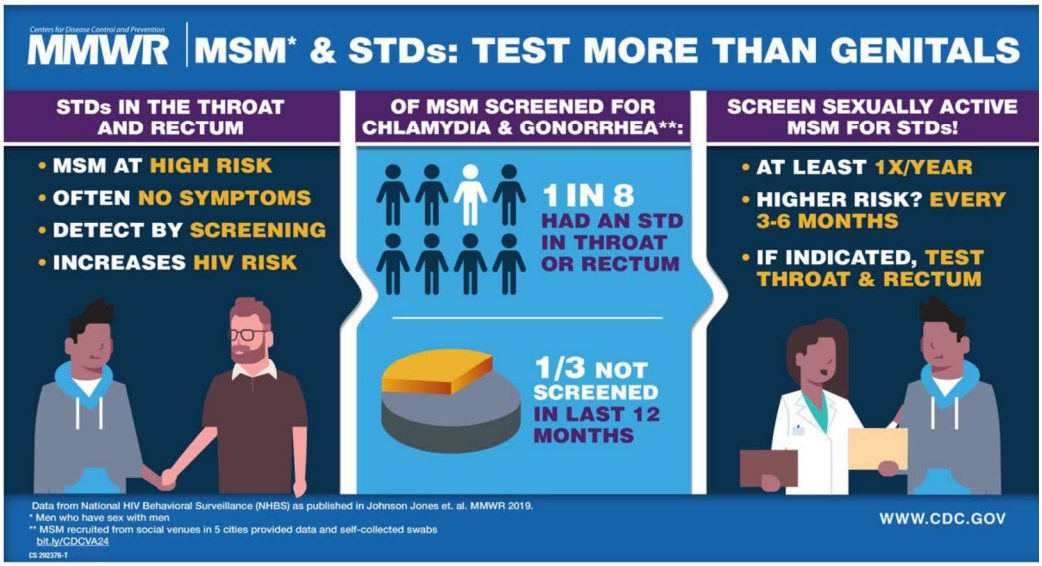


Gaps in the literature

- Evidence supporting extra-genital screening is compelling, however, the translation of evidence to practice remains disjointed.
- A systematic review recommends structural changes over simply “educating," but it does not suggest which structural intervention might be more effective over another.

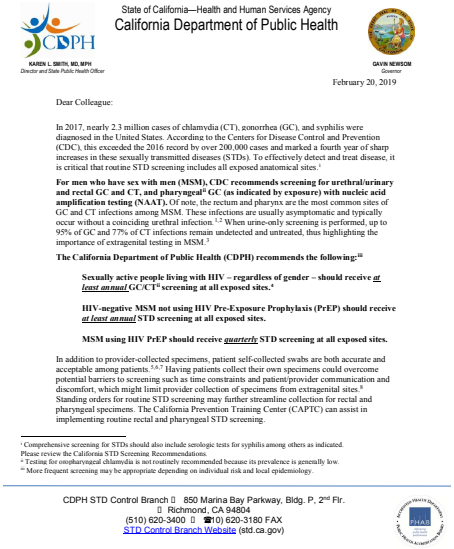
(Keenan et al., 2019; Gaspari et al., 2019; Drinkard et al., 2017; Scarborough et al., 2015; Taylor et al., 2016).

CDC Screening guidelines



California Department of Public Health

- The **California Department of Public Health (CDPH)** recommends the following:
  1. Sexually active people living with HIV – regardless of gender – should receive *at least annual* GC/CT screening at all exposed sites.
  2. HIV-negative MSM not using HIV Pre-Exposure Prophylaxis (PrEP) should receive *at least annual* STD screening at all exposed sites.
  3. MSM using HIV PrEP should receive *quarterly (q 3 months)* STD screening at all exposed sites.



State of California—Health and Human Services Agency
California Department of Public Health

KAREN L. SMITH, MD, MPH
Director and State Public Health Officer

GAVIN NEWSOM
Governor

February 20, 2019

Dear Colleague:

In 2017, nearly 2.3 million cases of chlamydia (CT), gonorrhea (GC), and syphilis were diagnosed in the United States. According to the Centers for Disease Control and Prevention (CDC), this exceeded the 2016 record by over 200,000 cases and marked a fourth year of sharp increases in these sexually transmitted diseases (STDs). To effectively detect and treat disease, it is critical that routine STD screening includes all exposed anatomical sites.[i]

For men who have sex with men (MSM), CDC recommends screening for urethral/urinary and rectal GC and CT, and pharyngeal[ii] GC (as indicated by exposure) with nucleic acid amplification testing (NAAT). Of note, the rectum and pharynx are the most common sites of GC and CT infections among MSM. These infections are usually asymptomatic and typically occur without a coinciding urethral infection.[1,2] When urine-only screening is performed, up to 95% of GC and 77% of CT infections remain undetected and untreated, thus highlighting the importance of extragenital testing in MSM.[3]

The California Department of Public Health (CDPH) recommends the following:[iii]

Sexually active people living with HIV – regardless of gender – should receive *at least annual* GC/CT[ii] screening at all exposed sites.[4]

HIV-negative MSM not using HIV Pre-Exposure Prophylaxis (PrEP) should receive *at least annual* STD screening at all exposed sites.

MSM using HIV PrEP should receive *quarterly* STD screening at all exposed sites.

In addition to provider-collected specimens, patient self-collected swabs are both accurate and acceptable among patients.[5-6,7] Having patients collect their own specimens could overcome potential barriers to screening such as time constraints and patient/provider communication and discomfort, which might limit provider collection of specimens from extragenital sites.[8] Standing orders for routine STD screening may further streamline collection for rectal and pharyngeal specimens. The California Prevention Training Center (CAPTC) can assist in implementing routine rectal and pharyngeal STD screening.

[i] Comprehensive screening for STDs should also include serologic tests for syphilis among others as indicated. Please review the California STD Screening Recommendations.
[ii] Testing for oropharyngeal chlamydia is not routinely recommended because its prevalence is generally low.
[iii] More frequent screening may be appropriate depending on individual risk and local epidemiology.

CDPH STD Control Branch ▯ 850 Marina Bay Parkway, Bldg. P, 2nd Flr.
▯ Richmond, CA 94804
(510) 620-3400 ▯ ☎(0) 620-3180 FAX
STD Control Branch Website (std.ca.gov)

Call-to-Action

- Consider using the CDC's **4 P's of sexual history taking** to facilitate the conversation and decision making:
  - 1 – Partners
  - 2 – Practices (sexual)
  - 3 – Protection from STIs
  - 4 – Past hx of STIs
    - *(5th P is "Pregnancy" – if applicable)*

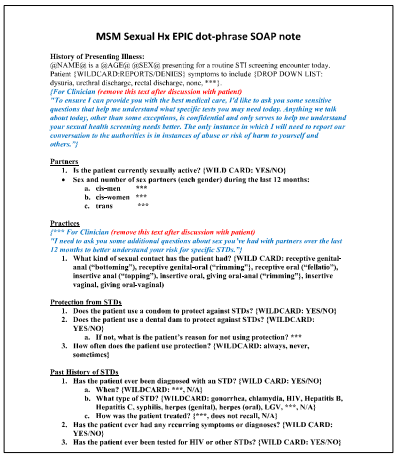
Want to learn more?
Scan these QR codes with your smart phone's camera!

California Prevention Training Center (PTC) Resources

California PTC Extragenital Screening Lecture
(15-minute YouTube video)

EPIC dot-phrase SOAP template

- Dot-phrase "code" will be decided by AHS, and shared to provider team.
- Final version may be subject to modifications in accordance with AHS policies and procedures.
- Blue text will "highlight" when you use "F2" function in EPIC note writer.
  - *Optional suggestions on how you might consider wording your conversation.*
  - *Last blue text = instructions on how to order GC/CT in AHS's EPIC EMR (under A/P)*
- Red text is a reminder for you to delete the section prior to signing your note.



MSM Sexual Hx EPIC dot-phrase SOAP note

History of Presenting Illness:
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(For Clinician (remove this text after discussion with patient)
"To ensure I can provide you with the best medical care, I'd like to ask you some sensitive questions that help me understand what specific tests you may need today. Anything we talk about today, other than some exceptions, is confidential and only serves to help me understand your sexual health screening needs better. The only instance in which I will need to report our conversation to the authorities is in instances of abuse or risk of harm to yourself and others."]

Partners
1. **Is the patient currently sexually active? {WILD CARD: YES/NO}**
- **Sex and number of sex partners (each gender) during the last 12 months:**
  a. **cis-men ***
  b. **cis-women ***
  c. **trans ***

Practices
*[*** For Clinician (remove this text after discussion with patient)*
"I need to ask you some additional questions about sex you've had with partners over the last 12 months to better understand your risk for specific STDs."]
1. **What kind of sexual contact has the patient had? {WILD CARD: receptive genital-anal ("bottoming"), receptive genital-oral ("rimming"), receptive oral ("fellatio"), insertive anal ("topping"), insertive oral, giving oral-anal ("rimming"), insertive vaginal, giving oral-vaginal)**

Protection from STDs
1. **Does the patient use a condom to protect against STDs? {WILDCARD: YES/NO}**
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3. **How often does the patient use protection? {WILDCARD: always, never, sometimes}**

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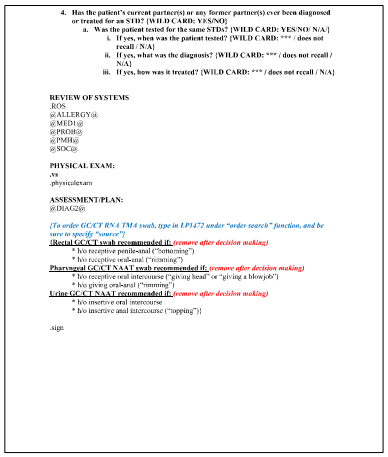
1. **Has the patient ever been diagnosed with an STD? {WILD CARD: YES/NO}**
   a. **When? {WILDCARD: ***, N/A}**
   b. **What type of STD? {WILDCARD: gonorrhea, chlamydia, HIV, Hepatitis B, Hepatitis C, syphilis, herpes (genital), herpes (oral), LGV, ***, N/A}**
   c. **How was the patient treated? {***, does not recall, N/A}**
2. **Has the patient ever had any recurring symptoms or diagnoses? {WILD CARD: YES/NO}**
3. **Has the patient ever been tested for HIV or other STDs? {WILD CARD: YES/NO}**



4. **Has the patient's current partner(s) or any former partner(s) ever been diagnosed or treated for an STD? {WILD CARD: YES/NO}**
   a. **Was the patient tested for the same STDs? {WILD CARD: YES/NO/ N/A}**
      i. **If yes, when was the patient tested? {WILD CARD: *** / does not recall / N/A}**
      ii. **If yes, what was the diagnosis? {WILD CARD: *** / does not recall / N/A}**
      iii. **If yes, how was it treated? {WILD CARD: *** / does not recall / N/A}**

REVIEW OF SYSTEMS
.ROS
@ALLERGY@
@MED1@
@PROB8@
@PMH@
@SOC@

PHYSICAL EXAM:
.vs
.physicalexam

ASSESSMENT/PLAN:
@DIAG2@

[To order GC/CT RNA TMA swab, type in LP1472 under "order search" function, and be sure to specify "source"]
Rectal GC/CT swab recommended if: *(remove after decision making)*
- h/o receptive penile-anal ("bottoming")
- h/o receptive oral-anal ("rimming")

Pharyngeal GC/CT NAAT swab recommended if: *(remove after decision making)*
- h/o receptive oral intercourse ("giving head" or "giving a blowjob")
- h/o giving oral-anal ("rimming")

Urine GC/CT NAAT recommended if: *(remove after decision making)*
- h/o insertive oral intercourse
- h/o insertive anal intercourse ("topping")

.sign

Next on the agenda…

- The dot-phrase template will be available in the near future. Please look out for an email from Dr. Jessica Leung
- A **post-intervention survey** will be administered starting **Mon March 1st – Tues March 9th by 9 PM PST**
  - Emailed by Dr. Jessica Leung
  - Identical questions and similar questions – a bit shorter than pre-intervention survey (minus demographic questions)
  - Please complete the post-intervention to allow us to link your pre-intervention data
  - **Reminder**: Neither the pre- nor post-intervention surveys will be traceable to the individual participant. All responses are anonymous and will not be used in any way to "out" anyone.

Thank you for your time!

- Thank you for taking the time to participate in my quality improvement project, and for contributing to my academic journey.

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- Taylor, M. M., Frasure-Williams, J., Burnett, P., & Park, I. U. (2016). Interventions to improve sexually transmitted disease screening in clinic-based settings. *Sexually Transmitted Diseases*, *43*. https://doi.org/10.1097/olq.0000000000000294

YouTube Video URL: https://youtu.be/ZEqdrmwen-k

Video Transcript:

00:00
hello and thank you for taking the time

00:02
to review this quick presentation
00:04
my name is jackson and i am a dnp
00:06
candidate at ucla
00:08
the aim of this presentation is to
00:10
quickly share some of the literature and
00:12
screen guidelines around extragenital
00:15
gonorrhea and chlamydia screening and to
00:17
introduce an epic dot phrase that
00:19
i will be shared with the ahs team in
00:22
the coming weeks
00:25
if you haven't already done so please
00:27
consider completing the pre-intervention
00:29
survey i
00:30
have linked the survey on this video so
00:31
feel free to click on the link in the
00:33
description box below
00:35
or the yellow icon um the
00:38
pre-intervention survey is
00:39
relatively short and shouldn't take more
00:41
than five minutes to complete
00:43
it will stop accepting submissions at 9
00:46
00 pm pacific standard time
00:47
on monday february 1st

00:51
so what is the big deal with extra
00:53
genital screening uh well nowadays we
00:56
think that because there is better
00:57
access to same-day
00:58
care and std screening the cdc actually
01:02
has revealed some compelling data that
01:04
gonorrhea and chlamydia rates have
01:06
increased over the past few years
01:08
gonorrhea rates have increased
01:10
five percent which is the highest number
01:12
reported since 1991
01:15
and chlamydia rates have increased three
01:18
percent which is actually the most
01:19
ever reported to the cdc um
01:22
while these statistics take into
01:24
consideration both men and women
01:26
it is important to point out that gay
01:29
and bisexual men have sex with men
01:31
are disproportionately affected by
01:33
gonorrhea
01:34
so while as a country as a whole we may
01:36
have more options for same-day std
01:38
screenings such as at a retail clinic

01:41
or urgent care clinic we have to ask
01:43
ourselves
01:44
why are our numbers still on the rise
01:48
um as i have both worked in both primary
01:52
care and
01:52
fqhc and a retail urgent care clinics
01:57
i have noticed that in both
01:58
resource-rich and resource-poor settings
02:00
my msn patients were not being offered
02:02
extra genital screening
02:04
i remember having a patient who had
02:06
tested negative for gcct
02:08
in his urine and had been testing
02:10
negative for the past few times
02:12
um but when i saw him i tested him for
02:15
um
02:16
throat and rectum and in and that was in
02:19
fact
02:19
positive uh this led me to start
02:22
reviewing the literature available and i
02:24
found that just as i have seen in my own
02:26
practice
02:27
i was finding that the literature

02:28
revealed many gay
02:30
bisexual and msm patients were not
02:33
actually being screened properly for
02:34
gcct in the throat and rectum
02:38
um many studies collectively acknowledge
02:41
that both
02:42
that providers can in fact miss over 80
02:44
percent of gonorrhea and chlamydia
02:46
among msm patients if they only opted
02:49
for urogenital testing only the
02:52
literature recommends routine extra
02:54
general screening um
02:55
off to be offered uh in anatomical site
02:58
exposure
02:59
and as such it is important for us to
03:01
discuss with our patients about how
03:03
understanding their sexual practices
03:05
can help us offer more comprehensive
03:07
screening options if applicable
03:10
the literature also does however
03:12
acknowledge that many providers are not
03:14
screening their msm patients
03:16
due to a lack of comfort or time

03:18
constraints in a busy clinic
03:22
it is also important to acknowledge that
03:24
there is emerging evidence that suggests
03:26
saliva can serve as a
03:27
vehicle for gcct transmission while
03:31
further studies are needed to
03:33
determine if chlamydia can be
03:35
transmitted via saliva
03:36
to extragenital sites uh authors ciao
03:40
unfairly acknowledged that gonorrhea
03:42
infections at exchange general sites are
03:44
transmitted through non-genital contacts
03:47
such as kissing oral anal sex
03:51
and use of saliva in addition to
03:54
condomless
03:55
oral and anal intercourse this is
03:57
certainly something for us to keep in
03:59
mind as more studies and data are
04:00
published
04:03
the literature also discusses that there
04:05
are multiple obstacles that exist
04:08
such as confidentiality concerns
04:10
language and cultural barriers or

04:12
challenges in obtaining a sexual history
04:15
it is important to note that more than
04:17
90
04:18
of pharyngeal infections were in fact
04:20
asymptomatic
04:22
this means that symptoms alone are
04:24
really not a good indicator to screen
04:26
for pharyngeal infection
04:29
finally sexual risk assessment tools and
04:31
staff training
04:32
were acknowledged as potential
04:34
approaches to encouraging
04:36
extra genital screening
04:39
finally we should consider extra general
04:41
screening
04:42
because we only have one recommended
04:44
treatment option left for gonorrhea
04:46
and more than half of all infections
04:48
each year are
04:49
truly resistant to at least one
04:52
antibiotic
04:53
therefore the cdc does recommend
04:55
following all screening and treatment

04:57
guidelines
04:58
reporting treatment failures and
05:00
preventing a re-infection
05:02
by notifying and treating partners if we
05:05
continue to forego
05:07
extra genital screening when appropriate
05:10
we are potentially
05:11
contributing to this problem
05:15
so while the evidence supporting
05:16
estrogen and screening
05:18
is compelling the translation of
05:20
evidence to practice remains
05:22
slightly disjointed for example
05:25
the system a systematic review by taylor
05:27
at all recommends structural changes
05:29
over an educational in-service alone
05:32
however it doesn't suggest which
05:34
structural change might be more
05:36
effective over another while some
05:38
publications have acknowledged that
05:40
involving
05:40
medical assistants or other care team
05:42
members

05:44
could be effective such as strategically
05:47
placing extra general
05:49
swabs in the exam room i found through
05:52
my literature research that
05:53
qi projects involving the provider
05:55
directly were
05:56
actually the most effective in in
05:59
encouraging screening rates among
06:01
appropriate patient encounters
06:05
so let's talk about um screening
06:07
guidelines really quick uh according to
06:09
the cdc it is recommended that we screen
06:11
sexually active msm at least once a year
06:14
or every three to six months if they are
06:17
high risk
06:18
with more than one sexual partner of
06:20
course if indicated we do want to
06:22
consider
06:23
testing the throttling rectum because
06:25
gcct
06:26
um in a throat and rectum is often
06:29
asymptomatic
06:31
and can potentially increase hiv risk

06:35
while there are other options you can
06:36
surely discuss with your patients
06:38
such as studying prep this is not the
06:41
scope of the presentation
06:44
furthermore the california department of
06:46
public health also recommends uh
06:48
screening in three instances uh for
06:51
these extra general
06:52
extra general infections so the first
06:54
one would be sexually active people
06:56
living with hiv regardless of gender
06:59
they should receive at least annual gcct
07:02
screening at all exposed anatomical
07:05
sites
07:06
uh hiv they also recommend screening in
07:08
hiv-negative msm not using prep
07:11
and that they should receive at least
07:13
annual sti screening in all exposed
07:15
sites
07:17
and finally msm patients using hiv
07:21
prep should receive sti screening
07:24
exposed sites
07:25
at least every three months if you are

07:28
interested
07:29
feel free to read the dear colleague
07:30
letter as previewed on the right
07:33
hand side you can find the url in the
07:35
description box below
07:37
or click on the letter on your YouTube
07:39
video screen
07:41
so let's make extra general testing a
07:45
priority
07:45
um so we can consider using the cdc's
07:48
four p's of sexual history taking to
07:50
facilitate a conversation
07:52
and decision making i have omitted the
07:54
fifth p for pregnancy
07:56
for the scope of this presentation
07:58
though you may add this to your template
07:59
if applicable
08:01
you can also find more information about
08:03
the california prevention training
08:05
center
08:06
resources by scanning the qr codes on
08:08
the right hand side
08:10
including a more in-depth um lecture

08:14
uh that's about 15 minutes
08:18
finally i have devolved a soap note
08:20
template in the form of a dot phrase on
08:22
epic the dot phrase will be shared
08:25
with the ahs provider team at some point
08:27
in time
08:28
do keep in mind that the final version
08:30
is subject to
08:31
modifications to be in accordance with
08:34
ahs
08:35
policies and procedures uh in a nutshell
08:38
the
08:38
soap note mirrors the cdc's five p's of
08:41
sexual history taking format
08:43
um the dot phrase is designed for
08:46
providers
08:46
to use the f2 function the blue text
08:49
is uh um is text that is in a brackets
08:53
and this prompts your epic note writer
08:55
to highlight
08:56
whenever you hit f2 so that you can
08:58
delete it after performing the prompted
09:00
actions

09:02
the blue text will probably not show up
09:04
as blue on your epic note
09:05
writer but it will include suggestions
09:08
on how you might consider wording your
09:09
conversation
09:11
or even suggestions on how to order the
09:14
gcct
09:15
within the ahs epic system
09:18
you also will see red text and this does
09:21
show up as read in your epic
09:23
note writer the red text is a reminder
09:25
for you to delete that section prior to
09:28
signing your note
09:29
for instance in the assessment plan
09:31
section you will see that some of the
09:33
practices that would warrant a specific
09:36
type of let's say pharyngeal rectal
09:39
testing
09:42
dot phrase template will be available in
09:43
the near future um
09:45
so please look out for an email from uh
09:47
for updates from dr liang
09:49
i understand that you may or may not

09:51
have the opportunity to use the epic dot
09:54
phrase
09:54
over the next six weeks but it would be
09:57
helpful if you could provide some
09:58
feedback on how it might potentially
10:00
help augment
10:01
or guide your practice lastly if you
10:05
could take the post intervention
10:06
survey which will be available between
10:09
march 1st of march
10:10
9th your feedback and your time is
10:12
greatly appreciated
10:14
this will allow me to link your
10:16
pre-intervention survey responses to
10:18
your post-intervention
10:19
responses and i just want to remind that
10:22
um
10:23
remind you that neither your pre nor
10:25
post-intervention responses will be
10:27
traceable to
10:28
any individual provider your responses
10:30
are all anonymous
10:32
and will not be used to out anyone in

10:34
any way shape or form
10:36
uh your responses are helpful to me and
10:38
understanding how i could improve my
10:39
project in the future
10:42
and again uh thank you so much for
10:44
taking time out of your busy
10:46
schedule to participate in my project
10:48
and for making
10:49
time to complete the post intervention
10:51
serving when it's available
10:52
your participation greatly adds to my
10:55
academic journey and
10:56
i really appreciate your feedback

TABLE OF EVIDENCE

CITATION	PURPOSE	SAMPLE/ SETTING	METHODS (Design, Interventions, Measures)	RESULTS	DISCUSSION, INTERPRETATION, LIMITATION ON FINDINGS
Carter, J. W., Hart-Cooper, G. D., Butler, M. O., Borkowski, K. A., & Hoover, K. W. (2014). Provider barriers prevent recommended sexually transmitted disease screening of HIV-infected men who have sex with men. *Sexually Transmitted Diseases*, *41*(2), 137–142. https://doi.org/10.1097/olq.0000000000000067	Understand barriers encountered by HIV care providers and screening for extra-genital infections	118 provider questionnaires; 40 healthcare providers within 8 HIV clinics across 6 US cities Study demographics is best described as older adult (55%), female (54%), White (62%), physicians (51%) and other healthcare providers (49%) who have practiced in healthcare (50%) and HIV-care (52%) for <10 years.	**Method & Design:** Mixed studies design with 118 questionnaires and 40 semi-structured interviews **Interventions:** Questionnaire and interviews conducted to identify barriers deterring extra-genital screening.	Themes of obstacles that prevented extra-genital screening include: • patient confidentiality concerns • language and cultural barriers • challenges obtaining a sexual history • time constraints 1) Providers reported that they and colleagues experienced surprise at the frequency of asymptomatic anal and pharyngeal GC and CT infection among those tested only using urine screening tests.	**Discussion:** Noted that syphilis screening among HIV patients were adhered to well, but not extra-genital gonorrhea and chlamydia. They attributed the increased adherence for syphilis screening to ease of testing, given that it is a blood test, and many HIV patients will be monitored for CD4 counts, and it was easy to order the blood test. However, the study also noted that extra-genital infections required provider history taking skills and patient's trust and willingness to discuss sexual behaviors. Furthermore, other studies recommended

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				2) Similarly, one provider reported relatively few high-risk patients were screened annually for STIs, causing the clinic to prepare an EMR reminders to increase adherence to screening recommendations (Carter et al., 2014).	structural interventions, such as strategic placement of the swabs next to PAP smear kit during set up for the visit. **Limitation:** May not represent the on-average experience of providers with limited quantitative and qualitative data. Few clinics studied, all of which are geographically constrained to the US.
Drinkard, L. N., Huxta, R. A., Halbritter, A., Nguyen, G. T., & Malebranche, D. (2017). The case for extragenital screening of chlamydia trachomatis and neisseria gonorrhoeae in the college health setting. *Sexually Transmitted Diseases*, *44*(5), 274–	To review results from implementing extra-genital testing and discuss recommendations for college clinical health practices	4,093 male college students in a college health clinic setting Study demographics is best described as male college students that are White (56.5%),	**Method & Design:** Cross-sectional design conducted over 6 year period. Examined health records of sample to evaluate effectiveness of GC or CT screening. Determined proportion of GC or CT infections that would have been missed if extra-genital screening was not performed.	• 7.6% of screening visits used extra-genital screening based on self-reported risk factors. • Determined that if only urogenital screening used it would miss 26.4% of chlamydia and 63.2% of	**Discussion:** Emphasizes sexual risk assessment tools, and then applying them to encourage extra-genital screening. Potential approaches to increase extra-genital screening adherence include enhanced staff training

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277. https://doi.org/10.1097/olq.0000000000000593		20's age range (81.2%), seeking urine or extra-genital CT and GC screening.	**Interventions:** Performed sensitivity analysis to determine proportion of GC or CT screenings that would have been missed if uro-genital screening performed only. (I.e., instances of negative urogenital GC or CT but positive pharyngeal or rectal GC or CT)	gonorrhea infections	and electronic questionnaires. **Limitation:** Only sampled male college students but did not categorize as MSM or heterosexual. Combined rectal and pharyngeal screening as singular group for extra-genital screen.
Keenan, M., Thomas, P., & Cotler, K. (2019). Increasing sexually transmitted infection detection through screening at extragenital sites. *The Journal for Nurse Practitioners*. https://doi.org 10.1016/j.nurpra.2019.07.023	Increase screening and detection of GC or CT in extragenital sites.	4 FNPs providing primary and urgent care. Reviewed 318 medical records during pre-implementation phase and 120 medical records during post-implementation.	**Methods:** Academic detailing methodology was used to facilitate the adoption of evidence-based practice by healthcare providers **Design:** Quality improvement project implemented universal screening methods with the option of self-collection over an 8-week period. The clinic consists of 4 family NPs providing primary and urgent care.	Pre-intervention: 93% (296 of 318) of STI screening was solely urine based. Post-intervention: 84% (101 of 120) of all STI screening was urine based, demonstrating a 9% decrease. Analyzing specifically the MSM population, universal screening was performed approximately 23% (10 of 43) of the time before the intervention and 50% (6	For extragenital site STI screening to become more prevalent, NPs need to be able to educate patients on the risks for extragenital site infection and implications of undetected STIs. **Limitations:** • Does not represent average experience of providers

CITATION	PURPOSE	SAMPLE/ SETTING	METHODS (Design, Interventions, Measures)	RESULTS	DISCUSSION, INTERPRETATION, LIMITATION ON FINDINGS
			Intervention: PowerPoint presentation to focus on impact of STIs and why universal screening with option to self-swab is imperative for practice. Quizzes before and after the educational session, were used to determine the effectiveness of the academic detailing sessions. Data from a medical record review 12 weeks before the academic detailing sessions were compared with a subsequent record review 8 weeks after the academic detailing sessions and analyzed.	of 12) after the intervention.	• Inadequate documentation of patient sexual history • Small sample size of patients with implementation period being shorter than pre-implementation period
Scarborough, A. P., Slome, S., Hurley, L. B., & Park, I. U. (2015). Improvement of sexually transmitted disease screening among HIV-infected men who have sex with men	Improving provider screening rates for GC or CT among HIV-positive MSM patients	4 HIV primary care providers who care for more than 1,100 patients living with HIV in Kaiser	**Methods & Design:** A cross-sectional analysis study design. 4 providers agreed to test the sexual history assessment. Front office staff were instructed to give a paper-	• 364 HIV+ MSM seen for care during the intervention period • Only 47.3% completed the	**Discussion:** Study suggests that staff education regarding STD screening recommendations, and implementation of a sexual risk assessment

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through implementation of a standardized sexual risk assessment tool. *Sexually Transmitted Diseases*, *42*(10), 595–598. https://doi.org/10.1097/olq.0000000000000333		Permanente Oakland	based assessment to every English-speaking male. **Intervention:** Developed a didactic session on STD screening among MSM, presented results on pre-intervention percentage of patients screened for STD, and implemented a standardized, patient-administered sexual risk assessment for providers to review during patient encounters.	sexual risk assessment. • Improvements in GC or CT screening and syphilis screening were observed • proportion of HIV + MSM receiving GC or CT screening increased by 26.8% (31.6%–40.1%, P = 0.01) at any anatomical site and by 45% (19.5%–28.3%, P = 0.003) at the pharyngeal site.	tool may improve extra-genital screening rates. **Limitations:** Not all applicable patients who were seen for a visit completed the assessment The study is unable to determine whether improved clinic-level screening rates were due to implementation of the risk assessment, or providers' awareness of pre-intervention screening rates. Study was done in the context of routine care, thus unable to determine who completed the survey and who did not.
Gaspari, V., Marangoni, A., D'Antuono, A., Roncarati, G., Salvo, M., Foschi, C., & Re, M. C.	Assess any predictors and the prevalence of GC or CT	893 patients presenting to an STI clinic, both male (MSM)	**Methods & Design:** Cohort study design. Convenience sampling was used to enroll 893	Of the 893 subjects, 89 (9.9%) reported about various oropharyngeal symptoms, including sore	More than 90% of the patients reported no symptoms, indicating that symptoms are not

CITATION	PURPOSE	SAMPLE/ SETTING	METHODS (Design, Interventions, Measures)	RESULTS	DISCUSSION, INTERPRETATION, LIMITATION ON FINDINGS
(2019). Pharyngeal chlamydia and gonorrhea: A hidden problem. *International Journal of STD & AIDS, 30*(8), 732–738. https://doi.org/10.1177/0956462419838922	pharyngeal infections	and female patients, reporting unprotected oral sex	patients presenting to an STI clinic who have self-reported unprotected oral sex. **Intervention:** A pharyngeal swab for the molecular detection of GC or CT was collected from each patient. The measures were binary, being positive or negative for the presence of pharyngeal gonorrhea or chlamydia.	throat, hoarseness, and cervical tenderness. 134 cases of gonorrhea (15%) and 34 chlamydial infections (3.8%) were found in the oropharyngeal site. No significant difference between MSM and females.	indications to screen for pharyngeal infections. History of sexual contact with partners positive for STI and presence of both genital and rectal infections were significantly associated with pharyngeal infection. Recommended throat testing as routine for CT/NG detection. **Limitations:** • Did not include ”intimate kissing” as a definition of unprotected oral intercourse • Did not investigate the incidence of rectal infections, and only focused

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					on pharyngeal infections.

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