

Chlamydia trachomatis screening in young people in Merseyside

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Summary

Objectives. *To evaluate the acceptability to young people of proactive Chlamydia trachomatis (CT) information and urine test. To discover the extent of CT infection and the practical implications for completing treatment and partner notification.*

Design. *Prospective screening with sexual health questionnaire.*

Setting. *Three family planning clinics for young people in Liverpool and South Sefton.*

Participants. *Nine hundred and five women and 53 men had urine tests and answered the questionnaire. All aged 20 years or under attending the clinics were given information about CT and safer sex.*

Main outcome measures. *The acceptability of proactive information and screening for CT using a urine test. Prevalence of CT infection. The time and effort incurred informing and managing those testing positive.*

Results. *The information and urine test were readily accepted. Prevalence of CT was 8.5% in women and 5.7% in men. More than three-quarters of those testing positive were treated, but it took much time and effort, as follow-up attendance was poor.*

Conclusions. *The prevalence of CT was high in this population. Young people participated in screening readily. They are interested in this health issue, but it was difficult to hold their attention long enough to complete the process of treatment and contact tracing. Completing this successfully either needs a huge input of resources or a new approach. These results have led to the piloting of an outreach health adviser administering treatment and carrying out partner notification at the screening site. Some of the questions raised by the CMO have been addressed.*

Key words

Chlamydia trachomatis, screening, sexual health, teenagers

(PID), which is difficult to diagnose. Complications include ectopic pregnancy, chronic pelvic pain and infertility.

Chlamydial infection often presents with no symptoms or minimal, disregarded symptoms. Control depends on detection by laboratory testing. An intimate examination to acquire a sample has made screening young people difficult and enzyme immunoassay tests have limited sensitivity. Recent technical advances involving amplification of DNA allow sensitive and specific detection from a first catch urine sample.²

Screening large numbers of adolescents has taken place in other countries,³ but only small studies have been conducted in the UK.⁴ A fall in CT prevalence has been noted in areas of the USA and in Sweden where CT screening programmes have been active.⁵ The Chief Medical Officer's (CMO) Expert Advisory Group on CT recommended opportunistic screening (pilots started September 1999), especially in teenagers, and called for research to complement the design and implementation of a national screening programme.

Methods

All clients aged 20 years and under attending three young people's family planning (FP) clinics in Merseyside were given written information about CT and about the study. Confidentiality was emphasised to all. In participants under 16 years Gillick competence was established prior to entering the study. Those choosing to have the CT test were counselled and answered a short questionnaire about sexual behaviour and their satisfaction with the information and test. They returned after 2 weeks to collect their results and, if positive, be referred to the genitourinary medicine (GUM) clinic. In case they did not return, confidential contact points for reminders were negotiated.

Urine samples were frozen (-20°C), transported cold to the laboratory and tested by Ligase Chain Reaction (Abbott Laboratories) for CT. The questionnaires were analysed to produce the odds ratios of CT infection in different client subgroups with 95% confidence intervals. Ethical approval was obtained.

Results

Less than 1% of attendees refused to participate and over two-thirds entered the first time they were approached. The rest deferred due to lack of time.

The overall prevalence was 8.5% in females (77 from 905) and 5.7% in males (three from 53). The highest prevalence was found in those aged 17 years (14.0%; n = 26). Most (86.1%) were pleased to learn more about CT, and nearly all were either pleased (61.4%) or did not mind (37.5%) being offered the urine test.

Key message points

- Information about *Chlamydia trachomatis* and screening using urine are very acceptable to teenagers.
- *Chlamydia trachomatis* is very common in teenagers, even when risk appears low e.g. only one partner - 3.27%, always use condoms - 4.72%.
- Completing the process of treatment and contact tracing is difficult, as young people are poor at attending for follow-up.
- Carrying out treatment and contact tracing at the same time as testing is therefore being piloted.

Introduction

Chlamydia trachomatis (CT) genital infection costs the health service in England and Wales £100 million each year.¹ It is the major cause of pelvic inflammatory disease

Table 1 Young people who tested positive for CT, their symptom status in association with their response to follow-up

	Obtaining Results			Total	Receiving treatment			Total
	Attended for results spontaneously	Needed reminders and attended for results	Did not find out results as part of study		Treated within 1 month from test	Treated more than 1 month from test	Not treated or lost to follow-up	
Presented with relevant symptoms	2	0	0	2	2	0	0	2
Symptoms elicited	9	31	3*	42	15	19	8†	42
No symptoms	9	20	7	36	10	16	10	36
All clients	20	50	10	80	27	35	18	80

*One was treated within 1 month as she was admitted to hospital and the study informed the hospital of the result and she was treated.

†Two never found out their results, one refused referral, four did not attend GUM, and two were lost to follow up as they were referred to their GPs.

Eighty participants tested positive. Only 25% of them attended for their results without a reminder; a similar proportion to those testing negative (Tables 1 and 2). Despite 34 reminders, including some home visits, 10 never attended for their results. However, one of these received treatment as an inpatient in hospital. Sixty-nine were referred for treatment (seven insisted on GP referral only; one refused referral as she said someone had impersonated her). Sixty-one of these 69 were eventually treated (although screening for other STIs was offered at GUM, many refused examination). Therefore treatment was definitely received by 62 (77.5%) participants with positive tests; 88.6% of those who knew their result.

The participants who were treated within 1 month of the test (27) needed 16 reminders; those treated more than 1 month from it (35) needed 66 reminders. Some of those who knew their result but did not attend their referral site may have received treatment from another source.

Analyses of behaviour patterns and predictors of CT infection were only conducted on the female participants (n = 905) as the number of males was small and the men may not have been representative (Table 3). Most were attending for contraception (63.8%) and pregnancy tests (22.7%). The reason for attendance and the length of the current sexual relationship did not have a significant association with a positive test.

Sexual activity for longer than 1 year, and certain relevant symptoms, were significantly associated with testing positive for CT. Frequency of condom use was associated with a significantly lower chance of testing positive for CT, but the percentage testing positive of those claiming to always use condoms was still 4.72%. The odds ratios of being CT positive rose with number of partners ever.

Discussion

This is the first study of a urine-screening test in large numbers of young people attending FP clinics in the UK. The high acceptance provided a representative population sample and demonstrated a high CT prevalence. The number of men recruited was low, but this reflects the clientele in FP clinics. A higher prevalence of CT has been found in an older age group (20-24 years) for men.⁶

Although this study was devised and largely carried out before the CMO's report was published, it provides answers to some of the questions raised in it.

- Both the setting and the urine sample were acceptable to clients.
- Risk markers for elevated risk of infection have been identified. However, even in subgroups with lowest risk (only one ever partner, always using a condom), CT prevalence exceeded the 3% threshold for cost-effective screening.⁷
- The CMO's report suggests that generally, positive cases should be referred to GUM clinics, although it is recognised that not all individuals will be willing to attend. Young people in Merseyside thought that the test was important and promised to return. However, regardless of test result, symptoms or age, and in contrast with results in another UK study,⁸ they were very poor at attending their appointment to get their results or treatment. Only 33.8% were treated within 1 month of the test. Despite a specifically dedicated staff and a lot of effort, 12.5% never found out they had an infection and 23.8% had no proof of treatment. The delay and drop-outs from the referral process may allow the CT to cause more physical damage and be passed on to new partners. The impression was that the subjects were genuine in their initial interest, but that their priorities changed in a very short time. Informed by this study, outreach by the GUM health adviser is being

Table 2 Young people who tested positive for CT, their age in association with their response to follow-up

	Obtaining results			Total	Receiving treatment			Total
	Attended for results spontaneously	Needed reminders and attended for results	Did not find out results as part of study		Treated within 1 month from test	Treated more than 1 month from test	Not treated or lost to follow-up	
Age 17 to 20	17	42	9	68	23	29	16	68
Aged 15 and 16	3	8	1	12	4	6	2	12
All clients	20	50	10	80	27	35	18	80

Table 3 CT infection in young women and the association with relevant symptoms³ and behaviour⁴

		No. giving answer	No. testing CT positive	Percentage testing CT positive	Odds ratio (95%confidence intervals)
Any relevant symptoms		380	44	11.58	2.01 (1.22-3.31)
No symptoms elicited		525	33	6.29	
Unusual discharge	Yes	140	21	15	2.23 (1.26-3.94)
	No	765	56	7.32	
Bleeding between periods	Yes	76	15	19.74	3.04 (1.56-5.88)
	No	829	62	7.48	
Dysuria	Yes	160	22	13.75	2.0 (1.14-3.49)
	No	745	55	7.38	
Length of current sexual relationship	≤ 6 months	661	56	8.47	Not significant
	> 6 months	222	20	9.01	
Time since first sexual intercourse	< 1 year	450	25	5.55	2.57 (1.47-3.86)
	> 1 year	443	52	11.74	
Number of partners ever	1	336	11	3.27	1.0
	2	251	20	7.97	2.57
	3	144	17	11.81	3.97
	4	58	9	15.52	5.44
	≥ 5	103	18	17.48	6.28
Use condoms	Always	233	11	4.72	0.44
	Not always	656	66	10.06	(0.22 < OR < 0.88)

³Relevant symptoms included bleeding between periods, postcoital bleeding, pelvic pain, pain during intercourse, unusual discharge, and burning or stinging when passing urine.
⁴905 women tested and 77 with positive results. As all questions could be left blank not all totals add up to 905.

piloted to enable treatment, contact tracing and test of cure to take place at the same venue as testing. Careful audit of this pilot will inform the effectiveness of this approach.

Conclusion

Sexually active teenagers in Merseyside are willing to be screened for CT and have a high prevalence of infection. Targeted testing in this age group, regardless of the criterion used, would miss significant numbers of infected people. Attendance for results and for management of positives at GUM was not adequate. Opportunistic screening of all young people accessing FP services, with novel ways of ensuring results are known and acted upon, are vital to make an impact on the level of disease.

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Significance of this paper

It has been documented that *Chlamydia trachomatis* genital infection is common in young people and that screening is cost effective and health effective. However a large prevalence study of teenagers has not been done in this country using the new DNA amplification techniques, and the practical implications of testing for CT in this age group are not known.

This prevalence study shows that CT is very common in teenagers, and it adds the practical information that although they are keen to know more and have the test, their priorities changed in a very short space of time. They were very poor at attending for follow-up. This dilemma either needs a huge input of resources, or a new approach. The results of this study have informed research to pilot the effectiveness of CT treatment by an outreach worker from genitourinary medicine in the young people's clinic.