UNSW
Kirby Institute

HIV, viral hepatitis and sexually transmissible infections in Australia Annual surveillance report 2021

Hepatitis B

UNSW
SYDNEY

ISSN 2206-1630 (Online)

This publication and associated data are available at internet address kirby.unsw.edu.au

Suggested citation:
Kirby Institute. HIV, viral hepatitis and sexually transmissible infections in Australia: annual surveillance report 2021. Sydney: Kirby Institute, UNSW Sydney; 2021.

Design il Razzo, Email: admin@ilrazzo.com.au

The Kirby Institute for infection and immunity in society
UNSW Sydney, Sydney, NSW 2052

Telephone: 02 9385 0900 (International +61 2 9385 0900)
Email: recpt@kirby.unsw.edu.au

HIV, viral hepatitis and sexually transmissible infections in Australia
Annual surveillance report 2021

The Kirby Institute

Prepared by:

Jonathan King

Hamish McManus

Richard Gray

Skye McGregor

Other contributors:

- Australian Government Department of Health
- State/territory health departments
- Brynley Hull, Aditi Dey, National Centre for Immunisation Research and Surveillance
- Ela Naruka, Amy Kwon, Behzad Hajarizadeh, Lucy Watchirs-Smith, Heather Valerio, Gregory Dore, Alex Walton, Lisa Maher, Jennifer Iversen, Melanie Simpson, Morgan Stewart, Nick Rose, Kathy Petoumenos, The Kirby Institute, UNSW Sydney
- Benjamin Cowie, Karen McCulloch, Jennifer MacLachlan, Nicole Romero, WHO Collaborating Centre for Viral Hepatitis, Victorian Infectious Diseases Reference Laboratory, The Doherty Institute
- Mark Stoové, Margaret Hellard, Burnet Institute
- Mandy Byrne, Australia and New Zealand Liver and Intestinal Transplant Registry
- Limin Mao, Centre for Social Research in Health, UNSW Sydney
- Monica Lahra, WHO Neisseria Reference Laboratory

in collaboration with networks in surveillance for HIV, viral hepatitis and sexually transmissible infections

The Kirby Institute is funded by the Australian Government Department of Health and is affiliated with the Faculty of Medicine, UNSW Sydney. The Surveillance and Evaluation Research Program at the Kirby Institute is responsible for the public health monitoring and evaluation of patterns of transmission of bloodborne viral and sexually transmissible infections

Table of Contents

Abbreviations 4

Hepatitis B 5

1 **Summary data** 5
- New hepatitis B notifications 5
- Prevalence and morbidity 5
- Testing and care 6
- Prevention 6

2 **Interpretation** 6

3 **Hepatitis B notifications** 7
- Newly acquired hepatitis B 12

4 **Number of people living with hepatitis B and prevalence** 12
- Number of people living with hepatitis B 12
- Hepatitis B morbidity 13

5 **Hepatitis B testing and care** 14
- The hepatitis B diagnosis and care cascade 14
- Hepatitis B treatment 15

6 **Hepatitis B prevention** 16
- Hepatitis B vaccination 16

References 18

Tables List

Table 1	Characteristics of hepatitis B notifications, 2011–2020	7
Table 2	Estimated number of people living with chronic hepatitis B and estimated prevalence by country of birth, 2020	13

Figures List

Figure 1	Hepatitis B notification rate per 100 000 population by gender, 2011–2020	8
Figure 2	Hepatitis B notification rate per 100 000 population, 2011–2020, by age group	9
Figure 3	Hepatitis B notification rate per 100 000 population by Aboriginal and Torres Strait Islander status, 2016–2020	10
Figure 4	Hepatitis B notification rate per 100 000 population, 2011–2020, by region of residence	11
Figure 5	Newly acquired hepatitis B notification rate per 100 000 population by gender, 2011–2020	12
Figure 6	Estimated prevalence of chronic hepatitis B infection among Australians born overseas by country, 2020	13
Figure 7	The hepatitis B diagnosis and care cascade, 2016–2020	14
Figure 8	Number of people dispensed antiviral drugs for hepatitis B, 2014–2020, by drug type	15
Figure 9	Roll-out of hepatitis B vaccination in Australia, by year	16
Figure 10	Hepatitis B vaccination coverage estimates at 12 and 24 months by Aboriginal and Torres Strait Islander status, 2016–2020	17

Abbreviations

ABS	Australian Bureau of Statistics
ACCESS	Australian Collaboration for Coordinated Enhanced Sentinel Surveillance
AIDS	acquired immunodeficiency syndrome
ANSPS	Australian Needle Syringe Program Survey
ART	Antiretroviral therapy
BBV	bloodborne virus
CI	confidence interval
DNA	deoxyribonucleic acid
HIV	human immunodeficiency virus
HPV	human papillomavirus
PEP	post-exposure prophylaxis
PrEP	pre-exposure prophylaxis RNA ribonucleic acid
STI	sexually transmissible infection
TasP	treatment as prevention
UNAIDS	Joint United Nations Programme on HIV/AIDS

Hepatitis B

The years for comparison in this report are from 2011 to 2020 unless focus is given to the impact of the COVID-19 epidemic, where the years for comparison are 2011 to 2019, and 2019 and 2020.

1 Summary data

New hepatitis B notifications

- In 2020, there were a total of 5106 hepatitis B notifications in Australia, with 2647 (52%) among males and 2436 (48%) among females.
- The hepatitis B notification rate declined by 32%, from 29.0 per 100 000 population in 2011 to 19.8 per 100 000 population in 2020. Declines are likely attributable in part to the impact of vaccination, as well as COVID-19 restrictions on sexual activity, healthcare access and testing, and travel during 2020.
- Compared to other age groups, the hepatitis B notification rate in 2020 was highest among those aged 35 to 39 years (43.7 per 100 000) and those aged 30 to 34 years (39.6 per 100 000).
- The hepatitis B notification rate has declined among younger age groups over the past five years (70% among people aged 15 to 19 years, 64% among those aged 20 to 24 years, and 63% among those aged 25 to 29 years). Smaller declines were seen among those aged 30 to 34 years (41%), 35 to 39 years (7%) and 40 years and older (9%). The overall trends by age group during 2016 -2019 reflect the impact of hepatitis B vaccination programs, while the declines in 2020 also reflect the COVID-19 pandemic and related disruptions.
- The hepatitis B notification rate among Aboriginal and Torres Strait Islander populations declined by 21% between 2016 and 2020 (from 38.7 per 100 000 to 30.9 per 100 000).
- The hepatitis B notification rate among the Aboriginal and/or Torres Strait Islander population was more than one and a half times as high as the non-Indigenous population in 2020 (30.9 and 16.9 per 100 000, respectively).

Prevalence and morbidity

- According to modelled estimates, there were an estimated 222 559 people living with chronic hepatitis B in Australia at the end of 2020, of whom an estimated 51 600 (23.2%) were born in Northeast Asia and 43 451 (19.5%) were born in Southeast Asia, 16 137 (7.3%) were Aboriginal and/or Torres Strait Islander people and 22 480 (12.8%) were Australian-born non-Indigenous people.
- The estimated chronic hepatitis B prevalence was 6.7% among people living in Australia who were born in Northeast Asia, 5.1% among people born in Southeast Asia, 2.1% among Aboriginal and/or Torres Strait Islander people, 4.0% among people who inject drugs, and 3.0% among gay and bisexual men, with some people counted in more than one category.
- An estimated 364 deaths attributable to chronic hepatitis B infection occurred in 2020, a reduction of 19% from 452 in 2011.

Testing and care

- According to modelled estimates, in 2020, an estimated 73% (162 480) of people living with chronic hepatitis B in Australia had been diagnosed, and of those, an estimated 23% (50 229) were receiving regular clinical care. Best practice indicates that all people diagnosed with chronic hepatitis B require regular monitoring to assess the stage and progression of their liver disease and to facilitate the commencement of treatment as needed.
- Treatment for hepatitis is recommended for a proportion of patients who meet specific criteria for treatment based on age, viral load, liver function tests, liver fibrosis stage and family history. In 2020, 11% (23 787) of people living with chronic hepatitis B were estimated to be receiving antiviral therapy.

Prevention

- In 2020 coverage of infant hepatitis B vaccination at 12 months of age was 93.2% among Aboriginal and Torres Strait Islander populations and 95.3% among the non-Indigenous population, reaching 97.3% and 96.3% respectively by 24 months of age.

2 Interpretation

Hepatitis B in adolescents and adults in Australia is transmitted through a variety of pathways, including injecting drug use and sexual contact. However, most people living with chronic hepatitis B in Australia were born overseas and acquired hepatitis B at birth or in early childhood and so hepatitis B notifications reflect trends in both incidence of new infection and testing for those with chronic infection. In 2020, there were reductions in testing, diagnosis and treatment of hepatitis B, likely due to the ongoing COVID-19 pandemic. Between 2011 and 2019, age-specific notification rates for both overall and newly acquired hepatitis B declined among the age groups (under 35 years) that are most likely to have benefited from the introduction of universal vaccination of infants in 2000 (1990 in the Northern Territory) and adolescent catch-up programs from 1998 (with variations by jurisdiction in when school-based vaccination programs were introduced). There have also been vaccination programs introduced in countries that many Australian migrants emigrate from. Maternal screening and vaccination of infants born to women with hepatitis B are also likely to have contributed to this decline.

Overall, of the people living with chronic hepatitis B in Australia in 2020, an estimated 27% remained undiagnosed. Of the people living with chronic hepatitis B, an estimated 23% were receiving care and 11% were receiving treatment. These data suggest an ongoing substantial gap in both the uptake of testing to diagnose chronic hepatitis B, and the uptake of monitoring and treatment to prevent morbidity and mortality. There is a need to strengthen strategies to ensure progress in all of these areas.

3 Hepatitis B notifications

This section focuses on people notified with hepatitis B infection in Australia, including notifications of newly acquired hepatitis B infection (having evidence of hepatitis B acquisition within two years of diagnosis) and unspecified (those without evidence of being newly acquired).

There were 5106 notifications of hepatitis B infection in Australia in 2020. Of these, 151(3%) were among Aboriginal and Torres Strait Islander populations, 2447 (48%) were among the non-Indigenous population, and there were a further 2542 (59%) notifications for which Aboriginal and Torres Strait Islander status was not reported.

In 2020, just over half (52%, 2668) of hepatitis B notifications were among males, 93% (4786) were among people aged 25 years and above, and 84% (4339) were among people residing in major cities. Of the 5106 hepatitis B notifications in 2020, the vast majority (98%, 5020) were reported as unspecified (without evidence of recent infection), probably representing chronic hepatitis B infection, and only 115 (2%) were reported as newly acquired (Table 1).

Table 1 Characteristics of hepatitis B notifications, 2011–2020

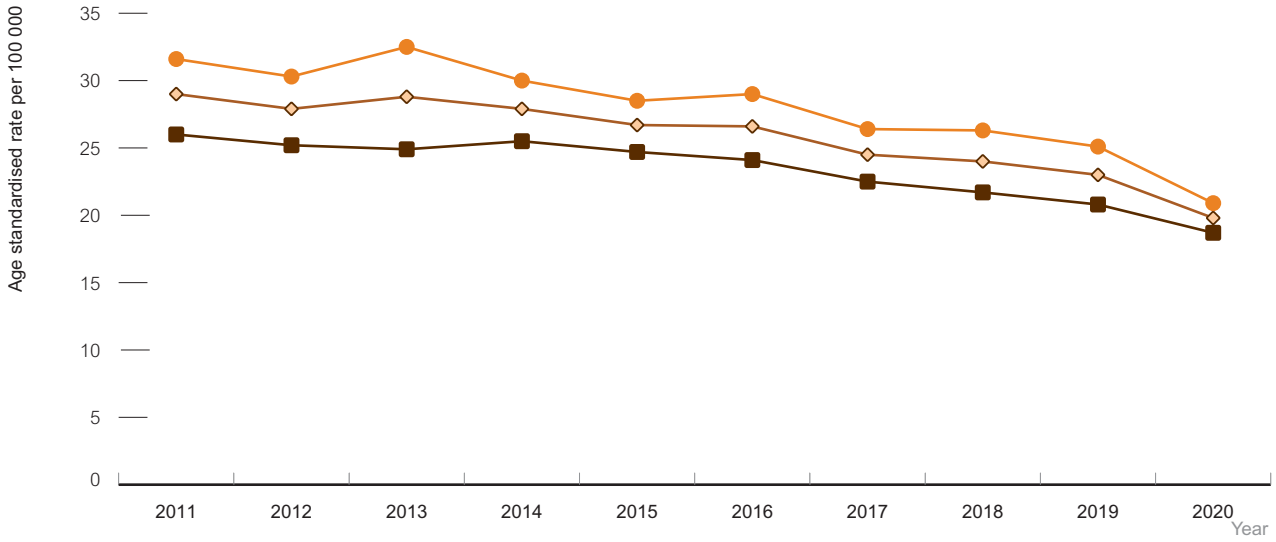
	Year of diagnosis									
Characteristic	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total cases	6517	6513	6967	6497	6312	6360	5999	5970	5809	5106
Gender										
Male	3587	3645	4046	3479	3358	3435	3208	3221	3126	2647
Female	2889	2838	2889	2982	2933	2898	2770	2721	2662	2436
Missing	41	30	32	36	21	27	21	28	21	23
Age group										
0–14	89	86	93	76	69	81	48	40	50	23
15–19	235	260	317	165	164	174	120	105	114	69
20–24	674	633	669	523	448	419	378	364	315	255
25–29	1164	1125	1112	1021	988	860	829	782	671	482
30–34	1042	1094	1170	1148	1075	1105	1006	945	988	762
35–39	751	771	863	835	800	910	828	867	872	801
40+	2556	2540	2743	2726	2763	2809	2789	2862	2799	2709
Missing	6	4	0	3	5	2	1	5	0	5
Aboriginal and Torres Strait Islander status										
Aboriginal and/or Torres Strait Islander	252	210	226	195	242	185	166	151	138	151
Non-Indigenous	2742	3010	3279	2923	2771	3232	3212	3363	3158	2483
Not reported	3523	3293	3462	3379	3299	2943	2621	2456	2513	2472
Newly acquired[a]	193	194	174	178	148	172	146	137	164	115
Area of residence										
Major cities	5439	5263	5400	5498	5315	5451	5111	5037	4940	4303
Regional	654	747	882	742	732	699	630	637	628	587
Remote	268	398	539	147	154	93	107	101	88	107
Not reported	156	105	146	110	111	117	151	195	153	109

a Newly acquired hepatitis B is defined as newly diagnosed hepatitis B infection with laboratory or clinical evidence of acquisition in the two years before diagnosis. Enhanced surveillance procedures related to hepatitis B vary by state/territory. The total number of cases reported here is likely to be an underestimation of the true number of newly acquired infections.

Source: Australian National Notifiable Diseases Surveillance System.

The hepatitis B notification rate in Australia declined by 21%, from 29.0 per 100 000 in 2011 to 23.0 per 100 000 in 2019. Between 2019 and 2020, the hepatitis B notification rate declined by 14% from 23.0 to 19.8 and was likely due in part to the impacts of the COVID-19 pandemic. Although the gap narrowed in 2020, notification rates have been consistently higher among males than females, and were 20.9 and 18.7 per 100 000 in 2020, respectively (Figure 1).

Figure 1 Hepatitis B notification rate per 100 000 population by gender, 2011–2020

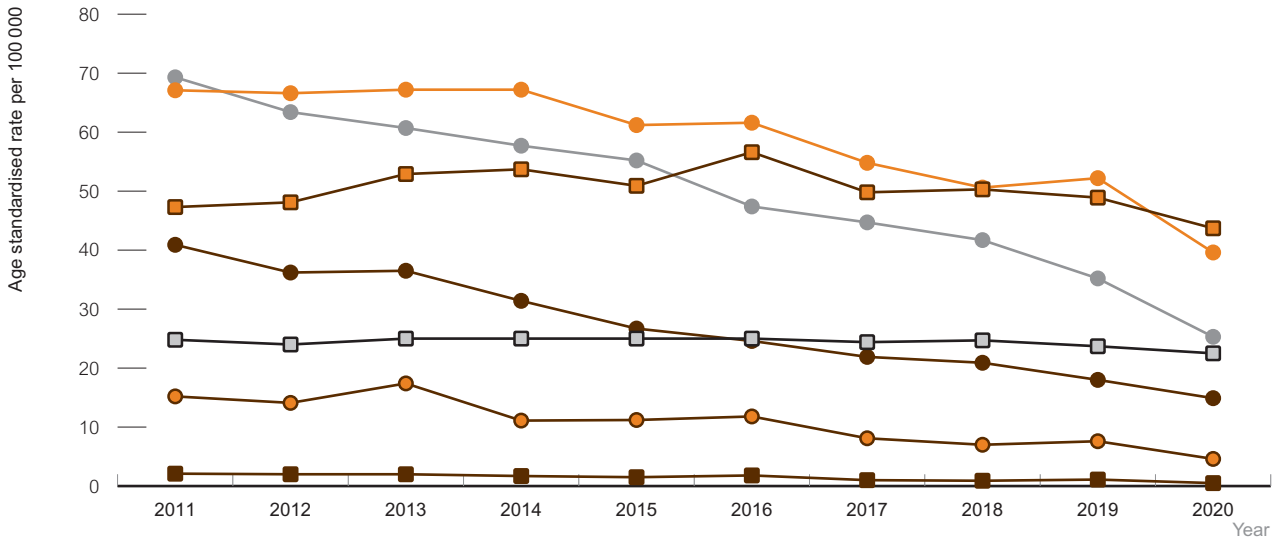


	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Males	31.6	30.3	32.5	30.0	28.5	29.0	26.4	26.3	25.1	20.9
Females	26.0	25.2	24.9	25.5	24.7	24.1	22.5	21.7	20.8	18.7
Total	29.0	27.9	28.8	27.9	26.7	26.6	24.5	24.0	23.0	19.8

Source: Australian National Notifiable Diseases Surveillance System.

Between 2011 and 2019, hepatitis B notification rates declined among all age groups with the greatest declines seen among the younger age groups. A decline of 48% was seen among those aged 0 to 14 years (from 2.1 to 1.1 per 100 000), 50% among those aged 15 to 19 years (from 15.2 to 7.6 per 100 000), 56% among those aged 20 to 24 years (from 40.9 to 18.0 per 100 000), 49% among those aged 25 to 29 years (from 69.3 to 35.2 per 100 000), and 22% among those aged 30 to 34 years (from 67.1 to 52.2 per 100 000) (Figure 2). In the same period, the notification rate remained relatively stable among those aged 35 to 39 years (between 56.6 and 47.3 per 100 000) and those aged 40 years and older (between 23.7 and 25.0 per 100 000) (Figure 2). The greater declines seen among the younger age groups is likely due to the effect of hepatitis B immunisation, introduced nationally for infants in Australia in 2000, and in many countries with high migration to Australia in the 1990s. Declines were seen among all age groups between 2019 and 2020, likely due to the impacts of the COVID-19 pandemic (Figure 2).

Figure 2 Hepatitis B notification rate per 100 000 population, 2011–2020, by age group



	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
0–14	2.1	2.0	2.0	1.7	1.5	1.8	1.0	0.9	1.1	0.5
15–19	15.2	14.1	17.4	11.1	11.2	11.8	8.1	7.0	7.6	4.6
20–24	40.9	36.2	36.5	31.4	26.7	24.6	21.9	20.9	18.0	14.9
25–29	69.3	63.4	60.7	57.7	55.2	47.4	44.7	41.7	35.2	25.3
30–34	67.1	66.6	67.2	67.2	61.2	61.6	54.8	50.6	52.2	39.6
35–39	47.3	48.1	52.9	53.7	50.9	56.6	49.8	50.3	48.9	43.7
40+	24.8	24.0	25.0	25.0	25.0	25.0	24.4	24.7	23.7	22.5

Source: Australian National Notifiable Diseases Surveillance System.

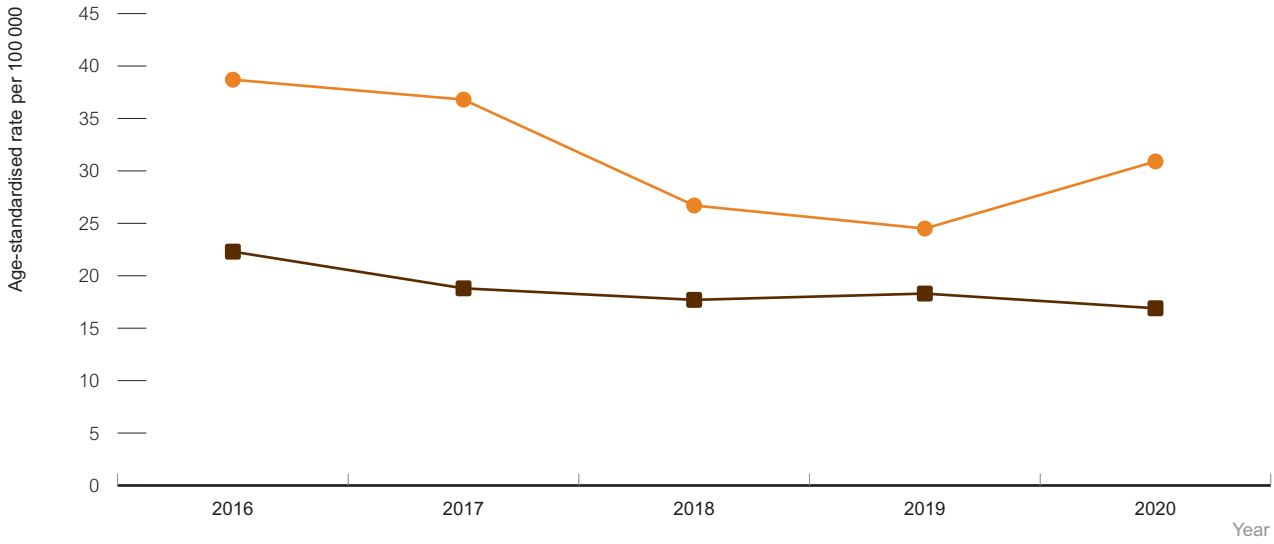
Notification rates among males and females declined across all age groups with the greatest declines seen among the younger age groups. Among those aged 0 to 14 years, notification rates decreased by 82% among males and 71% among females, (from 2.8 to 0.5 per 100 000 and from 1.4 to 0.4 per 100 000 per 100 000, respectively). Similarly, among those aged 15 to 19 years rates declined by 75% among males and 64% among females. Detailed breakdowns of notification rates by gender and age are available on the Kirby Institute data site..

The hepatitis B notification rate among the Aboriginal and Torres Strait Islander population is based on data from six jurisdictions (Australian Capital Territory, Northern Territory, Queensland, South Australia, Tasmania and Western Australia), where Aboriginal and Torres Strait Islander status was reported in at least half of all hepatitis B notifications for each the five years (2016–2020). Approximately 60% of the Aboriginal/or and Torres Strait Islander population reside in these jurisdictions, so it is important to note that the notification rates are not necessarily nationally representative.

In 2020, the hepatitis B notification rate among the Aboriginal and/or Torres Strait Islander population in these jurisdictions was more than one and a half times as high compared with the non-Indigenous population (30.7 per 100 000 compared with 16.9 per 100 000) (Figure 3). Among the Aboriginal and/or Torres Strait Islander population, the rate decreased by 21% from 38.7 per 100 000 in 2016, to 24.5 per 100 000 in 2019, and then increased to 30.9 per 100 000 in 2020. By comparison, among the non-Indigenous population, the notification rate decreased by 24% from 22.3 per 100 000 in 2016 to 16.9 per 100 000 in 2020.

The largest declines nationally have been observed among younger age groups, which likely reflects that Aboriginal and/or Torres Strait Islander children being eligible for vaccination, whereas non-Indigenous notifications include people born overseas, where vaccination programs vary considerably. For further information on hepatitis B notification rates by Aboriginal and Torres Strait Islander status and age, please refer to the Kirby Institute data site. and *Bloodborne viral and sexually transmissible infections in Aboriginal and Torres Strait Islander people: annual surveillance report 2021*[1].

Figure 3 Hepatitis B notification rate per 100 000 population by Aboriginal and Torres Strait Islander status, 2016–2020

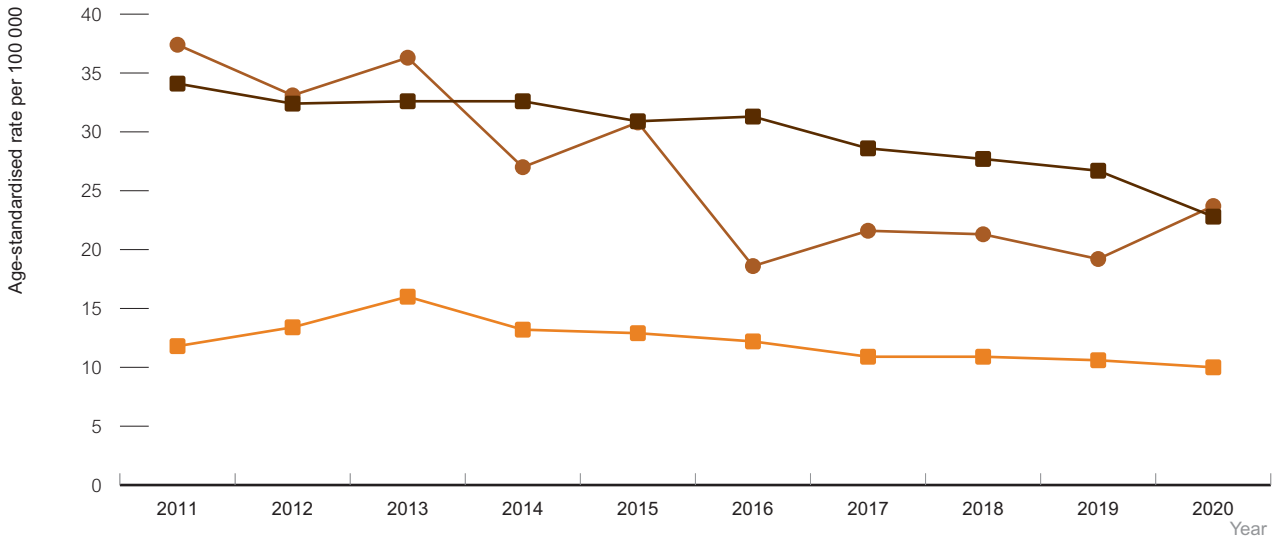


Source: Australian National Notifiable Diseases Surveillance System. Includes jurisdictions in which Aboriginal and Torres Strait Islander status was reported for ≥50% of notifications for each year (Australian Capital Territory, Northern Territory, Queensland, South Australia, Tasmania and Western Australia).

The higher rates of newly diagnosed hepatitis B among Aboriginal and Torres Strait Islander populations than among the non-Indigenous population reflects the higher prevalence of chronic hepatitis B among Aboriginal and Torres Strait Islander peoples. This relates to historical vertical and early childhood transmission, particularly in the pre-vaccine era, with some additional infections through sexual and blood contact in adolescence and adulthood[2]. Aboriginal and Torres Strait Islander people also have higher rates of risk factors for adult hepatitis B acquisition, including receptive syringe sharing among people who inject drugs. (See above under Hepatitis C prevention, p. 23.)

Rates of hepatitis B notification were higher in 2020 among people residing in major cities and remote areas (22.8 and 23.7 per 100 000, respectively) than in regional areas (10.0 per 100 000). This trend may relate to higher proportions of people born overseas and Aboriginal and Torres Strait Islander peoples living in major cities and remote areas, respectively. Rates over the past 10 years (2011–2020) have declined in remote areas by 37% from 37.4 to 23.7 per 100 000, 33% in major cities, from 34.1 to 22.8 per 100 000 and 15% in regional areas from 11.8 to 10.0 per 100 000 (Figure 4). The pattern was similar among males and females, with notification rates lowest in regional areas for both genders. For breakdowns of notification rates by gender and remoteness area please see the Kirby Institute data site.

Figure 4 Hepatitis B notification rate per 100 000 population, 2011–2020, by region of residence



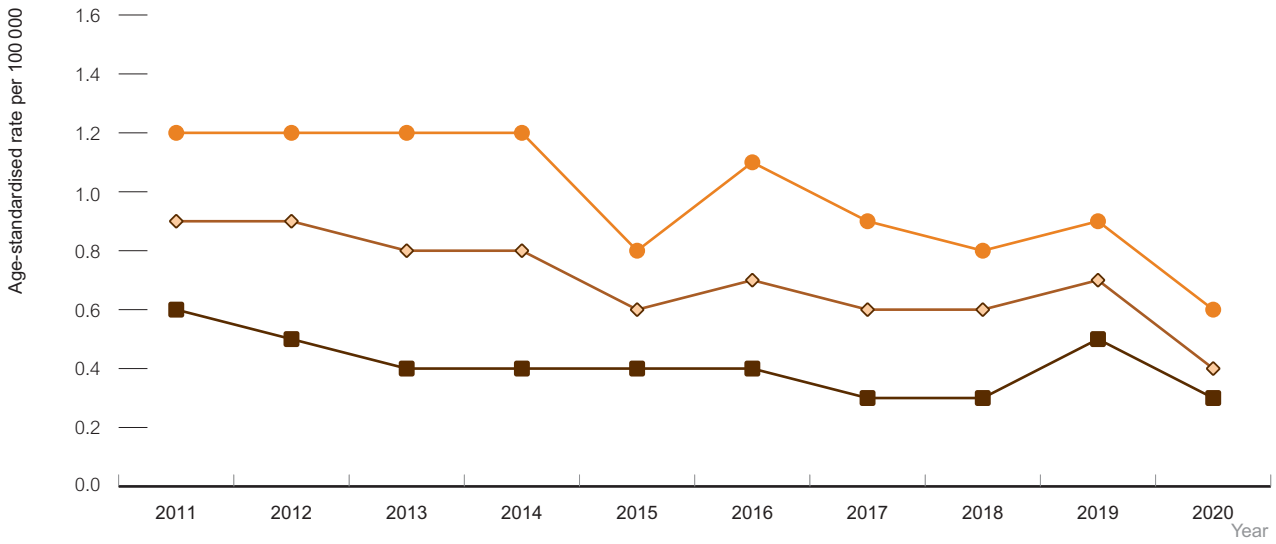
	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Major cities	34.1	32.4	32.6	32.6	30.9	31.3	28.6	27.7	26.7	22.8
Regional	11.8	13.4	16.0	13.2	12.9	12.2	10.9	10.9	10.6	10.0
Remote	37.4	33.1	36.3	27.0	30.8	18.6	21.6	21.3	19.2	23.7

Source Australian National Notifiable Diseases Surveillance System.

Newly acquired hepatitis B

The vast majority of hepatitis Cases B in Australia are chronic infections among people born in countries with high prevalence of hepatitis B[3]. For some hepatitis B notifications, it is possible to determine if the infection was acquired in the two years before diagnosis, on the basis of a prior negative test or other serological factors; these cases are defined as newly acquired hepatitis B. There was a 22% decline in the newly acquired hepatitis B notification rate, from 0.9 per 100 000 in 2011 to 0.7 per 100 000 in 2019, with a 25% decline among males and an 8% decline among females. Between 2019 and 2020, the newly acquired hepatitis B notification rate declined by 33% among males, 40% among females and 43% overall, likely due to the impacts of the COVID-19 pandemic. In 2020, the rate of newly acquired hepatitis B was twice as high among males (0.6 per 100 000) compared with females (0.3 per 100 000) (Figure 5).

Figure 5 Newly acquired hepatitis B notification rate per 100 000 population by gender, 2011–2020



	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Males	1.2	1.2	1.2	1.2	0.8	1.1	0.9	0.8	0.9	0.6
Females	0.6	0.5	0.4	0.4	0.4	0.4	0.3	0.3	0.5	0.3
Total	0.9	0.9	0.8	0.8	0.6	0.7	0.6	0.6	0.7	0.4

Source: Australian National Notifiable Diseases Surveillance System.

4 Number of people living with hepatitis B and prevalence

Number of people living with hepatitis B

At the end of 2020, there were an estimated 222 559 people living with chronic hepatitis B in Australia. Of those, an estimated 155 134 (69.7%) were born overseas, 28 480 (12.8%) were Australian-born non-Indigenous people, and 16 137 (7.3%) were Aboriginal and/or Torres Strait Islander people (Table 2). People born in Southeast Asia and Northeast Asia, together with Aboriginal and Torres Strait Islander peoples, represent 10% of the Australian population [2], but account for half of all people living with chronic hepatitis B in Australia. The estimated proportion of people living with hepatitis B was also higher among people who inject drugs (12 798, 5.8% of people living with chronic hepatitis B) and gay and bisexual men (10 010, 4.5% of people living with chronic hepatitis B). The prevalence estimates among overseas-born Australians reflect the prevalence in the country of their birth, which is particularly high in the Asia-Pacific region (Figure 6).

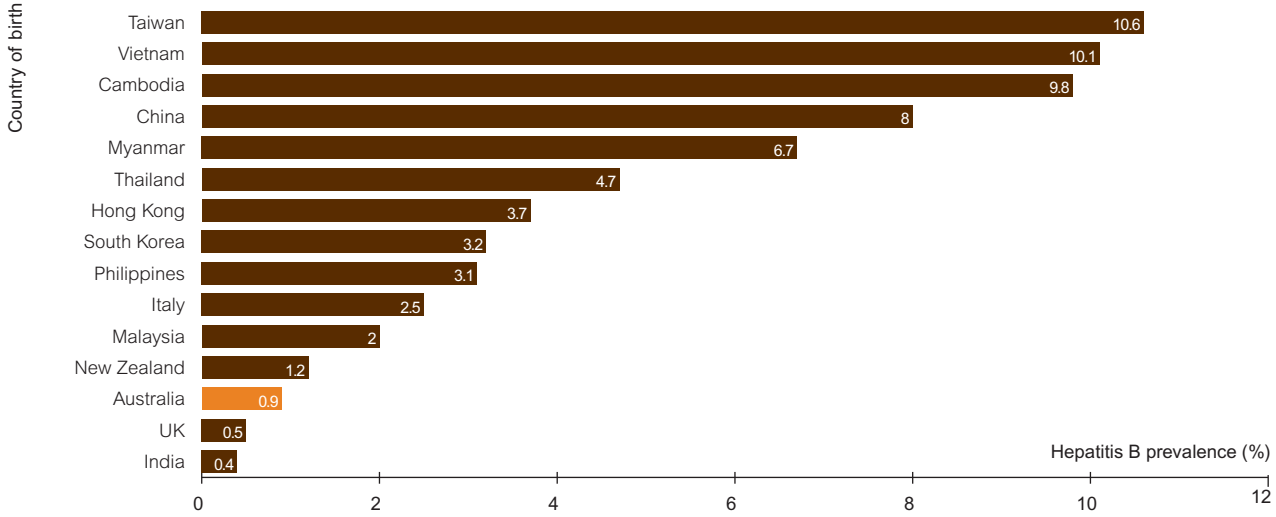
Table 2 Estimated number of people living with chronic hepatitis B and estimated prevalence by country of birth, 2020

Population	People living with chronic hepatitis B	Proportion of all people living with chronic hepatitis B	Hepatitis B prevalence
Total	222 559		
Australian-born non-Indigenous	28 480	12.8%	0.2%
Born in Northeast Asia	51 600	23.2%	6.7%
Born in Southeast Asia	43 451	19.5%	5.1%
Born in Sub-Saharan Africa	8 242	3.7%	2.6%
Other regions of birth	51 841	23.3%	0.2%
Aboriginal and/or Torres Strait Islander	16 137	7.3%	2.1%
People who inject drugs	12 798	5.8%	4.0%
Gay and bisexual men	10 010	4.5%	3.0%

Note: Estimates by subpopulation may overlap.

Source: WHO Collaborating Centre for Viral Hepatitis, Doherty Institute.

Figure 6 Estimated prevalence of chronic hepatitis B infection among Australians born overseas by country, 2020



Source: Adjusted Australian antenatal prevalence data [4,5], international population seroprevalence data[6,7], WHO Collaborating Centre for Viral Hepatitis, Doherty Institute.

Hepatitis B morbidity

There is no comprehensive registry of advanced liver disease related to hepatitis B in Australia. One indicator of the extent of liver disease caused by hepatitis B is the number of liver transplants due to chronic hepatitis B infection. Of the 220 liver transplants in 2020, 15 (7%) were attributable to chronic hepatitis B infection. Many factors influence the selection of candidates for transplant, and the numbers may not necessarily reflect the overall morbidity and mortality attributable to individual causes of liver disease. For detailed information relating to chronic hepatitis B among liver transplant patients, please see the Kirby Institute data site.

There were an estimated 364 deaths attributable to chronic hepatitis B in 2020, a reduction of 19% from 452 in 2011. The majority of the deaths in 2020 were attributed to hepatocellular carcinoma, which was responsible for an estimated 322 deaths, while an estimated 92 people died due to decompensated cirrhosis. These estimates are produced by the WHO Collaborating Centre for Viral Hepatitis at the Doherty Institute and were derived from modelling, which may not correlate with transplant data.

5 Hepatitis B testing and care

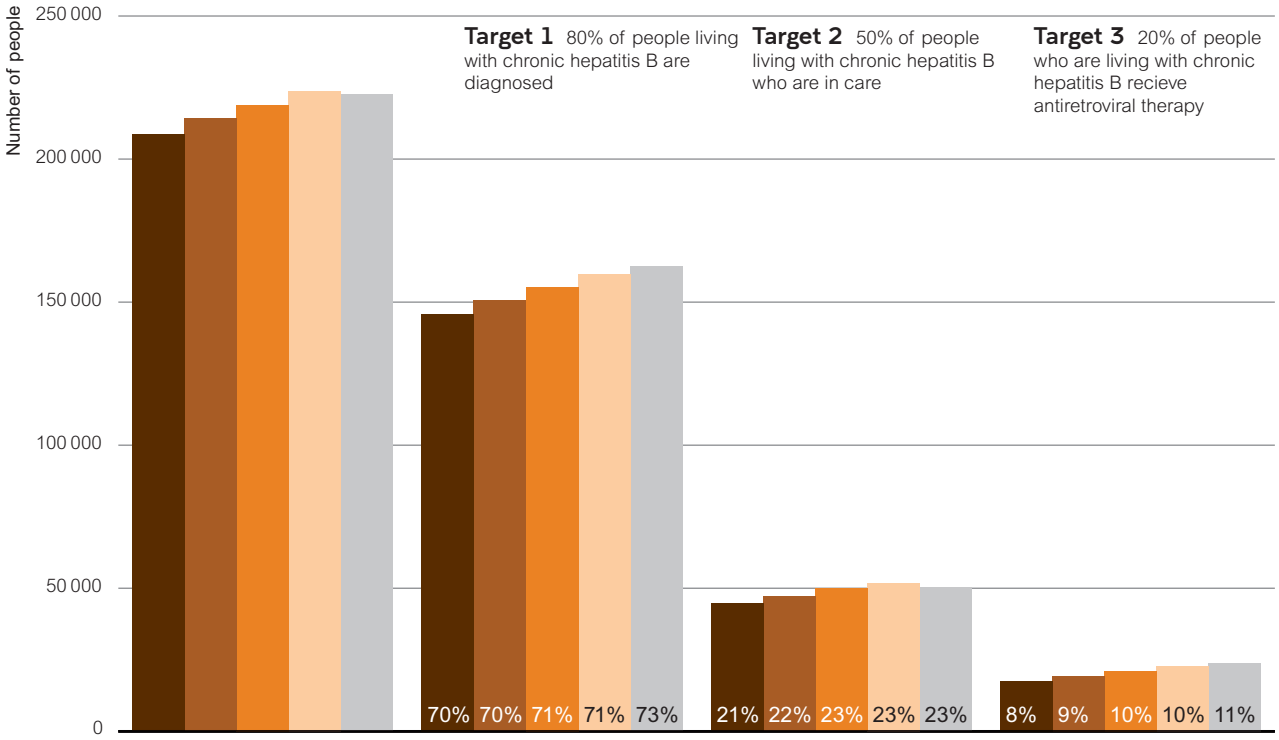
The hepatitis B diagnosis and care cascade

This section includes the hepatitis B diagnosis and care cascade, which estimates the number of people living with chronic hepatitis B infection in Australia, number diagnosed, number retained in care and number receiving antiviral treatment.

These estimates are produced by the WHO Collaborating Centre for Viral Hepatitis at the Doherty Institute and are intended to support improvements in the delivery of services to people with hepatitis B infection. Proportions of people in each stage of the cascade in Australia were estimated using mathematical modelling, notifications, and Medicare data. The approach was informed by recommendations from a national stakeholder reference group (see Methodology for further detail).

At the end of 2020, an estimated 222 559 people were living with chronic hepatitis B in Australia. Of those, an estimated 162 480 (73%) were diagnosed, 50 229 (22% of those living with chronic infection) received care (monitored or received antiviral therapy), and 23 787 (11% of those living with chronic infection) received antiviral therapy (Figure 7)

Figure 7 The hepatitis B diagnosis and care cascade, 2016–2020



	Living with hepatitis B infection	Diagnosed with hepatitis B infection	Receiving care	Received treatment
2016	208 535	145 800	44 668	17 698
2017	214 173	150 583	47 161	19 358
2018	218 964	155 191	49 971	21 135
2019	223 860	159 636	51 892	22 828
2020	222 559	162 480	50 229	23 787

Note: Due to updated modelling methods, estimates may be different from figures presented in previous years of reporting.

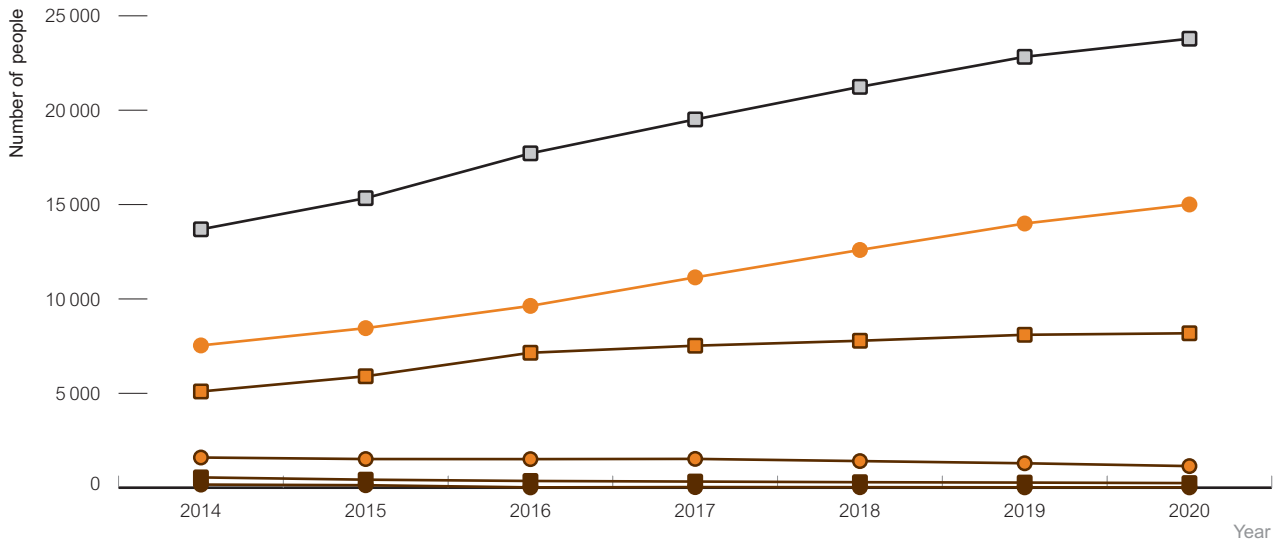
Source: WHO Collaborating Centre for Viral Hepatitis, Doherty Institute; see Methodology for detail.

Hepatitis B treatment

While treatment for hepatitis B is not curative, it can reduce morbidity and mortality associated with infection. Treatment controls viral replication and resulting liver damage, which profoundly reduces progression to advanced liver disease and hepatocellular carcinoma. In general, people who are chronically infected but do not have any signs of significant viral replication or active liver damage do not need treatment. However, it is important to closely monitor liver health with regular (at least annual) liver function tests, liver fibrosis assessment, and quantitative viral DNA tests. Treatment for hepatitis B should be considered for people with elevated hepatitis B viral load, abnormal liver function tests, or significant liver fibrosis.

From the start of 2014 to the end of 2020, there was a 74% increase in the number of people who were dispensed hepatitis B antiviral treatment, from 13 689 to 23 787 (Figure 10). However, the population of people living with chronic hepatitis B has also grown in recent years (see The hepatitis B diagnosis and care cascade, on page 20). Of people who received hepatitis B antiviral treatments in 2020, 63% received entecavir, and 34% received tenofovir (Figure 8).

Figure 8 Number of people dispensed antiviral drugs for hepatitis B, 2014–2020, by drug type



	2014	2015	2016	2017	2018	2019	2020
adefovir	545	425	356	325	291	271	244
entecavir	7 537	8 453	9 632	11 143	12 595	13 996	15 005
lamivudine (hep B)	1 599	1 518	1 514	1 526	1 410	1 294	1 144
peginterferon alfa-2a	165	132	17	32	27	20	18
tenofovir	5 098	5 904	7 149	7 523	7 785	8 101	8 181
any drug	13 689	15 340	17 714	19 510	21 237	22 828	23 787

Note: Excludes tenofovir dispensing for HIV co-infected patients. Patients on telbivudine and interferonalfa-2b are excluded; there were no more than 30 for in any year.

Source: Pharmaceutical Benefits Scheme. Excludes temporary residents who are ineligible for Medicare. See Methodology for detail.

6 Hepatitis B prevention

Vaccination is the corner-stone of hepatitis B primary prevention. Other strategies to protect people from acquiring hepatitis B infection include use of sterile needles and syringes and ancillary equipment among people who inject drugs, condom use, universal precautions in healthcare settings, monitoring of pregnant women living with chronic hepatitis B and their babies, and screening of blood donors[9]. Secondary prevention strategies to reduce the risk of progression to hepatocellular carcinoma include improving access to diagnosis, monitoring and antiviral treatment for those with evidence of active liver disease.

Hepatitis B vaccination

Patterns of hepatitis B infection in Australia should be interpreted with knowledge of the history of hepatitis B immunisation programs. In the Northern Territory, hepatitis B screening was introduced for all pregnant women and vaccination to infants born to mothers living with chronic infection in 1985; universal infant vaccination was implemented in 1990, and a catch-up program for children aged 6 to 16 years was introduced in 1998. In other states and territories, hepatitis B vaccination of all infants commenced in 2000, and a universal adolescent (children aged 11 to 14 years) school-based hepatitis B vaccination catch-up program commenced in 1998 in Victoria and Tasmania, in 1999 in South Australia and the Australian Capital Territory, in 2002 in Western Australia, in 2004 in New South Wales, and in 2007 in Queensland (Figure 9)[10].

Between 2016 and 2020, hepatitis B vaccination coverage rates for children remained high in Australia (Figure 12). In 2020, hepatitis B vaccination coverage at 12 months of age was 93.2% among Aboriginal and Torres Strait Islander children and 95.3% among non-Indigenous children, reaching 97.3% and 96.3% at 24 months of age, respectively (Figure 10).

Figure 9 Roll-out of hepatitis B vaccination in Australia, by year

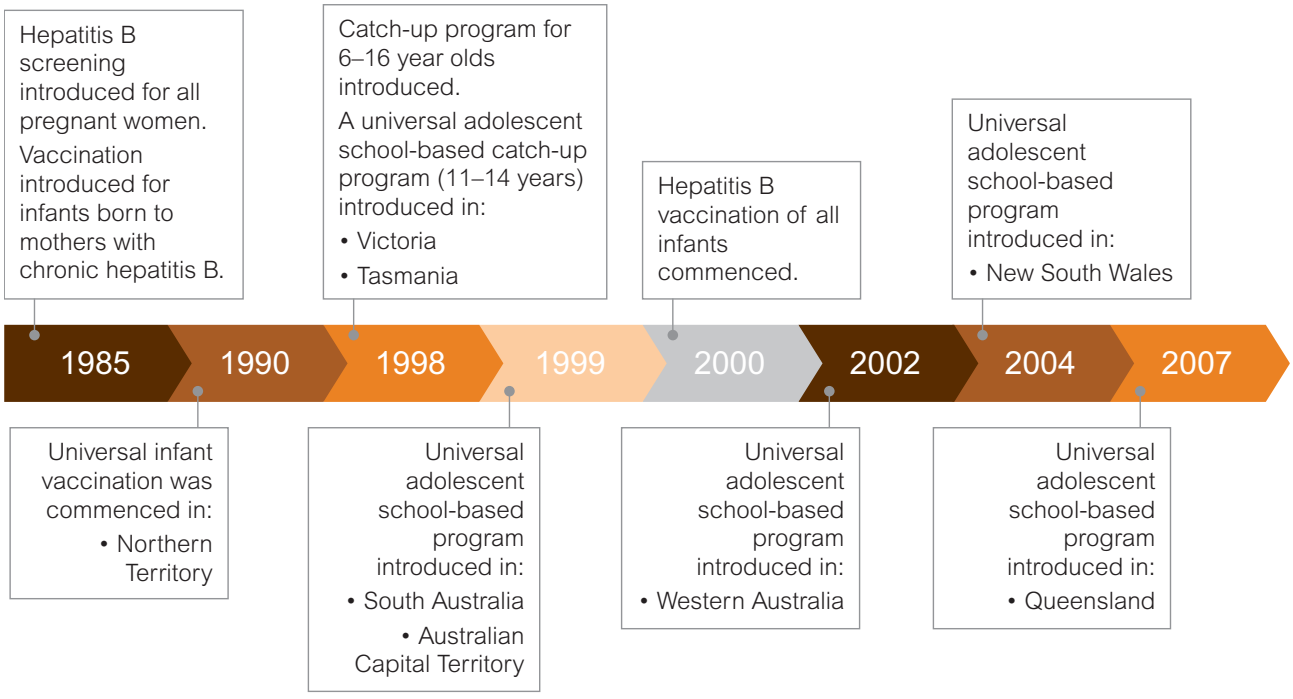
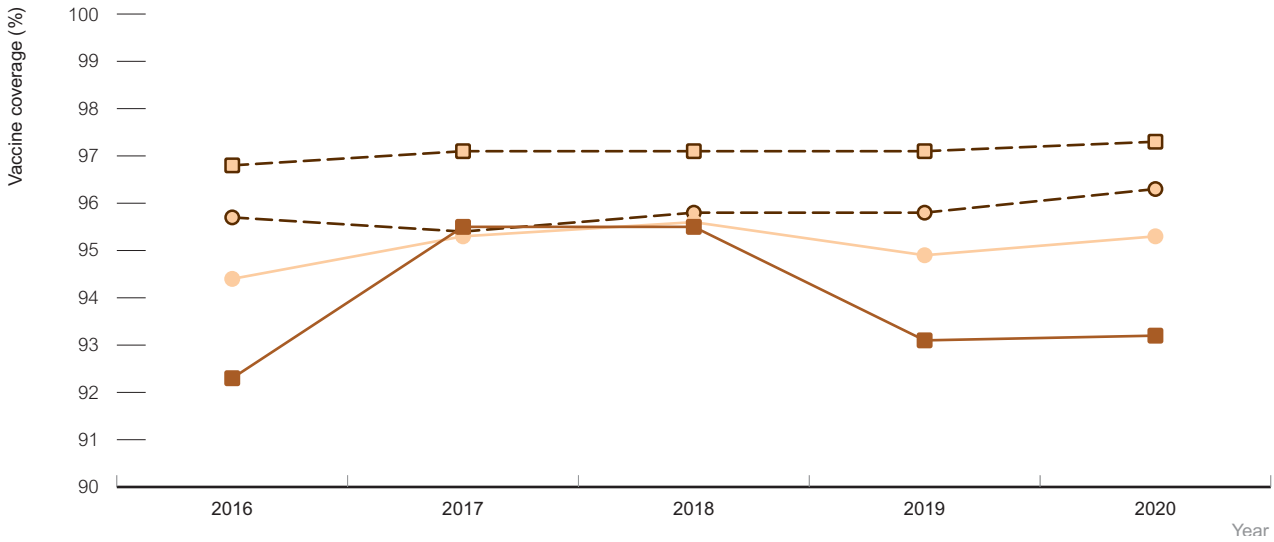


Figure 10 Hepatitis B vaccination coverage estimates at 12 and 24 months by Aboriginal and Torres Strait Islander status, 2016–2020



	2016	2017	2018	2019	2020
Aboriginal and Torres Strait Islander children 12 months (%)	92.3	95.5	95.5	93.1	93.2
Aboriginal and Torres Strait Islander children 24 months (%)	96.8	97.1	97.1	97.1	97.3
Non-Indigenous children 12 months (%)	94.4	95.3	95.6	94.9	95.3
Non-Indigenous children 24 months (%)	95.7	95.4	95.8	95.8	96.3

Source: National Centre for Immunisation Research and Surveillance of Vaccine Preventable Diseases; see Methodology for detail.

References

1. Kirby Institute. Bloodborne viral and sexually transmissible infections in Aboriginal and Torres Strait Islander people Annual Surveillance Report 2021. Kirby Institute, UNSW Sydney; 2021.
2. Graham S, MacLachlan JH, Gunaratnam P, Cowie BC. Chronic hepatitis B prevalence in Australian Aboriginal and Torres Strait Islander people before and after implementing a universal vaccination program: a systematic review and meta-analysis. Sex Health. 2019 Jun;16(3):201–11.
3. MacLachlan J, Allard N, Carville K, Haynes K, Cowie B. Mapping progress in chronic hepatitis B: geographic variation in prevalence, diagnosis, monitoring and treatment, 2013-15. Aust N Z J Public Health. 2018 Feb;42(1):62–8.
4. Reekie J, Gidding HF, Kaldor JM, Liu B. Country of birth and other factors associated with hepatitis B prevalence in a population with high levels of immigration. Journal of Gastroenterology and Hepatology. 2013 Sep;28(9):1539–44.
5. He WQ, Duong MC, Gidding H, MacLachlan J, Wood J, Kaldor JM, et al. Trends in chronic hepatitis B prevalence in Australian women by country of birth, 2000 to 2016. J Viral Hepat. 2019 Sep 9;
6. Schweitzer A. Worldwide prevalence of chronic hepatitis B virus infection: estimations based on a systematic review of data published between 1965 and 2013. The Lancet. 2015;online.
7. Kowdley KV, Wang CC, Welch S, Roberts H, Brosgart CL. Prevalence of chronic hepatitis B among foreign-born persons living in the United States by country of origin. Hepatology. 2012 Aug;56(2):422–33.
8. Australian Government Department of Health. Third National Hepatitis B Strategy 2018–2022. Canberra: Department of Health; 2018.
9. World Health Organization. Guidelines for the prevention, care and treatment of persons with chronic hepatitis B infection. Geneva: WHO; 2015.
10. National Centre for Immunisation Research and Surveillance. Significant events in hepatitis B vaccination practice in Australia. Sydney: NCIRS; 2015.