

Comparison of Methods to Increase Repeat Testing in Persons Treated for Gonorrhea and/or Chlamydia at Public Sexually Transmitted Disease Clinics

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Background: Retesting 3 to 4 months after treatment for those infected with chlamydia and/or gonorrhea has been recommended.

Goal: We compared various methods of encouraging return for retesting 3 months after treatment for chlamydia or gonorrhea.

Study: In study 1, participants were randomly assigned to: 1) brief recommendation to return, 2) intervention 1 plus \$20 incentive paid at return visit, or 3) intervention 1 plus motivational counseling at the first visit and a phone reminder at 3 months. In study 2, participants at 1 clinic were randomly assigned to 4) intervention 1, 5) intervention 1 plus phone reminder, or 6) intervention 1 plus motivational counseling but no telephone reminder.

Results: Using multiple logistic regression, the odds ratios for interventions 2 and 3, respectively, compared with intervention 1 were 1.2 (95% confidence interval [CI], 0.6–2.5) and 2.6 (95% CI, 1.3–5.0). The odds ratios for interventions 5 and 6 compared with intervention 4 were 18.1 (95% CI, 1.7–193.5) and 4.6 (95% CI, 0.4–58.0).

Conclusions: A monetary incentive did not increase return rates compared with a brief recommendation. A reminder phone call seemed to be the most effective method to increase return.

PERSONS INFECTED WITH GONORRHEA (GC) or chlamydia (CT) have been found to be at high risk for reinfection.¹ Many repeat infections are asymptomatic.² Urine tests introduced in recent years allow easy retesting, and the 2002 sexually transmitted disease (STD) treatment guidelines from the Centers for Dis-

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ease Control and Prevention (CDC) recommend retesting three to four months after initial treatment for women infected with CT.³

Well-planned, brief counseling interventions have been shown to have a positive behavioral impact in areas such as alcohol abuse⁴ and other addictive behaviors (see reference⁵ for a brief review). Miller and colleagues (eg,^{5,6}) have termed their successful brief interventions “motivational interviewing.” The putative effect of motivational interviewing is to trigger a decision and commitment to change; this type of intervention may be completed in much less time than is usually considered necessary for success. The elements included in motivational interviewing sessions are: 1) discussion and contemplation of the client's current situation, 2) emphasis on the client's personal responsibility, 3) advice given to change but specific goal may be left to the client's discretion, 4) offering alternative strategies for changing behavior, 5) empathic nature of intervention emphasized, and 6) emphasis on enhancing clients' perception of ability to change.

It is clear that this model of brief counseling intervention is related to cognitive-behavioral theories such as social-cognitive theory^{7,8} and the theory of reasoned action,⁹ which stress the importance of efficacy beliefs and outcome expectancies. Using a theoretically informed brief intervention model to encourage return for STD retesting appears particularly appropriate for clients who have been diagnosed with an STD at the visit when they are receiving treatment. The need for this visit provides an opening for assessment by the client of their current health-seeking and sexual behavior.

The use of incentives to increase healthcare behavior also has received considerable support (see, for example, references^{10–12}). To the best of our knowledge, however, incentives have not been compared with motivational counseling to encourage return for rescreening for STDs.

Telephone or mail reminders are also inexpensive ways to

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potentially increase return, and a number of studies have shown their at least moderate effectiveness in areas such as adolescent clinic appointments,¹³ mammography screening,¹⁴ and immunization appointments.^{15–17} Inability to contact clients for a variety of reasons, however, may limit the effectiveness of reminders.¹⁷ In addition, some studies have found that telephone¹⁸ or postcard^{18,19} cues to action were not sufficient to increase return rates for appointments. For example, reminders were not effective in a study with a low-income, inner-city clinic population attending a women's ambulatory health service.¹⁸

In 2 related studies, we compared various methods of encouraging return for retesting 3 months after initial treatment for CT or GC. These studies were part of a program of multisite multilevel feasibility studies conducted in collaboration with the CDC and the National Institute of Mental Health, designed to reduce the transmission of gonorrhea in high-prevalence communities (Harlem, NY, southwest Los Angeles County, CA, and Prince George's County, MD) known collectively as the Gonorrhea Community Action Project (GCAP).

Methods

Study 1

Enrollment for this study was conducted from April 2000 to July 2001 (with follow-up activities lasting until December 2001) in 2 county-run STD clinics in Prince George's County (PGC), MD, and Los Angeles (LA) County, CA.

The protocol was reviewed and approved by the following Institutional Review Boards: California State University, Long Beach; County of Los Angeles Department of Health Services; the Maryland Department of Health and Mental Hygiene; and the CDC.

Eligible participants were male and female STD clinic patients who had just received treatment for GC or CT, lived in the catchment area, and were between 14 and 30 years of age. In LA, potential participants were referred to the study staff by the treating clinician. The clinician informed these potential participants that if they chose to speak with the study staff member, that person would know that they had just been treated for an STD. The study was fully explained to those potential participants who chose to speak with study staff.

In PGC, the clinician directed potential participants to an STD clinic disease intervention specialist assigned to the study. The study was presented using a standard recruitment script, and potential participants were given the opportunity to enroll. In both LA and PGC, discussion of the study was at the end of the visit; all clients had already received all the usual clinic services, including medical care and counseling.

After providing written informed consent, participants were randomly assigned to 1 of 3 treatment conditions. Randomization was stratified by site and gender, and procedures followed current recommendations.²⁰ Randomization codes were sealed in opaque, numbered envelopes that were opened sequentially in the presence of the participant. A log of codes was kept to ensure that codes were assigned as expected.

Intervention Description. As noted here, all patients received standard care, including counseling, given to STD patients at the participating clinics. Intervention 1 was a minimal intervention consisting of provision of an appointment card with a 3-month date of return, approved by the patient, on one side and a statement that, "It is important to keep your appointment" and a list of reasons to return for the scheduled visit on the other. The reasons listed were based on those most commonly endorsed during formative re-

search interviews. They were: "to make sure you are healthy," "to check for symptoms you can't see or feel," and "to continue good health seeking behaviors." The card also instructed patients to return "if you have any symptoms," "if you get a new sex partner," and "if you can't get your current sex partner treated." Patients (in all intervention conditions) were told that the return visit would involve only a urine test, and that there would be no wait to be seen. This interaction lasted less than 5 minutes. Intervention 2 included all elements of intervention 1 plus the promise of a \$20 valued incentive provided when the patient returned for the 3-month visit. This interaction also lasted approximately 5 minutes. In LA, \$20 in cash was provided when the patient returned for this visit. In PGC, the incentive was a \$20-value supermarket gift certificate.

Intervention 3 consisted of a motivational counseling intervention based on motivational interviewing⁵ at the initial visit designed to encourage return, and a reminder phone call or letter a few days before the scheduled 3-month return date. The motivational counseling covered factors believed to be related to behavior and behavior change by a number of theorists.²¹ It was designed to last between 13 and 25 minutes. The protocol components were: introduction and orientation to the session; assessment and enhancement of clients' self-perception of risk; review of previous health-seeking behavior and identification and reinforcement of factors supporting return to the clinic; identification and addressing of barriers to returning to the clinic; summary discussion of the need for a return visit in 3 months or sooner; client commitment to return to the clinic and completion of the appointment card; and provision of any necessary additional referrals.

Quality and consistency of protocol implementation was assured through several mechanisms. Clear protocol specifications were contained in the intervention manual. Staff members from both sites were initially trained together before study initiation. Each intervention was role-played and feedback was given. Subsequently hired staff members were trained by the supervisors at each site. All sessions were audiotaped (with the consent of the participant; there were fewer than 10 refusals). Initially, all tapes were reviewed. Subsequently, 10% were randomly chosen for review on a weekly basis. Corrective feedback was provided as needed, although this was rare.

Because of the limited duration of the intervention, a pretest-posttest design was not feasible, so a posttest-only design was used. After the intervention (but during the same visit), participants completed an approximately 20-minute survey using audio computer-assisted self-interviewing (ACASI) technology. Each participant was introduced to the computer program by a staff member and then completed the survey by him-/herself in a private room. In a small number of cases, as a result of technical difficulties, the survey had to be administered as a self-completion paper-and-pencil survey and then entered into the computer later. After the survey was completed, each participant was reimbursed \$15 in cash or a gift certificate for his or her time.

Except as noted here, no attempts were made to contact participants about their 3-month appointment. Regardless of 3-month return, however, multiple attempts were made to recontact all participants for a follow-up visit 4.5 months after the initial visit. At this visit, another urine specimen was obtained and a follow-up ACASI survey was completed. A \$20-value reimbursement was provided. In PGC, when participants could not be convinced to visit the clinic, a telephone interview was completed.

Measures. The main outcome measure was return for the 3-month screening visit. In addition, a number of presumed cognitive mediating variables were assessed in the ACASI surveys.

These were variables thought to be important in a number of health behavior and psychologic theories²¹ and were concepts covered in the motivational counseling. They included knowledge about reasons to return, beliefs about the benefits and barriers to returning for the 3-month visit, attitudes and perceived norms about returning, perceived self-efficacy for returning, and intention to return. Other potential confounding variables assessed included demographic variables, prior STD and STD examination history, number of lifetime sex partners and number of sex partners in the prior 3 months, and frequency of condom use in the prior 3 months.

Analysis. Analyses were conducted using SPSS-PC version 10. An intention-to-treat approach was taken. In the initial analysis, the percentage of individuals who returned was crosstabulated by intervention condition. Univariate and multiple logistic regression analyses were also conducted. The multiple logistic regression analyses controlled for age, sex, race/ethnicity, education, employment status, and study location.

Study 2

Intervention 3 included both motivational counseling and reminder phone calls or letters. In an attempt to disentangle the effect of the reminder from the motivational counseling, a second, smaller study was conducted in Los Angeles from July 2001 through June 2002. Procedures for recruitment, randomization, and analysis were identical to those reported for LA, except that the treatment condition to which participants were assigned differed.

Participants were randomly assigned to 4) brief recommendation to return (same as intervention 1), 5) brief recommendation to return plus phone reminder, or 6) intervention 4 plus motivational counseling but no telephone reminder. Because this study was not originally planned, and was conducted only at 1 site, a smaller number of participants were recruited for this study; 29 participants were assigned to intervention 4, 27 to intervention 5, and 25 to intervention 6. As a result of administrative error, 1 of the intervention 5 participants did not receive a reminder, and 2 intervention 6 participants received a reminder. None of these participants returned at 3 months and all are included in the intention-to-treat analysis.

Combined Methods for Both Studies

Cognitive Mediating Variables. For the analysis of potential mediating variables, participants in interventions 1, 2, 4, and 5 were combined and compared with participants in interventions 3 and 6, because intervention 3 and 6 participants were the only ones who received an intervention designed to affect the mediating variables. The potential mediating variables were constructed as follows. Knowledge was the number correct out of 7 questions (potential range 0–7). Attitude was measured with 3 semantic differential items (How *bad–good is, unnecessary–necessary is, much would you like–dislike* coming back to the STD clinic for a urine test for gonorrhea and chlamydia in 3 months) each on a 7-point scale. These had adequate internal consistency (Cronbach's $\alpha = .73$) and were summed. Norm was measured as a combination of 2 questions, 1 assessing the participant's perception about whether people who are important to the participant think that the participant should return for a urine test and 1 assessing the participant's perception of how many of the people the participant knows would return for a urine test. These 2 items were only moderately correlated (Cronbach's $\alpha = .41$). Perceived self-efficacy to return and intention to return in 3 months were both measured as single 7-point variables. Because these mediating variables were highly positively skewed, they were recoded into

dichotomous variables approximately at the median. A score of 5, 6, or 7 was defined as high knowledge; a score of 19, 20, or 21 was coded as highly positive attitude; a score of 10 through 14 was defined as highly positive social norm; a score of 7 was scored as high perceived self-efficacy; and a score of 7 was defined as high intention to return. In addition, scales for specific normative beliefs, self-efficacy beliefs, and behavioral beliefs were constructed. The normative beliefs scale had 6 items with good internal consistency (Cronbach's $\alpha = .85$), the self-efficacy beliefs scale had 7 items (Cronbach's $\alpha = .91$), and the behavioral beliefs scale had 19 items (Cronbach's $\alpha = .87$). These were more normally distributed than the other potential mediating variables, and analysis of variance was conducted with these variables comparing means by group assignment and 3-month return.

Results

Study 1

Sample Description. In LA, 233 eligible potential participants spoke with a study staff member. Of these, 52 refused, leaving 171 participants; the most common reasons for refusal were not enough time ($n = 30$) and not interested ($n = 19$). (It should be noted that because of confidentiality concerns, potential participants in LA may have chosen not to speak to study staff, and we have no data on the number who so chose.) In PGC, all potential participants spoke with study staff (who were health department employees). In PGC, 688 potential participants were asked to join the study, and 254 accepted for an acceptance rate of 37%. Fewer females were approached ($n = 209$), but 98 (47%) accepted. The most common reason cited for refusal was lack of time. This is understandable given that potential participants were approached at the end of what could have been a long clinic visit. Thus, a total of 423 participants enrolled; 2 participants subsequently asked to be dropped from the study (1 from intervention 2 and 1 from intervention 3), leaving 141 participants in intervention 1, 144 in intervention 2, and 136 in intervention 3. Two participants in intervention 3 did not receive either a telephone or mailed reminder as a result of administrative error but were nonetheless included in the intention-to-treat analysis. Descriptive data for the sample can be found in Table 1. As a result of technical difficulties and oversights, immediate posttest data are not available on 4 of these participants, so the self-report data are for a total of 417 participants. A large number of the participants reported they had previously had gonorrhea ($n = 152$; 36%) and/or chlamydia ($n = 167$; 40%). Other STDs were less frequently reported, but only 32% of participants reported never having had an STD previously. STD testing was also relatively common with 58% (69% of females and 49% of males) reporting that they had been tested in the prior 12 months. This question was worded, "Not including this time, have you gone to get tested for a sexually transmitted disease, often called an STD, in the past 12 months?" and may be subject to recall error or may include a recent prior visit during which testing was obtained for the currently treated STD. Over 85% of males reported more than 5 female sex partners in their lifetime (vaginal, anal, and/or oral sex), with 11% reporting 1 to 5 female partners and 3% reporting no female partners. These percentages for the prior 3 months were 14%, 78%, and 8%, respectively. Nearly 6% of males reported at least 1 male lifetime sex partner, and 5% reported a male sex partner in the prior 3 months. Slightly more than half (52%) of the females reported more than 5 lifetime male sex partners, 44% reported 1 to 5 partners, and 5% reported no male partners. For the prior 3 months, 3% of females reported 5 or more male partners, and 14% reported no male partners. Fifteen percent of females reported at least 1 lifetime

TABLE 1. Study 1—Baseline Characteristics by Intervention

	Standard Treatment (N = 141)	Standard Treatment Plus Incentives (N = 144)	Standard Treatment Plus Motivational Counseling and Reminder (N = 136)	Total (N = 421)
Mean age (years)	22.1	22.2	21.7	22.0
Gender				
Female	44.7%	43.1%	43.4%	43.7%
Male	55.3%	56.9%	56.6%	56.3%
Race/ethnicity				
African-American	94.3%	93.1%	86.8%	91.4%
Latino	2.1%	3.5%	5.1%	3.6%
Other	3.5%	3.5%	8.1%	5.0%
In school				
Yes	24.3%	25.2%	26.9%	25.4%
Education				
Less than high school grad	20.7%	29.4%	28.4%	26.1%
High school	53.6%	51.7%	42.5%	49.4%
Greater than high school	25.7%	18.9%	29.1%	24.5%
Employed				
No	37.9%	31.5%	33.6%	34.3%
Part-time	18.6%	18.9%	24.6%	20.6%
Full-time	43.6%	49.7%	41.8%	45.1%
Previous GC	38.6%	38.5%	32.1%	36.5%
Previous CT	40.0%	44.1%	35.8%	40.0%
Some previous STD	70.0%	70.6%	63.4%	68.1%
STD tested past 12 months	59.3%	53.8%	60.4%	57.8%
Used condom last time had sex	37.1%	37.8%	38.3%	37.7%
No. of male sex partners in lifetime (women only)	n = 63	n = 61	n = 55	n = 179
None	4.8%	4.9%	3.6%	4.5%
1–5	44.4%	41.0%	45.5%	43.6%
More than 5	50.8%	54.1%	50.9%	52.0%
No. of female sex partners in lifetime (men only)	n = 71	n = 79	n = 75	n = 225
None	4.2%	0.0%	5.3%	3.1%
1–5	11.3%	15.2%	6.7%	11.1%
More than 5	84.5%	84.8%	88.0%	85.8%

GC = gonorrhea; CT = chlamydia.

female partner, with 9% reporting a female partner in the prior 3 months. We do not know what might explain this relatively high percentage.

Most participants reported inconsistent condom use, with 18% reporting no use, 14% reporting use rarely, 23% reporting use some of the time, 25% reporting use most of the time, and 15% reporting use every time.

There were no significant baseline differences between intervention conditions for any demographic or sexual behavior variables (see Table 1).

Return for Retesting. Return rates at 3 months were 11.4% for the brief reasons for return condition, 13.2% for the incentive condition, and 23.9% for the motivational counseling plus re-

minder condition. In univariate logistic regression, when compared with intervention 1, the odds ratio for intervention 2 was 1.19 (95% confidence interval [CI], 0.6–2.4), and the odds ratio for intervention 3 was 2.50 (95% CI, 1.3–4.8). No demographic variable was related to return. Those who had received another STD examination in the 12 months before study enrollment were somewhat less likely to return (19.9% vs. 13.3%, $P = 0.07$). The return results were not consistent by site and gender (see Table 2). After controlling for gender, clinic site, and prior STD examination using multiple logistic regression, the odds ratios changed little from the univariate logistic regression. For interventions 2 and 3, respectively, compared with intervention 1, the odds ratios were 1.15 (95% CI, 0.6–2.4) and 2.49 (95% CI, 1.3–4.8). An additional logistic regression analysis was conducted, including

TABLE 2. Study 1—Return Rates by Intervention Condition, Site, and Gender

	Standard Treatment	Standard Treatment Plus Incentive	Standard Treatment Plus Motivational Counseling and Reminder
Los Angeles			
Male	7.7	23.3	17.9
Female	13.8	6.9	28.6
Prince George's County			
Male	7.7	13.5	22.4
Female	17.6	9.1	29.0

TABLE 3. Immediate Posttest Cognitive Mediating Variables by Intervention

	No Motivational Counseling (Interventions 1, 2, 4 and 5, n = 339)	Motivational Counseling (Intervention 3 and 6, n = 159)	P-Value
High knowledge	54.6%	60.4%	0.223
Highly positive attitude	47.8%	58.5%	0.026
Highly positive social norm	50.7%	61.6%	0.023
High self-efficacy	54.0%	52.8%	0.810
High intention to return	54.0%	54.7%	0.878

3-way interaction terms for site, gender, and intervention. Although the return rates and their pattern differ by site, the 4-way interactions were not significant.

Study 2

The study 2 participants resembled the study 1 participants on most demographic and STD history variables. For example, slightly more than half (53%) of the participants in study 2 were male, 86% were black, and 73% had previously been diagnosed with an STD. On the other hand, study 2 participants were somewhat more likely to be in school (46% vs. 25% in study 1) and were more likely not to be working (68% vs. 34%).

Return rates at 3 months were 3.4%, 33.3%, and 12.0%, respectively. Unlike study 1, the pattern was similar for males and females. After controlling for gender and STD testing in the prior 12 months, the odds ratios for interventions 5 and 6 compared with intervention 4 were 12.3 (95% CI, 1.4–112.0) and 2.5 (95% CI, 0.2–28.0). Thus, the reminder significantly increased the return rate relative to usual care. The motivational interview return rate was higher but not significantly different from usual care.

Combined Results for Both Studies

Cognitive Mediating Variables. There were few significant differences between conditions on the hypothesized cognitive mediating variables on the immediate posttest. As can be seen from Table 3, motivational counseling participants were somewhat more likely to have highly positive attitudes and social norms regarding return in 3 months for retesting. They were also somewhat, although not statistically significantly, more likely to have a high knowledge score. There were no differences between treatment conditions on general perceived self-efficacy to return or for intention to return. None of the belief scales were related to intervention condition; the mean score for the motivational counseling participants on the behavioral beliefs scale was 5.49, whereas it was 5.55 for those who did not receive this intervention ($P = 0.47$). The means for the normative beliefs scale were 4.32 and 4.28, respectively ($P = 0.61$), and the means for the self-efficacy beliefs scale were 5.90 and 5.96 ($P = 0.59$). Contrary to expectation, none of the presumed cognitive mediators were even modestly related to 3-month return.

Reinfection at Follow Up. Data on the number of participants who were reinfected at the 4.5-month follow-up visit were available only for the LA participants; 8.9% of the 124 who returned were reinfected.

Discussion

The combined results from both studies lead to the conclusion that telephone/mail reminders appeared to be the most effective method, of those we used, for encouraging return for retesting. Because this intervention can often be easily implemented, this is

encouraging for clinics. However, the return rates were low for all methods. Thus, developing more effective methods for encouraging return for retesting is still required. The fact that the motivational counseling did increase return rates over those of the standard appointment cards remains helpful for tailoring and at least as a secondary intervention mechanism. This intervention is fairly expensive, however, and given the higher return rates seen in the telephone/mail reminder condition, under similar conditions, it is not as cost-effective as the reminder condition. We are currently completing cost-effectiveness analyses to estimate the return rate that would need to be achieved for the motivational counseling to be cost-effective.

We were able to institute 1) incentives, 2) motivational counseling, and 3) phone reminders into 2 unrelated STD clinics. Thus, any of the interventions, in any combination, is feasible. The next task is to discern under what circumstances to introduce each intervention.

Clearly, the telephone reminder intervention was the most effective in the situations in which we tested the intervention and remains an attractive primary option as an intervention. However, although simple reminders appeared to be the most effective intervention in our studies, there are several concerns that should be addressed before considering instituting this on a programmatic level. First, the confidentiality of clients must be respected. Thus, although automated reminder systems may be very efficient, they are probably not appropriate for this type of appointment. The need to speak to the client directly in many cases may also reduce the effectiveness and increase the cost of this type of intervention as a result of difficulty in contacting the client. Multiple attempts may be necessary to contact the client, and these calls will often need to be made after typical business hours. Many STD clinic clients, moreover, have unreliable phone contact; for these clients, a motivational counseling intervention may be a viable alternative. Therefore, for a given clinic, the presence of reliable locating information may be a guide to which intervention to use.

To be a convincing alternative, however, the motivational counseling intervention would have to be demonstrably more effective alone than it was in these experiments. Although the odds ratio of 2.5 (interview vs. control) constitutes a reasonable effect size, the low numbers meant we could not differentiate it from chance in study 2 (but also note this odds ratio was the same as for study 1). We expected the motivational counseling and the incentive conditions to be more effective than they were based on results from a number of prior studies of these techniques for encouraging other behaviors. It should be noted, however, that although many studies have found that brief motivational interventions can be effective at encouraging behavior change, this is not universally the case.^{10,11,14} Motivational counseling as we designed it and where we instituted it in the clinic flow might not have been appropriate for encouraging return for retesting. This behavior might not have been important enough to the participants to attend adequately to the session, or we may not have adequately incorporated the important elements of motivational interviewing. Evidence of this may be the

fact that the differences between the motivational intervention and the other interventions on the cognitive mediating variables were not very large. We do not believe that this was the result of poor intervention implementation by our counselors because the quality assurance review of audiotaped sessions indicated that the protocol was consistently followed. Instead, the placement of the motivational intervention after treatment and after any risk reduction counseling may have placed the method at a disadvantage in that reduced posttreatment tension and anxiety for the client results in reduced salience of the intervention content. Depending on clinic flow and waiting times, the motivational counseling may be better placed earlier in the treatment process (eg, between the diagnostic interview and treatment).

If one accepts that a telephone reminder for retesting is likely to be a useful primary strategy for increasing return rates, and that a possibly revised motivational intervention remains a potential secondary strategy, is there any room to consider incentives? The lack of effect for the incentives in this study may be the result of the long time period between the enrollment visit and the retesting visit. The most obvious reason for the effectiveness of the telephone/mail reminders is reduced forgetting.²² Perhaps a combination of incentives and a reminder would have been more effective than either alone by making the availability of the incentives more salient to the participants closer to the retesting visit. An increased incentive might also produce a higher return rate, but the amount offered is likely to be the maximum that clinics would consider.

A methodologic concern that should be noted is that the high refusal rate may have resulted in a biased study sample not fully representative of the clients seen at these STD clinics. As noted previously, the most common reason cited for refusing to participate was lack of time, but the observed results might not hold for the entire clinic population.

In conclusion, we conducted 2 related studies aimed at inserting different interventions aimed at retesting into functioning STD clinics, tailoring each intervention to each site. The results indicate the benefits of a telephone reminder system in a system with low return rates, but also that clinic staff and researchers might consider clinic- and client-tailored algorithms that pick among and even combine interventions to increase systemic return rates most effectively.

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