

# Quality improvement report

## Opportunistic screening for *Chlamydia* at a community based contraceptive service for young people

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### Abstract

**Problem** The suspected high prevalence of *Chlamydia* infection that is undiagnosed and untreated among high risk women who attend a contraceptive service for young people.

**Design** Cross sectional study from a community screening service.

**Background and setting** An inner city contraceptive and psychotherapy service for young people aged 12-21 years.

**Key measure for improvement** Prevalence of infection commensurate with or above findings from the national screening pilot (13.8% for > 16 year olds, 10.5% for 16-19 year olds, and 7.2% for 20 to 24 year olds).

**Strategies for change** Offering testing (of a first catch urine sample) for *Chlamydia* to all young people using the contraceptive service who were not previously screened; launching a publicity campaign about the new service; training medical staff and reception staff to deliver the service to maximise take up of screening and of treatment by infected cases; and surveying results from testing to monitor significant patterns of infection requiring further action.

**Effects of change** Percentage of clients with infection exceeded targets for each age group, 76% with a positive or equivocal result returned for treatment, 87% of those treated returned for a test of cure, and 99% of tests of cure were negative. Prevention work was initiated in a school with a particularly heavy concentration of infected clients.

**Lessons learnt** A contraceptive service for young women is a highly acceptable location for effective *Chlamydia* screening.

### Background

*Chlamydia trachomatis* infection of the genitals is the commonest curable sexually transmitted bacterial infection in England and is the most preventable cause of infertility in women. The national screening pilot found 13.8% of under 16 year olds, 10.5% of 16-19 year olds, and 7.2% of 20 to 24 year olds were infected. More than 60 000 cases were reported from genitourinary medicine clinics in 2000, and the number is increasing.<sup>1</sup> The NHS spends more than £50m (\$79m; €72m) a year treating infertility secondary to chlamydial infection (Templeton A. Chlamydia

screening. Adolescent Sexual Health. Royal College of Obstetricians and Gynaecologists. 12 December 2002).

Despite publicity campaigns, the public's awareness of *Chlamydia* and its consequences remains inadequate, particularly among young people. Fewer than an estimated 10% of prevalent infections are diagnosed<sup>1</sup>: many women, particularly younger women, go untreated and are at risk of developing severe complications such as ectopic pregnancy, pelvic pain, and tubal factor infertility.<sup>2,3</sup> *Chlamydia* is also common in young men and can cause epididymitis. Risk factors for undiagnosed chlamydial infection are younger age, non-married status, partner concurrency, higher number of reported sexual partners in the past year, and unprotected vaginal and anal intercourse.<sup>2</sup>

A pilot study of opportunistic screening for genital *Chlamydia* that used a first catch urine sample, tested with the ligase chain reaction, a nucleic acid amplification technique, has confirmed the value of this method of screening.<sup>1</sup> The national strategy for sexual health and HIV recognises the seriousness of undiagnosed *Chlamydia* infection and the need for a nationwide screening programme.<sup>4</sup>

### Context

A contraceptive service for young people, part of a voluntary sector organisation also offering counselling and psychotherapy, introduced a programme of opportunistic screening for genital *Chlamydia trachomatis*. The organisation has offered contraception and counselling for over 30 years.<sup>5</sup> The contraceptive service is partly funded by the local primary care trust and is linked to local NHS and voluntary sector providers. The service is for people aged 12 to 21 years; the mean age of users in 2001-2 was 18.34 (SD 2.91) years. The clinic is in a community with a high level of social problems and economic deprivation.<sup>6</sup> In 2001-2, 779 young people used the contraceptive service and were offered 2496 appointments, of which 89% were kept. Almost all (96.5%) users were female, and 24% were from a minority ethnic background. The clinical team comprised two female family planning doctors who provide sessions on weekdays with evening sessions on Monday and Wednesday until 8 pm.

## The problem

Experience from the contraceptive service of young women having unprotected sexual intercourse indicated that many clients with *Chlamydia* would not have had the condition diagnosed or treated. The contraceptive service, used by young women at risk of infection, gave the opportunity to introduce an opportunistic screening programme to determine the feasibility of detecting and treating undiagnosed cases.

## Key measures of improvement

We chose four measures of improvement: take up of the service, prevalence of previously unidentified infection, take up of treatment by positive or equivocal clients, and the percentage of treated cases that returned for test of cure screening. These measures indicate the acceptability of the test for clients. Anecdotal evidence of the users' experience of the service also contributed to measuring the service's acceptability.

## Gathering information

Before we implemented a pilot screening programme, we had been offering clients *Chlamydia* testing only if they showed symptoms—for example, breakthrough bleeding while using the pill or injectable methods of contraception—or if patients were considered to be particularly at risk. Pilots elsewhere found high rates of infection.<sup>1</sup>

We did a feasibility study for six months to test whether screening for *Chlamydia* was acceptable to our patients. We considered two types of test: cervical swabbing (enzyme linked immunosorbent assay (ELISA)) and the first catch urine for strand displacement assay. A cervical swab was unacceptable to a large proportion of younger women and is known to yield high false negative results. A urine test is easily done, and can be offered concurrently with a pregnancy test. We also assessed the efficiency of systems for testing urine samples by local laboratories, informing patients of their results, arranging further consultation and treatment for patients whose test showed a positive or equivocal result, and contacting partners of infected patients.

We also consulted two genitourinary consultants in different parts of the country about how to deal with an equivocal result: whether to contact the individual for retesting or whether to treat the equivocal result in the same way as a positive result and offer treatment to the individual. We took the latter course of action because of what we have learnt about the sexual behaviour of the users of the contraceptive service and their capacity to reliably attend repeat appointments. We were aware that treating an equivocal result as positive can have an adverse medical, psychological, and social impact on patients, especially if they are monogamous. This outcome had to be weighed against the fact that many of our clients were rarely monogamous, and having unprotected sexual intercourse with more than one partner was common. High risk clients were likely to attend the clinic on impulse but were unlikely to comply with a request for a repeat test. We therefore decided that untreated infection was a greater risk than the implications of treating a patient with an equivocal

result as a false positive. The treatment was a single 1 g dose of azithromycin.

## Strategies for change

We implemented a pilot screening project that resulted in changes to our practice.

- Offering a *Chlamydia* test to anyone using the service for contraception who has not been previously tested
- Launching a publicity campaign in the centre's waiting room about the new service—introducing a wide range of leaflets on the subject of *Chlamydia* and a display about the risks of *Chlamydia*, the benefit of being tested, and the nature of the test
- Training medical staff to offer a *Chlamydia* test to a young person whose purpose in attending the clinic is for contraceptive advice and how to make arrangements to ensure being able to make contact with the patient once results are known
- Training reception staff to contact and inform all patients of the result of the test and how to engage with those patients with positive or equivocal results, especially those who are anxious, to ensure that they return to the clinic for treatment and to discuss contacts with the doctor so that where ever possible they are traced and treated
- Having the doctors regularly survey the results from testing, which are kept in a register that lists the date of the test, the result, age of client, treatment, and details of test of cure.

## Effects of change

Between 1 April 2001 and 31 March 2002 of the 779 young people who used the centre's contraceptive and sexual health service, 566 (72.7%; 95% confidence interval 69.5% to 75.8%) young people who previously had not been tested for *Chlamydia* agreed to be tested (table 1). Some of the shortfall may be accounted for by young people who had previously been tested and successfully treated during the feasibility study attending for contraception but not requiring a test for *Chlamydia*. Some young women seeking contraception felt the test did not apply because they and their partner had both been virgins at first intercourse. Others



*Chlamydia* bacteria are responsible for the sexually transmitted infection

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**Table 1** Test results as a proportion of valid test cases

	No	% (95% CI)	SE
Positive	55	10.6 (7.9 to 13.2)	0.013
Equivocal	58	11.2 (8.5 to 13.9)	0.014
Negative	406	78.2 (74.7 to 81.8)	0.018

**Table 2** Number (percentage) of test results by age

Test result	Age (years)			
	<16	16-17	18-19	≥20
Positive	6 (7.6)	23 (13.9)	10 (8.3)	16 (10.5)
Equivocal	11 (13.9)	16 (9.6)	12 (9.9)	19 (12.4)
Negative	62 (78.5)	127 (76.5)	99 (81.8)	118 (77.1)

\*For the trend  $\chi^2=4.6$ , df=6, P=0.6.

**Table 3** Number (percentage) of test results by sex\*

Result	Sex	
	Female	Male
Positive	52 (10.6)	3 (11.1)
Equivocal	57 (11.6)	1 (3.7)
Negative	383 (77.8)	23 (85.2)

\*For the trend  $\chi^2=1.6$ , df=2, P=0.5.

refused to be tested because they were in a monogamous relationship. A minority refused outright even though testing was indicated because they were known to have had unprotected intercourse with more than one partner. Among a total of 519 (91.7%) clients with valid results were young people who responded to being recalled for further testing when the result of their test was invalid. However, a total of 47 (8.3%) clients who originally agreed to be tested did not get a valid test result despite efforts by medical and reception staff to recall them for further testing. Invalid results were samples that were leaking, insufficient, or lost in transit. Of the young people who had a valid result 79 (15.2%) were aged under 16, 166 (32.0%) were aged 16 or 17, 121 (23.3%) were 18 or 19, and 153 (29.5%) were 20 or older; 27 (5.2%) were male; a total of 55 (10.6%) clients had a positive result and 58 (11.2%) had an equivocal result. The initial high level of equivocal results was brought to the attention of the medical microbiology department that did the testing, which was unable to provide a reason for this: the initial high level of equivocal results using strand displacement assay remains unexplained. Tables 2 and 3 show test results by age and by sex. We saw no significant differences between age groups or between men and women. We treated 100 of 113 (88.5%) with a positive or equivocal result of whom 65 (65.0%) returned for a test of cure without being recalled. There was only one positive or equivocal result of a test of cure. Young women are worried about their future fertility, but we do not know whether this means that their use of condoms is increasing. All patients with positive or equivocal results were made aware of the importance of notifying all recent partners. The partners had the choice of being treated by their general practitioner, at a genitourinary medicine clinic, or at the Brandon Centre if their age was appropriate.

Two of the local schools in particular had many pupils with positive and equivocal results. We informed the school nurses. One school invited one of our trained administrators to talk to small groups of pupils (aged 14-15) in year 10 of about the risk of *Chlamydia*

and the centre's service. This information is now included in year 10's physical health and social education curriculum. Groups of pupils have visited the centre with their teacher (parental permission was obtained). They meet one of the centre's doctors and are able to discuss any concerns about sexual health and contraception. We also implemented a new information campaign in our waiting room aimed at alerting young people to the danger of infection.

## Lessons learnt

Screening confirms findings from recent studies of high levels of undiagnosed, laboratory confirmed *Chlamydia* infection among a high risk group of young people.<sup>1 2</sup> The high level of take up of the service shows that a clinic offering contraception for young women is a particularly suitable setting for testing for *Chlamydia*. Young women find testing for *Chlamydia* in this context less stigmatising than attending a sexual health clinic.

Clients who tested positive or equivocal had a high degree of compliance regarding treatment. Perhaps this is due to *Chlamydia* being understood as an infection with serious implications for fertility if left untreated. Inconsistent and erratic use of contraception to prevent unwanted pregnancy can also have serious health consequences but is not stigmatised to the same degree as a sexually transmitted infection. In this deprived and disadvantaged social setting, teenage pregnancy may even be desirable, showing fertility and fecundity.

We also found that urine testing, being non-invasive, was acceptable for our young population. We would not have achieved the same degree of compliance had swabs been used. Vaginal examinations are unacceptable for most of our clients, especially young adolescents. We also learnt that a test of cure was important to reassure clients who had been infected and came back for this test that they were clear of infection. It also allowed us to check indirectly on the take up of treatment by partners.

The study demonstrates the key role of reception staff in effectively delivering services, especially in ensuring that infected young women return to the clinic for treatment. Reception staff need to be well trained to communicate sensitive information to clients who can be anxious and distressed.

We found an area with room for improvement in reaching male partners of young women who had positive results. Only a minority of young men used the service following advice from their partner. Anecdotal evidence suggests that they used locally based alternative services, which they may have felt were more geared for working with young men than the Brandon Centre. With hindsight, we can see that we lacked experience in ensuring partners were notified.

## Next steps

The study suggests the value of routinely screening for chlamydia in clinics providing contraceptive services for young people in a community based venue. We intend to continue offering proactively chlamydia testing to all patients on a yearly basis or on a six monthly basis to younger women aged under 17, and when they start a new relationship. We would like to



### Key learning points

Chlamydial infection was evenly spread over the age group using the clinic

Urine testing is more valid and acceptable than using swabs, particularly in a family planning setting for young people

Present government policy is to target over 16s, but under 16 year olds are infected

Treatment with a single 1 g dose of azithromycin is highly acceptable and improves compliance

improve the proportion that take up treatment and that take up the test of cure. It is interesting to note that without the advent of the mobile phone contact would have been severely restricted since for nearly all young women who participated in the study the mobile phone was the preferred medium of contact. Perhaps the rate of contact could be improved if, as well as their mobile phone number, we asked young women for a safe address we could write to or a friend's mobile phone number. Email is another possibility but not many of our client population use email and even when they do they may be wary of being contacted in case confidentiality is breached. Although anecdotal evidence from clinics offering a *Chlamydia* testing service to a similar population suggests that the proportion of our users who voluntarily return for a test of cure is high, we would like to improve in this area. This may involve greater promotional efforts regarding the value of a test of cure by both reception and medical staff. We aim to promote the service by working closely with more

local schools in the area. We also intend to have a much more proactive attitude to the treatment of partners at the Brandon Centre and will take steps for the clinic to be more acceptable to young men. We shall issue all patients with a positive result with slips for notifying partners and support patients in encouraging partners to attend the centre for testing and treatment. At the time of writing, the take up by partners of the centre's service is improving as a result of initiating these measures.

We thank the Brandon Centre's reception team for their crucial contribution in delivering the screening service and the staff team of psychotherapists and psychologists for their support and interest.

Contributors: VM initiated and planned the study, wrote the report, and conducted the clinical work with Kylie Greaves, the other part time family planning doctor at the Brandon Centre. GB contributed to the planning and management of the study and wrote the report. PF did the statistical analysis. GB is guarantor.

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Competing interests: None declared.

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### A memorable patient

#### Using patients for teaching can enhance their lives

The students were in the last firm of their first clinical year, so I asked them if there was something they wanted to do that they hadn't covered. The answer was kidney disease. Now the trouble with kidney disease is that there often isn't much of a history, and, until it gets to end stage failure, there aren't many signs. We base our teaching around patients, and the only patient we had in the practice with anything worthwhile to show the students was a rather depressed 80 year old woman who was struggling with home peritoneal dialysis. I didn't think she would be amenable or a very good example for the students.

However, they were insistent so I telephoned the patient to ask if I could bring the students around, and her surprising response was "Oh yes please!"

When I turned up at her bungalow with six students we were met by a smiling face, a best frock, and a new hair do. "Please come in, would you like a cup of tea or a coke? I have been waiting to do my dialysis until you came to show you what was involved. Would you like to help me?" And so she did. I hadn't seen her looking so well in 15 years. In her youth she had been a dancer, and suddenly she had come alive again with a different audience.

The dialysis process took an hour, during which time she was able to tell her story, how she and her husband coped with a life of peritoneal dialysis, what drugs she took and what they were for, and the diet she was allowed.

For three years, I came every six weeks with a group of students. She soon picked up what the students were meant to know and gradually took over the session while she used a mixture of charm and a Socratic approach to teach the students all about renal failure. I sat at the back as she demonstrated the aseptic technique necessary, asked them why the opaque bag with draining dialysis fluid had a window in it (to detect discoloration that might indicate infection) and recounted the horrible experience of a peritoneal infection. The students' evaluation was that it was a powerful learning experience.

However, the best thing was the renewed vigour and excitement in life for the patient noticed by her family and friends. It is perhaps sad that the most enjoyment she received was teaching students for an hour every six weeks, but it was very important for her self esteem that she was able to make this contribution.

Eventually she slowed down, had difficulty concentrating, and shortly after teaching the last group of students in the year she died.

We have lots of patients who are happy to be available for the undergraduates who attend our practice, but what I learnt from Mrs H was that teaching students can enhance the quality of life for the patient.

Martin Rhodes *general practitioner*