



UNSW
Kirby Institute

**HIV, viral hepatitis
and sexually transmissible
infections in Australia
Annual surveillance
report 2023**



Hepatitis C



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HIV, viral hepatitis and sexually transmissible infections in Australia

Annual surveillance report 2023

Kirby Institute, UNSW Sydney

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

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Hepatitis C

We recognise communities and individuals impacted by and at risk of HIV, hepatitis B and C, and sexually transmissible infections. These people and communities are crucial stakeholders in the work we do, with invaluable contributions and lived experiences. We acknowledge and affirm their crucial role in the development of this report, and public health surveillance more broadly. This report aims to ensure that ongoing and emerging public health threats and inequities are apparent, and that high quality data are available to inform appropriate public health responses to address these issues. We also acknowledge the ongoing negative impacts stigma and societal discrimination play in perpetuating inequity, and support principles of empowerment, community ownership, and partnership.

The years for comparison in this report are from 2013 to 2022 unless focus is given to the impact of the COVID-19 epidemic, where the years for comparison are 2013 to 2019, and 2019 and 2022. Additional years for comparison include 2015 to 2022 to highlight the effect of subsidised interferon-free direct-acting antiviral regimen availability from March 2016. Assessment of progress towards national and global hepatitis C elimination targets are presented in Australia's progress towards hepatitis C elimination: annual report 2022 and the Tracking the Progress Report. Due to data availability, reporting of data specifically relating to newly acquired hepatitis C notifications are not presented in this report

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Abbreviations

| | |
|---------------|---|
| ABS | Australian Bureau of Statistics |
| ACCESS | Australian Collaboration for Coordinated Enhanced Sentinel Surveillance |
| ANSPS | Australian Needle Syringe Program Survey |
| BBV | bloodborne virus |
| DAA | interferon-free direct-acting antiviral therapy |

1 Summary data

New hepatitis C notifications

- In 2022 there were 6728 hepatitis C notifications in Australia. Over two-thirds (4659, 68%) of the notifications were among males.
- The overall hepatitis C notification rate declined by 42% over the 10-year period 2013 to 2022, from 44.6 to 25.8 per 100 000 population.
- Among the age group most likely to have acquired hepatitis C recently, people aged 15 to 24 years, the notification rate declined by 48% between 2013 and 2022 (from 40.4 per 100 000 in 2013 to 21.1 per 100 000 in 2022).
- In this period there was a 66% decline in the notification rate among women, from 30.5 to 10.5 per 100 000. Among men aged 15 to 24 years, the hepatitis C notification rate declined by 37% from 49.7 per 100 000 in 2013 to 31.1 per 100 000 in 2022.
- Between 2018 and 2022, among Aboriginal and Torres Strait Islander people aged 15 to 24 years, the hepatitis C notification rate declined by 19% from 232.9 to 188.5 per 100 000. In 2022 among people aged 15 to 24 years, the notification rate among Aboriginal and Torres Strait Islander peoples was ten times as high as among non-Indigenous people (188.5 and 18.3 per 100 000, respectively).

Testing

- Data from the Australian Needle Syringe Program Survey (ANSPS) indicate that in 2022, about half (49%) of survey respondents reported a hepatitis C antibody test in the previous 12 months, a decline from between 2013 and 2019 (range: 51% to 54%). Since the beginning of the COVID-19 pandemic in 2020, the proportion reporting a hepatitis C antibody test has remained stable between 47% and 49%.
- Among people who inject drugs and attend clinics in the Australian Collaboration for Coordinated Enhanced Sentinel Surveillance (ACCESS), the proportion who received a hepatitis C test in the past 12 months increased from 46% in 2013 to 54% in 2022. However, a decline in the number of people attending clinics in the ACCESS network since the start of the COVID-19 pandemic may mean that overall testing numbers among people who inject drugs declined in this period.

Incidence, prevalence, and morbidity

- Hepatitis C RNA prevalence, an indicator of current hepatitis C infection, among participants of the ANSPS was 12% in 2022, a decline from 51% in 2015.
- Between 2015 and 2019, the incidence of hepatitis C among people tested at ACCESS primary care sites decreased from 1.2 to 0.3 new infections per 100 person-years. In 2022, the incidence was 0.5 new infections per 100 person-years.
- The proportion of people receiving liver transplants due to chronic hepatitis C or hepatitis C-related hepatocellular carcinoma reduced by more than two-thirds between 2015 (72, 33% of all transplants) and 2022 (18, 9% of all transplants).
- Of the 74 400 people living with chronic hepatitis C at the end of 2022, an estimated 60 240 (81%) had been diagnosed, and 45 180 (74% of those diagnosed) had a hepatitis C RNA test to confirm their chronic hepatitis C infection.
- There was a 43% decrease in the estimated number of people living with hepatitis C and with associated cirrhosis between 2015 and 2022 from 16 730 to 9530. In the same period, among people who were living with chronic hepatitis C as well as those who have been cured, the estimated number with hepatitis C-related cirrhosis increased by 41% (from 18 610 to 26 320).
- The estimated number of hepatitis C-related deaths (among people living with hepatitis C and people cured of hepatitis C) decreased by 21% from 720 in 2015 to 500 in 2022.

Treatment

- According to modelled estimates, of the 79 000 people living with chronic hepatitis C at the start of 2022 (end of 2021), 5210 people (7%) received hepatitis C treatment during 2022 and 4890 (94% of those treated) were cured.
- A higher proportion of people with hepatitis C related cirrhosis at the start of 2022 were estimated to have received treatment in the same year (10%) compared with those without cirrhosis (7%).
- In 2022, 5210 people received PBS-subsidised DAA treatment. Between the start of 2015 and the end of 2022, 104 110 people received PBS-subsidised DAA treatment.
- Among participants in the ANSPS in 2022 with self-reported history of chronic hepatitis C, 68% reported ever receiving hepatitis C treatment, an increase from 11% in 2015. This six-fold increase was seen among Aboriginal and Torres Strait Islander participants (10% to 66%) and non-Indigenous participants (11% to 68%).

Injecting risk behaviour

- The reuse of needles and syringes that have been used by others (receptive syringe sharing) by people who inject drugs is a major risk factor for transmission of hepatitis C. The proportion of ANSPS respondents who reported receptive syringe sharing in the past month was 19% in 2022, with the proportion reporting receptive syringe sharing was more than twice as high among Aboriginal and/or Torres Strait Islander survey participants (31%) compared with non-Indigenous participants (15%).

2 Interpretation

The number of hepatitis C notifications in Australia declined in 2022, a continuing trend since 2016 when subsidised interferon-free direct-acting antiviral (DAA) therapy became available through the Pharmaceutical Benefits Scheme. This highly curative therapy has also resulted in a marked decline in the prevalence of people living with hepatitis C. Among people who inject drugs, a key population for hepatitis C treatment and prevention, hepatitis C RNA prevalence declined from 51% in 2015 to 12% in 2022. This major decline in prevalence is contributing to reduced community hepatitis C transmission, and a decline in the burden of disease among populations most at risk of acquiring hepatitis C.

Among people who inject drugs and with a history of living with hepatitis C, the proportion who also report receiving treatment in their lifetime increasing from 11% in 2015 to 68% in 2022, the highest proportion on record. Strategies are needed to further raise awareness among the wider community and health sector about the need for testing and availability of highly curative hepatitis C treatments to eliminate hepatitis C as a public health threat by 2030, in line with Australian Government and World Health Organization targets. Although 104 110 people have received highly curative DAA therapies, the number initiating therapy each year has steeply declined in recent years. Efforts must be redoubled to support people with chronic hepatitis C to achieve a cure through DAA therapy.

Hepatitis C notification rates remain several-fold higher among Aboriginal and Torres Strait Islander peoples compared with non-Indigenous people, suggesting an increase in the at-risk population and/or less effective implementation of harm reduction. Results from the Australian Needle Syringe Program survey show that Aboriginal and Torres Strait Islander peoples were more than twice as likely as non-Indigenous people to report recent receptive syringe sharing in 2022, with the gap unchanged in recent years. Further, there has been no decrease in the rates of receptive syringe sharing between 2019 and 2022, highlighting the need for enhanced focus on prevention efforts.

There is hyper-incarceration of Aboriginal and Torres Strait Islander individuals where access to evidence-based harm-reduction strategies is substantially limited. Therefore, there is a need to expand harm reduction strategies in prison settings, including the implementation of needle and syringe programs, ensuring they are culturally safe, appropriate, and co-designed with Aboriginal and Torres Strait Islander communities both inside and outside prison environments.

3 Hepatitis C notifications

This section focuses on people notified with hepatitis C in Australia, including newly acquired hepatitis C notifications (evidence of hepatitis C acquisition within two years before diagnosis) and unspecified hepatitis C notifications (cases that do not meet any of the criteria for a newly acquired case, acquired hepatitis C more than 24 months before diagnosis or for cases of unknown duration).

A total of 6728 hepatitis C notifications (newly acquired and unspecified) were reported in Australia in 2022, of which 1088 (16%) occurred among Aboriginal and Torres Strait Islander peoples, 3221 (48%) were among non-Indigenous people, and a further 2419 (36%) were among people for whom Aboriginal and Torres Strait Islander status was not reported. Aboriginal and Torres Strait Islander peoples comprise an estimated 3.8% of the Australian population ⁽¹⁾ meaning that these notifications reflect a disproportionately high burden of disease (Table 1).

In 2022, 4659 (69%) hepatitis C notifications were among males, 6028 (90%) were among people aged 25 years and above, and 4000 (59%) were among people residing in major cities (Table 1).

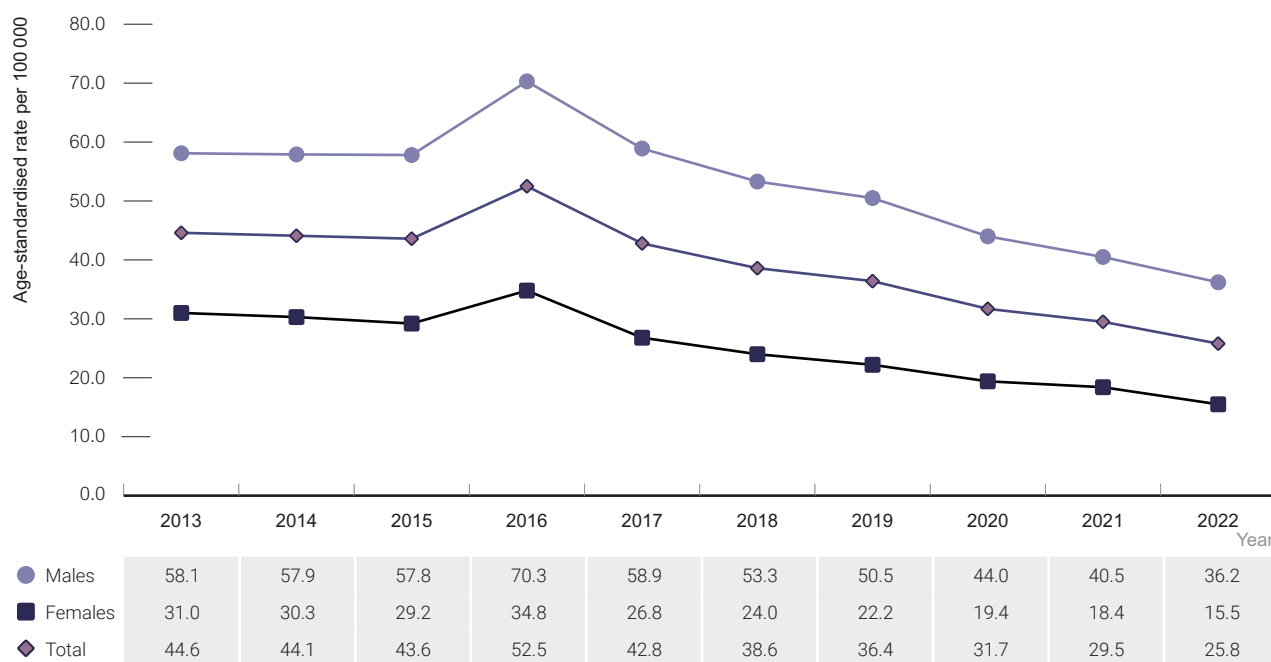
Table 1 Characteristics of new hepatitis C notifications, 2013 – 2022

| Characteristic | Year of diagnosis | | | | | | | | | |
|---|-------------------|--------|--------|--------|--------|-------|-------|-------|-------|-------|
| | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 |
| Total cases | 10 396 | 10 252 | 10 290 | 12 619 | 10 446 | 9 565 | 9 176 | 8 078 | 7 547 | 6 728 |
| Gender | | | | | | | | | | |
| Male | 6 796 | 6 701 | 6 794 | 8 381 | 7 120 | 6 534 | 6 300 | 5 556 | 5 139 | 4 659 |
| Female | 3 579 | 3 533 | 3 466 | 4 208 | 3 298 | 3 003 | 2 838 | 2 502 | 2 390 | 2 061 |
| Not reported | 21 | 18 | 30 | 30 | 28 | 28 | 38 | 20 | 18 | 8 |
| Age group | | | | | | | | | | |
| 0–14 | 33 | 41 | 43 | 36 | 32 | 37 | 49 | 66 | 36 | 31 |
| 15–19 | 307 | 217 | 221 | 228 | 195 | 180 | 213 | 178 | 134 | 125 |
| 20–24 | 995 | 896 | 944 | 939 | 923 | 774 | 868 | 779 | 644 | 544 |
| 25–29 | 1 215 | 1 178 | 1 193 | 1 308 | 1 166 | 1 075 | 1 074 | 990 | 913 | 737 |
| 30–34 | 1 528 | 1 457 | 1 443 | 1 551 | 1 322 | 1 118 | 1 089 | 970 | 915 | 774 |
| 35–39 | 1 303 | 1 328 | 1 288 | 1 653 | 1 326 | 1 228 | 1 133 | 981 | 887 | 714 |
| 40+ | 5 012 | 5 132 | 5 155 | 6 903 | 5 481 | 5 151 | 4 750 | 4 111 | 4 018 | 3 803 |
| Missing | 3 | 3 | 3 | 1 | 1 | 2 | 0 | 3 | 0 | 0 |
| Aboriginal and Torres Strait Islander status | | | | | | | | | | |
| Aboriginal and/or Torres Strait Islander | 1 086 | 1 198 | 1 220 | 1 419 | 1 480 | 1 393 | 1 459 | 1 226 | 1 311 | 1 088 |
| Non-Indigenous | 4 853 | 4 577 | 4 598 | 5 609 | 5 067 | 5 149 | 4 752 | 3 814 | 3 762 | 3 221 |
| Not reported | 4 457 | 4 477 | 4 472 | 5 591 | 3 899 | 3 023 | 2 965 | 3 038 | 2 474 | 2 419 |
| Area of residence | | | | | | | | | | |
| Major cities | 6 439 | 6 234 | 6 215 | 7 610 | 6 142 | 5 561 | 5 198 | 4 623 | 4 343 | 4 000 |
| Regional | 3 124 | 3 326 | 3 393 | 4 115 | 3 497 | 2 999 | 2 972 | 2 624 | 2 529 | 2 088 |
| Remote | 438 | 245 | 245 | 256 | 232 | 224 | 192 | 146 | 180 | 140 |
| Missing | 395 | 447 | 437 | 638 | 575 | 781 | 814 | 685 | 495 | 500 |
| State/Territory | | | | | | | | | | |
| ACT | 184 | 178 | 189 | 184 | 141 | 142 | 134 | 139 | 108 | 96 |
| NSW | 3 289 | 3 279 | 3 264 | 5 053 | 3 952 | 3 606 | 3 324 | 2 976 | 2 541 | 2 454 |
| NT | 256 | 180 | 200 | 194 | 151 | 147 | 133 | 104 | 105 | 78 |
| QLD | 2 428 | 2 527 | 2 516 | 2 757 | 2 357 | 2 142 | 2 382 | 2 174 | 2 095 | 1 755 |
| SA | 609 | 564 | 533 | 544 | 481 | 430 | 357 | 295 | 238 | 219 |
| TAS | 229 | 230 | 263 | 257 | 232 | 189 | 171 | 136 | 176 | 111 |
| VIC | 2 132 | 2 159 | 2 193 | 2 405 | 1 932 | 1 901 | 1 691 | 1 332 | 1 274 | 1 213 |
| WA | 1 269 | 1 135 | 1 132 | 1 225 | 1 200 | 1 008 | 984 | 922 | 1 010 | 802 |

Source: Australian National Notifiable Disease Surveillance System.

There was a 42% decrease in the notification rate of hepatitis C, from 44.6 per 100 000 population in 2013, to 25.8 per 100 000 in 2022 (Figure 1). Notification rates have been decreasing among both males and females since 2013 despite an increase in 2016. The increase in 2016 likely reflected the increase in testing associated with government-funded interferon-free direct-acting antiviral (DAA) treatments becoming available on the PBS in March 2016 ⁽²⁾. In 2016, there was a rapid uptake of treatment and cure among people living with hepatitis C, which coincides with a steady reduction in notification rates, with 2022 having the lowest notification rate in the reporting period (Figure 1).

Figure 1 Hepatitis C notification rate per 100 000 population by sex, 2013 – 2022



Source: Australian National Notifiable Disease Surveillance System.



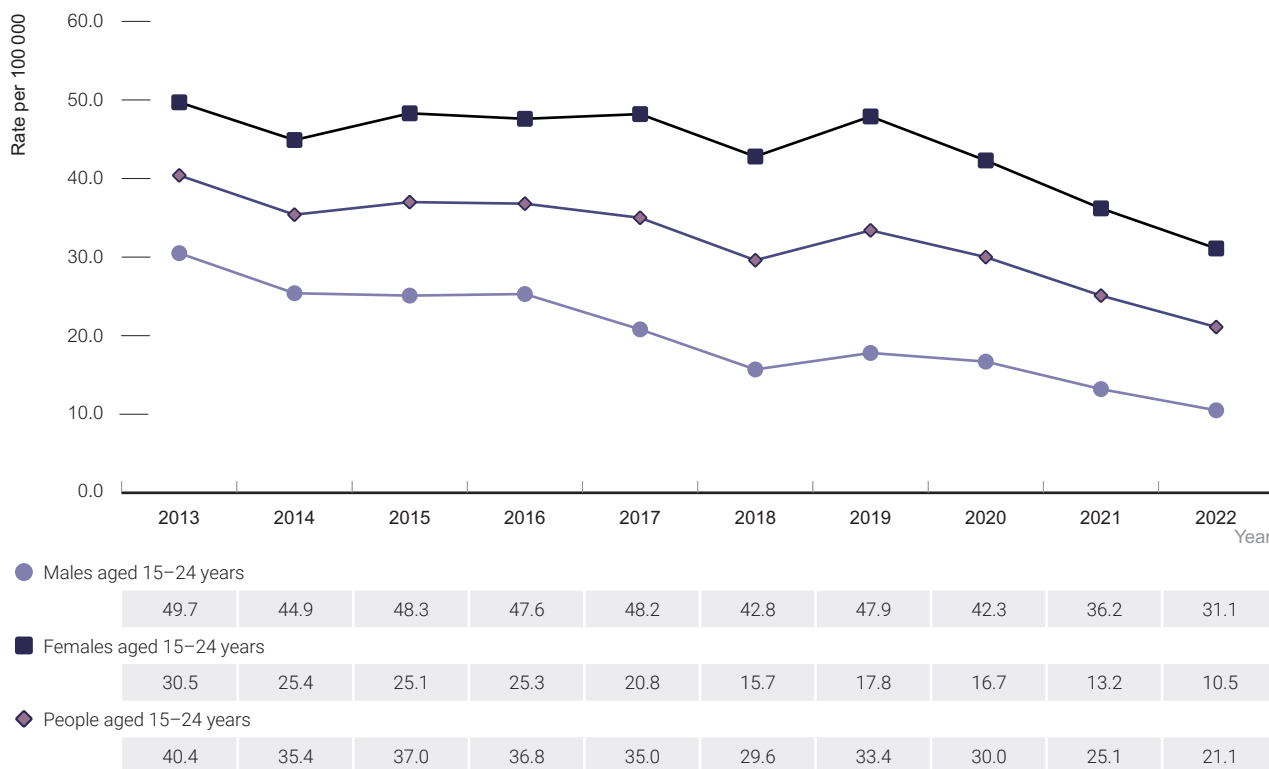
What does this mean?

The number of new hepatitis diagnoses has reduced since 2016.

Hepatitis C notification rates are highest among people aged 25 to 39 years, yet within the last 10 years (2013 – 2022), rates among this age group have halved from 79.7 per 100 000 in 2013, to 39.5 per 100 000 in 2022. In the same period, rates among people aged 40 years and older reduced by 34%, from 46.6 per 100 000 in 2013, to 30.6 per 100 000 in 2022. In 2016, there was an increase in rates among both age categories, likely reflecting an increase in testing associated with the introduction of DAA therapies. This trend was similar among both males and females. Rates among people aged 15–24 years reduced by 48% from 40.4 per 100 000 in 2013, to 21.1 per 100 000 in 2022, and were not obviously affected by the change in testing trends in 2016. For detailed breakdown of notification rates by age and sex, please see the [Kirby Institute data site](#).

Compared with older age-groups, most hepatitis C infections among those aged 15 to 24 years are more recently acquired⁽³⁾. Therefore, trends in the rate of notifications among those aged 15–24 years are used here as a proxy for the overall incidence of hepatitis C infection. There was a 48% decline in the notification rate among this group between 2013 and 2022. The notification rate among women declined by 66% from 30.5 per 100 000 in 2013 to 10.5 per 100 000 in 2022. By comparison, the rate among males declined to a lesser extent (37%), from 49.7 per 100 000 in 2013 to 31.1 per 100 000 in 2022 (Figure 2).

Figure 2 Hepatitis C notification rate per 100 000 population among people aged 15 to 24 years by sex, 2013 – 2022



Source: Australian National Notifiable Disease Surveillance System.

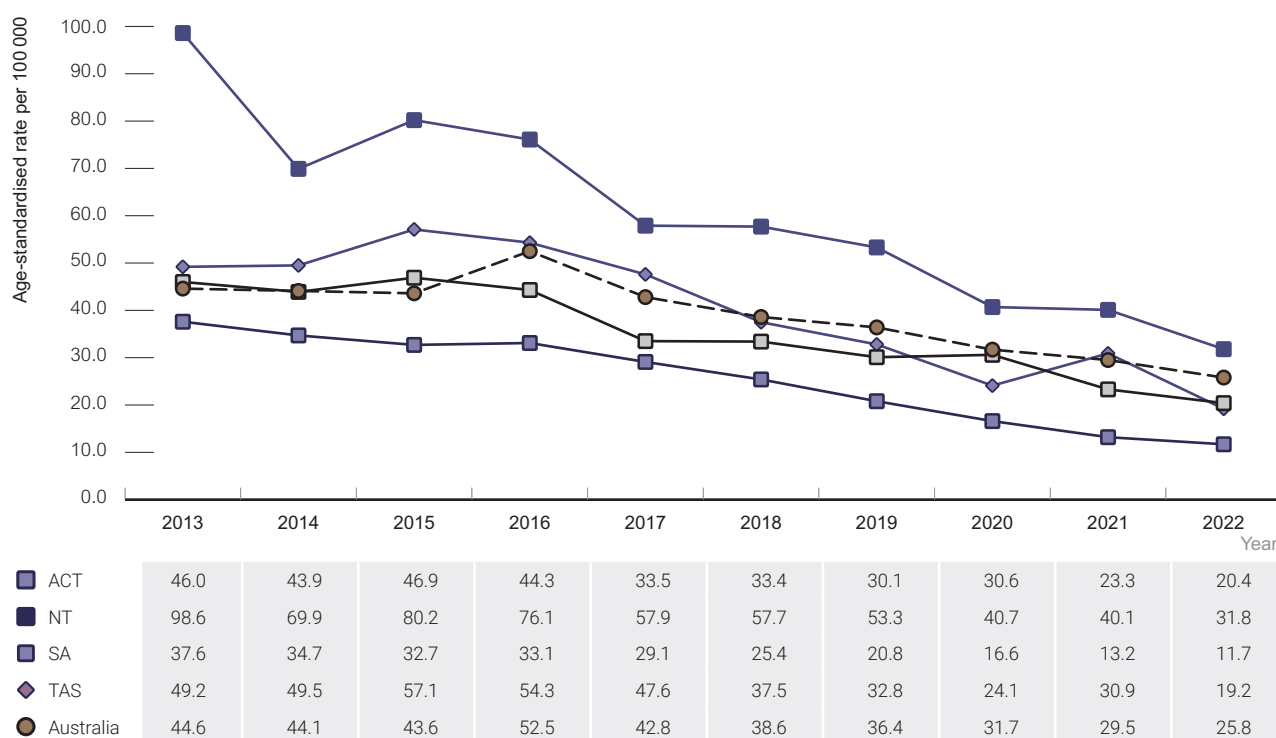
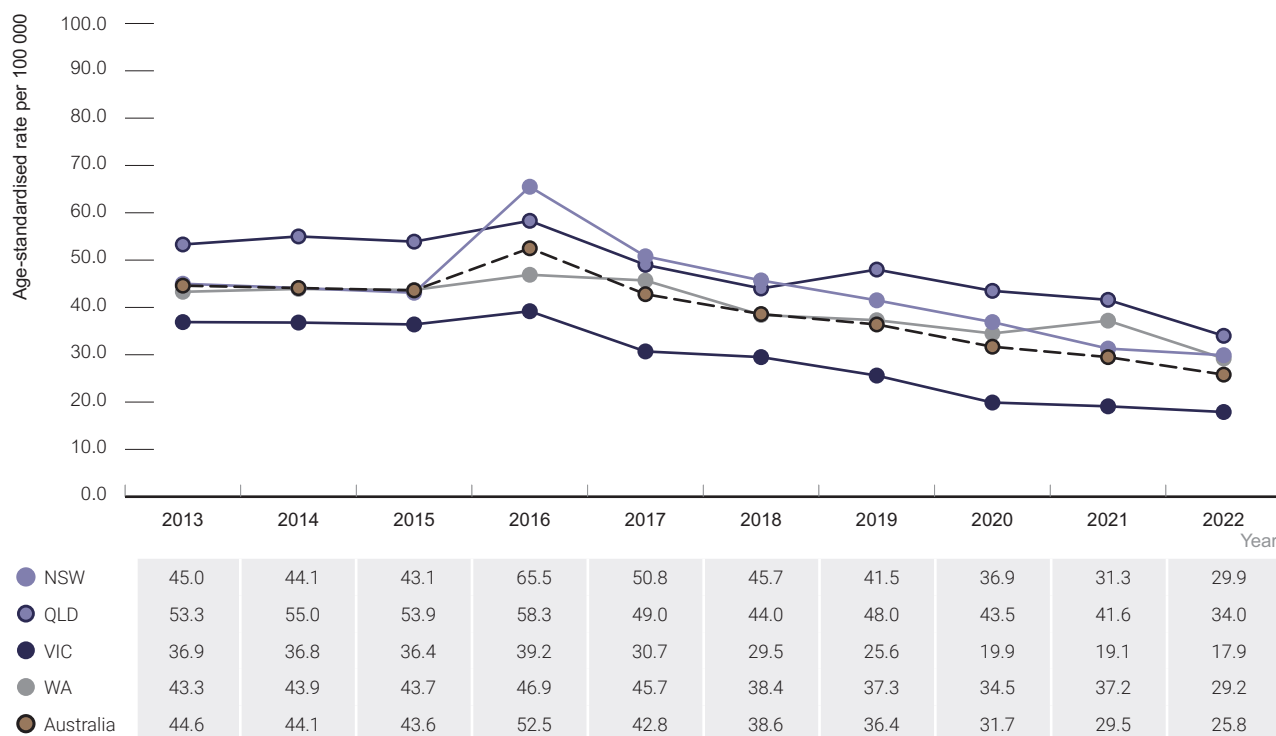


What does this mean?

The number of new hepatitis C diagnoses among young people has declined since 2013 among people aged 15 to 24 years, especially among women.

In 2022, hepatitis C notification rates were highest in Queensland at 34.0 per 100 000, followed by the Northern Territory at 31.8 per 100 000, and New South Wales at 29.9 per 100 000 (Figure 3). South Australia had the lowest notification rate at 11.7 per 100 000. Between 2013 and 2022, all states and territories saw a reduction in notification rates, ranging from a 69% reduction in South Australia, to a 33% reduction in Western Australia.

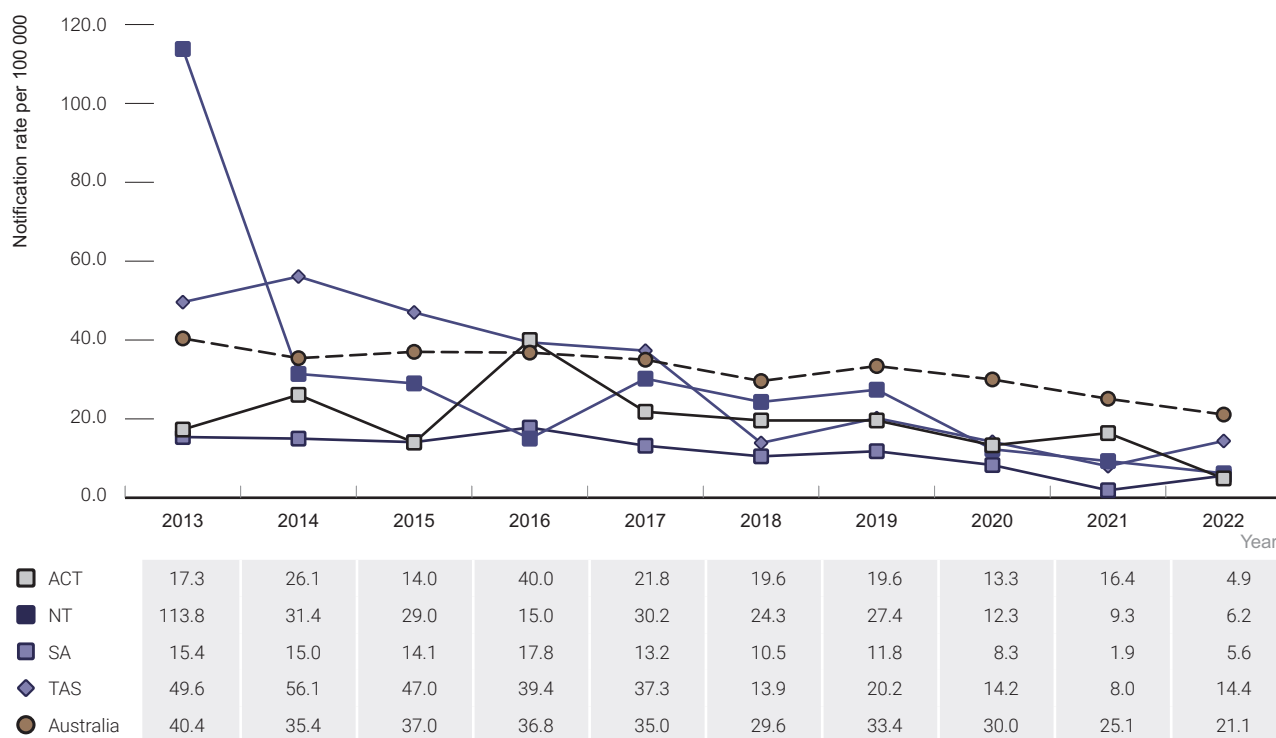
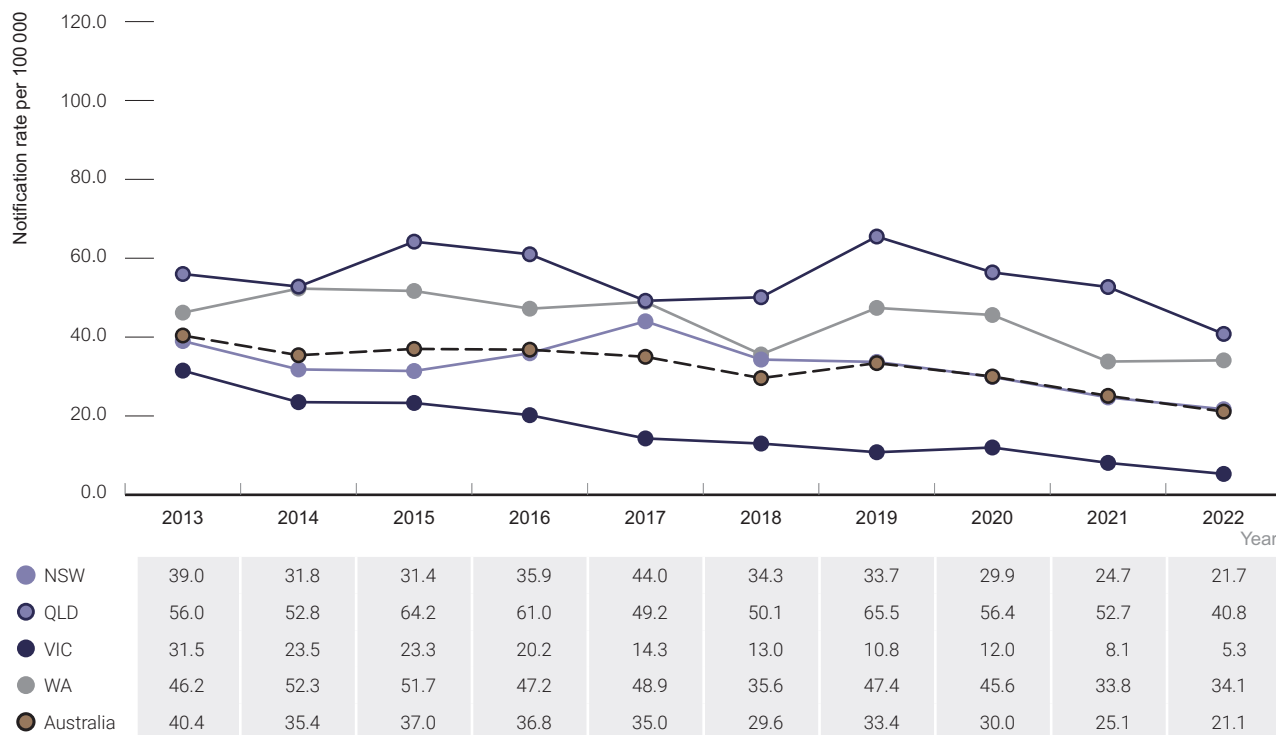
Figure 3 Hepatitis C notification rate per 100 000 population by state/territory, 2013 – 2022



Source: Australian National Notifiable Disease Surveillance System.

Hepatitis C notification rates among people aged 15 to 24 years declined in every state and territory between 2013 and 2022. In this period, the largest declines were seen in the Northern Territory (95%), Victoria (83%), and the Australian Capital Territory (72%) (Figure 4).

Figure 4 Hepatitis C notification rate per 100 000 population among people 15 to 24 years of age, by state/territory, 2013 – 2022



Source: Australian National Notifiable Disease Surveillance System.

Hepatitis C notification rates have historically been higher in regional areas (34.0 per 100 000 in 2022) than in remote areas (30.6 per 100 000 in 2022) and major cities (20.9 per 100 000 in 2022). In 2022, rates for all three areas have declined to the lowest levels in more than 10 years. Since 2013, notification rates have declined by 47% in major cities, 40% in remote areas, and by 38% in regional areas (Figure 5).

Between 2013 and 2022, notification rates among males residing in major cities reduced by 45% (from 50.3 to 27.9 per 100 000), while males residing in remote areas reduced by 39% (from 65.0 to 39.9 per 100 000). In the same period, rates among males living in regional areas declined by 29%, from 71.0 to 50.7 per 100 000. Declines in notification rates were also seen among females residing in major cities and remote areas. Among females, there was a 50% reduction in major cities (from 28.1 per 100 000 in 2013 to 14.1 per 100 000 in 2022) and 55% in regional areas (from 38.1 in 2013 to 17.1 per 100 000 in 2022). The hepatitis C notification rate among females in remote areas fluctuated between 2013 and 2021 but declined by 38% between 2021 and 2022 from 32.9 to 20.4 per 100 000 (41% decline since 2013). Full breakdown of hepatitis C notification rates by remoteness classification and sex can be found at the [Kirby Institute data site](#).

Figure 5 Hepatitis C notification rate per 100 000 population by region of residence, 2013 – 2022



Source: Australian National Notifiable Disease Surveillance System.

Aboriginal and Torres Strait Islander peoples

Aboriginal and Torres Strait Islander notification rates for hepatitis C are based on data from five jurisdictions (the Australian Capital Territory, Northern Territory, Queensland, South Australia, and Western Australia) where Aboriginal and Torres Strait Islander status was $\geq 50\%$ complete for all hepatitis C notifications for each of the five years (2018 – 2022).

Around a half (48%) of Aboriginal and Torres Strait Islander peoples reside in these jurisdictions so it is important to note that the notification rates are not necessarily nationally representative. Incomplete information on Aboriginal and Torres Strait Islander status can underestimate the true extent of these infections among Aboriginal and Torres Strait Islander peoples and notification rates may not reflect national trends.

Based on the data from these five jurisdictions, in 2022 the age-standardised hepatitis C notification rate was more than seven times as high among Aboriginal and Torres Strait Islander peoples (156.2 per 100 000) compared with non-Indigenous people (21.7 per 100 000). Notification rates of hepatitis C among Aboriginal and Torres Strait Islander peoples fluctuated between 2018 and 2022 (Figure 6).

Between 2018 and 2022, among Aboriginal and Torres Strait Islander people aged 15 to 24 years, the hepatitis C notification rate declined by 19% from 232.9 to 188.5 per 100 000. In the same period, among non-Indigenous people aged 15 to 24 years, the notification rate declined by 21% from 23.1 per 100 000 to 18.3 per 100 000. The hepatitis C notification rate among Aboriginal and Torres Strait Islander peoples aged 15 to 24 years was ten times as high as among non-Indigenous people aged 15 to 24 years (188.5 vs 18.3 per 100 000) (Figure 7)

Figure 6 Hepatitis C notification rate per 100 000 population by Aboriginal and Torres Strait Islander status, 2018 – 2022



Source: Australian National Notifiable Disease Surveillance System. Includes jurisdictions in which Indigenous status was reported for $\geq 50\%$ of notifications for each year (Australian Capital Territory, Northern Territory, Queensland, South Australia, and Western Australia).



What does this mean?

The rate of new diagnoses among Aboriginal and Torres Strait Islander peoples has varied since 2018 compared with a reduction in diagnoses among non-Indigenous people.

Figure 7 Hepatitis C notification rate among people aged 15 to 24 years by Aboriginal and Torres Strait Islander status per 100 000 population, 2018 – 2022

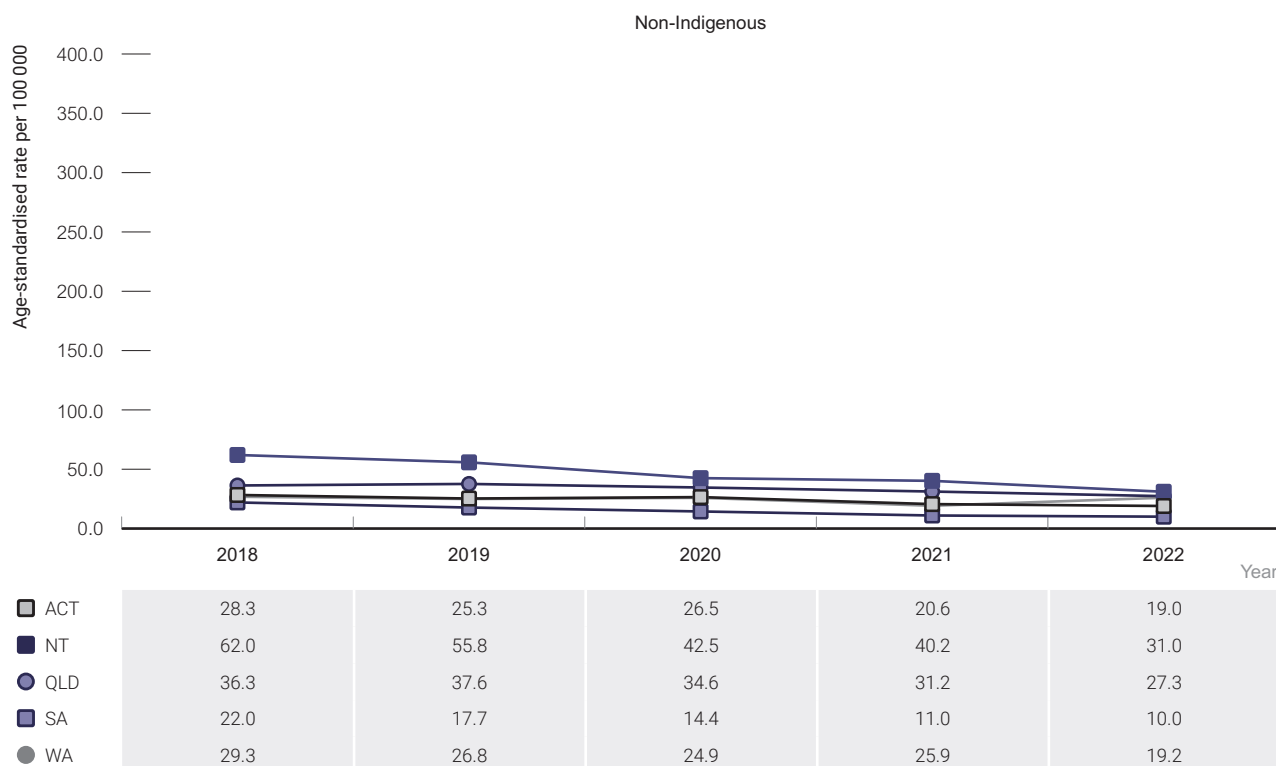
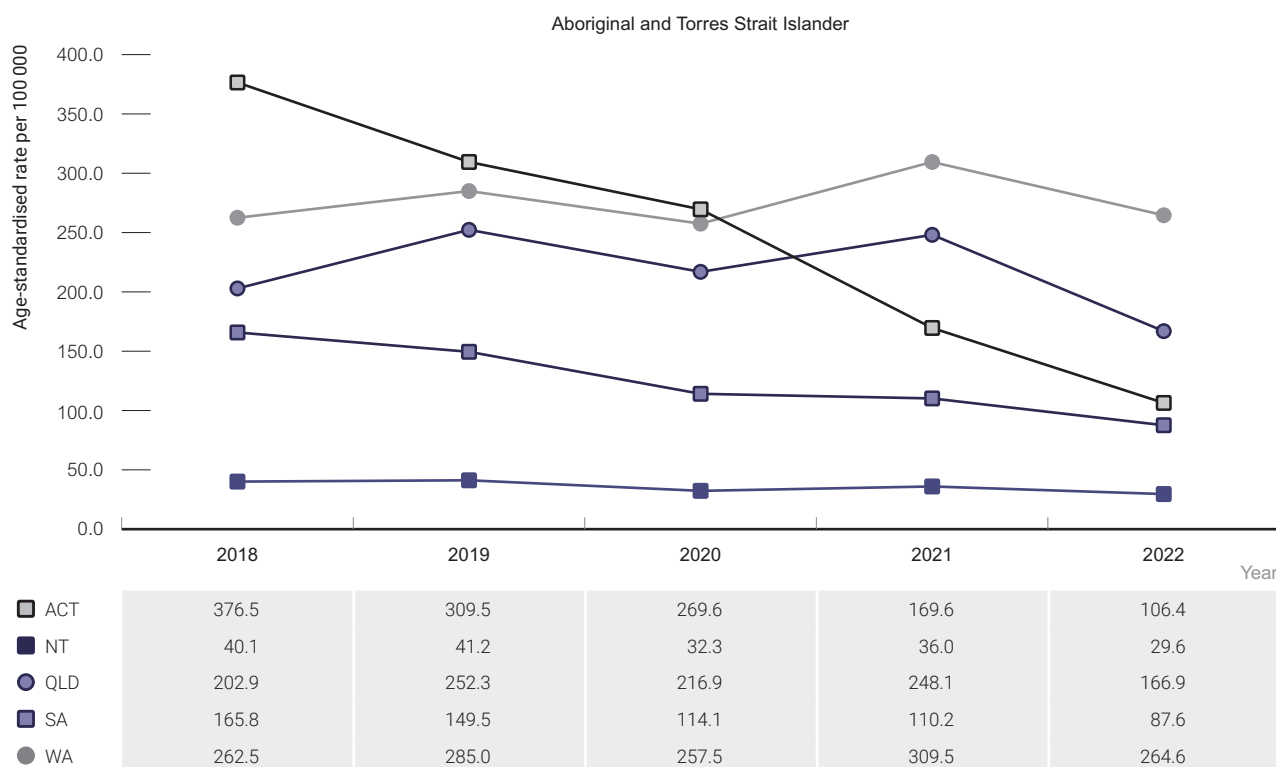


Source: Australian National Notifiable Disease Surveillance System. Includes jurisdictions in which Aboriginal and Torres Strait Islander status was reported for $\geq 50\%$ of notifications for each year (Australian Capital Territory, Northern Territory, Queensland, South Australia, and Western Australia).

In Western Australia, the hepatitis C notification rate in 2022 was almost 13 times as high among Aboriginal and Torres Strait Islander peoples than among non-Indigenous people (264.6 and 19.2 per 100,000, respectively). Also, in 2022, the hepatitis C notification rate in Queensland, South Australia, and the Australian Capital Territory, was six to nine times as high among Aboriginal and Torres Strait Islander peoples as among non-Indigenous people.

In the Australian Capital Territory, South Australia, and the Northern Territory, the hepatitis C notification rate declined between 2018 and 2022 among Aboriginal and Torres Strait Islander peoples. In Queensland, and Western Australia, the hepatitis C notification rate among Aboriginal and Torres Strait Islander peoples fluctuated in the same period, compared with declines among non-Indigenous people in every reported state and territory (Figure 8). See *Bloodborne viral and sexually transmissible infections in Aboriginal and Torres Strait Islander people: annual surveillance report 2023* for further detail ⁽⁴⁾

Figure 8 Hepatitis C notification rate per 100 000 people by Aboriginal and Torres Strait Islander status and state/territory, 2018 – 2022



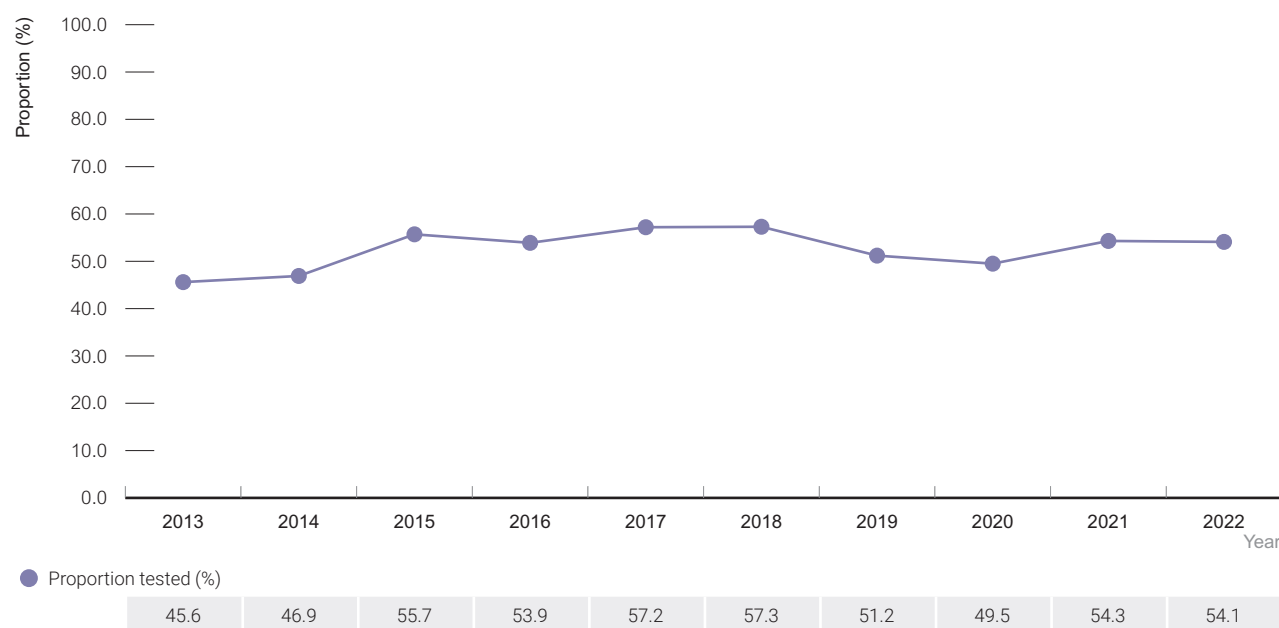
Source: Australian National Notifiable Disease Surveillance System. Includes jurisdictions in which Aboriginal and Torres Strait Islander status was reported for ≥50% of notifications for each year (Australian Capital Territory, Northern Territory, Queensland, South Australia, and Western Australia).

4 Hepatitis C testing

Sentinel surveillance of hepatitis C testing is conducted by the Australian Collaboration for Coordinated Enhanced Sentinel Surveillance (ACCESS) and includes general primary care sites specialising in the health of people who inject drugs, sexual health clinics, and primary care clinics specialising in the health of gay and bisexual men. According to Medicare data, national Hepatitis C testing rates showed a decline between 2019 and 2021 as a consequence of the COVID-19 pandemic related restrictions⁽⁵⁾.

Among people who inject drugs and attend one of the sexual health clinics in ACCESS, the proportion who received a hepatitis C test in the past 12 months fluctuated between 2013 and 2022 and was 54.1% in 2022 (Figure 9). A decline in the number of ACCESS clinic attendees since the start of the pandemic may mean that these figures are less representative of the broader population and should be interpreted with caution (Data not shown).

Figure 9 Proportion of people who inject drugs attending a sexual health clinic in the ACCESS network who had a hepatitis C test in the past 12 months, 2013 – 2022¹

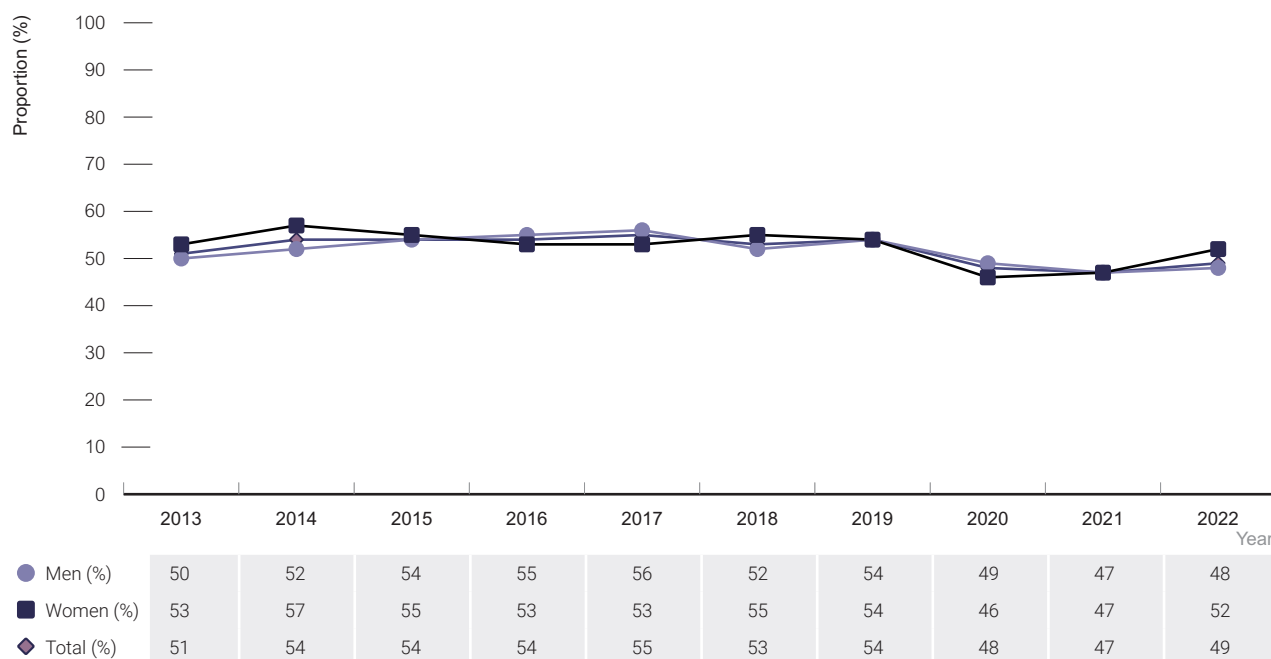


Note: Of clinics enrolled in ACCESS, injecting drug use status could be identified for analysis only among Sexual Health Clinics.

Source: ACCESS; see [Methodology](#) for detail.

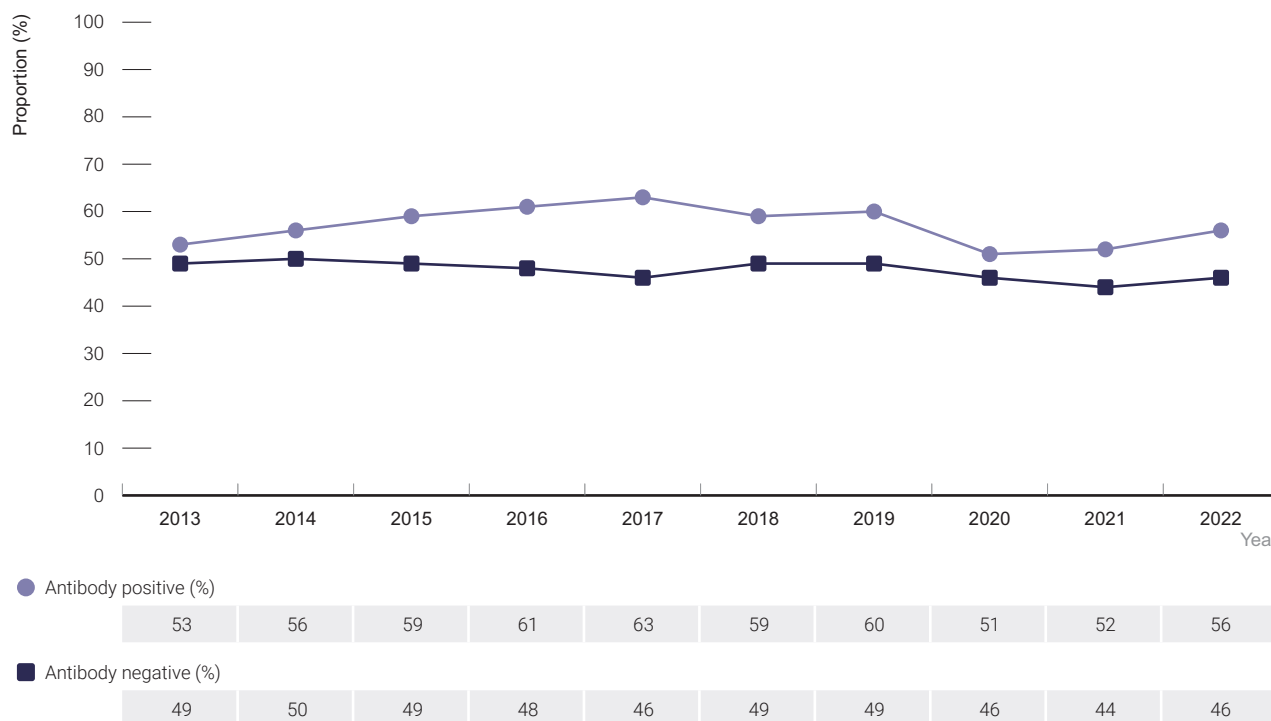
Data from the annual Australian Needle Syringe Program Surveys (ANSPS) provide insights into the demographic characteristics and risk behaviours of laboratory confirmed and self-reported bloodborne virus prevalence, including hepatitis C prevalence, among people who inject drugs attending needle and syringe programs throughout Australia. Between 2013 and 2019, the overall proportion of ANSPS respondents reporting hepatitis C testing fluctuated between 51% and 54%. Between 2020 and 2022 the proportion tested was lower compared to previous years but remained stable between 47% and 49% (49% overall in 2022; 48% among men and 52% among women) (Figure 10). The lower proportions from 2020 were likely related to the COVID-19 pandemic. Self-reported hepatitis C testing levels have consistently been higher among survey respondents who were confirmed as hepatitis C antibody positive than in those who were antibody negative (56% vs 46% in 2022) (Figure 11).

Figure 10 Proportion of people who inject drugs attending needle and syringe programs who reported a hepatitis C antibody test in the past 12 months by sex, 2013 – 2022



Source: Australian Needle Syringe Program Survey; see [Methodology](#) for detail.

Figure 11 Proportion of people who inject drugs attending needle and syringe programs who reported a hepatitis C antibody test in the past 12 months by hepatitis C antibody status, 2013 – 2022



Source: Australian Needle Syringe Program Survey; see [Methodology](#) for detail.

5 Hepatitis C incidence

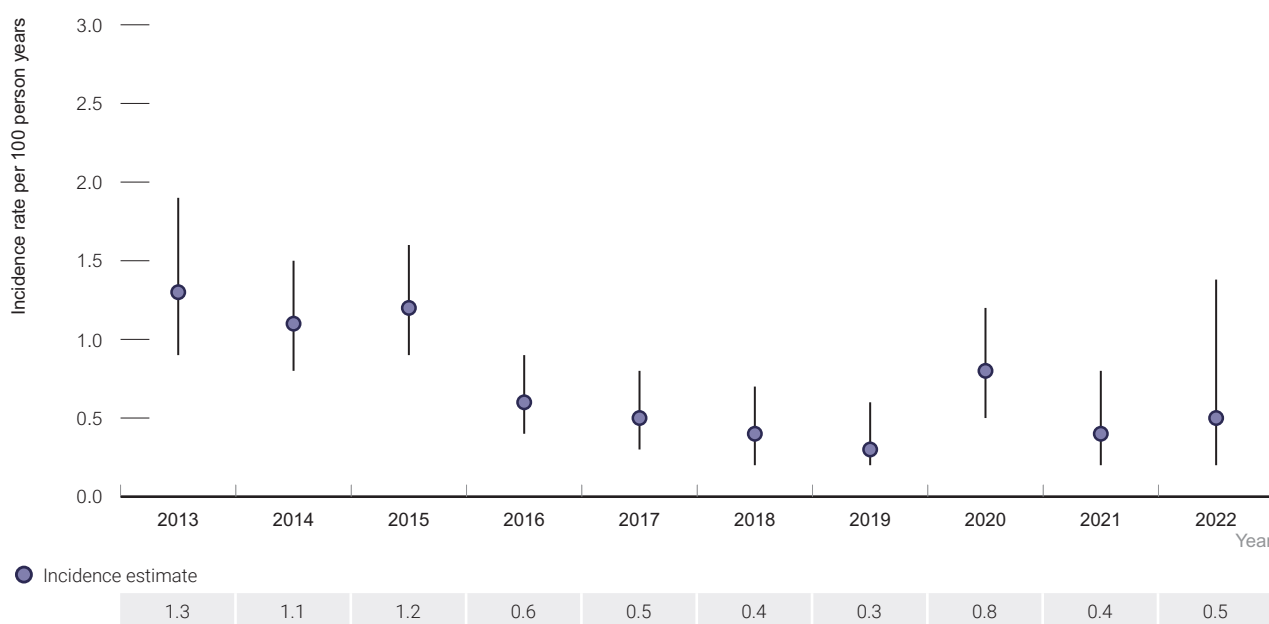
Hepatitis C incidence represents new transmissions and is an important indicator in monitoring the effectiveness of hepatitis C prevention programs and progress against national and global hepatitis C targets. Hepatitis C incidence estimates calculated using sentinel surveillance data from the ACCESS network are presented below.

For the years 2013 – 2023, among people attending an ACCESS primary care site who were hepatitis C antibody negative and had at least one repeat test, there were 195 seroconversions during 273 person-years at risk. Among this population, between 2015 and 2019, the hepatitis C incidence declined from 1.2 to 0.3 new infections per 100 person-years. Between 2019 and 2022 the hepatitis C incidence rate fluctuated and was 0.5 new infections per 100 person-years in 2022 (Figure 12).

For the years 2013 – 2023, among HIV positive gay and bisexual men attending one of the ACCESS primary care sites or sexual health clinics who had at least one repeat hepatitis C test, there were 269 seroconversions during 461 person-years at risk. Among this population, between 2015 and 2019, the hepatitis C incidence declined from 1.0 to 0.3 new infections per 100 person-years. Between 2019 and 2022 the hepatitis C incidence rate remained stable and was 0.2 new infections per 100 person-years in 2022 (Figure 13).

Overlapping confidence intervals between years mean that the differences in incidence rates are not statistically significant and trends should be interpreted with caution.

Figure 12 Incidence of hepatitis C infection at ACCESS primary care clinics, 2013 – 2022



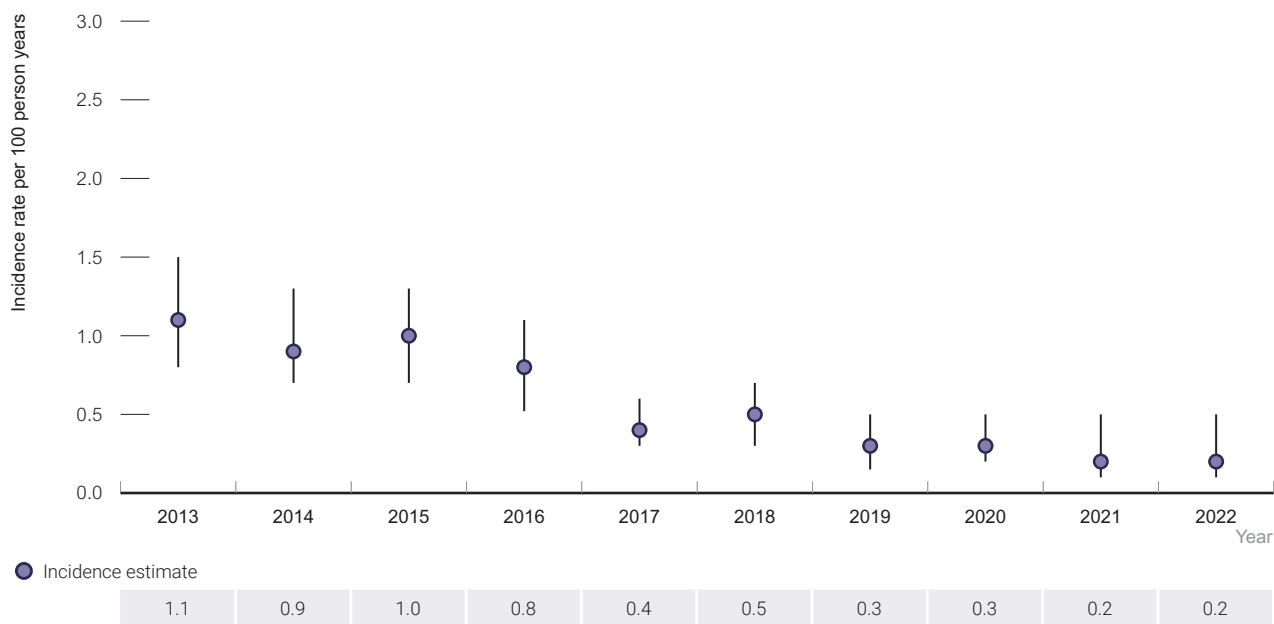
Source: ACCESS; see [Methodology](#) for detail.



What does this mean?

The number of new hepatitis C infections among people attending ACCESS primary care clinics has declined since 2013.

Figure 13 Incidence of hepatitis C infection among HIV-positive gay and bisexual men attending ACCESS sexual health and primary care clinics, 2013 – 2022



Source: ACCESS; see [Methodology](#) for detail.



What does this mean?

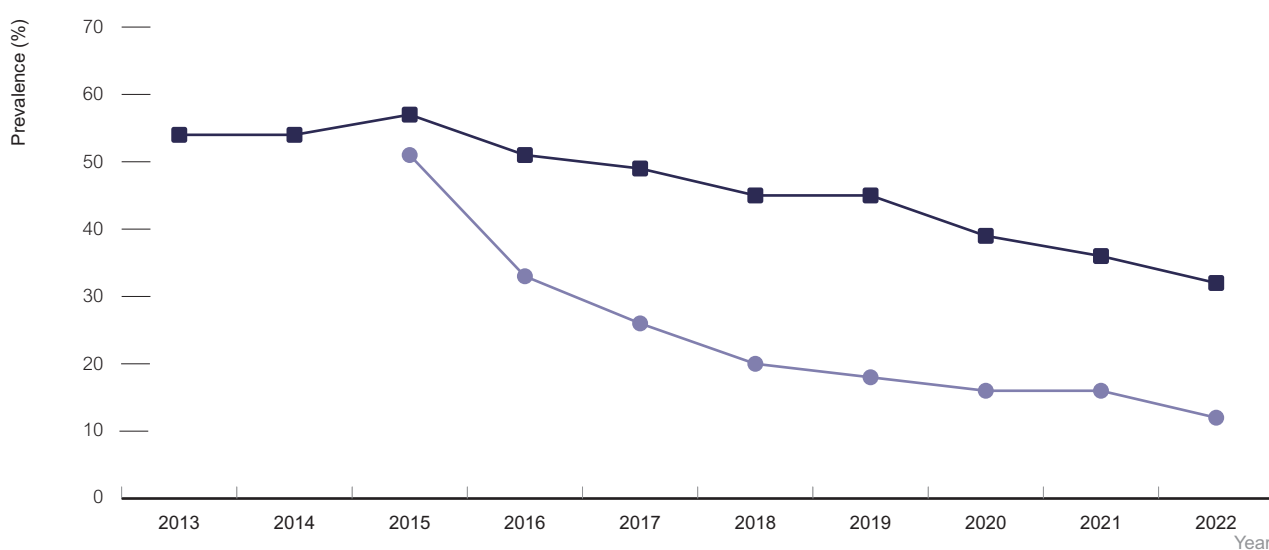
The number of new hepatitis C infections among gay and bisexual men attending ACCESS primary care clinics has declined considerably since 2013.

6 Hepatitis C prevalence

Australia's hepatitis C epidemic affects many people across differing age groups, ethnicities, and sociodemographic backgrounds. Key populations include people with a history of injecting drugs, people with a history of incarceration, and people from high-prevalence countries (where the prevalence of hepatitis C is higher than 3.5%). Among ANSPS participants, hepatitis C antibody prevalence declined from 57% in 2015 to 32% in 2022 (Figure 14).

By comparison, greater declines have been seen in hepatitis C RNA prevalence, reflecting the reduced level of current infection among people with hepatitis C antibodies since the widespread availability of DAA therapy ⁽⁶⁾. Hepatitis C RNA prevalence declined from 51% in 2015 to 12% in 2022 (Figure 14).

Figure 14 Hepatitis C antibody and RNA prevalence among people attending needle and syringe programs, 2013 – 2022



● Hepatitis C RNA prevalence (%)

| | | | | | | | | | | |
|--|--|--|----|----|----|----|----|----|----|----|
| | | | 51 | 33 | 26 | 20 | 18 | 16 | 16 | 12 |
|--|--|--|----|----|----|----|----|----|----|----|

■ Hepatitis C antibody prevalence (%)

| | | | | | | | | | |
|----|----|----|----|----|----|----|----|----|----|
| 54 | 54 | 57 | 51 | 49 | 45 | 45 | 39 | 36 | 32 |
|----|----|----|----|----|----|----|----|----|----|

Notes: RNA prevalence data are weighted for sex and HCV Ab status. RNA testing commenced as part of the ANSPS from 2015.

Source: Australian Needle Syringe Program Survey; see [Methodology](#) for detail.



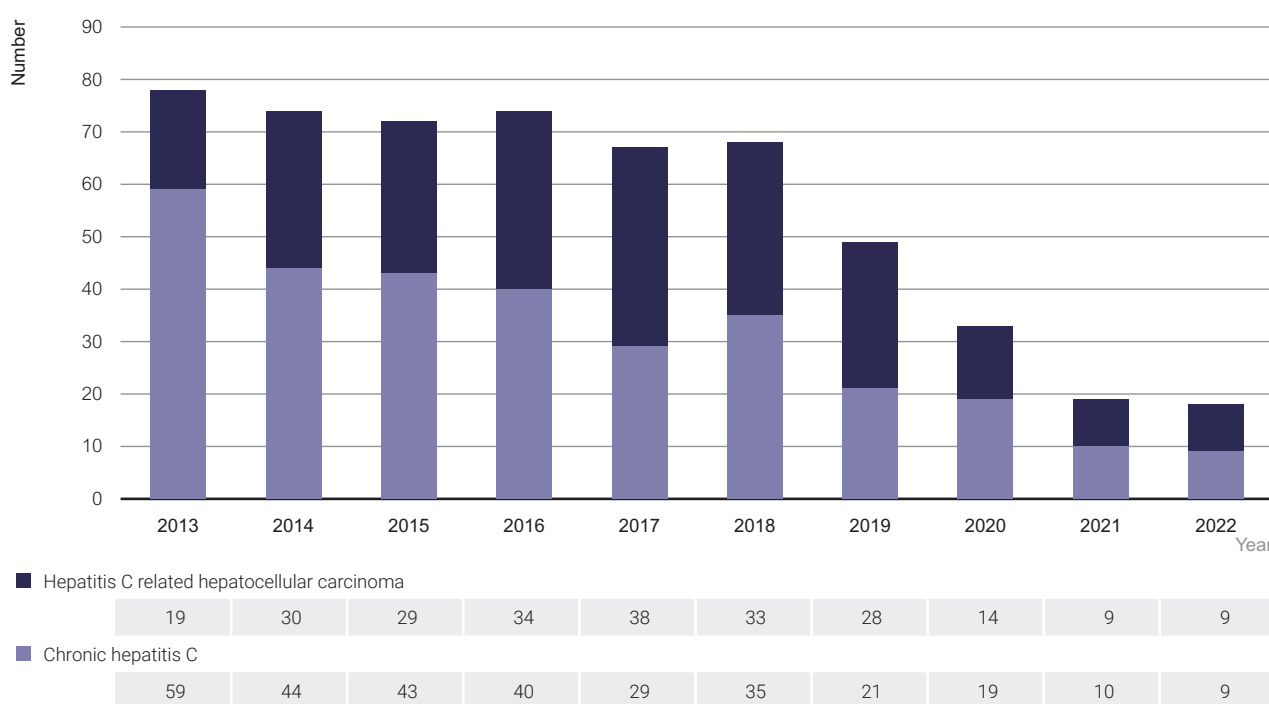
What does this mean?

The proportion of people attending needle and syringe programs with evidence of current hepatitis C infection has declined considerably since 2015. The proportion of people with evidence of a current or previous hepatitis C infection has also declined but not as much.

7 Hepatitis C morbidity and mortality

There is no comprehensive registry of advanced illness related to hepatitis C in Australia. One indicator of the extent of illness caused by hepatitis C is the number of liver transplants due to chronic infection. Of the 205 liver transplants in 2022, 18 (9%) were attributable to chronic hepatitis C infection or hepatitis C related hepatocellular carcinoma. The number of people having liver transplants in Australia due to hepatitis C related cirrhosis has reduced by 79% between 2015 and 2022 from 43 (20% of all liver transplants) to 9 (4% of all transplants). The number of liver transplants attributed to hepatitis C-related hepatocellular carcinoma has reduced from 29 (13% of all liver transplants) in 2015 to 9 (4% of all liver transplants) in 2022 (Figure 15). Many factors influence the selection of candidates for transplant, and the numbers may not necessarily reflect the overall morbidity and mortality attributable to individual causes of liver disease but suggest a major impact of direct-acting antiviral therapy. For detailed information relating to chronic hepatitis C among liver transplant patients, please see the [Kirby Institute data site](#).

Figure 15 Number of liver transplants due to chronic hepatitis C and hepatitis C related hepatocellular carcinoma, 2013 – 2022



Note: Only includes people aged 16 years and over.

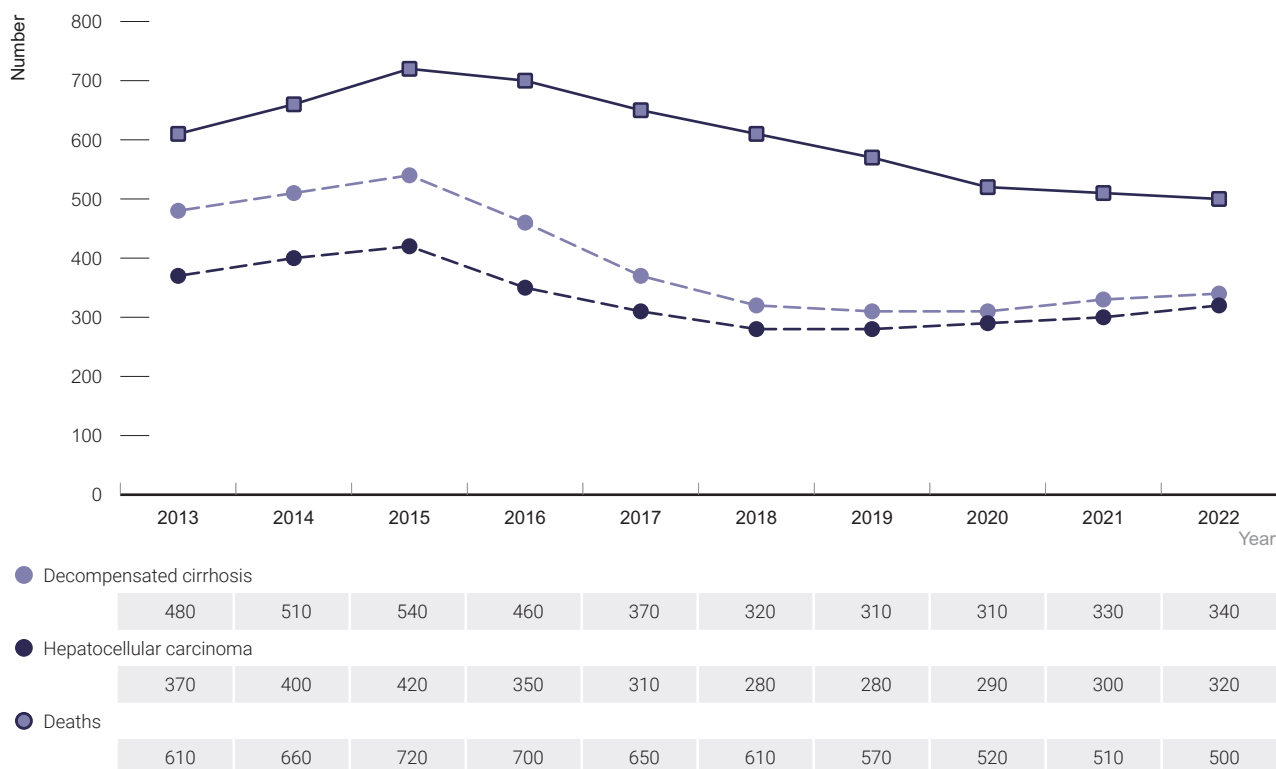
Source: Australian and New Zealand liver Transplant Registry; see [Methodology](#) for detail.

In lieu of empirical mortality and morbidity data, estimates based on mathematical modelling ^(7,8), incorporating the impact of hepatitis C treatment, are presented below with 104 110 people living with chronic hepatitis C treated with DAA since 2015. However, treatment uptake is declining which could potentially undermine Australia's progress towards the WHO HCV elimination targets. By the end of 2022, an estimated 51 670 people living with chronic hepatitis C had early to moderate fibrosis (stages F0–F2), 16 470 had severe fibrosis (stage F3), 10 860 had hepatitis C-related cirrhosis (stage F4) (see Figure 21, page 26). The estimated number of hepatitis C-related deaths declined by 31% from 710 in 2015 and to 500 in 2022 (Figure 16).

Among people who were living with chronic hepatitis C as well as those who have been cured, the estimated number of new cases of hepatitis C-related decompensated cirrhosis declined by 37% from 540 in 2015 to 340 in 2022 (Figure 16). The estimated number of new cases of hepatitis C-related hepatocellular carcinoma declined by 24% between 2015 and 2022 from 420 to 320.

The estimated number of people living with chronic hepatitis C who had hepatitis C-related cirrhosis declined by 43% between 2015 and 2022 from 16 730 to 9 530 (Figure 17). Among people who were living with chronic hepatitis C as well as those who have been cured, between 2015 and 2022, the estimated number with hepatitis C-related cirrhosis increased by 41% (from 18 610 to 26 320) (Figure 17). People who have been cured of chronic hepatitis C are included as they may still develop morbidity after being cured.

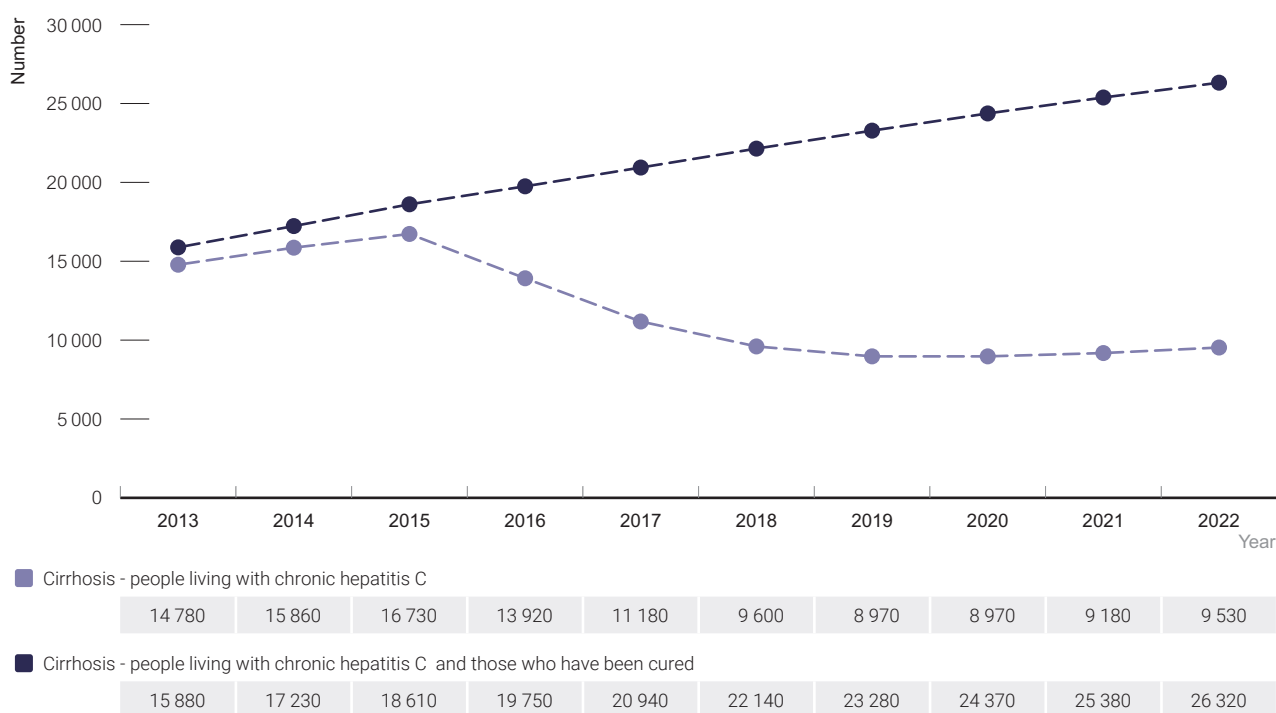
Figure 16 Estimated number of incident cases of hepatitis C-related decompensated cirrhosis, hepatocellular carcinoma, and deaths, 2013 – 2022



Note: Includes people with chronic hepatitis C infection and those who have been cured of infection but still have hepatitis C-related severe fibrosis or cirrhosis.

Source: See [Methodology](#) for detail.

Figure 17 Estimated number of people with hepatitis C-related cirrhosis, 2013 – 2022



Source: See [Methodology](#) for detail.

8 Hepatitis C diagnosis and care cascade

Methods used to generate cascade estimates are regularly revised to reflect the best and most current research available. Therefore, the following estimates may differ to same-year estimates presented in previous reporting.

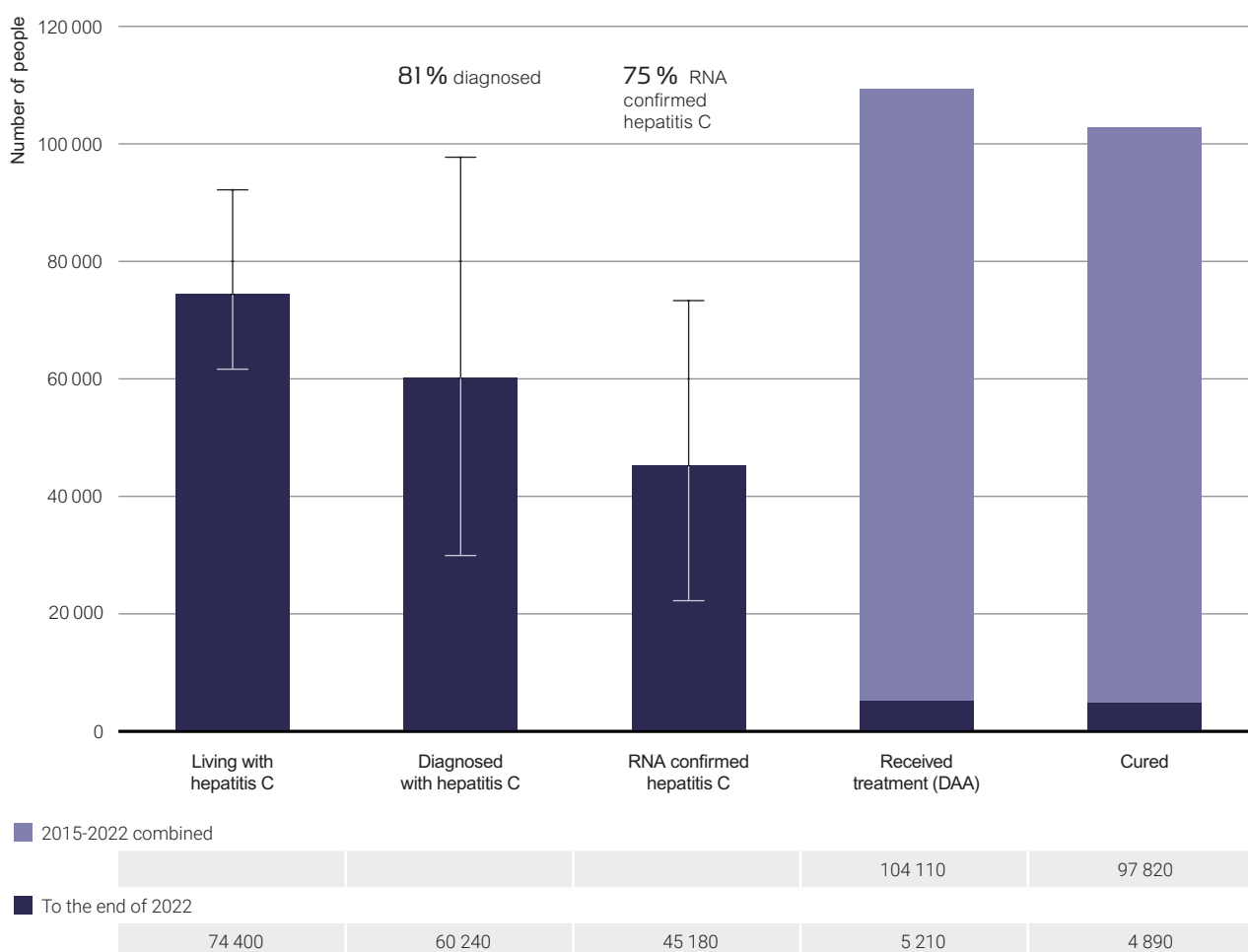
This section includes the hepatitis C diagnosis and care cascade, with estimates of the number of people living with chronic hepatitis C in Australia, the number and proportion of people who have been diagnosed, and the number who received antiviral treatment. These estimates are used to support and inform the delivery of services to people living with chronic hepatitis C infection, from diagnosis of chronic hepatitis C to initiation of antiviral therapy and cure. Using available data and accounting for uncertainties, the number and proportions of people in each stage of the cascade in Australia were estimated (Figure 18, Figure 19, Table 2).

At the end of 2022, an estimated 74 400 people were living with chronic hepatitis C in Australia, down from 162 590 at the end of 2015. Of those living with chronic hepatitis C at the end of 2022, an estimated 60 240 (81%) were diagnosed. Including all years between 2015 and 2022, an estimated 75% of those diagnosed also had an RNA test to confirm their chronic hepatitis C infection (45 180 people in 2022; Figure 18, Table 2).

Of the 79 000 people living with chronic hepatitis C at the start of 2022 (end of 2021), 5210 (7%) received hepatitis C DAA treatment in 2022. Between 2015 and 2022 between 93% and 94% of people who had received treatment were cured of hepatitis C, with 94% cured in 2022 (4890 people; Table 2). The Australian Government has committed to the World Health Organization targets of 90% of people living with chronic hepatitis C infection to be diagnosed, with 80% treatment coverage by 2030. For estimates over a greater range of years, please see the Kirby Institute data site.

Further details are provided in the [Methodology](#) section.

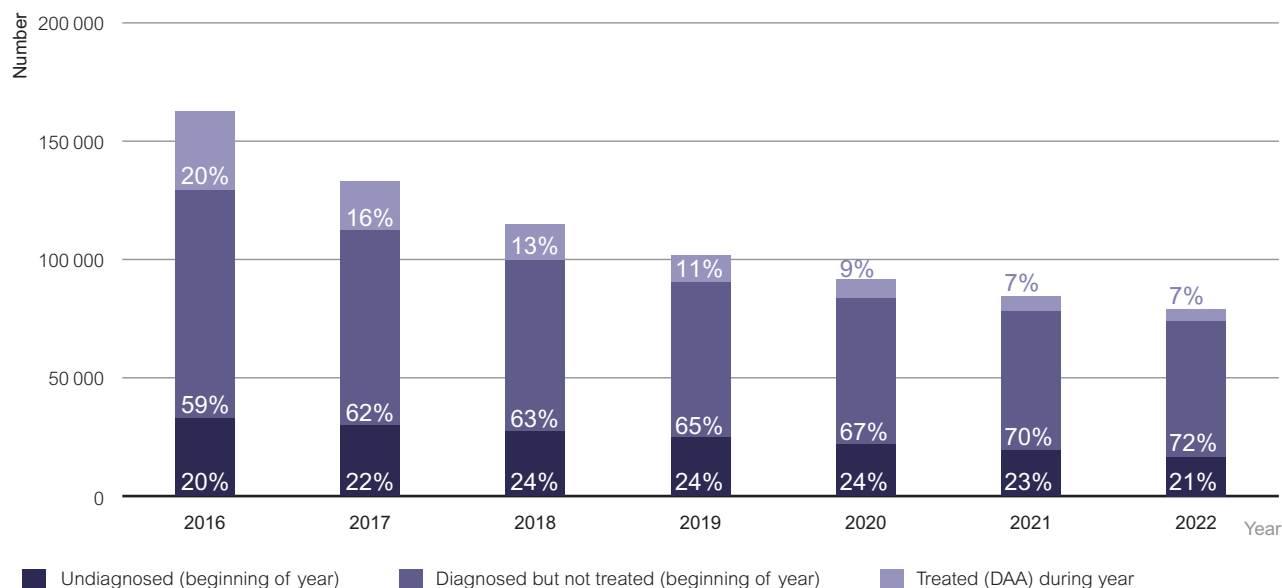
Figure 18 The hepatitis C diagnosis and care cascade



What does this mean?

The number of people living with hepatitis C is steadily reducing and the proportion of people who know their hepatitis C status is increasing. However, the proportion of people with hepatitis C who are on treatment is reducing.

Figure 19 The hepatitis C diagnosis and care cascade gaps, 2016 – 2022



Source: See [Methodology](#) for details of mathematical modelling used to generate estimates.

Table 2 The hepatitis C diagnosis and care cascade estimates, 2015 – 2022

| Year | Living with chronic hepatitis C (end of year) | Diagnosed with chronic hepatitis C (end of year) (%) ^a | RNA confirmed hepatitis C (end of year) (%) ^b | Received DAA hepatitis C treatment (during the year) (%) ^c | Cured of hepatitis C (during the year) (%) ^d |
|------|---|---|--|---|---|
| 2015 | 162 590 | 129 710 (80%) | 97 280 (75%) | 3 430 (2%) | 3 222 (94%) |
| 2016 | 133 110 | 103 170 (78%) | 77 380 (75%) | 33 200 (20%) | 31 310 (94%) |
| 2017 | 114 850 | 87 400 (76%) | 65 550 (75%) | 20 970 (16%) | 19 690 (94%) |
| 2018 | 101 630 | 76 880 (76%) | 57 660 (75%) | 15 210 (13%) | 14 280 (94%) |
| 2019 | 91 790 | 69 980 (76%) | 52 480 (75%) | 11 310 (11%) | 10 640 (94%) |
| 2020 | 84 650 | 65 510 (77%) | 49 130 (75%) | 8 230 (9%) | 7 730 (94%) |
| 2021 | 79 000 | 62 450 (79%) | 46 840 (75%) | 6 560 (8%) | 6 090 (93%) |
| 2022 | 74 400 | 60 240 (81%) | 45 180 (75%) | 5 210 (7%) | 4 890 (94%) |

Notes: a The proportion diagnosed is the number of people diagnosed divided by the number of people living with chronic hepatitis C;
 b The proportion of RNA confirmed hepatitis C is the number of people with RNA confirmed hepatitis C divided by the number of people diagnosed with hepatitis C;
 c The proportion for diagnosed and received treatment is the number of people treated with DAA therapy over the given year divided by the number of people with hepatitis C at the start of the given year;
 d The proportion cured of hepatitis C is the number of people cured of hepatitis C divided by the number of people who received hepatitis C treatment.

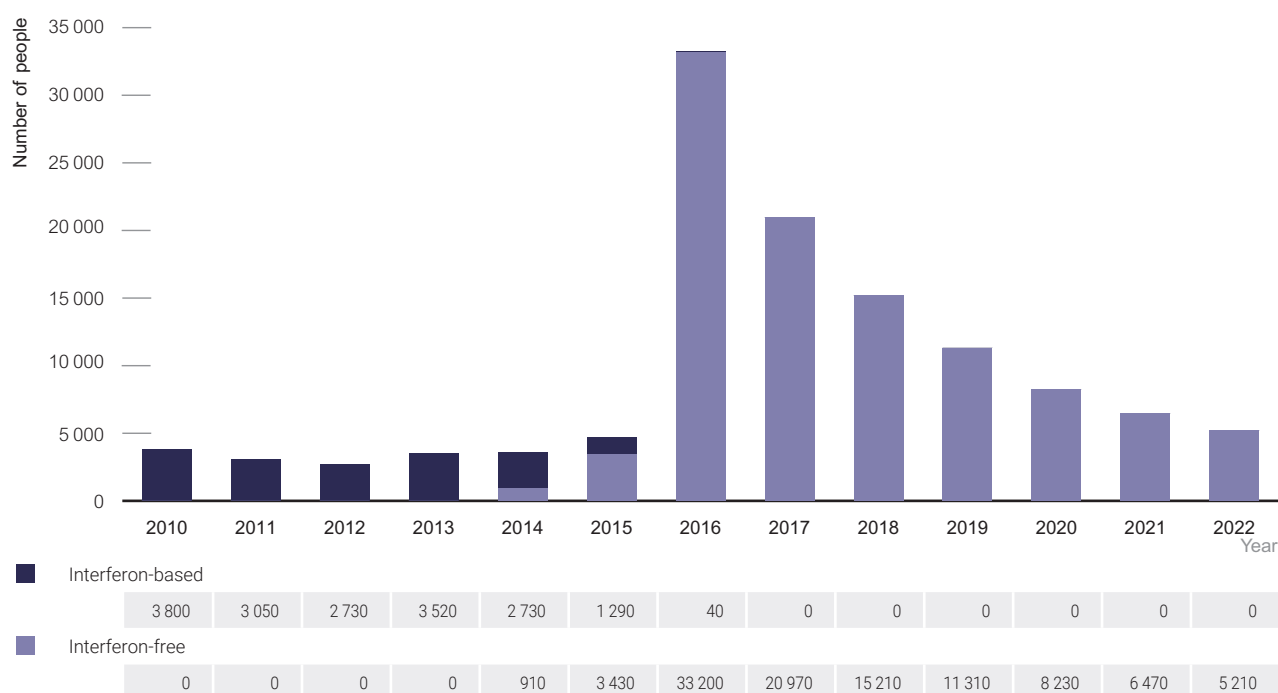
Source: See [Methodology](#) for details of mathematical modelling used to generate estimates.

9 Hepatitis C treatment

Subsidised interferon-free DAA regimens became available in Australia from March 2016. Access to new highly effective hepatitis C treatments led to a 26-fold increase in the number of people receiving treatment between 2015 and 2016. The large initial DAA uptake in 2016 likely reflected a 'warehouse' effect, with many patients awaiting DAA treatment access after a hepatitis C diagnosis in previous years ⁽²⁾. Since then, DAA treatment initiations (number receiving their first course of therapy) per year have declined from 33 200 in 2016 to 5 210 in 2022 (Figure 20). Between March 2016 and the end of 2022, 100 600 people received PBS-subsidised DAA treatment. This means that during this period, including those who have been cured, 60% of all people living with HCV at the start of 2015 (162 590 people), have received treatment.

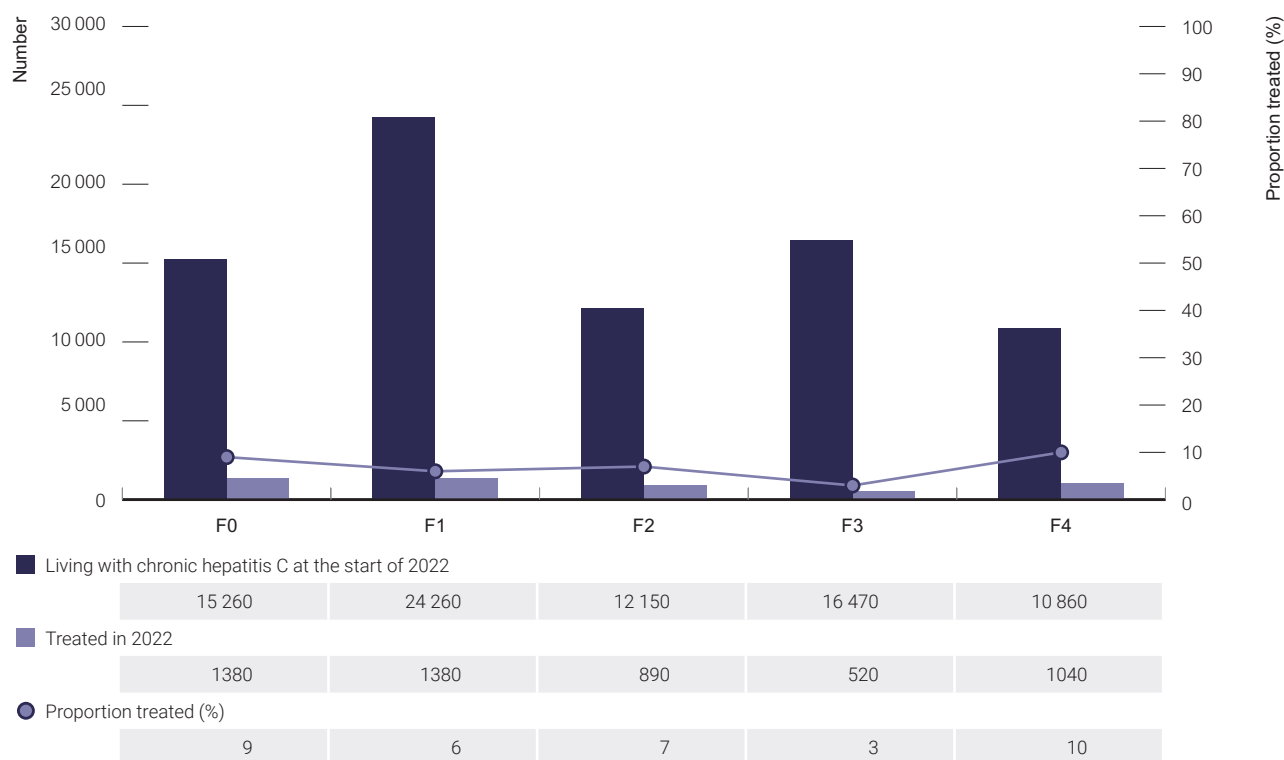
In 2022, 7% of all people estimated to be living with hepatitis C at the start of the year initiated DAA therapy (Table 2). A higher proportion of people with hepatitis C-related cirrhosis (stage F4) and early fibrosis (stage F0) at the start of 2022 were estimated to have gone on to receive treatment (10% and 9%, respectively) in 2022 compared with moderate fibrosis (stages F1-F2; 6%) and with severe fibrosis (stage F3; 3%) (Figure 21).

Figure 20 The number of people living with hepatitis C who received treatment, 2010 – 2022



Source: Pharmaceutical Benefits Scheme.

Figure 21 Number and proportion of people living with chronic hepatitis C at the start of 2022 who received treatment during 2022, by stage of disease



Note: F4 includes fibrosis stage 4, decompensated cirrhosis, and hepatocellular carcinoma.

Source: Pharmaceutical Benefits Scheme; see [Methodology](#) for detail.



What does this mean?

The highest uptake of hepatitis C treatment occurs among people who have early and advanced hepatitis.

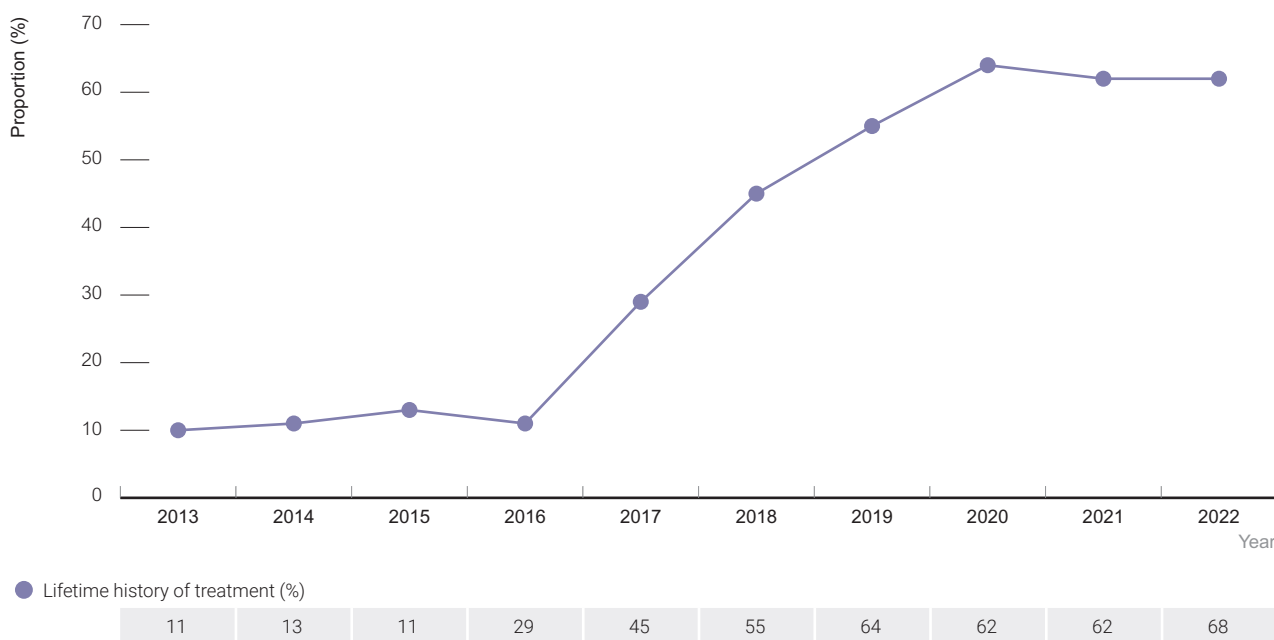
Table 3 Number of people with chronic hepatitis C infection initiating direct-acting antiviral therapy by state/territory, 2022

| State/Territory | Number initiating direct-acting antiviral therapy in 2022 |
|------------------------------|---|
| Australian Capital Territory | 60 |
| New South Wales | 1 690 |
| Northern Territory | 30 |
| Queensland | 1 470 |
| South Australia | 240 |
| Tasmania | 110 |
| Victoria | 990 |
| Western Australia | 610 |
| Australia | 5 210 |

Source: Pharmaceutical Benefits Scheme

Data from the ANSPS indicate that among respondents with self-reported chronic hepatitis C in 2022, 68% reported ever having received hepatitis C treatment, the highest in the reporting period, and an increase from 11% in 2015 (Figure 22). This increase reflects improved access through subsidised interferon-free direct-acting antiviral regimens from March 2016⁽⁶⁾. Among Aboriginal and/or Torres Strait Islander ANSPS respondents, there was more than a six-fold increase, from 10% in 2015 to 66% in 2022, similar to the six-fold increase in non-Indigenous respondents from 11% to 68% over the same period. Please refer to the [Australian Needle Syringe Program Survey National Data Report 2018 – 2022: Prevalence of HIV, HCV and injecting and sexual behaviour among NSP attendees](#) for more information⁽³⁾.

Figure 22 Proportion of hepatitis C antibody positive people seen at needle and syringe programs with a lifetime history of hepatitis C treatment, 2013 – 2022



Note: Denominator for lifetime history of treatment is restricted to people with hepatitis C antibody positive serology and excludes people who self-reported spontaneous clearance; prior to 2012 commenced treatment in the last twelve months was 'current treatment'; excludes people who reported treatment induced clearance >12 months previously.

Source: Australian Needle Syringe Program Survey; see [Methodology](#) for detail.



What does this mean?

The proportion of people using needle and syringe programs who have ever have hepatitis C treatment has increased considerably since 2015.

10 Hepatitis C prevention

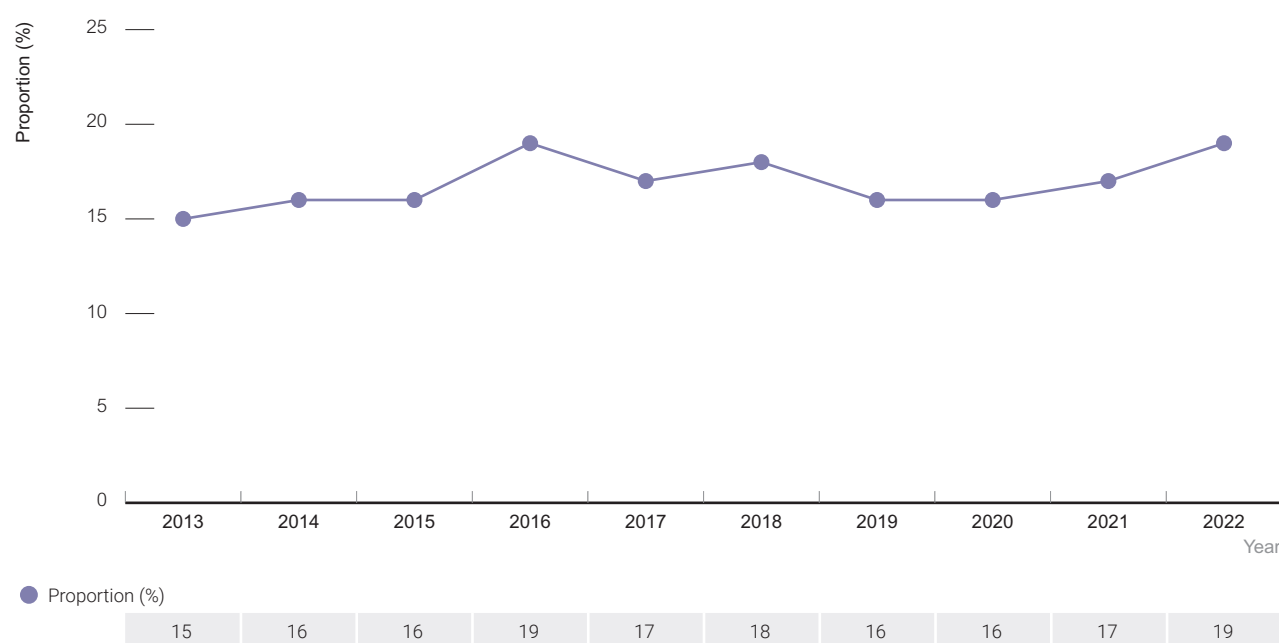
The reuse of needles and syringes that have been used by others (receptive syringe sharing) is a major risk factor for the transmission of hepatitis C and other bloodborne viruses among people who inject drugs. Harm reduction strategies, in community and prison settings, such as needle and syringe programs and opioid substitution therapy as well as safe injecting spaces, community education and peer interventions can reduce injecting risk behaviour^(9–11).

Opioid agonist therapy has been shown to reduce the incidence of hepatitis C and HIV among people who inject drugs^(12–14). Health promotion is important to enhance the effectiveness of harm reduction strategies and to support people who inject drugs to implement safer practices. Mathematical modelling suggests achieving a high coverage of hepatitis C antiviral treatment can reduce the population prevalence of hepatitis C and therefore lead to reduced incidence⁽¹⁵⁾. Secondary prevention strategies to reduce the risk of liver disease morbidity and mortality include improving access to diagnosis and antiviral treatment and engagement in regular ongoing liver cancer monitoring for all people with cirrhosis even when cured of hepatitis C infection.

Injecting risk behaviour

Data from the ANSPS indicate that the prevalence of receptive syringe sharing has been generally stable over the past 10 years (2013 – 2022). In 2022, 19% of people attending needle and syringe programs reported receptive syringe sharing in the last month (Figure 23). The proportion of respondents reporting receptive syringe sharing was more than twice as high among Aboriginal and/or Torres Strait Islander survey participants (31%) compared with non-Indigenous participants (15%). Please refer to the [Australian Needle Syringe Program Survey National Data Report 2018 – 2022: Prevalence of HIV, HCV and injecting and sexual behaviour among NSP attendees](#) for further information⁽³⁾.

Figure 23 Proportion of people seen at needle and syringe programs reporting receptive syringe sharing in the past month, 2013 – 2022



Source: Australian Needle Syringe Program Survey; see [Methodology](#) for detail.

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