

Is everyone treated equally? Management of genital *Chlamydia trachomatis* infection in New Zealand

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Summary: Health disparities often reflect inequitable access to appropriate health care. This study aimed to establish if cases of genital chlamydia infection were managed equitably by age, gender and ethnicity in a region of New Zealand with high rates of chlamydia infection (858 per 100,000 population). Clinical records of 415 genital chlamydia cases from 19 different health-care sites, including general practice and community settings, were reviewed. Data were analysed by demographic variables. For those treated, men were treated more quickly than women (median 3 days versus 6 days, $P < 0.001$), but there was no difference by ethnicity. Cases without documented treatment were more likely to be women (8.2% versus 2.1%, $P = 0.037$) and more likely to be Māori than non-Māori (13.6% versus 4.8%, $P = 0.036$). Overall, the most notable issue was the lack of effective partner notification across all demographic variables. Ongoing efforts are required to ensure equitable access to timely treatment and to ensure that more effective partner notification strategies are implemented.

Keywords: *Chlamydia trachomatis*, New Zealand, ethnicity, health care disparities, partner notification

INTRODUCTION

Chlamydia trachomatis infection (chlamydia) is a significant public health problem, as untreated infection may lead to salpingitis, tubal scarring, ectopic pregnancy and subfertility in some women.¹ New Zealand's estimated national rate of 803 per 100,000 population in 2009 was two to four times higher than reported national rates for Australia (287 per 100,000 population in 2009), the UK (202 per 100,000 population in 2008) and the USA (401 per 100,000 population in 2008).² Waikato District Health Board (DHB) in the upper North island of New Zealand has a high burden of reported cases (858 per 100,000 population in 2009), with nearly 80% being among those less than 25 years old. In addition, available data suggest disparities for Māori, with reported sentinel surveillance clinic rates of chlamydial infections among Māori being 2.5 times than that of non-Māori.²

Disparities in health outcomes often reflect socioeconomic and other factors that impact on adequate access to appropriate health care.^{3,4} Recent efforts locally have therefore focused on improving district-wide primary sexual health-care provision for young people, with free general practice visits introduced in high-need areas during 2003–2004.⁵ Encouragingly, chlamydia test uptake within Waikato DHB is now equitable by ethnicity, with high rates of testing among both Māori and non-Māori women under 25 years old,⁶ and coverage for young women reached 45% in 2009. However, improved access to testing without ensuring equitable access to effective treatment or partner notification means that disparities in health outcomes will likely persist. Hence, our aim was to

ascertain if there were any disparities in current case management of genital chlamydia infection in a range of clinical settings in Waikato DHB.

METHODS

Waikato DHB had an estimated resident population of 357,000 in 2008, of whom approximately 21% are Māori compared with 15% nationally. Nearly 54% of Māori are under 25 years of age, compared with 31% of non-Māori. Since mid-January 2008, two Waikato laboratories perform all chlamydia testing for the district. Both laboratories provided data on all tests carried out on residents from 1 February to 31 October 2008. Non-genital site samples were excluded. All urogenital samples were tested using nucleic acid amplification methods. Positive chlamydia test results were identified. Any practice or clinic setting within Waikato DHB with 25 or more positive chlamydia test results during the nine months was invited to participate. Each site was provided with a list of their laboratory-identified cases and asked to complete a proforma for each of 20 consecutive cases seen from 1 February 2008. The New Zealand Ministry of Health guidelines for chlamydia management⁷ are closely aligned to the UK guidelines for the management of uncomplicated genital chlamydia infection; hence, a UK-validated national chlamydia management audit tool was used as a basis for our proforma.⁸ The proforma was adapted to more closely reflect the New Zealand context and differences in health-care settings (Appendix A).

Twenty sites across a range of clinical settings were eligible. This included: nine rural general practices, three urban general practices, a family planning clinic, a sexual health clinic, a community accident and medical centre, a remand

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prison, a university-based student health service, high school-based student health services, a hospital-based emergency department and a hospital-based acute gynaecological service. All sites agreed to participate and 19 of 20 were able to provide data. The non-participating site was the remand prison. Combined, these sites detected 70% of 2258 urogenital chlamydia cases diagnosed in Waikato DHB during the time period. Seven sites chose to complete proformas for more than 20 cases (range 21–37), giving a sample of 415 cases (18%) of all Waikato DHB genital chlamydia cases diagnosed during 1 February–31 October 2008.

The analysis with regard to whether recommended standards of care were met has been described previously.⁹ This analysis focused on differences in case management by age, gender and ethnicity. Chi-squared and Fisher's exact tests were used to examine demographic and other categorical variables. Kolmogorov–Smirnov testing was used for continuous, but non-normal variables, such as days to treatment. Ethical approval was given for the study (NTY/09/25/EXP).

RESULTS

Of the 415 cases, 316 (76%) were women and 317 (78%) were under 25 years old (Table 1). Two transgender patients were excluded from any gender analysis. Ethnicity data were recorded for fewer laboratory-identified cases than for study cases (82% versus 95%, $P < 0.001$). The most commonly reported ethnicity among study cases was European (48%), followed by Māori (43%). A range of ethnicities were noted but, because of small numbers for several of these, ethnicity was analysed as Māori and non-Māori. There were more cases from rural general practice and less from sexual and reproductive health providers, $P < 0.001$.

Presenting features

The main reason for having the chlamydia test was documented for 319 of 415 cases (Table 2), with 'symptoms' being the most frequently reported reason for both sexes. Women were more likely than men to have 'offered by provider based on sexual history' as the main reason for testing ($P = 0.007$) while men were more likely to have 'contact of partner diagnosed with chlamydia' as the main reason for testing ($P = 0.007$). By ethnicity, Māori were more likely than non-Māori to have tests that were 'offered by provider based on sexual history' (41% or 24% versus 20% or 9%, $P < 0.001$).

Overall, 57% of cases were symptomatic. There was no difference in symptomatic cases versus asymptomatic cases by age-split (57% of under 25s versus 55% of those 25 and over, $P = 0.8$), by gender (65% of men versus 54% of women, $P = 0.06$) or by ethnicity (55.6% of Māori versus 55.9% of non-Māori, $P = 0.96$).

Treatment documentation

Treatment drug, dose and duration were well documented for 90% (373 of 415) of cases. Treatment was noted as being prescribed for an additional seven cases, but there was no record of drug choice or dose. Thus, 92% of cases had some evidence of treatment. Where treatment was documented, drug choice, dose and duration of treatment were appropriate for 98% of cases when compared with the New Zealand Ministry of Health guidelines for chlamydia management.⁷ Treatment, where noted, was mostly by prescription, rather than direct dispensing (73% versus 27%), with no difference in this by demographic variables.

Time to treatment was recorded for 90% (373 of 415) of cases. Same-day treatment occurred for 23% (85 of 373), 90% were

Table 1 Demographics of all Waikato DHB cases and of study sample

Demographics	All laboratory cases (n = 2258, 100%)		Study cases (n = 415, 18%)	
	Men	Women	Men	Women
Gender	614 (27%)	1644 (73%)	99* (24%)	316 (76%)
Age (years)	Number (% men)	Number (% women)	Number (% men)	Number (% women)
<15	4 (0%)	42 (3%)	0	7 (2%)
15–19	203 (33%)	775 (47%)	26 (26%)	152 (48%)
20–24	239 (39%)	511 (31%)	39 (39%)	100 (32%)
25–34	119 (19%)	240 (15%)	22 (22%)	45 (14%)
35–44	35 (6%)	64 (4%)	10 (10%)	6 (2%)
45–54	12 (3%)	9 (1%)	0	5 (2%)
55+	2 (0%)	3 (0%)	1 (1%)	0
Missing	0	0	1 (1%)	1
Ethnicity				
NZ European	247 (40%)	675 (41%)	50 (50%)	141 (45%)
Māori	192 (31%)	600 (36%)	29 (29%)	140 (44%)
Asian	9 (1%)	22 (1%)	8 (8%)	6 (2%)
Pacific	14 (2%)	42 (3%)	7 (7%)	12 (4%)
Other	16 (3%)	38 (2%)	0	1
Missing	136 (22%)	267 (16%)	5 (5%)	16 (5%)
Provider location				
Rural general practice	134 (22%)	482 (29%)	46 (46%)	159 (50%)
Urban general practice	91 (15%)	283 (17%)	15 (15%)	46 (15%)
Other primary care: primary A&E centres, high-school and tertiary education settings, prisons, community midwives	83 (14%)	156 (9%)	20 (20%)	41 (13%)
Sexual health clinic, family planning clinic	300 (49%)	608 (37%)	14 (14%)	27 (13%)
Secondary and tertiary care, including emergency department	6 (1%)	115 (7%)	4 (4%)	43 (9%)

*Including two transgender cases

Table 2 Case management by gender

Main reason for test*	Men (% of male cases)	Women (% of female cases)
Symptoms	47 (48.5%)	129 (40.8%)
Asymptomatic patient requesting check-up	20 (20.6%)	91 (28.8%)
Offered by provider, based on sexual history	6 (6.2%)	57 (18.0%)
Contact of partner diagnosed with chlamydia	19 (19.6%)	23 (7.3%)
Medicolegal	0	3 (0.9%)
Reason not documented	5 (5.2%)	13 (4.1%)
	97*	316
Treatment documentation*		
Treatment drug/dose/duration noted	94/97 (97%)	277/316 (88%)
Treatment drug/dose/duration correct	91/94 (97%)	271/277 (98%)
Azithromycin as first line	84/97 (87%)	248/316 (78%)
Immediate treatment	40/97 (41%)	45/316 (14%)
Median time-to-treatment (mean)	3 days (3.3 days)	6 days (6.6 days)
	97*	316

*Two transgender cases excluded

treated within 11 days and 95% within 17 days of being tested. The remaining 5% (18 of 373) were treated between days 19 and 90 of being tested. The only demographic difference in time to treatment was by gender. There was significantly less time from test to treatment for men than for women (median 3 days versus 6 days, $P < 0.001$). Only 16% (45/278) of women with documented treatment were treated at the time of testing, compared with 42% (40/95) of men, $P < 0.001$.

When analysed by reason for testing, known contacts had the shortest median time-to-treatment (1.3 days), while provider-offered testing had the longest median time-to-treatment (7.5 days). Those whose main reason for testing was 'offered by provider' was also less likely than those requesting a check-up to have documented treatments (78% versus 99%, $P < 0.001$).

No treatment was recorded for 35 cases; five cases failed to attend for treatment and the remaining 30 cases had no documented treatment or outcome, although it is possible that treatment occurred. Of cases with known ethnicity, lack of documented treatment or failure to attend for treatment was more likely for Māori than non-Māori (13.6% versus 4.8%, $P = 0.036$). Lack of documented treatment was also more likely for women, with 8.2% not having any treatment documented, compared with 2.1% for men, $P = 0.037$. There was no difference by age.

Lack of documentation for treatment or outcomes was notable in cases diagnosed in two hospital-based settings, with 26 of 47 (55%) of cases having incomplete or no treatment documented. In comparison, 16 of 368 (4.3%) cases diagnosed in other settings had either incomplete or no treatment documented. Of cases with known ethnicity, more Māori were seen at these two settings than elsewhere (74% versus 38%, $P < 0.001$). Also, more women than men attended these two settings (43 of 47 cases, 91%, $P = 0.01$).

Partner management

The results of partner notification compared with the Ministry of Health guidelines for chlamydia management⁷ have been

described previously.⁹ To summarize, most cases had limited documentation in their medical record around partner notification; 59% (246 of 415) had any documentation to suggest partner notification was discussed and 31% had any documentation about the planned method of partner notification (e.g. by the patient). Most participating sites noted that discussions typically involved telling patients to tell their partners. Documentation that partner notification was discussed did not differ significantly by age-split, gender or ethnicity.

A recommended target for partner notification is at least 50% of identified sexual partners being treated.⁷ Detailed sexual history taking appeared to be lacking; only 47% (196 of 415) of cases had any indication of the number of sexual partners in the preceding three months. There was also limited documentation by which to monitor the success of partner notification; 21% cases had any documentation that regular sexual partner(s) had been advised, 12% noted regular partner treatment as advised by the index case and 4% noted provider-verified regular partner treatment. There were no significant differences within any of the measures with respect to gender, age-split and ethnicity.

DISCUSSION

The limited partner notification, whether by age, gender or ethnicity, noted in a wide range of clinical settings in our locale is a concern. Repeated chlamydia infections in young women are most often re-infections and frequent testing and treatment of women alone is not likely to reduce prevalence in high-risk populations.¹⁰ Documentation that partner notification was discussed was similar to that reported in other community settings.^{11,12} However, with the exception of the Sexual Health Clinic, there was little patient follow-up and documented outcomes of partner notification were notably lower than that reported by the UK settings,¹²⁻¹⁴ where partner notification is most often undertaken by specialist sexual health advisers.¹⁵ In New Zealand, most sexually transmitted infections are managed in primary care and very few health boards employ contact tracers or health advisers for sexually transmitted infections. Improvements are feasible. With training, practice nurses can undertake partner notification that is at least as effective as referral to a specialist health adviser.¹⁶ New methods of partner management are emerging and a systematic review of interventions found involving index patients in shared responsibility for the management of sexual partners improved outcomes, for example, patient delivered partner therapy, home sampling for partners and providing additional information for partners.¹⁷

Of diagnosed cases in this study, men were no more likely to be symptomatic than women, but more men were treated immediately. This is presumably because male urethral symptoms, particularly urethral discharge, more accurately predict sexually transmitted infections than female symptoms, such as vaginal discharge.¹⁸ Men in the study were also more likely to be a contact of a chlamydia case. Others have reported men as being more likely to receive immediate treatment,^{19,20} and have suggested clinical features or the use of on-site microscopy as important influences. None of the settings involved in our study use on-site microscopy yet, encouragingly, the overall median time-to-treatment of five days is comparable to that previously reported from specialist genitourinary clinic audits.^{21,22} However, for women in our study,

the median time-to-treatment was double that of men and they were also more likely to have a lack of documented treatment. If treatment is not given immediately, a range of structural health-care factors, including the rapidity with which tests results are received, influence the time to treatment.^{20,23} Having a reliable point of care test to enable more immediate treatment for women would help overcome these factors.

Analysis by reason for testing suggests those that request testing may be more likely to have documented treatment than cases where testing was provider-offered. This raises the issue of whether provider-offered testing may be associated with a lower likelihood for returning for results and/or treatment, and warrants further investigation. Also, compared with women, case finding for men appeared more related to clinical features, such as symptoms or being a contact of infection, and less related to provider-offered opportunistic testing. This raises the possibility of missed opportunities to offer chlamydia testing to young men, as was noted in a UK general practice study.²⁴ New Zealand has achieved high chlamydia test uptake among young women, but not young men, with five times as many women aged 15–24 years being tested.^{6,25} However, our data does not capture if men were more likely than women to receive syndromic treatment without testing for chlamydia.

New Zealand's ethnic disparities in access to health care are well documented.³ There may also be disparities in the quality of health care.²⁶ In our study, treatment outcomes, such as time-to-treatment, appropriateness of treatment and partner management, were similar. However, there were some differences for Māori compared with non-Māori. Reasons for testing among Māori were more likely because of provider-offered testing than by patient-requested testing. It may be that providers perceive Māori as being at greater risk of having chlamydia and hence be more likely to offer testing as, although local test uptake is equitable by ethnicity, Māori are twice as likely as non-Māori to test positive.⁶

Lack of documented treatment or failure to attend for treatment was also more likely for Māori than non-Māori; although the numbers affected were small, this occurred for more than one of every seven Māori compared with less than one in 20 non-Māori. This may be another measure of access, as Māori may be more likely to face structural barriers in returning for treatment, e.g. poor transportation. However, this finding may simply reflect the bias around documentation for some settings involved in this study. As reported in the overall audit, secondary-care test results were often available only after a patient had been discharged from hospital and it was not possible to ascertain from the hospital medical record that cases and their partners were ever treated.⁹ Those facing cost barriers to health care may be more likely to choose to attend the local emergency department, particularly out-of-hours when there are limited options for free or low-cost primary care in Waikato DHB. This study was not designed to look at these issues and further study is needed to clarify this.

Study limitations include the retrospective study design and purposive sampling of cases. Only settings that diagnosed 25 or more cases were invited to participate, so that there was less inherent bias related to small case numbers. Relatively more cases were from rurally based general practice and less from sexual and reproductive health services, meaning that these results are not generalizable to settings where sexual health care is delivered predominately at specialist clinics. Data collection was based on the clinical record where documentation may not reflect actual care. Some pertinent information was not available,

for example, 73% of treatment was prescribed rather than dispensed, but there were no data regarding adherence to non-dispensed medications. Study strengths include a high participation rate and measuring clinical performance in a wide-range of settings. Ethnicity data for the study were collected from the patient medical record. Historically, ethnicity data within New Zealand databases have been provider-assigned and self-identified non-European ethnicities undercounted as a result.²⁷ However, local health-care settings have made efforts over recent years to collect self-identified ethnicity within their patient management systems. This information was felt to be more accurate than National Health Identifier (NHI)-mapped ethnicity within the laboratory database, where 18% of cases had missing data.

In conclusion, our study found differences in case management by gender and ethnicity that suggest barriers to timely appropriate health-care persist. However, by far the most notable issue was the overall lack of effective partner notification and, until this improves, prevalence is unlikely to reduce and current disparities in reported infections will likely continue. Ongoing efforts are required to ensure equitable access to timely treatment and to ensure more effective partner notification strategies are implemented.

REFERENCES

- 1 Stamm W. *Chlamydia trachomatis* infections of the adult. In: Holmes KK, Stamm WE, Piot P, Wasserheit JN, Corey L, et al., eds. *Sexually Transmitted Diseases*. 4th edn. New York: McGraw-Hill Medical, 2008:575–93
- 2 STI surveillance team. *Sexually Transmitted Infections in New Zealand Annual Surveillance Report 2009*, Population and Environmental Health Group, Institute of Environmental Science and Research Ltd (ESR), Wellington, 2010. See www.surv.esr.cri.nz (last accessed 22 September 2010)
- 3 Decades of Disparity III. *Ethnic and Socioeconomic Inequalities in Mortality, New Zealand 1981–1999*. Wellington: Ministry of Health, Ministry of Health and University of Otago, 2006
- 4 Brewer N, Pearce N, Jeffreys M, et al. Demographic differences in stage at diagnosis and cervical cancer survival in New Zealand, 1994–2005. *J Women's Health* 2009;7:955–63
- 5 Morgan J, Haar J. General practice funding to improve provision of adolescent primary sexual health care in New Zealand: results from an observational intervention. *Sex Health* 2009;6:203–07
- 6 Morgan J, Bell A. The highs and lows of opportunistic Chlamydia testing: uptake and detection in Waikato, New Zealand. *Sex Transm Infect* 2009;85:452–54
- 7 Ministry of Health. 2008. *Chlamydia Management Guidelines*. Wellington: Ministry of Health, 2008. See <http://www.moh.govt.nz/moh.nsf/pages/mh/8210> (last accessed 22 September 2010)
- 8 British Association for Sexual Health and HIV (BASHH). *National Audit Group Proformas*. See http://www.bashh.org/groups/national_audit_group (last accessed 22 September 2010)
- 9 Morgan J, Donnell A, Bell A. A multi-setting audit of the management of genital *Chlamydia trachomatis* infection. *N Z Med J* 2010;123:U4136
- 10 Batteiger BE, Tu W, Ofner S, et al. Repeated *Chlamydia trachomatis* genital infections in adolescent women. *J Infect Dis* 2010;201:42–51
- 11 Andersen B, Ostergaard L, Nygaard B, et al. Urogenital *Chlamydia trachomatis* infections in general practice: diagnosis, treatment, follow-up and contact tracing. *Fam Pract* 1998;15:223–28
- 12 Evans J, Bacon L. Managing sexually transmitted infections in community sexual health clinics: an audit of a community service. *Int J STD AIDS* 2006;17:486–87
- 13 McClean H, Carne C, Bunting P, et al. UK National Audit of Chlamydial Infection Management in Sexual Health Clinics. Case notes audit: information-giving, partner notification and follow-up. *Int J STD AIDS* 2008;19:473–76
- 14 Clarke J, Preston AD. A multi-district audit against national guidelines for the management of uncomplicated genital *Chlamydia trachomatis* infection. *Int J STD AIDS* 2001;12:677–86
- 15 Stokes T, Schober P. A survey of contact tracing practice for sexually transmitted diseases in GUM clinics in England and Wales. *Int J STD AIDS* 1999;10:17–21

16 Low N, McCarthy A, Roberts TE, *et al.* Partner notification of chlamydia infection in primary care: randomised controlled trial and analysis of resource use. *BMJ* 2006;**332**:14-19

17 Trelle S, Shang A, Nartey L, *et al.* Improved effectiveness of partner notification for patients with sexually transmitted infections: systematic review. *BMJ* 2007;**334**:354

18 Pettifor A, Walsh J, Wilkins V, *et al.* How effective is syndromic management of STDs?: a review of current studies. *Sex Transm Dis* 2000;**27**:371-85

19 McClean H, Carne C, Bunting P, *et al.* UK National Audit of Chlamydial Infection Management in Sexual Health Clinics. Case notes audit: demography, diagnosis and treatment. *Int J STD AIDS* 2008;**19**:469-72

20 Fernando I, Oroz C, Steedman N, *et al.* Factors affecting time to treatment following diagnosis of genital *Chlamydia trachomatis* infection in Scottish genitourinary medicine clinics. *Int J STD AIDS* 2007;**18**:819-22

21 Wong D, Berman S, Furness B, *et al.* Time to treatment for women with chlamydial or gonococcal infections; a comparative evaluation of sexually transmitted disease clinics in 3 US cities. *Sex Transm Dis* 2005;**32**:194-98

22 Steedman N, Oroz C, Fernando I, *et al.* An audit of the interval to treatment of anogenital *Chlamydia trachomatis* at Scottish genitourinary medicine clinics. *Int J STD AIDS* 2008;**19**:121-22

23 Chen MY, Ryder N, Donovan B. Completeness and timeliness of treatment for chlamydia within a sexual health service. *Int J STD AIDS* 2004;**15**:762-4

24 Hughes G, Williams T, Simms I, *et al.* Use of a primary care database to determine trends in genital chlamydia testing, diagnostic episodes and management in UK general practice, 1990-2004. *Sex Transm Infect* 2007;**83**:310-13

25 Riley D, McCarthy M, Lang S, *et al.* Is chlamydial infection underdiagnosed - particularly in teenage males? *N Z Med J* 2001;**114**:49

26 Arroll B, Goodyear-Smith F, Lloyd T. Depression in patients in an Auckland general practice. *N Z Med J* 2002;**115**:176-79

27 Bramley D, Latimer S. The accuracy of ethnicity data in primary care. *N Z Med J* 2007;**120**:u2779

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APPENDIX A: CHLAMYDIA AUDIT DATA COLLECTION FORM 2008

A case is a person who was diagnosed with chlamydia during 1 February-31 October 2008. Please provide data on the first 20 consecutive cases seen during this interval. If there are less than 20 cases, please provide data on all cases seen. Please exclude cases whose positive chlamydia test was taken by another clinic or service or department. Please note the index patient is the case being audited.

Clinic: _____

A. INDEX PATIENT

1. **Date first seen** (must be between 1 February and 31 October 2008 inclusive) _____

Please note the patient's clinic ID or NHI or date of birth (NOT name): _____

2. **Gender:** Male Female Transgender Not documented

Tick if pregnant:

3. **Age group:** <15 15-19 20-24 25-34
35-44 45-54 55+ Unknown

4. **Ethnicity:** _____

Or ethnicity not given or ethnicity not documented

5. **Ever tested for chlamydia before:** Yes No Not documented

If yes, please note date and result if known _____

6. **MAIN reason for this test** (choose one):

- Symptoms
- Asymptomatic patient requesting checkup

- Offered by provider, based on sexual history
- Contact of partner diagnosed with chlamydia
- Medicolegal case
- Not documented

Presenting features (tick as many as apply):

- Asymptomatic
- Urethral discharge
- Dysuria
- Post coital or intermenstrual bleeding
- Lower abdominal pain
- Vaginal discharge
- Scrotal pain
- Complications of chlamydia specify _____
- Other specify _____
- Not documented

7. Diagnosis: please tick all site(s)/samples tested:

- Urine Urethral swab Cervical swab
Vulvo-vaginal swab Other specify _____

8. Other STIs and/or examination considered:

	Yes	Not documented	Offered but declined or window period
Syphilis			
HIV			
Hepatitis B			
Other STIs			
Genital examination performed			

9. First 'anti-chlamydia' treatment given:

Either:

9a. Uncomplicated infection (tick either 'script given' or 'drug dispensed')

	Script given	Drug dispensed
• Doxycycline 100 mg bd for 7 days	<input type="checkbox"/>	<input type="checkbox"/>
• Azithromycin 1gm stat orally single dose	<input type="checkbox"/>	<input type="checkbox"/>
• Erythromycin 500 mg bd for 14 days	<input type="checkbox"/>	<input type="checkbox"/>
• Erythromycin 500 mg four times a day for 7 days	<input type="checkbox"/>	<input type="checkbox"/>
• Amoxicillin 500 mg three times a day for 7 days	<input type="checkbox"/>	<input type="checkbox"/>
• No treatment documented	<input type="checkbox"/>	
• Other treatments <input type="checkbox"/> please specify drug, dose and duration: _____		

or

9b. Complicated infection e.g. treatments for pelvic infection or epididymitis:

Please specify drug(s), dose and duration: _____

10. When was the index patient treated (choose one)?

- Index patient was treated at the time the chlamydia test was taken
- Index patient was treated after the date the chlamydia test was taken
- How many days later? _____
- Index patient failed to attend for treatment
- Not documented when index was treated

11. Advice given to index patient:

	Yes	Not documented
Given advice/information about chlamydia infection?		
Given a leaflet about chlamydia		
Advised to abstain from sexual intercourse until their treatment and of any partners was completed, if applicable?		

B. FOLLOW UP OF INDEX PATIENT

12. Was the patient followed up (choose one)?

- Yes, face-to-face []
- Yes, by telephone or text []
- No, referred elsewhere for follow up
If so, please note where _____
Did patient attend elsewhere Yes [] No [] Not documented []
- No, recalled but unable to contact/did not attend []
- No follow-up plan []

13. If the patient was followed up:

	Yes	Not applicable	Not documented
Was partner notification discussed?			
Had the patient adhered to the treatment?			
Had any symptoms resolved?			
Appropriate management of non-adherence (e.g. re-treatment etc.)			
Test-of-cure recommended, if pregnant			

C. PARTNER NOTIFICATION

	Yes	Not applicable	Not documented
Was partner notification (PN) discussed?			
Was the method of PN documented?			
Was the outcome of PN documented?			

D. PARTNERS

Record the number of reported sexual partners in the three months preceding the index patient's presentation ____ OR tick if not documented []

	As reported by index patient	As verified by a health-care worker	Index declined to discuss	Not recorded
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Please record numbers only here

- Number of regular partner(s) advised about chlamydia
- Number of regular partner(s) tested for chlamydia
- Regular partner(s) treated for chlamydia
- Number of casual partners advised about chlamydia
- Number of casual partners tested for chlamydia
- Number of casual partners treated for chlamydia