

3. Blood-borne viruses

Surveillance objectives

The objectives of blood-borne virus (BBV) infection surveillance are to:

- Monitor the epidemiology of blood-borne virus infections in terms of time, person and place, and risk factors for newly acquired infections;
- Communicate the patterns, risks and trends about blood-borne virus infection to the public, government and other key stakeholders;
- Inform the development of policy, service provision and timely, appropriate and targeted prevention strategies and interventions;
- Measure the impact of interventions;
- Provide appropriate information to cases, through their treating doctors, to reduce the risk of further transmission;
- Identify and investigate clusters of infection and cases potentially associated with novel and nosocomial transmission modes to reduce risk of further transmission.

Hepatitis B – newly acquired

Summary of notifications

The department received notifications for 109 cases of newly acquired hepatitis B in 2006, an increase of 25 per cent on the 87 cases notified in 2005. Despite this, the number of notified cases and the notification rate in 2006 were still lower than those in 2004 and the two preceding years (figure 2).

Of the newly acquired cases, 71 (65 per cent) were males and 38 (35 per cent) were females. Cases ranged in age from nine to 83 years with median ages of 33 years in males and 36 years in females.

The highest numbers of notified cases were in the 25–29 years and 35–39 years age groups for males and females respectively; combined sex notification rates were highest in the 25–29 years age group (figure 3).

Figure 2: Notified cases and notification rates of newly acquired hepatitis B, Victoria, 2002–2006

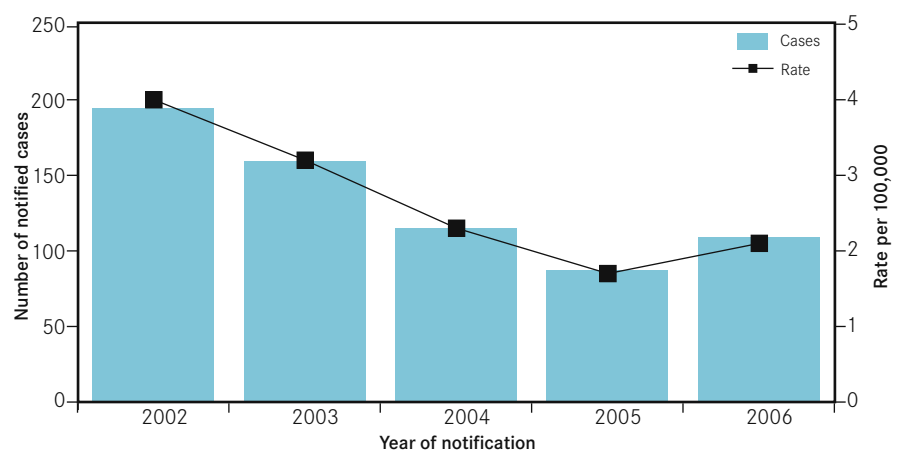


Figure 3: Notified cases and notification rates of newly acquired hepatitis B by age group and sex, Victoria, 2006

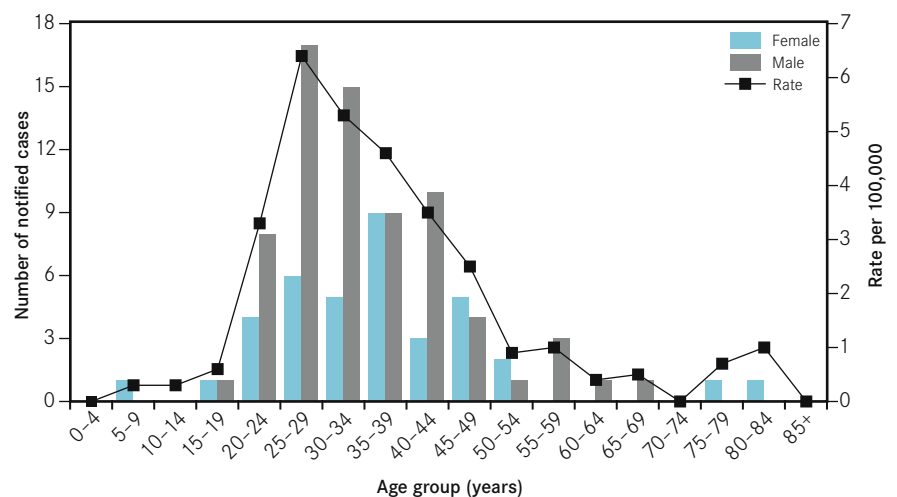
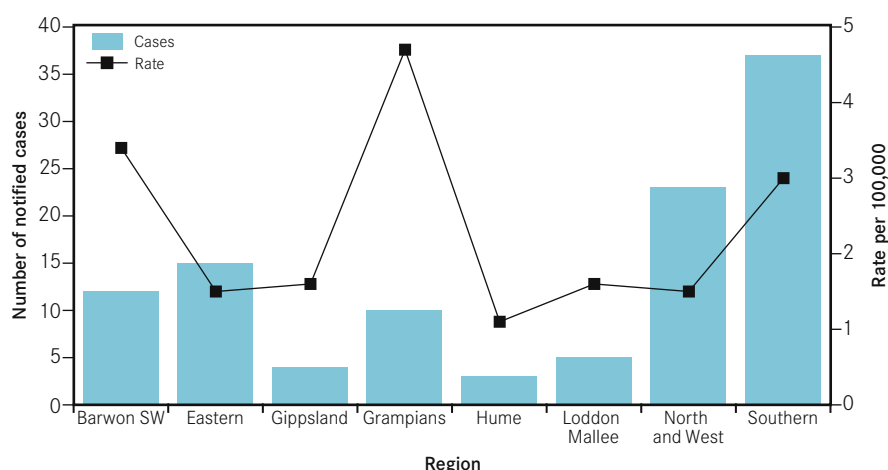


Figure 4: Notified cases and notification rates of newly acquired hepatitis B by region, Victoria, 2006



Sixty-nine per cent of the newly acquired hepatitis B cases were residents of metropolitan regions with the largest number of cases from Southern Metropolitan Region. The notification rate was highest for Grampians Region (figure 4).

Nearly 70 per cent of the newly acquired cases (n=75) were Australian born, of which three cases were reported as being of Aboriginal and/or Torres Strait Islander origin. The number of cases reported as being Australian born increased from 41 in 2005, which may be due to the revision of the enhanced surveillance form and improved data collection and quality.

More than half of the cases were tested for hepatitis B because they presented with signs and symptoms of acute hepatitis (table 2). Co-infection with hepatitis C was reported for 39 cases (36 per cent).

Table 2: Notified cases of newly acquired hepatitis B by reported reasons for testing, Victoria, 2006

Reason for testing*	Cases (per cent)
Signs and symptoms of acute hepatitis	56 (51)
Elevated liver function tests	30 (28)
Drug and alcohol screening	6 (6)
Prison screening	5 (5)
Other medical problem	4 (4)
Requested by patient	4 (4)
STI screening	4 (4)
Asymptomatic sexual contact	2 (2)
Source of occupational exposure	1 (1)
Refugee health assessment	1 (1)
Medical assessment	1 (1)
Routine antenatal screening	1 (1)
Other	15 (14)

* Multiple reasons reported.

Table 3: Notified cases of newly acquired hepatitis B cases by reported risk factors and year, Victoria, 2001–2006

Risk factor*	Cases (per cent)				
	2002	2003	2004	2005	2006
Injecting drug use	88 (46)	78 (49)	60 (52)	40 (46)	63 (58)
Hepatitis B positive sexual contact	77 (40)	69 (43)	53 (46)	52 (60)	26 (24)
Other	22 (11)	10 (6)	2 (2)	10 (11)	25 (23)

* Multiple risk factors reported; cases with unknown or no reported risk factors excluded.

Risk factors

Consistent with recent years injecting drug use and sexual transmission were the main risk factors identified for 63 cases (58 per cent) and 26 cases (24 per cent) respectively (table 3).

Outbreaks and other investigations

No outbreaks were identified and there were no cases notified that required a blood-borne investigation.

Comment

In July 2006, the CDCU implemented a revised newly acquired hepatitis B enhanced surveillance data collection form for notifying medical practitioners. This change to surveillance practice may – at least in part – explain the increase in the number of cases reported as born in Australia in 2006 compared to 2005.

Following the introduction of the birth dose and the Year 7 hepatitis B vaccination program in 2000, the number of notified cases of acute hepatitis B has been in general decline. A key challenge in continuing the decline will be vaccination of injecting drug users, a group that is difficult to target for health interventions.

Hepatitis B – unspecified

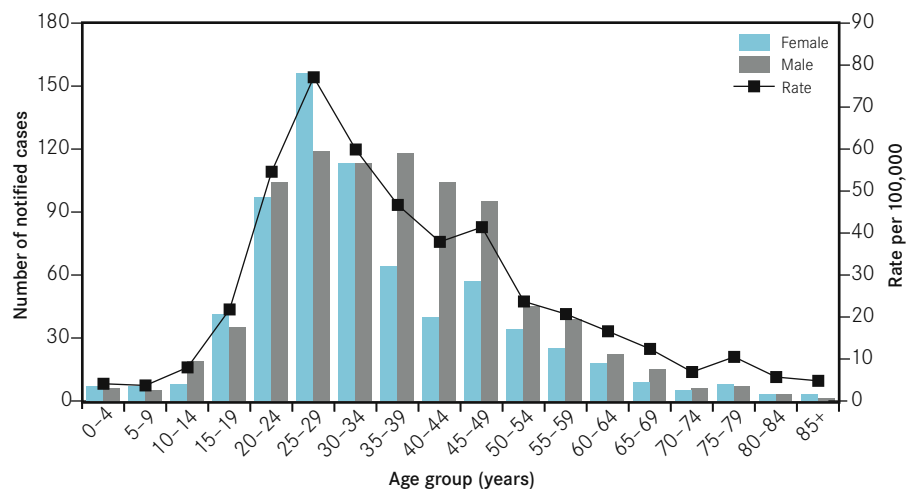
Summary of notifications

There were 1,576 cases of unspecified hepatitis B notified in 2006 in 856 males (54 per cent) and 696 females (44 per cent); sex was not reported for 24 cases. The number of cases and notification rates were highest for those aged 25–29 years (figure 5).

Risk factors

Risk factor data for cases of unspecified hepatitis B were not routinely collected.

Figure 5: Notified cases and notification rates of unspecified hepatitis B by age group and sex, Victoria, 2006



Hepatitis C – newly acquired

Summary of notifications

There were 208 cases of newly acquired hepatitis C notified in 2006. These comprised eight per cent of all hepatitis C infections notified for the year and represented a 20 per cent increase on the 174 cases notified in 2005.

Of the 208 newly acquired cases, 131 (63 per cent) were males (age range: seven months to 49 years) and 77 (37 per cent) were females (age range: 1–47 years). The median age was 27 years for both females and males. The numbers of cases for both sexes and the combined sex notification rate was highest in the 25–29 year age group (figure 6).

Sixty-eight per cent of the newly acquired hepatitis C cases were residents of metropolitan regions with the largest number of cases from North and West Metropolitan Region. The notification rate was highest for Grampians Region (figure 7).

Nearly 80 per cent of the newly acquired cases (n=165) were Australian born. Indigenous status was reported for 194 cases (93 per cent), of which 11 were reported as being of Aboriginal and/or Torres Strait Islander origin. Fifteen cases were reported to be infected with hepatitis B at the same time or prior to the hepatitis C diagnosis.

Fifty-five per cent of the newly acquired cases (n=118) were determined by demonstrated seroconversion to hepatitis C virus within the preceding 24 months. The remaining 90 cases were classified as newly acquired based on clinical evidence.

Having a history of alcohol consumption and injecting drug use was reported as the main reason for testing for 69 cases (33 per cent). Other commonly reported reasons included screened upon patient request, having elevated liver function tests (LFTs), presenting with symptomatic hepatitis and imprisonment (table 4).

Risk factors

All cases of newly acquired hepatitis C were followed up with the notifying doctor to collect risk factor information. Injecting drug use continued to be the highest risk factor – reported for 187 cases (90 per cent) – although only 22 per cent of these reported injecting drug use in the previous two years. Risk factors reported for the other 21 cases are shown in table 5.

Figure 6: Notified cases and notification rates of newly acquired hepatitis C by age group and sex, Victoria, 2006

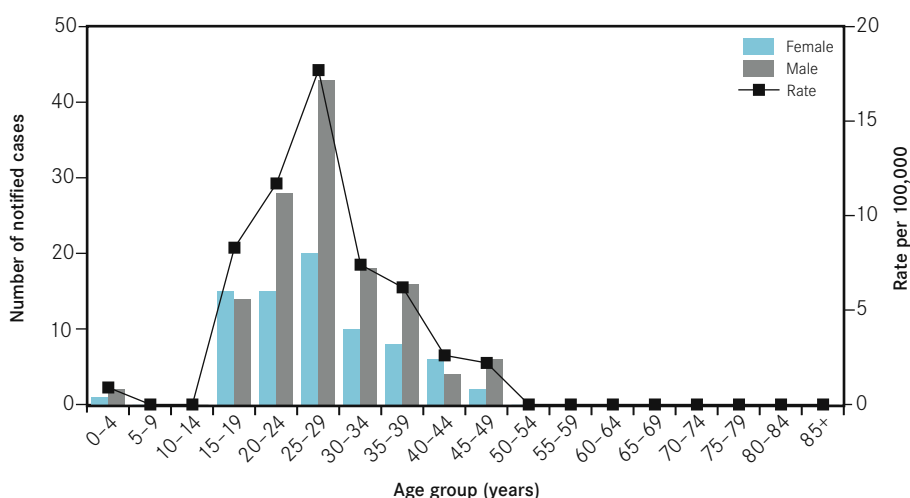
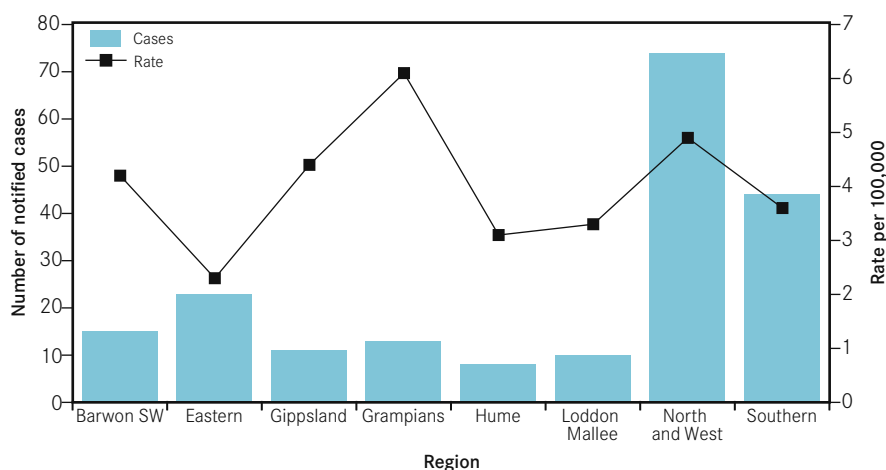


Figure 7: Notified cases and notification rates of newly acquired hepatitis C by region, Victoria, 2006



Outbreak and other investigations

No outbreaks were identified and there were no cases notified that required a blood-borne investigation.

Comment

It is likely that the increase in notified cases of newly acquired hepatitis C in 2006 is due – at least in part – to changes in surveillance practice that resulted in increased ascertainment of newly acquired infections. Changes included the revision and implementation of the questionnaire administered to notifying medical practitioners for enhanced data about cases from January 2006 and follow up with notifying laboratories about previous testing histories of all notified cases from January to June 2006. The latter was restricted to cases aged 30 years or less from July 2006. Despite the increase in case ascertainment, the number of newly acquired cases is still likely to be significantly underestimated. Most hepatitis C infections are asymptomatic and diagnosis of newly acquired infection is difficult in the absence of definitive laboratory evidence.

Funded by the department, and in collaboration with the Victorian Infectious Diseases Reference Laboratory and the Melbourne Sexual Health Centre, the Burnet Institute commenced operation of the Victorian

Table 4: Notified cases of newly acquired hepatitis C by reported reasons for testing, Victoria, 2006

Reason for testing*	Cases (per cent)
Drug and alcohol screening	69 (33)
Patient request	44 (21)
Elevated LFTs	35 (17)
Symptomatic hepatitis	31 (15)
Imprisonment	23 (11)
STI screening	21 (10)
Other medical problem	13 (6)
Routine antenatal screening	9 (4)
Hepatitis C monitoring	3 (1)
Postnatal screening	3 (1)
Asymptomatic house contact	2 (1)
Asymptomatic sexual contact	1 (<1)
Blood donor screening	1 (<1)
Source of occupational exposure	1 (<1)
Other	19 (9)

* Multiple reasons reported.

Primary Care Network for Sentinel Surveillance on BBVs and STIs in March 2006. Conducted through selected sentinel sites, the surveillance system examines testing patterns and risk behaviours in populations at higher risk of HIV, chlamydia, syphilis and hepatitis C: men who have sex with men, youth, pregnant women and injecting drug users. This project is ongoing but a report about the first nine months of its operation is published in the June 2007 issue of the *Victorian Infectious Diseases Bulletin*, available at <http://www.health.vic.gov.au/ideas>

Table 5: Notified cases of newly acquired hepatitis C by reported risk factors, Victoria, 2006

Risk factor*	Cases (per cent)
Injecting drug use	187 (90)
Hepatitis C positive sexual contact	6 (3)
Hepatitis C positive household contact	5 (2)
Dental procedure	2 (1)
Newborn	3 (1)
Imprisonment	3 (1)
Tattooing	2 (1)
Other	6 (3)
Unknown	3 (1)

* Only cases for which injecting drug use was not reported were followed up for other risk factors; multiple risk factors may be reported for these cases.

Hepatitis C – unspecified

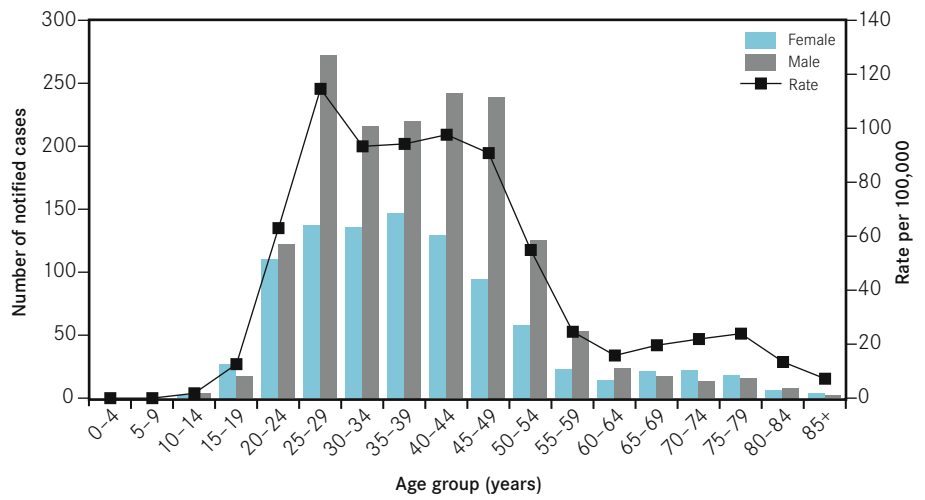
Summary of notifications

The department received notifications for 2,562 cases of unspecified hepatitis C in 2006. Of these, 1,593 were male and 950 were female; sex was not reported for 19 cases. The modal age group in females was those aged 35–39 years and in males was 25–29 years (figure 8). The combined sex notification rate was also highest in the 25–29 years age group.

Risk factors

Risk factor data for cases of unspecified hepatitis C were not routinely collected.

Figure 8: Notified cases and notification rates of unspecified hepatitis C by age group and sex, Victoria, 2006



Hepatitis D

Summary of notifications

There were seven cases of hepatitis D notified in 2006, an increase of five cases compared to 2005 but lower than 2002 and 2003 when nine and 13 were cases were notified respectively (table 6). The notified cases were in two females and five males aged between 31 and 52 years (median = 46 years); five of the seven cases were born overseas.

Risk factors

Risk factor data were not routinely collected.

Outbreaks and other investigations

No outbreaks were identified in 2006.

Comment

Hepatitis D can be misdiagnosed as an exacerbation of chronic hepatitis B infection. Hepatitis delta virus (HDV) and hepatitis B virus (HBV) may co-infect, or HDV infection may occur in persons with chronic hepatitis B. Prevention of HBV infection with vaccination therefore prevents infection with HDV. Chronic carriers of hepatitis B can avoid exposure to HDV by adopting safe sexual and injecting behaviours.

Table 6: Notified cases of hepatitis D by year and sex, Victoria, 2002–2006

Risk factor*	Cases		Total
	Female	Male	
2002	1	8	9
2003	4	9	13
2004	1	3	4
2005	1	1	2
2006	2	5	7