

# VIRAL HEPATITIS MAPPING PROJECT: **HEPATITIS B**

Geographic diversity in chronic  
hepatitis B prevalence,  
management and treatment



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**NATIONAL REPORT 2021**

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NATIONAL REPORT 2021

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WHO COLLABORATING CENTRE FOR VIRAL HEPATITIS,  
THE PETER DOHERTY INSTITUTE FOR INFECTION AND IMMUNITY  
AUSTRALASIAN SOCIETY FOR HIV, VIRAL HEPATITIS,  
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## ABBREVIATIONS

|       |  |
|-------|--|
| ABS   | Australian Bureau of Statistics  |
| ACT   | Australian Capital Territory   |
| AIR   | Australian Immunisation Register   |
| ASGS  | Australian Statistical Geography Standard                                |
| ASHM  | Australasian Society for HIV, Viral Hepatitis and Sexual Health Medicine |
| CHB   | chronic hepatitis B  |
| GP    | general practitioner   |
| MBS   | Medicare Benefits Schedule   |
| NNDSS | National Notifiable Diseases Surveillance System                         |
| NSW   | New South Wales  |
| NT    | Northern Territory   |
| NZ    | New Zealand  |
| PBS   | Pharmaceutical Benefits Scheme   |
| PHN   | Primary Health Network   |
| PNG   | Papua New Guinea   |
| 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 C: Data sources and methodology](#).

# EXECUTIVE SUMMARY

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## SECTION A: HEPATITIS B

### PREVALENCE

- An estimated 200,385 people were living with chronic hepatitis B (CHB) in Australia in 2021, representing 0.78% of the total population.
- The proportion of the population living with CHB (prevalence) varied widely by Primary Health Network (PHN) and was highest in **Northern Territory** and in PHNs in Sydney and Melbourne.

### TREATMENT

- Treatment uptake for CHB in 2021 was 12.7%, below the National Hepatitis B Strategy 2018–2022 target of 20% by 2022.
- Australia will not meet the National Strategy 2018–2022 target for treatment uptake.
- Although the number of people receiving treatment has increased over time, the rate of increase has reduced in recent years.
- Treatment uptake was highest in PHNs in Sydney, Melbourne, and Brisbane, as well as **Australian Capital Territory**.
- Only 13 Statistical Area 3s (SA3s) (4.4% of those reported) had already reached the 2022 treatment uptake target of 20%, generally in PHNs with higher uptake of treatment.
- General practitioner (GP) prescribing for CHB treatment was stable in 2021, and 22.2% of people treated for CHB in 2020 had a GP prescribe at least one of their prescriptions.

### CARE

- Engagement in care (treatment or viral load test monitoring) in 2021 was 26.0%, just over half the National Strategy 2018–2022 target of 50% by 2022.
- Similar to treatment uptake, care uptake was highest in PHNs in Sydney, Melbourne, Brisbane and **Australian Capital Territory**.
- Only three SA3s had already reached the National Strategy 2018–2022 care uptake target of 50% by 2022. These were in **Northern Territory (East Arnhem)** **Northern Queensland (Far North)** and **Brisbane South (Forest Lake Oxley)** PHNs.
- The number of people engaged in monitoring (received a viral load test while not receiving antiviral treatment) reduced in 2020 and in 2021, impeding progress toward the care uptake target.
- GPs provided 43.3% of all monitoring tests in 2021.

## IMMUNISATION

- Timely infant hepatitis B immunisation uptake (measured at 12 months of age) nationally declined to 94.6% in 2021, below the 95% National Strategy 2018–2022 target for 2022, despite the target previously having been met.
- Coverage was lower among Aboriginal and Torres Strait Islander children (91.8%), and this also declined between 2020 and 2021.
- The 95% coverage target was met in 16 of Australia's 31 PHNs for all children, and in eight PHNs for Aboriginal and Torres Strait Islander children.

## HEPATITIS C

**The equivalent report on hepatitis C, geographic diversity and trends in prevalence and treatment uptake and related methods, as well as liver cancer data, will be in a separate forthcoming publication.**

## SECTION B: VIRAL HEPATITIS SEROLOGY TESTING TRENDS

- The number of hepatitis serology tests occurring through Medicare reduced in 2020 and this decline has continued through the end of 2022, resulting in an estimated 1.3 million fewer serology tests over this time period.
- Although specific yearly trends varied, this decline between 2019 and 2022 occurred in all states and territories.



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# INTRODUCTION

## WHAT'S NEW IN THIS REPORT?

This 2021 report contains the following new information:

- Updated national and state/territory estimates of hepatitis B prevalence, based on revised modelling.
- Updated locally specific estimates of hepatitis B prevalence, based on newly released information from the 2021 Census and local and overseas prevalence data.
- Further detail on cultural and linguistic diversity among people living with hepatitis B at the local level.
- Updated projections assessing which PHNs are on track to meet strategic targets, including updated migration projections.
- Further assessment of trends in testing, diagnosis, care and treatment through 2021, reflecting the continued impact of COVID-19.

## BACKGROUND AND UPDATES IN THIS REPORT

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 serology testing data. Owing to changes in data availability, the data on hepatitis C prevalence and treatment uptake, as well as liver cancer data, will be presented in a separate forthcoming publication.

This report presents the most recent available estimates to the end of 2021, assessing ongoing trends from 2016 including assessment of the health service effects of the ongoing COVID-19 pandemic and associated restrictions. The report enables readers to identify the prevalence of hepatitis B in local areas, and to assess progress in delivering care to affected people.

This report includes updated and revised CHB prevalence estimates which more accurately reflect the current status of hepatitis B in Australia, including changes that have occurred in the 2021 Census and updating of inputs and data sources used. For more information on changes to the national estimate of the number of people living with CHB, please see the [National Surveillance for Hepatitis B Indicators Annual Report 2021](#)<sup>1</sup> and for a full description of the changes occurring by region and by subgroup for the estimates used in the Mapping Report, please see the full [Mapping Report Supplement](#). An overview of the key methodological changes related CHB prevalence is included in [Section A – Changes to prevalence estimates](#).

## USING THE DATA IN THIS REPORT

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.<sup>2</sup>

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

This report is structured according to the targets set out in the Third National Hepatitis B Strategy, which covers the period 2018–2022. Future versions of the report will assess progress towards new targets contained in the upcoming national viral hepatitis strategies, which are due for release in 2023.

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

- [Section A1](#): a national snapshot of hepatitis B prevalence, diagnosis, treatment and care
- [Section A2](#): state and territory snapshots of hepatitis B geographic diversity and trends
- [Section B](#): serology testing trends
- [Section C](#): data sources and methodology.

The hepatitis C report along with associated data and methodology will be published separately.

For further information about the Mapping Project, 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/whoccvh](http://www.doherty.edu.au/whoccvh) and [www.ashm.org.au/resources](http://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](mailto: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.

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# SECTION A: HEPATITIS B

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# SECTION A1: NATIONAL SNAPSHOT – HEPATITIS B

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## IN THIS SECTION

Section A1 includes the following information:

- national and state/territory-level estimates of CHB prevalence, treatment uptake, and care uptake
- national and PHN-level estimates of CHB prevalence, treatment, care uptake, and immunisation coverage
- assessment of trends over time in treatment and care uptake during 2016–2021
- assessment of variation in treatment and care uptake according to demographic and clinical factors
- data regarding prescribing and testing by general practitioners (GPs) according to state/territory and PHN.

Table A.1: Heat map of CHB prevalence, treatment uptake and care uptake in Australia, by PHN, 2021

| Primary Health Network                | PREVALENCE<br>Proportion of<br>the population<br>living with CHB<br>(%) | TREATMENT<br>Proportion of<br>people with CHB<br>who received<br>treatment (%) | CARE<br>Proportion of people<br>with CHB who received<br>care (treatment or<br>monitoring) (%) |
|---------------------------------------|---|--|--|
| <b>AUSTRALIA</b>                      | <b>0.78%</b>  | <b>12.7%</b>   | <b>26.0%</b>   |
| Northern Territory                    | 1.73%   | 10.8%  | 23.7%  |
| South Western Sydney                  | 1.32%   | 20.4%  | 38.8%  |
| Western Sydney                        | 1.24%   | 17.4%  | 37.3%  |
| Central and Eastern Sydney            | 1.20%   | 15.7%  | 30.9%  |
| Northern Sydney                       | 1.14%   | 15.9%  | 33.3%  |
| Eastern Melbourne                     | 1.11%   | 13.8%  | 31.5%  |
| North Western Melbourne               | 1.08%   | 14.4%  | 31.2%  |
| South Eastern Melbourne               | 0.90%   | 13.1%  | 28.9%  |
| Brisbane South                        | 0.90%   | 13.6%  | 29.7%  |
| Country WA                            | 0.79%   | 3.6%   | 5.1%   |
| Perth North                           | 0.75%   | 9.8%   | 14.8%  |
| Perth South                           | 0.75%   | 9.5%   | 13.7%  |
| Adelaide*                             | 0.66%   | 12.0%  | 19.8%  |
| Western Queensland                    | 0.66%   | 1.3%   | 7.7%   |
| Australian Capital Territory          | 0.63%   | 15.7%  | 30.5%  |
| Northern Queensland                   | 0.60%   | 7.0%   | 19.8%  |
| Brisbane North                        | 0.59%   | 8.0%   | 15.4%  |
| Nepean Blue Mountains                 | 0.57%   | 9.1%   | 19.6%  |
| Gold Coast                            | 0.54%   | 8.4%   | 16.1%  |
| Western NSW                           | 0.51%   | 5.2%   | 15.3%  |
| Darling Downs and West Moreton        | 0.50%   | 7.0%   | 15.1%  |
| Hunter New England and Central Coast  | 0.42%   | 6.0%   | 12.8%  |
| Murrumbidgee                          | 0.42%   | 4.5%   | 11.0%  |
| South Eastern NSW                     | 0.41%   | 8.5%   | 18.8%  |
| North Coast                           | 0.38%   | 6.9%   | 13.8%  |
| Murray                                | 0.38%   | 8.6%   | 20.8%  |
| Central Qld, Wide Bay, Sunshine Coast | 0.35%   | 7.9%   | 14.4%  |
| Western Victoria                      | 0.35%   | 8.0%   | 18.8%  |
| Gippsland                             | 0.33%   | 8.2%   | 17.8%  |
| Country SA*                           | 0.32%   | 5.1%   | 10.9%  |
| Tasmania                              | 0.27%   | 9.1%   | 19.2%  |

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.

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.

\*Data relating to SA may underestimate monitoring by at least 40% from 2020 onwards due to the provision of services outside of Medicare.

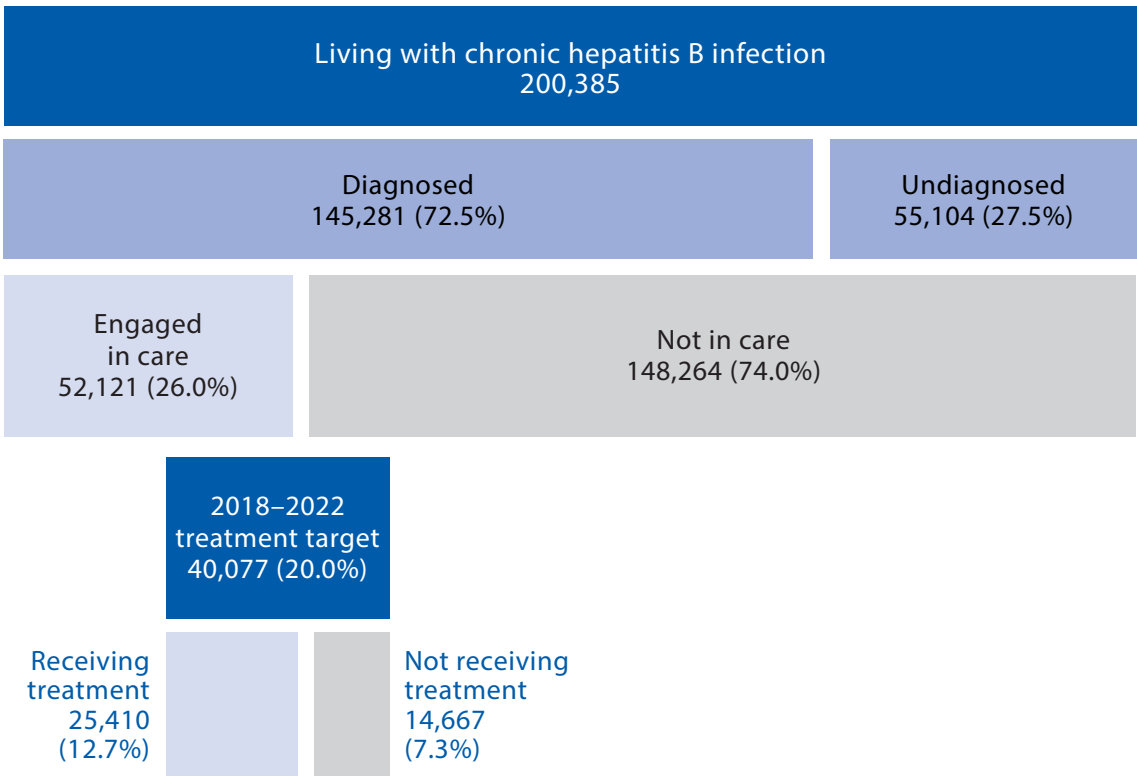
# THE CASCADE OF CARE

Australia’s National Hepatitis B Strategy (2018–2022)<sup>3</sup> targets include:

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

In 2021 in Australia, an estimated 200,385 people were living with CHB. Of those, 145,281 (72.5%) had ever been diagnosed; 51,121 (26.0%) people received care (either treatment or monitoring); and 25,410 (12.7%) received antiviral treatment (Figure A.1). The variation in each of these cascade indicators by geographic area is explored in later sections of this report. Trends show gradual increases in treatment and care uptake over time (Table A.2), but at a rate well below that needed to reach current national targets by 2022, or even by 2030. These trends are based on modelled projections of the future number of people estimated to be living with CHB,<sup>1</sup> and extrapolation of previous trends.

Figure A.1: CHB cascade of care, Australia, 2021



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.

[\(see data for this figure\)](#)

**Table A.2: Progress made towards 2022 National Hepatitis B Strategy targets for diagnosis, care and treatment, 2019–2021**

| Indicator                       | 2019 level | 2020 level | 2021 level   | Target by 2022 | Year Australia projected to reach target |
|---------------------------------|------------|------------|--------------|----------------|--|
| Diagnosis                       | 68.9%      | 70.4%      | <b>72.5%</b> | <b>80.0%</b>   | 2030                                     |
| Care (treatment or monitoring*) | 25.3%      | 24.9%      | <b>26.0%</b> | <b>50.0%</b>   | 2043                                     |
| Treatment                       | 11.1%      | 11.8%      | <b>12.7%</b> | <b>20.0%</b>   | 2027                                     |

CHB, chronic hepatitis B.

\*Monitoring is represented by a viral load test while not receiving treatment. Targets presume trends in population living with CHB and change in indicators over time remain stable. See *National Surveillance for Hepatitis B Indicators Annual Report 2021*<sup>1</sup> for more information about the assumptions and projections used.

It should be noted that the ‘engaged in care’ indicator reflects only a snapshot of the proportion of people with CHB who received items of guideline-based care<sup>4</sup> (either monitoring, measured using viral load testing, or treatment) in a given year. Further assessment of the uptake of more frequent testing which more closely reflects current guidelines is assessed in [Section A1 – Ongoing engagement in monitoring](#).

## PREVALENCE

In 2021 in Australia, an estimated 200,385 people were living with CHB, representing 0.78% of the total population (Table A.3).<sup>1</sup>

In 2020, the estimated number of people living with CHB in Australia decreased for the first time since the 1990s, because of international border closures due to the COVID-19 pandemic leading to reduced net migration from overseas to Australia. However, the estimated number of people living with CHB is projected to begin increasing again from 2022 in line with resumed migration to Australia and, by 2024, the number of people living with CHB is projected to return to 2019 levels.<sup>1</sup>

### CHANGES TO PREVALENCE ESTIMATES

CHB prevalence data have been comprehensively updated for this Mapping Report to ensure they accurately reflect current epidemiology and trends. This included updates to the source model used to generate the national and state/territory estimates of CHB prevalence, as well as the methods used to estimate CHB prevalence at the PHN and SA3 level. These are each described briefly below.

Changes to the model used to estimate CHB prevalence nationally are explored in detail in the [National Surveillance for Hepatitis B Indicators Annual Report 2021](#).<sup>1</sup> This model is described in full in that report; in summary, the model incorporates various data sources which have influence on the prevalence of CHB in Australia, including migration, births, deaths, CHB prevalence in migration source countries, and immunisation coverage locally and overseas. The recent changes include changes to historic CHB prevalence estimates by country of birth based on newly available data and re-assessment of available historic sources. Overall, this update has resulted in a 10% reduction in the estimated number of people living with CHB nationally. These new, revised prevalence updates are presented in Table A.3; for detailed comparison with the previous estimates, see the [Mapping Report Supplement](#).

In addition, a number of changes have been incorporated to the methods used for estimating prevalence according to PHN and SA3 for the Mapping Report, including the following:

- Inclusion of region-specific data regarding age distribution of migrants into prevalence estimation. The overall impact of this was that estimated CHB prevalence reduced in areas with younger migrants and increased in areas with older migrants, due to the ongoing reduction in prevalence over time in many endemic regions, in addition to the impact of immunisation.
- Incorporation of recent local evidence<sup>5</sup> demonstrating lower CHB prevalence in Australian-born people who live in rural regions relative to those living in urban regions. This reflects observed variations in geographic diversity of people with a culturally and linguistically diverse background. This incorporation generally had the impact of reducing estimated CHB prevalence in inner and outer regional areas where non-Indigenous Australian-born people were the most common group living with CHB (see [Figure A.7](#)).
- Revision of the CHB prevalence used for Aboriginal and Torres Strait Islander populations in Queensland to align with local clinical evidence, resulting in reduced overall estimated prevalence of CHB in the [Far North, Outback – North](#), and [Outback – South](#) SA3s, and therefore the [Northern Queensland](#) and [Western Queensland](#) PHNs.

In addition to changes to the methodological approaches, the report is now based on data derived from the 2021 Census, which provided updated information regarding the distribution of Australians geographically, including according to cultural and linguistic group. Changes in this distribution will also have impacts on CHB prevalence according to area. Other updates which affect prevalence estimates by subpopulation include updating source data for the number of men who have sex with men<sup>6</sup> and for people who inject drugs,<sup>7</sup> based on the most recent evidence. This is in addition to the adjustment of the prevalence of CHB in these groups to account for the increasing population of immunised young people in Australia. These changes resulted in a reduction in the estimated number of people living with CHB in these two priority populations. A full discussion of these changes and their impacts is in the [Mapping Report Supplement](#).

As CHB prevalence estimates are used as the denominator for CHB treatment and care uptake, changes in these estimates are consequently reflected in these indicators as well. Any major changes to uptake by PHN which are a result of these changes are identified in the [Mapping Report Supplement](#).

## PREVALENCE ACROSS STATES AND TERRITORIES

The highest prevalence of CHB was estimated to be in the NT at 1.73%, and the lowest prevalence in Tas. at 0.27%. Among other jurisdictions, the prevalence of CHB was also above the national average of 0.78% in NSW (0.89%) and Vic. (0.87%). Prevalence was similar to the national average in WA (0.76%), and below it in the ACT (0.63%), Qld (0.60%), and SA (0.56%) (Table A.3). Reduced net migration from overseas to Australia in 2020–21 led to reduced prevalence of CHB, particularly in the ACT, Vic. and NSW, compared to 2019, as these jurisdictions had a higher proportion of people with CHB born overseas.<sup>1</sup>

Table A.3: Estimated prevalence of CHB, by state and territory, 2021

| State/territory  | Total population  | People living with CHB | CHB prevalence (%) |
|------------------|-------------------|------------------------|--------------------|
| ACT              | 453,324           | 2,840                  | 0.63%              |
| NSW              | 8,095,430         | 72,058                 | 0.89%              |
| NT               | 249,345           | 4,325                  | 1.73%              |
| Qld              | 5,265,043         | 31,665                 | 0.60%              |
| SA               | 1,796,955         | 10,181                 | 0.56%              |
| Tas.             | 569,827           | 1,566                  | 0.27%              |
| Vic.             | 6,559,941         | 56,837                 | 0.87%              |
| WA               | 2,762,234         | 20,912                 | 0.76%              |
| <b>AUSTRALIA</b> | <b>25,766,605</b> | <b>200,385</b>         | <b>0.78%</b>       |

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

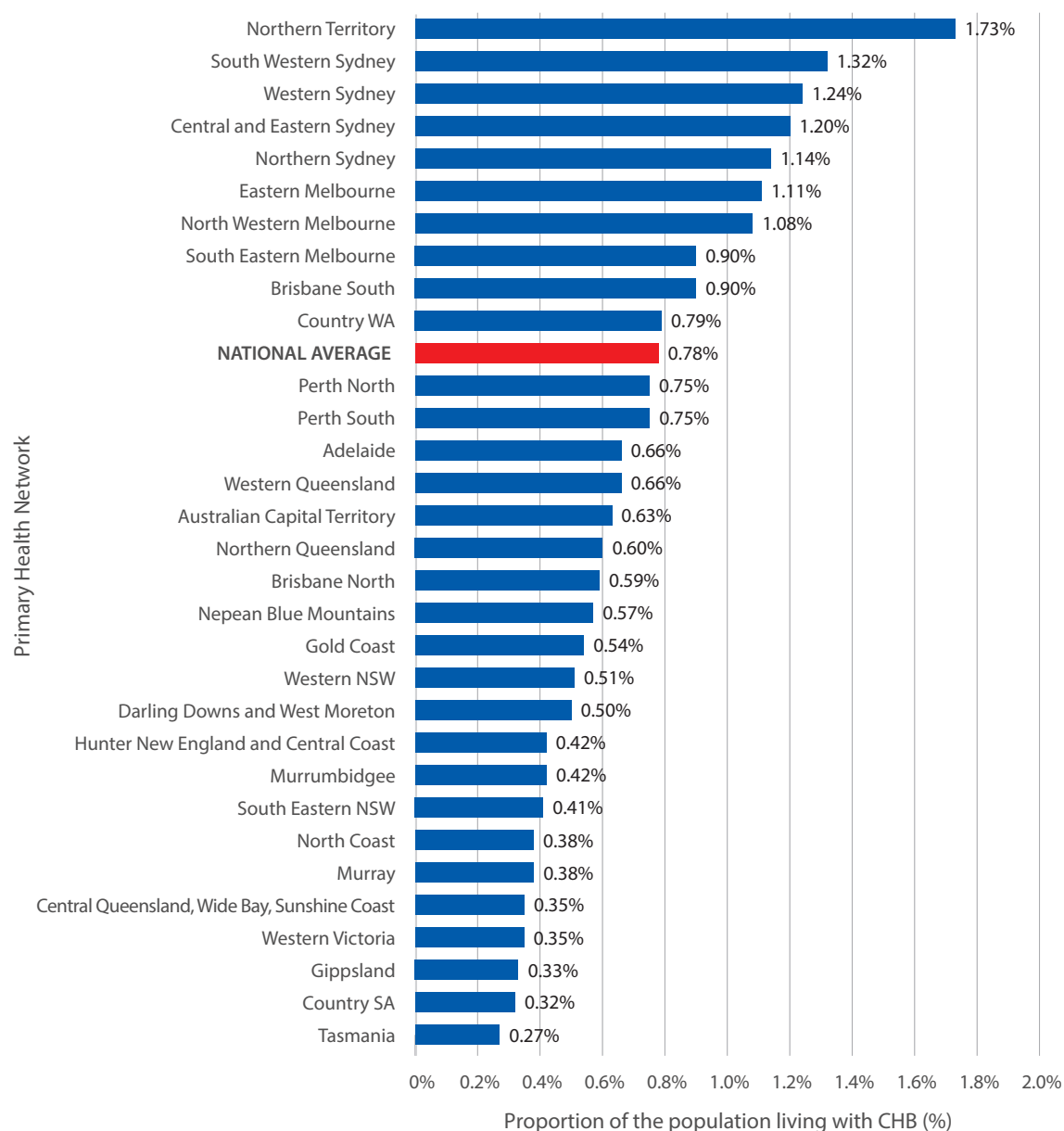
Data source: CHB prevalence estimates based on mathematical modelling incorporating population-specific prevalence and ABS population data.

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

## PREVALENCE ACROSS PRIMARY HEALTH NETWORKS

The **Northern Territory** PHN comprises the whole jurisdiction, and had the highest CHB prevalence of any PHN in 2021 (1.73%), more than six times that of the lowest prevalence PHNs. The number of people estimated to be living with CHB also varied widely according to PHN, as shown in Figure A.3. Outside the NT, prevalence was highest in following PHNs: **South Western Sydney** (1.32%), **Western Sydney** (1.24%), **Central and Eastern Sydney** (1.20%), **Northern Sydney** (1.14%), **Eastern Melbourne** (1.11%), and **North Western Melbourne** (1.08%) (Figure A.2). Some changes in rankings have occurred due to the modifications made to CHB prevalence; see the [Mapping Report Supplement](#) for a full description of the changes.

Figure A.2: Estimated prevalence of CHB by PHN, 2021

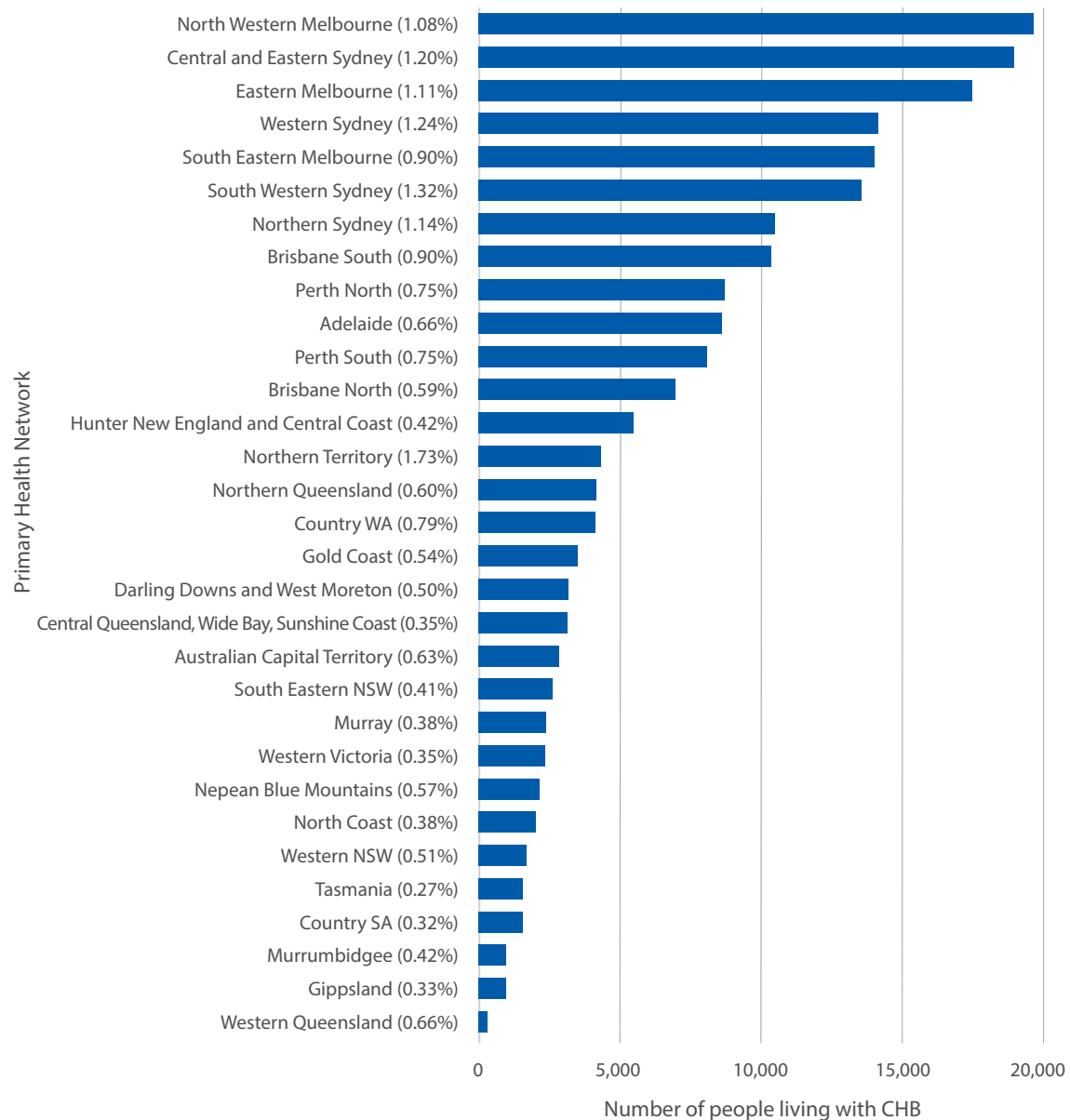


CHB, chronic hepatitis B. PHN, Primary Health Network.

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

[\(see data for this figure\)](#)

Figure A.3: Estimated number of people living with CHB by PHN (prevalence in brackets), 2021



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](#).

[\(see data for this figure\)](#)



## PREVALENCE ACROSS REMOTENESS AREAS

CHB prevalence in 2021 was highest in very remote regions (2.34%), where it was triple the national average. The high CHB prevalence in very remote regions relates to the greater prevalence in the Aboriginal and Torres Strait Islander population, as they make up the majority of residents in very remote regions. This is the reason for the high prevalence observed in the **Northern Territory** PHN, which has a high proportion of residents in very remote regions (Figure A.4).

**Table A.4: Estimated prevalence of CHB by remoteness area, 2021**

| Remoteness area  | Total population  | People living with CHB | CHB prevalence (%) |
|------------------|-------------------|------------------------|--------------------|
| Major cities     | 18,942,792        | 168,005                | 0.89%              |
| Inner regional   | 4,552,037         | 16,464                 | 0.36%              |
| Outer regional   | 190,1818          | 10,024                 | 0.53%              |
| Remote           | 231,744           | 2,997                  | 1.29%              |
| Very remote      | 123,708           | 2,895                  | 2.34%              |
| <b>AUSTRALIA</b> | <b>25,766,605</b> | <b>200,385</b>         | <b>0.78%</b>       |

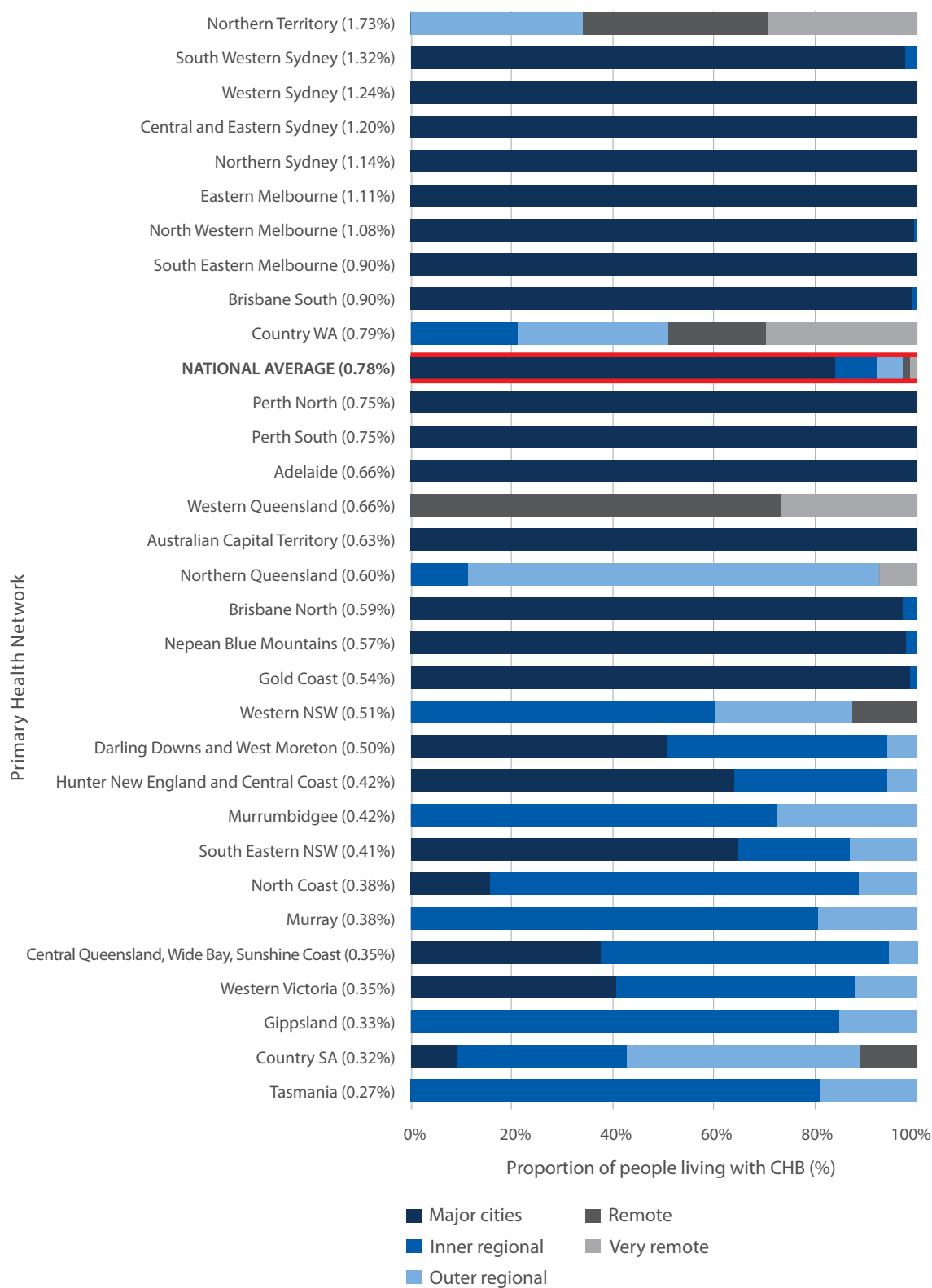
ABS, Australian Bureau of Statistics. CHB, chronic hepatitis B.

Data source: CHB prevalence estimates based on mathematical modelling incorporating population-specific prevalence and ABS population data. Remoteness based on designations by the ABS.<sup>8</sup>

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 remote regions (1.29%, Table A.4) and major cities (0.89%). These prevalence variations reflect the variation in the proportion of the population which belong to the key priority populations for CHB (people born overseas in endemic regions, and Aboriginal and Torres Strait Islander people). In PHNs where people living with CHB are predominantly born overseas, the vast majority 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 PHNs with greater populations in remote regions. Prevalence according to remoteness and state and territory specific to Aboriginal and Torres Strait Islander people is provided in the [Mapping Report Supplement](#).

Figure A.4: Proportion of people living with CHB according to remoteness area, by PHN, ordered by CHB prevalence (in brackets), 2021



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 based on designations by the ABS.<sup>8</sup>

[\(see data for this figure\)](#)

## DIAGNOSIS

Overall, in Australia it is estimated that 72.5% of people living with CHB in 2021 have ever been diagnosed, based on data on notified cases of CHB. It should be noted that this does not necessarily represent an effective diagnosis experience from the perspective of the person living with CHB, only notification to a state or territory health department following a positive diagnostic test; it merely represents the minimum requirement for potential engagement in care.

Since 2011, there have been only modest increases in the estimated proportion of people living with CHB who have been diagnosed.<sup>1</sup> The proportion diagnosed remains below the National Hepatitis B Strategy 2018–2022 target of 80% diagnosed by 2022.

The estimated proportion of people living with CHB who have been diagnosed varied greatly between jurisdictions (Table A.5), with NSW (77.6%), the ACT (71.5%) and Qld (71.9%) having the highest proportion diagnosed as of 2021. Estimates for all other states and territories were below the national average of 72.5%, with higher levels seen in the NT (68.0%) and SA (64.0%), than in Vic. (63.5%), WA (56.7%) or Tas. (50.8%). Due to the large populations of NSW and Vic., these states were home to an estimated two-thirds of people living with CHB who had not yet been diagnosed.

It is anticipated that the estimated proportion diagnosed with CHB will be further refined in the next Mapping Report, as the effect of duplicate notifications between jurisdictions is enumerated by a national surveillance data linkage project currently under way. Until this new evidence on duplicate notifications is available, in the current Mapping Report the proportion of notifications which are duplicates due to multiple notification in different states and territories is estimated to be 8%.<sup>1</sup> This interim approximation is based on assessments of duplicate notifications from linkage studies conducted in NSW and Victoria which may not be nationally representative.

**Table A.5: Estimated proportion of people living with CHB who have been diagnosed, by state and territory, 2021**

| State/territory  | People living with CHB | Proportion who have been diagnosed (%) | Number who have been diagnosed | Number remaining undiagnosed |
|------------------|------------------------|--|--------------------------------|------------------------------|
| ACT              | 2,840                  | 71.5%                                  | 2,032                          | 808                          |
| NSW              | 72,058                 | 77.6%                                  | 55,907                         | 16,151                       |
| NT               | 4,325                  | 68.0%                                  | 2,941                          | 1,384                        |
| Qld              | 31,665                 | 71.9%                                  | 22,760                         | 8,905                        |
| SA               | 10,181                 | 64.0%                                  | 6,513                          | 3,668                        |
| Tas.             | 1,566                  | 50.8%                                  | 796                            | 770                          |
| Vic.             | 56,837                 | 63.5%                                  | 36,118                         | 20,719                       |
| WA               | 20,912                 | 56.7%                                  | 11,857                         | 9,055                        |
| <b>AUSTRALIA</b> | <b>200,385</b>         | <b>72.5%</b>                           | <b>145,281</b>                 | <b>55,104</b>                |

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.

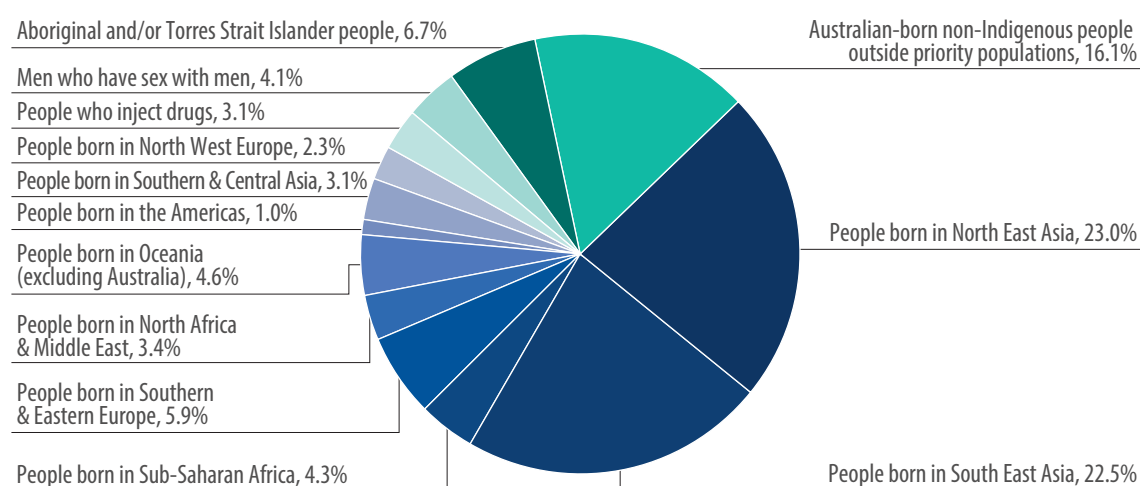
Totals may not add up due to inclusion of people without a state/territory of residence recorded in source data.

## PRIORITY POPULATIONS FOR CHB IN AUSTRALIA

Country of birth is a key predictor of the risk of CHB, and it is estimated that 70% of all people living with CHB in Australia in 2021 were born overseas. Regions of birth with the highest prevalence were North-East Asia (5.00% prevalence, representing 23.0% of the total with CHB) and South-East Asia (4.03% prevalence, 22.5% of the total) (Table A.6 and Figure A.5). A smaller proportion of people in Australia with CHB were born in Southern and Eastern Europe (5.9% of the total with CHB), Oceania (4.6%), and Sub-Saharan Africa (4.3%). Note that all data are based on residents counted in the Australian Census of Population and Housing, and include individuals regardless of visa status.

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 be subject to broader health care access disparities,<sup>9</sup> 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.

**Figure A.5: People living with CHB in Australia, by priority population,\* 2021**



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.

Aboriginal and Torres Strait Islander people were estimated to represent 6.7% of people living with CHB in Australia. A higher than average prevalence of CHB is also seen in men who have sex with men, and in people who inject drugs, who represented 4.1% and 3.1% of the total with CHB in Australia, respectively. The remaining 16.1% of people with CHB include 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),<sup>10</sup> via unsterile health care practices, transfusions, tattooing or piercing practices, or through sexual contact.

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 chronic infection is highest.<sup>11</sup> 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 C: Data sources and methodology](#).

**Table A.6: People living with CHB in Australia, by priority population,\* ordered from highest to lowest prevalence within each subgroup, 2021**

| Population group   | Total population  | People living with CHB | Prevalence (%) | Proportion of all people living with CHB (%) |
|--|-------------------|------------------------|----------------|--|
| <b>People born in Australia (total)</b>                            | <b>18,371,602</b> | <b>60,068</b>          | <b>0.33%</b>   | <b>30.0%</b>                                 |
| People who inject drugs  | 241,817           | 6,160                  | 2.55%          | 3.1%   |
| Men who have sex with men  | 364,478           | 8,149                  | 2.24%          | 4.1%   |
| Aboriginal and/or Torres Strait Islander people                    | 875,472           | 13,463                 | 1.54%          | 6.7%   |
| Australian-born non-Indigenous people outside priority populations | 16,889,834        | 32,297                 | 0.19%          | 16.1%  |
| <b>People born overseas (total)</b>                                | <b>7,382,142</b>  | <b>140,317</b>         | <b>1.90%</b>   | <b>70.0%</b>                                 |
| People born in North East Asia                                     | 919,639           | 45,994                 | 5.00%          | 23.0%  |
| People born in South East Asia                                     | 1,120,424         | 45,125                 | 4.03%          | 22.5%  |
| People born in Sub-Saharan Africa                                  | 375,398           | 8,541                  | 2.28%          | 4.3%   |
| People born in Southern and Eastern Europe                         | 662,455           | 11,752                 | 1.77%          | 5.9%   |
| People born in North Africa and the Middle East                    | 468,492           | 6,820                  | 1.46%          | 3.4%   |
| People born in Oceania (excluding Australia)                       | 728,616           | 9,200                  | 1.26%          | 4.6%   |
| People born in the Americas  | 339,555           | 2,083                  | 0.61%          | 1.0%   |
| People born in Southern and Central Asia                           | 1,235,119         | 6,247                  | 0.51%          | 3.1%   |
| People born in North West Europe                                   | 1,532,443         | 4,555                  | 0.30%          | 2.3%   |
| <b>AUSTRALIA</b>   | <b>25,766,605</b> | <b>200,385</b>         | <b>0.78%</b>   | <b>–</b>                                     |

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

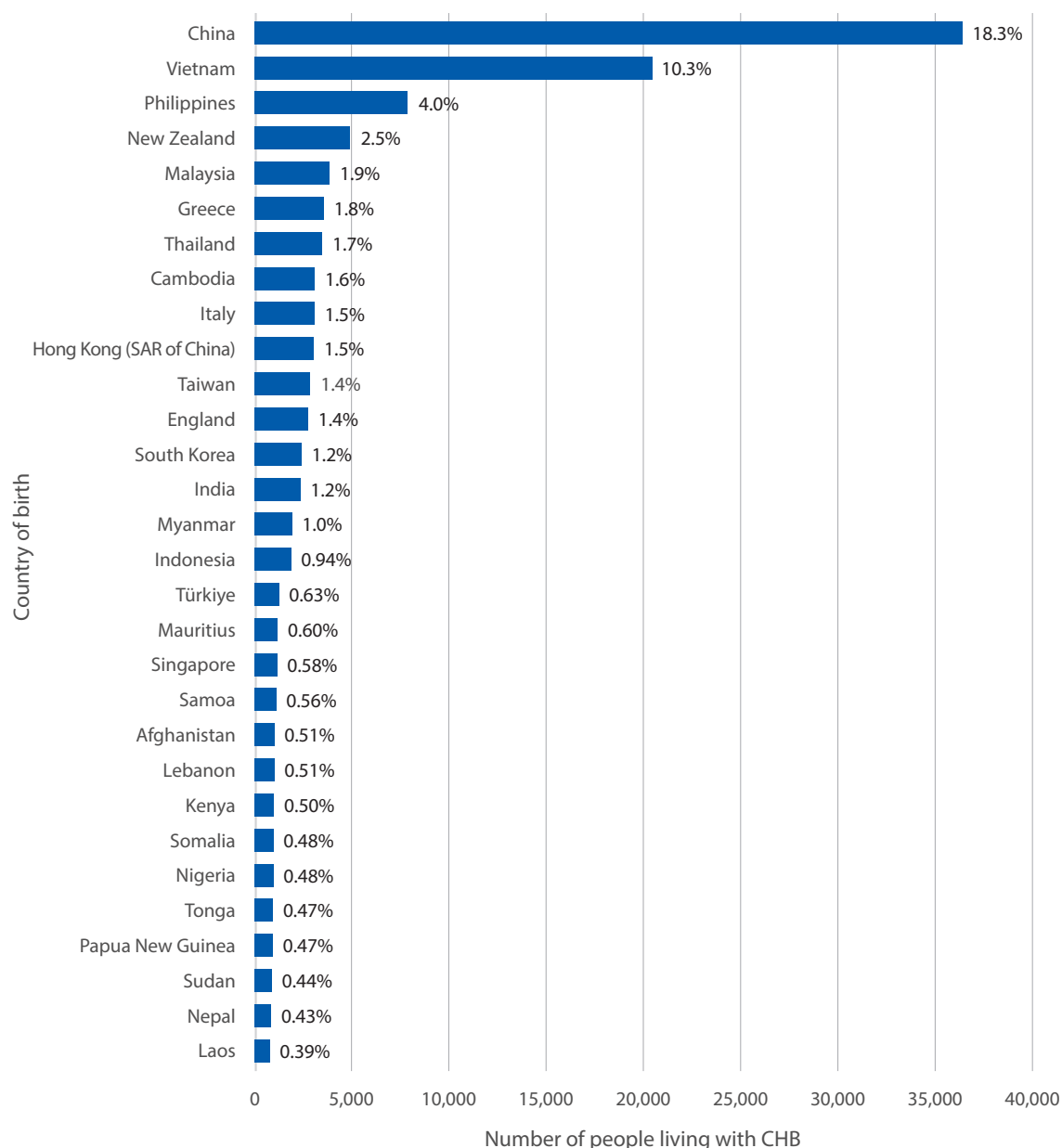
Data source: CHB prevalence estimates based on mathematical modelling incorporating population-specific prevalence and ABS population data.

\*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.

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 (18.3% of all people with CHB) and Vietnam (10.3%) (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 data 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 high prevalence, such as Māori). Conversely, many countries in Sub-Saharan Africa and the Pacific have very high prevalence but lower numbers of people living in Australia. For more extensive data regarding prevalence of CHB by country of birth, see the [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), 2021



ABS, Australian Bureau of Statistics. CHB, chronic hepatitis. SAR, Special Administrative Region.

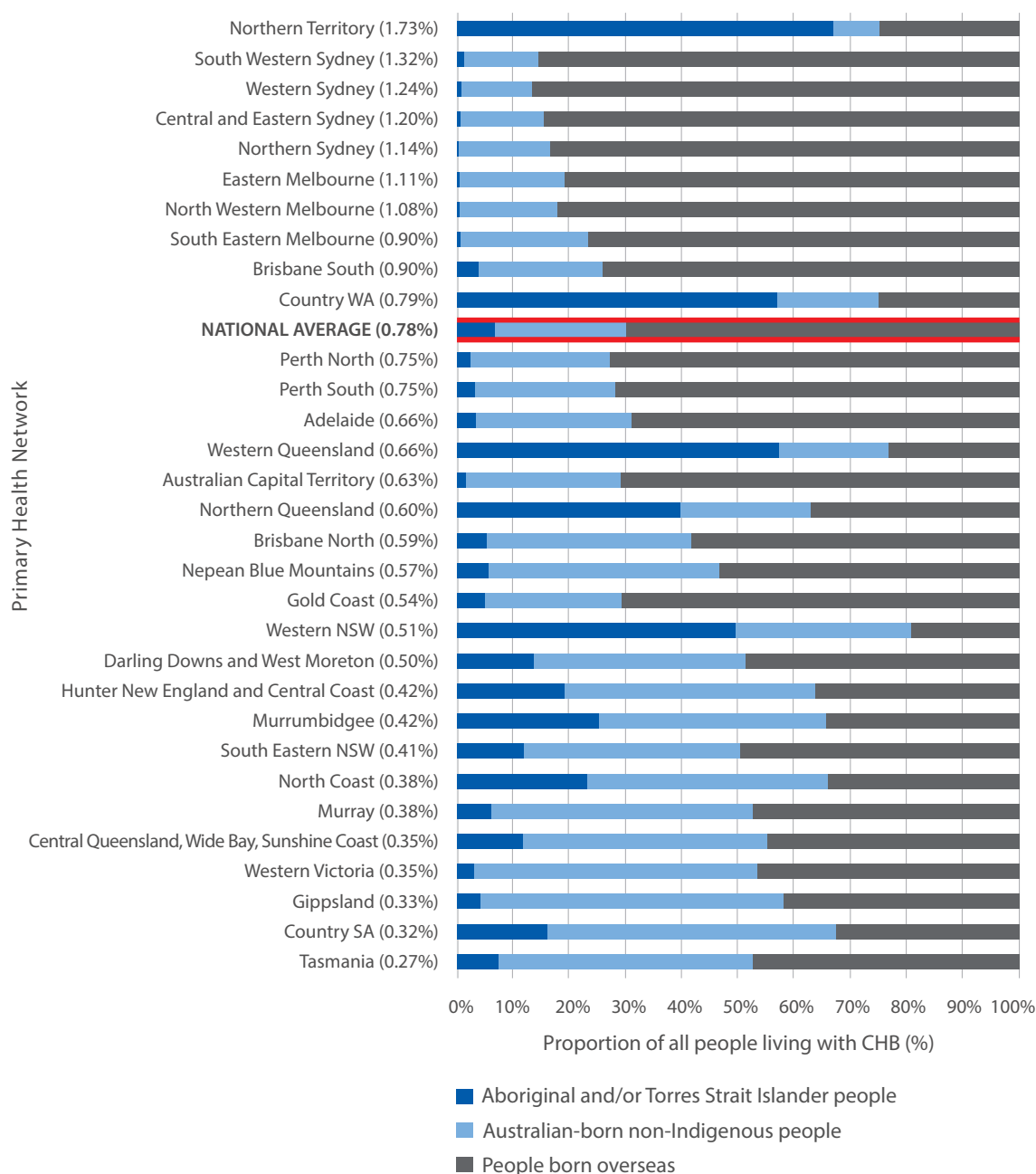
B. % indicates the proportion of all people with CHB born in this country.

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.<sup>12,13</sup>

[\(see data for this figure\)](#)

In most PHNs, people born overseas were the most common group living with CHB, reflecting the overall national distribution. However, in five PHNs, Aboriginal and Torres Strait Islander people made up the largest group of people living with CHB: **Northern Territory, Western Queensland, Country WA, Northern Queensland**, and **Western NSW** (Figure A.7). 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. 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.

Figure A.7: Proportion of people living with CHB according to priority population, by PHN, ordered by CHB prevalence (in brackets), 2021



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.

[\(see data for this figure\)](#)

This variation is consequently reflected in the distribution of people living with CHB by remoteness area by PHN, as the distribution of priority populations varies according to area. In PHNs where Aboriginal and Torres Strait Islander people represent the largest group living with CHB, the residential location is predominantly rural or remote (Figure A.4). Conversely, in PHNs where people living with CHB are predominantly born overseas, the vast majority live in major cities. 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 populations.

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 (for more detail see the [Mapping Report Supplement](#)). These factors lead to variation by PHN in who are the most common groups living with CHB.

China was the most common overseas country of birth in the majority of PHNs (Table A.7), reflecting the national pattern (Figure A.6). However, for some PHNs, the most common overseas country of birth was Vietnam or Philippines (Table A.7). This variation from the national average was most pronounced in South Western Sydney, where 35.1% of people with CHB were born in Vietnam, compared to 10.3% 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 several PHNs.

The most common three overseas countries of birth for people living with CHB in each PHN are presented in Table A.7. More detailed ranking information is available on request, and data regarding prevalence by country is provided in the [Mapping Report Supplement](#). Consideration of predominant overseas countries of birth in a given region can assist to develop culturally and linguistically diverse communities, through tailoring of responses according to language and cultural context.

**Table A.7: 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, 2021**

| Primary Health Network   | Most common overseas country of birth for people with CHB in this PHN | Proportion of the total with CHB in this 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 this 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 this PHN who were born in this country (%) |
|--------------------------|---|--|---|--|---|--|
| Northern Territory       | Philippines   | 4.7%   | China   | 2.6%   | Vietnam   | 2.5%   |
| South Western Sydney     | Vietnam   | 35.1%  | China   | 9.1%   | Cambodia  | 6.5%   |
| Western Sydney           | China   | 31.8%  | Vietnam   | 8.3%   | Philippines   | 7.3%   |
| Central & Eastern Sydney | China   | 35.3%  | Vietnam   | 7.9%   | Greece  | 4.0%   |
| Northern Sydney          | China   | 43.4%  | Hong Kong (SAR of China)  | 5.4%   | South Korea   | 3.8%   |
| Eastern Melbourne        | China   | 37.3%  | Vietnam   | 7.7%   | Malaysia  | 4.1%   |
| North Western Melbourne  | Vietnam   | 22.3%  | China   | 11.9%  | Philippines   | 4.4%   |
| South Eastern Melbourne  | China   | 15.4%  | Vietnam   | 12.6%  | Cambodia  | 7.3%   |
| Brisbane South           | China   | 17.1%  | Vietnam   | 11.5%  | Taiwan  | 6.3%   |
| Country WA               | Philippines   | 4.4%   | NZ  | 3.6%   | England   | 2.1%   |
| Perth North              | Vietnam   | 13.0%  | China   | 8.7%   | Philippines   | 3.9%   |

*Continued next page*



| Primary Health Network                | Most common overseas country of birth for people with CHB in this PHN | Proportion of the total with CHB in this 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 this 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 this PHN who were born in this country (%) |
|---------------------------------------|---|--|---|--|---|--|
| Perth South                           | China   | 13.5%  | Philippines   | 6.5%   | Malaysia  | 6.0%   |
| Adelaide                              | China   | 14.5%  | Vietnam   | 12.9%  | Philippines   | 3.3%   |
| Western Queensland                    | #   | #  | #   | #  | #   | #  |
| Australian Capital Territory          | China   | 20.0%  | Vietnam   | 8.7%   | Philippines   | 3.8%   |
| Northern Queensland                   | Philippines   | 5.0%   | NZ  | 3.3%   | PNG   | 3.1%   |
| Brisbane North                        | China   | 11.2%  | NZ  | 5.8%   | Philippines   | 5.0%   |
| Nepean Blue Mountains                 | Philippines   | 8.2%   | China   | 7.5%   | NZ  | 2.9%   |
| Gold Coast                            | China   | 16.2%  | NZ  | 12.4%  | Philippines   | 4.3%   |
| Western NSW                           | #   | #  | #   | #  | #   | #  |
| Darling Downs and West Moreton        | NZ  | 5.7%   | Philippines   | 5.2%   | Vietnam   | 4.4%   |
| Hunter New England and Central Coast  | China   | 6.7%   | Philippines   | 3.8%   | Vietnam   | 2.4%   |
| Murrumbidgee                          | #   | #  | #   | #  | #   | #  |
| South Eastern NSW                     | China   | 7.2%   | Vietnam   | 3.9%   | Philippines   | 3.8%   |
| North Coast                           | #   | #  | #   | #  | #   | #  |
| Murray                                | Philippines   | 4.6%   | China   | 4.1%   | Vietnam   | 4.0%   |
| Central Qld, Wide Bay, Sunshine Coast | NZ  | 7.8%   | Philippines   | 5.3%   | China   | 3.7%   |
| Western Victoria                      | China   | 7.9%   | Philippines   | 4.6%   | Vietnam   | 3.1%   |
| Gippsland                             | #   | #  | #   | #  | #   | #  |
| Country SA                            | #   | #  | #   | #  | #   | #  |
| Tasmania                              | China   | 13.7%  | Vietnam   | 3.3%   | England   | 2.9%   |
| <b>NATIONAL AVERAGE</b>               | <b>China</b>  | <b>18.3%</b>   | <b>Vietnam</b>  | <b>10.3%</b>   | <b>Philippines</b>  | <b>4.0%</b>  |

ABS, Australian Bureau of Statistics. CHB, chronic hepatitis B. 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 born overseas was <1000.

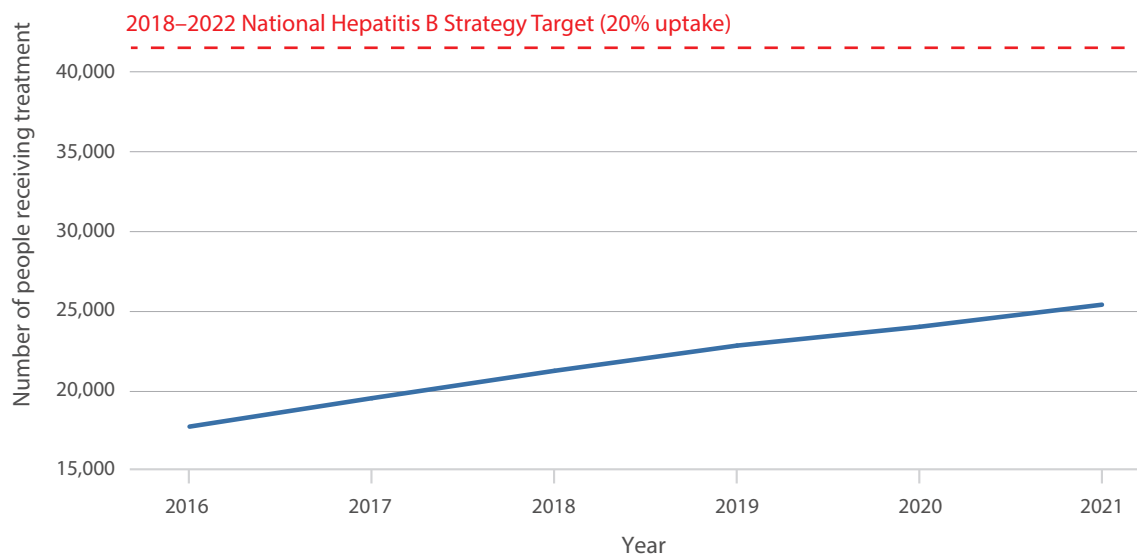
# TREATMENT

The overall number of people who received treatment for CHB in Australia in 2021 was 25,410, or 12.7% of the total number living with CHB. This is just over half the National Hepatitis B Strategy 2018–2022 target of 20% by 2022.

## TREATMENT TRENDS OVER TIME

The number of people who received CHB treatment in a given year has increased over time, from 21,237 in 2018 to 25,410 in 2021. This represents a 19.6% increase overall; however, this is well below the 90% increase from 2018 which would have been required to meet the National Strategy 2018–2022 treatment uptake target of 20% by 2022. This treatment trend relative to the National Strategy target is presented in Figure A.8. The rate of increase in the number of people receiving treatment has been slowing over time, from an 8.9% increase between 2018 and 2019 to a 5.8% increase between 2020 and 2021.

**Figure A.8: Number of people receiving treatment for CHB, 2016–2021, compared to National Strategy 2018–2022 target level**



CHB, chronic hepatitis B.

Data source: Treatment data sourced from Medicare statistics.

[\(see data for this figure\)](#)

The changes in this trend have been driven by reduced new initiations in treatment, as shown in Figure A.9, below. New initiations increased by 13.9% between 2016 and 2018, but only by 0.5% between 2019 and 2021. New initiations did reduce in 2020, plausibly in response to reduced health care access during the widespread social disruption caused by the emerging COVID-19 pandemic, but they had recovered to the 2019 baseline by 2021.

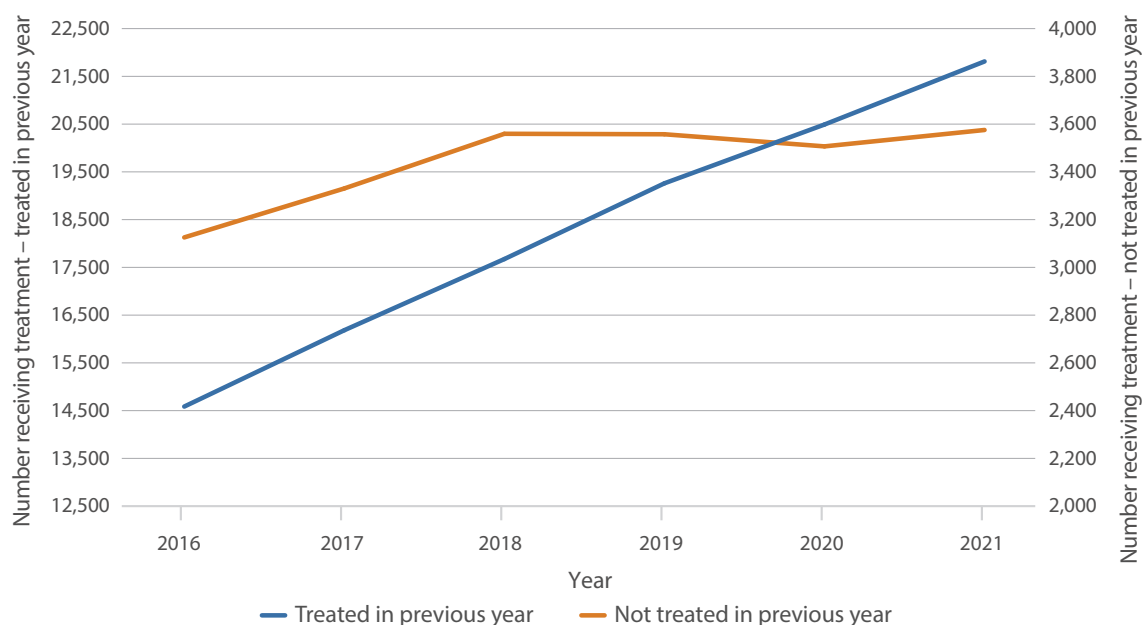
This is in line with findings regarding viral-load testing trends, which have reduced since 2019 (see [Monitoring and care trends over time](#)), as a viral load test is an essential requirement for workup of a newly diagnosed person prior to initiation of antiviral treatment.

The relative treatment uptake trends over time by [state and territory](#), by [PHN](#) and [SA3](#), and by factors such as [provider type](#) and [demographics](#), are discussed in specific sections below.

As discussed above, the number of people estimated to be living with CHB reduced in 2020 and 2021, due to the effects on migration of international border closures due to COVID-19. Border closures may also have had an impact on the number of new treatment initiations, due to reduced numbers

of diagnoses in new migrants. However, given treatment numbers need to significantly increase in order to prevent attributable morbidity and mortality, this remains a concerning trend.

**Figure A.9: Number of people receiving treatment for CHB, by year and past treatment history status, 2016–2021 (note separate axes)**



CHB, chronic hepatitis B.

Data source: Treatment data sourced from Medicare statistics.

[\(see data for this figure\)](#)

## TREATMENT ACROSS STATES AND TERRITORIES

Treatment uptake in 2021 varied greatly between jurisdictions, but no state or territory approached the national target of 20% (Table A.8). Treatment uptake was above the national average of 12.7% in the ACT (15.7%), NSW (15.1%) and Vic. (13.3%); and below the national average in SA (10.9%), the NT (10.8%), Qld (9.6%), Tas. (9.1%) and WA (8.5%).

**Table A.8: CHB treatment uptake, by state and territory, 2021**

| State/territory  | People living with CHB | People receiving treatment | Treatment uptake (%) |
|------------------|------------------------|----------------------------|----------------------|
| ACT              | 2,840                  | 445                        | 15.7%                |
| NSW              | 72,058                 | 10,884                     | 15.1%                |
| NT               | 4,325                  | 469                        | 10.8%                |
| Qld              | 31,665                 | 3,027                      | 9.6%                 |
| SA               | 10,181                 | 1,113                      | 10.9%                |
| Tas.             | 1,566                  | 142                        | 9.1%                 |
| Vic.             | 56,837                 | 7,557                      | 13.3%                |
| WA               | 20,912                 | 1,769                      | 8.5%                 |
| <b>AUSTRALIA</b> | <b>200,385</b>         | <b>25,410</b>              | <b>12.7%</b>         |

Continued next page

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 2020 and 2021 in all states and territories (Table A.9). The slowing trend in treatment increases over time seen at the national level was seen in all states and territories except for Tas. (Table A.9).

Table A.9: Number of people receiving treatment for CHB, by state and territory, 2019–2021

| State/territory  | People on treatment in 2019 | People on treatment in 2020 | People on treatment in 2021 |
|------------------|-----------------------------|-----------------------------|-----------------------------|
| ACT              | 373                         | 410                         | 445                         |
| NSW              | 10,115                      | 10,362                      | 10,884                      |
| NT               | 369                         | 419                         | 469                         |
| Qld              | 2,640                       | 2,827                       | 3,027                       |
| SA               | 977                         | 1,021                       | 1,113                       |
| Tas.             | 102                         | 130                         | 142                         |
| Vic.             | 6,698                       | 7,197                       | 7,557                       |
| WA               | 1,549                       | 1,638                       | 1,769                       |
| <b>AUSTRALIA</b> | <b>22,828</b>               | <b>24,008</b>               | <b>25,410</b>               |

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.

## TREATMENT ACROSS PRIMARY HEALTH NETWORKS

Treatment uptake was highest in PHNs in Sydney, Melbourne, and Brisbane, as well as the **Australian Capital Territory** PHN (Figure A.10). For the first time in 2021, a PHN is estimated to have reached the 2022 National Strategy treatment uptake target of 20% (**South Western Sydney**, 20.4%). PHNs where uptake was lowest were generally located in the most rural and remote regions of Australia, reflecting the challenges in service delivery to people living with CHB in these regions. However, variation within PHNs can be substantial, and is explored in each state and territory in detail in [Section A2](#).

## TREATMENT TRENDS OVER TIME BY PRIMARY HEALTH NETWORK

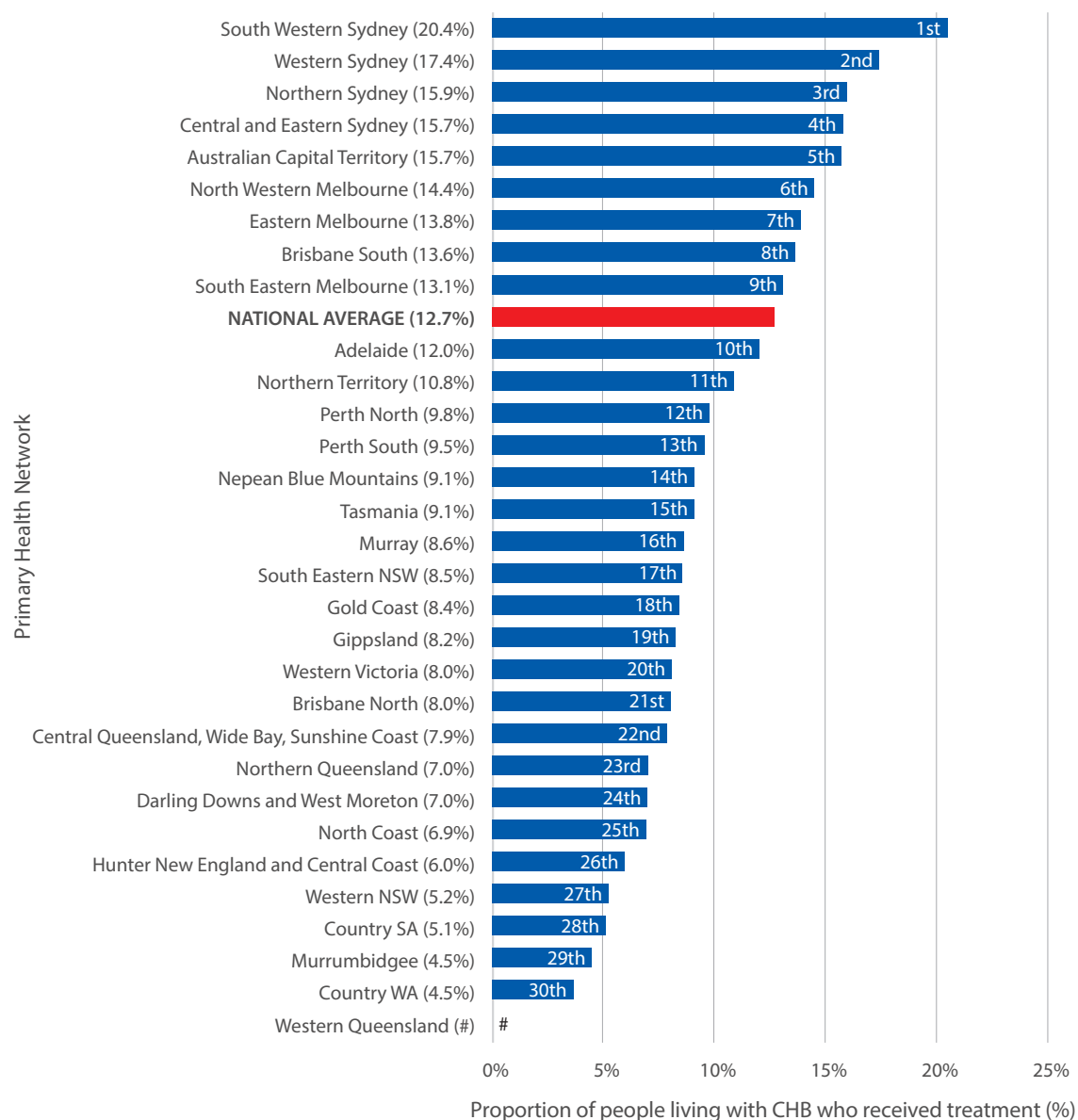
Due partly to the impact of the COVID-19 pandemic and related disruptions to regular health service delivery, treatment trends during 2020 and 2021 were highly variable between PHNs. In all PHNs (except in **Murrumbidgee**) the total number of people receiving treatment increased over this time period, reflecting the national trend; however, the magnitude of the increase differed widely according to PHN.

The proportional increase in the number of people receiving treatment was greater than the national average in a number of predominantly non-metropolitan PHNs, including **Northern Territory**; **Western Victoria**; **Central Queensland**, **Wide Bay**, **Sunshine Coast**; **Gippsland**; and **Country WA**. Other PHNs with a greater than average increase included **Perth South**, **Brisbane South**, **Brisbane North**, **Australian Capital Territory**, **South Eastern Melbourne** and **Tasmania**.

PHNs where the proportional increase in the number treated was smaller than the national average included **Central and Eastern Sydney**, **Perth North**, **Nepean Blue Mountains**, **Murray** and **Gold Coast** PHNs.

Treatment uptake estimation has also been impacted by changes to denominator estimates discussed above; this is discussed fully in the [Mapping Report Supplement](#).

**Figure A.10: CHB treatment uptake (bars and in brackets) and ranking (label) by PHN, 2021**



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.

# Data suppressed where number of people receiving treatment was <6.

[\(see data for this figure\)](#)

## PROJECTED PROGRESS TOWARDS TREATMENT TARGETS ACROSS PRIMARY HEALTH NETWORKS

For the full reporting of Australia's current status and projected progress towards targets for diagnosis, treatment, care, and mortality reduction, see the [National Surveillance for Hepatitis B Indicators Annual Report 2021](#).<sup>1</sup>

Based on current trends in treatment uptake and in the number of people living with CHB, Australia is not on track to meet the National Strategy treatment uptake target of 20% by 2022. No state or territory is projected to reach the 20% treatment uptake target by 2022, and most are not predicted to reach it until at least 2030.

The only PHN expected to reach the 2022 treatment uptake target is **South Western Sydney**, which had already reached 20.4% uptake in 2021. If trends in treatment uptake and the number of people living with CHB remain stable, the three Sydney PHNs with the highest levels of treatment uptake in 2021 (**Western Sydney**, **Northern Sydney** and **South Western Sydney**) would be on track to reach 20% treatment uptake by 2025. However, this 20% target is considered to be an underestimate of the number of people who require treatment in Australia,<sup>1</sup> and may need to be higher to prevent attributable adverse outcomes.

These projections assume that trends remain stable, but all relevant inputs are subject to significant uncertainty, for example in future migration. However, they indicate that substantial increases are needed in nearly every PHN in order to meet National Strategy targets for treatment uptake, as current yearly increases are insufficient.

## TREATMENT ACROSS REMOTENESS AREAS

CHB treatment uptake in 2021 was highest in major cities (13.8%) and in very remote areas (8.6%) (Table A.10). This reflects trends by PHN (Figure A.10), given that PHNs with higher treatment uptake are those in capital cities (particularly Melbourne and Sydney) as well as the **Northern Territory**, which has a high very remote population (Figure A.4). The uptake of monitoring and care across remoteness areas is discussed in the section [Care across remoteness areas](#) below.

**Table A.10: CHB treatment uptake by remoteness area, 2021**

| Remoteness area  | Total population  | People living with CHB | People on treatment | Treatment uptake (%) |
|------------------|-------------------|------------------------|---------------------|----------------------|
| Major cities     | 18,942,792        | 168,005                | 23,194              | 13.8%                |
| Inner regional   | 4,552,037         | 16,464                 | 1,086               | 6.6%                 |
| Outer regional   | 1,901,818         | 10,024                 | 733                 | 7.3%                 |
| Remote           | 231,744           | 2,997                  | 143                 | 4.8%                 |
| Very remote      | 123,708           | 2,895                  | 250                 | 8.6%                 |
| <b>AUSTRALIA</b> | <b>25,766,605</b> | <b>200,385</b>         | <b>25,410</b>       | <b>12.7%</b>         |

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

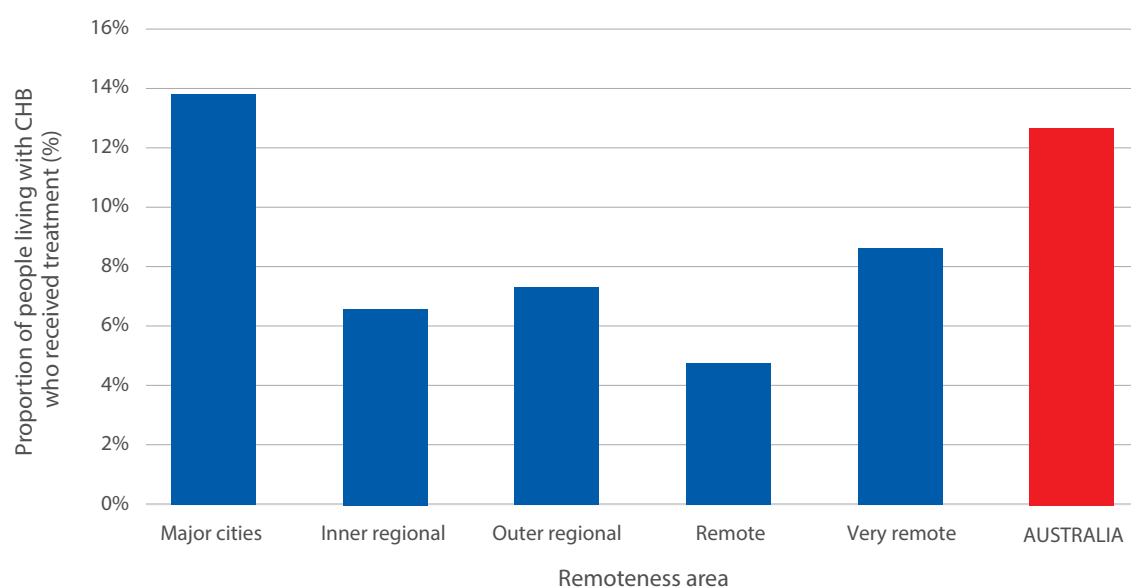
Data source: CHB prevalence estimates based on mathematical modelling incorporating population-specific prevalence and ABS population data. Treatment data sourced from Medicare statistics. Remoteness category based on designations by the ABS.<sup>8</sup>

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 more rapidly over time in areas outside of major cities, most prominently in very remote areas, where there was a 32.2% increase between 2019 and 2021, compared to the national average increase of 11.3%. This has resulted in a reduced disparity in treatment uptake between rural or remote and metropolitan areas in 2021 compared to previous years.

Figure A.11: CHB treatment uptake by remoteness area, 2021



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.<sup>8</sup>

[\(see data for this figure\)](#)

## TREATMENT ACROSS STATISTICAL AREA 3 REGIONS

Due to the relatively small population size of Statistical Area 3s (SA3s) (averaging around 70,000 residents), there were large variations in treatment uptake observed, and some SA3s had high levels of uptake. Uptake variation and trends by SA3 are discussed in detail in relation to the relevant state or territory in [Section A2](#). Of the 284 SA3s with sufficient data available for reliable reporting (see [Table C.2](#)), 13 had treatment uptake that met or exceeded the 20% National Strategy target for 2022.

The highest uptake was in [East Arnhem](#), in the [Northern Territory](#) PHN, the only very remote SA3 to reach the 20% target. Reflecting its high overall uptake, three SA3s in [South Western Sydney](#) PHN reached the target ([Fairfield](#), 27.6% uptake; [Bringelly – Green Valley](#), 20.2%; and [Bankstown](#), 20.0%), as did three in [Western Sydney](#) PHN ([Carlingford](#), 22.4%; [Auburn](#), 21.6%; and [Merrylands – Guildford](#), 21.2%). One SA3 reached the target in each of [Northern Sydney](#) ([Pennant Hills – Epping](#), 20.3%) and [Central and Eastern Sydney](#) PHNs ([Hurstville](#), 23.4%). In Victoria, two SA3s reached the target – [Brimbank](#) in [North Western Melbourne](#) PHN (22.3%) and [Dandenong](#) in [South Eastern Melbourne](#) PHN (21.9%). The target was also reached in the SA3s of [Gunghalin](#) in the [Australian Capital Territory](#) PHN (22.9% uptake) and [Forest Lake – Oxley](#) in [Brisbane South](#) PHN (20.7%).

Although projections are more unreliable in regions with smaller populations, a further nine SA3s had uptake levels between 17% and 19% in 2021, and could be on track to meet the 2022 target of 20% if uptake levels are maintained. Further exploration of SA3-specific data, including rankings across Australia for CHB treatment and care uptake, is available in the [online portal](#).

## TREATMENT PROVIDERS

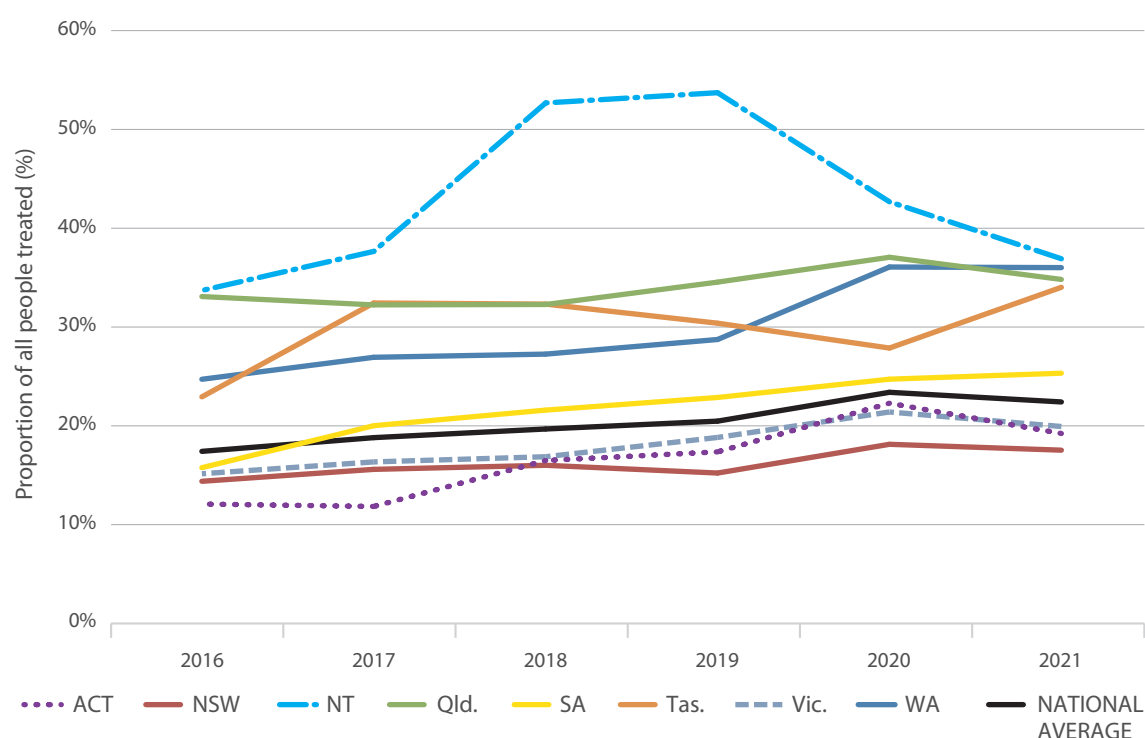
In 2021, a total of 5,657 people (22.2% of people that received CHB treatment) had at least one of their prescriptions prescribed by a GP. This included 2,120 people who had all their prescriptions provided by a GP (8.3% of people treated), while the remainder (3,537 people, 13.9% of people treated) were prescribed prescriptions by both a GP and a specialist physician and/or other provider. These categories are based on the derived classifications used by Medicare, which are generated using a practitioner's recent service history. Providers in the 'other' category can include temporary resident doctors, locum relief doctors, nurse practitioners, and others not able to be classified as either GP or specialist. See [Section C: Data sources and methodology](#) for more details on provider classifications.

The proportion of people who were prescribed treatment for CHB by a GP has increased gradually over time, from 17.3% in 2016 to 23.2% in 2020, and in 2021 the proportion declined slightly to 22.2%.

GP prescribing varied considerably according to state and territory; however, all states have seen some increase since 2016 (Figure A.12). The proportion of people prescribed by a GP was highest in states and territories with a higher rural and remote population (NT, 36.7%; WA, 35.8%; and Qld, 34.6%). These findings are consistent with the service access limitations in these jurisdictions, where remote residence is common for people living with CHB and specialist services may not be available.

There was also a continued increase observed in the proportion of SA3s in which at least some residents received GP prescribing during this period, reaching 95.8% in 2021.

**Figure A.12: Proportion of people with a GP involved<sup>^</sup> in CHB treatment prescribing, 2016–2021**



CHB, chronic hepatitis B. GP, general practitioner.

Data source: Treatment data sourced from Medicare statistics. Provider type is derived by Medicare using the clinician's service history.

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

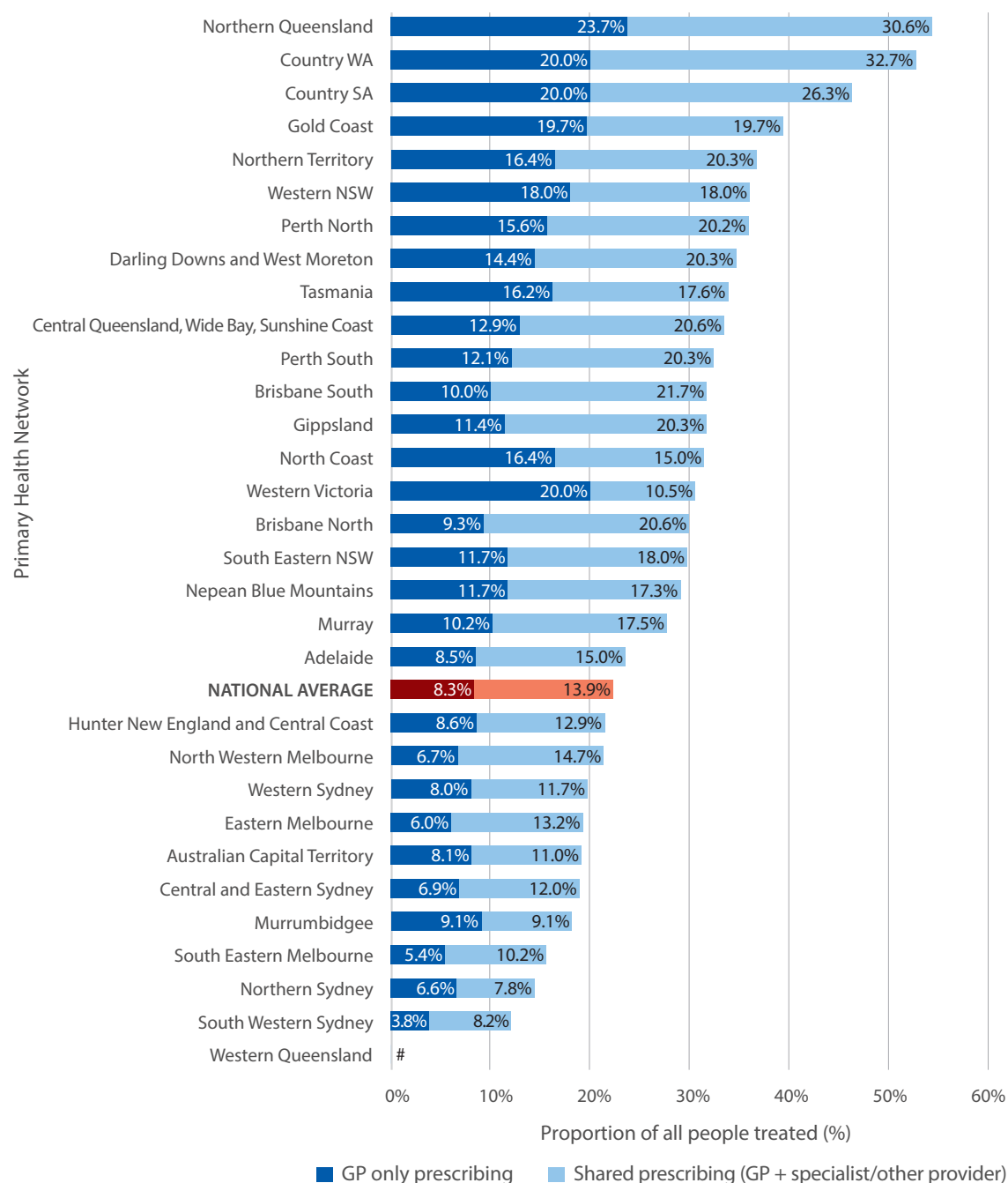
[\(see data for this figure\)](#)

When assessed by PHN, the proportion of people treated by a GP (either exclusively or through shared prescribing) was highest in **Northern Queensland** (54.3%), **Country WA** (52.7%), **Country SA** (46.3%), **Gold Coast** (39.4%) and **Northern Territory** (36.7%) PHNs. Figure A.13 shows the ranking by



PHN, including the proportion of people prescribed exclusively by a GP and those who were prescribed by both a GP and another provider.

**Figure A.13: Proportion of people with a GP involved<sup>^</sup> in CHB treatment prescribing, by PHN, 2021**



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

Data source: Treatment data sourced from Medicare statistics. Provider type is derived by Medicare using the clinician's service history. 'Other provider' includes nurse practitioner, temporary resident doctor, locum relief doctor and others not able to be classified.

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

# Data suppressed as number receiving treatment was <6.

[\(see data for this figure\)](#)

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.

## TREATMENT DEMOGRAPHICS

People who received CHB treatment in 2021 were most commonly male (59.3%); this proportion has decreased slightly since 2016, when males made up 63.6% of the total number treated (see [Section C – Ascertainment of age and sex in Medicare](#)).

The use of CHB treatment during pregnancy to assist in the prevention of mother-to-child transmission is included in overall treatment uptake figures, if this is provided through Medicare. Although pregnancy-specific codes were added to the Pharmaceutical Benefits Scheme (PBS) in 2020, analysis has indicated they are not specific to pregnancy and are being used for ongoing treatment. Therefore, they cannot be used to identify treatment uptake for the prevention of mother-to-child transmission, and other methods will be explored for assessing this in future reports.

People receiving treatment were most commonly in the  $\geq 60$  year age group (34.7%) or the 50–59 year age group (24.8%). This is concordant with modelled estimates of the proportion eligible for treatment, of which 29.5% are estimated to be aged  $\geq 60$  years and 19.4% aged 50–59 years.

The age distribution of those receiving treatment has shifted over time. When assessing new initiations in treatment, there was a greater increase in new treatment courses begun in people aged  $\geq 60$  years (a 30.2% increase between 2017 and 2021 compared to the overall trend of a 7.2% increase). Concurrently, the proportion of people starting treatment who were aged  $< 30$  years decreased (a 31.2% decline between 2017 and 2021). This also reflects a declining trend in the modelled number of people estimated to be eligible for treatment aged  $< 30$  years. This is 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 chronic hepatitis B in these age groups.

## TREATMENT TYPES

The majority of people who received CHB treatment in 2021 were prescribed first line monotherapy (94.3% of the total treated), either entecavir (63.0% of the total treated) or tenofovir (31.3%). The proportion of people treated with lamivudine and/or adefovir has continued to decline over time, from 9.1% in 2016 to 4.2% in 2021. The number of people receiving interferon treatment remained very low, declining further to  $< 0.03\%$  of the total treated ( $< 10$  people) in 2021.

## MONITORING AND CARE

In 2021 in Australia, there were 26,711 people who were not on treatment for CHB but received a viral load test (defined as receiving monitoring). When combined with the number who were on treatment, this meant that 52,121 people, or 26.0% of all those estimated to be living with CHB in Australia, were provided with care in 2021. Clinical guidelines recommend that all people living with CHB should be engaged in regular care, and viral load testing is an essential component in the laboratory assessment of CHB, allowing for identification of the need for treatment.<sup>14,15</sup> The National Hepatitis B Strategy 2018–2022 sets a target of 50% in care, which Australia will not meet. Further, the estimate of care engagement is an optimistic estimate, given it represents only treatment or viral load testing provided in 2021, and not necessarily ongoing care. Further metrics of care are explored in the [Ongoing engagement in monitoring](#) section below.

## MONITORING AND CARE TRENDS OVER TIME

The number of people who received monitoring for CHB (viral load testing while not receiving treatment) had been increasing consistently since 2010, but began to decline from 2018 onwards. The largest decline occurred between 2019 and 2020, from 29,064 to 26,813 (a 7.7% decrease). This level then remained relatively stable between 2020 and 2021, declining by 0.4% to 26,711 (Table A.12). Despite this reduction, care uptake remained stable between 2019 and 2021, because of increases in treatment uptake.

## CARE ACROSS STATES AND TERRITORIES

As the measure of care used includes treatment as a component, and the uptake of treatment and monitoring are generally correlated according to region, patterns of care uptake generally reflect those for treatment. Care uptake, like treatment uptake, was highest in 2020 in NSW (30.7%), the ACT (30.5%) and Vic. (29.5%) (Table A.11). Also reflecting treatment uptake, care uptake was below the national average of 26.0% in the NT (23.7%), Qld (20.5%), Tas. (19.2%), SA (18.4%) and WA (12.5%) (Table A.11).

**Table A.11: CHB treatment and care uptake, by state and territory, 2021**

| State/territory  | People living with CHB | People receiving treatment | Treatment uptake (%) | People receiving monitoring | Care uptake (treatment and monitoring) (%) | People not in care |
|------------------|------------------------|----------------------------|----------------------|-----------------------------|--|--------------------|
| ACT              | 2,840                  | 445                        | 15.7%                | 420                         | 30.5%                                      | 1,975              |
| NSW              | 72,058                 | 10,884                     | 15.1%                | 11,259                      | 30.7%                                      | 49,915             |
| NT               | 4,325                  | 469                        | 10.8%                | 556                         | 23.7%                                      | 3,300              |
| Qld              | 31,665                 | 3,027                      | 9.6%                 | 3,473                       | 20.5%                                      | 25,165             |
| SA*              | 10,181                 | 1,113                      | 10.9%                | 763                         | 18.4%                                      | 8,305              |
| Tas.             | 1,566                  | 142                        | 9.1%                 | 159                         | 19.2%                                      | 1,265              |
| Vic.             | 56,837                 | 7,557                      | 13.3%                | 9,232                       | 29.5%                                      | 40,048             |
| WA               | 20,912                 | 1,769                      | 8.5%                 | 840                         | 12.5%                                      | 18,303             |
| <b>AUSTRALIA</b> | <b>200,385</b>         | <b>25,410</b>              | <b>12.7%</b>         | <b>26,711</b>               | <b>26.0%</b>                               | <b>148,264</b>     |

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.

\* Data relating to SA may underestimate monitoring by at least 40% due to the provision of services outside of Medicare.

Estimation of the number of viral load tests and therefore care uptake uses Medicare data as the primary source; however, this can lead to underestimation as it is unable to include viral load testing services through funding streams outside Medicare, such as in public hospitals (if Medicare is not used for test reimbursement) or privately funded testing for Medicare-ineligible people. This has been found to be the case for a substantial proportion of all viral load tests conducted in SA, representing at least 40% of tests conducted in 2021 (personal communication, SA Health). As SA represents only 5% of all people living with CHB in Australia, this is unlikely to have notable impacts on national estimates of care uptake. However, if this underestimation is consistent for monitoring tests, care uptake in SA could be as high as 23.6%, increasing the care uptake ranking for SA from 7th to 5th among states and territories. Additional exploration of these data will be provided in the 2022 Mapping Report.

## MONITORING AND CARE TRENDS OVER TIME BY STATE AND TERRITORY

In most states and territories the number of people who received monitoring declined between 2019 and 2021, reflecting the national trend, after stable increases previously. Given treatment numbers have continued to increase in most states and territories, this only led to a decline in care uptake in the NT, where the decline in monitoring was particularly pronounced (a 26.7% decline between 2019 and 2021) (Table A.12). The majority of this decline occurred in 2020–2021 and may reflect the disruption to health services caused by the ongoing impact of the COVID-19 pandemic.

In Vic. and NSW, declines were observed between 2019 and 2020 followed by increased or stable numbers between 2020 and 2021 (Table A.12). However, the increases were not sufficient to offset the declines, leading to an overall reduction in the number of people receiving monitoring between 2019 and 2021. Because treatment numbers increased by a similar proportion, this did not result in a decrease in care uptake. However, it did mean that care uptake increased by only 2.4% in NSW and 4.5% in Vic., even further below the trajectory needed to reach care uptake targets.

The only jurisdictions where the number of people receiving monitoring increased between 2019 and 2021 were Tas. (a 19.5% increase) and WA (8.8%). These two states, however, continued to have the lowest levels of care uptake compared to other states and territories (Table A.12).

Due to the data limitations discussed above, trends could not be reliably estimated for SA. The decline observed between 2019 and 2021 is very likely the result of a shift in testing billing away from Medicare and not a true reduction in monitoring provision.

**Table A.12: Number of people receiving monitoring of CHB, by state and territory, 2019–2021**

| State            | People receiving monitoring in 2019 | People receiving monitoring in 2020 | People receiving monitoring in 2021 |
|------------------|-------------------------------------|-------------------------------------|-------------------------------------|
| ACT              | 415                                 | 427                                 | 420                                 |
| NSW              | 12,050                              | 11,289                              | 11,259                              |
| NT               | 759                                 | 727                                 | 556                                 |
| Qld              | 3656                                | 3,605                               | 3,473                               |
| SA*              | 1232                                | 934                                 | 763                                 |
| Tas.             | 144                                 | 135                                 | 159                                 |
| Vic.             | 10,029                              | 8,899                               | 9,232                               |
| WA               | 772                                 | 793                                 | 840                                 |
| <b>AUSTRALIA</b> | <b>29,064</b>                       | <b>26,813</b>                       | <b>26,711</b>                       |

CHB, chronic hepatitis B.

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

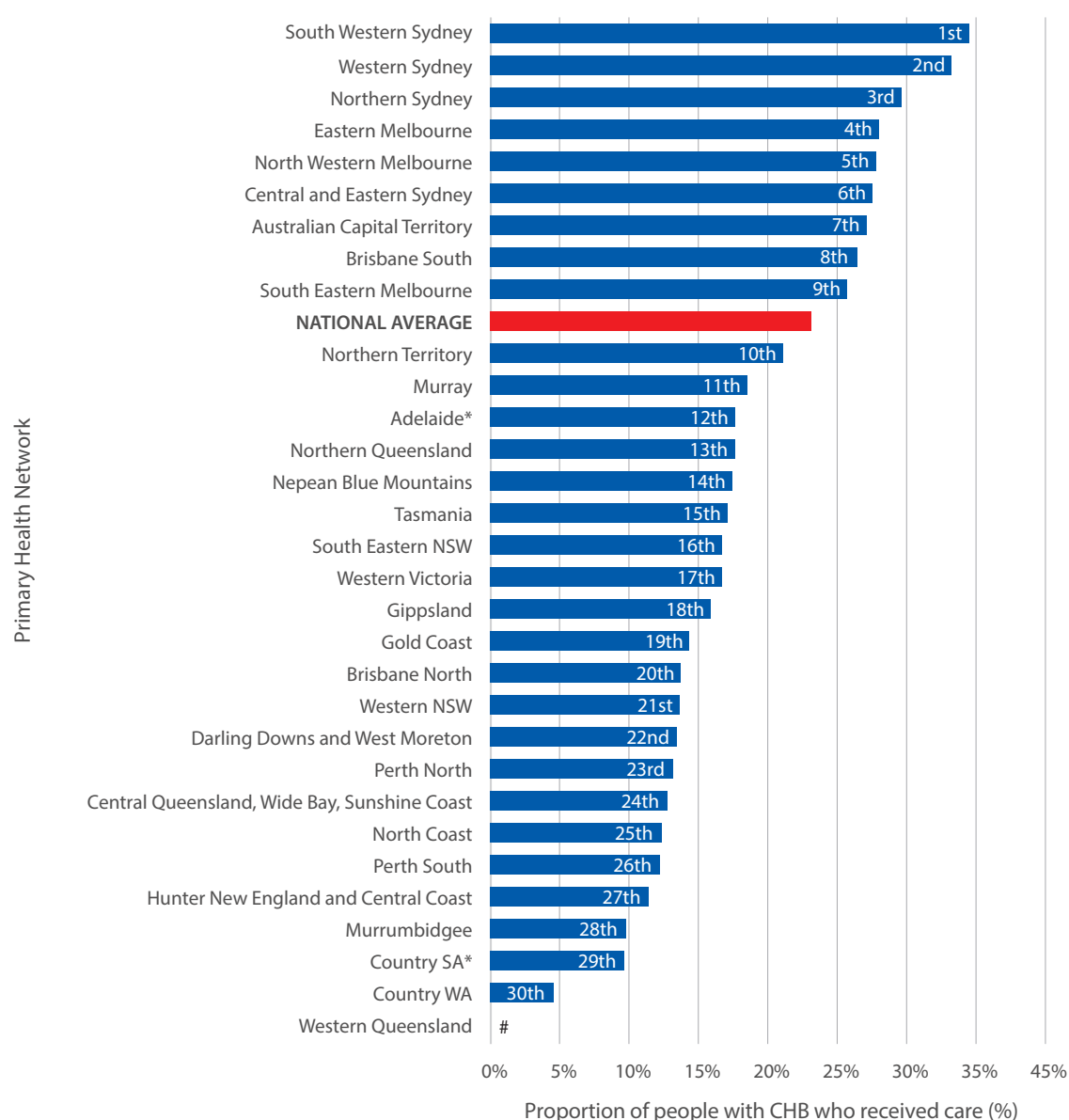
Totals may not add up due to inclusion of people without a state/territory of residence recorded in source data.

\* Data relating to SA may underestimate monitoring by at least 40% from 2020 onwards due to the provision of services outside of Medicare.

## CARE ACROSS PRIMARY HEALTH NETWORKS

Care uptake was highest in PHNs in Sydney, Melbourne, and Brisbane, and in **Australian Capital Territory** (Figure A.14). No PHN had yet reached the 2022 National Strategy Target of 50% care uptake by the end of 2021, and none were predicted to by the end of 2022. Care uptake by PHN generally reflects the ranking of PHNs according to treatment uptake, but in some areas there was a disparity between treatment uptake and care uptake ranking. This was most substantial for the **Northern Queensland** PHN (ranked 13th for care uptake but 23rd for treatment uptake), and the Murray PHN (ranked 11th for care uptake but 16th for treatment uptake). These differences are discussed further for each relevant state and territory in [Section A.2](#).

Figure A.14: CHB care uptake, ranked by PHN, 2021



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.

# Data suppressed where number receiving treatment or monitoring was <6.

\* Data relating to SA may underestimate monitoring by at least 40% from 2020 onwards due to the provision of services outside of Medicare.

[\(see data for this figure\)](#)

## MONITORING AND CARE TRENDS OVER TIME BY PRIMARY HEALTH NETWORK

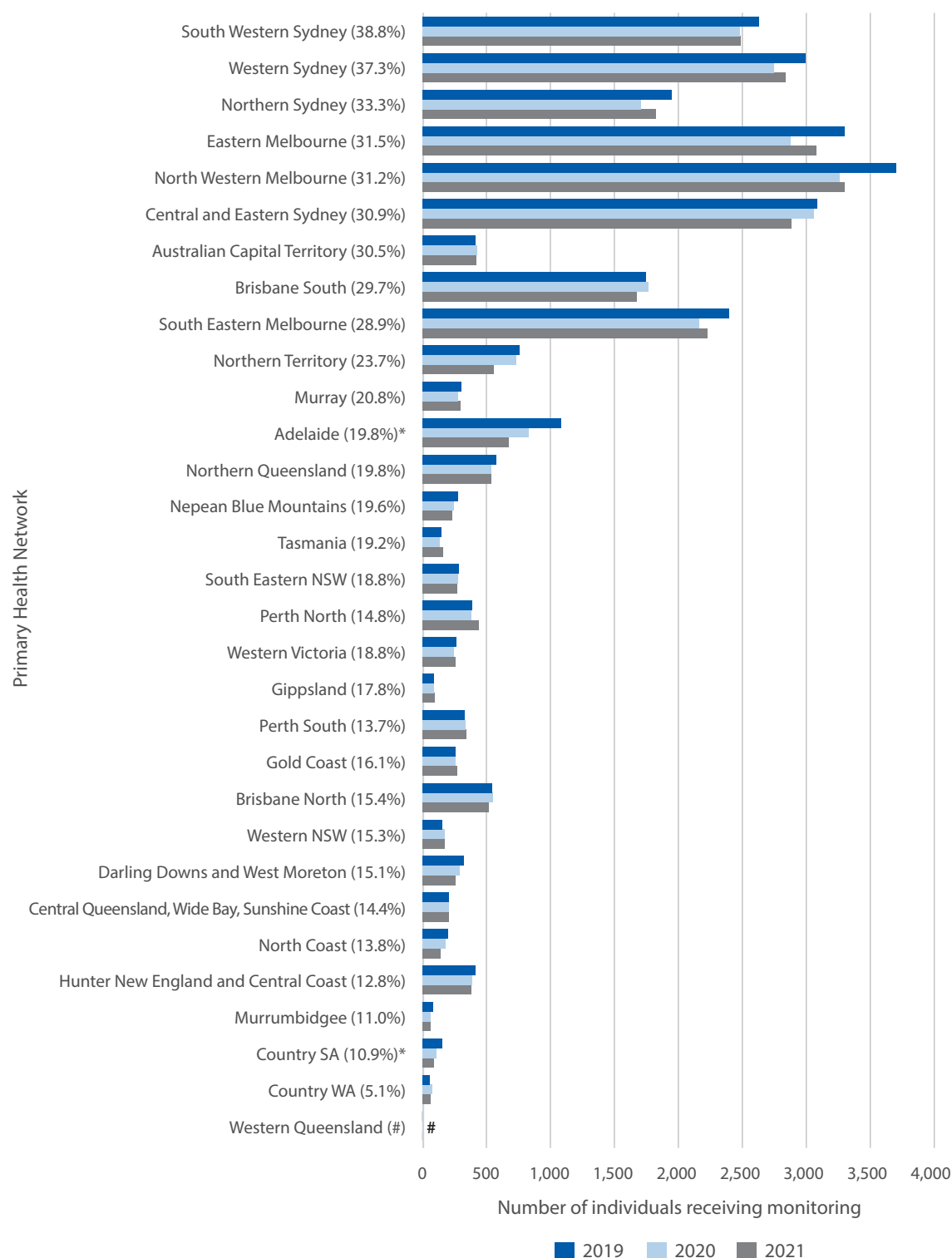
In the majority of PHNs, the number of people who received monitoring (viral load testing while not on treatment) reduced between 2019 and 2021, reflecting the national and jurisdictional trends. However, due to the stable or increasing treatment numbers in almost all PHNs, the uptake of care declined in only a small number of PHNs, as discussed below.

The only PHNs where the number of people who received monitoring increased between 2020 and 2021 were **Tasmania, Western NSW, Gippsland** and **Gold Coast**. The number receiving monitoring also remained stable in **Australian Capital Territory** and **Central Queensland, Wide Bay, Sunshine Coast** PHNs.

The PHNs with the most substantial decreases in the number of people receiving monitoring were **North Coast NSW** (a 28.4% decline between 2019 and 2021), **Northern Territory** (26.7% decline), **Murrumbidgee** (23.8% decline), **Darling Downs and West Moreton** (19.1% decline) and **Nepean Blue Mountains** (18.1% decline). These PHNs were consequently the only five to have a decline in estimated care uptake between 2019 and 2021, as they were the only PHNs where the decline in monitoring was larger than any increase in treatment. Monitoring data over time are presented in Figure A.15.

In most PHNs in Melbourne and Sydney, the number of people receiving monitoring declined between 2019 and 2020, followed by increases between 2020 and 2021 (**South Western Sydney, Western Sydney, Northern Sydney, Eastern Melbourne, North Western Melbourne** and **South Eastern Melbourne**). However, in most regions, this was not sufficient to offset the decline and led to an overall reduction in the number of people receiving monitoring between 2019 and 2021 (Figure A.14). The only exception was **Central and Eastern Sydney** PHN; while the overall reduction between 2019 and 2021 was similar to other PHNs in Sydney and Melbourne, the decline was predominantly during 2021, not 2020.

Figure A.15: Number of people receiving CHB monitoring over time by PHN, 2019–2021, ordered by care uptake in 2021 (in brackets)



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

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

# Data suppressed where number receiving treatment or care was <6.

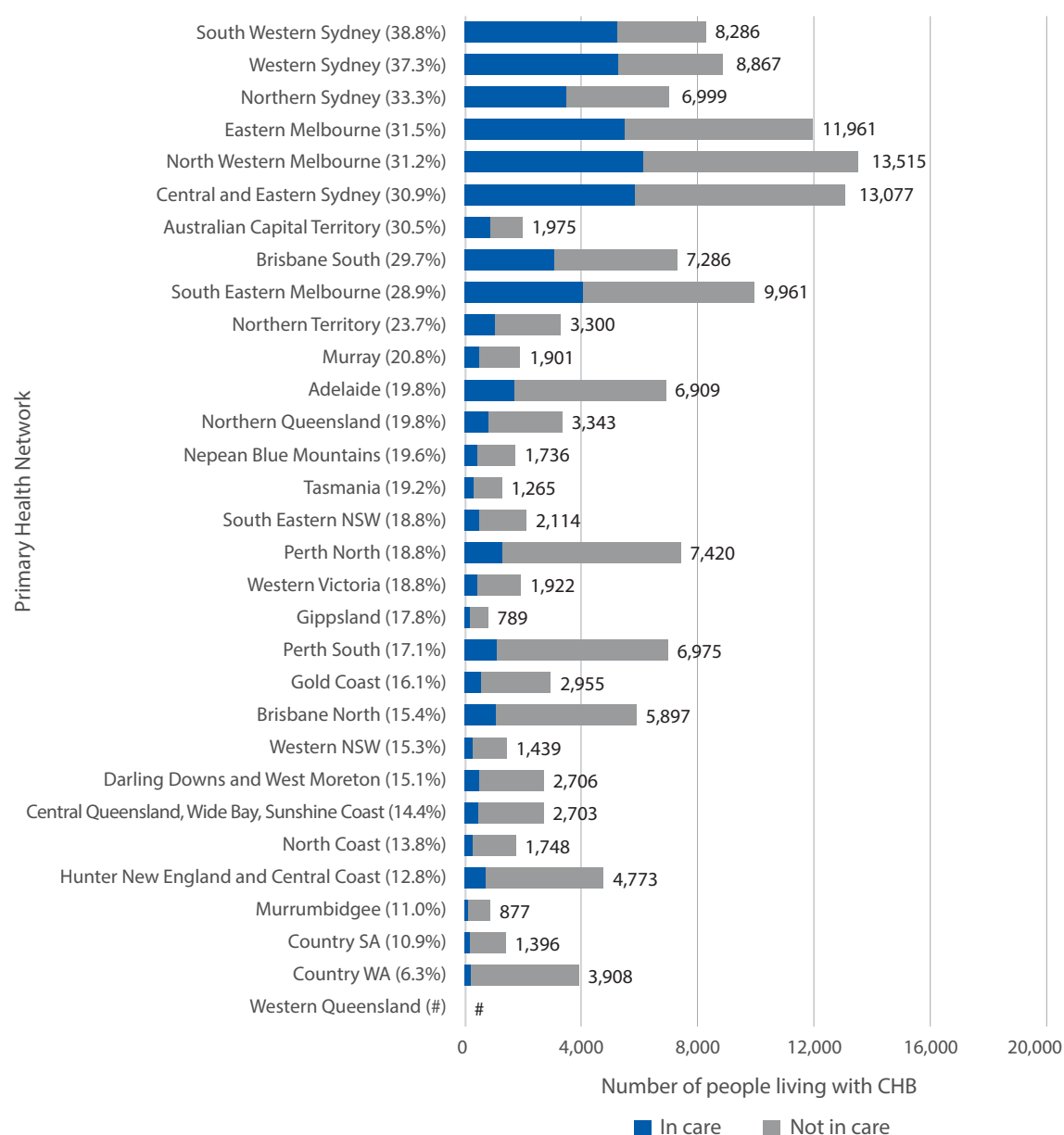
\* Data relating to SA may underestimate monitoring by at least 40% from 2020 onwards due to the provision of services outside of Medicare.

[\(see data for this figure\)](#)

## NUMBER NOT IN CARE ACROSS PRIMARY HEALTH NETWORKS

Although the proportion of people with CHB in care 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.16). Of the estimated 149,000 people not engaged in care for CHB in 2021, nearly half (48.9%) lived in the seven Sydney and Melbourne PHNs. The PHNs with the largest number of people estimated not to be receiving care were **North Western Melbourne** (31.2% care uptake, 13,515 people not in care), **Central and Eastern Sydney** (30.9% care uptake, 13,077 not in care) and **Eastern Melbourne** (31.5% care uptake, 11,961 people not in care).

**Figure A.16: Number of people living with CHB in care (blue bars) and not in care (grey bars and labels), by PHN, ordered by proportional care uptake (in brackets), 2021**



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.

# Data suppressed where number receiving treatment or care was <6.

\* Data relating to SA may underestimate monitoring by at least 40% from 2020 onwards due to the provision of services outside of Medicare.

[\(see data for this figure\)](#)



## CARE ACROSS REMOTENESS AREAS

Care uptake according to remoteness area is shown in Table A.13. Similar to trends in treatment uptake, care uptake was highest in major cities and in very remote areas. This is reflected in the findings by PHN, where uptake is higher in the **Northern Territory** and **Northern Queensland** PHNs, which are disproportionately very remote PHNs, shown in [Figure A.4](#).

**Table A.13: CHB treatment and care uptake by remoteness area, 2021**

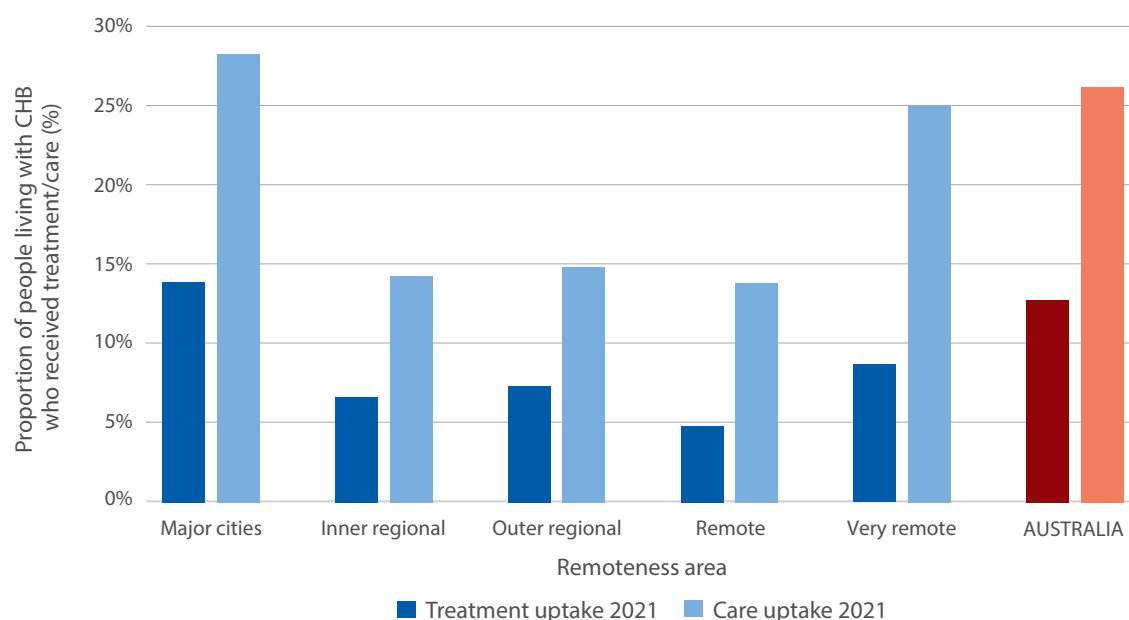
| Remoteness area  | Total population  | People living with CHB | People on treatment | Treatment uptake (%) | People receiving monitoring | Care uptake (treatment or monitoring) (%) |
|------------------|-------------------|------------------------|---------------------|----------------------|-----------------------------|---|
| Major cities     | 18,942,792        | 168,005                | 23,194              | 13.8%                | 23,982                      | 28.1%                                     |
| Inner regional   | 4,552,037         | 16,464                 | 1,086               | 6.6%                 | 1,247                       | 14.2%                                     |
| Outer regional   | 1,901,818         | 10,024                 | 733                 | 7.3%                 | 744                         | 14.7%                                     |
| Remote           | 231,744           | 2,997                  | 143                 | 4.8%                 | 268                         | 13.7%                                     |
| Very remote      | 123,708           | 2,895                  | 250                 | 8.6%                 | 469                         | 24.9%                                     |
| <b>AUSTRALIA</b> | <b>25,766,605</b> | <b>200,385</b>         | <b>25,410</b>       | <b>12.7%</b>         | <b>26,711</b>               | <b>26.0%</b>                              |

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 an area of residence recorded in source data.

**Figure A.17: CHB treatment and care uptake by remoteness area, 2021**



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.

[\(see data for this figure\)](#)

## MONITORING AND CARE TRENDS OVER TIME BY REMOTENESS AREA

Trends in CHB monitoring varied greatly according to remoteness area. Uptake of monitoring reduced nationally between 2019 and 2021, and this occurred in all remoteness classifications; however, the change was most pronounced in remote areas (a 33.6% decline) and in outer regional areas (16.9% decline) compared to the national average (8.1% decline). The decline in remote areas was almost exclusively due to declines in remote regions of the NT; the same decline was not seen in very remote regions of the NT, however (see [Section A2, Northern Territory](#) for specific trend discussion). In major cities and inner and outer regional areas, the decline occurred predominantly during 2020, but in very remote regions the decline occurred during 2021. In remote regions, declines occurred in both years.

These trends likely reflect the relative effect of health service disruption due to COVID-19 during 2020 and 2021, which varied in intensity by region and time period.

## CARE ACROSS STATISTICAL AREA 3 REGIONS

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 284 SA3s with sufficient data available for reliable reporting (see [Section C2 – Table C.2](#)), three had care uptake that met or exceeded the 50% National Strategy target for 2022. Two of the three were located in PHNs which had below-average care uptake: **Far North** (76.2% uptake) in **Northern Queensland** PHN, and **East Arnhem** (**Northern Territory** PHN), where uptake was estimated to be >85% (precise estimation in this SA3 is limited by small population size). Uptake also reached the care target in the **Forest Lake – Oxley** SA3 (50.3%) in **Brisbane South** PHN.

Although projections are not necessarily reliable, especially in SA3 regions where population sizes are smaller, four additional SA3s would be on track to meet the 2022 target of 50% if uptake trends between 2019 and 2021 were maintained. 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](#).

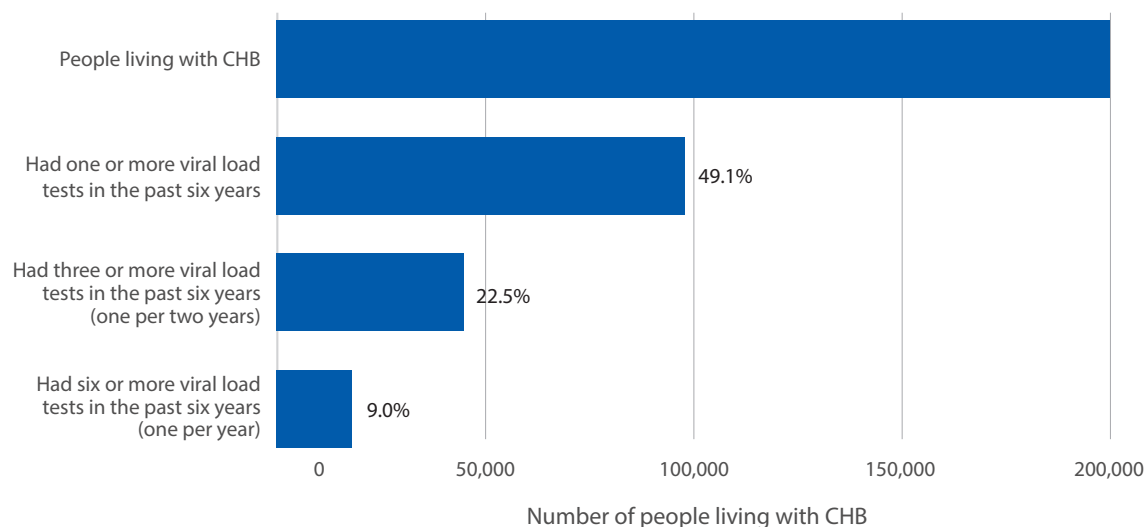
## ONGOING ENGAGEMENT IN MONITORING

As hepatitis B viral load testing is recommended annually, the occurrence of a viral load test in the past year is used for the standard care metric assessed in this report. However, guideline-based care requires ongoing monitoring, not merely once-off testing, and analysis of long-term trends is key. Data with unique identifiers were available for the period 2016–2021 for this report, allowing assessment of the ongoing pattern of testing at the individual level over a six-year period. Analysis was conducted using the following metrics, for all people regardless of current treatment status or history:

- the proportion who had at least one viral load test in the past six years
- the proportion who had three or more tests (reflecting testing approximately every two years)
- the proportion who had six or more tests (representing testing at least annually).

Between 2016 and 2021, a total of 98,316 people received at least one hepatitis B viral load test. This represents 49.1% of all people living with CHB, indicating that only half of people with CHB have received a minimum requirement for guideline-based care in the past six years.

**Figure A.18: Number (bars) and proportion (labels) of people living with CHB according to frequency of viral load testing, 2016–2021**



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. Viral load testing data sourced from Medicare statistics.

[\(see data for this figure\)](#)

These data also demonstrate that, even among people who are receiving viral load testing, few are receiving it at the frequency recommended in clinical guidelines. Only 9.0% of people with CHB had at least six viral load tests during 2016–2021, which reflects viral load testing frequency of once per year (Figure A.18), a frequency which reflects clinical guideline recommendations.<sup>14</sup> This represented less than one-fifth of the total number of people who had a viral load test during that period, indicating that intermittent viral load testing is far more common than regular testing.

Testing approximately every two years was more common; this occurred for 22.5% of those living with CHB, or about half of those who had any viral load testing during the period.

These findings highlight that estimates of engagement in care based on a single year are optimistic, and include a significant number of people whose viral load was monitored during the year in question but were not sufficiently engaged in guideline-based care over time.

## ONGOING ENGAGEMENT IN MONITORING ACROSS STATES AND TERRITORIES

The proportion of people who received ongoing monitoring for CHB varied significantly according to state and territory (Table A.14), generally correlating with differences seen in the care uptake indicator (Table A.8). The proportion of people who had at least one viral load test in the past six years was above the national average of 49.1% in NSW (58.1%), the ACT (56.1%) and Vic. (54.1%), and similar to the national average in the NT (50.3%) and SA (49.2%).

The proportion who had three or more tests in the past six years showed similar patterns of uptake according to state and territory (Table A.14). When assessing yearly testing uptake (six or more tests in the past six years), uptake in the NT was substantially below the national average, in contrast to the other uptake measures. This trend is influenced by the lower number of tests in the NT during 2016–17, and also the greater than average decline in monitoring seen in 2021 compared to other states and territories. It is also likely associated with the considerable geographic barriers to accessing pathology testing in much of the NT, given the high proportion of people with CHB living in remote areas ([Figure A.4](#)).

Table A.14: Ongoing CHB viral load testing, 2016–2021, by state and territory and frequency of testing

| State/territory  | People living with CHB | Proportion who had one or more viral load tests in the past six years (%) | Proportion who had three or more viral load tests in the past six years (one per two years) (%) | Proportion who had six or more viral load tests in the past six years (one per year) (%) |
|------------------|------------------------|---|---|--|
| ACT              | 2,840                  | 56.1%   | 24.3%   | 9.0%   |
| NSW              | 72,058                 | 58.1%   | 27.9%   | 11.4%  |
| NT               | 4,325                  | 50.3%   | 22.3%   | 4.3%   |
| Qld              | 31,665                 | 35.4%   | 16.5%   | 6.6%   |
| SA*              | 10,181                 | 49.2%   | 19.5%   | 5.8%   |
| Tas.             | 1,566                  | 39.2%   | 13.6%   | 5.3%   |
| Vic.             | 56,837                 | 54.1%   | 26.6%   | 11.5%  |
| WA               | 20,912                 | 23.9%   | 4.2%  | 0.6%   |
| <b>AUSTRALIA</b> | <b>200,385</b>         | <b>49.1%</b>  | <b>22.5%</b>  | <b>9.0%</b>  |

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. 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.

\* Data relating to SA may underestimate monitoring by at least 40% from 2020 onwards due to the provision of services outside of Medicare.

## PROGRESS TOWARDS CARE TARGETS ACROSS PRIMARY HEALTH NETWORKS

For the full reporting of Australia's progress towards targets for diagnosis, treatment, care, and mortality reduction, see the [National Surveillance for Hepatitis B Indicators Annual Report 2021](#).<sup>1</sup>

Based on current trends in treatment uptake and changes in the number of people living with CHB, Australia will not meet the National Strategy care uptake target of 50% by 2022. Predicting future care uptake is highly imprecise, given the variable trends in the number of people receiving monitoring between 2019 and 2021 (Figure A.15). However, the number of people receiving monitoring in Australia has not increased since 2018, so without substantial changes in current trends, Australia will not meet the 2022 National Strategy target of 50% care uptake in the coming decade.

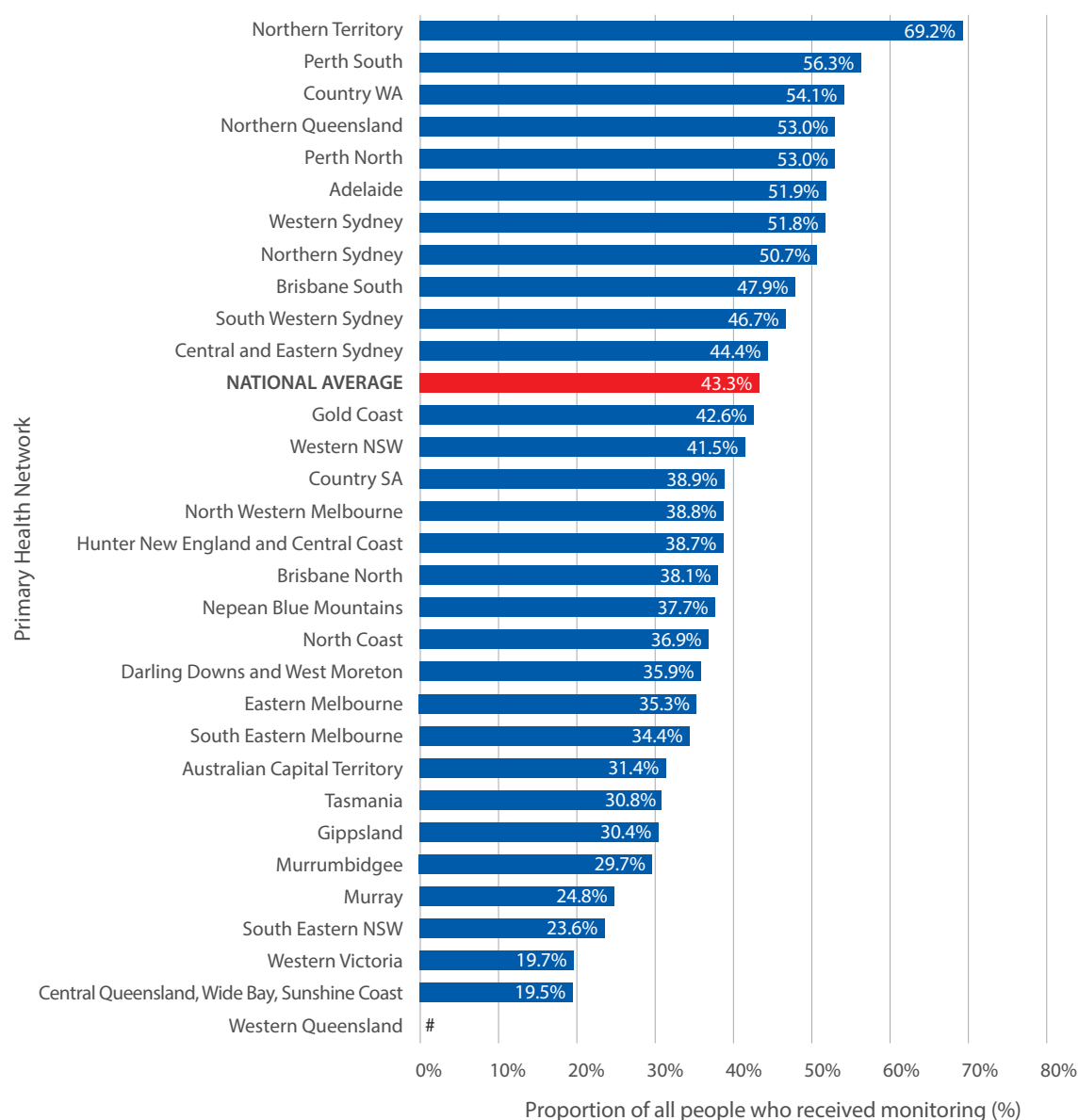
## MONITORING WHILE RECEIVING TREATMENT

Clinical guidelines recommend that people receiving treatment for CHB should be monitored more regularly than those not on treatment including, at minimum, an annual viral load test.<sup>16</sup> In 2021, 67.7% of people who were receiving treatment had at least one viral load monitoring test. This proportion has declined gradually over time but it did not decline any more rapidly during 2021 than in previous years.

## MONITORING PROVIDERS

GPs were the most common providers of monitoring (viral load tests in people not receiving treatment) in 2021, making up 43.3% of the total (Figure A.19). This proportion varied widely according to PHN, and did not always correspond to the level of GP prescribing. For example, although GP monitoring was above average in all PHNs in Sydney, GP prescribing in these regions is among the lowest of all PHNs nationally (Figure A.13). PHNs with the highest levels of GP monitoring were **Northern Territory, Perth South, Country WA, Northern Queensland, Perth North, Adelaide, Western Sydney** and **Northern Sydney**, where GPs made up more than 50% of providers of monitoring tests for people not on treatment (Figure A.19).

Figure A.19: Proportion of CHB monitoring provided by a GP, 2021



CHB, chronic hepatitis B. GP, general practitioner.

Data source: Medicare statistics. Provider type derived by Medicare based on the practitioners service history; 'other' includes nurse practitioner, temporary resident doctor, locum relief doctor and others not able to be classified.

# Data suppressed where number receiving treatment or care was <6.

[\(see data for this figure\)](#)

## MONITORING DEMOGRAPHICS

People receiving monitoring (viral load testing while not on treatment) in 2021 were relatively evenly distributed by sex (52.8% female and 47.2% male; see [Section C – Ascertainment of age and sex in Medicare](#)).

Similar proportions were seen in each of the age groups 30–39 years (21.5%), 40–49 years (24.2%), 50–59 years (21.9%) and ≥60 years (26.7%).

The proportion of females has increased slightly since 2016, when it was 50.1%, as did the proportion aged ≥60 years, from 19.8% in 2016, while other age groups remained at relatively stable proportions. The proportion of people receiving monitoring that were aged over 50 years (48.6% of the total) was higher than the estimated proportion of people with CHB who are in this age group (34.3%), reflecting the findings for [treatment uptake](#).

## IMMUNISATION

Hepatitis B infant immunisation coverage (the proportion of one-year-old children who received the three infant doses recommended at 2, 4 and 6 months) was 94.6% in 2021, just below the National Strategy target of 95% by 2022. This represented a decrease since 2020, when coverage was above the target at 95.1%, and was also lower than the level in 2019 (94.8%). This decline was reflected across regions: of the 31 Australian PHNs, 26 had a decline in uptake between 2020 and 2021. In seven PHNs, this meant uptake at 12 months of age dropped below the 95% uptake target between 2020 and 2021.

In many PHNs, the trend observed was an increase in 2020 followed by a decrease in 2021 (Figure A.21). There was no specific pattern to these trends according to the PHN location, with declines over time occurring in a similar proportion of metropolitan and non-metropolitan PHNs.

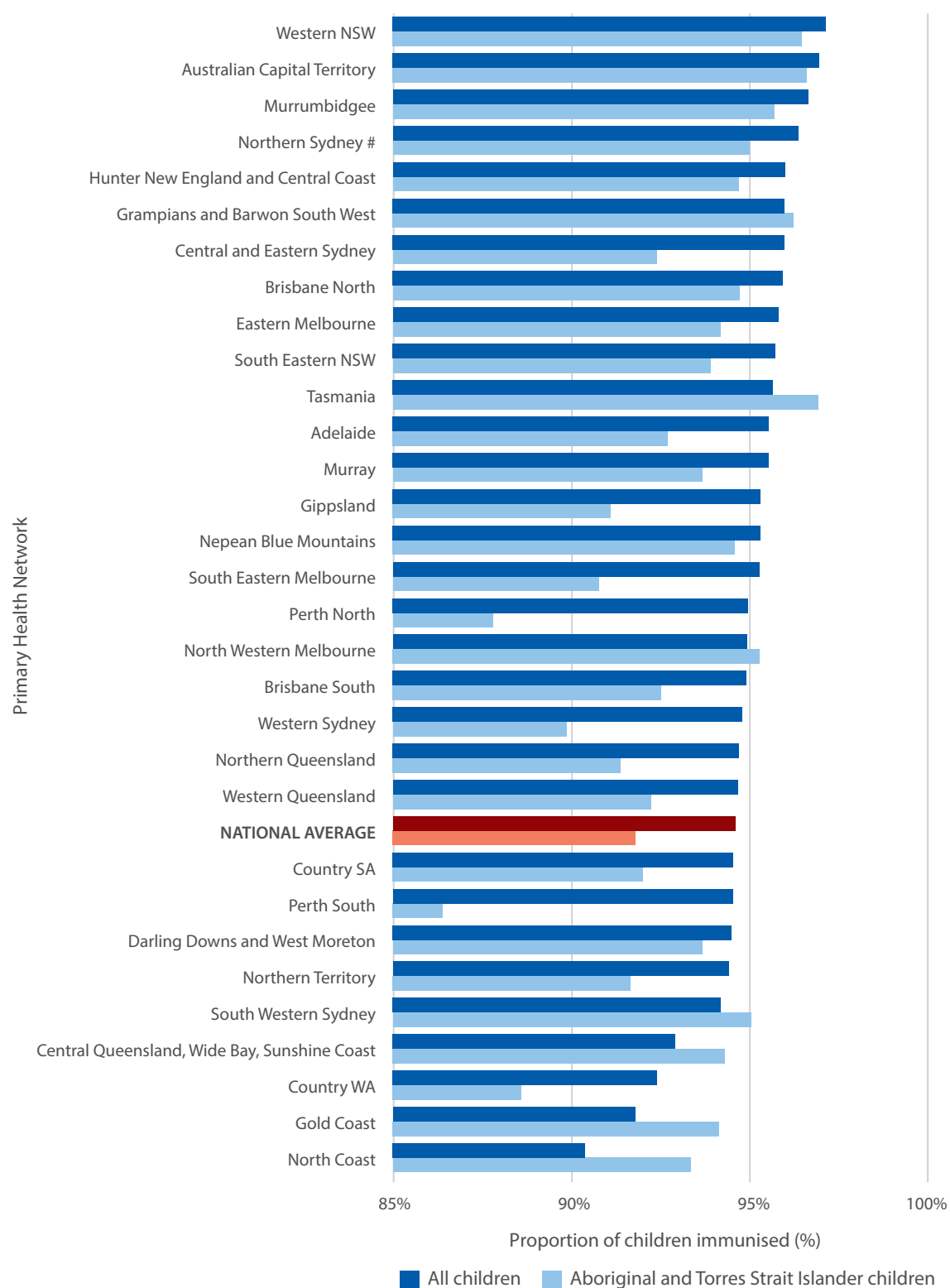
Of the 31 PHNs, 16 had coverage in 2021 above the target level of 95% (Figure A.20), a decrease from 22 PHNs in 2020 but still an increase over the longer term from nine in 2018. A further five PHNs had uptake between 94.5% and 94.9%, close to the target level. Only four PHNs had uptake lower than 94% – **Central Queensland, Wide Bay, Sunshine Coast** (92.9%); **Country WA** (92.4%); **Gold Coast** (91.8%); and **North Coast** (90.4%).

A small number of PHNs had an increase in coverage between 2020 and 2021, in contrast with national trends, and with resulting increases in rank relative to other PHNs. These included **Northern Sydney**, which increased in national rank from 11th to 4th, and **Central and Eastern Sydney**, which increased in rank from 16th to 7th.

Among Aboriginal and Torres Strait Islander children, coverage at 12 months of age was estimated to be 91.8% in 2021, a reduction from the level in 2020 (93.2%). Most PHNs had a decline in coverage between 2020 and 2021 (22 of 31 PHNs). There was also reduction in the number of PHNs who met the 95% uptake target among 12-month-old Aboriginal and Torres Strait Islander children, from 13 PHNs in 2020 to eight in 2021.

In seven PHNs, coverage was higher among Aboriginal and Torres Strait Islander children than among all children; this was the case in four of the five PHNs with the lowest coverage among all children (Figure A.20). These differences may reflect different drivers of immunisation coverage among non-Indigenous and Aboriginal and Torres Strait Islander communities. 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.20: Hepatitis B immunisation coverage for 12-month-olds, among all children and among Aboriginal and Torres Strait Islander children, ordered by immunisation uptake among all children, by PHN, 2021



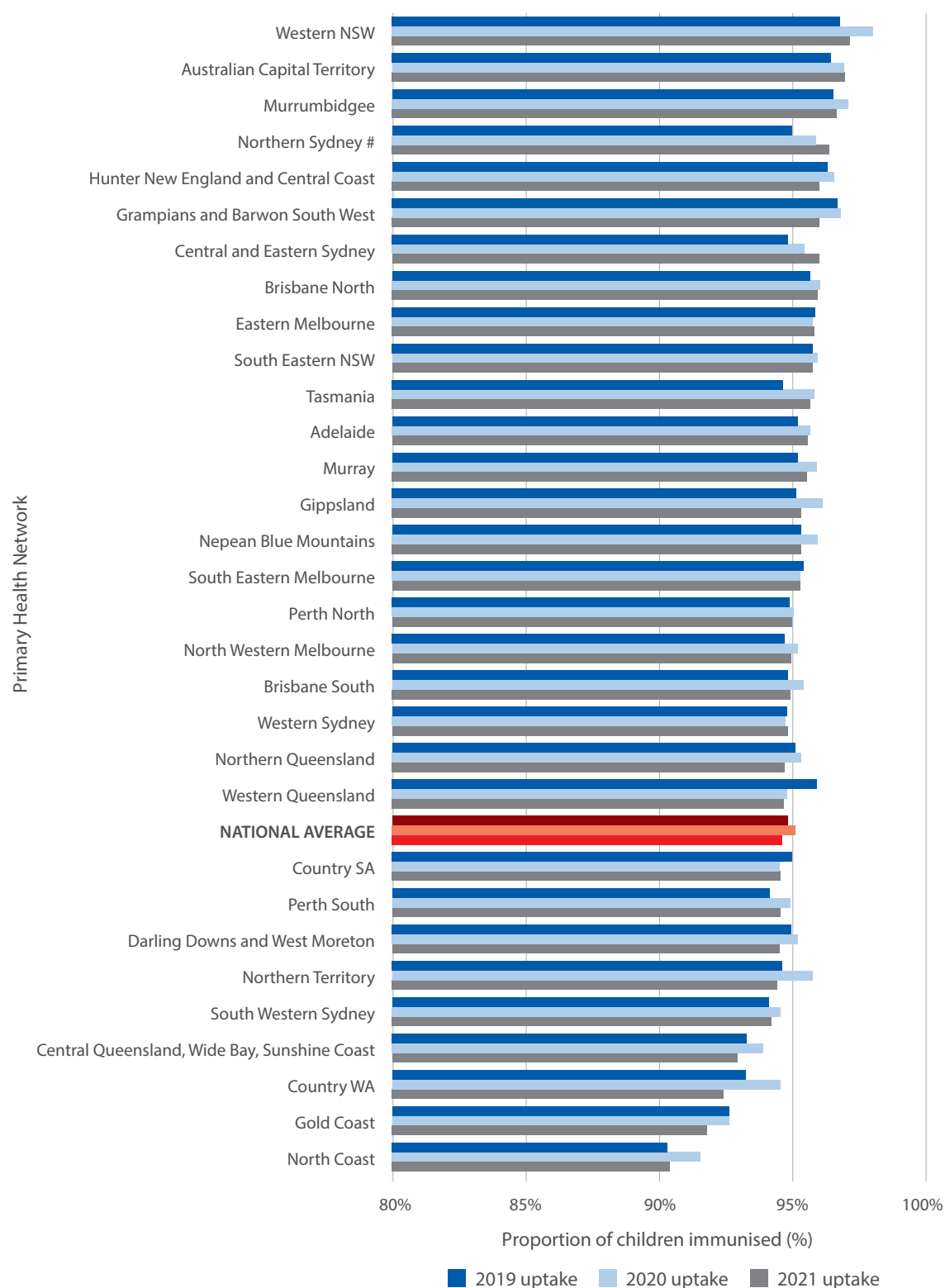
PHN, Primary Health Network.

Data source: Australian Immunisation Register.

# Uptake in Northern Sydney only reported as  $\geq 95\%$  among Aboriginal and Torres Strait Islander children due to low population numbers.

[\(see data for this figure\)](#)

Figure A.21: Hepatitis B immunisation coverage for 12-month-olds over time, ordered by 2021 immunisation uptake, by PHN, 2019–2021



PHN, Primary Health Network.

Data source: Australian Immunisation Register.

# Uptake in Northern Sydney only reported as  $\geq 95\%$  among Aboriginal and Torres Strait Islander children due to low population numbers.

[\(see data for this figure\)](#)



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

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## IN THIS SECTION

Section A2 includes the following information:

- estimates of CHB 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.

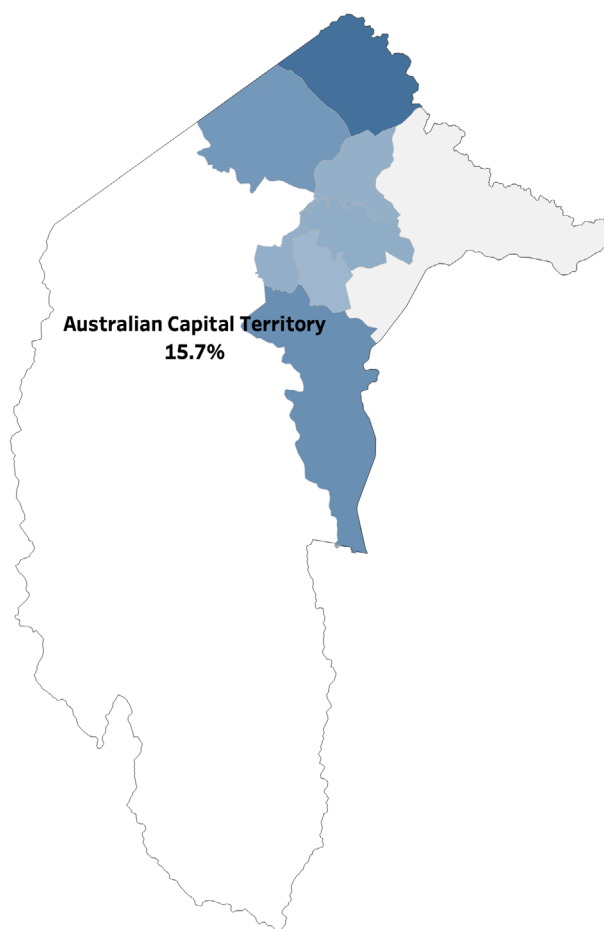
## AUSTRALIAN CAPITAL TERRITORY

- An estimated 2,840 people were living with CHB in 2021 in the ACT, 0.63% of the population.
- CHB treatment uptake in the ACT in 2021 was 15.7%, higher than the national average of 12.7%.
- CHB care uptake in the ACT in 2021 was 30.5%, higher than the national average of 26.0%.
- ACT ranked 1st for CHB treatment uptake and 2nd for CHB care uptake of the eight states and territories.
- Treatment trends in the ACT increased more rapidly than the national average between 2019 and 2021.
- Monitoring trends in the ACT remained stable compared to a decline at the national level between 2019 and 2021.

### CHB TREATMENT

CHB treatment uptake in the **Australian Capital Territory** PHN overall in 2021 was 15.7%, higher than the national average of 12.7% (Table A.15). Within the PHN, uptake was highest in **Gungahlin** SA3 (22.9%), where it exceeded the National Strategy target of 20%, and was also above the national average in **Tuggeranong** (16.6%) and **Belconnen** (15.0%) (Figure A.22). The number of people who received treatment for CHB in these three SA3s increased by more than 20% between 2019 and 2021, far exceeding the national increase of 11.3% during the same period. In contrast, the number of people receiving treatment declined between 2019 and 2021 in **South Canberra** and **Woden Valley**. There were declines between 2019 and 2020 in North Canberra and Weston Creek; however, these were reversed in 2021. These four SA3s all had treatment uptake below the national average in 2021 (**South Canberra**, 11.0%; **North Canberra**, 10.6%; **Weston Creek**, 10.7%; and **Woden Valley**, 9.4%).

Figure A.22: Geographic variation in CHB treatment uptake in the ACT PHN, by SA3, 2021



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.

## CHB CARE

CHB care uptake in the **Australian Capital Territory** PHN in 2021 was 30.5%, higher than the national average of 26.0%. Variations by SA3 largely reflected variations in treatment uptake. The **Australian Capital Territory** PHN was one of the few nationally not to have a decline in the number of people receiving monitoring between 2019 and 2021; however, the number did decline in the SA3s **North Canberra**, **South Canberra** and **Weston Creek**.

Table A.15: CHB prevalence, treatment uptake, and care uptake in the ACT PHN, by SA3, 2021

| PHN and SA3                             | Total population | People living with CHB | CHB prevalence (%) | Treatment uptake (%) | Care uptake (%) |
|---|------------------|------------------------|--------------------|----------------------|-----------------|
| <b>Australian Capital Territory PHN</b> | <b>453,324</b>   | <b>2,840</b>           | <b>0.63%</b>       | <b>15.7%</b>         | <b>30.5%</b>    |
| Belconnen                               | 107,126          | 715                    | 0.67%              | 15.0%                | 27.4%           |
| Gungahlin                               | 88,504           | 711                    | 0.80%              | 22.9%                | 39.2%           |
| North Canberra                          | 60,153           | 386                    | 0.64%              | 10.6%                | 23.8%           |
| South Canberra                          | 30,579           | 154                    | 0.50%              | 11.0%                | 26.6%           |
| Tuggeranong                             | 90,143           | 428                    | 0.47%              | 16.6%                | 35.0%           |
| Weston Creek                            | 36,869           | 206                    | 0.56%              | 10.7%                | 24.3%           |
| Woden Valley*                           | 39,143           | 235                    | 0.60%              | 9.4%                 | 22.1%           |

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.

\* Woden Valley SA3 previously named Woden.

# NEW SOUTH WALES

- An estimated 72,058 people were living with CHB in NSW in 2021, 0.89% of the population.
- CHB treatment uptake in NSW in 2021 was 15.1%, higher than the national average of 12.7%.
- CHB care uptake in NSW in 2021 was 30.7%, higher than the national average of 26.0%.
- NSW ranked 2nd for CHB treatment uptake and 1st for CHB care 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.
- Treatment numbers in NSW increased between 2019 and 2021, but the number of people receiving monitoring declined; these trends were reflected across most PHNs.

## CHB TREATMENT

CHB treatment uptake in NSW overall in 2021 was 15.1%, higher than the national average of 12.7%. Uptake varied greatly across the 10 PHNs in NSW (Figure A.23 and Figure A.24).

Treatment uptake in NSW was highest in the **South Western Sydney** PHN (20.4%), where it had reached the 2022 National Strategy target of 20%. Treatment uptake varied greatly within the PHN, which covers a diverse range of regions. Uptake was highest within the regions of the PHN closest to central Sydney, including three where uptake met the National Strategy treatment target of 20% – **Fairfield** (27.6%), **Bringelly – Green Valley** (20.2%) and **Bankstown** (20.0%). Given the 20% target is a conservative estimate for the proportion of people estimated to need treatment,<sup>1</sup> uptake may need to be higher in some regions due to the demographic and clinical characteristics of the people with CHB in that region. Uptake was also above the national average in **Liverpool** (16.7%); however, the number of people receiving treatment declined in this SA3 between 2019 and 2021, reducing uptake.

In **Western Sydney** PHN (overall uptake 17.4%), the areas with higher treatment were also those closer to central Sydney. SA3s where uptake had already reached the 20% National Strategy target included **Carlingford** (22.4%), **Auburn** (21.6%) and **Merrylands – Guildford** (22.1%), and uptake was also above the national average in **Baulkham Hills** (18.5%), **Blacktown** (17.2%) and **Parramatta** (14.4%). The remaining SA3s in the PHN had treatment uptake similar to the national average. The number of people receiving treatment declined between 2019 and 2020 in a number of SA3s (including **Merrylands – Guildford**, **Parramatta** and **Mount Druitt**); however, these declines were reversed during 2021.

In **Northern Sydney**, treatment uptake was 15.9% overall. Uptake was highest in **Pennant Hills – Epping** (20.3%), where it reached the 2022 National Strategy target of 20%. Uptake was also above the national average in **Ku-ring-gai** (17.7%), **Hornsby** (16.6%), **Chatswood – Lane Cove** (16.3%) and **Ryde – Hunters Hill** (16.3%).

Treatment uptake in **Central and Eastern Sydney** was 15.7%. Within the PHN, uptake was highest in the SA3 of **Hurstville** (20.4%), where it had reached the 20% National Strategy target for 2022. Treatment was also above the PHN average in **Marrickville – Sydenham – Petersham** (19.4%), **Kogarah – Rockdale** (18.9%), **Canterbury** (18.1%) and **Strathfield – Burwood – Ashfield** (16.3%). The number of people receiving treatment declined in **Central and Eastern Sydney** PHN between 2019 and 2020, the only Sydney PHN where this occurred. The number subsequently increased during 2021; however, this still resulted in the PHN having the lowest increase in treatment between 2019 and 2021 of any NSW PHN. This decrease in treatment was concentrated in the **Sydney Inner City** SA3, where treatment declined by 14.6% between 2019 and 2021.

Treatment uptake was below the NSW average (15.1%) in all non-metropolitan NSW PHNs. The highest uptake occurred in **Nepean Blue Mountains** (9.1%) and **South Eastern NSW** (8.5%) PHNs.

The number of people receiving treatment declined between 2019 and 2020 in these two PHNs; however, it increased again during 2021. In contrast, the number of people receiving treatment decreased between 2020 and 2021 in **Western NSW** and **North Coast**; however, this was only minor relative to the increase seen between 2019 and 2020, and so did not affect overall uptake trends.

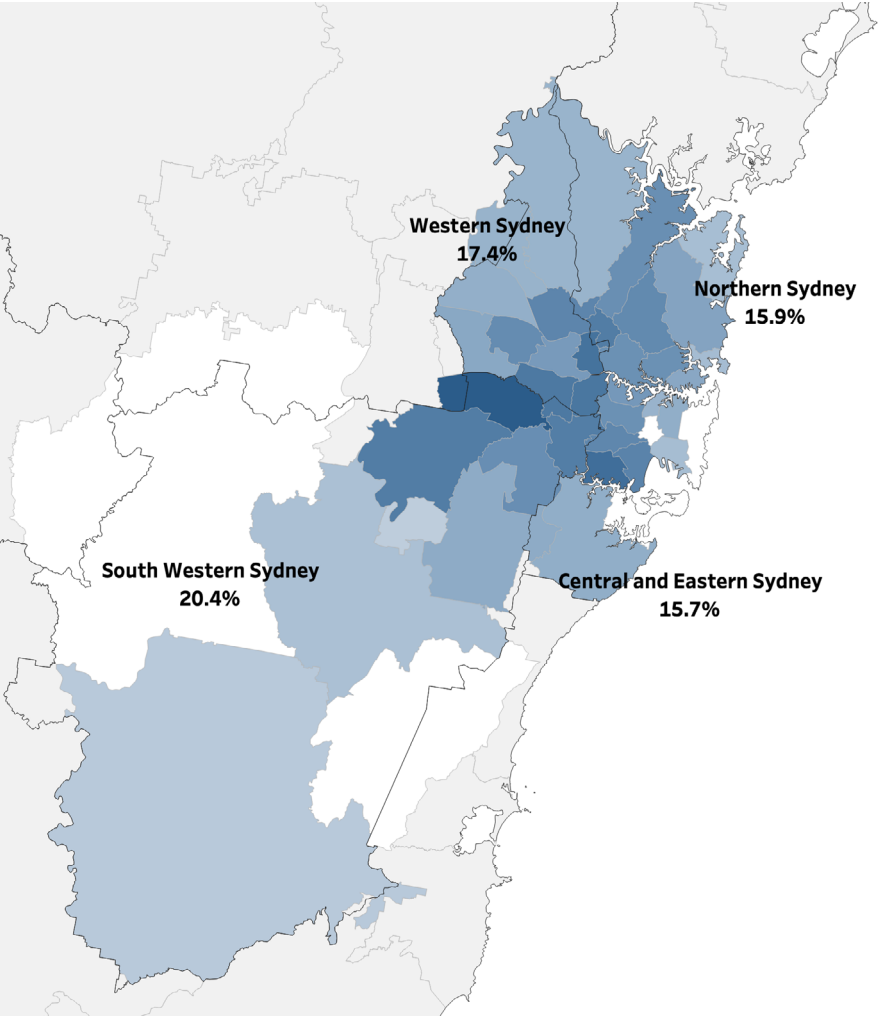
## CHB CARE

In NSW, care uptake largely reflected treatment uptake, which means Sydney PHNs ranked highly. However, no PHN was on track to meet the 50% National Strategy care target by 2022. Most Sydney PHNs saw significant declines in the number of people receiving off-treatment viral load monitoring tests between 2019 and 2020. In many, the number increased again during 2021, but this was not sufficient to offset the reduction, so all had a decline in monitoring between 2019 and 2021. The exception to this pattern was **Central and Eastern Sydney**, which had stable monitoring numbers between 2019 and 2020, but numbers declined during 2021.

Several SA3s within Sydney PHNs had care uptake that approached the 2022 National Strategy target of 50%, including **Fairfield** (49.0% uptake) in **South Western Sydney**, and **Auburn** (49.4%) and **Carlingford** (47.2% uptake) in **Western Sydney**. If current trends continue, both **Auburn** and **Carlingford** would be on track to reach 50% care uptake by 2022. However, in **Fairfield** the number of people receiving monitoring declined between 2019 and 2021, so the target would not be reached without a reversal in this trend.

The number of people receiving monitoring also reduced in all non-metropolitan NSW PHNs except for **Western NSW**, where it increased between 2019 and 2020 and remained stable during 2021. In all other PHNs, there was a reduction in monitoring in both 2020 and 2021. In all non-metropolitan NSW PHNs, care uptake was below 20% in 2021; it was highest in **Nepean Blue Mountains** (19.6%) and **South Eastern NSW** (18.8%).

Figure A.23: Geographic variation in CHB treatment uptake in Greater Sydney, by PHN and SA3, 2021

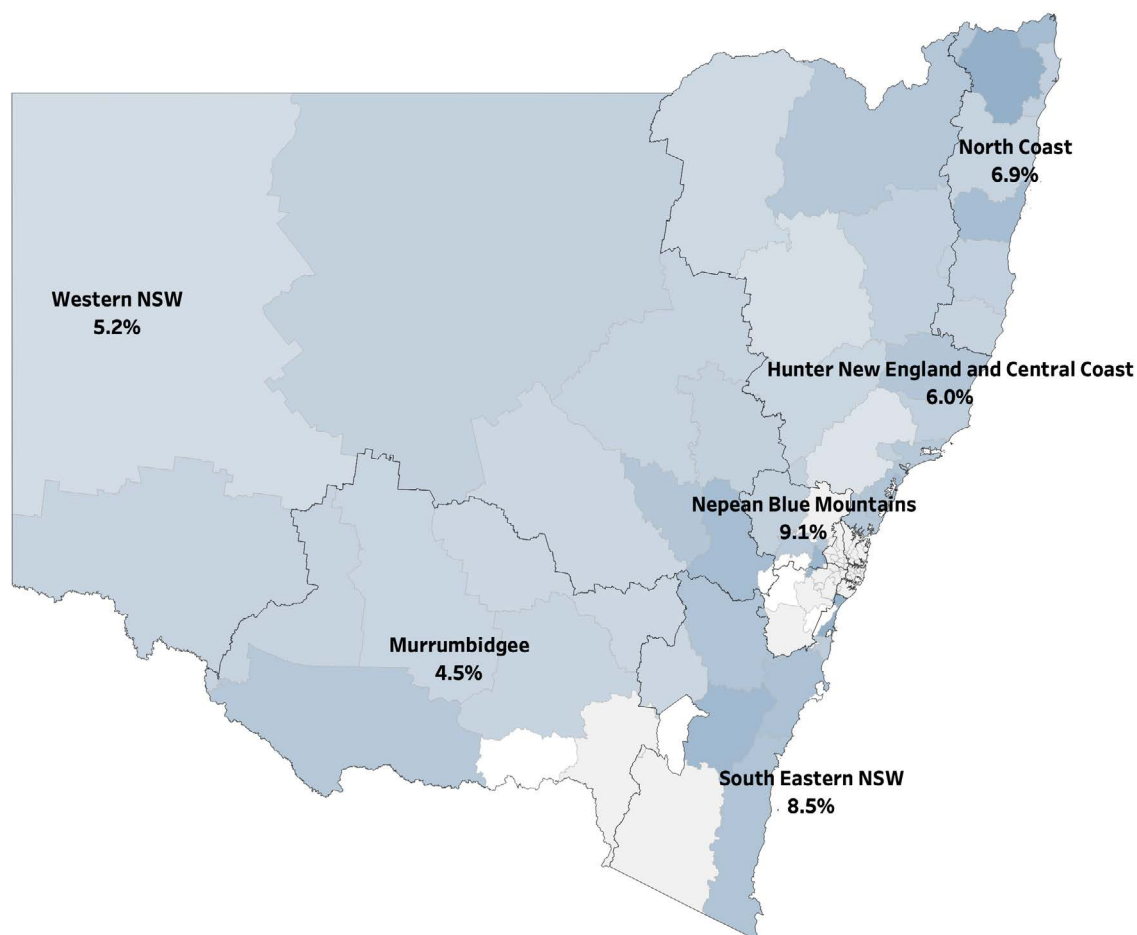


ABS, Australian Bureau of Statistics. CHB, chronic hepatitis B. PHN, Primary Health Network. SA3, Statistical Area 3.

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.24: Geographic variation in CHB treatment uptake in NSW (other than Greater Sydney), by PHN and SA3, 2021



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.16: CHB prevalence, treatment uptake, and care uptake in NSW by PHN and SA3, 2021

| PHN and SA3                           | Total population | People living with CHB | CHB prevalence (%) | Treatment uptake (%) | Care uptake (%) |
|---------------------------------------|------------------|------------------------|--------------------|----------------------|-----------------|
| <b>Central and Eastern Sydney PHN</b> | <b>1,575,057</b> | <b>18933</b>           | <b>1.20%</b>       | <b>15.7%</b>         | <b>30.9%</b>    |
| Botany                                | 35,605           | 488                    | 1.37%              | 8.4%                 | 17.0%           |
| Canada Bay                            | 89,267           | 1140                   | 1.28%              | 14.8%                | 31.4%           |
| Canterbury                            | 127,143          | 2204                   | 1.73%              | 18.1%                | 38.1%           |
| Cronulla – Miranda – Caringbah        | 118,833          | 747                    | 0.63%              | 11.0%                | 23.4%           |
| Eastern Suburbs – North               | 128,346          | 826                    | 0.64%              | 10.7%                | 19.9%           |

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| PHN and SA3                         | Total population | People living with CHB | CHB prevalence (%) | Treatment uptake (%) | Care uptake (%) |
|-------------------------------------|------------------|------------------------|--------------------|----------------------|-----------------|
| Eastern Suburbs – South             | 151,772          | 1366                   | 0.90%              | 11.7%                | 20.9%           |
| Hurstville                          | 137,828          | 2609                   | 1.89%              | 23.4%                | 43.3%           |
| Kogarah – Rockdale                  | 156,013          | 2297                   | 1.47%              | 18.9%                | 34.4%           |
| Leichhardt                          | 57,687           | 349                    | 0.61%              | 10.0%                | 19.8%           |
| Marrickville – Sydenham – Petersham | 55,782           | 583                    | 1.04%              | 19.4%                | 35.0%           |
| Strathfield – Burwood – Ashfield    | 166,159          | 2769                   | 1.67%              | 16.3%                | 33.2%           |
| Sutherland – Menai – Heathcote      | 120,031          | 694                    | 0.58%              | 11.0%                | 21.5%           |
| Sydney Inner City                   | 230,184          | 2860                   | 1.24%              | 11.0%                | 24.1%           |
| <b>Northern Sydney PHN</b>          | <b>922,840</b>   | <b>10486</b>           | <b>1.14%</b>       | <b>15.9%</b>         | <b>33.3%</b>    |
| Chatswood – Lane Cove               | 130,766          | 1742                   | 1.33%              | 16.3%                | 34.0%           |
| Hornsby                             | 89,378           | 1064                   | 1.19%              | 16.6%                | 34.8%           |
| Ku-ring-gai                         | 145,501          | 2000                   | 1.37%              | 17.7%                | 37.5%           |
| Manly                               | 55,257           | 295                    | 0.53%              | 8.5%                 | 18.3%           |
| North Sydney – Mosman               | 83,449           | 659                    | 0.79%              | 12.1%                | 25.2%           |
| Pennant Hills – Epping              | 48,844           | 922                    | 1.89%              | 20.3%                | 42.1%           |
| Pittwater                           | 73,402           | 315                    | 0.43%              | 8.3%                 | 17.5%           |
| Ryde – Hunters Hill                 | 152,475          | 2533                   | 1.66%              | 16.3%                | 34.5%           |
| Warringah                           | 143,768          | 956                    | 0.66%              | 12.8%                | 24.9%           |
| <b>South Western Sydney PHN</b>     | <b>1,024,469</b> | <b>13535</b>           | <b>1.32%</b>       | <b>20.4%</b>         | <b>38.8%</b>    |
| Bankstown                           | 178,127          | 2786                   | 1.56%              | 20.0%                | 41.5%           |
| Bringelly – Green Valley            | 125,679          | 1547                   | 1.23%              | 20.2%                | 38.6%           |
| Camden                              | 108,898          | 590                    | 0.54%              | 5.6%                 | 13.4%           |
| Campbelltown (NSW)                  | 183,725          | 1560                   | 0.85%              | 11.4%                | 22.2%           |
| Fairfield                           | 197,405          | 4963                   | 2.51%              | 27.6%                | 49.0%           |
| Liverpool                           | 145,425          | 1755                   | 1.21%              | 16.7%                | 33.5%           |
| Southern Highlands                  | 52,002           | 192                    | 0.37%              | 6.2%                 | 16.1%           |
| Wollondilly                         | 33,207           | 141                    | 0.43%              | 7.8%                 | 15.6%           |
| <b>Western Sydney PHN</b>           | <b>1,141,815</b> | <b>14153</b>           | <b>1.24%</b>       | <b>17.4%</b>         | <b>37.3%</b>    |
| Auburn                              | 109,480          | 2394                   | 2.19%              | 21.6%                | 49.4%           |
| Baulkham Hills                      | 146,597          | 1899                   | 1.30%              | 18.5%                | 35.0%           |
| Blacktown                           | 130,343          | 1286                   | 0.99%              | 17.2%                | 36.6%           |
| Blacktown – North                   | 151,390          | 1200                   | 0.79%              | 10.7%                | 24.2%           |

Continued next page

| PHN and SA3                                     | Total population | People living with CHB | CHB prevalence (%) | Treatment uptake (%) | Care uptake (%) |
|---|------------------|------------------------|--------------------|----------------------|-----------------|
| Carlingford                                     | 72,080           | 1351                   | 1.87%              | 22.4%                | 47.2%           |
| Dural – Wisemans Ferry                          | 32,559           | 210                    | 0.65%              | 10.0%                | 25.2%           |
| Merrylands – Guildford                          | 129,481          | 2027                   | 1.57%              | 21.2%                | 42.2%           |
| Mount Druitt                                    | 112,553          | 1179                   | 1.05%              | 12.0%                | 33.2%           |
| Parramatta                                      | 177,563          | 1823                   | 1.03%              | 14.4%                | 32.5%           |
| Rouse Hill – McGraths Hill                      | 79,769           | 784                    | 0.98%              | 10.1%                | 19.0%           |
| <b>Hunter New England and Central Coast PHN</b> | <b>1,313,444</b> | <b>5,476</b>           | <b>0.42%</b>       | <b>6.0%</b>          | <b>12.8%</b>    |
| Armidale  | 36,510           | 174                    | 0.48%              | 5.2%                 | 12.1%           |
| Gosford   | 181,268          | 903                    | 0.50%              | 6.5%                 | 13.6%           |
| Great Lakes                                     | 31,792           | 112                    | 0.35%              | 5.4%                 | 10.7%           |
| Inverell – Tenterfield                          | 34,584           | 167                    | 0.48%              | 6.6%                 | 18.6%           |
| Lake Macquarie – East                           | 147,849          | 489                    | 0.33%              | 8.6%                 | 16.2%           |
| Lake Macquarie – West                           | 59,585           | 194                    | 0.33%              | 7.2%                 | 18.0%           |
| Lower Hunter                                    | 88,192           | 320                    | 0.36%              | 2.2%                 | 4.1%            |
| Maitland  | 112,842          | 377                    | 0.33%              | 5.0%                 | 12.7%           |
| Moree – Narrabri                                | 22,110           | 158                    | 0.71%              | 3.8%                 | 12.1%           |
| Newcastle                                       | 178,622          | 741                    | 0.41%              | 6.7%                 | 14.4%           |
| Port Stephens                                   | 75,087           | 267                    | 0.36%              | 6.4%                 | 11.6%           |
| Tamworth – Gunnedah                             | 83,733           | 441                    | 0.53%              | 2.9%                 | 7.3%            |
| Taree – Gloucester                              | 55,960           | 207                    | 0.37%              | 6.8%                 | 10.6%           |
| Upper Hunter                                    | 30,188           | 140                    | 0.46%              | 4.3%                 | 9.3%            |
| Wyong   | 175,124          | 787                    | 0.45%              | 6.7%                 | 14.9%           |
| <b>Murrumbidgee PHN</b>                         | <b>236,907</b>   | <b>985</b>             | <b>0.42%</b>       | <b>4.5%</b>          | <b>11.0%</b>    |
| Griffith – Murrumbidgee (West)                  | 45,998           | 272                    | 0.59%              | 4.4%                 | 9.9%            |
| Tumut – Tumbarumba                              | 13,613           | 50                     | 0.37%              | #                    | #               |
| Upper Murray exc. Albury                        | 39,729           | 123                    | 0.31%              | 6.5%                 | 14.6%           |
| Wagga Wagga                                     | 100,827          | 417                    | 0.41%              | 4.6%                 | 12.2%           |
| Young – Yass^                                   | 36,740           | 122                    | 0.33%              | #                    | #               |
| <b>Nepean Blue Mountains PHN</b>                | <b>380,409</b>   | <b>2,160</b>           | <b>0.57%</b>       | <b>9.1%</b>          | <b>19.6%</b>    |
| Blue Mountains                                  | 80,014           | 346                    | 0.43%              | 6.1%                 | 13.9%           |
| Hawkesbury                                      | 11,360           | 48                     | 0.42%              | #                    | #               |
| Penrith   | 163,493          | 960                    | 0.59%              | 9.5%                 | 19.8%           |
| Richmond – Windsor                              | 61,230           | 279                    | 0.46%              | 6.5%                 | 14.0%           |

| PHN and SA3                  | Total population | People living with CHB | CHB prevalence (%) | Treatment uptake (%) | Care uptake (%) |
|------------------------------|------------------|------------------------|--------------------|----------------------|-----------------|
| St Marys                     | 64,311           | 527                    | 0.82%              | 12.0%                | 27.1%           |
| <b>North Coast PHN</b>       | <b>537,524</b>   | <b>2,029</b>           | <b>0.38%</b>       | <b>6.9%</b>          | <b>13.8%</b>    |
| Clarence Valley              | 50,528           | 194                    | 0.38%              | 4.6%                 | 10.8%           |
| Coffs Harbour                | 93,581           | 416                    | 0.44%              | 8.2%                 | 19.0%           |
| Kempsey – Nambucca           | 51,044           | 236                    | 0.46%              | 5.1%                 | 13.6%           |
| Port Macquarie               | 87,564           | 306                    | 0.35%              | 4.6%                 | 10.8%           |
| Richmond Valley – Coastal    | 86,241           | 288                    | 0.33%              | 5.2%                 | 9.4%            |
| Richmond Valley – Hinterland | 73,717           | 274                    | 0.37%              | 10.6%                | 14.6%           |
| Tweed Valley                 | 94,851           | 316                    | 0.33%              | 8.6%                 | 15.5%           |
| <b>South Eastern NSW PHN</b> | <b>631,625</b>   | <b>2,603</b>           | <b>0.41%</b>       | <b>8.5%</b>          | <b>18.8%</b>    |
| Dapto – Port Kembla          | 78,780           | 351                    | 0.44%              | 10.8%                | 23.7%           |
| Goulburn – Mulwaree          | 40,516           | 155                    | 0.38%              | 7.1%                 | 15.5%           |
| Kiama – Shellharbour         | 104,084          | 367                    | 0.35%              | 5.7%                 | 16.1%           |
| Queanbeyan                   | 67,664           | 277                    | 0.41%              | 9.0%                 | 16.9%           |
| Shoalhaven                   | 107,243          | 419                    | 0.39%              | 7.6%                 | 20.8%           |
| Snowy Mountains              | 20,142           | 70                     | 0.35%              | #                    | #               |
| South Coast                  | 74,940           | 278                    | 0.37%              | 7.2%                 | 14.8%           |
| Wollongong                   | 138,256          | 687                    | 0.50%              | 10.2%                | 20.2%           |
| <b>Western NSW PHN</b>       | <b>331,340</b>   | <b>1,699</b>           | <b>0.51%</b>       | <b>5.2%</b>          | <b>15.3%</b>    |
| Bathurst                     | 49,945           | 192                    | 0.38%              | 8.3%                 | 19.3%           |
| Bourke – Cobar – Coonamble   | 18,318           | 219                    | 1.20%              | 5.0%                 | 24.1%           |
| Broken Hill and Far West     | 19,127           | 122                    | 0.64%              | #                    | #               |
| Dubbo                        | 70,732           | 413                    | 0.58%              | 4.6%                 | 14.3%           |
| Lachlan Valley               | 53,211           | 271                    | 0.51%              | 4.1%                 | 7.4%            |
| Lithgow – Mudgee             | 46,379           | 179                    | 0.39%              | 5.0%                 | 10.6%           |
| Lower Murray                 | 12,154           | 65                     | 0.53%              | #                    | #               |
| Orange                       | 61,475           | 237                    | 0.39%              | 6.8%                 | 19.8%           |

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 <3000.

^ New SA3 added to the Australian Statistical Geography Standard, resulting from the splitting of the previous Goulburn–Yass SA3 into Young–Yass SA3 (Murrumbidgee PHN) and Goulburn Mulwaree SA3 (South Eastern NSW PHN).

## NORTHERN TERRITORY

- CHB treatment uptake in the NT in 2021 was 10.8%, lower than the national average of 12.7%.
- CHB care uptake in the NT in 2021 was 23.7%, similar to the national average of 26.0%.
- NT ranked 5th for CHB treatment uptake and 4th for CHB care uptake of the eight states and territories.
- Treatment numbers in the NT increased more rapidly than the national average between 2019 and 2021, but the number of people receiving monitoring declined more rapidly than the national average.

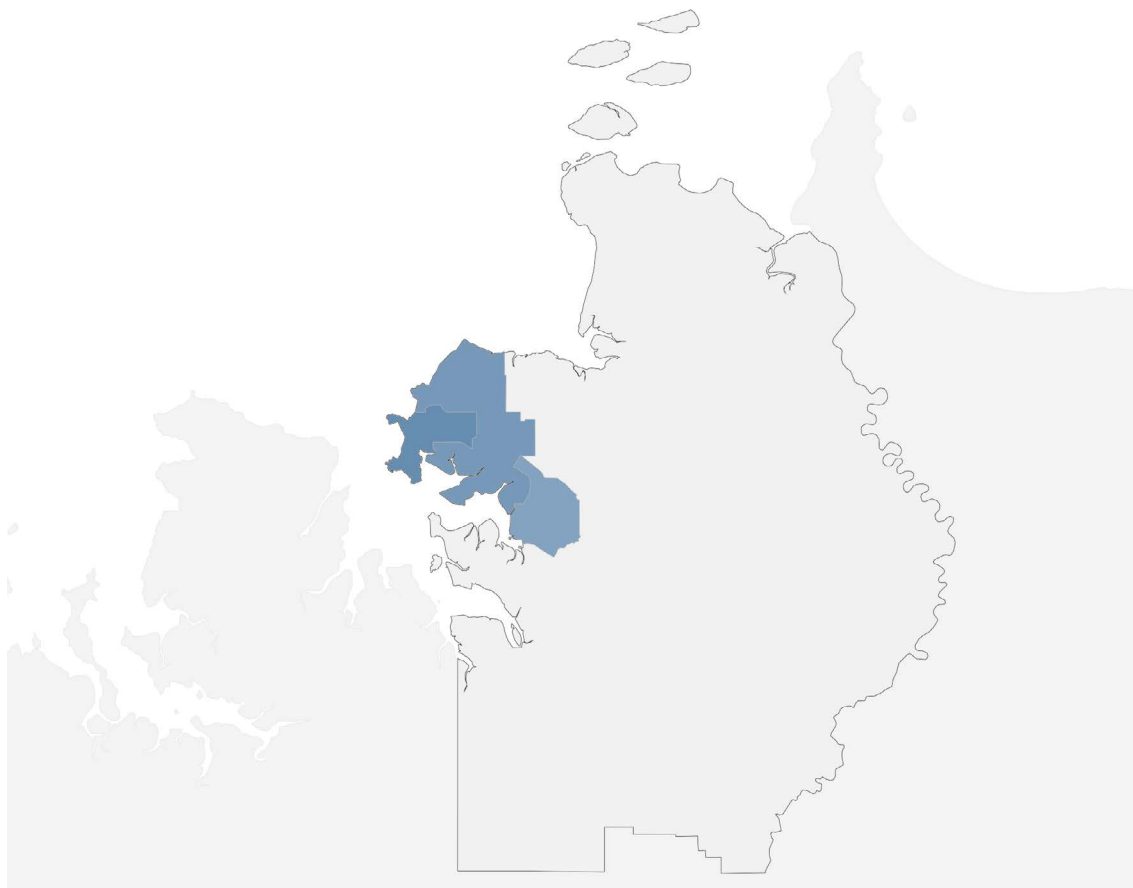
### CHB TREATMENT

CHB treatment uptake in 2021 in the **Northern Territory** PHN was 10.8%, below the national average of 12.7%. This represents a continuing improving trend, compared to 2016 when treatment uptake was only half the national average. The number of people receiving treatment in the NT has increased more rapidly over time than in any other state or territory except Tas. 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 need to be suppressed in order to protect confidentiality. Treatment uptake was highest in **East Arnhem** (32.9%) (Table A.17), above the 2022 National Strategy target of 20%. It was also above or similar to the national average in **Darwin City** (17.1%), **Darwin Suburbs** (14.6%) and **Palmerston** (12.8%) (Figure A.25 and Figure A.26). Treatment uptake improved in all SA3s between 2019 and 2021.

### CHB CARE

CHB care within the NT was highest in **East Arnhem** (>85%), where it had already met the 50% National Strategy target for care uptake, along with only two other SA3s nationally. Uptake was also above the national average in **Darwin City** (29.1%) and **Daly – Tiwi – West Arnhem** (28.7%). The number of people receiving off-treatment monitoring declined in all SA3s in the **Northern Territory** PHN between 2019 and 2021, reducing the overall care uptake in the NT. This decline was most pronounced in remote SA3s such as **Alice Springs** and **Katherine**.

Figure A.25: Geographic variation in CHB treatment uptake in Greater Darwin, by SA3, 2021

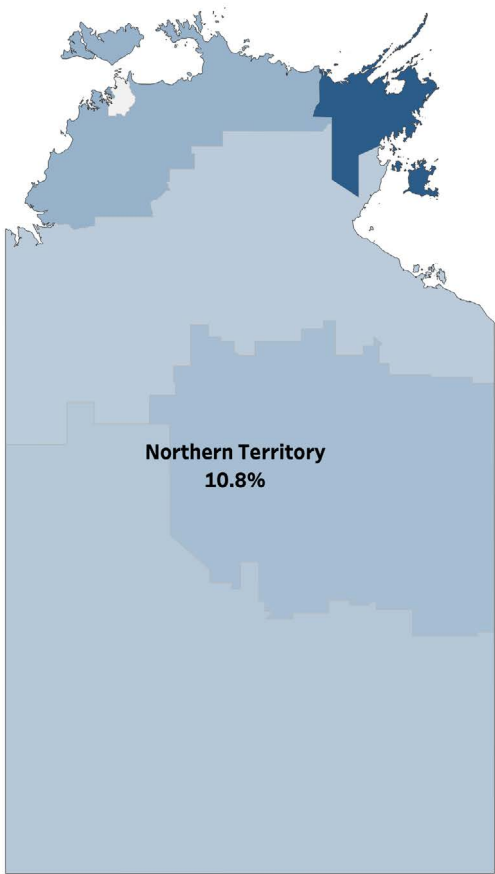


ABS, Australian Bureau of Statistics. CHB, chronic hepatitis B. PHN, Primary Health Network. SA3, Statistical Area 3.

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.26: Geographic variation in CHB treatment uptake in the NT by SA3, 2021



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, treatment uptake, and care uptake in the NT, by SA3, 2021

| PHN and SA3                   | Total population | People living with CHB | CHB prevalence (%) | Treatment uptake (%) | Care uptake (%) |
|-------------------------------|------------------|------------------------|--------------------|----------------------|-----------------|
| <b>Northern Territory PHN</b> | <b>249,345</b>   | <b>4,325</b>           | <b>1.73%</b>       | <b>23.7%</b>         | <b>10.8%</b>    |
| Alice Springs                 | 44,947           | 1,061                  | 2.36%              | 6.7%                 | 20.5%           |
| Barkly                        | 3,972            | 122                    | 3.06%              | 8.2%                 | 14.8%           |
| Daly – Tiwi – West Arnhem     | 29,973           | 1,034                  | 3.45%              | 10.2%                | 29.1%           |
| Darwin City                   | 28,959           | 276                    | 0.95%              | 17.1%                | 28.7%           |
| Darwin Suburbs                | 59,657           | 683                    | 1.14%              | 14.6%                | 20.4%           |
| East Arnhem                   | 5,545            | 112                    | 2.03%              | 32.9%                | 89.0%           |
| Katherine                     | 18,706           | 524                    | 2.80%              | 5.9%                 | 14.1%           |
| Litchfield                    | 17,676           | 122                    | 0.69%              | #                    | #               |
| Palmerston                    | 39,912           | 392                    | 0.98%              | 12.8%                | 18.9%           |

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 <3000.

## QUEENSLAND

- CHB treatment uptake in Qld in 2021 was 9.6%, lower than the national average of 12.7%.
- CHB care uptake in Qld in 2021 was 20.5%, lower than the national average of 26.0%.
- Qld ranked 6th for CHB treatment uptake and 5th for CHB care uptake of the eight states and territories.
- Treatment uptake was highest in **Brisbane South**, with SA3 regions of uptake above average also located in **Brisbane North**, **Gold Coast** and **Northern Queensland**.
- Care uptake was highest in **Brisbane South** and **Northern Queensland**, with SA3 regions of uptake above average also located in the **Darling Downs** and **West Moreton** PHN.
- Treatment numbers in Qld increased and monitoring numbers decreased at a similar rate to the national average between 2019 and 2021.

### CHB TREATMENT

Treatment uptake within Qld was highest in **Brisbane South** PHN (13.6%) (Figure A.27). Within **Brisbane South** PHN, the **Forest Lake – Oxley** SA3 had already met the 20% treatment uptake target (20.7% uptake). Treatment was also above the PHN average in **Sunnybank** (18.2%), **Mt Gravatt** (15.3%) and **Rocklea – Acacia Ridge** (14.7%). The SA3 of **Nathan** previously had uptake above the PHN average; however, the number of people receiving treatment declined in both 2020 and 2021, reducing uptake. Treatment numbers also declined in **Springwood – Kingston** and **Wynnum – Manly** in 2020, but numbers returned to the 2019 levels by 2021. Treatment uptake in most other SA3s in **Brisbane South** PHN was similar to the Qld average (Table A.18).

In **Brisbane North** PHN, the number of people receiving treatment increased in all SA3s between 2019 and 2021. Uptake overall was 8.0% in 2021, and was highest in **Chermside** (10.3%) and **Sandgate** (11.5%) SA3s. Uptake ranged between 6 and 10% in the remaining SA3s (Table A.18).

In **Gold Coast** PHN, treatment uptake was 8.4% overall, and was highest in the SA3 of **Gold Coast – North** (10.9%) and **Southport** (10.7%). In the remaining PHNs, treatment uptake ranged between 6 and 9%, below the Qld average. The number of people receiving treatment increased over time in **Gold Coast** PHN overall; however, declines occurred in **Ormeau – Oxenford**, **Robina** and **Surfers Paradise** SA3s; in all regions, this decrease predominantly occurred in 2020.

Treatment uptake in **Darling Downs and West Moreton** PHN was 7.0%, but was higher in **Springfield – Redbank** (9.9%) and **Ipswich Hinterland** (7.4%) (Figure A.28), while treatment uptake in the remaining PHNs varied between 5 and 7%. The number of people receiving treatment in this PHN increased by a smaller increment between 2019 and 2021 than the state average.

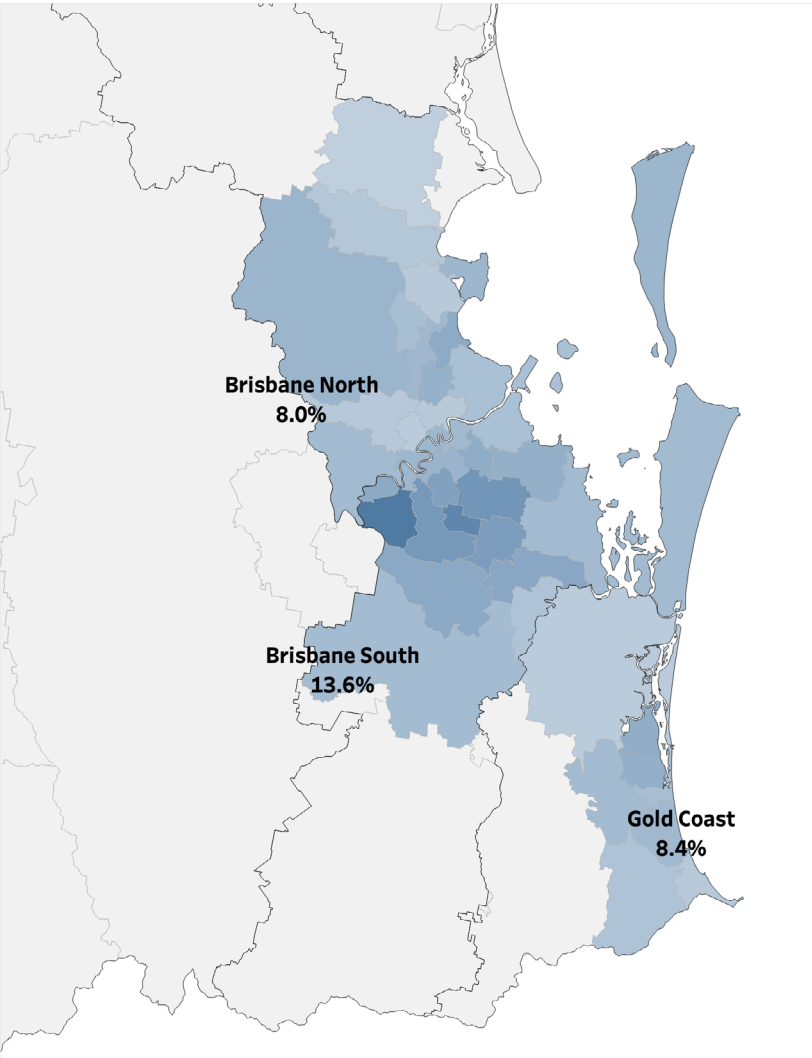
In **Central Queensland, Wide Bay, Sunshine Coast** PHN, the number of people receiving treatment increased by a greater percentage than in any other Qld PHN, and uptake in 2021 reached 7.9% (Table A.18). This increase in treatment numbers occurred in all SA3s except for **Maroochy**. Within the PHN, uptake was highest in **Noosa** (9.8%), **Nambour** (9.6%) and **Gympie – Cooloola** (9.4%) SA3s.

Treatment uptake in **Northern Queensland** PHN overall in 2021 was 7.0%. This PHN contained the SA3 with the third-highest treatment uptake in Qld, **Far North** (17.9%). If the increasing trend in treatment numbers is observed between 2019 and 2021 in this SA3 is maintained over time, the SA3 would be projected to reach the 2022 National Strategy target of 20% treatment uptake. Uptake was also above the PHN average in **Cairns – South** (10.1%) and **Cairns – North** (8.1%) SA3s. In all three SA3s with above average uptake, treatment numbers increased more rapidly than the average for Qld between 2019 and 2021.



Treatment uptake could not be assessed in **Western Queensland**, as the number of people was too small for reliable estimation.

**Figure A.27: Geographic variation in CHB treatment uptake in Greater Brisbane and Gold Coast, by PHN and SA3, 2021**

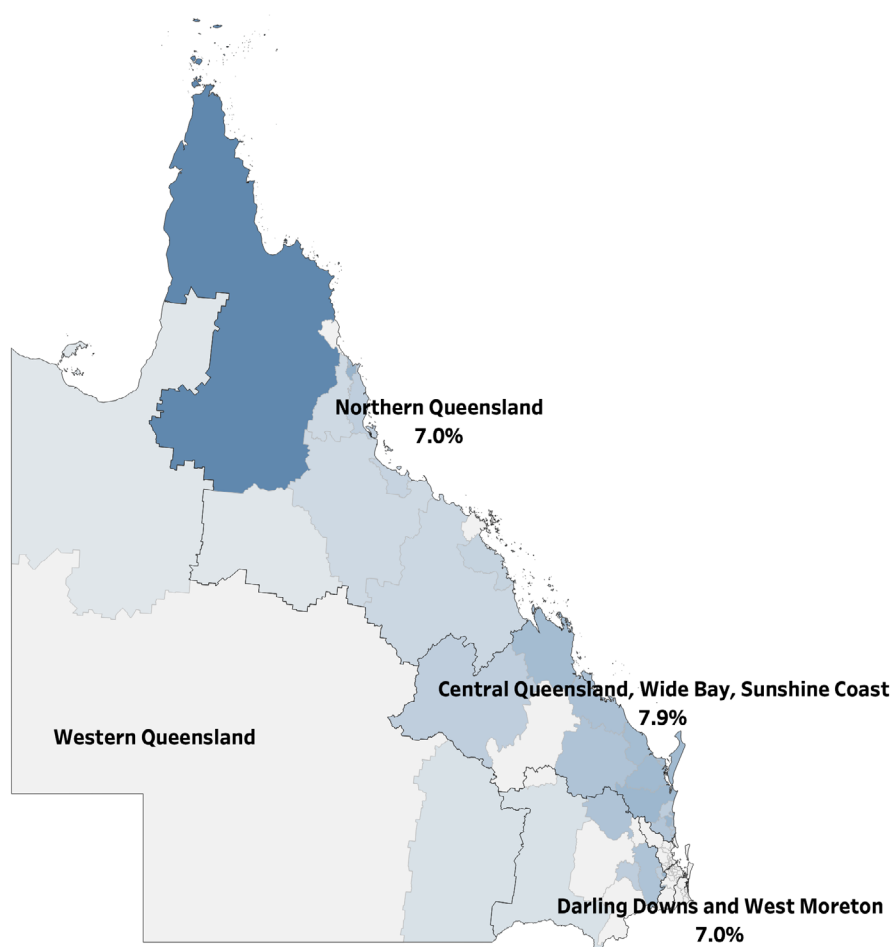


ABS, Australian Bureau of Statistics. CHB, chronic hepatitis B. PHN, Primary Health Network. SA3, Statistical Area 3.

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.28: Geographic variation in CHC treatment uptake in Qld (other than Greater Brisbane and Gold Coast), by PHN and SA3, 2021



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.

## CHB CARE

In Qld, CHB care uptake generally reflected treatment trends. This was seen in **Brisbane South**, which had the highest care uptake (30.7%) of PHNs in Qld, and which was the only PHN with uptake above the national average. Uptake within **Brisbane South** was highest in **Forest Lake – Oxley** (care uptake 50.3%, Table A.18), which was among only three SA3s to reach the 2022 care uptake target of 50% (see [Care across Statistical Area 3 regions](#), and **Northern Queensland** PHN, below). The number of people who received monitoring reduced in **Brisbane South** between 2019 and 2021, consistent with national trends and with most PHNs in Qld.

**Northern Queensland** PHN ranked 13th nationally for care uptake, well above its rank for treatment uptake of 23rd, due to higher-than-average levels of monitoring uptake in those not receiving treatment in this PHN. Care uptake was especially high in the **Far North** SA3 (76.2%), one of only three SA3s to meet the 2022 National Strategy target of 50% care uptake (see [Care across Statistical Area 3 regions](#)).

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.

In contrast to national and state trends, the number of people who received monitoring while not on treatment increased in **Gold Coast** PHN between 2019 and 2021, and remained stable in **Central Queensland, Wide Bay, Sunshine Coast** PHN. Combined with increases in treatment numbers, this led to increases in care uptake over time; however, it still remained below the national average (16.1% and 14.4%, respectively). The number of people engaged in monitoring while not receiving treatment declined in **Darling Downs and West Moreton** PHN more rapidly than any other Qld PHN, due to declines in both 2020 and 2021. This led to a decline in care uptake, and was driven by declines in the **Springfield – Redbank and Toowoomba** SA3s.

**Table A.18: CHB prevalence, treatment uptake and care uptake in Qld by PHN and SA3, 2021**

| PHN and SA3                    | Total population | People living with CHB | CHB prevalence (%) | Treatment uptake (%) | Care uptake (%) |
|--------------------------------|------------------|------------------------|--------------------|----------------------|-----------------|
| <b>Brisbane North PHN</b>      | <b>1,174,419</b> | <b>6,971</b>           | <b>0.59%</b>       | <b>8.0%</b>          | <b>15.4%</b>    |
| Bald Hills – Everton Park      | 57,732           | 314                    | 0.54%              | 9.2%                 | 17.5%           |
| Bribie – Beachmere             | 31,436           | 136                    | 0.43%              | #                    | #               |
| Brisbane Inner                 | 90,290           | 828                    | 0.92%              | 9.4%                 | 19.9%           |
| Brisbane Inner – North         | 125,517          | 784                    | 0.62%              | 6.2%                 | 13.5%           |
| Brisbane Inner – West          | 57,322           | 319                    | 0.56%              | 6.0%                 | 14.7%           |
| Caboolture                     | 91,186           | 487                    | 0.53%              | 5.3%                 | 8.8%            |
| Caboolture Hinterland          | 13,088           | 69                     | 0.53%              | #                    | #               |
| Chermside                      | 82,989           | 551                    | 0.66%              | 10.3%                | 20.7%           |
| Kenmore – Brookfield – Moggill | 50,816           | 321                    | 0.63%              | 8.7%                 | 14.6%           |
| Narangba – Burpengary          | 69,289           | 330                    | 0.48%              | 6.7%                 | 12.1%           |
| North Lakes                    | 95,238           | 544                    | 0.57%              | 6.2%                 | 11.8%           |
| Nundah                         | 43,963           | 243                    | 0.55%              | 7.8%                 | 15.2%           |
| Redcliffe                      | 65,648           | 322                    | 0.49%              | 9.6%                 | 12.7%           |
| Sandgate                       | 54,780           | 305                    | 0.56%              | 11.5%                | 17.4%           |
| Sherwood – Indooroopilly       | 66,876           | 560                    | 0.84%              | 9.5%                 | 20.7%           |
| Strathpine                     | 63,474           | 331                    | 0.52%              | 8.2%                 | 15.1%           |
| The Gap – Enoggera             | 57,430           | 261                    | 0.45%              | 6.5%                 | 13.1%           |
| The Hills District             | 57,344           | 266                    | 0.46%              | 9.8%                 | 17.3%           |
| <b>Brisbane South PHN</b>      | <b>1,157,703</b> | <b>10,363</b>          | <b>0.90%</b>       | <b>13.6%</b>         | <b>29.7%</b>    |
| Beauresert                     | 23,193           | 91                     | 0.39%              | #                    | #               |
| Beenleigh                      | 69,689           | 413                    | 0.59%              | 7.3%                 | 14.5%           |
| Brisbane Inner – East          | 47,128           | 235                    | 0.50%              | 9.0%                 | 15.3%           |

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| PHN and SA3   | Total population | People living with CHB | CHB prevalence (%) | Treatment uptake (%) | Care uptake (%) |
|---|------------------|------------------------|--------------------|----------------------|-----------------|
| Browns Plains   | 75,548           | 697                    | 0.92%              | 11.8%                | 24.7%           |
| Capalaba  | 83,999           | 418                    | 0.50%              | 10.5%                | 19.6%           |
| Carindale   | 50,777           | 360                    | 0.71%              | 11.1%                | 21.4%           |
| Centenary   | 35,537           | 317                    | 0.89%              | 11.7%                | 27.4%           |
| Cleveland – Stradbroke                                  | 89,227           | 413                    | 0.46%              | 8.7%                 | 16.0%           |
| Forest Lake – Oxley                                     | 72,726           | 1,253                  | 1.72%              | 20.7%                | 50.3%           |
| Holland Park – Yeronga                                  | 91,242           | 604                    | 0.66%              | 9.9%                 | 19.2%           |
| Jimboomba   | 46,212           | 256                    | 0.55%              | 8.6%                 | 16.4%           |
| Loganlea – Carbrook                                     | 74,950           | 530                    | 0.71%              | 12.1%                | 22.1%           |
| Mt Gravatt  | 84,260           | 1,072                  | 1.27%              | 15.3%                | 34.5%           |
| Nathan  | 29,019           | 234                    | 0.81%              | 13.2%                | 29.9%           |
| Rocklea – Acacia Ridge                                  | 68,899           | 1,070                  | 1.55%              | 14.7%                | 36.0%           |
| Springwood – Kingston                                   | 88,224           | 949                    | 1.08%              | 13.8%                | 29.1%           |
| Sunnybank   | 48,622           | 1,042                  | 2.14%              | 18.2%                | 38.5%           |
| Wynnum – Manly  | 78,453           | 407                    | 0.52%              | 7.9%                 | 19.2%           |
| <b>Gold Coast PHN</b>                                   | <b>655,990</b>   | <b>3,522</b>           | <b>0.54%</b>       | <b>8.4%</b>          | <b>16.1%</b>    |
| Broadbeach – Burleigh                                   | 69,452           | 323                    | 0.47%              | 9.0%                 | 19.5%           |
| Coolangatta   | 61,234           | 204                    | 0.33%              | 6.4%                 | 10.8%           |
| Gold Coast – North                                      | 40,583           | 229                    | 0.56%              | 10.9%                | 17.0%           |
| Gold Coast Hinterland                                   | 16,407           | 54                     | 0.33%              | #                    | #               |
| Mudgeeraba – Tallebudgera                               | 38,259           | 149                    | 0.39%              | 7.4%                 | 15.5%           |
| Nerang  | 65,404           | 322                    | 0.49%              | 8.7%                 | 14.6%           |
| Ormeau – Oxenford                                       | 160,546          | 815                    | 0.51%              | 6.0%                 | 12.8%           |
| Robina  | 63,898           | 418                    | 0.65%              | 9.1%                 | 18.6%           |
| Southport   | 95,955           | 699                    | 0.73%              | 10.7%                | 19.3%           |
| Surfers Paradise  | 44,252           | 309                    | 0.70%              | 8.1%                 | 16.8%           |
| <b>Central Queensland, Wide Bay, Sunshine Coast PHN</b> | <b>899,762</b>   | <b>3,156</b>           | <b>0.35%</b>       | <b>7.9%</b>          | <b>14.4%</b>    |
| Biloela^  | 11,844           | 52                     | 0.44%              | #                    | #               |
| Buderim   | 69,952           | 265                    | 0.38%              | 6.8%                 | 12.8%           |
| Bundaberg   | 95,103           | 357                    | 0.37%              | 8.4%                 | 16.0%           |
| Caloundra   | 100,304          | 350                    | 0.35%              | 6.6%                 | 11.1%           |
| Central Highlands (Qld)                                 | 24,242           | 127                    | 0.52%              | 5.5%                 | 11.0%           |

| PHN and SA3                               | Total population | People living with CHB | CHB prevalence (%) | Treatment uptake (%) | Care uptake (%) |
|---|------------------|------------------------|--------------------|----------------------|-----------------|
| Gladstone^                                | 64,256           | 231                    | 0.36%              | 7.8%                 | 16.4%           |
| Gympie – Cooloola                         | 55,342           | 169                    | 0.31%              | 9.4%                 | 14.2%           |
| Hervey Bay                                | 68,514           | 243                    | 0.35%              | 8.2%                 | 14.8%           |
| Maroochy                                  | 72,425           | 254                    | 0.35%              | 8.3%                 | 13.0%           |
| Maryborough                               | 41,635           | 124                    | 0.30%              | 8.9%                 | 17.8%           |
| Nambour^                                  | 54,823           | 187                    | 0.34%              | 9.6%                 | 15.0%           |
| Noosa                                     | 36,302           | 123                    | 0.34%              | 9.8%                 | 16.3%           |
| Noosa Hinterland^                         | 25,342           | 71                     | 0.28%              | #                    | #               |
| Rockhampton                               | 127,027          | 445                    | 0.35%              | 8.5%                 | 16.4%           |
| Sunshine Coast Hinterland                 | 52,652           | 158                    | 0.30%              | 6.9%                 | 12.6%           |
| <b>Darling Downs and West Moreton PHN</b> | <b>640,037</b>   | <b>3,187</b>           | <b>0.50%</b>       | <b>7.0%</b>          | <b>15.1%</b>    |
| Burnett                                   | 49,417           | 191                    | 0.39%              | 7.3%                 | 12.6%           |
| Darling Downs – East                      | 39,497           | 126                    | 0.32%              | #                    | #               |
| Darling Downs (West) – Maranoa            | 41,195           | 192                    | 0.47%              | #                    | #               |
| Granite Belt                              | 40,205           | 134                    | 0.33%              | #                    | #               |
| Ipswich Hinterland                        | 52,031           | 204                    | 0.39%              | 7.4%                 | 12.3%           |
| Ipswich Inner                             | 134,565          | 653                    | 0.49%              | 5.7%                 | 12.9%           |
| Springfield – Redbank                     | 109,350          | 953                    | 0.87%              | 9.9%                 | 23.4%           |
| Toowoomba                                 | 173,777          | 734                    | 0.42%              | 5.6%                 | 11.4%           |
| <b>Northern Queensland PHN</b>            | <b>691,984</b>   | <b>4,168</b>           | <b>0.60%</b>       | <b>7.0%</b>          | <b>19.8%</b>    |
| Bowen Basin – North                       | 31,084           | 171                    | 0.55%              | 4.1%                 | 9.4%            |
| Cairns – North                            | 37,569           | 196                    | 0.52%              | 8.1%                 | 16.3%           |
| Cairns – South                            | 125,133          | 972                    | 0.78%              | 10.1%                | 23.8%           |
| Charters Towers – Ayr – Ingham            | 37,201           | 187                    | 0.50%              | 3.8%                 | 8.0%            |
| Far North                                 | 25,373           | 312                    | 1.23%              | 17.9%                | 76.2%           |
| Innisfail – Cassowary Coast               | 36,562           | 293                    | 0.80%              | 5.5%                 | 18.1%           |
| Mackay                                    | 121,116          | 466                    | 0.38%              | 4.7%                 | 13.7%           |
| Port Douglas – Daintree                   | 11,564           | 61                     | 0.53%              | #                    | #               |
| Tablelands (East) – Kuranda               | 45,291           | 291                    | 0.64%              | 3.8%                 | 10.3%           |
| Townsville                                | 198,570          | 1,124                  | 0.57%              | 4.6%                 | 11.6%           |
| Whitsunday                                | 22,520           | 95                     | 0.42%              | #                    | #               |

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| PHN and SA3                   | Total population | People living with CHB | CHB prevalence (%) | Treatment uptake (%) | Care uptake (%) |
|-------------------------------|------------------|------------------------|--------------------|----------------------|-----------------|
| <b>Western Queensland PHN</b> | <b>45,148</b>    | <b>298</b>             | <b>0.66%</b>       | <b>#</b>             | <b>#</b>        |
| Outback – North               | 28,838           | 218                    | 0.76%              | #                    | #               |
| Outback – South               | 16,309           | 80                     | 0.49%              | #                    | #               |

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 <3000.

^ New SA3s added to the Australian Statistical Geography Standard, resulting from the splitting of the previous Nambour–Pomona SA3 into Nambour SA3 and Noosa Hinterland SA3; and the splitting of Gladstone–Biloela SA3 into Gladstone SA3 and Biloela SA3.

# SOUTH AUSTRALIA

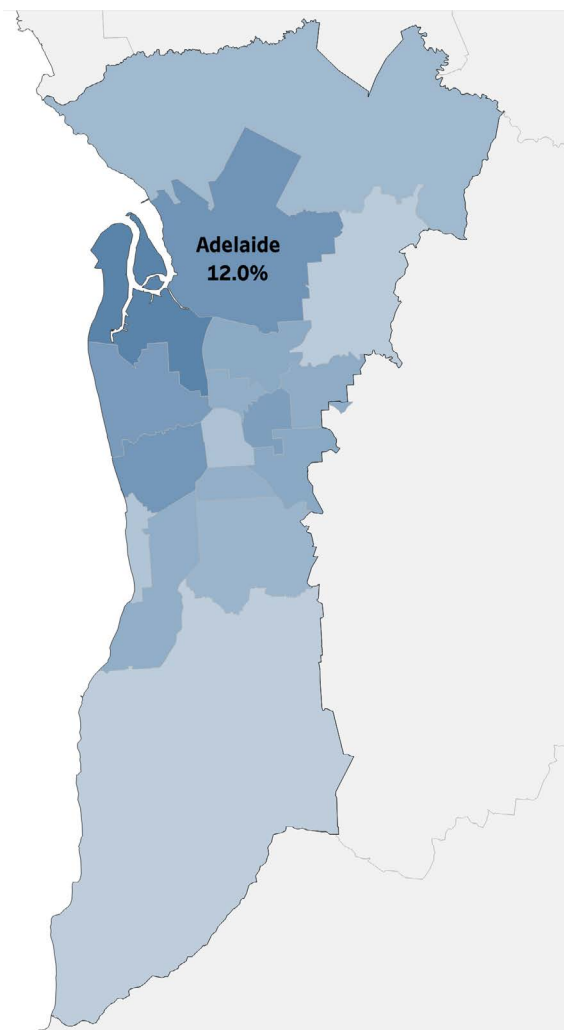
- CHB treatment uptake in SA in 2021 was 10.9%, lower than the national average of 12.7%.
- SA ranked 4th for CHB treatment uptake of the eight states and territories.
- Treatment uptake was highest in Adelaide and lower in more remote regions.
- Treatment numbers in SA increased during 2021, at a similar rate to the national average.
- CHB care uptake assessment in SA was limited by data reliability (see below).

## CHB TREATMENT

Treatment uptake in SA overall was 10.9%, below the national average of 12.7%. Treatment uptake was higher in **Adelaide** PHN (12.0%), and within the PHN was highest in the **Port Adelaide – West** SA3 (18.9%). If the trends in the number of people receiving treatment in this SA3 continue, it is projected to reach the 20% National Strategy treatment uptake target by 2022. Treatment uptake was also above the national average in **Salisbury** (15.6%), **Charles Sturt** (14.2%) and **Norwood – Payneham – St Peters** (13.6%) SA3s (Figure A.29, Table A.19). The number of people receiving treatment in **Adelaide** PHN increased during 2019–2021, by a similar increment as was seen at the national level. However, there was a decline in the number of people receiving treatment in the **Mitcham**, **Playford** and **Unley** SA3s.

Assessing variation in treatment uptake within **Country SA** 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. The number of people receiving treatment in this PHN increased at a similar rate to the national trend during 2019–2021.

Figure A.29: Geographic variation in CHB treatment uptake in Greater Adelaide, by PHN and SA3, 2021



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 SA (other than Greater Adelaide), by PHN and SA3, 2021



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.

## CHB CARE

Estimates of CHB care for SA are subject to significant uncertainty and robust analysis of trends cannot be conducted, due to evidence that a substantial proportion of all viral load tests conducted in SA are performed outside of Medicare (see Section A.1 [Care across states and territories](#)). It is estimated that this may represent at least 40% of tests conducted in 2021 (personal communication, SA Health). If this underestimation is consistent for monitoring tests and is representative across geographic regions, care uptake in **Adelaide** PHN could be as high as 25.3% and in **Country SA** PHN could be as high as 14.9%. Further exploration of these data will be provided in the 2022 Mapping Report.

Table A.19: CHB prevalence, treatment uptake and care uptake\* in SA by PHN and SA3, 2021

| PHN and SA3                    | Total population | People living with CHB | CHB prevalence (%) | Treatment uptake (%) | Care uptake (%) |
|--------------------------------|------------------|------------------------|--------------------|----------------------|-----------------|
| <b>Adelaide PHN</b>            | <b>1,301,097</b> | <b>8,615</b>           | <b>0.66%</b>       | <b>12.0%</b>         | <b>19.8%</b>    |
| Adelaide City                  | 24,617           | 247                    | 1.00%              | 7.7%                 | 15.4%           |
| Burnside                       | 48,285           | 387                    | 0.80%              | 11.9%                | 18.1%           |
| Campbelltown (SA)              | 68,097           | 559                    | 0.82%              | 11.3%                | 20.0%           |
| Charles Sturt                  | 110,543          | 760                    | 0.69%              | 14.2%                | 20.9%           |
| Holdfast Bay                   | 44,417           | 185                    | 0.42%              | 7.0%                 | 14.6%           |
| Marion                         | 76,701           | 420                    | 0.55%              | 11.0%                | 18.1%           |
| Mitcham                        | 80,275           | 414                    | 0.52%              | 9.7%                 | 16.2%           |
| Norwood – Payneham – St Peters | 35,322           | 243                    | 0.69%              | 13.6%                | 23.5%           |
| Onkaparinga                    | 173,259          | 643                    | 0.37%              | 5.6%                 | 9.8%            |
| Playford                       | 98,953           | 647                    | 0.65%              | 9.1%                 | 16.7%           |
| Port Adelaide – East           | 77,983           | 655                    | 0.84%              | 11.6%                | 20.5%           |
| Port Adelaide – West           | 64,585           | 657                    | 1.02%              | 18.9%                | 29.8%           |
| Prospect – Walkerville         | 35,194           | 245                    | 0.70%              | 11.0%                | 18.4%           |
| Salisbury                      | 143,705          | 1,318                  | 0.92%              | 15.6%                | 25.6%           |
| Tea Tree Gully                 | 97,903           | 432                    | 0.44%              | 6.0%                 | 10.4%           |
| Unley                          | 40,408           | 242                    | 0.60%              | 10.7%                | 14.9%           |
| West Torrens                   | 80,852           | 561                    | 0.69%              | 15.1%                | 24.2%           |
| <b>Country SA PHN</b>          | <b>495,858</b>   | <b>1,566</b>           | <b>0.32%</b>       | <b>5.1%</b>          | <b>10.9%</b>    |
| Adelaide Hills                 | 78,533           | 251                    | 0.32%              | #                    | #               |
| Barossa                        | 36,981           | 90                     | 0.24%              | 8.9%                 | 16.7%           |
| Eyre Peninsula and South West  | 55,810           | 178                    | 0.32%              | 6.2%                 | 12.9%           |
| Fleurieu – Kangaroo Island     | 53,815           | 132                    | 0.25%              | #                    | #               |
| Gawler – Two Wells             | 40,007           | 143                    | 0.36%              | 4.2%                 | 9.1%            |
| Limestone Coast                | 65,974           | 216                    | 0.33%              | 5.1%                 | 11.6%           |
| Lower North                    | 22,017           | 51                     | 0.23%              | #                    | #               |
| Mid North                      | 26,341           | 73                     | 0.28%              | #                    | #               |
| Murray and Mallee              | 68,772           | 251                    | 0.36%              | 4.8%                 | 10.4%           |
| Outback – North and East       | 21,817           | 113                    | 0.52%              | 5.3%                 | 22.9%           |
| Yorke Peninsula                | 25,791           | 68                     | 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 <3000.

\* Data relating to SA may underestimate monitoring by up to 40% from 2020 onwards due to the provision of services outside of Medicare.

# TASMANIA

- CHB treatment uptake in Tas. in 2021 was 9.1%, lower than the national average of 12.7%.
- CHB care uptake in Tas. in 2021 was 19.2%, lower than the national average of 22.6%.
- Tas. ranked 7th for CHB treatment uptake and 6th for CHB care uptake of the eight states and territories.
- Treatment numbers in Tas. increased more rapidly than the national average between 2019 and 2021, and more rapidly than any other state or territory.
- Monitoring numbers in Tas. increased between 2019 and 2021, in contrast with declining national trends.

## CHB TREATMENT

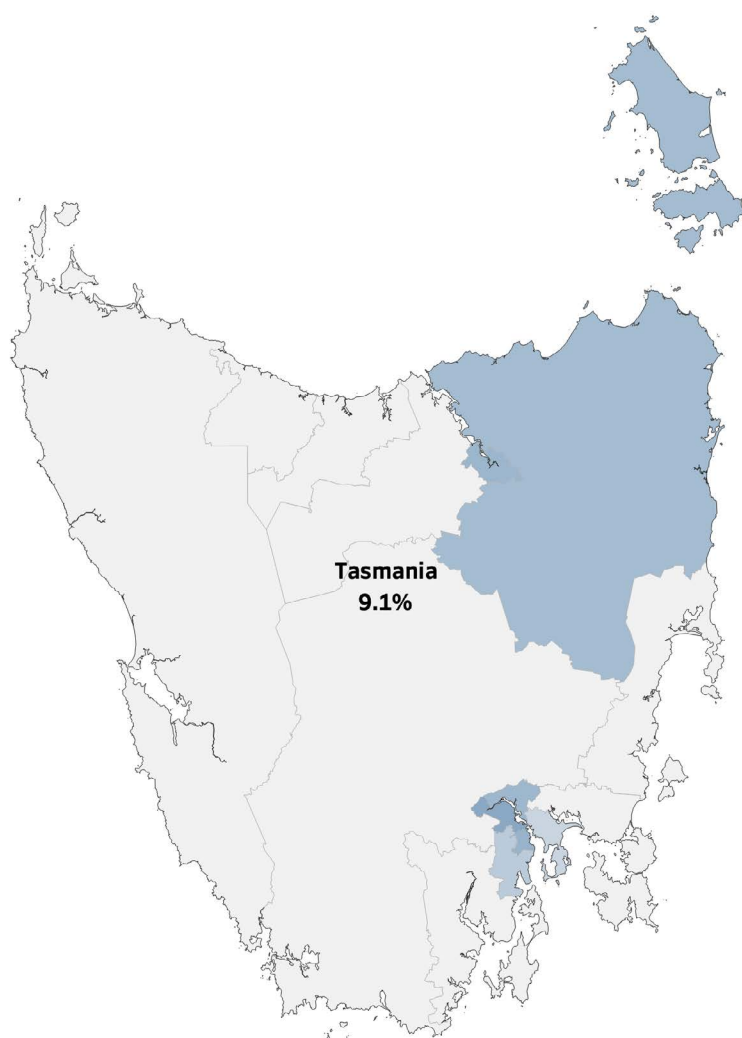
Treatment uptake in the **Tasmania** PHN overall was 9.1%, below the national average of 12.7%. However, **Tasmania** PHN had the second-highest increase in treatment numbers of any PHN between 2019 and 2021, reducing the gap in uptake with other PHNs in Australia. This increase in treatment occurred in all SA3s.

Assessment of variations in treatment uptake in the Tasmania PHN is limited by the small number of people with CHB in most SA3s, and there was no apparent pattern of uptake variation that could be assessed (Figure A.31, Table A.20). No SA3 reached or approached the National Strategy treatment uptake target of 20%, or had uptake above the national average level.

## CHB CARE

The variation in care uptake across the **Tasmania** PHN largely reflected treatment uptake, in the regions with sufficient population to allow assessment of variation. The number of people provided monitoring for CHB in Tas. decreased between 2019 and 2020; however, it increased substantially in 2021 to above the previous baseline, leading to an increase over the overall 2019–2021 period, in contrast to the declining trend observed at the national level.

Figure A.31: Geographic variation in CHB treatment uptake in Tas., by SA3, 2021



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, treatment uptake, and care uptake in Tas., by SA3, 2021

| PHN and SA3                 | Total population | People living with CHB | CHB prevalence (%) | Treatment uptake (%) | Care uptake (%) |
|-----------------------------|------------------|------------------------|--------------------|----------------------|-----------------|
| <b>Tasmania</b>             | <b>569,827</b>   | <b>1,566</b>           | <b>0.27%</b>       | <b>9.1%</b>          | <b>19.2%</b>    |
| Brighton                    | 26,631           | 65                     | 0.24%              | 9.3%                 | 18.6%           |
| Burnie – Ulverstone         | 58,288           | 109                    | 0.19%              | #                    | #               |
| Central Highlands (Tas.)    | 3,259            | 5                      | 0.17%              | #                    | #               |
| Devonport                   | 47,268           | 103                    | 0.22%              | #                    | #               |
| Hobart – North East         | 61,167           | 184                    | 0.30%              | 4.3%                 | 15.2%           |
| Hobart – North West         | 62,547           | 217                    | 0.35%              | 12.0%                | 25.3%           |
| Hobart – South and West     | 38,114           | 135                    | 0.35%              | 5.9%                 | 14.8%           |
| Hobart Inner                | 56,389           | 270                    | 0.48%              | 10.0%                | 24.1%           |
| Huon – Bruny Island         | 22,948           | 43                     | 0.19%              | 14.0%                | 32.7%           |
| Launceston                  | 93,529           | 251                    | 0.27%              | 9.6%                 | 18.8%           |
| Meander Valley – West Tamar | 21,590           | 38                     | 0.18%              | #                    | #               |
| North East                  | 41,127           | 70                     | 0.17%              | 8.6%                 | 17.2%           |
| Sorell – Dodges Ferry       | 18,647           | 43                     | 0.23%              | #                    | #               |
| South East Coast            | 5,815            | 10                     | 0.17%              | #                    | #               |
| West Coast                  | 12,509           | 24                     | 0.19%              | #                    | #               |

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. SA3s not listed where population <3000.

## VICTORIA

- CHB treatment uptake in Vic. in 2021 was 13.3%, similar to the national average of 12.7%.
- CHB care uptake in Vic. in 2021 was 29.5%, higher than the national average of 26.0%.
- Vic. ranked 3rd for CHB treatment uptake and 3rd for CHB care uptake of the eight states and territories.
- Treatment and care uptake were highest in PHNs in the Melbourne metropolitan region, with lower uptake in the more regional areas.
- Care uptake was also highest in Melbourne PHNs, with SA3 regions of above-average uptake also located in the **Murray** PHN.
- Treatment numbers in Vic. increased between 2019 and 2021 but the number of people receiving monitoring declined; these trends were reflected across most PHNs.

### CHB TREATMENT

CHB treatment in Vic. overall was 13.3%, very similar to the national average of 12.7%. Uptake was similarly high across the three Melbourne PHNs; however, considerable variation was seen within the PHNs.

In **North Western Melbourne** PHN, uptake was highest in **Brimbank** (22.3%), where it had already met the National Strategy target of 20%. Treatment uptake was also above the PHN average in the **Maribyrnong** (19.0%), **Melton – Bacchus Marsh** (16.0%), **Yarra** (16.1%), **Darebin North** (15.5%) and **Hobsons Bay** (15.4%) SA3s (Figure A.33, Table A.21). With the exception of **Melbourne City** SA3, treatment uptake was generally lower in more regional parts of the PHN. The lower uptake in **Melbourne City** may reflect the younger and more temporarily resident population, which is more likely to be Medicare ineligible.<sup>17</sup> The number of people who were receiving treatment increased in all SA3s between 2019 and 2021, except for **Wyndham**.

Uptake in **South Eastern Melbourne** PHN overall was 13.1%. This was driven by **Dandenong** SA3 (21.9% uptake), which had the highest uptake in the PHN and which had already met the 2022 National Strategy target of 20% uptake. Uptake was below the Vic. average in all remaining SA3s, ranging between 6 and 12%. The number of people who were receiving treatment increased in all SA3s between 2019 and 2021, most rapidly in **Dandenong**.

In contrast, in **Eastern Melbourne** PHN, treatment uptake was above the state average in almost all SA3s, but none met the 2022 target level of 20%. Uptake was highest in **Manningham – West** (16.9%) and **Monash** (15.2%) and lowest in **Yarra Ranges** (5.5%). Treatment numbers increased in most SA3s in this PHN, but decreased in **Whitehorse – East**, **Whitehorse – West**, and **Yarra Ranges** SA3s.

Within non-metropolitan Vic. PHNs, uptake was highest in **Murray** PHN (8.6%), especially in the **Murray River – Swan Hill** SA3 (15.6%), which was the only SA3 in regional Vic. to exceed the state average treatment uptake (Figure A.32). Uptake was also above the PHN average in **Heathcote – Castlemaine – Kyneton** (13.7%), **Bendigo** (12.2%) and **Mildura** (8.3%). Treatment trends over time varied within the PHN, with an increase overall and in many SA3s, but a decline in the number of people receiving treatment between 2019 and 2021 in the SA3s of **Heathcote – Kyneton – Castlemaine**, **Upper Goulburn Valley** and **Shepparton**.

Uptake in **Gippsland** PHN overall was 8.2%, and was higher than this in the **Wellington** (9.8%) and **Gippsland – East** (9.4%) SA3s. Treatment numbers increased substantially in all SA3s in this PHN, except for **Gippsland – South West**.

Treatment uptake in **Western Victoria** was 8.0% overall. Assessing variation in uptake within this PHN is limited by the population size, as a number of regions have a small number of people living with CHB. SA3s with higher uptake within the PHN included **Colac – Corangamite** (10.9%) and **Geelong** (9.8%). The number of people receiving treatment in **Western Victoria** increased substantially between 2019 and 2021, by a larger proportion than any other PHN in Australia. This led to an increase in uptake for the PHN relative to others in regional Vic. This increase occurred in all SA3s except for **Surf Coast – Bellarine Peninsula**.

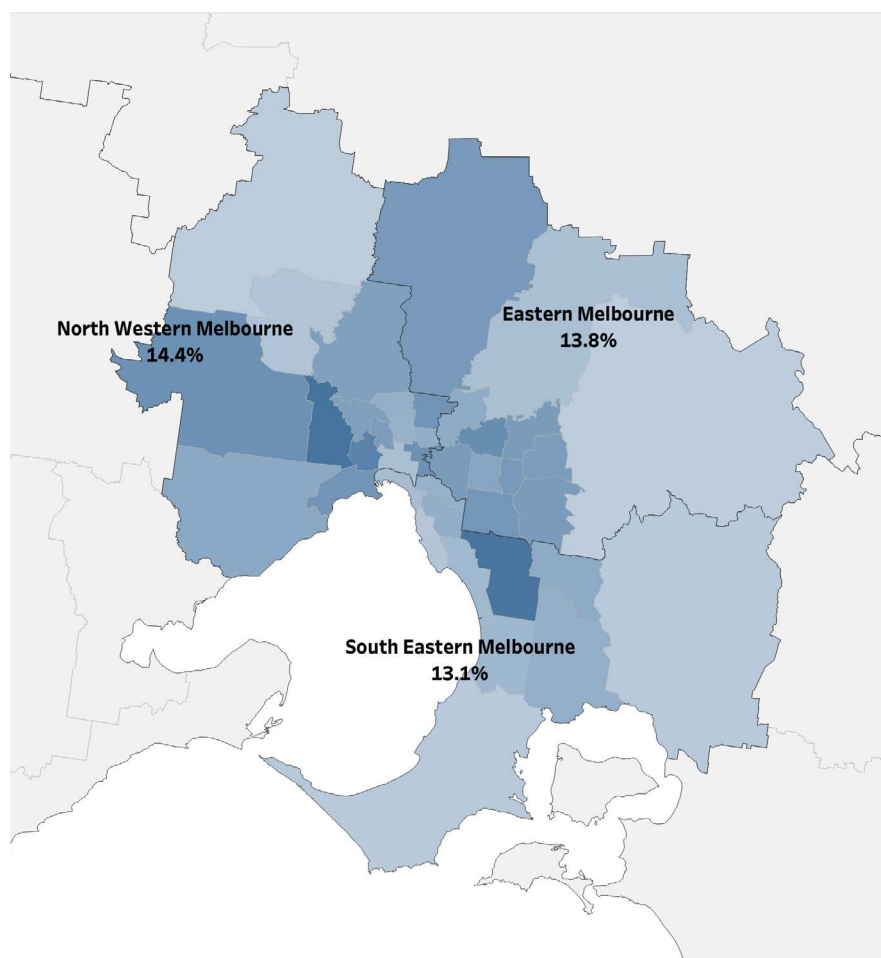
## CHB CARE

Care uptake in Vic. largely reflected treatment uptake according to region; however, there were some variations on this trend. For example the **Murray** PHN had higher care uptake relative to treatment uptake, ranking 11th for care uptake among all PHNs in 2021 compared to 16th for treatment uptake. Murray was the only non-metropolitan PHN which contained SA3s that exceeded the Vic. average for care uptake, specifically **Heathcote – Castlemaine – Kyneton** (34.1%), **Bendigo** (34.0%), and **Murray River – Swan Hill** (33.5%). This was driven in part by trends since 2019, during which time the number of people receiving CHB monitoring increased or remained stable in these SA3s and the PHN overall, whereas at the state level and in many other regions it declined.

Care uptake was highest in the three Melbourne PHNs, reflecting treatment uptake. Two SA3s approached the 50% National Strategy care uptake target: **Brimbank** (48.8%) in **North Western Melbourne** and **Dandenong** (46.7%) in **South Eastern Melbourne**. However, in both these SA3s and in most in Melbourne PHNs, the number of people receiving monitoring declined substantially between 2019 and 2020, and although increases occurred in 2021, they did not return to 2019 levels, therefore a decline was seen overall for 2019–2021.

The number of people receiving monitoring slightly increased or remained stable in three regional PHNs, but all still had care uptake below the national average at the PHN level (Table A.21).

Figure A.32: Geographic variation in CHB treatment uptake in Greater Melbourne, by PHN and SA3, 2021



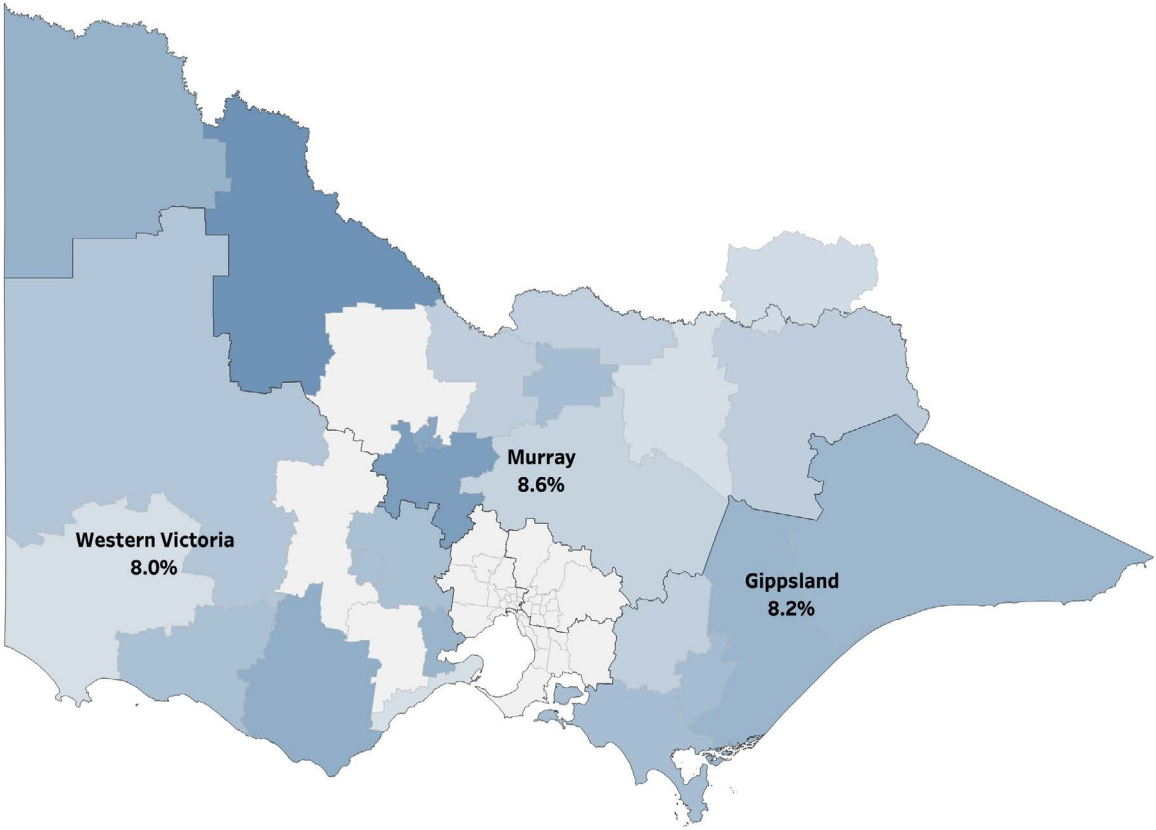
ABS, Australian Bureau of Statistics. CHB, chronic hepatitis B. PHN, Primary Health Network. SA3, Statistical Area 3.

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.33: Geographic variation in CHB treatment uptake in Vic. (other than Greater Melbourne), by PHN and SA3, 2021



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, treatment uptake, and care uptake in Vic., by PHN and SA3, 2021

| PHN and SA3                  | Total population | People living with CHB | CHB prevalence (%) | Treatment uptake (%) | Care uptake (%)' |
|------------------------------|------------------|------------------------|--------------------|----------------------|------------------|
| <b>Eastern Melbourne PHN</b> | <b>1,574,607</b> | <b>17,452</b>          | <b>1.11%</b>       | <b>13.8%</b>         | <b>31.5%</b>     |
| Banyule                      | 124,007          | 981                    | 0.79%              | 11.3%                | 25.8%            |
| Boroondara                   | 179,744          | 2,151                  | 1.20%              | 14.2%                | 33.9%            |
| Knox                         | 174,256          | 1,787                  | 1.03%              | 14.1%                | 32.1%            |
| Manningham – East            | 29,321           | 255                    | 0.87%              | 14.1%                | 24.3%            |
| Manningham – West            | 100,401          | 1,832                  | 1.82%              | 16.9%                | 36.8%            |
| Maroondah                    | 104,139          | 887                    | 0.85%              | 13.9%                | 32.5%            |
| Monash                       | 187,151          | 3,106                  | 1.66%              | 15.2%                | 33.5%            |

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| PHN and SA3                        | Total population | People living with CHB | CHB prevalence (%) | Treatment uptake (%) | Care uptake (%)' |
|------------------------------------|------------------|------------------------|--------------------|----------------------|------------------|
| Nillumbik – Kinglake               | 58,587           | 268                    | 0.46%              | 7.8%                 | 19.4%            |
| Whitehorse – East                  | 64,384           | 957                    | 1.49%              | 14.5%                | 35.0%            |
| Whitehorse – West                  | 120,226          | 1,962                  | 1.63%              | 12.4%                | 30.3%            |
| Whittlesea – Wallan                | 272,661          | 2,508                  | 0.92%              | 14.4%                | 31.1%            |
| Yarra Ranges                       | 159,730          | 758                    | 0.47%              | 5.5%                 | 14.2%            |
| <b>North Western Melbourne PHN</b> | <b>1,814,318</b> | <b>19,648</b>          | <b>1.08%</b>       | <b>14.4%</b>         | <b>31.2%</b>     |
| Brimbank                           | 136,474          | 2,907                  | 2.13%              | 22.3%                | 48.8%            |
| Brunswick – Coburg                 | 89,414           | 710                    | 0.79%              | 10.3%                | 22.5%            |
| Darebin – North                    | 85,280           | 952                    | 1.12%              | 15.5%                | 32.8%            |
| Darebin – South                    | 57,548           | 421                    | 0.73%              | 10.9%                | 21.6%            |
| Essendon                           | 73,859           | 746                    | 1.01%              | 13.9%                | 29.4%            |
| Hobsons Bay                        | 89,837           | 729                    | 0.81%              | 15.4%                | 27.7%            |
| Keilor                             | 64,391           | 577                    | 0.90%              | 13.3%                | 25.8%            |
| Macedon Ranges                     | 31,929           | 121                    | 0.38%              | 5.8%                 | 14.9%            |
| Maribyrnong                        | 74,336           | 1,111                  | 1.49%              | 19.0%                | 38.4%            |
| Melbourne City                     | 146,667          | 2,186                  | 1.49%              | 7.9%                 | 18.5%            |
| Melton – Bacchus Marsh             | 247,275          | 2,560                  | 1.04%              | 16.0%                | 32.9%            |
| Moreland – North                   | 79,780           | 677                    | 0.85%              | 10.6%                | 24.5%            |
| Sunbury                            | 45,804           | 222                    | 0.48%              | 7.2%                 | 15.3%            |
| Tullamarine – Broadmeadows         | 208,747          | 1,852                  | 0.89%              | 13.4%                | 27.7%            |
| Wyndham                            | 295,598          | 3,069                  | 1.04%              | 11.8%                | 28.5%            |
| Yarra                              | 87,379           | 807                    | 0.92%              | 16.1%                | 37.2%            |
| <b>South Eastern Melbourne PHN</b> | <b>1,562,265</b> | <b>14,011</b>          | <b>0.90%</b>       | <b>13.1%</b>         | <b>28.9%</b>     |
| Bayside                            | 103,082          | 683                    | 0.66%              | 6.7%                 | 16.1%            |
| Cardinia                           | 116,280          | 636                    | 0.55%              | 6.3%                 | 17.6%            |
| Casey – North                      | 108,252          | 1,039                  | 0.96%              | 11.5%                | 26.9%            |
| Casey – South                      | 270,440          | 2,303                  | 0.85%              | 10.8%                | 24.8%            |
| Dandenong                          | 190,339          | 4,018                  | 2.11%              | 21.9%                | 46.7%            |
| Frankston                          | 124,493          | 680                    | 0.55%              | 9.3%                 | 20.0%            |
| Glen Eira                          | 147,641          | 1,417                  | 0.96%              | 10.9%                | 23.8%            |
| Kingston                           | 125,350          | 911                    | 0.73%              | 9.1%                 | 19.7%            |

Continued next page

| PHN and SA3                       | Total population | People living with CHB | CHB prevalence (%) | Treatment uptake (%) | Care uptake (%)' |
|-----------------------------------|------------------|------------------------|--------------------|----------------------|------------------|
| Mornington Peninsula              | 171,346          | 725                    | 0.42%              | 6.2%                 | 12.7%            |
| Port Phillip                      | 104,126          | 733                    | 0.70%              | 8.3%                 | 19.7%            |
| Stonnington – East                | 34,919           | 300                    | 0.86%              | 10.3%                | 23.4%            |
| Stonnington – West                | 65,998           | 565                    | 0.86%              | 10.4%                | 24.6%            |
| <b>Gippsland PHN</b>              | <b>292,579</b>   | <b>960</b>             | <b>0.33%</b>       | <b>8.2%</b>          | <b>17.8%</b>     |
| Baw Baw                           | 54,332           | 169                    | 0.31%              | 5.3%                 | 16.0%            |
| Gippsland – East                  | 46,348           | 148                    | 0.32%              | 9.4%                 | 18.2%            |
| Gippsland – South West            | 71,615           | 220                    | 0.31%              | 8.2%                 | 19.1%            |
| Latrobe Valley                    | 77,275           | 281                    | 0.36%              | 8.6%                 | 18.2%            |
| Wellington                        | 43,009           | 143                    | 0.33%              | 9.8%                 | 16.8%            |
| <b>Murray PHN</b>                 | <b>636,046</b>   | <b>2,401</b>           | <b>0.38%</b>       | <b>8.6%</b>          | <b>20.8%</b>     |
| Albury                            | 67,224           | 265                    | 0.39%              | 3.4%                 | 10.6%            |
| Bendigo                           | 112,136          | 409                    | 0.36%              | 12.2%                | 34.0%            |
| Campaspe                          | 37,257           | 111                    | 0.30%              | 5.4%                 | 14.5%            |
| Heathcote – Castlemaine – Kyneton | 45,159           | 132                    | 0.29%              | 13.7%                | 34.1%            |
| Loddon – Elmore                   | 8,111            | 23                     | 0.28%              | #                    | #                |
| Mildura                           | 54,649           | 284                    | 0.52%              | 10.2%                | 20.4%            |
| Moir                              | 30,713           | 94                     | 0.31%              | #                    | #                |
| Murray River – Swan Hill          | 36,149           | 188                    | 0.52%              | 15.9%                | 33.5%            |
| Shepparton                        | 66,270           | 336                    | 0.51%              | 8.3%                 | 17.3%            |
| Upper Goulburn Valley             | 56,739           | 169                    | 0.30%              | 4.7%                 | 16.6%            |
| Wangaratta – Benalla              | 46,805           | 132                    | 0.28%              | #                    | #                |
| Wodonga – Alpine                  | 74,833           | 258                    | 0.34%              | 5.4%                 | 10.9%            |
| <b>Western Victoria PHN</b>       | <b>680,126</b>   | <b>2,366</b>           | <b>0.35%</b>       | <b>8.0%</b>          | <b>18.8%</b>     |
| Ballarat                          | 129,613          | 430                    | 0.33%              | 7.9%                 | 14.9%            |
| Barwon – West                     | 19,959           | 49                     | 0.25%              | #                    | #                |
| Colac – Corangamite               | 36,197           | 110                    | 0.30%              | 10.9%                | 23.7%            |
| Creswick – Daylesford – Ballan    | 23,633           | 64                     | 0.27%              | #                    | #                |
| Geelong                           | 219,827          | 959                    | 0.44%              | 9.8%                 | 24.1%            |
| Glenelg – Southern Grampians      | 36,585           | 101                    | 0.28%              | #                    | #                |

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| PHN and SA3                      | Total population | People living with CHB | CHB prevalence (%) | Treatment uptake (%) | Care uptake (%)' |
|----------------------------------|------------------|------------------------|--------------------|----------------------|------------------|
| Grampians                        | 57,925           | 186                    | 0.32%              | 7.0%                 | 17.2%            |
| Maryborough – Pyrenees           | 18,377           | 50                     | 0.27%              | #                    | #                |
| Surf Coast – Bellarine Peninsula | 86,383           | 253                    | 0.29%              | 2.8%                 | 10.3%            |
| Warrnambool – Otway Ranges       | 51,628           | 164                    | 0.32%              | 7.9%                 | 15.2%            |

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 <3000.

## WESTERN AUSTRALIA

- CHB treatment uptake in WA in 2021 was 8.5%, lower than the national average of 12.7%.
- CHB care uptake in WA in 2021 was 12.5%, lower than the national average of 26.0%.
- WA ranked 8th for CHB treatment uptake and 8th for CHB care 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.
- Treatment numbers in WA increased between 2019 and 2021, consistent with national trends.

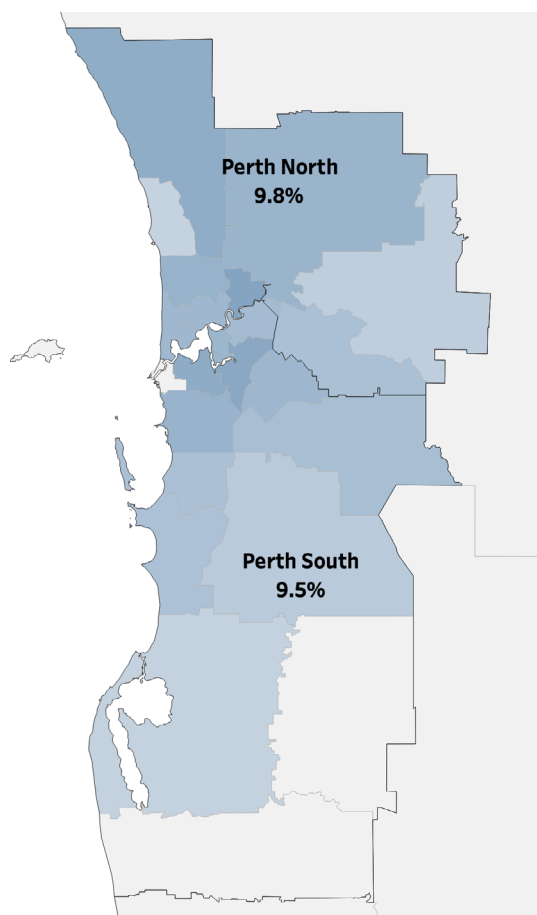
### CHB TREATMENT

Treatment uptake was similar in **Perth North** (9.8%) and **Perth South** (9.5%) PHNs (Figure A.34). Treatment uptake was highest in the **Bayswater – Bassendean** (12.6%) and **Wanneroo** (11.2%) SA3s in **Perth North**, and in **Canning** (12.0%) and **Melville** (12.0%) SA3s in **Perth South** (Table A.22).

The number of people receiving treatment for CHB increased in both PHNs between 2019 and 2021, although the increase was more rapid in **Perth South** PHN. This increase was reflected in all SA3s in these two PHNs except for **Rockingham** in **Perth South** PHN and **Wanneroo** in **Perth North** PHN.

Treatment uptake in **Country WA** PHN, where more than half of all people living with CHB live in remote areas (Figure A.4), was 3.6%, lower than the state average. Treatment uptake appeared to be similar across SA3s, ranging from 3 to 5%; however, low numbers limited robust comparisons across these regions (Figure A.35).

Figure A.34: Geographic variation in CHB treatment uptake in Greater Perth, by PHN and SA3, 2021

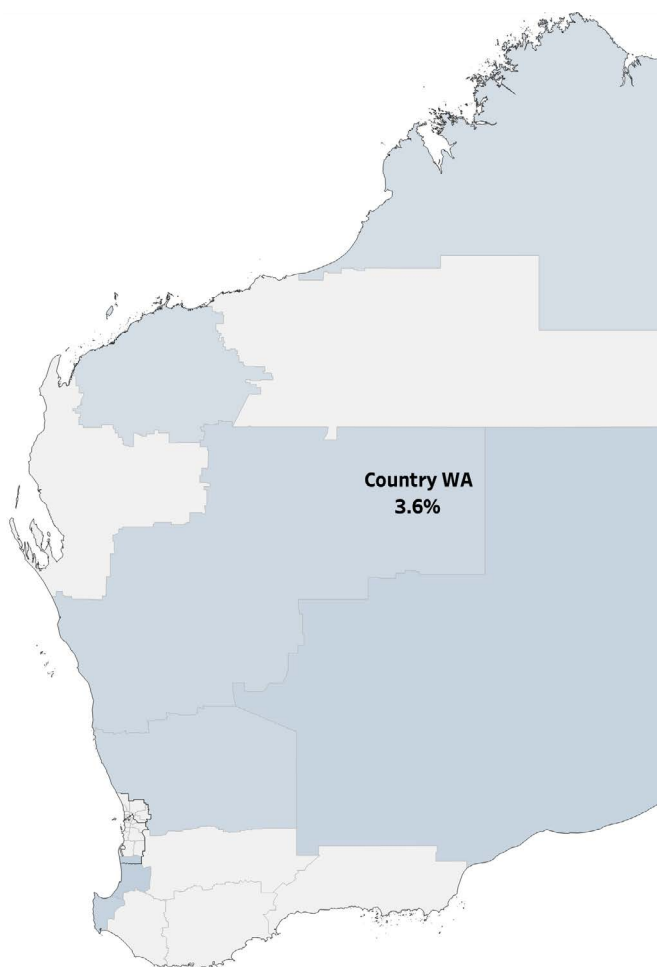


ABS, Australian Bureau of Statistics. CHB, chronic hepatitis B. PHN, Primary Health Network. SA3, Statistical Area 3.

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.35: Geographic variation in CHB treatment uptake in WA (other than Greater Perth), by PHN and SA3, 2021



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.

## CHB CARE

Care uptake within WA was higher in **Perth North** (14.8%) and **Perth South** (13.7%) PHNs than in **Country WA** (5.1%), reflecting treatment trends. Care uptake within WA generally reflected treatment uptake, being higher in metropolitan compared to rural areas. Although some metropolitan regions had lower uptake, care uptake generally ranged between 10 and 20% within these PHNs. Within **Country WA**, it was not possible to fully assess variation due to the number of SA3s with populations too low for accurate estimation.

Table A.22: CHB prevalence, treatment uptake, and care uptake in WA by PHN and SA3, 2021

| PHN and SA3                          | Total population | People living with CHB | CHB prevalence (%) | Treatment uptake (%) | Care uptake (%) |
|--------------------------------------|------------------|------------------------|--------------------|----------------------|-----------------|
| <b>Perth North PHN</b>               | <b>1,156,973</b> | <b>8,708</b>           | <b>0.75%</b>       | <b>9.8%</b>          | <b>14.8%</b>    |
| Bayswater – Bassendean               | 88,410           | 848                    | 0.96%              | 12.6%                | 18.1%           |
| Cottesloe – Claremont                | 66,651           | 442                    | 0.66%              | 9.3%                 | 12.4%           |
| Joondalup                            | 161,953          | 818                    | 0.50%              | 4.8%                 | 8.9%            |
| Kalamunda                            | 55,486           | 280                    | 0.51%              | 7.8%                 | 14.4%           |
| Mundaring                            | 26,212           | 110                    | 0.42%              | 5.5%                 | 11.5%           |
| Perth City                           | 134,921          | 1,096                  | 0.81%              | 9.2%                 | 13.7%           |
| Stirling                             | 226,252          | 2,065                  | 0.91%              | 10.2%                | 15.5%           |
| Swan                                 | 175,514          | 1,356                  | 0.77%              | 9.9%                 | 15.5%           |
| Wanneroo                             | 221,574          | 1,692                  | 0.76%              | 11.2%                | 16.2%           |
| <b>Perth South PHN</b>               | <b>1,084,059</b> | <b>8,086</b>           | <b>0.75%</b>       | <b>9.5%</b>          | <b>13.7%</b>    |
| Armadale                             | 99,567           | 696                    | 0.70%              | 8.0%                 | 13.5%           |
| Belmont – Victoria Park              | 77,921           | 741                    | 0.95%              | 8.6%                 | 12.5%           |
| Canning                              | 160,248          | 1,871                  | 1.17%              | 12.0%                | 16.7%           |
| Cockburn                             | 140,371          | 966                    | 0.69%              | 10.1%                | 14.2%           |
| Fremantle                            | 34,358           | 154                    | 0.45%              | #                    | #               |
| Gosnells                             | 86,006           | 798                    | 0.93%              | 9.4%                 | 13.0%           |
| Kwinana                              | 48,349           | 347                    | 0.72%              | 7.8%                 | 12.8%           |
| Mandurah                             | 111,800          | 517                    | 0.46%              | 4.8%                 | 7.4%            |
| Melville                             | 103,678          | 796                    | 0.77%              | 11.3%                | 16.2%           |
| Rockingham                           | 141,995          | 671                    | 0.47%              | 7.6%                 | 10.8%           |
| Serpentine – Jarrahdale              | 33,915           | 163                    | 0.48%              | 6.1%                 | 10.9%           |
| South Perth                          | 45,850           | 365                    | 0.80%              | 9.6%                 | 14.3%           |
| <b>Country WA PHN</b>                | <b>521,201</b>   | <b>4,119</b>           | <b>0.79%</b>       | <b>3.6%</b>          | <b>5.1%</b>     |
| Albany                               | 63,095           | 322                    | 0.51%              | #                    | #               |
| Augusta – Margaret River – Busselton | 58,905           | 195                    | 0.33%              | 4.6%                 | 6.3%            |
| Bunbury                              | 112,177          | 435                    | 0.39%              | 5.3%                 | #               |
| East Pilbara                         | 22,565           | 393                    | 1.74%              | #                    | #               |
| Esperance                            | 15,546           | 81                     | 0.52%              | #                    | #               |
| Gascoyne                             | 8,778            | 124                    | 1.41%              | #                    | 6.1%            |
| Goldfields                           | 35,612           | 348                    | 0.98%              | 4.6%                 | 6.8%            |
| Kimberley                            | 33,348           | 1,109                  | 3.32%              | 3.1%                 | 4.4%            |

Continued next page



| PHN and SA3        | Total population | People living with CHB | CHB prevalence (%) | Treatment uptake (%) | Care uptake (%) |
|--------------------|------------------|------------------------|--------------------|----------------------|-----------------|
| Manjimup           | 23,403           | 88                     | 0.38%              | #                    | #               |
| Mid West           | 53,265           | 384                    | 0.72%              | 3.9%                 | 5.8%            |
| West Pilbara       | 27,014           | 323                    | 1.19%              | 3.1%                 | 5.2%            |
| Wheat Belt – North | 49,226           | 233                    | 0.47%              | 3.9%                 | 6.0%            |

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 <3000.

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SECTION B:  
VIRAL HEPATITIS  
SEROLOGY  
TESTING TRENDS

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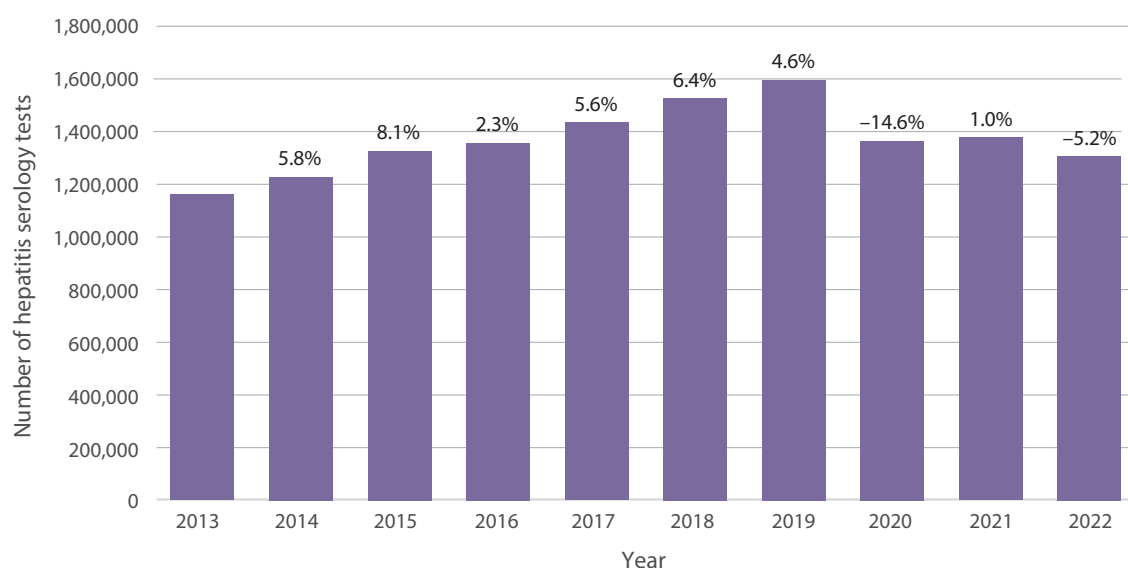
# SECTION B1: VIRAL HEPATITIS SEROLOGY TESTING TRENDS

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 the majority of tests are for diagnosing hepatitis B and C, and for monitoring hepatitis B.

The number of hepatitis serology tests had previously been consistently increasing over time, by an average of 5.5% per year between 2013 and 2019 (Figure B.1). This increase occurred in all states and territories, with an average yearly increase of between 4 and 11%.

However, in 2020, the number of viral hepatitis serology test items declined by 14.6%, reducing from 1,584,349 to 1,353,508 (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 occurring each month has since not risen above the number in March 2020. There was some increase during 2021 but further declines occurred in 2022 (Figure B.1). Overall, this represented an 18.2% decline in the number of tests between 2019 and 2022. Compared to the expected trend, this represents 1,276,320 fewer hepatitis serology tests occurring during 2020–2022 than would have been expected if trends had remained stable from 2019 onwards.

**Figure B.1: Number of hepatitis serology test items (bars) and proportional change from previous year (labels), by year, 2013–2022**



Data source: Testing data sourced from Medicare statistics.

[\(see data for this figure\)](#)

## EFFECT ON DIAGNOSIS

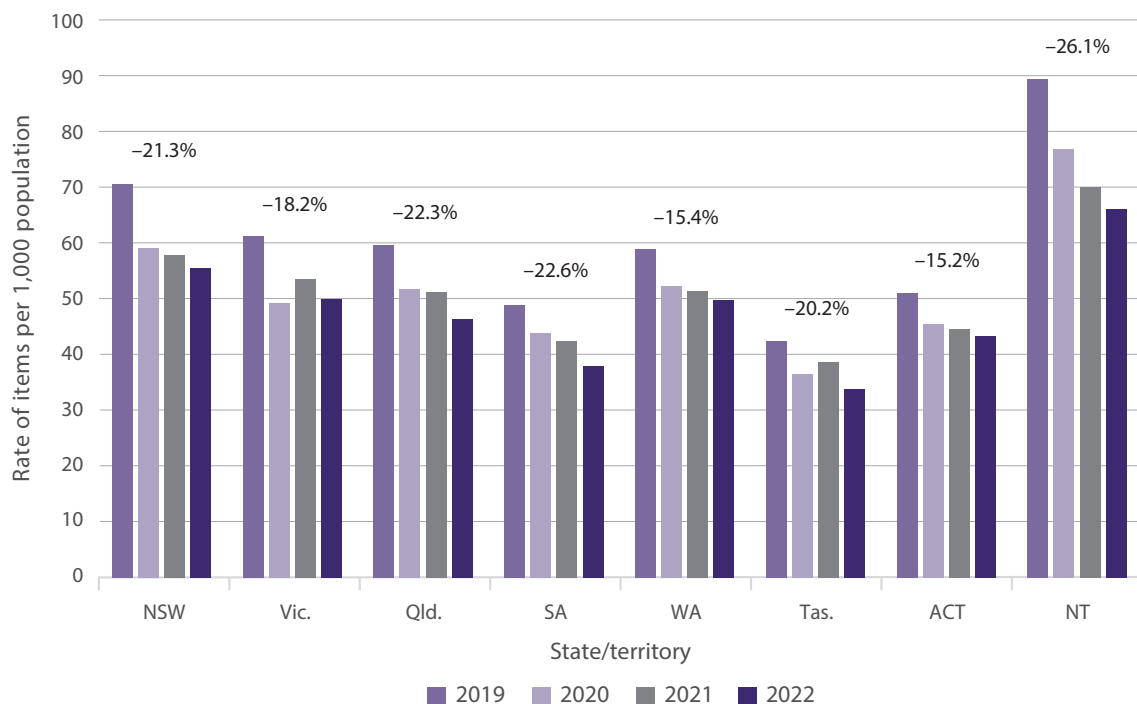
This decrease in testing was reflected in a 12% decline in unspecified (chronic) hepatitis B notifications during 2020 compared to 2019, with 674 fewer new diagnoses of hepatitis B during this period. This decline is much more rapid than the average of 2.8% per year during 2013–2019. Hepatitis B notifications reduced by another 1.4% in 2021.

Conversely, the decline in unspecified (chronic) hepatitis C notifications during 2020 (12.7%) was similar to the decline in the previous year (15.5%). Notifications declined a further 5.1% in 2021. This more stable trend is consistent with estimates that the proportion undiagnosed for hepatitis C is lower than for hepatitis B. Further, a significant proportion of new diagnoses of hepatitis B occur through migration screening, and migration reduced as a result of the international border closures imposed during 2020 and 2021.

## TRENDS BY STATE AND TERRITORY

The observed decline in the number of hepatitis serology tests from 2020 onward occurred in all states and territories (Figure B.2), with an average decline in the rate of tests of 20.2%. The decline ranged from 15.4% in WA to 26.1% in the NT. In most states and territories, the largest decline occurred between 2019 and 2020; however, in SA and Qld there were similar declines in both 2019–2020 and 2021–2022 (Figure B.2).

**Figure B.2: Rate of hepatitis serology items per 1,000 population, by state/territory and year, 2019–2022 (labels show total proportional change between 2019 and 2022)**



ABS, Australian Bureau of Statistics.

Data source: Testing data sourced from Medicare statistics. Population denominator sourced from ABS Estimated Resident Population.

[\(see data for this figure\)](#)

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# SECTION C: DATA SOURCES AND METHODOLOGY

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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](mailto:jennifer.maclachlan@mh.org.au).

Table C.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 and 2021 Census data according to population              | Postcode 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 Census data according to population, and NNDSS data | Postcode 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   | Postcode of residence when a person was dispensed treatment (as recorded in Medicare data)           |
| CHB monitoring   | Number of people who received a viral load test during the specified time period   | MBS data   | Postcode of residence when a person was tested (as recorded in Medicare data)                        |
| CHB care (treatment or monitoring)                             | Number of people who <i>either</i> received treatment <i>or</i> were provided with monitoring in the past year   | MBS data   | Postcode of residence when a person was tested or dispensed treatment (as recorded in Medicare data) |
| Hepatitis B immunisation                                       | Proportion of children fully immunised for hepatitis B (doses at two, four and six months) at 12 months of age   | Australian Immunisation Register data  | Postcode of residence for the child at one year of age   |
| Number of hepatitis serology MBS items                         | Number of items for hepatitis serology testing items provided through Medicare (non-specific item used for any hepatitis test)                           | MBS  | State/territory of residence when a person was tested (as recorded in Medicare data)                 |

CHB, chronic hepatitis B. MBS, Medicare Benefits Schedule. NNDSS, National Notifiable Diseases Surveillance System. PBS, Pharmaceutical Benefits Scheme.

Table C.2: Common data terms

| Term             | Definition  |
|------------------|---|
| Data suppression | Data are not reported when the number of people is fewer than six, indicated in tables using '#'. Suppression is to protect confidentiality, in accordance with data access agreements. Data are also suppressed when the number of people is so low or the estimated proportion so high that it reduces the reliability of estimates; the threshold applied is 85%, and uptake in these areas is indicated as '>85%'.  |
| 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 1.7 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 type    | Practitioner category of the practitioner prescribing treatment or ordering a test, as derived by Medicare based on the practitioner's service history.<br><br>Broad groups were GP, specialist, and other (includes nurse practitioner, temporary resident doctor, locum relief doctor and others not able to be classified as GP or specialist).  |
| 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.<br><br>This report used the 2016 Remoteness Area Structure as 2021 concordances were not yet available.   |
| SA2              | Geographic area defined by the ABS. These are smaller than SA3s; populations usually range between 3,000 to 25,000 people. There were 2,310 SA2s in Australia in 2016.<br><br>This report used 2016 SA2 boundaries to concord with other available data sources.  |
| SA3              | Geographic area defined by the ABS. These are larger than SA2s; populations usually range between 30,000 and 130,000 residents. This report used 2021 ABS SA3 boundaries, and excluded SA3s with a population smaller than 3,000 residents to ensure reliable reporting. There were 358 SA3s in Australia in 2021, of which 330 are included in this report as they contained sufficient total population.<br><br>Treatment and care metrics are not reported if the number of individuals who have received treatment and/or care was <6. This meant reporting was restricted to 284 SA3s. |

ABS, Australian Bureau of Statistics. GP, general practitioner. 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.<sup>22</sup> Further information regarding the model can be found in the associated paper<sup>22</sup> and report.<sup>1</sup> 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.<sup>16</sup>

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,<sup>13,23,24</sup> which were adjusted upwards to correct for the discrepancy in CHB prevalence by sex, according to the differential between men and women observed in published serosurveys.<sup>25</sup> Prevalence estimates for countries for which data were not available from local source estimates were generated from global systematic review papers.<sup>26,27</sup> These prevalence data are combined with data according to country of birth obtained from the 2021 Census. Country-of-birth designations use the Standard Australian Classification of Countries 2016, which adopts a broad definition of 'country' that includes sovereign nation states, administrative subdivisions, external territories, and regions under disputed ownership or control.<sup>28</sup> This report follows ABS naming conventions for such countries.<sup>29</sup>

These data were extracted at the level of postcode and then assigned to each remoteness area, SA3 and PHN using the postcode of residence and concordances published by the Australian Bureau of Statistics (ABS)<sup>30</sup> and the Department of Health and Aged Care.<sup>31</sup> This ensured consistency with other measures used in conjunction with these estimates (such as treatment and care) which use postcode to derive geography. The total population obtained using the Census in each area was adjusted up to meet the total Australian Estimated Resident Population for December 2021.

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.<sup>12,32,33</sup> Population-level data were also available for Queensland within the Far North region,<sup>34</sup> and these were used to generate prevalence estimates in this area as well as in the very remote regions of Western Queensland. These changes had the impact of reducing CHB prevalence compared to the previous Mapping Report. The impact of these changes is discussed in detail in the [Mapping Report Supplement](#).



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.<sup>35</sup> These data sources were combined to generate tailored figures for estimated hepatitis B prevalence in each rurality classification, within each state/territory. These estimate are provided in the [Mapping Report Supplement](#).

CHB prevalence in men who have sex with men was estimated based on population-level data generated in Australia.<sup>36–38</sup> 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.<sup>6</sup> The prevalence of CHB in people who inject drugs in Australia was derived from a global systematic review.<sup>39</sup> The number of people who inject drugs was estimated using age-specific data obtained from the 2019 National Drug Strategy Household Survey.<sup>7</sup> 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 [Prevalence 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 proportion of people living with CHB who had been diagnosed was estimated using model-derived estimates of the total number of people who had ever had CHB in Australia as the denominator, and the cumulative number of notifications of CHB from 1971 to 2021 as the numerator. Mortality was not included in the model, therefore the proportion derived represents people ever having lived with CHB who have ever been diagnosed. 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. More information on source information and methodology can be found in the report and referenced publication.<sup>1,22</sup>

## 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.

Regions of residence were assigned using the postcode of a person's residence at the time of the prescription dispensing or service provision. Postcodes were assigned to each SA3 using the concordances published by the ABS.<sup>30,40,41</sup> These SA3s were then assigned to each remoteness area and PHN using the postcode of residence and concordances published by the ABS<sup>30</sup> and the Department of Health and Aged Care.<sup>31</sup> These residential details depend on a person updating their information with Medicare, so they may not have been up to date for all people. All time periods are based on the date of service, which represents the date the patient was supplied with their medication by a pharmacy or the date a test was performed.

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). Previous analyses and comparison with other source data demonstrated that the vast majority of testing and treatment services for patients with hepatitis B and C are provided through Medicare and included in these estimates;<sup>42</sup> however, this is not the case in some regions, such as SA.

### 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 the Medicare record, and is provided as only male or female.

### Provider type

The provider type used by Medicare is a derived designation, based on a practitioner's service history, and broadly grouped as GP, specialist or 'other' (which includes nurse practitioners, temporary resident doctors, locum relief doctors and others not able to be classified as either GP or specialist). Practitioners-in-training were categorised into their prospective occupational categories (for example, specialist trainees were classified as specialists rather than as 'other').

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 (specialist or other provider) 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, i.e. prescribed one or more of the prescriptions.

### Treatment

Treatment data for CHB represent the number of people prescribed any drug listed on the PBS<sup>43</sup> for the treatment of CHB (adefovir, entecavir, lamivudine, pegylated interferon alfa-2a and tenofovir).

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](#) section 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.

The main measure of hepatitis B monitoring used is the composite 'in care' indicator, which is defined as receiving either treatment or a viral load test in the past 12 months. This indicator includes viral load tests only for people who have not been prescribed any hepatitis B treatment in the past 12 months.

Three other hepatitis B viral load measures are used in reporting, which assess longitudinal engagement: the proportion who had at least one viral load test in the past six years, the proportion who had three or more tests (reflecting testing approximately every two years), and the proportion who had six or more tests (representing testing at least annually). All of these measures include people who are receiving treatment as well as people who are not receiving treatment.

## Hepatitis B projections

Future projections for hepatitis B at the national and state/territory level were derived from the [National Surveillance for Hepatitis B Indicators Annual Report 2021](#).<sup>1</sup> These projections incorporate population, demographic, migration, vaccine uptake and mortality data. Estimates of treatment uptake in 2025 by PHN were based on the average change in uptake between 2019 and 2021, as yearly trends during this period were highly variable. PHN-level projections beyond 2025 were not generated in this report because of the extremely high uncertainty in future total population, CHB prevalence, and treatment and care uptake trends, as well as anticipated future changes to targets in the upcoming National Strategy 2023–2030.

## 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 two, four and six 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 data were obtained for coverage according to state and territory and PHN for all children and for Aboriginal and Torres Strait Islander children.<sup>44</sup>

Data for overall coverage at the national level were obtained from reporting by the National Centre for Immunisation Research and Surveillance.<sup>45</sup>

## Viral hepatitis serology testing – national, state and territory trends

### DATA SOURCE

The data source used was MBS records.

Data were extracted from the publicly available data reported 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 December 2022. The proportional change each year was calculated during this period, as well as the expected number for 2020–2022 based on linear projection of the trend observed during 2013 to 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 2022.

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.

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# DATA TABLES TO ACCOMPANY FIGURES

Figure A.1: CHB cascade of care, Australia, 2021

| Cascade category                          | Number of people | Proportion of total living with CHB |
|---|------------------|-------------------------------------|
| Living with chronic hepatitis B infection | 200,385          |                                     |
| Diagnosed                                 | 145,281          | 72.5%                               |
| Undiagnosed                               | 55,104           | 27.5%                               |
| Engaged in care                           | 52,121           | 26.0%                               |
| Not in care                               | 148,264          | 74.0%                               |
| Need treatment                            | 40,077           | 20.0%                               |
| Receiving treatment                       | 25,410           | 12.7%                               |
| Not receiving treatment                   | 14,667           | 7.3%                                |

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Figure A.2: Estimated prevalence of CHB by PHN, 2021

| Primary Health Network                       | Proportion of the population living with CHB (%) |
|--|--|
| Northern Territory                           | 1.73%  |
| South Western Sydney                         | 1.32%  |
| Western Sydney                               | 1.24%  |
| Central and Eastern Sydney                   | 1.20%  |
| Northern Sydney                              | 1.14%  |
| Eastern Melbourne                            | 1.11%  |
| North Western Melbourne                      | 1.08%  |
| South Eastern Melbourne                      | 0.90%  |
| Brisbane South                               | 0.90%  |
| Country WA                                   | 0.79%  |
| <b>NATIONAL AVERAGE</b>                      | <b>0.78%</b>                                     |
| Perth North                                  | 0.75%  |
| Perth South                                  | 0.75%  |
| Adelaide                                     | 0.66%  |
| Western Queensland                           | 0.66%  |
| Australian Capital Territory                 | 0.63%  |
| Northern Queensland                          | 0.60%  |
| Brisbane North                               | 0.59%  |
| Nepean Blue Mountains                        | 0.57%  |
| Gold Coast                                   | 0.54%  |
| Western NSW                                  | 0.51%  |
| Darling Downs and West Moreton               | 0.50%  |
| Hunter New England and Central Coast         | 0.42%  |
| Murrumbidgee                                 | 0.42%  |
| South Eastern NSW                            | 0.41%  |
| North Coast                                  | 0.38%  |
| Murray                                       | 0.38%  |
| Central Queensland, Wide Bay, Sunshine Coast | 0.35%  |
| Western Victoria                             | 0.35%  |
| Gippsland                                    | 0.33%  |
| Country SA                                   | 0.32%  |
| Tasmania                                     | 0.27%  |

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Figure A.3: Estimated number of people living with CHB by PHN (prevalence in brackets), 2021

| Primary Health Network                       | Number of people living with CHB |
|--|----------------------------------|
| North Western Melbourne                      | 19648                            |
| Central and Eastern Sydney                   | 18933                            |
| Eastern Melbourne                            | 17452                            |
| Western Sydney                               | 14153                            |
| South Eastern Melbourne                      | 14011                            |
| South Western Sydney                         | 13535                            |
| Northern Sydney                              | 10486                            |
| Brisbane South                               | 10363                            |
| Perth North                                  | 8708                             |
| Adelaide                                     | 8615                             |
| Perth South                                  | 8086                             |
| Brisbane North                               | 6971                             |
| Hunter New England and Central Coast         | 5476                             |
| Northern Territory                           | 4325                             |
| Northern Queensland                          | 4168                             |
| Country WA                                   | 4119                             |
| Gold Coast                                   | 3522                             |
| Darling Downs and West Moreton               | 3187                             |
| Central Queensland, Wide Bay, Sunshine Coast | 3156                             |
| Australian Capital Territory                 | 2840                             |
| South Eastern NSW                            | 2603                             |
| Murray                                       | 2401                             |
| Western Victoria                             | 2366                             |
| Nepean Blue Mountains                        | 2160                             |
| North Coast                                  | 2029                             |
| Western NSW                                  | 1699                             |
| Tasmania                                     | 1566                             |
| Country SA                                   | 1566                             |
| Murrumbidgee                                 | 985                              |
| Gippsland                                    | 960                              |
| Western Queensland                           | 298                              |

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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), 2021

| Primary Health Network                               | Major cities | Inner regional | Outer regional | Remote      | Very remote |
|--|--------------|----------------|----------------|-------------|-------------|
| Northern Territory (1.73%)                           | 0.0%         | 0.0%           | 34.0%          | 36.6%       | 29.3%       |
| South Western Sydney (1.32%)                         | 97.5%        | 2.5%           | 0.0%           | 0.0%        | 0.0%        |
| Western Sydney (1.24%)                               | 100.0%       | 0.0%           | 0.0%           | 0.0%        | 0.0%        |
| Central and Eastern Sydney (1.20%)                   | 100.0%       | 0.0%           | 0.0%           | 0.0%        | 0.0%        |
| Northern Sydney (1.14%)                              | 100.0%       | 0.0%           | 0.0%           | 0.0%        | 0.0%        |
| Eastern Melbourne (1.11%)                            | 100.0%       | 0.0%           | 0.0%           | 0.0%        | 0.0%        |
| North Western Melbourne (1.08%)                      | 99.4%        | 0.6%           | 0.0%           | 0.0%        | 0.0%        |
| South Eastern Melbourne (0.90%)                      | 100.0%       | 0.0%           | 0.0%           | 0.0%        | 0.0%        |
| Brisbane South (0.90%)                               | 99.1%        | 0.9%           | 0.0%           | 0.0%        | 0.0%        |
| Country WA (0.79%)                                   | 0.0%         | 21.0%          | 29.8%          | 19.3%       | 29.9%       |
| <b>NATIONAL AVERAGE (0.78%)</b>                      | <b>83.8%</b> | <b>8.2%</b>    | <b>5.0%</b>    | <b>1.5%</b> | <b>1.4%</b> |
| Perth North (0.75%)                                  | 100.0%       | 0.0%           | 0.0%           | 0.0%        | 0.0%        |
| Perth South (0.75%)                                  | 100.0%       | 0.0%           | 0.0%           | 0.0%        | 0.0%        |
| Adelaide (0.66%)                                     | 100.0%       | 0.0%           | 0.0%           | 0.0%        | 0.0%        |
| Western Queensland (0.66%)                           | 0.0%         | 0.0%           | 0.0%           | 73.2%       | 26.8%       |
| Australian Capital Territory (0.63%)                 | 100.0%       | 0.0%           | 0.0%           | 0.0%        | 0.0%        |
| Northern Queensland (0.60%)                          | 0.0%         | 11.2%          | 81.3%          | 0.0%        | 7.5%        |
| Brisbane North (0.59%)                               | 97.1%        | 2.9%           | 0.0%           | 0.0%        | 0.0%        |
| Nepean Blue Mountains (0.57%)                        | 97.8%        | 2.2%           | 0.0%           | 0.0%        | 0.0%        |
| Gold Coast (0.54%)                                   | 98.5%        | 1.5%           | 0.0%           | 0.0%        | 0.0%        |
| Western NSW (0.51%)                                  | 0.0%         | 60.1%          | 27.0%          | 12.9%       | 0.0%        |
| Darling Downs and West Moreton (0.50%)               | 50.4%        | 43.6%          | 6.0%           | 0.0%        | 0.0%        |
| Hunter New England and Central Coast (0.42%)         | 63.8%        | 30.3%          | 5.9%           | 0.0%        | 0.0%        |
| Murrumbidgee (0.42%)                                 | 0.0%         | 72.3%          | 27.7%          | 0.0%        | 0.0%        |
| South Eastern NSW (0.41%)                            | 64.6%        | 22.0%          | 13.3%          | 0.0%        | 0.0%        |
| North Coast (0.38%)                                  | 15.6%        | 72.8%          | 11.6%          | 0.0%        | 0.0%        |
| Murray (0.38%)                                       | 0.0%         | 80.3%          | 19.7%          | 0.0%        | 0.0%        |
| Central Queensland, Wide Bay, Sunshine Coast (0.35%) | 37.4%        | 57.0%          | 5.7%           | 0.0%        | 0.0%        |
| Western Victoria (0.35%)                             | 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 (0.32%)                                   | 9.1%         | 33.5%          | 46.0%          | 11.4%       | 0.0%        |
| Tasmania (0.27%)                                     | 0.0%         | 80.9%          | 19.1%          | 0.0%        | 0.0%        |

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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), 2021

| Country of birth         | Number of people living with CHB |
|--------------------------|----------------------------------|
| China                    | 36688                            |
| Vietnam                  | 20615                            |
| Philippines              | 7923                             |
| New Zealand              | 4944                             |
| Malaysia                 | 3867                             |
| Greece                   | 3566                             |
| Thailand                 | 3491                             |
| Cambodia                 | 3107                             |
| Italy                    | 3091                             |
| Hong Kong (SAR of China) | 3064                             |
| Taiwan                   | 2876                             |
| England                  | 2757                             |
| South Korea              | 2427                             |
| India                    | 2359                             |
| Myanmar                  | 1928                             |
| Indonesia                | 1879                             |
| Türkiye                  | 1258                             |
| Mauritius                | 1202                             |
| Singapore                | 1157                             |
| Samoa                    | 1118                             |
| Afghanistan              | 1017                             |
| Lebanon                  | 1017                             |
| Kenya                    | 1010                             |
| Somalia                  | 968                              |
| Nigeria                  | 966                              |
| Tonga                    | 948                              |
| Papua New Guinea         | 937                              |
| Sudan                    | 891                              |
| Nepal                    | 864                              |
| Laos                     | 787                              |

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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), 2021

| Primary Health Network and CHB prevalence            | Proportion Aboriginal and/or Torres Strait Islander people | Proportion Australian-born non-Indigenous people | Proportion People born overseas |
|--|--|--|---------------------------------|
| Northern Territory (1.73%)                           | 66.8%  | 8.3%   | 24.9%                           |
| South Western Sydney (1.32%)                         | 1.2%   | 13.3%  | 85.5%                           |
| Western Sydney (1.24%)                               | 0.8%   | 12.4%  | 86.8%                           |
| Central and Eastern Sydney (1.20%)                   | 0.6%   | 14.8%  | 84.6%                           |
| Northern Sydney (1.14%)                              | 0.3%   | 16.3%  | 83.4%                           |
| Eastern Melbourne (1.11%)                            | 0.4%   | 18.7%  | 80.9%                           |
| North Western Melbourne (1.08%)                      | 0.5%   | 17.3%  | 82.2%                           |
| South Eastern Melbourne (0.90%)                      | 0.5%   | 22.8%  | 76.7%                           |
| Brisbane South (0.90%)                               | 3.8%   | 21.9%  | 74.2%                           |
| Country WA (0.79%)                                   | 57.0%  | 18.0%  | 25.0%                           |
| <b>NATIONAL AVERAGE (0.78%)</b>                      | <b>6.7%</b>  | <b>23.3%</b>                                     | <b>70.0%</b>                    |
| Perth North (0.75%)                                  | 2.4%   | 24.8%  | 72.8%                           |
| Perth South (0.75%)                                  | 3.2%   | 24.9%  | 72.0%                           |
| Adelaide (0.66%)                                     | 3.3%   | 27.8%  | 69.0%                           |
| Western Queensland (0.66%)                           | 57.2%  | 19.4%  | 23.4%                           |
| Australian Capital Territory (0.63%)                 | 1.5%   | 27.6%  | 70.9%                           |
| Northern Queensland (0.60%)                          | 39.7%  | 23.1%  | 37.2%                           |
| Brisbane North (0.59%)                               | 5.3%   | 36.2%  | 58.5%                           |
| Nepean Blue Mountains (0.57%)                        | 5.5%   | 41.1%  | 53.4%                           |
| Gold Coast (0.54%)                                   | 4.9%   | 24.3%  | 70.7%                           |
| Western NSW (0.51%)                                  | 49.4%  | 31.3%  | 19.3%                           |
| Darling Downs and West Moreton (0.50%)               | 13.6%  | 37.7%  | 48.7%                           |
| Hunter New England and Central Coast (0.42%)         | 19.1%  | 44.6%  | 36.3%                           |
| Murrumbidgee (0.42%)                                 | 25.2%  | 40.3%  | 34.4%                           |
| South Eastern NSW (0.41%)                            | 11.9%  | 38.3%  | 49.8%                           |
| North Coast (0.38%)                                  | 23.1%  | 42.9%  | 34.0%                           |
| Murray (0.38%)                                       | 6.0%   | 46.5%  | 47.4%                           |
| Central Queensland, Wide Bay, Sunshine Coast (0.35%) | 11.7%  | 43.4%  | 44.9%                           |
| Western Victoria (0.35%)                             | 3.0%   | 50.3%  | 46.6%                           |
| Gippsland (0.33%)                                    | 4.2%   | 53.9%  | 42.0%                           |
| Country SA (0.32%)                                   | 16.0%  | 51.4%  | 32.6%                           |
| Tasmania (0.27%)                                     | 7.4%   | 45.2%  | 47.4%                           |

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Figure A.8: Number of people receiving treatment for CHB, 2016–2021, compared to National Strategy 2018–2022 target level

| Year | Total people on treatment |
|------|---------------------------|
| 2016 | 17,714                    |
| 2017 | 19,510                    |
| 2018 | 21,237                    |
| 2019 | 22,828                    |
| 2020 | 24,014                    |
| 2021 | 25,410                    |

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Figure A.9: Number of people receiving treatment for CHB, by year and past treatment history status, 2016–2021 (note separate axes)

| Year | Total people treated in previous year | Total people not treated in previous year |
|------|---------------------------------------|---|
| 2016 | 14,572                                | 3,126                                     |
| 2017 | 16,178                                | 3,332                                     |
| 2018 | 17,675                                | 3,562                                     |
| 2019 | 19,268                                | 3,560                                     |
| 2020 | 20,505                                | 3,509                                     |
| 2021 | 21,832                                | 3,578                                     |

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Figure A.10: CHB treatment uptake (bars and in brackets) and ranking (label) by PHN, 2021

| Primary Health Network                       | Treatment uptake 2021 | Treatment uptake rank 2021 |
|--|-----------------------|----------------------------|
| South Western Sydney                         | 20.4%                 | 1st                        |
| Western Sydney                               | 17.4%                 | 2nd                        |
| Northern Sydney                              | 15.9%                 | 3rd                        |
| Central and Eastern Sydney                   | 15.7%                 | 4th                        |
| Australian Capital Territory                 | 15.7%                 | 5th                        |
| North Western Melbourne                      | 14.4%                 | 6th                        |
| Eastern Melbourne                            | 13.8%                 | 7th                        |
| Brisbane South                               | 13.6%                 | 8th                        |
| South Eastern Melbourne                      | 13.1%                 | 9th                        |
| <b>NATIONAL AVERAGE</b>                      | <b>12.7%</b>          |                            |
| Adelaide                                     | 12.0%                 | 10th                       |
| Northern Territory                           | 10.8%                 | 11th                       |
| Perth North                                  | 9.8%                  | 12th                       |
| Perth South                                  | 9.5%                  | 13th                       |
| Nepean Blue Mountains                        | 9.1%                  | 14th                       |
| Tasmania                                     | 9.1%                  | 15th                       |
| Murray                                       | 8.6%                  | 16th                       |
| South Eastern NSW                            | 8.5%                  | 17th                       |
| Gold Coast                                   | 8.4%                  | 18th                       |
| Gippsland                                    | 8.2%                  | 19th                       |
| Western Victoria                             | 8.0%                  | 20th                       |
| Brisbane North                               | 8.0%                  | 21st                       |
| Central Queensland, Wide Bay, Sunshine Coast | 7.9%                  | 22nd                       |
| Northern Queensland                          | 7.0%                  | 23rd                       |
| Darling Downs and West Moreton               | 7.0%                  | 24th                       |
| North Coast                                  | 6.9%                  | 25th                       |
| Hunter New England and Central Coast         | 6.0%                  | 26th                       |
| Western NSW                                  | 5.2%                  | 27th                       |
| Country SA                                   | 5.1%                  | 28th                       |
| Murrumbidgee                                 | 4.5%                  | 29th                       |
| Country WA                                   | 3.6%                  | 30th                       |
| Western Queensland                           | #                     | #                          |

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Figure A.11: CHB treatment uptake by remoteness area, 2021

| Remoteness       | Treatment uptake |
|------------------|------------------|
| Major cities     | 13.8%            |
| Inner regional   | 6.6%             |
| Outer regional   | 7.3%             |
| Remote           | 4.8%             |
| Very remote      | 8.6%             |
| <b>AUSTRALIA</b> | <b>12.7%</b>     |

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Figure A.12: Proportion of people with a GP involved^ in CHB treatment prescribing, 2016–2021

| State                   | 2016         | 2017         | 2018         | 2019         | 2020         | 2021         |
|-------------------------|--------------|--------------|--------------|--------------|--------------|--------------|
| ACT                     | 12.0%        | 11.8%        | 16.4%        | 17.3%        | 22.1%        | 19.1%        |
| NSW                     | 14.3%        | 15.5%        | 15.9%        | 15.1%        | 18.0%        | 17.4%        |
| NT                      | 33.5%        | 37.4%        | 52.3%        | 53.4%        | 42.4%        | 36.7%        |
| QLD                     | 32.9%        | 32.0%        | 32.1%        | 34.3%        | 36.8%        | 34.6%        |
| SA                      | 15.7%        | 19.9%        | 21.5%        | 22.7%        | 24.6%        | 25.2%        |
| TAS                     | 22.8%        | 32.2%        | 32.1%        | 30.2%        | 27.7%        | 33.8%        |
| VIC                     | 15.1%        | 16.2%        | 16.8%        | 18.7%        | 21.3%        | 19.8%        |
| WA                      | 24.5%        | 26.8%        | 27.1%        | 28.6%        | 35.8%        | 35.8%        |
| <b>NATIONAL AVERAGE</b> | <b>17.3%</b> | <b>18.7%</b> | <b>19.6%</b> | <b>20.3%</b> | <b>23.2%</b> | <b>22.3%</b> |

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Figure A.13: Proportion of people with a GP involved^ in CHB treatment prescribing, by PHN, 2021

| Primary Health Network                       | GP only prescribing | Shared prescribing (GP + specialist or other provider) |
|--|---------------------|--|
| Northern Queensland                          | 23.7%               | 30.6%  |
| Country WA                                   | 20.0%               | 32.7%  |
| Country SA                                   | 20.0%               | 26.3%  |
| Gold Coast                                   | 19.7%               | 19.7%  |
| Northern Territory                           | 16.4%               | 20.3%  |
| Western NSW                                  | 18.0%               | 18.0%  |
| Perth North                                  | 15.6%               | 20.2%  |
| Darling Downs and West Moreton               | 14.4%               | 20.3%  |
| Tasmania                                     | 16.2%               | 17.6%  |
| Central Queensland, Wide Bay, Sunshine Coast | 12.9%               | 20.6%  |
| Perth South                                  | 12.1%               | 20.3%  |
| Brisbane South                               | 10.0%               | 21.7%  |
| Gippsland                                    | 11.4%               | 20.3%  |
| North Coast                                  | 16.4%               | 15.0%  |
| Western Victoria                             | 20.0%               | 10.5%  |
| Brisbane North                               | 9.3%                | 20.6%  |
| South Eastern NSW                            | 11.7%               | 18.0%  |
| Nepean Blue Mountains                        | 11.7%               | 17.3%  |
| Murray                                       | 10.2%               | 17.5%  |
| Adelaide                                     | 8.5%                | 15.0%  |
| <b>NATIONAL AVERAGE</b>                      | <b>8.3%</b>         | <b>13.9%</b>   |
| Hunter New England and Central Coast         | 8.6%                | 12.9%  |
| North Western Melbourne                      | 6.7%                | 14.7%  |
| Western Sydney                               | 8.0%                | 11.7%  |
| Eastern Melbourne                            | 6.0%                | 13.2%  |
| Australian Capital Territory                 | 8.1%                | 11.0%  |
| Central and Eastern Sydney                   | 6.9%                | 12.0%  |
| Murrumbidgee                                 | 9.1%                | 9.1%   |
| South Eastern Melbourne                      | 5.4%                | 10.2%  |
| Northern Sydney                              | 6.6%                | 7.8%   |
| South Western Sydney                         | 3.8%                | 8.2%   |
| Western Queensland                           | #                   | #  |

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Figure A.14: CHB care uptake, ranked by PHN, 2021

| Primary Health Network                       | Care uptake 2021 |
|--|------------------|
| South Western Sydney                         | 38.8%            |
| Western Sydney                               | 37.3%            |
| Northern Sydney                              | 33.3%            |
| Eastern Melbourne                            | 31.5%            |
| North Western Melbourne                      | 31.2%            |
| Central and Eastern Sydney                   | 30.9%            |
| Australian Capital Territory                 | 30.5%            |
| Brisbane South                               | 29.7%            |
| South Eastern Melbourne                      | 28.9%            |
| <b>NATIONAL AVERAGE</b>                      | <b>26.0%</b>     |
| Northern Territory                           | 23.7%            |
| Murray                                       | 20.8%            |
| Adelaide*                                    | 19.8%            |
| Northern Queensland                          | 19.8%            |
| Nepean Blue Mountains                        | 19.6%            |
| Tasmania                                     | 19.2%            |
| South Eastern NSW                            | 18.8%            |
| Western Victoria                             | 18.8%            |
| Gippsland                                    | 17.8%            |
| Gold Coast                                   | 16.1%            |
| Brisbane North                               | 15.4%            |
| Western NSW                                  | 15.3%            |
| Darling Downs and West Moreton               | 15.1%            |
| Perth North                                  | 14.8%            |
| Central Queensland, Wide Bay, Sunshine Coast | 14.4%            |
| North Coast                                  | 13.8%            |
| Perth South                                  | 13.7%            |
| Hunter New England and Central Coast         | 12.8%            |
| Murrumbidgee                                 | 11.0%            |
| Country SA*                                  | 10.9%            |
| Country WA                                   | 5.1%             |
| Western Queensland                           | #                |

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Figure A.15: Number of people receiving CHB monitoring over time by PHN, 2019–2021, ordered by care uptake in 2021 (in brackets)

| Primary Health Network                               | 2019  | 2020  | 2021  |
|--|-------|-------|-------|
| South Western Sydney (38.8%)                         | 2,628 | 2,474 | 2,482 |
| Western Sydney (37.3%)                               | 2,989 | 2,745 | 2,830 |
| Northern Sydney (33.3%)                              | 1,943 | 1,701 | 1,820 |
| Eastern Melbourne (31.5%)                            | 3,291 | 2,872 | 3,075 |
| North Western Melbourne (31.2%)                      | 3,695 | 3,254 | 3,296 |
| Central and Eastern Sydney (30.9%)                   | 3,079 | 3,051 | 2,879 |
| Australian Capital Territory (30.5%)                 | 415   | 427   | 420   |
| Brisbane South (29.7%)                               | 1,740 | 1,762 | 1,669 |
| South Eastern Melbourne (28.9%)                      | 2,393 | 2,158 | 2,221 |
| Northern Territory (23.7%)                           | 759   | 727   | 556   |
| Murray (20.8%)                                       | 301   | 279   | 294   |
| Adelaide (19.8%)*                                    | 1,081 | 826   | 673   |
| Northern Queensland (19.8%)                          | 577   | 536   | 534   |
| Nepean Blue Mountains (19.6%)                        | 278   | 244   | 228   |
| Tasmania (19.2%)                                     | 144   | 135   | 159   |
| South Eastern NSW (18.8%)                            | 283   | 278   | 267   |
| Perth North (14.8%)                                  | 388   | 382   | 438   |
| Western Victoria (18.8%)                             | 264   | 246   | 254   |
| Gippsland (17.8%)                                    | 85    | 90    | 92    |
| Perth South (13.7%)                                  | 329   | 336   | 342   |
| Gold Coast (16.1%)                                   | 256   | 254   | 272   |
| Brisbane North (15.4%)                               | 544   | 547   | 515   |
| Western NSW (15.3%)                                  | 155   | 170   | 171   |
| Darling Downs and West Moreton (15.1%)               | 320   | 289   | 259   |
| Central Queensland, Wide Bay, Sunshine Coast (14.4%) | 203   | 203   | 205   |
| North Coast (13.8%)                                  | 197   | 179   | 141   |
| Hunter New England and Central Coast (12.8%)         | 414   | 383   | 377   |
| Murrumbidgee (11.0%)                                 | 84    | 64    | 64    |
| Country SA (10.9%)*                                  | 151   | 108   | 90    |
| Country WA (5.1%)                                    | 55    | 75    | 61    |
| Western Queensland                                   | #     | #     | #     |

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Figure A.16: Number of people living with CHB in care (blue bars) and not in care (grey bars and labels), by PHN, ordered by proportional care uptake (in brackets), 2021

| Primary Health Network                               | In care | Not in care |
|--|---------|-------------|
| South Western Sydney (38.8%)                         | 5,249   | 3,037       |
| Western Sydney (37.3%)                               | 5,286   | 3,581       |
| Northern Sydney (33.3%)                              | 3,487   | 3,512       |
| Eastern Melbourne (31.5%)                            | 5,491   | 6,470       |
| North Western Melbourne (31.2%)                      | 6,133   | 7,382       |
| Central and Eastern Sydney (30.9%)                   | 5,856   | 7,221       |
| Australian Capital Territory (30.5%)                 | 865     | 1,110       |
| Brisbane South (29.7%)                               | 3,077   | 4,209       |
| South Eastern Melbourne (28.9%)                      | 4,050   | 5,911       |
| Northern Territory (23.7%)                           | 1,025   | 2,275       |
| Murray (20.8%)                                       | 500     | 1,401       |
| Adelaide (19.8%)                                     | 1,706   | 5,203       |
| Northern Queensland (19.8%)                          | 825     | 2,518       |
| Nepean Blue Mountains (19.6%)                        | 424     | 1,312       |
| Tasmania (19.2%)                                     | 301     | 964         |
| South Eastern NSW (18.8%)                            | 489     | 1,625       |
| Perth North (18.8%)                                  | 1,288   | 6,132       |
| Western Victoria (18.8%)                             | 444     | 1,478       |
| Gippsland (17.8%)                                    | 171     | 618         |
| Perth South (17.1%)                                  | 1,111   | 5,865       |
| Gold Coast (16.1%)                                   | 567     | 2,388       |
| Brisbane North (15.4%)                               | 1,074   | 4,823       |
| Western NSW (15.3%)                                  | 260     | 1,179       |
| Darling Downs and West Moreton (15.1%)               | 481     | 2,225       |
| Central Queensland, Wide Bay, Sunshine Coast (14.4%) | 453     | 2,250       |
| North Coast (13.8%)                                  | 281     | 1,467       |
| Hunter New England and Central Coast (12.8%)         | 703     | 4,070       |
| Murrumbidgee (11.0%)                                 | 108     | 769         |
| Country SA (10.9%)                                   | 170     | 1,226       |
| Country WA (6.3%)                                    | 211     | 3,697       |
| Western Queensland                                   | #       | #           |

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Figure A.17: CHB treatment and care uptake by remoteness area, 2021

| Remoteness       | Treatment uptake | Care uptake  |
|------------------|------------------|--------------|
| Major cities     | 13.8%            | 28.1%        |
| Inner regional   | 6.6%             | 14.2%        |
| Outer regional   | 7.3%             | 14.7%        |
| Remote           | 4.8%             | 13.7%        |
| Very remote      | 8.6%             | 24.9%        |
| <b>AUSTRALIA</b> | <b>12.7%</b>     | <b>26.0%</b> |

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Figure A.18: Metrics of ongoing engagement in care for people living with CHB, 2016–2021

| Frequency category   | Number of people |
|--|------------------|
| Had six or more viral load tests in the past six years (one per year)        | 18,050           |
| Had three or more viral load tests in the past six years (one per two years) | 45,166           |
| Had one or more viral load tests in the past six years                       | 98,316           |
| People living with CHB   | 200,385          |

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Figure A.19: Proportion of CHB monitoring provided by a GP, 2021

| Primary Health Network                       | Proportion of all people who received monitoring (%) |
|--|--|
| Northern Territory                           | 69.2%  |
| Perth South                                  | 56.3%  |
| Country WA                                   | 54.1%  |
| Northern Queensland                          | 53.0%  |
| Perth North                                  | 53.0%  |
| Adelaide                                     | 51.9%  |
| Western Sydney                               | 51.8%  |
| Northern Sydney                              | 50.7%  |
| Brisbane South                               | 47.9%  |
| South Western Sydney                         | 46.7%  |
| Central and Eastern Sydney                   | 44.4%  |
| <b>NATIONAL AVERAGE</b>                      | <b>43.3%</b>   |
| Gold Coast                                   | 42.6%  |
| Western NSW                                  | 41.5%  |
| Country SA                                   | 38.9%  |
| North Western Melbourne                      | 38.8%  |
| Hunter New England and Central Coast         | 38.7%  |
| Brisbane North                               | 38.1%  |
| Nepean Blue Mountains                        | 37.7%  |
| North Coast                                  | 36.9%  |
| Darling Downs and West Moreton               | 35.9%  |
| Eastern Melbourne                            | 35.3%  |
| South Eastern Melbourne                      | 34.4%  |
| Australian Capital Territory                 | 31.4%  |
| Tasmania                                     | 30.8%  |
| Gippsland                                    | 30.4%  |
| Murrumbidgee                                 | 29.7%  |
| Murray                                       | 24.8%  |
| South Eastern NSW                            | 23.6%  |
| Western Victoria                             | 19.7%  |
| Central Queensland, Wide Bay, Sunshine Coast | 19.5%  |
| Western Queensland                           | #  |

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Figure A.20: Hepatitis B immunisation coverage for 12-month-olds, among all children and among Aboriginal and Torres Strait Islander children, ordered by immunisation uptake among all children, by PHN, 2021

| Primary Health Network                       | All children | Aboriginal and Torres Strait Islander children |
|--|--------------|--|
| Western NSW                                  | 97.1%        | 96.5%  |
| Australian Capital Territory                 | 97.0%        | 96.6%  |
| Murrumbidgee                                 | 96.6%        | 95.7%  |
| Northern Sydney #                            | 96.4%        | 95.0%  |
| Hunter New England and Central Coast         | 96.0%        | 94.7%  |
| Grampians and Barwon South West              | 96.0%        | 96.2%  |
| Central and Eastern Sydney                   | 96.0%        | 92.4%  |
| Brisbane North                               | 95.9%        | 94.7%  |
| Eastern Melbourne                            | 95.8%        | 94.2%  |
| South Eastern NSW                            | 95.7%        | 93.9%  |
| Tasmania                                     | 95.7%        | 96.9%  |
| Adelaide                                     | 95.5%        | 92.7%  |
| Murray                                       | 95.5%        | 93.7%  |
| Gippsland                                    | 95.3%        | 91.1%  |
| Nepean Blue Mountains                        | 95.3%        | 94.6%  |
| South Eastern Melbourne                      | 95.3%        | 90.8%  |
| Perth North                                  | 95.0%        | 87.8%  |
| North Western Melbourne                      | 94.9%        | 95.3%  |
| Brisbane South                               | 94.9%        | 92.5%  |
| Western Sydney                               | 94.8%        | 89.9%  |
| Northern Queensland                          | 94.7%        | 91.4%  |
| Western Queensland                           | 94.7%        | 92.2%  |
| <b>NATIONAL AVERAGE</b>                      | <b>94.6%</b> | <b>91.8%</b>                                   |
| Country SA                                   | 94.5%        | 92.0%  |
| Perth South                                  | 94.5%        | 86.4%  |
| Darling Downs and West Moreton               | 94.5%        | 93.7%  |
| Northern Territory                           | 94.4%        | 91.7%  |
| South Western Sydney                         | 94.2%        | 95.0%  |
| Central Queensland, Wide Bay, Sunshine Coast | 92.9%        | 94.3%  |
| Country WA                                   | 92.4%        | 88.6%  |
| Gold Coast                                   | 91.8%        | 94.2%  |
| North Coast                                  | 90.4%        | 93.3%  |

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Figure A.21: Hepatitis B immunisation coverage for 12-month-olds over time, ordered by 2021 immunisation uptake, by PHN, 2019–2021

| Primary Health Network                       | 2019 uptake  | 2020 uptake  | 2021 uptake  |
|--|--------------|--------------|--------------|
| Western NSW                                  | 96.8%        | 98.0%        | 97.1%        |
| Australian Capital Territory                 | 96.4%        | 96.9%        | 97.0%        |
| Murrumbidgee                                 | 96.5%        | 97.1%        | 96.6%        |
| Northern Sydney #                            | 95.0%        | 95.9%        | 96.4%        |
| Hunter New England and Central Coast         | 96.3%        | 96.5%        | 96.0%        |
| Grampians and Barwon South West              | 96.7%        | 96.8%        | 96.0%        |
| Central and Eastern Sydney                   | 94.8%        | 95.4%        | 96.0%        |
| Brisbane North                               | 95.6%        | 96.0%        | 95.9%        |
| Eastern Melbourne                            | 95.8%        | 95.7%        | 95.8%        |
| South Eastern NSW                            | 95.7%        | 95.9%        | 95.7%        |
| Tasmania                                     | 94.6%        | 95.8%        | 95.7%        |
| Adelaide                                     | 95.2%        | 95.7%        | 95.5%        |
| Murray                                       | 95.2%        | 95.9%        | 95.5%        |
| Gippsland                                    | 95.1%        | 96.1%        | 95.3%        |
| Nepean Blue Mountains                        | 95.3%        | 95.9%        | 95.3%        |
| South Eastern Melbourne                      | 95.4%        | 95.3%        | 95.3%        |
| Perth North                                  | 94.9%        | 95.0%        | 95.0%        |
| North Western Melbourne                      | 94.7%        | 95.2%        | 94.9%        |
| Brisbane South                               | 94.8%        | 95.4%        | 94.9%        |
| Western Sydney                               | 94.8%        | 94.7%        | 94.8%        |
| Northern Queensland                          | 95.1%        | 95.3%        | 94.7%        |
| Western Queensland                           | 95.9%        | 94.8%        | 94.7%        |
| <b>NATIONAL AVERAGE</b>                      | <b>94.8%</b> | <b>95.1%</b> | <b>94.6%</b> |
| Country SA                                   | 95.0%        | 94.5%        | 94.5%        |
| Perth South                                  | 94.1%        | 94.9%        | 94.5%        |
| Darling Downs and West Moreton               | 94.9%        | 95.2%        | 94.5%        |
| Northern Territory                           | 94.6%        | 95.7%        | 94.4%        |
| South Western Sydney                         | 94.1%        | 94.5%        | 94.2%        |
| Central Queensland, Wide Bay, Sunshine Coast | 93.3%        | 93.9%        | 92.9%        |
| Country WA                                   | 93.2%        | 94.5%        | 92.4%        |
| Gold Coast                                   | 92.6%        | 92.6%        | 91.8%        |
| North Coast                                  | 90.3%        | 91.5%        | 90.4%        |

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Figure B.1: Number of hepatitis serology test items (bars) and proportional change from previous year (labels), by year, 2013–2022

| Year | Number of hepatitis serology test |
|------|-----------------------------------|
| 2013 | 1,151,957                         |
| 2014 | 1,218,633                         |
| 2015 | 1,316,761                         |
| 2016 | 1,346,927                         |
| 2017 | 1,422,844                         |
| 2018 | 1,514,247                         |
| 2019 | 1,584,349                         |
| 2020 | 1,353,508                         |
| 2021 | 1,366,601                         |
| 2022 | 1,295,841                         |

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Figure B.2: Rate of hepatitis serology items per 1,000 population, by state/territory and year, 2019–2022 (labels show total proportional change between 2019 and 2022)

| Rates | NSW  | Vic. | Qld  | SA   | WA   | Tas. | ACT  | NT   |
|-------|------|------|------|------|------|------|------|------|
| 2019  | 70.6 | 61.3 | 59.8 | 49.0 | 59.0 | 42.4 | 51.1 | 89.6 |
| 2020  | 59.1 | 49.3 | 51.9 | 43.9 | 52.3 | 36.5 | 45.6 | 76.9 |
| 2021  | 58.0 | 53.6 | 51.3 | 42.5 | 51.5 | 38.7 | 44.6 | 70.2 |
| 2022  | 55.6 | 50.1 | 46.5 | 38.0 | 49.9 | 33.8 | 43.3 | 66.2 |

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