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Point-of-care testing for Sexually Transmitted Infections Increases Awareness and Short-term Abstinence in Adolescent Women

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Abstract

Purpose—To evaluate the impact of point-of-care (POC) testing for sexually transmitted infections (STIs) on reported awareness of test results and STI risk-reduction behaviors in adolescents.

Methods—Women ages 14–21 were recruited from the Emergency Department or Teen Health Clinic for this longitudinal study and were tested for STIs. Baseline demographics, risk behaviors, treatment, POC tests (wet mount and rapid antigen tests for *Trichomonas vaginalis*), and other STI test results (available 24–48 hours post-visit) were measured. These were compared to subject's report of test results, abstinence, partner discussion, and partner testing during a post-visit telephone contact.

Results—Of 294 women, 155 (53%) were contacted: 65 (42%) had a positive STI test; 28 (43%) were POC positive; and 52 (33.5%) believed their STI results were positive. A positive POC test increased the proportion of subjects aware of being positive for an STI (89 vs. 21%, p<.01). Post-visit, 62% reported abstinence, 82% discussed testing with her partner, and 48% reported partner testing. Predictors of abstinence included a positive POC test (adjusted odds ratio (AOR) 4.6 confidence interval (CI) 1.5–13.6, prior abstinence of > 14 days (AOR 3.9, CI 1.7–9.0) and black race (AOR 3.5, CI 1.2–9.7). Women who believed their STI results were positive were more likely to report partner discussion (odds ratio (OR) 3.0, CI 1.0–8.8) and partner testing (OR 5.1, CI 2.4–11.2).

Conclusions—Awareness of STI results increases with POC testing. Effective communication of results can increase patient understanding and compliance with risk-reduction strategies which may impact the STI epidemic.

BACKGROUND

Point-of-care (POC) tests are an important strategy to address the epidemic of sexually transmitted infections (STIs) among U.S. adolescent women where access to care and

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confidentiality are significant barriers to STI treatment. In the usual STI testing scenario, the patient is tested and provided presumptive treatment if infection is suspected based on clinical findings. This strategy is popular when follow-up is uncertain, including adolescents evaluated in emergency departments. [1] Although these patients receive treatment at their visits, they may receive inappropriate therapy, and some may remain unaware of their actual STI test results. However, clinicians may have a low threshold for presumptive therapy, because adolescents not treated at the visit face an average delay of 3 to 14 days between testing and notification [2,3]. Furthermore, a substantial proportion of teens may never receive any treatment or follow-up. [4] POC tests would improve the current approach to treating STIs in adolescents by providing the clinician the opportunity to give test results and appropriate treatment in an immediate and confidential manner. This decreased interval between testing and treatment should reduce disease transmission.

In addition, POC testing allows for a “teachable moment” where, beyond providing the patient with an accurate diagnosis and treatment plan, the physician also counsels the patient regarding high-risk behaviors and partner discussion. The U. S. Centers for Disease Control and Prevention (CDC) recommends the following post-diagnosis behaviors to reduce transmission of STIs such as chlamydia, gonorrhea and trichomoniasis: abstain from sexual intercourse for a week after single dose therapy, notify all sexual partners within the last two months, and abstain until all partners have been treated.[5] With POC testing for these infections, the clinician can provide immediate guidance for eliminating the infection and decreasing the risk of recurrence.

The current literature reports mixed results on the impact of a positive STI on subsequent risk behaviors in adolescents. In a sample of females ages 17 to 25 from a military base, Hwang et al [6] showed that, despite accurate diagnosis and treatment, those who tested positive were actually at a higher risk of a repeat STI and demonstrated no decrease in risk behaviors 13 weeks after their initial diagnosis. In contrast, Fortenberry et al. found that a positive STI result increased the likelihood of abstinence and condom use measured one month after an initial diagnosis in an adolescent population.[7] Abstinence was associated with younger age, female gender, and black race. These researchers also found that the median time to next coitus was 8 days, and the likelihood of post-visit abstinence was increased for those recruited from the adolescent clinic rather than those recruited at an STD clinic. However, neither of these studies included any POC STI tests.

POC tests are now available for trichomoniasis, the STI caused by *Trichomonas vaginalis* (TV). [8] These tests offer the opportunity to study the effect of POC testing on knowledge of STI results and sexual behaviors. The overall objective of this study is to evaluate the impact of point-of-care testing on patient awareness of her STI results and on reported behaviors among adolescent women at least one week after a visit that included both standard STI testing and POC STI testing.

METHODS

This is a follow-up evaluation of a subset of women who participated in a study of diagnostic methods for TV. Study methods and demographics have been reported for the full sample.[8] In brief, we recruited a convenience sample of adolescent women from a hospital-based teen clinic and pediatric emergency department between July 2004 and June 2006. All subjects were offered the opportunity to participate in a follow up phone call 7–14 days after her visit. Subjects were informed that, at this contact, the research team would review STI test results and ask questions related to sexual activity, condom use, treatment and partner notification. In order to make this follow up contact, subjects were asked to provide at least two phone numbers or email addresses.

Baseline visit

At the initial visit, sexually experienced young women were interviewed confidentially, a pelvic exam was performed, STI tests were obtained, and the clinician's findings and treatments were recorded. We used the interval between initial visit and her reported date of last sexual intercourse to determine whether the patient had been abstinent for at least 14 days prior to the initial visit. Prior condom use was determined by the patient's response to the question "Did you use condoms at your last sexual intercourse?" We defined the variable "treated for cervicitis" if the provider marked "cervicitis" as a diagnosis and the patient received a CDC recommended antibiotic regimen for cervicitis. We defined the variable "treated for pelvic inflammatory disease (PID)" if the provider marked "PID" as a diagnosis and gave a CDC recommended antibiotic regimen for PID. We obtained up to three contact numbers from those who consented to a telephone follow-up interview. The study was approved by the Institutional Review Board. Consent was obtained from all participants and the requirement for parental consent for those younger than age 18 was waived in May 2005, three months after the study began. Because parental consent was required for some of our subjects, we assessed for bias by including the question "Is your parent/guardian aware that you are sexually active?"

Laboratory testing

All subjects enrolled in this study had POC STI tests which included office microscopy (wet mount) and a rapid antigen TV test (OSOM® TV; Genzyme Diagnostics, Boston, MA) performed on vaginal swabs. If the rapid antigen test was positive (n=27), or the wet mount showed motile trichomonads (n=1), the subject was deemed POC TV positive. Patients were given POC results within 20 minutes, and no one left without receiving her results. Standard STI results included endocervical tests for *Chlamydia trachomatis* via a strand displacement assay (BDProbetek® ET; Becton Dickinson, Sparks, Maryland), and for *Neisseria gonorrhoea* using either culture or strand displacement assay at the clinician's discretion. An additional vaginal specimen was submitted for TV culture (InPouch ® TV, Biomed Diagnostics, White City, OR). These standard STI test results were available one to four days after the visit. If any endocervical test or TV culture result was positive, the subject was deemed positive for a "standard STI test". Nucleic acid amplification tests for TV (reported in the prior paper[8]) were performed after the close of the study and not used for clinical care, thus these results were not included in this study.

All subjects who had a positive POC TV test were treated by the examining clinician. Other subjects received presumptive antibiotic treatment based on the provider's clinical judgment. Because of the large number of clinical providers at two recruitment sites, counseling and treatment was not standardized as part of the research protocol. However, STI testing, treatment and counseling are routine at both the Emergency Department and the Teen health Center. In addition, the CDC sexually transmitted disease treatment guidelines[9] were available in hard copy and online at both recruiting sites.

All standard STI results were handled per the usual clinical protocol for each site. In general, as soon as a positive result was faxed to the clinic or emergency department, the staff would obtain the chart and attempt to contact the patient by phone. Priority was given to those who were positive for an STI but had not yet received treatment. If telephone contact was not made within 3 attempts, a registered letter was sent to the listed home address. In addition to routine clinical follow-up, research personnel attempted to contact all subjects by phone within 7–14 days of the initial study visit. After several attempts in the first 2 weeks, the research team continued to try to reach subjects for up to 6 weeks after the initial visit. When the research contact was successful, subjects completed a telephone interview regarding their understanding of STI results and their post-visit behaviors, using the following questions: 1: (awareness/ belief) "At your last visit, did you test positive for any sexually transmitted diseases (STDs)?";

2: (abstinence) “Since your last visit, have you had vaginal sexual intercourse?”; 3: (discussion) “Did you tell your partner that *you* had been tested for STDs?”; 4: (partner testing) “Did *your partner* get tested for STDs?”

Statistical Methods—Data was analyzed using statistical software (Stata version 8, Statacorp, College Station, TX). We described the test characteristics of the subjects’ awareness of test results compared to standard STI tests and to POC tests to examine whether the patient understood her results. Using chi-square tests for dichotomous variables, we assessed differences in subject characteristics by contact success, abstinence, and partner discussion or testing. Because the time between initial visit and telephone follow-up contact (the contact interval) was not constant and because we saw that the likelihood of abstinence decreased with increasing time since the last visit, we compared the contact interval as a dichotomous variable (using the median of 14 days as the cut point) or as a continuous variable in logistic regression models. A multivariable logistic regression model was created by entering all variables with a p value of ≤ 0.1 and using backward stepwise elimination of non-significant variables. Separate models were built to determine independent predictors of post-visit abstinence, partner discussion, and partner testing. We also tested for correlation and interaction terms.

RESULTS

Of the initial 330 women recruited for our primary study, 294 subjects consented to participate in a follow up phone call. All of these women provided at least one contact telephone number. We were able to contact 159/294 (54%) of these women, with a median contact interval of 14 days (range 7–42 days) since baseline visit. Four subjects refused to answer questions once contacted, resulting in a final sample size of 155 subjects. The mean age of these subjects was 17.6 ± 1.6 years. 84.5% (133/155) were Black and 60% (93/155) were enrolled from the pediatric emergency department setting.

Table 1 illustrates the demographic and history characteristics stratified by successful telephone follow-up. The majority of women had at least one genitourinary symptom, and two-thirds reported abnormal vaginal discharge. Chi-squared tests of association found that those who were contacted did not differ from those who could not be contacted with respect to baseline STI risk factors or to possession of a cell phone. However, successful contact was more likely for subjects recruited from Teen Health Clinic (66/101, 65%) than from the ED (94/193, 49%, $p<.05$).

Patient awareness of STI test results

We compared the patient perception of STI test results with actual STI test results to examine whether the patient understood her results. Overall, 65/155 (42%) were positive for an STI: 37 were only standard STI test positive; 14 were only POC TV positive and 14 were both POC TV positive and standard STI positive. 52/155 (33.5%) women believed their STI results were positive, and 48 of these were correct (25 POC TV positive, 23 standard STI test positive, 4 all STI tests negative). Thus, 74% (48/65) of infected women correctly identified that her STI was positive. Overall, there was 87% agreement between perceived and actual STI test results with a kappa value of 0.72. Seventeen women were unaware of positive STI results representing 10.9% (17/155) of the study sample and 26% (17/65) of those with a positive STI test. The median contact interval for these 17 “infected but unaware” women was 13 days (range 7 to 25 days), which was not significantly different from those who were “infected and aware” or uninfected (15.3 days and 17.8 days, respectively).

In the full sample, the only factor associated with belief that her STI was positive was a positive POC TV test. Of the 28 women with a positive POC TV, 89% (25/28) believed her STI was

positive compared to 21% (27/127) of those with a negative POC TV test (Pearson's chi square= 47.6, Fisher's exact p<.01). Subject age, site of care, risk behaviors and visit treatment did not differ between those who did and did not believe that her STI was positive (data not shown). When limited to the sample with a true positive STI (n=65), those with positive POC TV test results were significantly more likely to be aware of having an STI than those who were POC TV negative (89% (25/28) vs. 62% (23/37), *p*=.01). The remaining 11% of those who were POC TV positive but denied having a positive STI test had been prescribed appropriate antibiotics at their visit.

Predictors of post-visit abstinence

Of the contacted subjects, 62% (n=97/155) reported abstinence since their initial visit. Of the 58 who did not abstain, 90% had sex with their former partner, while 10% had a new partner. On bivariate analyses, black race, POC TV positive, prior abstinence of >14 days before initial visit, prior condom use, a contact interval of ≤ 14 days since visit, and patient's belief that she was STI positive were each significantly associated with an increased likelihood of reporting post-visit abstinence. However, antibiotic therapy for cervicitis was not associated with post-visit abstinence (Table 2).

Using multivariable logistic regression and controlling for contact interval and reported prior condom use at initial visit, we found three significant predictors of post-visit abstinence: a positive POC TV (adjusted odds ratio (AOR) 4.6), prior abstinence of >14 days before initial visit (AOR 3.9), and black race (AOR 3.5). As described above, the variable, "belief that STI was positive," was not independent of the variable "POC TV" (Spearmans correlation coefficient 0.55, p<.01). Therefore, both variables could not be entered into the same model. A separate logistic model using "belief that STI was positive" instead of "POC TV" yielded the same significant predictors of abstinence: black race, prior abstinence, and belief that STI was positive (AOR 3.1, CI 1.4–6.1), controlling for contact interval, and condom use at baseline. The model using POC TV is presented in Table 2.

Predictors of partner discussion

Of the 153 subjects who answered this question, 126 (82%) reported that she had discussed with her partner that *she* was tested for STIs. Chi-squared tests and univariate (unadjusted) odds ratios were computed and demonstrated that prior abstinence significantly predicted partner discussion, with a trend towards significance for the variables of age ≥18, positive STI results, and belief that she tested positive for an STI (Table 3). Backward stepwise regression demonstrated that the only variable significantly associated with partner discussion was belief that she tested positive for an STI (AOR 3.0, CI 1.0–8.9) even after controlling for contact interval, prior condom use, age ≥ 18, and abstinence after visit.

Predictors of partner testing

Of the 152 subjects who answered both partner discussion and testing questions, 73 (48%) reported that her partner was *tested* for an STI. Unadjusted odds ratios demonstrated that age, race, prior abstinence, POC results and treatment at visit were not related to reporting that her partner was tested. However, condom use at the last sexual contact decreased the likelihood of partner testing, whereas patient's belief that she tested positive for an STI increased the likelihood of the partner getting tested (*p* <.01). Using backward stepwise regression, a multivariate model confirmed that the belief that she tested positive for an STI was the strongest predictor of partner testing (AOR 5.1, 95% CI 2.4–11.2), while prior condom use at baseline was a negative predictor of partner testing (AOR 0.32. 95% CI .38–.73), when controlling for contact interval as a continuous variable.

DISCUSSION

We showed that young women with positive POC results were more likely to report being aware of their STI diagnosis. Congruent with several health behavior models, we found that this awareness increased the likelihood that women adopted the risk-reduction behaviors recommended by the CDC. Both positive POC test results and the subject's belief that she tested positive were each associated with abstinence, partner discussion and partner testing. Not surprisingly, prior protective behaviors, including abstinence for the two weeks preceding her visit and condom use at baseline, were predictive of continued abstinence. In contrast, classic STI symptoms and presumptive antibiotic treatment did not predict any subsequent behaviors. These results highlight the importance of providing test results to adolescent women regardless of initial treatment. POC testing is one effective way of achieving this goal.

In comparison to previous studies assessing the impact of a positive STI on subsequent adolescent risk behaviors [6,7], our study assessed behaviors after a much shorter interval (median of 14 days) and our results were similar to those of Fortenberry's. Since Hwang's study assessed these behaviors at 13 weeks, they may have missed a decrease in risk behaviors that occurred in the first month, which did not persist at 13 weeks. The short-term abstinence that we and Fortenberry describe (termed "sexual avoidance" by some authors) could decrease STI transmission if the source partner was treated before resuming sexual contact.

Unfortunately, we found that those who abstained or used condoms were less likely to report discussing their results with their partners or report partner testing. Having taken steps to protect herself from STIs, these young women may have felt fewer obligations to protect their partners. The finding that women 18 and over were more likely to discuss testing with their partners suggests that more mature women may act more responsibly or that older adolescents are involved in more established relationships.

We observed a higher response rate among women recruited from the teen clinic compared to the emergency department, which is consistent with other studies.[7] This difference may reflect a stronger sense of partnership with an established care provider in the teen clinic as opposed to the emergency department. Neither site of recruitment nor parental awareness of sexual activity influenced any of our subsequent findings.

We also documented the difficulty in communicating STI results to our patients. Despite routine clinical follow-up and aggressive research follow-up, over a quarter of women with an STI were infected but unaware of their results one to six weeks after their visit. Until accurate POC tests are available for all STIs, further attention should be given to assure prompt and reliable follow-up of test results. These may include alternative methods of contact such as texting and emailing.

Screening and treating individual patients is insufficient to affect the epidemic of curable STIs such as chlamydia, gonorrhea and trichomoniasis. Additional steps must be taken to diagnose and treat the infected contacts. Since our results demonstrate that many adolescent women resume sexual contact with their prior partner within a week after STI testing, and 10% acquire a new partner, providers must be more vigilant in contacting all women with positive results and not just those who were untreated at their visit.

The inadequacy of partner discussion and treatment may explain the high re-infection rates seen in adolescent women. In adults, Wald et al. found that those who were aware of their partners' herpes infection remained free of infection for significantly longer than those who did not know their partner was infected (260 days versus 60 days).[10] Our results also confirm that the "infected but unaware" STI subject may contribute to the ongoing epidemic of curable

STIs, whereas knowledge of one's infection improves abstinence, partner discussion and partner testing.

The limitations of this study include the low response rate, the short follow-up interval, and the overlap between clinical and research follow-up. Women who were not contacted by the research team may have been successfully contacted by the clinical protocol, but this contact was not recorded. The 53% response rate in this study verifies the difficulty in reaching adolescent women for follow-up after an STI testing visit, even when telephone contact was the clinical standard and subjects had provided additional research consent for follow-up. Also, we were only able to collect subjects' self-reported behaviors. The reliability of self-reported sexual behaviors in adolescents has often been questioned, and a recent study demonstrated that up to 40% of adolescents reporting sexual activity change their minds when asked at a second point in time.[11] Therefore, those who knew their STI results were positive may have been motivated to provide socially desirable answers. Additionally, STI counseling for patients was not standardized in this study. Both sites routinely provide this counseling however our study did not measure the compliance with counseling therefore it is possible that some patients received a different amount of counseling than others. Alternatively, this lack of standardization mimics the real world of clinical care and thus increases the applicability of our findings. Lastly, POC testing was only available for trichomonas, and it is possible that results may vary if other STI pathogens were included.

Our results confirm that some young women find it difficult to comply with guidelines regarding abstinence, partner discussion and testing. Many have not yet attained the psychosocial milestones that assist with these difficult tasks. However, once armed with their own results, young women are more likely to take appropriate protective actions. Future studies should examine the effects of other STI POC tests on STI risk reduction behaviors as well as on measurable biologic endpoints such as STI recurrence rates.

In conclusion, POC STI tests are important tools to increase the proportion of tested subjects who recognize that they have an STI, which consequently affects sexual risk behaviors. Awareness of STI status was a stronger predictor of safe sexual behaviors than presumptive treatment. In modeling studies, even if POC tests are less sensitive than nucleic acid amplification tests, they can increase the proportion treated when follow-up is difficult.[12] Therefore, POC testing has the potential to significantly impact the STI epidemic among adolescents by increasing patient treatment as well as understanding, empowerment, and compliance with the recommended risk-reduction strategies of abstinence, partner discussion, and partner testing.

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Table 1

Subject demographic and history characteristics stratified by whether or not telephone contact was successful[a]

	Total % (n = 294)	Contacted % (n = 155)	Not contacted % (n = 139)	P value[b]
Age 18–21 Years	39.5 (116)	38 (59)	41 (57)	0.61
Black Race	83.7 (246)	84.5 (131)	82.7 (115)	0.68
Site = Emergency Department	65.6 (193)	60 (93)	71.9 (100)	0.03
Parent Aware of Sexual Activity	87.1 (256)	90.3 (140)	83.4 (116)	0.08
Had Cell Phone	46.6 (137)	44.5 (69)	48.9 (68)	0.45
POC TV positive at Visit	18.0 (53)	18.0 (28)	18.1 (25)	0.99
STI positive	39.8 (117)	41.9 (65)	37.4 (52)	0.43
Prior Abstinence of > 14 Days	33.7 (99)	34.2 (53)	33.1 (46)	0.84
Condom Used at Last Sexual Contact	45.6 (134)	49.7 (77)	41.0 (57)	0.14
Self Report of Prior STI	61.2 (180)	62.6 (97)	59.7 (83)	0.61
>1 Sexual Partner in Last 3 Months	27.6 (81)	26.5 (41)	28.8 (40)	0.66
Vaginal Symptoms	66.7 (196)	65.8 (102)	67.6 (94)	0.74
Any GU Symptoms	93.2 (274)	91.6 (142)	94.9 (132)	0.26
Treated for Cervicitis at visit	50 (147)	48.7 (74)	52.9 (73)	0.47
Treated for PID at visit	7.6 (22)	6.6 (9)	8.8 (113)	0.27

[a] Cell entries are column percents (N)

[b] P-value determined by chi-squared tests of significance

Table 2

Subject demographic and laboratory variables associated with reported abstinence since initial visit, for the 155 contacted subjects

	Reported Abstinence n (%)		Unadjusted odds ratio of abstinence[d]	Final Multivariable Logistic Regression Model[e]
n=155	**n (%)**	**p Value[c]**	**OR (95% CI)**	**AOR (95% CI)**
Demographics				
Age 18–21 years				
Yes (59)	33 (55.9)	0.23	.66(0.34–1.3)	
No (96)	63 (65.6)		Referent	
Black Race				
Yes (131)	85 (64.9)	0.08	2.2(0.9–5.2)	3.5 (1.2–9.7)
No (24)	11 (45.8)		Referent	
Self reported risk behaviors				
Prior Abstinence of>14 Days				
Yes (53)	41 (77.4)	0.004	2.9 (1.4–6.2)	3.9 (1.7–9.0)
No (102)	55 (53.9)		Referent	
Condom Used at Last Sexual Contact				
Yes (77)	54 (70.1)	0.04	2.0 (1.0–3.9)	
No (78)	42 (53.9)		Referent	
Self Report of Prior STI				
Yes (97)	61(62.9)	0.75	1.1 (0.6–2.2)	
No (58)	35 (60.3)		Referent	
>1 Sexual Partner in Last 3 Months				
Yes (41)	26 (63.4)	0.82	1.1 (0.5–2.3)	
No (114)	70 (61.4)		Referent	
Visit data (collected at initial visit)				
Site of Care = Emergency Department				
Yes (93)	54 (58.1)	0.22	0.7 (0.3–1.3)	
No (62)	42 (67.7)		Referent	
Treated for Cervicitis at Visit				
Yes (74)	46 (62.2)	0.81	1.1 (0.6–2.1)	
No (78)	17 (60.2)		Referent	
POC TV Positive				
Yes (28)	23 (82.1)	0.02	3.4 (1.2–9.5)	4.6 (1.5–13.6)
No (127)	73 (57.5)		Referent	
Vaginal Symptoms				
Yes (102)	63 (61.8)	0.95	1.0 (0.5–1.9)	
No (53)	33 (62.3)		Referent	
Any GU Symptoms				

	Reported Abstinence n (%)		Unadjusted odds ratio of abstinence[d]	Final Multivariable Logistic Regression Model[e]
n=155	**n (%)**	**p Value[c]**	**OR (95% CI)**	**AOR (95% CI)**
Yes (142)	86 (60.6)	0.24	0.5 (0.1–1.7)	
No (13)	10 (76.9)		Referent	
Treated for PID at visit				
Yes (9)	3 (33.3)	0.08	0.3 (0.07–1.2)	
No (142)	89 (62.9)		Referent	
Follow up data				
Contact Interval ≤14 Days From Visit				
Yes (85)	60 (70.6)	0.01	2.2 (1.2–4.4)	
No (70)	36 (51.4)		Referent	
Belief that STI was positive[f]				
Yes (52)	39 (75.0)	0.02	2.4(1.2–5.1)	
No (103)	57 (55.3)		Referent	

[c] Chi-squared tests of association

[d] Univariable logistic regression for independent variables significant at $p \leq .1$

[e] Final logistic regression model, showing significant predictors of abstinence after controlling for contact interval (as a continuous variable) and condom use at baseline visit

[f] The variables “POC TV positive” and “Belief that STI was positive” were highly correlated so separate models were developed, please see text.

Table 3

Variables associated with Partner Discussion for the 153 subjects who answered partner notification questions

	Univariate Associations[i]		Unadjusted Logistic Regression[j]	Final Multivariable Logistic Regression Model[k]
n=153	**n (%)**	**p Value**	**OR (95% CI)**	**AOR (95% CI)**
Demographics				
Age 18–21 Years				
Yes (58)	52 (89.7)	0.06	2.5 (0.9–6.5)	2.44 (0.9–6.7)
No (95)	74 (77.9)		Referent	
Black Race				
Yes (129)	105 (81.4)	0.47	0.63 (0.17–2.3)	
No (24)	21 (87.5)		Referent	
Self reported risk behaviors				
Prior Abstinence of >14 Days				
Yes (53)	39 (73.6)	0.04	0.4 (0.2–0.97)	see footnote[l]
No (100)	87(87.0)		Referent	
Condom Used at Last Sexual Contact				
Yes (76)	59 (77.6)	0.13	0.52 (0.22–1.2)	
No (77)	67 (87.0)		Referent	
Visit data (collected at initial visit)				
Treated for Cervicitis at Visit				
Yes (74)	62 (83.8)	0.58	1.3 (0.55–2.9)	
No (76)	61 (80.3)		Referent	
POC TV positive				
Yes (28)	26 (92.9)	0.11	3.2 (0.7–14.6)	
No (125)	100 (80.0)		Referent	
Follow up data				
Contact Interval ≤14 Days From Visit				
Yes (84)	72 (85.7)	.23	1.7 (0.72–3.8)	0.97 (0.9–1.0)
No (69)	54 (78.3)		Referent	
Belief that STI was positive				
Yes (51)	46 (90.2)	0.07	2.5 (0.9–7.1)	3.0 (1.0–8.9)
No (102)	80 (78.4)		Referent	
Abstained After Visit[l]				
Yes (94)	74 (78.7)	0.14	.50 (0.2–1.3)	0.4 (0.2–1.1)
No (59)	52 (88.1)		Referent	

[i] Chi-squared tests of association, “POC TV positive” and “Belief that STI was positive” were collinear; in this model, use of “Belief that STI was positive” yielded higher R2

[j] Univarable logistic regression for independent variables significant at $p \leq .1$

[k] Final logistic regression model, showing significant predictors of partner notification after controlling for contact interval (as a continuous variable) and age≥18

[l] The variables abstain and prior abstain were highly correlated therefore both were not included in the final model