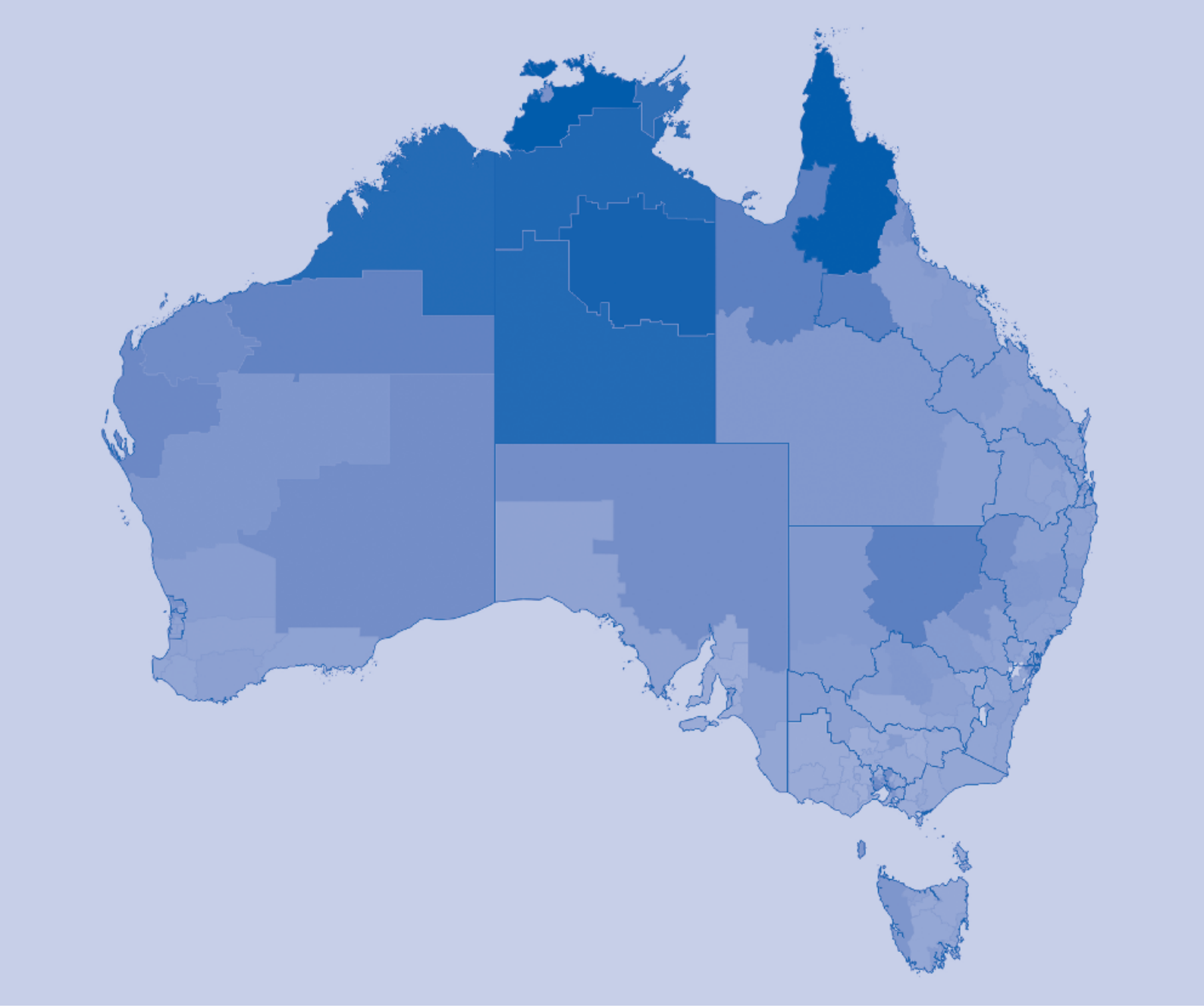

VIRAL HEPATITIS MAPPING PROJECT: HEPATITIS B

Geographic diversity in chronic hepatitis B prevalence, management and treatment

NATIONAL REPORT 2023

ashm

WHO Collaborating Centre for Viral Hepatitis VIDRL

Doherty Institute

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- SA Health
- SA Pathology
- Services Australia

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We would also like to acknowledge the oversight and guidance of the Epidemiology and Public Health Research Advisory Group, WHO Collaborating Centre for Viral Hepatitis, Doherty Institute.

DECLARATION REGARDING THE USE OF PLIDA DATA

The results in this report are based, in part, on data supplied by the Department of Social Services to the Australian Bureau of Statistics (ABS) under the *Social Security (Administration) Act 1999* (Cth), *A New Tax System (Family Assistance) (Administration) Act 1999* (Cth), *Paid Parental Leave Act 2010* (Cth) and the *Student Assistance Act 1973* (Cth). Such data may only be used for the purposes of the *Census and Statistics Act 1905* (Cth) or performance of functions of the ABS as set out in section 6 of the *Australian Bureau of Statistics Act 1975* (Cth) (ABS Act). Any discussion of data limitations or weaknesses is in the context of using the data for statistical purposes, and not related to the ability of the data to support the Department of Social Services' core operational requirements.

Legislative requirements ensure privacy and secrecy of these data are followed. For access to PLIDA data under section 16A of the ABS Act or enabled by section 15 of the *Census and Statistics (Information Release and Access) Determination 2018* (Cth), source data are de-identified and so data about specific individuals have not been viewed in conducting this analysis. In accordance with the Census and Statistics Act 1905, results have been treated where necessary to ensure that they are not likely to enable identification of a particular person or organisation.

The results are also based, in part, on migration data supplied by Home Affairs to the ABS under the *Australian Border Force Act 2015* (Cth), which requires that such data are only used for the purposes of the Census and Statistics Act 1905 or performance of functions of the ABS as set out in section 6 of the ABS Act. Any discussion of data limitations or weaknesses is in the context of using the data for statistical purposes, and not related to the ability of the data to support Home Affairs' core operational requirements.

Legislative requirements ensure privacy and secrecy of these data are followed. For access to PLIDA data under section 16A of the ABS Act or enabled by section 15 of the Census and Statistics (Information Release and Access) Determination 2018, source data are de-identified and so data about specific individuals have not been viewed in conducting this analysis. In accordance with the Census and Statistics Act 1905, results have been treated where necessary to ensure that they are not likely to enable identification of a particular person or organisation.

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The Australian Government Department of Health and Aged Care

While the Australian Government Department of Health and Aged Care provides financial support for this project, the material contained in this resource should not be taken to represent the views of the Australian Government Department of Health and Aged Care.

ABBREVIATIONS

ABS	Australian Bureau of Statistics
ACT	Australian Capital Territory
AIR	Australian Immunisation Register
CHB	chronic hepatitis B
CHC	chronic hepatitis C
GP	general practitioner
MBS	Medicare Benefits Schedule
NNDSS	National Notifiable Diseases Surveillance System
NP	nurse practitioner
NSW	New South Wales
NT	Northern Territory
PBS	Pharmaceutical Benefits Scheme
PHN	Primary Health Network
Qld	Queensland
SA	South Australia
SA2	Statistical Area 2
SA3	Statistical Area 3
Tas	Tasmania
Vic	Victoria
WA	Western Australia
WHO	World Health Organization

For data terms and definitions, see Section D – Data sources and methodology.

EXECUTIVE SUMMARY

SECTION A: HEPATITIS B

PREVALENCE AND PRIORITY POPULATIONS

- An estimated 219,800 people were living with chronic hepatitis B (CHB) in Australia in 2023, representing a prevalence of 0.82% of the total population.
- The number of people living with CHB has increased by 9.6% since 2018, increasing the number of people who need to be diagnosed and engaged in care to meet targets.
- The proportion of the population living with CHB varied widely by Primary Health Network (PHN) and was highest in the **Northern Territory** PHN and in PHNs in Sydney and Melbourne.
- The prevalence of CHB was highest in those born in North East Asia (4.92%), South East Asia (3.91%) and Sub-Saharan Africa (2.42%); and was also higher in Aboriginal and Torres Strait Islander people (1.43%). Data regarding care and treatment uptake by country of birth and Indigenous status are reported below.

CARE

- Engagement in care (treatment or viral load test monitoring) in 2023 was 24.5%, half the Third National Hepatitis B Strategy 2018–2022 (the National Strategy) target of 50%.
- The number of people engaged in monitoring (receiving a viral load test while not receiving antiviral treatment) reduced nationally between 2018 and 2023, impeding progress towards the care uptake target.
- The number of people engaged in monitoring increased in some regions, most rapidly in the **Western Victoria**, **Western Queensland** and **Central Queensland, Wide Bay and Sunshine Coast** PHNs.
- While no PHN reached the 50% target, care uptake was highest in PHNs in Sydney, Melbourne and Brisbane, and the **Australian Capital Territory** PHN.
- When assessing the total period of data available (2014–2023), just over half of all people living with CHB (55.3%) had evidence of being engaged in any care (either a viral load test or treatment) during the prior 10 years.
- Of those who did receive care during 2014–2023, the majority (53.0%) had only irregular monitoring (viral load testing less than once every two years).
- Care uptake during 2014–2023 was higher among those born overseas than among Aboriginal and Torres Strait Islander people and non-Indigenous Australian-born people at the national level; however, this varied by state and territory and in the NT was higher among Aboriginal and Torres Strait Islander people.
- Due to the population distribution of people living with CHB, the PHNs with the highest number of people not engaged in care during 2014–2023 were the **North Western Melbourne**, **Central and Eastern Sydney** and **Eastern Melbourne** PHNs, each with over 7,000 people not in care, despite higher-than-average uptake.
- General practitioners (GPs) provided 54.9% of viral load monitoring tests in 2023, and nurse practitioners (NPs) provided 0.7%.

TREATMENT

- Treatment uptake for CHB in 2023 was 12.6%, below the National Strategy target of 20% by 2022.
- The number of people receiving treatment has increased over time (30% between 2018 and 2023); however, the number of new initiations per year has plateaued. A 95% increase in the number receiving treatment from 2018 would have been needed to meet the National Strategy target of 20% uptake by 2022.
- Treatment uptake increased most rapidly between 2018 and 2023 in the **Western Victoria**, **Central Queensland, Wide Bay and Sunshine Coast** and **Northern Territory** PHNs.
- Treatment uptake was highest in PHNs in Sydney, Melbourne and Brisbane, and the **Australian Capital Territory** PHN.
- Only one PHN reached the 2022 National Strategy target of 20% (**South Western Sydney**), and projections suggest that no other PHNs are due to exceed this target before 2030 if current trajectories continue.
- Only 10 Statistical Area 3s (SA3s) (4.8% of those reported) had reached the 2022 treatment uptake target of 20% in 2023, generally located in PHNs with higher uptake of treatment.
- Treatment uptake was higher among those born overseas than among Aboriginal and Torres Strait Islander people or non-Indigenous Australian-born people. It did not meet the 20% target in any of these population groups.
- Treatment continuation was high, with 80.1% of those who received treatment in 2014 still on treatment in 2023.
- GP prescribing represented 21.9% of CHB treatment in 2023, and NP prescribing represented 1.6%.

IMMUNISATION

- Timely infant hepatitis B immunisation uptake (measured at 12 months of age) was 93.2% in 2023, below the 95% National Strategy target for 2022. Overall coverage declined during the period 2018–2023.
- Coverage was lower among Aboriginal and Torres Strait Islander children (89.9%), and this also declined between 2018 and 2023.
- The 95% coverage target was met in 11 of Australia's 31 PHNs for all children in 2023, a reduction from 16 PHNs in 2021.
- The 95% coverage target was met in three PHNs for Aboriginal and Torres Strait Islander children in 2023, a reduction from eight PHNs in 2021.

SECTION B: SEROLOGY TESTING FOR HEPATITIS B AND C

- The number of hepatitis serology tests (including hepatitis B and C) occurring through Medicare reduced during 2020–2022. There was a subsequent increase in 2023 and 2024; however, testing rates were still below 2019 levels.
- This reduction led to an estimated 2.2 million fewer serology tests during the period.
- Although specific yearly trends varied, this decline during 2020–2022 occurred in all states and territories.

SECTION C: LIVER CANCER

- Liver cancer rates in Australia are highly variable according to region.
- In the **North Western Melbourne**, **Western Sydney**, **Central and Eastern Sydney**, **Northern Territory** and **South Western Sydney** PHNs, the majority of Statistical Area 2s (SA2s) had liver cancer rates above the national average.
- The five PHNs with the highest liver cancer rates also had above-average prevalence of CHB (**North Western Melbourne** and **Western Sydney**) or had above-average prevalence of both CHB and chronic hepatitis C (CHC) (**Central and Eastern Sydney**, **Northern Territory** and **South Western Sydney**).

HEPATITIS C

The equivalent report on hepatitis C, geographic diversity and trends in prevalence and treatment uptake and related methods are presented in the Viral Hepatitis Mapping Project: Hepatitis C National Report 2023–2024.

MAPPING REPORT AT A GLANCE

The Hepatitis B Mapping Report – overview of concepts, methods and outputs

Data reported:

Hepatitis B prevalence

The proportion of the total population living with chronic hepatitis B (CHB)

Source: mathematical modelling incorporating data including migration, births, deaths, clinical progression, immunisation, and notifications

Geography available: state and territory, remoteness area, Primary Health Network, and Statistical Area 3

Time period available: 2023

Hepatitis B care uptake

The proportion of people with CHB who had either treatment OR a viral load test

Source: Medicare data for hepatitis B viral load testing and hepatitis B treatment

Geography available: state and territory, remoteness area, Primary Health Network and Statistical Area 3

Time period available: uptake in 2023, uptake overall for 2014–2023, trends for 2018–2023

Hepatitis B treatment uptake

The proportion of people with CHB who had treatment

Source: Medicare data for hepatitis B treatment

Geography available: state and territory, remoteness area, Primary Health Network and Statistical Area 3

Time period available: uptake in 2023, trends for 2018–2023, projections to 2030

Serology testing for hepatitis B and C

The number and rate of people who had a hepatitis serology test

Source: Medicare data for hepatitis serology testing (includes hepatitis A, B, C, D and E)

Geography available: state and territory

Time period available: trends during Jan 2014– Jun 2024

Hepatitis B immunisation

The proportion of infants fully immunised for hepatitis B (doses at 2, 4 and 6 months) by 12 months of age

Source: National Immunisation Register

Geography available: Primary Health Network

Time period available: 2023, trends during 2018–2023

Liver cancer incidence variation

The proportion of regions within a Primary Health Network where the rate of liver cancer is above average

Source: Australian Cancer Atlas, using data derived from state and territory cancer registries

Geography available: Primary Health Network

Time period available: 2010–2019

Geographic areas used for reporting:

8 states and territories

31 Primary Health Networks (population 45,000 – 1.6 million)

5 remoteness areas (major cities to very remote)

330 Statistical Area 3 (SA3) regions (population 5,000–300,000)

Geographic region is based on the residence of the person living with hepatitis B, not the location of the service provider

Click to look up an SA3, Primary Health Network or remoteness area for an address

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TABLES AND FIGURES

INTRODUCTION

BACKGROUND

The Viral Hepatitis Mapping Project aims to assess geographic variations in the prevalence of viral hepatitis and disparities in access to care in order to identify priority areas for response. Improving access to care and treatment for viral hepatitis is needed to reduce the burden of attributable liver disease and cancer, the distribution of which is also geographically disparate.

This publication includes data regarding hepatitis B, as well as estimates of viral hepatitis testing and liver cancer. The most recent data regarding hepatitis C prevalence and treatment uptake are presented in the Viral Hepatitis Mapping Project: Hepatitis C National Report 2023–2024 (published 2025).

This report presents the most recent available estimates for prevalence, treatment and care to the end of 2023, with testing data available to June 2024. The report enables readers to identify the prevalence of hepatitis B in local areas, and to assess progress in delivering care to affected people.

The authors acknowledge communities and individuals affected by hepatitis B. We thank all people with a living and lived experience of hepatitis B, and acknowledge those who have lost their lives to hepatitis B.

This report highlights a range of disparities which must be addressed to meet Australia's 2030 elimination goals for hepatitis B, focusing on geographic inequities. This report is informed by the targets set out in the Third National Hepatitis B Strategy 2018–2022. Future versions of the report will assess progress towards new targets contained in the Fourth National Hepatitis B Strategy 2023–2030, which is yet to be released.

For the first time, this report also includes sections that discuss inequities by population group, highlighting the lower level of care access among Aboriginal and Torres Strait Islander peoples at the national level, which is a likely driver of disparities observed among those living in more remote regions. The findings in this report highlight the enduring traumatic legacy of colonisation on Aboriginal and Torres Strait Islander peoples, and recognise the historical disadvantage perpetuated by institutional racism and systemic failures that collectively contribute to these disparities.[1,2] This emphasises the urgent need for culturally appropriate care and programs led by affected communities that address the root causes of health inequities. These factors also may impact the likelihood of experiencing adverse outcomes related to CHB, emphasising the need to focus on marginalised communities for increased access to care and treatment.

By acknowledging and addressing systemic issues leading to inequities, comprehensive and equitable approaches to hepatitis B care in Australia can be supported.

WHAT'S NEW IN THIS REPORT?

This 2023 report contains the following updates:

- Further assessment of trends in diagnosis, care and treatment during 2018–2023, including comparisons over the period covered by the current National Hepatitis B Strategy.
- First-ever estimates for Australia of the national hepatitis B cascade of care according to priority population (people born overseas and Aboriginal and Torres Strait Islander peoples).
- Expanded assessment of monitoring over time, providing increased understanding of long-term trends in care uptake during the total period of available data (2014–2023), including adjustments to account for those who have died or emigrated.
- Updated estimates of hepatitis B prevalence for all geographic regions, based on updated modelling.
- Updated estimates of hepatitis B according to priority population and region, using updated estimated resident population data.
- Serology testing data (including hepatitis B and C) through mid-2024.
- More accurate geographic location information for hepatitis B treatment and care.
- Incorporation of adjusted data to account for viral load testing conducted outside of Medicare in SA.
- Updated liver cancer data according to PHN to 2019.

HOW TO USE THE DATA

The data in this report are intended for use in the development and implementation of policy and service delivery, allowing identification of priority groups and assessment of variation in key metrics by area. The specification of priority populations, such as culturally and linguistically diverse communities, is intended to improve health care services to these communities. However, data should be used in a way that considers the broader social, cultural and personal context of individuals, and recognises the various factors that influence health service access, as people living with viral hepatitis are often subject to intersecting discrimination.[3]

The information presented here should be understood to represent estimates, and used with consideration for the uncertainty inherent in population modelling and routinely collected data. These estimates are also subject to continued revision and updating to ensure that information is as accurate as possible.

REPORT STRUCTURE

The Mapping Project is divided into two reports. This report includes:

- Section A1: national snapshot of hepatitis B prevalence, treatment, monitoring and care, and immunisation
- Section A2: geographic diversity and trends in CHB by state and territory
- Section B: serology testing for hepatitis B and C
- Section C: liver cancer
- Section D: data sources and methodology.

The report on hepatitis C geographic diversity, trends in prevalence and treatment uptake, and related methods are presented in the Viral Hepatitis Mapping Project: Hepatitis C National Report 2023–2024 (published separately).

MORE INFORMATION

For further information about the Mapping Project, to access previous reports, and to view frequently asked questions, please visit the project website. To explore the data included in this report, visit the online portal, which provides interactive visualisations of these variations at the state and territory, PHN and SA3 level. For further information or resources related to viral hepatitis and the Mapping Project, visit www.doherty.edu.au/viralhepatitis and www.ashm.org.au/resources. The Mapping Project is constantly evolving in response to valued feedback and guidance. To provide feedback, or to request further information or specific data, please contact jennifer.maclachlan@mh.org.au.

This report would not be possible without the contributions of the data custodians who provided information, and we gratefully acknowledge their support.

SECTION A: HEPATITIS B

SECTION A1: NATIONAL SNAPSHOT – HEPATITIS B

IN THIS SECTION

Section A1 includes the following information:

- national and state/territory-level estimates of CHB prevalence, priority populations, diagnosis, treatment uptake and care uptake
- national and PHN-level estimates of CHB prevalence, priority populations, treatment, care uptake and immunisation coverage
- assessment of trends in treatment and ongoing care engagement during the period 2018–2023, covering the current Hepatitis B National Strategy
- historical care engagement data for the total period currently available (2014–2023)
- assessment of variation in treatment and care uptake according to demographic and clinical factors, and according to priority population
- data regarding prescribing and viral load testing by provider specialty according to state/territory and PHN.

Table A.1: Heat map of CHB prevalence, care uptake and treatment uptake, by PHN, 2023

PHN	PREVALENCE Proportion of the population living with CHB (%)	TREATMENT Proportion of people with CHB who received treatment (%)	CARE Proportion of people with CHB who received care (treatment or monitoring) (%)
NATIONAL AVERAGE IN 2023	**0.82%**	**12.6%**	**24.5%**
NATIONAL STRATEGY TARGET	**-**	**20.0%**	**50.0%**
Northern Territory	1.79%	10.9%	21.3%
South Western Sydney	1.36%	20.2%	37.2%
Western Sydney	1.29%	17.4%	34.1%
Central and Eastern Sydney	1.28%	14.9%	28.7%
Northern Sydney	1.23%	15.5%	32.2%
Eastern Melbourne	1.17%	13.9%	28.9%
North Western Melbourne	1.09%	13.9%	27.3%
Brisbane South	0.96%	13.4%	27.1%
South Eastern Melbourne	0.94%	12.4%	25.5%
Country WA	0.82%	4.0%	*
Perth North	0.82%	9.4%	*
Perth South	0.79%	9.6%	*
Western Queensland	0.72%	#	#
Adelaide	0.70%	12.4%	*
Australian Capital Territory	0.67%	15.2%	26.2%
Northern Queensland	0.64%	6.8%	16.9%
Brisbane North	0.61%	8.5%	15.0%
Nepean Blue Mountains	0.59%	8.8%	18.5%
Gold Coast	0.56%	9.5%	16.1%
Darling Downs and West Moreton	0.53%	7.3%	15.2%
Western NSW	0.52%	5.6%	15.7%
South Eastern NSW	0.42%	8.8%	17.6%
Hunter New England and Central Coast	0.41%	6.7%	14.3%
Murrumbidgee	0.39%	5.7%	12.4%
Murray	0.39%	8.1%	20.3%
Central Queensland, Wide Bay, Sunshine Coast	0.37%	7.4%	12.9%
Country SA	0.36%	5.4%	*
Western Victoria	0.36%	9.2%	19.7%
North Coast	0.35%	8.8%	18.8%
Gippsland	0.33%	8.0%	15.5%
Tasmania	0.32%	9.1%	15.7%

ABS, Australian Bureau of Statistics. CHB, chronic hepatitis B. PHN, Primary Health Network.

Key: Green denotes lowest prevalence and highest care and treatment uptake, with the colour gradient through to red, which denotes highest prevalence and lowest care and treatment uptake. Grey denotes suppressed data.

Data source: CHB prevalence estimates based on mathematical modelling incorporating population-specific prevalence and ABS population data. Treatment and monitoring (viral load testing) data sourced from Medicare statistics.

Data suppressed where number of people receiving treatment or monitoring was ≤20.

* Data not reported for SA and WA by PHN due to the extent of monitoring services outside of Medicare.

THE CASCADE OF CARE

Australia's Third National Hepatitis B Strategy 2018–2022[4] targets included:

- 80% of people living with CHB diagnosed
- 50% of people living with CHB engaged in care (treatment or viral load test monitoring)
- 20% of people living with CHB receiving treatment.

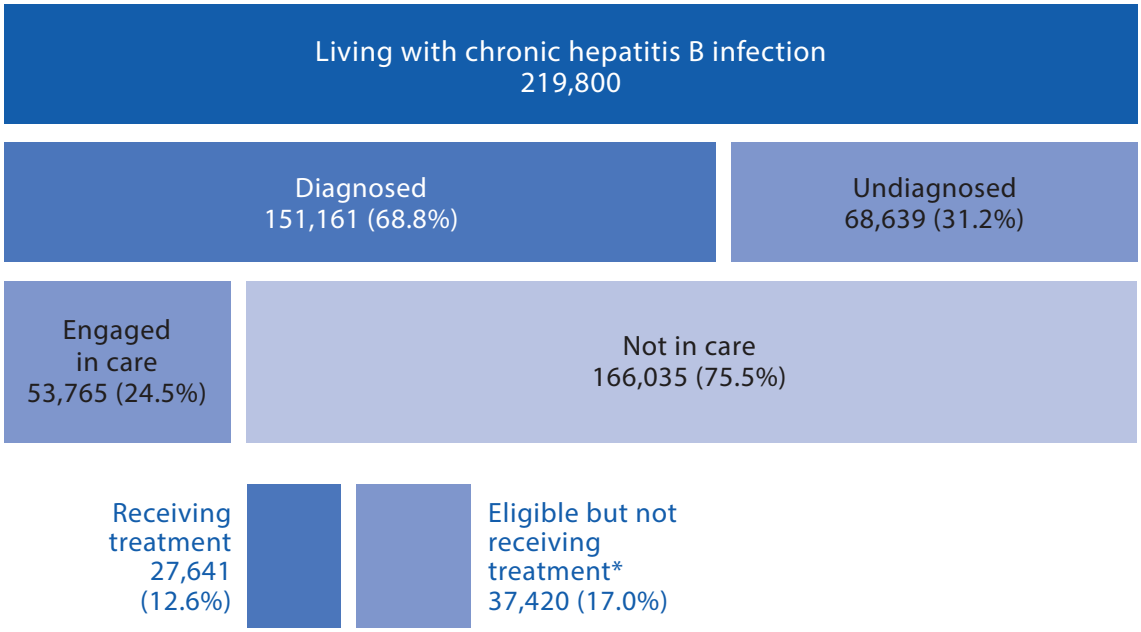
None of these cascade of care targets has been met nationally. Based on modelled projections of the future number of people estimated to be living with CHB,[5] and extrapolation of previous trends, none of these targets are estimated to be met until beyond 2030 under the current trajectories.

In 2023 in Australia, an estimated 219,800 people were living with CHB. Of those, 151,161 (68.8%) had ever been diagnosed; 53,765 (24.5%) people received care in 2023 (either treatment or monitoring); and 27,641 (12.6%) received antiviral treatment in 2023 (Figure A.1).

A total of 121,656 (55.3%) people received any care at any point during the period of available data (2014–2023), indicating that nearly half of people with CHB had no evidence of engagement in care in the past decade (see Ongoing engagement in care section).

This report explores the variation in each of these cascade indicators by geographic area and over time. Trends show gradual increases in diagnosis and treatment uptake over time (Table A.2); however, care uptake decreased in 2023 due partly to the increase in the number of people living with CHB when migration to Australia resumed after the travel restrictions applied during the COVID-19 pandemic were lifted.

Figure A.1: CHB cascade of care, Australia, 2023



ABS, Australian Bureau of Statistics. CHB, chronic hepatitis B.

Data source: CHB prevalence estimates based on mathematical modelling incorporating population-specific prevalence and ABS population data. Proportion diagnosed estimated using modelling combined with notifications data. Treatment and monitoring (viral load test while not receiving treatment) data sourced from Medicare statistics.

* Treatment eligibility based on Australian clinical guidelines, estimated using mathematical modelling.

(See data for this figure)

Table A.2: Progress made towards 2022 National Hepatitis B Strategy targets for diagnosis, care and treatment, 2018–2023

Indicator	2018	2019	2020	2021	2022	2023	National Strategy target by 2022	Year Australia projected to reach 2022 target
Diagnosis	70.3%	69.8%	71.3%	73.3%	71.8%	68.8%	80.0%	2042
Care (treatment or monitoring*)	25.2%	25.3%	24.9%	26.5%	25.2%	24.5%	50.0%	2047
Treatment	10.6%	11.2%	11.9%	12.8%	12.8%	12.6%	20.0%	2036

ABS, Australian Bureau of Statistics. CHB, chronic hepatitis B.

Data source: CHB prevalence estimates based on mathematical modelling incorporating population-specific prevalence and ABS population data. Proportion diagnosed estimated using modelling combined with notifications data. Treatment and monitoring (viral load test while not receiving treatment) data sourced from Medicare statistics.

Targets presume trends in population living with CHB and change in indicators over time remain stable. See *National Surveillance for Hepatitis B Indicators Report 2023*[5] for more information about the assumptions and projections used.

* Monitoring is represented by a viral load test while not receiving treatment.

PREVALENCE

In 2023 in Australia, an estimated 219,800 people were living with CHB,[5] representing 0.82% of the total population (Table A.3). The number of people living with CHB in Australia has increased consistently since 1995, with the exception of 2020–2021 when international border closures due to the COVID-19 pandemic impacted migration to Australia. The number of people living with CHB in Australia is projected to continue to increase through at least 2030 if current migration trends continue.[5]

PREVALENCE BY STATE AND TERRITORY

The highest prevalence of CHB was estimated to be in the NT at 1.79%, and the lowest prevalence in Tas at 0.32%. Among other jurisdictions, the prevalence of CHB was also above the national average of 0.82% in NSW (0.92%) and Vic (0.90%). Prevalence was similar to the national average in WA (0.81%), and below it in the ACT (0.67%), Qld (0.64%) and SA (0.60%) (Table A.3).

Table A.3: Estimated prevalence of CHB, by state and territory, 2023

State/ territory	Total population	People living with CHB	CHB prevalence (%)
ACT	470,018	3,160	0.67%
NSW	8,428,215	77,844	0.92%
NT	253,815	4,537	1.79%
Qld	5,527,248	35,352	0.64%
SA	1,866,388	11,258	0.60%
Tas	574,717	1,812	0.32%
Vic	6,903,901	62,241	0.90%
WA	2,928,484	23,596	0.81%
AUSTRALIA	**26,957,776**	**219,800**	**0.82%**

ABS, Australian Bureau of Statistics. CHB, chronic hepatitis B.

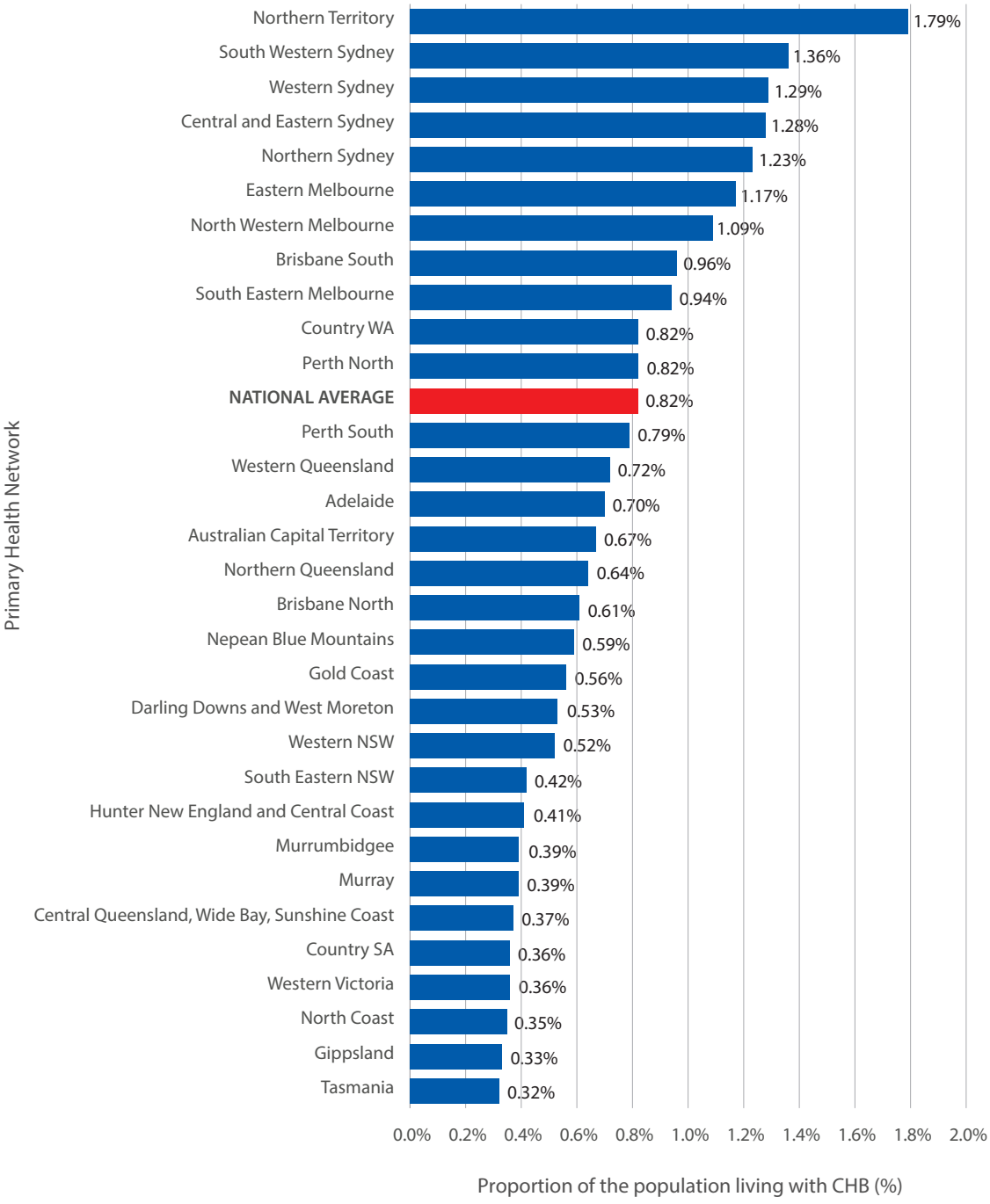
Data source: CHB prevalence estimates based on mathematical modelling incorporating population-specific prevalence and ABS population data.

Totals may not add up due to inclusion of people without a state/territory of residence recorded in source data.

PREVALENCE BY PRIMARY HEALTH NETWORK

The **Northern Territory** PHN comprises the whole jurisdiction and had the highest CHB prevalence of any PHN in 2023 (1.79%), more than six times that of the lowest prevalence PHN. The number of people estimated to be living with CHB in 2023 also varied widely according to PHN, as shown in Figure A.3. Outside the NT, prevalence was highest in the following PHNs: **South Western Sydney** (1.36%), **Western Sydney** (1.29%), **Central and Eastern Sydney** (1.28%), **Northern Sydney** (1.23%), **Eastern Melbourne** (1.17%) and **North Western Melbourne** (1.09%) (Figure A.2).

Figure A.2: Estimated prevalence of CHB by PHN, 2023

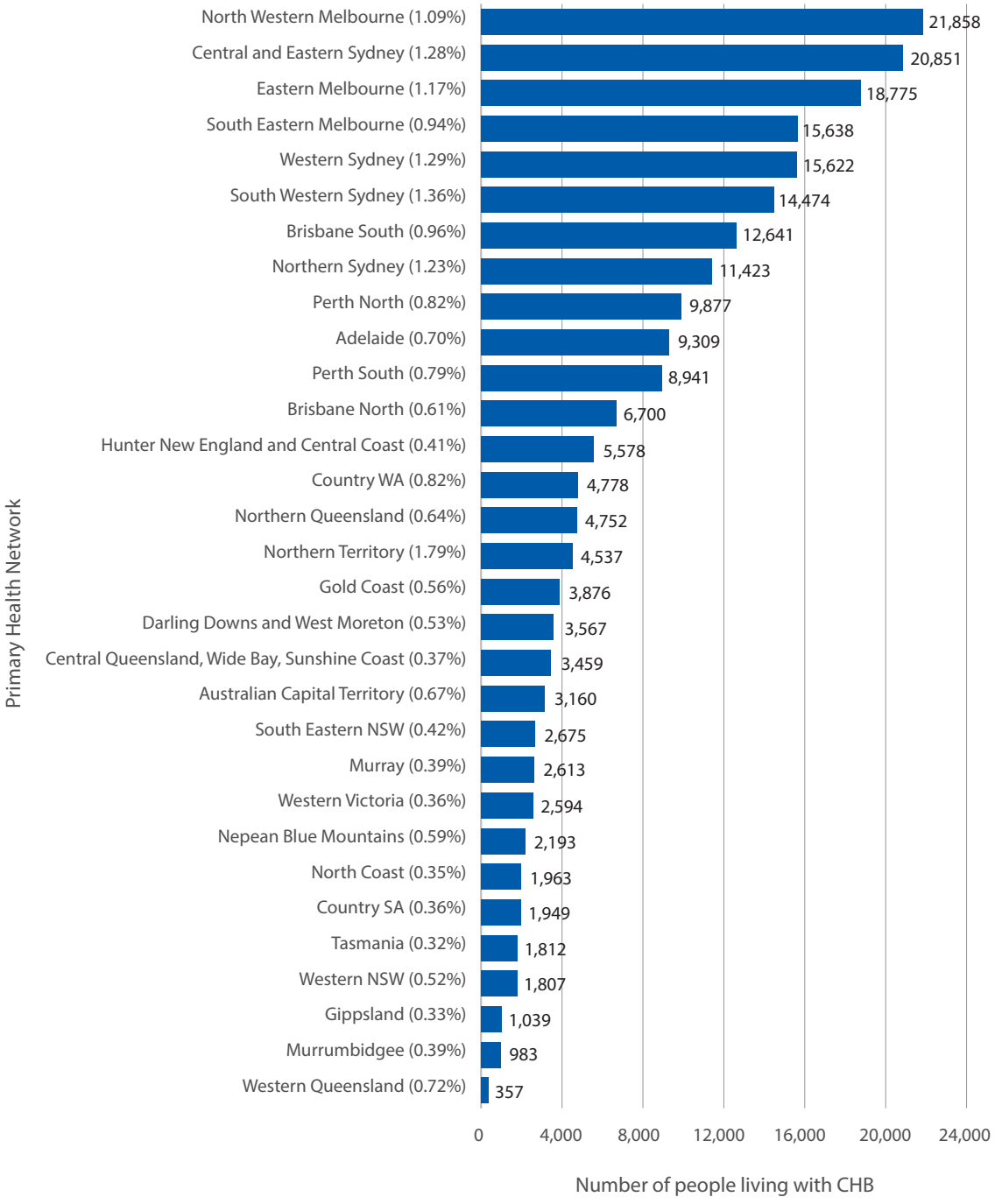


ABS, Australian Bureau of Statistics. CHB, chronic hepatitis B. PHN, Primary Health Network.

Data source: CHB prevalence estimates based on mathematical modelling incorporating population-specific prevalence and ABS population data. (See data for this figure)

The total number of people living with CHB in each PHN is shown in Figure A.3. Due to the distribution of Australia's population, the number of people living with CHB is largest in PHNs covering Sydney and Melbourne, and these seven PHNs are estimated to comprise more than half (53.8%) of all people living with CHB in Australia (Figure A.3). The PHNs with the largest populations living with CHB in 2023 were **North Western Melbourne** (21,858 people) and **Central and Eastern Sydney** (20,851 people) (Figure A.3).

Figure A.3: Estimated number of people living with CHB by PHN (prevalence in brackets), 2023



ABS, Australian Bureau of Statistics. CHB, chronic hepatitis B. PHN, Primary Health Network.

Data source: CHB prevalence estimates based on mathematical modelling incorporating population-specific prevalence and ABS population data. For tabulated data see Section A2 – Geographic diversity and trends in chronic hepatitis B by state and territory. (See data for this figure)

PREVALENCE BY REMOTENESS AREA

CHB prevalence in 2023 was highest in very remote areas (1.63%), where it was approximately double the national average. These estimates have been revised since the 2023 report, and differences, particularly in remote regions, reflect population changes as well as the ongoing impact of hepatitis B immunisation in Australian-born populations.

The high CHB prevalence in very remote (1.63%) and remote (1.07%) areas relates to the greater prevalence in Aboriginal and Torres Strait Islander peoples, as they make up the majority of residents in very remote and remote areas. This is a contributing factor to the high prevalence observed in the **Northern Territory** PHN, which has a high proportion of residents in very remote areas (Figure A.4).

Table A.4: Estimated prevalence of CHB by remoteness area, 2023

Remoteness area	Total population	People living with CHB	CHB prevalence (%)
Major cities	19,705,611	184,297	0.95%
Inner regional	4,731,464	18,088	0.39%
Outer regional	1,977,951	11,002	0.52%
Remote	241,224	3,259	1.07%
Very remote	128,963	3,153	1.63%
AUSTRALIA	**26,957,776**	**219,800**	**0.82%**

ABS, Australian Bureau of Statistics. CHB, chronic hepatitis B.

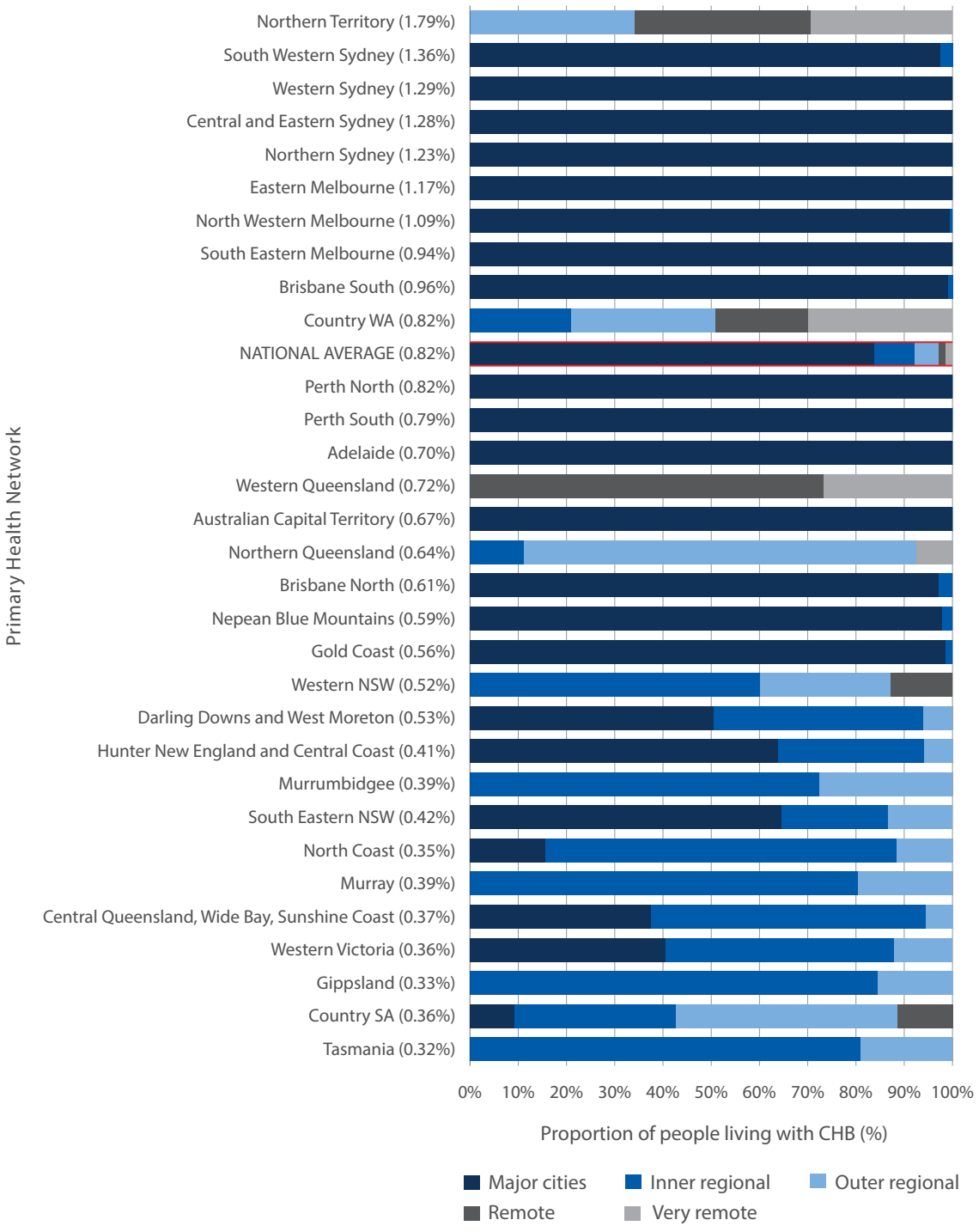
Data source: CHB prevalence estimates based on mathematical modelling incorporating population-specific prevalence and ABS population data. Remoteness area categories based on designations by the ABS.[6]

Totals may not add up due to inclusion of people without a remoteness area of residence recorded in source data.

Prevalence was also above the national average in major cities (0.95%) (Table A.4), reflecting the higher population of people born overseas in these regions. In PHNs where people living with CHB are predominantly born overseas, most people live in major cities (Figure A.4).

This distribution has relevance for the design and delivery of services for people living with CHB and highlights the substantial challenges in providing care for people living in remote regions. In many remote regions, the predominant group living with CHB is Aboriginal and/or Torres Strait Islander people; disparities in care and treatment uptake often reflect the ongoing impact of the legacy of colonisation, institutional racism and systemic disadvantage. Prevalence according to remoteness and state and territory specific to Aboriginal and Torres Strait Islander peoples is provided in the 2023 Mapping Report Supplement.

Figure A.4: Proportion of people living with CHB according to remoteness of residence, by PHN, ordered by CHB prevalence (in brackets), 2023



ABS, Australian Bureau of Statistics. CHB, chronic hepatitis B. PHN, Primary Health Network.

Data source: CHB prevalence estimates based on mathematical modelling incorporating population-specific prevalence and ABS population data. Remoteness area categories based on designations by the ABS.[6]

(See data for this figure)

PREVALENCE BY STATISTICAL AREA 3 REGION

The estimated prevalence of CHB ranged from 0.16–3.60% across Australia's 330 Statistical Area 3s (SA3s) where the population was sufficient for estimation. Reflecting findings by PHN, four of the five SA3s with the highest estimated prevalence were located in the **Northern Territory** PHN (Daly – Tiwi – West Arnhem, 3.60%; East Arnhem, 3.44%; Barkly, 3.39%; and Katherine, 2.89%). Prevalence was also above 2% in Alice Springs (2.29%) in the **Northern Territory** PHN, as well as the Kimberley SA3 (3.16%) in the **Country WA** PHN; in the Fairfield SA3 (2.68%) in the **South Western Sydney** PHN; in the Auburn SA3 (2.28%) in the **Western Sydney** PHN; in the Dandenong SA3 (2.20%) in the **South Eastern Melbourne** PHN; in the Brimbank SA3 (2.17%) in the **North Western Melbourne** PHN; in the Sunnybank SA3 (2.13%) in the **Brisbane South** PHN; and in the Hurstville SA3 (2.05%) in the **Central and Eastern Sydney** PHN.

PRIORITY POPULATIONS FOR CHB

Country of birth is a key predictor of the risk of CHB for people living in Australia, and 70% of all people living with CHB in Australia in 2023 were born overseas.

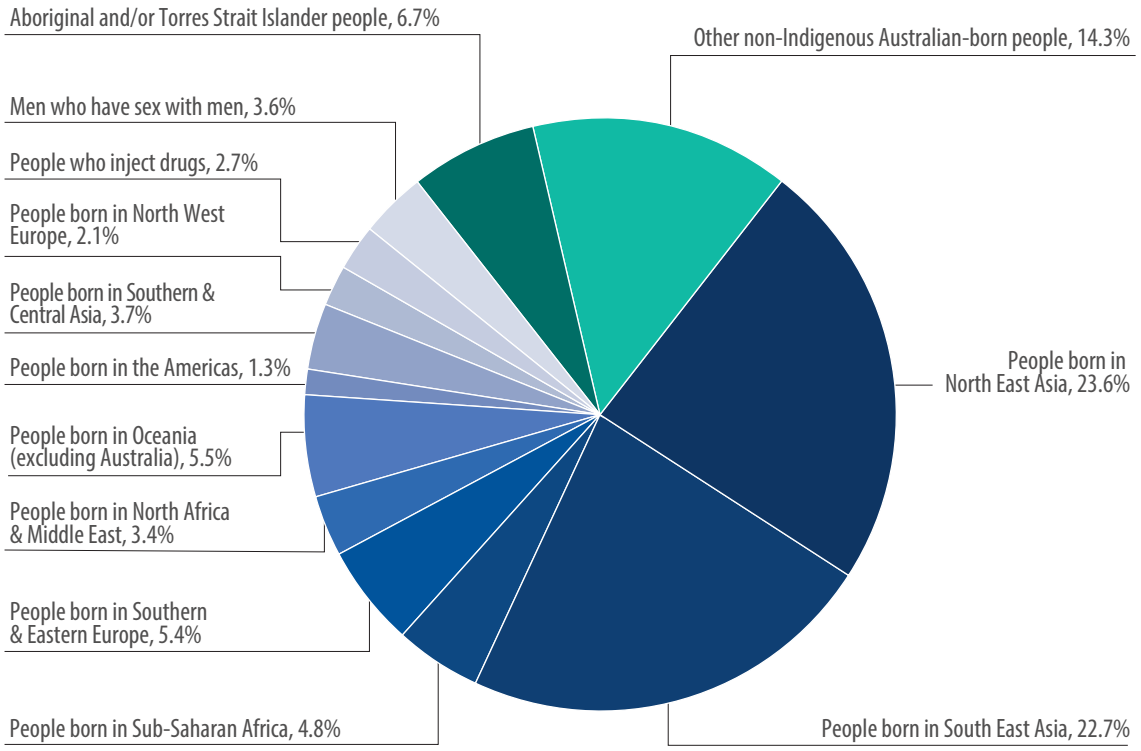
Proportions presented here according to population have been updated using estimated resident population data for 2023[7,8] that account for recent migration and population growth, and revised estimates of the total number of people living with CHB.[5] All data are based on residents counted in the Australian Census of Population and Housing and include all individuals regardless of visa status.

Regions of birth with the highest prevalence were North East Asia (4.92% prevalence, representing 23.6% of the total with CHB) and South East Asia (3.91% prevalence, 22.7% of the total) (Figure A.5 and Table A.5). A smaller proportion of people in Australia with CHB were born in Oceania (excluding Australia; 5.5% of the total with CHB), Southern and Eastern Europe (5.4%) and Sub-Saharan Africa (4.8%).

Due to the higher prevalence of CHB among people born overseas and the evidence that culturally and linguistically diverse communities in Australia are likely to experience broader health care access disparities,[9] data presented in this section of the report focus on this population. These data can support the identification and prioritisation of people most likely to be living with CHB in Australia. Data regarding treatment and care uptake among these populations are presented in the section Care uptake by priority population.

A person may belong to more than one of these groups, but they are allocated to only one priority population, because data regarding the intersectional influence of CHB epidemiology across priority populations are highly limited. The methodology prioritises country of birth and Aboriginal and Torres Strait Islander status when allocating populations, as this usually reflects transmission in early life when the risk of developing chronic infection is highest.[10] However, policy responses to CHB should not assume exclusivity of risk group categories, and should recognise that a person may belong to more than one community. Further detail regarding methodology for sourcing these estimates is available in Section D – Data sources and methodology.

Figure A.5: People living with CHB in Australia, by priority population,* 2023



ABS, Australian Bureau of Statistics. CHB, chronic hepatitis B.

Data source: CHB prevalence estimates based on mathematical modelling incorporating population-specific prevalence and ABS population data.

*When a person belonged to more than one population group, they were allocated to only one in the model based on evidence regarding the most common transmission risk, with prioritisation given to country of birth and Aboriginal and Torres Strait Islander status.

(See data for this figure)

Aboriginal and/or Torres Strait Islander people, the majority of whom likely acquired CHB via mother-to-child transmission in the era prior to immunisation,[11] were estimated to represent 6.7% of people living with CHB in Australia. Men who have sex with men are estimated to represent 3.6% of the total, and people who inject drugs are estimated to represent 2.7%. Other Australian-born non-Indigenous people with CHB outside of these specified priority populations were estimated to make up 14.3% of the total. This population includes those who acquired CHB through various modes of transmission, such as mother-to-child transmission in Australia (particularly before universal infant hepatitis B vaccination in 2000);[12] unsterile health care practices, transfusions, tattooing or piercing; or sexual contact.

Table A.5: People living with CHB in Australia, by priority population,* ordered from highest to lowest prevalence within each subgroup, 2023

Population group	Total population	People living with CHB	Prevalence (%)	Proportion of all people living with CHB (%)
People born in Australia (total)	**18,606,652**	**60,224**	0.32%	27.4%
People who inject drugs	251,293	5,998	**2.39%**	**2.7%**
Men who have sex with men	377,818	7,952	**2.10%**	**3.6%**
Aboriginal and/or Torres Strait Islander people	1,033,712	14,785	**1.43%**	**6.7%**
Other non-Indigenous Australian-born people^	16,943,829	31,489	**0.19%**	**14.3%**
People born overseas (total)	**8,351,124**	**159,576**	**1.91%**	**72.6%**
People born in North East Asia	1,053,114	51,840	**4.92%**	**23.6%**
People born in South East Asia	1,280,205	49,995	**3.91%**	**22.7%**
People born in Sub-Saharan Africa	439,770	10,658	**2.42%**	**4.8%**
People born in Southern and Eastern Europe	694,930	11,848	**1.70%**	**5.4%**
People born in North Africa and Middle East	530,425	7,582	**1.43%**	**3.4%**
People born in Oceania (excluding Australia)	825,755	11,980	**1.45%**	**5.5%**
People born in the Americas	440,303	2,923	**0.66%**	**1.3%**
People born in Southern and Central Asia	1,525,542	8,234	**0.54%**	**3.7%**
People born in North West Europe	1,561,081	4,514	**0.29%**	**2.1%**
AUSTRALIA	**26,957,776**	**219,800**	**0.82%**	**100.0%**

ABS, Australian Bureau of Statistics. CHB, chronic hepatitis B.

Data source: CHB prevalence estimates based on mathematical modelling incorporating population-specific prevalence and ABS population data.

*When a person belonged to more than one population group, they were allocated to only one in the model based on evidence regarding the most common transmission risk, with prioritisation given to country of birth and Aboriginal and Torres Strait Islander status.

^'Other non-Indigenous Australian-born people' includes those who acquired CHB through modes such as mother-to-child transmission in Australia (particularly before universal infant hepatitis B vaccination in 2000);[12] unsterile health care practices, transfusions, tattooing or piercing; or sexual contact.

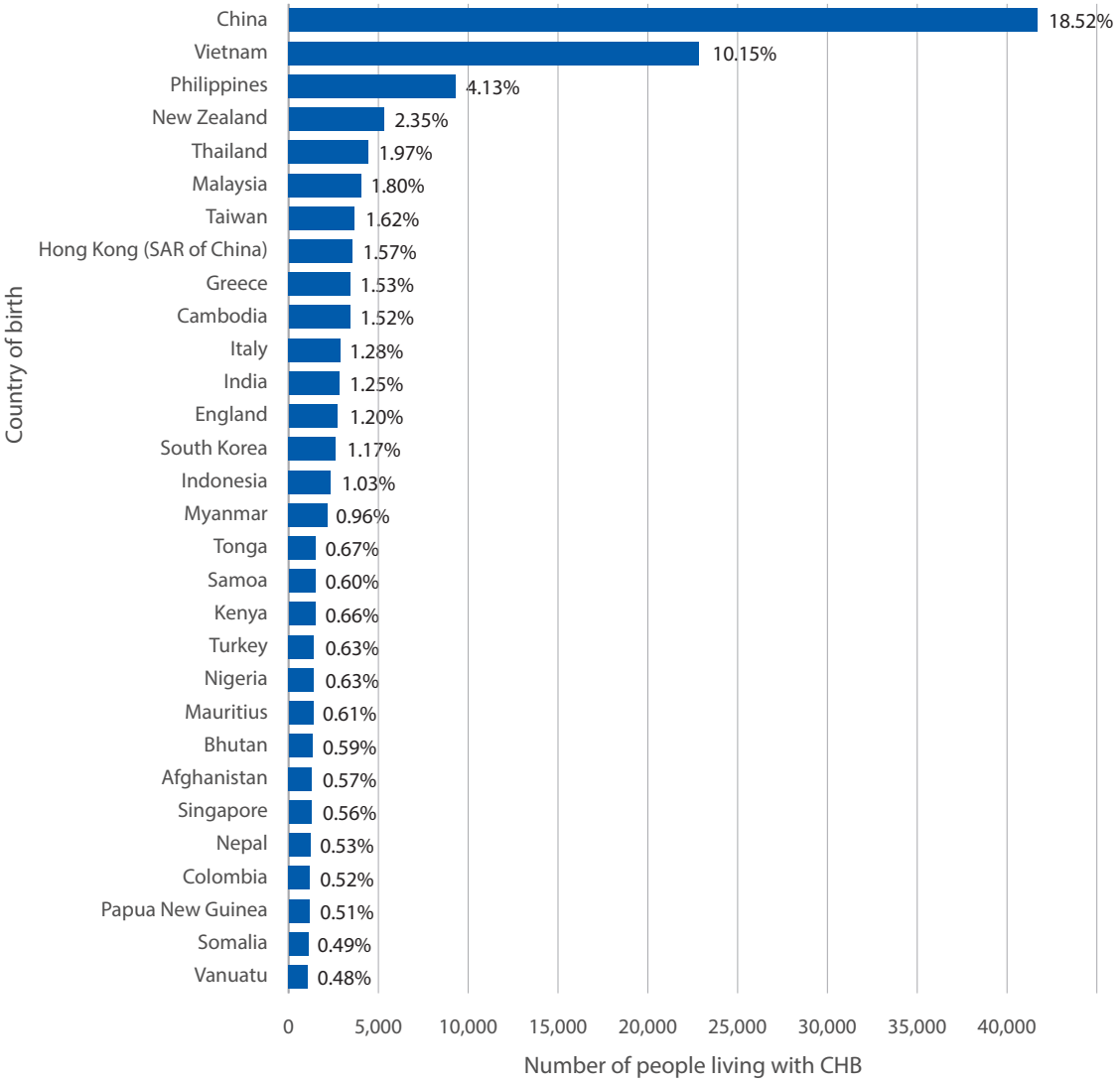
Totals may not add up due to inclusion of people with an inadequately described country of birth recorded in source data.

PRIORITY COUNTRIES OF BIRTH FOR CHB

Among all people living with CHB in Australia who were born overseas, the majority were born in a relatively small number of countries, predominantly in the Asia–Pacific region (Figure A.5 and Figure A.6). The most common countries of birth were China (18.5% of all people with CHB) and Vietnam (10.2%) (Figure A.6), which together represented more than one-quarter of people with CHB. The 14 most common countries of birth comprised half of all people living with CHB in Australia.

These patterns reflect both the variation in prevalence of CHB by country of birth and the total number of people born in these countries living in Australia. Because of this, some countries, such as New Zealand and England, rank highly due to their very large populations within Australia, despite not being countries with a high prevalence of CHB (although they may include subpopulations with a higher prevalence, such as Māori). Conversely, many countries in Sub-Saharan Africa and the Pacific have high CHB prevalence but lower numbers of people living in Australia. For more extensive data regarding prevalence of CHB by country of birth, see the 2023 Mapping Report Supplement.

Figure A.6: Number (bars) and proportion (labels) of people born overseas and living with CHB in Australia, by country of birth (top 30 countries), 2023



ABS, Australian Bureau of Statistics. CHB, chronic hepatitis B. SAR, special administrative region.

Data source: CHB prevalence estimates based on mathematical modelling incorporating population-specific prevalence and ABS population data. Country-specific data sourced predominantly from local antenatal studies.[13, 14]

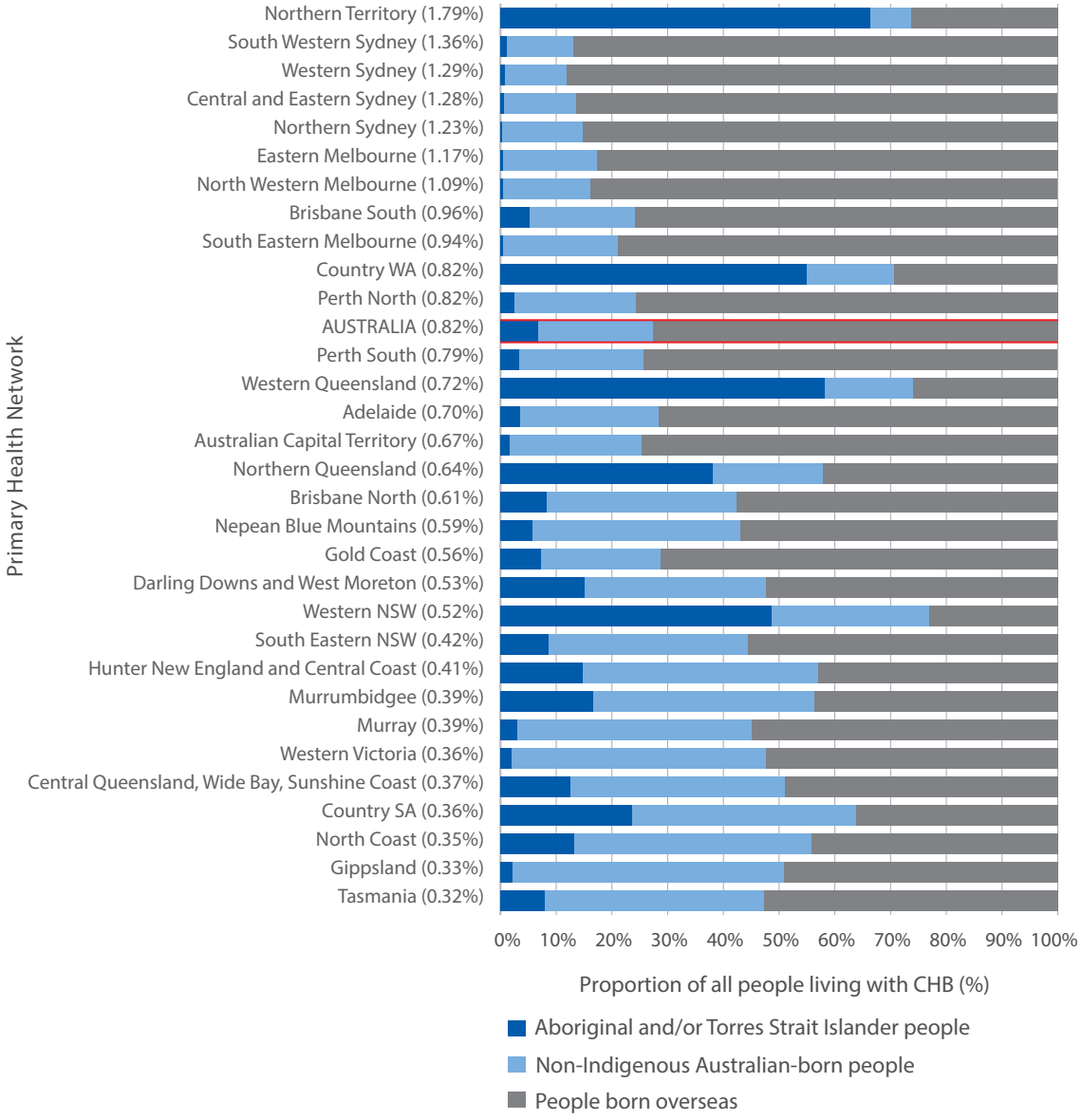
(See data for this figure)

PRIORITY POPULATIONS FOR CHB BY PRIMARY HEALTH NETWORK

In most PHNs, people born overseas were the most common group living with CHB, reflecting the overall national distribution. However, in four PHNs, Aboriginal and/or Torres Strait Islander people represented the largest group of people living with CHB: **Northern Territory**, **Western Queensland**, **Country WA** and **Western NSW** (Figure A.7). In the **Northern Queensland** PHN, the proportions of people born overseas and Aboriginal and Torres Strait Islander peoples were similar.

These PHNs generally have a higher proportion of residents in remote regions (see Figure A.4), where population sizes are often smaller and more widely distributed geographically; for relative comparison of the total number of people living with CHB in each PHN, see Figure A.3. Consideration of the particular priority populations affected in each PHN can assist when designing culturally appropriate and effective public health responses to CHB in local communities.

Figure A.7: Proportion of people living with CHB according to priority population, by PHN, ordered by CHB prevalence (in brackets), 2023



ABS, Australian Bureau of Statistics. CHB, chronic hepatitis B. PHN, Primary Health Network.

Data source: CHB prevalence estimates based on mathematical modelling incorporating population-specific prevalence and ABS population data. (See data for this figure)

REMOTENESS OF RESIDENCE FOR CHB BY PRIMARY HEALTH NETWORK

The variation in priority populations by region has impacts on the distribution of people living with CHB by remoteness area, as where people live varies by population group. In PHNs where Aboriginal and/or Torres Strait Islander people represent the largest group living with CHB, the residential location is predominantly rural or remote (Figure A.4). Conversely, PHNs where most people living with CHB were born overseas are predominantly located in major cities. This distribution has relevance for the appropriate design and delivery of services for people living with CHB, and highlights that for some populations there may need to be further investment in services located outside of major cities in order to address gaps in access to care (see Care uptake by remoteness area).

PRIORITY COUNTRIES OF BIRTH FOR CHB BY PRIMARY HEALTH NETWORK

In addition to variation in the proportion of people living with CHB who were born overseas by PHN (Figure A.7), there is also variation in the most common countries of birth among those born overseas. This is due to differences in both migration patterns and in the age distribution of migrants in a given area, as age distribution is associated with CHB prevalence. These factors lead to variation by PHN in the most common groups living with CHB.

China was the most common overseas country of birth in the majority of PHNs (Table A.6), reflecting the national pattern (Figure A.6). However, for some PHNs, the most common overseas country of birth was Vietnam or the Philippines (Table A.6). This variation from the national average was most pronounced in the **South Western Sydney** PHN, where 34.8% of people with CHB were born in Vietnam, compared to 10.2% nationally. Although New Zealand is not a country with a high CHB prevalence, the high population in many areas led to it being the most common overseas country of birth in one PHN.

The three most common overseas countries of birth for people living with CHB in each PHN are presented in Table A.6. More detailed ranking information is available on request, and data regarding prevalence by country is provided in the 2023 Mapping Report Supplement. Consideration of predominant overseas countries of birth in a given region can assist with tailoring responses to the local linguistic and cultural context. Data regarding the most common languages spoken by people with CHB is also available upon request.

Table A.6: Top three overseas countries of birth for people living with CHB and proportion of the total number living with CHB, by PHN, ordered by CHB prevalence, 2023

PHN (CHB prevalence)	Most common overseas country of birth for people with CHB in this PHN	Proportion of the total with CHB in PHN who were born in this country (%)	2nd most common overseas country of birth for people with CHB in this PHN	Proportion of the total with CHB in PHN who were born in this country (%)	3rd most common overseas country of birth for people with CHB in this PHN	Proportion of the total with CHB in PHN who were born in this country (%)
AUSTRALIA	**China**	**18.5%**	**Vietnam**	**10.2%**	**Philippines**	**4.1%**
Northern Territory	Philippines	4.8%	China	2.5%	Vietnam	2.5%
South Western Sydney	Vietnam	34.8%	China	9.4%	Cambodia	6.2%
Western Sydney	China	31.5%	Vietnam	7.9%	Philippines	7.6%
Central and Eastern Sydney	China	34.9%	Vietnam	7.7%	Thailand	3.4%
Northern Sydney	China	43.4%	Hong Kong (SAR of China)	5.3%	South Korea	3.6%
Eastern Melbourne	China	38.3%	Vietnam	7.6%	Malaysia	3.9%
North Western Melbourne	Vietnam	22.0%	China	12.4%	Philippines	4.6%
Brisbane South	China	17.3%	Vietnam	10.9%	Taiwan	6.7%
South Eastern Melbourne	China	16.0%	Vietnam	12.6%	Cambodia	7.0%
Country WA	Philippines	4.5%	NZ	3.4%	Vanuatu	3.3%
Perth North	Vietnam	12.7%	China	8.9%	Philippines	4.1%
Perth South	China	13.7%	Philippines	6.7%	Malaysia	5.6%
Western Queensland	#	#	#	#	#	#
Adelaide	China	14.8%	Vietnam	12.8%	Philippines	3.5%
Australian Capital Territory	China	19.7%	Vietnam	8.6%	Bhutan	4.9%
Northern Queensland	Philippines	5.0%	Vanuatu	4.3%	NZ	3.0%
Brisbane North	China	9.6%	NZ	5.8%	Philippines	5.2%
Nepean Blue Mountains	Philippines	8.2%	China	7.8%	NZ	2.7%
Gold Coast	China	16.1%	NZ	11.7%	Philippines	4.5%
Darling Downs and West Moreton	Philippines	5.3%	NZ	5.3%	Vietnam	4.3%
Western NSW	#	#	#	#	#	#
South Eastern NSW	China	7.8%	Vietnam	4.4%	Philippines	4.2%

Continued next page

PHN (CHB prevalence)	Most common overseas country of birth for people with CHB in this PHN	Proportion of the total with CHB in PHN who were born in this country (%)	2nd most common overseas country of birth for people with CHB in this PHN	Proportion of the total with CHB in PHN who were born in this country (%)	3rd most common overseas country of birth for people with CHB in this PHN	Proportion of the total with CHB in PHN who were born in this country (%)
Hunter New England and Central Coast	China	7.4%	Philippines	4.3%	Vietnam	2.8%
Murrumbidgee	#	#	#	#	#	#
Murray	Philippines	5.1%	China	4.7%	Vietnam	4.3%
Western Victoria	NZ	7.4%	Philippines	5.5%	China	4.0%
Central Queensland, Wide Bay, Sunshine Coast	#	#	#	#	#	#
Country SA	China	8.4%	Philippines	5.1%	Vietnam	3.5%
North Coast	#	#	#	#	#	#
Gippsland	#	#	#	#	#	#
Tasmania	China	13.9%	Vietnam	3.6%	Bhutan	3.2%

ABS, Australian Bureau of Statistics. CHB, chronic hepatitis B. NZ, New Zealand. PHN, Primary Health Network. SAR, special administrative region.

Data source: CHB prevalence estimates based on mathematical modelling incorporating population-specific prevalence and ABS population data.

Data suppressed where total number of people living with CHB who were born overseas was <1000.

DIAGNOSIS

In Australia it is estimated that 68.8% of people living with CHB in 2023 have ever been diagnosed, based on data on notified cases of CHB. It should be noted that this does not necessarily mean that the person living with CHB is aware of and understands their diagnosis and has been linked to care. It reflects a notification to a state or territory health department following a positive diagnostic test and therefore represents only the first step towards potential engagement in care.

The proportion diagnosed did not reach the Third National Hepatitis B Strategy 2018–2022 target of 80% diagnosed by 2023, and this is not on track to be reached until 2042 based on current trends. The proportion diagnosed has reduced over the period of the National Strategy 2018–2022, due to the number of new diagnoses not keeping pace with the increasing number of people living with CHB.[5]

DIAGNOSIS BY STATE AND TERRITORY

The estimated proportion of people living with CHB who have been diagnosed varied greatly between jurisdictions (Table A.7), with NSW (78.0%) and the NT (77.1%) having the highest proportion diagnosed as of 2023. Estimates for all other states and territories were below the national average of 68.8% (Table A.7).

It is anticipated that the estimated proportion diagnosed with CHB will be further refined in future mapping reports, as the effect of duplicate notifications between jurisdictions is further enumerated.

Until this new evidence on duplicate notifications is available, in the current mapping report the proportion of notifications which are duplicates due to multiple notifications in different states and territories has been estimated to be 8% and diagnosis outputs adjusted accordingly.[5] This interim approximation is based on assessments of duplicate notifications from linkage studies conducted in NSW and Vic which may not be nationally representative.

Table A.7: Estimated proportion of people living with CHB who have been diagnosed, by state and territory, 2023

State/ territory	People living with CHB	Proportion who have been diagnosed (%)	Number who have been diagnosed	Number remaining undiagnosed
ACT	3,160	65.5%	2,070	1,090
NSW	77,844	78.0%	60,716	17,126
NT	4,537	77.1%	3,500	1,039
Qld	35,352	64.7%	22,873	12,479
SA	11,258	67.9%	7,646	3,614
Tas	1,812	63.0%	1,141	670
Vic	62,241	64.2%	39,940	22,282
WA	23,596	56.3%	13,275	10,311
AUSTRALIA	**219,800**	**68.8%**	**151,161**	**68,578**

ABS, Australian Bureau of Statistics. CHB, chronic hepatitis B.

Data source: CHB prevalence estimates based on mathematical modelling incorporating population-specific prevalence and ABS population data. Proportion diagnosed estimated using modelling combined with notifications data.

Totals may not add up due to individual modelling of diagnosis in each state and territory.

MONITORING AND CARE

In 2023 in Australia, 26,124 people received a viral load test for CHB through Medicare while not on treatment (defined as receiving monitoring). When combined with the 27,641 people who received treatment (see Treatment), this represented 53,765 people who received CHB care (defined as treatment ***or*** monitoring) in 2023, or 24.5% of those living with CHB in Australia. This was only half of the National Hepatitis B Strategy target of 50% by 2022; the target aimed to assess progress in relation to clinical guidelines recommending that all people living with CHB should be engaged in regular care.[15,16,17]

The number of people who were engaged in care increased by 6.5% between 2018 and 2023; however, as the number of people with CHB also increased, care uptake has not increased since 2018, when it was 25.2%.

These estimates only reflect monitoring in a single year; assessment over a longer period of time provide insights into gaps in ongoing engagement and is explored in the Ongoing engagement in care section below, with data analysed for the total period currently available (2014–2023).

Treatment data include Medicare-funded services only, and will not capture treatment paid for privately or funded by state governments, nor include those who are not eligible for Medicare due to their visa status. Viral load testing data is supplemented from state government laboratories to account for billing outside of Medicare where it is available; see Section D – Hepatitis B testing, treatment and care for further information.

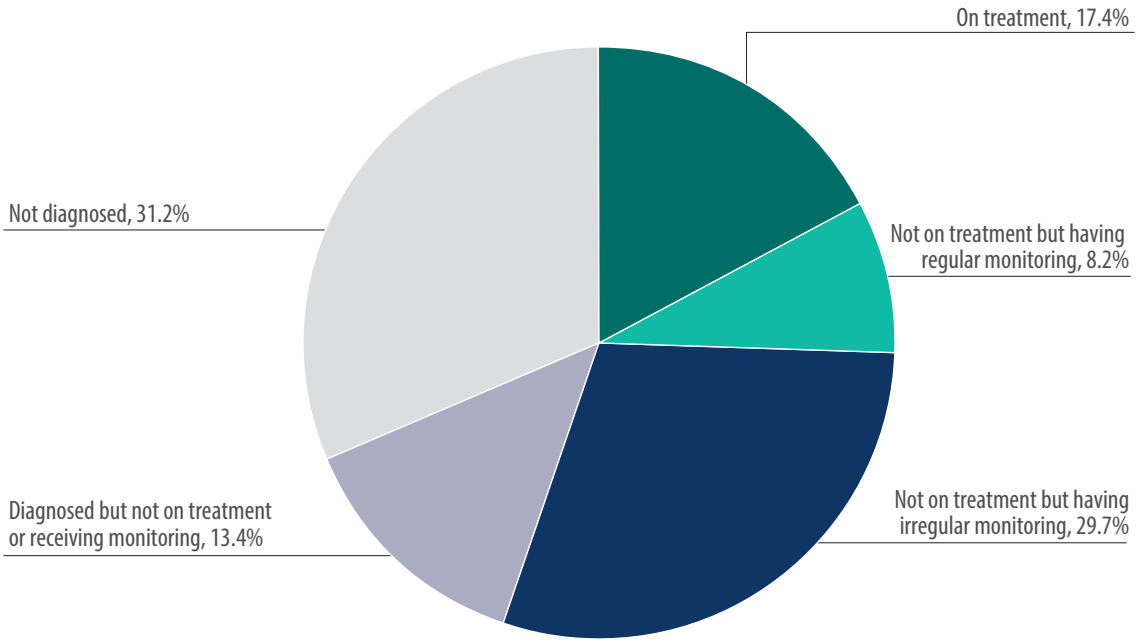
ONGOING ENGAGEMENT IN CARE

During the entire period 2014–2023, a total of 121,656 people had a hepatitis B viral load test or hepatitis B treatment through Medicare. This represents 55.3% of all people with CHB in Australia in 2023 (Figure A.8), indicating that nearly half of those living with CHB did not have evidence of receiving either of the key components of guideline-based care for their CHB in the past 10 years. These data exclude those who have died or emigrated from Australia and therefore include only those currently living with CHB in Australia.

Of those who were not receiving treatment but did have monitoring, the majority (78.3%) had only infrequent monitoring (fewer than five viral load tests during the period, or less than once every two years). Of those who had neither treatment nor monitoring, it is estimated that they were most commonly undiagnosed (70.0% of those who had neither treatment nor monitoring, Figure A.8), while the remainder were diagnosed but not engaged in care.

These findings highlight that estimates of engagement in care based on a single year are optimistic, and effective assessment of care engagement requires longitudinal data to effectively identify ongoing gaps in care. These data suggest that in order to improve care and treatment uptake, focus is required on engaging people who have never been diagnosed or who have not received recent monitoring.

Figure A.8: Category of care for people living with CHB, 2014–2023



ABS, Australian Bureau of Statistics. CHB, chronic hepatitis B.

Data source: CHB prevalence estimates based on mathematical modelling incorporating population-specific prevalence and ABS population data. Proportion diagnosed estimated using modelling combined with notifications data. Monitoring and treatment data sourced from Medicare statistics.

Regular monitoring defined as an average of at least one test every two years; irregular monitoring defined as less than one test every two years.

(See data for this figure)

CARE TRENDS OVER TIME BY STATE AND TERRITORY

The number of people who were receiving care for CHB increased by 6.5% between 2018 and 2023. However, this was driven by increases in the number of people receiving treatment (29.9% increase), as the number receiving monitoring declined over the period (10.5% decrease; see Treatment trends over time). There were fluctuations in the number who received monitoring over time; the largest decrease occurred between 2019 and 2020 (8.3% decrease) and most significantly in NSW, Vic and Tas (Table A.9), likely reflecting the peak of health care disruptions due to the impact of the COVID-19 pandemic.

Care uptake trends over time by PHN and SA3, and by provider type, age and sex are discussed in specific sections below.

CARE UPTAKE BY STATE AND TERRITORY

Care uptake was highest in 2023 in NSW (29.3%), Vic (26.6%) and the ACT (26.2%) (Table A.8). Care uptake was below average in the NT (21.3%), Qld (19.4%) and Tas (15.7%) (Table A.8). As the measure of care used includes treatment as a component, patterns of care often reflect those for treatment (see Treatment uptake by state and territory).

Estimation of care uptake uses Medicare data, which can lead to underestimation as it is unable to include viral load testing services through other funding streams. This is thought to be the case for a substantial proportion of all viral load tests conducted in SA and WA in 2023.

Additional data are available from SA regarding the likely magnitude of this (personal communication, SA Health), which indicates care uptake in SA is 33.1%, the highest of all states and territories. Additional data are not currently available for WA but are being sought for future reporting.

Table A.8: CHB treatment and care uptake, by state and territory, 2023

State/ territory	People living with CHB	People receiving treatment	Treatment uptake (%)	People receiving monitoring	Care uptake (treatment and monitoring) (%)	People not in care	Proportion of all people not in care in Australia
ACT	3,160	481	15.2%	349	26.2%	2,331	1.4%
NSW	77,844	11,652	15.0%	11162	29.3%	55,030	33.1%
NT	4,537	494	10.9%	471	21.3%	3,573	2.2%
Qld	35,352	3,486	9.9%	3385	19.4%	28,481	17.2%
SA	11,258	1,261	11.2%	*	*	*	*
Tas	1,812	165	9.1%	120	15.7%	1,527	0.9%
Vic	62,241	8,120	13.0%	8454	26.6%	45,667	27.5%
WA	23,596	1,982	8.4%	*	*	*	*
AUSTRALIA	**219,800**	**27,641**	**12.6%**	**26,124**	**24.5%**	**166,035**	**-**

ABS, Australian Bureau of Statistics. CHB, chronic hepatitis B.

Data source: CHB prevalence estimates based on mathematical modelling incorporating population-specific prevalence and ABS population data. Treatment and monitoring (viral load test while not receiving treatment) data sourced from Medicare statistics.

Totals may not add up due to inclusion of people without a state/territory of residence recorded in source data. The number of people receiving monitoring may be underestimated in some states and territories due to the extent of monitoring services outside of Medicare.

* Data for WA not reported due to the extent of the provision of monitoring services outside of Medicare. See text for estimates of care uptake in SA accounting for underestimation of services.

CARE TRENDS OVER TIME BY STATE AND TERRITORY

The number of people who received monitoring declined between 2018 and 2023 in all states and territories (Table A.9), reflecting the national trend. This led to a decrease in the number of people in care nationally and in all states and territories (Table A.8).

Table A.9: Number of people receiving monitoring of CHB, by state and territory, 2018–2023

State/ territory	People receiving monitoring in 2018	People receiving monitoring in 2019	People receiving monitoring in 2020	People receiving monitoring in 2021	People receiving monitoring in 2022	People receiving monitoring in 2023
ACT	441	431	382	413	442	349
NSW	11,925	12,056	11,177	11,077	10,956	11,162
NT	694	618	599	480	444	471
Qld	3,759	3,702	3,682	3,548	3,445	3,385
SA	*	*	*	*	*	*
Tas	139	147	130	140	123	120
Vic	9,604	10,044	8,915	9,289	8,803	8,454
WA	*	*	*	*	*	*
AUSTRALIA	**29,197**	**29,086**	**26,678**	**27,792**	**25,735**	**26,124**

CHB, chronic hepatitis B.

Data source: Monitoring data (viral load test while not on treatment) sourced from Medicare statistics.

Totals may not add up due to inclusion of people without a state/territory of residence recorded in source data.

* Data regarding monitoring over time for SA and WA not reported due to the extent of the the extent of monitoring services outside of Medicare.

ONGOING ENGAGEMENT IN CARE BY STATE AND TERRITORY

The proportion of people who had received any care (either treatment or monitoring) during the total period 2014–2023 varied significantly according to state and territory (Table A.10), generally correlating with differences seen in treatment uptake in 2023 (Table A.12). The proportion of people who had any history of care engagement during 2014–2023 was above the national average of 55.3% in NSW (61.8%), Vic (58.7%) and the ACT (57.7%); similar to the national average in SA (52.0%) and the NT (45.2%); and below the national average in Qld (39.3%) and Tas (37.5%). Estimates for this metric are not reported for WA due to the extent of monitoring services outside of Medicare for this period (see Section D – Hepatitis B testing, treatment and care).

Table A.10: Proportion of people who had any CHB care (treatment or monitoring) during 2014–2023

State/ territory	People living with CHB in 2023	Number of people who had any CHB care (treatment or monitoring) during 2014–2023	Proportion of people who had any CHB care (treatment or monitoring) during 2014–2023
ACT	3,160	1,864	57.7%
NSW	77,844	49,805	61.8%
NT	4,537	2,223	45.2%
Qld	35,352	14,838	39.3%
SA^	11,258	6,166	52.0%
Tas	1,812	737	37.5%
Vic	62,241	37,789	58.7%
WA*	23,596	*	*
AUSTRALIA	**219,800**	**121,656**	**55.3%**

ABS, Australian Bureau of Statistics. CHB, chronic hepatitis B.

Data source: CHB prevalence estimates based on mathematical modelling incorporating population-specific prevalence and ABS population data. Treatment and monitoring (viral load testing) data sourced from Medicare statistics.

Totals may not add up due to inclusion of people without a state/territory of residence recorded in source data. The number of people receiving monitoring may be underestimated in some states and territories due to provision of viral load tests outside of Medicare.

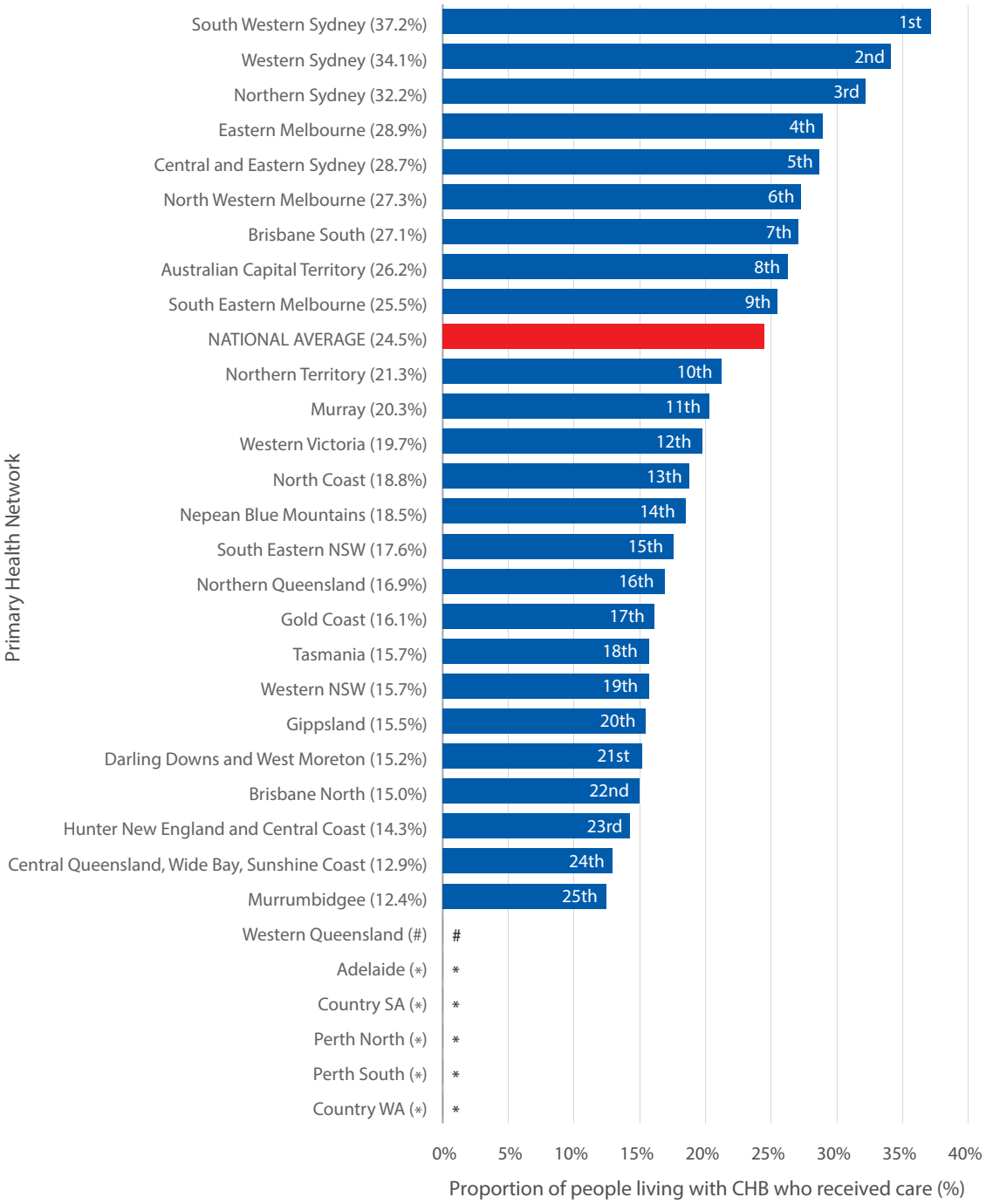
^Data relating to SA may underestimate monitoring by up to 50% from 2020 onwards due to the provision of services outside of Medicare.

*Data not reported for WA due to the extent of monitoring services outside of Medicare.

CARE UPTAKE BY PRIMARY HEALTH NETWORK

Care uptake was highest in PHNs in Sydney, Melbourne and Brisbane, and in the **Australian Capital Territory** PHN (Figure A.9). No PHN reached the National Strategy target (50% care uptake by 2022) and the PHN with the highest uptake (**South Western Sydney**, 37.2%) was still considerably lower than the target.

Figure A.9: CHB care uptake, ranked by PHN, 2023



ABS, Australian Bureau of Statistics. CHB, chronic hepatitis B. PHN, Primary Health Network.

Data source: CHB prevalence estimates based on mathematical modelling incorporating population-specific prevalence and ABS population data. Care data (treatment and monitoring) sourced from Medicare statistics. The number of people receiving monitoring may be underestimated in some states and territories due to provision of viral load tests outside of Medicare.

Data suppressed where number receiving treatment or monitoring was ≤10.

* Data not reported for SA and WA by PHN due to the extent of monitoring services outside of Medicare.

PHN rankings based on raw care uptake data; percentage differences may be obscured by rounding.

(See data for this figure)

MONITORING AND CARE TRENDS OVER TIME BY PRIMARY HEALTH NETWORK

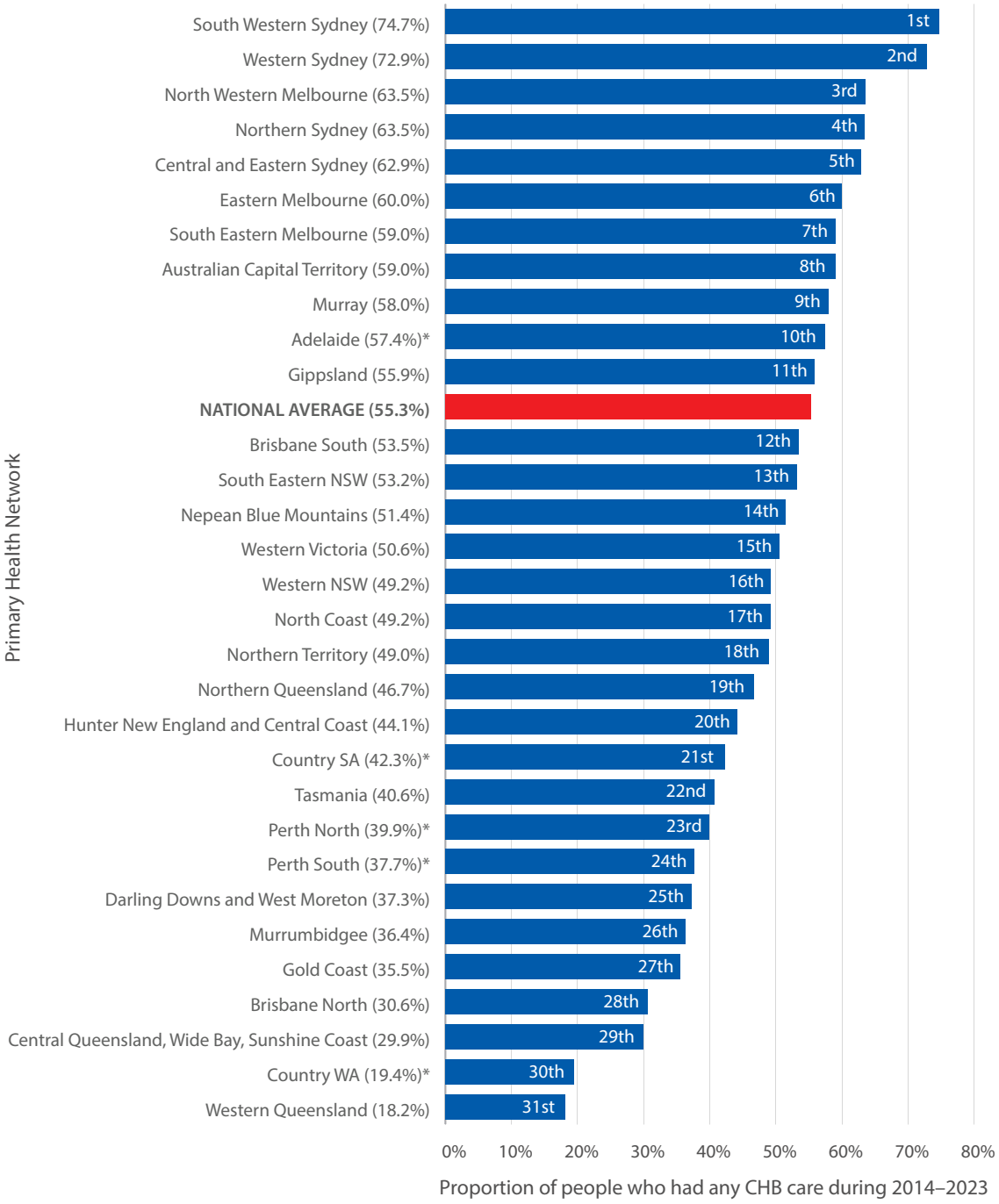
The number of people who received monitoring declined between 2018 and 2023 in 17 of the 26 PHNs with available data for the period, with the most substantial declines occurring in **Northern Territory** (32.2% decline), **Australian Capital Territory** (20.9% decline), **Gippsland** (19.7% decline), **Northern Queensland** (17.9% decline) and **North Western Melbourne** (17.7% decline) (see 2023 Mapping Report Supplement for raw data). This shift led to declines in the number of people in care in the **Northern Territory** and **Northern Queensland** PHNs, where increases in treatment over this period were insufficient to offset declines in monitoring.

The largest increases in the number of people who received monitoring between 2018 and 2023 occurred in the **Western Victoria** (43.8%), **Central Queensland, Wide Bay and Sunshine Coast** (15.0%), **North Coast** NSW (13.1%), **Gold Coast** (12.9%) and **Western NSW** (12.8%) PHNs.

ONGOING ENGAGEMENT IN CARE BY PRIMARY HEALTH NETWORK

The proportion of people who received either treatment or monitoring during 2014–2023 varied significantly according to PHN (Figure A.10), often correlating with differences seen in the care uptake indicator for 2023 (Figure A.9) but with some notable variations. The proportion of people who had any history of care engagement in the past 10 years was highest in the **South Western Sydney** (72.5%), **Western Sydney** (71.0% increase) and **Northern Sydney** (62.3%) PHNs, which reflected care and treatment uptake rankings (Figure A.9 and Figure A.19). Notable variation was seen in the **Gold Coast** PHN, which ranked 18th for care uptake in 2023 but 27th for any care during 2014–2023, likely due to the significant increase in monitoring and treatment in this PHN in recent years (see Monitoring and care trends over time by Primary Health Network) and reflected in the large projected future increase in treatment through 2030 (Figure A.20). There was also a disparity in the **Gippsland** PHN, which ranked 21st for care uptake in 2023 but 11th for any care during 2014–2023, due to the substantial decline in monitoring in this PHN in 2023 (see Monitoring and care trends over time by Primary Health Network).

Figure A.10: Proportion of people who had any CHB care (treatment or monitoring), 2014–2023



CHB, chronic hepatitis B. PHN, Primary Health Network.

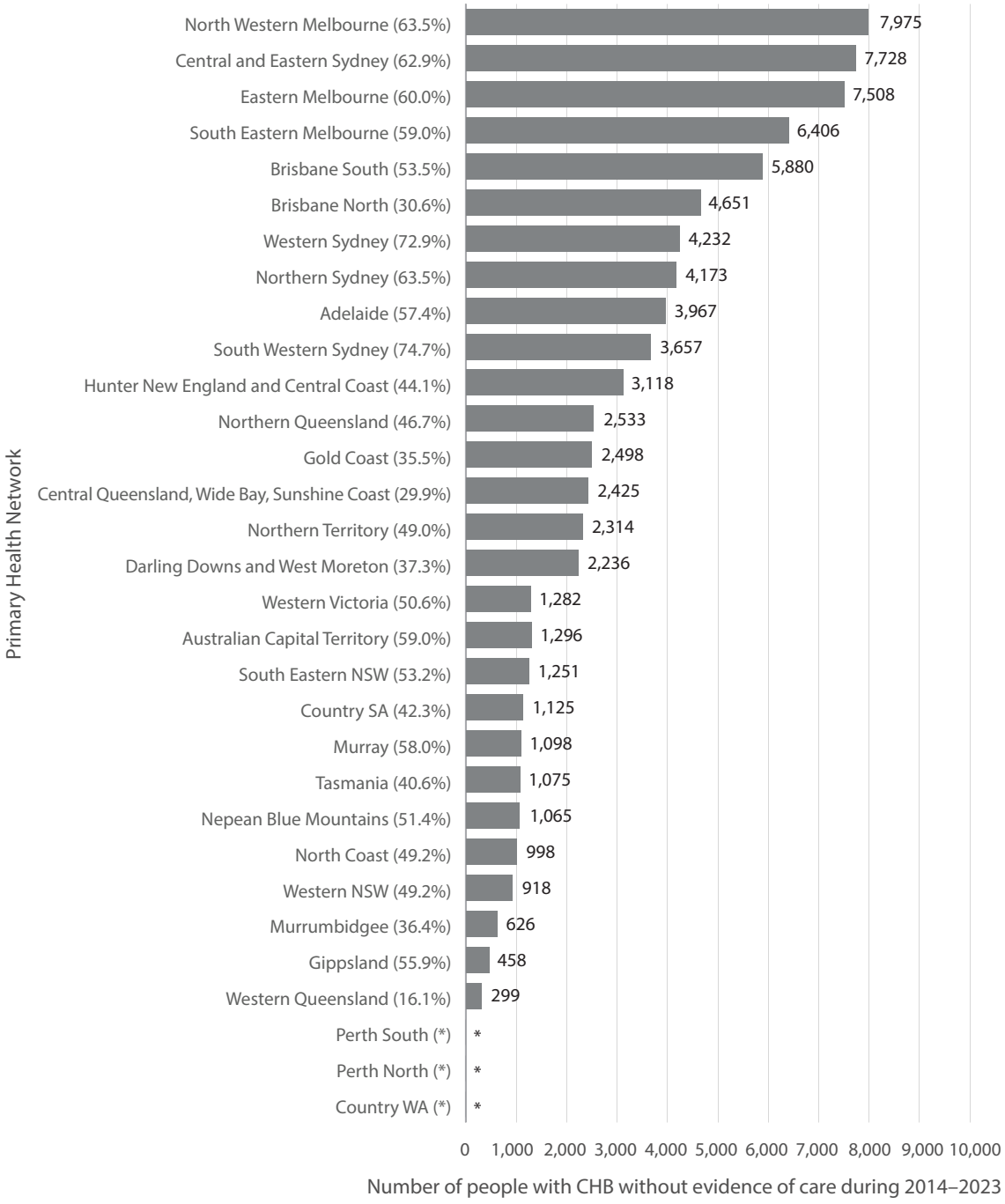
Data source: Medicare statistics. Monitoring represents viral load testing while not receiving treatment. The number of people receiving monitoring may be underestimated in some states and territories due to provision of viral load tests outside of Medicare.

* Data relating to SA and WA underestimate care uptake due to the provision of monitoring outside of Medicare.
(See data for this figure)

Although the proportion of people with CHB who had any care during 2014–2023 was highest in PHNs in Sydney and Melbourne, the large number of people living with CHB in major cities means that these are also the locations with the highest number of people not engaged in care (Figure A.11). The seven PHNs with the largest estimated number of people who did not receive either monitoring or treatment during 2014–2023 were those located in Sydney and Melbourne. The PHNs with the

largest number of people estimated not to be receiving care in the past decade were **North Western Melbourne** (63.5% care uptake during 2014–2023, 7,975 people not in care), **Central and Eastern Sydney** (62.9% care uptake during 2014–2023, 7,728 people not in care) and **Eastern Melbourne** (60.0% care uptake during 2014–2023, 7,508 people not in care).

Figure A.11: Number of people living with CHB who were not in care during 2014–2023 (bars and labels), by PHN, ordered by proportional uptake during 2014–2023 (in brackets)



ABS, Australian Bureau of Statistics. CHB, chronic hepatitis B. PHN, Primary Health Network.

Data source: CHB prevalence estimates based on mathematical modelling incorporating population-specific prevalence and ABS population data. Care data (treatment and monitoring) sourced from Medicare statistics. The number of people receiving monitoring may be underestimated in some states and territories due to the extent of monitoring services outside of Medicare.

* Data not available for this metric for WA due to the provision of services outside of Medicare. (See data for this figure)

CARE UPTAKE BY REMOTENESS AREA

Care uptake according to remoteness area is shown in Table A.11. Care uptake was highest in major cities and in very remote areas. This is reflected in the findings by PHN, where care uptake among non-metropolitan PHNs was higher in the **Northern Territory** and **Northern Queensland** PHNs, which are disproportionately very remote (shown in Figure A.4).

Table A.11: CHB care uptake by remoteness area, 2023

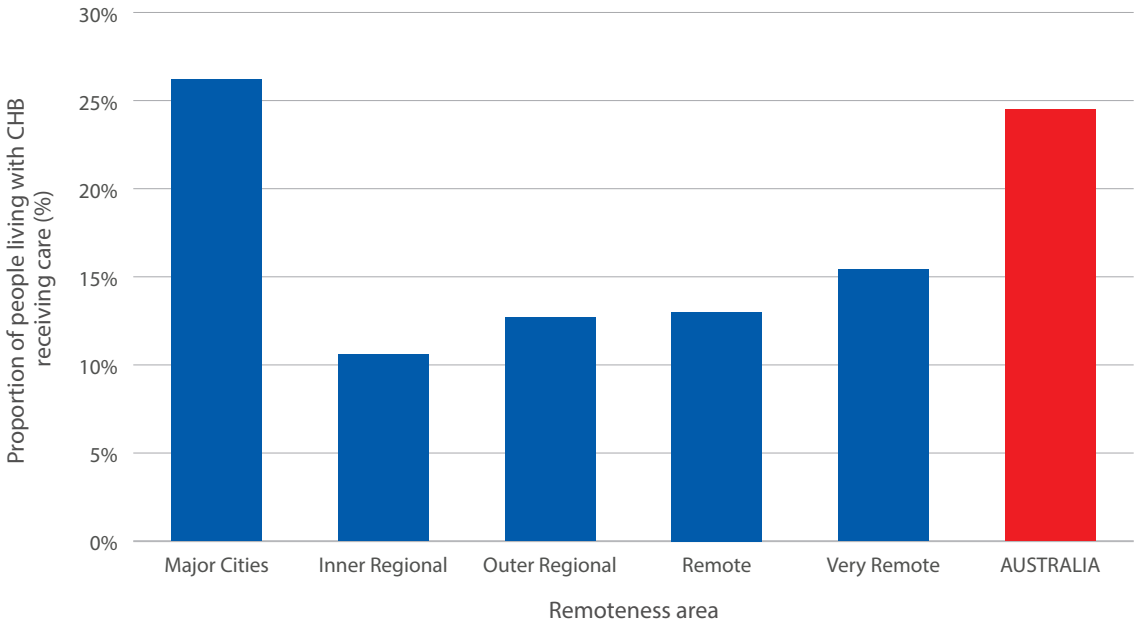
Remoteness area	Total population	People living with CHB	People receiving monitoring	Care uptake (treatment or monitoring) (%)
Major cities	19,705,611	184,297	23,360	26.2%
Inner regional	4,731,464	18,088	1,236	10.6%
Outer regional	1,977,951	11,002	707	12.7%
Remote	241,244	3,259	281	13.0%
Very remote	128,963	3,153	412	15.4%
AUSTRALIA	**26,957,776**	**219,800**	**26,011**	**24.5%**

ABS, Australian Bureau of Statistics. CHB, chronic hepatitis B.

Data source: CHB prevalence estimates based on mathematical modelling incorporating population-specific prevalence and ABS population data. Care data (treatment and monitoring) sourced from Medicare statistics. Monitoring represents viral load testing while not receiving treatment. The number of people receiving monitoring may be underestimated in some states and territories due to the extent of monitoring services outside of Medicare.

Totals may not add up due to inclusion of people without an area of residence recorded in source data.

Figure A.12: CHB care uptake by remoteness area, 2023



ABS, Australian Bureau of Statistics. CHB, chronic hepatitis B.

Data source: CHB prevalence estimates based on mathematical modelling incorporating population-specific prevalence and ABS population data. Care data (treatment and monitoring) sourced from Medicare statistics. Monitoring represents viral load testing while not receiving treatment. The number of people receiving monitoring may be underestimated in some states and territories due to the extent of monitoring services outside of Medicare.

(See data for this figure)

MONITORING AND CARE TRENDS OVER TIME BY REMOTENESS AREA

The number of people who received CHB monitoring declined between 2018 and 2023 in inner regional (19.5% decline), remote (7.8% decline) and very remote areas (32.0% decline), but remained stable in major cities and outer regional areas. Due to the increase in the number of people living with CHB over time, there was a decline in care uptake between 2018 and 2023.

CARE UPTAKE BY STATISTICAL AREA 3 REGION

CHB care uptake variation and trends by SA3 are discussed in detail in relation to the relevant state or territory in Section A2. Of the 247 SA3s with sufficient data available for reliable reporting (see Section D – Table D.2), one had care uptake in 2023 that met or exceeded the National Strategy target of 50% by 2022, while another eight had uptake between 40 and 50%. The highest care uptake was seen in Darwin City (50.6% uptake) in the **Northern Territory** PHN; Fairfield (45.7%) and Bankstown (41.6%) in the **South Western Sydney** PHN; Far North (44.9% uptake) in the **Northern Queensland** PHN; Auburn (44.5%) and Carlingford (42.1%) in the **Western Sydney** PHN; Brimbank (43.2%) in the **North Western Melbourne** PHN; Forest Lake – Oxley (42.7%) in the **Brisbane South** PHN; and Hurstville (42.2%) in the **Central and Eastern Sydney** PHN.

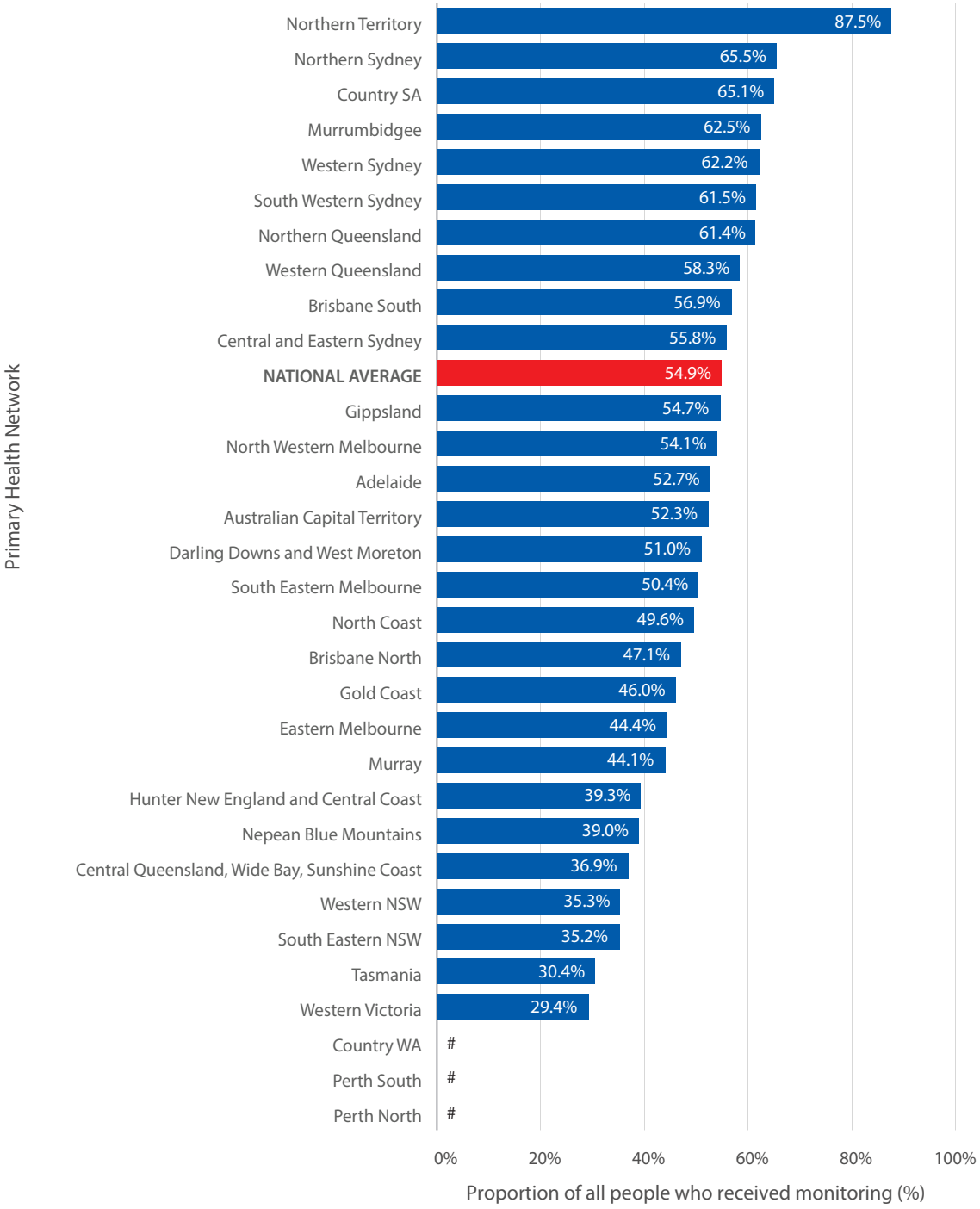
This is a reduction from 2022, when the 50% care target was also met in the Far North SA3 in the **Northern Queensland** PHN; although the number of people receiving treatment and monitoring increased in this SA3, the increase in the population living with CHB in 2023 led to a reduction in uptake. In addition, estimates for the East Arnhem SA3 in the **Northern Territory** PHN, where the target was previously estimated to have been met, have been revised due to the previous incorrect assignment of geographic regions to this SA3. For information specific to the Top End of the NT with regard to treatment and care uptake, see the 2023 Mapping Report Supplement.

Further exploration of SA3-specific data, including rankings across Australia for CHB treatment and care uptake, are provided in the ASHM Viral Hepatitis Mapping Project online portal.

MONITORING PROVIDERS

General practitioners (GPs) provided most monitoring (viral load tests in people not receiving treatment) in 2023 (data available for January–October), making up 54.9% of the total (Figure A.13). This proportion varied widely according to PHN (Figure A.23). PHNs with the highest levels of GP monitoring were **Northern Territory**, **Northern Sydney**, **Country SA**, **Murrumbidgee** and **Western Sydney**, where GPs provided more than two-thirds of monitoring tests for people not on treatment (Figure A.13). Data for this metric are not available for WA PHNs due to billing of viral load tests outside of Medicare.

Figure A.13: Proportion of CHB monitoring provided by a GP, by PHN, 2023



CHB, chronic hepatitis B. GP, general practitioner. PHN, Primary Health Network.

Data source: Medicare statistics. Monitoring represents viral load testing while not receiving treatment.

Provider type is based on the practitioner's registered provider type.

Data suppressed where number receiving treatment or care was ≤20. Data are not available for WA PHNs.

(See data for this figure)

MONITORING BY AGE AND SEX

People receiving monitoring in 2023 were relatively evenly distributed by sex (52.5% female and 47.0% male; see Section D – Ascertainment of age and sex in Medicare). A similar proportion of all monitoring tests occurred in people in each of the age groups 30–39 years (16.1%), 40–49 years (25.1%), 50–59 years (22.25%) and 60–69 years (20.6%). The distribution by sex has remined stable since 2018. The number of people receiving monitoring has increased between 2018 and 2023 in those older than 60, while declining in the remaining age groups. This trend likely partly reflects the reduced CHB prevalence in younger age groups, likely due to the impact of overseas infant hepatitis B vaccination programs scaling up from the 1990s with a resultant reduction in the prevalence of CHB in these age groups. However, this does not apply to those in the 40–60 years age group, who are not in the vaccinated age group, and the data suggest a decline in monitoring in this age group.

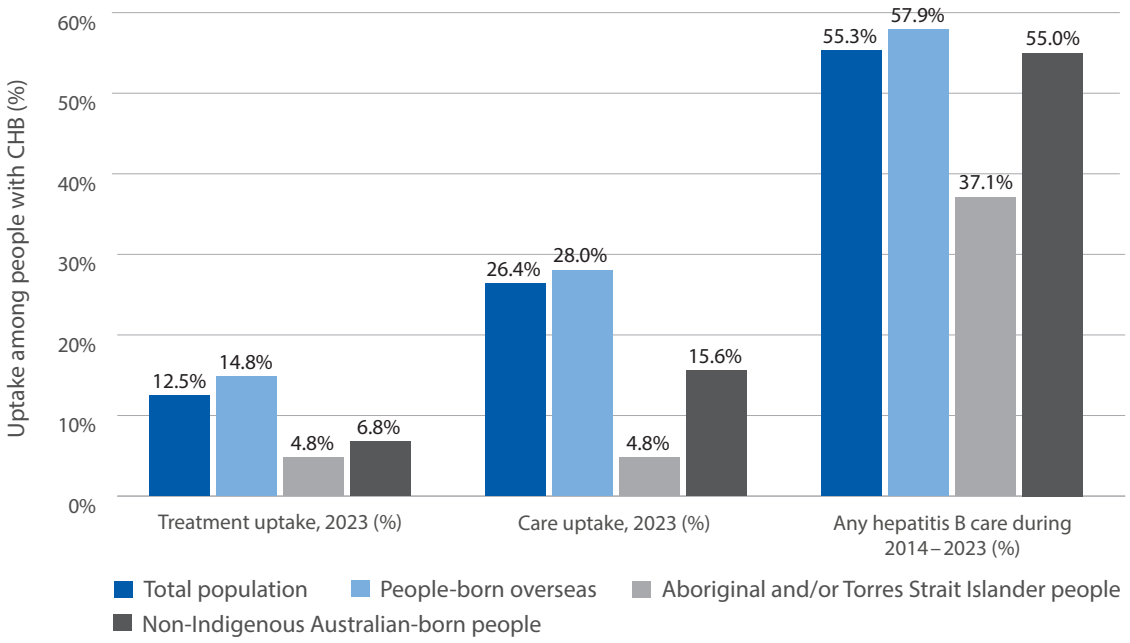
CARE UPTAKE BY PRIORITY POPULATION

As people born overseas and Aboriginal and Torres Strait Islander people are disproportionately affected by CHB in Australia (see Priority populations for CHB), assessment of care engagement indicators according to population group is key to fully ascertaining gaps and disparities in access. This was not previously possible, as the main data source for treatment and care data (Medicare) does not collect these demographics, but the development of linked data connecting Medicare records with Census and other datasets, including country of birth and Indigenous status using the Person Level Integrated Data Asset (PLIDA; see Section D – Hepatitis B testing, treatment and care), has made this possible. This report contains preliminary analysis of these data, focused on historical care uptake due to the larger scope of that data, which will be expanded on in future reports.

Uptake estimates indicate that people born overseas are more likely to have received care during 2014–2023 (60.9%) compared to the overall population (55.3%), Aboriginal and Torres Strait Islander people (36.3%) and non-Indigenous people born in Australia (36.5%). This was also the case for engagement in care in 2023 and for treatment uptake in 2023 (Figure A.14), where uptake among people born overseas was estimated to be more than double other population groups.

Uptake of care in Aboriginal and Torres Strait Islander people varied widely according to state and territory. Uptake was highest in the NT, where it was higher in Aboriginal and Torres Strait Islander people than the total population (52.5% compared to 45.2%), and similar in Vic (56.2% compared to 58.7%) and Qld (36.5% compared to 39.3%; see the 2023 Mapping Report Supplement).

Figure A.14: CHB treatment uptake and care uptake by population group, 2014–2023



ABS, Australian Bureau of Statistics. CHB, chronic hepatitis B. PLIDA, Person Level Integrated Data Asset.

Data source: CHB prevalence estimates based on mathematical modelling incorporating population-specific prevalence and ABS population data. Care data (treatment and monitoring) sourced from Medicare statistics linked to demographic information derived from the Census and other sources in the PLIDA environment. The number of people receiving monitoring may be underestimated in some states and territories due to provision of viral load tests outside of Medicare, and this may impact estimates by population group.

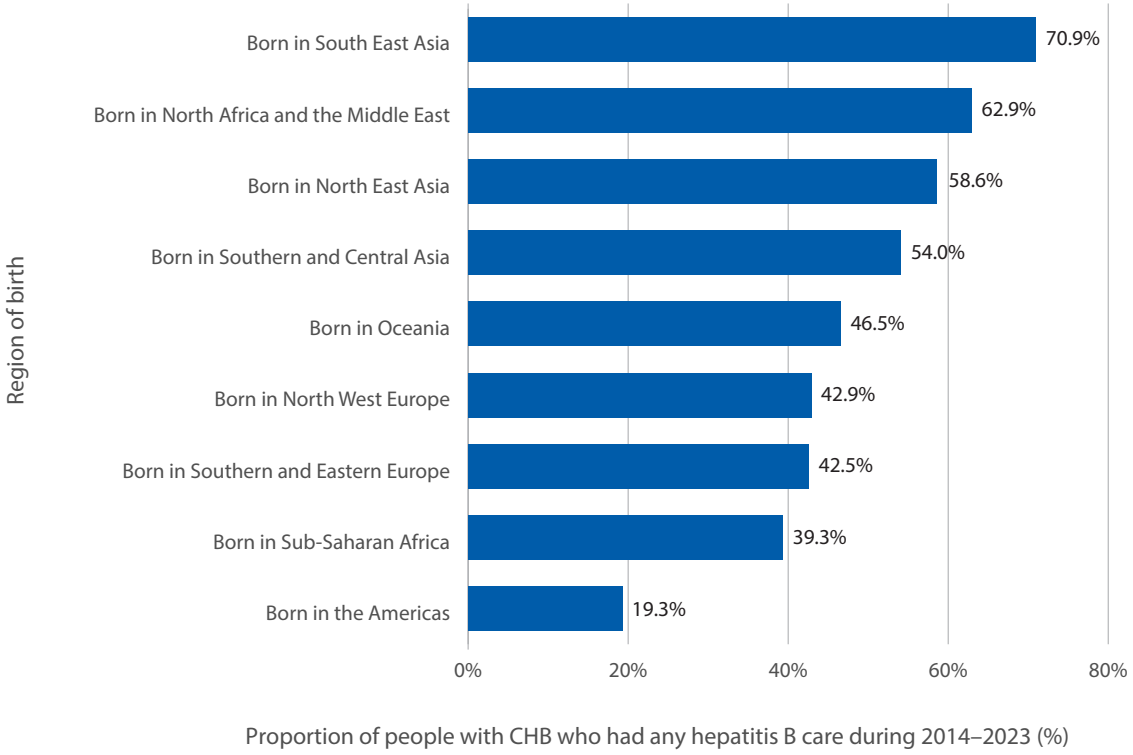
(See data for this figure)

Further analysis of historical data for the period 2014–2023 among people born overseas according to region of birth shows that there is substantial variation. Those born in South East Asia were the most likely to have had care, with 70.9% of people born in this region having received either viral load testing or treatment. Uptake was also higher in those born in North Africa and the Middle East (62.9% had care), North East Asia (58.6% had care) and Southern and Central Asia (54.0% had care) (Figure A.15).

These findings highlight the considerable diversity in care provision according to population group, and emphasise the need for community-specific interventions to reach those in greatest need. They also provide insight into patterns according to geographic area, suggesting that the distribution of people with CHB according to priority population is one of the key drivers of uptake in a given area. Further analysis is required to fully explore the various factors associated with CHB care engagement, including language, ancestry, socioeconomic status, length of time lived in Australia, migration category and other factors associated with cultural and linguistic diversity.

These data also highlight the substantial barriers to access for many Aboriginal and Torres Strait Islander people, which often reflect the enduring traumatic legacy of colonisation, recognising the historical disadvantage perpetuated by institutional racism and systemic failures that collectively contribute to health disparities between Aboriginal and Torres Strait Islander peoples and non-Indigenous Australians.

Figure A.15: Proportion of people born overseas who had any CHB care (treatment or monitoring), according to region of birth, 2014–2023



ABS, Australian Bureau of Statistics. CHB, chronic hepatitis B. PLIDA, Person Level Integrated Data Asset.

Data source: CHB prevalence estimates based on mathematical modelling incorporating population-specific prevalence and ABS population data. Care data (treatment and monitoring) sourced from Medicare statistics linked to demographic information derived from the Census and other sources in the PLIDA environment. The number of people receiving monitoring may be underestimated in some states and territories due to provision of viral load tests outside of Medicare, and this may impact estimates by population group. (See data for this figure)

TREATMENT

The overall number of people who received treatment for CHB in Australia through Medicare in 2023 was 27,641, or 12.6% of the total number living with CHB. This is only two-thirds of the Third National Hepatitis B Strategy 2018–2022 target of 20% by 2022. Although the number of people receiving treatment in 2023 increased from 26,617 in 2022, the number of people living with CHB increased by a larger proportion, leading to a reduction in treatment uptake from 12.9% to 12.6%.

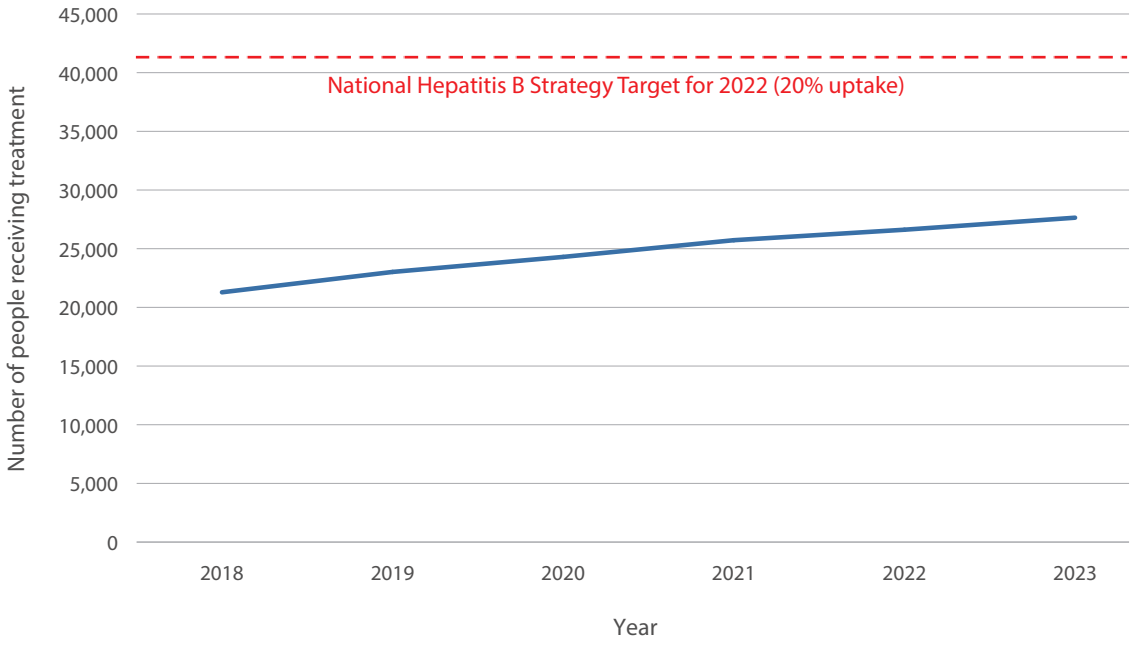
TREATMENT TRENDS OVER TIME

The number of people who are receiving CHB treatment has increased over time, from 21,285 in 2018 to 27,641 in 2023, a 30% increase. However, this change over time is well below the rate which would have been required (a 95% increase) to meet the National Strategy treatment uptake target of 20% by 2022. This treatment trend relative to the National Strategy 2022 target is presented in Figure A.16. The rate of increase in the number of people receiving treatment has been slowing over time, from an 8.1% increase between 2018 and 2019 to a 3.8% increase between 2022 and 2023.

The majority of those who commenced treatment during the period 2014–2023 (when data are available) continued to receive it; of the 12,730 people who were on treatment in 2014 and who were still alive and living in Australia in 2023, 10,201 were still receiving treatment (80.1%).

The relative treatment uptake trends over time by state and territory by PHN and SA3, and by provider type, age and sex, and drug are discussed in specific sections below.

Figure A.16: Number of people receiving treatment for CHB, 2018–2023, compared to National Strategy 2022 target level



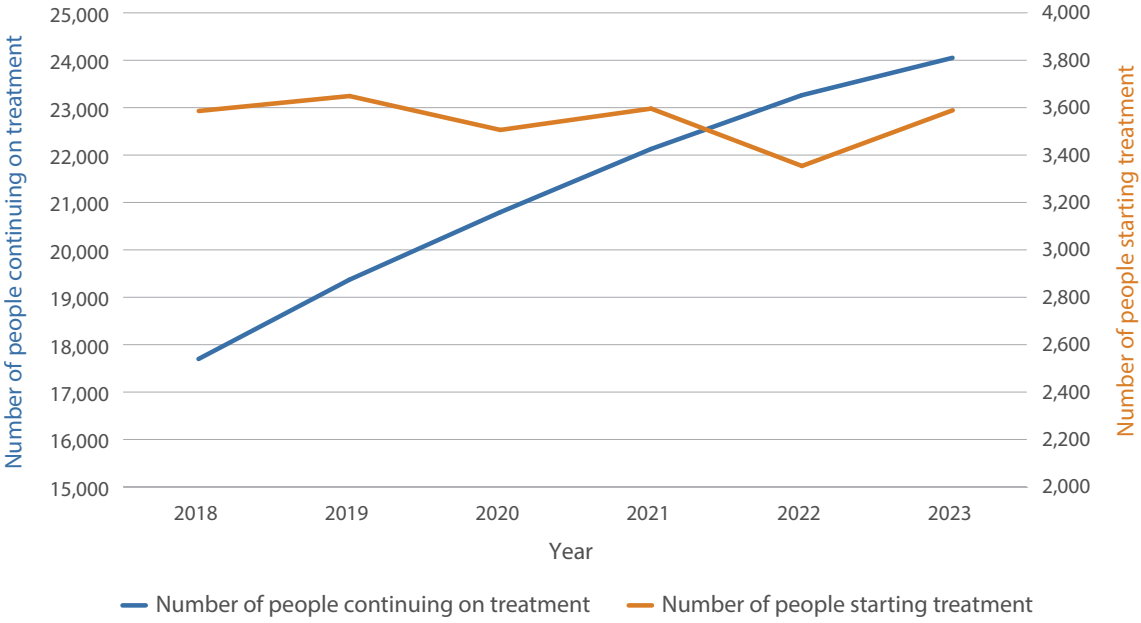
CHB, chronic hepatitis B.

Data source: Treatment data sourced from Medicare statistics.

(See data for this figure)

The number of people receiving treatment for CHB in a given year is made up of those who are continuing treatment from the past year, and those who are starting treatment for the first time in that year. Trends in each of these groups are shown in Figure A.17. New initiations have fluctuated over time since 2018, but overall remained stable. In order to meet the increased treatment numbers identified as a target in the National Hepatitis B Strategy, the number of new initiations needs to substantially increase.

Figure A.17: Number of people receiving treatment for CHB, by year and past treatment history status, 2018–2023 (note separate truncated axes)



CHB, chronic hepatitis B.

Data source: Treatment data sourced from Medicare statistics.

(See data for this figure)

TREATMENT UPTAKE BY STATE AND TERRITORY

Treatment uptake in 2023 varied greatly between jurisdictions, but no state or territory approached the national target of 20% (Table A.12). Treatment uptake was above the national average of 12.6% in the ACT (15.2%), NSW (15.0%) and Vic (13.0%); and below the national average in SA (11.2%), the NT (10.9%), Qld (9.9%), Tas (9.1%) and WA (8.4%).

Table A.12: CHB treatment uptake, by state and territory, 2023

State/ territory	People living with CHB	People receiving treatment	Treatment uptake (%)
ACT	3,160	481	15.2%
NSW	77,844	11,652	15.0%
NT	4,537	494	10.9%
Qld	35,352	3,486	9.9%
SA	11,258	1,261	11.2%
Tas	1,812	165	9.1%
Vic	62,241	8,120	13.0%
WA	23,596	1,982	8.4%
AUSTRALIA	**219,800**	**27,641**	**12.6%**

ABS, Australian Bureau of Statistics. CHB, chronic hepatitis B.

Data source: CHB prevalence estimates based on mathematical modelling incorporating population-specific prevalence and ABS population data. Treatment data sourced from Medicare statistics.

Totals may not add up due to inclusion of people without a state/territory of residence recorded in source data.

TREATMENT TRENDS OVER TIME BY STATE AND TERRITORY

The number of people who received treatment for hepatitis B increased between 2018 and 2023 in all states and territories. However, reflecting the national trend, the increase in the number of people treated was significantly smaller between 2022 and 2023 than it was between 2018 and 2019 in all states and territories except Tas (Table A.13). The largest increases in the number of people who received treatment between 2018 and 2023 occurred in the NT (71.6% increase), Tas (51.3%), Qld (45.4%) and SA (43.5%).

Table A.13: Number of people receiving treatment for CHB, by state and territory, 2018–2023

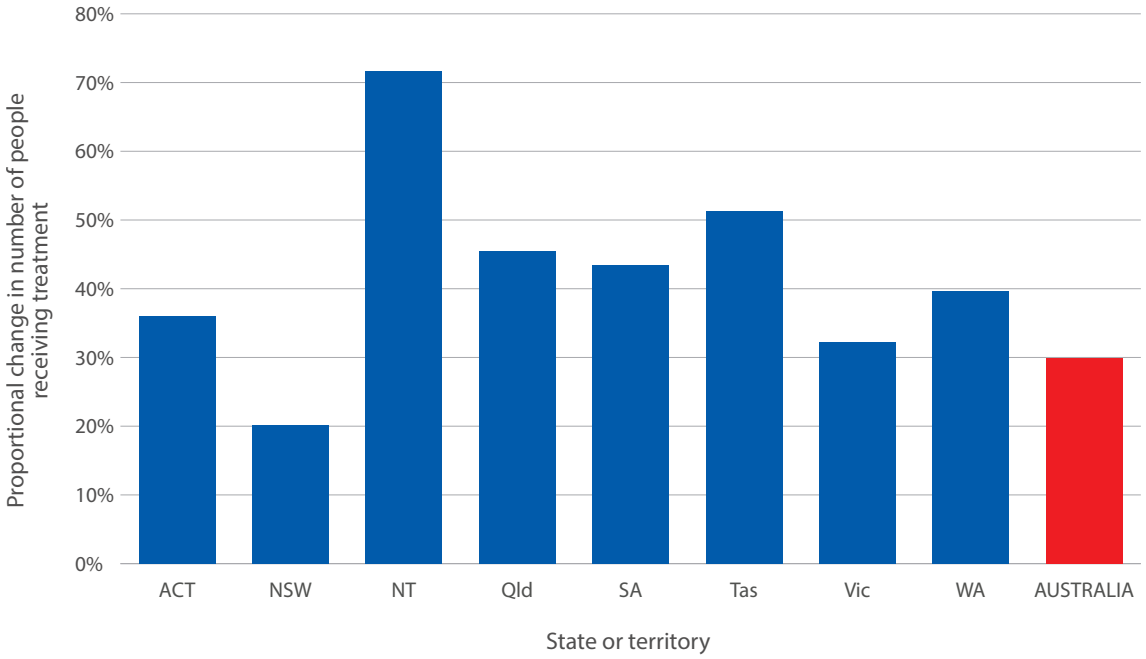
State/ territory	People receiving treatment in 2018	People receiving treatment in 2019	People receiving treatment in 2020	People receiving treatment in 2021	People receiving treatment in 2022	People receiving treatment in 2023	Increase in number receiving treatment, 2018–2023
ACT	354	378	415	452	473	481	36.0%
NSW	9,699	10,201	10,530	11,062	11,380	11,652	20.1%
NT	288	346	386	440	467	494	71.6%
Qld	2,397	2,703	2,934	3,121	3,273	3,486	45.4%
SA	879	998	1,056	1,149	1,188	1,261	43.5%
Tas	109	111	135	142	160	165	51.3%
Vic	6,141	6,720	7,168	7,549	7,801	8,120	32.2%
WA	1,418	1,562	1,675	1,810	1,875	1,982	39.7%
AUSTRALIA	**21,285**	**23,019**	**24,300**	**25,724**	**26,617**	**27,641**	**29.9%**

CHB, chronic hepatitis B.

Data source: Treatment data sourced from Medicare statistics.

Totals may not add up due to inclusion of people without a state/territory of residence recorded in source data.

Figure A.18: Proportional change in number of people receiving treatment for CHB, 2018–2023



ABS, Australian Bureau of Statistics. CHB, chronic hepatitis B.

Data source: Treatment data sourced from Medicare statistics. (See data for this figure)

FUTURE PROJECTIONS FOR TREATMENT UPTAKE BY STATE AND TERRITORY

Based on current levels of treatment uptake and changes in the population living with CHB, projections were generated to estimate the treatment uptake in each state and territory in 2030, and reported in the *National Surveillance for Hepatitis B Indicators Report*.[5] These show that substantial increases in treatment are required in all states and territories in order to meet previously established treatment targets.

The data indicate that no state or territory is on track to meet the 2022 National Strategy target of 20% until at least 2033, when the NT is projected to be the first to surpass 20%, followed by Qld and the ACT in 2035. These projections partly reflect the above discussed trends which find that these states and territories have seen more rapid increases in treatment numbers over time.

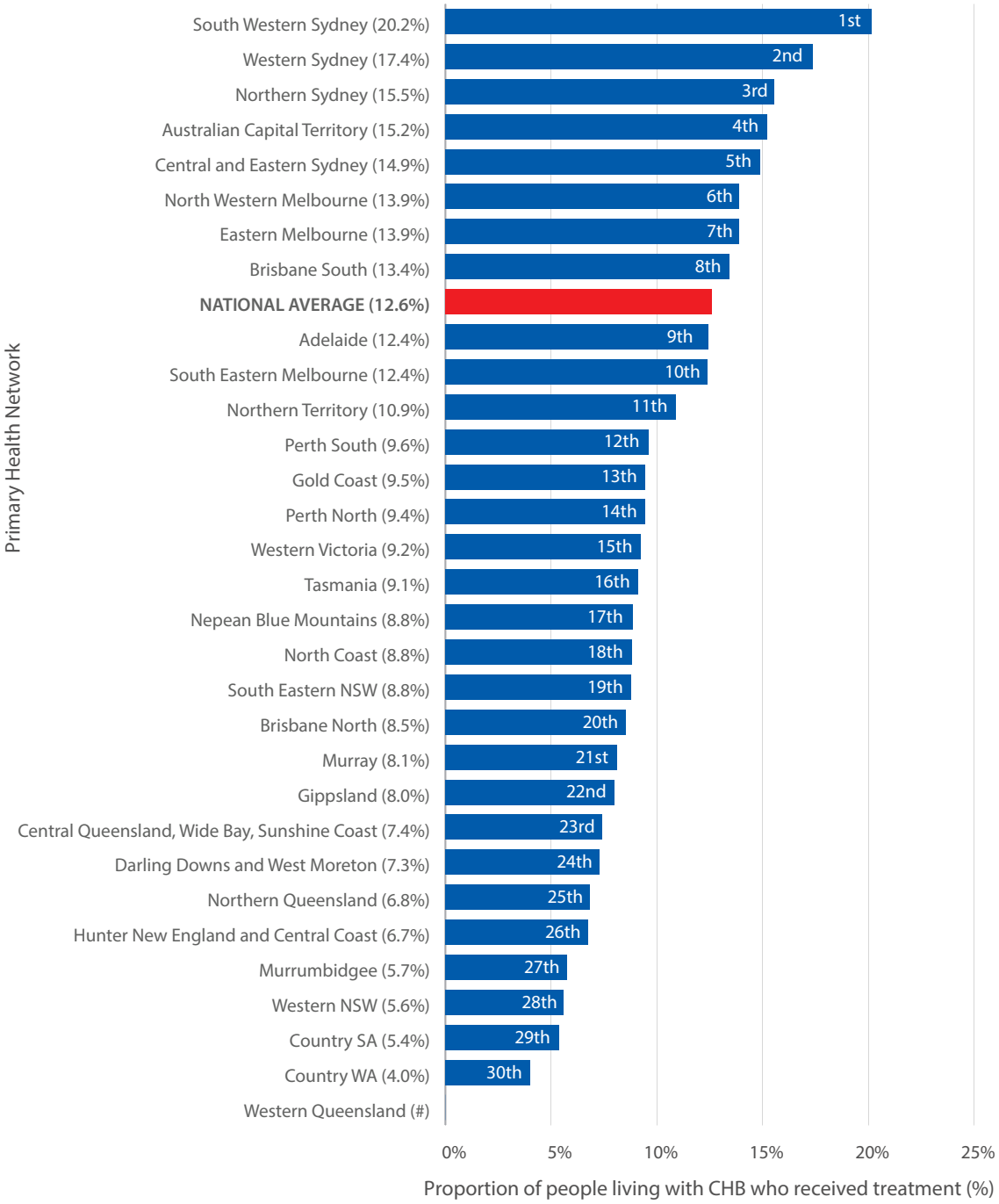
TREATMENT UPTAKE BY PRIMARY HEALTH NETWORK

Treatment uptake was highest in PHNs in Sydney, Melbourne and Brisbane, as well as the **Australian Capital Territory** PHN (Figure A.19). Only one PHN is estimated to have reached the 2022 National Strategy treatment uptake target of 20% (**South Western Sydney**, treatment uptake 20.2%). PHNs where treatment uptake was lowest were generally located in the most rural and remote regions of Australia (with the exception of the **Northern Territory**, where it was just below average), reflecting the challenges in service delivery to people living with CHB in these regions. In many of these regions the predominant group living with CHB is Aboriginal and/or Torres Strait Islander people (Figure A.7), and the disparity in uptake reflects the ongoing impact of the legacy of colonisation, institutional racism and systemic disadvantage. Variation in treatment uptake within PHNs can also be substantial, and is explored in each state and territory in detail in Section A2.

Treatment uptake by PHN generally reflects the ranking of PHNs according to care uptake (see Care uptake by Primary Health Network), but in some areas there was a disparity between treatment uptake and care uptake ranking. This was most substantial for the **Northern Queensland** (ranked 17th

for care uptake but 25th for treatment uptake), **Western NSW** (ranked 20th for care uptake but 28th for treatment uptake) and **Murray** PHNs (ranked 12th for care uptake but 20th for treatment uptake). These variations may be due to a smaller proportion of people with CHB in these areas being eligible for treatment, and this should be considered when assessing progress towards treatment targets.

Figure A.19: CHB treatment uptake (bars and in brackets) and ranking (label) by PHN, 2023



ABS, Australian Bureau of Statistics. CHB, chronic hepatitis B. PHN, Primary Health Network.

Data source: CHB prevalence estimates based on mathematical modelling incorporating population-specific prevalence and ABS population data. Treatment data sourced from Medicare statistics.

PHN rankings based on raw treatment uptake data; percentage differences may be obscured by rounding.

Data suppressed where number of people receiving treatment was ≤20. (See data for this figure)

TREATMENT TRENDS OVER TIME BY PRIMARY HEALTH NETWORK

The number of people receiving treatment has increased in all PHNs since 2018, reflecting the national trend. The largest proportional increases occurred in PHNs with lower baseline treatment uptake, including **Western Victoria** (98.1% increase); **Central Queensland, Wide Bay and Sunshine Coast** (76.6% increase); **Northern Territory** (71.6% increase); and **Country WA (**64.3%). PHNs where the proportional increase in the number treated was smaller than the national average included **South Western Sydney** (14.3% increase), **Central and Eastern Sydney (**15.5% increase), **Hunter New England and Central Coast** (15.6% increase) and **Murray** (16.8% increase). These data are provided in full in the 2023 Mapping Report Supplement.

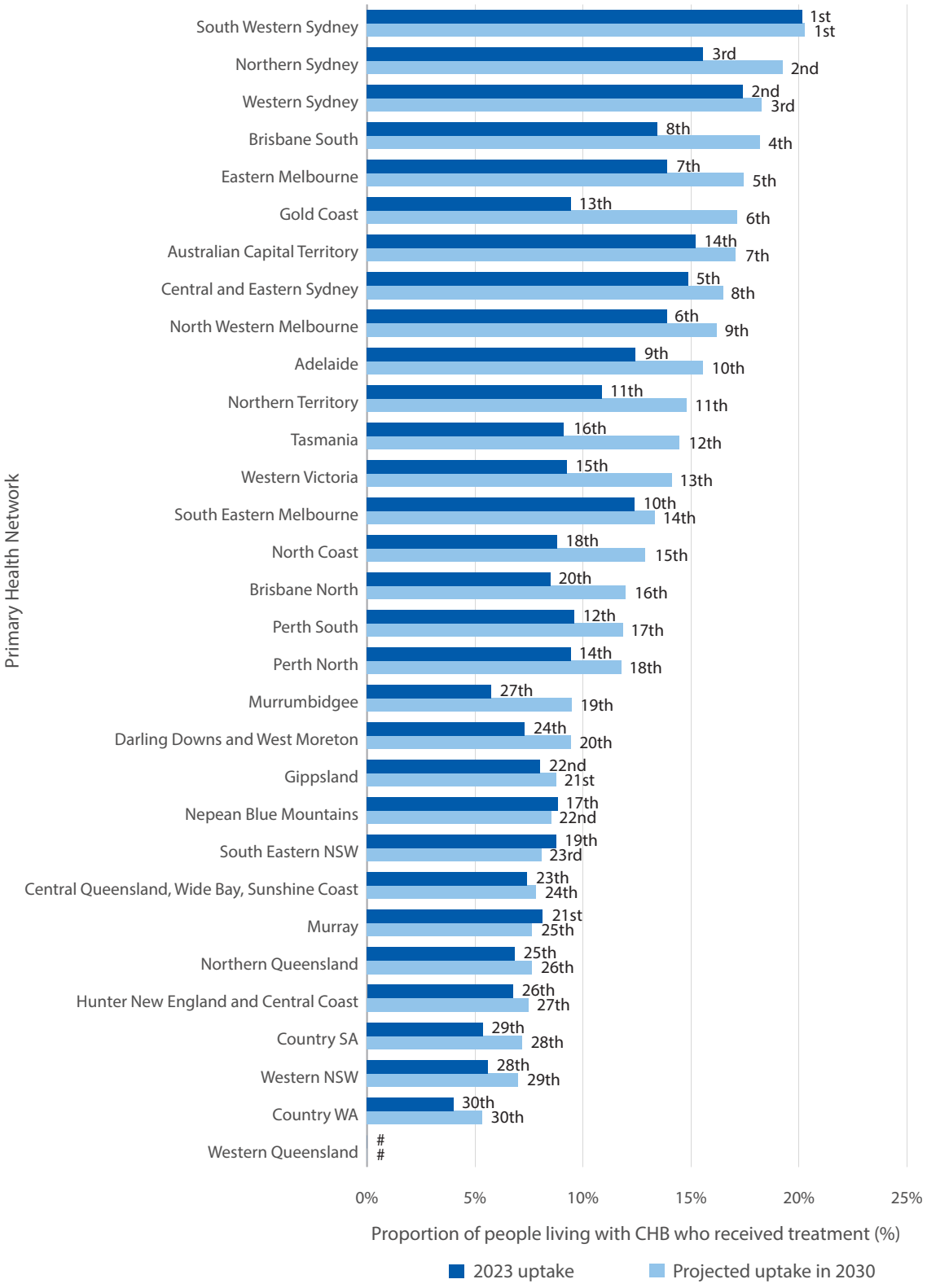
FUTURE PROJECTIONS FOR TREATMENT UPTAKE BY PRIMARY HEALTH NETWORK

Based on current levels of treatment uptake, and change in the number of people receiving treatment and the population living with CHB, projections were generated to estimate the treatment uptake in each PHN in 2030. These data are presented in Figure A.20, including the current rank for 2023 and the projected rank in 2030.

Based on these projections, it is estimated that the only PHN likely to exceed 20% treatment uptake by 2030 is **South Western Sydney**, which already reached 20% uptake in 2021. It is estimated that three additional PHNs will have uptake above 18% by 2030 (**Northern Sydney**, 19.3%; **Western Sydney**, 18.3%; and **Brisbane South**, 18.2%). Some PHNs are projected to move up in rank compared to 2023 based on their current trend in treatment numbers (Figure A.20). This rank change would be largest in **Murrumbidgee** (27th to 19th), **Gold Coast** (13th to 6th), **Brisbane South** (8th to 4th), **Tasmania** (16th to 12th), **Brisbane North** (20th to 16th) and **Darling Downs and West Moreton** (24th to 20th). In a small number of PHNs, due to the very low current rate of increase in treatment numbers and the projection that the number of people with CHB will continue to increase, their uptake is predicted to decline by 2030 (**Murray**, **Nepean Blue Mountains** and **South Eastern NSW** PHNs).

Although projection data are subject to significant change due to potential future shifts in treatment trends and in prevalence, they highlight that few PHNs are on track to make significant progress towards the 2022 treatment target of 20%, even by 2030 and even if the future population with CHB has been overestimated.

Figure A.20: CHB treatment uptake in 2023 and projected uptake in 2030, ordered by projected 2030 uptake, by PHN (ranks labelled)



CHB, chronic hepatitis B. PHN, Primary Health Network.

Data source: CHB prevalence estimates based on mathematical modelling incorporating population-specific prevalence and ABS population data. Treatment data sourced from Medicare statistics.

Totals include people without a state/territory of residence recorded in source data.

Data suppressed where number of people receiving treatment was ≤20. (See data for this figure)

TREATMENT UPTAKE BY REMOTENESS AREA

CHB treatment uptake in 2023 was highest in major cities (13.6%). This reflects trends by PHN (Figure A.19), given that PHNs with higher treatment uptake are those in capital cities (particularly Melbourne and Sydney) (Figure A.4). The uptake of monitoring and care across remoteness areas is discussed in the section Care uptake by remoteness area.

Table A.14: CHB treatment uptake by remoteness area, 2023

Remoteness area	Total population	People living with CHB	People on treatment	Treatment uptake (%)
Major cities	19,705,611	184,297	24,140	13.6%
Inner regional	4,731,464	18,088	1,170	5.1%
Outer regional	1,977,951	11,002	760	6.1%
Remote	241,224	3,259	176	5.0%
Very remote	128,963	3,153	254	6.5%
AUSTRALIA	**26,957,776**	**219,800**	**27,641**	**12.6%**

ABS, Australian Bureau of Statistics. CHB, chronic hepatitis B.

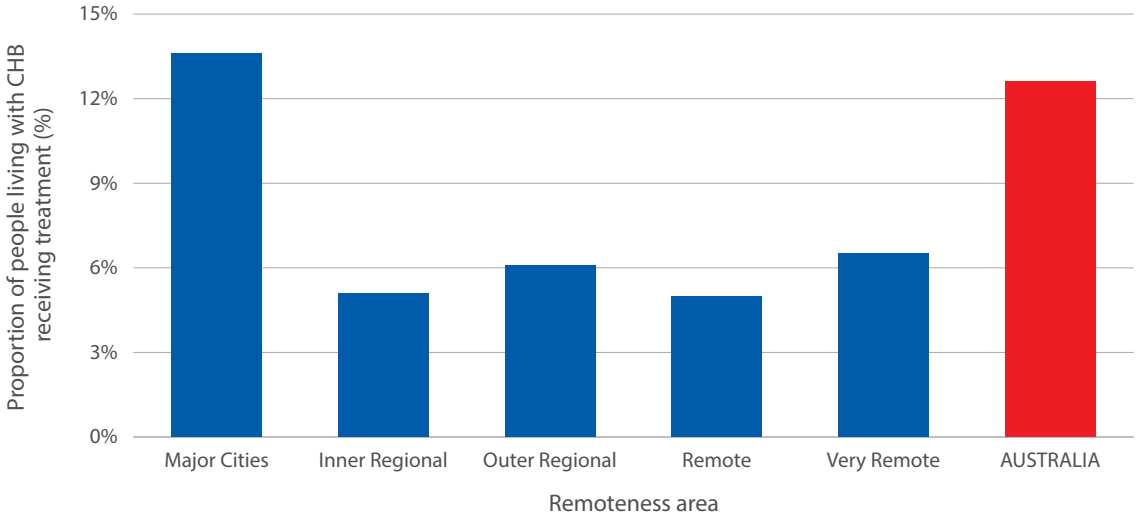
Data source: CHB prevalence estimates based on mathematical modelling incorporating population-specific prevalence and ABS population data. Treatment data sourced from Medicare statistics. Remoteness category based on designations by the ABS.[8]

Totals may not add up due to inclusion of people without an area of residence recorded in source data.

TREATMENT TRENDS OVER TIME BY REMOTENESS AREA

The number of people receiving treatment for CHB has increased most rapidly over time in remote areas, where there was a 69.5% increase between 2018 and 2023, and very remote areas, where there was a 42.6% increase, compared to the national average increase of 29.9%. These areas previously had the lowest baseline uptake, and this shift has resulted in a reduced disparity in treatment uptake between remote/very remote areas and inner and outer regional areas compared to 2018.

Figure A.21: CHB treatment uptake by remoteness area, 2023



ABS, Australian Bureau of Statistics. CHB, chronic hepatitis B.

Data source: CHB prevalence estimates based on mathematical modelling incorporating population-specific prevalence and ABS population data. Treatment data sourced from Medicare statistics. Remoteness category based on designations by the ABS.[8] (See data for this figure)

TREATMENT UPTAKE BY STATISTICAL AREA 3 REGION

Due to the relatively small population size of SA3s (averaging around 70,000 residents), there were larger variations in treatment uptake observed than at the PHN level. Uptake variation by SA3 is discussed in detail for each state and territory in Section A2. Of the 247 SA3s with sufficient data available for reliable reporting (see Section D – Table D.2), 10 had treatment uptake that met or exceeded the National Strategy target of 20% by 2022, while two had uptake between 19.5 and 20%.

Those SA3s where treatment uptake was estimated to have reached the target of 20% in 2023 were Darwin City (26.7% uptake) in the **Northern Territory** PHN; Fairfield (25.9%) and Bankstown (22.3%) in the **South Western Sydney** PHN; Hurstville (23.7%) in the **Central and Eastern Sydney** PHN; Gungahlin (23.6%) and Molonglo (20.0%) in the **Australian Capital Territory** PHN; Carlingford (22.8%), Auburn (21.1%) and Merrylands – Guildford (20.2%) in the **Western Sydney** PHN; and Brimbank (22.0%) in the **North Western Melbourne** PHN. Treatment uptake also reached 19.9% in the Forest Lake – Oxley SA3 (**Brisbane South** PHN) and 19.6% the Dandenong SA3 (**South Eastern Melbourne** PHN).

This is a reduction from 2022, when 14 SA3s met the 20% treatment target; although the number of people receiving treatment has increased in most of these SA3s, the increase in the population living with CHB in 2023 led to a reduction in uptake.

In addition, estimates for the East Arnhem SA3 in the **Northern Territory** PHN have been revised due to the previous incorrect assignment of geographic regions to this SA3. For information specific to the Top End of the NT with regard to treatment and care uptake, reflecting the impact of the Hep B PAST program, see the 2023 Mapping Report Supplement.

Further exploration of SA3-specific data, including rankings across Australia for CHB treatment and care uptake, is available in the online portal.

TREATMENT BY PROVIDER

Data regarding hepatitis B treatment providers are only available for the period January–October 2023, and are presented below as representative of 2023 overall, given most people who received a treatment script in 2023 are covered during this period.

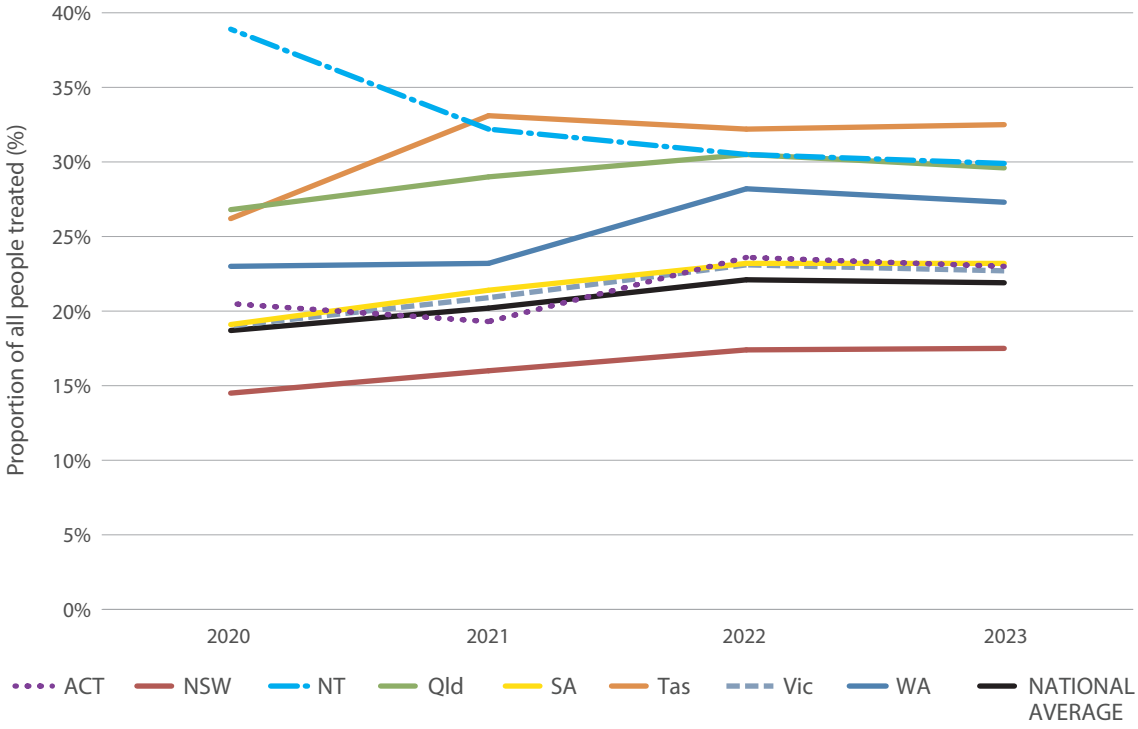
During January–October 2023, a total of 26,731 people received CHB treatment, of which 5,862 (21.9%) had at least one of their prescriptions prescribed by a GP. This included 4,006 people who had all their prescriptions provided by a GP (15.0% of people treated), while the remainder (1,856 people, 6.9% of people treated) were prescribed prescriptions by both a GP and a non-GP specialist and/or other provider. These categories are based on the registered specialty or specialties listed in Medicare, rather than derived using a practitioner's qualifications and service history, which can lead to incorrect estimations.[18] See Section D – Data sources and methodology for more details on provider classifications.

Of those prescribed CHB treatment exclusively by a non-GP specialist (17,873, 66.9%), most were prescribed their treatment by a gastroenterologist (15,157, 82.0% of those treated by a specialist). A total of 445 people were prescribed at least one of their prescriptions by a nurse practitioner (NP) (1.6% of the total treated), an increase from 1.1% in 2022. The majority of this prescribing occurred in Qld (42.6% of those prescribed by an NP) and the NT (24.9%).

The proportion of people who were prescribed treatment for CHB by a GP has increased over time, from 18.7% in 2020 to 21.9% in 2023. This occurred in all states and territories, with the exception of the NT, which declined but still had above-average GP prescribing in 2023 (Figure A.22).

The proportion of people prescribed treatment by a GP was highest in Tas (32.5%), the NT (29.9%) and Qld (29.6%). These findings are consistent with the service access limitations in the NT and Qld, where remote residence is common for people living with CHB and non-GP specialist services may not be available.

Figure A.22: Proportion of people with a GP involved^ in CHB treatment prescribing, by state and territory, 2020–2023



CHB, chronic hepatitis B. GP, general practitioner.

Data source: Treatment data sourced from Medicare statistics. Provider type is based on the clinician's registered specialty.

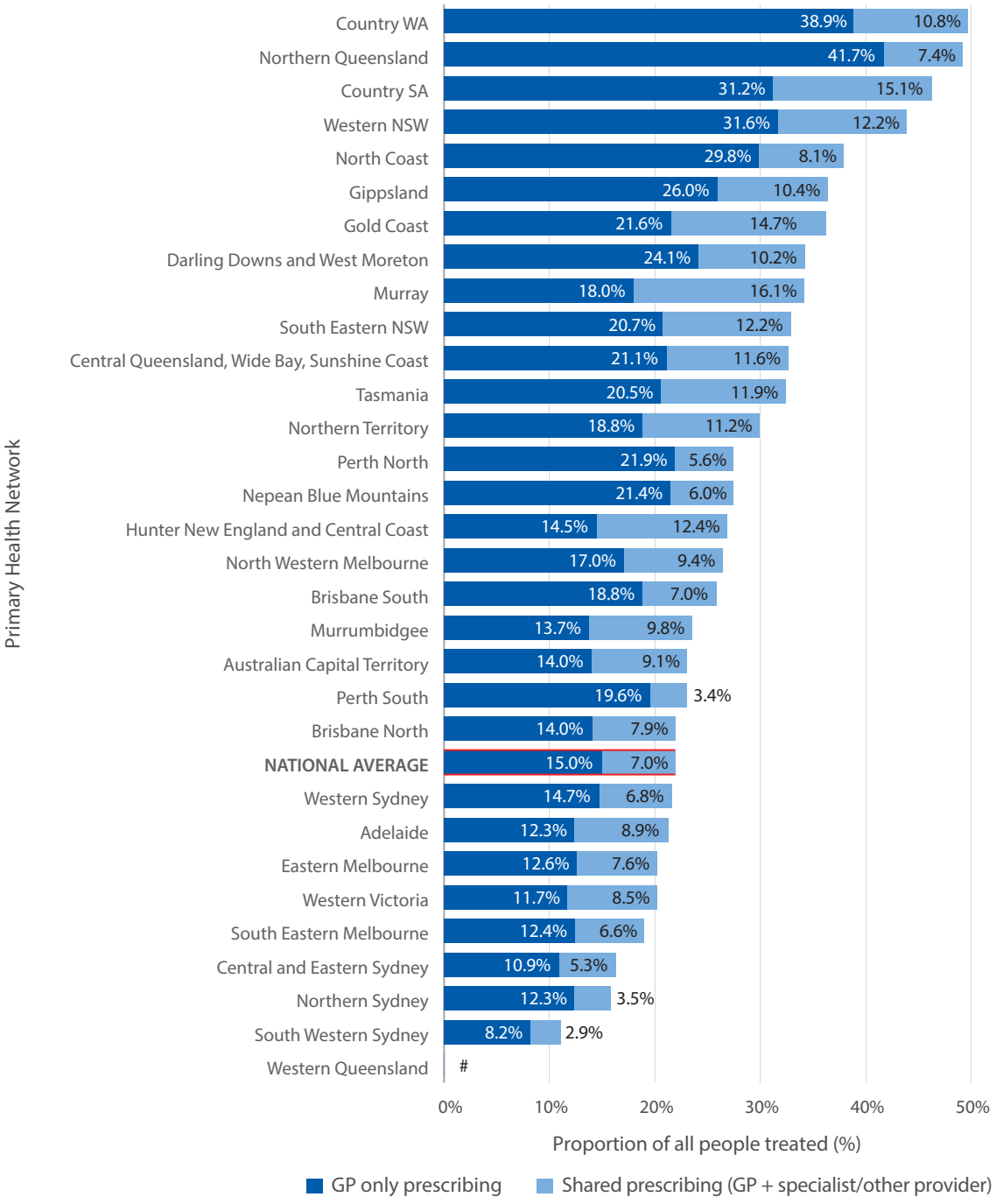
^ A GP prescribed at least one of the treatment prescriptions for a person in that year.

(See data for this figure)

When assessed by PHN, the proportion of people treated by a GP (either exclusively or through shared prescribing) was highest in the **Country WA** (49.7%), **Northern Queensland** (49.2%), **Country SA** (46.2%), **Western NSW** (43.9%) and **North Coast** NSW (37.9%). Figure A.23 shows the ranking by PHN, including the proportion of people prescribed treatment exclusively by a GP and those whose antivirals were prescribed by both a GP and another provider.

PHNs with below-average GP prescribing were more likely to be located in the major cities of Melbourne and Sydney, reflecting findings at the state level of the correlation between GP prescribing and remoteness of residence for people with CHB.

Figure A.23: Proportion of people with a GP involved^ in CHB treatment prescribing, by PHN, 2023



CHB, chronic hepatitis B. GP, general practitioner. PHN, Primary Health Network.

Data source: Treatment data sourced from Medicare statistics. Provider type is based on the clinician's registered specialty.

^ A GP prescribed at least one of the treatment prescriptions for a person in that year. 'GP only prescribing' indicates all of a person's prescriptions were provided by a GP. 'Shared prescribing' indicates prescriptions were prescribed for a person by multiple providers, with at least one provided by a GP.

Data suppressed where number receiving treatment was ≤20.

(See data for this figure)

TREATMENT BY AGE AND SEX

People who received CHB treatment in 2023 were more commonly male (58.0%; see Section D – Ascertainment of age and sex in Medicare). People receiving treatment were most commonly in the 40–49 (22.3% of the total), 50–59 (23.8%) and 60–69 year age groups (24.7%). This is concordant with modelled estimates of the proportion eligible for treatment, of which 28.4% are estimated to be aged ≥60 years and 19.1% aged 50–59 years.[5]

The increase in the number of people receiving treatment was larger in females (39.1% increase) than in males (25.0%), potentially reflecting observed increases in guideline-based treatment during pregnancy for the prevention of mother-to-child-transmission.[19]

The number of people receiving treatment increased in those aged 40 and above, while declining in the remaining age groups. This trend likely reflects the reduced CHB prevalence in younger age groups, likely due to the impact of overseas infant hepatitis B vaccination programs scaling up from the 1990s with a resultant reduction in the prevalence of CHB in these age groups.

TREATMENT BY DRUG

The vast majority of people who received CHB treatment in 2023 were prescribed first line monotherapy (95.2% of the total treated), either entecavir (66.3% of the total treated) or tenofovir (29.0%). Over the four years from 2020 to 2023, fewer than 30 people received interferon therapy.

IMMUNISATION

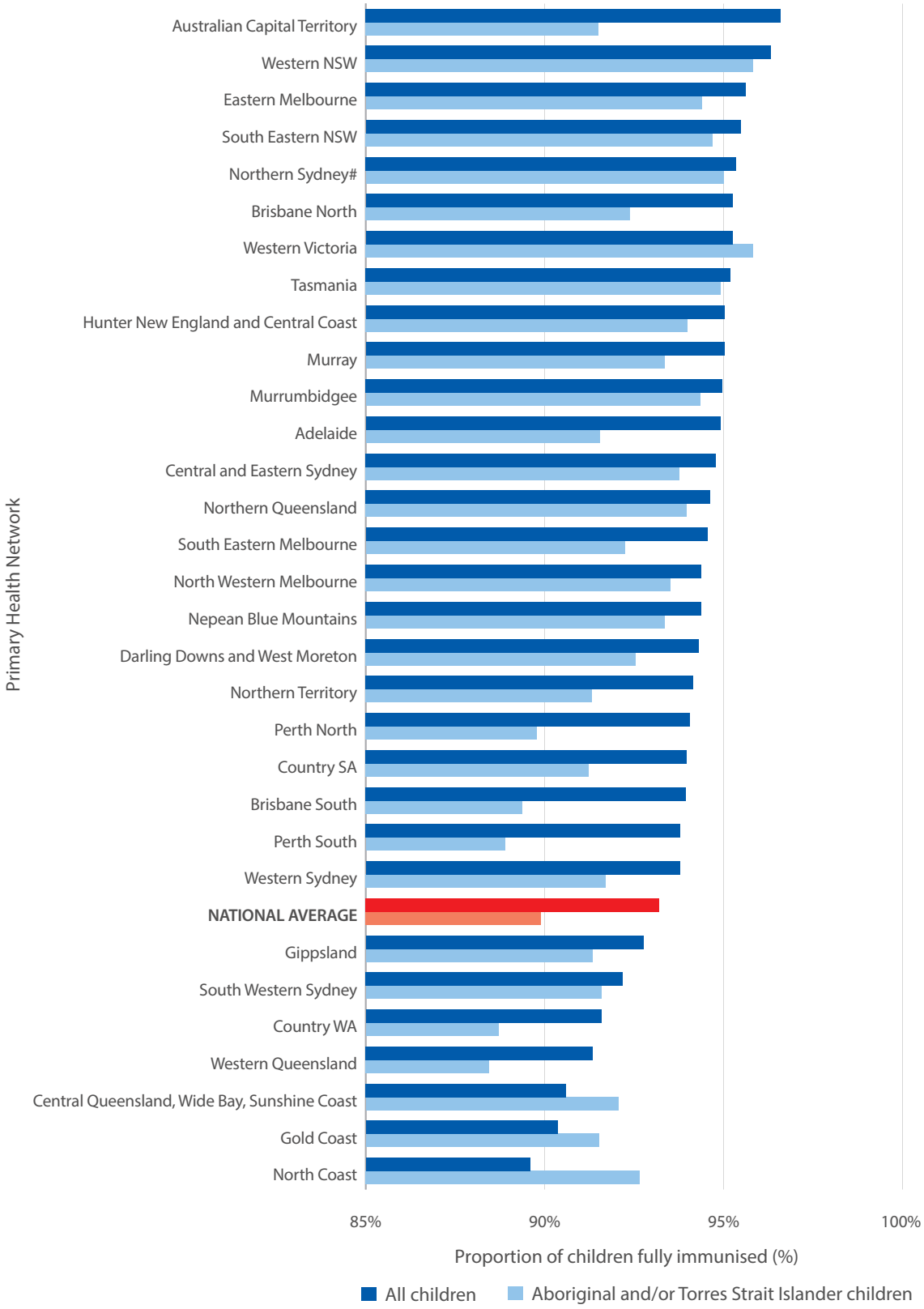
Hepatitis B infant immunisation coverage (the proportion of 12-month-old children who received the three infant doses recommended at 2, 4 and 6 months) was 93.2% in 2023. This was below the National Strategy target of 95% and represented a slight decline from coverage in 2022 (93.8%). This decline occurred in 21 of Australia's 31 PHNs (Figure A.25).

Of all 31 PHNs, 11 had coverage in 2023 above or equal to the target level of 95% (Figure A.24), an increase from nine in 2018 but a substantial decline from 16 PHNs in 2021.

Immunisation coverage has declined during the period of the Third National Hepatitis B Strategy, from 94.3% in 2018. Coverage did reach the target in 2020 (95.1%) but has not been above 95% since.

Among Aboriginal and Torres Strait Islander children, coverage at 12 months of age was estimated to be 89.9% in 2023, a slight decrease since 2022 (90.2%). Only three PHNs met the 95% target for immunisation uptake among Aboriginal and/or Torres Strait Islander children in 2023 (**Western NSW**, 95.8%; **Western Victoria**, 95.8%; and **Northern Sydney**, >95%) (Figure A.24), a decline from eight PHNs in 2021. Coverage was lower among Aboriginal and Torres Strait Islander children than among all children in all but four PHNs (**Western Victoria**, **Gold Coast**, **North Coast** NSW and **Central Queensland, Wide Bay and Sunshine Coast**) (Figure A.24). These differences may reflect different drivers of immunisation coverage among non-Indigenous and Aboriginal and Torres Strait Islander communities, as well as the enduring traumatic legacy of colonisation, recognising the historical disadvantage perpetuated by institutional racism and systemic failures that collectively contribute to health disparities between Aboriginal and Torres Strait Islander peoples and non-Indigenous Australians. However, in many PHNs, the Aboriginal and Torres Strait Islander population is small and the differences reflect a low number of infants, so should be interpreted with caution.

Figure A.24: Hepatitis B immunisation coverage for 12-month-olds, among all children and among Aboriginal and/or Torres Strait Islander children, ordered by immunisation uptake among all children, by PHN, 2023

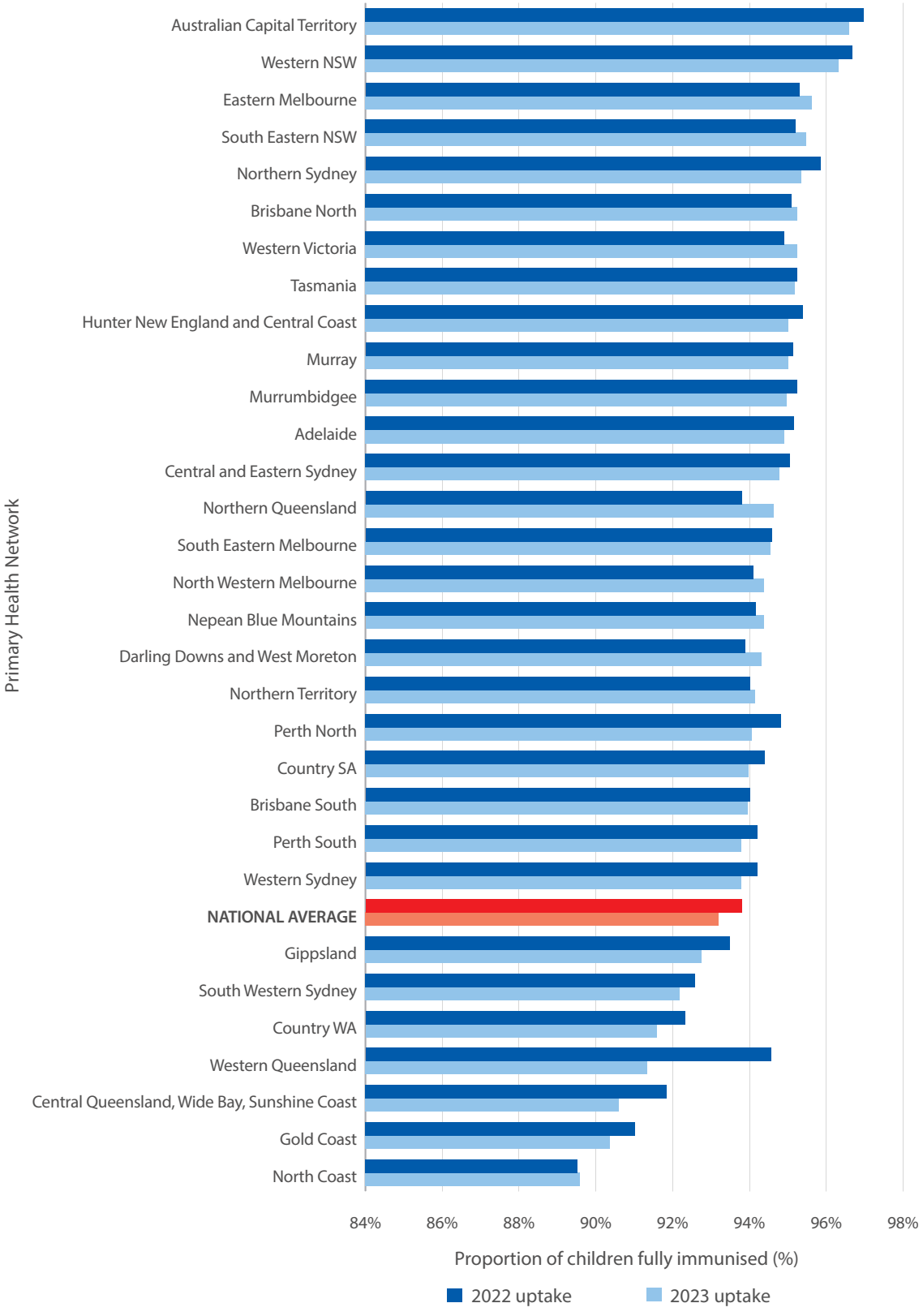


PHN, Primary Health Network.

Data source: Australian Immunisation Register.

Coverage is >95%; reporting approximated due to low number of children. (See data for this figure)

Figure A.25: Hepatitis B immunisation coverage for 12-month-olds in 2022 and 2023, ordered by 2023 immunisation uptake, by PHN



PHN, Primary Health Network.

Data source: Australian Immunisation Register. (See data for this figure)

SECTION A2: GEOGRAPHIC DIVERSITY AND TRENDS IN CHRONIC HEPATITIS B BY STATE AND TERRITORY

IN THIS SECTION

Section A2 includes the following information:

- estimates of CHB prevalence, treatment and care uptake for each PHN and SA3 across Australia
- measurement of progress towards National Strategy targets and geographic trends
- assessment of the drivers of variation at a local level.

AUSTRALIAN CAPITAL TERRITORY

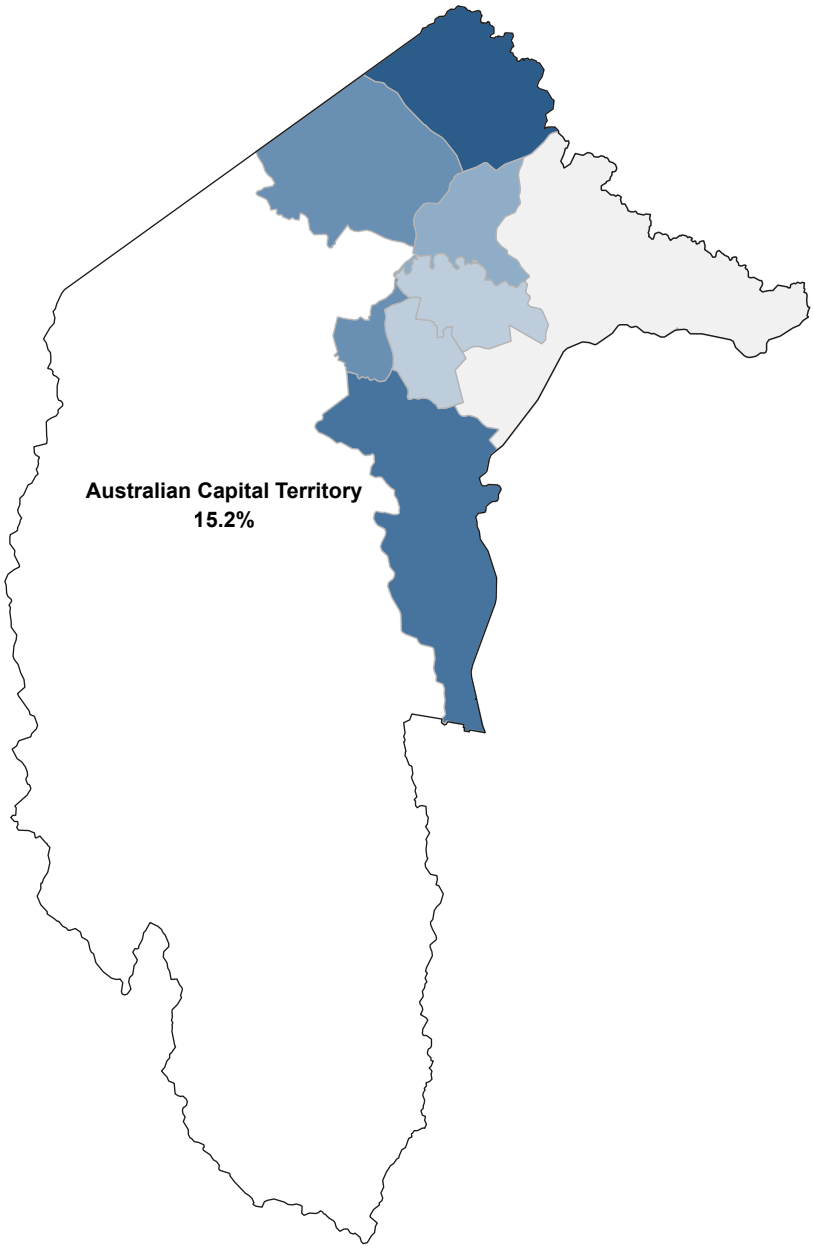
- An estimated 3,160 people were living with CHB in 2023 in the ACT, 0.67% of the population.
- CHB treatment uptake in the ACT in 2023 was 15.2%, higher than the national average of 12.6%.
- The number of people receiving treatment in the ACT increased by 36% between 2018 and 2023, similar to the national average of 30%.
- CHB care uptake in the ACT in 2023 was 26.2%, similar to the national average of 24.5%.
- The ACT ranked 3rd for CHB care uptake and 1st for CHB treatment uptake of the eight states and territories.

CHB TREATMENT AND CARE

CHB care uptake in the **Australian Capital Territory** PHN in 2023 was 26.2%, similar to the national average of 24.5%. Within the PHN, care uptake was highest in Gungahlin (35.2%) and Molonglo (31.7%).

Similar to care uptake, treatment uptake was highest in the SA3s of Gungahlin (23.6%) and Molonglo (20.0%), where it had met the National Strategy target of 20% (Table A.15).

Figure A.26: Geographic variation in CHB treatment uptake in the ACT, by SA3, 2023



ABS, Australian Bureau of Statistics. CHB, chronic hepatitis B. PHN, Primary Health Network. SA3, Statistical Area 3.

Key: Darker shade of blue denotes higher treatment uptake. PHN outlines, names and overall treatment estimates are denoted in black. Grey areas represent SA3 regions outside the boundary of the PHN, or those with data suppressed due to low treatment numbers (≤10).

Data source: CHB prevalence estimates based on mathematical modelling incorporating population-specific prevalence and ABS population data. Treatment data sourced from Medicare statistics.

Table A.15: CHB prevalence, care uptake and treatment uptake in the ACT, by SA3, 2023

PHN and SA3	Total population	People living with CHB	CHB prevalence (%)	Care uptake (%)	Treatment uptake (%)
Australian Capital Territory PHN	**470,018**	**3,160**	**0.67%**	**26.2%**	**15.2%**
Belconnen	109,244	792	0.73%	22.9%	13.7%
Gungahlin	91,816	782	0.85%	35.2%	23.6%
Molonglo	14,440	91	0.63%	31.7%	20.0%
North Canberra	65,674	447	0.68%	20.5%	10.3%
South Canberra	33,466	177	0.53%	15.1%	7.9%
Tuggeranong	90,395	467	0.52%	30.8%	15.1%
Weston Creek	24,969	127	0.51%	24.3%	12.6%
Woden Valley	40,014	278	0.69%	17.3%	8.5%

ABS, Australian Bureau of Statistics. CHB, chronic hepatitis B. PHN, Primary Health Network. SA3, Statistical Area 3.

Data source: CHB prevalence estimates based on mathematical modelling incorporating population-specific prevalence and ABS population data. Treatment data sourced from Medicare statistics.

Note: Totals may not add up due to inclusion of people without an SA3 of residence recorded in source data.

NEW SOUTH WALES

- An estimated 77,844 people were living with CHB in NSW in 2023, 0.92% of the population.
- CHB treatment uptake in NSW in 2022 was 15.0%, higher than the national average of 12.6%.
- Treatment numbers in NSW increased between 2018 and 2022 by 20%, lower than the national average increase of 30%.
- CHB care uptake in NSW in 2022 was 29.3%, higher than the national average of 24.5%.
- NSW ranked 1st for CHB care uptake and 2nd for CHB treatment uptake of the eight states and territories.
- Higher treatment and care uptake were generally seen in PHNs in Sydney, with lower uptake in regional and remote areas.

CHB TREATMENT AND CARE

CHB care and treatment uptake varied across the 10 PHNs in NSW, and both were highest in Sydney PHNs.

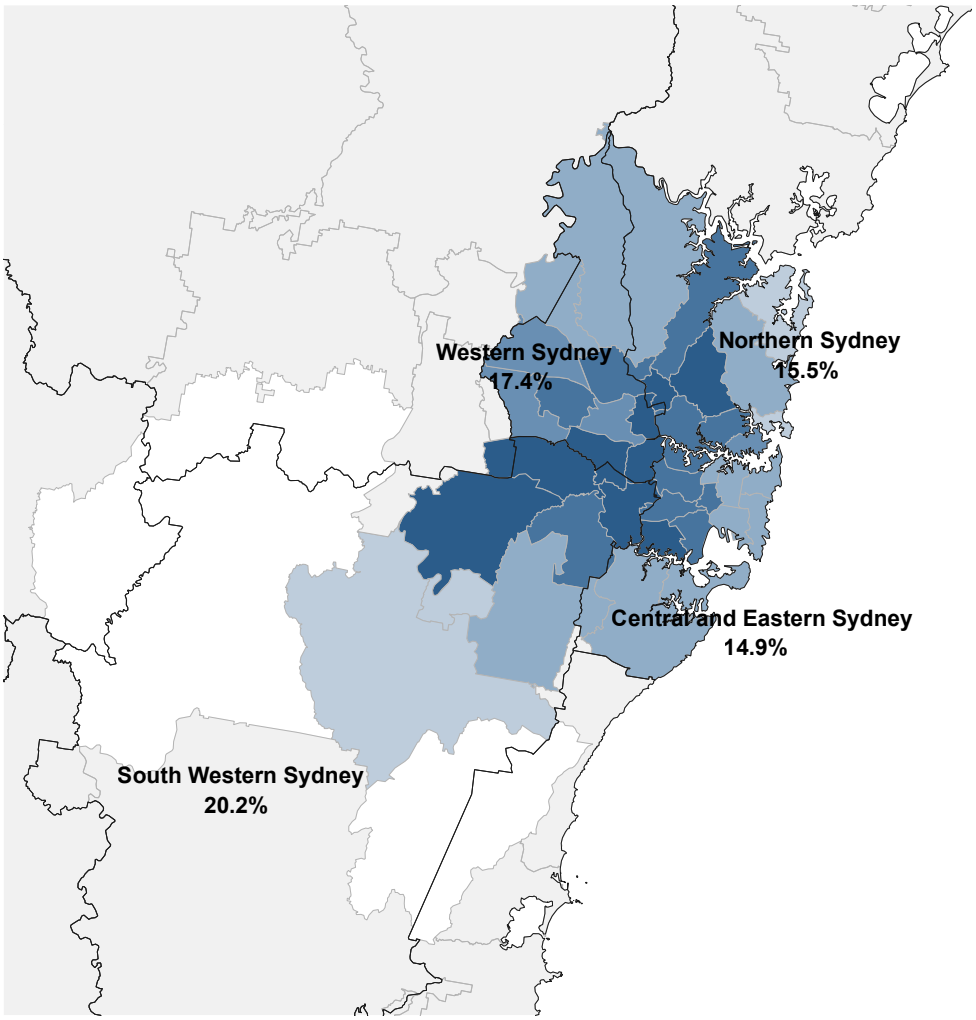
No PHN met the 50% National Strategy care target; however, several SA3s within Sydney PHNs had care uptake that approached this level, including Fairfield (45.7%) and Bankstown (41.6%) in the **South Western Sydney** PHN; Auburn (44.5%) and Carlingford (42.1%) in the **Western Sydney** PHN; and Hurstville (42.2%) in the **Central and Eastern Sydney** PHN.

Both care uptake and treatment uptake were highest in the **South Western Sydney** PHN, which was the only PHN in Australia to have reached the National Strategy treatment uptake target of 20% (20.2%). Treatment uptake also met the National Strategy target in the Fairfield (25.9%) and Bankstown (22.3%) SA3s in the **South Western Sydney** PHN. In the **Western Sydney** PHN there were also three SA3s where uptake had already reached the 20% National Strategy target: Carlingford (22.8%), Auburn (21.1%) and Merrylands – Guildford (20.2%). Treatment uptake also met the National Strategy in the SA3 of Hurstville (23.7%) in the **Central and Eastern Sydney** PHN.

Treatment and care uptake were below the NSW average in all non-metropolitan NSW PHNs. The highest care uptake occurred in the **North Coast** (18.8%) and **Nepean Blue Mountains** (18.5%) PHNs, while for treatment, uptake was highest in the **Nepean Blue Mountains** (8.8%), **North Coast** (8.8%) and **South Eastern NSW** (8.8%) PHNs.

The number of people who received monitoring increased substantially between 2018 and 2023 in a number of NSW PHNs, including **North Coast** and **Western NSW** (both 13% increase), in contrast to the decline observed nationally.

Figure A.27: Geographic variation in CHB treatment uptake in Greater Sydney, by PHN and SA3, 2023

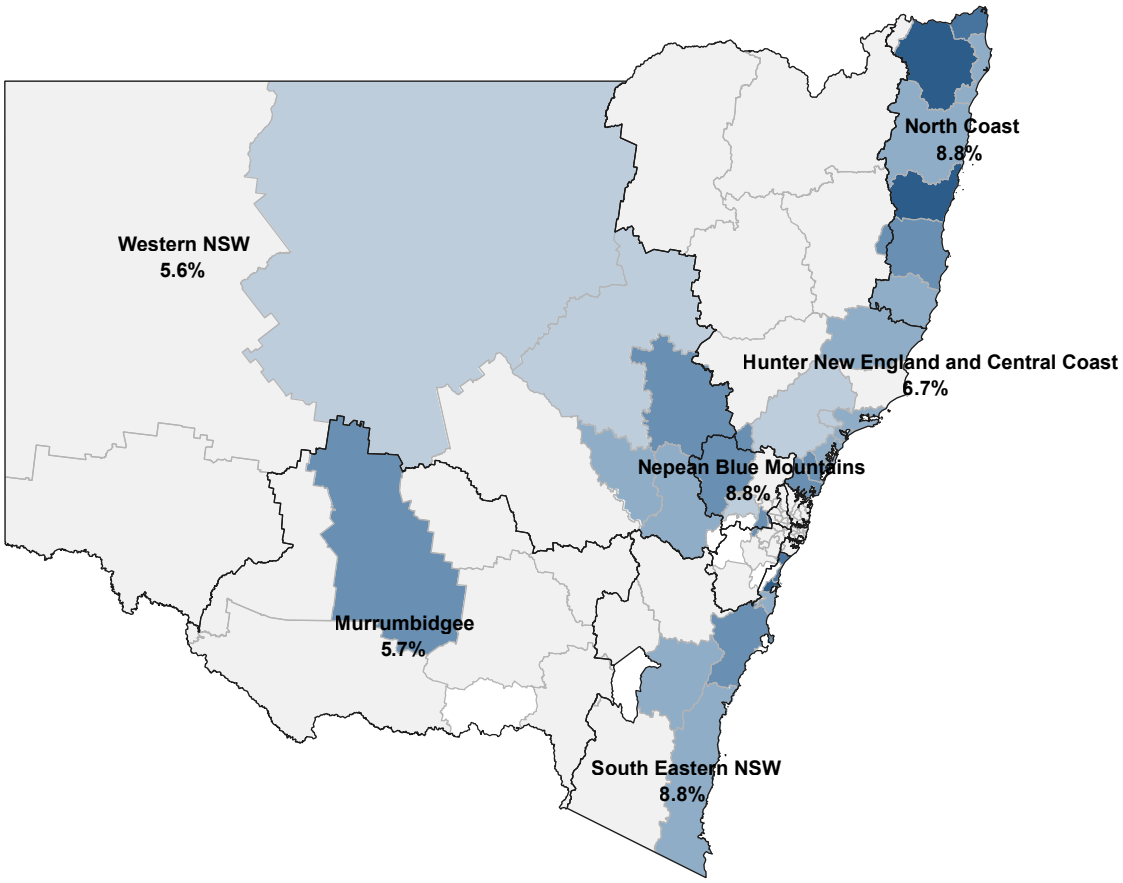


ABS, Australian Bureau of Statistics. CHB, chronic hepatitis B. PHN, Primary Health Network. SA3, Statistical Area 3.

Key: Darker shade of blue denotes higher treatment uptake. PHN outlines, names and overall treatment estimates are denoted in black. Grey areas represent SA3 regions outside the boundary of the PHN, or those with data suppressed due to low treatment numbers (≤10).

Data source: CHB prevalence estimates based on mathematical modelling incorporating population-specific prevalence and ABS population data. Treatment data sourced from Medicare statistics.

Figure A.28: Geographic variation in CHB treatment uptake in NSW (other than Greater Sydney), by PHN and SA3, 2023



ABS, Australian Bureau of Statistics. CHB, chronic hepatitis B. PHN, Primary Health Network. SA3, Statistical Area 3.

Key: Darker shade of blue denotes higher treatment uptake. PHN outlines, names and overall treatment estimates are denoted in black. Grey areas represent SA3 regions outside the boundary of the PHN, or those with data suppressed due to low treatment numbers (≤10).

Data source: CHB prevalence estimates based on mathematical modelling incorporating population-specific prevalence and ABS population data. Treatment data sourced from Medicare statistics.

Table A.16: CHB prevalence, care uptake and treatment uptake in NSW by PHN and SA3, 2023

PHN and SA3	Total population	People living with CHB	CHB prevalence (%)	Care uptake (%)	Treatment uptake (%)
Central and Eastern Sydney PHN	**1,628,371**	**20,851**	**1.28%**	**28.7%**	**14.9%**
Botany	62,641	902	1.44%	18.6%	9.5%
Canada Bay	89,650	1,238	1.38%	29.5%	15.4%
Canterbury	146,358	2,633	1.80%	33.3%	17.2%
Cronulla – Miranda – Caringbah	122,554	799	0.65%	21.2%	10.0%
Eastern Suburbs – North	132,668	915	0.69%	19.3%	10.3%

Continued next page

PHN and SA3	Total population	People living with CHB	CHB prevalence (%)	Care uptake (%)	Treatment uptake (%)
Eastern Suburbs – South	143,300	1,323	0.92%	20.8%	11.3%
Hurstville	137,683	2,825	2.05%	42.2%	23.7%
Kogarah – Rockdale	153,562	2,467	1.61%	29.2%	16.2%
Leichhardt	58,012	372	0.64%	22.9%	11.2%
Marrickville – Sydenham – Petersham	56,917	614	1.08%	32.6%	17.7%
Strathfield – Burwood – Ashfield	170,374	2,991	1.76%	32.4%	15.6%
Sutherland – Menai – Heathcote	114,332	717	0.63%	21.2%	11.8%
Sydney Inner City	240,318	3,056	1.27%	20.9%	9.4%
Northern Sydney PHN	**925,830**	**11,423**	**1.23%**	**32.2%**	**15.5%**
Chatswood – Lane Cove	123,180	1,841	1.49%	33.3%	16.1%
Hornsby	90,573	1,186	1.31%	32.5%	15.8%
Ku-ring-gai	128,629	1,968	1.53%	37.5%	18.3%
Manly	44,942	248	0.55%	16.3%	8.2%
North Sydney – Mosman	99,508	868	0.87%	26.4%	12.4%
Pennant Hills – Epping	57,208	1,098	1.92%	39.4%	18.5%
Pittwater	64,669	301	0.47%	11.0%	6.0%
Ryde – Hunters Hill	156,036	2,767	1.77%	34.7%	16.4%
Warringah	161,085	1,144	0.71%	22.2%	11.7%
South Western Sydney PHN	**1,067,883**	**14,474**	**1.36%**	**37.2%**	**20.2%**
Bankstown	192,328	3,181	1.65%	41.6%	22.3%
Bringelly – Green Valley	163,642	1,790	1.09%	35.4%	18.3%
Camden	77,133	414	0.54%	15.9%	8.0%
Campbelltown (NSW)	188,320	1,706	0.91%	22.0%	11.8%
Fairfield	198,178	5,306	2.68%	45.7%	25.9%
Liverpool	145,482	1,674	1.15%	30.2%	15.4%
Southern Highlands	53,673	203	0.38%	#	#
Wollondilly	49,126	199	0.40%	15.0%	7.0%
Western Sydney PHN	**1,212,803**	**15,622**	**1.29%**	**34.1%**	**17.4%**
Auburn	110,848	2,526	2.28%	44.5%	21.1%
Baulkham Hills	159,736	2,239	1.40%	31.4%	17.9%
Blacktown	147,404	1,551	1.05%	31.6%	15.1%
Blacktown – North	168,686	1,344	0.80%	25.7%	12.4%

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PHN and SA3	Total population	People living with CHB	CHB prevalence (%)	Care uptake (%)	Treatment uptake (%)
Carlingford	77,677	1,544	1.99%	42.1%	22.8%
Dural – Wisemans Ferry	28,520	190	0.67%	22.4%	11.8%
Merrylands – Guildford	170,848	2,574	1.51%	38.1%	20.2%
Mount Druitt	118,906	1,333	1.12%	27.2%	13.1%
Parramatta	160,884	1,798	1.12%	30.3%	14.7%
Rouse Hill – McGraths Hill	69,292	522	0.75%	18.0%	10.0%
Hunter New England and Central Coast PHN	**1,354,134**	**5,578**	**0.41%**	**14.3%**	**6.7%**
Armidale	38,417	173	0.45%	#	#
Gosford	182,162	956	0.52%	17.4%	8.0%
Great Lakes	33,910	109	0.32%	#	#
Inverell – Tenterfield	39,630	158	0.40%	#	#
Lake Macquarie – East	129,742	457	0.35%	13.7%	7.5%
Lake Macquarie – West	89,338	313	0.35%	17.0%	7.5%
Lower Hunter	103,902	331	0.32%	9.6%	4.5%
Maitland	93,695	315	0.34%	11.1%	5.1%
Moree – Narrabri	25,164	134	0.53%	#	#
Newcastle	186,975	845	0.45%	15.1%	7.1%
Port Stephens	79,241	270	0.34%	11.5%	6.3%
Tamworth – Gunnedah	88,081	381	0.43%	10.9%	4.2%
Taree – Gloucester	59,024	185	0.31%	13.2%	6.9%
Upper Hunter	31,436	147	0.47%	#	#
Wyong	173,417	803	0.46%	17.2%	8.5%
Murrumbidgee PHN	**250,320**	**983**	**0.39%**	**12.4%**	**5.7%**
Griffith – Murrumbidgee (West)	50,172	284	0.57%	18.0%	8.7%
Tumut – Tumbarumba	15,102	52	0.35%	#	#
Upper Murray exc. Albury	44,530	127	0.29%	#	#
Wagga Wagga	101,668	395	0.39%	8.9%	3.8%
Young – Yass	38,847	125	0.32%	#	#
Nepean Blue Mountains PHN	**370,145**	**2,193**	**0.59%**	**18.5%**	**8.8%**
Blue Mountains	79,116	374	0.47%	14.8%	4.9%
Hawkesbury	25,440	107	0.42%	#	#
Penrith	167,650	1,017	0.61%	19.2%	8.7%

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PHN and SA3	Total population	People living with CHB	CHB prevalence (%)	Care uptake (%)	Treatment uptake (%)
Richmond – Windsor	39,293	196	0.50%	#	#
St Marys	58,647	499	0.85%	23.5%	13.0%
North Coast PHN	**557,060**	**1,963**	**0.35%**	**18.8%**	**8.8%**
Clarence Valley	55,449	176	0.32%	17.0%	7.3%
Coffs Harbour	95,137	416	0.44%	23.8%	10.5%
Kempsey – Nambucca	52,828	177	0.34%	23.4%	8.4%
Port Macquarie	90,497	295	0.33%	15.2%	6.5%
Richmond Valley – Coastal	90,859	304	0.33%	15.8%	6.7%
Richmond Valley – Hinterland	72,298	247	0.34%	19.9%	10.8%
Tweed Valley	99,992	349	0.35%	16.5%	10.1%
South Eastern NSW PHN	**642,681**	**2,675**	**0.42%**	**17.6%**	**8.8%**
Dapto – Port Kembla	82,424	383	0.46%	18.9%	10.9%
Goulburn – Mulwaree	39,543	146	0.37%	#	#
Kiama – Shellharbour	103,695	374	0.36%	16.5%	6.6%
Queanbeyan	67,590	290	0.43%	12.5%	7.0%
Shoalhaven	110,781	398	0.36%	19.8%	8.9%
Snowy Mountains	21,387	72	0.34%	#	#
South Coast	78,245	270	0.34%	12.2%	7.1%
Wollongong	139,016	742	0.53%	21.0%	10.2%
Western NSW PHN	**349,530**	**1,807**	**0.52%**	**15.7%**	**5.6%**
Bathurst	50,713	177	0.35%	17.5%	7.3%
Bourke – Cobar – Coonamble	22,327	435	1.95%	15.6%	5.4%
Broken Hill and Far West	20,144	144	0.71%	#	#
Dubbo	76,649	347	0.45%	16.6%	5.2%
Lachlan Valley	54,995	247	0.45%	#	#
Lithgow – Mudgee	48,456	164	0.34%	14.3%	7.8%
Lower Murray	13,332	74	0.55%	#	#
Orange	62,915	220	0.35%	20.8%	6.3%

ABS, Australian Bureau of Statistics. CHB, chronic hepatitis B. PHN, Primary Health Network. SA3, Statistical Area 3.

Data source: CHB prevalence estimates based on mathematical modelling incorporating population-specific prevalence and ABS population data. Treatment data sourced from Medicare statistics.

Totals may not add up due to inclusion of people without an SA3 of residence recorded in source data.

Data suppressed where number receiving treatment or care was ≤10. SA3s not listed where population was <3000.

NORTHERN TERRITORY

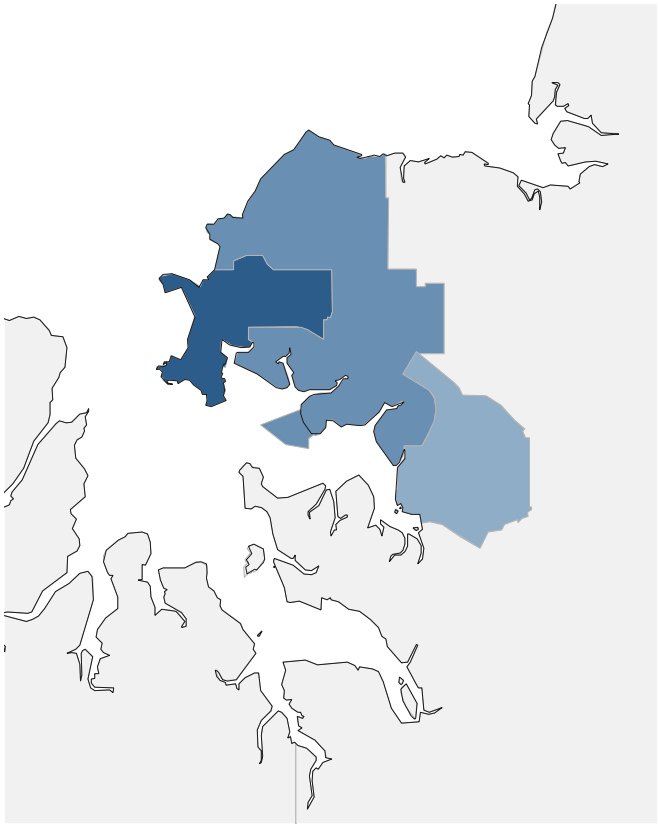
- An estimated 5,537 people were living with CHB in the NT in 2023, 1.79% of the population.
- CHB care uptake in the NT in 2023 was 21.3%, lower than the national average of 24.5%.
- CHB treatment uptake in the NT in 2023 was 10.9%, lower than the national average of 12.6%.
- Treatment numbers in the NT increased by 72% between 2018 and 2023, higher than the national average change of 30%.
- The NT ranked 5th for both CHB care uptake and CHB treatment uptake of the eight states and territories.

CHB TREATMENT AND CARE

Due to the small populations and the imprecision of postcode regions in the NT, differentiation of treatment and care uptake by region is subject to more uncertainty than in most other jurisdictions, and in some, data must be suppressed to protect confidentiality. Previous geographic allocations led to errors in uptake estimations in some regions, including the East Arnhem SA3; for further information regarding regions covered by the Hep B PAST program, see the 2023 Mapping Report Supplement.

Of those able to be assessed, treatment and care uptake were both highest in the Darwin City SA3, where it met both the National Strategy care uptake target of 50% (uptake 50.6%) and treatment target of 20% (uptake 26.7%) (Figure A.29 and Figure A.30).

Figure A.29: Geographic variation in CHB treatment uptake in Greater Darwin, by SA3, 2023

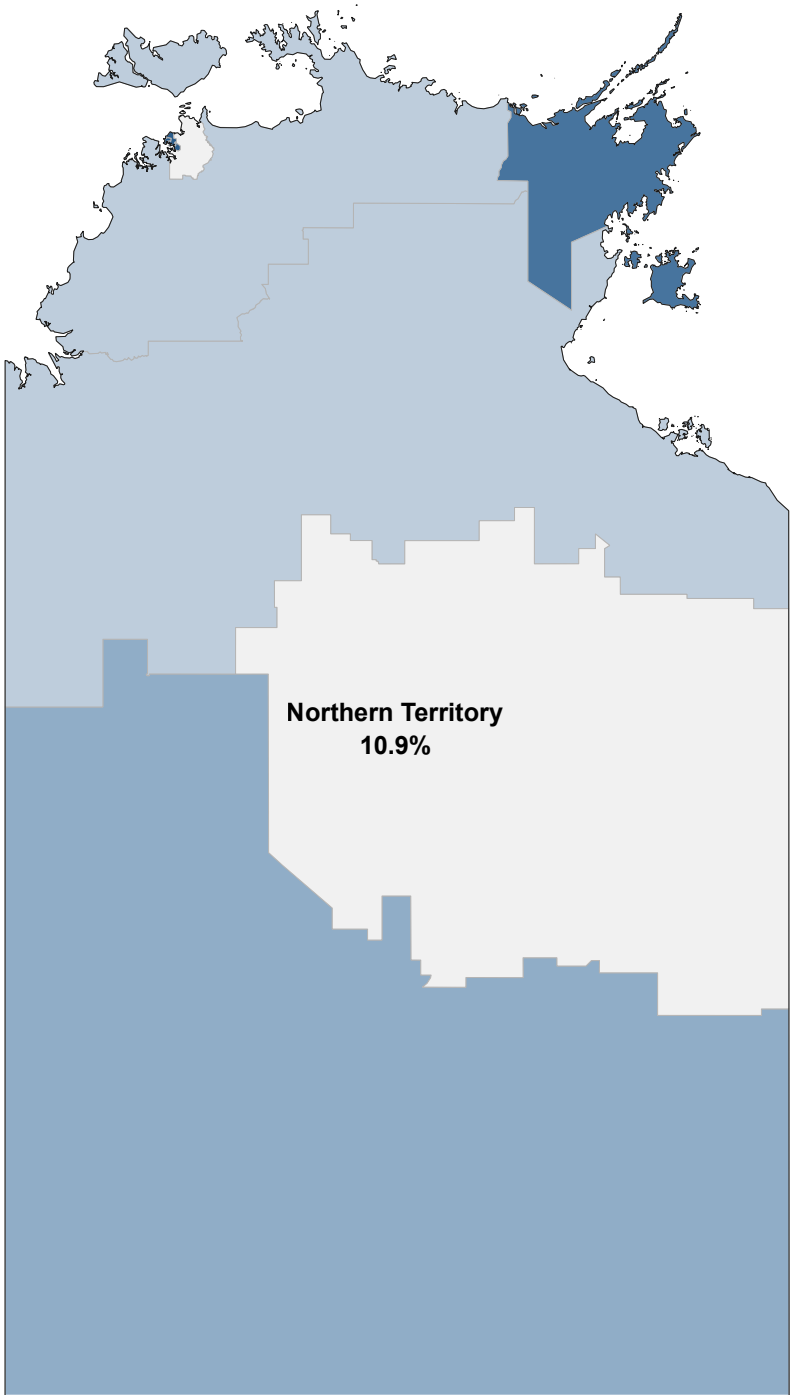


ABS, Australian Bureau of Statistics. CHB, chronic hepatitis B. PHN, Primary Health Network. SA3, Statistical Area 3.

Key: Darker shade of blue denotes higher treatment uptake. PHN outlines, names and overall treatment estimates are denoted in black. Grey areas represent SA3 regions outside the boundary of the PHN, or those with data suppressed due to low treatment numbers (<6).

Data source: CHB prevalence estimates based on mathematical modelling incorporating population-specific prevalence and ABS population data. Treatment data sourced from Medicare statistics.

Figure A.30: Geographic variation in CHB treatment uptake in the NT (other than Greater Darwin), by SA3, 2023



ABS, Australian Bureau of Statistics. CHB, chronic hepatitis B. PHN, Primary Health Network. SA3, Statistical Area 3.

Key: Darker shade of blue denotes higher treatment uptake. PHN outlines, names and overall treatment estimates are denoted in black. Grey areas represent SA3 regions outside the boundary of the PHN, or those with data suppressed due to low treatment numbers (<6).

Data source: CHB prevalence estimates based on mathematical modelling incorporating population-specific prevalence and ABS population data. Treatment data sourced from Medicare statistics.

Table A.17: CHB prevalence, care uptake and treatment uptake in the NT, by SA3, 2023

PHN and SA3	Total population	People living with CHB	CHB prevalence (%)	Care uptake (%)	Treatment uptake (%)
Northern Territory PHN	**253,815**	**4,537**	**1.79%**	**21.3%**	**10.9%**
Alice Springs	41,638	953	2.29%	23.2%	7.7%
Barkly	6,068	206	3.39%	#	#
Daly – Tiwi – West Arnhem	18,358	661	3.60%	11.7%	5.5%
Darwin City	28,881	284	0.98%	50.6%	26.7%
Darwin Suburbs	58,416	723	1.24%	23.0%	16.7%
East Arnhem^	14,754	507	3.44%	27.7%	11.8%
Katherine	21,494	621	2.89%	12.3%	6.5%
Litchfield	23,042	171	0.74%	#	#
Palmerston	41,165	411	1.00%	21.0%	14.6%

ABS, Australian Bureau of Statistics. CHB, chronic hepatitis B. PHN, Primary Health Network. SA3, Statistical Area 3.

Data source: CHB prevalence estimates based on mathematical modelling incorporating population-specific prevalence and ABS population data. Treatment data sourced from Medicare statistics.

Totals may not add up due to inclusion of people without an SA3 of residence recorded in source data.

Data suppressed where number receiving treatment or care was <6. SA3s not listed where population was <3000.

^East Arnhem population and uptake metrics were revised between 2022 and 2023 reports due to previous erroneous allocation of geographic regions in Medicare data; see 2023 Mapping Report Supplement for further information.

QUEENSLAND

- An estimated 35,352 people were living with CHB in 2023 in Qld, 0.64% of the population.
- CHB care uptake in Qld in 2023 was 19.4%, lower than the national average of 24.5%.
- CHB treatment uptake in Qld in 2023 was 9.9%, lower than the national average of 12.6%.
- Treatment numbers in Qld increased by 45% between 2018 and 2023, more rapidly than the national average change of 30%.
- Qld ranked 6th for both CHB care uptake and CHB treatment uptake of the eight states and territories.
- Treatment and care uptake were highest in the **Brisbane South** PHN, with SA3 regions of uptake above average also located in the **Northern Queensland** PHN.

CHB TREATMENT AND CARE

The highest care uptake in Qld occurred in the **Brisbane South** PHN, which had the highest care uptake (27.1%) of PHNs in Qld, and which was the only PHN in the state with uptake above the national average. Uptake within the **Brisbane South** PHN was highest in the Forest Lake – Oxley SA3 (42.7%, Table A.18), where it approached the 2022 care uptake target of 50% (see Care uptake by Statistical Area 3 region). Treatment uptake was also highest in the **Brisbane South** PHN (Figure A.31), where the Forest Lake – Oxley SA3 almost met the 20% treatment uptake target (19.9% uptake).

Treatment and care uptake were below the national average in all Qld PHNs outside of the **Brisbane South** PHN. The highest treatment uptake was observed in the **Gold Coast** PHN (uptake 9.5%), while care uptake was highest in **Northern Queensland** PHN (16.9% uptake).

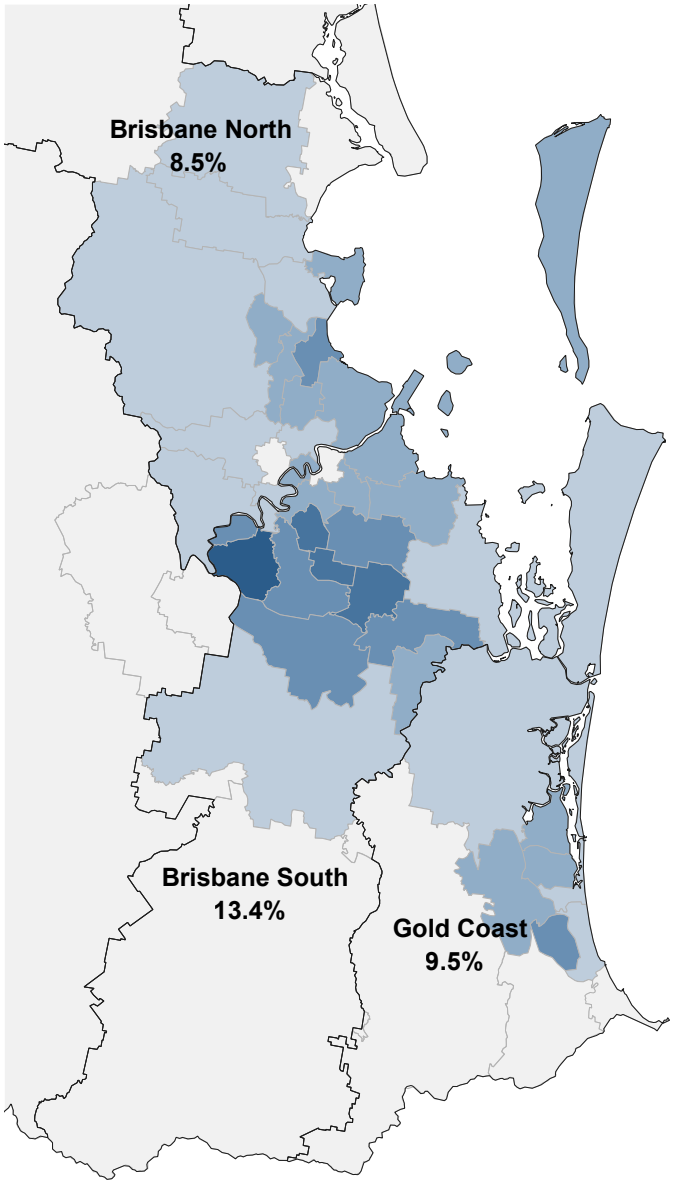
The **Northern Queensland** PHN ranked 17th nationally for care uptake, well above its rank for treatment uptake of 25th, due to higher-than-average levels of monitoring uptake in those not receiving treatment in this PHN. Care uptake was especially high in in the Far North SA3 (44.9%), the SA3 with the second-highest level of care uptake in Australia (see Care uptake by Statistical Area 3 region).

The higher levels of CHB care uptake relative to treatment uptake in this region may reflect the challenges in delivery of treatment in rural and remote areas, which may require more frequent health service access compared to monitoring. It may also be related to a different clinical course of disease in people living with CHB in this region, resulting in fewer people who require treatment. These factors emphasise the importance of assessing progress towards the care uptake target, which is not susceptible to variations in the proportion of people who need treatment.

The number of people who received monitoring increased substantially between 2018 and 2023 in a number of Qld PHNs, including **Central Queensland, Wide Bay and Sunshine Coast** (15% increase) and **Gold Coast** (13% increase), in contrast to the decline observed nationally.

Treatment and care uptake could not be assessed in **Western Queensland**, as the number of people was too small for reliable estimation. However, data assessing the uptake of treatment and monitoring during the period 2014–2023 (providing a larger sample size) suggest that treatment uptake in **Western Queensland** is below average (Figure A.10).

Figure A.31: Geographic variation in CHB treatment uptake in Greater Brisbane and Gold Coast, by PHN and SA3, 2023

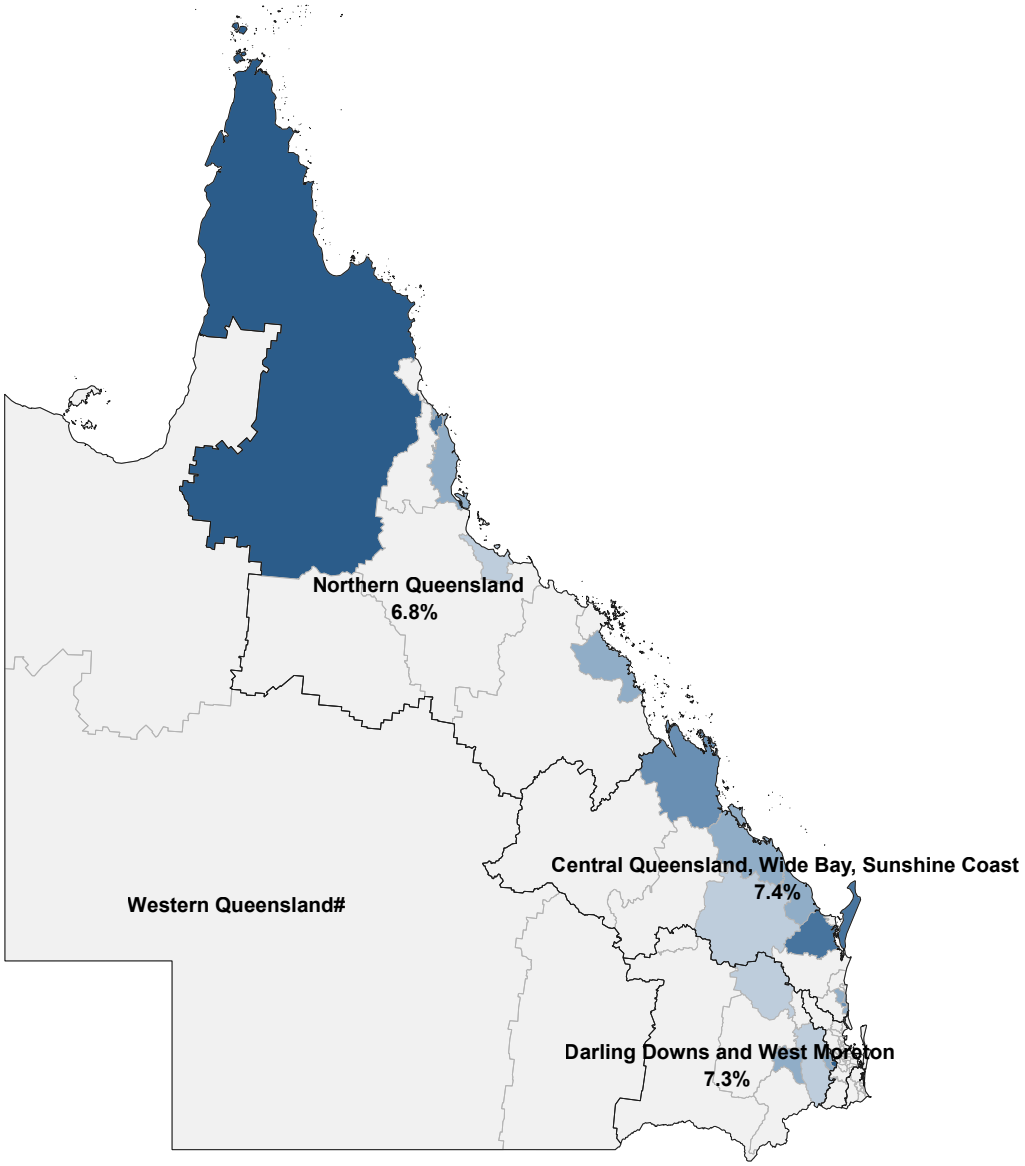


ABS, Australian Bureau of Statistics. CHB, chronic hepatitis B. PHN, Primary Health Network. SA3, Statistical Area 3.

Key: Darker shade of blue denotes higher treatment uptake. PHN outlines, names and overall treatment estimates are denoted in black. Grey areas represent SA3 regions outside the boundary of the PHN, or those with data suppressed due to low treatment numbers (<6).

Data source: CHB prevalence estimates based on mathematical modelling incorporating population-specific prevalence and ABS population data. Treatment data sourced from Medicare statistics.

Figure A.32: Geographic variation in CHB treatment uptake in Qld (other than Greater Brisbane and Gold Coast), by PHN and SA3, 2023



ABS, Australian Bureau of Statistics. CHB, chronic hepatitis B. PHN, Primary Health Network. SA3, Statistical Area 3.

Key: Darker shade of blue denotes higher treatment uptake. PHN outlines, names and overall treatment estimates are denoted in black. Grey areas represent SA3 regions outside the boundary of the PHN, or those with data suppressed due to low treatment numbers (<6).

Data source: CHB prevalence estimates based on mathematical modelling incorporating population-specific prevalence and ABS population data. Treatment data sourced from Medicare statistics.

Data suppressed where number receiving treatment or care was ≤10.

Table A.18: CHB prevalence, care uptake and treatment uptake in Qld by PHN and SA3, 2023

PHN and SA3	Total population	People living with CHB	CHB prevalence (%)	Care uptake (%)	Treatment uptake (%)
Brisbane North PHN	**1,102,994**	**6,700**	**0.61%**	**15.0%**	**8.5%**
Bald Hills – Everton Park	49,449	337	0.68%	18.7%	10.5%
Bribie – Beachmere	39,670	174	0.44%	#	#
Brisbane Inner – North	109,520	727	0.66%	12.5%	7.2%
Brisbane Inner – West	65,232	398	0.61%	14.2%	5.6%
Caboolture	89,409	521	0.58%	10.0%	6.6%
Caboolture Hinterland	16,224	85	0.52%	#	#
Chermside	78,480	526	0.67%	18.8%	10.6%
Kenmore – Brookfield – Moggill	49,945	348	0.70%	15.9%	8.9%
Narangba – Burpengary	75,022	376	0.50%	13.0%	8.5%
North Lakes	97,194	597	0.61%	11.4%	6.3%
Nundah	46,119	311	0.67%	18.5%	10.0%
Redcliffe	67,547	359	0.53%	13.4%	9.5%
Sandgate	64,459	417	0.65%	22.5%	13.6%
Sherwood – Indooroopilly	59,554	525	0.88%	18.8%	8.9%
Strathpine	42,631	256	0.60%	19.6%	11.7%
The Gap – Enoggera	57,472	308	0.54%	11.4%	7.3%
The Hills District	95,067	436	0.46%	14.7%	8.3%
Brisbane South PHN	**1,319,494**	**12,641**	**0.96%**	**27.1%**	**13.4%**
Beaudesert	15,864	58	0.37%	#	#
Beenleigh	51,242	316	0.62%	16.2%	9.8%
Brisbane Inner^	101,066	961	0.95%	18.7%	9.1%
Brisbane Inner – East	47,758	258	0.54%	#	#
Browns Plains	107,143	974	0.91%	24.7%	13.1%
Capalaba	76,640	435	0.57%	18.6%	10.8%
Carindale	57,701	431	0.75%	23.0%	11.9%
Centenary	34,024	343	1.01%	27.3%	12.8%
Cleveland – Stradbroke	100,137	485	0.48%	15.2%	8.4%
Forest Lake – Oxley	84,578	1,472	1.74%	42.7%	19.9%
Holland Park – Yeronga	85,068	644	0.76%	20.5%	10.0%
Jimboomba	71,805	355	0.49%	15.9%	6.0%
Loganlea – Carbrook	69,061	514	0.74%	22.4%	12.5%

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PHN and SA3	Total population	People living with CHB	CHB prevalence (%)	Care uptake (%)	Treatment uptake (%)
Mt Gravatt	85,430	1,245	1.46%	29.6%	14.6%
Nathan	42,619	439	1.03%	30.1%	16.5%
Rocklea – Acacia Ridge	75,876	1,226	1.62%	34.4%	14.7%
Springwood – Kingston	83,145	894	1.08%	25.8%	15.3%
Sunnybank	53,846	1,147	2.13%	34.3%	16.8%
Wynnum – Manly	76,491	445	0.58%	20.1%	10.1%
Gold Coast PHN	**690,841**	**3,876**	**0.56%**	**16.1%**	**9.5%**
Broadbeach – Burleigh	71,387	346	0.48%	14.5%	8.0%
Coolangatta	61,036	221	0.36%	12.0%	5.3%
Gold Coast – North	73,204	472	0.65%	19.8%	11.8%
Gold Coast Hinterland	21,223	75	0.35%	#	#
Mudgeeraba – Tallebudgera	37,941	164	0.43%	#	#
Nerang	73,266	390	0.53%	15.0%	10.1%
Ormeau – Oxenford	176,847	916	0.52%	14.5%	7.8%
Robina	57,274	415	0.72%	20.0%	12.9%
Southport	68,580	538	0.79%	17.0%	10.9%
Surfers Paradise	50,083	339	0.68%	16.6%	8.8%
Central Queensland, Wide Bay, Sunshine Coast PHN	**946,604**	**3,459**	**0.37%**	**12.9%**	**7.4%**
Biloela	15,102	64	0.42%	#	#
Buderim	62,876	247	0.39%	12.9%	8.2%
Bundaberg	99,728	410	0.41%	12.5%	7.3%
Caloundra	104,332	382	0.37%	12.0%	6.4%
Central Highlands (Qld)	30,422	152	0.50%	#	#
Gladstone	67,653	245	0.36%	11.3%	6.1%
Gympie – Cooloola	56,752	167	0.30%	#	#
Hervey Bay	68,629	239	0.35%	14.3%	8.5%
Maroochy	67,587	265	0.39%	12.1%	7.2%
Maryborough	50,847	151	0.30%	17.6%	9.2%
Nambour	53,825	210	0.39%	12.6%	6.1%
Noosa	49,050	184	0.37%	#	#
Noosa Hinterland	25,891	76	0.29%	#	#
Rockhampton	127,970	458	0.36%	16.3%	8.6%
Sunshine Coast Hinterland	65,940	209	0.32%	#	#

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PHN and SA3	Total population	People living with CHB	CHB prevalence (%)	Care uptake (%)	Treatment uptake (%)
Darling Downs and West Moreton PHN	**676,793**	**3,567**	**0.53%**	**15.2%**	**7.3%**
Burnett	52,190	224	0.43%	10.5%	5.7%
Darling Downs – East	44,837	147	0.33%	#	#
Darling Downs (West) – Maranoa	45,892	213	0.46%	#	#
Granite Belt	43,384	158	0.36%	#	#
Ipswich Hinterland	72,630	288	0.40%	8.9%	4.8%
Ipswich Inner	126,698	676	0.53%	13.4%	6.5%
Springfield – Redbank	118,280	1,067	0.90%	24.0%	11.0%
Toowoomba	172,882	794	0.46%	11.7%	6.1%
Northern Queensland PHN	**741,232**	**4,752**	**0.64%**	**16.9%**	**6.8%**
Bowen Basin – North	38,184	216	0.57%	#	#
Cairns – North	62,277	341	0.55%	17.8%	7.2%
Cairns – South	111,485	978	0.88%	23.4%	9.4%
Charters Towers – Ayr – Ingham	42,838	243	0.57%	#	#
Far North	33,873	414	1.22%	44.9%	15.2%
Innisfail – Cassowary Coast	36,794	343	0.93%	22.0%	7.2%
Mackay	128,460	492	0.38%	13.6%	6.1%
Port Douglas – Daintree	12,891	67	0.52%	#	#
Tablelands (East) – Kuranda	45,167	325	0.72%	8.5%	3.9%
Townsville	203,944	1,228	0.60%	8.3%	4.8%
Whitsunday	25,320	105	0.42%	#	#
Western Queensland PHN	**49,291**	**357**	**0.72%**	**#**	**#**
Outback – North	31,541	260	0.82%	#	#
Outback – South	17,750	97	0.54%	#	#

ABS, Australian Bureau of Statistics. CHB, chronic hepatitis B. PHN, Primary Health Network. SA3, Statistical Area 3.

Data source: CHB prevalence estimates based on mathematical modelling incorporating population-specific prevalence and ABS population data. Treatment data sourced from Medicare statistics.

Totals may not add up due to inclusion of people without an SA3 of residence recorded in source data.

Data suppressed where number receiving treatment or care was <6. SA3s not listed where population was <3000.

^Brisbane Inner SA3 reallocated from Brisbane North PHN to Brisbane South PHN between 2022 and 2023 reports due to population changes.

SOUTH AUSTRALIA

- An estimated 11,258 people were living with CHB in SA in 2023, 0.60% of the population.
- CHB treatment uptake in SA in 2023 was 11.2%, similar to the national average of 12.6%.
- Treatment numbers in SA increased by 43% between 2018 and 2023, more rapidly than the national average change of 30%.
- SA ranked 4th for CHB treatment uptake of the eight states and territories.
- Treatment uptake was highest in the **Adelaide** PHN and lower in more remote regions.

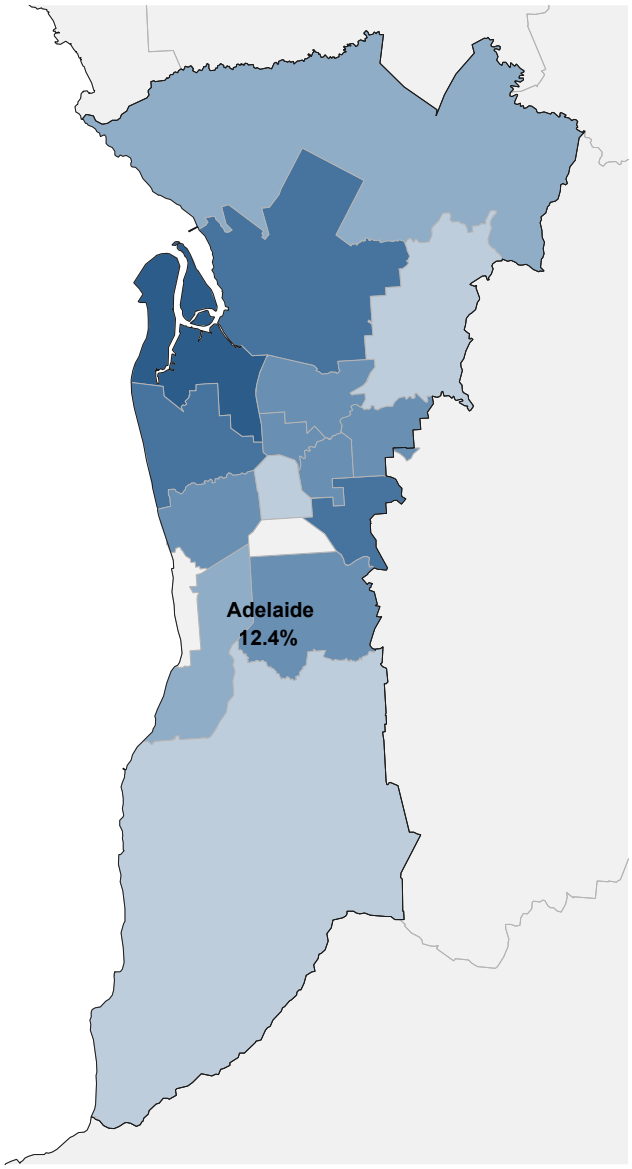
CHB TREATMENT AND CARE

Treatment uptake was highest in the **Adelaide** PHN (12.4%), and within the PHN was highest in the Port Adelaide – West SA3 (17.7%) (Figure A.33, Table A.19).

Assessing variation in treatment uptake within the **Country SA** PHN (overall uptake 5.4%) is difficult, as most SA3s in the region have a small population, leading to high uncertainty within the data. However, the available data does not suggest substantial variation in uptake within the PHN.

Estimates of CHB care by SA3 and PHN in SA are not available, due to evidence that a substantial proportion of viral load tests conducted in SA are performed outside of Medicare and thus not included in the data used. Overall estimated care uptake for SA is presented in Section A1 – Care uptake by state and territory.

Figure A.33: Geographic variation in CHB treatment uptake in Greater Adelaide, by PHN and SA3, 2023

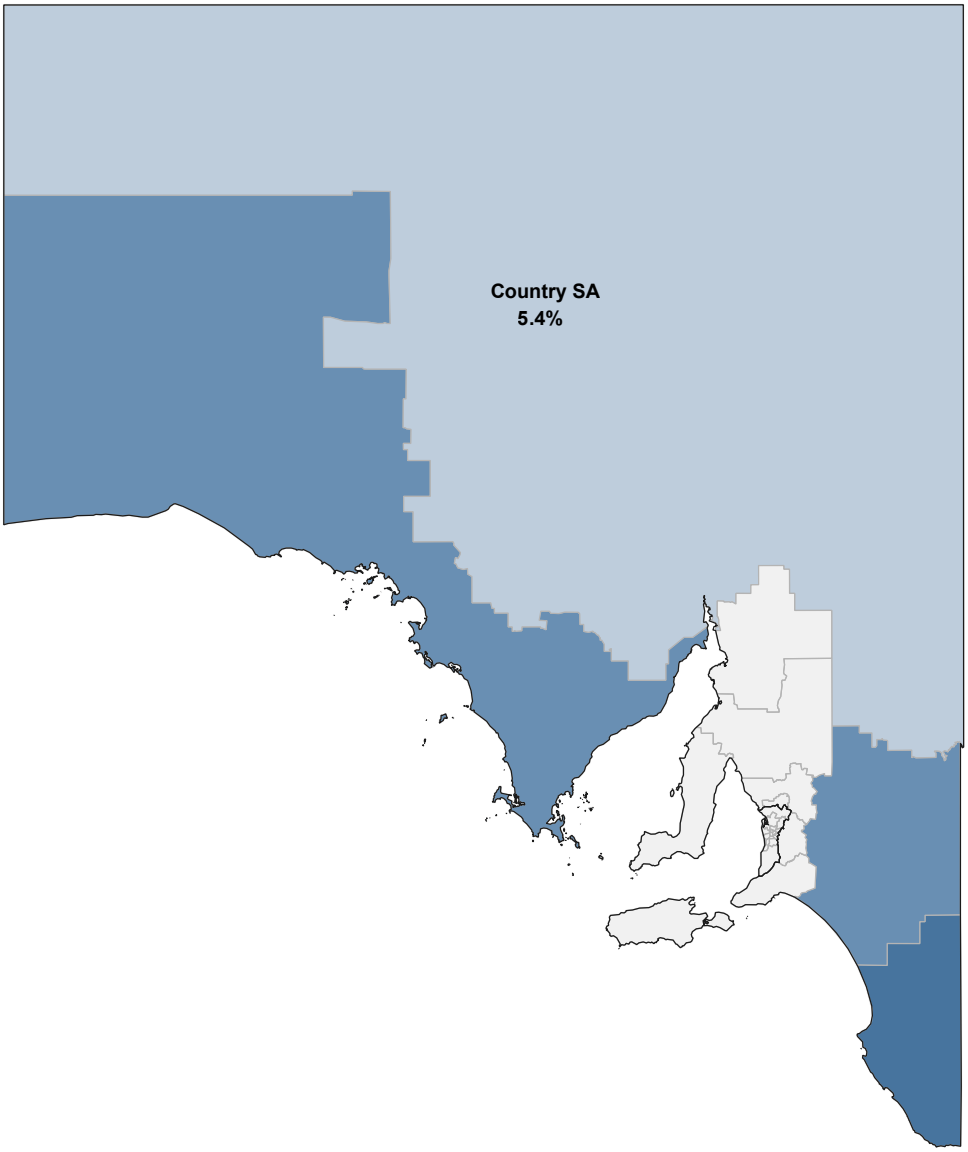


ABS, Australian Bureau of Statistics. CHB, chronic hepatitis B. PHN, Primary Health Network. SA3, Statistical Area 3.

Key: Darker shade of blue denotes higher treatment uptake. PHN outlines, names and overall treatment estimates are denoted in black. Grey areas represent SA3 regions outside the boundary of the PHN, or those with data suppressed due to low treatment numbers (<6).

Data source: CHB prevalence estimates based on mathematical modelling incorporating population-specific prevalence and ABS population data. Treatment data sourced from Medicare statistics.

Figure A.34: Geographic variation in CHB treatment uptake in SA (other than Greater Adelaide), by PHN and SA3, 2023



ABS, Australian Bureau of Statistics. CHB, chronic hepatitis B. PHN, Primary Health Network. SA3, Statistical Area 3.

Key: Darker shade of blue denotes higher treatment uptake. PHN outlines, names and overall treatment estimates are denoted in black. Grey areas represent SA3 regions outside the boundary of the PHN, or those with data suppressed due to low treatment numbers (<6).

Data source: CHB prevalence estimates based on mathematical modelling incorporating population-specific prevalence and ABS population data. Treatment data sourced from Medicare statistics.

Table A.19: CHB prevalence, care uptake* and treatment uptake in SA by PHN and SA3, 2023

PHN and SA3	Total population	People living with CHB	CHB prevalence (%)	Care uptake (%) *	Treatment uptake (%)
Adelaide PHN	**1,331,941**	**9,309**	**0.70%**	*	**12.4%**
Adelaide City	28,113	269	0.96%	*	6.7%
Burnside	47,805	420	0.88%	*	16.3%
Campbelltown (SA)	57,988	501	0.86%	*	12.2%
Charles Sturt	124,853	922	0.74%	*	15.4%
Holdfast Bay	37,122	156	0.42%	*	#
Marion	100,901	632	0.63%	*	11.3%
Mitcham	68,698	371	0.54%	*	11.8%
Norwood – Payneham – St Peters	39,611	285	0.72%	*	12.7%
Onkaparinga	183,616	716	0.39%	*	7.5%
Playford	108,591	729	0.67%	*	9.2%
Port Adelaide – East	81,200	735	0.90%	*	13.4%
Port Adelaide – West	63,958	656	1.03%	*	17.7%
Prospect – Walkerville	31,797	228	0.72%	*	13.6%
Salisbury	149,085	1,474	0.99%	*	15.0%
Tea Tree Gully	99,823	479	0.48%	*	6.5%
Unley	40,233	250	0.62%	*	#
West Torrens	68,546	488	0.71%	*	13.6%
Country SA PHN	**534,447**	**1,949**	**0.36%**	*	**5.4%**
Adelaide Hills	84,387	291	0.35%	*	4.8%
Barossa	40,153	120	0.30%	*	#
Eyre Peninsula and South West	59,658	227	0.38%	*	6.1%
Fleurieu – Kangaroo Island	58,862	150	0.26%	*	#
Gawler – Two Wells	41,065	146	0.36%	*	#
Limestone Coast	69,663	248	0.36%	*	6.5%
Lower North	23,388	56	0.24%	*	#
Mid North	27,903	81	0.29%	*	#
Murray and Mallee	74,394	296	0.40%	*	5.8%
Outback – North and East	26,757	260	0.97%	*	4.1%
Yorke Peninsula	28,216	72	0.26%	*	#

ABS, Australian Bureau of Statistics. CHB, chronic hepatitis B. PHN, Primary Health Network. SA3, Statistical Area 3.

Data source: CHB prevalence estimates based on mathematical modelling incorporating population-specific prevalence and ABS population data. Treatment data sourced from Medicare statistics.

Totals may not add up due to inclusion of people without an SA3 of residence recorded in source data.

Data suppressed where number receiving treatment or care was <6. SA3s not listed where population was <3000.

* Data not reported for SA by PHN or SA3 due to the extent of the provision of monitoring services outside of Medicare.

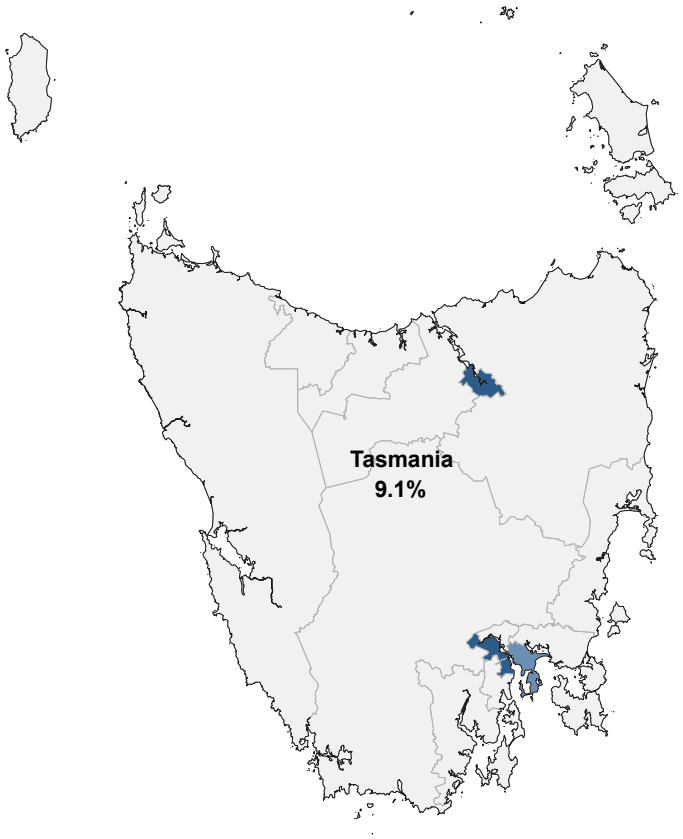
TASMANIA

- An estimated 1,812 people were living with CHB in Tas in 2023, 0.32% of the population.
- CHB care uptake in Tas in 2022 was 15.7%, lower than the national average of 24.5%.
- CHB treatment uptake in Tas in 2023 was 9.1%, lower than the national average of 12.6%.
- Tas ranked 7th for both CHB care uptake and CHB treatment uptake of the eight states and territories.
- Treatment numbers in Tas increased by 51% between 2018 and 2023, more rapidly than the national average increase of 30%.

CHB TREATMENT AND CARE

Assessment of variations in treatment and care uptake in the **Tasmania** PHN is limited by the small number of people with CHB in most SA3s; however, no SA3 is estimated to have reached treatment or care uptake levels above the national average level (Figure A.35, Table A.20).

Figure A.35: Geographic variation in CHB treatment uptake in Tas, by SA3, 2023



ABS, Australian Bureau of Statistics. CHB, chronic hepatitis B. PHN, Primary Health Network. SA3, Statistical Area 3.

Key: Darker shade of blue denotes higher treatment uptake. PHN outlines, names and overall treatment estimates are denoted in black. Grey areas represent SA3 regions outside the boundary of the PHN, or those with data suppressed due to low treatment numbers (<6).

Data source: CHB prevalence estimates based on mathematical modelling incorporating population-specific prevalence and ABS population data. Treatment data sourced from Medicare statistics.

Table A.20: CHB prevalence, care uptake and treatment uptake in Tas, by SA3, 2023

PHN and SA3	Total population	People living with CHB	CHB prevalence (%)	Care uptake (%)	Treatment uptake (%)
Tasmania PHN	**574,717**	**1,812**	**0.32%**	**15.7%**	**9.1%**
Brighton	20,623	57	0.28%	#	#
Burnie – Ulverstone	51,508	107	0.21%	#	#
Central Highlands (Tas)	12,913	#	#	#	#
Devonport	50,249	128	0.25%	#	#
Hobart – North East	61,420	208	0.34%	11.8%	6.2%
Hobart – North West	58,839	252	0.43%	22.4%	11.4%
Hobart – South and West	37,712	153	0.41%	#	#
Hobart Inner	56,213	314	0.56%	20.0%	11.2%
Huon – Bruny Island	23,099	47	0.21%	#	#
Launceston	89,852	291	0.32%	16.9%	10.6%
Meander Valley – West Tamar	25,254	49	0.20%	#	#
North East	41,213	81	0.20%	#	#
Sorell – Dodges Ferry	19,538	47	0.24%	#	#
South East Coast	7,926	#	#	#	#
West Coast	18,359	41	0.22%	#	#

ABS, Australian Bureau of Statistics. CHB, chronic hepatitis B. PHN, Primary Health Network. SA3, Statistical Area 3.

Data source: CHB prevalence estimates based on mathematical modelling incorporating population-specific prevalence and ABS population data. Treatment data sourced from Medicare statistics.

Totals may not add up due to inclusion of people without an SA3 of residence recorded in source data.

Data suppressed where number receiving treatment or monitoring was <6 and/or people living with CHB was <25. SA3s not listed where population was <3000.

VICTORIA

- An estimated 62,241 people were living with CHB in Vic in 2023, 0.90% of the population.
- CHB care uptake in Vic in 2023 was 26.6%, similar to the national average of 24.5%.
- CHB treatment uptake in Vic in 2023 was 13.0%, similar to the national average of 12.6%.
- Treatment numbers in Vic increased by 32% between 2018 and 2023, a similar trend to the national average change of 30%.
- Vic ranked 2nd for CHB care uptake and 3rd for CHB treatment uptake of the eight states and territories.
- Treatment and care uptake were highest in PHNs in the Melbourne metropolitan region, but with SA3 regions of above-average uptake also located in the **Murray** and **Western Victoria** PHNs.

CHB TREATMENT AND CARE

Care and treatment uptake were higher in the three Melbourne PHNs than in the three non-metropolitan PHNs.

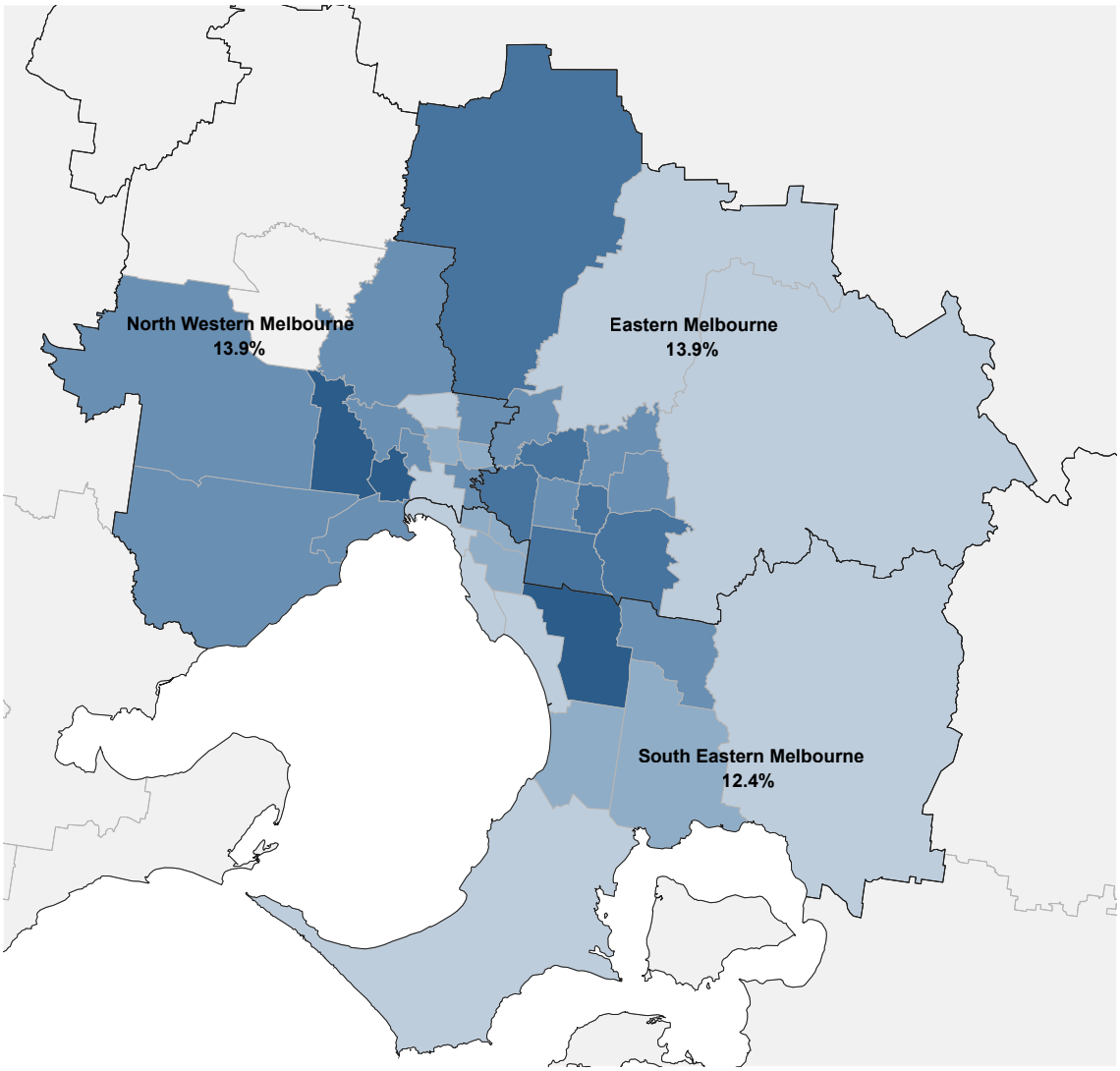
Treatment uptake was highest in the SA3 of Brimbank (22.0%) in the **North Western Melbourne** PHN, where it met the National Strategy target of 20%. Treatment uptake was also close to the target in the Maribyrnong SA3 (19.2%) in the **North Western Melbourne** PHN and the Dandenong SA3 (19.6%) in the **South Eastern Melbourne** PHN, where it approached the target.

Care uptake was also highest in the Brimbank SA3 (43.2%) in the **North Western Melbourne** PHN and the Dandenong SA3 (39.0%) in the **South Eastern Melbourne** PHN (Table A.21); however, neither met the 50% care uptake target.

Outside of Melbourne PHNs, care uptake was highest in the Bendigo SA3 (35.2%) in the **Murray** PHN, and in the Geelong SA3 (27.3%) in the **Western Victoria** PHN. Treatment uptake was also highest in the SA3s of Bendigo (12.7%) in the **Murray** PHN and Geelong (12.0%) in the **Western Victoria** PHN (Figure A.37).

A substantial increase occurred in both care and treatment uptake in the **Western Victoria** PHN, where treatment increased between 2018 and 2023 by 98.1%, more than any other PHN in Australia, and the number of people receiving monitoring increased by 44% between 2018 and 2023 in contrast to a decline in Vic overall.

Figure A.36: Geographic variation in CHB treatment uptake in Greater Melbourne, by PHN and SA3, 2023

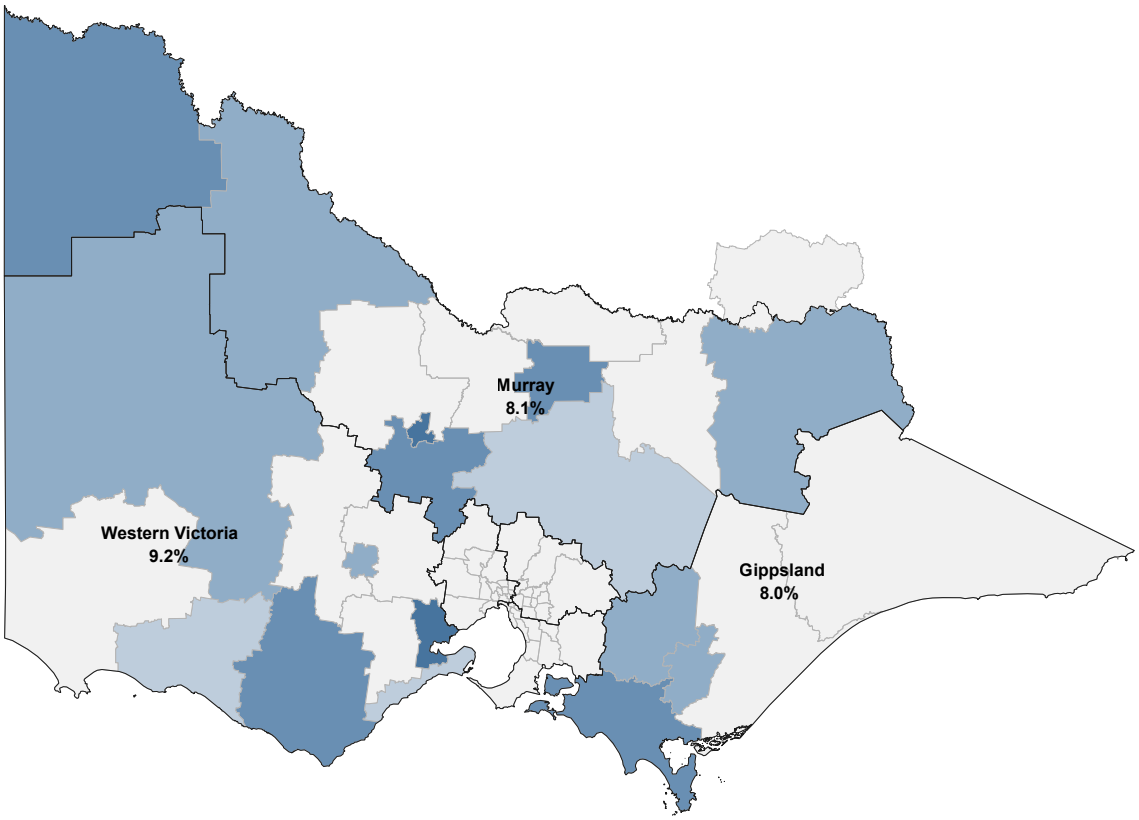


ABS, Australian Bureau of Statistics. CHB, chronic hepatitis B. PHN, Primary Health Network. SA3, Statistical Area 3.

Key: Darker shade of blue denotes higher treatment uptake. PHN outlines, names and overall treatment estimates are denoted in black. Grey areas represent SA3 regions outside the boundary of the PHN, or those with data suppressed due to low treatment numbers (<6).

Data source: CHB prevalence estimates based on mathematical modelling incorporating population-specific prevalence and ABS population data. Treatment data sourced from Medicare statistics.

Figure A.37: Geographic variation in CHB treatment uptake in Vic (other than Greater Melbourne), by PHN and SA3, 2023



ABS, Australian Bureau of Statistics. CHB, chronic hepatitis B. PHN, Primary Health Network. SA3, Statistical Area 3.

Key: Darker shade of blue denotes higher treatment uptake. PHN outlines, names and overall treatment estimates are denoted in black. Grey areas represent SA3 regions outside the boundary of the PHN, or those with data suppressed due to low treatment numbers (<6).

Data source: CHB prevalence estimates based on mathematical modelling incorporating population-specific prevalence and ABS population data. Treatment data sourced from Medicare statistics.

Table A.21: CHB prevalence, care uptake and treatment uptake in Vic by PHN and SA3, 2023

PHN and SA3	Total population	People living with CHB	CHB prevalence (%)	Care uptake (%)	Treatment uptake (%)
Eastern Melbourne PHN	**1,604,922**	**18,775**	**1.17%**	**28.9%**	**13.9%**
Banyule	131,284	1,150	0.88%	22.9%	12.2%
Boroondara	176,802	2,275	1.29%	32.2%	14.8%
Knox	163,908	1,866	1.14%	31.1%	14.5%
Manningham – East	26,996	263	0.97%	27.6%	14.2%
Manningham – West	104,268	2,011	1.93%	33.4%	16.6%
Maroondah	118,488	1,066	0.90%	27.7%	11.7%
Monash	198,166	3,411	1.72%	31.2%	14.9%
Nillumbik – Kinglake	68,495	342	0.50%	17.4%	7.2%
Whitehorse – East	65,438	1,053	1.61%	34.0%	15.8%

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PHN and SA3	Total population	People living with CHB	CHB prevalence (%)	Care uptake (%)	Treatment uptake (%)
Whitehorse – West	116,303	2,047	1.76%	30.1%	12.6%
Whittlesea – Wallan	274,855	2,476	0.90%	24.3%	14.6%
Yarra Ranges	159,918	814	0.51%	14.9%	6.2%
North Western Melbourne PHN	**1,998,675**	**21,858**	**1.09%**	**27.3%**	**13.9%**
Brimbank	189,920	4,128	2.17%	43.2%	22.0%
Brunswick – Coburg	97,234	762	0.78%	17.5%	9.1%
Darebin – North	101,590	1,180	1.16%	26.5%	13.5%
Darebin – South	56,114	420	0.75%	20.0%	10.9%
Essendon	72,940	693	0.95%	25.4%	12.5%
Hobsons Bay	90,083	751	0.83%	21.8%	12.8%
Keilor	63,860	599	0.94%	20.3%	11.9%
Macedon Ranges	34,770	130	0.37%	#	#
Maribyrnong	92,953	1,470	1.58%	33.7%	19.2%
Melbourne City	179,683	2,435	1.36%	15.9%	7.2%
Melton – Bacchus Marsh	228,611	1,888	0.83%	25.9%	12.3%
Moreland – North	85,346	756	0.89%	18.0%	7.6%
Sunbury	48,721	231	0.47%	#	#
Tullamarine – Broadmeadows	223,977	2,035	0.91%	21.2%	12.0%
Wyndham	333,165	3,465	1.04%	26.9%	13.1%
Yarra	99,709	914	0.92%	29.4%	14.3%
South Eastern Melbourne PHN	**1,671,133**	**15,638**	**0.94%**	**25.5%**	**12.4%**
Bayside	105,625	742	0.70%	16.5%	7.3%
Cardinia	128,768	704	0.55%	19.3%	8.0%
Casey – North	143,650	1,455	1.01%	22.5%	11.8%
Casey – South	253,550	2,179	0.86%	21.7%	10.4%
Dandenong	203,486	4,468	2.20%	39.0%	19.6%
Frankston	144,680	827	0.57%	18.2%	9.2%
Glen Eira	166,909	1,709	1.02%	21.6%	11.2%
Kingston	128,281	1,004	0.78%	18.6%	8.6%
Mornington Peninsula	172,453	763	0.44%	13.9%	6.2%
Port Phillip	110,953	791	0.71%	19.0%	7.2%
Stonnington – East	45,093	401	0.89%	22.6%	10.6%
Stonnington – West	67,687	595	0.88%	23.4%	9.0%

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PHN and SA3	Total population	People living with CHB	CHB prevalence (%)	Care uptake (%)	Treatment uptake (%)
Gippsland PHN	**311,802**	**1,039**	**0.33%**	**15.5%**	**8.0%**
Baw Baw	61,563	194	0.32%	16.5%	8.8%
Gippsland – East	49,945	167	0.33%	#	#
Gippsland – South West	74,683	230	0.31%	17.6%	9.8%
Latrobe Valley	79,016	294	0.37%	14.5%	8.0%
Wellington	46,595	154	0.33%	#	#
Murray PHN	**669,057**	**2,613**	**0.39%**	**20.3%**	**8.1%**
Albury	69,458	275	0.40%	#	#
Bendigo	106,244	405	0.38%	35.2%	12.7%
Campaspe	38,959	114	0.29%	#	#
Heathcote – Castlemaine – Kyneton	54,271	159	0.29%	24.1%	9.4%
Loddon – Elmore	12,571	34	0.27%	#	#
Mildura	58,301	323	0.55%	22.1%	9.9%
Moira	31,174	96	0.31%	#	#
Murray River – Swan Hill	38,161	236	0.62%	20.7%	8.1%
Shepparton	69,844	355	0.51%	15.0%	9.6%
Upper Goulburn Valley	62,019	189	0.31%	15.7%	5.6%
Wangaratta – Benalla	49,358	145	0.29%	#	#
Wodonga – Alpine	78,695	283	0.36%	14.7%	7.2%
Western Victoria PHN	**717,770**	**2,594**	**0.36%**	**19.7%**	**9.2%**
Ballarat	122,224	419	0.34%	14.0%	7.7%
Barwon – West	23,695	57	0.24%	#	#
Colac – Corangamite	38,680	123	0.32%	19.0%	9.5%
Creswick – Daylesford – Ballan	31,523	88	0.28%	#	#
Geelong	222,104	1,031	0.46%	27.3%	12.0%
Glenelg – Southern Grampians	37,017	106	0.29%	#	#
Grampians	60,349	218	0.36%	17.1%	8.3%
Maryborough – Pyrenees	27,392	74	0.27%	#	#
Surf Coast – Bellarine Peninsula	100,574	296	0.29%	13.0%	5.8%
Warrnambool	54,213	183	0.34%	13.9%	6.4%

ABS, Australian Bureau of Statistics. CHB, chronic hepatitis B. PHN, Primary Health Network. SA3, Statistical Area 3.

Data source: CHB prevalence estimates based on mathematical modelling incorporating population-specific prevalence and ABS population data. Treatment data sourced from Medicare statistics.

Totals may not add up due to inclusion of people without an SA3 of residence recorded in source data.

Data suppressed where number receiving treatment or care was <6. SA3s not listed where population was <3000.

WESTERN AUSTRALIA

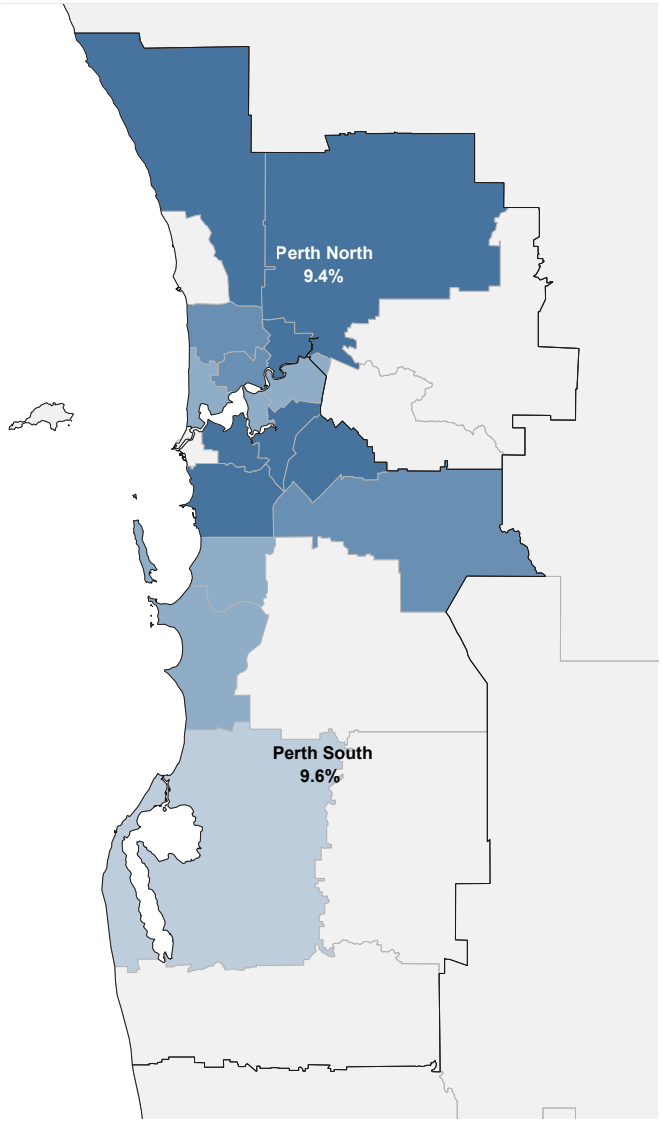
- An estimated 23,596 people were living with CHB in WA in 2023, 0.81% of the population.
- CHB treatment uptake in WA in 2023 was 8.4%, lower than the national average of 12.6%.
- Treatment numbers in WA increased by 40% between 2018 and 2023, more rapidly than the national average change of 30%.
- WA ranked 8th for CHB treatment uptake of the eight states and territories.
- Treatment and care uptake were highest in the two PHNs in the Perth metropolitan region, with lower uptake in more regional areas.

CHB TREATMENT AND CARE

Treatment uptake was similar in the **Perth North** (9.4%) and **Perth South** (9.6%) PHNs (Figure A.38, Table A.22), and no SA3 within WA reached or approached the National Strategy treatment target of 20%. Treatment uptake in the **Country WA** PHN, where more than half of all people living with CHB live in remote areas (Figure A.4), was 4.0%, lower than the state average. Treatment uptake appeared to be similar across SA3s; however, low numbers limited robust comparisons across these regions (Figure A.39).

Estimates of CHB care by SA3 and PHN in WA are not available, due to evidence that a substantial proportion of viral load tests conducted in WA are performed outside of Medicare and thus not included in the data used (see Section A1 – Care uptake by state and territory).

Figure A.38: Geographic variation in CHB treatment uptake in Greater Perth, by PHN and SA3, 2023

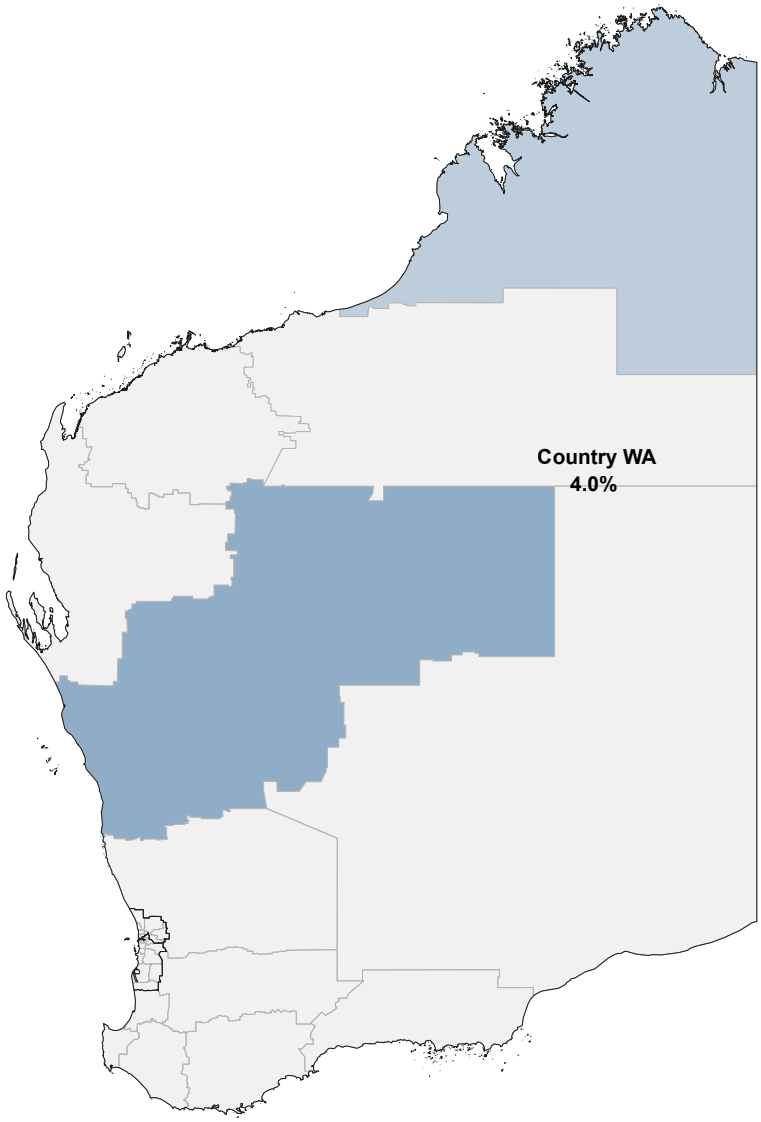


ABS, Australian Bureau of Statistics. CHB, chronic hepatitis B. PHN, Primary Health Network. SA3, Statistical Area 3.

Key: Darker shade of blue denotes higher treatment uptake. PHN outlines, names and overall treatment estimates are denoted in black. Grey areas represent SA3 regions outside the boundary of the PHN, or those with data suppressed due to low treatment numbers (<6).

Data source: CHB prevalence estimates based on mathematical modelling incorporating population-specific prevalence and ABS population data. Treatment data sourced from Medicare statistics.

Figure A.39: Geographic variation in CHB treatment uptake in WA (other than Greater Perth), by PHN and SA3, 2023



ABS, Australian Bureau of Statistics. CHB, chronic hepatitis B. PHN, Primary Health Network. SA3, Statistical Area 3.

Key: Darker shade of blue denotes higher treatment uptake. PHN outlines, names and overall treatment estimates are denoted in black. Grey areas represent SA3 regions outside the boundary of the PHN, or those with data suppressed due to low treatment numbers (<6).

Data source: CHB prevalence estimates based on mathematical modelling incorporating population-specific prevalence and ABS population data. Treatment data sourced from Medicare statistics.

Table A.22: CHB prevalence, care uptake* and treatment uptake in WA by PHN and SA3, 2023

PHN and SA3	Total population	People living with CHB	CHB prevalence (%)	Care uptake (%)*	Treatment uptake (%)
Perth North PHN	**1,209,105**	**9,877**	**0.82%**	*	**9.4%**
Bayswater – Bassendean	91,918	933	1.01%	*	11.1%
Cottesloe – Claremont	78,987	561	0.71%	*	7.0%
Joondalup	173,320	950	0.55%	*	4.5%
Kalamunda	63,698	378	0.59%	*	#
Mundaring	47,575	244	0.51%	*	#
Perth City	124,287	1,181	0.95%	*	9.0%
Stirling	228,072	2,324	1.02%	*	9.5%
Swan	168,851	1,435	0.85%	*	11.5%
Wanneroo	232,398	1,871	0.81%	*	11.5%
Perth South PHN	**1,138,110**	**8,941**	**0.79%**	*	**9.6%**
Armadale	106,818	771	0.72%	*	9.0%
Belmont – Victoria Park	83,886	856	1.02%	*	8.2%
Canning	109,140	1,416	1.30%	*	11.3%
Cockburn	130,047	920	0.71%	*	11.3%
Fremantle	44,247	213	0.48%	*	#
Gosnells	139,608	1,524	1.09%	*	11.2%
Kwinana	52,958	379	0.72%	*	8.2%
Mandurah	120,279	561	0.47%	*	6.1%
Melville	114,953	974	0.85%	*	11.2%
Rockingham	151,263	736	0.49%	*	6.8%
Serpentine – Jarrahdale	37,399	181	0.49%	*	#
South Perth	47,514	409	0.86%	*	8.3%
Country WA PHN	**581,269**	**4,778**	**0.82%**	*	**4.0%**
Albany	66,288	369	0.56%	*	#
Augusta – Margaret River – Busselton	63,495	215	0.34%	*	#
Bunbury	116,323	501	0.43%	*	#
East Pilbara	28,101	479	1.71%	*	2.7%
Esperance	17,104	94	0.55%	*	#
Gascoyne	10,493	139	1.33%	*	#
Goldfields	41,049	432	1.05%	*	4.2%
Kimberley	40,035	1,264	3.16%	*	3.5%
Manjimup	25,540	109	0.43%	*	#
Mid West	59,139	398	0.67%	*	4.0%
West Pilbara	32,843	387	1.18%	*	#
Wheat Belt – North	60,477	293	0.48%	*	#
Wheat Belt – South	20,381	97	0.48%	*	#

ABS, Australian Bureau of Statistics. CHB, chronic hepatitis B. PHN, Primary Health Network. SA3, Statistical Area 3.

Data source: CHB prevalence estimates based on mathematical modelling incorporating population-specific prevalence and ABS population data. Treatment data sourced from Medicare statistics.

Totals may not add up due to inclusion of people without an SA3 of residence recorded in source data.

Data suppressed where number receiving treatment or care was <6. SA3s not listed where population was <3000.

* Data not reported for WA by PHN or SA3 due to the extent of the provision of monitoring services outside of Medicare.

SECTION B: SEROLOGY TESTING FOR HEPATITIS B AND C

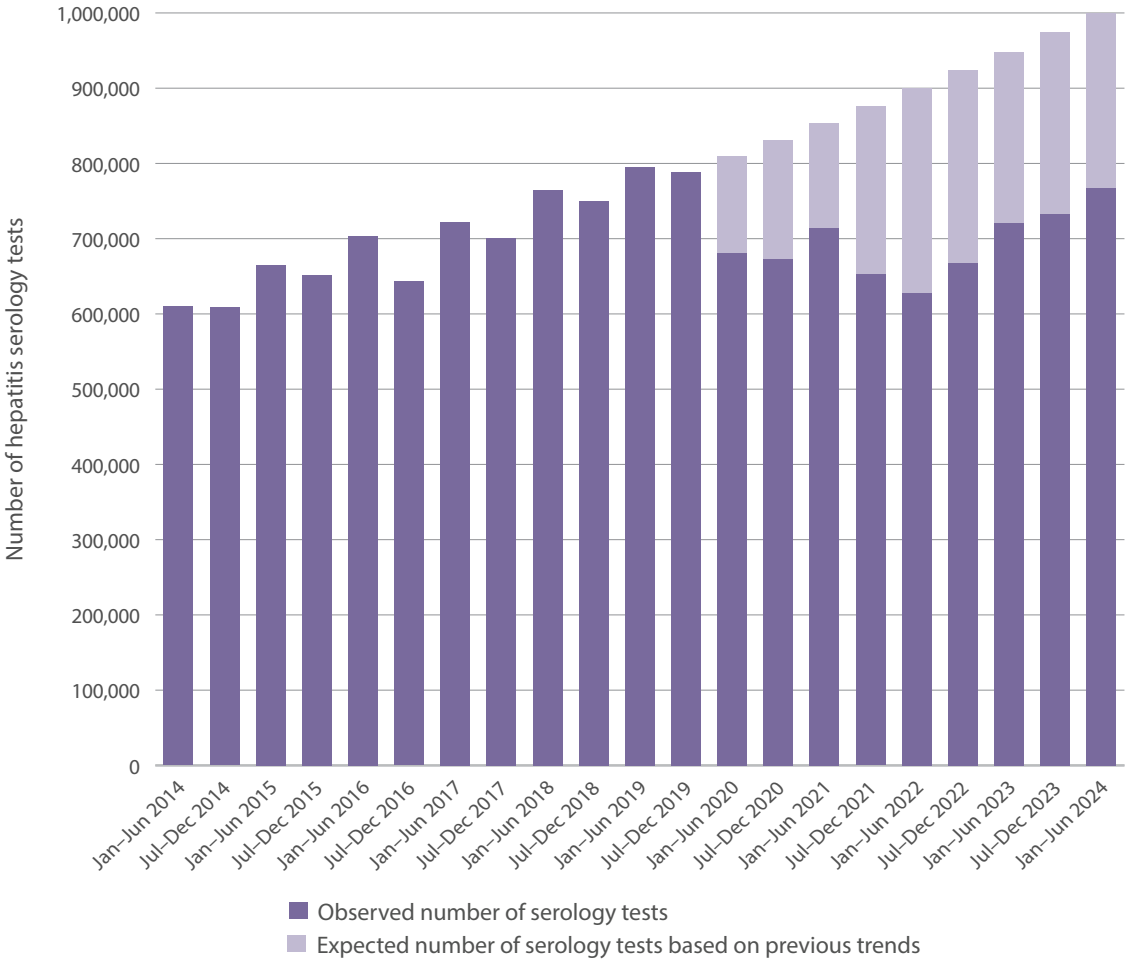
The essential first step in the cascade of care for hepatitis B and hepatitis C is diagnosis, which requires serological testing to identify a person's status. Data are available from Medicare regarding the number of viral hepatitis serology tests conducted. Trends in these data can provide evidence about the level of testing, which needs to increase if National Strategy targets for hepatitis B and C diagnosis are to be met. Although the Medicare item for these tests does not distinguish which hepatitis serology test is being conducted, it is likely that most tests are for diagnosing hepatitis B and C, and for monitoring hepatitis B.

The number of hepatitis serology tests provided had previously been consistently increasing over time, by an average of 6.0% per year between 2014 and 2019 (Figure B.1). This increase occurred in all states and territories, with an average yearly increase of between 4.2% and 12.7%.

However, between 2019 and 2020, the number of viral hepatitis serology test items declined by 13.7%, reducing from 788,831 in July–December 2019 to 680,812 in January–June 2020 (Figure B.1). The number of tests declined rapidly from April 2020 onwards, during the first period of widespread social distancing and travel restrictions in response to the COVID-19 pandemic in Australia. The number of tests increased during January–June 2021 but then declined further, to levels below those in 2020.

The number of tests increased during 2023 and the first half of 2024 but remained below the number in July–December 2019 (Figure B.1), despite increases in Australia's population since that time. This overall represents 2,169,891 fewer hepatitis serology tests occurring during January 2020 – June 2024 than would have been expected if the trend observed during 2014–2019 had continued (Figure B.1).

Figure B.1: Number of hepatitis serology test items, by 6-month period, Jan 2014 – Jun 2024



Data source: Testing data sourced from Medicare statistics. Expected number of serology tests generated using annual trend from 2014 to 2019. (See data for this figure)

EFFECT ON DIAGNOSIS

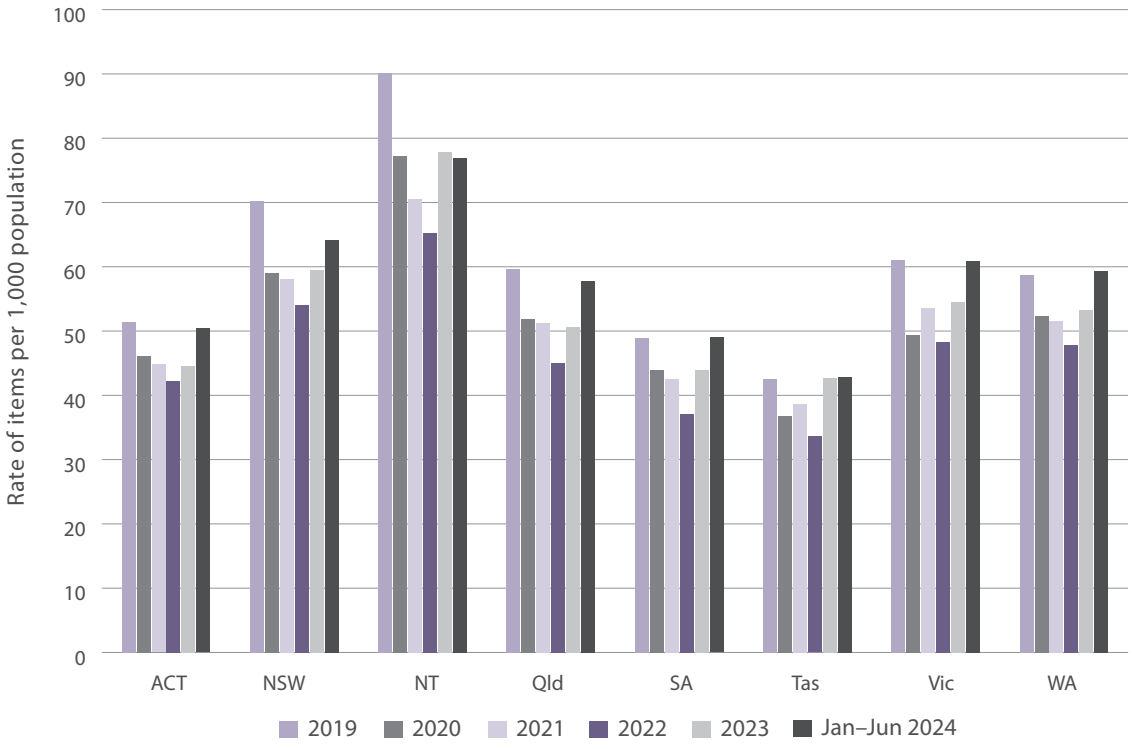
This trend in testing was reflected in unspecified (chronic) hepatitis B notifications, which declined by 12.0% from 5,606 in 2019 to 4,936 in 2020, and by a further 6.8% to 4,600 in 2021, much more rapid than the average decline of 2.9% per year during 2013–2019. Hepatitis B notifications increased to 4,948 in 2022 and 5,277 in 2023, still below the number in 2019. As Australia has not reached the 2022 National Strategy target for diagnosis and the number of people living with CHB continues to increase over time, notifications must increase to meet this goal. The lack of increase in notifications is demonstrated by the reduction in proportion diagnosed in 2023 compared to 2022 (see Section A.1 – Diagnosis).

Unlike for hepatitis B, the trend in unspecified (chronic) hepatitis C notifications did not clearly correlate with the trend in testing, as the decline in notifications for hepatitis C occurred most significantly between 2018 and 2019 (22.5%), when serology tests increased. This lack of correlation is consistent with estimates that the proportion undiagnosed for hepatitis C is lower than for hepatitis B and that the number of people estimated to be living with hepatitis C is declining over time with continued treatment uptake.[20]

TRENDS BY STATE AND TERRITORY

The observed decline in the number of hepatitis serology tests after 2019 occurred in all states and territories (Figure B.2). In most states and territories, the largest decline occurred between 2019 and 2020, with further declines during 2022 (Figure B.2). Testing rates increased between 2022 and 2024 in all states and territories; however, in January–June 2024 they remained below the 2019 level in all states and territories except SA, WA and Tas, where they were similar to the 2019 level (Figure B.2).

Figure B.2: Rate of hepatitis serology test items per 1,000 population, by state/territory and year, Jan 2019 – Jun 2024



ABS, Australian Bureau of Statistics.

Data source: Testing data sourced from Medicare statistics. Population denominator sourced from ABS estimated resident population. (See data for this figure)

SECTION C: LIVER CANCER

LIVER CANCER IN AUSTRALIA

Liver cancer remains the fastest-increasing cause of cancer death in Australia, with most cases being preventable and linked to identifiable risk factors.[21] This makes assessment of geographic variations in incidence particularly important, as it can identify regions where the burden of disease is especially high and interventions should be prioritised. Modifiable risk factors include CHB and CHC, which together are the predominant cause of liver cancer in Australia, as well as alcohol consumption, smoking, obesity and other causes of chronic liver disease which all contribute to the incidence of liver cancer.[22,23] Previous analyses have demonstrated the strong geographic pattern of liver cancer incidence,[24] and this iteration of the Mapping Report presents the most recent available national liver cancer data, for the period 2010–2019.

AUSTRALIAN CANCER ATLAS

The Australian Cancer Atlas is a collaborative project, led by Cancer Council Queensland and Queensland University of Technology, which aims to provide a national perspective of how the burden of cancer varies by geographical area. It draws source data from each state and territory cancer registry, which collect all cancer diagnoses through mandatory reporting requirements. It uses spatial models to generate 'smoothed' estimates at the Statistical Area 2 (SA2) level to assess variation from the national average and quantifies the uncertainty of these estimates. These models allow highly granular and robust measurement of variation in cancer incidence and survival, while preserving confidentiality of the data.

Permission has been given for the use of modelled estimates for liver cancer incidence from the Australian Cancer Atlas. For more detail on the Australian Cancer Atlas and to interact with the online mapping, visit atlas.cancer.org.au. This reporting assesses the proportion of SA2s which had an above-average standardized incidence rate of liver cancer during the period 2010–2019 in each PHN, using a 60% probability cut-off for inclusion, as this provides statistical evidence that the area's incidence rates were genuinely above the Australian average (see Section D – Data sources and methodology). Collating and cleaning cancer records leads to extensive delays for many cancer registries in reporting cases, and data will continue to be updated in future reports.

VARIATION IN LIVER CANCER INCIDENCE ACROSS AUSTRALIA

Liver cancer incidence in Australia varied widely according to region, and in some areas reached more than three times the national incidence rate. Overall in Australia, 20.6% of SA2s were estimated to have a liver cancer rate that was genuinely above the national average. As shown in Figure C.1, in the **Northern Territory**, **South Western Sydney**, **North Western Melbourne**, **Central and Eastern Sydney** and **Western Sydney** PHNs, the majority of SA2s had liver cancer rates well above average. In the **Western Queensland** and **Hunter New England and Central Coast** PHNs, the proportion of elevated-incidence SA2s was also above the national average of 20.6%.

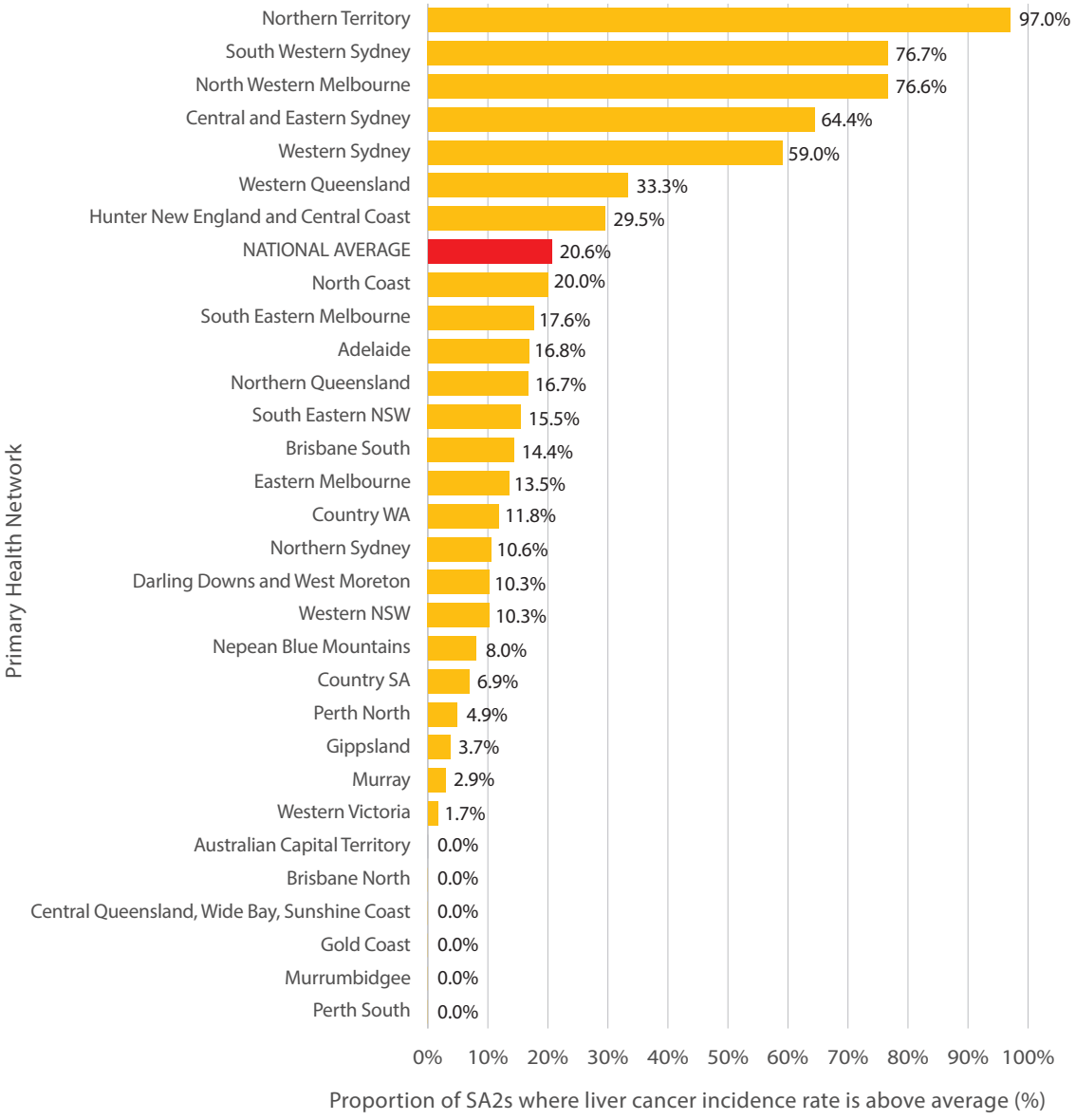
All five PHNs where liver cancer rates were highest had above-average estimated prevalence of CHB (**North Western Melbourne** and **Western Sydney**) or both CHB and CHC (**Northern Territory**, **South Western Sydney** and **Central and Eastern Sydney**).

The heat map below (Table C.1) shows the distribution of liver cancer rates by PHN in relation to prevalence of CHB and CHC relative to the national average, as well as other risk factors for liver cancer. A correlation between liver cancer and higher CHB prevalence is evident, with the five PHNs that had the highest proportion of high-incidence SA2s also ranking highest for CHB prevalence. In

contrast, the prevalence of CHC is more evenly distributed according to region, and there are fewer regions with very high CHC prevalence. For more information about the generation of CHC prevalence variation estimates, see the Viral Hepatitis Mapping Project: Hepatitis C National Report 2023–2024.

This association between liver cancer and geography is influenced by the population distribution of people living with CHB, given that people born overseas in countries with high prevalence of CHB most often live in particular areas of capital cities such as Sydney and Melbourne. The **Northern Territory** PHN has the highest prevalence of CHB in Australia, and the majority of those affected are Aboriginal and Torres Strait Islander people.[25] There is also evidence of variation in the strain of CHB prevalent in Aboriginal and Torres Strait Islander people in the NT, which may be associated with a more severe clinical course and increased risk of liver cancer,[26] as well as poorer outcomes after diagnosis of liver cancer for Aboriginal and Torres Strait Islander people and those living in rural and remote regions.[27,28] The ongoing impact of the legacy of colonisation, institutional racism and systemic disadvantage has a substantial impact on these geographic disparities.

Figure C.1: Proportion of SA2s within a PHN where the rate of liver cancer was above the Australian average, 2010–2019



PHN, Primary Health Network. SA2, Statistical Area 2.

Data source: Cancer data based on modelled estimates from the Australian Cancer Atlas. (See data for this figure)

Table C.1: Heat map of liver cancer incidence during 2010–2019 and related factors (year indicated) in Australia, by PHN

PHN	LIVER CANCER: Proportion of SA2s where liver cancer incidence was above average	CHB: Relative prevalence of CHB compared to the national average	CHC: relative prevalence of CHC compared to the national average	OBESITY: Proportion of the adult population who were obese	SMOKING: Proportion of the adult population who were current smokers	ALCOHOL: Proportion of the adult population who consumed of ≥2 drinks per day
NATIONAL AVERAGE	**20.6%**	**-**	**-**	**32.0%**	**15.7%**	**16.8%**
TIME PERIOD AVAILABLE	**2010–2019**	**2023**	**2016**	**2017–2018**	**2017–2018**	**2017–2018**
Northern Territory	97.0%	119.2%	98.4%	29.3%	21.1%	21.0%
South Western Sydney	76.7%	66.2%	7.4%	33.3%	15.7%	10.6%
North Western Melbourne	76.6%	34.1%	-6.7%	32.7%	16.2%	11.1%
Central and Eastern Sydney	64.4%	57.0%	16.7%	24.3%	12.3%	14.3%
Western Sydney	59.0%	58.0%	-13.4%	28.9%	12.8%	8.3%
Western Queensland	33.3%	-11.2%	64.4%	*	*	*
Hunter New England and Central Coast	29.5%	-49.5%	17.7%	37.5%	18.1%	19.5%
North Coast	20.0%	-56.8%	64.7%	35.1%	17.4%	20.0%
South Eastern Melbourne	17.6%	14.8%	-14.1%	28.7%	14.6%	14.4%
Adelaide	16.8%	-14.3%	-35.5%	31.3%	14.5%	13.8%
Northern Queensland	16.7%	-21.4%	40.5%	36.2%	19.7%	23.0%
South Eastern NSW	15.5%	-48.9%	25.4%	35.0%	16.2%	18.1%
Brisbane South	14.4%	17.5%	4.7%	31.1%	14.2%	15.3%
Eastern Melbourne	13.5%	43.5%	-43.5%	26.7%	12.4%	13.9%
Country WA	11.8%	0.8%	22.9%	32.8%	19.9%	23.7%
Northern Sydney	10.6%	51.3%	-53.3%	20.1%	7.9%	16.6%
Darling Downs and West Moreton	10.3%	-35.4%	22.9%	37.4%	17.7%	17.2%
Western NSW	10.3%	-36.6%	78.5%	42.5%	19.6%	21.0%
Nepean Blue Mountains	8.0%	-27.3%	2.8%	36.2%	15.7%	16.8%
Country SA	6.9%	-55.3%	-29.3%	36.5%	17.8%	19.2%
Perth North	4.9%	0.2%	-15.4%	27.0%	12.5%	16.9%
Gippsland	3.7%	-59.1%	3.7%	38.2%	20.3%	19.7%
Murray	2.9%	-52.1%	3.5%	38.0%	19.4%	19.0%
Western Victoria	1.7%	-55.7%	-14.3%	36.1%	18.4%	18.7%
Perth South	0.0%	-3.6%	-12.4%	28.7%	14.0%	16.0%
Australian Capital Territory	0.0%	-17.5%	-11.0%	28.6%	10.1%	15.0%

Continued next page

PHN	LIVER CANCER: Proportion of SA2s where liver cancer incidence was above average	CHB: Relative prevalence of CHB compared to the national average	CHC: relative prevalence of CHC compared to the national average	OBESITY: Proportion of the adult population who were obese	SMOKING: Proportion of the adult population who were current smokers	ALCOHOL: Proportion of the adult population who consumed of ≥2 drinks per day
Brisbane North	0.0%	-25.5%	6.8%	30.9%	13.2%	17.1%
Central Queensland, Wide Bay, Sunshine Coast	0.0%	-55.2%	12.1%	32.7%	17.6%	19.5%
Gold Coast	0.0%	-31.2%	13.1%	30.4%	16.3%	18.8%
Murrumbidgee	0.0%	-51.8%	37.0%	36.1%	17.9%	20.4%
Tasmania	0.0%	-61.3%	9.0%	33.6%	17.9%	19.0%

ABS, Australian Bureau of Statistics. CHB, chronic hepatitis B. CHC, chronic hepatitis C. PHN, Primary Health Network. SA2, Statistical Area 2.

Legend: Green denotes lowest proportion, with a colour gradient through to red denoting highest proportion.

Data source: Cancer data based on modelled estimates from the Australian Cancer Atlas. CHB prevalence variation based on mathematical modelling incorporating population-specific prevalence and ABS population data.[8] CHC prevalence variation based on published national estimates and notifications distribution. Smoking, obesity and alcohol use sourced from the Social Health Atlas produced by the Public Health Information Data Unit, and represent modelled estimates for 2018–2019, the most recent period available.

* Western Queensland data not available due to low numbers.

SECTION D: DATA SOURCES AND METHODOLOGY

If you have questions regarding methodology, data sources or findings of the Mapping Report, or would like to provide feedback, please contact jennifer.maclachlan@mh.org.au.

Table D.1: Summary of data sources

Indicator	Method of estimation	Source	Basis of geographic data
CHB prevalence	Calculated using prevalence data according to population group (e.g. country of birth)	Published seroprevalence surveys 2021 ABS Census data according to population 2023 ABS estimated resident population	Region of residence when a person completed the 2021 Census
CHB prevalence in Aboriginal and Torres Strait Islander people	Calculated using seroprevalence study data according to state/territory, supplemented with notifications data	Published seroprevalence surveys 2021 ABS Census data according to population 2023 ABS estimated resident population NNDSS data	Region of residence when a person completed the 2021 Census
CHB treatment	Number of people prescribed antiviral medications indicated for hepatitis B (adefovir, entecavir, lamivudine, pegylated interferon alfa-2a or tenofovir)	PBS data	Region of residence when a person was dispensed treatment
CHB monitoring	Number of people who received a viral load test while not receiving treatment during the specified time period	MBS data	Region of residence when a person was tested
CHB care (treatment or monitoring)	Number of people who *either* received treatment *or* were provided with monitoring in the past year	MBS data	Region of residence when a person was tested or dispensed treatment
Hepatitis B immunisation	Proportion of children fully immunised for hepatitis B (doses at 2, 4 and 6 months) at 12 months of age	Australian Immunisation Register data	Region of residence for the immunised child at one year of age
Number of hepatitis serology MBS items	Number of items for hepatitis serology testing provided through Medicare (non-specific item used for any hepatitis test)	MBS data	State/territory of residence when a person was tested
Liver cancer above average	In each PHN, the proportion of SA2 regions where the standardized incidence rate of liver cancer during 2010–2019 was 'genuinely'^ above the national average	Australian Cancer Atlas, a statistical model of cancer incidence based on data from cancer registries	Where a person was living when they were diagnosed with cancer

ABS, Australian Bureau of Statistics. CHB, chronic hepatitis B. MBS, Medicare Benefits Schedule. NNDSS, National Notifiable Diseases Surveillance System. PBS, Pharmaceutical Benefits Scheme. PHN, Primary Health Network. SA2, Statistical Area 2 (see Table D.2).

^ Thresholds for average based on 60% probability cut-off.

Table D.2: Common data terms

Term	Definition
Data suppression	Data are suppressed in instances where their publication would risk identification of individuals, and/or the derived statistics would be unreliable, due to low counts. Data are also suppressed where the suppression of a single table cell would allow re-calculation of the suppressed data. Data suppression and the thresholds used are indicated in tables using '#'.
Incidence	The number of new cases of a health condition occurring in a given time period. For example, the incidence of liver cancer refers to the number of new cases of liver cancer that have occurred.
PHN	Geographic area derived as part of the national health reform agenda; populations range between 50,000 and 2 million residents. There are 31 PHNs in Australia. Each PHN contains multiple SA3s.
Prevalence	The proportion of the total population living with a health condition. For example, if chronic hepatitis B prevalence is 1%, this means 1% of people in a given population have chronic hepatitis B.
Provider specialty	Specialty of the practitioner prescribing treatment, using the registered specialty available in Medicare data. In reports prior to 2023, specialty was derived by the Department of Health and Aged Care using the practitioner's qualifications and service history (see Treatment by provider).
Remoteness area	Geographic area defined by the ABS based on measures of relative access to services; categories are major cities, inner regional, outer regional, remote and very remote.
SA2	Geographic area defined by the ABS. Populations usually range between 3,000 to 25,000 people. There are 2,473 SA2s in Australia, with 2,238 having data available.
SA3	Geographic area defined by the ABS. These are larger than SA2s; populations usually range between 30,000 and 130,000 residents. This report excluded SA3s with a population smaller than 3,000 residents to ensure reliable reporting. There are 359 SA3s in Australia, of which 332 are included in this report as they contained sufficient total population. Treatment and care metrics are not reported if the number of individuals who have received treatment and/or care was 10 or fewer. For Section A, this meant reporting was restricted to 247 SA3s.
Uptake	The proportion of the total population receiving a relevant service. For example, treatment uptake of 20% means that 20% of people with CHB had treatment. Note that in this report all uptake figures are of the total with CHB, not of those eligible.

ABS, Australian Bureau of Statistics. CHB, chronic hepatitis B. PHN, Primary Health Network. SA2, Statistical Area 2. SA3, Statistical Area 3.

DETAILED STATISTICAL METHODOLOGY

HEPATITIS B PREVALENCE

Data sources

The data sources used were:

- a mathematical model of hepatitis B in Australia
- Census data according to country of birth, age, year of migration and Aboriginal and Torres Strait Islander status
- published estimates of seroprevalence.

Prevalence model

The overall number of people living with CHB in Australia and in each state and territory was estimated using a deterministic compartmental mathematical model of hepatitis B virus infection in the Australian population from 1951 to 2050, which incorporates existing mathematical models, surveillance notifications, epidemiological research, clinical studies, and demographic and mortality data.[29] Further information regarding the model can be found in the associated paper[30] and report.[5] This model is also used to estimate the proportion of people who would be eligible for hepatitis B treatment, based on the natural history and current clinical guidelines.[16,17]

The number of people living with CHB in each region within a given state or territory was modelled based on the distribution of priority populations in that region, namely people born overseas and Aboriginal and Torres Strait Islander people. Although men who have sex with men and people who inject drugs are also priority populations for CHB, region-specific estimates for these populations are not available, so they are apportioned equally in each region using the national model.

The number of people living with CHB born in each country (including Australia) is derived using local antenatal seroprevalence data,[13,14,31] which were adjusted upwards to correct for the discrepancy in CHB prevalence by sex, according to the differential between males and females observed in published serosurveys.[32] Prevalence estimates for countries for which data were not available from local source estimates were generated from global systematic review papers.[33,34] These prevalence data are combined with population data according to region and country of birth obtained from the 2021 Census, and estimated resident population data by country of birth and Indigenous status for 2023, both generated by the Australian Bureau of Statistics (ABS). Country-of-birth designations use the most recent ABS Standard Australian Classification of Countries, which adopts a broad definition of 'country' that includes sovereign nation states, administrative subdivisions, external territories, and regions under disputed ownership or control.[35] This report follows ABS naming conventions for such countries.[36]

These data were extracted by SA3, which were then assigned to a given PHN using concordances published by the ABS[37] and the Department of Health and Aged Care.[38] Data were also extracted by remoteness area to generate prevalence specific to that geographic designation. The total population obtained using the Census in each area was adjusted up to meet the total Australian estimated resident population for December 2023.

Prevalence data for Aboriginal and Torres Strait Islander people are also derived predominantly using antenatal seroprevalence data, which were available according to birth cohort and remoteness area of residence for several states and territories.[39,40,41] Population-level data were also available for Qld within the Far North region,[42,43] and these were used to generate prevalence estimates in this area as well as in the very remote regions of Western Queensland.

For jurisdictions and regions with no seroprevalence data, notifications data were used to estimate differential prevalence according to region. These were sourced from the National Notifiable Diseases Surveillance System (NNDSS). The remoteness classifications used were established by the ABS, and are based on measures of relative access to services. Specific Aboriginal and Torres Strait Islander population data are available from the ABS for each of these regions.[7] These data sources were combined to generate tailored figures for estimated hepatitis B prevalence in each rurality classification, within each state/territory. These estimates are available in the 2023 Mapping Report Supplement.

CHB prevalence in men who have sex with men was estimated based on population-level data generated in Australia.[44,45,46] The number of men who have sex with men was estimated using age-specific data available from the Second Australian Study of Health and Relationships.[47] The prevalence of CHB in people who inject drugs in Australia was derived from a global systematic review.[48] The number of people who inject drugs was estimated using age-specific data obtained from the 2019 National Drug Strategy Household Survey.[49] Acknowledging the impact of immunisation on CHB prevalence in people born in Australia since the implementation of universal coverage policies in 2000, prevalence was reduced for both groups to the baseline for Australian-born people without specified risk factors (0.2%) for relevant age groups.

Differentiation of priority populations

Estimates according to priority population are derived as described above in the Prevalance model section, using a combination of population and prevalence data. Although a person may belong to more than one of the priority groups used to calculate prevalence, they are considered mutually exclusive for the purposes of this report due to the lack of available estimates to allow calculation of these crossover subgroups. The model prioritises country of birth and Indigenous status due to the higher risk of chronic infection in people exposed early in life, the most common route in these groups. For example, prevalence estimates for people born overseas will likely include a proportion of people who acquired their infection through injecting drug use or through sexual transmission. However, given the far greater risk of chronic infection associated with mother-to-child transmission, their country of birth is considered to be the more relevant characteristic for the purposes of identifying priority populations. For the purposes of deriving these estimates, due to the very small number of people who are in both categories, people born overseas and Aboriginal and Torres Strait Islander people are considered mutually exclusive.

HEPATITIS B PROPORTION DIAGNOSED

Data sources

The data sources used were:

- a mathematical model incorporating hepatitis B prevalence
- notifications from the NNDSS.

The number of people living with CHB who have been diagnosed is a direct output of the model, and calibrated using NNDSS notifications data. It was calculated by summing diagnosed health states and treatment health states within the model, to give the yearly total number of people living with CHB who have been diagnosed. The proportion of people living with CHB in Australia who have been diagnosed is the number of people living with CHB who have ever been diagnosed divided by the total number of people living with CHB in Australia in a given year. More information on source information and methodology can be found in the referenced report and publication.[5,30]

Based on evidence from linkage studies conducted in Vic and NSW, 8% of notified cases of CHB were presumed to be duplicates across jurisdictions, and the number of people estimated to be diagnosed was reduced accordingly.

HEPATITIS B TESTING, TREATMENT AND CARE

Data sources

The data sources used were:

- MBS records
- PBS records.

These sources include all services provided through Australia's national subsidised health care system, Medicare. Data were provided regarding the period 1 January 2011 to 31 December 2023. Analysis of hepatitis B treatment and care uptake is done for each year. For most analyses, the period to 31 December 2023 was used to capture a full year of data; some 2024 data is included in Section B. Analysis of historical care uptake is done for the 10-year period 1 January 2014 to 31 December 2023, as this is the period where complete PBS data are available.

Data were accessed through the ABS Person Level Integrated Data Asset (PLIDA), which provides Medicare data linked to other Australian Government datasets, including the ABS Census, and social services and taxation databases. These datasets are used to generate comprehensive information about individuals such as country of birth, Indigenous status, and area of residence at a given time.

Region of residence was generated using this linked PLIDA data, and reflects a person's residence at the time of the prescription dispensing or service provision (not the location of the service provider, such as pharmacy or laboratory). All time periods are based on the date of supply/date of service, which represents the date the patient was supplied with their medication by a pharmacy (for treatment) or the date a test was performed (for testing).

These data do not include services that were not provided by Medicare, such as those paid for out of pocket or subsidised by state government services (including services provided to hospital inpatients). Supplementary data have been obtained for SA allowing for calculation of estimated care uptake in 2023 accounting for this underestimation. Data regarding variation by geographic area, and data for WA, are being sought for future reporting.

MBS and PBS data will also not include those ineligible for Medicare; for example, due to their visa status.

Ascertainment of age and sex in Medicare

Age was ascertained as age at the time of the first treatment prescription in a given year. Sex is ascertained from combined data across the PLIDA linked dataset, and is provided as only male, female or missing.

Provider specialty

Requesting provider (for ordering of tests) and prescriber (for treatment) specialty is provided in Medicare data, and reflects the registered specialty. Complete data regarding prescriber specialty for hepatitis B treatment was available for the period January 2020 – October 2023, and data for January–October 2023 is used here as representative of data to December 2023. Previous analysis used the derived provider specialty generated by the Department of Health and Aged Care; however, this is subject to imprecision, and underestimated prescribing by nurse practitioners (NPs) in particular due to misclassification.[18] Comparative analysis revealed that a subset of NPs were inaccurately identified in the derived variable (being listed as 'unclassified' specialty), resulting in an underestimate of prescribing by this group by up to two-thirds. Prescribers are grouped as GPs; non-GP specialists, including all internal medicine subspecialties; and NPs. Some prescribers were unable to be classified and are grouped together as 'other prescribers', including those without a specialty code, resident doctors, Rural Other Medical Practitioners and locum relief doctors. Practitioners in training were categorised into their prospective occupational categories (e.g. non-GP specialist trainees were classified as non-GP specialists). Proportions by provider are of the total who received treatment or testing.

Two measures of GP prescribing uptake were used: GP only, where all treatment prescriptions in a given year were prescribed by a GP, and shared care, where both a GP and another provider (non-GP specialist or other provider such as an NP) prescribed treatment prescriptions during the given year. These two groups were combined to assess the total proportion where a GP was involved in treatment prescribing; that is, prescribed one or more of the prescriptions.

Treatment

Treatment data for CHB represent the number of people prescribed any drug listed on the PBS for the treatment of CHB (adefovir, entecavir, lamivudine, pegylated interferon alfa-2a and tenofovir).[50]

Treatment uptake was derived by dividing the number of people receiving treatment by the total estimated population living with CHB or CHC in a given geographic area (see Hepatitis B prevalence for detail).

Hepatitis B monitoring and care

Hepatitis B monitoring is measured using viral load testing (MBS items 68482 and 69483), which is an essential component of the recommended care for people with CHB regardless of whether or not they are receiving treatment.

Hepatitis B monitoring is used in the composite 'in care' indicator, which is defined as receiving either treatment or a viral load test while not receiving treatment. This metric is generated for each year and also for the total time period 2014–2023.

HEPATITIS B PROJECTIONS

Future projections for hepatitis B at the national and state/territory level are generated as part of the National Hepatitis B Indicators Report 2023,[5] and those estimates are extrapolated to the PHN level in this report based on the distribution of people living with CHB in 2023. These projections incorporate population, demographic, migration, vaccine uptake and mortality data.

Treatment uptake projections are generated using the trend observed during the period 2021–2023.

IMMUNISATION COVERAGE

Data source

The data source used was the Australian Immunisation Register (AIR).

The immunisation schedule for hepatitis B includes three doses of vaccine at 2, 4 and 6 months, and the AIR records data regarding what proportion of children received complete immunisation by the age of 12 months. The AIR is a national register that includes all children registered with Medicare, and coverage is estimated to be 99% of all Australian children.

Publicly available coverage data were obtained by PHN for all children and for Aboriginal and Torres Strait Islander children.[51] Data for overall coverage at the national level were obtained from reporting by the National Centre for Immunisation Research and Surveillance.[52]

SEROLOGY TESTING FOR HEPATITIS B AND C

Data source

The data source used was MBS records.

Data were extracted from the publicly available data reported by Services Australia regarding MBS items 69475, 69478 and 69481, which provide for hepatitis serology testing (hepatitis A–E included, but predominantly hepatitis B and C). The items provide for one, two or three hepatitis serology tests, respectively. The aggregate number of items provided through the MBS was assessed for each month from January 2013 to June 2024. The proportional change each year was calculated during this period, as well as the expected number for 2020–2023 based on linear projection of the trend observed during 2013–2019.

Data were extracted for each state and territory, and analysed as rates per 1,000 population using ABS estimated resident population for June of each year from 2013 to 2023.

Unlike other estimates presented in this report derived from Medicare data, these data are not disaggregated to the individual level, so may represent the same person tested multiple times.

Trends in serology testing were contextualised using unspecified (chronic) hepatitis B and C notification rates by state and territory, extracted from the publicly available data provided by the NNDSS.

LIVER CANCER

Data source

The data source used was Australian Cancer Atlas.

The Australian Cancer Atlas is a collaborative project led by Cancer Council Queensland and Queensland University of Technology, which aims to provide a national perspective of how the burden of cancer varies by geographical area. It uses spatial models to generate estimates at the SA2 level, allowing highly robust and granular measurement of variation in cancer incidence and survival while preserving data privacy and confidentiality. The Atlas assesses variation in the cancer incidence and survival between 2,238 SA2s across Australia for 30 different cancers.

The Australian Cancer Atlas estimates are produced using Bayesian statistical model methods on cancer incidence data supplied by Australia's state and territory cancer registries through the Australian Cancer Database (held by the Australian Institute of Health and Welfare). Modelling is used to generate 'smoothed' estimates of the risk of being diagnosed with cancer, and the excess deaths associated with a cancer diagnosis. These models generate smoothed estimates by assuming that the average risk of cancer diagnosis or the average excess death rate due to cancer in any one area is likely to be similar to the corresponding risk in its neighbouring areas.

Therefore, this modelling allows researchers to make stable estimates by small geographical areas, while also reflecting and quantifying the uncertainty of estimates. The estimates in the Australian Cancer Atlas then allow for more accurate and appropriate comparisons to be made between different geographic areas in Australia, based on comparisons against the Australian averages. The model enables decision-making by clearly identifying areas that have evidence of being different from the national average.[53] All modelled estimates are age-standardised, which accounts for variations in the age structure between regions of Australia, and means that differences in rates are not due to these variations.

Permission has been given for use of the modelled liver cancer incidence estimates in the National Viral Hepatitis Mapping Report. For more detail on the methods of the Australian Cancer Atlas and the Bayesian statistical model they use for their estimates, visit atlas.cancer.org.au.

In this report, we assessed the proportion of SA2s which had an above-average incidence rate of liver cancer in each PHN, using the 60% probability cut-off for inclusion, as this suggests the area's incidence rate is genuinely above the Australian average. PHNs were then ranked according to the proportion of SA2s that had above-average rates.

Liver cancer risk factors

Data regarding the rates of obesity, smoking and alcohol were obtained from the Social Health Atlases of Australia 2018, which is published by the Public Health Information Development Unit of Torrens University Australia.[54] These indicators are generated based on data gathered from the Australian National Health Survey 2014–15, which was conducted during 2014–2015 among approximately 19,000 participants.[55]

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DATA TABLES TO ACCOMPANY FIGURES

Figure A.1: CHB cascade of care, Australia, 2023

Cascade category	Number of people	Proportion of total living with CHB
Living with chronic hepatitis B infection	219800	
Diagnosed	151161	68.8%
Undiagnosed	68639	31.2%
Engaged in care	53765	24.5%
Not in care	166035	75.5%
Receiving treatment	27641	12.6%
Eligible but not receiving treatment	37372	17.0%
Not receiving treatment	14,606	7.1%

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Figure A.2: Estimated prevalence of CHB by PHN, 2023

Primary Health Network	Proportion of the population living with CHB (%)
Northern Territory	1.79%
South Western Sydney	1.36%
Western Sydney	1.29%
Central and Eastern Sydney	1.28%
Northern Sydney	1.23%
Eastern Melbourne	1.17%
North Western Melbourne	1.09%
Brisbane South	0.96%
South Eastern Melbourne	0.94%
Country WA	0.82%
Perth North	0.82%
NATIONAL AVERAGE	**0.82%**
Perth South	0.79%
Western Queensland	0.72%
Adelaide	0.70%
Australian Capital Territory	0.67%
Northern Queensland	0.64%
Brisbane North	0.61%
Nepean Blue Mountains	0.59%
Gold Coast	0.56%
Darling Downs and West Moreton	0.53%
Western NSW	0.52%
South Eastern NSW	0.42%
Hunter New England and Central Coast	0.41%
Murrumbidgee	0.39%
Murray	0.39%
Central Queensland, Wide Bay, Sunshine Coast	0.37%
Country SA	0.36%
Western Victoria	0.36%
North Coast	0.35%
Gippsland	0.33%
Tasmania	0.32%

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Figure A.3: Estimated number of people living with CHB by PHN (prevalence in brackets), 2023

Primary Health Network	Estimated number of people living with CHB, 2023
North Western Melbourne (1.09%)	21,858
Central and Eastern Sydney (1.28%)	20,851
Eastern Melbourne (1.17%)	18,775
South Eastern Melbourne (0.94%)	15,638
Western Sydney (1.29%)	15,622
South Western Sydney (1.36%)	14,474
Brisbane South (0.96%)	12,641
Northern Sydney (1.23%)	11,423
Perth North (0.82%)	9,877
Adelaide (0.70%)	9,309
Perth South (0.79%)	8,941
Brisbane North (0.61%)	6,700
Hunter New England and Central Coast (0.41%)	5,578
Country WA (0.82%)	4,778
Northern Queensland (0.64%)	4,752
Northern Territory (1.79%)	4,537
Gold Coast (0.56%)	3,876
Darling Downs and West Moreton (0.53%)	3,567
Central Queensland, Wide Bay, Sunshine Coast (0.37%)	3,459
Australian Capital Territory (0.67%)	3,160
South Eastern NSW (0.42%)	2,675
Murray (0.39%)	2,613
Western Victoria (0.36%)	2,594
Nepean Blue Mountains (0.59%)	2,193
North Coast (0.35%)	1,963
Country SA (0.36%)	1,949
Tasmania (0.32%)	1,812
Western NSW (0.52%)	1,807
Gippsland (0.33%)	1,039
Murrumbidgee (0.39%)	983
Western Queensland (0.72%)	357

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Figure A.4: Proportion of people living with CHB according to remoteness of residence, by PHN, ordered by CHB prevalence (in brackets), 2023

Primary Health Network	Major cities	Inner regional	Outer regional	Remote	Very remote
Northern Territory (1.79%)	0.0%	0.0%	34.0%	36.6%	29.3%
South Western Sydney (1.36%)	97.5%	2.5%	0.0%	0.0%	0.0%
Western Sydney (1.29%)	100.0%	0.0%	0.0%	0.0%	0.0%
Central and Eastern Sydney (1.28%)	100.0%	0.0%	0.0%	0.0%	0.0%
Northern Sydney (1.23%)	100.0%	0.0%	0.0%	0.0%	0.0%
Eastern Melbourne (1.17%)	100.0%	0.0%	0.0%	0.0%	0.0%
North Western Melbourne (1.09%)	99.4%	0.6%	0.0%	0.0%	0.0%
South Eastern Melbourne (0.94%)	100.0%	0.0%	0.0%	0.0%	0.0%
Brisbane South (0.96%)	99.1%	0.9%	0.0%	0.0%	0.0%
Country WA (0.82%)	0.0%	21.0%	29.8%	19.3%	29.9%
NATIONAL AVERAGE (0.82%)	**83.8%**	**8.2%**	**5.0%**	**1.5%**	**1.4%**
Perth North (0.82%)	100.0%	0.0%	0.0%	0.0%	0.0%
Perth South (0.79%)	100.0%	0.0%	0.0%	0.0%	0.0%
Adelaide (0.70%)	100.0%	0.0%	0.0%	0.0%	0.0%
Western Queensland (0.72%)	0.0%	0.0%	0.0%	73.2%	26.8%
Australian Capital Territory (0.67%)	100.0%	0.0%	0.0%	0.0%	0.0%
Northern Queensland (0.64%)	0.0%	11.2%	81.3%	0.0%	7.5%
Brisbane North (0.61%)	97.1%	2.9%	0.0%	0.0%	0.0%
Nepean Blue Mountains (0.59%)	97.8%	2.2%	0.0%	0.0%	0.0%
Gold Coast (0.56%)	98.5%	1.5%	0.0%	0.0%	0.0%
Western NSW (0.52%)	0.0%	60.1%	27.0%	12.9%	0.0%
Darling Downs and West Moreton (0.53%)	50.4%	43.6%	6.0%	0.0%	0.0%
Hunter New England and Central Coast (0.41%)	63.8%	30.3%	5.9%	0.0%	0.0%
Murrumbidgee (0.39%)	0.0%	72.3%	27.7%	0.0%	0.0%
South Eastern NSW (0.42%)	64.6%	22.0%	13.3%	0.0%	0.0%
North Coast (0.35%)	15.6%	72.8%	11.6%	0.0%	0.0%
Murray (0.39%)	0.0%	80.3%	19.7%	0.0%	0.0%
Central Queensland, Wide Bay, Sunshine Coast (0.37%)	37.4%	57.0%	5.7%	0.0%	0.0%
Western Victoria (0.36%)	40.5%	47.3%	12.1%	0.0%	0.0%
Gippsland (0.33%)	0.0%	84.5%	15.5%	0.0%	0.0%
Country SA (0.36%)	9.1%	33.5%	46.0%	11.4%	0.0%
Tasmania (0.32%)	0.0%	80.9%	19.1%	0.0%	0.0%

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Figure A.5: People living with CHB in Australia, by priority population,* 2023

Priority population	Proportion of total
People who inject drugs	2.7%
Men who have sex with men	3.6%
Aboriginal and/or Torres Strait Islander people	6.7%
Other non-Indigenous Australian-born people	14.3%
People born in North East Asia	23.6%
People born in South East Asia	22.7%
People born in Sub-Saharan Africa	4.8%
People born in Southern & Eastern Europe	5.4%
People born in North Africa & Middle East	3.4%
People born in Oceania (excluding Australia)	5.5%
People born in the Americas	1.3%
People born in Southern & Central Asia	3.7%
People born in North West Europe	2.1%

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Figure A.6: Number (bars) and proportion (labels) of people born overseas and living with CHB in Australia, by country of birth (top 30 countries), 2023

Country of birth	Number of people living with CHB (%)
China	18.52%
Vietnam	10.15%
Philippines	4.13%
New Zealand	2.35%
Thailand	1.97%
Malaysia	1.80%
Taiwan	1.62%
Hong Kong (SAR of China)	1.57%
Greece	1.53%
Cambodia	1.52%
Italy	1.28%
India	1.25%
England	1.20%
South Korea	1.17%
Indonesia	1.03%
Myanmar	0.96%
Tonga	0.67%
Samoa	0.60%
Kenya	0.66%
Turkey	0.63%
Nigeria	0.63%
Mauritius	0.61%
Bhutan	0.59%
Afghanistan	0.57%
Singapore	0.56%
Nepal	0.53%
Colombia	0.52%
Papua New Guinea	0.51%
Somalia	0.49%
Vanuatu	0.48%

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Figure A.7: Proportion of people living with CHB according to priority population, by PHN, ordered by CHB prevalence (in brackets), 2023

Primary Health Network and CHB prevalence	Aboriginal and/or Torres Strait Islander people	Australian-born non-Indigenous people	People born overseas
Northern Territory (1.79%)	3,400	369	1,355
South Western Sydney (1.36%)	202	2,153	15,643
Western Sydney (1.29%)	164	2,141	17,120
Central and Eastern Sydney (1.28%)	154	3,344	22,430
Northern Sydney (1.23%)	39	2,042	12,123
Eastern Melbourne (1.17%)	86	3,821	18,667
North Western Melbourne (1.09%)	132	4,087	22,062
Brisbane South (0.96%)	839	2,989	12,118
South Eastern Melbourne (0.94%)	96	3,858	14,847
Country WA (0.82%)	3,121	885	1,673
Perth North (0.82%)	290	2,556	8,893
AUSTRALIA (0.82%)	**18,458**	**56,631**	**199,193**
Perth South (0.79%)	361	2,358	7,909
Western Queensland (0.72%)	262	71	117
Adelaide (0.70%)	479	3,382	9,783
Australian Capital Territory (0.67%)	77	1,196	3,750
Northern Queensland (0.64%)	2,283	1,181	2,531
Brisbane North (0.61%)	704	2,867	4,881
Nepean Blue Mountains (0.59%)	154	1,017	1,555
Gold Coast (0.56%)	354	1,049	3,486
Darling Downs and West Moreton (0.53%)	676	1,467	2,355
Western NSW (0.52%)	1,091	639	517
South Eastern NSW (0.42%)	288	1,188	1,851
Hunter New England and Central Coast (0.41%)	1,016	2,933	2,987
Murrumbidgee (0.39%)	203	486	534
Murray (0.39%)	93	1,329	1,732
Western Victoria (0.36%)	60	1,426	1,633
Central Queensland, Wide Bay, Sunshine Coast (0.37%)	547	1,675	2,142
Country SA (0.36%)	673	1,150	1,033
North Coast (0.35%)	321	1,042	1,078
Gippsland (0.33%)	26	609	614
Tasmania (0.32%)	266	1,321	1,774

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Figure A.8: Category of care for people living with CHB, 2014–2023

	On treatment	Not on treatment but having regular monitoring	Not on treatment but having irregular monitoring	Diagnosed but not on treatment or receiving monitoring	Not diagnosed
Number	38,351	18,102	65,203	29,505	68,639
Proportion	17.4%	8.2%	29.7%	13.4%	31.2%

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Figure A.9: CHB care uptake, ranked by PHN, 2023

Primary Health Network	Care uptake 2023
South Western Sydney	37.2%
Western Sydney	34.1%
Northern Sydney	32.2%
Eastern Melbourne	28.9%
Central and Eastern Sydney	28.7%
North Western Melbourne	27.3%
Brisbane South	27.1%
Australian Capital Territory	26.2%
South Eastern Melbourne	25.5%
NATIONAL AVERAGE	**24.5%**
Northern Territory	21.3%
Murray	20.3%
Western Victoria	19.7%
North Coast	18.8%
Nepean Blue Mountains	18.5%
South Eastern NSW	17.6%
Northern Queensland	16.9%
Gold Coast	16.1%
Tasmania	15.7%
Western NSW	15.7%
Gippsland	15.5%
Darling Downs and West Moreton	15.2%
Brisbane North	15.0%
Hunter New England and Central Coast	14.3%
Central Queensland, Wide Bay, Sunshine Coast	12.9%
Murrumbidgee	12.4%
Western Queensland	#
Adelaide	#
Country SA	#
Perth South	#
Perth North	#
Country WA	#

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Figure A.10: Proportion of people who had any CHB care (treatment or monitoring), 2014–2023

Primary Health Network	Proportion who have ever had a viral load, 2014–2023
South Western Sydney	74.7%
Western Sydney	72.9%
North Western Melbourne	63.5%
Northern Sydney	63.5%
Central and Eastern Sydney	62.9%
Eastern Melbourne	60.0%
South Eastern Melbourne	59.0%
Australian Capital Territory	59.0%
Murray	58.0%
Adelaide	57.4%
Gippsland	55.9%
NATIONAL AVERAGE	**55.3%**
Brisbane South	53.5%
South Eastern NSW	53.2%
Nepean Blue Mountains	51.4%
Western Victoria	50.6%
Western NSW	49.2%
North Coast	49.2%
Northern Territory	49.0%
Northern Queensland	46.7%
Hunter New England and Central Coast	44.1%
Country SA	42.3%
Tasmania	40.6%
Perth North	39.9%
Perth South	37.7%
Darling Downs and West Moreton	37.3%
Murrumbidgee	36.4%
Gold Coast	35.5%
Brisbane North	30.6%
Central Queensland, Wide Bay, Sunshine Coast	29.9%
Country WA	19.4%
Western Queensland	18.2%

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Figure A.11: Number of people living with CHB who were not in care during 2014–2023, by PHN, ordered by proportional uptake during 2014–2023

Primary Health Network	Not in care 2014-2023
North Western Melbourne (63.5%)	7,975
Central and Eastern Sydney (62.9%)	7,728
Eastern Melbourne (60.0%)	7,508
South Eastern Melbourne (59.0%)	6,406
Brisbane South (53.5%)	5,880
Brisbane North (30.6%)	4,651
Western Sydney (72.9%)	4,232
Northern Sydney (63.5%)	4,173
Adelaide (57.4%)	3,967
South Western Sydney (74.7%)	3,657
Hunter New England and Central Coast (44.1%)	3,118
Northern Queensland (46.7%)	2,533
Gold Coast (35.5%)	2,498
Central Queensland, Wide Bay, Sunshine Coast (29.9%)	2,425
Northern Territory (49.0%)	2,314
Darling Downs and West Moreton (37.3%)	2,236
Western Victoria (50.6%)	1,282
Australian Capital Territory (59.0%)	1,296
South Eastern NSW (53.2%)	1,251
Country SA (42.3%)	1,125
Murray (58.0%)	1,098
Tasmania (40.6%)	1,075
Nepean Blue Mountains (51.4%)	1,065
North Coast (49.2%)	998
Western NSW (49.2%)	918
Murrumbidgee (36.4%)	626
Gippsland (55.9%)	458
Western Queensland (16.1%)	299
Perth South (*)	*
Perth North (*)	*
Country WA (*)	*

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Figure A.12: CHB Care uptake by remoteness area, 2023

Remoteness	Care uptake
Major Cities	26.2%
Inner Regional	10.6%
Outer Regional	12.7%
Remote	13.0%
Very Remote	15.4%
AUSTRALIA	**24.5%**

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Figure A.13: Proportion of CHB monitoring provided by a GP, by PHN, 2023

Primary Health Network	GP monitoring
Northern Territory	87.5%
Northern Sydney	65.5%
Country SA	65.1%
Murrumbidgee	62.5%
Western Sydney	62.2%
South Western Sydney	61.5%
Northern Queensland	61.4%
Western Queensland	58.3%
Brisbane South	56.9%
Central and Eastern Sydney	55.8%
NATIONAL AVERAGE	**54.9%**
Gippsland	54.7%
North Western Melbourne	54.1%
Adelaide	52.7%
Australian Capital Territory	52.3%
Darling Downs and West Moreton	51.0%
South Eastern Melbourne	50.4%
North Coast	49.6%
Brisbane North	47.1%
Gold Coast	46.0%
Eastern Melbourne	44.4%
Murray	44.1%
Hunter New England and Central Coast	39.3%
Nepean Blue Mountains	39.0%
Central Queensland, Wide Bay, Sunshine Coast	36.9%
Western NSW	35.3%
South Eastern NSW	35.2%
Tasmania	30.4%
Western Victoria	29.4%
Country WA	*
Perth South	*
Perth North	*

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Figure A.14: CHB treatment uptake and care uptake by population group, 2014–2023

Region of birth	Treatment uptake, 2023 (%)	Care uptake, 2023 (%)	Any hepatitis B care during 2014–2023 (%)
People born overseas	14.8%	28.0%	57.9%
Non-Indigenous Australian born people	6.8%	15.6%	55.0%
Aboriginal and/or Torres Strait Islander people	4.8%	4.8%	37.1%
Total population	12.5%	26.4%	55.3%

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Figure A.15: Proportion of people born overseas who had any CHB care (treatment or monitoring), according to region of birth, 2014–2023

Region of birth	Any hepatitis B care during 2014–2023 (%)
Born in South East Asia	70.9%
Born in North Africa and the Middle East	62.9%
Born in North East Asia	58.6%
Born in Southern and Central Asia	54.0%
Born in Oceania	46.5%
Born in North West Europe	42.9%
Born in Southern and Eastern Europe	42.5%
Born in Sub-Saharan Africa	39.3%
Born in the Americas	19.3%

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Figure A.16: Number of people receiving treatment for CHB, 2018–2023, compared to National Strategy 2022 target level

Year	Total	Target 2022
2018	21,285	41,550
2019	23,019	41,550
2020	24,300	41,550
2021	25,724	41,550
2022	26,617	41,550
2023	27,641	41,550

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Figure A.17: Number of people receiving treatment for CHB, by year and past treatment history status, 2018–2023 (note separate truncated axes)

Year	Number of people continuing on treatment	Number of people starting treatment
2018	17,698	3,587
2019	19,369	3,650
2020	20,793	3,507
2021	22,127	3,597
2022	23,262	3,355
2023	24,051	3,590

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Figure A.18: Proportional change in number of people receiving treatment for CHB, 2018–2023

State/territory	Change in number of people receiving treatment
ACT	36.0%
NSW	20.1%
NT	71.6%
Qld	45.4%
SA	43.5%
Tas	51.3%
Vic	32.2%
WA	39.7%
AUSTRALIA	**29.9%**

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Figure A.19: CHB treatment uptake (bars and in brackets) and ranking (label) by PHN, 2023

PHN label	Treatment uptake in 2023
South Western Sydney	20.2%
Western Sydney	17.4%
Northern Sydney	15.5%
Australian Capital Territory	15.2%
Central and Eastern Sydney	14.9%
North Western Melbourne	13.9%
Eastern Melbourne	13.9%
Brisbane South	13.4%
NATIONAL AVERAGE	**12.6%**
Adelaide	12.4%
South Eastern Melbourne	12.4%
Northern Territory	10.9%
Perth South	9.6%
Gold Coast	9.5%
Perth North	9.4%
Western Victoria	9.2%
Tasmania	9.1%
Nepean Blue Mountains	8.8%
North Coast	8.8%
South Eastern NSW	8.8%
Brisbane North	8.5%
Murray	8.1%
Gippsland	8.0%
Central Queensland, Wide Bay, Sunshine Coast	7.4%
Darling Downs and West Moreton	7.3%
Northern Queensland	6.8%
Hunter New England and Central Coast	6.7%
Murrumbidgee	5.7%
Western NSW	5.6%
Country SA	5.4%
Country WA	4.0%
Western Queensland	#

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Figure A.20: CHB treatment uptake in 2023 and projected uptake in 2030, ordered by projected 2030 uptake, by PHN (ranks labelled)

Primary Health Network	2023 uptake	2023 rank label	Projected uptake in 2030	2030 rank label
South Western Sydney	20.2%	1st	20.3%	1st
Northern Sydney	15.5%	3rd	19.3%	2nd
Western Sydney	17.4%	2nd	18.3%	3rd
Brisbane South	13.4%	8th	18.2%	4th
Eastern Melbourne	13.9%	7th	17.4%	5th
Gold Coast	9.5%	13th	17.2%	6th
Australian Capital Territory	15.2%	4th	17.1%	7th
Central and Eastern Sydney	14.9%	5th	16.5%	8th
North Western Melbourne	13.9%	6th	16.2%	9th
Adelaide	12.4%	9th	15.6%	10th
Northern Territory	10.9%	11th	14.8%	11th
Tasmania	9.1%	16th	14.5%	12th
Western Victoria	9.2%	15th	14.1%	13th
South Eastern Melbourne	12.4%	10th	13.3%	14th
North Coast	8.8%	18th	12.9%	15th
Brisbane North	8.5%	20th	12.0%	16th
Perth South	9.6%	12th	11.9%	17th
Perth North	9.4%	14th	11.8%	18th
Murrumbidgee	5.7%	27th	9.5%	19th
Darling Downs and West Moreton	7.3%	24th	9.5%	20th
Gippsland	8.0%	22nd	8.8%	21st
Nepean Blue Mountains	8.8%	17th	8.5%	22nd
South Eastern NSW	8.8%	19th	8.1%	23rd
Central Queensland, Wide Bay, Sunshine Coast	7.4%	23rd	7.8%	24th
Murray	8.1%	21st	7.6%	25th
Northern Queensland	6.8%	25th	7.6%	26th
Hunter New England and Central Coast	6.7%	26th	7.5%	27th
Country SA	5.4%	29th	7.2%	28th
Western NSW	5.6%	28th	7.0%	29th
Country WA	4.0%	30th	5.3%	30th
Western Queensland	#	#	#	#

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Figure A.21: CHB treatment uptake by remoteness area, 2023

Remoteness	Treatment uptake
Major Cities	13.6%
Inner Regional	5.1%
Outer Regional	6.1%
Remote	5.0%
Very Remote	6.5%
AUSTRALIA	**12.6%**

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Figure A.22: Proportion of people with a GP involved in CHB treatment prescribing, by state and territory, 2020–2023

State/territory	2020	2021	2022	2023
ACT	20.5%	19.3%	23.6%	23.0%
NSW	14.5%	16.0%	17.4%	17.5%
NT	38.9%	32.2%	30.5%	29.9%
Qld	26.8%	29.0%	30.5%	29.6%
SA	19.1%	21.4%	23.2%	23.2%
Tas	26.2%	33.1%	32.2%	32.5%
Vic	19.0%	20.9%	23.1%	22.7%
WA	23.0%	23.2%	28.2%	27.3%
AUSTRALIA	18.7%	20.2%	22.1%	21.9%

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Figure A.23: Proportion of people with a GP involved^ in CHB treatment prescribing, by PHN, 2023

PHN	Shared prescribing (GP + specialist/other provider)	GP only prescribing
Country WA	10.8%	38.9%
Northern Queensland	7.4%	41.7%
Country SA	15.1%	31.2%
Western NSW	12.2%	31.6%
North Coast	8.1%	29.8%
Gippsland	10.4%	26.0%
Gold Coast	14.7%	21.6%
Darling Downs and West Moreton	10.2%	24.1%
Murray	16.1%	18.0%
South Eastern NSW	12.2%	20.7%
Central Queensland, Wide Bay, Sunshine Coast	11.6%	21.1%
Tasmania	11.9%	20.5%
Northern Territory	11.2%	18.8%
Perth North	5.6%	21.9%
Nepean Blue Mountains	6.0%	21.4%
Hunter New England and Central Coast	12.4%	14.5%
North Western Melbourne	9.4%	17.0%
Brisbane South	7.0%	18.8%
Murrumbidgee	9.8%	13.7%
Australian Capital Territory	9.1%	14.0%
Perth South	3.4%	19.6%
Brisbane North	7.9%	14.0%
NATIONAL AVERAGE	7.0%	15.0%
Western Sydney	6.8%	14.7%
Adelaide	8.9%	12.3%
Eastern Melbourne	7.6%	12.6%
Western Victoria	8.5%	11.7%
South Eastern Melbourne	6.6%	12.4%
Central and Eastern Sydney	5.3%	10.9%
Northern Sydney	3.5%	12.3%
South Western Sydney	2.9%	8.2%
Western Queensland	#	#

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Figure A.24: Hepatitis B immunisation coverage for 12-month-olds, among all children and among Aboriginal and/or Torres Strait Islander children, ordered by immunisation uptake among all children, by PHN, 2023

PHN Name	All children	Aboriginal and/or Torres Strait Islander children
Australian Capital Territory	96.6%	91.5%
Western NSW	96.3%	95.8%
Eastern Melbourne	95.6%	94.4%
South Eastern NSW	95.5%	94.7%
Northern Sydney#	95.3%	95.0%
Brisbane North	95.2%	92.4%
Western Victoria	95.2%	95.8%
Tasmania	95.2%	94.9%
Hunter New England and Central Coast	95.0%	94.0%
Murray	95.0%	93.3%
Murrumbidgee	95.0%	94.3%
Adelaide	94.9%	91.5%
Central and Eastern Sydney	94.8%	93.8%
Northern Queensland	94.6%	94.0%
South Eastern Melbourne	94.5%	92.2%
North Western Melbourne	94.4%	93.5%
Nepean Blue Mountains	94.4%	93.3%
Darling Downs and West Moreton	94.3%	92.6%
Northern Territory	94.2%	91.3%
Perth North	94.1%	89.8%
Country SA	94.0%	91.2%
Brisbane South	93.9%	89.4%
Perth South	93.8%	88.9%
Western Sydney	93.8%	91.7%
NATIONAL AVERAGE	93.2%	89.9%
Gippsland	92.8%	91.3%
South Western Sydney	92.2%	91.6%
Country WA	91.6%	88.7%
Western Queensland	91.3%	88.4%
Central Queensland, Wide Bay, Sunshine Coast	90.6%	92.1%
Gold Coast	90.4%	91.5%
North Coast	89.6%	92.7%

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Figure A.25: Hepatitis B immunisation coverage for 12-month-olds in 2022 and 2023, ordered by 2023 immunisation uptake, by PHN

PHN Name	2022 uptake all children	2023 uptake all children
Australian Capital Territory	97.0%	96.6%
Western NSW	96.7%	96.3%
Eastern Melbourne	95.3%	95.6%
South Eastern NSW	95.2%	95.5%
Northern Sydney	95.9%	95.3%
Brisbane North	95.1%	95.2%
Western Victoria	94.9%	95.2%
Tasmania	95.2%	95.2%
Hunter New England and Central Coast	95.4%	95.0%
Murray	95.1%	95.0%
Murrumbidgee	95.2%	95.0%
Adelaide	95.2%	94.9%
Central and Eastern Sydney	95.0%	94.8%
Northern Queensland	93.8%	94.6%
South Eastern Melbourne	94.6%	94.5%
North Western Melbourne	94.1%	94.4%
Nepean Blue Mountains	94.2%	94.4%
Darling Downs and West Moreton	93.9%	94.3%
Northern Territory	94.0%	94.2%
Perth North	94.8%	94.1%
Country SA	94.4%	94.0%
Brisbane South	94.0%	93.9%
Perth South	94.2%	93.8%
Western Sydney	94.2%	93.8%
NATIONAL AVERAGE	93.8%	93.2%
Gippsland	93.5%	92.8%
South Western Sydney	92.6%	92.2%
Country WA	92.3%	91.6%
Western Queensland	94.6%	91.3%
Central Queensland, Wide Bay, Sunshine Coast	91.8%	90.6%
Gold Coast	91.0%	90.4%
North Coast	89.5%	89.6%

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Figure B.1: Number of hepatitis serology test items, by 6-month period, Jan 2014 – Jun 2024

6-month period	Observed number of serology tests	Expected number of serology tests based on previous trends
Jan–Jun 2014	610,000	-
Jul–Dec 2014	608,633	-
Jan–Jun 2015	665,131	-
Jul–Dec 2015	651,630	-
Jan–Jun 2016	703,944	-
Jul–Dec 2016	642,983	-
Jan–Jun 2017	722,139	-
Jul–Dec 2017	700,705	-
Jan–Jun 2018	764,589	-
Jul–Dec 2018	749,658	-
Jan–Jun 2019	795,518	-
Jul–Dec 2019	788,831	-
Jan–Jun 2020	680,812	809,854
Jul–Dec 2020	672,696	831,438
Jan–Jun 2021	714,307	853,597
Jul–Dec 2021	652,294	876,347
Jan–Jun 2022	627,876	899,703
Jul–Dec 2022	667,965	923,681
Jan–Jun 2023	721,275	948,298
Jul–Dec 2023	732,633	973,572
Jan–Jun 2024	767,133	999,519

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Figure B.2: Rate of hepatitis serology test items per 1,000 population, by state/territory and year, Jan 2019 – Jun 2024

Year	ACT	NSW	NT	Qld	SA	Tas	Vic	WA
2019	51.4	70.3	90.1	59.6	48.9	42.5	61.0	58.7
2020	46.1	59.0	77.2	51.9	43.9	36.8	49.4	52.3
2021	44.8	58.1	70.5	51.2	42.5	38.7	53.6	51.5
2022	42.2	54.0	65.3	45.0	37.1	33.6	48.3	47.8
2023	44.6	59.5	77.8	50.6	44.0	42.7	54.5	53.3
Jan–Jun 2024	50.4	64.1	76.9	57.8	49.0	42.9	60.9	59.3

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Figure C.1: Proportion of SA2s within a PHN where the rate of liver cancer was above the Australian average, 2010–2019

PHN	Liver cancer rate above national average
Northern Territory	97.0%
South Western Sydney	76.7%
North Western Melbourne	76.6%
Central and Eastern Sydney	64.4%
Western Sydney	59.0%
Western Queensland	33.3%
Hunter New England and Central Coast	29.5%
NATIONAL AVERAGE	**20.6%**
North Coast	20.0%
South Eastern Melbourne	17.6%
Adelaide	16.8%
Northern Queensland	16.7%
South Eastern NSW	15.5%
Brisbane South	14.4%
Eastern Melbourne	13.5%
Country WA	11.8%
Northern Sydney	10.6%
Darling Downs and West Moreton	10.3%
Western NSW	10.3%
Nepean Blue Mountains	8.0%
Country SA	6.9%
Perth North	4.9%
Gippsland	3.7%
Murray	2.9%
Western Victoria	1.7%
Australian Capital Territory	0
Brisbane North	0
Central Queensland, Wide Bay, Sunshine Coast	0
Gold Coast	0
Murrumbidgee	0
Perth South	0

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