

HEPATITIS C IN NSW, 1991–1999

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Hepatitis C is a bloodborne virus that may present as an acute illness with jaundice, but more commonly passes unnoticed. Most people infected are symptomless initially, but 65–85 per cent will progress to chronic HCV infection (persistent viraemia) and 15–20 per cent will develop long-term liver damage.¹ Liver cancer has been reported in approximately 1–4 per cent of cases, and cirrhosis after an average of 25–30 years of infection.² Over the past decade hepatitis C virus (HCV) infections have been identified as one of the common important infections, with an estimated 170 million persons infected worldwide.³

Hepatitis C was first identified in 1989, and a serological (antibody) assay to detect evidence of infection became available in 1990. There have been several generations of antibody tests available since testing began in 1990, and it is likely that in the earlier years of testing there were higher rates of false positives.

Under the NSW Public Health Act, laboratories have been required to notify diagnoses of HCV since 1991. In addition, doctors and hospital managers are required to notify diagnoses of acute viral hepatitis. Here we

present an analysis of HCV reports among NSW residents for the nine year period 1990–1999.

METHODS

At each Public Health Unit, staff enter details of HCV notified cases including their age, sex, postcode, diagnosis, and date of specimen collection, onto the confidential statewide Notifiable Diseases Database (NDD). We analysed these data to determine the characteristics of persons reported with an acute and other hepatitis C infection. Incidence rates were calculated using the estimated 1997 mid-year population from the Australian Bureau of Statistics.

RESULTS

Over the period 1991–1999, over 55,000 people were reported with markers of HCV infection. There was a substantial increase in the number of people notified with the infection from 852 in 1991 to 7701 in 1999 (Table 1). Notifications peaked in 1994 (8027) and since have plateaued with 7000 and 8000 cases per year.

The 25–34 year age group had the highest average annual notification rate (243.1/100 000) for the period followed by the 35–44 year age group (204.5/100 000) (Table 2). There has been little variation in the number of notifications from year to year among these age groups, particularly since 1995. In contrast,

TABLE 1

NOTIFICATIONS OF ACUTE HEPATITIS C INFECTIONS AND TOTAL NOTIFICATIONS AND RATES OF HEPATITIS C BY YEAR OF DIAGNOSIS, NSW, 1991–1999

	<i>Hepatitis C Acute N (%)*</i>	<i>Hepatitis C Total notifications N (%)</i>	<i>Rate[#]</i>
1991	22 (2.6)	852 (1.5)	13.6
1992	28 (0.7)	3997 (7.2)	63.7
1993	23 (0.4)	6036 (10.9)	96.2
1994	22 (0.3)	8027 (14.5)	128.0
1995	33 (0.5)	7026 (12.7)	112.0
1996	19 (0.3)	7134 (12.9)	113.7
1997	19 (0.3)	7077 (12.8)	112.8
1998	101 (1.4)	7380 (13.4)	117.7
1999	81 (1.1)	7701 (13.9)	122.8
TOTAL	348 (0.6)	55230 (100.0)	97.8

* Percentage of total HCV notifications per year

Average annual notification rate per 100,000 based on 1997 population estimates

TABLE 2**CHARACTERISTICS OF PERSONS NOTIFIED WITH ACUTE HEPATITIS C INFECTIONS AND TOTAL NOTIFICATIONS AND RATES OF HEPATITIS C, NSW, 1991–1999**

	<i>Hepatitis C Acute N (%)</i> *	<i>Hepatitis C Total notifications N (%)</i>	<i>Rate</i> [#]
Sex			
Male	223 (0.7)	34444 (62.4)	122.9
Female	122 (0.6)	20137 (37.6)	70.9
Age (years)			
0–9	4 (0.5)	825 (1.5)	10.4
10–14	2 (1.8)	113 (0.2)	2.9
15–19	33 (1.7)	1898 (3.4)	49.2
20–24	65 (1.1)	5956 (10.7)	146.3
25–34	140 (0.7)	21181 (38.4)	243.1
35–44	73 (0.4)	17760 (32.2)	204.5
45–54	19 (0.5)	3874 (7.0)	53.6
55–64	6 (0.4)	1558 (2.8)	31.8
65+	6 (0.3)	2036 (3.6)	28.3
TOTAL	348 (0.6)	55230 (100.0)	97.8
Table excludes missing or other			
* Percentage of total HCV notifications per row			
# Average annual notification rate per 100,000 based on 1997 population estimates			
+ see Table 1 for complete heading			

notification in the 15–19 year age group has steadily increased since 1995: 1995 (170), 1996 (229), 1997 (320), 1998 (372), and 1999 (433).

Northern Rivers Area Health Service had the highest average annual rate (170.4/100 000) followed by Central Sydney (153.5/100 000) and South Eastern Sydney (136.2/100 000) (Table 3). Males were more likely to be reported with hepatitis C than females (ratio 1.7 to 1.0) with an average annual rate of 122.9/100 000 in males compared to 70.9/100 000 in females. Aboriginality was poorly reported and was missing in 88 per cent of notifications.

Laboratory notifications accounted for over 99 per cent of notifications. The majority of HCV notifications were unspecified and these notifications provide insufficient information to determine whether the infection was recently acquired. Very few cases were notified as acute HCV (<1 per cent).

DISCUSSION

Hepatitis C is the most commonly reported notifiable infection in New South Wales and the rest of Australia.⁴ Over 140,000 persons have been notified in Australia since antibody testing became available in 1990, over a third of whom were NSW residents.² It has been estimated that the total number of HCV notifications represented only 60–70 per cent of the people infected and a large number remain undiagnosed.⁴

The number of HCV infections notified annually in NSW has plateaued in recent years. The high rate of notifications in 1994 may represent changes in reporting rather than a true rise in infections, as the test kits became available and health care workers and patients became more aware of the condition. Also, because antibody tests used in the early 1990s had a relatively high false positive rate, data from earlier years may include people who did not have HCV.

HCV is predominantly transmitted by the parenteral route, and mainly from injecting drug use.⁵ The increase in HCV notifications in the 15–19 year age group is consistent with an increasing trend in hepatitis C prevalence observed among injecting drug users. Prevalence surveys indicate that infection rates among injecting drug users remain high and are highest among those who have injected for more than three years. However, there is also a gradual increase in transmission rates in those who have injected for less than three years.⁴ Of additional concern is that the percentage of injecting drug users seen at needle and syringe exchange programs who report sharing of injecting drug equipment increased from 14 per cent in 1997 to 23 per cent in 1999.⁴

Newly-acquired HCV infections have been poorly reported to date in NSW. In 2000, however, NSW Health introduced enhanced surveillance through local public health units to determine newly-acquired infections in

TABLE 3**TOTAL NOTIFICATIONS AND CRUDE RATES OF HEPATITIS C BY AREA HEALTH SERVICE, NSW, 1991–1999**

Area Health Service	Total Hepatitis C	Rate [#]
Central Sydney	6637	153.5
Northern Sydney	3818	55.8
Western Sydney	6610	112.2
Wentworth	1973	71.9
South Western Sydney	6761	100.9
Central Coast	2057	82.8
Hunter	3708	78.2
Illawarra	2435	80.0
South Eastern Sydney	9221	136.2
Northern Rivers	3859	170.4
Mid North Coast	1946	86.0
New England	930	58.3
Macquarie	393	42.4
Mid Western	1573	105.3
Far West	168	37.8
Greater Murray	1211	52.5
Southern	1415	87.4
# Average annual crude rate per 100,000 based on 1997 population estimates		

the previous 24 months. In addition, enhanced surveillance is collecting information describing potential risk factors and people who have recently been infected. Given the clinical profile of the illness and the associated stigma of specific risk factors such as injecting drug use, HCV poses a particular challenge in disease surveillance. The need to improve the surveillance of HCV has been highlighted at both state and national levels.^{6,7}

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