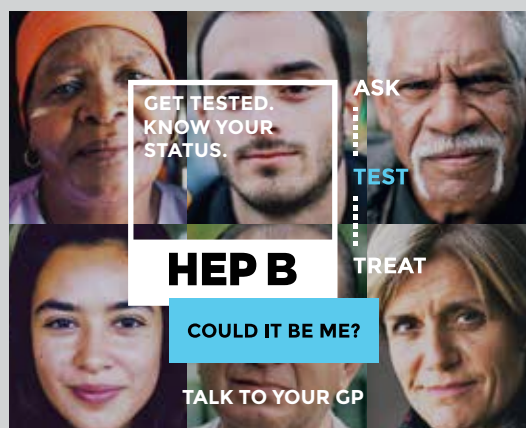


NSW HEPATITIS B AND HEPATITIS C STRATEGIES 2014–2020 DATA REPORT

2018 Annual Data Report



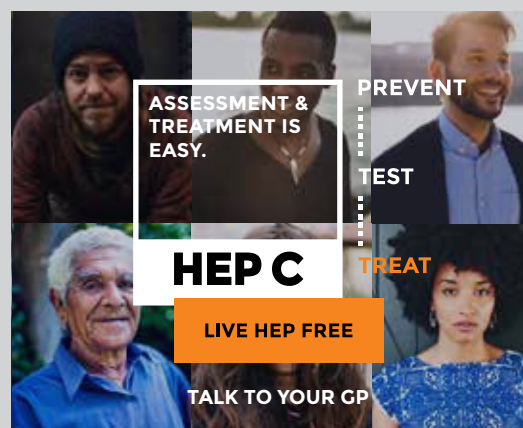
GET TESTED.
KNOW YOUR
STATUS.

ASK
TEST
TREAT

HEP B

COULD IT BE ME?
TALK TO YOUR GP

A collage of four diverse people's faces. A white box contains the text 'GET TESTED. KNOW YOUR STATUS.' To the right, a vertical dotted line separates the words 'ASK', 'TEST', and 'TREAT'. Below the collage, a blue box contains 'HEP B', and another blue box contains 'COULD IT BE ME? TALK TO YOUR GP'.



ASSESSMENT &
TREATMENT IS
EASY.

PREVENT
TEST
TREAT

HEP C

LIVE HEP FREE
TALK TO YOUR GP

A collage of four diverse people's faces. A white box contains the text 'ASSESSMENT & TREATMENT IS EASY.' To the right, a vertical dotted line separates the words 'PREVENT', 'TEST', and 'TREAT'. Below the collage, an orange box contains 'HEP C', and another orange box contains 'LIVE HEP FREE TALK TO YOUR GP'.

Policy Context

Hepatitis C

The *NSW Hepatitis C Strategy 2014-2020* continues the NSW Government's commitment to reduce hepatitis C infections and improve the health outcomes of people living with hepatitis C.

The PBS listing of new hepatitis C treatments in 2016, during the life of the Strategy, has increased the focus on improving access to treatment in key settings, particularly for people who inject drugs.

The Ministry of Health has committed to the elimination of hepatitis C in NSW by 2028.

Key Data

Hepatitis C (testing, treatment, prevention)		
	2018	Change since 2017
Number of tests for hepatitis C antibody	582,937	5.9% increase (550,409)
Progress towards elimination	29% of the estimated number of people with hepatitis C initiated treatment (at 31 December 2018)	3 percentage point increase (26% at 31 December 2017)
Number of units of injecting equipment distributed	14,515,017	7% increase (13,558,302)
Number of people participating in the Opioid Treatment Program	21,103	2% increase (20,681)

Key Messages

It is now possible to eliminate hepatitis C as a public health concern

The direct acting antiviral hepatitis C treatments (DAAs) are cost effective, safe, and highly effective with a cure rate of greater than 95 per cent. The scale up of the DAAs for hepatitis C is a system priority for NSW.

Accessing high quality hepatitis C treatment in primary care is required

Increased access in primary care will improve equity by allowing the public health system to focus on more complex populations including people who inject drugs. Ongoing support will be provided to increase access to treatment in primary care, including Aboriginal Controlled Community Health Services (ACCHSs).

Strengthening treatment efforts for people who inject drugs is critical

A focus on key settings including Needle and Syringe Programs (NSPs), alcohol and other drug (AOD) services and custodial settings will improve access to treatment for people who inject drugs.

Access to sterile needles and syringes and opioid treatment programs continue to be important in the prevention of hepatitis C transmission.

Policy Context

Hepatitis B

The *NSW Hepatitis B Strategy 2014-2020* continues the NSW Government's commitment to reduce hepatitis B infections and improve the health outcomes for people living with hepatitis B.

The Hepatitis B Strategy strengthens our efforts across prevention, testing, treatment and monitoring, building on achievements and prioritising the additional activities required to reduce hepatitis B infections in NSW.

The range of key settings needed for action include antenatal care services, Aboriginal Community Controlled Health Services, general practice and primary care, and corrective services.

Key Data

Hepatitis B (treatment, monitoring, and screening)				
			2018	Change since 2017
Number of tests for hepatitis B surface antigen			646,827	6.2% increase (608,787)
Residents dispensed with hepatitis B treatment			10,049	9.6% increase (9,166)
Number of viral load tests			15,117	1.3% decrease (15,316)
Hepatitis B vaccines	Proportion of infants in NSW who have received 3 doses of hepatitis B vaccine	12 months	94.5%	0.14 percentage point decrease (94.6%)
		24 months	96.3%	0.2 percentage point increase (96.1%)
Proportion of women giving birth who are screened for hepatitis B			98.8% (in 2017)	0.5 percentage point increase (98.3% in 2016)

Key Messages

Ongoing efforts are required to support GPs to prescribe HBV treatment and monitor patients

It is essential that primary care plays a greater role in testing, treatment and monitoring in all districts, with a focus on the five districts with the highest prevalence.

Hepatitis B primary prevention programs are critical components

This includes the hepatitis B childhood vaccination program; screening pregnant women for hepatitis B; ensuring all babies born to hepatitis B positive mothers receive immunoglobulin within 12 hours of birth; and providing hepatitis B vaccine for high risk groups.

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SHPN: (CPH) 190383

Glossary of Terms

ACCHS	Aboriginal community controlled health service
ADM	Automatic dispensing machine
HBV	Hepatitis B
HCV	Hepatitis C
CALD	Culturally and linguistically diverse
IDC	Internal dispensing chute
LHD	Local health district
MSIC	Medically supervised injecting centre
NNEDC	NSW Needle and Syringe Program Enhanced Data Collection
NSP	Needle and syringe program
NUAA	New South Wales Users and AIDS Association
NSW	New South Wales
OAT	Opioid antagonist treatment
OTP	Opioid treatment program
PFSHC	Publicly funded sexual health clinic
PWID	People who inject drugs
RSS	Receptive syringe sharing

Hepatitis C

1. Hepatitis C notification data and hepatitis C infection

Hepatitis C notification data provides limited information that can be used for assessing the epidemiological patterns of hepatitis C infection. This is because many infections are asymptomatic, so people who are infected may never be tested, or only tested many years after infection, and laboratory reports do not distinguish between infections acquired recently, or years before. Also, variations in notifications may reflect differences in testing patterns rather than differences in incidence of infection.

Hepatitis C RNA is a marker of active infection. Hepatitis C RNA testing is recommended for all patients who have a positive hepatitis C antibody test. It's important to note that there may be multiple tests for each individual tested for hepatitis C. However, an individual with multiple positive hepatitis C tests will only generate one notification.

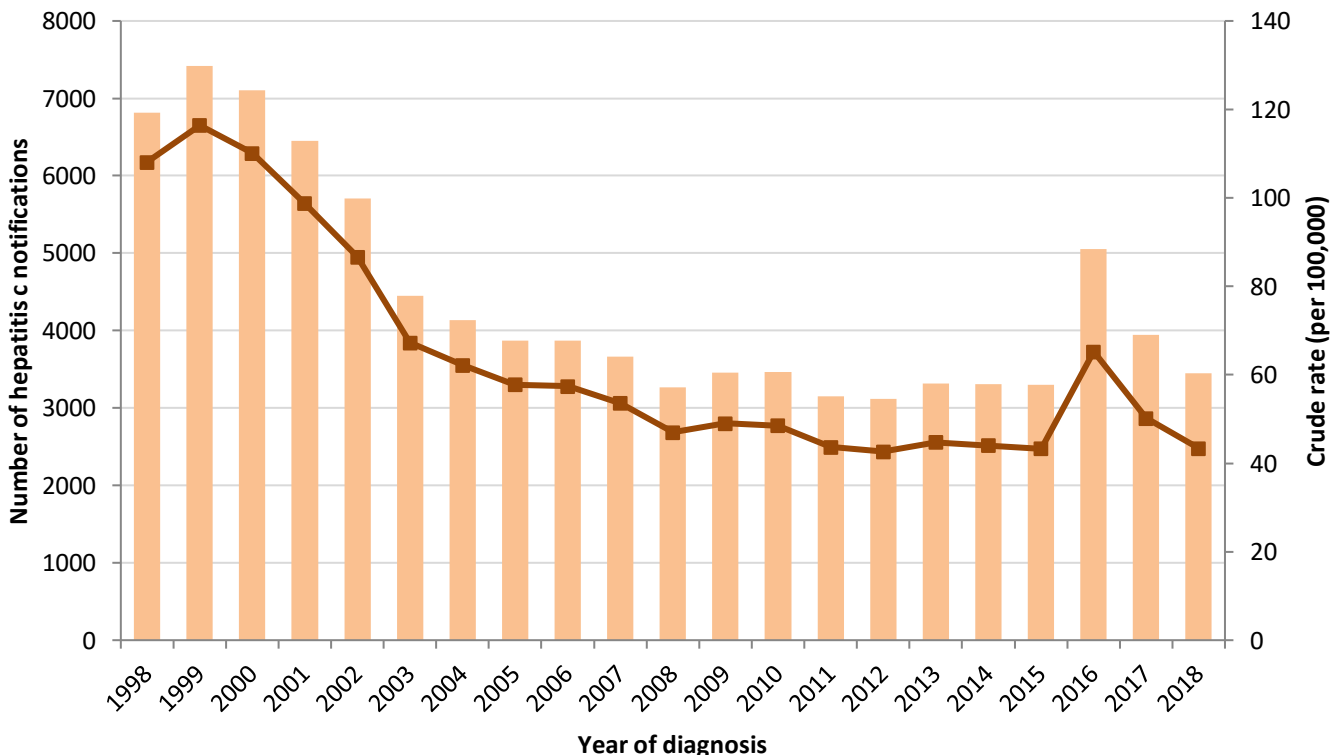
1.1 How many diagnoses of hepatitis C are notified?

Hepatitis C data has changed in 2018/19 following two data activities.

In 2019, a project was undertaken to identify and remove duplicates from the NSW notifiable conditions information management system (NCIMS). This had the effect of reducing the number of hepatitis C notifications in previous years.

From 1 January 2016, laboratories have reported positive qualitative and quantitative HCV RNA test results. Two retrospective NCIMS HCV RNA data imports for the period 1 January 2016 to 31 December 2018 were conducted, one in 2018 and one in 2019. This had the effect of increasing hepatitis C notifications from 2016 to 2018.

Figure 1: Hepatitis C notification rate, NSW, 1998-2018



Data source: NCIMS and ABS population estimates (SAPHaRI), NSW Health; data extracted 27 May 2019

In 2018:

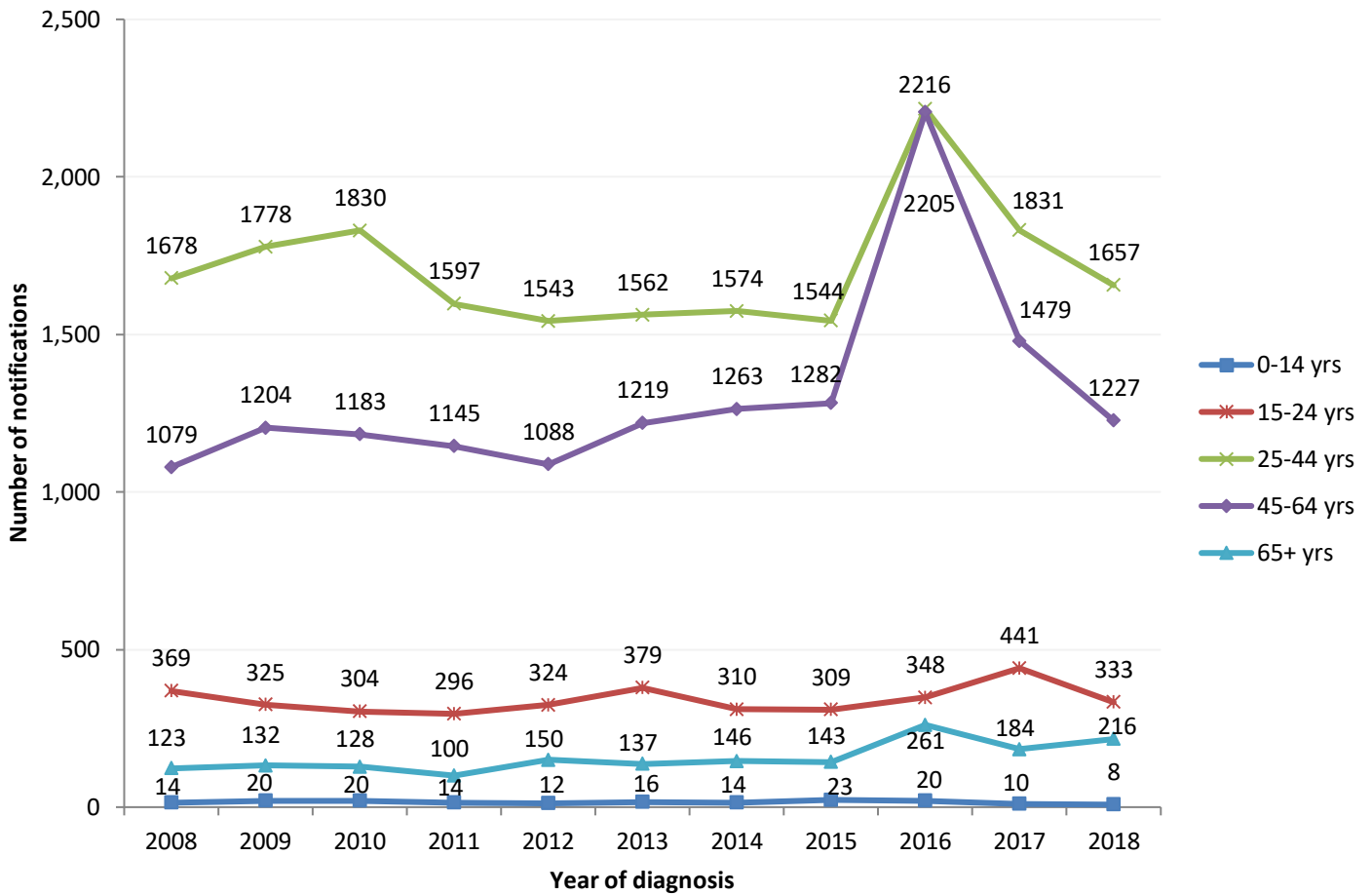
- There were 3,446 hepatitis C notifications in NSW.

- The hepatitis C notification rate was 43 notifications per 100,000 population, 16% lower compared with 2017 (50 notifications per 100,000 population).

Note: There was an upswing in the number of hepatitis C notifications once new treatments for hepatitis C, called direct acting antivirals (DAAs), became available in Australia from March 2016.

1.2 Which groups are being notified?

Figure 2: Notifications of hepatitis C in NSW, by age group, 2008-2018



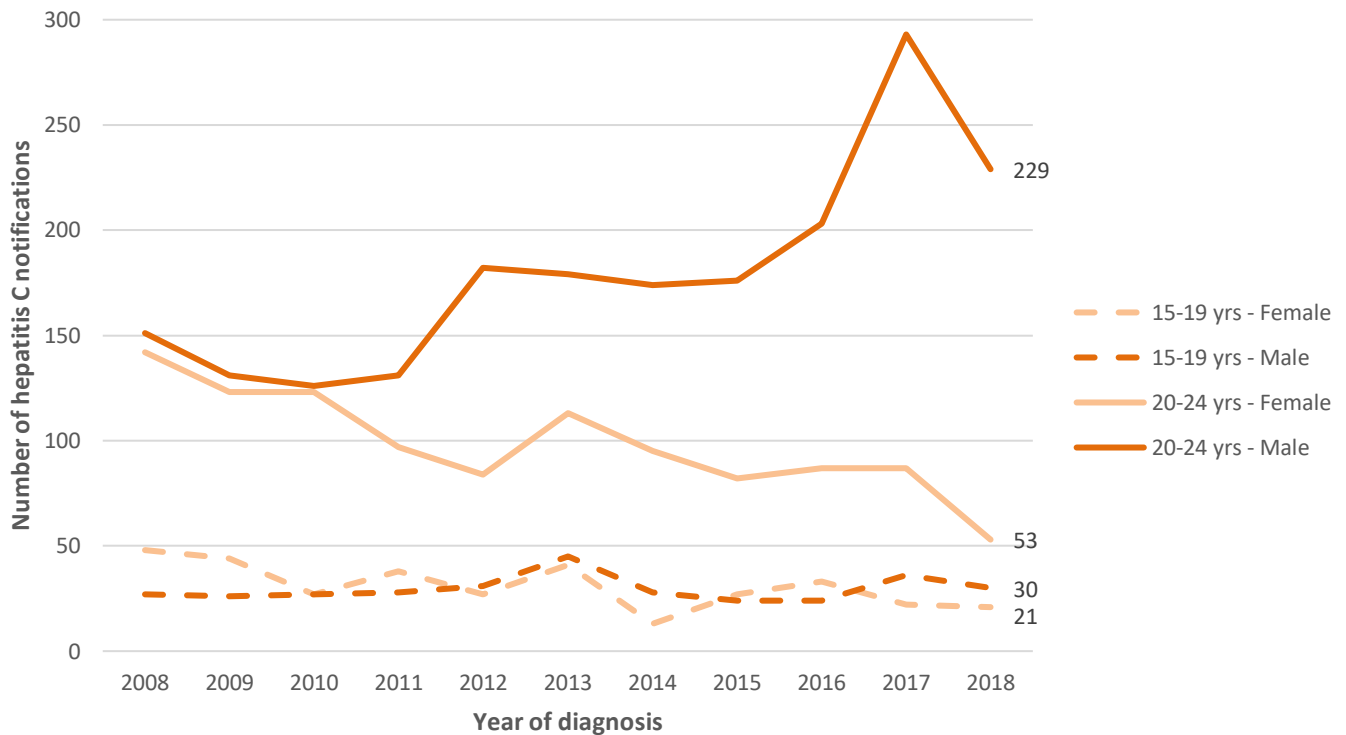
Data source: NCIMS, NSW Health; data extracted 27 May 2019
 Note: Excludes persons whose age is unknown or not stated.

In 2018:

- The largest number of hepatitis C notifications was amongst people aged 25-44 years; there was a 10 per cent decline in this age group compared with 2017. Hepatitis C notifications also declined in the 15-24 years, and 45-64 years age groups, with the largest (24%) decline occurring in the 15-24 years age group.
- Hepatitis C notifications increased by 17% amongst people aged 65+ years whilst the number (8) of notifications amongst people aged 0-14 years remained similar compared with 2017 (10).

Note: See **Figure 7** and **Appendix Tables 2 and 3** for Justice Health notification data.

Figure 3: Notifications of hepatitis C in people aged between 15 and 24 years, by age group and gender, NSW, 2008-2018



Data source: NCIMS, NSW Health; data extracted 27 May 2019

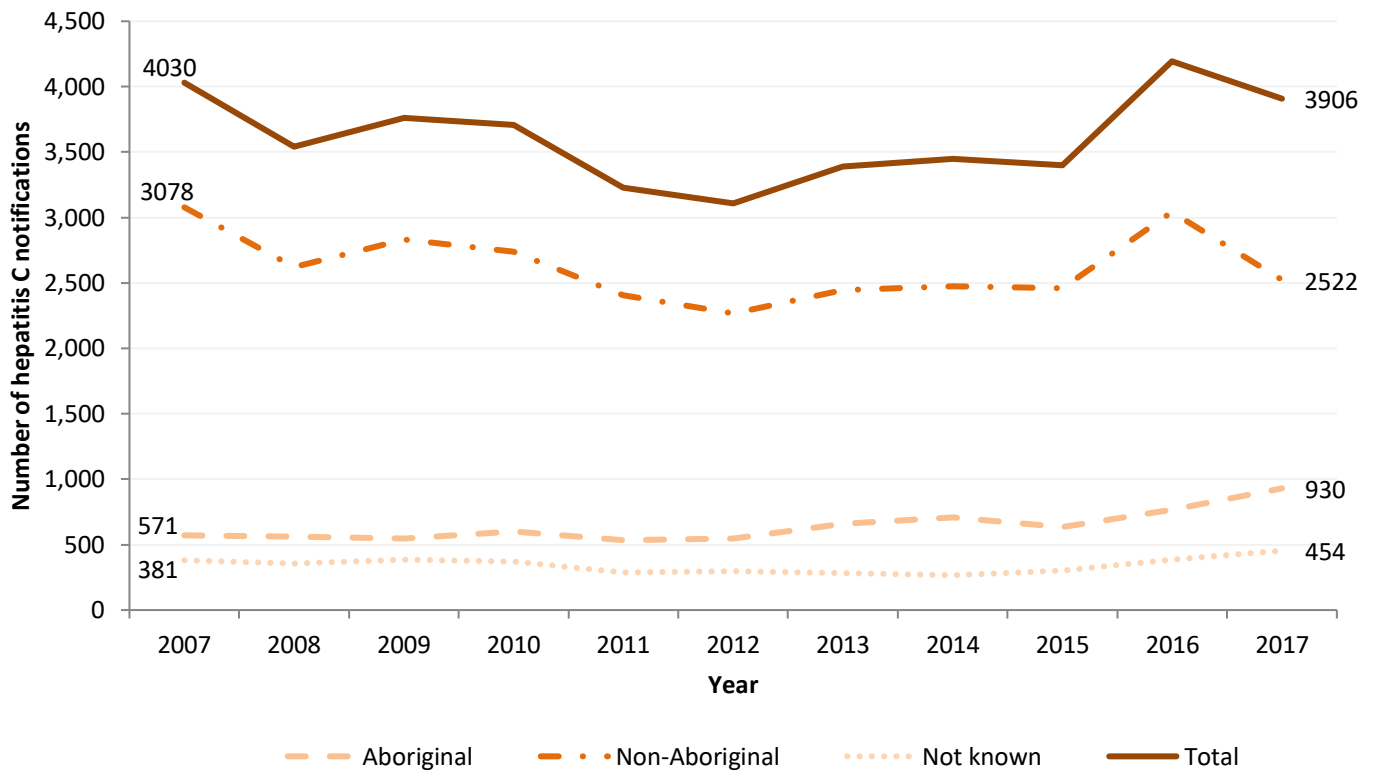
Note: Excludes transgender persons and persons whose age or sex is unknown or not state.

In 2018:

- Compared with 2017, there was a decline in the number of hepatitis C notifications amongst males and females aged 20 to 24 years, by 22% and 39% respectively.
- Compared with 2017, the number of hepatitis C notifications also declined amongst males and females aged 15-19 years, by 17% and 4.5% respectively.

Note: Notifications of hepatitis C in young people may be an indicator of recently acquired infections as these are the ages when injecting drug behaviours often commence, and hepatitis C infection is more likely to be acquired soon after initiation. However, the number of hepatitis C infections that are detected (and subsequently notified) is dependent on the number of people in this age group who are tested.

Figure 4: Hepatitis C notifications in NSW, by Aboriginality, 2007-2017.



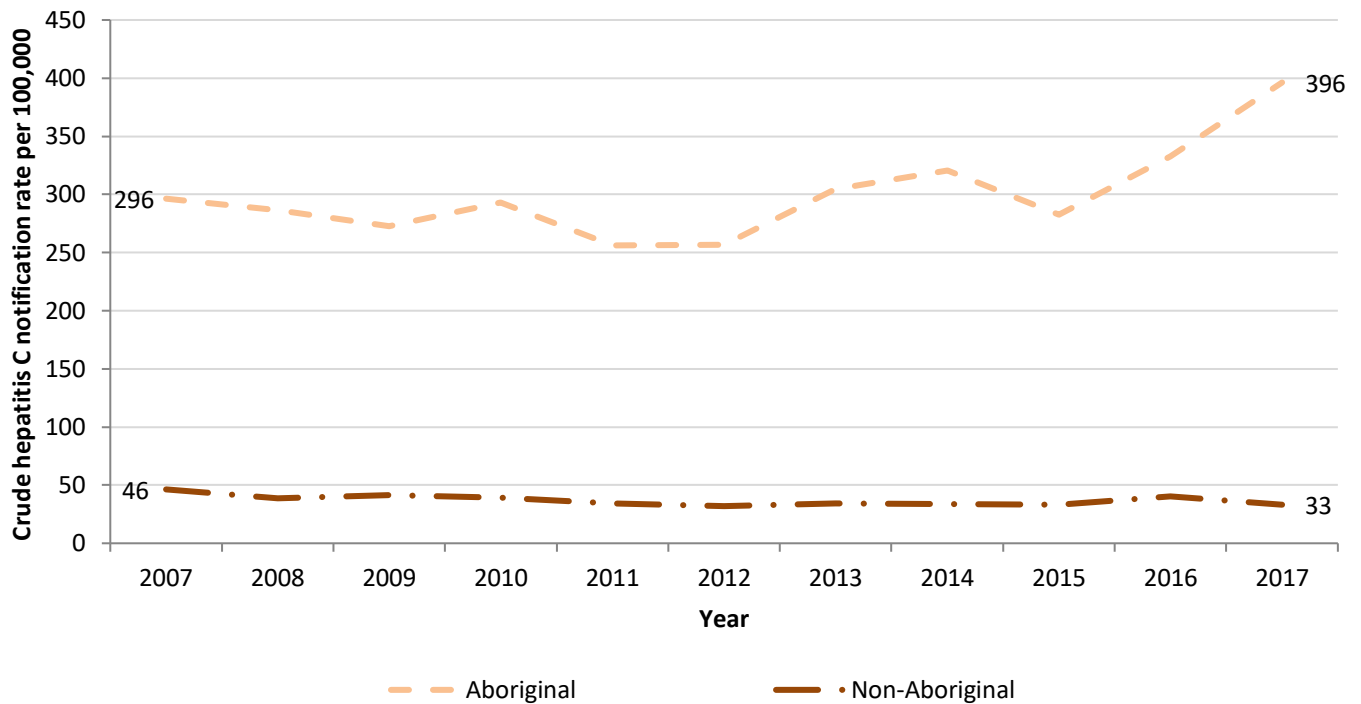
Data source: Communicable Diseases Register, NSW Ministry of Health (via SAPHaRI); data extracted 31 May 2019. At time of report, data available until 2017^{1,2}

- From 2007 to 2017, 39,711 notifications for hepatitis C were recorded in the Communicable Diseases Register (CDR). Of these, 7,061 (18 per cent) were in Aboriginal people and 28,887 (73 per cent) were in non-Aboriginal people; Aboriginality was not known after data linkage for 3,763 notifications (9 per cent).
- Trends in the Aboriginal population are difficult to interpret due to the yearly variation in the number of people for whom Aboriginal status was not known, and the relatively high proportion of incomplete data compared to the proportion in Aboriginal people.

¹ Work is currently underway to update the data contained in the Communicable Diseases Register and this will be published in future reports

² See **Appendix: Table 5** for details about methodology

Figure 5: Hepatitis C notification rate by Aboriginality, NSW, 2007-2017.

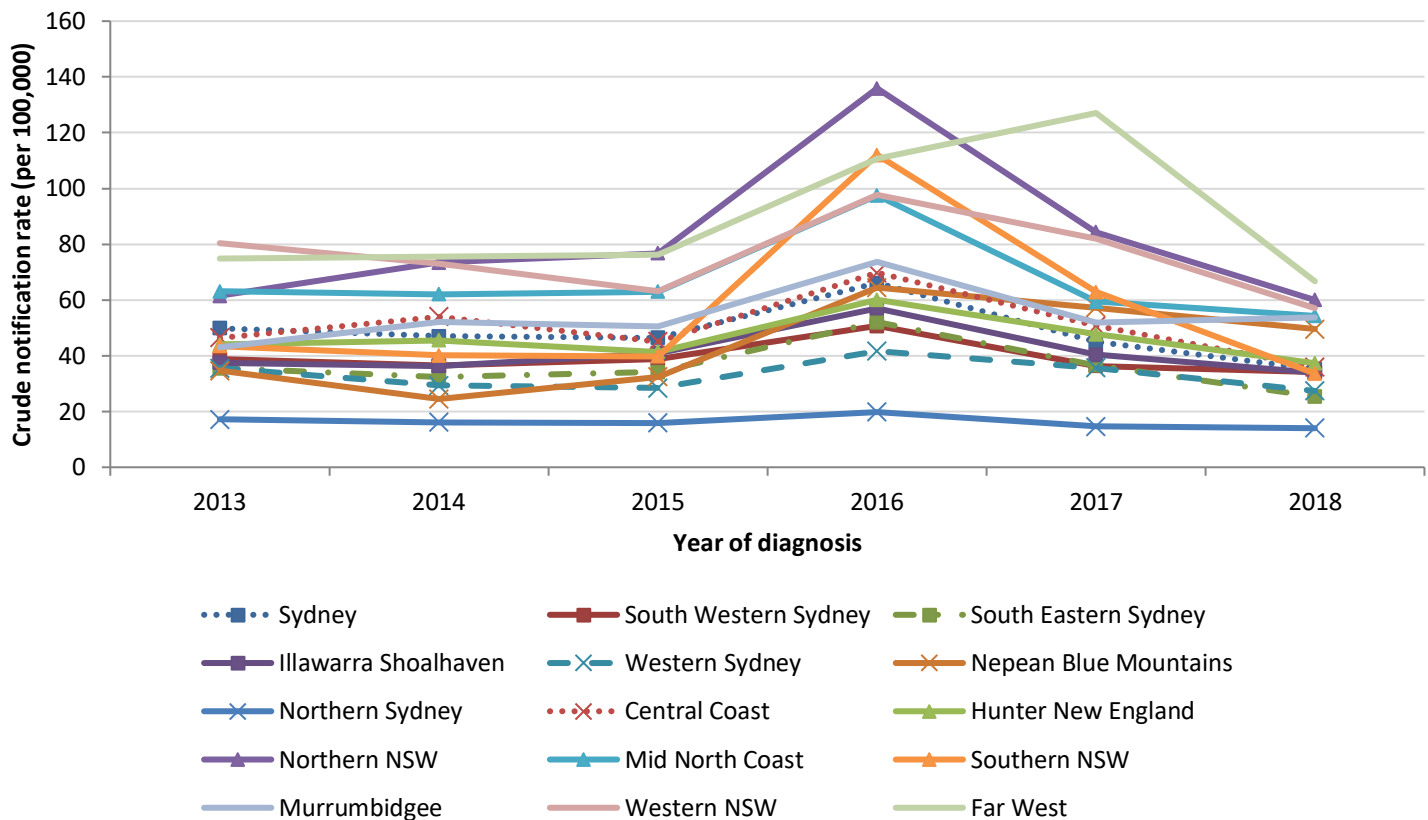


Data source: Communicable Diseases Register, NSW Ministry of Health (via SAPHaRI); data extracted 31 May 2019. At time of report, data available until 2017^{1,2}
 Note: Excludes records where Aboriginal status was not stated/not known.

- Amongst those whose Aboriginal status was known, the hepatitis C notification rate in Aboriginal people was 396 per 100,000 population in 2017, which is 12 times higher than the rate in non-Aboriginal people (33 per 100,000).
- Notification rates are influenced by variations in incidence of disease, screening rates and/or the number of people for whom Aboriginal status was not known (see Figure 4). Screening rates for hepatitis C may be higher in Aboriginal populations than in non-Aboriginal populations, contributing to higher rates of notification.

1.3 Where are notifications occurring?

Figure 6: Hepatitis C notification rate, by LHD of residence, NSW, 2013-2018



Data source: NCIMS, NSW Health; data extracted 27 May 2019

Note: Excludes non-NSW residents and persons whose place of residence in NSW was not known.

In 2018:

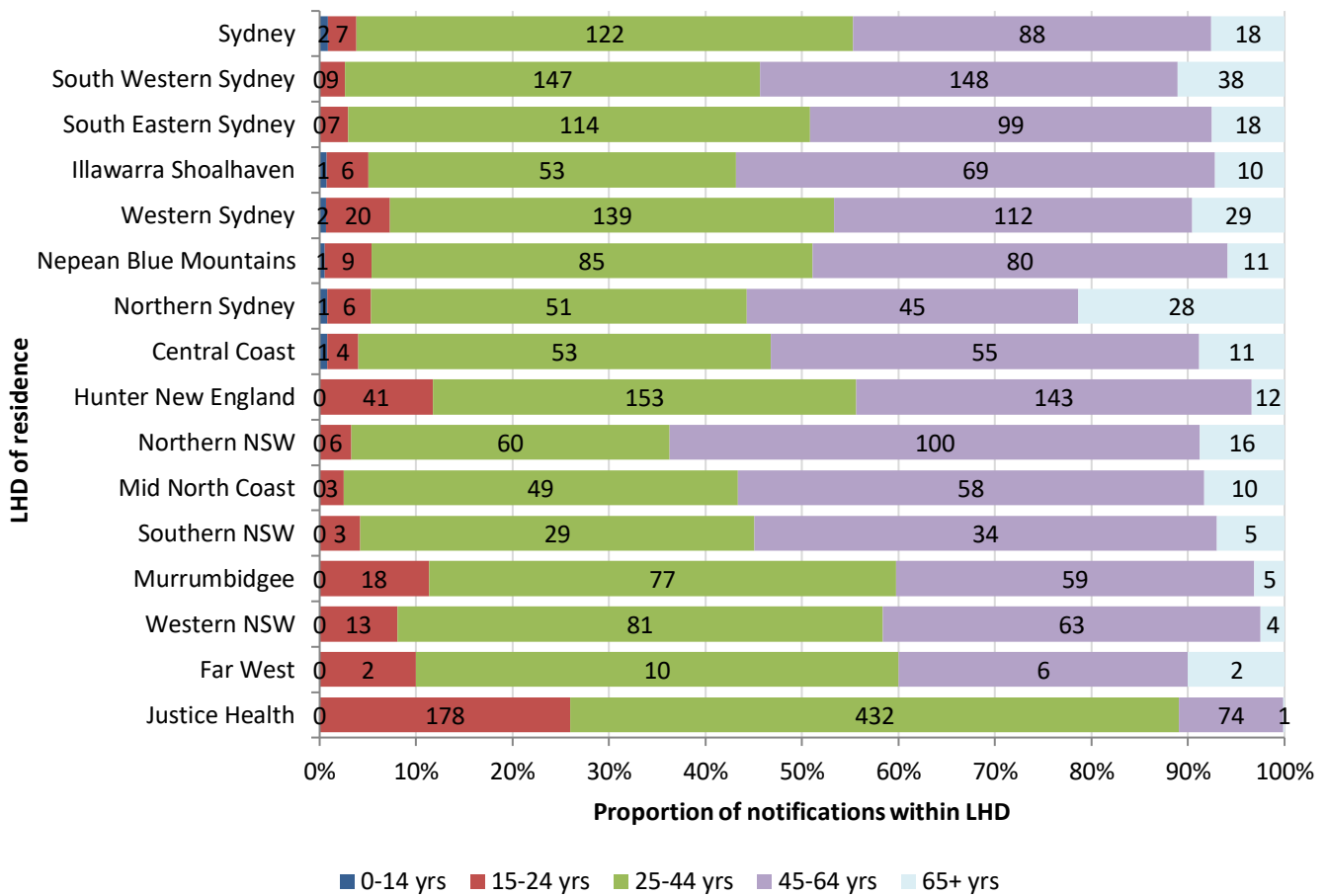
- Far West, Northern NSW and Western NSW LHDs had the highest hepatitis C notification rates in NSW.
- Compared with 2017, the hepatitis C notification rate increased by 3.5% in the Murrumbidgee LHD, while all other LHDs reported a decrease.
- Compared with 2017, the largest declines in the hepatitis C notification rate occurred in the Far West and Southern NSW LHDs (47% and 46% respectively).

Note: Local changes in the notification rate can be difficult to interpret due to a range of factors. Because hepatitis C is often asymptomatic, people may be tested many years after infection and testing patterns vary across time and settings. Local health promotion campaigns and screening programs targeting at-risk populations can result in increased testing and better detection rates.

There is substantial variation in population size between the LHDs. For LHDs with a smaller population, such as Far West NSW, a small change in the number of notifications can have a large impact on the annual rate.

A notification rate has not been calculated for Justice Health as the population (the denominator) fluctuates considerably and data are available only for the annual number of incarcerations, not the number of people incarcerated.

Figure 7: Notifications of hepatitis C, by LHD and age group, NSW, 2018



Data source: NCIMS, NSW Health; data extracted 27May 2019

Note: Excludes non-NSW residents and persons whose age and/or place of residence in NSW was not known; data labels show number of notifications in age group for LHD.

In 2018:

- As in previous years, the highest number and highest proportion of hepatitis C notifications amongst 15-24 year olds were reported by Justice Health.
- Of the 336 hepatitis C notifications in people aged 15-24 years in 2018, 178 (53%) were from Justice Health.

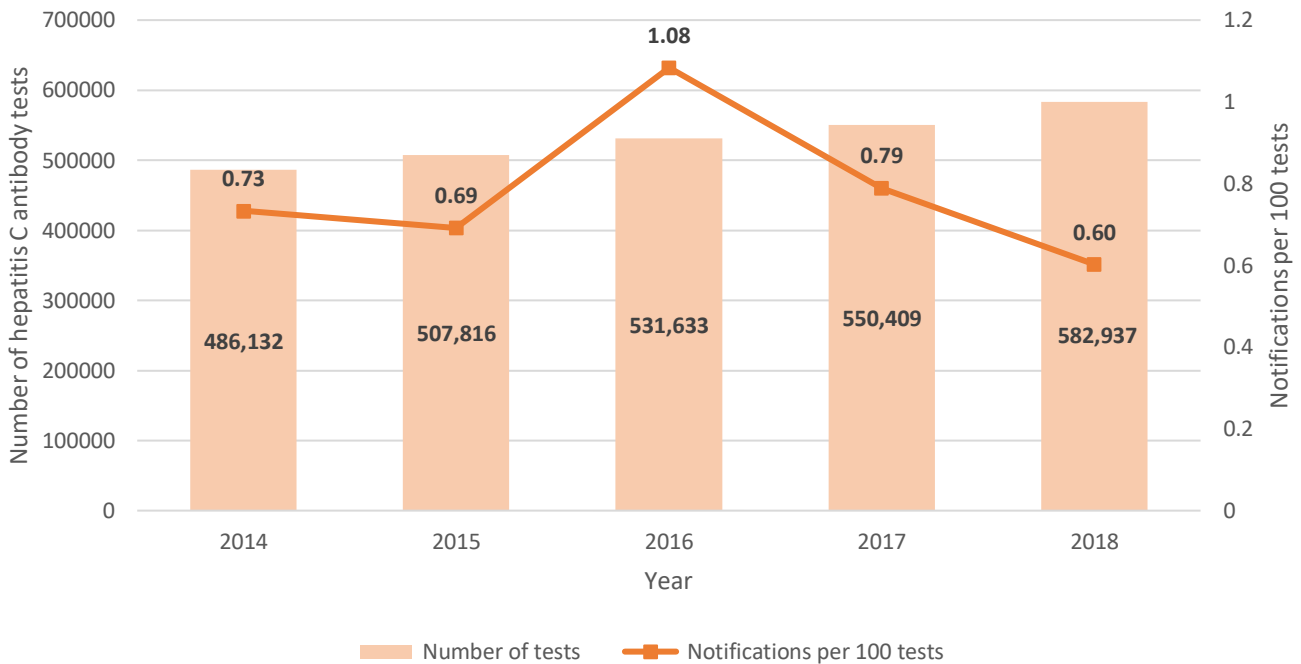
Note: Notifications of hepatitis C in young people are an indicator of newly acquired infections as this is when injecting drug behaviours often commence, and hepatitis C infection is more likely to be acquired soon after initiation. High numbers of notifications in custodial settings may be partly due to a higher proportion of people with risk factors for hepatitis C infection in the population, targeted screening programs, and the inclusion of people who have been previously diagnosed interstate or overseas.

Hepatitis C infections in children are usually acquired from their mother during pregnancy or birth.

2. Testing for hepatitis C

2.1 Is hepatitis C testing increasing?

Figure 8: Number of tests for hepatitis C antibody and notification to test ratio³, NSW, 2014-2018



Data sources: NSW denominator data project, NSW Health

In 2018:

- The number of hepatitis C tests performed in NSW is continuing to increase gradually each year. In 2018, 582,937 tests for hepatitis C antibody were performed in 15 laboratories in NSW, a 6% per cent increase from 2017 (550,409 tests).
- The hepatitis C notification to test ratio in 2018 was 0.6, lower compared with 2017 (0.79).

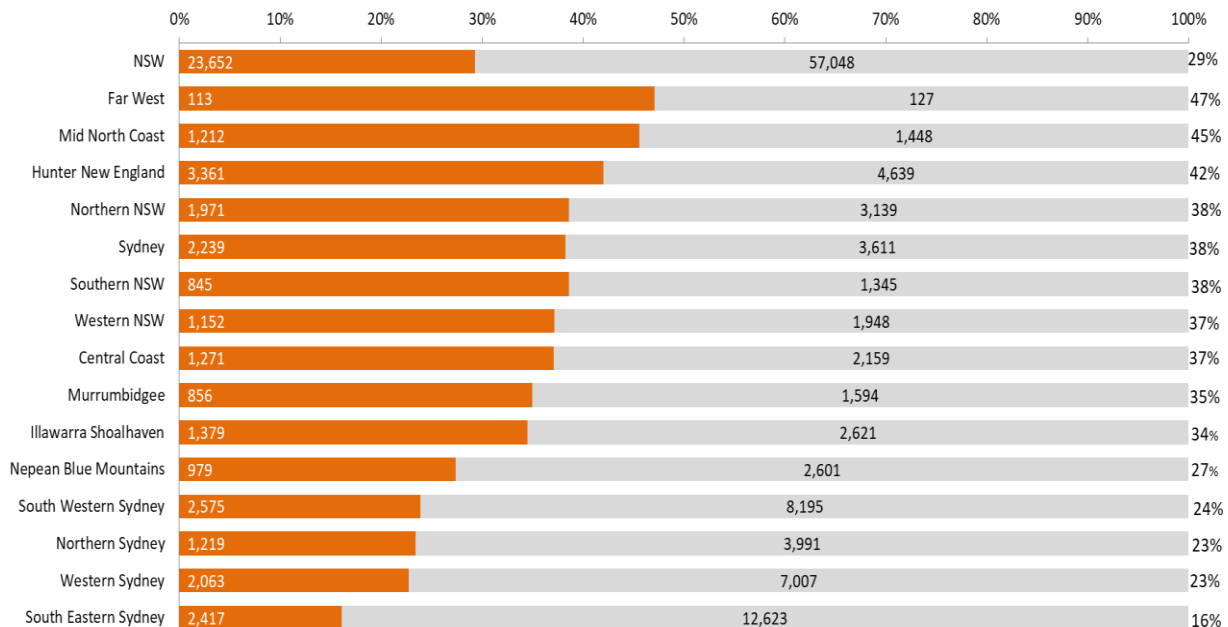
Note: Hepatitis C denominator data has changed due to a previous over count of hepatitis C tests by one laboratory. This had the effect of decreasing the number of hepatitis C tests that were reported to have been conducted from 2014-2018.

³ See **Appendix: Table 4** for more details about methodology

3. Hepatitis C treatment access

3.1 How many people are accessing hepatitis C treatment?

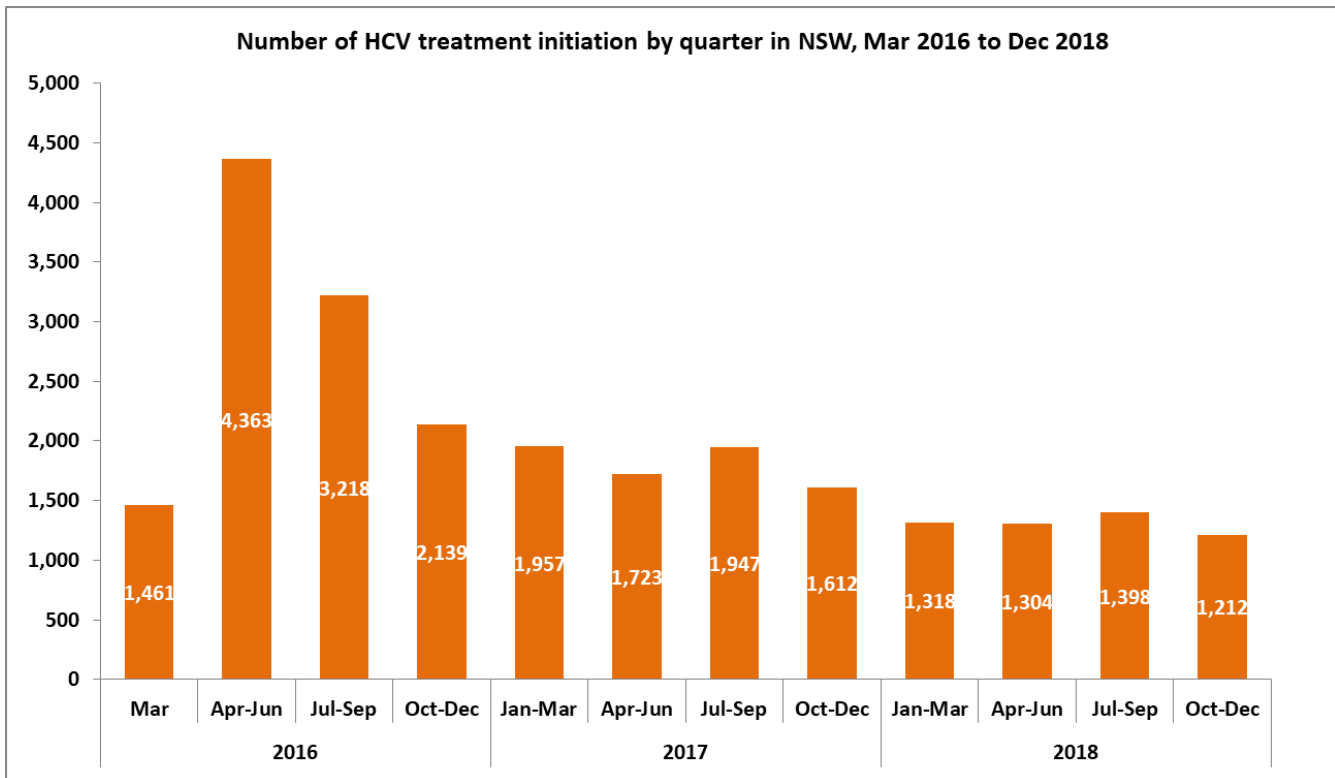
Figure 9: Number of residents initiating hepatitis C treatment in NSW between 1 March 2016 and 31 December 2018 by LHD of patient residence, compared to the estimated number of people living with hepatitis C in 2016



Data source: PBS data (treatment initiation); The Kirby Institute, 2017 Estimates and Projections of the Hepatitis C Virus Epidemic in NSW: Summary Report; Numbers include treatment initiated in Justice Health.

- Between 1 January to 31 December 2018, 5,232 people initiated hepatitis C treatment.
- As of December 2018, 29 per cent (23,652) of the estimated 80,700 people in NSW with hepatitis C have initiated treatment.

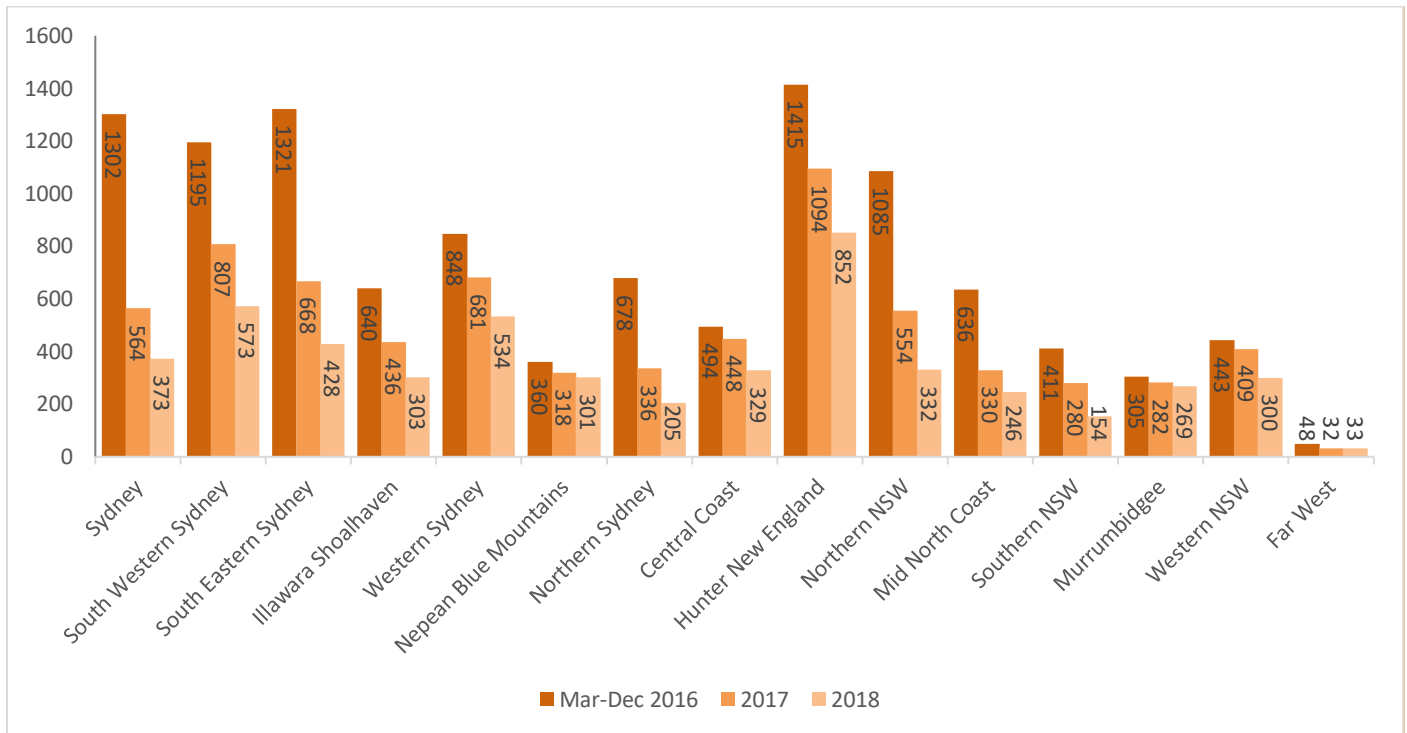
Figure 10: Number of residents initiating hepatitis C treatment in NSW by quarter, 1 March 2016 - 31 December 2018



Data source: Pharmaceutical Benefits Schedule Highly Specialised Drugs Programme data

- The number of residents initiating hepatitis C treatment each quarter continues to decrease. Between October and December 2018, 1,212 people initiated hepatitis C treatment.
- Further efforts are needed by districts to actively find people with hepatitis C and link them to treatment services.

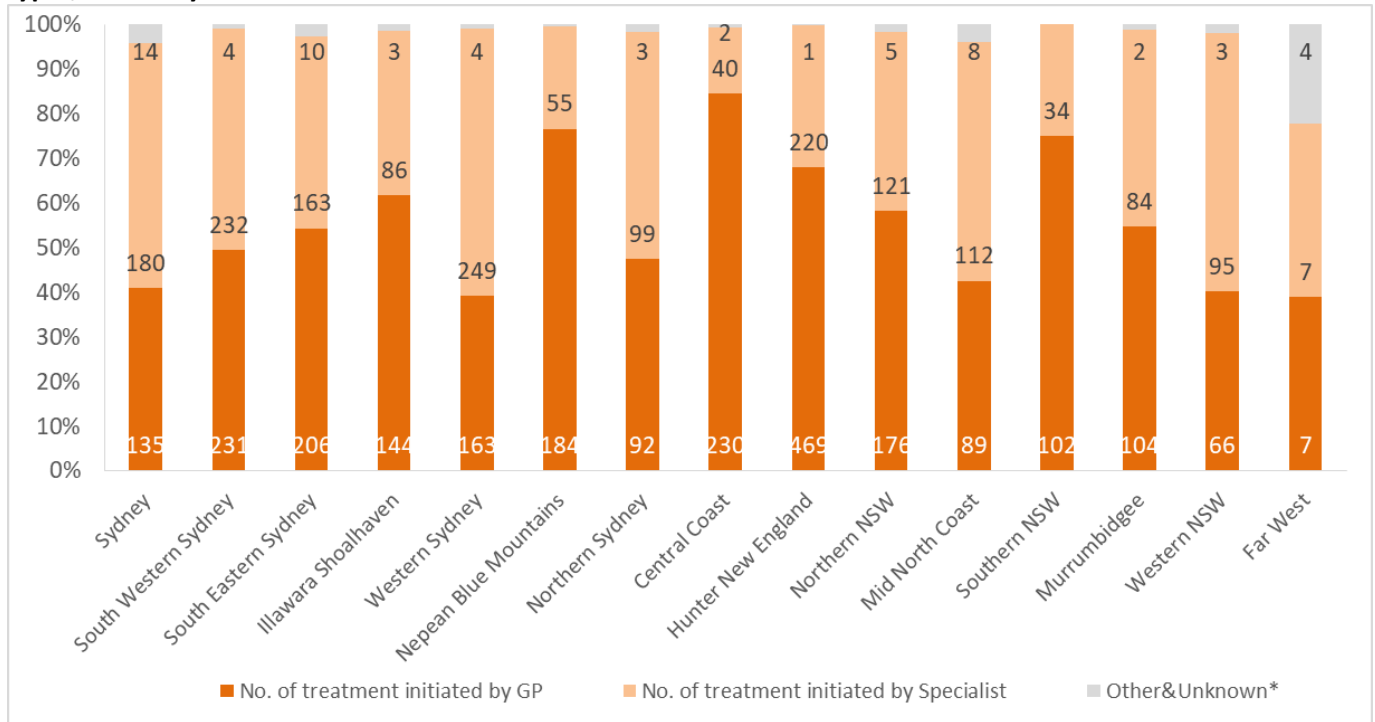
Figure 11: Number of residents initiating hepatitis C treatment in NSW by LHD by year, 1 March 2016 - 31 December 2018



Data source: Pharmaceutical Benefits Schedule Highly Specialised Drugs Programme data

- The number of residents initiating hepatitis C treatment has decreased across all LHDs each year since March 2016.
- LHDs are implementing locally tailored strategies to increase testing and treatment, including in general practice.

Figure 12: Number of people in NSW dispensed hepatitis C treatment by LHD of patient residence, by prescriber type⁴, 1 January - 31 December 2018



Data source: Pharmaceutical Benefits Schedule Highly Specialised Drugs Programme data

Note: The Figure identifies the number of NSW residents who initiated hepatitis C treatment by specialist or a GP by LHD of patient residence.

- From 1 January to 31 December 2018, the proportion of NSW residents initiating hepatitis C treatment by a general practitioner (GP) was 59 per cent.

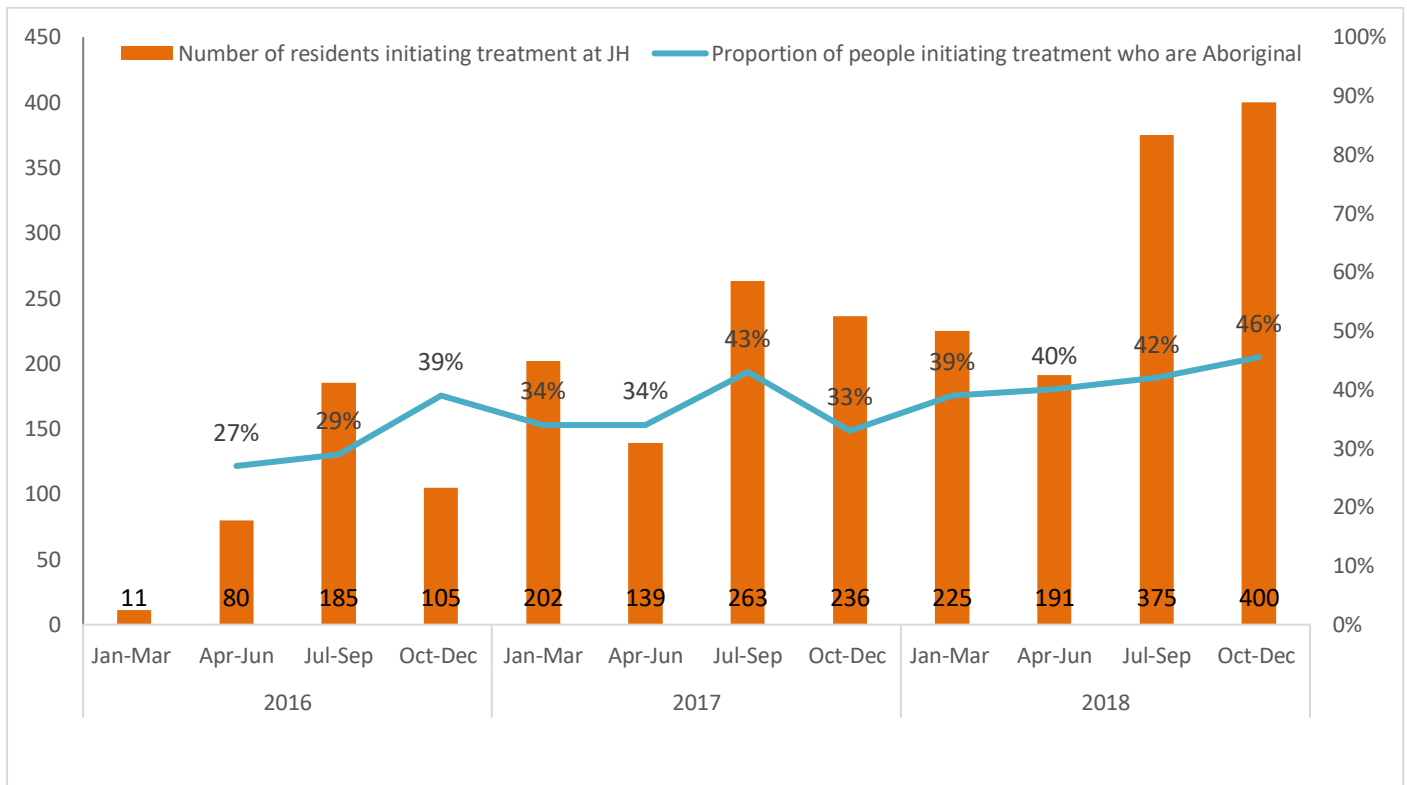
Note: The number and proportion stated in NSW includes people who initiated treatment at Justice Health Settings. The number and proportion of people initiating treatment across LHDs exclude Justice Health Settings.

⁴ The prescriber type is a derived field that indicates the specialty of the health professional providing the prescription. It is derived for each quarter based on the prescriber's registered specialties and the Medicare services they have provided that quarter. As a result, it may change over time and should be interpreted with this limitation noted.

People in custodial settings are a priority population in the NSW Hepatitis C Strategy 2014-2020

Hepatitis C prevalence in NSW prisons is 20 to 30 times higher than in the wider community. Those with a history of injecting drug use are often marginalised in the community and find it difficult to access treatment. Justice Health has a unique opportunity to access and treat people with hepatitis C in custody.

Figure 13: Number of people initiating treatment in Justice Health, including the number and proportion of people who identify as Aboriginal, 1 January 2016 - 31 December 2018



Data source: Pharmaceutical Benefits Schedule Highly Specialised Drugs Program data, 1 March 2016 and 31 December 2018 (number of people initiated on treatment) and NSW Health Hepatitis C Minimum Data Set (proportion of people initiated on treatment who are Aboriginal).

- Between 1 March 2016 and 31 December 2018, 2,412 NSW residents initiated hepatitis C treatment in Justice Health settings.
- In 2018, a total of 1,191 NSW residents initiated hepatitis C treatment in Justice Health; the proportion of those initiating treatment who are Aboriginal people increased from 39% in first quarter to 46% in the fourth quarter 2018.
- Throughout 2017 and 2018, screening and treatment has been scaled up across all correctional centres state-wide.

Note: In 2017, the Hepatitis in Prisons Elimination (HIPE) Program commenced in NSW prisons. The HIPE initiative involves broad screening, concurrent treatment with new DAA, and the ongoing review of new admissions at targeted correctional centres with stable populations. As of December, 2018, the virtual elimination of hepatitis C has been achieved in three correctional centres in NSW, including the Compulsory Drug Treatment Program, Emu Plains and Berrima. The HIPE program will be scaled up to 12 prisons in 2018/19.

4. Hepatitis C prevention investment

Access to sterile injecting equipment and drug treatment programs are proven, cost-effective ways to prevent hepatitis C transmission. A continued harm reduction approach, combined with other complementary prevention strategies, is central to prevention efforts in NSW.

The NSW Needle and Syringe Program needs to be flexible and targeted, ensuring that sterile injecting equipment is readily available in the areas of highest need and for those most at risk of infection.

4.1 Who is accessing the Needle and Syringe Program?

The proportion of priority populations accessing the NSW NSP has remained relatively stable between 2016 and 2018. Among people participating in the NSW Needle and Syringe Program Enhanced Data Collection (NNEDC) in 2018:

- 20 per cent identified as Aboriginal and/or Torres Strait Islander
- 24 per cent of respondents had experienced homelessness
- 10 per cent reported being imprisoned in the past year
- 20 per cent reported a mental health issue

Data source: NSW Needle and Syringe Program Enhanced Data Collection 2018 (NNEDC)

Note: The NNEDC provides an annual snapshot of NSW client demographic and drug use behaviour. In 2018 all 15 LHDs participated at 50 sites. Please note that this data does not provide an accurate reflection of the population across NSW nor comparisons between local health districts. The survey is a snapshot only, with 50 of the 337 primary and secondary outlets surveyed in 2018. The NSW NSP also includes automatic dispensing machines and pharmacies that are not captured as part of the survey.

4.2 What proportion of people use other people's used needles and syringes (receptive syringe sharing)?

Among respondents in the 2018 NNEDC, reports of receptive syringe sharing (RSS) in the previous month remained stable at 20%. Factors associated with an increased risk of RSS included homosexual identity, homelessness and recent imprisonment. Twenty five per cent of respondents reported being prescribed opioid antagonist treatment (OAT), which was associated with decreased RSS.

4.3 How many units of injecting equipment are distributed by the Needle and Syringe Program?

- As of 2018, the public NSW NSP had 30 primary outlets, 316 secondary outlets, 178 automatic dispensing machines (ADMs) and 77 internal dispensing chutes (IDCs).
Note: The type and number of NSP outlets by LHD is at **Appendix Figure 30**
- The number of units of injecting equipment distributed in NSW increased from 13,558,302 in 2017 to 14,515,017 in 2018. This included:
 - 12,802,963 units dispensed at public outlets
 - 1,712,054 units dispensed at NSW pharmacies

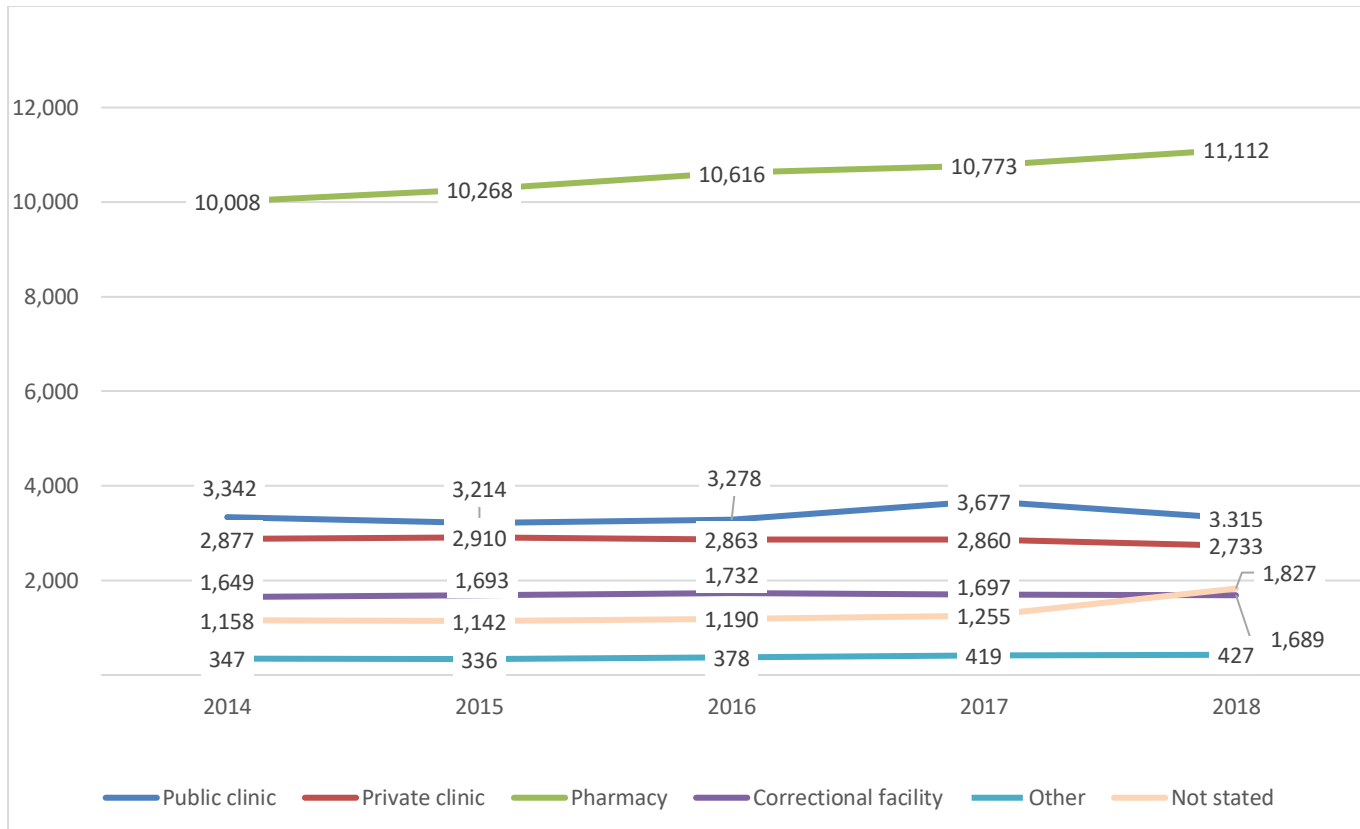
Note: The total includes additional units ordered from The Pharmacy Guild of Australia (NSW Branch) by individual pharmacies, but not allocated to an LHD.

Note: The number of units of injecting equipment distributed by LHD is at **Appendix Table 4**

4.4 How many people in NSW are receiving pharmacotherapy treatment?

It is essential that the Needle and Syringe Program is complemented by other initiatives such as drug and alcohol treatment programs that reduce injecting risk behaviour.

Figure 14: Number of people participating in the Opioid Treatment Program, by dosing point, at 30 June, 2014 – 2018



Data source: National Opioid Pharmacotherapy Statistics Annual Data 2014-2018

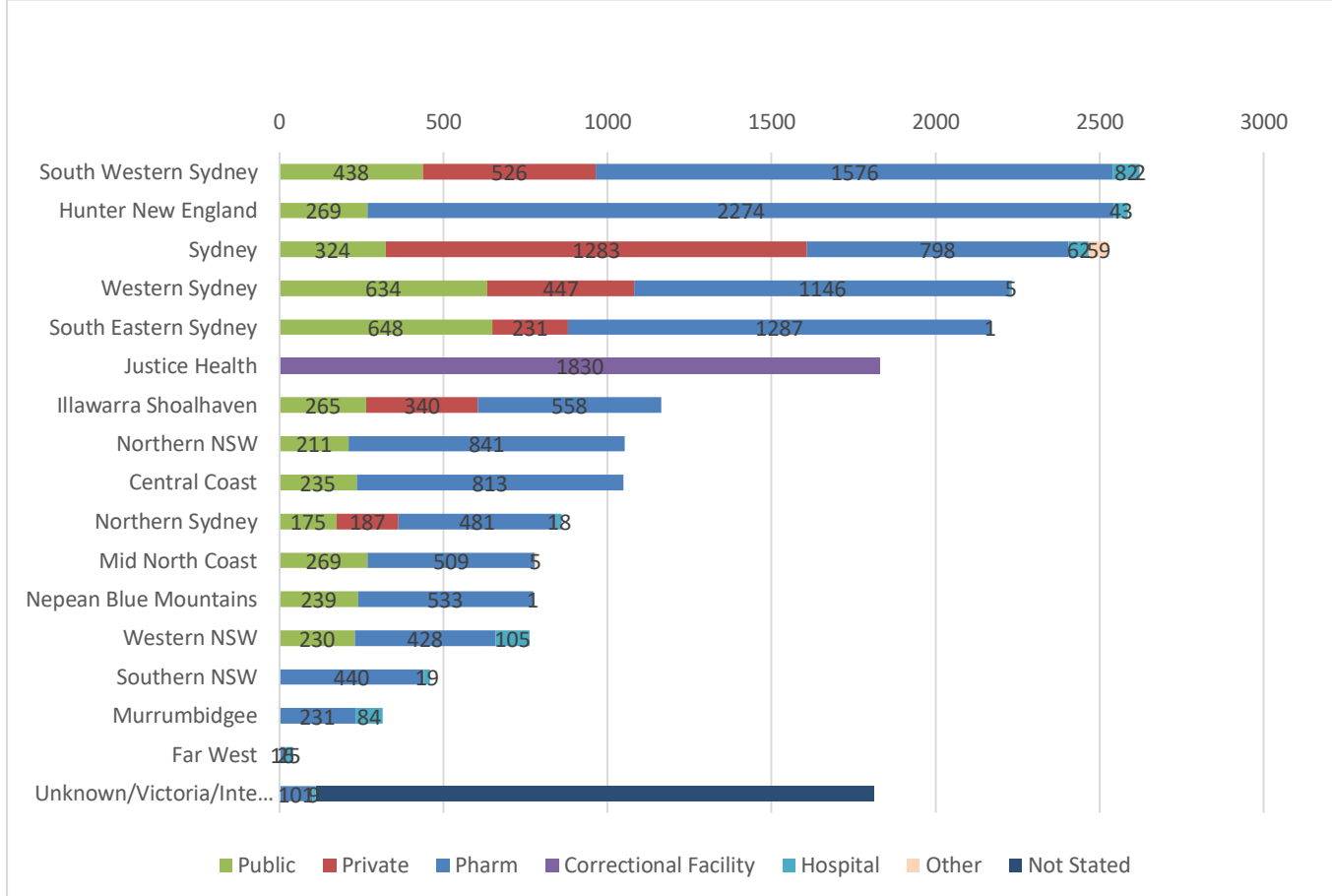
- In 2018, 21,103 clients had active authorities for pharmacotherapy treatment in various dosing settings on a snapshot day of the program (NOPSAD 2018).
- Between 30 June 2014 and 30 June 2018 community pharmacy dosing was consistently the most common dosing point in each time period. In 2018, over 52 per cent of clients (11,112) received treatment at a community pharmacy; 16 per cent of clients (3,315) received treatment at a public clinic; and 13 per cent of clients (2,983) received treatment at a private clinic. Other accounts for clients dosed in hospital and community health settings, and Not Stated (1,827) accounts for clients that may have moved dosing point but the data has not been updated with the Pharmaceutical Regulatory Unit.

Specialist opioid treatment clinics (public or private) are usually the most appropriate supervised administration or dosing points for highly complex clients (with high risk drug use and co-morbid conditions) who require greater clinical support. For less complex and stable clients treatment is available in primary care settings through general practitioners and community pharmacy. Clients assessed by clinicians as sufficiently stable in public clinics can transition to the primary care setting, which may be more convenient for them. Conversely, a client undergoing a period of instability should be referred to a specialist public clinic for treatment, where available.

A key outcome of the investment in the Opioid Treatment Program (OTP) is enhanced accessibility to opioid treatment for vulnerable populations. Low risk clients are permitted to be inducted onto methadone or

buprenorphine in primary care settings. This increases treatment provision through GPs as historically most clients were initiated in public OTP clinics. From July 2018 onwards not-accredited prescribers are permitted to induct up to 20 clients onto buprenorphine and manage 10 stable referred methadone clients. Free online and face to face training for opioid treatment is available through www.otac.org.au.

Figure 15: Number of people participating in the Opioid Treatment Program, by dosing point, by LHD, at 30 June 2018



Data source: Pharmaceutical Drugs and Addiction System (PHDAS), NSW Health up to Sep 2017; Electronic Recording and Reporting Controlled Drug System (ERRCD), NSW Health from Oct 2017

- The highest number of people participating in the OTP was in South Western Sydney, Sydney, Hunter New England, Western Sydney, South Eastern Sydney, and Justice Health.
- The highest number of people treated in public clinics occurs in South Eastern Sydney, Western Sydney, and South Western Sydney.
- The highest number of people treated in private clinics occurs in Sydney, South Western Sydney, Western Sydney and Illawarra Shoalhaven.
- The highest number of people treated in community pharmacies occurs in Hunter New England, South Western Sydney, South Eastern Sydney and Western Sydney.
- Hospital dosing is usually provided as either an inpatient or outpatient service. In regional and remote LHDs like Far West, Western and Murrumbidgee, hospital dosing usually is provided where no viable alternative for supervised administration is available.

-
- The large proportion of Not Stated dosing points for clients is from records not being updated with Pharmaceutical Regulatory Unit, but the clients are generally in the Pharmacy sector. This could be because prescribers do not notify PRU when they change the supervised administration location of their clients.

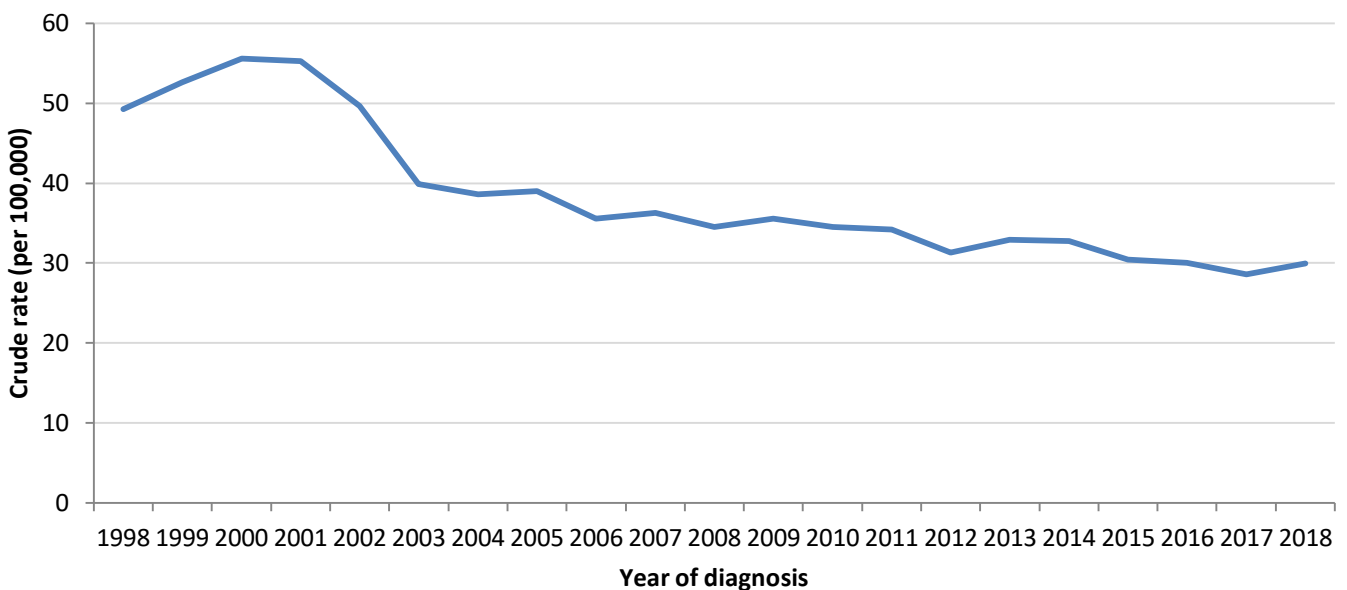
Hepatitis B

5. Hepatitis B notification data and hepatitis B infections

Hepatitis B notifications data provides limited information that can be used for assessing the epidemiological patterns of hepatitis B infections. This is because many infections are asymptomatic, and so people who are infected may never be tested, or only tested many years after infection, and laboratory reports do not distinguish between infections acquired recently, or years before. Furthermore, variations in notifications may reflect differences in testing patterns rather than differences in incidence of infection.

5.1 How many diagnoses of hepatitis B are notified?

Figure 16: Hepatitis B notification rate, NSW, 1998-2018

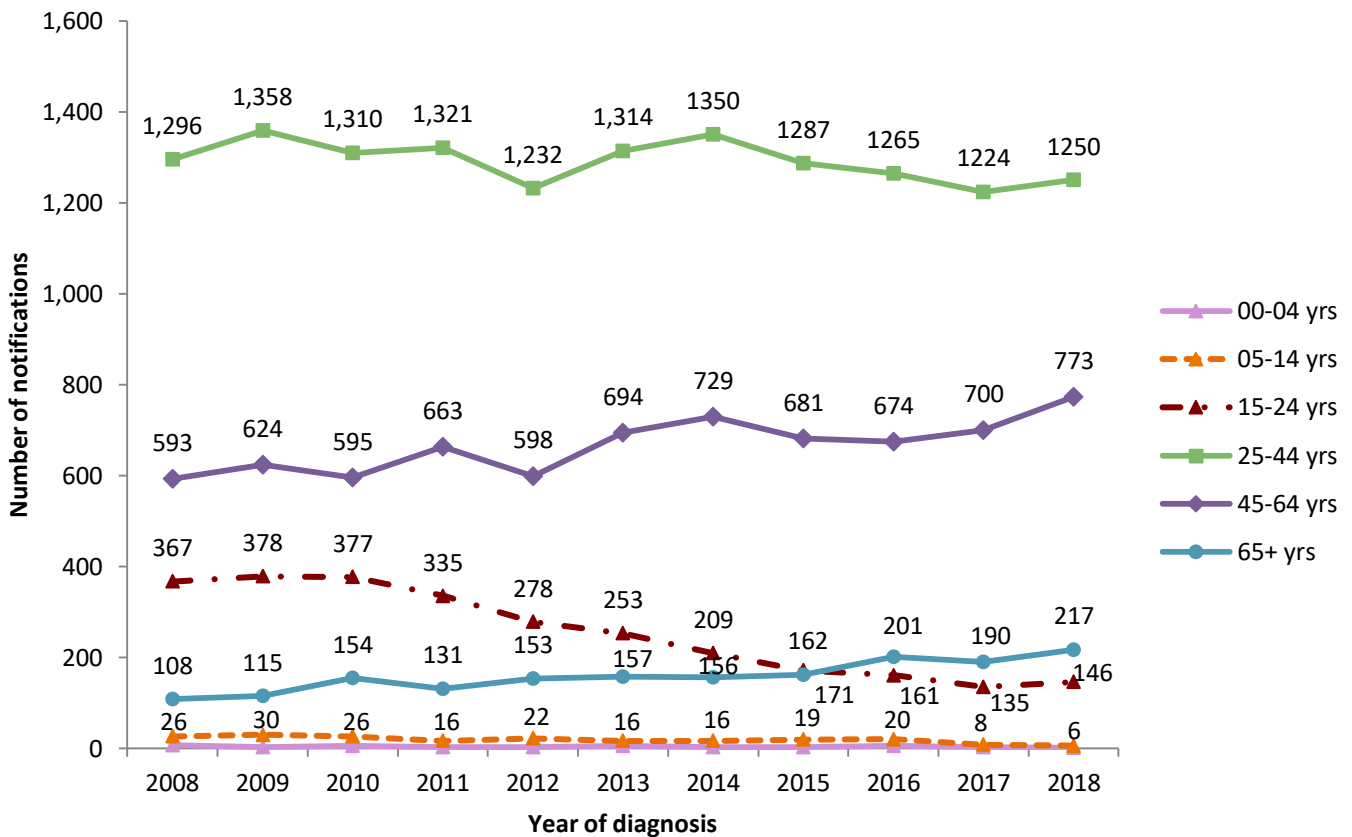


Data source: NCIMS, NSW Health; data extracted 27 May 2019

- The hepatitis B notification rate has declined in NSW since 2001 and stabilised in recent years. In 2018, there was small rate increase compared to 2017, with 30 notifications per 100,000 population compared to 29 notifications per 100,000 population in 2017.
- There were 2,393 hepatitis notifications in NSW in 2018.

5.2 Which groups are being notified?

Figure 17: Hepatitis B notifications in NSW by age group and year of diagnosis, 2008-2018

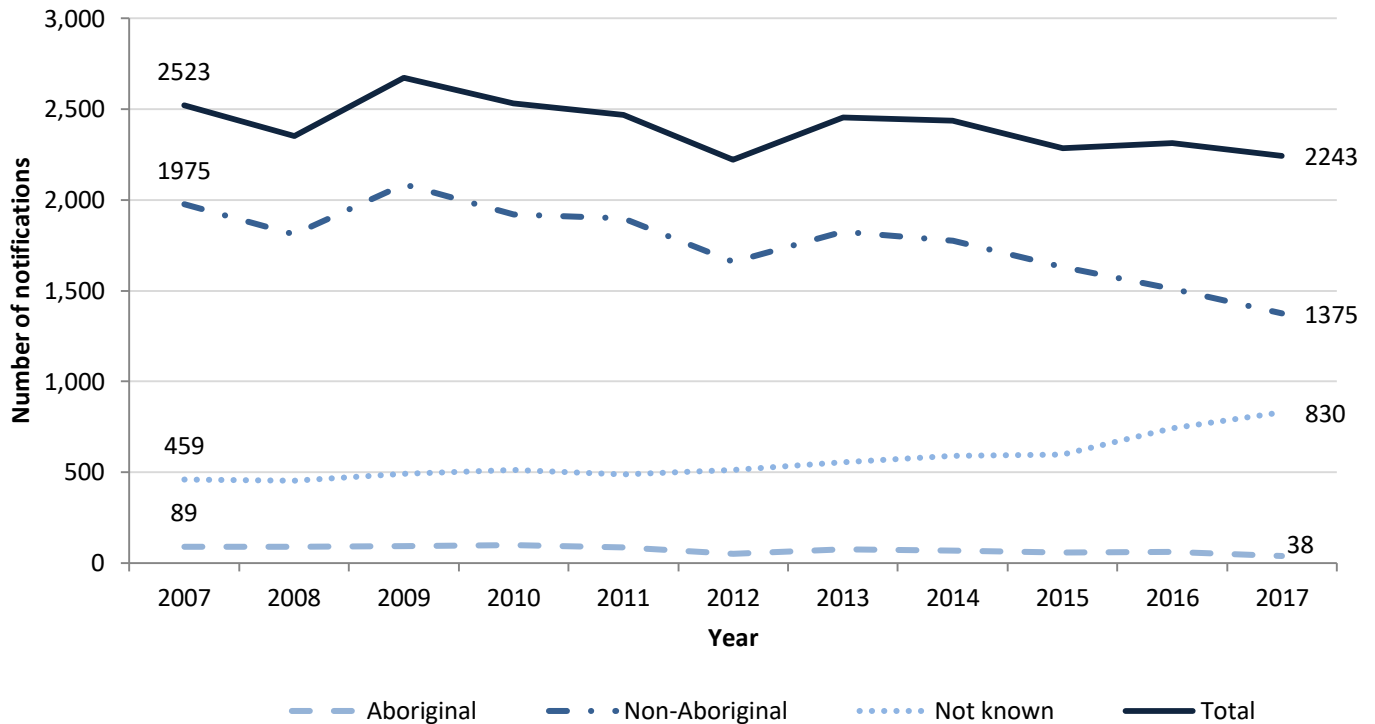


Data source: NCIMS, NSW Health; data extracted 27 May 2019

Note: Excludes persons whose age is unknown or not stated.

- The pattern of hepatitis B notifications by age group remains consistent with recent years.
- Of those people newly diagnosed with hepatitis B in 2018, 1 (<1 per cent) was aged 0-4 years, 6 (<1 per cent) were aged 5-14 years, 146 (6 per cent) were aged 15-24 years, 1,250 (52 per cent) were aged 25-44 years, 773 (32 per cent) were aged 45-64 years and 217 (9 per cent) were aged 65 years and over.
- Notifications of hepatitis B in young people aged 15-24 years have continued to decline, which may be related to the catch-up immunisation program for adolescents, which was introduced as a school-based program in 2004, and to universal routine immunisation of infants which commenced in NSW in May 2000.

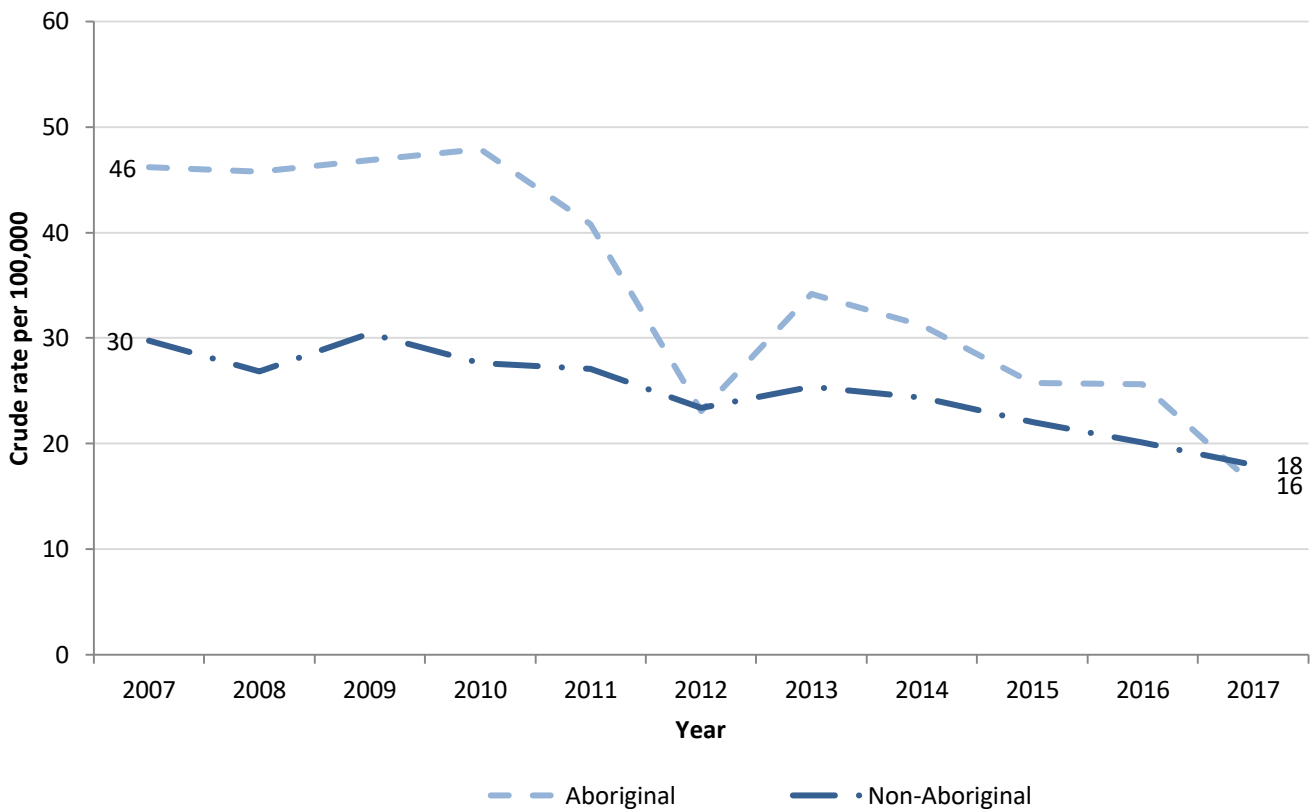
Figure 18: Hepatitis B notifications in NSW, by Aboriginality, 2007-2017



Data source: Communicable Diseases Register, NSW Ministry of Health (via SAPHaRI); data extracted 31 May 2019. At time of report, data were available until 2017^{1,2}

- From 2007 to 2017, 26,504 notifications for hepatitis B were recorded in the Communicable Diseases Register (CDR). Of these, 803 (3.0 per cent) were in Aboriginal people and 19,468 (73.5 per cent) were in non-Aboriginal people; Aboriginality was not known after data linkage for 6,233 notifications (23.5 per cent).
- Trends in the Aboriginal population are difficult to interpret due to variation in the yearly number of people for whom Aboriginal status was not known, and the high proportion of incomplete data compared to the proportion in Aboriginal people.

Figure 19: Hepatitis B notification rate by Aboriginality, NSW, 2007-2017



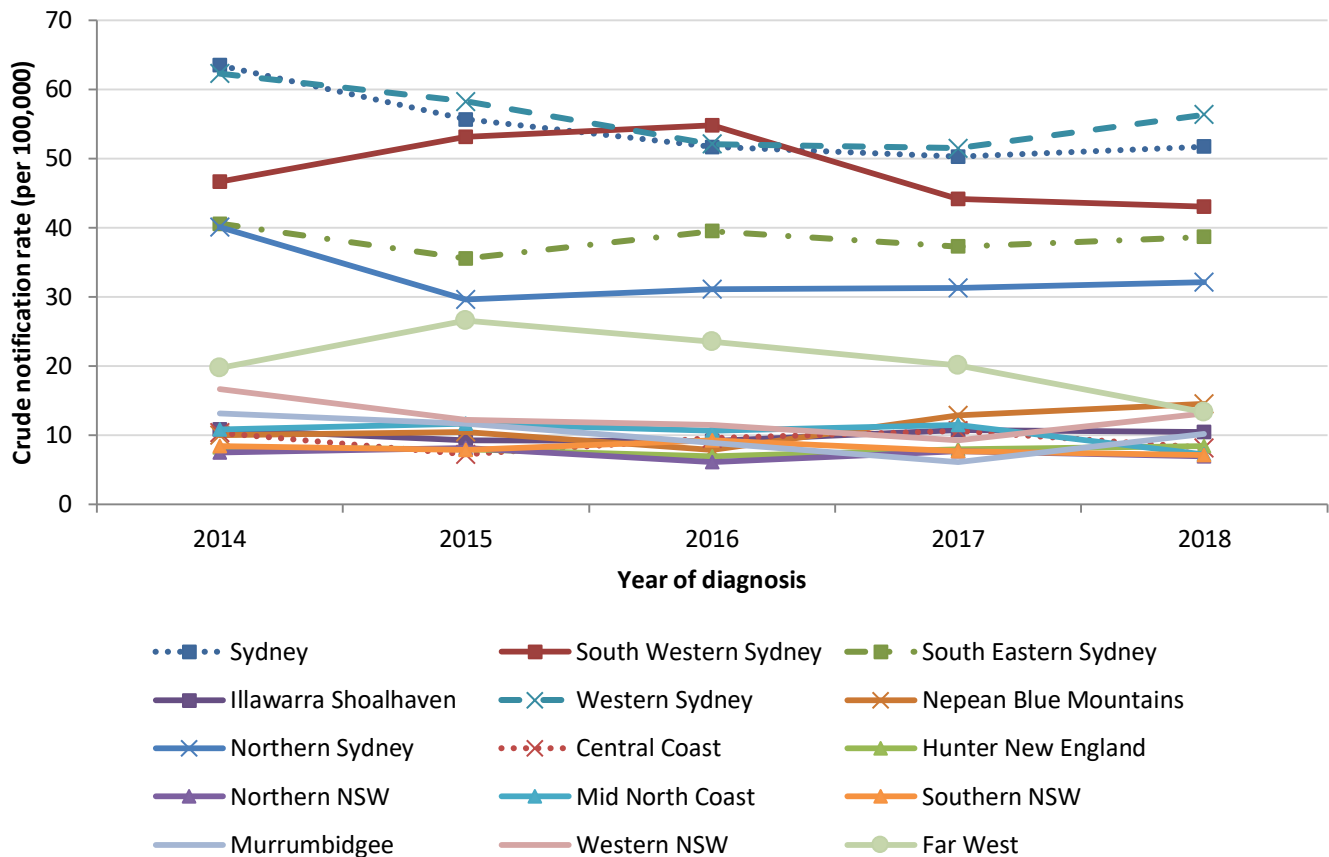
Data source: Communicable Diseases Register, NSW Ministry of Health (via SAPHaRI); data extracted 31 May 2019. At time of report, data available until 2017^{1,2}

Note: Excludes records where Aboriginal status was not stated/not known.

- Amongst those whose Aboriginal status was known, the hepatitis B notification rate in non-Aboriginal people was 18 per 100,000 population in 2017, 1.1 times higher than the rate in Aboriginal people (16 per 100,000).
- Notification rates are influenced by variations in incidence of disease, screening rates and/or the number of people for whom Aboriginal status was not known (see Figure 17).

5.3 Where are notifications occurring?

Figure 20: Hepatitis B notification rate, by LHD of residence, NSW, 2013-2018



Data source: NCIMS, NSW Health; data extracted 27 May 2019

Note: Excludes persons whose place of residence in NSW was not known; notifications from Justice Health excluded.

- Western Sydney, Sydney and South Western Sydney Local Health Districts (LHDs) reported the highest rates of hepatitis B notification in NSW in 2018 (56, 52 and 43 per 100,000 respectively). South Eastern Sydney and Northern Sydney LHDs also had high rates of hepatitis B notification compared to regional and remote LHDs. These rates are most likely a reflection of migrant settlement patterns of people who acquired infection at birth overseas and targeted testing in these areas.
- Of the non-metropolitan LHDs, Nepean Blue Mountains had the highest hepatitis B notification rate (14 per 100,000 population, n=55).

Note: Local changes in the notification rate can be difficult to interpret due to a range of factors, particularly changes in migrant settlement patterns of people who acquired infection at birth overseas. Because hepatitis B is often asymptomatic, people may be tested many years after infection and testing patterns vary across time and settings. Local health promotion campaigns and screening programs targeting at-risk populations can result in increased testing and better detection rates.

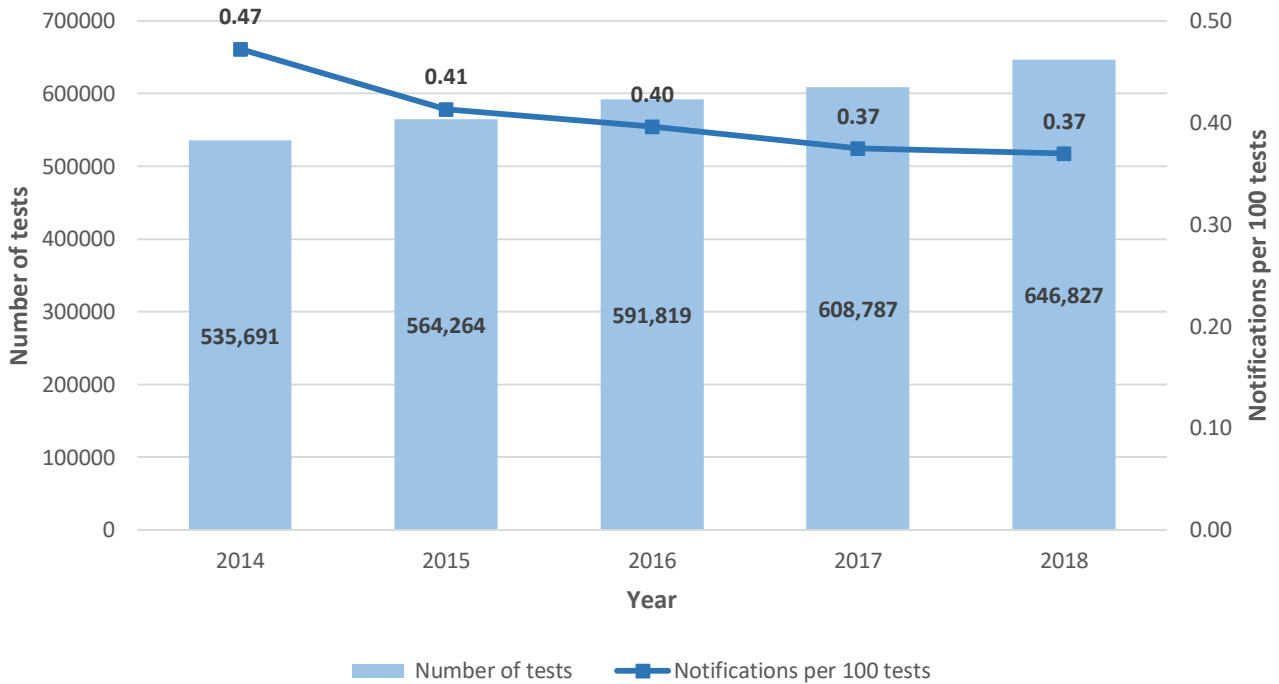
There is substantial variation in population size between the LHDs. For LHDs with a smaller population, such as Far West NSW, a small change in the number of notifications can have a large impact on the annual rate.

A notification rate has not been calculated for Justice Health as the population (the denominator) fluctuates considerably and data are available only for the annual number of incarcerations, not the number of people incarcerated.

6. Testing for hepatitis B

6.1 Is hepatitis B testing increasing?

Figure 21: Number of tests for hepatitis B surface antigen and notification to test ratio⁵, 2013-2018



Data source: NSW denominator data project, Health Protection NSW, NSW Health

- The number of hepatitis B tests performed in NSW is continuing to increase gradually each year. In 2018, 646,827 tests for hepatitis B surface antigen were performed in 15 laboratories in NSW, a 6 per cent increase from 2017 (608,787 tests).
- Although the number of hepatitis B tests performed in NSW is continuing to increase gradually each year, the notification to test ratio is declining. In 2018, the hepatitis B notification to test ratio was 0.37, the same as 2017. This suggests that there is increased testing amongst a broader population that is at lower risk, or repeat testing of those already known to have hepatitis B.

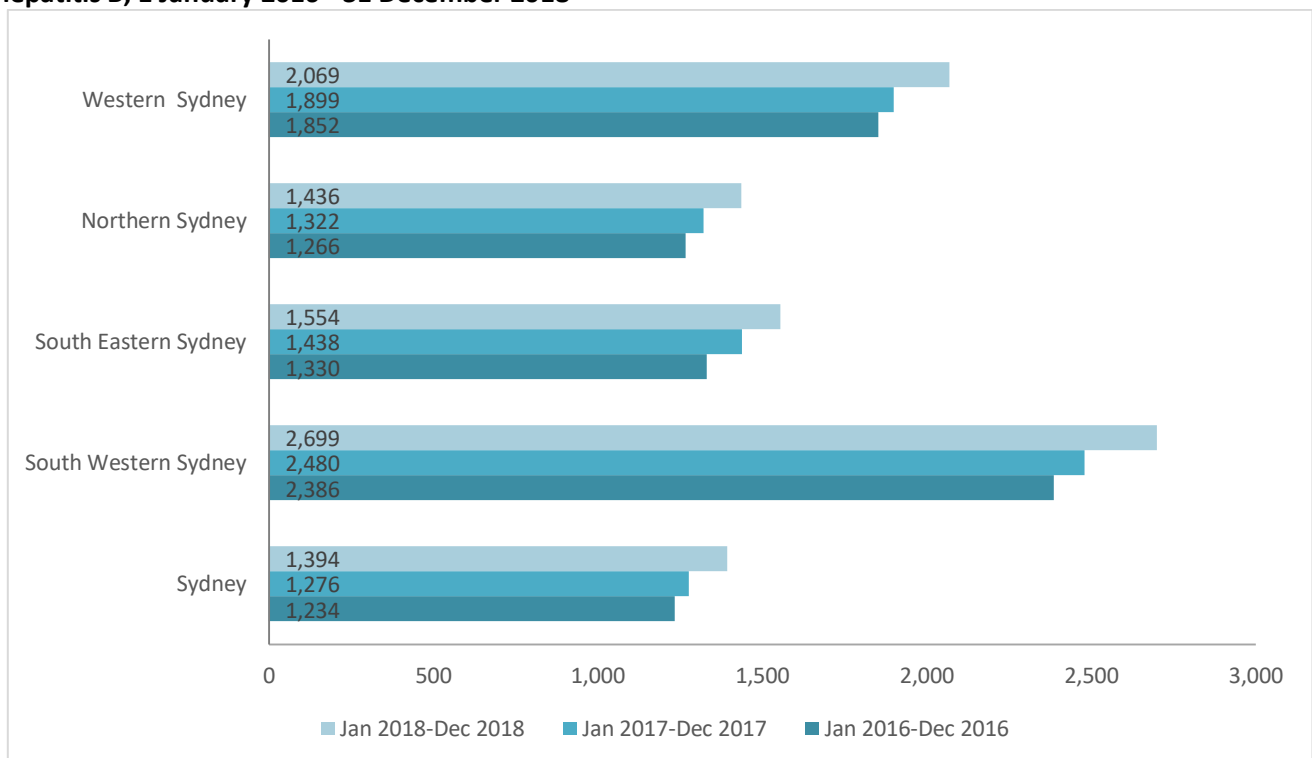
⁵ See **Appendix: Table 2** for more details about methodology

7. Hepatitis B treatment access

In 2017 there were an estimated 79,685 people living with chronic hepatitis B in NSW⁶. Up to 1 in 4 people with chronic hepatitis B will die from liver cancer or liver failure unless they receive appropriate monitoring and treatment. Not all people living with hepatitis B require treatment; it is estimated that 8-25 per cent of cases require antiviral treatment⁷. The National Hepatitis B Strategy set a treatment target of 15 per cent by 2017. No state or territory reached the national target. Uptake was highest in NSW (9.6 per cent) followed by Victoria (7.9 per cent).

7.1 How many people in NSW are accessing hepatitis B treatment?

Figure 22: Number of NSW residents⁸ dispensed hepatitis B treatment in the five LHDs with the highest prevalence of hepatitis B, 1 January 2016 - 31 December 2018



Data source: Pharmaceutical Benefits Schedule Highly Specialised Drugs Program data, 1 January 2016 to 31 December 2018

Note: Figure 21 incorporates residents who were dispensed treatment in Justice Health settings.

Data for all other local health districts is at Appendix: Figure 30

Between 1 January and 31 December 2018:

- 9,152 NSW residents were dispensed hepatitis B treatment in the five LHDs with the highest prevalence of hepatitis B, which accounted for 92 per cent of the total number of residents dispensed hepatitis B treatment in NSW. This is a 9 per cent increase compared to the 12 months to 31 December 2017 (8,415) and a 13 per cent increase compared to the 12 months to 31 December 2016 (8,068).
- In the five LHDS with high burden, 16 NSW residents were dispensed hepatitis B treatment in Justice Health settings compared to the same number (16) between 1 January 2017 and 31 December 2017; and 12 between 1 January 2016 and 31 December 2016
- 10,049 NSW residents were dispensed hepatitis B treatment across NSW, which was 13 per cent of the estimated number of people living in NSW with chronic hepatitis B in 2017 (79,685).

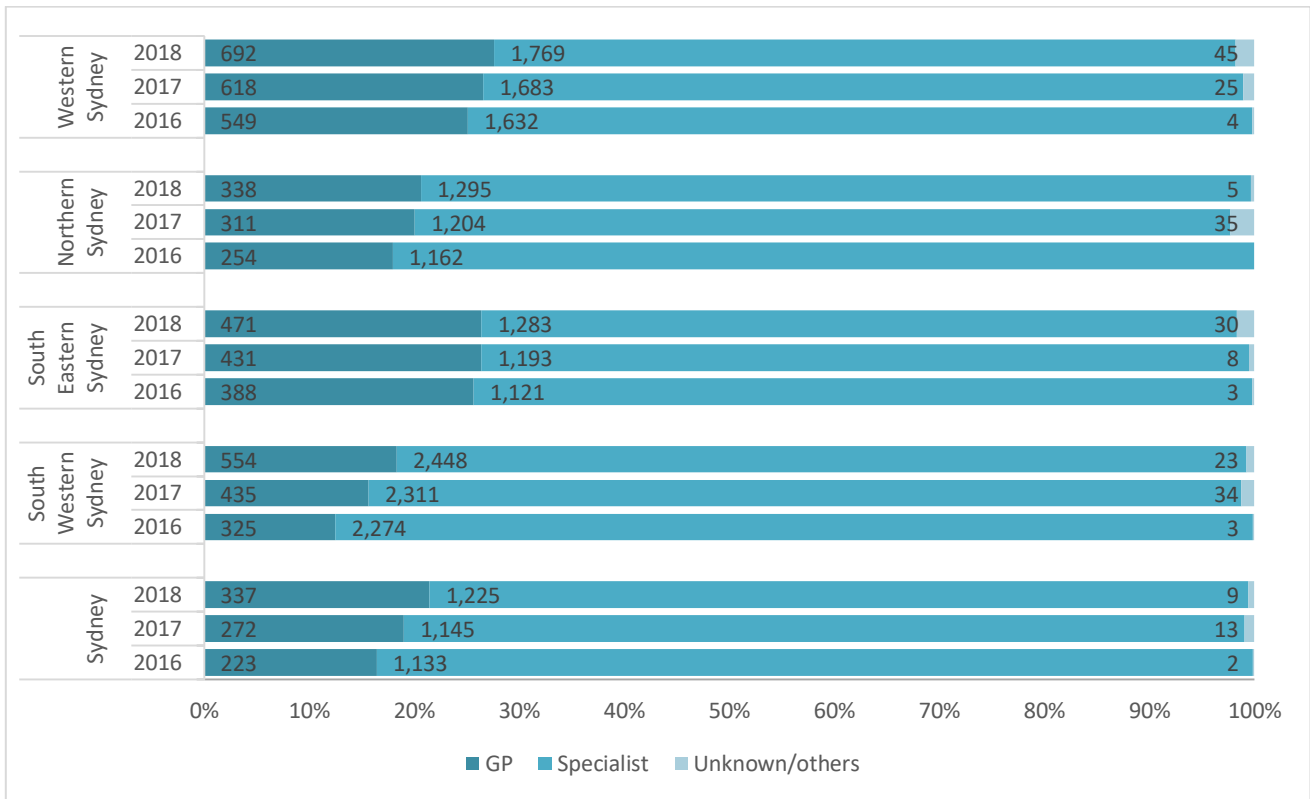
⁶ Viral Hepatitis Mapping Project: Estimates of chronic hepatitis B diagnosis, monitoring and treatment by Primary Health Network, National Report 2017. Published by the Australasian Society for HIV Medicine

⁷ Treatment is only beneficial in some stages of hepatitis B infection

⁸ Figure 1 incorporates residents who were dispensed treatment in Justice Health settings

7.2 What percentage of people with chronic hepatitis B are receiving treatment in primary care?

Figure 23: Number of NSW residents dispensed hepatitis B treatment in the five LHDs with the highest prevalence of hepatitis B, by prescriber type, 1 January 2016 - 31 December 2018



Data source: Pharmaceutical Benefits Schedule Highly Specialised Drugs Program data, 1 January 2016 to 31 December 2018

Note: Figure 22 incorporates residents who were dispensed treatment in Justice Health settings. Data for all other local health districts is at Appendix: Figure 31

Between 1 January 2018 and 31 December 2018:

- 23 per cent of NSW residents in the five LHDs with the highest prevalence of hepatitis B were prescribed their treatment by a GP. This is an increase of 1 per cent compared to the same period in 2017 and 4 per cent compared to the same period in 2016.

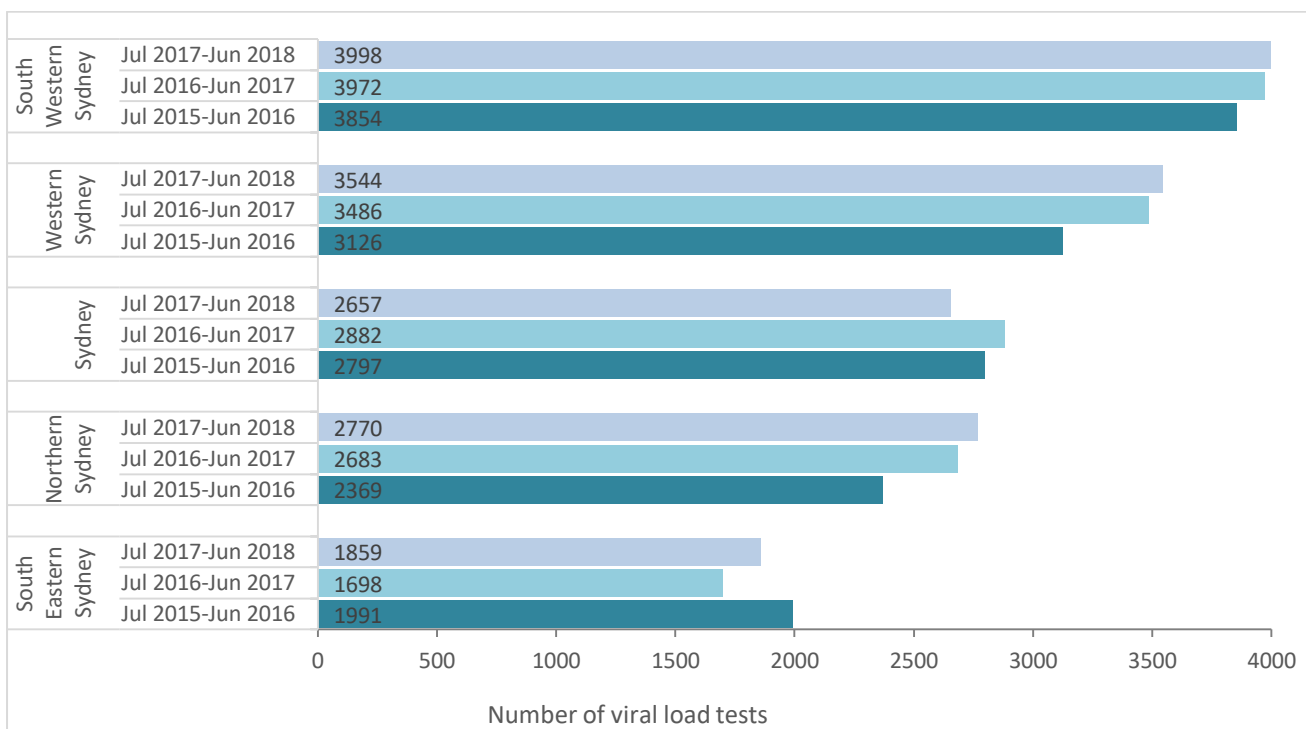
8. Management of hepatitis B

8.1 How many people in NSW with chronic hepatitis B are having their condition monitored?

All people with chronic hepatitis B require regular (six to twelve monthly) monitoring of hepatitis B viral load and should be receiving ongoing care, incorporating either yearly off-treatment monitoring (including a DNA viral load test) or antiviral treatment. People who are on antiviral treatment are also monitored via a hepatitis B viral load test, in order to provide recommendations for their treatment plan.^{9 10}

The frequency of monitoring varies according to the phase of infection, the extent of liver damage present, whether the person is receiving treatment, and the presence of other complicating factors such as co-infections, immunosuppression and other causes of liver disease.

Figure 24: Number of people in the five high prevalence LHDs with CHB and not receiving treatment who had a viral load test via Medicare, 1 July 2015 - 30 June 2018



Data source: Medicare Benefits Schedule, Department of Human Services

Note: Data from MBS is only available to 30 June 2018. Data is based on patient enrolment postcode and date of service (DOP). An annual hepatitis B viral load test (MBS item 69482) for people not on treatment is covered under Medicare, so this data indicates the number of people tested. This data excludes tests not ordered under Medicare and therefore is an underestimate of the number of people being monitored. It does not include services provided by hospital doctors to public patients in public hospitals and services that qualify for a benefit under the Department of Veterans' Affairs National Treatment Account. Data for the other Local Health Districts is at Appendix: Figure 32

Between 1 July 2017 and 30 June 2018:

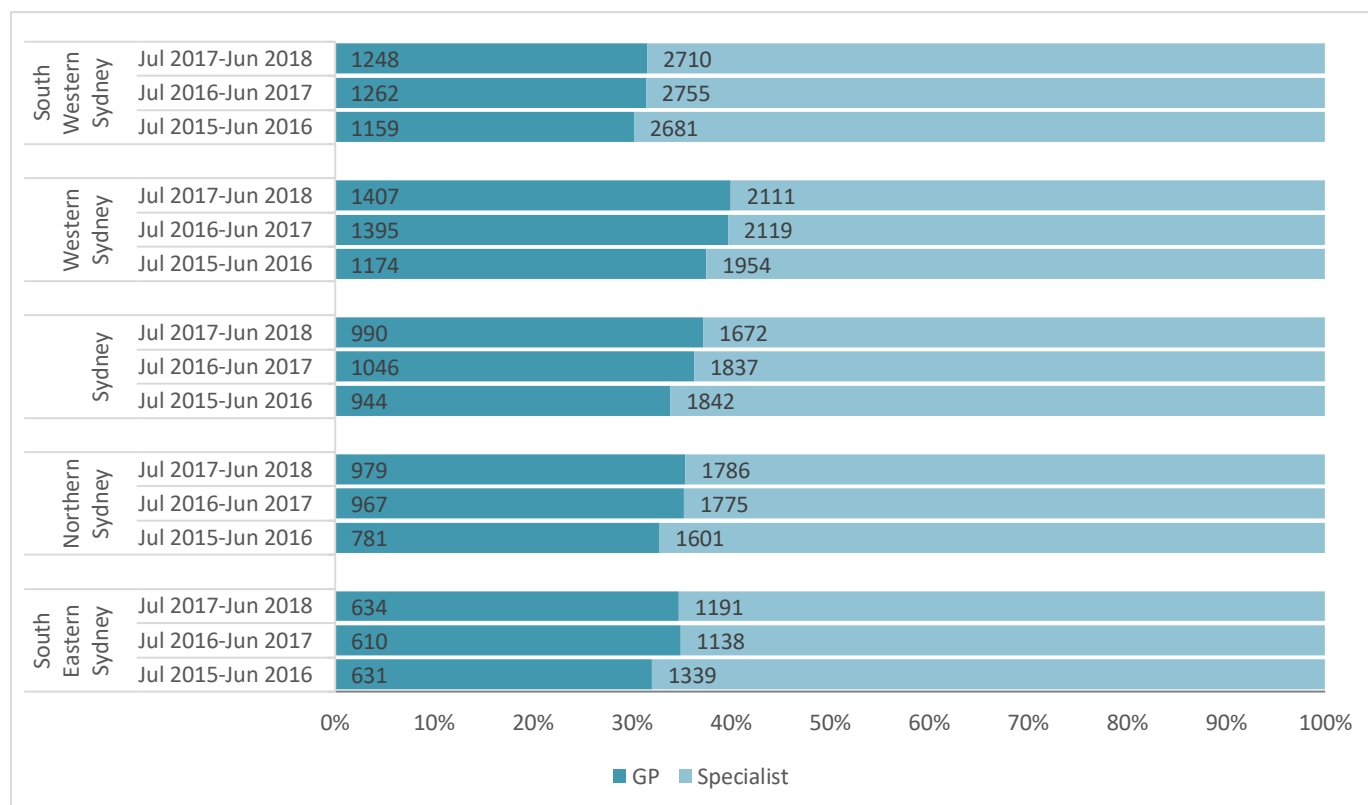
- 14,828 people with CHB not on treatment received an annual MBS viral load test in the five LHDs
- The number of tests remained stable compared to the same period in 2016 to 2017 (14,721) and 2015 to 2016 (14,137)

⁹ HBV viral load testing under the Medicare Benefits Schedule (MBS) is used as a surrogate for guideline-based monitoring of people living with chronic hepatitis B who are not receiving treatment. Viral load testing is covered annually under MBS (item 69482) in line with the recommended guidelines. Those who are receiving antiviral therapy are monitored via a different MBS item (69483) for their viral load tests.

¹⁰ Hepatitis B Mapping Project: Estimates of chronic hepatitis B diagnosis, monitoring and treatment by Medicare Local, 2014/15 – National Report. Published by the Australasian Society for HIV Medicine (ASHM)

8.2 How are people in NSW with chronic hepatitis B having their condition monitored?

Figure 25: Number of people with hepatitis B not receiving treatment in the five LHDs with the highest prevalence of hepatitis B who had an annual MBS viral load test (item 69482) by type of practitioner ordering the test, 1 July 2015 – 30 June 2018



Data source: Medicare Benefits Schedule, Department of Human Services; Note: Data from MBS is only available to 30 June 2018. Data is based on patient enrolment postcode and date of service (DOS). An annual hepatitis B viral load test (MBS item 69482) for people not on treatment is covered under Medicare, so this data indicates the number of people tested. This data excludes tests not ordered under Medicare and therefore is an underestimate of the number of people being monitored. It does not include services provided by hospital doctors to public patients in public hospitals and services that qualify for a benefit under the Department of Veterans' Affairs National Treatment Account.

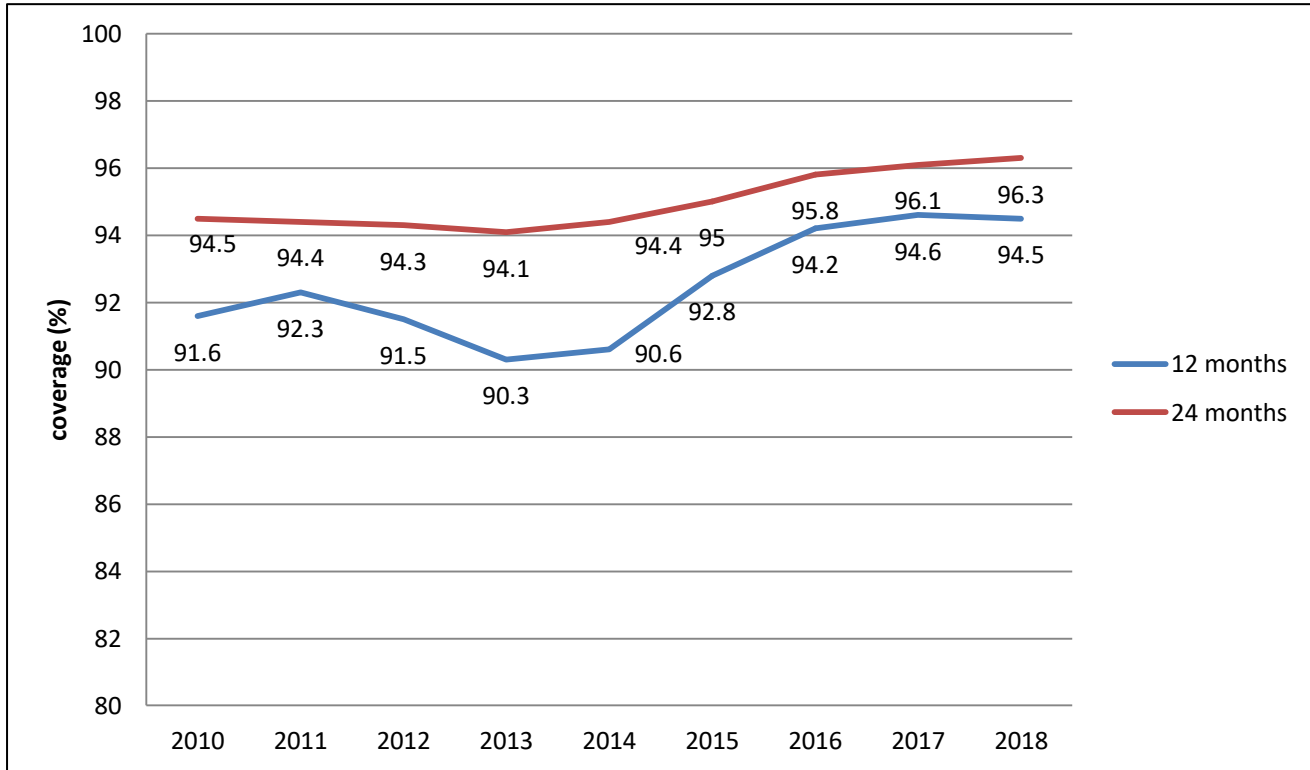
Between 1 July 2017 and 30 June 2018:

- 36 per cent (5,258) of people with CHB not on treatment received an annual MBS viral load test that was requested by a GP and 65 per cent (9,470) had a test requested by a specialist. The percentages remained stable when compared to the same periods between 2015 and 2016.

9. Hepatitis B prevention investment

9.1 What proportion of infants in NSW are vaccinated for hepatitis B?

Figure 26: Proportion of infants in NSW who have received 3 doses of hepatitis B vaccine (measured at 12 and 24 months of age) 2010-2018



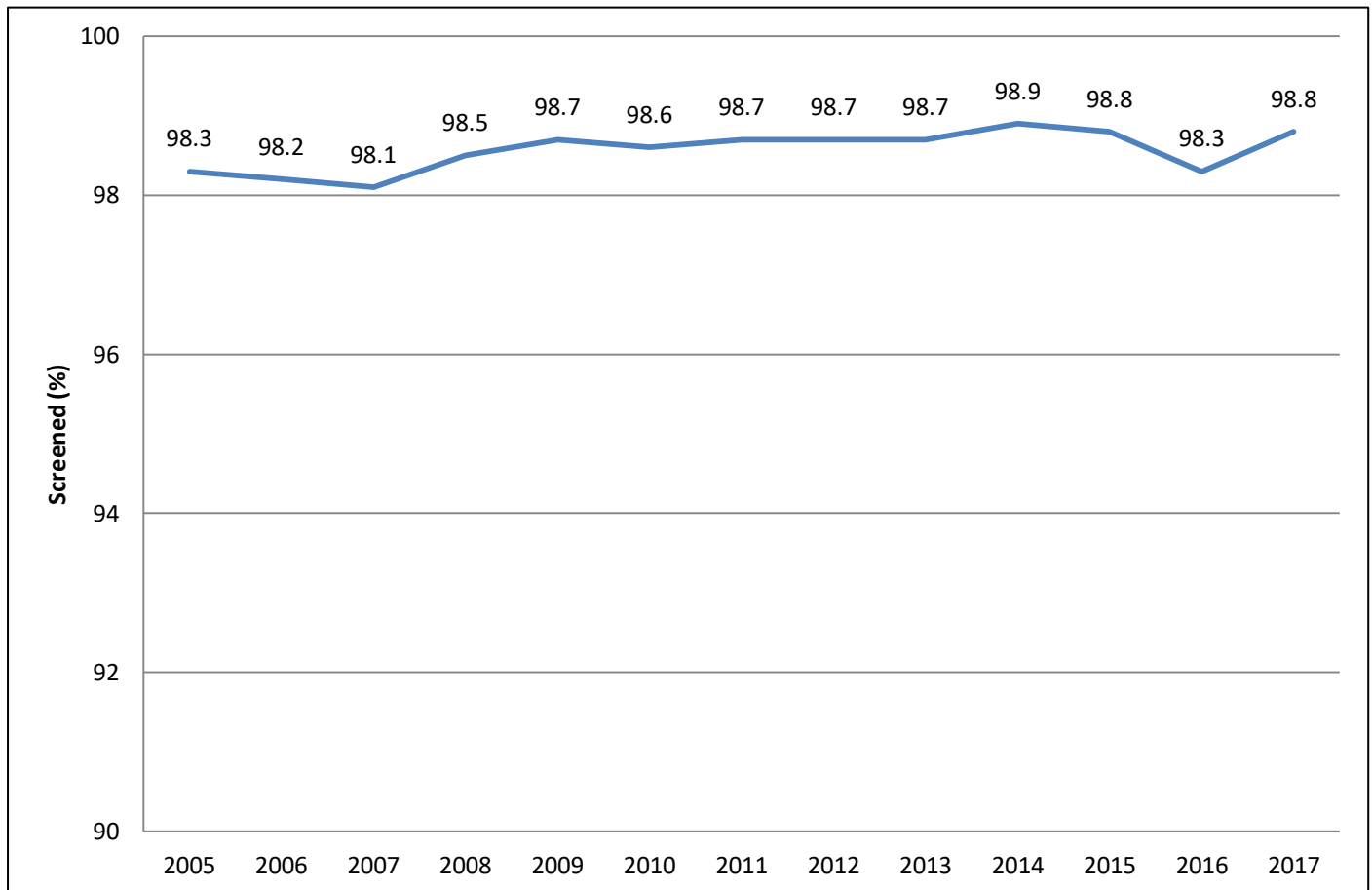
Data source: Australian Immunisation Register, Australian Government Department of Human Services

- Hepatitis B vaccine is due at birth, 6 weeks, 4 months and 6 months of age. Children fully vaccinated with at least three doses measured at 12 months of age in 2018 was 94.5 per cent. Coverage for Aboriginal children was 94.7 per cent.
- At 24 months of age in 2018, 96.3 per cent of all children, and 97.7 per cent of Aboriginal children were fully vaccinated against hepatitis B. These rates are higher than at 12 months of age, indicating that delayed vaccination as well as underreporting¹¹ influence reported vaccination rates.

¹¹ Children overdue for immunisation: a question of coverage or reporting? An audit of the Australian Immunisation Register. *Aust NZ J Public Health* 2019; 43:214-20

9.2 What proportion of women giving birth in NSW are screened for hepatitis B?

Figure 27: Proportion of women giving birth in a public or private hospital in NSW who are screened for hepatitis B 2005 - 2017

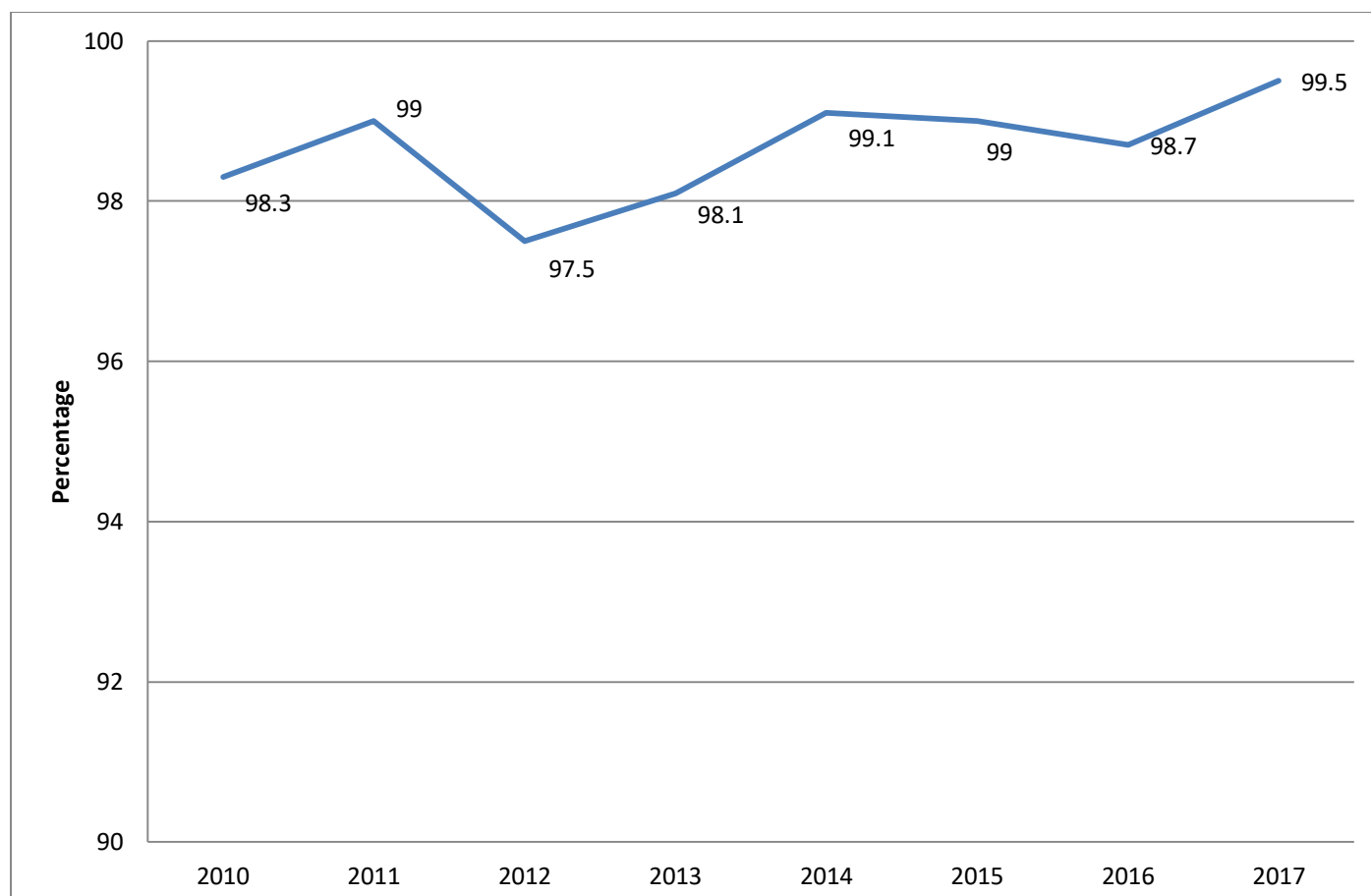


Data source: Neonatal Hepatitis B Vaccination Program Database, NSW Health

- The proportion of mothers giving birth in a public or private hospital in NSW screened for hepatitis B was 98.8 per cent in 2017 (the latest year for which data is available).
- Screening rates have remained stable across all LHDs. Reporting issues in South Western Sydney LHD which have been rectified contributed to a decrease in reported screening rates in 2016.

9.3 What proportion of neonates in NSW born to hepatitis B positive mothers receive hepatitis B immunoglobulin within 12 hours of birth?

Figure 28: Proportion of neonates in NSW born to hepatitis B positive mothers who received hepatitis B immunoglobulin within 12 hours of birth, 2010 - 2017



Data source: Neonatal Hepatitis B Vaccination Program Database, NSW Health

Table 1: Neonatal hepatitis B immunoglobulin administration (2009 - 2017)

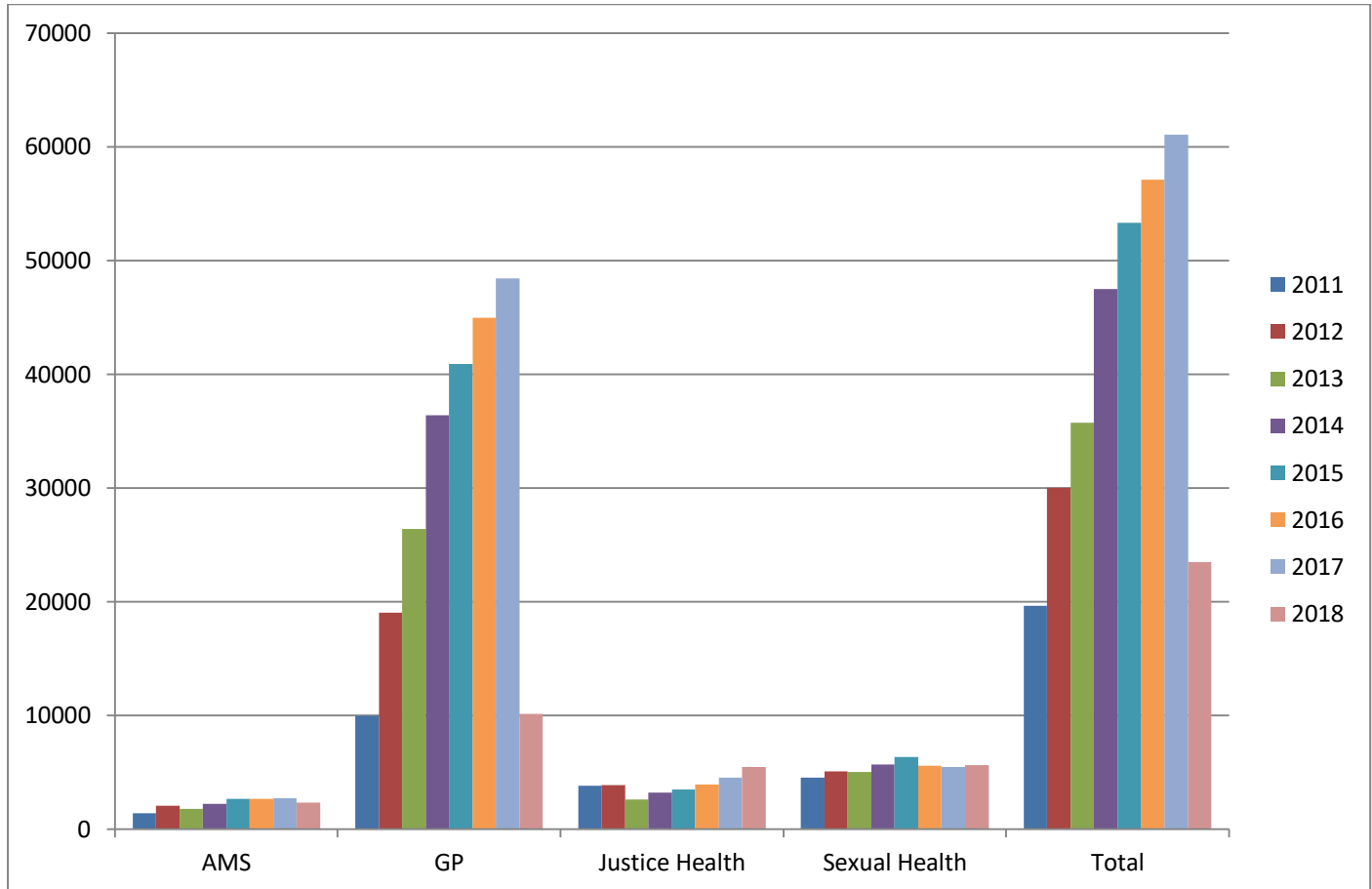
Year	No. neonates born to HBsAg+ mothers	No. neonates born to HBsAg+ mothers who received HBIG	No. neonates born to HBsAg+ mothers who received HBIG within 12 hours of birth (%)
2010	664	660	653 (98.3%)
2011	702	699	695 (99.0%)
2012	757	744	735 (97.1%)
2013	696	690	683 (98.1%)
2014	739	737	732 (99.1%)
2015	677	673	670 (99.0%)
2016	696	689	687 (98.7%)
2017	642	642	639 (99.5%)

Data source: NSW neonatal hepatitis B vaccination data collection (NSW hospitals and public health units)

The proportion of babies born to mothers living with hepatitis B who receive hepatitis B immunoglobulin (HBIG) within 12 hours of birth increased from 98.7 per cent in 2016 to 99.5 per cent in 2017 (the most current data available).

9.4 How many doses of hepatitis B vaccine are distributed to GPs, Aboriginal Community Controlled Health Services, Sexual Health Clinics and Justice Health?

Figure 29: Number of adult doses of hepatitis B vaccine distributed to health care providers through the NSW Vaccine Centre



Data source: NSW Vaccine Centre Database

- NSW Health purchases adult formulation hepatitis B vaccine for vaccination of at-risk groups. The total number of doses of adult hepatitis B vaccine distributed to health care providers in NSW decreased significantly from 61,051 doses in 2017 to 23,494 doses in 2018 as a result of ordering restrictions placed on GPs.
- Since November 2016, there has been an international shortage of adult hepatitis B vaccine formulations. The shortage initially affected the private market and in 2018 government funded supplies became constrained. As a precautionary measure, in May 2018, NSW Health restricted the distribution of free adult hepatitis B vaccine to GPs to ensure supply was available for those at highest risk of contracting the disease, including household and sexual contacts of acute and chronic hepatitis B cases, and injecting drug users.
- GPs are required to order the vaccine for eligible persons via the local public health unit.
- Distribution to Aboriginal community controlled services, Justice Health and sexual health services remain stable.

Appendix

Table 2: Number of hepatitis B and hepatitis C notifications by gender and age group, NSW, 2018

Age group (years)	Hepatitis B				Hepatitis C (excluding Justice Health)				Hepatitis C (from Justice Health)			
	Male	Female	Other/ un-known	Total	Male	Female	Other/ un-known	Total	Male	Female	Other/ un-known	Total
TOTAL	1330	1066	9	2393	1768	991	7	2766	595	90	0	685
0-4	0	1	0	1	7	5	0	7	0	0	0	0
5-9	0	1	0	1	1	0	0	1	0	0	0	0
10-14	3	2	0	5	0	1	0	0	0	0	0	0
15-19	13	14	0	26	14	20	0	14	16	1	0	17
20-24	61	58	0	119	80	42	0	80	149	11	0	160
25-29	140	148	3	288	164	102	0	164	141	21	0	162
30-34	203	163	1	361	167	106	1	167	97	16	0	113
35-39	196	150	1	346	227	137	1	227	65	14	0	79
40-44	156	97	0	250	221	102	0	221	60	15	0	75
45-49	122	106	0	225	197	107	2	197	32	8	0	40
50-54	100	78	1	178	185	106	1	185	23	4	0	27
55-59	117	67	0	184	207	101	1	207	5	0	0	5
60-64	106	77	0	182	167	79	0	167	2	0	0	2
65-69	57	50	0	105	74	35	1	74	1	0	0	1
70-74	25	23	0	48	28	19	0	28	0	0	0	0
75-79	16	13	0	27	15	16	0	15	0	0	0	0
80-84	11	11	0	22	7	9	0	7	0	0	0	0
85 and over	4	7	3	14	7	4	0	7	0	0	0	0
Missing	0	0	0	0	0	0	0	0	2	0	0	2

Data source: NCIMS, NSW Health; data extracted 27 May 2019.

Note: Data are provisional and subject to change

Table 3: Number of hepatitis B and hepatitis C notifications by LHD of residence, NSW, 2014-2018

Local Health Districts	Hepatitis B					Hepatitis C				
	2014	2015	2016	2017	2018	2014	2015	2016	2017	2018
TOTAL	2462	2323	2326	2260	2393	3307	3301	5050	3945	3451
Central Coast	34	24	32	36	28	178	150	234	172	124
Far West	6	8	7	6	4	23	23	33	38	20
Hunter New England	74	72	63	73	78	409	375	548	440	348
Illawarra Shoalhaven	43	37	37	44	43	144	164	231	165	140
Justice Health	7	21	26	21	44	324	311	433	507	685
Mid North Coast	23	25	23	25	16	132	135	211	130	120
Murrumbidgee	38	34	26	18	30	151	147	216	153	159
Nepean Blue Mountains	36	38	29	48	55	88	118	237	214	188
Northern NSW	22	24	18	23	21	215	226	403	253	182
Northern Sydney	356	267	284	289	300	143	143	181	135	131
Other/unknown	10	6	5	11	4	36	34	18	26	34
South Eastern Sydney	360	320	361	345	362	288	308	476	338	239
South Western Sydney	430	501	528	434	431	336	365	489	357	342
Southern NSW	17	16	19	16	15	81	81	230	131	71
Sydney	397	357	339	335	350	294	298	434	300	238
Western NSW	46	34	32	26	37	202	176	273	230	161
Western Sydney	563	539	494	502	564	265	263	395	348	274

Data source: NCIMS, NSW Health; data extracted 27 May 2019.

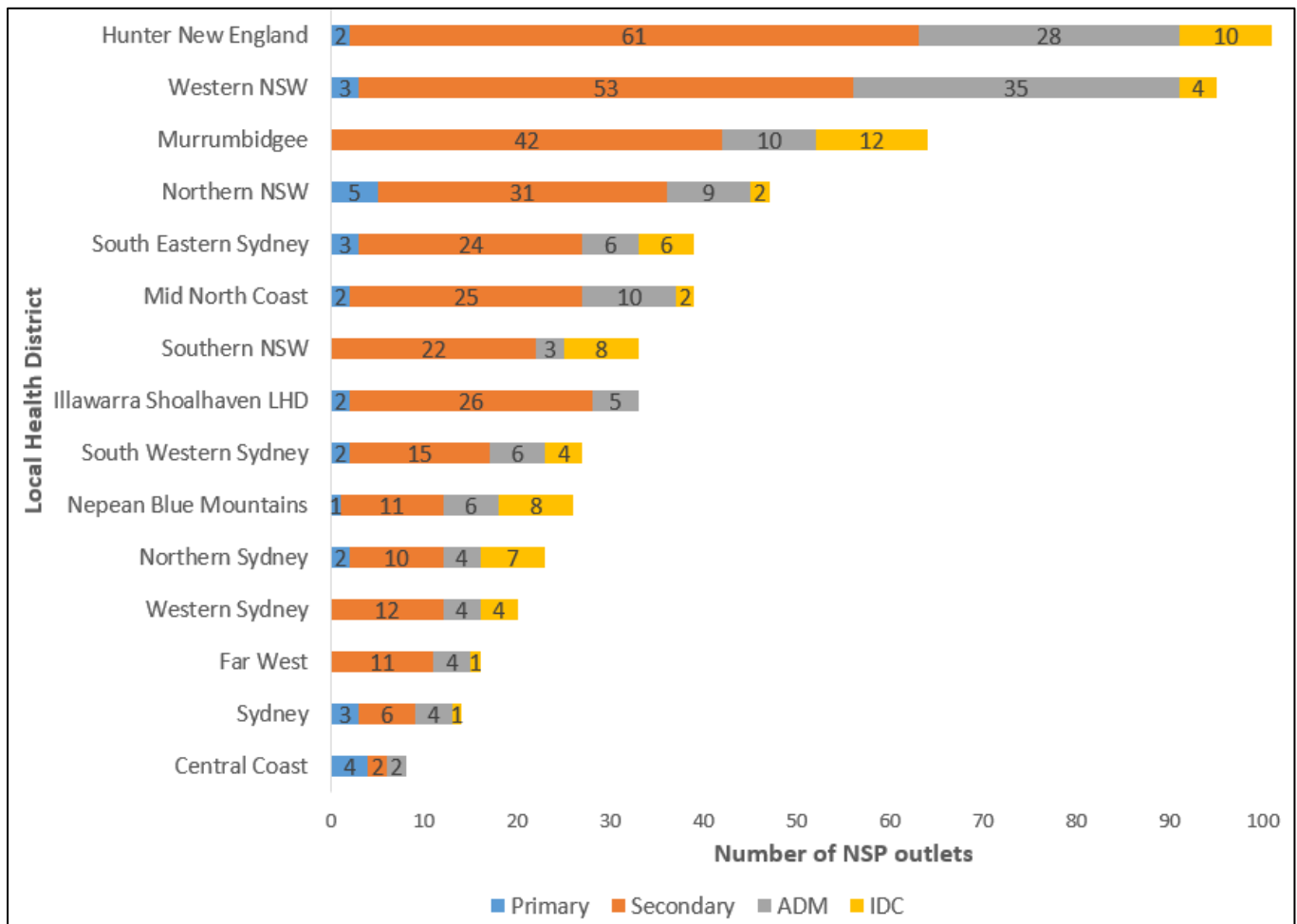
Note: Data are provisional and subject to change.

Table 4: Number of units of injecting equipment distributed by LHD in 1 January – 31 December 2018

LHD	Public	Pharmacy
HNE	2,275,500	523,989
S	1,403,724	252,434
WS	1,144,804	65,084
SES	993,807	181,099
SWS	990,723	462,905
WNSW	877,641	4,495
CC	768,565	11,568
ISH	751,643	39,810
MNC	552,562	17,300
NNSW	544,969	7,530
NBM	511,833	47,150
MNC	494,780	39,985
NS	418,798	54,570
SNSW	246,424	4,035
FW	100,431	100
Total	12,076,204	1,712,054
Number of units of injecting equipment distributed by NGOs 1 January – 31 December 2018		
NUAA	399,853	
ACON	284,675	
MSIC	42,231	
Total	726,759	

Data source: Public NSP - NSW Health NSP Minimum Data Set

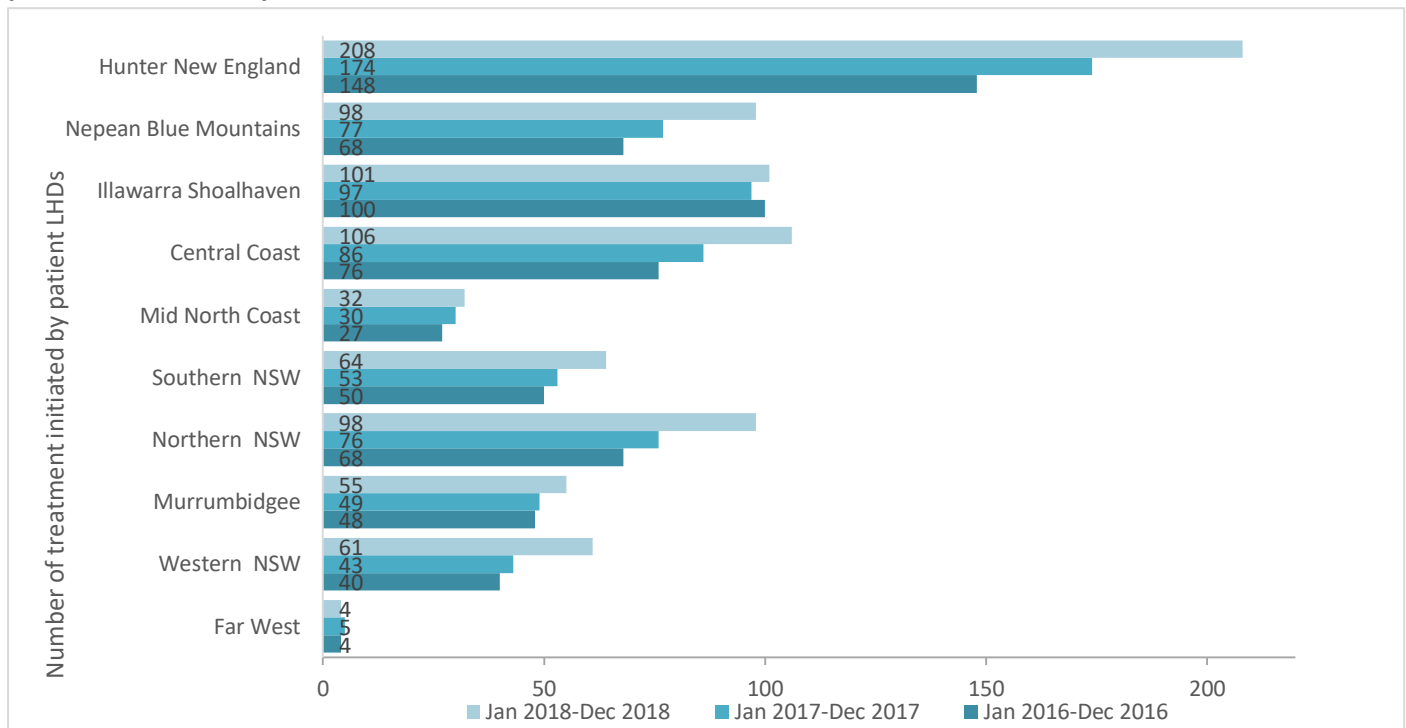
Figure 30: Number of public NSW NSP outlets by type, by LHD, 31 December 2018



Data source: Local Health District NSP Services

- As of December 2018, the public NSW NSP had 29 primary outlets, 351 secondary outlets, 136 automatic dispensing machines (ADMs) and 69 internal dispensing chutes (IDCs).

Figure 31: Number of NSW residents dispensed hepatitis B treatment in the LHDs with lower hepatitis B prevalence, 1 January 2016 - 31 December 2018



Data source: Pharmaceutical Benefits Schedule Highly Specialised Drugs Program data, 1 January 2016 to 31 December 2018

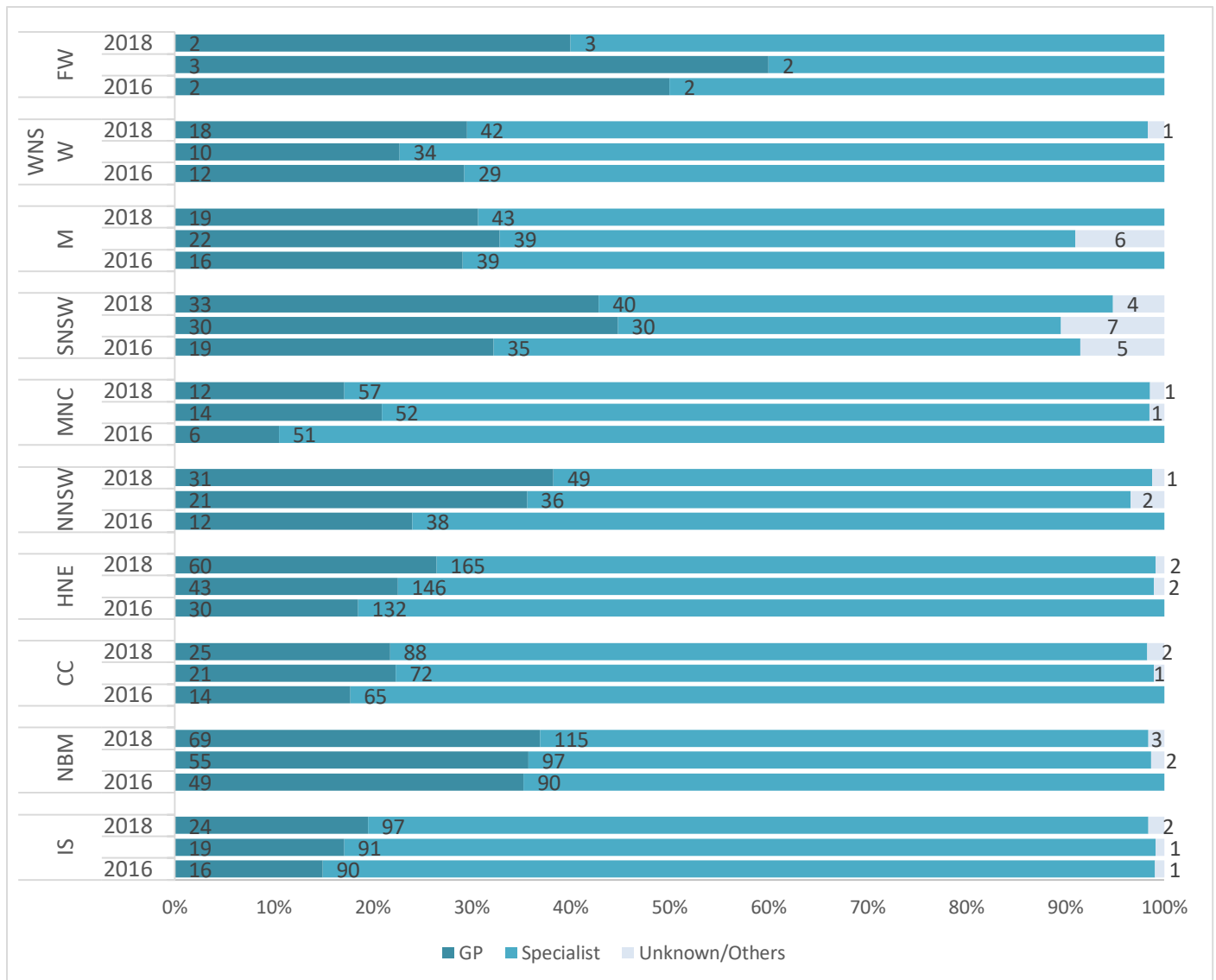
Note: Figure 30 includes residents who were dispensed treatment in Justice Health settings.

Between 1 January to 31 December 2018:

- 897 residents were dispensed hepatitis B treatment in the ten LHDs with lower prevalence, which accounted for 9 per cent of the total number of residents dispensed hepatitis B treatment in NSW¹².
- This is a 19 per cent increase compared to the 12 months from January to December 2017 (751) and a 29 per cent increase compared to the 12 months from January to December 2016 (693).
- 18 NSW residents were dispensed hepatitis B treatment in Justice Health settings; which is higher than the period between 1 January 2017 to 31 December 2017 (13) and 1 January 2016 to 31 December 2016 (11).

¹² Overall, 10,049 NSW residents were dispensed treatment during 1 January 2018 to 31 December 2018

Figure 32: Number of NSW residents dispensed hepatitis B treatment by LHD of patient residence, by prescriber type, 1 January 2016 - 31 December 2018 in LHDs with lower hepatitis B prevalence



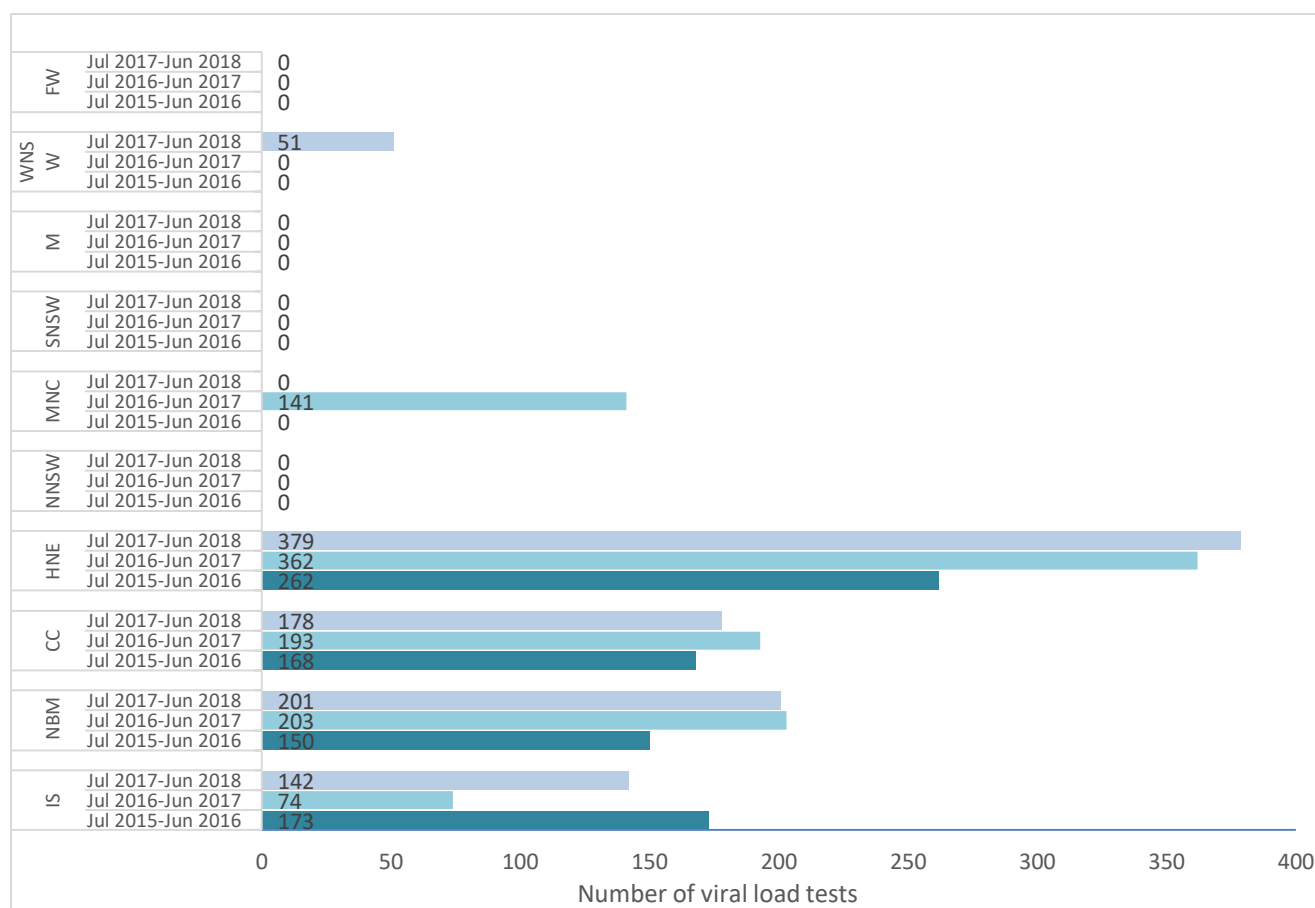
Data source: Pharmaceutical Benefits Schedule Highly Specialised Drugs Program data, 1 January 2016 - 31 December 2018.

Note: Figure 31 incorporates residents who were dispensed treatment in Justice Health settings.

Between 1 January 2018 and 31 December 2018:

- Of the residents dispensed hepatitis B treatment in the ten LHDs with lower prevalence, 29 per cent were prescribed by a GP, which increased by six per cent when compared to January 2016 to December 2016 (23 per cent) and one per cent when compared to January 2017 to December 2017 (28 per cent).

Figure 33: Number of people in the lower prevalence LHDs with CHB and not receiving treatment who had a viral load test via Medicare, 1 July 2015 - 30 June 2018



Data source: Medicare Benefits Schedule, Department of Human Services

Note: Data from MBS is only available to 30 June 2018. Data is based on patient enrolment postcode and date of processing (DOP). An annual hepatitis B viral load test (MBS item 69482) for people not on treatment is covered under Medicare, so this data indicates the number of people tested. This data excludes tests not ordered under Medicare and therefore is an underestimate of the number of people being monitored. It does not include services provided by hospital doctors to public patients in public hospitals and services that qualify for a benefit under the Department of Veterans' Affairs National Treatment Account.

Between 1 July 2017 and 30 June 2018:

- Among the ten LHDs with lower CHB prevalence, six of them did not have data recorded.
- 951 people with CHB not on treatment received an annual MBS viral load test. This is 6 per cent of the total tests (15,779) provided in NSW.

Table 5: Data Sources

Name	Custodian	Description
NSW Notifiable Conditions Information Management System (NCIMS)	Health Protection NSW, NSW Health	<p>NCIMS contains records of all people notified to NSW Health with a notifiable condition under the NSW <i>Public Health Act 2010</i>. Notification data may not reflect the true incidence of hepatitis B and C infections as they only represent a proportion of notifiable diseases in the population, however they are useful for monitoring trends over time.</p> <p>Notifications are for individual people with hepatitis C or B and subsequent notifications (in the one year or in later years) for the same infection in the same individual are not counted.</p>
Communicable Diseases Register (CDR)	Health Protection NSW, NSW Health	<p>The CDR contains de-identified records from NCIMS, linked to emergency department, hospitalisation and deaths data, and includes the Enhanced Reporting of Aboriginality (ERA) variable. Record linkage was carried out by the Centre for Health Record Linkage (www.cherel.org.au), NSW Ministry of Health. Data are currently available to the end of 2017.</p>
NSW Health denominator data project	Health Protection NSW, NSW Health	<p>Monthly aggregated testing data for selected notifiable conditions from 15 NSW public and private laboratories. These laboratories account for more than 90% of the total notifications for the selected conditions in NSW. Information from laboratories does not provide any indication on whether there are repeat tests for the same individual.</p> <p>The notification to test ratio has been calculated by dividing the number of notifications to NSW Health by the total number of tests performed by the participating laboratories, and multiplying by 100. Notifications are for individual people with hepatitis C/B reported from all laboratories and subsequent notifications (in the one year or in later years) for the same infection in the same individual are not counted. However, the testing data are for individual tests reported from participating laboratories and may include multiple specimens per individual. As such, the notification to test ratio may be an underestimate of the percentage of people tested who were positive for the condition.</p>