

Air-/Droplet-
Borne
Diseases

Vector-Borne/
Zoonotic
Diseases

Food-/Water-
Borne
Diseases

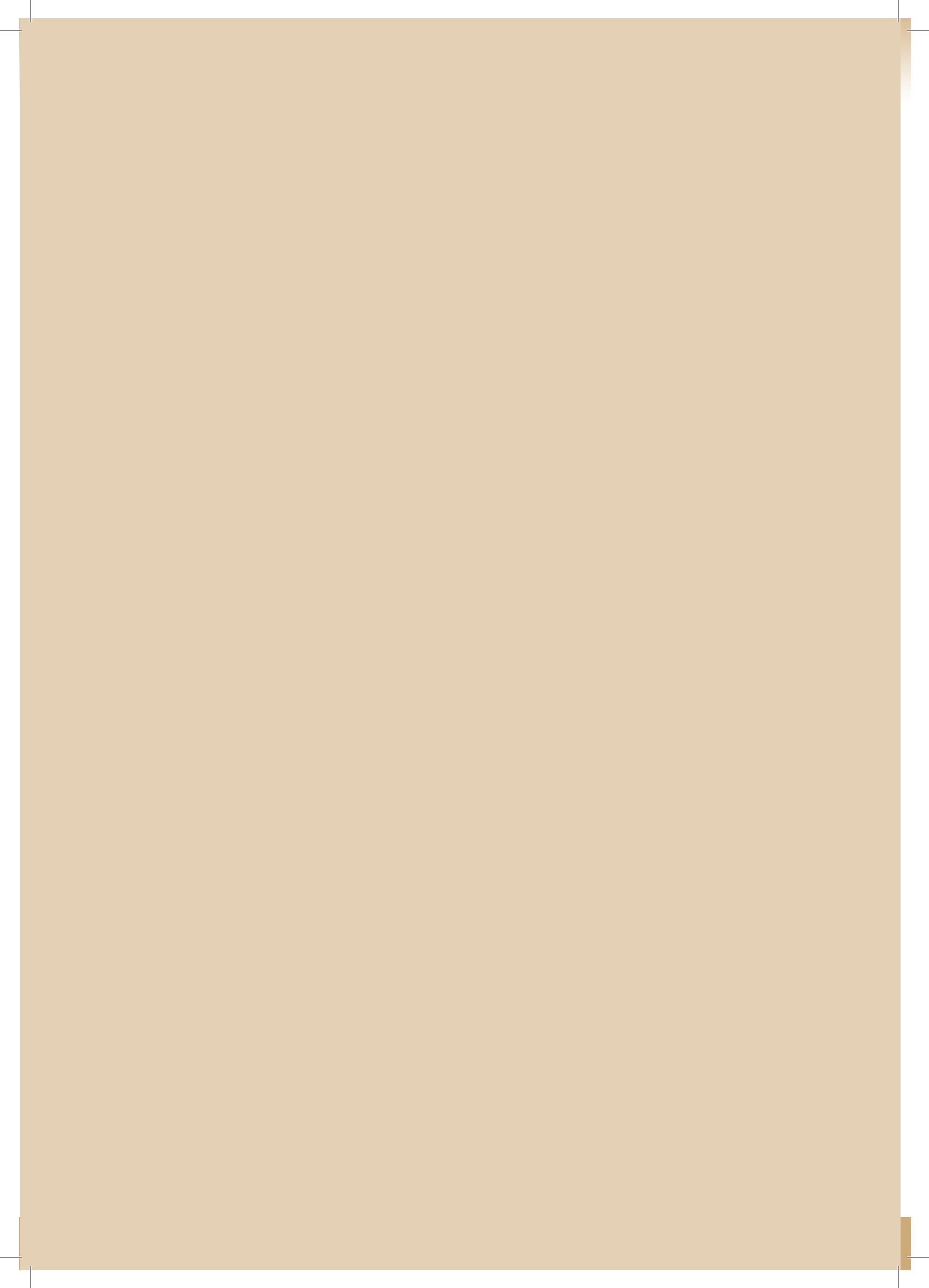
Blood-Borne
Diseases

Environment-
Related
Diseases

HIV/AIDS, STIs,
Tuberculosis
& Leprosy

Childhood
Immunisation

- Hepatitis B
- Hepatitis C



IV BLOOD-BORNE DISEASES

Blood-borne pathogens are microorganisms such as viruses or bacteria that are carried in blood and can cause disease in humans.

There are many different blood-borne diseases including syphilis, brucellosis, hepatitis B (HBV), hepatitis C (HCV) and Acquired Immunodeficiency Syndrome (AIDS).

HEPATITIS B

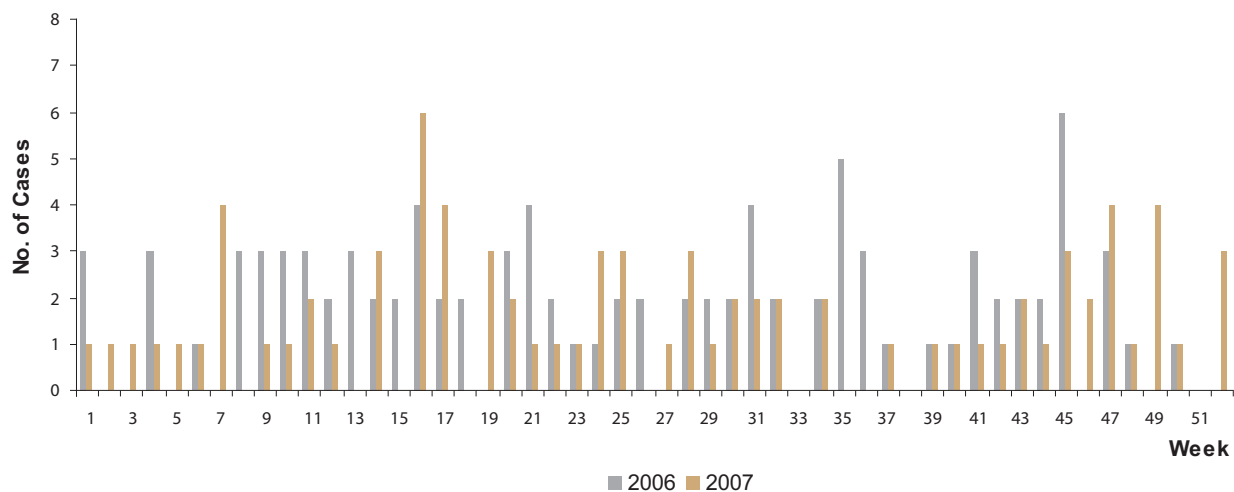
Hepatitis B virus is a small DNA virus that belongs to the Hepadnaviridae family of viruses. The common symptoms of hepatitis B infection include: fever, fatigue, muscle or joint pain, loss of appetite, mild nausea and vomiting. More severe cases may present with jaundice and ascites.

A total of 79 cases of acute hepatitis B were reported in

The mode of transmission is via infected human blood and body fluids. The mechanism of infection commonly includes transfusion of blood or blood products, sexual contact, contaminated IV drug use paraphernalia or by accidental occupational exposure.

2007, compared to 96 cases reported in 2006 (Figure 4.1). Three of the cases were foreigners seeking medical treatment in Singapore. These three cases were not included in the analysis. All cases were serologically confirmed with the presence of hepatitis B surface antigen (HBsAg) and anti-HBc IgM antibody which are both associated with acute clinical presentation.

Figure 4.1
E-weekly distribution of reported hepatitis B cases, 2006 – 2007



Male to female ratio was 5.9:1 and 32.9% of cases occurred in the 35 – 44 years age group (Table 4.1).

Among the three major ethnic groups, Malays had the highest incidence rate followed by Chinese and Indians (Table 4.2).

Table 4.1
Age-gender distribution and age-specific incidence rates of acute hepatitis B[^], 2007

Age (Yrs)	Male	Female	Total (%)	Incidence rate per 100,000 population*
0 – 4	0	0	0 (0.0)	0.0
5 – 14	0	0	0 (0.0)	0.0
15 – 24	7	2	9 (11.8)	1.3
25 – 34	18	2	20 (26.4)	2.1
35 – 44	20	5	25 (32.9)	3.1
45 – 54	9	0	9 (11.8)	1.4
55+	11	2	13 (17.1)	1.8
Total	65	11	76 (100.0)	1.7

[^]Excluding three foreigners seeking medical treatment in Singapore.

*Rates are based on 2007 estimated mid-year population.

(Source: Singapore Department of Statistics)

Table 4.2
Ethnic-gender distribution and ethnic-specific incidence rates of acute hepatitis B[^], 2007

	Male	Female	Total (%)	Incidence rate per 100,000 population*
Singapore Resident				
Chinese	28	6	34 (44.8)	1.3
Malay	8	0	8 (10.5)	1.6
Indian	2	2	4 (5.3)	1.3
Others	2	0	2 (2.6)	2.2
Foreigner	25	3	28 (36.8)	2.8
Total	65	11	76 (100.0)	1.7

[^]Excluding three foreigners seeking medical treatment in Singapore.

*Rates are based on 2007 estimated mid-year population.

(Source: Singapore Department of Statistics)

The cases comprised people from a wide spectrum of occupational groups. Labourers and related workers not

classified made up 25.0% of total notifications in 2007 (Table 4.3).

Table 4.3
Distribution of acute hepatitis B cases by occupation, 2007

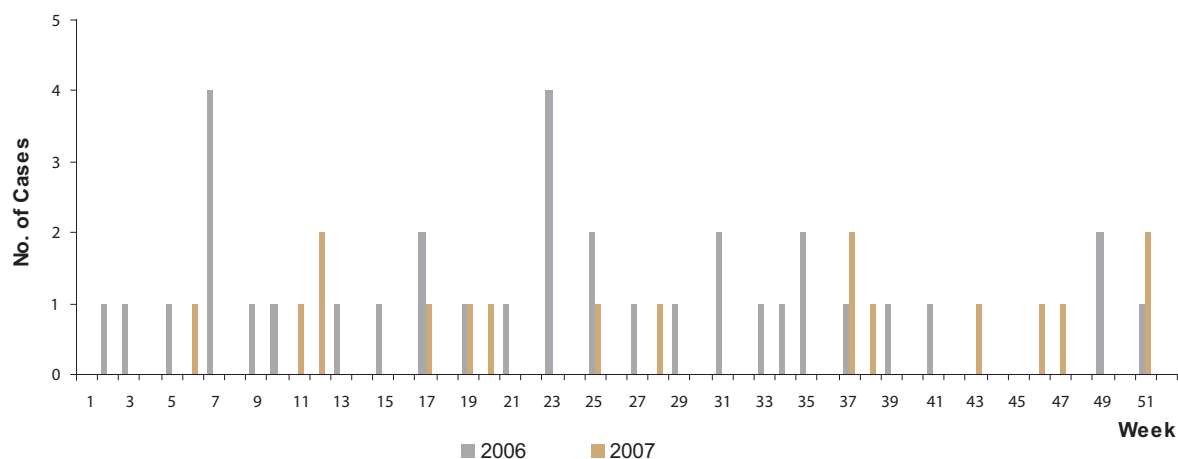
Occupation	Total	%
Cleaners, Labourers and Related Workers		
Construction labourers and related workers	3	3.9
Domestic helpers & cleaners	2	2.6
Labourers & Related Workers Not Classified	19	25.0
Legislator, Senior Officials and Manager		
Manager	3	3.9
Self-employed/Businessmen	5	6.6
Professionals		
Accountants & Accounting & Finance Clerks	2	2.6
Aircraft Pilots & Related Associate Professionals	1	1.3
Engineer / Assistant engineer	1	1.3
Information technology professionals	1	1.3
Lawyers & related workers	1	1.3
Associate Professionals and Technicians		
Clerical officers	3	3.9
Supervisors & General Foremen	2	2.6
Technicians/Asst Engineers	2	2.6
Service Workers and Shop/Market Sales Workers		
Cabin Attendants & Stewards	1	1.3
Driver	2	2.6
Hawker/ Food Handler	2	2.6
Protective Service worker	1	1.3
Ships deck crew & related workers	1	1.3
Shop Sales & Related Workers	4	5.3
Waiters or related workers in food establishment	3	3.9
Production craftsmen & workers not classified		
Carpenter	1	1.3
Electrician	1	1.3
Machine Operators/QC checkers	1	1.3
Unclassified		
Housewife	4	5.3
Retiree	4	5.3
Students	3	3.9
Unemployed	3	3.9
Workers not classifiable by occupation	0	0.0
Total	76	100.0

HEPATITIS C

Hepatitis C virus (HCV) is an enveloped RNA virus in the *flaviviridae* family which appears to have a narrow host range. HCV is a major cause of acute hepatitis and chronic liver disease, including cirrhosis and liver cancer. It is most efficiently transmitted by direct percutaneous exposure to infected blood or intravenous drug use.

A total of 17 cases of acute hepatitis C were reported in 2007 compared with 35 cases reported in 2006 (Figure 4.2). Four cases were foreigners seeking medical treatment in Singapore and were not included in the analysis. All cases were serologically-confirmed with the presence of anti-HCV antibody, associated with acute clinical presentation.

Figure 4.2
E-weekly distribution of reported hepatitis C cases, 2006 – 2007



The male to female ratio was 5.5:1 and 46.1% of cases occurred in the 45 – 54 years age group (Table 4.4). Among the three major ethnic groups, Malays had the

highest incidence rate followed by Chinese and Indians (Table 4.5).

Table 4.4
Age-gender distribution and age-specific incidence rates of reported acute viral hepatitis C[^], 2007

Age (Yrs)	Male	Female	Total (%)	Incidence rate per 100,000 population*
0 – 4	0	0	0 (0.0)	0.0
5 – 14	0	0	0 (0.0)	0.0
15 – 24	0	0	0 (0.0)	0.0
25 – 34	1	1	2 (15.4)	0.2
35 – 44	4	0	4 (30.8)	0.5
45 – 54	5	1	6 (46.1)	0.9
55+	1	0	1 (7.7)	0.1
Total	11	2	13 (100.0)	0.3

[^]Excluding four foreigners seeking medical treatment in Singapore.
*Rates are based on 2007 estimated mid-year population.
(Source: Singapore Department of Statistics)

Table 4.5
Ethnic-gender distribution and ethnic-specific incidence rates of reported acute viral hepatitis C[^], 2007

	Male	Female	Cases (%)	Incidence rate per 100,000 population*
Singapore Resident				
Chinese	6	1	7 (53.8)	0.3
Malay	4	1	5 (38.5)	1.0
Indian	1	0	1 (7.7)	0.3
Others	0	0	0 (0.0)	0.0
Foreigner	0	0	0 (0.0)	0.0
Total	11	2	13 (100.0)	0.3

[^]Excluding four foreigners seeking medical treatment in Singapore.
*Rates are based on 2007 estimated mid-year population.
(Source: Singapore Department of Statistics)