

Northern Territory AIDS/STD Program Surveillance Update

**Department of Health and Community Services, Vol. 3 No 1,
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This report presents quarterly statistics for all sexually transmissible infections (STIs) and blood borne viruses (BBVs) in the Northern Territory (NT) during the periods January to March 2002 and April to June 2002. Data for this report is sourced from the Northern Territory Notifiable Diseases Surveillance System (NTNDSS), the centralised database of NT wide notifications and the AIDS/STD Program's HIV and AIDS databases.

1. Aims of the report

The aim of the report is to provide up to date information that can be used by service providers to assess the current level of infection within their district. Regular reports seek to raise the awareness of all service providers about the high rates of preventable and largely, readily curable infections and assist clinicians to plan targeted interventions. In previous reports there has not been any data analysis. In this report we have highlighted gonorrhoea and chlamydia notifications and presented some analysis. Feedback from readers on this and other areas of interest is welcomed.

2. Format

The report is divided into bacterial sexually transmissible infections (gonorrhoea, chlamydia, syphilis and donovanosis) and trichomonas. The blood borne viruses hepatitis C and human immunodeficiency virus are presented separately. This publication of the report also presents a review of notification data for *Chlamydia trachomatis* and *Neisseria gonorrhoeae* over the eleven-year period 1991 to 2001.

3. Trends in gonorrhoea and chlamydia notifications

Background

C. trachomatis and *N. gonorrhoeae* are predominantly sexually transmitted pathogens that are currently notifiable in all States and Territories of Australia. Many of these infections, particularly in women, are difficult to diagnose clinically because they produce few, if any symptoms. This is one reason these bacterial STIs present significant challenges to public health programs. The Northern Territory (NT) has the highest rates of gonorrhoea and chlamydia in Australia and despite there being an affordable, well-tolerated treatment for uncomplicated infections with these organisms, rates in young men and women in both the Aboriginal and non-Aboriginal populations are increasing.

Method

Disease Control units are located in each district of the NT. These units are responsible for local disease surveillance and disease control activities within their jurisdiction. Pathology laboratories notify positive chlamydia and gonorrhoea results to the local Centre for Disease Control (CDC) and each regional centre then forwards notification data to the CDC in Darwin on a fortnightly basis. The data on the Northern Territory Notifiable Diseases Surveillance System (NTNDSS) was reviewed for notifications of gonorrhoea and chlamydia from 1991 to 2001.

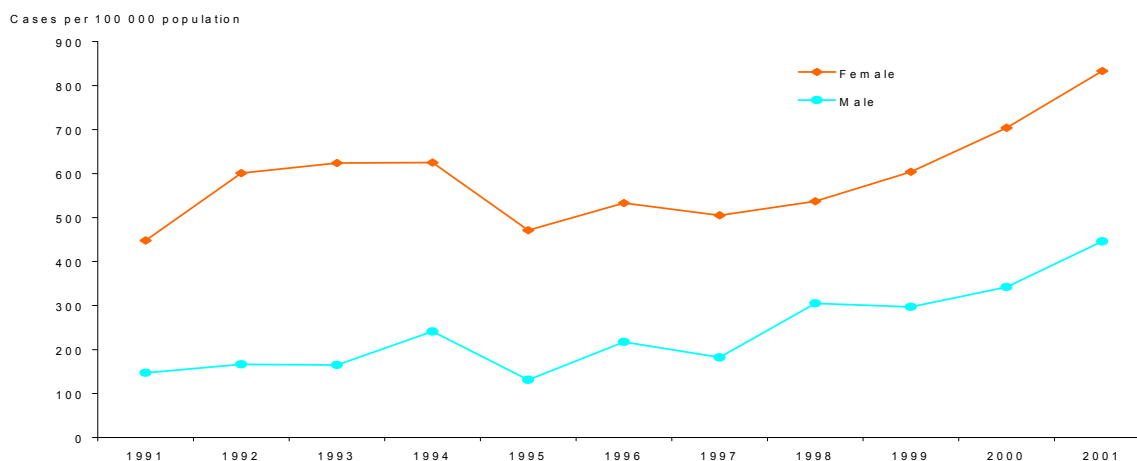
Results

Chlamydia trachomatis

There were 8 230 cases of chlamydia notified to the NTNDSS in the years 1991 to 2001 inclusive. Notification rates of genital chlamydia infections have been consistently rising with increases of 8 to 26 percent annually since 1997 and overall, have more than doubled since 1991. In 2001 notification rates among the Aboriginal population were more than 18 times the non-Aboriginal rate.

Gender was recorded for 99% of notifications made in the period 1991 to 2001. Sixty eight percent (5625) of the total cases were diagnosed in females. Notification trends by gender are illustrated below in figure 1.

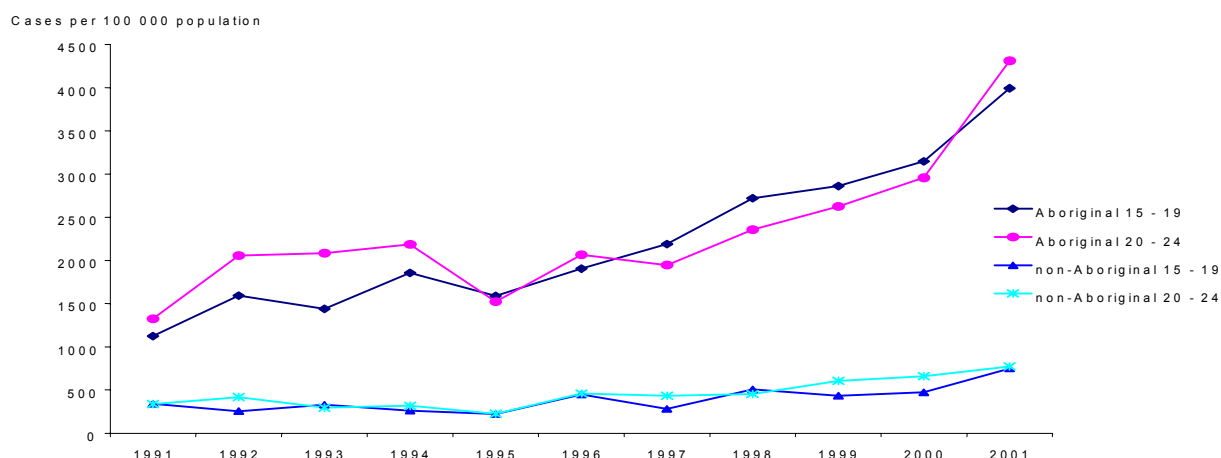
Figure 1. Rates of genital *C.trachomatis* notified in the NT by year and gender



Indigenous status was recorded for 78% (6400) and age details were available for 98% of chlamydia notifications in the period reviewed. In that same time frame, rates among the Aboriginal and non-Aboriginal population of the NT have increased by 211% and 141% respectively.

In the six years of 1997 to 2001 there have been consistent increases in chlamydia rates for all age groups between 15 and 34 years. Among the 15 to 19 year old non-Aboriginal group rates in 2001 were 166% higher than 1997 figures. This compares with an increase of 82% among young Aboriginal adults of the same age in the same time period (fig.2).

Figure 2. Chlamydia notification rates in the NT by age group, indigenous status and year



Neisseria gonorrhoeae

There were 10 080 notifications of gonorrhoea in the NT for the years 1991 to 2001. Gender was recorded for 99.5% of the total notifications, with males and females being more evenly represented in the figures compared with chlamydia notification trends. Females accounted for 47 percent (4758) of the total notifications with consistently higher overall rates following a dramatic increase in the 1995 – 1996 period (fig.3). Indigenous status was recorded for 8709 (86%) of the total gonorrhoea notifications in the period reviewed.

Analysis by five-year age group indicates rates of gonorrhoea are increasing in those groups between 10 and 44 years, with 15 to 24 years olds consistently having the highest rates. Among Aboriginal adolescents aged 15 to 19 notification rates were 5435 per 100 000 population in 2001, this represents a 75% increase from the 1997 figure. Among the non-Aboriginal population of the same age, gonorrhoea notifications increased 70% for the same time period (fig. 4).

Figure 3. Gonorrhoea notification rates in the NT by year and gender

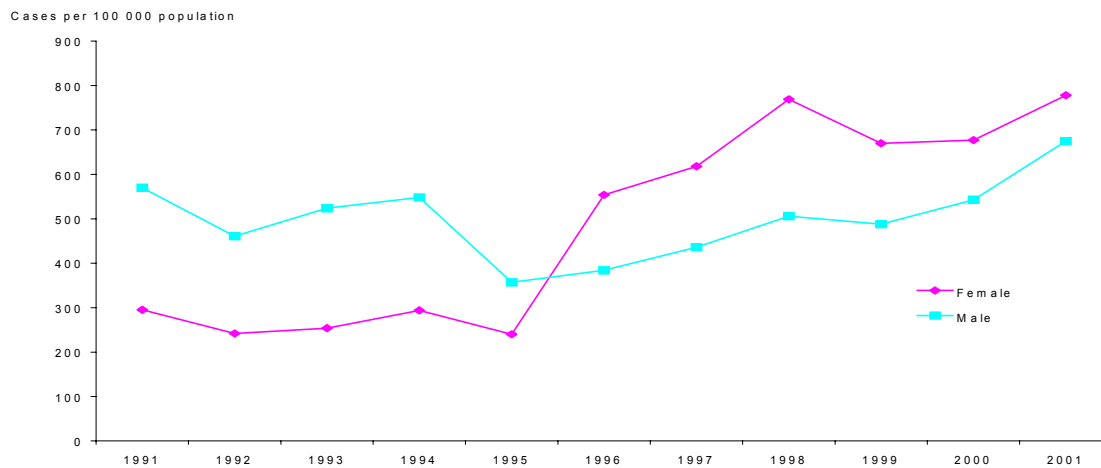
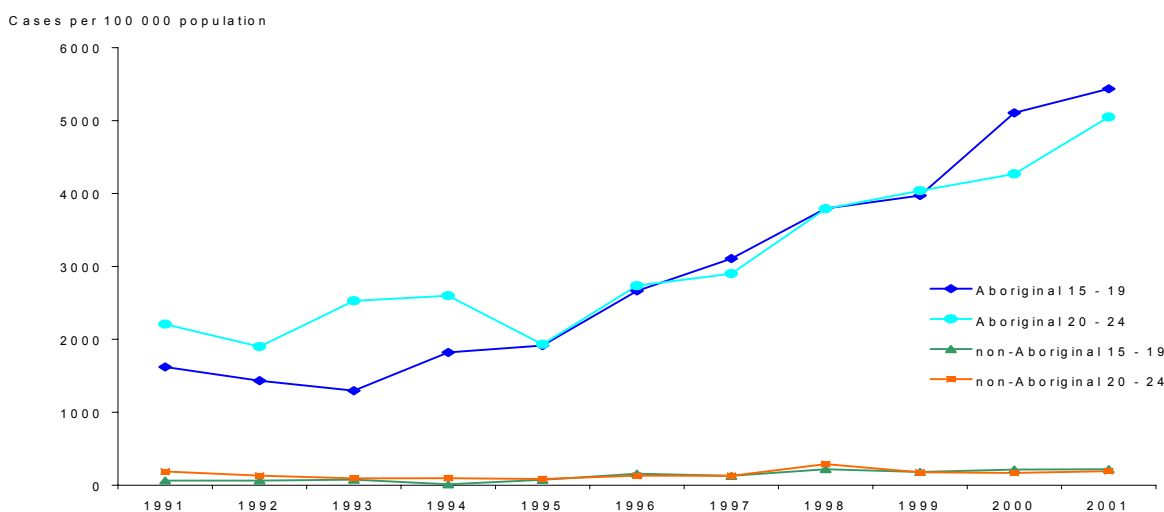


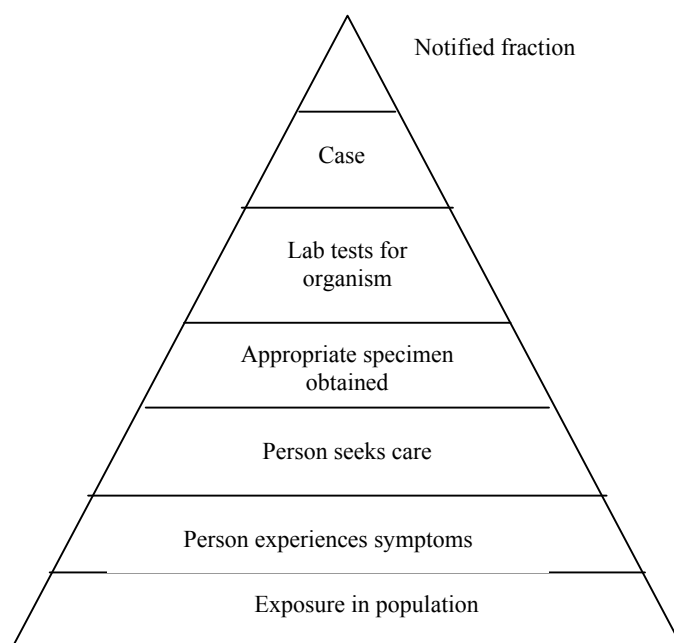
Figure 4. Gonorrhoea notification rates in the NT by age group, indigenous status and year



Discussion

The data presented here indicates that females in the NT have higher rates of both chlamydia and gonorrhoea than their male counterparts, with an increasing trend evident across both genders. Similarly, rates of infection for these bacterial STIs are much higher among the Aboriginal adolescents (15 to 19 years) and young adults aged 20 to 24 than the non-Aboriginal people in the same age groups. Notification rates of these infections are increasing in the NT population aged between 15 and 24 irrespective of Indigenous status.

There are specific surveillance issues that should be considered when analysing trends in notification rates of these bacterial STIs. A chain of events must take place for an infected person to come to be represented on any disease surveillance database. The communicable disease surveillance pyramid¹ presented below illustrates how each step is dependant on the one below it and each variable contributes to the final figure of cases notified.



The potential causative factors impacting on the spiralling rates of gonorrhoea and chlamydia in the NT can be considered within the framework of the surveillance pyramid. Increasing rates may be a reflection of a change in 'culture' leading to increased exposure in the population. For example, young adults may be engaging in more unprotected sexual activity due to a lack of knowledge of safer sex, lack of access to barrier methods of contraception, lack of negotiation skills or conscious or informed choice to engage in unsafe sex.

There is good evidence that a high proportion of bacterial infections with gonorrhoea and particularly chlamydia, are asymptomatic². While this proportion is not likely to have changed over the time period examined here, it certainly is a barrier to people seeking care. In the absence of comprehensive education, regular case finding and timely treatment in an endemic community, infection has the potential to circulate undetected. Even in the presence of symptoms, there are many reasons people will hesitate to seek assistance in sexual health matters including gender issues, cost of services, concerns over confidentiality, shame and physical access to the health centre³.

Since the introduction of the highly sensitive and less invasive PCR testing methods in 1998 for gonorrhoea and chlamydia, it is realistic to expect better case ascertainment. According to the data presented here, females and Aboriginal people have more infection than males or the

non-Aboriginal population of the NT. The striking gender imbalance may be reflective of more efficient male to female transmission of disease² or less active case finding among males. There is undoubtedly an extremely high burden of disease and if one population group is being tested more than another, it will be reflected in surveillance trends.

Finally, trends may be increasing due to a lack of appropriate and timely treatment of infection, leading to increased opportunity for spread of the bacteria. This could be influenced by delays in notification from laboratory to clinician, delays in following up the index case for treatment, inadequate treatment being administered or failure to appropriately treat contacts. All these steps are essential in curbing the spread of STIs and all have unique logistical challenges that can make the task more difficult.

Summary

People are less likely to seek care if they are not suffering significant symptoms and there is good evidence of many barriers to seeking help even when they do suspect something is wrong. Screening has been identified as one way of increasing the likelihood of detecting infections in individuals who may otherwise have not presented for testing. This approach can also help to overcome 'shame' many young people may feel in presenting to the health clinic. However, screening can not happen in isolation and timely treatment and follow-up of sexual partners is essential for this approach to have any impact on disease rates.

Eleven years of surveillance data indicates that rates of chlamydia and gonorrhoea are increasing in males, females, Aboriginal and non-Aboriginal people and are highest in those aged 15 to 24 years. There are a number of potential factors contributing to the trends observed and teasing out causation is difficult. Ultimately though, young, sexually active individuals are obviously at the greatest risk of sexually transmitted infections and these disease trends highlight a number of key issues:

- Chlamydia and gonorrhoea infections are **endemic** in the NT – treat symptomatic people syndromically (this reduces the potential for spread of an infection while waiting for results) and reduces the chance of complications developing.
- Sensitive, more socially acceptable tests are available for the detection of these infections and treatment of uncomplicated infection is cheap and well tolerated. **Think** STI screening when seeing young adults for health care services.
- Timely treatment and effective contact tracing are essential parts of a comprehensive sexual health service and have key roles in breaking the cycle of transmission.
- STIs facilitate the transmission of HIV⁴.
- The complications of bacterial STIs are not notifiable hence, rates of gonorrhoea and chlamydia are merely indicators of the *potential* impact long term sequelae such as infertility can have on a population with endemic rates of disease.

References

- 1 Adapted from CDC Website: (<http://www.cdc.gov/foodnet/Surveys.htm#whatpyr>)
- 2 Holmes K *et al* (1999), Sexually Transmitted Diseases Third Edition; McGraw-Hill
- 3 Burack R, Young teenagers' attitudes towards general practitioners and their provision of sexual health care British Journal of General Practice, 2000, 50:550 – 554
- 4 Laga M *et al* Condom promotion, sexually transmitted diseases treatment, and declining incidence of HIV-1 infection in female Zairian sex workers The Lancet, 1994, 344:246-248

4. Quarterly Notifications

4.1 Genital Chlamydia Infection

In the period January 1 to June 30, 2002, there were 696 notifications of chlamydia in the Northern Territory (table 1.1). This compares with a range of 396 to 611 for the same period 1999 to 2001 and represents consistent increases across all five health districts of the NT.

Females accounted for the majority of chlamydia notifications (64%) (fig.1.2) and cases were more likely to be notified in Aboriginal people (66%) (fig.1.3). Young adults aged 15 to 29 continue to be the most frequently represented age groups for chlamydia with infections in this age bracket accounting for 73% of all chlamydia notifications in the first half of 2002. This proportion has remained consistent for the past 3 years.

4.2 Gonorrhoea infections

A total of 821 notifications for gonorrhoea were made in the first two quarters of this year. This is a ten percent increase on figures for the final six months of 2001 and compares with a range of 568 to 692 for the same period 1999 to 2001. A slightly higher proportion of females (54%) than males were diagnosed with gonorrhoea infection (fig.1.2) and 79 percent of all cases for the six months to June were recorded in Aboriginal people.

As expected, the majority of gonorrhoea infections were notified in the age groups 15 to 29 years with rates peaking in those aged 15 to 19 (fig.1.5). There were 43 notifications made in minors aged 14 years or less which is on average, almost twice as many notifications as have been received for the same period in the years 1999 to 2001.

4.3 Syphilis

The total of 228 syphilis notifications for the first 2 quarters of 2002 compare with previous years figures for the same period of 197 in 1999 to 180 in 2001. Gender distribution of syphilis cases is relatively even with females accounting for 51% of notifications and males, 49%.

Darwin Urban district syphilis notification rates have increased significantly with the number of cases rising from 7 for January to June 2001 to 80 for the same period in 2002.

There were 10 cases of congenital syphilis notified in the period January to June 2002. These cases are reported separately and are not included in the syphilis statistics of this report.

4.4 Human Immunodeficiency Virus (HIV)

There were 5 new notifications of HIV in the first 6 months of this year. Four of these notifications are also newly acquired infections. All cases of HIV notified for this period were acquired through heterosexual contact and comprised 2 females and 3 males of non Aboriginal descent.

4.5 Acquired Immunodeficiency Syndrome (AIDS)

Two new cases of AIDS were notified in non Aboriginal males with one recorded heterosexual transmission and one homosexual. The AIDS defining illnesses cases presented with were oesophageal candidiasis and HIV wasting with pneumocystis carinii pneumonia.

5. Limitations to the report

This update does not provide data on:

- complications of sexually transmitted infections such as pelvic inflammatory disease, epididimo-orchitis or infertility. These are not notifiable.
- cases diagnosed as a proportion of the number of tests performed. It cannot be determined whether the epidemiology reported here reflects testing patterns or patterns of infection.

6. Consumer response

The NT AIDS/STD Program 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 Department of Health and Community Services website: <http://www.health.nt.gov.au/>

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1. Sexually transmissible infections (STIs)

Table 1.1 Gonorrhoea, chlamydia, syphilis and donovanosis rates in the Northern Territory, January-March 2002 and April-June 2002

NT Total	Gonorrhoea		Chlamydia		Syphilis		Donovanosis	
	Cases	Rate ¹	Cases	Rate ¹	Cases	Rate ¹	Cases	Rate ¹
<i>Quarter</i>								
Jan-Mar 2002	405	802.0	303	600.0	89	176.2	5	9.9
Apr-Jun 2002	416	823.8	393	778.3	139	275.3	2	3.9
Jan - June 2002	821	812.9	696	689.1	228	225.8	7	6.9

¹ Cases per 100,000 population

Figure 1.1 Gonorrhoea, chlamydia, syphilis and donovanosis rates in the Northern Territory, January-June 2002

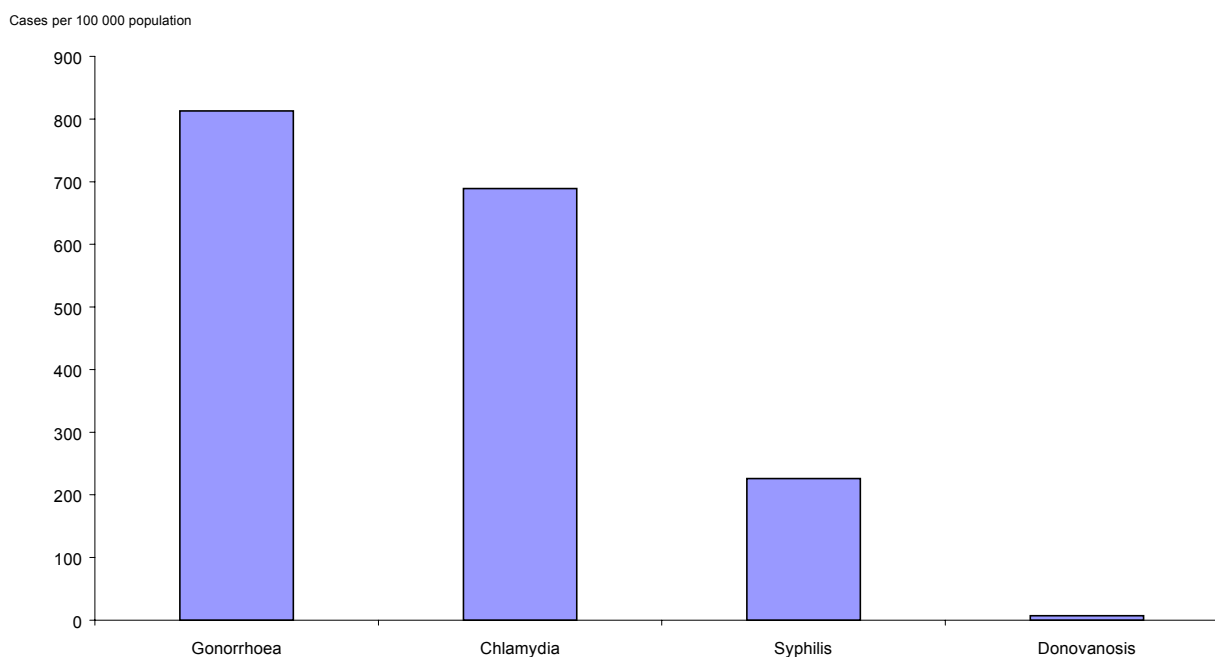


Table 1.2 Gonorrhoea, chlamydia, syphilis and donovanosis rates in the Northern Territory by gender, January-March 2002 and April-June 2002

Gender	Gonorrhoea		Chlamydia		Syphilis		Donovanosis	
	Cases	Rate ¹	Cases	Rate ¹	Cases	Rate ¹	Cases	Rate ¹
Males								
Jan-Mar 2002	200	755.3	106	400.3	36	135.9	2	7.5
Apr-Jun 2002	180	679.8	145	547.6	75	283.3	0	0.0
Females								
Jan-Mar 2002	205	853.5	197	820.2	53	220.7	3	12.5
Apr-Jun 2002	235	978.4	247	1028.4	64	266.5	2	8.3
Unknown								
Apr-Jun 2002	1		1					

¹ Cases per 100,000 population

Figure 1.2 Gonorrhoea, chlamydia, syphilis and donovanosis rates in the Northern Territory by gender, January-June 2002

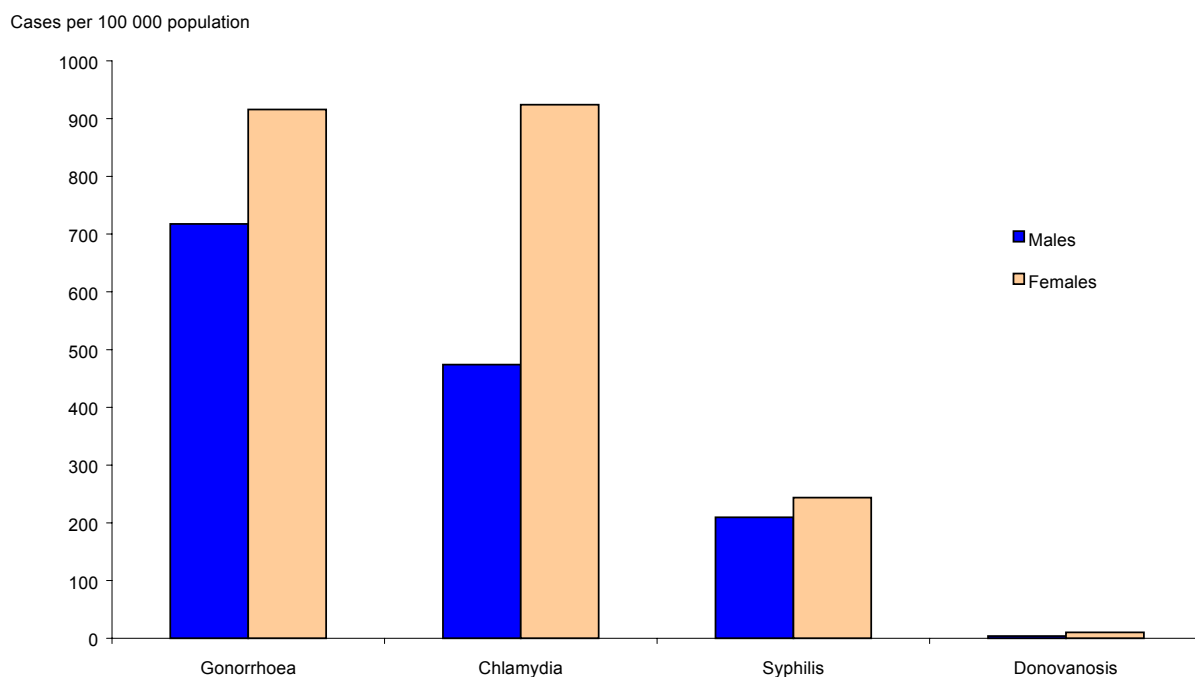


Table 1.3 Gonorrhoea, chlamydia, syphilis and donovanosis rates in the Northern Territory by Indigenous status, January-March 2002 and April-June 2002

Indigenous Status	Gonorrhoea		Chlamydia		Syphilis		Donovanosis	
	Cases	Rate ¹	Cases	Rate ¹	Cases	Rate ¹	Cases	Rate ¹
<i>Aboriginal</i>								
Jan-Mar 2002	319	2229.4	202	1411.7	75	524.1	5	34.9
Apr-Jun 2002	327	2285.3	256	1789.1	108	754.8	2	13.9
<i>non-Aboriginal</i>								
Jan-Mar 2002	48	132.6	79	218.3	7	19.3	0	0.0
Apr-Jun 2002	56	154.7	92	254.2	13	35.9	0	0.0
<i>Unknown I/S</i>								
Jan-Mar 2002	38		22		7		0	
Apr-Jun 2002	33		45		18		0	

¹ Cases per 100,000 population

Figure 1.3 Gonorrhoea, chlamydia, syphilis and donovanosis rates in the Northern Territory by Indigenous status, January-June 2002

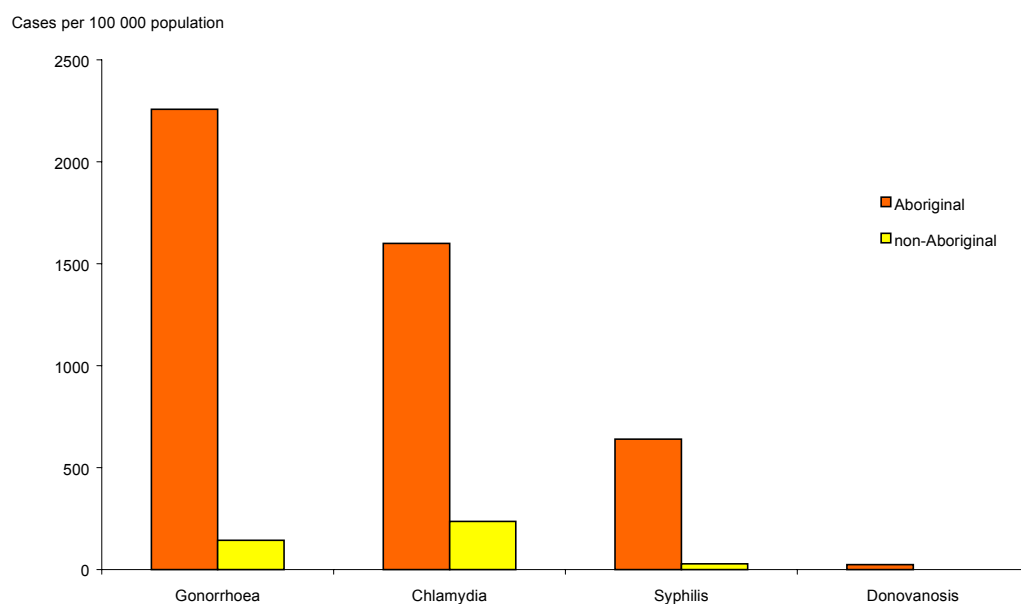


Table 1.4 Gonorrhoea, chlamydia, syphilis and donovanosis rates in the Northern Territory by district, January-March 2002 and April-June 2002

District	Gonorrhoea		Chlamydia		Syphilis		Donovanosis	
	Cases	Rate ¹	Cases	Rate ¹	Cases	Rate ¹	Cases	Rate ¹
<i>Darwin Urban</i>								
Jan-Mar 2002	64	235.1	108	396.8	6	22	0	0.0
Apr-Jun 2002	69	253.5	99	363.7	10	36.7	0	0.0
<i>Darwin Rural</i>								
Jan-Mar 2002	46	1451.6	23	725.8	28	883.6	0	0.0
Apr-Jun 2002	56	1767.1	36	1136.0	52	1640.9	1	31.6
<i>Katherine</i>								
Jan-Mar 2002	57	1209.2	48	1018.2	16	339.4	3	63.6
Apr-Jun 2002	43	912.2	40	848.5	4	84.9	0	0.0
<i>East Arnhem</i>								
Jan-Mar 2002	33	940.7	25	712.7	6	171.0	0	0.0
Apr-Jun 2002	22	627.1	26	741.2	3	114.0	0	0.0
<i>Barkly</i>								
Jan-Mar 2002	14	771.3	9	495.9	1	55.1	1	55.1
Apr-Jun 2002	13	716.3	8	440.7	2	110.2	0	0.0
<i>Alice Springs</i>								
Jan-Mar 2002	191	1897.1	90	893.9	32	317.8	1	9.9
Apr-Jun 2002	213	2115.6	184	1827.6	68	675.4	1	9.9

¹ Cases per 100,000 population

Figure 1.4 Gonorrhoea, chlamydia, syphilis and donovanosis rates in the Northern Territory by district, January-June 2002

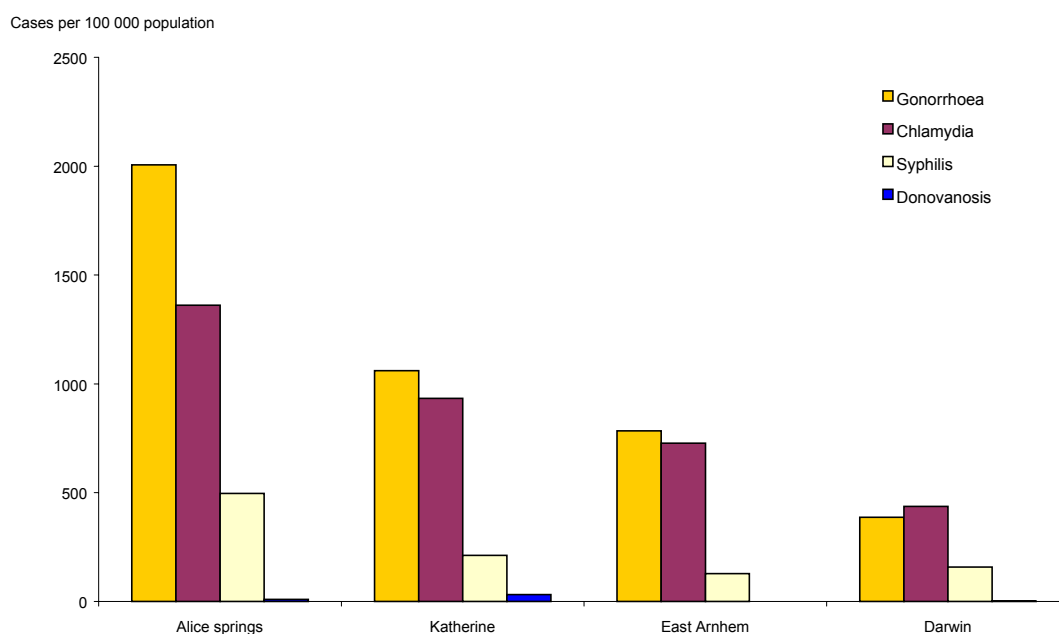
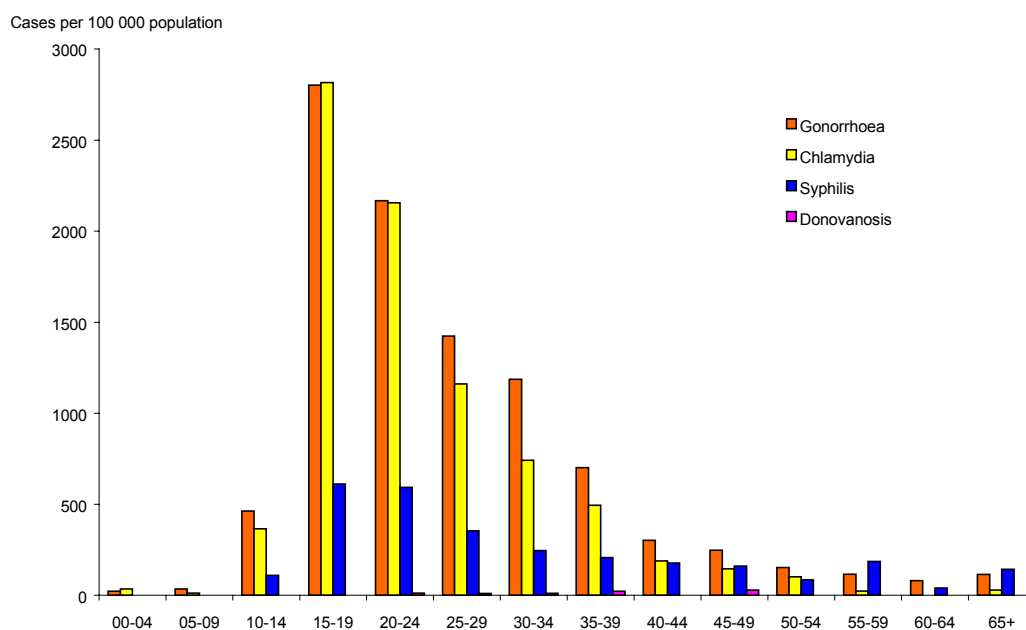


Table 1.5 Gonorrhoea, chlamydia, syphilis and donovanosis rates in the Northern Territory by five-year age group, January-June 2002

Age group	Gonorrhoea		Chlamydia		Syphilis		Donovanosis	
	Cases	Rate ¹	Cases	Rate ¹	Cases	Rate ¹	Cases	Rate ¹
<i>Jan-June 2002</i>								
00-04	2	22.8	3	34.2	0	0.0	0	0.0
05-09	3	34.6	1	11.5	0	0.0	0	0.0
10-14	38	463.0	30	365.5	9	109.7	0	0.0
15-19	211	2802.1	212	2815.4	46	610.9	0	0.0
20-24	183	2167.5	182	2155.6	50	592.2	1	11.8
25-29	141	1423.1	115	1160.7	35	353.2	1	10.1
30-34	116	1186.9	74	742.0	24	245.6	1	10.2
35-39	61	700.6	43	493.9	18	206.7	2	22.9
40-44	24	302.4	15	188.9	14	176.4	0	0.0
45-49	17	247.8	10	145.8	11	160.3	2	29.2
50-54	9	152.6	6	101.7	5	84.8	0	0.0
55-59	5	116.0	1	23.2	8	185.6	0	0.0
60-64	2	80.2	0	0.0	1	40.1	0	0.0
65+	4	114.4	1	28.6	5	143.0	0	0.0
Unknown	5		3		2		0	
Total	821	812.9	696	689.1	228	225.8	7	6.9

¹ Cases per 100,000 population

Figure 1.5 Gonorrhoea, chlamydia, syphilis and donovanosis rates in the Northern Territory by five-year age group, January-June 2002



2. Trichomoniasis

Figure 2.1 Gonorrhoea, chlamydia and trichomoniasis rates in the Northern Territory by district, January-June 2002

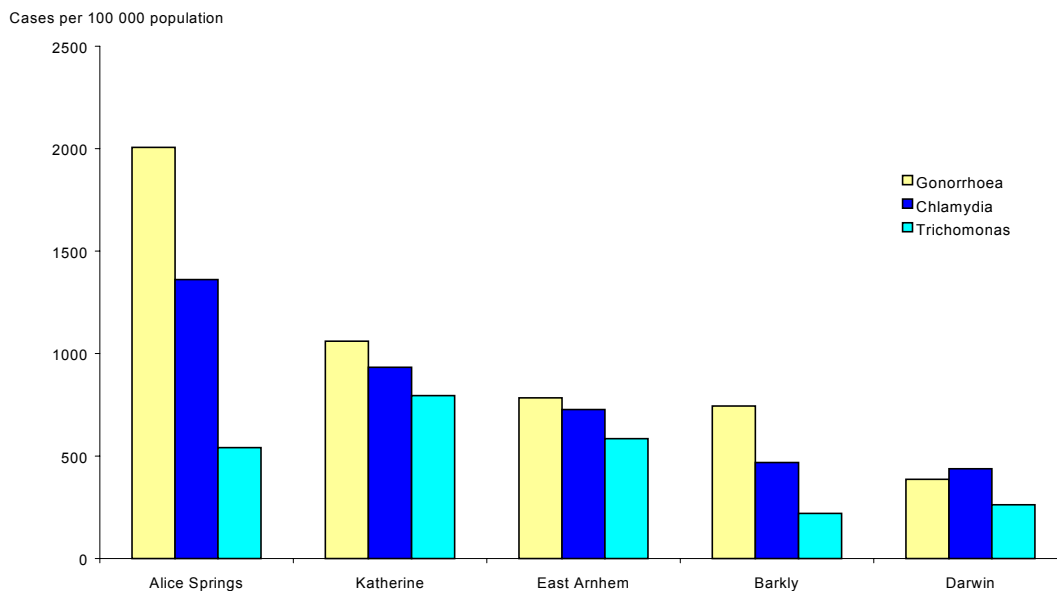
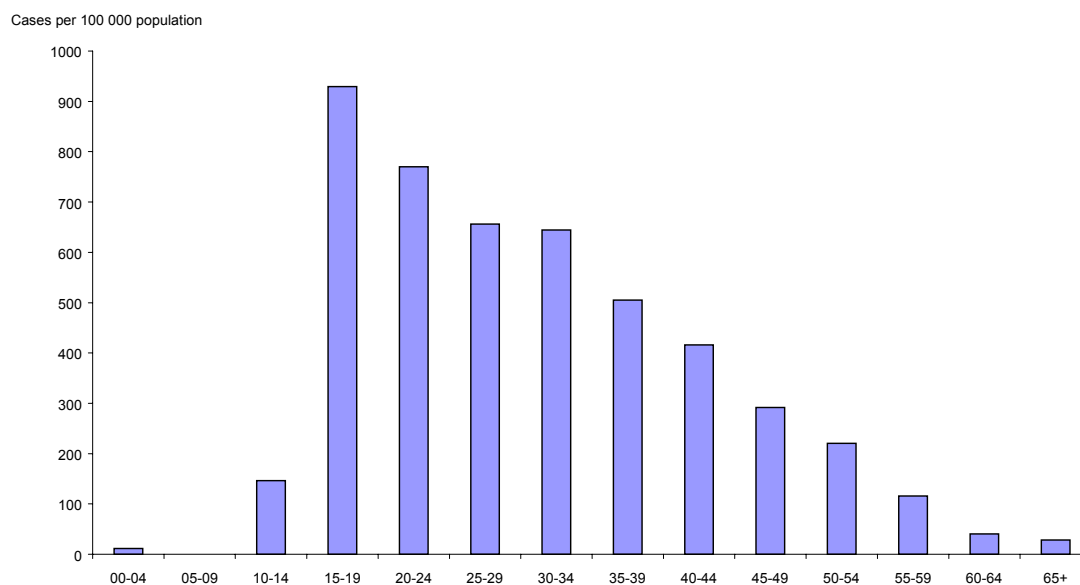


Figure 2.2 Trichomoniasis rates in the Northern Territory by five-year age group, January-June 2002



3. Hepatitis C

Figure 3.1 Percentage of hepatitis C cases in the Northern Territory by gender, January-June 2002

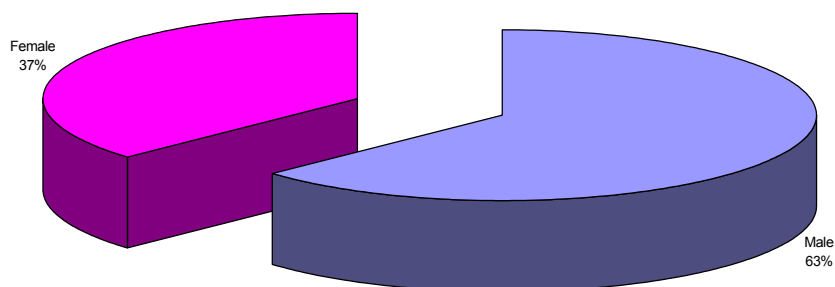


Figure 3.2 Percentage of hepatitis C cases in the Northern Territory by Indigenous status, January-June 2002

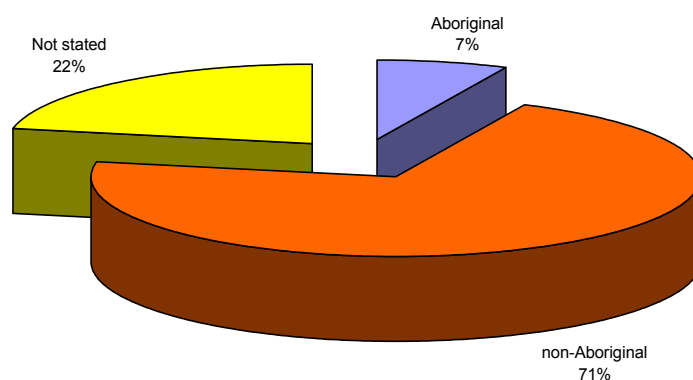


Table 3.1 Hepatitis C rates in the Northern Territory by district, January-March 2002 and April-June 2002

Gender	Darwin		Katherine		East Arnhem		Barkly		Alice Springs	
	Cases	Rate ¹	Cases	Rate ¹	Cases	Rate ¹	Cases	Rate ¹	Cases	Rate ¹
<i>Jan-Mar 2002</i>										
Male	22	137.6	3	116.9	1	54.4	1	103.9	3	58.5
Female	12	83.3	0		0	0.0	0	0.0	2	40.5
Unknown										
Total	34		3		1		1		5	
<i>Apr-Jun 2002</i>										
Male	22	137.6	1	38.9	0	0.0	1	103.9	1	19.5
Female	15	104.2	1	46.5	1	59.8	0	0.0	1	20.2
Unknown										
Total	37		2		1		1		2	
Jan - June 2002	71	116.8	5	53.0	2	28.5	2	55.1	7	34.8

1 Cases per 100,000 population

Figure 3.3 Hepatitis C rates in the Northern Territory by district, January-June 2002

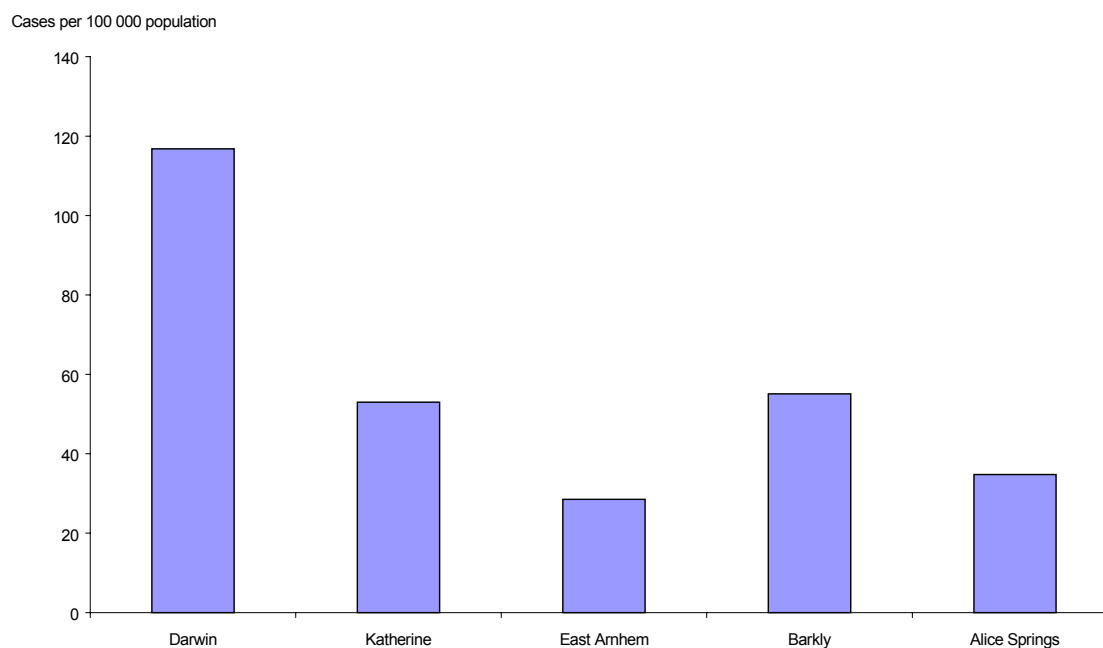
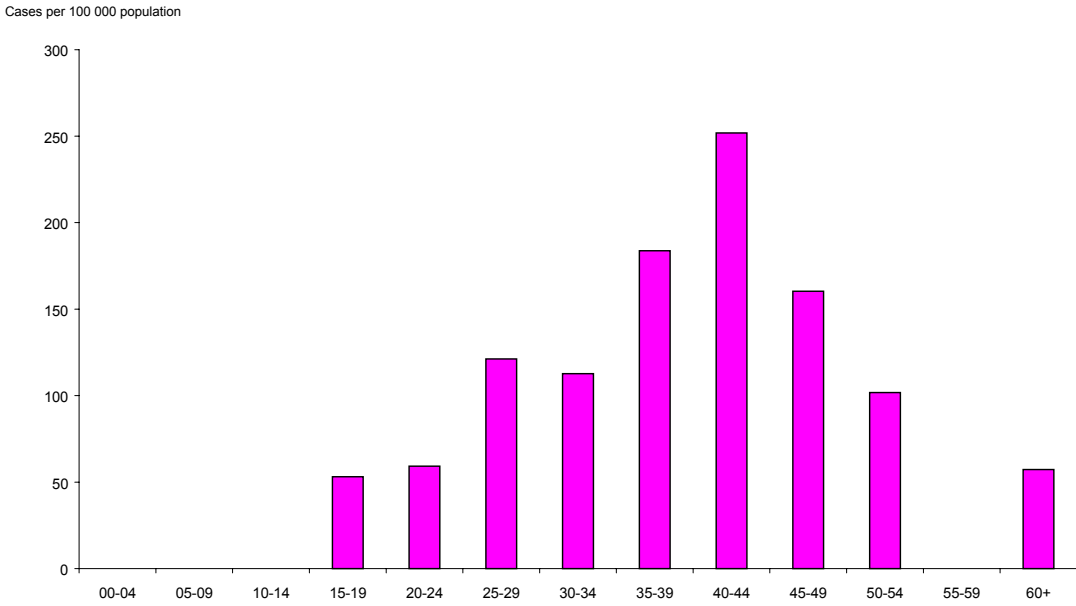


Table 3.2 Hepatitis C rates in the Northern Territory by five-year age group, January-June 2002

Hepatitis C		
Age Group	Cases	Rate ¹
<i>Jan-June 2002</i>		
00-04	0	0.0
05-09	0	0.0
10-14	0	0.0
15-19	4	53.1
20-24	5	59.2
25-29	12	121.2
30-34	11	112.6
35-39	16	183.8
40-44	20	251.9
45-49	11	160.3
50-54	6	101.7
55-59	0	0.0
60+	2	57.2
Unknown	0	
Total	87	86.1

¹ Cases per 100,000 population

Figure 3.4 Hepatitis C rates in the Northern Territory by five-year age group, January-June 2002



4. Human Immunodeficiency Virus (HIV)

Table 4.1 Number of cases of HIV* during the first two quarters of 2002 by gender, Indigenous status, age group and mode of transmission

Quarter	Gender	Indigenous status	Age group	Mode of transmission
<i>Jan-Mar 2002</i>	Female	non Aboriginal	20-24	Heterosexual transmission
	Male	non Aboriginal	30-34	Heterosexual transmission
<i>Apr-Jun 2002</i>	Female	non Aboriginal	25-29	Heterosexual transmission
	Male	non Aboriginal	40-44	Heterosexual transmission
	Male	non Aboriginal	25-29	Heterosexual transmission
<i>Jan-Jun 2002 Total = 5 cases</i>				

* Cases in NT residents

Table 4.2 Annual number of cases of HIV by age group and gender, 1990–2002

Age Group	Female	Male	Total
<i>00-12</i>	0	1	1
<i>13-19</i>	0	0	0
<i>20-29</i>	6	12	18
<i>30-39</i>	5	35	40
<i>40-49</i>	3	16	19
<i>50-59</i>	1	10	11
<i>60+</i>	0	2	2
Total	15	76	91

Figure 4.1 Number of cases of AIDS during the first two quarters of 2002 by gender, indigenous status, age group and mode of transmission

Quarter	Gender	Indigenous status	Age group	AIDS defining illness
<i>Jan-Mar 2002</i>	Male	non Aboriginal	40-44	Oesophageal candidiasis
	Male	non Aboriginal	35-39	PCP / HIV wasting
<i>Jan-Jun 2002 Total = 2 cases</i>				