HHS Public Access

Author manuscript

Sex Health. Author manuscript; available in PMC 2016 June 22.

Published in final edited form as:

Sex Health. 2015 March ; 12(1): 71–73. doi:10.1071/SH14132.

Feasibility and acceptability of point-of-care testing for sexually transmissible infections among men and women in mobile van settings

Elizabeth A. Hesse[A], **Lea E. Widdice**[A,D], **Sherine A. Patterson-Rose**[A], **Sarah St. Cyr**[B], **Laura Dize**[C], and **Charlotte A. Gaydos**[C]

[A]Division of Adolescent and Transition Medicine, Cincinnati Children's Hospital Medical Center, 3333 Burnet Avenue, MLC 4000, Cincinnati, OH 45229-3039, USA.

[B]Division of Pediatric and Adolescent Gynecology, Cincinnati Children's Hospital Medical Center, 3333 Burnet Avenue, MLC 4000, Cincinnati, OH 45229-3039, USA.

[C]School of Medicine, Division of Infectious Diseases, Sexually Transmitted Infections Research Laboratory, Johns Hopkins University, 530 Rangos Building, 855 North Wolfe Street, Baltimore, MD 21205, USA.

Abstract

To demonstrate the feasibility and acceptability of mobile point-of-care and near-patient testing for sexually transmissible infections, we offered services during an annual community event and surveyed event-goers. Forty-two participants were tested. When provided with options, the majority of participants chose point-of-care or near-patient testing. Trichomoniasis, chlamydia and gonorrhea were detected. All but one infected participant were notified and prescribed treatment. Participants responding to a written questionnaire reported sample self-collection and testing in a van as acceptable, although men reported self-collection in a van as less acceptable than a doctor's office. Providing mobile point-of-care and near-patient sexually transmitted infection testing to the general population is feasible and acceptable.

Keywords

community outreach; mobile health units; public health

Introduction

The feasibility and acceptability of point-of-care (POC) and non-Clinical Laboratory Improvement Amendment waived, near-patient testing in a mobile setting has not been demonstrated. We sought to demonstrate the feasibility and acceptability of these tests when

[D]Corresponding author. lea.widdice@cchmc.org.

Conflicts of interest

Dr Lea E. Widdice reports that she has received kits and reagents from Cepheid®. However, the company had no access to the data or to the manuscript under review. Dr Charlotte Gaydos has received research support from Cepheid. No other conflicts of interest are reported for the other authors.

providing sexually transmissible infection (STI) services at a community event in a metropolitan area with high STI prevalence.[1]

Methods

Through a community–academic partnership, we provided free STI screening in a mobile health care van at an annual community event to women ≤14 years during Year 1 (2012) and women and men ≤14 years in Year 2. Tests included: OSOM® Rapid Trichomonas Test (Sekisui Diagnostics, Lexington, MA, USA); laboratory-based *Chlamydia trachomatis* (CT) and *Neisseria gonorrhoeae* (NG) nucleic acid amplification test;[2] near-patient Xpert® CT/NG assay (Cepheid, Sunnyvale, CA, USA)[3] (Year 2 only); and Rapid Plasma Reagin syphilis test (Becton, Dickenson and Company Sparks, MD, USA). All specimens were self-collected in the van. Participants with positive results were notified and prescribed treatment. In Year 2, a confidential questionnaire assessed the acceptability of test turnaround times and self-sample collection among visitors to the van.[4,5]

According to the approved institutional review board protocol, consent for research was not required for testing, except for participants choosing the Cepheid Xpert® CT/NG assay in Year 2, because the van did not have a CLIA licence.

Feasibility measures included STI testing uptake, STI prevalence, and treatment delivery rates. Acceptability was measured on a 5-point Likert-like scale (1 = very acceptable, 5 = very unacceptable).[4,5] Differences in acceptability were tested using the Wilcoxon signed-rank test.

Results

The mean age of women was 28 years (range, 16–63 years) in Year 1 ($n = 16$), and 30 years (range, 14–55 years) in Year 2 ($n = 15$). The mean age of men ($n = 11$) was 19 years (range, 14–29 years).

Table 1 shows the number of participants tested by test type and the rate of positive results. Nine infections were detected from seven participants (two women in Year 2 had TV and CT). Six of seven participants (86%) with positive results were prescribed treatment (i.e. prescription or referral given). All participants with positive results from POC testing (TV) and one of two participants with positive results from near-patient testing (CT/NG) were notified the same day and prescribed treatment. One of three participants with positive laboratory-based test results was unable to be contacted.

Twenty women and 10 men completed the questionnaire. Women rated the van and a doctor's office as equally acceptable locations to self-collect samples (urine: means 1.58 and 1.32 respectively, $P = 0.16$; vaginal: means 1.45 and 1.30 respectively, $P = 0.41$). In contrast, men rated the van as less acceptable than a doctor's office for self-collection of urine but not penile samples (urine: means 2.38 and 1.63 respectively, $P = 0.03$; penile: means 2.33 and 1.78 respectively, $P = 0.06$). Men and women reported that STI testing in a van was more acceptable (lower mean score) with shorter turnaround times: (4–14 days, mean score = 3.1; 1–3 days, mean score = 2.7; more than 2 h but on the same day, mean score = 2.1; 1–2 h

mean score = 1.8; <1 h, mean score = 1.5; $P < 0.05$ for each turnaround time compared with "more than 2 h but on the same day".

Discussion

By providing the combination of POC and near-patient testing with STI screening in a venue accessible to the general public, we demonstrated that community event attendees sought testing and found self-collecting samples to be acceptable. We are unaware of other reports on the use of POC trichomoniasis or near-patient CT/NG testing in a mobile health care setting. In the present study, POC and near-patient tests were the preferred method of STI testing. Additionally, infections were detected in those tested in this nontraditional setting for STI services.

Conclusion

Future STI screening initiatives should consider using mobile settings to improve accessibility for populations with a high prevalence of infection and incorporate POC and near-patient testing to provide timely results and treatment.

Acknowledgements

This data was presented in part in June 2014 as two poster presentations for the Centers for Disease Control and Prevention (CDC) 2014 STD Prevention Conference. We would like to thank Jill S. Huppert, MD, MPH, for her contributions to this project including conception and design, acquisition of data, and administrative, technical and material support. This project was supported by grant number 2 U54 EB007958 (Gaydos) from the NIH/NIBIB and NIAID NIH U-01 AI 068613 (Gaydos).

References

1. Carlson, D. Hamilton County Health Department, Board of Health; 2014. Chlamydia and gonorrhea quarterly report. Hamilton County Public Health – Epidemiology and Assessment.. Available from: http://www.hamiltoncountyhealth.org/files/files/Reports/Chlamydia_Gonorrhea_Q4_2013.pdf [18 May 2014]
2. Gaydos CA, Quinn TC, Willis D, Weissfeld A, Hook EW, Martin DH, Ferrero DV, Schachter J. Performance of the APTIMA Combo 2 assay for detection of *Chlamydia trachomatis* and *Neisseria gonorrhoeae* in female urine and endocervical swab specimens. J Clin Microbiol. 2003; 41:304–309. doi:10.1128/JCM.41.1.304-309.2003. [PubMed: 12517865]
3. Gaydos CA, Van der Pol B, Jett-Goheen M, Barnes M, Quinn N, Clark C, Daniel GE, Dixon PB, Hook EW. The CT/NG Study Group Performance of the Cepheid CT/NG Xpert rapid PCR test for detection of *Chlamydia trachomatis* and *Neisseria gonorrhoeae*. J Clin Microbiol. 2013; 51:1666–72. doi:10.1128/JCM.03461-12. [PubMed: 23467600]
4. Kahn JA, Bernstein DI, Rosenthal SL, Huang B, Kollar LM, Colyer JL, Tissot AM, Hillard PA, Witte D, Groen P, Slap GB. Acceptability of human papillomavirus self testing in female adolescents. Sex Transm Infect. 2005; 81:408–14. doi:10.1136/sti.2004.012047. [PubMed: 16199741]
5. Huppert JS, Hesse EA, Bernard MA, Xiao Y, Huang B, Gaydos CA, Kahn JA. Acceptability of self-testing for trichomoniasis increases with experience. Sex Transm Infect. 2011; 87:494–500. doi: 10.1136/sextrans-2011-050037. [PubMed: 21795289]

Table 1

Total number tested and percentage with positive results for trichomoniasis, chlamydia, gonorrhea and syphilis among women and men screened at a community event in Years 1 and 2

STI test	Women				Men	
	Year 1		Year 2		Year 2	
	Number tested, n	Positive, n (%)[A]	Number tested, n	Positive, n (%)[A]	Number tested, n	Positive, n (%)[A]
Trichomoniasis, point-of-care[B]	16	1 (6)	15	3 (20)	n/a	n/a
Chlamydia[B]						
Laboratory-based[D]	15	2 (13)	2	0	1	0
Near-patient[E]	n/a	n/a	12	2 (17)	10	0
Gonorrhea[C]						
Laboratory-based[D]	15	1 (7)	2	0	1	0
Near-patient[E]	n/a	n/a	12	0	10	0
Syphilis, laboratory-based[D]	15	0	11[F]	0	8[G]	0

AC2, APTIMA Combo 2; n/a, not applicable; STI, sexually transmissible infection

[A] Percentage of the number tested for the specific STI.

[B] Ten-minute turnaround time.

[C] Chlamydia and gonorrhea were offered together.

[D] Two-week turnaround time.

[E] Ninety-minute turnaround time. Near-patient testing was only offered in Year 2. Confirmation testing for all near-testing results with AC2 had exact agreement for all samples.

[F] Of the 12 requesting testing, only 11 received testing due to failed phlebotomy attempts.

[G] Of the nine requesting testing, only eight received testing due to failed phlebotomy attempts.