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ORIGINAL PAPER

An Educational Intervention to Improve Provider Screening for Syphilis Among Men Who Have Sex with Men Utilizing an Urban Urgent Care Center

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Abstract

Rates of syphilis are increasing in the United States especially among men who have sex with men (MSM). The purpose of this project was to implement an educational intervention based on the 2015 CDC Sexually Transmitted Diseases (STD) Treatment Guidelines for urgent care providers with an emphasis on identifying MSM sexual behavior and appropriate screening for syphilis. An urgent care center was identified as a location where men seek care and where STD testing was occurring. After a baseline provider focus group to identify barriers to STD testing, a patient survey was created and given to clients to increase identification of MSM behaviors and to prompt providers to order syphilis testing. In addition, an educational intervention was implemented to improve provider and staff screening for syphilis. The intervention occurred between September 2015–December 2015. A total of 1341 males were seen with 1067 surveys collected. The mean age was 35.6 and 57.4% were Hispanic. Overall, 72 (5.4%) males identified as MSM. Approximately 50% of all MSM identified had RPRs (n = 37) sent and of these 13.5% (n = 5) tested positive for syphilis. The focus group among urgent care providers and staff identified barriers to syphilis testing. Targeted screening of males using a self-administered questionnaire is acceptable to urgent care populations and may assist in identifying MSM which in turn may help to facilitate syphilis screening and other relevant STI testing pertinent to this population.

Keywords Syphilis · Screening test · Urgent care setting · MSM (men-who-have-sex-with-men)

Introduction

Infections resulting in the sexual transmission of *Treponema pallidum*, syphilis, remain a high burden of disease in the United States (U.S.). CDC national data show that rates of primary and secondary syphilis (P&S syphilis), the most infectious states of syphilis, have increased 17.6% since 2015 [1]. The men-who-have-sex-with-men (MSM) population have the highest proportion of infections representing 58% of P&S syphilis cases nationally compared to 12% identified in women [2]. New York City has seen an 81% rise in P&S syphilis from 2012 to 2016 with 88% of male cases identifying same sex practices [3].

Early diagnosis and treatment of P&S syphilis is critical to prevent further transmission, secondary disease and complications with its associated health care costs. The literature has noted an increase in ocular complications of undiagnosed and untreated syphilis including panuveitis, keratitis, chorioretinitis, optic atrophy and glaucoma [4]. In addition, neurological complications though rare (4–10%), may be

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devastating and may include: general paresis, tabes dorsalis (with symptoms such as sphincter dysfunction, ataxia, walking disorder), and paretic symptoms such as emotional lability, sensory impairment, decline in mental or cognitive abilities, dementia and other psychiatric disorders [5]. Finally, co-infection of syphilis with HIV is common and likely increases the risk of transmission of both infections contributing to the public health crisis for STIs [6].

MSM are considered a high risk population for syphilis. As such, the CDC recommends annual screening for sexually active MSM and screening every 3–6 months if at increased risk, which CDC defines as: if risk behaviors persist or if they or their sexual partners have multiple partners. Further, studies show that many high risk populations are uninsured, and often seek care in urgent care settings [7, 8]. Although there is no data indicating that MSM specifically utilize urgent care settings more often, there are studies showing a twofold increase in the number of urgent care visits for STI testing and a threefold increase in persons diagnosed with STIs at urgent care settings in the U.S. from 2010 to 2014 [9]. As STIs and particularly syphilis has been increasing among MSM populations, strategies to enhance urgent care centers use of the CDC STD screening and treatment guidelines would be an effective means of improving the diagnosis and treatment of syphilis.

The purpose of this project was to implement an educational intervention based on the 2015 CDC STD Treatment Guidelines for urgent care providers with an emphasis on identifying MSM sexual behavior and appropriate screening for syphilis among MSM patients utilizing the urgent care center.

Methods

Study Setting and Data Collection

In order to identify a clinical setting at our institution that would serve high risk males, we queried the electronic health record (EHR) laboratory system to identify sites that had a high volume of syphilis testing and high rate of positive test results. The EHR data query showed that the urgent care center affiliated with New York Presbyterian Hospital, a large academic urban hospital located in a largely Hispanic neighborhood, had the highest rate of syphilis diagnoses in the hospital, outside of the medical center's HIV and STD clinics. Specifically, between September 2013–September 2014, there were 2056 unique patient visits among men over 20 years of age. Among these patients, 208 unique syphilis tests were performed which identified 12 new syphilis cases, or 5.7% of those screened. This site then was chosen for the intervention as it represented a site where there might be missed opportunities for education of providers and screening of patients.

This clinic is staffed by emergency medicine trained clinicians and serves patients that are self-referred. The center has daytime hours on both weekdays and Saturdays. All men over 18 years of age were eligible to participate in the intervention and all staff including health care providers and nursing participated in the educational intervention. Over the course of the intervention, data collected included the number of males seen, surveys collected and completed, MSM identified, number of survey's requesting STI testing including syphilis testing, and syphilis tests ordered by healthcare providers. During the intervention, a weekly email was sent to the urgent care medical providers and staff to notify them of the outcomes including the volume of surveys and tests ordered. In addition, the email included a brief educational fact about syphilis and reminded providers of the need to screen patients at risk. This study was approved by the Columbia University Institutional Review Board with a waiver of written consent.

Educational Intervention

To increase syphilis screening among at risk patients, the project included an educational intervention focused on provider education regarding the 2015 CDC STD Treatment Guidelines and the implementation of a patient-tool to assess sexual practices. At the start of the project, the project team held a focus group and met with urgent care staff including nursing and medical providers to assess gaps and barriers to sexual risk screening and testing and to discuss potential areas for change in the work flow of the clinic to improve this process. Educational interventions were put in place after the assessment and were evaluated at 12 weeks into the study. After that evaluation, updates were given to the urgent care staff, nurses and physicians and general education about syphilis and testing was provided.

Areas discussed in the initial focus group included: lack of expertise in sexual health screening during the triage process, lack of a standardized sexual health order set, time constraints, and lack of expertise in addressing positive test results. The majority of providers cited time constraints and discomfort as barriers to asking routine sexual history questions. (Table 1) To minimize these barriers, a three question paper survey was developed to assess the study participant's risk for STIs based on sexual practices and sexual partner gender preferences. The survey questions included: "Have you ever had any type of sex in your life (by sex we mean oral-vaginal or anal-intercourse/relations"; "Have your sexual partners been male, female or both"; and "May we test you for sexually transmitted diseases today, including syphilis". The survey was given to all patients > 18 years of age.

Table 1 Focus group results February 2015: barriers, issues and interventions utilized to improve sexual health screening for MSM in an urgent care center to increase

Barrier	Specific issue	Recommended improvement or intervention
Health system		
EHR	No sexual health assessment for nursing triage	Patient performed sexual health assessment
	No standing order set	
Provider		
Nursing	Time constraint	Education on why important and discussion of work flow
	No private location for triage	Change location of triage and review sexual health survey
Doctor or nurse practitioner	Time constraint	Education on why important and discussion of work flow
	Not comfortable with sexual health questions	Patient survey
	Forgetting to order tests	Standard order sets
		Nursing reminders to double check orders
	Fear of positive test result	Flow sheet with contact information for study team to manage positive test results with referrals

A "Frequently Asked Question" (FAQ) (see appendix) hand-out was also created to provide patients with basic facts about syphilis, including risk factors for transmission as well as signs and symptoms of infection. FAQ cards and surveys were provided to study participants in both English and Spanish.

The survey was completed at triage and reviewed by the medical provider at the time of visit. The provider ordered syphilis and other STI screening with a rapid plasma reagin (RPR) if requested by the patient or if indicated by the provider's review of the screening survey. At the providers' discretion and with patient consent, human immunodeficiency antibody testing (Architect HIV/AG/AB Combo test, Abbott Diagnostics) and/or GC/CT testing by nucleic acid amplification tests (NAAT) (Aptima C2; GenProbe) were ordered. The study team collected these laboratory results including any baseline HIV testing available on the day of the visit.

Measures and Statistical Methods

Descriptive statistics were used to report percentages of all measures collected.

In order to assess the fidelity of the intervention, we measured the proportion of eligible males seen in the urgent care who received and completed the survey.

Results

This educational intervention was implemented at the urgent care center from September 2015-December 2015. A total of 1341 males were seen during the study; 701 males during the first 12 weeks and 640 males during the second 12 weeks. A total of 557 (80%) and 510 (50.8%) of surveys were collected during the first and second part of the study respectively. The mean age of the men seen was 35.6 ± 10.3 years and 57.4% were Hispanic. Overall, 72 (5.4%) males identified as MSM (5.7% in the first 12 weeks and 3.8% in the second 12 weeks). Most MSM (83.3%) reported sexual activity exclusively with other males but (16.7%) reported having sex with both males and females. The top three chief complaints for MSM visits were throat (16.7%); genito-urinary complaints (15.3%), as well as STI specific concerns (i.e. partner exposure or presenting for STI screening) (15.3%). Less than half (47%) of all MSM had a sexual history documented in their electronic medical record at the time of the urgent care visit. Only 60% of patients who requested syphilis screening had an RPR ordered.

In the first weeks of the study, we had 272 completed surveys; 40 MSM were identified and 21 (7.7%) had an RPR sent (Fig. 1). We then held a debriefing of the testing that had occurred and education on screening was provided. We modified the workflow of when the survey was administered to have the physicians perform the survey during their visit. This change resulted in a 10% increase in survey completion; first 12 weeks (49%) and second 12 weeks (60%); and a 28% increase in order completion for requested RPRs (Fig. 2). During the study, 66.5% (729 of 1067) of surveys were either incomplete (414) or left blank (295). The most frequently omitted question (84.5%) was the question about sexual partners.

Identification of MSM, Sexual History Taking, Syphilis and STI Testing

Of all MSM identified, (n = 72), 63.9% indicated on the survey that they would like STI screening with syphilis testing. Approximately 50% of all MSM identified had RPRs (n = 37) sent and of these 13.5% (n = 5) tested positive for syphilis. All participants who tested positive returned for

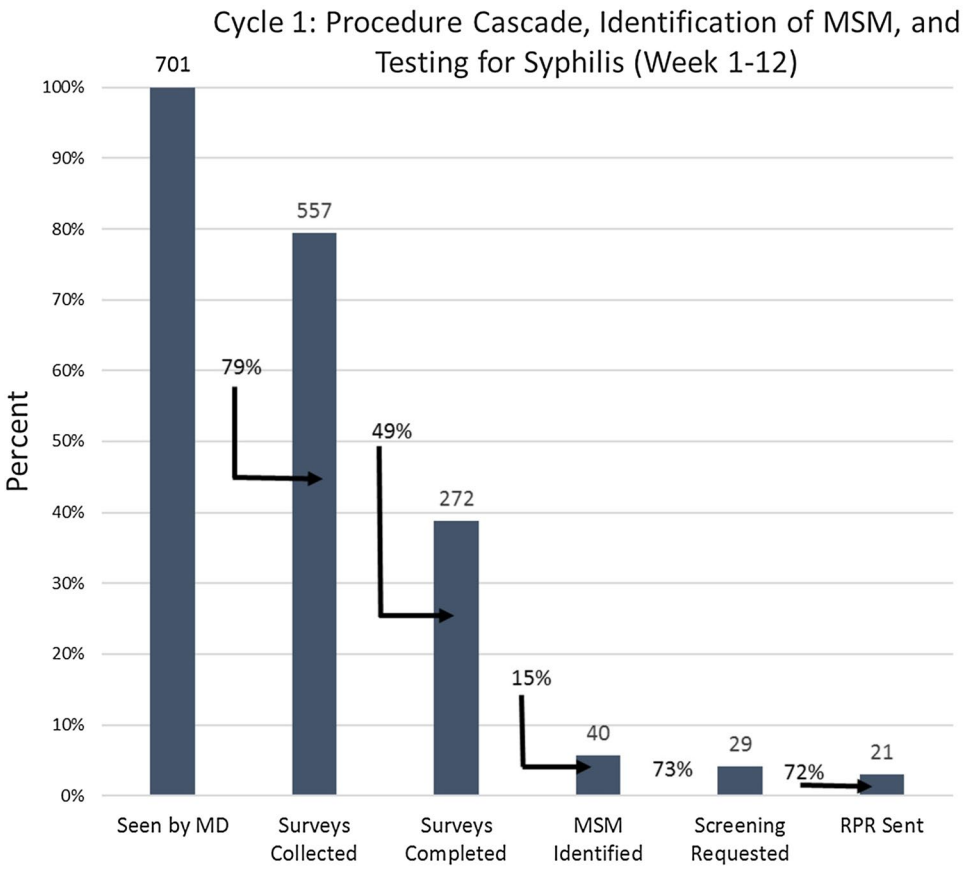

Fig. 1 Education intervention cycle 1: procedure cascade, identification of MSM, and testing for syphilis (week 1–12). This figure shows procedures of the first cycle of intervention and the percent completion of each step. During the first cycle, the cascade shows the drop-off in the number of participants from those first seen (n = 701) and who took (n = 557) and completed (n = 272) the survey. In addition, of those identified as MSM (n = 40), the number who requested syphilis screening (n = 29) and then the number who actually had an RPR test sent (n = 21)

treatment except for one MSM had been previously identified and treated by an outside provider. A total of 32 (44.4%) of participants had GC/CT tests sent. The majority (84.3%) were urine tests while only 15.6% had extra genital testing (9.3% pharyngeal and 6.3% rectal tests). Of all samples, 6 (18.8%) tested positive for either gonorrhea (n = 4) or chlamydia (n = 2). No samples tested positive for both organisms. Of all MSM identified, 13.9% (n = 10) were known to be HIV seropositive. HIV testing was performed in 31.9% (n = 23) of MSM at the time of their visit with one new diagnosis of HIV at the time of screening.

Discussion

The goal of this project was to assess if providing an educational intervention and creating assessment tools for the urgent care staff could assist in the identification of MSM and thus encourage providers to order screening tests for syphilis in this population. Clinical education regarding appropriate syphilis screening and sexual history questions was provided, and a participant sexual health paper survey was implemented. Over the course of the study, there was a drop-off in the number of surveys collected however our collection rate remained above 50% during the project period. We speculate that this change may have been related to the normal variations in clinic volume or possibly "study burn out" by providers and staff. During the study, approximately 5% of participants identified as MSM and approximately 50% of the chief complaints were related to possible STIs, but less than half were screened for STIs including syphilis. In fact, even when the participant requested screening, only 60% received the testing. Despite this, STIs were identified in this population and all were appropriately managed.

There are several limitations in this study: our overall sample size was small and few MSM were identified limiting the generalizability of this assessment. In addition, participant surveys were incomplete with sexual health questions often lacking or left blank possibly due to patient's lack of comfort disclosing sexual practices in a medical setting. Another possible impediment to screening in this setting was the lack of a standardized order set as it is possible that physicians either forgot or missed ordering the syphilis screening test despite it being requested. Providers in this setting also expressed concerns regarding follow up procedures should they receive a positive result (appropriate referrals for further management, contacting patients and partners etc). Future studies are needed to determine if increased sexual health screening to identify MSM will improve the identification of syphilis infections in this setting. Exploring the

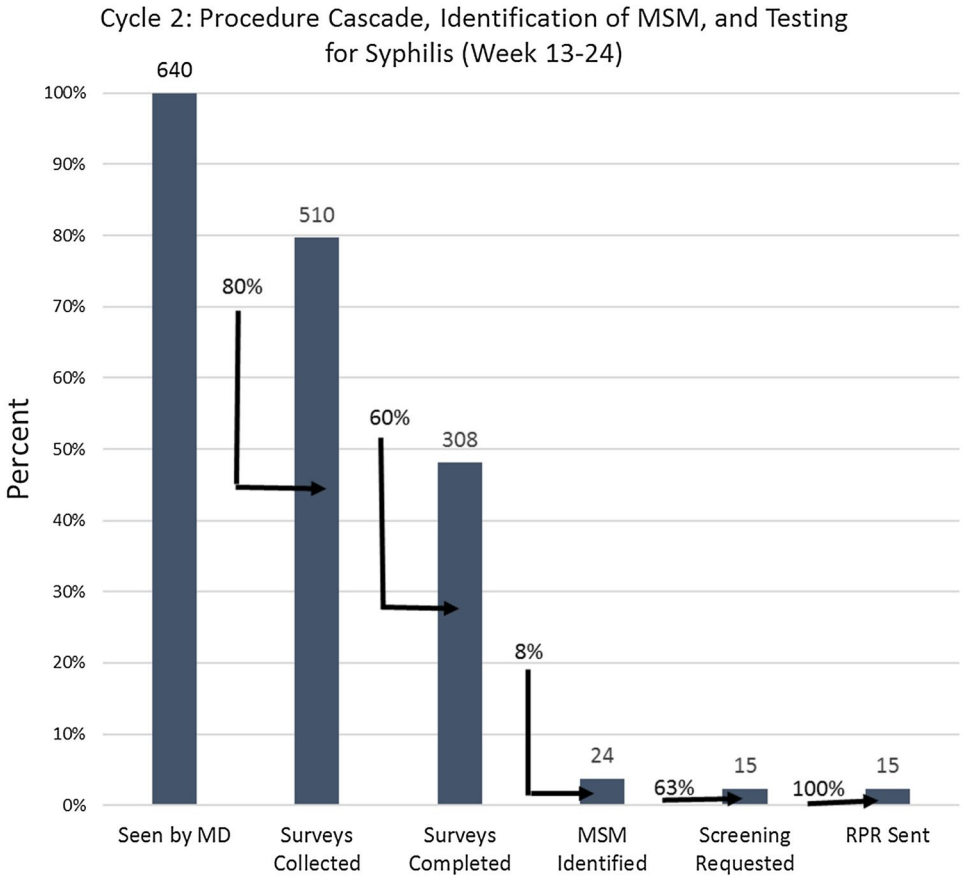

Fig. 2 Education intervention cycle 2: procedure cascade, identification of MSM, and testing for syphilis (week 13–24). This figure shows procedures of the second cycle of intervention and the percent completion of each step. During the second cycle, the cascade shows a drop-off in the number of participants from those first seen (n = 640) and who took (n = 510) and completed (n = 308) the survey. In addition, of those identified as MSM (n = 24), the number who requested syphilis screening (n = 15) and then the number who actually had an RPR test sent (n = 15)

use of other modalities such as electronic self-administered ACASI (audio computer assisted survey instrument)-based assessment tools to elicit sensitive sexual health information, may be useful in this setting [10, 11].

Implications for Practice and Conclusion

This project provides an initial step in improving sexual health care screening practices in an urgent care setting, particularly for an MSM population. This study reaffirmed previously identified barriers for STI testing in an urgent care setting such as nursing, physician and staff discomfort in facilitating brief sexual history questionnaires and time constraints for providers [12]. In addition, it suggests that targeted screening of males using a self-administered questionnaire may assist in identifying MSM which in turn may help to facilitate syphilis screening and other relevant STI testing pertinent to this population. Given the increasing incidence of syphilis among the MSM population and their utilization of urgent care facilities for acute and routine care, this may present an opportunity to improve the clinical approach to reach, screen and test this population.

Compliance with Ethical Standards

Conflict of interest The authors do not have any conflicts of interest to declare.

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