NSW Health

NSW Hepatitis B Annual Data Report

2023

NSW GOVERNMENT

Contents

Key Messages

Data Summary

Hepatitis B is a blood-borne virus and is the predominant cause of liver cancer. Immunisation remains the most effective primary prevention strategy against hepatitis B infection. In 2023, the infant immunisation coverage in NSW was 96.2 per cent at 24 months of age. In addition, public hospitals are required to screen all pregnant women for hepatitis B and all neonates born to hepatitis B positive mothers must receive hepatitis B immunoglobulin within 12 hours of birth. These prevention strategies aim to reduce mother-to-child transmission of hepatitis B.

Early diagnosis, regular monitoring, and treatment (where indicated), can prevent adverse health outcomes for people living with chronic hepatitis B. In 2023, laboratories in NSW performed over half a million hepatitis B surface antigen tests and the hepatitis B rate was 24 notifications per 100,000 population (1,945 notifications). The Kirby Institute, University of NSW (UNSW) reported a continued decline in the percentage of late hepatitis B diagnosis among people presenting with hepatitis B-related liver failure and liver cancer in NSW.

Modelling by WHO Collaborating Centre for Viral Hepatitis at the Doherty Institute has estimated 73,671 people were living with chronic hepatitis B in NSW in 2022. Hepatitis B viral load testing in 2023 from the Medicare Benefits Schedule (MBS), reported 6,645 hepatitis B viral load tests for monitoring only (no treatment) and a further 11,785 people (16 per cent) were dispensed hepatitis B antiviral treatment through the Pharmaceutical Benefits Scheme (PBS).

While NSW is making progress towards achieving the NSW Hepatitis B Strategy target of 20 per cent of people living with hepatitis B receive treatment, significant improvements are required to reach the Strategy target of 100 per cent of people retained in care. Linkage to care is defined as a person receiving either viral load monitoring or antiviral treatment for their chronic hepatitis B infection. Primary care services, particularly general practice play a key role in chronic hepatitis B care. Engaging general practitioners and other primary care providers is a priority under the Strategy to improve linkage to care. In 2023, general practitioners requested 44 per cent of MBS viral load tests and prescribed 27 per cent of antiviral treatment through the PBS. NSW Health will continue to work with key partners to improve initiatives that support screening and clinical management in primary care settings.

Most people living with chronic hepatitis B in NSW were born overseas. In 2020, the most common countries of birth were China and Vietnam, together representing more than one-third of people living with chronic hepatitis B in NSW. The most common country of birth however varies according to Local Health District. Data from the Centre for Social Research in Health, University of NSW shows challenges persist regarding experiences and expressions of stigma and discrimination. The NSW Hepatitis B Strategy prioritises efforts to address these challenges.

Hepatitis B remains a substantial public health issue in NSW. Improving access to care, regular monitoring and treatment are required to improve the health outcomes and wellbeing of people with chronic hepatitis B infection and to prevent liver cancer.

NSW Hepatitis B Strategy 2023 – 2026

NSW has committed to supporting the National and World Health Organization (WHO) strategic goals to eliminate hepatitis B by 2030. Hepatitis B affects an estimated 79,522 people in NSW, many of whom may not be aware they have the virus. The NSW Hepatitis B Strategy 2023-2026 (the Strategy) was launched in February 2023 and provides a system-wide framework for NSW Health and partners to respond to hepatitis B from 2023 to 2026. The Strategy focuses on four pillars:

1. **Prevention:** Prevent new infections and chronic disease.
2. **Early Diagnosis:** Diagnose infection and normalise regular testing to avoid late diagnosis.
3. **Linkage to care:** Appropriately treat and regularly monitor people living with chronic hepatitis B. Facilitate assessment of individuals at higher risk of liver disease and comorbidities.
4. **Access and Equity:** Enable equitable access to services, reduce hepatitis B-related stigma, and remove barriers to seeking healthcare.

The NSW Hepatitis B Strategy has 11 targets that provide a specific focus for the efforts made towards achieving the goals of the Strategy by the end of 2026. The Hepatitis B Annual Data Report (this document) will be published each year to report on key indicators of the NSW Hepatitis B Strategy 2023-2025. This data report will be used to adjust the NSW approach to hepatitis B as required, and to respond to new and emerging issues. Not all indicators and data may be available.

NSW Health Acknowledgment

NSW Health acknowledges the Traditional Custodians of country throughout NSW and their connections to land, sea and community. We pay our respects to their Elders past and present and extend that respect to all Aboriginal people today.

NSW Health also recognises all communities and individuals impacted by and at risk of hepatitis B. NSW Health recognises the ongoing negative impacts of stigma and societal discrimination people impacted by hepatitis B can experience.

In this report, Aboriginal and Torres Strait Islander people are referred to as Aboriginal people in recognition that Aboriginal people are the original inhabitants of NSW.

Progress towards NSW Hepatitis B 2023-2026 Strategy targets

The NSW Hepatitis B Strategy 2023 – 2026 uses 2020 as the baseline data for prevalence numbers, diagnosis, prevention, care and treatment to establish long-term trends from before the COVID-19 pandemic. This approach avoids data discrepancies caused by service disruptions during the pandemic and is in line with the National Hepatitis B Strategy. The Strategy uses 2021 as the baseline data for access and equity targets as no data is available for 2020. Data for 2023 is not available for all indicators but will be included in future data reports when available.

Prevention

Target	Baseline (2020)	2023	2026 Target
95% or higher hepatitis B childhood vaccination coverage*.	97%	96%	95%
100% of pregnant women are screened for hepatitis B**.	This data will be available in future reports.	This data will be available in future reports.	100%
100% of infants born to hepatitis B positive mothers receive immunoglobulin within 12 hours of birth**.	This data will be available in future reports.	This data will be available in future reports.	100%
100% of pregnant women with a high viral load (>200,000 or 5.3 log10 IU/mL) are offered treatment in their third trimester.	-	This data will be available in future reports.	100%

Early diagnosis

Target	Baseline (2020)	2022	2026 Target
90% of people living with hepatitis B are diagnosed[1].	80%	84%	90%
Target	**Baseline (2020)**	**2021**	**2026 Target**
Less than 10% of late diagnosis among people presenting with liver failure or liver cancer[2].	24% (DC) 224% (HCC)	29% (DC) 16% (HCC)	<10%

DC = Decompensated cirrhosis; HCC = Hepatocellular carcinoma

Linkage to care

Target	Baseline (2020)	2022	2026 Target
100% of people living with hepatitis B receive care[1].	27%	31%	100%
20% of people living with hepatitis B receive antiviral treatment[1].	13%	15%	20%
20% reduction in hepatitis B-related mortality[2].	75 deaths attributed to hepatitis B	62 17% reduction	20% reduction

Access and Equity

Target	Baseline (2021)	2022	2026 Target
75% reduction in discriminatory attitudes held towards people at risk of or living with hepatitis B by healthcare workers.	31%	27%	75% reduction
75% reduction in discriminatory attitudes held towards people at risk of or living with hepatitis B by the general public.	49%	This data will be available in future reports	75% reduction

*Children fully vaccination with at least 3 doses of hepatitis B vaccine (excluding birth dose) measured at 24 months of age. Hepatitis B birth dose vaccination is not calculated in this baseline target. See NSW Mothers and Babies Report for information about hepatitis B birth dose vaccination.

** This baseline and target will be updated in future reports to incorporate new data metrics that will provide more accurate monitoring of these indicators.

[1] Data used to set targets is based on estimates and modelling undertaken by the WHO Collaborating Centre for Viral Hepatitis, the Doherty Institute, using NSW data from the National Surveillance for Hepatitis B indicators: Measuring the progress towards the targets of the national hepatitis B strategy annual reports.

[2] Data used to set targets is based on estimates and modelling undertaken by the Kirby Institute, University of NSW (UNSW).

Glossary of terms

APDC	Admitted Patient Data Collection
ASHM	Australasian Society for HIV, Viral Hepatitis and Sexual Health Medicine
CC	Central Coast Local Health District
CHB	Chronic hepatitis B
DC	Decompensated cirrhosis
FW	Far West Local Health District
GP	General practitioner
HBV	Hepatitis B virus
HCC	Hepatocellular carcinoma
HNE	Hunter New England Local Health District
IS	Illawarra Shoalhaven Local Health District
LHD	Local Health District
M	Murrumbidgee Local Health District
MBS	Medicare Benefits Schedule
MNC	Mid North Coast Local Health District
NBM	Nepean Blue Mountains Local Health District
NCIMS	Notifiable Conditions Information Management System
NNSW	Northern NSW Local Health District
NS	Northern Sydney Local Health District
NSW	New South Wales
PBS	Pharmaceutical Benefits Scheme
RBDM	Registry of Births, Deaths and Marriages
SES	South Eastern Sydney Local Health District
SNSW	Southern NSW Local Health District
SWS	South Western Sydney Local Health District
SYD	Sydney Local Health District
UNSW	University of New South Wales
WHO	World Health Organisation
WNSW	Western NSW Local Health District
WS	Western Sydney Local Health District

SHPN (CPH) 240740

1. Prevention

Vaccination

Population-wide hepatitis B immunisation programs are the most effective and cost-effective public health measure to prevent disease. The NSW Immunisation Program is a population-wide program that aims to minimise the incidence and prevalence of vaccine preventable diseases, including hepatitis B. In NSW, all infants are offered hepatitis B vaccine at birth, 6 weeks, 4 and 6 months of age in accordance with the NSW Childhood Immunisation Schedule.

Hepatitis B vaccination is also recommended and free to eligible adult population groups. While the risk of chronic infection is higher when exposed early in life, identifying unvaccinated people, and offering vaccination plays a critical role in preventing chronic infection and transmission.

Screening of pregnant women

In NSW, all pregnant women must be offered screening and information about hepatitis B. All mothers with chronic hepatitis B and their babies must be prioritised and managed in accordance with guidelines to prevent mother-to-child transmission of hepatitis B. The Neonatal and Infant Hepatitis B Prevention and Vaccination Program Policy Directive specifies the requirements for neonatal hepatitis B prevention and vaccination in NSW.

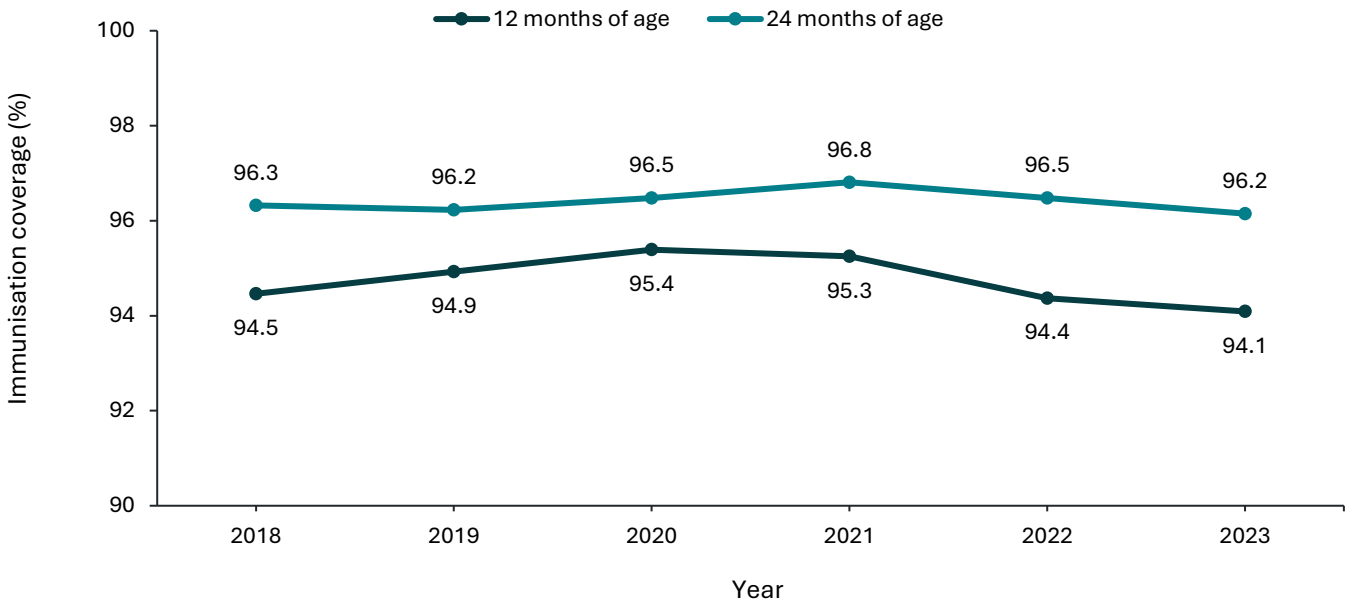
This data report monitors and reports infant vaccination coverage, prevention and treatment measures for babies born to hepatitis B positive mothers. All public hospitals are required to locally monitor and report on neonatal prevention and treatment measures. NSW Health recommends private hospitals implement neonatal hepatitis B prevention and vaccination procedures as outlined in the Neonatal and Infant Hepatitis B Prevention and Vaccination Program Policy Directive.

1.1 Hepatitis B vaccination among infants

In 2023, 96.2 per cent of all infants in NSW were fully vaccinated against hepatitis B by 24 months of age (Figure 1). Full vaccination for infants is defined as receiving hepatitis B vaccination at 6 weeks, 4 and 6 months of age. Delays in vaccination as well as underreporting likely influence the 2.1 per cent difference in immunisation coverage between 12 and 24 months of age.[1]

The NSW Hepatitis B Strategy aims for 95 per cent or higher hepatitis B childhood vaccination coverage, including birth dose. Information about hepatitis B birth dose vaccination in NSW and by Local Health District is available in the NSW Mothers and Babies Report.

Figure 1: Proportion of infants in NSW who have received 3 doses of hepatitis B vaccine (measured at 12 and 24 months of age) 2018-2023



Data source: Commonwealth Coverage Reports, 2018 – 2023. Note: Y-axis starts at 90% coverage.

1.2 Hepatitis B screening among pregnant women and prevention among newborn babies

Future reports will include data on DNA testing and antiviral treatment for pregnant women with chronic hepatitis B, screening among pregnant women and immunoglobulin administration.

[1] Law C, McGuire R, Ferson MJ *et al,*; NSW Public Health Network AIR Study Group. Children overdue for immunisation: a question of coverage or reporting? An audit of the Australian Immunisation Register. Aust N Z J Public Health. 2019 Jun;43(3):214-220. doi: 10.1111/1753-6405.12891b.

2. Early Diagnosis

Most adults who become infected with hepatitis B virus will naturally resolve or 'clear' the infection, so they are no longer infectious and have lifelong immunity to hepatitis B re-infection. However, about 15 per cent of infected adults do not clear the virus and remain infectious. These individuals develop chronic hepatitis B, defined as an infection that persists for more than six months. By contrast, about 85–90 per cent of infants infected at birth, or in early childhood, will develop chronic hepatitis B[2].

Early diagnosis of hepatitis B is crucial, as 15–40 per cent of people living with untreated chronic hepatitis B will eventually experience liver failure (a sudden deterioration in liver function known as decompensated cirrhosis) or develop hepatocellular carcinoma (the most common type of primary liver cancer).

The NSW Hepatitis B Strategy aims to have 90 per cent of people living with hepatitis B diagnosed. Current modelling by the WHO Collaborating Centre for Viral Hepatitis at the Doherty Institute estimates that in 2022, 83.9 per cent of people living with chronic hepatitis B in NSW had been diagnosed[3].

Late diagnosis

Late diagnosis of hepatitis B can cause adverse health outcomes and is defined as a hepatitis B diagnosis within two years prior, at the time of, or after admission for liver failure or liver cancer. Late diagnosis is a missed opportunity to reduce hepatitis B related morbidity and mortality.

The NSW Hepatitis B Strategy has a goal to diagnose early and normalise regular testing to avoid poor health outcomes. Primary healthcare services, including general practice, play a key role in providing education, early testing, diagnosis, treatment, and monitoring services for hepatitis B detection, management and liver cancer prevention. Research conducted by the WHO Collaborating Centre for Viral Hepatitis at the Doherty Institute[4] found that 95 per cent of people diagnosed with late hepatitis B had previously visited a general practitioner (on average two healthcare visits per year) and 89 per cent had a blood test for other conditions in the 10 years prior to the late diagnosis. This highlights opportunities for timely detection of hepatitis B and early intervention had been missed.

The NSW Hepatitis B Strategy aims to have less than 10 per cent of people with hepatitis B-associated liver failure or liver cancer be diagnosed late with hepatitis B. Of people with hepatitis B-associated liver failure or liver cancer, the percentage who had a late hepatitis B diagnosis continues to decrease in NSW due to people being engaged in care and increased testing.

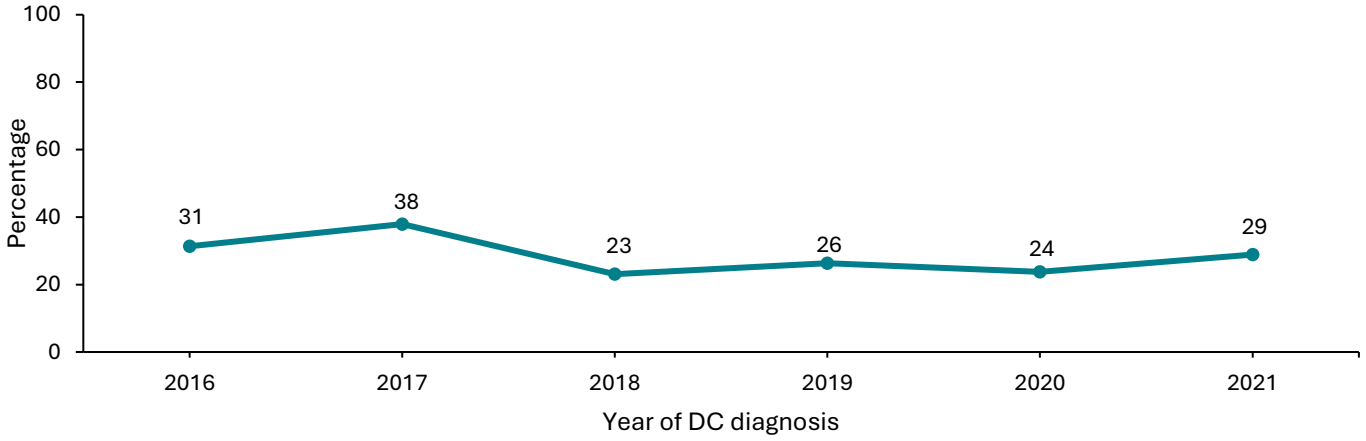
[2] Hepatitis B Consensus Statement Working Group. Australian recommendations for the management of hepatitis B infection: a consensus statement 2022. Melbourne. Gastroenterological Society of Australia.
[3] Nguyen A, Romero N, MacLachlan JH, Cowie BC. National Surveillance for Hepatitis B Indicators: Measuring the progress towards the targets of the National Hepatitis B Strategy – Annual Report 2022. Melbourne: WHO Collaborating Centre for Viral Hepatitis, The Doherty Institute; 2024.
[4] Mnatzaganian, G, MacLachlan JH, Allard N, Brown C, Rowe S, Cowie, BC. (2023) Missed opportunities for diagnosis of hepatitis B and C in individuals diagnosed with decompensated cirrhosis or hepatocellular carcinoma. Journal of Gastroenterology and Hepatology, 38: 976–983. https://doi.org/10.1111/jgh.16162.

2.1 Hepatitis B liver-related late diagnosis

Data from the most recent data linkage in 2023 included all hepatitis B notifications (1993 to March 2022), hospital admissions (July 2001 to March 2022) and deaths (1993 to 2022). These data were used to evaluate the observed trends in late diagnosis.

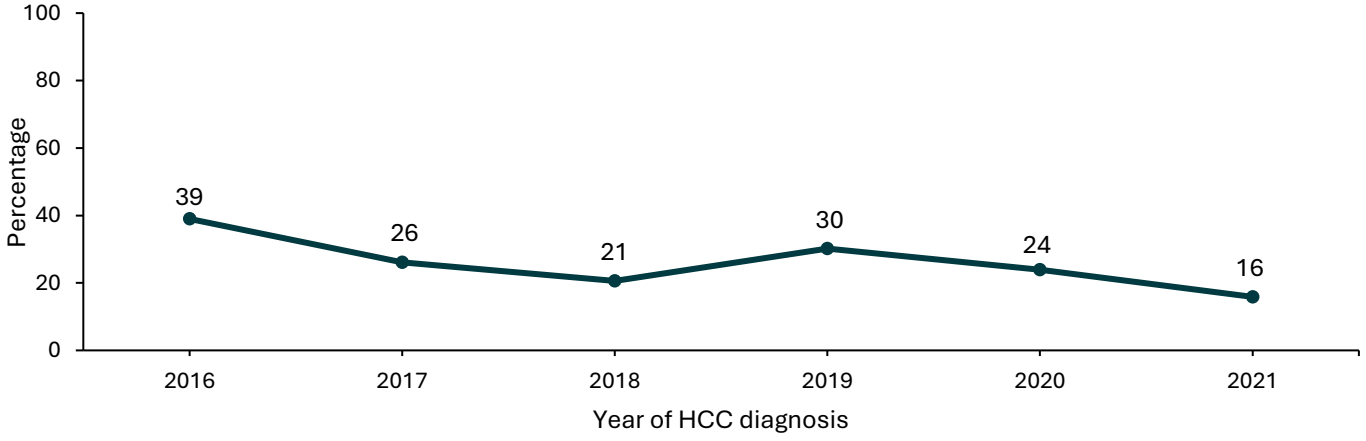
The most recent analysis by the Viral Hepatitis Clinical Research Program at the Kirby Institute, University of NSW reported among people with hepatitis B-related decompensated cirrhosis, 29% had been diagnosed late in 2021 and among people with hepatitis B-related hepatocellular carcinoma, 16% had been diagnosed late in 2021 (Figure 4 and Figure 5).

Figure 4: Proportion of people presenting with decompensated cirrhosis (DC) who had late hepatitis B diagnosis, NSW, 2001–2021



Data source: NCIMS (1993- March 2022) and APDC (July 2001-2022) (via SAPHaRI), NSW Health. Year is based on first hospital presentation with DC (proxy for DC diagnosis). Late HBV diagnosis is defined by an HBV notification after, at the time or within 2 years before DC diagnosis. ICD-10 codes for DC use primary or secondary diagnosis fields for DC ascites (R18.0), bleeding oesophageal varices (I85.0, I98.3, and I98.21), chronic hepatic failure (including hepatic encephalopathy; K72.1, K72.9), alcoholic hepatic failure (K70.4), or hepatorenal syndrome (K76.7). Date extracted 28 March 2022 (NCIMS) & 31 March 2022 (APDC). Data analysis: Viral Hepatitis Clinical Research Program, Kirby Institute, UNSW.

Figure 5: Proportion of people with hepatocellular carcinoma (HCC) who had late hepatitis B diagnosis, NSW, 2001–2021



Data source: NCIMS (March 1993-2022), and APDC (July 2001-2022) (via SAPHaRI), NSW Health. Year is based on first hospital presentation with HCC (proxy for HCC diagnosis). Late HBV diagnosis is defined by an HBV notification after, at the time or within 2 years before HCC diagnosis. ICD-10 codes for HCC use hospital discharge diagnosis codes; primary or secondary diagnosis fields for liver cell carcinoma (C22.0). Date extracted 28 March 2022 (NCIMS) & 31 March 2022 (APDC). Data analysis: Viral Hepatitis Clinical Research Program, Kirby Institute, UNSW.

3. Linkage to care

Linkage to care is defined as a person receiving either monitoring or antiviral treatment for their chronic hepatitis B infection. While there is no specific cure for hepatitis B, it is important that people with chronic hepatitis B have regular monitoring of their liver function and blood tests to assess stage of infection and whether antiviral treatment is needed. Antiviral treatment can prevent progression of chronic infection to liver diseases such as cirrhosis and lower the risk of liver cancer. Approximately 14,000 people living with hepatitis B require antiviral treatment, however everyone living with hepatitis B should be monitored at least once per year to detect changes that may prompt the need for treatment. Regular screening for liver cancer is also recommended depending on the stage of infection.

Current modelling by the WHO Collaborating Centre for Viral Hepatitis at the Doherty Institute estimates 73,671 people are living with chronic hepatitis B in NSW. In 2022, 30.5 per cent were engaged in care (monitoring or antiviral treatment). With the current trajectory in care uptake, NSW will not reach 50 per cent engaged in care until 2040[5]. NSW has an ambitious target to achieve 100 per cent of people living with hepatitis B in NSW receiving care by 2026.

NSW is achieving high rates of hepatitis B diagnosis, however significant improvements in the uptake of care (monitoring or antiviral treatment) are required to reduce morbidity and mortality. A key focus of the NSW Hepatitis B Strategy 2023-2026 is to link all people diagnosed with hepatitis B into timely care and appropriate treatment. NSW Health is committed to improving the models of care available to sustain engagement in care including locally coordinated and multidisciplinary models of care and supporting screening and clinical management initiatives in primary care settings.

General practice and s100 community prescribers

While people with chronic infection can be managed and treated by specialists in tertiary settings, hepatitis B s100 community prescribers are available in primary care settings. NSW Health partners with ASHM to provide training and authorisation for hepatitis B prescribers in NSW and supports professional development for community s100 prescribers. There are currently 165 hepatitis B s100 community prescribers in NSW, 77 per cent are general practitioners and 7 per cent are nurse practitioners. ASHM's prescriber map provides up-to-date information on the location and contract details of accredited hepatitis B prescribers in NSW. General Practitioners who are not S100 accredited also have a responsibility in the diagnoses and ongoing monitoring of people living with hepatitis B.

3.1 Chronic hepatitis B monitoring

Monitoring is defined as a viral load test each year among people with chronic hepatitis B who are not receiving treatment. Annual hepatitis B viral load testing data for NSW residents are publicly available from Medicare Benefits Schedule statistics. These data are based on the date the test was processed by Services Australia and do not capture monitoring provided to inpatients in public hospitals, nor monitoring performed through the Department of Veterans' Affairs. Previous analyses and comparison with other source data by the Doherty Institute demonstrated that the vast majority of hepatitis B viral load testing are provided through Medicare.[5]

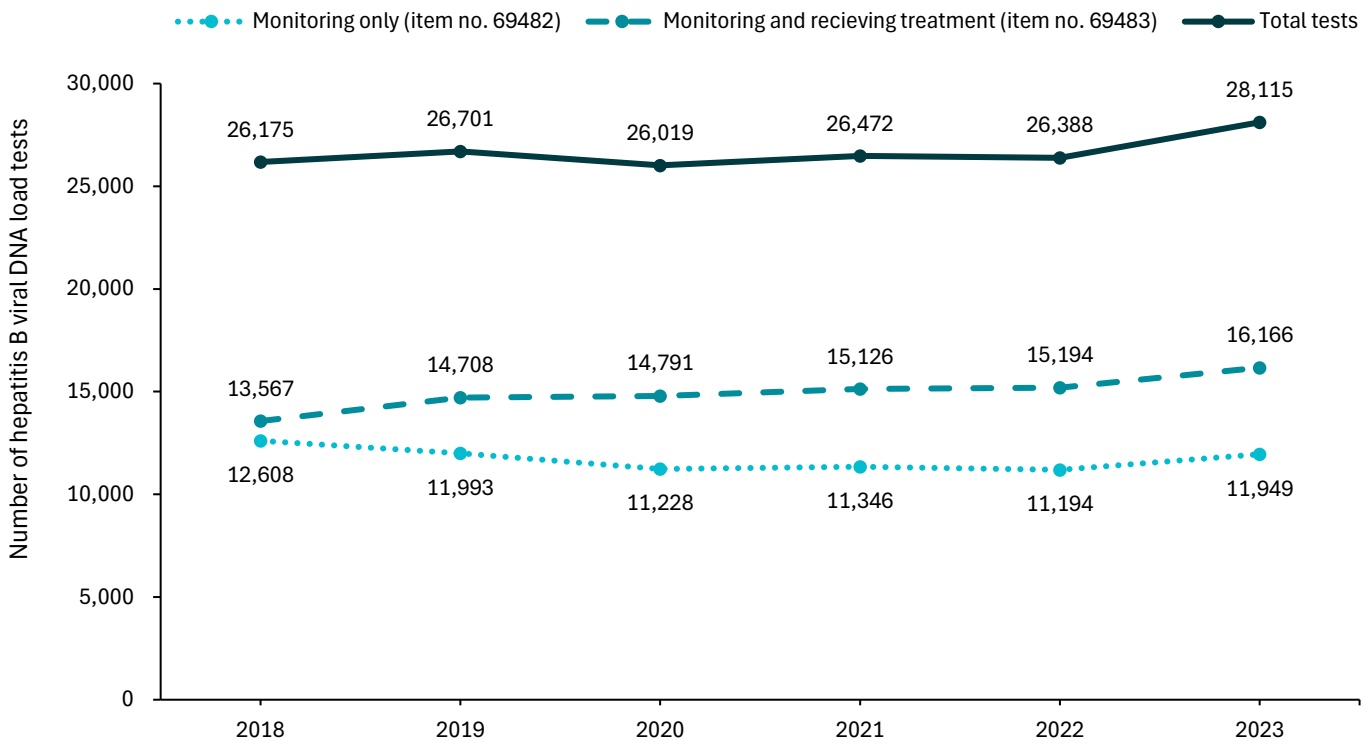
In 2023 Medicare reported 28,115 hepatitis B viral load tests in NSW, including 11,949 tests for people living with chronic hepatitis B who required monitoring only (43% total tests) and 16,166 viral load tests for people living with chronic hepatitis B and receiving antiviral treatment (58% of total tests) (Figure 6). Viral load testing for monitoring only (Medicare item number 69482), is limited to one test per patient in a 12-month period and provides a rough estimate of the number of people living with chronic hepatitis B who are monitored. In comparison, viral load testing for people receiving treatment (Medicare item number 69483) is limited to no more than four tests per patient in a 12-month period.

Viral load testing for monitoring only increased 7 per cent compared to 2022 (2022: N=11,194, 2023: N=11,949), but remained 5% lower than 2018 (N=12,608). Changes in viral load tests for monitoring may only reflect people transitioning from monitoring into treatment initiation, a decline in retention in care or changes to testing patterns. Patient linked viral load data and treatment data are unavailable to monitor the progression of people living with chronic hepatitis B through the care cascade.

Of people with chronic hepatitis B living in NSW, approximately 16 per cent received a viral load test for monitoring only (11,949/73,671). NSW has an ambitious Strategy target of 100 per cent of people living with hepatitis B having regular monitoring and/or appropriate treatment by 2026. To meet this target, substantial improvements to engage and retain people in care are required, and improved collection, linkage and reporting of surveillance data would be necessary.

[5] MacLachlan JH, Romero N, Purcell I, Cowie BC. Viral Hepatitis Mapping Project: Hepatitis B National Report 2022. Darlinghurst, NSW, Australia: ASHM; 2024. https://ashm.org.au/vh-mapping-project/

Figure 6: Number of hepatitis B viral load tests in NSW between 2018 – 2023



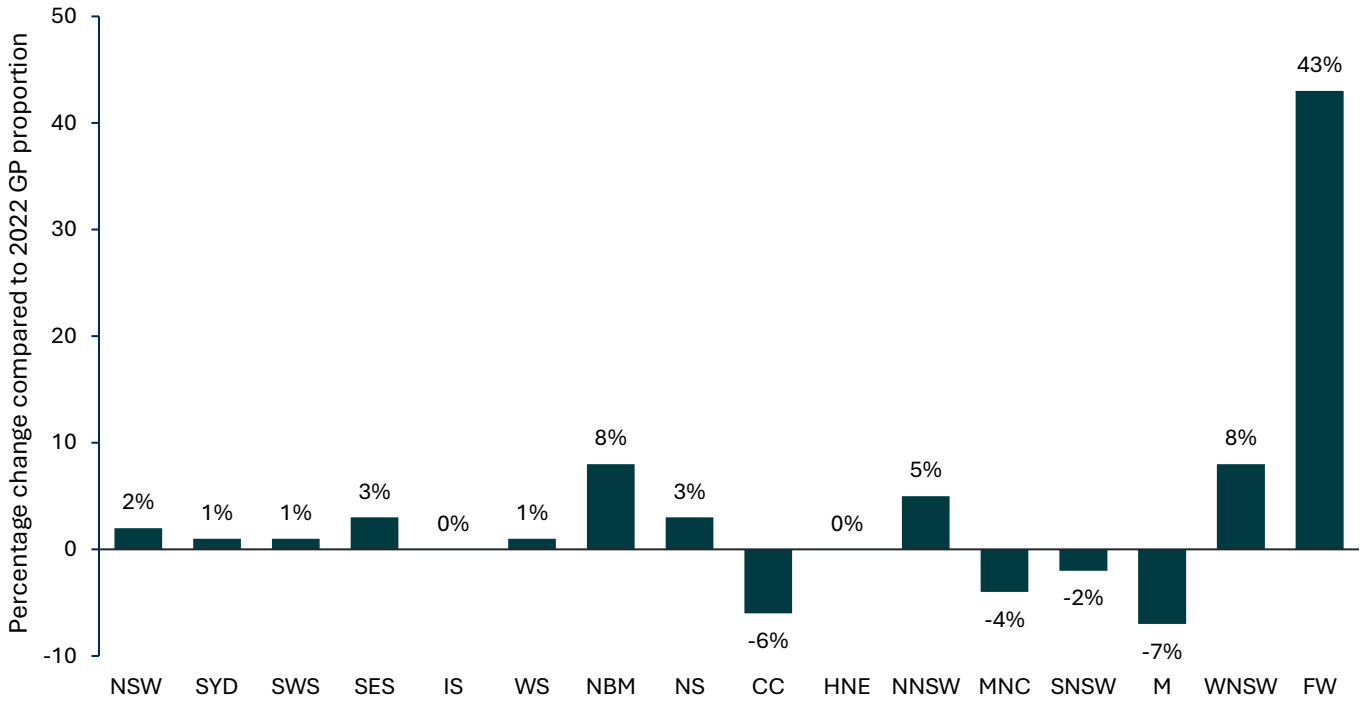
Data source: Medicare Benefits Schedule statistics, Department of Services Australia. Item 69482 is for quantitation of Hepatitis B viral DNA in patients who are Hepatitis B surface antigen positive and have chronic hepatitis B but are not receiving antiviral therapy. This item is applicable not more than once in a 12-month period per patient. Item number 69483 is for quantitation of Hepatitis B viral DNA in patients who are Hepatitis B surface antigen positive and who have chronic hepatitis B and are receiving antiviral therapy. This item is applicable not more than 4 times in a 12-month period per patient. NSW locality is based on the address of the patient at the time of claiming the service. Year is calculated based on the date the service was processed by Services Australia, not the date the service was provided. Data does not include HBV viral load tests provided to inpatients in public hospitals or HBV viral load tests that qualify for a benefit under the Department of Veterans' Affairs National Treatment Account.

3.2 Chronic hepatitis B monitoring in general practice.

Primary healthcare services, including general practice, play a key role in providing education, testing, treatment, early diagnosis and monitoring services for hepatitis B and liver cancer prevention. Late diagnosis of hepatitis B is a missed opportunity to reduce hepatitis-B related morbidity and mortality.

In NSW in 2023, GPs requested 44 per cent of hepatitis B viral load tests billed through Medicare (N=6,645) for people not receiving antiviral treatment. This was a 2 per cent increase compared to 2022 (42%, 6,379/15,039) (Figure 7). Nine out of fifteen Local Health Districts observed an increase in viral load testing by GPs. Annual fluctuations in the proportion of GP requested viral load tests may reflect changes in service delivery and retention in care.

Figure 7: Percentage change in hepatitis B viral load tests for people not receiving antiviral treatment requested by General Practitioners by Local Health District of patient residence, 2022 – 2023.



Data source: Medicare Benefits Schedule, Department of Services Australia. Item 69482 is for quantitation of Hepatitis B viral DNA in patients who are Hepatitis B surface antigen positive and have chronic hepatitis B but are not receiving antiviral therapy. This item is applicable not more than once in a 12-month period per patient. GP services are classified using the registered specialty of requestion provider. Year is calculated based on the date the service was provided. Local Health District is based on the address of the patient at the time of date of service.
Note: The bars represent the percentage change in the proportion of Hepatitis B viral load tests prescribed by GPs in 2023 compared against the proportion of Hepatitis B viral load tests prescribed by GPs in 2022 by LHD.

Table 1: Number of hepatitis B viral load tests for people not receiving antiviral treatment by General Practitioners via Medicare by Local Health District of patient residence, 2022 – 2023.

	NSW	SYD	SWS	SES	IS	WS	NBM	NS	CC	HNE	NNSW	MNC	SNSW	M	WNSW	FW
2023	6,645	945	1,241	771	141	1,544	92	1,456	109	156	28	50	29	37	40	6
2022	6,379	952	1,162	731	157	1,533	88	1,306	114	140	29	42	46	44	35	0

Data source: Medicare Benefits Schedule, Department of Services Australia. Item 69482 is for quantitation of Hepatitis B viral DNA in patients who are Hepatitis B surface antigen positive and have chronic hepatitis B but are not receiving antiviral therapy. This item is applicable not more than once in a 12-month period per patient. GP services are classified using the registered specialty of requestion provider. Year is calculated based on the date the service was provided. Local Health District is based on the address of the patient at the time of date of service.

3.2 Hepatitis B treatment

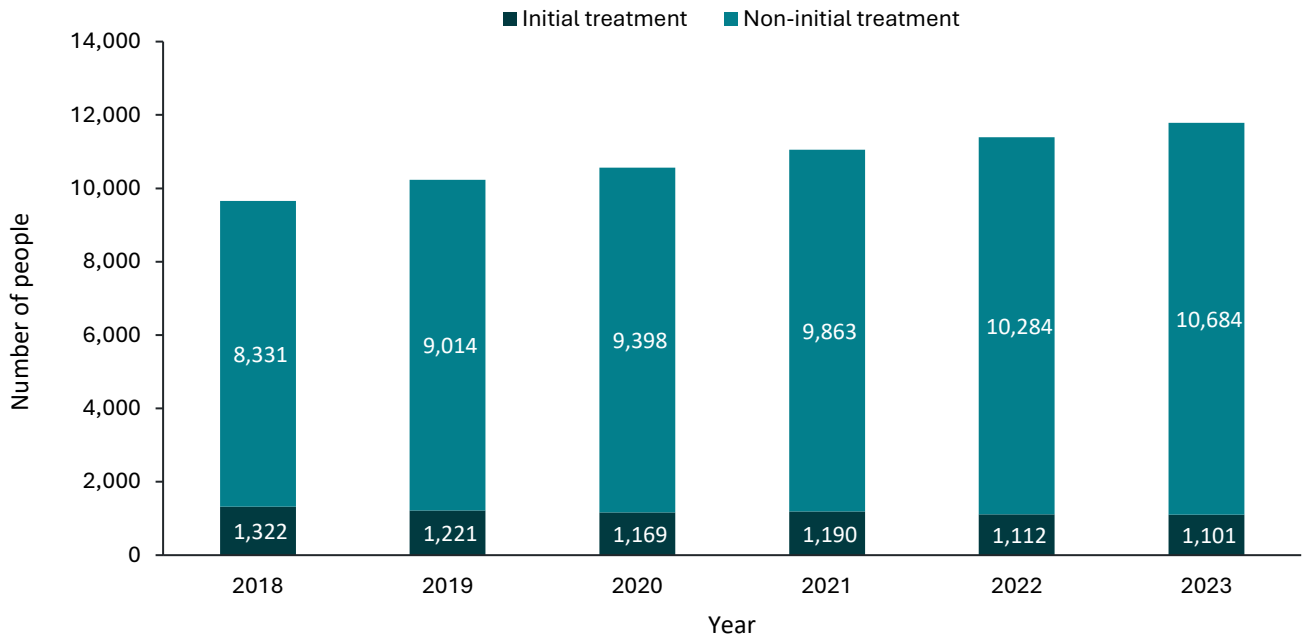
Antiviral treatment can slow the progression of cirrhosis, lower the risk of liver cancer, and improve long-term survival for some people with chronic hepatis B (CHB). Most people who start antiviral treatment, continue it for life. However, treatment is not recommended for most people with chronic hepatitis B.

According to modelled estimates by the WHO Collaborating Centre for Viral Hepatitis at the Doherty Institute[6], the proportion of people living with chronic hepatitis B in NSW receiving antiviral treatment has increased over time. In 2022, an estimated 29.9 per cent of people living with chronic hepatitis B were eligible for treatment (22,018/73,671).

In 2023, 11,785 people were dispensed hepatitis B treatment in NSW through the Pharmaceutical Benefits Scheme (PBS) (Figure 8). This represents 53.3% of people with Hepatitis B estimated to be eligible for treatment (N=22,018) and 16% of the estimated number of people living with hepatitis B in NSW in 2022 (N=73,671). Nine per cent of people were dispensed treatment in NSW for the first time (N=1,101).

For additional information, see Appendix C, Table 6 for residents dispensed hepatitis B treatment via the PBS by Local Health District.

Figure 8: People dispensed hepatitis B treatment, NSW, 2018 to 2023



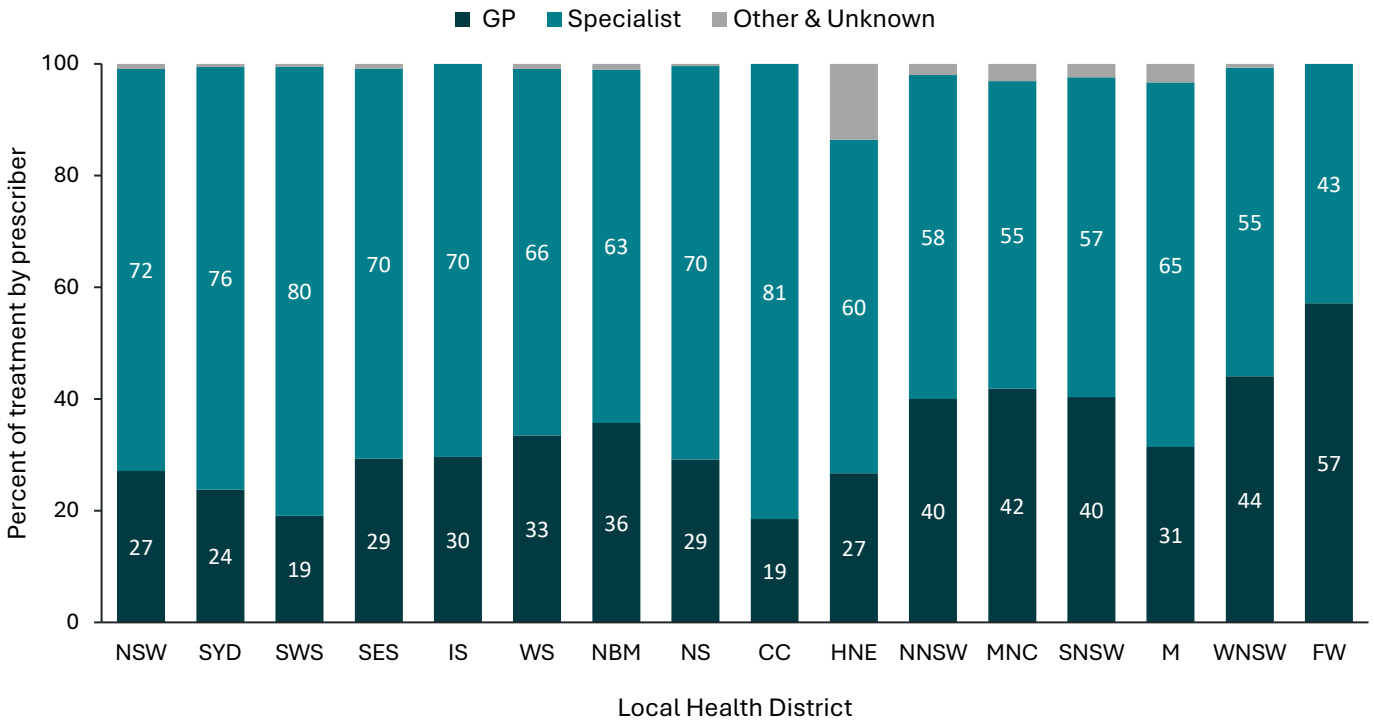
Data source: Pharmaceutical Benefits Scheme. Indication is "Chronic hepatitis B infection". The counting is applicable not more than once in a 12-month period per patient. Initial treatment refers to the first time of Hepatitis B treatment dispensed to patients via PBS. Year is calculated based on the date the supply. Local Health District is based on the address of the patient at the time of date of supply record in PBS. Data does not include HBV treatments provided to inpatients in public hospitals and PBS non-eligible patients.
Note: Figure incorporates residents who were dispensed treatment in Justice Health settings.

[6] Modelled estimates from the National Surveillance for Hepatitis B Indicators: Measuring the progress towards the targets of the National Hepatitis B Strategy – Annual Report 2022

3.2 Hepatitis B treatment by prescriber type

General practitioners (GPs) prescribed 27 per cent (N=6,164) of hepatitis B treatments dispensed to NSW residents through the PBS (Figure 9 and Table 2). This represented a small increase compared to 2022 (26 per cent). GPs prescribed more than 40 per cent of treatments in three Local Health Districts (LHDs) — Mid North Coast LHD (42 per cent), Western NSW LHD (44 per cent), and Far West LHD (57 per cent). These higher percentages of GP prescribing reflect local models of care that enables hepatitis B management in GP settings. This may be a result of reduced access to specialist services in the region and utilisation of s100 community prescribers.

Figure 9: Hepatitis B treatment by prescriber type and Local Health District of patient residence, 2023



Data source: Pharmaceutical Benefits Scheme. Indication is "Chronic hepatitis B infection". The counting is applicable not more than once in a 12-month period per patient. Prescriber types are classified using the PBS benefit claim definition. Year is calculated based on the date the supply. Local Health District is based on the address of the patient at the time of date of supply record in PBS. Data does not include HBV treatments provided to inpatients in public hospitals and PBS non-eligible patients.

Note: Incorporates residents who were dispensed treatment in Justice Health settings.

Table 2: Hepatitis B treatments by prescriber type and Local Health District of patient residence, 2023

	NSW	SYD	SWS	SES	IS	WS	NBM	NS	CC	HNE	NNSW	MNC	SNSW	M	WNSW	FW
GP	6,164	668	1,139	956	101	1,646	140	1,080	47	116	80	54	50	38	67	8
Spec	16,346	2,122	4,806	2,273	240	3,225	248	2,606	207	259	116	71	71	79	84	6
Other	209	16	29	27	0	44	4	15	0	59	4	4	3	4	1	0
Total	22,719	2,806	5,974	3,256	341	4,915	392	3,701	254	434	200	129	124	121	152	14

Data source: Pharmaceutical Benefits Scheme. GP = General practitioner, Spec = specialist and Other = Other & Unknown. This item is applicable not more than once in a 12-month period per patient. Prescriber types are classified using the PBS benefit claim definition. Year is calculated based on the date the supply. Local Health District is based on the address of the patient at the time of date of supply record in PBS. Data does not include HBV treatments provided to inpatients in public hospitals and PBS non-eligible patients.

Note: Incorporates residents who were dispensed treatment in Justice Health settings.

4. Access and Equity

The NSW Hepatitis B Strategy 2023-2026 has a goal to enable equitable access to services, reduce hepatitis B-related stigma, and to remove barriers to seeking healthcare. NSW Health acknowledges the structural, societal, community and individual barriers that impact access to services. Barriers can include stigma and discrimination, cultural, social and economic factors, inequitable access to services and legal needs. The Strategy aims to effectively address these barriers and to achieve:

- 75% reduction in discriminatory attitudes held towards people at risk of or living with hepatitis B by healthcare workers.
- 75% reduction in discriminatory attitudes held towards people at risk of or living with hepatitis B by the general public.

4.1 Stigma and Discrimination

Stigma and discrimination can discourage people from accessing health care and treatment for hepatitis B. The Stigma Indicators Monitoring Project periodically collects data to monitor and measure the expression of stigma by health providers and the general public. The data collected is in relation to any experiences of stigma and discrimination within the past 12 months, as well as stigmatising experiences within health care settings by healthcare workers.

Negative behaviour towards people with hepatitis B in NSW by:

1. General public

In 2021 (the most recent data available), 49 per cent of the general public living in NSW reported they would behave negatively towards other people because of their hepatitis B. This was a larger proportion than the 31 per cent reported in 2020. There has been no significant change in self-reported behaviour, for example negative behaviour between 2017 to 2021.

2. Health care workers

In 2022 (the most recent data available), 27 per cent of health care workers living in NSW reported they would behave negatively towards other people because of their hepatitis B. There has been no significant change self-reported behaviour, for example negative behaviour from 2021 to 2022. There was no significant different between NSW participants and participants from elsewhere in Australia.

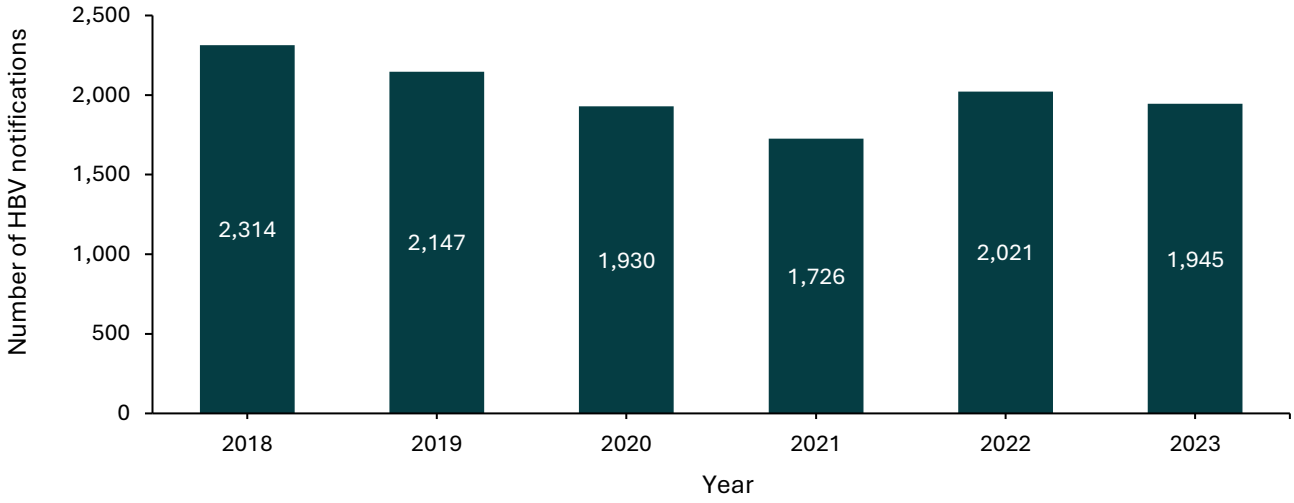
Appendices

Appendix A: Hepatitis B notifications

Hepatitis B notification data provides limited information about the epidemiology of hepatitis B infection as many infections are asymptomatic. As a result, people who are infected may never be tested, or only tested many years after infection. Laboratory reports do not distinguish between infections acquired recently and those acquired many years ago. Variations in the number of notifications may reflect differences in testing patterns over time rather than changes in the incidence of hepatitis B infection.

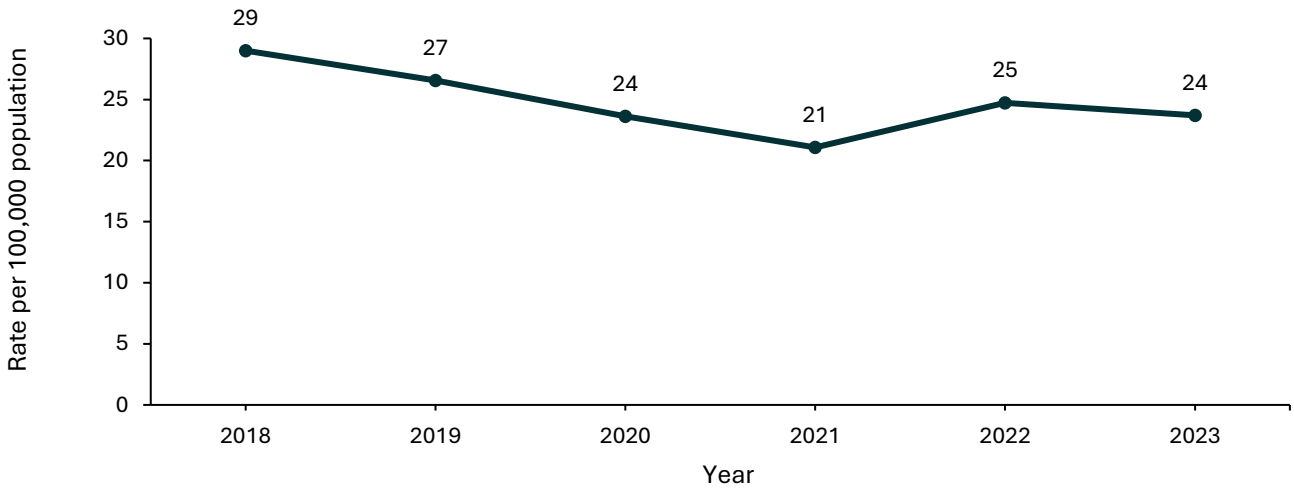
See the NSW infectious diseases data for additional information about hepatitis B notifications in NSW residents and by Local Health District.

Figure 10: Hepatitis B notifications, NSW, 2018-2023



Data source: NCIMS; data extracted 9 April 2024. Note: Excludes non-NSW residents. Year of notification is based on calculated onset date.

Figure 11: Hepatitis B notification rate, NSW 2018-2023



Data source: NCIMS, NSW Health, ABS estimated residential population (via SAPHaRI); data extracted 9 April 2024. Note: Excludes non-NSW residents. Year of notification is based on calculated onset date.

Table 3: Hepatitis B notifications by gender, age group and LHD of residence, NSW 2018-2023

Characteristic	2018 N = 2,314[1]	2019 N = 2,147[1]	2020 N = 1,930[1]	2021 N = 1,726[1]	2022 N = 2,021[1]	2023 N = 1,945[1]
Gender						
Male	1,284 (55.5%)	1,148 (53.5%)	1,003 (52.0%)	945 (54.8%)	1,094 (54.1%)	1,078 (55.4%)
Female	1,025 (44.3%)	996 (46.4%)	925 (47.9%)	779 (45.1%)	926 (45.8%)	864 (44.4%)
Other/Not stated	5 (0.2%)	3 (0.1%)	2 (0.1%)	2 (0.1%)	1 (0.0%)	3 (0.2%)
Age at diagnosis	40 (31, 54)	40 (32, 54)	41 (33, 56)	43 (34, 56)	46 (36, 59)	45 (35, 59)
Age group at diagnosis						
0-14	7 (0.3%)	7 (0.3%)	5 (0.3%)	3 (0.2%)	3 (0.1%)	6 (0.3%)
15-19	27 (1.2%)	29 (1.4%)	18 (0.9%)	12 (0.7%)	21 (1.0%)	21 (1.1%)
20-24	117 (5.1%)	101 (4.7%)	84 (4.4%)	62 (3.6%)	61 (3.0%)	66 (3.4%)
25-29	288 (12.4%)	250 (11.6%)	164 (8.5%)	130 (7.5%)	119 (5.9%)	137 (7.0%)
30-34	353 (15.3%)	357 (16.6%)	300 (15.5%)	267 (15.5%)	237 (11.7%)	213 (11.0%)
35-39	337 (14.6%)	327 (15.2%)	304 (15.8%)	241 (14.0%)	266 (13.2%)	269 (13.8%)
40-44	245 (10.6%)	223 (10.4%)	198 (10.3%)	224 (13.0%)	236 (11.7%)	224 (11.5%)
45-49	220 (9.5%)	192 (8.9%)	163 (8.4%)	174 (10.1%)	205 (10.1%)	205 (10.5%)
50-54	164 (7.1%)	144 (6.7%)	165 (8.5%)	143 (8.3%)	193 (9.5%)	182 (9.4%)
55-59	177 (7.6%)	146 (6.8%)	159 (8.2%)	159 (9.2%)	180 (8.9%)	152 (7.8%)
60-64	174 (7.5%)	146 (6.8%)	152 (7.9%)	115 (6.7%)	192 (9.5%)	173 (8.9%)
65-69	97 (4.2%)	108 (5.0%)	104 (5.4%)	81 (4.7%)	144 (7.1%)	127 (6.5%)
70-74	49 (2.1%)	54 (2.5%)	61 (3.2%)	67 (3.9%)	82 (4.1%)	73 (3.8%)
75-79	27 (1.2%)	39 (1.8%)	23 (1.2%)	27 (1.6%)	41 (2.0%)	52 (2.7%)
80-84	22 (1.0%)	15 (0.7%)	22 (1.1%)	12 (0.7%)	21 (1.0%)	29 (1.5%)
85+	10 (0.4%)	9 (0.4%)	6 (0.3%)	9 (0.5%)	20 (1.0%)	15 (0.8%)
Missing	0 (0.0%)	0 (0.0%)	2 (0.1%)	0 (0.0%)	0 (0.0%)	1 (0.1%)
Local Health District						
Central Coast	27 (1.2%)	34 (1.6%)	24 (1.2%)	25 (1.4%)	19 (0.9%)	31 (1.6%)
Far West	4 (0.2%)	5 (0.2%)	7 (0.4%)	7 (0.4%)	7 (0.3%)	6 (0.3%)
Hunter New England	74 (3.2%)	59 (2.7%)	60 (3.1%)	62 (3.6%)	56 (2.8%)	71 (3.7%)
Illawarra Shoalhaven	43 (1.9%)	35 (1.6%)	38 (2.0%)	28 (1.6%)	44 (2.2%)	34 (1.7%)
Mid North Coast	17 (0.7%)	15 (0.7%)	14 (0.7%)	21 (1.2%)	24 (1.2%)	26 (1.3%)
Murrumbidgee	32 (1.4%)	30 (1.4%)	26 (1.3%)	32 (1.9%)	31 (1.5%)	52 (2.7%)
Nepean Blue Mountains	54 (2.3%)	50 (2.3%)	38 (2.0%)	44 (2.5%)	33 (1.6%)	37 (1.9%)
Northern NSW	22 (1.0%)	14 (0.7%)	18 (0.9%)	18 (1.0%)	24 (1.2%)	20 (1.0%)
Northern Sydney	289 (12.5%)	343 (16.0%)	272 (14.1%)	237 (13.7%)	268 (13.3%)	252 (13.0%)
South Eastern Sydney	350 (15.1%)	296 (13.8%)	284 (14.7%)	218 (12.6%)	259 (12.8%)	225 (11.6%)
South Western Sydney	409 (17.7%)	365 (17.0%)	331 (17.2%)	355 (20.6%)	434 (21.5%)	483 (24.8%)
Southern NSW	14 (0.6%)	18 (0.8%)	20 (1.0%)	23 (1.3%)	15 (0.7%)	16 (0.8%)
Sydney	338 (14.6%)	304 (14.2%)	279 (14.5%)	258 (14.9%)	283 (14.0%)	194 (10.0%)
Western NSW	37 (1.6%)	25 (1.2%)	23 (1.2%)	27 (1.6%)	29 (1.4%)	27 (1.4%)
Western Sydney	547 (23.6%)	482 (22.4%)	443 (23.0%)	331 (19.2%)	450 (22.3%)	422 (21.7%)
Justice Health	43 (1.9%)	50 (2.3%)	34 (1.8%)	23 (1.3%)	24 (1.2%)	25 (1.3%)
Missing	14 (0.6%)	22 (1.0%)	19 (1.0%)	17 (1.0%)	21 (1.0%)	24 (1.2%)

[1]n (%); Median (IQR)

Data source: NCIMS, NSW Health; data extracted 9 April 2024. Note: Excludes non-NSW residents. Year of notification is based on calculated onset date. Data are provisional and subject to change.

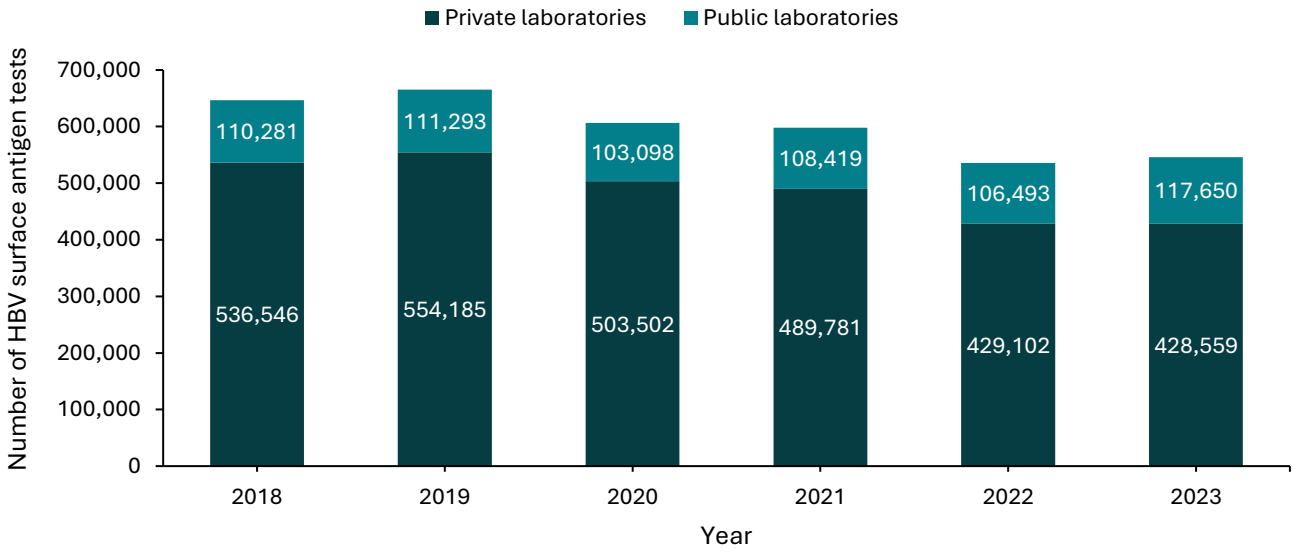
Table 4: Hepatitis B notification rates per 100,000 population by gender, age group and LHD of residence, NSW, 2018-2023

Characteristic	2018	2019	2020	2021	2022	2023
Gender						
Female	25.5	24.5	22.5	18.9	22.5	20.9
Male	32.4	28.6	24.8	23.3	27.0	26.5
Other/Not stated	NA	NA	NA	NA	NA	NA
Age group at diagnosis						
0-14	0.5	0.5	0.3	0.2	0.2	0.4
15-19	5.7	6.1	3.8	2.6	4.5	4.3
20-24	21.3	18.2	15.6	12.1	12.2	13.4
25-29	47.7	40.8	27.0	22.1	20.8	24.4
30-34	59.5	59.2	49.1	43.5	39.3	35.6
35-39	61.1	57.5	52.2	40.7	45.3	45.8
40-44	48.4	44.1	38.6	42.8	44.4	41.1
45-49	42.0	36.4	30.9	33.6	40.6	41.0
50-54	34.2	30.1	34.0	28.8	38.0	35.3
55-59	36.1	29.5	32.1	32.6	37.6	32.2
60-64	39.6	32.5	32.9	24.5	40.3	35.9
65-69	25.0	27.4	25.7	19.7	34.3	29.6
70-74	14.8	15.8	17.2	18.4	22.5	19.8
75-79	11.7	16.2	9.1	10.2	14.4	17.2
80-84	13.5	8.9	12.6	6.6	11.2	14.9
85+	5.8	5.1	3.3	4.8	10.5	7.7
Missing	NA	NA	NA	NA	NA	NA
Local Health District						
Central Coast	7.9	9.9	6.9	7.2	5.4	8.8
Far West	13.5	17.0	24.1	24.4	24.7	21.4
Hunter New England	8.0	6.3	6.4	6.5	5.9	7.4
Illawarra Shoalhaven	10.4	8.3	8.9	6.5	10.2	7.8
Mid North Coast	7.7	6.7	6.2	9.2	10.5	11.3
Murrumbidgee	10.7	10.0	8.6	10.6	10.3	17.1
Nepean Blue Mountains	14.3	13.1	9.9	11.5	8.6	9.6
Northern NSW	7.3	4.6	5.9	5.8	7.8	6.4
Northern Sydney	30.8	36.0	28.4	24.8	28.0	26.3
South Eastern Sydney	37.1	31.0	29.6	23.0	27.8	24.3
South Western Sydney	40.5	35.4	31.6	33.8	41.2	45.5
Southern NSW	6.7	8.5	9.3	10.7	6.9	7.3
Sydney	49.3	43.6	39.7	37.0	40.8	28.0
Western NSW	13.2	8.9	8.2	9.6	10.2	9.5
Western Sydney	54.6	47.0	42.5	31.7	43.1	40.1
Justice Health	NA	NA	NA	NA	NA	NA
Unknown	NA	NA	NA	NA	NA	NA

Data source: NCIMS, NSW Health and ABS estimated residential population (via SAPHaRI); data extracted 9 April 2024. Note: Excludes non-NSW residents. Year of notification is based on calculated onset date. Rate calculated per 100,000 population. NA is applied when the denominator (total population) is unavailable. For Justice Health this is because the available population data provides the number of annual incarcerations, not the number of people incarcerated.

Appendix B: Hepatitis B testing

Figure 12: Hepatitis B surface antigen tests by public and private laboratory, NSW, 2018-2023



Data source: NSW Denominator Data Project, NSW Health. Data extracted 9 April 2024.

Table 5: Hepatitis B viral load testing for monitoring only (no treatment) by Local Health District of residence, 2018 to 2023

Local Health District	2018	2019	2020	2021	2022	2023
Central Coast	207	207	223	181	199	212
Far West	<100	<100	<100	<100	9	14
Hunter New England	368	360	313	318	262	292
Illawarra Shoalhaven	254	344	369	330	372	332
Mid North Coast	<100	55	<100	<100	69	87
Murrumbidgee	<100	<100	<100	<100	76	72
Nepean Blue Mountains	213	194	208	206	200	176
Northern NSW	<100	<100	<100	<100	59	52
Northern Sydney	2,910	2,842	2,670	2,873	2,994	3,104
South Eastern Sydney	2,063	1,963	1,944	1,832	1,870	1,855
South Western Sydney	3,937	3,638	3,301	3,179	3,141	3,277
Southern NSW	<100	60	<100	<100	95	63
Sydney	2,939	2,630	2,405	2,305	2,282	2,210
Western NSW	122	<100	<100	<100	81	78
Western Sydney	3,633	3,513	3,063	3,231	3,330	3,305
NSW Total	**16,974**	**16,153**	**14,911**	**14,854**	**15,039**	**15,129**

Data source: Medicare Benefits Schedule, Department of Services Australia. Item 69482, quantitation of Hepatitis B viral DNA in patients who are Hepatitis B surface antigen positive and have chronic hepatitis B but are not receiving antiviral therapy. For any particular patient, this item is applicable not more than once in a 12-month period. Year is calculated based on the date the service was provided. Local Health District is based on the address of the patient at the time the date of service. Data does not include HBV viral load tests provided to inpatients in public hospitals or HBV viral load tests that qualify for a benefit under the Department of Veterans' Affairs National Treatment Account.

Note: The MBS testing data from Australia Service is allocated to GPs and specialists. Before 2022, if either group conducted fewer than 50 tests, the precise numbers were masked and reported as less than 100.

Appendix C: Hepatitis B treatment

Table 6: People receiving hepatitis B treatment by Local Health District of residence, 2018 to 2023

Local Health District	2018	2019	2020	2021	2022	2023
Central Coast	97	100	101	110	119	137
Far West	3	5	9	8	6	7
Hunter New England	201	204	218	220	225	225
Illawarra Shoalhaven	107	129	139	167	167	178
Mid North Coast	59	73	73	64	65	72
Murrumbidgee	51	57	59	53	64	63
Nepean Blue Mountains	158	167	187	203	210	202
Northern NSW	60	68	71	80	87	100
Northern Sydney	1,403	1,559	1,629	1,757	1,835	1,947
South Eastern Sydney	1,474	1,559	1,574	1,603	1,627	1,704
South Western Sydney	2,647	2,777	2,883	2,961	3,026	3,111
Southern NSW	58	63	66	66	62	59
Sydney	1,306	1,329	1,344	1,392	1,430	1,458
Western NSW	59	66	74	74	78	83
Western Sydney	1,970	2,079	2,140	2,295	2,395	2,439
NSW Total	**9,653**	**10,235**	**10,567**	**11,053**	**11,396**	**11,785**

Data source: Pharmaceutical Benefits Scheme. Indication is “Chronic hepatitis B infection”. The counting is applicable not more than once in a 12-month period per patient. Year is calculated based on the date the supply. Local Health District is based on the address of the patient at the time of date of supply record in PBS. Data does not include HBV treatments provided to inpatients in public hospitals and PBS non-eligible patients.

Note: Incorporates residents who were dispensed treatment in Justice Health settings.

Appendix D: Data sources

Table 7: Details on data sources included in this report

Name	Custodian	Description
NSW Notifiable Conditions Information Management System (NCIMS)	Health Protection NSW, NSW Health	NCIMS contains records of all people notified to NSW Health with a notifiable condition under the NSW *Public Health Act 2010*. Hepatitis B notification data may not reflect the true incidence of hepatitis B infections as they only include those living with hepatitis B who were tested and diagnosed. Notification data is however useful for monitoring trends over time. A hepatitis B notification represents an individual. Subsequent notifications for the same individual are not counted.
NSW Health denominator data project	Health Protection NSW, NSW Health	Monthly aggregated testing data for selected notifiable conditions from 12 public and private laboratories in NSW. These laboratories account for ~88% of the total notifications for the selected conditions in NSW. Information provided by these laboratories does not indicate if there are repeat tests for the same individual.
Pharmaceutical Benefits Schedule (PBS) Highly Specialised Drugs Programme data	Centre for Population Health, NSW Health	This data is prepared by Services Australia for NSW Health and captures all hepatitis B treatment dispensing in NSW through the PBS from a public hospital, private hospital, or community pharmacies.
Medicare Benefits Scheme (MBS) Programme data	Centre for Population Health, NSW Health	This data is prepared by the Services Australia for NSW Health and captures hepatitis B viral load tests (MBS item 69482) by General Practitioners and Specialists in NSW and by NSW Health region.
Hepatitis B decompensated cirrhosis and hepatocellular Carcinoma data linkage	Kirby Institute, UNSW	Trends in hepatitis B decompensated cirrhosis (DC) and hepatocellular carcinoma diagnoses in New South Wales are determined through linkage of hepatitis B notifications (January 1993-March 2022) with hospital admissions (July 2001-March 2022) and deaths data (January 1993- December 2022). Late hepatitis B notification is defined as notification at or within 2 years of a DC or HCC diagnosis.
National Surveillance for Hepatitis B Indicators: Annual Report 2022	WHO Collaborating Centre for Viral Hepatitis, The Doherty Institute	The estimates are prepared by the WHO Collaborating Centre for Viral Hepatitis, The Doherty Institute. Estimates are derived from a mathematical model which incorporates important demographic features such as births, migration, deaths, and aging overtime. The 2022 Annual Report data is used in this report.
Stigma Indicators Monitoring Project	Centre for Social Research in Health	The Stigma Indicators Monitoring Project periodically collects data regarding stigma and discrimination experienced by groups including people affected by hepatitis B. The project also monitors the expression of stigma towards these groups by health care workers and the public.
Australian Immunisation Register	Australian Government	The Australian Immunisation Register (AIR) is a national register that records vaccines given to all people in Australia.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