Use of a Computer Alert Increases Detection of Early, Asymptomatic Syphilis Among Higher-Risk Men Who Have Sex With Men

Melanie Bissessor,1 Christopher K. Fairley,1,2 David Leslie,3 and Marcus Y. Chen1,2

1Melbourne Sexual Health Centre, Carlton, and 2The University of Melbourne, School of Population Health, and 3Victorian Infectious Diseases Reference Laboratory, North Melbourne, Victoria, Australia

Our study assessed the impact of a computer alert that reminded clinicians to test men who were at higher risk for syphilis on the rate of syphilis testing and diagnoses. The percentage of high-risk men who have sex with men who were tested for syphilis increased from 77% to 89% (P < .001), and the percentage of such men with asymptomatic syphilis increased from 16% to 53% (P = .001).

Syphilis has reemerged internationally as a significant problem among men who have sex with men (MSM), with cases being over-represented among human immunodeficiency virus (HIV)-positive MSM [1–4]. Early syphilis is commonly asymptomatic [5], and the diagnosis is often missed in those who are symptomatic [6]; therefore, targeted screening of sufficient frequency may be the most effective way in which to detect the majority of syphilis cases in a timely manner and reduce ongoing transmission. In a US study, reported syphilis testing rates were low even among MSM with a prior diagnosis of syphilis, among which population reinfection was common [7].

Mathematical modeling suggests that increasing the frequency of syphilis screening among the highest-risk MSM would have a much greater impact on reducing the transmission and prevalence of syphilis than would simply increasing the proportion of all MSM who have at least 1 syphilis test per year [8]. The US Centers for Disease Control and Prevention recommends screening of higher risk MSM for sexually transmitted infections, including syphilis, every 3–6 months [9].

There is little published data on specific interventions that have been shown to increase syphilis testing or detection among MSM. This study aimed to assess the impact of a computer alert used in a clinical setting on the rate of syphilis testing and detection among higher-risk MSM.

METHODS

This study was conducted at the Melbourne Sexual Health Centre, Victoria, Australia. In October 2008, a computer alert was introduced that was aimed at increasing syphilis screening of high-risk MSM. This alert appeared during the consultation on the electronic medical record whenever MSM reported 10 partners within the prior 12 months (which defined them as being at higher risk for syphilis). The alert read “3 monthly syphilis testing is recommended for higher risk MSM.”

Clients were required to enter details of their sexual history using computer-assisted self interview (CASI) in a private booth located in the waiting area. Men answered a series of questions that took, on average, 3 minutes to complete [10]. This information appeared as a printout in the paper medical record. The sexual history was only obtained by CASI if at least 3 months had elapsed since the previous clinic visit. Clients returning within 3 months for another assessment or screening had sexual histories obtained by clinician interview. In either case, clinicians then entered this information into the electronic medical record.

Serological testing rates for syphilis among MSM were determined for the 12 months before and the 12 months after the introduction of the alert. Data on serological testing for syphilis were obtained from the Victorian Infectious Diseases Laboratory. Men were classified as being at higher risk if they had 10 male partners within the prior 12 months and as being at lower risk if they had ≤10 male partners within the prior 12 months. Consultations in which the number of male partners within the preceding 12 months was not obtained were excluded from further analysis. These consultations were mostly with men returning for their results after recently being tested.

To determine the effectiveness of the intervention, we ascertained the proportion of higher- and lower-risk MSM who received a diagnosis of early, asymptomatic syphilis before and after the introduction of the alert.

Ethical approval for this study was granted by the Alfred Hospital Human Research Ethics Committee.
RESULTS

During the 12 months before the intervention, there were 6789 consultations with MSM. Of these, 2017 consultations (30%) were with higher-risk MSM, and 1885 (28%) were with lower-risk MSM. The remaining consultations (42%) were generally return visits for test results.

In the 12 months after the introduction of the alert, there were 8036 consultations with MSM. Of these, 1445 (18%) were with higher-risk MSM, and 2448 (30%) were with lower-risk MSM. The remainder (52%) could not be classified because of the absence of risk data.

The proportion of MSM who were identified as being at higher risk who were tested for syphilis in the 2 time periods increased significantly, from 77% (1559 of 2017 patients) to 89% (1282 of 1445) (P < .001). The proportion of higher-risk men who received a diagnosis of early syphilis and who were asymptomatic for syphilis increased from 16% (5 of 31 patients) to 53% (31 of 58) in the 2 periods, respectively (P = .001).

By contrast, there was no significant increase in the percentage of MSM who were identified as being at lower risk who were tested for syphilis, which was 65% (1228 of 1885 patients) and 68% (1667 of 2448) for the 2 time periods, respectively (P = .4). Nor was there a significant increase in the percentage of lower-risk men who received a diagnosis of early syphilis who were asymptomatic, which was 10% (1 of 10 patients) and 19% (3 of 16), respectively (P = .6).

DISCUSSION

We demonstrated that the use of a computer alert increased the frequency of syphilis testing significantly among higher-risk MSM and resulted in a significant increase in the detection of asymptomatic, early syphilis. These data demonstrate the effectiveness of a computerized alert in improved screening and detection of syphilis.

There are a number of limitations to the study. First, it is possible that some of the increase in testing for syphilis arose because of other factors, such as an increase in the awareness of syphilis among clinicians and clients over the study period. However, we saw a differential increase in testing rates between higher-risk and lower-risk men, with a significant increase in testing rates in higher-risk men but not in lower-risk men, which suggests that the increase in testing rates among higher-risk men was attributable to the alert. Second, some men were excluded from the analysis because a sexual history was not obtained; however, most of these men were returning for results.

The 12% increase in syphilis testing seen among higher-risk men is notable because the background rate of syphilis testing prior to the introduction of the alert was already relatively high (77%). It is possible that such an alert would have an even greater impact in services where existing testing rates are lower. It is also possible that such an alert might also increase screening of higher-risk MSM for other sexually transmitted infections, such as chlamydia, gonorrhoea, and HIV, as well identify higher-risk men for risk-reduction counseling and other behavioral interventions.

CONCLUSIONS

This study provides evidence of the impact of a computer alert on syphilis testing of higher-risk MSM and reports significant increases in both testing rates and detection of early, asymptomatic syphilis.

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