

Victorian Primary Care Network for Sentinel Surveillance on BBVs and STIs*

Chlamydia Network Report 2 January – June 2007

We are pleased to present the second report in this series.

This six monthly report presents information on trends and patterns in chlamydia infection in Victoria, with a particular focus on the findings from a sentinel surveillance network established with the collaboration of a number of primary health and sexual health services. Each issue includes standard tabulations from the sentinel surveillance network and features updates from other surveillance systems of relevance to chlamydia. The surveillance network provides further insight into trends in annual STI diagnoses in Victoria and information about chlamydia testing and prevalence among those tested, complementing other data sources.

Sentinel Surveillance for Chlamydia

Method: In March 2006, a sentinel surveillance system based on primary care sites commenced operation involving collection and linking of two data sets (i) demographic data and chlamydia test results collected by the laboratory on all individuals routinely tested for chlamydia at the site, and (ii) extra demographic information and risk behaviour information collected through brief questionnaires completed voluntarily by patients while in the doctor's room. Only one test was included for patients where multiple chlamydia specimens were taken in one visit. The test outcome was categorised as positive if any of these tests were positive.

Sentinel sites were chosen if (i) they diagnosed a high number of chlamydia infections per year, (ii) had a high case load of young people, women, or men who have sex with men (MSM) and (iii) were willing to participate. Twelve clinics were approached and agreed to participate. This report provides chlamydia sentinel surveillance results for the period January to June 2007. Two sites did not use the sentinel form; one already had a computer-assisted medical records system which collected briefer patient behavioural information, the other allowed access to laboratory testing data. Results from sites with a high caseload of women and young people (labelled WYP sites) **and** results from heterosexuals from sexual health clinics are presented together as **heterosexuals**; and results from gay men's sites and MSM attending sexual health clinics are presented as **MSM**.

Results-Tests: A total of 6433 chlamydia tests were conducted among individuals attending the 12 sites (3595 in males, 2832 in females, 6 in transgender/persons with gender not reported). At WYP sites most of the 1695 tests were conducted in females (87%), compared to gay men's clinics where most of the 2051 tests were in males (89%).

Table 1: Number of chlamydia tests and questionnaires by chlamydia result, Jan-Jun 2007

Site Number:	Primary health services (WYP)+								Sexual health clinics			Gay men's health clinics				All
	2	3	7	9	14	15	16	All	6	18	All	4 [^]	5	10	All	
Chlamydia tests																
Number of tests	785	616	54	11	82	50	97	1695	95	2814	2909	259#	561#	1009#	1829	6433
Positive tests (n)	44	22	4	0	1	4	9	84	2	149	151	17	26	63	106	341
Positive tests (%)	5.6	3.6	7.4	--	1.2	8.0	9.3	5.0	2.1	5.3	5.2	6.6	4.6	6.2	5.8	5.3
Chlamydia surveys																
Forms (n)	387	225	29	0	37	36	74	788	91	2813	2904	0	240	537	775	4467
Response rate (%)*	49.3	36.5	53.7	0.0	45.1	72.0	76.3	46.5	95.8	100.0	99.8	--	42.8	53.2	49.4	72.4
Positive tests (n)**	24	10	4	--	1	2	8	49	2	148	150	--	14	28	42	241
Positive tests (%)	6.2	4.4	13.8	--	2.7	5.6	10.8	6.2	2.2	5.3	5.2		5.8	5.2	5.4	5.4

+WYP refers to sites at primary health services that specialise in young people's and women's health. [^]Site 4 collects testing data only and not included in calculation of response rate. *Response rate = total surveys completed / total number of males tested x 100. **Positive tests (%) = total positive tests in sentinel surveillance form / sentinel surveillance forms x 100
[#]Chlamydia tests, results and response rate for sites located at health services specialising in gay men's health reported for males only

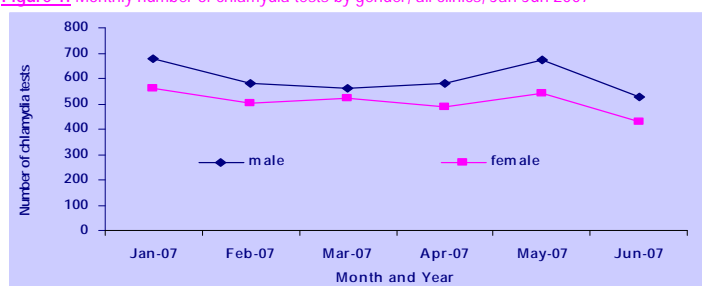
*In regards to sentinel surveillance, BBVs (blood borne viruses) refers to hepatitis C and STIs (sexually transmissible infections) refers to HIV, chlamydia and syphilis

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In females, an average of 508 chlamydia tests were conducted per month (range: 430-563), which was higher than the average of 417 (range: 354-489) in the last report (Apr-Dec 06). In males, a monthly average of 599 (range: 526-678) tests was consistent with the monthly average of 601 tests in the last time period (Figure 1).

Figure 1: Monthly number of chlamydia tests by gender, all clinics, Jan-Jun 2007



Results – demographics and behavioural information: Both demographic and behavioural information were available for 4467 (72%) of the 6433 individuals tested for chlamydia, but response rate varied from 0% to 100% according to site (Table 1). Sex workers were excluded from analysis.

Heterosexuals accounted for 2394 of the 4467 surveyed individuals, arising from nine sites (WYP=7, sexual health services=2): 1081 (45%) in males and 1313 (55%) in females.

Among the 1081 heterosexual men reported on in table 2, 39% were aged 25 to 34 years, about a third (34%) were aged 16 to 24 years, 39% reported STI symptoms and over two-thirds (70%) reported more than two female sexual partners in the past 12 months. At sites using the sentinel surveillance form, additional information behavioural was available for 120 heterosexual males (Table 3); 67% (n=67) of those reporting sex with female casual partners did not always use condoms for these contacts and 64% (n=76) reported a new sexual partner in the past three months. The overall prevalence of chlamydia infection was 8.4% (95% CI 6.8-10.2) and 12.8% (95% CI 9.6-16.7) in 16 to 24 year olds. The highest prevalence was observed in those (i) aged 16 to 24 years (ii) born outside of Australia and (iii) reporting STI symptoms when tested (Tables 2 and 3).

Compared to males, the 1313 heterosexual females tested (Table 2) were younger (61% were aged 16 to 24 years), less likely to present with symptoms (23%) or report more than two sexual partners in the past 12 months (55%). At sites using the sentinel surveillance form (Table 3) a slightly lower proportion of women who had sex with casual partners did not always use condoms for these contacts (60%). and a lower proportion (41%) reported a new sexual partner in the past three months. The overall chlamydia prevalence was 4.8% (95% CI 3.7-6.1) and 6.4% (95% CI 4.8-8.3) in 16 to 24 year olds. The highest prevalence was observed in those (i) aged 16 to 19 years (ii) reporting more than two male sexual partners in the past 12 months (iii) not always using condoms with regular (iv) or casual partner/s and (v) reporting new sexual partner/s in the past three months (Tables 2 and 3).

Table 2: Characteristics of individuals^a surveyed and tested for chlamydia at WYP sites and heterosexuals from sexual health clinics (sex workers and unknowns excluded), Jan-Jun 2007

		Males				Females			
		Tested		Positive		Tested		Positive	
		n	%	n	%	n	%	n	%
All		1081	100	91	8.4 (6.8-10.2)	1313	100	63	4.8 (3.7-6.1)
Age group (years)	16 to19	87	8.1	10	11.5	342	26.1	26	7.6
	20 to 24	280	25.9	37	13.2	459	35.0	25	5.5
	25 to 34	420	38.8	36	8.6	358	27.3	10	2.8
	35+	294	27.2	8	2.7	154	11.7	2	1.3
	16 to 24	367	34.0	47	12.8 (9.6-16.7)	801	61.0	51	6.4 (4.8-8.3)
Country of Birth	Australia	700	64.8	51	7.3	661	72.3	33	5.0
	Other	341	31.6	37	10.9	253	27.7	14	5.5
Aboriginal and/or Torres Strait Islander	No	955	98.4	81	8.5	882	98.7	47	5.3
	Yes	15	1.6	1	6.7	12	1.3	0	--
STI symptoms	No	650	60.1	51	7.9	959	76.5	61	4.9
	Yes	418	39.1	39	9.3	294	23.5	13	4.4
Male sexual partners, past 12 months	None	#				99	8.0	3	3.0
	1	#				454	36.9	15	3.3
	2+	#				678	55.1	41	6.1
Female sexual partners, past 12 months	None	130	12.1	11	8.5	#			
	1	193	17.9	11	5.7	#			
	2+	755	70.0	69	9.1	#			

^a Includes all those tested and surveyed at WYP sites and heterosexuals tested and surveyed at sexual health clinics
results of same sex sexual partners from WYP sites not reported

Table 3: Behaviours of individuals surveyed^a and tested for chlamydia at WYP sites and heterosexuals from site 6 (sex workers, unknowns excluded), Jan-Jun 2007

		Males				Females			
		Tested		Positive		Tested		Positive	
		n	%	n	%	n	%	n	%
All		120	100	14	11.7 (6.5-18.8)	693	100	36	5.2 (3.7-7.1)
Regular sexual partner, past 12 months	No	16	13.4	3	18.8	56	8.5	2	3.6
	Yes	103	86.6	11	10.7	600	91.5	32	5.3
Condom use, with regular partners, past 12 months	Did not always use condoms	92	89.3	10	10.9	500	83.3	30	6.0
	Always used condoms	11	10.7	1	9.1	100	16.7	2	2.0
Casual sexual partner, past 12 months	No	19	16.0	2	10.5	322	49.6	9	2.8
	Yes	100	84.0	12	12.0	327	50.4	23	7.0
Condom use with casual partner/s, past 12 months	Did not always use condoms	67	67.0	8	11.9	197	60.2	16	8.1
	Always used condoms	33	33.0	4	12.1	130	39.8	7	5.4
New sexual partner/s, past three months*	No	43	36.1	4	9.3	387	58.6	11	2.8
	Yes	76	63.9	10	13.2	273	41.4	23	8.4

^a Includes all those tested and surveyed at WYP sites and heterosexuals tested and surveyed at sexual health clinics

* Site 18 excluded because it uses electronic data collection which collects briefer behavioural information than the sentinel surveillance form

MSM accounted for 1315 of the 4467 individuals, arising from sexual health clinics (n=2) or primary health sites specialising in gay men's health (n=3).

Among MSM, 33% were aged 20 to 29 years and 34% aged 30 to 39 years and 2.7% of MSM surveyed were known to be HIV positive at the time of testing (Table 4). Of those reporting regular anal sex partners, 54% reported not always using condoms in the past six months and among those with casual anal sex partners, 35% reported not always using condoms in the past six months (Table 5).

The prevalence of chlamydia infection among MSM was **5.4% (95% CI 4.2-6.8)**. The highest prevalence estimates were observed in those (i) aged 30-39 years and 40-49 years, (ii) reporting STI symptoms when tested, (iii) known to be HIV positive (iv) reporting that their current regular sexual partner was HIV positive, (v) reporting six or more anal sex partners in the past six months, and (vi) reporting they did not always use condoms with casual anal sex partner/s (Table 4 and 5).

Table 4: Characteristics of MSM surveyed and tested for chlamydia, sexual health and gay men's health clinics (sex workers and unknowns excluded), Jan-Jun 2007

		Tested		Positive	
		n	%	n	%
All		1315	100	71	5.4 (4.2-6.8)
Age group (years)	16-19	31	2.4	0	--
	20-29	437	33.2	19	4.4
	30-39	449	34.1	29	6.5
	40-49	266	20.3	17	6.4
	50+	132	10.1	6	4.6
Country of Birth	Australia	957	73.7	49	5.1
	Other	314	24.2	21	6.7
Aboriginal and/or Torres Strait Islander	No	1226	99.0	67	5.5
	Yes	12	1.0	0	--
STI symptoms	No	1133	87.0	57	5.0
	Yes	169	13.0	13	7.7
HIV positive	No	694	52.8	37	5.3
	Yes	36	2.7	5	13.9
	Not available	585	44.5	29	5.0

^aIn regards to sentinel surveillance, BBVs (blood borne viruses) refers to hepatitis C and STIs (sexually transmissible infections) refers to HIV, chlamydia and syphilis

Table 5: Behaviours of MSM surveyed and tested for chlamydia, gay men's health clinics and site 6* (sex workers, unknowns excluded) Jan-Jun 2007

		Tested		Positive	
		N	%	n	%
All		788	100	43	5.5
Male anal sex partners, past 6 months*	None	70	9.2	3	4.3
	1 to 5	470	61.6	23	4.9
	6 +	223	29.2	17	7.6
Regular anal sex partners, past 6 months	No	284	37.8	16	5.6
	Yes	468	62.2	23	4.9
HIV status of current regular partner	Positive	50	12.1	4	9.5
	Negative	274	66.0	13	4.7
	Don't know/he hasn't had a test	91	21.9	4	4.4
Condom use: anal sex with regular partner/s, past 6 months	Did not always use condoms	255	54.5	13	5.1
	Always used condoms	213	45.5	10	4.7
Casual anal sex partners, past 6 months	No	174	22.7	7	4.0
	Yes	591	77.3	35	5.9
Condom use: anal sex with casual partner/s, past 6 months	Did not always use condoms	207	35.0	16	7.7
	Always used condoms	384	65.0	19	5.0

* Site 18 not included in this table as electronic data collection used at this site collects briefer behavioural information than the sentinel surveillance form

Conclusion: Heterosexual men presenting at sentinel sites reported more sexual partners and STI symptoms than women. Subsequently the chlamydia prevalence was higher among 16 to 24 year old men than women; 12.6% and 6.4% respectively. These estimates are slightly higher than in the previous report (Apr-Dec 06); 10% and 5.4%. However sex workers were included in the results from the previous time period and this analysis and future analyses will exclude sex workers.

More chlamydia tests per month were conducted in females in between January to June 2007 compared to the April to December 2006. The level of condom use did not alter between reporting periods, with around two thirds of heterosexual males and females in each period reporting they did not always use condoms with casual sexual partners.

In MSM, a chlamydia prevalence of 5.4% was consistent with 5.8% in the previous report. The level of reported condom use with casual sexual partners was also consistent with the previous report, with around one third of MSM reporting that they did not always use condoms with casual anal sex partners.

Limitations: (i) the sentinel system only includes individuals seeking health services and the results cannot be assumed to apply to all individuals from the same demographic groups, (ii) the STI questionnaire designed for completion by MSM when tested for chlamydia without a concurrent HIV test was infrequently completed and may lead to an under-representation of HIV positive MSM, and (iii) STI symptoms are not a specific option on the questionnaire at two gay men's health services, so the frequency of symptoms in MSM may be underreported.

*Sites: Family Planning Victoria: Action Centre, Box Hill
Melbourne Juvenile Justice Centre, Parkville Youth Residential Centre, Young Peoples Health Service, Young Mums Clinic, Well Women's Clinic, Melbourne Sexual Health Centre, Prahran Market Clinic, The Centre Clinic, Carlton Clinic, Geelong Sexual Health Clinic*

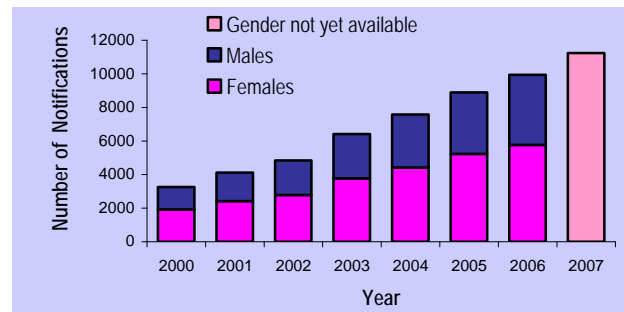
Collaborators: Burnet Institute, Victorian Infectious Diseases Reference Laboratory, Melbourne Sexual Health Centre, Department of Human Services (Funders)

Updates from Other Surveillance Systems

Passive surveillance

Between 1996 and 2007, chlamydia notifications in Victoria increased six-fold, from 1611 in 1996 to 11,231 in 2007, with the greatest number of cases among women aged 15 to 24 years. The number of chlamydia notifications by sex between 2000 and 2007 are shown in Figure 2. During 2006, enhanced surveillance information was available for about one third of cases; 30% of cases in males were reported to be MSM.

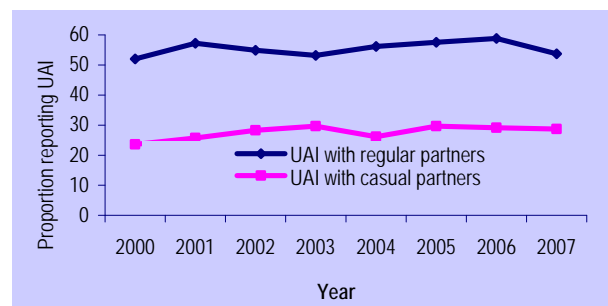
Figure 2: Chlamydia notifications by gender (unknowns excluded), Victoria, 2000-2007



MSM - Periodic survey

Sexual risk behaviour among MSM is monitored through the annual Melbourne Periodic Gay Community Survey. The most recent survey conducted in February 2007 found that among MSM reporting casual sexual partners, there was an increase in unprotected anal intercourse from 24% in 2000 to 29% in 2007 (Figure 3). In the 2006 survey, 34.3% of respondents reported an anal swab in the past 12 months and 44.3% reported a urine test in the past 12 months, a significant increase from previous years.

Figure 3: Frequency of reported unprotected anal intercourse (UAI) in the past six months, by partner type and year, Victoria, 2000-2007



Updates from Other Studies

Big Day Out (BDO) Study

A survey of over 900 young people at the 2007 Melbourne BDO music festival found 35% had multiple sexual partner/s in the past year and 40% had new sexual partner/s in the past three months. Of those with new sexual partners, 53% always used condoms in the past year and of those with casual partners, 53% used condoms all the time. These results were consistent with similar BDO surveys conducted in 2005 and 2006.

Sex and Sport Study

In 2005, a cross sectional study of 108 males (aged 16 to 29 years) from rural football clubs in Victoria found a chlamydia prevalence of 3.9% among sexually active participants.¹ The Sex and Sport survey included men who had not accessed health services for testing (and were thus likely to be asymptomatic) and who lived in a rural area.

¹ Gold J, Hocking J, Hellard M, The feasibility of recruiting young men in rural areas from community football clubs for STI screening, ANZJPH. 2007;31:243-6

*In regards to sentinel surveillance, BBVs (blood borne viruses) refers to hepatitis C and STIs (sexually transmissible infections) refers to HIV, chlamydia and syphilis