Northern Territory Government

DEPARTMENT OF HEALTH

Northern Territory Sexual Health and Blood Borne Virus Unit Surveillance Update

Centre for Disease Control
Department of Health
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A. Introduction

In this report we present the quarterly statistics for notifiable sexually transmissible infections (STIs) and blood borne viruses (BBVs) in the Northern Territory (NT) for the period January to June 2012. Also included in the report are the results of gonococcal sensitivity surveillance in the NT for 2011.

The notification data used in this report were extracted from the Northern Territory Notifiable Diseases System (NTNDS). The extraction of notification data was carried out on 1 August 2012. Other data also used include HIV notification data from the HIV/AIDS database maintained by the NT Sexual Health and Blood Borne Virus Unit (SHBBVU); the STI/BBV statistics of Australia and other states/territories were extracted from the National Notifiable Disease System available on line, and the '*HIV/AIDS, Viral Hepatitis and Sexually Transmissible Infections in Australia Annual Surveillance Report 2012*' published by the Kirby Institute. The gonococcal sensitivity surveillance data were provided by the Australian Gonococcal Sensitivity Programme. Population data used for rate calculation are estimated resident population prepared and provided by the Health Gains Planning unit, which are derived from the Census data retrieved from the Australian Bureau of Statistics. Population data for 2010 were used for calculating 2012 rates as the population data for 2011 and 2012 are not available yet.

The quarterly rates of notification presented in this report are crude annualised rates per 100,000 population. As there is often a small proportion of notifications categorised as 'interstate' or of unknown residence locations, the sum of district-specific notifications presented in this report is lower than the total number of notifications shown in other tables.

Many research studies have shown that for common STIs (such as chlamydia) testing rates and notification rates are highly correlated. Therefore, caution should be taken when interpreting the STI statistics reported in this publication. This is particularly needed as prevalence of common STIs is known to be high, and an increase or decrease in testing can lead to a similar change in numbers and rates of notifications when the prevalence remains at the same level. For example, the randomised community trial, STRIVE, currently implemented in the NT includes a certain number of remote communities into its randomised arm every year. As the study promotes targeted STI testing, this is expected to considerably increase STI testing in the targeted young age groups, and thereby increase notifications of STIs as well. This needs to be considered when interpreting any increase in notification rates reported in this report.

B. Quarterly Statistics

Table B.1.1 Number and rate of gonorrhoea, chlamydia, infectious syphilis and trichomoniasis notifications, NT, Jan-Jun, 2012

Quarter	Gonorrhoea		Chlamydia		Infectious Syphilis		Trichomoniasis	
	Cases	Rate	Cases	Rate	Case	Rate	Case	Rate
2012								
Jan-Mar	470	818.5	729	1269.6	3	5.2	684	1191.2
Apr-Jun	355	618.3	656	1142.5	6	10.4	612	1065.9
Total	825	718.4	1385	1206.1	9	7.8	1296	1128.6
2011								
Jan-Mar	504	877.8	663	1154.7	17	29.6	597	1039.7
Apr-Jun	489	851.6	630	1097.2	6	10.4	694	1208.7
Total	993	864.7	1293	1125.9	23	20.0	1291	1124.2

Figure B.1.1 Annualised notification rates of gonorrhoea, chlamydia, infectious syphilis and trichomoniasis, NT, Jan-Jun 2008-2012

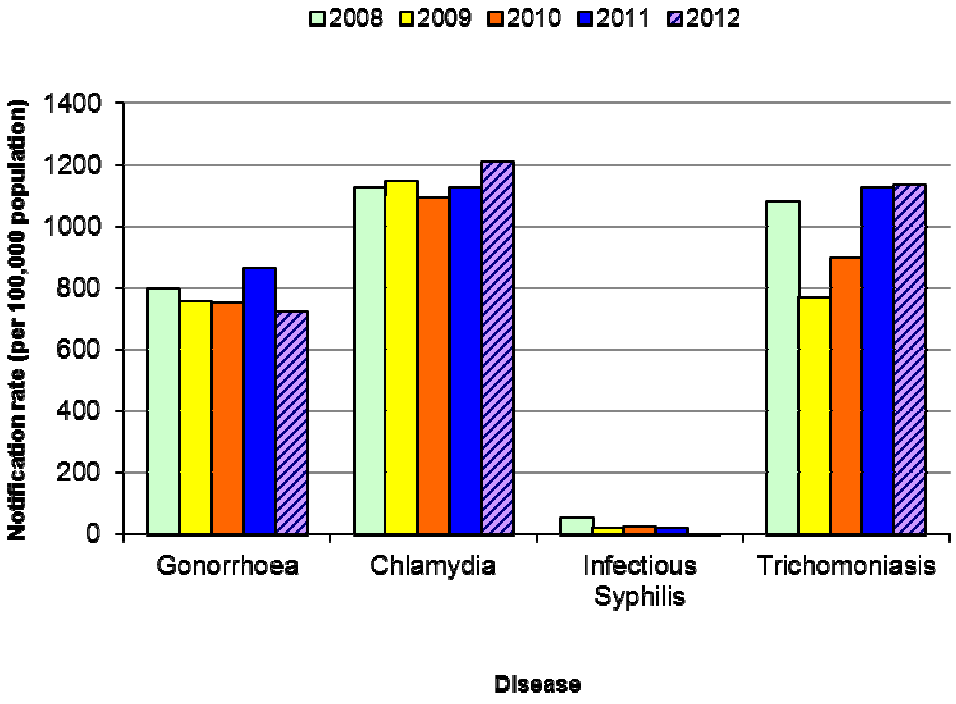


Table B.1.2 Number and rate of gonorrhoea, chlamydia, infectious syphilis and trichomoniasis by sex, NT, Jan-Jun, 2012

Gender	Gonorrhoea		Chlamydia*		Infectious Syphilis		Trichomoniasis	
	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate
Males								
Jan-Mar	214	719.0	287	964.3	2	6.7	106	356.1
Apr-Jun	177	594.7	293	984.4	4	13.4	88	295.7
Total	**391**	**656.9**	**580**	**974.4**	**6**	**10.1**	**194**	**325.9**
Females								
Jan-Mar	256	925.7	441	1594.6	1	3.6	578	2090.0
Apr-Jun	178	643.6	362	1309.0	2	7.2	524	1894.7
Total	**434**	**784.6**	**803**	**1451.8**	**3**	**5.4**	**1102**	**1992.4**
Jan-Jun 2011 total								
Males	471	791.3	501	841.6	13	21.8	175	294.0
Females	522	943.7	792	1431.9	10	18.1	1116	2017.7
Total	**993**	**864.7**	**1,293**	**1125.9**	**23**	**20.0**	**1291**	**1124.2**

Figure B.1.2 Annualised notification rates of gonorrhoea, chlamydia, infectious syphilis and trichomoniasis by gender, NT, Jan-Jun 2008-2012

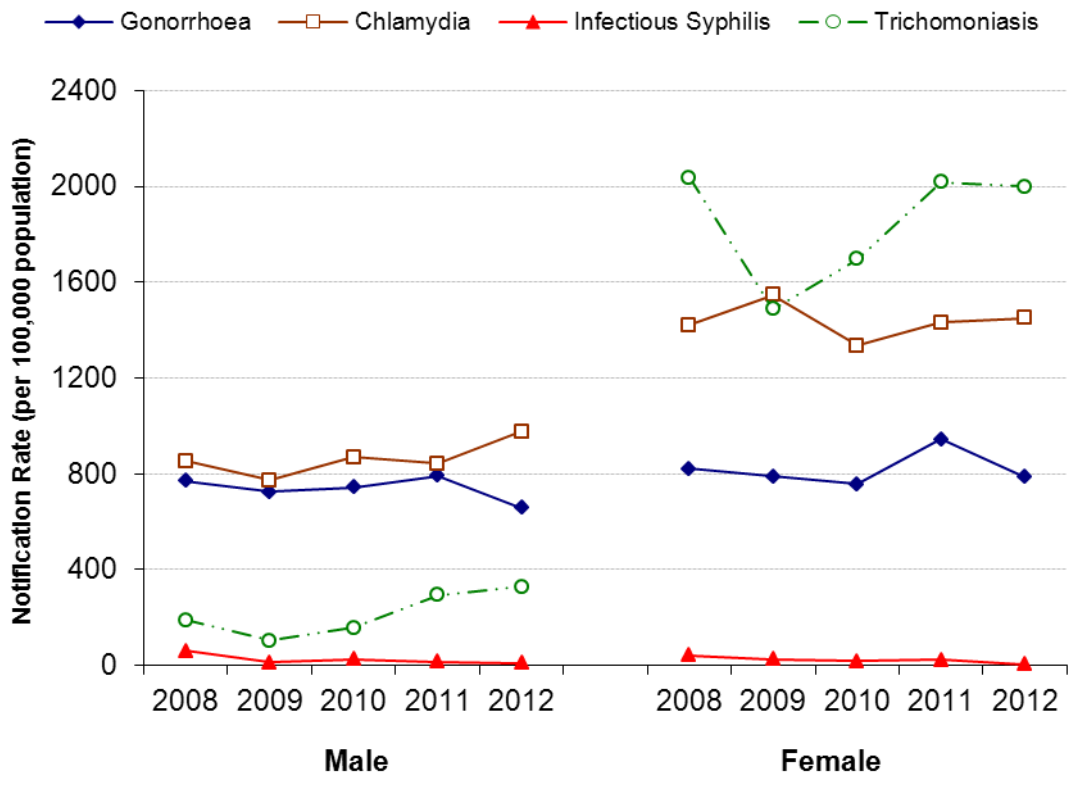
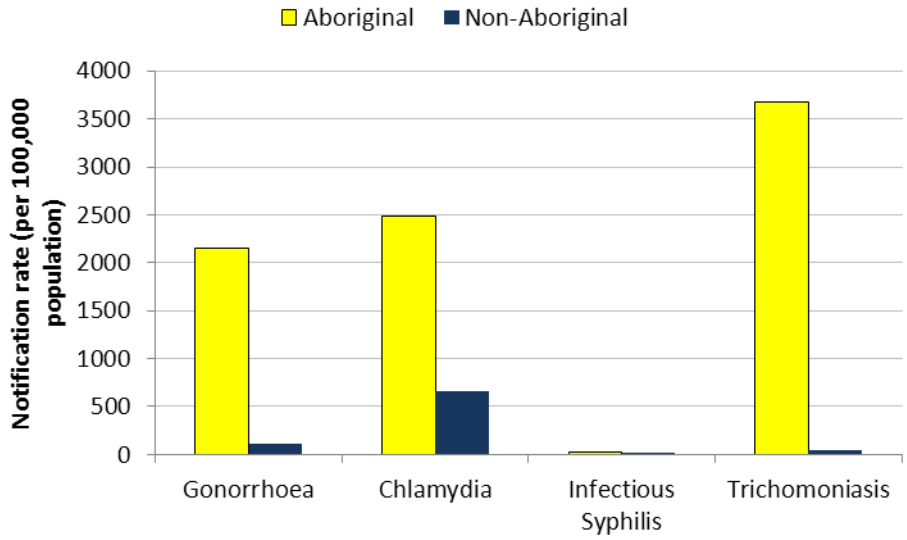


Table B.1.3 Number and rate of gonorrhoea, chlamydia, infectious syphilis and trichomoniasis notifications by ethnicity, NT, Jan-Jun, 2012

Ethnicity	Gonorrhoea		Chlamydia		Infectious Syphilis		Trichomoniasis	
Quarter	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate
Aboriginal								
Jan-Mar	413	2391.4	443	2565.1	2	11.6	659	3815.8
Apr-Jun	306	1771.8	354	2049.7	6	34.7	583	3375.7
Total	**719**	**2081.6**	**797**	**2307.4**	**8**	**23.2**	**1242**	**3595.7**
Non-Aboriginal								
Jan-Mar	46	114.6	243	605.3	1	2.5	14	34.9
Apr-Jun	38	94.6	247	615.2	0	0.0	17	42.3
Total	**84**	**104.6**	**490**	**610.2**	**1**	**1.2**	**31**	**38.6**
Unknown								
Jan-Mar	11		43		0		11	
Apr-Jun	11		55		0		12	
Total	**22**		**98**		**0**		**23**	

Figure B.1.3 Annualised notification rates* of gonorrhoea, chlamydia, infectious syphilis and trichomoniasis by ethnicity, NT, Jan-Jun, 2012



* Adjusted rates after allocating notifications of unknown ethnicity to Aboriginal and non-Aboriginal categories according to their proportions based on notifications of known ethnicity.

Table B.1.4 Number and rate of gonorrhoea, chlamydia, infectious syphilis and trichomoniasis notifications by district, NT, Jan-Jun, 2012

	Gonorrhoea		Chlamydia		Infectious Syphilis		Trichomoniasis	
District	**Cases**	**Rate**	**Cases**	**Rate**	**Cases**	**Rate**	**Cases**	**Rate**
Darwin								
Jan-Mar	116	323.7	349	973.9	0	0.0	208	580.4
Apr-Jun	104	290.2	331	923.7	1	2.8	179	499.5
Total	**220**	**307.0**	**680**	**948.8**	**1**	**1.4**	**387**	**540.0**
Katherine								
Jan-Mar	86	1720.0	84	1680.0	2	40.0	121	2420.0
Apr-Jun	80	1600.0	96	1920.0	0	0.0	147	2940.0
Total	**166**	**1660.0**	**180**	**1800.0**	**2**	**20.0**	**268**	**2680.0**
East Arnhem								
Jan-Mar	31	734.7	66	1564.2	0	0.0	115	2725.4
Apr-Jun	14	331.8	51	1208.7	0	0.0	120	2843.9
Total	**45**	**533.2**	**117**	**1386.4**	**0**	**0.0**	**235**	**2784.7**
Barkly								
Jan-Mar	20	1207.4	11	664.1	1	60.4	39	2354.4
Apr-Jun	15	905.5	19	1147.0	2	120.7	33	1992.2
Total	**35**	**1056.4**	**30**	**905.5**	**3**	**90.6**	**72**	**2173.3**
Alice Springs								
Jan-Mar	208	1942.5	208	1942.5	0	0.0	195	1821.1
Apr-Jun	135	1260.8	148	1382.2	3	28.0	131	1223.4
Total	**343**	**1601.6**	**356**	**1662.3**	**3**	**14.0**	**326**	**1522.3**

Figure B.1.4 Annualised notification rates of gonorrhoea, chlamydia, infectious syphilis and trichomoniasis by district, NT, Jan-Jun, 2012

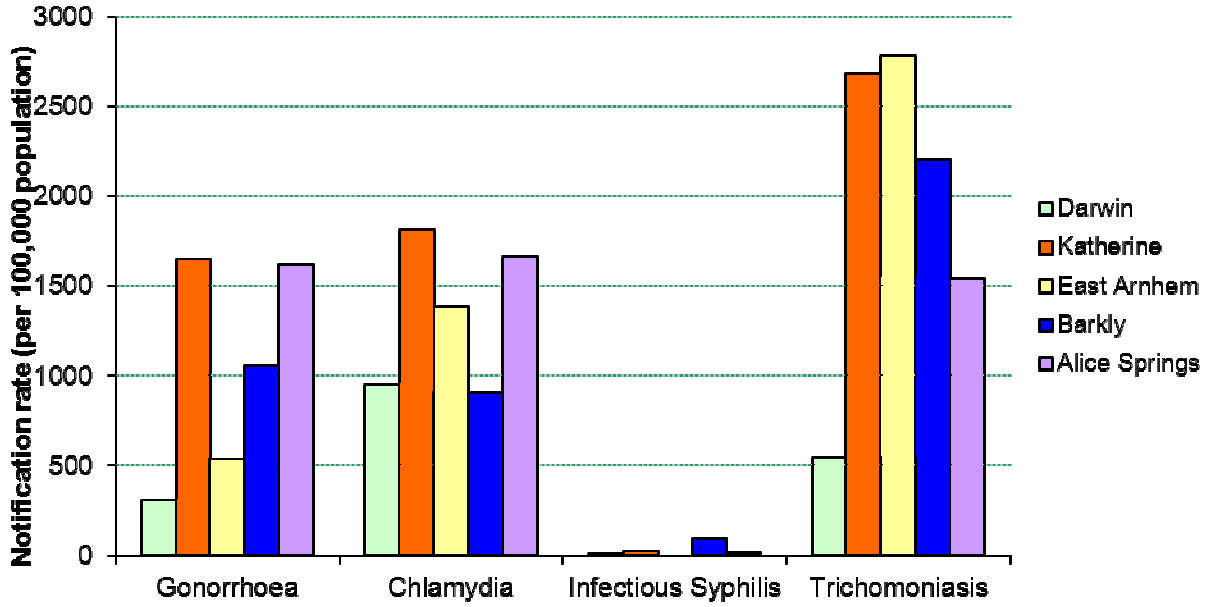
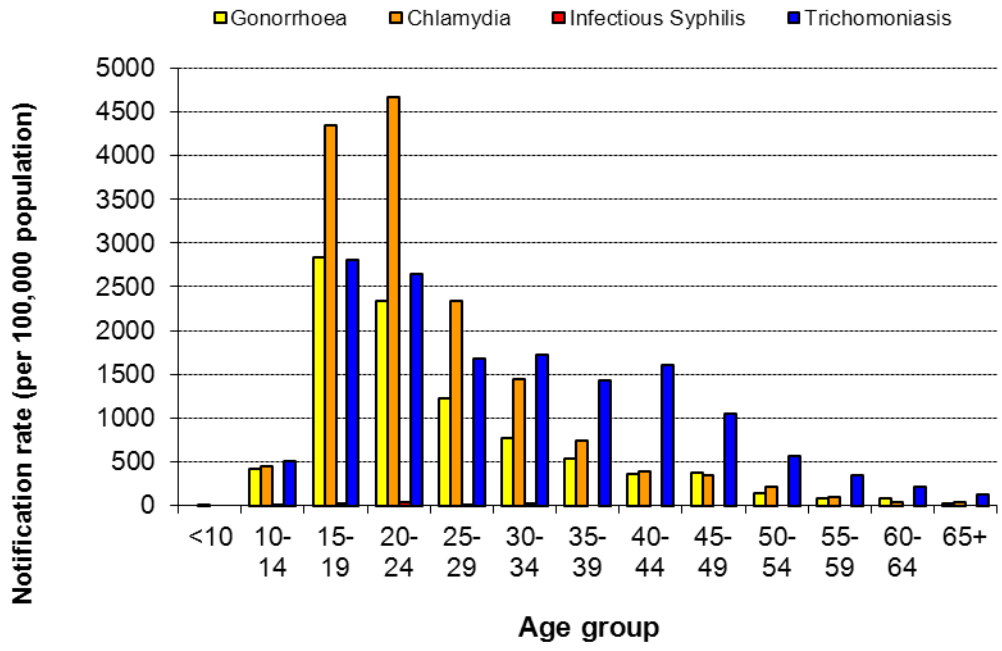


Table B.1.5 Number and rate of gonorrhoea, chlamydia, infectious syphilis and trichomoniasis notifications by 5-year age group, Jan-Jun, 2012

	Gonorrhoea		Chlamydia		Syphilis		Trichomoniasis	
Age group	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate
<10	0	0.0	0	0.0	0	0.0	0	0.0
10-14	35	417.6	38	453.4	1	11.9	42	501.1
15-19	239	2837.8	367	4357.6	2	23.7	235	2790.3
20-24	218	2300.5	442	4664.4	3	31.7	250	2638.2
25-29	129	1221.5	247	2338.8	1	9.5	177	1676.0
30-34	73	773.1	136	1440.4	2	21.2	161	1705.1
35-39	50	538.2	69	742.8	0	0.0	132	1421.0
40-44	31	364.6	33	388.2	0	0.0	136	1599.7
45-49	30	371.9	28	347.1	0	0.0	83	1028.9
50-54	10	137.4	15	206.1	0	0.0	41	563.4
55-59	5	80.5	6	96.6	0	0.0	21	338.1
60-64	4	85.3	2	42.6	0	0.0	10	213.2
65+	1	15.7	2	31.4	0	0.0	8	125.8
Total	**825**	**718.4**	**1385**	**1206.1**	**9**	**7.8**	**1296**	**1128.6**

Figure B.1.5 Annualised notification rate of gonorrhoea, chlamydia, infectious syphilis and trichomoniasis notifications by age group, Jan-Jun, 2012



B.1 Gonorrhoea

The annualised notification rate of gonorrhoea in this six-month period (718.4 per 100,000) represented a decrease of 17% compared with the same period in 2011 (Table B.1.1 and Figure B.1.1). However, it was still much higher than the age-standardised rate for Australia of 52.5 per 100,000 in 2011.

As shown in Figure B.1.2, there was an approximately equal rate decrease in both sexes (about 17%). There were slightly more female cases than male ones (male to female ratio was 1:1.11, see Table B.1.2). The majority of the notifications (87.2%) were recorded in the Aboriginal population, and the Aboriginal rate was about 20 times the non-Aboriginal rate (Table B.1.3). The NT Aboriginal and non-Aboriginal rates were both considerably higher than their corresponding rates for Australia (age-standardised rate, 673 and 22 per 100,000, respectively) in 2011.

The highest district-specific rate was recorded in Katherine, followed by Alice Springs (see Table B.1.4). The highest age-specific notification rate was recorded in the 15-19 year age group, followed by 20-24; these two age groups recorded 55.4% of all notifications (Table B.1.5 and Figure B.1.5). There were no notifications recorded in the under 10 year age group, but there were 35 in the 10-14 year age group.

B.2 Genital chlamydia

In contrast to the sharp decrease in gonorrhoea, the annualised rate of genital chlamydia for this reporting period showed a slight increase (7.1%) over the corresponding rate for 2011 (Figure B.1.1 and Table B.1.1). The majority of the increase occurred in males and the notification rate for males increased by 15.8% compared with the same rates for 2011. The rate for females continued to be considerably higher than the rate for males (higher by 49.0%, see Table B.1.2).

The majority (57.5%) of notifications were recorded in the Aboriginal population (Table B.1.3). The proportion of notifications with Aboriginal status being unknown was 7.1%, considerably higher than the 2.7% for gonorrhoea. The notification rate for the Aboriginal population was about 3.8 times the non-Aboriginal rate. Both Aboriginal and non-Aboriginal rates were considerably higher than the corresponding rates for Australia (1,343 and 378 per 100,000 in 2010 respectively).

The highest district-specific rate was recorded in Katherine, followed by Alice Springs (Table B.1.4). However, nearly 50% of the notifications were recorded in Darwin district.

The 20-24 year age group recorded the highest notification rate, followed by the 15-19 year age group (Table B.1.5). As usual, these two age groups accounted for more than half (58.4%) of all notifications. There were no notifications recorded in the under 10 year age group, but there were 38 in the 10-14 year age group.

B.3 Infectious syphilis

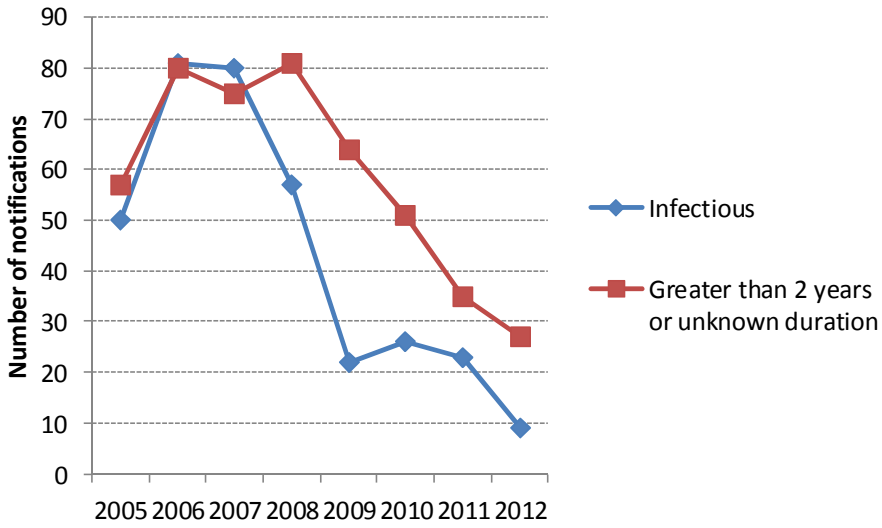
There were only 9 notifications of infectious syphilis in this 6-month period, giving an annualised notification rate of 7.8 per 100,000 which was considerably lower than the same rate for 2009-2011 (the rate remained at around 20 per 100,000 in these three years, see Table B.1.1 and Figure B.1.1). This rate is already close to the age-standardised rate for Australia of 5.7 per 100,000 in 2011.

The number of male cases double that recorded in females, though both numbers were low (Table B.1.2). Eight out of the 9 cases (88.9%) notified were Aboriginal; the Aboriginal rate was nearly 20 times the non-Aboriginal rate (Table B.1.3). The reporting of Aboriginal status was 100% in this 6-month period for infectious syphilis.

Barkly district recorded the highest number and rate of notification (Table B.1.4). The number of notifications was 3 or less in all districts. Like chlamydia and gonorrhoea, the highest number and rate of notification were recorded in the 15-19 and 20-24 year age groups (Table B.1.5).

As shown in Figure B.3.1, the decrease in syphilis notifications in recent years occurred in both categories of syphilis.

Figure B.3.1 Annualised notifications of syphilis by category, NT, Jan-Jun, 2005-2012



There were no notifications of congenital syphilis in this reporting period. The last case of congenital syphilis was notified in 2009.

B.4 Trichomoniasis

The number and rate of notification for trichomoniasis in this reporting period were both at the same level as what were reported for the same period in 2011 (Table B.1.1). The majority (85.4%) of notifications were female and 95.8% of them were Aboriginal (Table B.1.2 and Table B.1.3). The Aboriginal rate was 93.1 times the non-Aboriginal rate.

The rate was substantially higher in mainly remote districts than in the mainly urban Darwin district. East Arnhem and Katherine recorded the highest rates, but the highest number of notifications was recorded in Darwin district (Table B.1.4).

Like the other STIs, the highest rates continued to be recorded in the 15-19 and 20-24 year age groups (Table B.1.5). However, the rate difference between these two age groups and other age groups was not as large as that for gonorrhoea or chlamydia. This is because there were relatively more trichomoniasis notifications in the 25-49 year age group than for other STIs.

There were no notifications recorded in the under 10 year age group, but there were 42 cases in the 10-14 year age group.

B.5 Donovanosis and other sexually transmitted infections

There were no notifications of donovanosis, chancroid or lymphogranuloma venereum in this reporting period.

B.7 Hepatitis C Infection

A total of 96 notifications of hepatitis C infection were recorded in this reporting period, compared with 103 in the same period of 2011 (Figure B.7.1). There did not appear to be any evident trend in the last six years.

The annualised notification rate for this 6-month period was 83.6 per 100,000, compared with the Australian rate of 45.7 per 100,000 in 2011. There were no newly acquired cases in this period and all notifications were classified as unspecified (Table B.7.2)

As was usually the case, there were considerably more male cases than female ones (male: female=2.7:1, see Table B.7.1). The majority of cases (85.4%) of notifications were non-Aboriginal. Aboriginal status was unknown in 3.1% of the notifications.

The highest number and rate of notifications were both recorded in Darwin (accounted for 68.8% of all cases, see Table B.7.3). The highest age-specific rate was recorded in the 40-44 year age group in men and 35-39 in women (Figure B.7.2).

Figure B.7.1 Number of hepatitis C notifications by gender, NT, Jan-Jun, 2007-2012

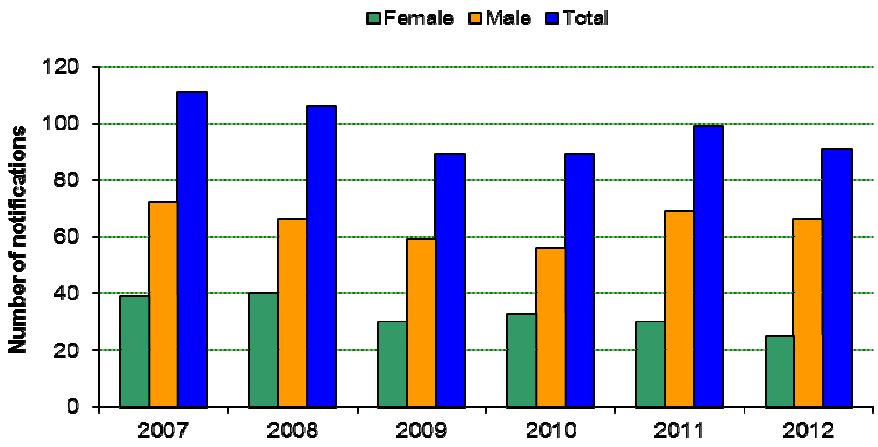


Table B.7.1 Number and rate of hepatitis C notifications by gender and ethnicity, NT, Jan-Jun, 2012

Quarter	Sex	Aboriginal		Non-Aboriginal		Unknown	Total	
		Case	Rate	Case	Rate	Case	Case	Rate
Jan-Mar	Female	2	22.8	12	63.6	1	15	54.2
	Male	7	82.5	39	183.3	0	46	154.6
	Unknown	0		0		0	1	
	Total	**9**	**52.1**	**51**	**127.0**	**1**	**62**	**108.0**
Apr-Jun	Female	1	11.4	10	53.0	0	11	39.8
	Male	1	11.8	21	98.7	2	24	80.6
	Total	**2**	**11.6**	**31**	**77.2**	**2**	**35**	**61.0**
Jan-Jun	Female	3	17.1	22	58.3	1	26	47.0
	Male	8	47.1	60	141.0	2	70	117.6
	Total	**11**	**31.8**	**82**	**102.1**	**3**	**96**	**83.6**

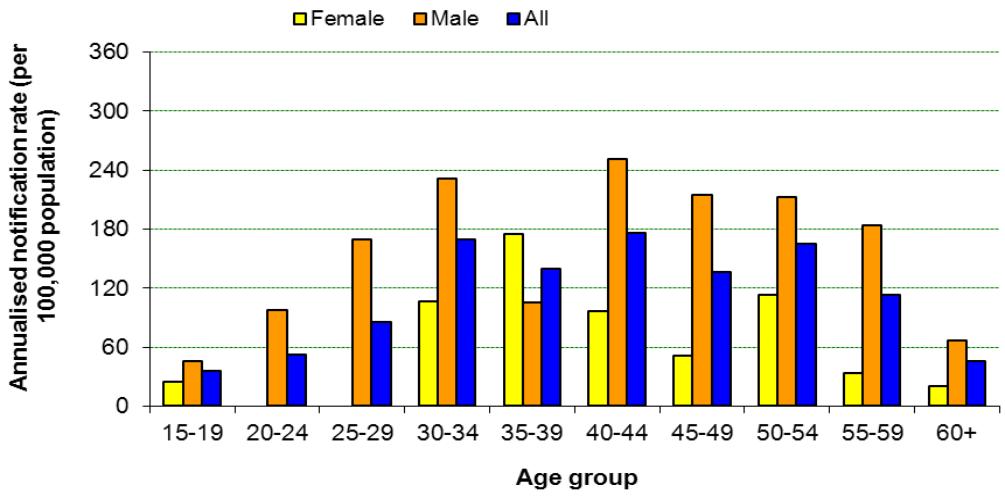
Table B.7.2 Number of hepatitis C notifications by gender, ethnicity and disease categories, NT, Jan-Jun, 2012

Type	Gender	Indigenous status			Total	%
		Aboriginal	Non-Aboriginal	Unknown		
Newly acquired	Female	0	0	0	0	**0.0%**
	Male	0	0	0	0	
Unspecified	Female	3	22	1	26	**100.0%**
	Male	8	60	2	70	
Total		**11**	**82**	**3**	**96**	
%		**11.5%**	**85.4%**	**3.1%**		

Table B.7.3 Number and annualised rate of hepatitis C notifications by gender and district, NT, Jan- Jun 2012

Quarter	Sex	District									
		Darwin		Katherine		East Arnhem		Barkly		Alice Springs	
		Case	Rate	Case	Rate	Case	Rate	Case	Rate	Case	Rate
Jan-Mar	Female	11	65.0	2	81.4	1	48.9	0	0	1	18.4
	Male	30	158.7	1	39.3	0	0.0	1	116.9	11	208.0
Apr-Jun	Female	7	41.3	0	0.0	0	0.0	0	0.0	3	55.3
	Male	18	95.2	1	39.3	1	46.0	0	0.0	3	56.7
Jan-Jun 2012											
	Female	18		2		1		0		4	
	Male	48		2		1		1		14	
	Total	**66**	**92.1**	**4**	**40.0**	**2**	**23.7**	**1**	**30.2**	**18**	**84.1**

Figure B.7.1 Annualised notification rate of hepatitis C by age groups, NT, Jan-Jun, 2012



B.8 Human Immunodeficiency Virus (HIV)

The number of notifications increased in this 6-month period compared with the last 5 years (Figure B.8.1). Nine of the 13 cases were male and one was Aboriginal (Table B.8.1). Three cases were classified as newly acquired and 6 cases were classified as late presentation.

Table B.8.1 HIV notifications by sex and ethnicity, NT, Jan-Jun 2010-2012

Category	2010	2011	2012
Male	4	5	9
Female	1	0	4
Total	**5**	**5**	**13**
Aboriginal	1	1	1
Non-Aboriginal	4	4	12

Figure B.8.1 HIV notifications by sex, NT, Jan-Jun 2008-2012

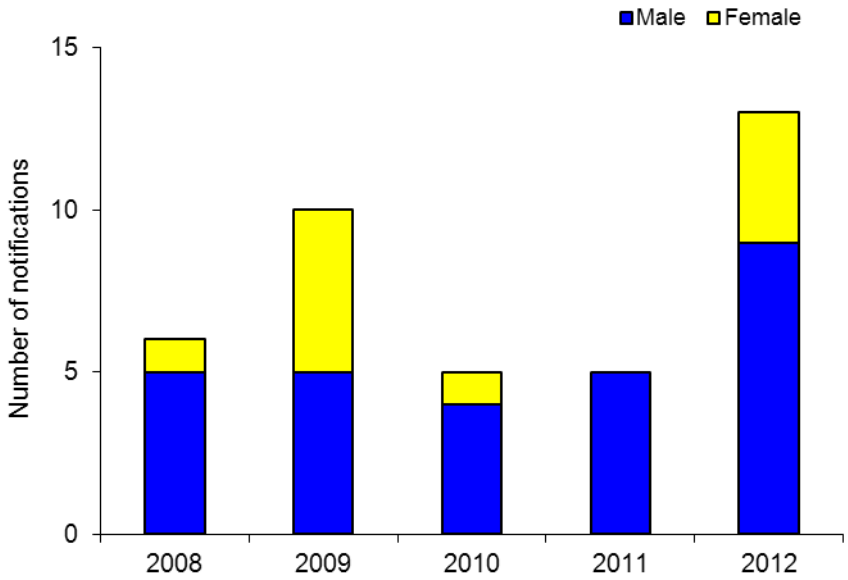


Table B.8.2 HIV notifications by exposure category and place of infection, NT, Jan-Jun, 2012

Exposure category	No.	%
Male homosexual contact	1	7.7%
Male homosexual / bisexual contact	1	7.7%
Heterosexual contact	9	69.2%
Heterosexual contact / IDU	1	7.7%
Undetermined	1	7.7%
Place of infection		
NT	1	7.7%
Imported	6	46.2%
Interstate	1	7.7%
Overseas travel	2	15.4%
Unknown	3	23.1%
Total	**13**	

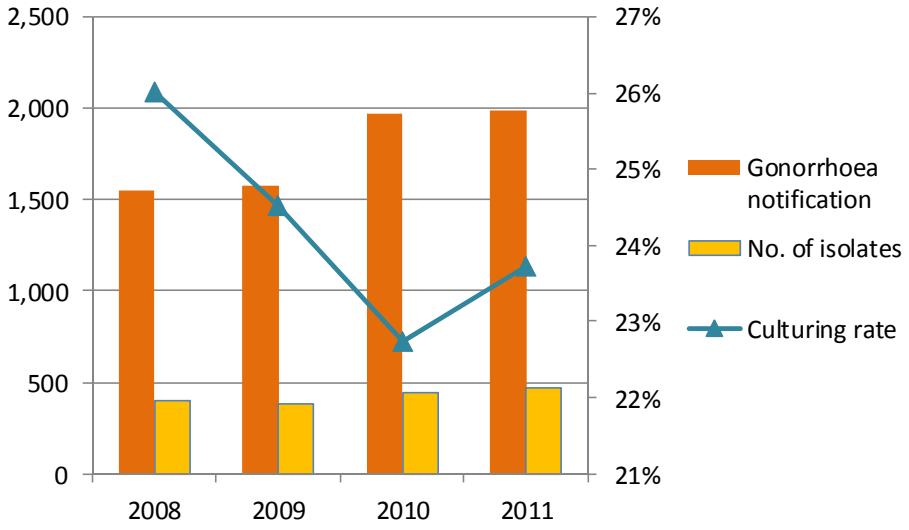
As was the case in the past, the majority of cases (69.2%) contracted the infection through heterosexual contact (Table B.8.2). Only one case acquired the infection in the NT. There were two cases who were Australians becoming infected while travelling to high prevalence countries. Six cases acquired the infection before they arrived in Australia either as immigrants or temporary residents.

C. Surveillance of antimicrobial sensitivity of *N. gonorrhoeae*, 2011

The surveillance of antimicrobial sensitivity of *N. gonorrhoeae* is important to the control of gonorrhoea in the NT. For a detailed explanation on this issue, please refer to Vol.10 No.1 of this publication. The data used in this report were provided by the Australian Gonococcal Surveillance Programme (AGSP).

In 2011, a total of 472 isolates from the NT were forwarded to the AGSP. This represents a small increase over the 448 isolates in 2010 (there were 387 isolates in 2009, and 403 in 2008). Compared with the 1898 cases of gonorrhoea diagnosed in 2011, the proportion of cases cultured (culturing rate) was about 25%. This proportion has not changed considerably over the past few years (see Figure C.1).

Figure C.1: Number of notifications and isolates and culturing rate, Northern Territory, 2008-2011



Of these, 323 were from males (68.4%) and 149 from females (31.6%), giving a male to female ratio of 2.2:1, which was at about the same level as the same figure for 2010 (Table C.1).

Table C.1 Specimen sites of N. Gonorrhoeae isolates from the NT by sex, 2011

Site	Male		Site	Female	
	Number	%		Number	%
Urethra	304	94.1%	Cervix	140	94.0%
Rectal	2	0.6%	Rectal	0	0.0%
Pharynx	0	0.0%	Pharynx	0	0.0%
DGI	4	1.2%	DGI	4	2.7%
Other/Unknown	13	4.0%	Other/Unknown	5	3.4%
Total	323		Total	149	

The majority of isolates in men were taken from urethra (94.1%, compared with the 68.0% reported for Australia) while 94.0% of isolates from women were taken from the cervix (85.6% for Australia). Notably, there were 4 isolates from men and 4 from women that were taken from cases of disseminated gonococcal infection (sterile non-genital sites of the body).

Of all isolates received, 459 (97.2%) were viable for antimicrobial sensitivity analysis. About 0.8% of the isolates from public hospital laboratories were non-viable, compared with the 5.1% for other laboratories. The results of the antimicrobial sensitivity tests for the 459 isolates are summarised in Table C.2. Overall, there were 7 isolates classified as chromosome-mediated penicillin resistant (CMRNG, 1.5%) and 12 as penicillinase-producing penicillin resistant (PPNG, 2.6%), giving a total proportion of isolates resistant to penicillin of 4.1%, which was close to the proportions reported in the last five years (3.8% in 2010, 4.2% in 2009, 3.9% in 2008, 4.1% in 2007, 4.6% in 2006). All isolates resistant to penicillin were sensitive to Ceftriaxone, the antibiotic currently recommended for gonococcal infections acquired from contact with people from interstate or overseas.

After separating the statistics by Top End and Central Australia split, the proportion of isolates resistant to penicillin was 12.9% in the Top End and 1.2% in Central Australia. It is also worth noting that the culturing rate for the Top End region was 13.6% and that for Central Australia 30.2% in 2011.

Data on the source of infection was only collected on cases of PPNG in the current NT surveillance system. Of the 10 cases of PPNG recorded in the Top End region, only one acquired the infection locally (from an unknown person in Darwin) with all the others acquired overseas. All isolates resistant to penicillin were sensitive to Ceftriaxone.

Table C.2 Penicillin sensitivity for *N. Gonorrhoeae* isolates from the NT by region, 2011

Sensitivity result	Top End	%	Central Australia	%	Total	%
Fully sensitive	1	0.8%	4	1.2%	5	1.1%
Less sensitive	99	81.8%	336	98.0%	435	94.8%
CMRNG	5	4.1%	2	0.6%	7	1.5%
PPNG	10	8.3%	2	0.6%	12	2.6%
Total	**116**		**343**		**459**	

In Jan-Jun, 2012, 7 cases of PPNG were notified. Four of them were male and 3 were female. Three of these cases were diagnosed residents of Tennant Creek. This small outbreak has led to a change in the recommended treatment for genital gonorrhoea in this region (from oral penicillin to injectable Ceftriaxone). The other four cases were all diagnosed in Darwin. Except one who acquired the infection from an unknown local contact, all the others acquired the infection outside of the NT (either interstate or overseas). None of them reported having local contacts before being detected and treated. All were treated with antibiotics effective for the identified strains.

D. Readers' responses

The SHBBVU is very interested in readers' responses to this report. Please forward any comments or suggestions to:

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All data in this report are provisional and subject to future revision.

This report is downloadable in PDF format from the website of the Department of Health and Families:

http://www.health.nt.gov.au/Centre_for_Disease_Control/Publications/Sexual_Health_Surveillance_Updates/index.aspx

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