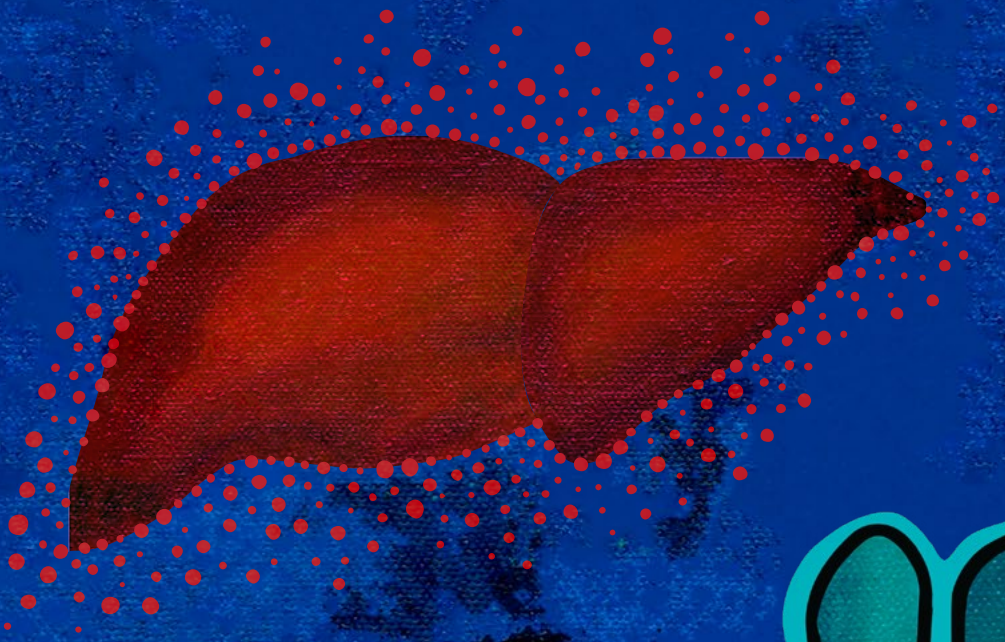
VIRAL HEPATITIS AND LIVER CANCER

Queensland Report



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Hepatitis and Liver Health

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Our cover showcases the artwork, Vision, created by Nicky Newley-Guivarra, from Nigooli Designs. Nicky is a gifted painter and has beautifully represented the story of Hepatitis Queensland's ongoing reconciliation journey, closely guided by her role as Hepatitis Queensland's Cultural Liaison Lead.

ABBREVIATIONS

ABS	Australian Bureau of Statistics
ACT	Australian Capital Territory
AIHW	Australian Institute of Health and Welfare
ARIA	Accessibility/Remoteness Index of Australia
ASGS	Australian Statistical Geography Standard
ASHM	Australasian Society for HIV, Viral Hepatitis and Sexual Health Medicine
ASIR	Age-standardised incidence rate
ASMR	Age-standardised mortality rate
BMI	Body Mass Index
CALD	Culturally and Linguistically Diverse
CHB	Chronic hepatitis B
CHC	Chronic hepatitis C
CI	Confidence interval
DAA	Direct-acting antivirals
GP	General Practitioner
HCC	Hepatocellular carcinoma
HCV	Hepatitis C Virus
HIV	Human Immunodeficiency Virus
IRSAD	Index of Relative Socioeconomic Advantage and Disadvantage
MASLD	Metabolic dysfunction-associated steatotic liver disease
NNDSS	National Notifiable Diseases Surveillance System
NP	Nurse Practitioner
NSW	New South Wales
NT	Northern Territory
UNSW	University of New South Wales
PBS	Pharmaceutical Benefits Scheme
PHN	Primary Health Network
QLD	Queensland
RNA	Ribonucleic acid
SA	South Australia
SA2	Statistical Area 2
SA3	Statistical Area 3
SEIFA	Socio-Economic Indexes for Areas
SIR	Standardised incidence ratio
TAS	Tasmania
VIC	Victoria
WA	Western Australia
WHO	World Health Organization

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FOREWORD

Viral hepatitis is the leading cause of liver cancer in Queensland, and addressing it is essential to reducing preventable deaths.

Queensland has made meaningful progress in preventing liver cancer and improving outcomes for people affected by viral hepatitis (hepatitis B and hepatitis C), guided by key government strategies including the Queensland Hepatitis B Plan 2030[1], Queensland Hepatitis C Plan 2030[2], Queensland Cancer Strategy 2024–2034[3], and Achieving Health Equity in Cancer Care with Aboriginal and Torres Strait Islander Queenslanders 2024[4]. National frameworks, such as the Roadmap to Liver Cancer Control in Australia 2023[5] and the Australian Cancer Plan[6], reinforce this shared commitment.

Community organisations, including Hepatitis Queensland, Cancer Council Queensland and sector partners, also play a critical role through community-based prevention, testing, diagnosis, care navigation and support.

Despite this progress, liver cancer mortality continues to rise in Queensland, even as outcomes improve for many other cancers. Gaps in testing, treatment and long-term care mean many Queenslanders are still not benefiting from effective prevention and care. These challenges are driven by late diagnosis, suboptimal linkage to and retention in care, and persistent inequities in access to culturally safe and appropriate services, particularly for priority populations and those living in regional and remote areas.

This report presents the latest Queensland data on liver cancer, hepatitis B, hepatitis C and key behavioural and metabolic risk factors. It highlights both progress and persistent inequities, and identifies priority areas where coordinated, equity-focused action is urgently needed. Queensland has the tools to prevent liver cancer, but these must reach the communities where they will have the greatest impact.

Achieving sustained reductions in liver cancer incidence and mortality will require decisive action: strengthening hepatitis testing, diagnosis and linkage to care; addressing stigma and discrimination; improving surveillance and early detection; expanding access to specialist liver care; and implementing targeted strategies to address behavioural and metabolic risk factors. This will require strong leadership, coordinated investment and collaboration across government, clinical services, community organisations, researchers and people with lived-living experience. Acting now will reduce avoidable deaths, address entrenched inequities, and deliver long-term health and economic benefits for Queensland.

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EXECUTIVE SUMMARY

Viral hepatitis remains a central driver of liver cancer risk in Queensland

Despite substantial advances in prevention and treatment, mortality rates continue to rise while outcomes for most other cancers improve. Viral hepatitis remains the largest preventable cause of liver cancer, with hepatitis B and hepatitis C responsible for around half of all cases.

This report synthesises epidemiological data on liver cancer in Queensland and examines the major drivers of disease, including hepatitis B, hepatitis C, and key behavioural and metabolic risk factors such as smoking, excessive alcohol use, overweight and obesity. The findings demonstrate that liver cancer and its major drivers are not distributed evenly across the population. Instead, there are pronounced inequities by geography and population group.

Between 2018 and 2022, there were 2,360 liver cancer diagnoses in Queensland, corresponding to an age-standardised incidence rate of 7.5 per 100,000 population. Nearly three-quarters of cases occurred in males, and incidence increased sharply with age. Overall, approximately one in 100 Queenslanders can expect to be diagnosed with liver cancer by age 85.

Liver cancer survival remains poor compared with most other cancers, although five-year relative survival has improved from 8.6 per cent in the 1980s to 24.1 per cent in 2018-2022. Mortality continues to increase, with the age-standardised mortality rate rising from 1.6 deaths per 100,000 population in 1982-1989 to 5.1 deaths per 100,000 in 2018-2022. Over a lifetime, approximately one in 143 Queenslanders will die from liver cancer.

Marked liver cancer inequities are evident across Queensland. Aboriginal and Torres Strait Islander peoples experience 2.5 times the incidence and substantially poorer survival compared with non-Indigenous Queenslanders. Higher incidence is also observed among culturally and linguistically diverse communities, residents of regional and remote areas, and people living in the most socioeconomically disadvantaged areas.

Viral hepatitis remains a central driver of liver cancer risk in Queensland. In 2023, there were 920 hepatitis B notifications, and an estimated 35,000 people were living with chronic hepatitis B. Engagement in care remains well below targets, with approximately 25 per cent receiving recommended monitoring and care, and around 10 per cent receiving antiviral treatment. In the Brisbane South region, which has the highest hepatitis B prevalence in Queensland, uptake of monitoring and treatment remains substantially below state targets.

Hepatitis C continues to be the most frequently notified blood-borne virus in Queensland, with 2,093 notifications in 2023. Notifications were highest among males and younger adults, and Aboriginal and Torres Strait Islander peoples accounted for 26 per cent of cases despite representing only 4.6 per cent of the population. Correctional settings accounted for 40 per cent of notifications, highlighting the critical role of correctional health services in prevention, testing and treatment. In 2023, an estimated 13,200 people were living with hepatitis C.

More than 24,000 Queenslanders have received curative hepatitis C treatment since the introduction of direct-acting antivirals, however transmission and new diagnoses continue, particularly among people who inject drugs and those in correctional settings.

Behavioural and metabolic risk factors for liver cancer also show clear geographic patterning. Smoking, overweight and obesity, and excessive alcohol use are more prevalent in regional and remote Queensland, particularly in Western and Northern Queensland. These risk factors cluster in the same communities that experience the highest liver cancer burden, compounding existing health inequities.

Overall, the findings demonstrate that a large proportion of liver cancer in Queensland is preventable. The tools to reduce the burden already exist (including hepatitis B vaccination, antiviral therapy, curative hepatitis C treatment, and strategies to reduce alcohol-related and metabolic liver disease), but these interventions are not reaching all communities equitably. Reducing liver cancer incidence and mortality will require coordinated, equity-focused action. Priority areas include scaling up hepatitis B and C testing and treatment, strengthening liver cancer surveillance for people at highest risk, improving access to culturally safe care, and addressing the behavioural and metabolic drivers of liver disease.

Targeted investment in communities experiencing the greatest burden, including Aboriginal and Torres Strait Islander peoples, high-prevalence migrant communities, people in correctional settings, and residents of disadvantaged and regional areas offers the greatest opportunity to reduce inequities and prevent avoidable deaths. With sustained collaboration across public health, primary care and specialist services, community organisations, and importantly people with lived-living experience, Queensland can make meaningful progress in preventing liver cancer, improving survival, and reducing avoiding deaths.

"Viral hepatitis is the largest preventable cause of liver cancer with hepatitis B and hepatitis C responsible for around half of all cases."

VIRAL HEPATITIS AND LIVER CANCER AT A GLANCE

Fast Growing. Deadly. Largely Preventable.

The challenge

Liver cancer is one of the fastest-growing causes of cancer death in Queensland. Despite advances in treatment: incidence is rising; mortality is rising; and survival remains lower than most cancers.

Liver Cancer (2018-2022)

2,360
diagnoses in 2025

7.5 in 100,000
People will be diagnosed*

73% male

5.1 deaths
per 100,000 people**

Aboriginal and Torres Strait Islander Peoples experience
2.5 times the risk

** Age-standardised incidence rate*
*** Age-standardised mortality rate*

Viral hepatitis: 2023 estimates

Hepatitis B	Hepatitis C
920 notifications	**2,100 notifications** • 26% among Aboriginal and Torres Strait Islander peoples • 40% in correctional settings
35,000 people living with hepatitis B	**13,200 people** living with hepatitis C
25% receiving recommended **monitoring and care**	**24,000+ cured**, but transmission continues
10% receiving treatment	

Fast-facts

Who is most affected

Liver cancer disproportionately affects:

- Aboriginal and Torres Strait Islander peoples
- Culturally and linguistically diverse communities
- Regional and remote communities
- Socioeconomically disadvantaged populations.

Other risk factors

Liver cancer risk is also driven by behavioural and metabolic risk factors:

- Smoking
- Excessive alcohol use
- Overweight and obesity
- Metabolic conditions

What will make the difference

- ✓ Most liver cancer is preventable
- ✓ Hepatitis B vaccination and treatment
- ✓ Curative hepatitis C treatment
- ✓ Monitoring for hepatitis B
- ✓ Liver cancer surveillance
- ✓ Addressing lifestyle and metabolic risks.

Priority actions

- Increase hepatitis B testing, monitoring, and treatment
- Expand hepatitis C testing and treatment
- Improve culturally safe healthcare access
- Strengthen liver cancer surveillance programs
- Address behavioural and metabolic risk factors
- Target investment to highest-burden communities.

"Reducing viral hepatitis is the single greatest opportunity to reduce liver cancer deaths in Queensland."

LIVER CANCER DATA

LIVER CANCER INCIDENCE

There were 2,360 liver cancer diagnoses in Queensland in 2018 – 2022, representing a five-year age-standardised incidence rate (ASIR) of 7.5 diagnoses per 100,000 population. When considering lifetime risk, 1 in 100 Queenslanders can expect to be diagnosed with liver cancer by age 85. Most liver cancer diagnoses were hepatocellular carcinoma (HCC).

From 1982 to 2022, the number of diagnoses increased significantly for all people (42 – 423), with a sharper rise for males (30 – 309) compared with females (12 – 114, Figure 1). These results were supported by the analysis of incidence rates from 1982 to 2022 with males increasing from 3.4 – 9.6 per 100,000 population, while females had a lower rise (1.3 – 3.4 per 100,000 population, Figure 2).

Figure 1. Liver cancer incidence counts in Queensland by year (1982 – 2022).

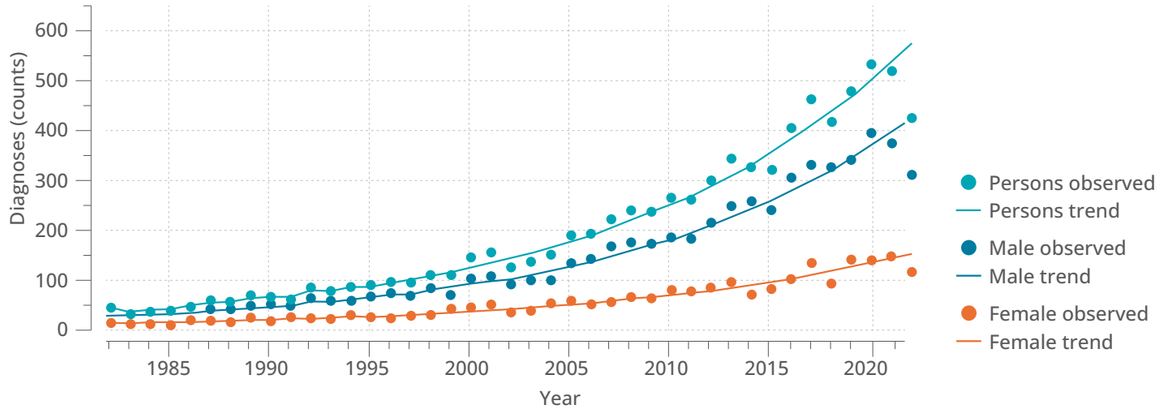
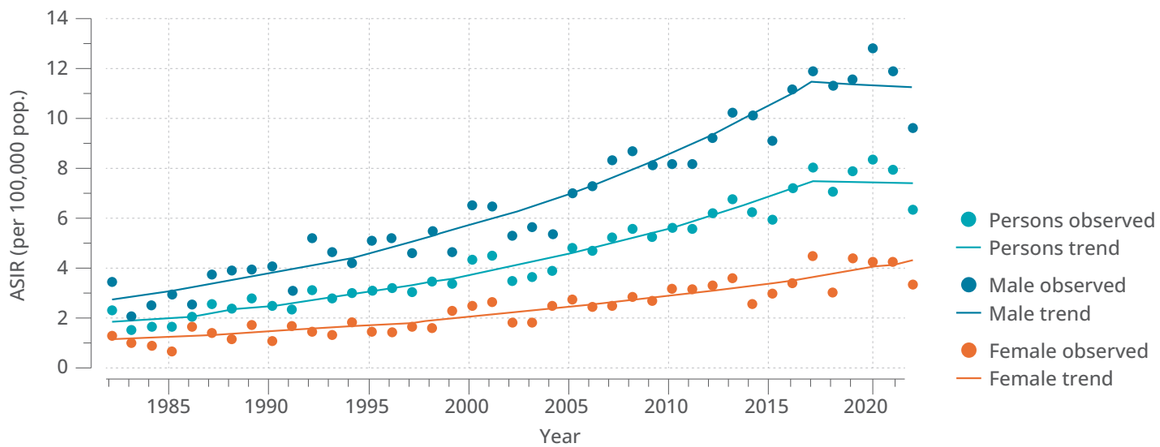


Figure 2. Liver cancer incidence rates in Queensland by year (1982 – 2022).



Significantly more males (n=1,734, 73%) than females (n=629, 27%) were diagnosed with liver cancer in 2018 – 2022 (Table 1), and incidence increased with age, peaking by 65 – 79 years of age (n = 1,075, 92%; Table 2).

Table 1. Liver cancer incidence in Queensland by sex (2018 – 2022).

Sex	Diagnoses	Five-year ASIR* (95% CI) (diagnoses per 100,000 population per year)
Male	1,734	11.4 (10.9, 12.0)
Female	629	3.9 (3.6, 4.2)

*Age standardised incidence rate.

Table 2. Liver cancer incidence in Queensland by age-group (2018 – 2022).

Age-group	Diagnoses	Five-year ASIR* (95% CI) (diagnoses per 100,000 population per year)
0 – 49	124	0.7 (0.6, 0.9)
50 – 64	732	14.9 (13.8, 16.0)
65 – 79	1,075	34.1 (32.0, 36.2)
80+	429	44.3 (40.2, 48.7)

*Age standardised incidence rate.

Compared with non-Indigenous Queenslanders, five-year ASIR was higher for Aboriginal and Torres Strait Islander peoples (18.0 vs 7.2 diagnoses per 100,000 population per year, Table 3). In addition, incidence was higher in culturally and linguistically diverse (CALD) Queenslanders compared with non-CALD Queenslanders (11.0 vs 9.7 diagnoses per 100,000 population per year, Table 4). Queensland data does not currently report country of birth or language spoken at home, so these aggregated findings are likely to mask substantial variation in incidence between different communities that is not visible without more granular data.

Table 3. Aboriginal and Torres Strait Islander peoples' liver cancer incidence in Queensland (2018 – 2022).

Group	Diagnoses	Five-year ASIR* (diagnoses per 100,000 population per year)
Aboriginal and Torres Strait Islander peoples	128	18.0 (14.9, 21.5)
Non-Indigenous	2,231	7.2 (6.9, 7.6)

*Age standardised incidence rate.

Table 4. Liver cancer incidence in Queensland by cultural and linguistic diversity (CALD) status.

CALD	Diagnoses (2018-2022)	Diagnoses (2011)	Crude Rates (2021) per 100,000 population*
Yes	338	79	11.0
No	2,022	437	9.7

*CALD population data is only available for Queensland by census year – crude rates are only calculated for 2021.[7]

The five-year ASIR was greater in low socioeconomic areas (quintile 1 = 9.8 per 100,000 population per year) compared with high socioeconomic areas in 2018 – 2022 (quintile 5 = 6.2 per 100,000 population per year, Table 5).

Table 5. Liver cancer incidence in Queensland by SEIFA – IRSAD* (2018 – 2022).

SEIFA – IRSAD (Quintile)	Diagnoses	Five-year ASIR# (95% CI) (diagnoses per 100,000 population per year)
1 (most disadvantaged)	608	9.8 (9.0, 10.6)
2	488	7.8 (7.1, 8.6)
3	464	6.8 (6.2, 7.5)
4	485	6.8 (6.2, 7.5)
5 (most advantaged)	308	6.2 (5.5, 6.9)

*Socioeconomic indexes for areas – Index of Relative Socioeconomic Advantage and Disadvantage.[8]
#Age standardised incidence rate.

Analysis of incidence by remoteness categories[9] revealed that five-year ASIR was higher in more remote areas compared with major cities in 2018 – 2022 (12.2 vs 7.5 per 100,000 population per year, Table 6).

Further, spatial analyses revealed that small geographical areas (Statistical Area Level 2 – SA2)9 with the highest standardised incidence ratios (more than 50% higher than the Queensland average; SIR at least 1.5) included areas of Northern Queensland (i.e. Carpentaria, Kowanyama-Pormpuraaw, Cape York, Northern Peninsula, Torres, and Daintree; Figure 3). Inner Regional and Major City areas of South East Queensland with higher incidence rates (SIR at least 1.5) included Inala – Richlands, Waterford West, Marsden and Loganlea (Figure 4).

Table 6. Liver cancer incidence in Queensland by remoteness (2018 – 2022).

Remoteness	Diagnoses	Five-year ASIR* (diagnoses per 100,000 population per year)
Major city	1,436	7.5 (7.1, 7.9)
Inner regional	515	6.9 (6.3, 7.6)
Outer regional	346	8.1 (7.3, 9.0)
Remote	28	9.5 (6.2, 13.9)
Very remote	29	12.2 (12.2, 17.6)

*Age standardised incidence rate.

Figure 3. Spatial variation in liver cancer diagnosis rates across Queensland (2013 – 2022), where orange/red is higher than the Queensland average, and green/blue is lower than the Queensland average.

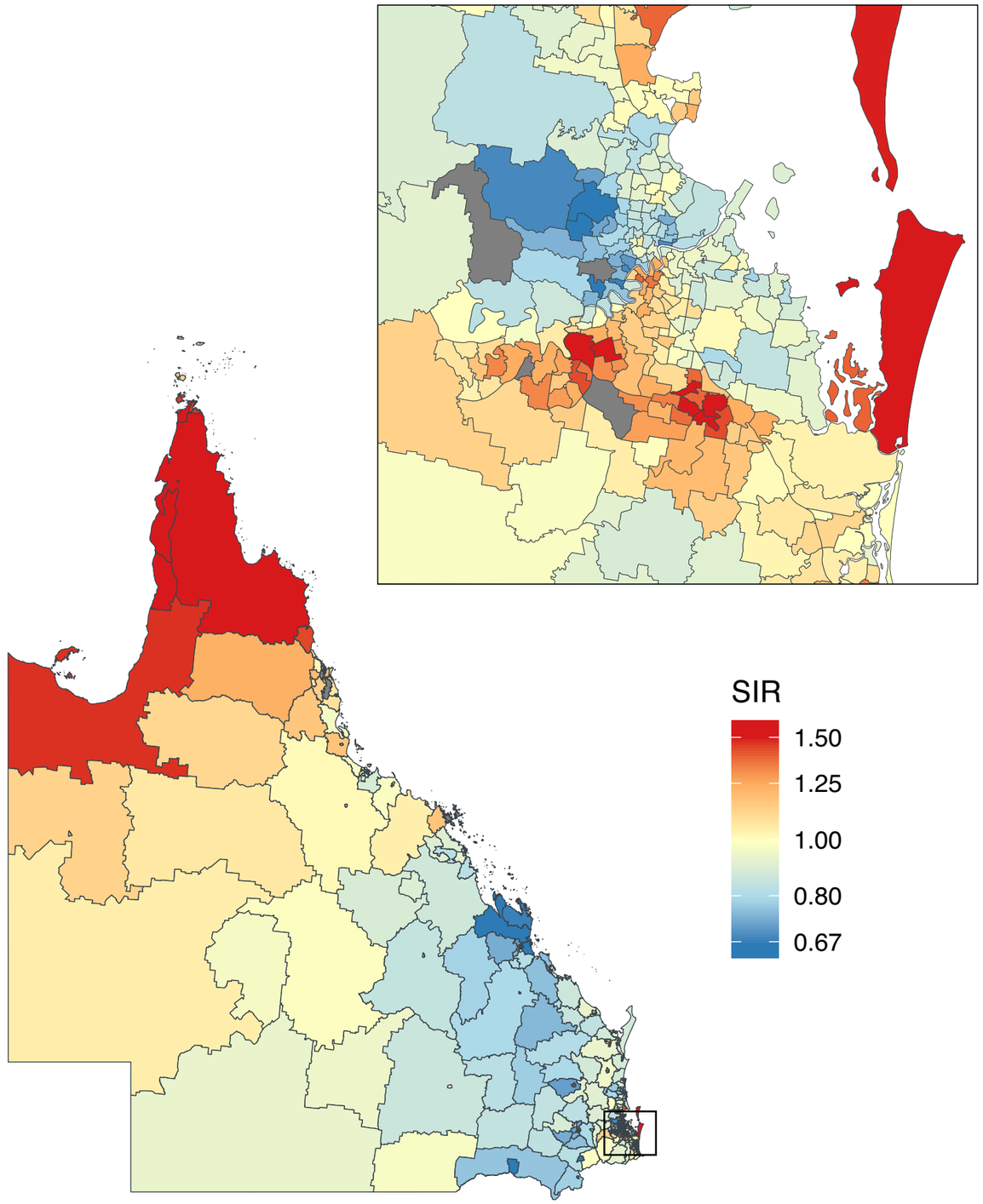
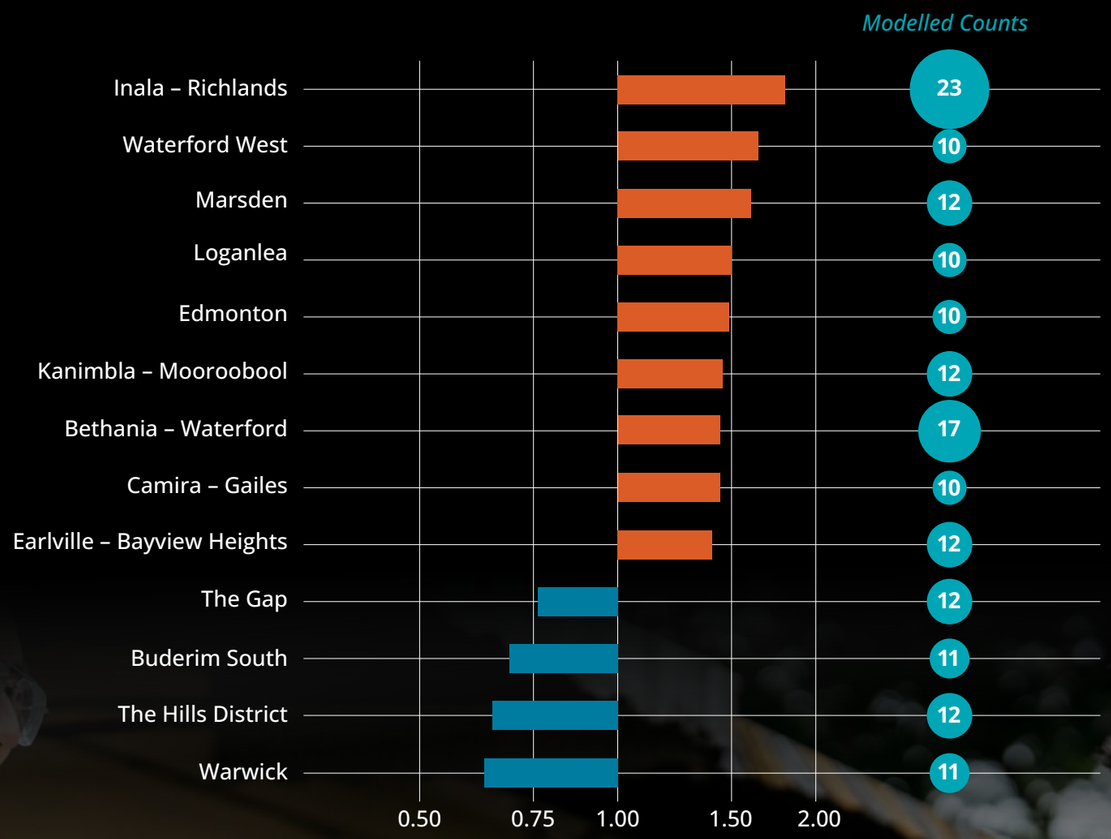


Figure 4. Select small geographical areas with liver cancer diagnosis rates that are likely different to the Queensland average, along with modelled number of diagnoses (2013 – 2022).



*Standardised incidence ratios reflect an estimate of the number of cancers diagnosed within each SA2 compared to what is expected based on the total Queensland cancer incidence.

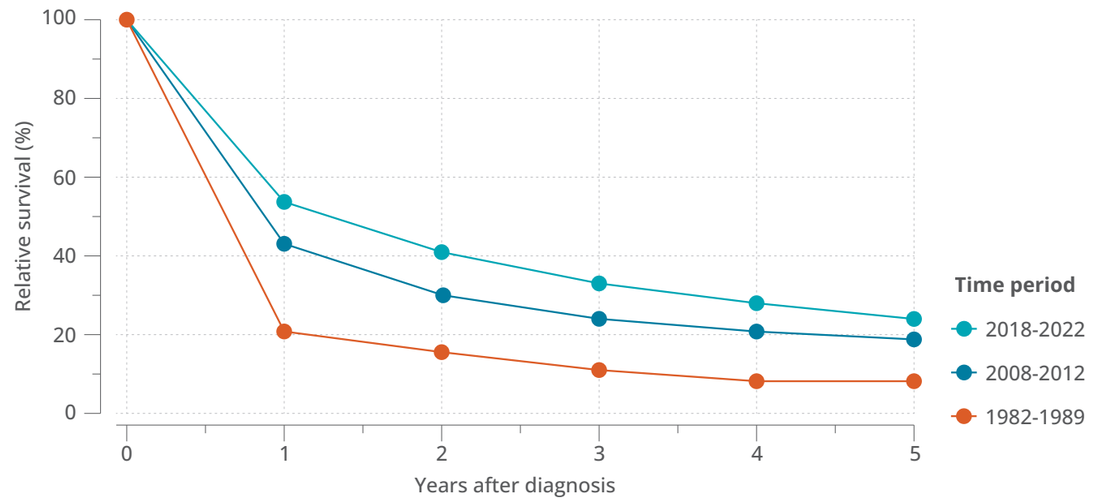
LIVER CANCER PREVALENCE

In December 2022, there were 921 people who were alive following a diagnosis of liver cancer in the previous 5 years (5-year prevalence, 2018 – 2022), with a higher number of males (n = 679, 74%) compared with females (n = 242, 26%). Of these, 284 (31%) lived outside a major city and 41 (4.5%) were Aboriginal and Torres Strait Islander peoples. While from 1993 to 2022, 30-year prevalence was 1,466 (n = 1068 (73%) males, n = 398 (27%) females).

LIVER CANCER SURVIVAL

The five-year relative survival for all persons was 24.1% from 2018 – 2022 (95% CI: 22.2 – 26.1), slightly lower for males (23.9%, 95% CI: 21.7 – 26.2) than for females (24.5%, 95% CI: 20.8 – 28.5). There has been a substantial improvement in survival over the last four decades, with five-year relative survival rate increasing from 8.6% (1982 – 1989), to 19.4% (2008 – 2012), and then 24.1% (2018 – 2022) (Figure 5).

Figure 5. Liver cancer survival in Queensland by selected five-year risk period.



The five-year relative survival decreased with age from 2018 – 2022 (Table 7). Survival within 5 years of diagnosis for Aboriginal and Torres Strait Islander peoples diagnosed with liver cancer (14.3%, 95% CI: 8.5 – 21.8) was low compared with non-Indigenous Queenslanders diagnosed with liver cancer (24%, 95% CI: 22 – 26).

Table 7. Liver cancer five-year relative survival in Queensland by age-group (2018 – 2022).

Age-group	5-year relative survival (95% CI)
0 – 49	34.7% (26.5, 43.0)
50 – 64	29.2% (26.0, 32.5)
65 – 79	21.9% (19.0, 24.9)
80+	11.4% (7.4, 16.7)

Table 8. Liver cancer five-year relative survival in Queensland by Remoteness (ARIA+) and SEIFA – IRSAD*.

Remoteness	5-year relative survival (95% CI)
Major city	27.4% (42.9, 30.2)
Inner regional	18.5% (15.0, 22.3)
Outer areas[#]	24.2% (19.6, 29.1)
SEIFA – IRSAD (Quintiles)	**5-year relative survival (95% CI)**
1 (most disadvantaged)	18.8% (15.4, 22.5)
2	23.5% (19.5, 27.8)
3	25.9% (21.5, 30.5)
4	29.6% (24.9, 34.4)
5 (most advantaged)	29.7% (24.2, 35.5)

*Socioeconomic indexes for areas – Index of Relative Socioeconomic Advantage and Disadvantage.[8]
[#]Outer Areas includes outer regional, remote and very remote areas. Areas have been aggregated due to low diagnoses counts.[9]

LIVER CANCER MORTALITY

There were 1,616 liver cancer deaths in Queensland from 2018 – 2022 (73% male), representing a five-year age-standardised mortality rate (ASMR) of 5.1 deaths per 100,000 population. When considering lifetime risk, 1 in 143 Queenslanders can expect to die from liver cancer if they live to age 85. However, the ASMR has increased over time from 1982 – 1989 (1.6 per 100,000 population, 95% CI: 1.4 - 1.8), to 2008 – 2012 (4.2 per 100,000 population, 95% CI: 3.9 - 4.4), and 2018 – 2022 (5.1 per 100,000 population, 95% CI: 4.8 - 5.4, Figure 6), with higher rates in males than females at all time points (Figure 6, Table 9).

Figure 6. Liver cancer mortality rates in Queensland by year (1982 – 2022).

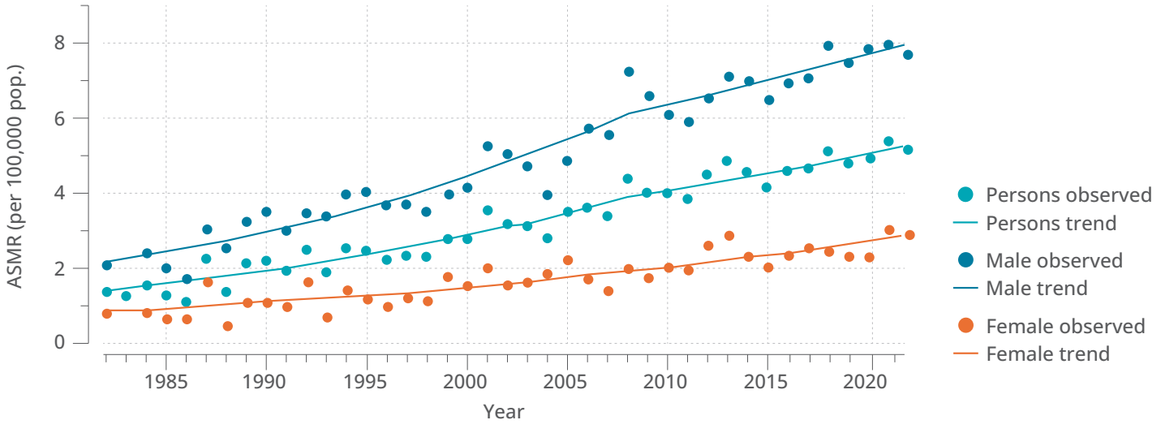


Table 9. Mortality due to liver cancer in Queensland by sex (2018 – 2022).

Sex	Deaths	Five-year ASMR* (95% CI) (deaths per 100,000 population per year)
Male	1,175	7.8 (7.3, 8.3)
Female	441	2.6 (2.4, 2.9)

*Age standardised mortality rate.

The five-year ASMR increased with age from 2018 – 2022 (Table 10). Further, mortality was high for Aboriginal and Torres Strait Islander peoples (n = 90, ASMR = 12.8 per 100,000 population per year, 95% CI: 10.1 – 15.7) compared with non-Indigenous Queenslanders (n = 1,525, ASMR = 4.9 per 100,000 population per year, 95% CI: 4.6 - 5.1), for people from CALD communities (8.5 vs 6.5 per 100,000 population per year, Table 11), for those of lower socioeconomic status (IRSAD quintile 1 = 6.5 vs IRSAD quintile 5 = 3.8 deaths per 100,000 population per year, Table 12), and with remoteness (Very Remote = 7.0 vs Major City = 4.9 deaths per 100,000 population per year, Table 13).[8,9]

Table 10. Mortality due to liver cancer in Queensland by age-group (2018 – 2022).

Age-group	Deaths	Five-year ASMR* (95% CI) (diagnoses per 100,000 population per year)
0 – 49	70	0.4 (0.3, 0.5)
50 – 64	436	8.7 (7.9, 9.6)
65 – 79	737	23.4 (21.8, 25.2)
80+	373	38.3 (34.5, 42.4)

*Age standardised mortality rate.

Table 11. Mortality due to liver cancer in Queensland by cultural and linguistic diversity (CALD)* (2018 – 2022).

CALD	Deaths	Diagnoses (2021)	Crude Rates (2021) per 100,000 population per year
Yes	232	61	8.5
No	1,384	291	6.5

*Queensland CALD population only available for census years.7

Table 12. Mortality due to liver cancer in Queensland by area-level SEIFA – IRSAD* (2018 – 2022).

SEIFA – IRSAD (Quintiles)	Deaths	Five-year ASMR# (95% CI) (deaths per 100,000 population per year)
1 (most disadvantaged)	408	6.5 (5.9, 7.2)
2	342	5.4 (4.8, 6.0)
3	330	4.8 (4.3, 5.4)
4	304	4.2 (3.8, 4.7)
5 (most advantaged)	190	3.8 (3.3, 4.4)

*Socioeconomic indexes for areas – index of relative socioeconomic advantage and disadvantage.[8]
#Age standardised mortality rate.

Table 13. Mortality due to liver cancer in Queensland by remoteness (2018 – 2022).[9]

Remoteness	Deaths	Five-year ASMR* (deaths per 100,000 population per year)
Major city	950	4.9 (4.6, 5.2)
Inner regional	360	4.7 (4.2, 5.3)
Outer regional	230	5.4 (4.7, 6.2)
Remote	19	6.8 (4.0, 10.8)
Very remote	15	7.0 (3.8, 11.6)

*Age standardised mortality rate.

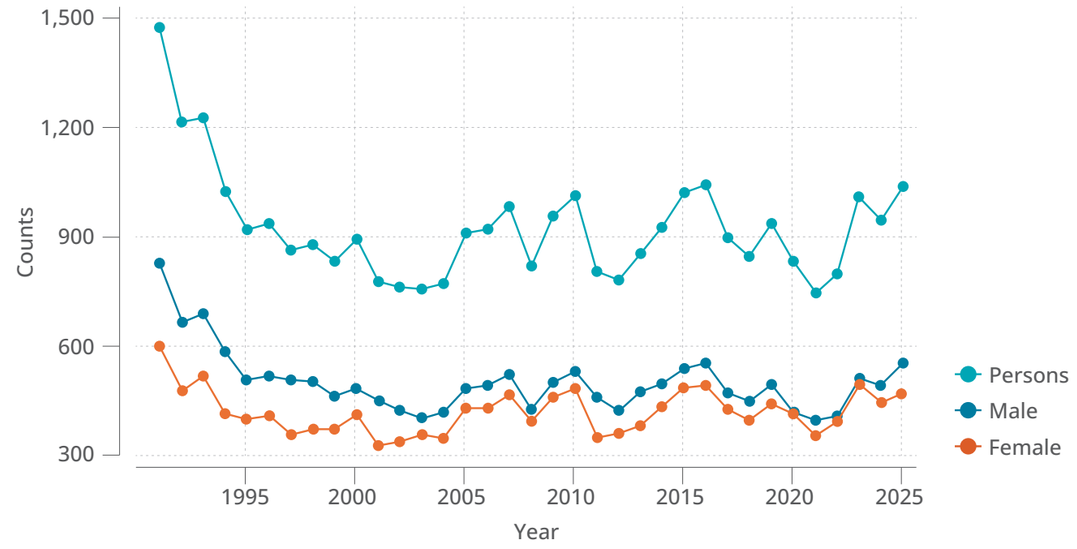
VIRAL HEPATITIS DATA

HEPATITIS B NOTIFICATIONS

In 2023, 920 hepatitis B cases were notified (n=28, 3% newly acquired). Notifications were similar for males and females (476 vs 444), 36 (4%) of total notifications were Aboriginal and Torres Strait Islander peoples, and 16 (1.8%) were in correctional settings. People aged 25 – 49 years accounted for 59% (n=542) of notifications, and 34% (n=312) were 50 years or older. Compared with other regions, Brisbane South (Metro South Hospital and Health Service) and Brisbane North regions (Metro North Hospital and Health Service) had the largest counts of hepatitis B notifications (318 and 174 respectively). Similar findings are reported in the most recent 2025 hepatitis B notification data.[10]

Hepatitis B notifications have decreased significantly since 1991 from close to 1,500 people, to around 800 to 1,000 cases per year from 1994 to 2025 (n=943) (Figure 7).

Figure 7. Hepatitis B notifications* in Queensland per year (1991 – 2025), by sex.



*Hepatitis B data reflect newly acquired and unspecified cases.

HEPATITIS B CASCADE OF CARE

Modelled data from 2023 estimates that 34,268 Queenslanders were living with hepatitis B, or approximately 0.6% of the population. Of these, 66% had been diagnosed, 21% were receiving care/monitoring, and 10% were on treatment (Figure 8). While everyone with chronic hepatitis B requires ongoing monitoring, around one third will meet criteria for antiviral treatment.[1] People who received hepatitis B treatment in 2023 were more commonly male (58.0%), in the 40+ age bracket (40-49 years = 22.3% of the total, 50–59 years = 23.8%, and 60–69 years = 24.7%). This is concordant with modelled estimates of the proportion eligible for treatment, of which 28.4% are estimated to be aged at least 60 years and 19.1% are aged 50–59 years.

Treatment coverage increased from 5.9% (n=1,729) in 2016 to 9.9% (n=3,496) in 2023 (Figure 9). The increase in the number of people receiving treatment was larger in females compared with males (39.1 vs 25.0% increase).

The estimated number of Queensland Aboriginal and Torres Strait Islander peoples living with chronic hepatitis B in 2023 was 3,874, reflecting approximately 1.8% of the Queensland Aboriginal and Torres Strait Islander population. This is nearly three times higher than the proportion living with chronic hepatitis B prevalence in the total Queensland population.

Figure 8. Hepatitis B care cascade in Queensland 2023.

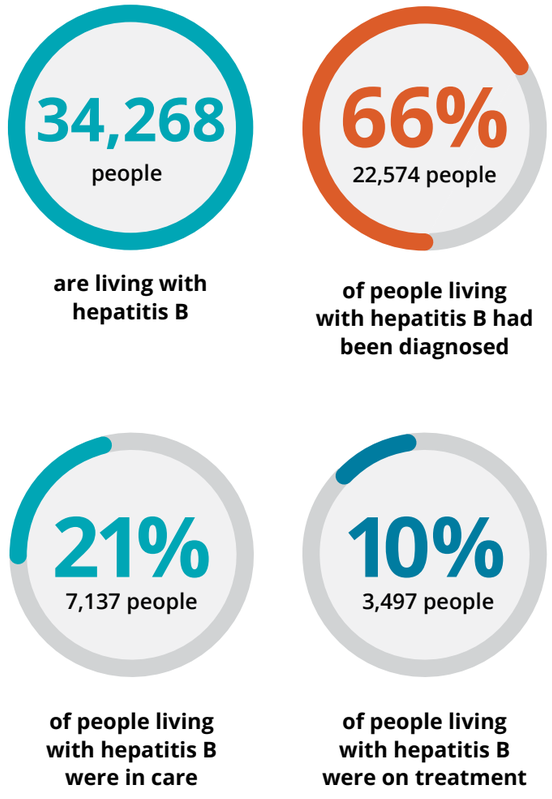


Figure 9. Uptake of treatment for hepatitis B in Queensland, 2016-2023.

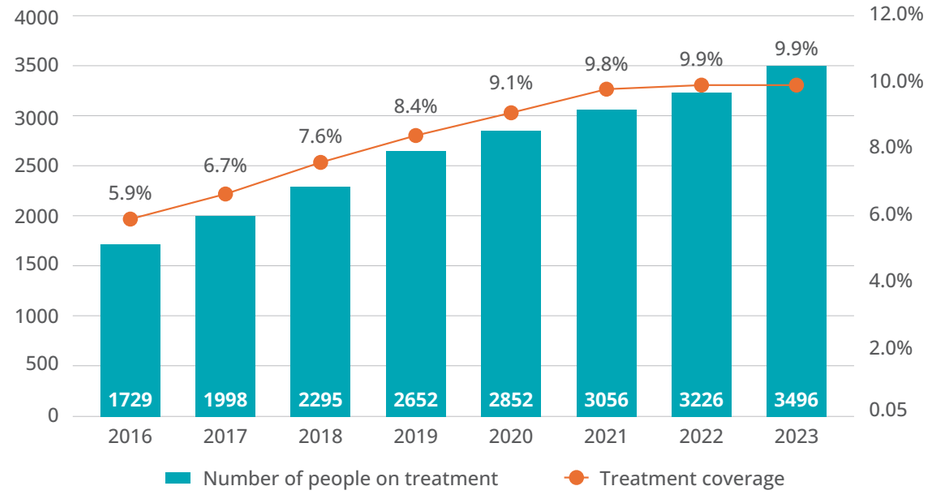


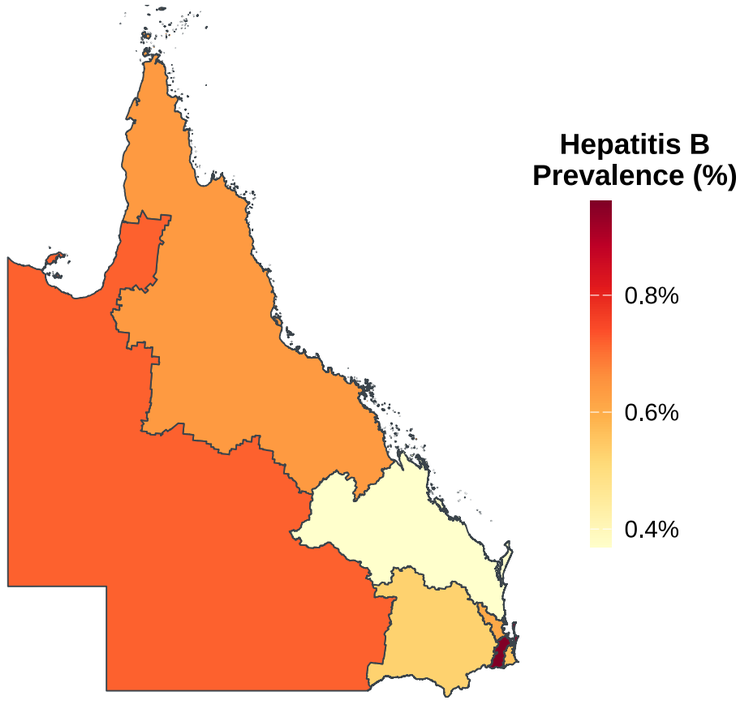
Table 14 and Figure 10 show estimated chronic hepatitis B prevalence n (%), care uptake (%) and treatment uptake (%) for all Queensland PHNs in 2024. Prevalence was higher than the Queensland average (n= 37,022, 0.66%) in Brisbane South (n=13,238, 0.98%, shown in dark red), Western Queensland (n=374, 0.76%, shown in red), Northern Queensland PHN (n=4,977, 0.67%, shown in orange) and Brisbane North (n=7,017, 0.63%, shown in orange). Compared with other PHNs, care and treatment uptake were highest in Brisbane South PHN (33% and 13.1% respectively, Table 14).

Table 14. Estimated chronic hepatitis B prevalence n (%), care (%) and treatment uptake (%) by Queensland Primary Health Network (PHN) in 2024.

PHN	Prevalence n (%)*	Care %*	Treatment %
Brisbane South	13,238 (0.98)	33.0	13.1
Western Queensland	374 (0.76)	#	#
Northern Queensland	4,977 (0.67)	28.2	6.6
Brisbane North	7,017 (0.63)	20.9	8.2
Gold Coast	4,059 (0.58)	23.5	9.5
Darling Downs and West Moreton	3,735 (0.54)	21.9	7.3
Central Queensland, Wide Bay, Sunshine Coast	3,623 (0.38)	19.7	7.4
All Queensland	**37,022 (0.66)**	**26.3**	**9.7**

*Proportion of the estimated population living with chronic hepatitis B.
#Data is suppressed due to low sample sizes that could identify individuals.

Figure 10. Estimated chronic hepatitis B prevalence % in Queensland by Primary Health Network (PHN) in 2024.

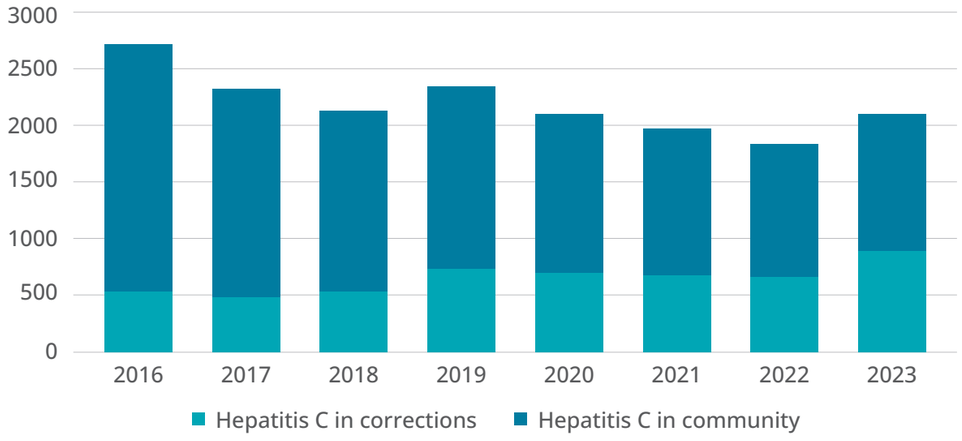


HEPATITIS C NOTIFICATIONS

In 2023 there were 2,093 hepatitis C cases notified in Queensland, with approximately 25% of cases 'newly acquired' and the remainder 'unspecified', meaning new or longstanding infections. Of the total notifications,76% were male, 55% were aged 20 – 39 years and 25% were aged 50 years or older, 26% were Aboriginal and Torres Strait Islander peoples, and 40% were notified within prison or correctional settings (Figure 11).

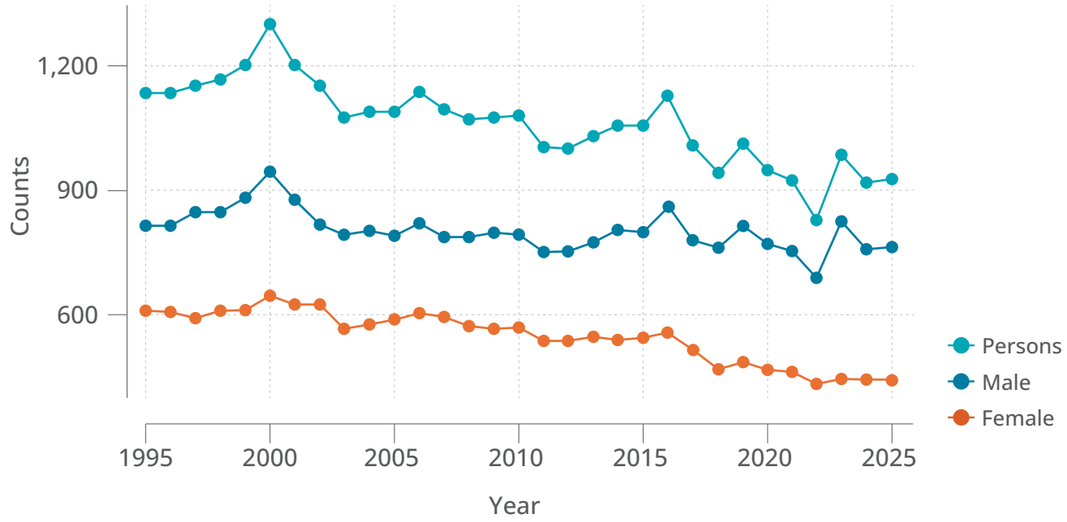
Compared with other regions, the metropolitan Brisbane North (Metro North Hospital and Health Service) and Brisbane South regions (Metro South Hospital and Health Service) had the largest counts of newly acquired and unspecified hepatitis C notifications (419 and 282 respectively). Similar findings are reported in the most recent 2025 hepatitis C notification data.[10]

Figure 11. Notifications of hepatitis C in Queensland, by setting (corrections vs community), 2016 – 2023.



Hepatitis C incidence has changed over time from close to 2,800 people per year in 1995, to around 3,300 cases in 2000, and around 2000 cases per year in 2025. There were more male than female notifications at each time point (Figure 12).

Figure 12. Queensland hepatitis C notifications* in Queensland per year (1995 – 2025), by sex.

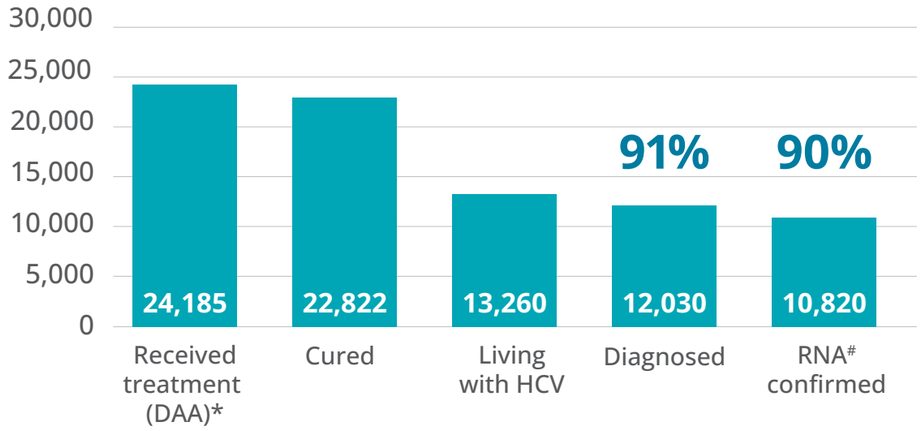


*Hepatitis C data reflect newly acquired and unspecified cases.

HEPATITIS C CASCADE OF CARE

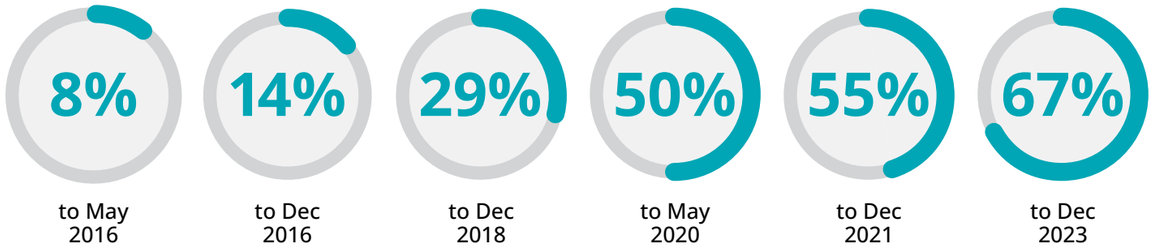
Data from 2023 estimates that 13,260 people were living with hepatitis C in Queensland. Of these, 91% (n=12,030) had been diagnosed – 90% (n=10,820) with RNA testing (Figure 13). Between 2016 and 2023, 24,185 Queenslanders had been treated for hepatitis C and, of these, 22,822 had been cured. Hepatitis C treatment coverage at the end of 2023 was 67% (Figure 14).

Figure 13. Hepatitis C (HCV) care cascade in Queensland at the end of 2023.



*Direct-acting antivirals (DAA). #Ribonucleic acid (RNA).

Figure 14. Hepatitis C treatment coverage in Queensland, cumulative starting March 2016.



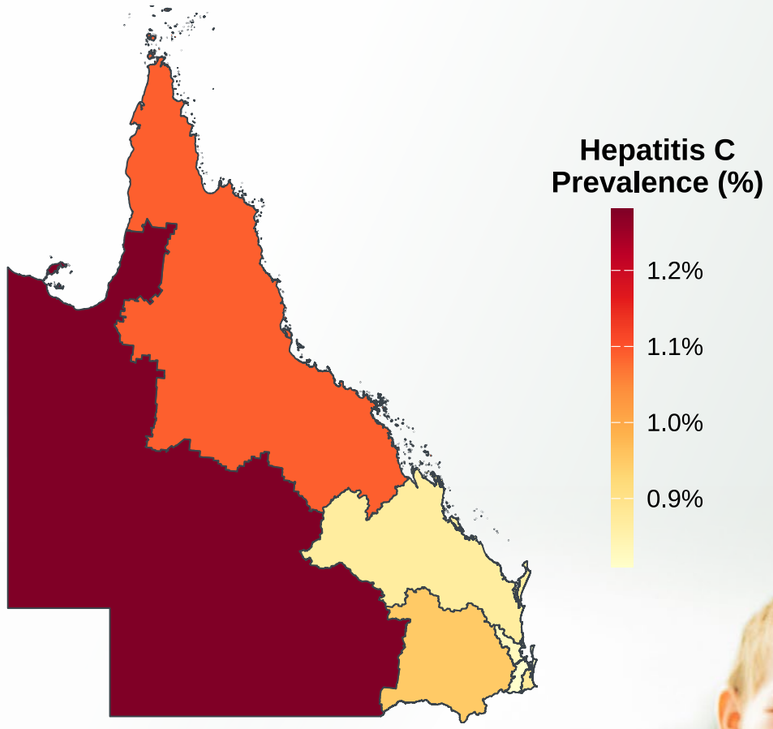
Estimated hepatitis C prevalence in 2016, the year DAA therapy was introduced, was higher than the Queensland average (0.90%) in Western Queensland (n=780, 1.28%, shown in dark red), Northern Queensland (n=9,126, 1.09%, shown in red) and Darling Downs West Moreton PHN (n=6,252, 0.95%, shown in orange) (Table 15, Figure 15).

Table 15. Hepatitis C prevalence n (%) by Queensland Primary Health Network (PHN) in 2016.

PHN	Prevalence n (%)*
Western Queensland	780 (1.28)
Northern Queensland	9,126 (1.09)
Gold Coast	6,252 (0.95)
Darling Downs and West Moreton	5,695 (0.88)
Central Queensland, Wide Bay, Sunshine Coast	9,329 (0.87)
Brisbane North	8,743 (0.83)
Brisbane South	14,278 (0.81)
All Queensland	**54,395 (0.90)**

*Proportion of estimated population living with hepatitis C.

Figure 15. Hepatitis C prevalence (%) in Queensland by Primary Health Network (PHN) in 2016.



BEHAVIOURAL AND METABOLIC RISK FACTOR DATA

SMOKING

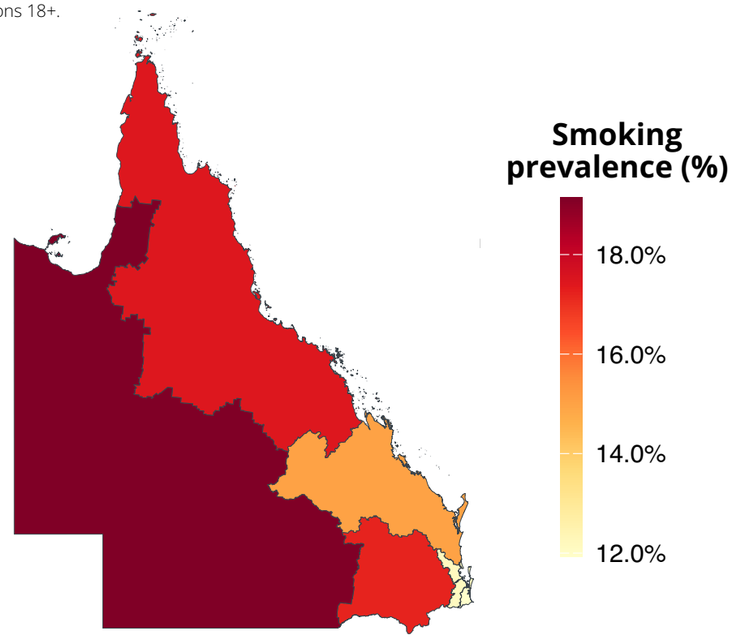
From 2023 to 2024, smoking prevalence was higher than the Queensland average (14%) in Western Queensland (19.1%, shown in dark red), Northern Queensland (17.5%, shown in red), Darling Downs and West Moreton (17.2%, shown in dark orange), and Central Queensland, Wide Bay and Sunshine Coast PHN (15.0%, shown in light orange) (Table 16, Figure 17).

Table 16. Average smoking prevalence* (%, 95% CI) in Queensland by Primary Health Network (PHN) (2023 – 2024).

PHN	Prevalence % (95% CI)
Western Queensland	19.1% (16.8, 21.7)
Northern Queensland	17.5% (16.2, 18.8)
Darling Downs and West Moreton	17.2% (15.8, 18.8)
Central Queensland, Wide Bay, Sunshine Coast	15.0% (13.7, 16.4)
Brisbane North	12.2% (11.0, 13.5)
Brisbane South	12.2% (11.0, 13.6)
Gold Coast	11.9% (10.6, 13.4)
Queensland	**14.0% (13.5, 14.6)**

*Daily and current non-daily smokers, persons 18+.

Figure 16. Average smoking prevalence (%)* in Queensland by Primary Health Network (PHN) (2023 – 2024).



OVERWEIGHT AND OBESITY

From 2023 to 2024, overweight and obesity[11] prevalence was higher than the Queensland average (62.3%) in Western Queensland (71.8%, shown in dark red), Darling Downs and West Moreton (69.7%, shown in red), Northern Queensland (65.6%, shown in dark orange), and Central Queensland, Wide Bay and Sunshine Coast PHN (63.4%, shown in orange) (Table 17, Figure 17).

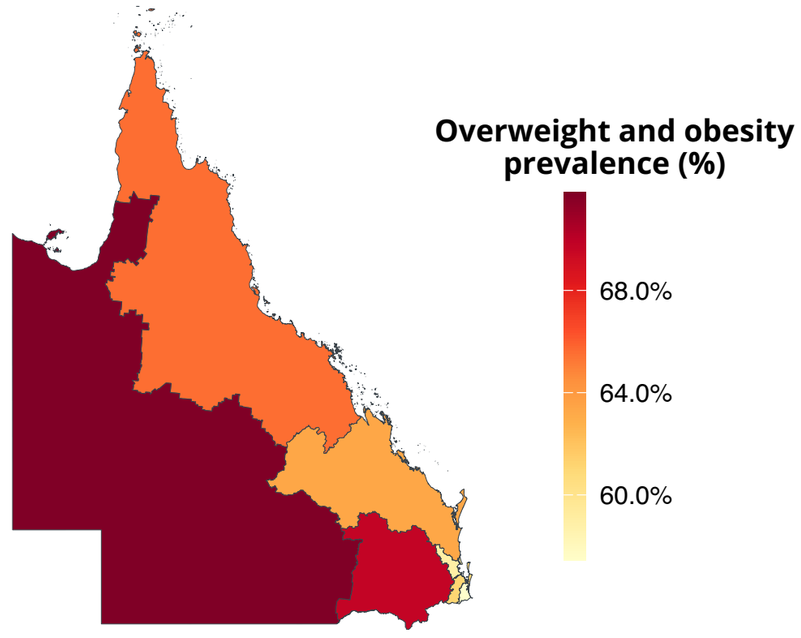
Table 17. Average overweight and obesity[11] prevalence (%, 95% CI) in Queensland by primary health network (PHN) (2023 – 2024).

PHN	Prevalence % (95% CI)
Western Queensland	71.8% (68.8, 74.7)
Darling Downs and West Moreton	69.7% (67.9, 71.5)
Northern Queensland	65.6% (64.0, 67.2)
Central Queensland, Wide Bay, Sunshine Coast	63.4% (61.6, 65.1)
Brisbane South	61.2% (59.3, 63.0)
Brisbane North	59.1% (57.1, 60.9)
Gold Coast	57.4% (55.4, 59.5)
Queensland	**62.3% (61.6, 63.1)**

*Overweight and obesity are defined using Body Mass Index (BMI), calculated as weight in kilograms divided by height in metres squared (kg/m^2). Adults with a BMI of 25.0 – 29.9 kg/m^2 are classified as overweight and those with a BMI of 30.0 kg/m^2 or higher are classified as obese.[11]

Figure 17. Average overweight and obesity* prevalence in Queensland by primary health network (PHN) (2023 – 2024).

*Overweight and obesity are defined using Body Mass Index (BMI), calculated as weight in kilograms divided by height in metres squared (kg/m^2). Adults with a BMI of 25.0–29.9 kg/m^2 are classified as overweight and those with a BMI of 30.0 kg/m^2 or higher are classified as obese.[11]



EXCESSIVE ALCOHOL USE

From 2021 to 2022, excessive alcohol use prevalence was higher than the Queensland average (36.4%) in Western Queensland (42.8%, shown in dark red), Northern Queensland (41.9%, shown in red), Central Queensland, Wide Bay and Sunshine Coast (38.6%, shown in dark orange), and Gold Coast PHN (38.3%, shown in orange) (Table 18, Figure 18).

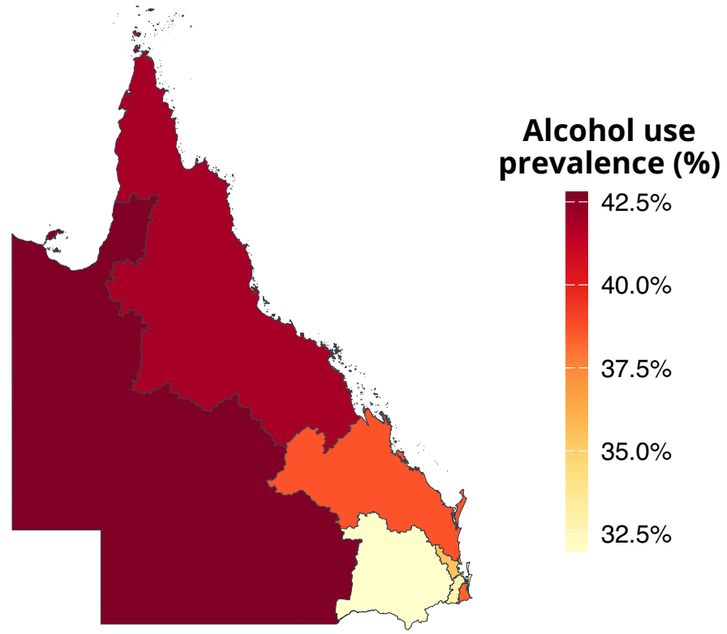
Table 18. Average prevalence (%, 95% CI) of excessive alcohol use* in Queensland by Primary Health Network (PHN) (2021 – 2022).

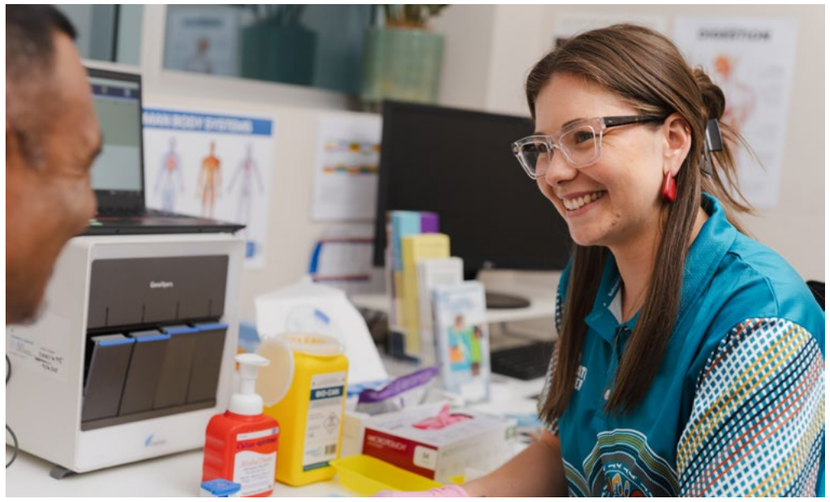
PHN	Prevalence % (95% CI)
Western Queensland	42.8% (39.8, 45.9)
Northern Queensland	41.9% (40.2, 43.7)
Central Queensland, Wide Bay, Sunshine Coast	38.6% (36.9, 40.4)
Gold Coast	38.3% (36.2, 40.5)
Brisbane North	35.5% (33.6, 37.5)
Brisbane South	32.8% (31.0, 34.7)
Darling Downs and West Moreton	32.0% (30.1, 33.9)
Queensland	**36.4% (35.6, 37.2)**

*Excessive alcohol use defined by more than 10 standard drinks a week or more than 4 standard drinks on any given day.[12]

Figure 18. Average prevalence of excessive alcohol use* in Queensland by primary health network (PHN) (2021 – 2022).

*Excessive alcohol use defined by more than 10 standard drinks a week or more than 4 standard drinks on any given day.[12]





DISCUSSION

Despite significant advances in vaccination, testing and treatment, the burden of disease falls disproportionately on populations already experiencing poorer health outcomes.

The findings of this report demonstrate that incidence and mortality have increased substantially over the past four decades, and that the burden of disease is concentrated among specific population groups and geographic regions. These patterns reflect the combined impact of viral hepatitis, behavioural and metabolic risk factors, and longstanding inequities in access to prevention, diagnosis, and care.

Epidemiological Trends

The steady increase in liver cancer incidence observed in Queensland mirrors trends seen nationally and internationally, where liver cancer has become one of the fastest-growing causes of cancer mortality.[13] The majority of cases are HCC, which is strongly associated with chronic liver disease and cirrhosis.[14-16]

Incidence patterns observed in this report are consistent with the natural history of liver cancer.[14,15] Males experience substantially higher incidence than females, reflecting higher prevalence of viral hepatitis, alcohol-related liver disease, and metabolic risk factors. Incidence also increases sharply with age, consistent with the long latency period between chronic liver injury and cancer development.[13-16]

The estimated lifetime risk of one in 100 Queenslanders being diagnosed with liver cancer highlights the substantial population burden of this disease and underscores the importance of effective prevention and early detection strategies.[14]

Persistent Inequities

The inequities identified in this report are among its most significant findings. Aboriginal and Torres Strait Islander peoples experience 2.5 times the incidence of liver cancer and significantly poorer survival compared with non-Indigenous Queenslanders. These disparities reflect longstanding inequities in access to healthcare, preventive services, and culturally safe care.[16] Hepatitis B prevalence among Aboriginal and Torres Strait Islander peoples has declined substantially since the introduction of universal hepatitis B immunisation in the year 2000, but remains significantly higher than in non-Indigenous populations, reflecting both historical endemic transmission and ongoing inequities in access to care.[17]

The disproportionate representation of Aboriginal and Torres Strait Islander peoples in hepatitis C notifications further highlights ongoing gaps in prevention, harm reduction services, and early diagnosis.[18,19] In 2023, Aboriginal and Torres Strait Islander peoples accounted for 26 per cent of hepatitis C notifications in Queensland despite representing only 4.6 per cent of the population.[2,20] Addressing these inequities requires sustained investment in community-led and culturally safe approaches ideally delivered through Aboriginal and Torres Strait Islander community health services.

Culturally and linguistically diverse communities also experience a higher burden of viral hepatitis and liver cancer. Many migrants from hepatitis B endemic regions, including Northeast Asia, Southeast Asia and Sub-Saharan Africa, acquired infection at birth or in early childhood before migrating to Australia. Structural barriers such as language, health literacy, stigma, and fragmented healthcare pathways can delay diagnosis and reduce engagement in long-term monitoring and treatment.[21-23] The strong socioeconomic gradients observed, where incidence and mortality peak in the most disadvantaged quintile, reflect broader social determinants including reduced healthcare access, higher burdens of viral hepatitis, and greater exposure to behavioural and metabolic risk factors.[24-26]

"With sustained collaboration across government, healthcare providers, researchers, and community organisations, Queensland can significantly reduce the burden of liver cancer and move closer to eliminating hepatitis B and hepatitis C as a public health threat by 2030."

Geographic Disparities

Geographic variation is also pronounced across Queensland. Liver cancer incidence and associated risk factors are higher in regional and remote areas, where access to specialised healthcare services is often limited.[27] Spatial analyses in this report identify several areas with significantly higher incidence than the Queensland average, including communities in Northern Queensland (e.g., Carpentaria) and in Inner Regional and Major City areas of South East Queensland (e.g., Inala-Richlands). These patterns underscore the need for place-based approaches that respond to the distinct demographic, cultural and service contexts of local communities.

Viral Hepatitis and Opportunities for Prevention

Hepatitis B and hepatitis C remain the most significant modifiable risk factors for liver cancer.[5,15] Despite effective vaccines and antiviral therapies, large gaps remain in diagnosis, treatment and long-term monitoring.[28] In Queensland, around 35,000 people are estimated to be living with chronic hepatitis B, yet only a small proportion are receiving recommended monitoring or antiviral treatment. Closing these gaps is essential to reducing liver cancer incidence, as ongoing monitoring and care, and antiviral therapy as required, can significantly reduce the risk of cirrhosis and HCC.[5,15,16]

For hepatitis C, the introduction of curative DAA therapies represents one of the most significant public health advances in recent decades.[28] More than 24,000 Queenslanders have received treatment, yet ongoing transmission and persistent diagnosis rates demonstrate that elimination goals have not yet been achieved with approximately 2,000 Queenslanders diagnosed each year.[2]

High notification rates among people in correctional settings and people who inject drugs highlight priority settings for targeted interventions. Interpretation of notification trends must consider testing patterns, which strongly influence observed incidence, however correctional settings represent a particularly high-impact opportunity for hepatitis C testing and treatment and should remain a central focus of elimination efforts.[2,24]

Behavioural and Metabolic Risk Factors

Behavioural and metabolic risk factors also contribute substantially to liver cancer risk. Smoking, excessive alcohol consumption, overweight and obesity, and metabolic disorders are increasingly recognised as major drivers of liver disease.[5,13,14,28,29] The clustering of these risk factors in the same geographic areas that experience the highest liver cancer incidence suggests a compounding effect of social and structural determinants of health. The growing prevalence of metabolic dysfunction-associated steatotic liver disease is particularly concerning and indicates that metabolic contributors to liver cancer are likely to increase in the coming decades without strong population-level prevention strategies.[28-32]

Implications for Policy and Practice

The findings of this report demonstrate that significant reductions in liver cancer incidence and mortality are achievable. Effective tools already exist, including hepatitis B vaccination and antiviral treatment, curative hepatitis C therapy, structured liver cancer surveillance programs, and evidence-based strategies to reduce alcohol-related and metabolic liver disease. However, the benefits of these interventions are not yet being realised equitably across the population. Addressing this gap will require coordinated action across public health systems, primary care, specialist services, and community organisations.

Priorities include strengthening viral hepatitis testing and linkage to care, expanding culturally safe and community-led services, improving access to liver cancer surveillance, and addressing the broader social and structural determinants of liver health. Targeting investment in communities with the highest burden offers the greatest opportunity to reduce inequities and prevent avoidable deaths. With sustained collaboration across government, healthcare providers, researchers, and community organisations, Queensland can significantly reduce the burden of liver cancer and move closer to eliminating hepatitis B and hepatitis C as a public health threat by 2030.

"Achieving meaningful and sustained reductions in liver cancer incidence and mortality will require a step change in how existing tools are delivered, prioritising equity, strengthening system-wide coordination, and ensuring that services are accessible, culturally appropriate and responsive to community need."

CONCLUSION

The findings of this report show that effective interventions to reduce liver cancer already exist, but their reach and implementation remain limited.

Despite significant advances in vaccination, testing and treatment, the burden of disease continues to fall disproportionately on populations already experiencing poorer health outcomes.

The findings of this report show that effective interventions to reduce liver cancer already exist, but their reach and implementation remain limited. Stronger and more consistent engagement in prevention, diagnosis, and long-term care is needed to reduce avoidable illness and death. Achieving meaningful and sustained reductions in liver cancer incidence and mortality will require a step change in how existing tools are delivered, prioritising equity, strengthening system-wide coordination, and ensuring that services are accessible, culturally appropriate and responsive to community need. With targeted action and sustained commitment, we have an opportunity to reduce preventable liver cancer and improve outcomes for all Queenslanders.

RECOMMENDATIONS

Reducing viral hepatitis is the single greatest opportunity to reduce liver cancer deaths in Queensland.

Strengthen hepatitis B and hepatitis C testing, diagnosis and linkage to care

- Expand community-based hepatitis B and C testing in areas with high notification numbers (e.g., metropolitan Brisbane North and South regions) as well as high-prevalence settings (e.g., culturally and linguistically diverse, or refugee health services, Aboriginal and Torres Strait Islander Community Controlled Health Organisations, custodial settings, alcohol and other drug services, mental health services).
- Improve linkage-to-care models, such as peer or nurse-led navigation, to ensure people diagnosed with hepatitis B or C are supported into ongoing monitoring and treatment.
- Increase the proportion of people with hepatitis B receiving guideline-recommended care through proactive recall and reminder systems in primary care.
- Expand point-of-care testing and same-day treatment initiation where appropriate.

Improve surveillance and early detection of liver cancer

- Introduce statewide clinical pathways to ensure individuals with cirrhosis or high-risk hepatitis B receive six-monthly ultrasound surveillance.
- Develop recall and reminder systems integrated within general practice software.
- Increase access to ultrasound services in regional and remote areas, including mobile imaging and telehealth-enabled reporting.
- Fund models that allow surveillance to occur in community-controlled and community-based organisations or settings to improve accessibility.

Reduce inequities for Aboriginal and Torres Strait Islander, culturally and linguistically diverse, and specific geographic communities across Queensland

- Co-design culturally safe screening, surveillance and treatment pathways with Aboriginal and Torres Strait Islander and culturally and linguistically diverse communities.
- Invest in community or peer navigators, interpreters, and bilingual health workers to support care engagement.
- Deliver local hepatitis B and C awareness programs through trusted community organisations and Aboriginal and Torres Strait Islander health services that are tailored to high-prevalence cultural or geographic groups (e.g., culturally and linguistically diverse communities, Aboriginal and Torres Strait Islander communities, and vulnerable communities across Queensland.

Enhance access to specialist liver care across Queensland

- Expand hepatology-related telemedicine services and outreach clinics across regional and remote areas of Queensland.
- Support integrated care models connecting GPs, nurse practitioners, and specialists to streamline hepatitis B and C management and liver cancer surveillance.
- Increase workforce capacity by upskilling primary health care or other social services professionals (as appropriate) in hepatitis B and C management and liver cancer risk assessment.

Address behavioural and metabolic risk factors

- Strengthen statewide strategies addressing alcohol-related harm, including population-level interventions to reduce excessive alcohol use.
- Expand nutrition, physical activity, and overweight/obesity reduction programs in regions with high liver cancer incidence.
- Support smoking cessation programs targeted to high-burden populations.
- Promote early detection and management of metabolic issues that contribute to MASLD (insulin resistance, obesity, metabolic syndrome).

Strengthen data, monitoring and research

- Improve real-time surveillance of hepatitis B care engagement, hepatitis C treatment uptake, and liver cancer staging at diagnosis.
- Support ongoing geographical/population mapping of incidence, mortality and hepatitis indicators to guide targeted investment.
- Fund research examining barriers to care among Aboriginal and Torres Strait Islander, culturally and linguistically diverse and vulnerable geographic communities across Queensland to inform service design.
- Support ongoing reporting on liver cancer disparities and progress toward hepatitis B and C elimination goals in Queensland.

Invest in community partnerships and health promotion

- Support community organisations to deliver culturally and linguistically appropriate prevention and health promotion messages.
- Deliver public awareness campaigns on hepatitis B and C prevention, testing, monitoring, and the importance of liver cancer surveillance.
- Strengthen partnerships across primary care, local hospitals, community organisations, and public health agencies.

DATA SOURCES

Population Level Data

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Remoteness: Remoteness Areas | Australian Bureau of Statistics

CALD group definitions: 3415.0 - Migrant Data Matrices, 2013

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Liver Cancer Data

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Geographic variation in chronic hepatitis B and C: Profile - nationalhepmapping | Tableau Public

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Queensland risk factor data: Detailed Queensland and regional preventive health survey results | Queensland Health

METHODOLOGY

Data Descriptions

Unless stated otherwise, incidence and mortality rates are directly age-standardised using the Australian Standard Population 2001. Five-year age groups were used, with the final group comprising people aged 85 years and over.

Age-standardised incidence and mortality rates for Aboriginal and Torres Strait Islander peoples and non-Indigenous Queenslanders were calculated using five-year age groups, with the final group comprising people aged 65 years and over.

Socio-economic status was measured using the SEIFA 2021, specifically the IRSAD. Areas were ranked into quintiles (1–5), with 1 representing the most disadvantaged and 5 representing the most advantaged.

Relative survival compares the observed survival of people with a particular disease to the expected survival of a comparable group from the general population, accounting for age, sex, and year of diagnosis. Relative survival estimates reported here were calculated using the period method.

Indirectly, SIRs reflect the ratio of observed cases in an area to the number expected based on overall cancer incidence in Queensland. An SIR above 1 indicates a higher-than-average rate, while an SIR below 1 indicates a lower-than-average rate. Similarly, survival ratios describe an area's relative survival compared with the Queensland average, adjusted for age, sex, and years since diagnosis. Ratios below 1 indicate poorer survival, and ratios above 1 indicate better survival.

Culturally and linguistically diverse populations are defined as people born overseas in countries other than Australia, Canada, Republic of Ireland, New Zealand, South Africa, the United Kingdom, or the United States of America. Being classified as culturally and linguistically diverse does not imply a lack of proficiency in English.

Data Limitations

Data presented in this report should be interpreted as estimates with inherent uncertainty rather than exact counts. Many people with liver cancer, hepatitis B, or hepatitis C are asymptomatic or remain undiagnosed. Modelled data suggest that approximately 20–30% of people with hepatitis B and 25–30% of people with hepatitis C have not been diagnosed, and high-risk groups (e.g., people who inject drugs or those in correctional settings) are underrepresented in routine surveillance due to limited systematic testing and reporting. Surveillance relies primarily on diagnosed cases reported to jurisdictional health departments; therefore, true prevalence may be underestimated.

This report presents hepatitis B and C notification data from 2023–2025, reflecting the most complete and reliable Queensland datasets currently available. While data are drawn from different years, trends have remained consistent, supporting valid comparison and interpretation across this period. Hepatitis C prevalence by PHN is sourced from 2016, the most recent year for which comprehensive and methodologically consistent PHN-level estimates are available, ensuring comparability across regions. However, since 2016, hepatitis C prevalence, treatment uptake, and re-infection rates have changed, and ongoing revisions have been made to the estimated prevalence by jurisdiction and region. Reported hepatitis C testing patterns (e.g., in correctional settings) also strongly influence notification trends and should therefore be interpreted with caution.

Modelling of hepatitis B prevalence, and the measurement of monitoring, care and treatment uptake, are subject to underlying data completeness and representativeness, particularly in CALD populations.

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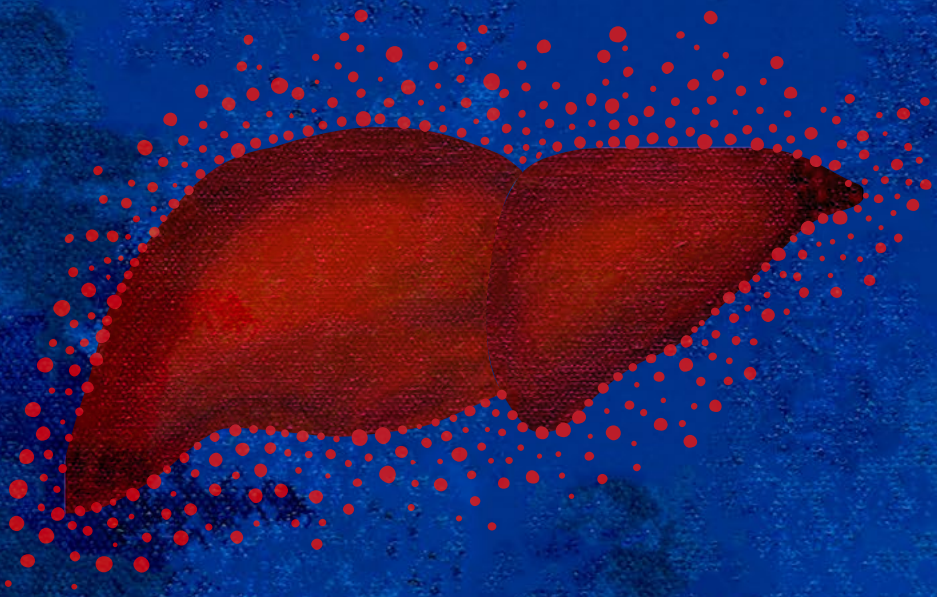

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