Exploring the Feasibility of Alternative STD-Testing Venues and Results Delivery Channels for a National Screening Campaign

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Annual chlamydia screening is recommended for sexually active women aged 25 years and younger, though less than half of eligible women are screened each year. If acceptable to young women, nontraditional testing venues and new communication technologies could promote efficiencies in sexually transmitted disease (STD) screening and facilitate screening by overcoming barriers at systems and patient levels. Objective*. This study sought to explore young women's technology use, preferences for STD-testing venues, attitudes toward nontraditional venues, and acceptability of test results delivery options.* Method*. A total of 80 ethnographic one-on-one telephone interviews were conducted with African American, Caucasian, and Latina women, aged 15 to 25 years, in 10 metropolitan areas of the United States. Interviews were recorded, transcribed, and analyzed using NVivo2.* Results*. Alternative STD-testing venues and results delivery channels are valued by young women for their convenience and accessibility, but they must also offer privacy, confidentiality, and emotional/informational support to be acceptable. Assuring provider (or self) competence and valid/accurate test results is also important.* Conclusions*. Although new technologies have been embraced by young women for personal and social uses, they may not be as readily embraced for the provision of STD-related services. Additional social marketing efforts may be needed to promote acceptance of nontraditional STD-testing settings and results delivery methods.*

Keywords: *social marketing/health communication; sexual health; access to health care; health promotion; environmental and systems change; reproductive health; women's health; child/adolescent health*

Health Promotion Practice
January 2013 Vol. 14, No. 1 96–104
DOI: 10.1177/1524839911404226

Chlamydia is the most commonly reported notifiable disease in the United States, with more than 1 million infections reported in 2009, the heaviest burden of which was among 15- to 24-year-old women (Centers for Disease Control and Prevention [CDC], 2010]. Estimates suggest that chlamydia develops into pelvic inflammatory disease in up to 40% of untreated women (CDC, 2009) and that about 10% of women with pelvic inflammatory disease become infertile (CDC, 2008). However, because chlamydia is asymptomatic in most women, many are unaware of their infection and do not seek testing or treatment.

BACKGROUND

CDC recommends annual chlamydia screening for sexually active women aged 25 years and younger (CDC, 2010), but less than half of eligible women (aged 16-25 years) are screened annually (National Committee for Quality Assurance, 2009). Many barriers exist at patient and systems levels, including stigma, fear, and, embarrassment among young women and access challenges such as transportation, inconvenient clinic hours, and cost (CDC, 2007; Chacko et al., 2008; Chorba, Scholes, Bluespruce, Operskalski, & Irwin, 2004). Insurance reporting policies, a lack of teen-friendly sexual health services, and confidentiality/privacy challenges may further impede adolescent screening (Maloney & Johnson, 2008).

Alternative or nontraditional test settings and new communication technologies could help overcome many of these challenges, if acceptable to young women. Settings such as school-based and retail clinics might offer accessible alternatives for reaching young women where they are. Screening and treatment services could

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be expanded in the nearly 2,000 school-based health centers nationwide, the majority of which serve urban, minority communities (Strozer, Juszczak, & Ammerman, 2010). Screening tests and treatment for common medical conditions are also increasingly being offered at retail clinics across the United States (Harris Interactive, 2008). Urine-based testing or self-collected vaginal swabs could be offered. New technologies, such as Internet-based screening using home-testing kits, may not only offer convenience but also alleviate some of women's fears, embarrassment, and privacy concerns and the need for parental transportation/support. Self-collected vaginal swabs are only FDA cleared for health care settings, but these specimens can be collected at home and submitted to laboratories that have verified the off-label procedure in accordance with Clinical Laboratory Improvement Amendments. Pilot web-based programs have demonstrated success in some parts of the United States (Gaydos et al., 2009).

Alternative methods of test results delivery, such as text or voice messaging, e-mail notification, or a secure website, could promote receipt of results and prompt follow-up for those who test positive for chlamydia. Text message results notification services have demonstrated the potential to save staff time, reduce patient time to treatment, and increase the efficiency with which cases are treated (Lim, Haar, & Morgan, 2008; Menon-Johansson, McNaught, Mandalia, & Sullivan, 2006). These promising strategies may bring chlamydia and other sexually transmitted disease (STD) screening to a wider range of sexually active populations, given that Internet and cell phone use are ubiquitous among youth (Lenhart, Purcell, Smith, Zickuhr, 2010).

To date, pilot programs using nontraditional settings and communication technologies to promote screening and treatment have focused on a limited number of cities in the United States (Gaydos et al., 2009) and STD clinic patients in the United Kingdom (Lim et al., 2008) and New Zealand (Menon-Johansson et al., 2006), which may not be generalizable to young women in the general U.S. population. To inform social marketing efforts to promote chlamydia screening among young women, CDC sought to explore young women's technology use, preferences for STD-testing venues, attitudes toward nontraditional venues, and acceptability of different test results delivery methods. Research findings can also inform STD program practice.

METHOD

A mix of African American, Caucasian, and Latina women, in school and working, were recruited from 10 U.S. metropolitan areas through professional market research firms. Eligible participants had to be female, be aged 15 to 25 years, be fluent in English, and report having had sexual intercourse or sought reproductive health services. Participants were recruited from a mix of household income and education levels. We used non-probability sampling and oversampled 15- to 17-year-old females since the literature provided less information about adolescents. Verbal consent was obtained from adult participants, and parental consent and minor assent were obtained for minors.

One-hour telephone interviews were conducted by trained female interviewers, matched to participant race/ethnicity, from October 2007 through January 2008. Ethnographic research, a qualitative/descriptive research method used to gather empirical data on human culture and behavior, was selected to enable detailed accounts from each participant in a conversational format. A loosely structured interview guide, developed based on identified gaps in the literature (CDC, 2007), was reviewed by CDC experts and pretested with three individuals for reliability and validity. The guide explored participants' technology use and attitudes, acceptability and preferences for STD-testing venues, and test results delivery methods. Open-ended questions were used (e.g., "What types of media do you use?" "Where would you go if you wanted an STD test?"), with probes to gauge reactions to specific scenarios (e.g., "How would you feel about getting tested at/test results by . . .?"). The ethnographic nature allowed interviewers to adjust questions as appropriate for each participant. Before data collection began, interviewers participated in a 6-hour training session to familiarize themselves with the project, research guide, and ethnographic process; acknowledge and discuss preexisting beliefs and assumptions; and conduct mock interviews.

Interviews were recorded, transcribed, and independently coded by three coders using NVivo2. A coding structure was developed by reviewing participant responses to induce codes, using guidance from research questions, key findings from a literature review, and theoretical constructs from the health belief model (Rosenstock, Strecher, & Becker, 1988) and *Theory of Planned Behavior* (Ajzen, 1991; e.g., benefits, barriers, self-efficacy, perceived control). Once everyone had elicited their versions, coders used an iterative process to narrow the number of discrete codes and finalize the coding structure. Before coding the full sample, coders trained on three sample transcripts until 90% agreement was reached. Three randomly selected transcripts from the full sample were reviewed to ensure 90%

TABLE 1
Participant Distribution by Age and Race/Ethnicity

Age (years)	
15-17	43
18-25	37
Race/ethnic distribution	
African American	28
Caucasian	25
Latina	27

NOTE: Interviews were distributed across the following 10 metropolitan areas (approximately 8 per location): Atlanta, Georgia; Akron, Ohio; Corpus Christi, Texas; Detroit, Michigan; Houston, Texas; Massapequa, New York; Orlando, Florida; Philadelphia, Pennsylvania; Portland, Oregon; and San Francisco, California.

agreement was maintained. A team of six qualitative researchers then analyzed the coded data to identify themes, with a minimum of two individuals analyzing each research question. Themes were discussed by analysts and finalized once consensus was reached.

The research was approved by CDC's Human Subjects Review Board and carried out through a contract with Academy for Educational Development (AED).

RESULTS

A total of 80 young women completed interviews. Participant demographics by race/ethnicity and age are detailed in Table 1. Unless otherwise noted, no differences were found by demographic segment.

Technology Use

Regular Internet and cell phone use was reported by 91% and 85% of participants, respectively. African American segments were more likely to report not having their own cell phones. A majority of Internet users reported going online from their homes, whereas others accessed the Internet from their friends' homes, the library, work, or school—for an average of at least 1 to 2 hours a day. Cell phones were commonly used to communicate with friends, particularly via text.

Preferences for STD-Testing Venues

When asked where they would seek STD testing, many reported their regular doctor or gynecologist as their first choice, followed by Planned Parenthood, other clinics, hospitals, schools, and the health department. Planned Parenthood clinics were generally well regarded, though STD clinics were less positively viewed, often associated with being *dirty*, *for lower class individuals*, and *in bad neighborhoods*. STD-testing facility qualities identified as most important to women were cleanliness and reliability; friendly, welcoming, and nonjudgmental providers and staff; the availability of free or low-cost and confidential testing; and anonymity. Representative participant responses are presented in Table 2.

Attitudes Toward Nontraditional Venues

Participants were asked about their interest and willingness to seek testing in school clinics and retail clinics and through Internet-based screening. Representative quotes are presented in Table 2.

Young women's reactions to school clinics were mixed. Those who responded favorably appreciated the convenience and accessibility, whereas those responding negatively expressed concerns about confidentiality and peer stigma and questioned the competence of school nurses.

The majority of participants responded negatively to the prospect of obtaining an STD test from a clinic in a retail store, such as Wal-Mart or Target. The lack of privacy and concerns about facility cleanliness and staff competence were reported as barriers. Among those who responded positively, convenience was the main benefit. A few also noted that promoting STD testing in these venues might raise awareness of the need for testing and serve as a reminder to those who have put it off.

Participants were slightly more negative than positive about the option of ordering an STD test from a website. Those who supported it liked the confidentiality, privacy, and convenience it would offer. In a few cases, participants also liked the fact that it would avoid potentially uncomfortable sexual health discussions with a provider. However, for many, these benefits were outweighed by concerns about their ability to conduct the test themselves, lab competency, and the potential for complications with the website or mix-ups in the mail. These women wondered whether their results would be valid or reliable. Furthermore, some admitted they may not be disciplined enough to collect and return the sample, once they received the kit in the mail.

Acceptability of Test Results Delivery Methods

Participants were asked about their interest in receiving STD test results through traditional (e.g., letter, in-person,

TABLE 2
Select Participant Preferences and Reactions to Existing and Alternative Testing Venues

Testing Venue	*Select Quotes*
Existing venues	
Clinic	"I'd probably go to a Planned Parenthood type of place where I wouldn't have to worry about my parents taking me and stuff like that." Caucasian, 15-17, in school
	"I have insurance myself, but [for] women who don't have insurance, it's good to go the local Planned Parenthood clinic. They do free STD testing." African American, 18-25, working
	"I would go to Planned Parenthood [for testing because] it's the nationwide thing. They're reputable, they're known; it's not some little office somewhere." African American, 18-25, in school[a]
STD clinic/ health department	"A lot of lower class people go to clinics and they're not as clean." Hispanic, 18-25, in school
	"I tend to think of free clinics being in bad neighborhoods, and I guess I don't want to travel to a bad neighborhood to get tested." Caucasian, 18-25, in school[a]
	"I would go to the health department because it is free and confidential." Caucasian, 15-17, in school
Regular doctor	"Of course I would rather go to my gynecologist, because they already know my whole medical history and everything. Then, I mean, if I couldn't go there, I would go to my nurse practitioner, just because I've gone to her forever, and I mean I guess the whole thing is the Planned Parenthood would be my last option. I don't really want to go there. I trust my doctor more than I do a clinic." Caucasian, 18-25, in school[a]
	"[I'd prefer] someone reliable, like not just somewhere like they are just going to rush through it and not really care. If you go to your own doctor, they are going to do a good job. They know what they are doing." Caucasian, 15-17, in school[a]
Alternative settings	
School clinic	"I don't think people should do that. It's your school. Does the person there [clinical staff] know what they're doing? Are the people at your school going to know about it? Is it confidential? Are the kids going to find out? I don't know. I guess at my school I kind of consider it [school clinic] a joke." African American, 15-17, in school
	"No, because if it gets out that you have an STD or something, people would be all, 'Stay away from her. Don't get close to that girl, she has AIDS.' A whole bunch of rumors will get started and then no one will like you no more and you'll have no friends and then you'll have to move to a different school." Latina, 15-17, in school
	"I would do it. Because I know with a lot of girls [they] don't go to doctors or anything else, so I think that would be convenient for them." Latina, 18-25, working
Retail clinic	"I wouldn't feel my business should be out in the streets. Wal-Mart? I just know everybody goes to Wal-Mart. Everybody's there. Would the clinic they use be clean with it? Know what they're doing? I don't know. I wouldn't do that." African American, 15-17, in school
	"That sounds like a good idea because I think that if you have clinic in a public area like that, a lot more people would get tested regularly than they do now." African American, 15-17, in school
Internet-based screening	"No, I won't be comfortable with that. I think that's something that needs to be done by someone, and not yourself, someone with a medical background or medical history. You could do something wrong when you're testing your own self . . . Also, anything can happen in the mailing transactions." African American, 18-25, working
	"I don't know if I would be able to be that regimented to actually mail it back. I don't know if I would trust myself if I did the job right. I really don't." Caucasian, 18-25, working
	"Because it's me that's doing it. It's not anyone else meddling with my results until they're analyzed. It's something I could do at home, it's something that I don't have to get in a car and go somewhere and have this long talk with a professional about sexual education when I could do it at my house." Latina, 15-17, in school

a. Participants reported having had a personal experience (self or friend) with STD testing in the past.

TABLE 3
Select Participant Reactions to Existing and Alternative Results Delivery Options

Results Delivery Options	*Select Quotes*
Provider interaction	
In person	"I think that is probably what I'm most comfortable with just because that's how I had it done. It was nice to speak to somebody and for them to tell me 'okay, this is what we did, this is the tests we ran and thank God, you're negative.' Again, just somebody to talk to so that if you had questions, you had somebody face to face to talk to." Latina, 18-25, in school
By phone	"No, because if I'm in the house with my mom. We have two phones. How would I know my mom wasn't going to pick up the phone? I don't want her to know." African American, 15-17, working
	"Having the health care provider call me and discuss it with me over the phone because I feel like I'm going out of my way to go to the clinic or back to the place where I got tested when you could just tell me over the phone. I'd rather you just tell me on the phone so that I wouldn't have to go wherever it is, I'm sure it will be not exactly around the corner so I prefer someone just to call me and tell me." African American, 17-25, working
Mailed letter	"I guess I kind of feel that it might be nice to have [a letter], especially if it comes back later and you have to show your partners this is what I got, 'I want you to know you can have peace of mind for yourself.'" Latina, 18-25, in school
	"Oh, I don't think I would like it in the mail because…anybody could just go up to my mailbox and dig in my mail, read my stuff. I just feel that's not safe." Caucasian, 15-17, in school
Phone prompt (text/voice mail)	
Notification of results availability	"I think that'd be good because sometimes they call you and you're busy and you're kind of in a rush. It just gives you a chance to do it when you have time and it's discreet, like it's on your phone. You can just check it and then call when you have time." Latina, 18-25, in school
	"No—no phone calls. Not with that kind of message for the doctor calling to say call me about…I have your results. If you're with other people and they also check the answering machine, or you have a boyfriend sees a number come up on your cell phone. He gets to asking questions that's none of his business. That starts problems." African American, 18-25, working
Notification of actual results	"I'd be mad about that one. Better to tell me to my face than to get a message. Then by reading it, you still go to the doctor to get the medicine for it. At least if they tell me face-to-face, they can give me the medicine right there." African American, 15-17, in school
	"Getting a message on my cell phone? For me personally, I'd like that because my cell phone is my life line. I also have it on me. It wouldn't come in the mail and be a chance that somebody else got it. Or, yeah, I like it." African American, 15-17, in school
Secure Internet site	"I'd feel fine about that—a lot of other things that are done through the Web. I do my banking and stuff through the Web. I guess I can find out about my health through the Web, too." African American, 18-25, in school
	"I don't think I like that one. I know it's a secure spot, but you never know who's around your computer. If you're looking at it at the library, you never know who actually can go and see what you've done, or go back to the site, I don't know. I wouldn't want to check on the Internet. I'd rather it be more personal." Latina, 15-17, working

phone call) and nontraditional (e.g., e-mail, secure website, text) methods. Interviews also explored acceptability of receiving message prompts (that results are available) compared with actual results through various channels. Select quotes are presented in Table 3.

Results notification through a mailed letter elicited mixed feedback. Many who reacted positively appreciated that postal mail comes directly to them and offers documented evidence that they have been tested (and are STD-free). However, others felt this could expose

their personal information to others who could access their mail, including parents.

Nearly all respondents reacted positively to receiving test results directly from a health care provider during an in-person visit. Many said they would appreciate the chance to ask questions and have a conversation with the provider, particularly if results were positive. This interpersonal interaction was perceived as a comfort to many, regardless of the result.

Most respondents reacted positively to results notification through a phone consultation with a provider. This method offered both interpersonal interaction and convenience. Very few women were opposed to this method, with the exception of those who were concerned about their ability to have a private, uninterrupted conversation, including those without personal cell phones.

Most participants reacted positively to receiving a cell phone message or an e-mail indicating that their test results are ready, citing the ability to respond at their convenience as a key benefit. The few who reacted negatively were concerned about privacy, given the potential for others to intercept the message. This was particularly true of those who check their e-mail in public places.

There was no strong preference for text or voice mail prompts. When probed about receiving their actual results by text or voice messaging, the majority of young women responded negatively because of privacy concerns. Others disliked the impersonal nature of the communication, explaining that it would not provide the informational or emotional support needed if results were positive. The handful of women who responded positively cited convenience as a key benefit. However, many pointed out that it would not offer added convenience if a clinic visit was still needed to obtain treatment.

Responses were evenly split on the option of receiving STD test results through a secure website. Convenience was cited as the main benefit. Discussions suggested that those who were comfortable with this medium already used the Internet for personal matters, such as banking. Some liked that a website could offer detailed STD information that they could read at their convenience. In contrast, those with privacy concerns, who did not trust the security of the Internet for personal matters or did not have access to a personal computer, were less willing to receive results online.

DISCUSSION

It has been noted that to effectively promote chlamydia screening, we must raise awareness of the need for annual screening among women, make it personally relevant to them, and offer them a choice of easy, accessible, and confidential testing options (Friedman & Bloodgood, 2010; Pavlin, Gunn, Parker, Fairley, & Hocking, 2006). Nontraditional testing venues and new communication technologies may enhance available options for women, helping overcome barriers at systems and patient levels, and promote efficiencies in STD screening, test results delivery, and treatment, reaching more people at lower financial and personnel cost. This study explored the acceptability of alternative STD-testing venues and channels for results delivery among a sample of young sexually active women from the general U.S. population.

Findings suggest that although young women value convenience and accessibility in STD test settings, other factors, such as privacy, confidentiality, and a site that is clean, safe, and reliable (*with a good reputation*), are equally, if not more, important. Alternative settings may appeal to young women for their convenience, but additional efforts may be required if they ever become nationally available to build their reputations as reliable, trustworthy, and appropriate STD-screening venues.

Many respondents in this study reacted negatively to Internet-based screening because of a lack of confidence in their own ability to collect vaginal specimens, a lack of self-discipline in collecting and returning specimens, confidentiality concerns, and skepticism about the reliability and validity of test results. Some of these concerns have been reported previously (Blake, Kearney, Oakes, Druker, & Biback, 2003; Gaydos et al., 2006). By the same token, many participants doubted the competence of school clinic staff and retail clinic staff as STD care providers.

If Internet-based screening programs were to become nationally viable, consumers would need to be reassured of the reliability, validity, and confidentiality of testing. Offering explicit directions and reassuring ease of use could promote consumer self-efficacy. As noted by Owens et al. (2010), listing confidentiality policies, accreditation by professional organizations, and participation in laboratory proficiency programs on websites could also add legitimacy.

Similarly, acceptability of school- and retail-based clinics could be increased through public relations efforts to raise consumer confidence in nontraditional providers, promoting them as competent, friendly, and nonjudgmental. This would need to be supported by provider training to ensure that the promise is delivered. Clinical training and quality improvement strategies have been at least partially credited for the success of chlamydia-screening efforts in school-based settings in California (Braun & Provost, 2010) and in London pharmacies (Baraitser, Pearce, Holmes, Horne, & Boynton,

2007), though research suggests that additional incentives may be needed to ensure that providers consistently offer screening to at-risk women in private/commercial settings (Brabin, Thomas, Hopkins, O'Brien, & Roberts, 2009; Thomas et al., 2010).

Piloted efforts in nontraditional settings have also owed much of their success to supportive marketing and to educational and/or outreach efforts to raise consumer awareness of, create perceived need/demand for, and address fears and misconceptions about testing (Baraitser et al., 2007; Braun & Provost, 2010; Gaydos et al., 2009). Efforts that have failed to address these components have met with less success (Brabin et al., 2009). Raising awareness of urine and vaginal self-collected testing as options for chlamydia screening and broadening access to screening in a range of settings may also help shift women's perceptions of testing. Lessons can be learned from HIV efforts, such as District of Columbia's HIV-testing initiative at Department of Motor Vehicle offices, normalizing testing while reaching consumers where they are (Stewart, 2010).

In the meantime, strategies may be considered to minimize potential embarrassment and safeguard consumer privacy, given women's fears of being *caught getting tested*. Internet-based programs using generic packaging for test kits may increase women's acceptance (Gaydos et al., 2006). Adding options for women to tailor their own packaging or labels and website functions (e.g., a "hide" button that allows users to close out of the site without creating a browser history) may also increase acceptability for those without private Internet access. Designing the website as a woman's health site, through which chlamydia testing is one of several products/services offered, may minimize women's need to conceal their online activity. Eventually, home test kit ordering may be feasible through SMS services, offering privacy and access to anyone with a cell phone. In school settings, creative strategies have been used, offering universal screening to students regardless of sexual history and requiring that all students submit urine collection cups in paper bags, whether or not they actually provide a sample (Cohen et al., 2005). Such voluntary programs have demonstrated feasibility and success (e.g., District of Columbia Department of Health, 2010), but many have lacked the needed public, political and financial support to sustain long-term success (Cohen, 2009).

Study participants' technology access and use generally reflected that of the U.S. population (Lenhart et al., 2010). But whereas young women have embraced new technologies for personal and social uses, these technologies may not be as readily embraced for the delivery of STD test results. First, confidentiality and privacy concerns may trump the benefits of convenience and efficiency. For many women, these channels are perceived to be vulnerable to exposure of others who might judge, slander, or chastise them or who have no business knowing their results. Given the stigmatizing and private nature of STD screening, the acceptability of these channels for STD test results delivery may depend on the content of the message (generic or explicit), whether the user personally controls the technology or has shared access to it, and whether she trusts the security of the technology. E-mail, cell phones, and the Internet may offer appropriate channels for notifying most patients about the availability of test results as long as the message is generic, but they may be less acceptable for delivering actual results. To some women, particularly those who have adopted new technologies for managing other secure information, the receipt of STD test results through these channels was perceived as a welcome extension. As the uses and capabilities of these technologies continue to expand (Lenhart et al., 2010), later adopters may also welcome their function for STD-related services.

Second, technology may not offer the personal, emotional, or informational support of a provider. Many participants preferred receiving their actual results, whether positive or negative, in person by a provider. This illustrates the extent to which STD testing may be emotionally difficult for many young women and the importance of providing the option for provider contact with any results delivery method. The convenience of receiving results through new communication technologies is lost when results are positive and require a provider visit for counseling and treatment. New innovations being explored in the fields of sexual/reproductive health could soon make STD counseling possible through e-mail, instant messenger, or tailored, interactive websites (Swendeman & Rotheram-Borus, 2010). If acceptable to patients, these may one day replace the need for in-person counseling. Future innovations could also explore the delivery of prescriptions through text, e-mail, or a secure website, so that patients could print them or bring their cell phones directly to pharmacies for treatment. Finally, young women value channels that offer results in a format they can retain for their records or share with partners at their discretion, in print or online.

This study did not aim to involve a statistically representative sample, so results cannot be "generalized" to all young women. Given that young women self-selected to participate, they may be more willing to discuss sexual health/STDs than the general population. Young women's STD-related attitudes and preferences may also vary based on STD history, which was not assessed here. Results are self-reported based on hypothetical

scenarios and may have been influenced by social desirability bias. Also, technology-related attitudes and practices may have changed since this research was conducted. Finally, this research included only those living in metropolitan areas. Future research should explore young women in rural areas, who may stand to benefit more from alternative venues, given their reduced access to sexual health services and greater concerns about anonymity. To date, Internet-based pilot programs have shown low uptake in rural areas (Jenkins, Rabins, Barnes, Agreda, & Gaydos, in press).

Despite these limitations, this research can inform future STD-screening efforts. Pilot studies could explore the feasibility of chlamydia screening in U.S. retail clinics and other venues, incorporating needed provider training/incentives, systems support, and marketing strategies identified here and elsewhere (Brabin et al., 2010). Clinical improvement and consumer-marketing strategies, as well as public, financial, and policy support, would be needed to disseminate piloted school- and Internet-based screening programs more broadly.

CONCLUSION

Although young women have embraced new technologies for personal and social uses, additional marketing efforts may be needed to promote their acceptance for STD-screening venues and test results delivery. Young women value the convenience and accessibility afforded by alternative venues and settings, but other factors are often more important. STD-screening venues must offer privacy, confidentiality, competent providers (or self-efficacy, for Internet-based programs), emotional and informational support, and assurance of test accuracy. Factors such as privacy, confidentiality, and convenience are also important for results delivery channels, as are the provision of emotional/informational support and retainable documentation of results. The acceptability of newer communication technologies for STD test results delivery may depend on the actual results, message content, and the privacy of technology access.

Given that young women do not all have private access to mobile and Internet technologies, a range of options should be made available to accommodate their diverse circumstances and needs. Social marketing efforts can help change women's attitudes about where, when, and how STD testing is performed.

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