

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

Chlamydia Network Report 3 July – December 2007

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

This six monthly report presents information on chlamydia infection in Victoria, with a focus on the findings from a sentinel surveillance network established in collaboration with a number of primary health and sexual health services. 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. In this report results reflect two key improvements in the chlamydia network since previous reports; revision of the electronic data extraction at one site captured an increased number of tests and surveys; and a revised method for assigning HIV status in men who have sex with men (MSM) led to an increased number of MSM with a known HIV status in the chlamydia network.

Sentinel Surveillance for Chlamydia

Method: In 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 MSM and (iii) were willing to participate. Twelve clinics at eleven sites agreed to participate. This report provides results for July to December 2007. Two sites did not use the sentinel survey form; one had a computer-assisted medical record system which collected briefer behavioural information, the other provides laboratory testing data only. Results from sites with a high caseload of women and young people (labelled WYP sites) and results from heterosexuals tested at sexual health clinics are presented together as heterosexuals; and results from gay men's sites and MSM tested at sexual health clinics are presented as MSM. HIV status of MSM tested for chlamydia was assigned using prior HIV viral load or T-cell assay test; results of prior HIV tests in the sentinel surveillance system; and self reported previous HIV test result in surveyed MSM.

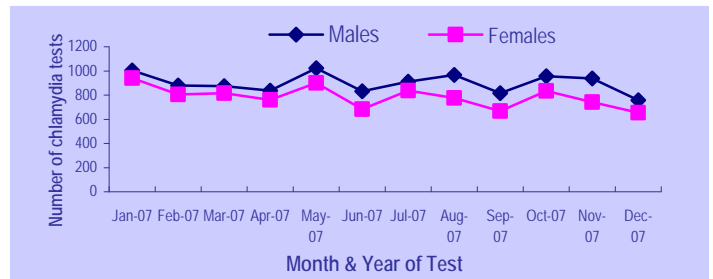
Table 1: Number of chlamydia tests and questionnaires by chlamydia result, Jul-Dec 2007

Site Number:	Primary health services (WYP)+							Sexual health clinics			Gay men's health clinics [#]				All
	2	3	14	15	16	19 [§]	All	6	18	All	4 [^]	5	10	All	
Chlamydia tests															
Number of tests	602	444	116	41	102	57	1362	114	6545	6659	267	487	1115	1869	9890
Positive tests (n)	28	12	3	2	16	9	70	0	305	305	17	27	74	118	493
Positive tests (%)	4.7	2.7	2.6	4.9	15.7	15.8	5.1	0.0	4.7	4.6	6.4	5.5	6.7	6.3	5.0
Chlamydia surveys															
Forms completed (n)	300	207	30	16	79	37	669	111	6545	6656	--	188	613	801	8126
Response rate (%) [*]	49.8	46.6	25.9	39.0	77.5	64.9	49.1	97.4	100.0	100.0	--	38.6	55.0	42.9	82.2
Forms included in analysis [^]	300	207	30	16	79	37	669	53	4926	4979	--	187	596	783	6431
Positive tests (n) ^{**}	12	9	0	1	12	5	39	0	280	280	--	9	28	37	356
Positive tests (%)	4.0	4.3	0.0	6.3	15.2	13.5	5.8	0.0	5.7	6.1	--	4.8	4.7	4.7	5.5

⁺WYP refers to sites at primary health services that specialise in women's and young people'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 #Results from gay men's health clinics are for males only; [§]Site 19 refers to results from sites 7 & 9 which are co-located and were previously reported separately [^]excludes sex workers and heterosexual males from GMH

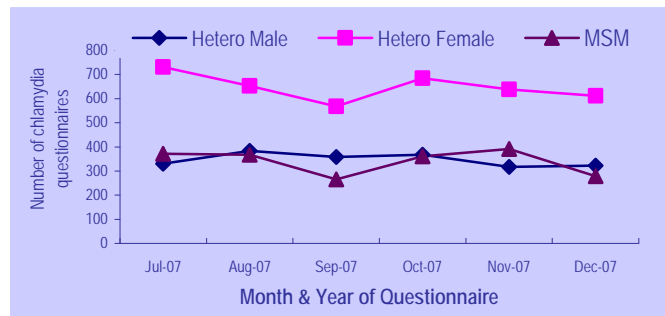
Results - Tests: A total of 9890 chlamydia tests (Table 1) were conducted among individuals attending the 11 sites (5345 in males, 4509 in females, 36 in transgender and persons with gender not reported). At WYP sites most of the 1362 tests were conducted in females (86%), compared to sexual health clinics where half of the 6659 tests were in males (50%). In females, an average of 751 chlamydia tests were conducted per month (range: 654-836), which was lower than the average of 817 (range: 683-940) in the previous time period (Jan-Jun 07). In males, a monthly average of 891 (range: 757-968) tests was similar to the monthly average of 908 tests in the last time period (range 831-1023) (Figure 1).

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



Results—demographic details and behaviours: Demographic and behavioural information were available for 8126 (82%) of the 9890 individuals tested for chlamydia, response rate varying by site (26% to 100%) (Table 1). Sex workers were excluded from further analysis.

Figure 2: Number of chlamydia questionnaires by respondent type, all clinics, Jul-Dec 2007



Results - Heterosexuals: Heterosexuals accounted for 4394 of the 8126 surveyed individuals, arising from eight sites (WYP=6, sexual health=2); 2080 (47%) in males and 2314 (53%) in females (Fig 2).

Among the 2080 heterosexual men reported on in Table 2, 28% were aged 16 to 24 years, 39% were aged 25 to 34 years, 44% reported STI symptoms and over three quarters (77%) reported more than two female sexual partners in the past 12 months. At sites using the sentinel surveillance form, additional behavioural information was available for 136 heterosexual males (Table 3); 70% (n=66) of those reporting sex with casual partners did not always use condoms with these partners and 54% (n=67) reported a new sexual partner in the past three months.

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

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), Jul-Dec 2007

		Males				Females			
		Tested		Positive		Tested		Positive	
		n	%	n	%	n	%	n	%
All		2080	100	130	6.3 (5.2-7.4)	2314	100	117	5.1 (4.2-6.0)
Age group (years)	16 to 19	100	4.8	10	10.0	280	12.1	19	6.8
	20 to 24	478	23.0	52	10.9	804	34.8	53	6.6
	25 to 34	816	39.2	47	5.8	853	36.9	39	4.6
	35+	686	33.0	21	3.1	377	16.3	6	1.6
	16 to 24	578	27.8	62	10.7 (8.3-13.5)	1084	46.9	72	6.6 (5.2-8.3)
Country of Birth	Australia	1329	67.2	78	5.9	813	62.7	26	3.2
	Other	650	32.8	47	7.2	483	37.3	27	5.6
Aboriginal and/or Torres Strait Islander	No	1840	98.8	112	6.1	1790	99.4	86	4.8
	Yes	23	1.2	3	13.0	11	0.6	1	9.1
STI symptoms	No	1120	56.3	58	5.2	1225	57.9	69	5.6
	Yes	871	43.8	69	7.9	890	42.1	44	4.9
Male sexual partners, past 12 months	None	1676	99.1	102	6.1	58	3.1	0	0.0
	1	3	0.2	0	--	684	36.0	17	2.5
	2+	12	0.7	0	--	1157	60.9	89	7.7
Female sexual partners, past 12 months	None	51	3.0	0	0.0	1783	95.8	102	5.7
	1	338	19.7	11	3.3	50	2.7	1	2.0
	2+	1323	77.3	94	7.1	29	1.6	0	0.0

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

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

		Males				Females			
		Tested		Positive		Tested		Positive	
		n	%	n	%	n	%	n	%
All		136	100	16	11.8 (6.3-17.2)	580	100	23	4.0 (2.4-5.6)
Regular sexual partner, past 12 months	No	21	16.8	1	4.8	41	7.4	0	0.0
	Yes	104	83.2	15	14.4	514	92.6	22	4.3
Condom use, with regular partners, past 12 months	Did not always use condoms	91	87.5	15	16.5	448	87.2	22	4.9
	Always used condoms	13	12.5	0	0.0	66	12.8	0	0.0
Casual sexual partner, past 12 months	No	28	22.8	4	14.3	268	49.1	6	2.2
	Yes	95	77.2	12	12.6	278	50.9	15	5.4
Condom use with casual partner/s, past 12 months	Did not always use condoms	66	69.5	11	16.7	177	63.6	10	5.6
	Always used condoms	29	30.5	1	3.5	101	36.3	5	5.0
New sexual partner/s, past three months*	No	57	46.0	6	10.5	327	59.6	9	2.8
	Yes	67	54.0	10	14.9	222	40.4	13	5.9

^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

Compared to males, the 2314 heterosexual females tested (Table 2) were younger (47% were aged 16 to 24 years), and less likely to report more than two opposite sex sexual partners in the past 12 months (61%). 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 (64%) and a lower proportion (40%) reported a new sexual partner in the past three months.

The overall chlamydia prevalence among **heterosexual males** was **6.3% (95% CI 5.2-7.4)** and 10.7% (95% CI 8.3-13.5) in 16 to 24 year olds. Higher prevalence was observed in males (i) aged 16 to 24 years (ii) reporting STI symptoms (iii) who were aboriginal and/or TSI (iv) with multiple female sexual partners, and did not always use condoms with (v) regular partners and (vi) casual partners (Tables 2 and 3).

The overall chlamydia prevalence among **heterosexual females** was **5.1% (95% CI 4.2-6.0)** and 6.6% (95% CI 5.2-8.3) in 16 to 24 year olds. Higher prevalence was observed in females (i) aged 16 to 24 years (ii) reporting two or more male sexual partners in the past 12 months (iii) not always using condoms with regular partner/s and (iv) reporting new sexual partner/s in the past three months (Tables 2 and 3).

Results – MSM: MSM accounted for 2035 of the 8126 surveyed individuals, arising from four clinics. Among MSM, 35% were aged 20 to 29 years and 33% aged 30 to 39 years; 8.8% were known to be HIV positive when surveyed (Table 4). Of MSM reporting regular anal sex partners, 57% reported not always using condoms in the past six months and in MSM with casual

anal sex partners, 34% reported not always using condoms in the past six months (Table 5).

The prevalence of chlamydia infection among MSM was **5.4% (95% CI 4.4-6.4)**. Prevalence estimates were higher in MSM (i) aged 16-19 years, (ii) reporting STI symptoms when tested, (iii) known to be HIV positive (iv) reporting their current regular sexual partner was HIV positive, (v) reporting six or more anal sex partners in the past six months, and (vi) who reported a casual anal sex partner/s (Table 4 and 5).

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

		Tested		Positive	
		n	%	n	%
All		2035	100	109	5.4 (4.4-6.4)
Age group (years)	16-19	52	2.6	4	7.7
	20-29	720	35.4	40	5.6
	30-39	668	32.8	34	5.1
	40-49	383	18.8	22	5.7
	50+	212	10.4	9	4.2
Country of Birth	Australia	1383	71.9	66	4.8
	Other	540	28.1	32	5.9
Aboriginal and/or Torres Strait Islander	No	1849	99.3	94	5.1
	Yes	14	0.7	1	7.1
STI symptoms	No	1502	79.9	66	4.4
	Yes	378	20.1	31	8.2
Known HIV status	Negative	1855	91.2	89	4.8
	Positive	179	8.8	20	11.2
	Unknown	1	0.1	0	0.0

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

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

		Tested		Positive	
		n	%	n	%
All		788	100	37	4.7
Male oral sex partners, past 6 months	None	18	2.4	1	5.6
	1 to 5	388	50.9	11	2.8
	6 +	357	46.8	25	7.0
Male anal sex partners, past 6 months	None	78	10.2	1	1.3
	1 to 5	479	62.8	20	4.2
	6 +	206	27.0	16	7.8
Regular anal sex partners, past 6 months	No	279	37.9	12	4.3
	Yes	458	62.1	25	5.5
HIV status of current regular partner	Positive	40	10.1	4	10.0
	Negative	284	71.5	9	3.2
	Don't know/he hasn't had a test	73	18.4	4	5.5
Condom use: anal sex with regular partner/s, past 6 months	Did not always use condoms	263	57.4	16	6.1
	Always used condoms	195	42.6	9	4.6
Casual anal sex partners, past 6 months	No	192	25.4	2	1.0
	Yes	565	74.6	35	6.2
Condom use: anal sex with casual partner/s, past 6 months	Did not always use condoms	191	33.8	14	7.3
	Always used condoms	374	66.2	21	5.6

* 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: Overall the response rate for the chlamydia network has risen to over 80% (from 62% in Apr-Dec 06 and 72% in Jan-Jun 07), improving validity of results from the system.

Heterosexual men presenting at sentinel sites continue to report more sexual partners than heterosexual women. The prevalence of chlamydia was highest among 16 to 24 year olds heterosexual males (10.7%). The proportion of heterosexuals reporting not always using condoms with casual partners has remained steady at 65-70% for heterosexual males and 60-64% for heterosexual females across the three reporting periods.

Just over five percent of MSM were found to be infected with chlamydia. The proportion of MSM reporting not always using condoms with casual anal sex partners has remained steady, ranging from 33-35% across the three reporting periods.

Limitations: (i) the sentinel system includes only 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 limiting the available behavioural data in HIV positive MSM (iii) STI symptoms are not a specific option on the questionnaire at gay men's health services, so the frequency of symptoms in MSM may be underreported, this option will be included from 2008 (iv) previous reports contained an underestimation of the number of tests and surveys. This was due to an electronic data extraction error at one site. Thus the number of tests and demographic data are not directly comparable with previous reports.

Sites: Family Planning Victoria: Action Centre, Box Hill, Adolescent Forensic Health Service, 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)

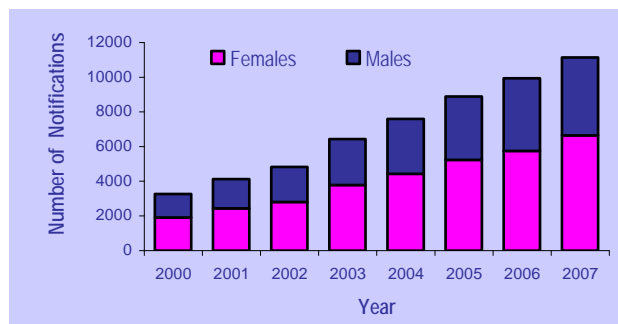
All data in this report are provisional and subject to revision as further information becomes available.

Updates from Other Surveillance Systems

Passive Surveillance

Between 2000 and 2007, chlamydia notifications in Victoria increased from 3264 to 11,151 (Figure 3), with the greatest number of cases among women aged 15-24 years. In 2006, enhanced surveillance data was available from DHS for about one third of cases; 30% of cases in males were reported to be MSM.

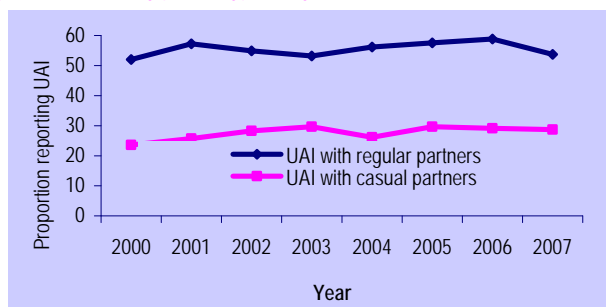
Figure 3: Chlamydia notifications by gender (unknowns excluded), Victoria, 2000-2007



MSM - Periodic Survey

Sexual risk behaviour among Victorian MSM is monitored through the annual Melbourne Gay Community Periodic Survey. There has been a reported increase in unprotected anal intercourse from 24% in 2000 to 29% in 2007 (Figure 4).

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 2000 young people at a 2008 Melbourne music festival found 42% had multiple sexual partners in the past year and 36% had new sexual partner/s in the past 3 months. Fifty seven percent always used condoms with new sexual partners and 63% always used condoms with casual partners. Since 2005[#] the proportion of those surveyed reporting casual partners has significantly increased while the proportion reporting new sexual partner/s has significantly decreased. Consistent condom use among those with multiple and/or new partners has significantly increased in the same time frame. [#] these analyses adjusted for age and sex

Sex and Sport Study

In 2007, via a community based program, chlamydia testing was conducted at sporting clubs in regional Victoria. Chlamydia infection was detected in 3.5% of sexually active males tested and 5.6% of sexually active females tested. The proportion of individuals testing positive for chlamydia increased with the reported number of sexual partners in the past year, and the number of new partners in the past three months. Less than 20% participants had previously been tested for an STI.

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