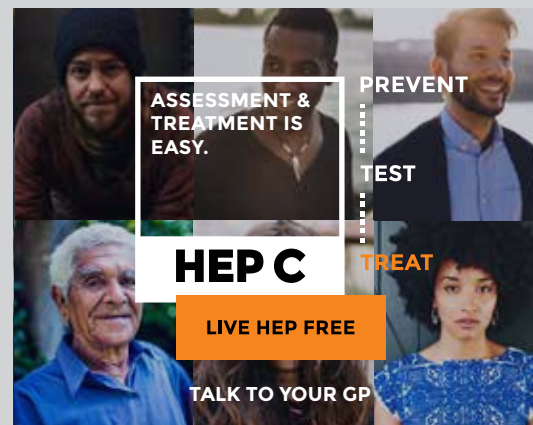
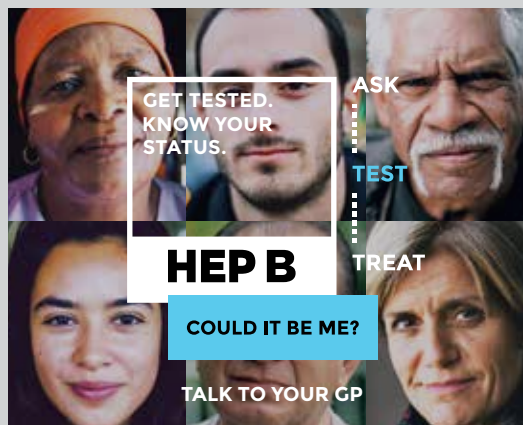


NSW HEPATITIS B AND C STRATEGIES 2014-2020

2016 Annual Data report



Overview

The *NSW Hepatitis C Strategy 2014-2020* and the *NSW Hepatitis B Strategy 2014-2020* were launched in September 2014. These strategies describe how the NSW public health system will work with general practitioners, non-government organisations, community organisations, researchers and affected communities to form a coordinated response to hepatitis C and hepatitis B.

Both *Strategies* have an equity focus. This emphasis will require the health system to prioritise work with population groups in greatest need and in those settings and geographical locations where infections are most prevalent.

To reduce hepatitis C infections in NSW and improve the health outcomes of people living with hepatitis C in NSW, the *NSW Hepatitis C Strategy 2014-2020* outlines two targets to be achieved by 2020:

1. reduce sharing of injecting equipment among people who inject drugs by 25%; and
2. increase the number of people accessing hepatitis C treatment in NSW by 100%*

* The target to increase hepatitis C treatment is being reviewed in light of new treatments available in 2016.

To achieve these targets the Hepatitis C Strategy identifies these key actions:

- building on established hepatitis C prevention efforts;
- improving management of chronic hepatitis C; and
- improving access to hepatitis C treatment.

To reduce hepatitis B infections in NSW and improve the health outcomes of people living with hepatitis B in NSW, the *NSW Hepatitis B Strategy 2014-2020* outlines five targets to be achieved by 2020:

1. achieve hepatitis B childhood vaccination coverage of 95%;
2. ensure all pregnant women are screened for hepatitis B;
3. ensure all babies born to hepatitis B positive mothers receive hepatitis B immunoglobulin within 12 hours of birth;
4. reduce sharing of injecting equipment among people who inject drugs by 25%; and
5. increase the number of people living with hepatitis B receiving antiviral treatment (when clinically indicated) by 300%.

To achieve these targets the Hepatitis B Strategy identifies these key actions:

- building on established hepatitis B prevention efforts;
- Increasing hepatitis B testing and diagnosis
- Improving monitoring, care and treatment for people living with hepatitis B

The Data Report has been developed to monitor progress against the targets outlined in the *NSW Hepatitis C Strategy 2014-2020* and the *NSW Hepatitis B Strategy 2014-2020*. This is the 2016 Annual Data Report, which shows progress between 1 January to 31 December 2016. The Data Reports will be published on a 6-monthly basis.

The Data report provides an overview of the epidemiology of hepatitis C and hepatitis B and describes progress and achievements in meeting targets and priority actions of both strategies. To monitor this progress, a range of data sources have been identified for ongoing analysis and reporting purposes.

Over the lifetime of both strategies, the Ministry will work with key stakeholders to improve and enhance data systems in order to better capture activity relating to hepatitis C and hepatitis B prevention, assessment, management, and treatment. The activities NSW Health is engaged in to meet the Strategy goals and targets is summarised in the [NSW Hepatitis B Snapshot](#) and the [NSW Hepatitis C Snapshot](#).

Current progress against the targets in the *NSW Hepatitis C Strategy 2014-2020* and the *NSW Hepatitis B Strategy 2014-2020* is summarised below.

- In 2016, the hepatitis B childhood vaccination coverage measured at 12 months was 94% at 31 December, which is higher than in 2015. Coverage at 24 months was 96%, which is higher than in 2015.
- In 2015, the proportion of women giving birth in a public or private hospital in NSW screened for hepatitis B was 99%. This result is consistent with 2014.
- In 2015, the proportion of babies born to mothers living with hepatitis B who received hepatitis B immunoglobulin (HBIG) within 12 hours of birth was 99%. This result is consistent with 2014.
- Between 1 October 2015 and 30 September 2016, a total of 8,067 NSW residents were dispensed hepatitis B treatment for chronic hepatitis B at least once in public hospital, private hospital and community pharmacies in NSW. This result is almost 10% higher than in the same period in 2015¹.
- 20% of respondents in the 2016 NSW NSP Enhanced Data Collection survey reported using someone else's used needles and syringes (receptive syringe sharing [RSS]) in the past month, which is higher than the prevalence of RSS observed in 2015 (16%) but lower than in 2013 (22%)².
- Between 1 March to 30 September 2016, 8,873¹ NSW residents initiated hepatitis C treatment since the listing of new-generation medicines on the Pharmaceutical Benefits Scheme (PBS), which is approximately 11% of the 80,700³ people living with chronic hepatitis C in NSW.

The Ministry of Health has developed Key Performance Indicators with Aboriginal Medical Services (AMS) which are being phased in from 2016/17. These indicators will enable the reporting of data to monitor access for Aboriginal people in relation to hepatitis B testing and management; and hepatitis C treatment. Thirty AMSs will commence reporting against these indicators from 2017/18.

¹ Pharmaceutical Benefits Schedule Highly Specialised Drugs Programme data prepared for NSW Health.

² Geddes, L, Iversen J, and Maher L. NSW Needle and Syringe Program Enhanced Data Collection Report 2016, The Kirby Institute, UNSW Australia, Sydney 2016.

³ The Kirby Institute. Monitoring hepatitis C treatment uptake in Australia (issue 6). The Kirby Institute, UNSW Australia, Sydney, February 2017 (available at <http://kirby.unsw.edu.au/research-programs/vhcrp-newsletters>)

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Glossary of Terms

AMS	Aboriginal Medical Service
ADM	Automatic dispensing machine
IDC	Internal dispensing chute
HBV	Hepatitis B
HCV	Hepatitis C
LHD	Local Health District
NSP	Needle and Syringe Program
NUAA	New South Wales Users and AIDS Association
NSW	New South Wales
OST	Opioid substitution treatment
OTP	Opioid Treatment Program
PFSHC	Publicly funded Sexual Health Clinic
PWID	People who inject drugs

1. GOALS

1.1 Improve health outcomes of people living with hepatitis B

1.1.1 Burden of disease of hepatitis B

In Australia it is estimated that 232,600¹ people are living with chronic hepatitis B, with approximately 84,600² in NSW. Living with hepatitis B is associated with increased morbidity, mortality and health-related costs. Chronic viral hepatitis is the leading cause of liver cancer and the most common reason for liver transplantation. A significant proportion of people living with hepatitis B are not aware of their infection.

It is estimated that over 9% of people living with chronic hepatitis B in Australia are Aboriginal and Torres Strait Islander people (n=21,632). Aboriginal and Torres Strait Islander people represent 3% of the Australian population. People born in the Asia-Pacific account for an estimated 38% of those living with chronic hepatitis B in Australia (n=88,621). People from Sub-Saharan Africa account for an estimated 4% of people living with chronic hepatitis B in Australia.¹

In NSW, the hepatitis B notification rate among Aboriginal people was 24 per 100,000 in 2015, which is 1.3 times higher than the rate among non-Aboriginal people (18 per 100,000) (Figure 5).

In NSW, hepatitis B infection is not evenly distributed, with higher notification rates in some areas including Western Sydney, South Western Sydney, South Eastern Sydney, Sydney and Northern Sydney (Figure 9).

Evidence shows that vaccination programs for hepatitis B are starting to have a benefit with declining rates of new infection in NSW, particularly in younger age groups.

The Ministry of Health is currently developing updated incidence and prevalence modelling of infection and disease burden for hepatitis B under the BRISE³ Research Program.

¹ The Kirby Institute. HIV, viral hepatitis and sexually transmissible infections in Australia Annual Surveillance Report 2016. The Kirby Institute, UNSW Australia, Sydney NSW 2052

² 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)

³ BBV & STI Research, Intervention and Strategic Evaluation (BRISE), 2014-2019 – University of NSW

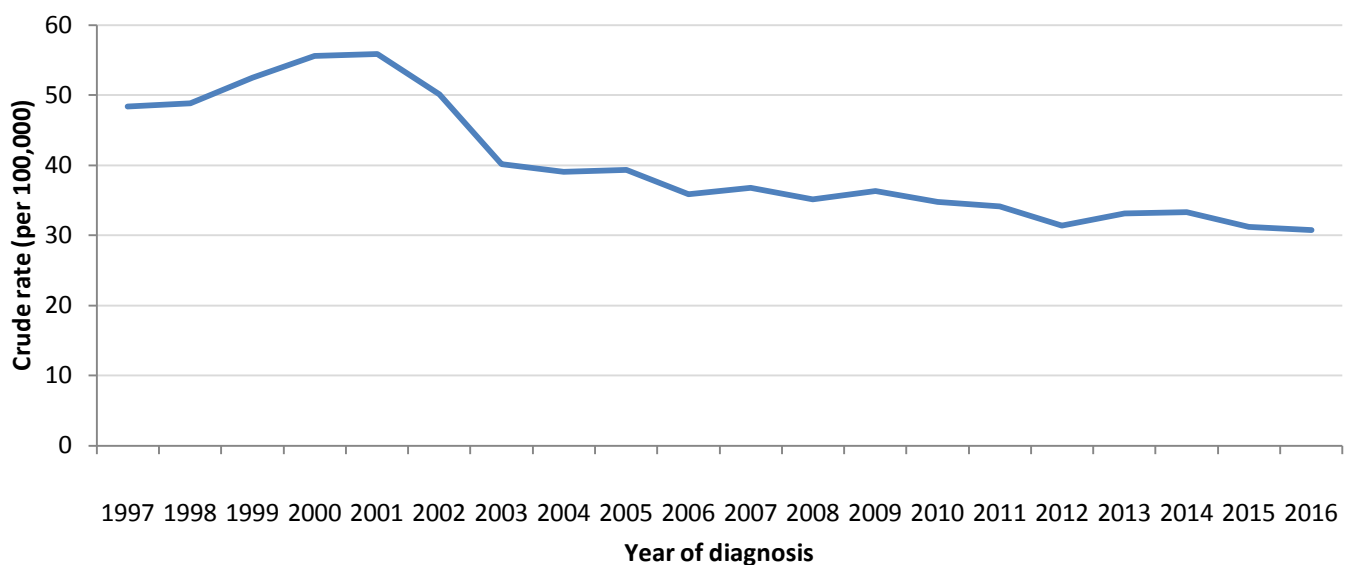
1.2 Reduce hepatitis B infections in NSW

Hepatitis B is a notifiable condition under the Public Health Act 2010, and is notified to NSW Health by laboratories⁴. Hospitals and doctors are also required to notify acute viral hepatitis. Notifications data provide 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 infection acquired recently, or years before. Furthermore, variations in notifications may reflect differences in testing patterns rather than differences in incidence of infection.

Hepatitis B is recorded as 'unspecified' when the time of infection is unknown (most notifications) or is known to be longer than two years prior to diagnosis. Hepatitis B is notified as 'newly acquired' when there is evidence that the infection was acquired within two years of diagnosis, either from serology or previous negative testing⁵. Apart from the small number of people who have evidence of a recent negative test or who are symptomatic, it is difficult to identify acute infections.

1.2.1 How many people are notified with hepatitis B in NSW?

Figure 1: Hepatitis B notification rate, NSW, 1997-2016



Data source: NCIMS, NSW Health; data extracted 31 Jan 2017

Note: Includes all hepatitis B notifications ie those classified as 'newly acquired' and 'unspecified'.

Comment

The notification rate of hepatitis B in NSW has remained stable between 2015 and 2016, at 31 notifications per 100,000 population.

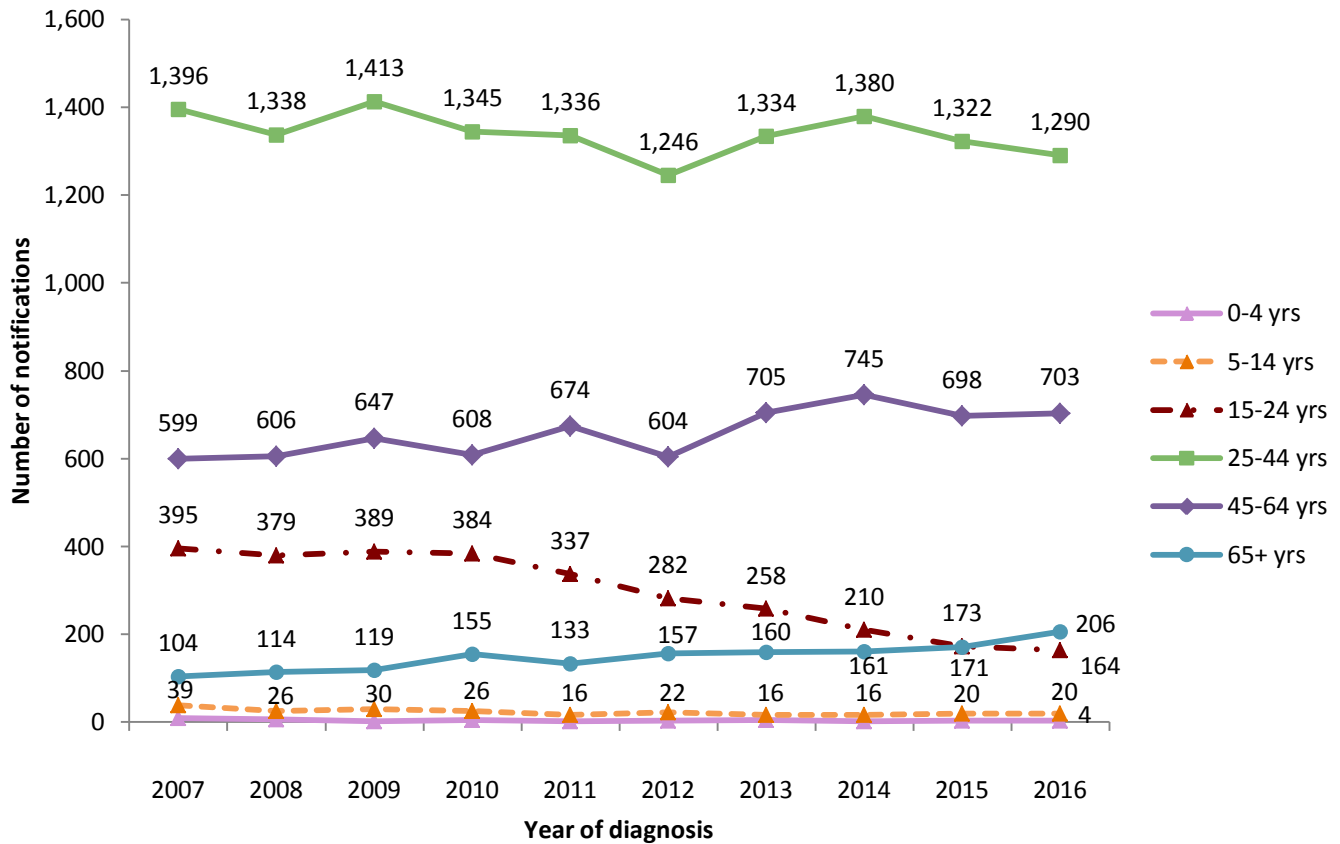
Of the 2,388 hepatitis B notifications in 2016, 2,378 (100%) were classified as 'unspecified' and 10 (<1%) were classified as 'newly acquired'.

⁴ NSW Health. Disease notification [webpage]. <http://www.health.nsw.gov.au/Infectious/Pages/notification.aspx>

⁵ NSW Health. Control guideline for Public Health Units: Hepatitis B <http://www.health.nsw.gov.au/Infectious/controlguideline/Pages/hepb.aspx>

1.2.2 Which groups are being notified?

Figure 2: Hepatitis B notifications in NSW by age group and year of diagnosis, 2016



Data source: NCIMS, NSW Health; data extracted 31 Jan 2017

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

Comment

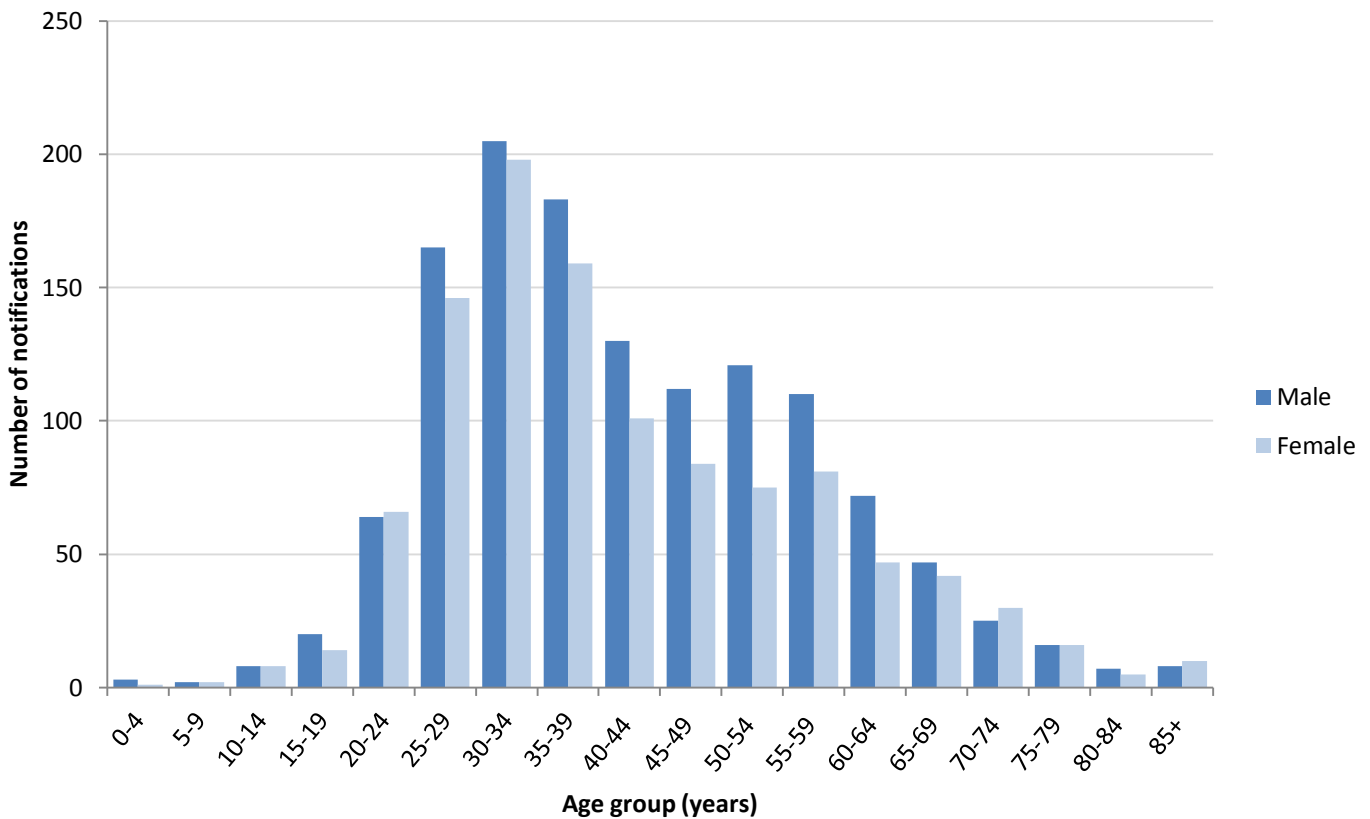
The pattern of hepatitis B notifications by age group remains consistent with recent years.

Of those people newly diagnosed with hepatitis B in 2016, 4 (<1%) were 0-4 years, 20 (1%) were 5-14 years, 164 (7%) were 15-24 years, 1,290 (54%) were 25-44 years, 703 (29%) were 45-64 years and 206 (9%) were 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.

Notifications in older adults (45-64 years, and 65+ years) have continued to increase gradually, possibly reflecting increased testing of people who acquired infection early in life.

Figure 3: Notifications of hepatitis B in NSW, by age group and gender, 2016



Data source: NCIMS, NSW Health; data extracted 31 Jan 2017.

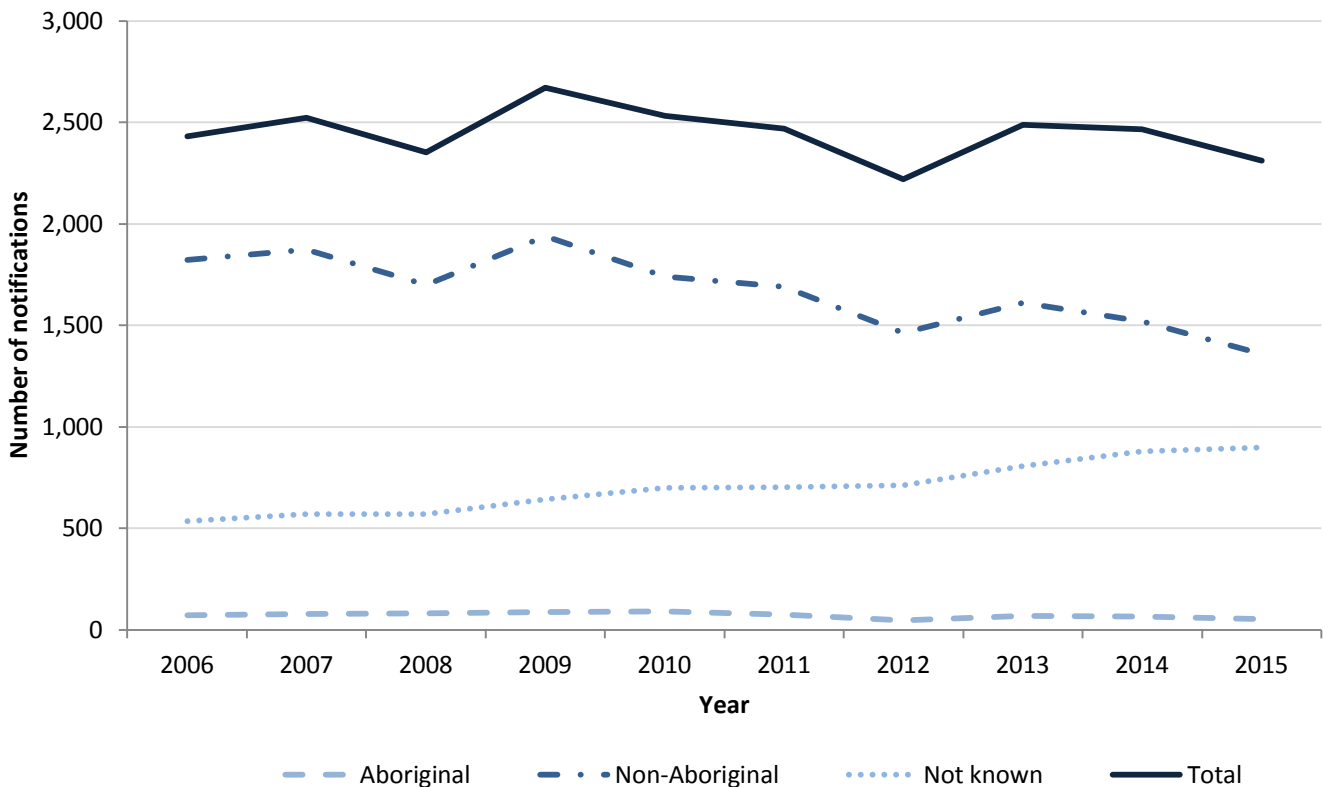
Note: Excludes transgender persons and persons whose age or sex is unknown or not stated.

Comment

In 2016, 54% of hepatitis B notifications were in males, 45% were in females and <1% were in transgender persons; the proportion of notifications in males was slightly higher than in 2015 (52%) and correspondingly lower in females (48%).

The age distribution of hepatitis notifications in 2016 is broadly similar to 2015, with the most commonly notified age group being 30-34 years. However, in 2016, there were more notifications in males than females in almost every age group, including 25-29 years and 30-34 years. In 2014 and 2015, females had a higher number of hepatitis B notifications than males in both of these age groups, which may have been due to routine antenatal screening resulting in higher detection rates amongst pregnant women, but this was not seen in 2016.

Figure 4: Hepatitis B notifications in NSW, by Aboriginality, 2006-2015.



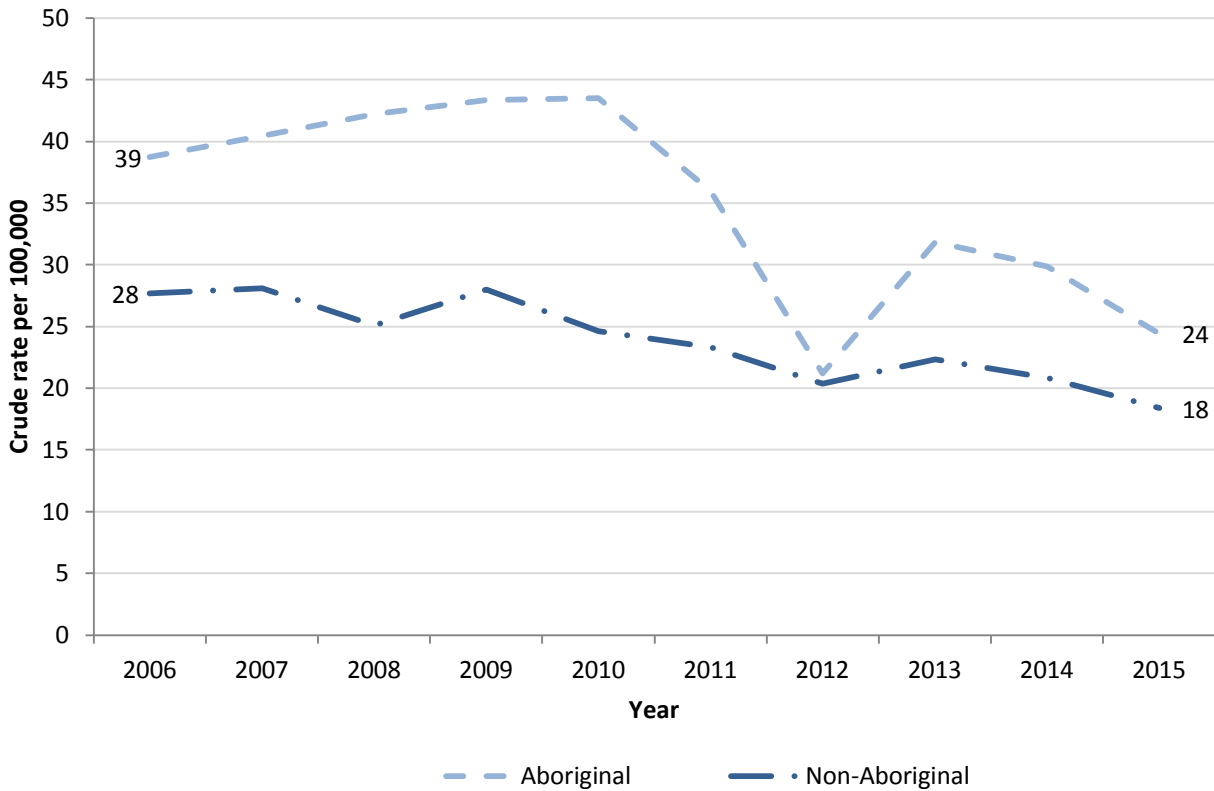
Data source: Communicable Diseases Register, NSW Health; data extracted 16 Feb 2017.

Comment

From 2006 to 2015, 24,468 notifications for hepatitis B were recorded in the Communicable Diseases Register (CDR). Of these, 725 (3.0%) were in Aboriginal people and 16,724 (68%) were in non-Aboriginal people; for 7019 (29%) Aboriginality was not known after data linkage.

The Communicable Diseases Register (CDR) has been established under the Public Health and Disease Registers provisions of the NSW *Public Health Act 2010*. It contains de-identified records from the NSW Notifiable Conditions Information Management System (NCIMS), linked to emergency department, hospitalisation and deaths data. Data are currently available to the end of 2015.

Figure 5: Hepatitis B notification rate by Aboriginality, NSW, 2006-2015.



Data source: Communicable Diseases Register, NSW Health; data extracted 16 Feb 2017.

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

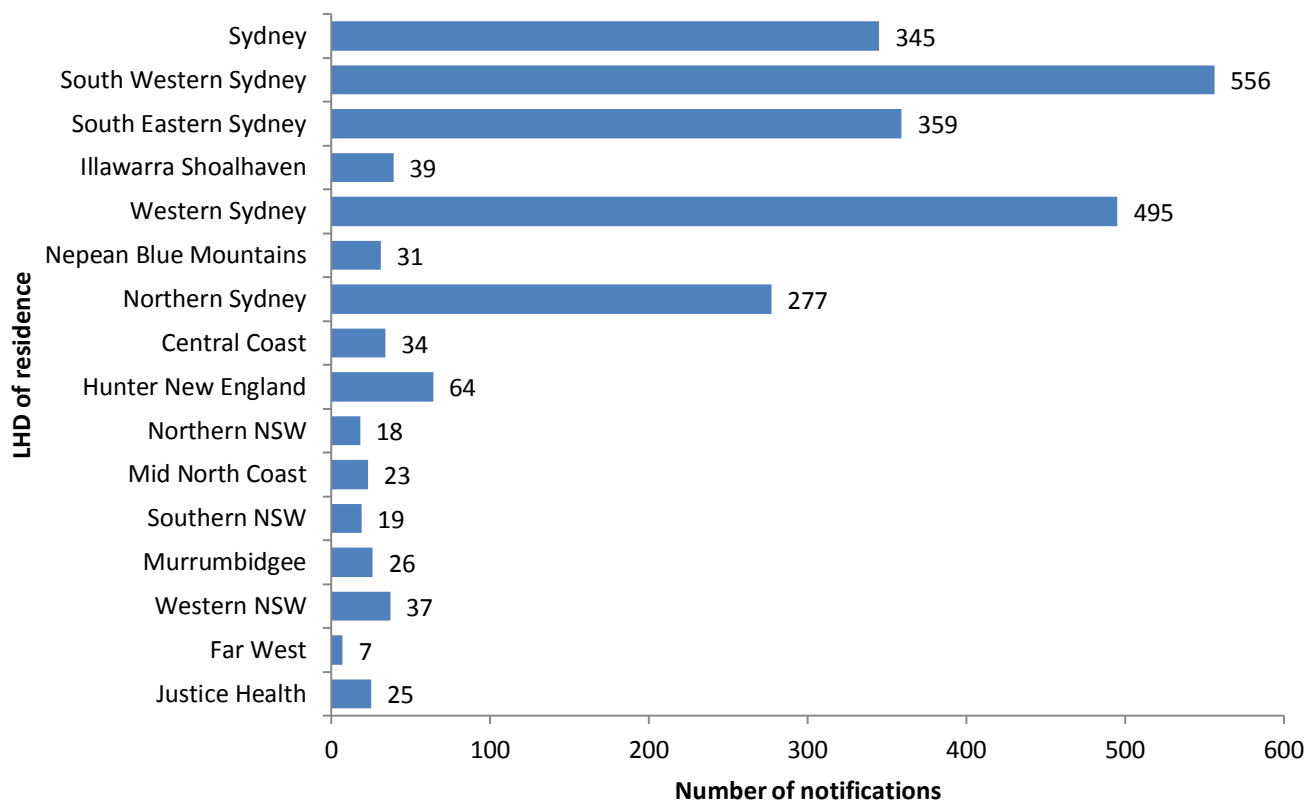
Comment

Between 2006 and 2015, hepatitis B notification rates have shown an overall decline among both Aboriginal and non-Aboriginal populations.

Amongst those whose Aboriginal status was known, the hepatitis B notification rate in Aboriginal people was 24 per 100,000 population in 2015, 1.3 times higher than the rate in non-Aboriginal people (18 per 100,000).

1.2.3 Where are notifications occurring?

Figure 6: Notifications of hepatitis B, by LHD of residence, NSW, 2016



Data source: NCIMS, NSW Health; data extracted 31 Jan 2017

Note: Excludes persons whose place of residence in NSW was not known; Justice Health data includes notifications from juvenile correctional centres

Comment

Five Sydney metropolitan LHDs (South Western Sydney, Western Sydney, South Eastern Sydney, Sydney and Northern Sydney LHDs) account for 85% of hepatitis B notifications during this 2016, similar to previous years.

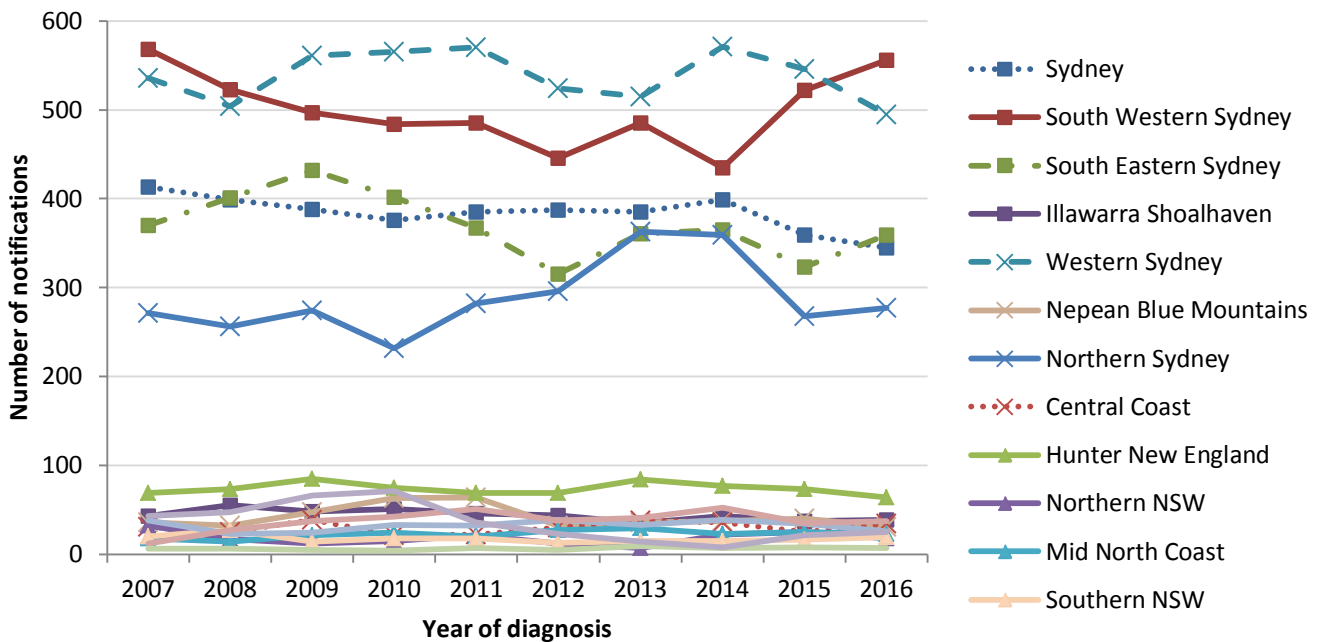
Local trends in hepatitis B notification are shown in Figure 7.

In NSW, an estimated 60% of people living with hepatitis B were born overseas⁶. In general, the proportion of people living with chronic hepatitis B reflects the proportion of the population born in a country with high prevalence of hepatitis B. The number of hepatitis B notifications in an LHD is most likely a reflection of migrant settlement patterns of people who acquired infection at birth overseas and targeted testing in these areas.

To account for the substantial variation in population size between the LHDs, notification rates are shown in Figure 9.

⁶ MacLachlan J, Cowie B. Hepatitis B Mapping Project: Estimates of chronic hepatitis B prevalence and cultural and linguistic diversity by Medicare Local, 2011 – National Report. Australasian Society for HIV Medicine. 2013

Figure 7: Notifications of hepatitis B, by LHD of residence, NSW, 2007-2016



Data source: NCIMS, NSW Health; data extracted 31 Jan 2017

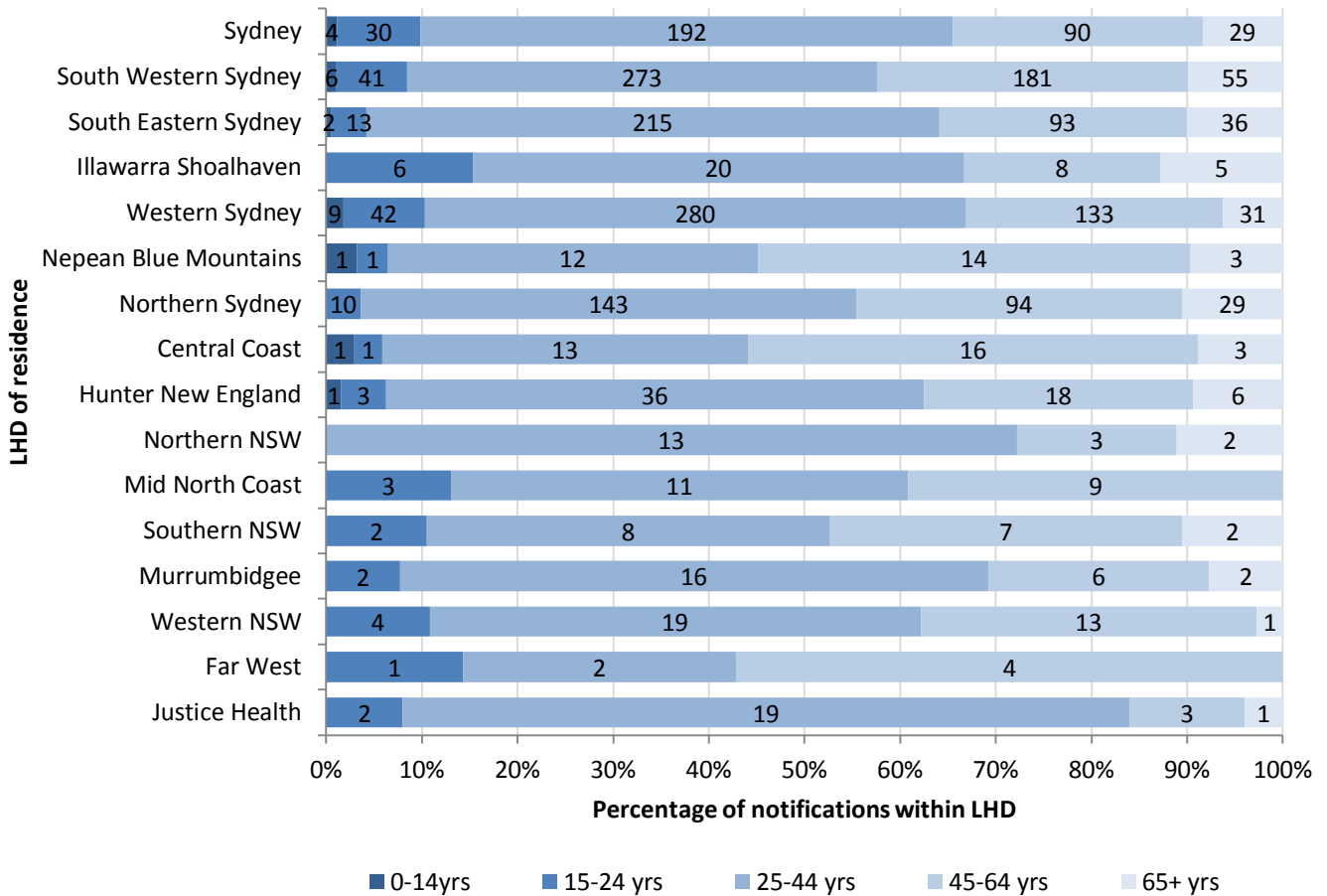
Note: Excludes persons whose place of residence in NSW was not known

Comment

South Eastern Sydney and South Western Sydney LHDs had the largest increases in the number of hepatitis B notifications in 2016 compared to 2015, while Western Sydney LHD had the largest decrease.

Local changes in the number of notifications 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.

Figure 8: Notifications of hepatitis B, by LHD and age group, NSW, 2016



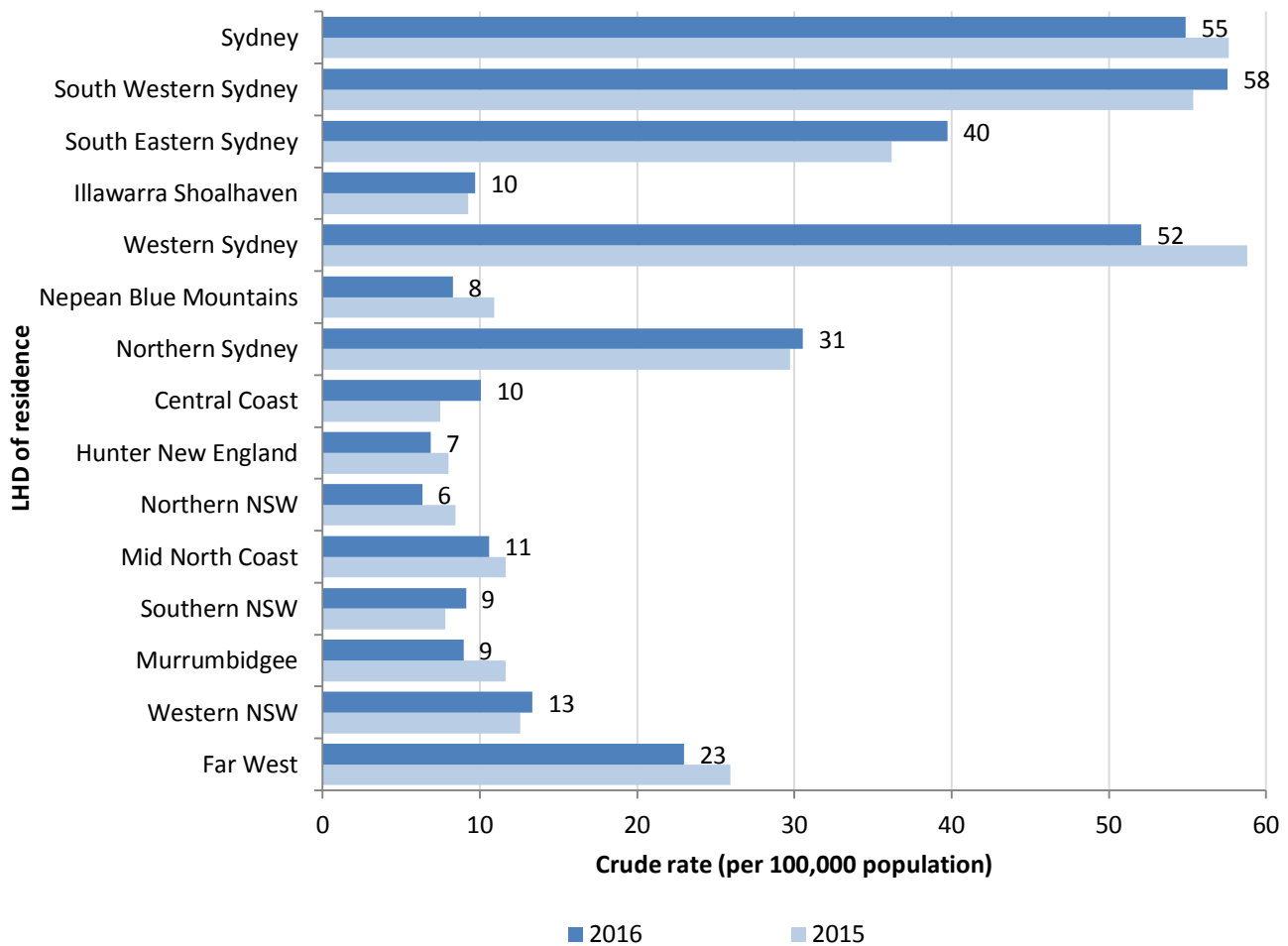
Data source: NCIMS, NSW Health; data extracted 31 Jan 2017

Note: Excludes persons whose age and/or place of residence in NSW was not known or not stated; data labels show number of notifications in age group for LHD; Justice Health data includes notifications from juvenile correctional centres

Comment

The age distribution of hepatitis B notifications by LHD can be difficult to interpret for several reasons. Differences in the number of hepatitis B notifications between LHDs is most likely a reflection of migrant settlement patterns of people who acquired infection at birth overseas and targeted testing in these areas. Due to the small number of notifications in many of the LHDs, particularly regional and remote areas, the data may not represent ongoing local trends.

The state-wide trend of hepatitis B notifications by age group is shown in Figure 2.

Figure 9: Notification rate of hepatitis B in NSW, by LHD of residence, 2016

Data source: NCIMS, NSW Health; data extracted 6 Feb 2017

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

Comment

South Western Sydney, Sydney and Western Sydney Local Health Districts (LHDs) reported the highest rates of hepatitis B notification in NSW in 2016 (58, 55 and 52 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.

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.

1.3 Improve health outcomes of people living with hepatitis C

1.3.1 Burden of disease of hepatitis C

In Australia, it is estimated that 227,300⁷ people are living with chronic hepatitis C, with approximately 80,700⁸ people from NSW.

In NSW, the hepatitis C notification rate among Aboriginal people was 275 per 100,000 in 2015, which is 8.5 times higher than the rate among non-Aboriginal people (32 per 100,000) (Figure 16).

New direct acting anti-viral hepatitis C treatments were listed on the Pharmaceutical Benefits Scheme (PBS) on 1st March 2016. The medications are safer and highly effective.

Appropriate treatment of hepatitis C can prevent the development of the major life-threatening complications of chronic liver disease including cirrhosis and liver cancer. Since 2006, the estimated number of Australians with severe fibrosis related to hepatitis C has increased by 73% (n=16,732), the estimated number of Australians with hepatitis C related cirrhosis has increased by 96% (n=8,737) and the estimated number of deaths attributable to hepatitis C has increased by 111% since 2006⁹.

In 2015 and 2016, six in 10 people with chronic hepatitis C-related cirrhosis have received new DAA treatments in NSW⁸.

With a cure rate of greater than 90% for the new hepatitis C treatments, we are looking to a future where the elimination of hepatitis C as a public health concern can be a reality.

The Ministry of Health is currently developing updated incidence and prevalence modelling of infection and disease burden for hepatitis C under the BRISE¹⁰ Research Program.

⁷ The Kirby Institute. HIV, viral hepatitis and sexually transmissible infections in Australia Annual Surveillance Report 2016. The Kirby Institute, UNSW Australia, Sydney NSW 2052

⁸ The Kirby Institute. Monitoring hepatitis C treatment uptake in Australia (issue 6). The Kirby Institute, UNSW Australia, Sydney, September 2016 (available at <http://kirby.unsw.edu.au/research-programs/vhcrp-newsletters>)

⁹ The Kirby Institute. Hepatitis B and C in Australia Annual Surveillance Report Supplement 2016. The Kirby Institute, UNSW Australia, Sydney NSW 2052.

¹⁰ BBV & STI Research, Intervention and Strategic Evaluation (BRISE) 2014-2019 – University of NSW

1.4 Reduce hepatitis C infections in NSW

How often hepatitis C infection occurs (the incidence) is best obtained through observational studies. Evidence from two such studies^{11,12} suggests that the incidence of hepatitis C infection among people who inject drugs in Sydney has declined over the past decade. These findings are consistent with other data sources indicating that the epidemiology of hepatitis C infection among people who inject drugs is changing.

Hepatitis C is a notifiable condition under the *Public Health Act 2010*, and is notified to NSW Health by laboratories¹³. Hospitals and doctors are also required to notify acute viral hepatitis. Notifications data provide limited information that can be used for assessing the epidemiological patterns of hepatitis C 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.

Hepatitis C notifications are classified as 'unspecified' when the time of infection is unknown (most notifications) or is known to be longer than two years prior to diagnosis. Hepatitis C is classified as 'newly acquired' when there is evidence that the infection was acquired within two years of diagnosis, either from an acute hepatitis illness or previous negative testing¹⁴. Apart from the small number of people who have evidence of a recent negative test or who are symptomatic, it is difficult to identify acute infections.

¹¹ White B, Dore G, Lloyd A, Rawlinson W, Maher L. Opioid substitution therapy protects against hepatitis C virus acquisition in people who inject drugs: the HITS-c study. *MJA* 2014;201(6):326-329

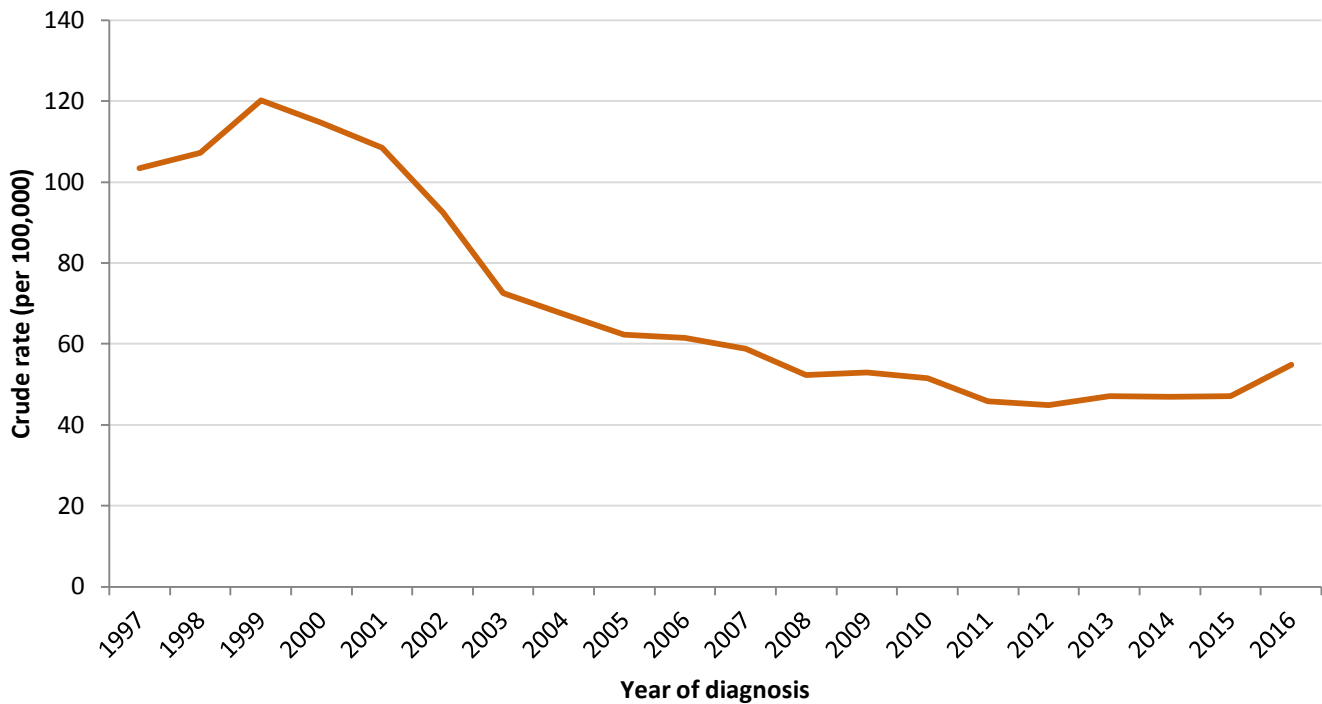
¹² Maher L, Jalaludin B, Chant K, Jayasuriya R, Sladden T, Kaldor J, Sargent P. Incidence and risk factors for hepatitis C seroconversion in injecting drug users in Australia. *Addiction* 2006;101(10):1499-1508

¹³ NSW Health. Disease notification [webpage] <http://www.health.nsw.gov.au/Infectious/Pages/notification.aspx>

¹⁴ NSW Health. Control guideline for Public Health Units: Hepatitis C. http://www.health.nsw.gov.au/Infectious/controlguideline/Pages/hep_c_protoco.aspx#2

1.4.1 How many diagnoses of hepatitis C are notified?

Figure 10: Hepatitis C notification rate, NSW, 1995-2016



Data source: NCIMS and ABS population estimates (SAPHaRI), NSW Health; data extracted 13Mar 2017

Note: Includes all hepatitis B notifications ie those classified as 'newly acquired' and 'unspecified'.

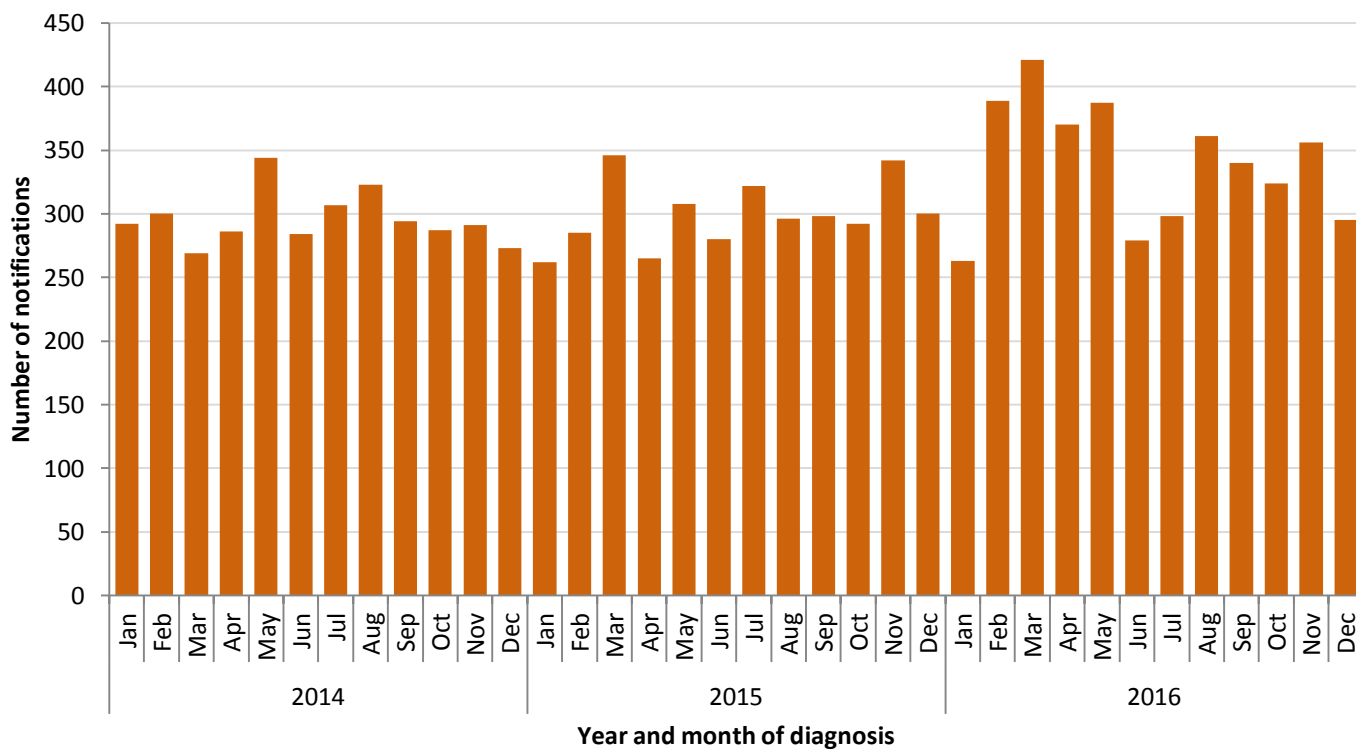
Comment

The hepatitis C notification rate in NSW has increased between 2015 and 2016.

In 2016, the hepatitis C notification rate was 55 notifications per 100,000 population, higher than in 2015 (47 per 100,000) and the highest annual rate since 2007.

Of the 4,238 hepatitis C notifications in 2016, 4,216 (99%) were classified as 'unspecified' and 22 (1%) were classified as 'newly acquired'.

Figure 11: Notifications of hepatitis C by month, NSW, January 2014 to December 2016



Data source: NCIMS, NSW Health; data extracted 7 Feb 2017

Comment

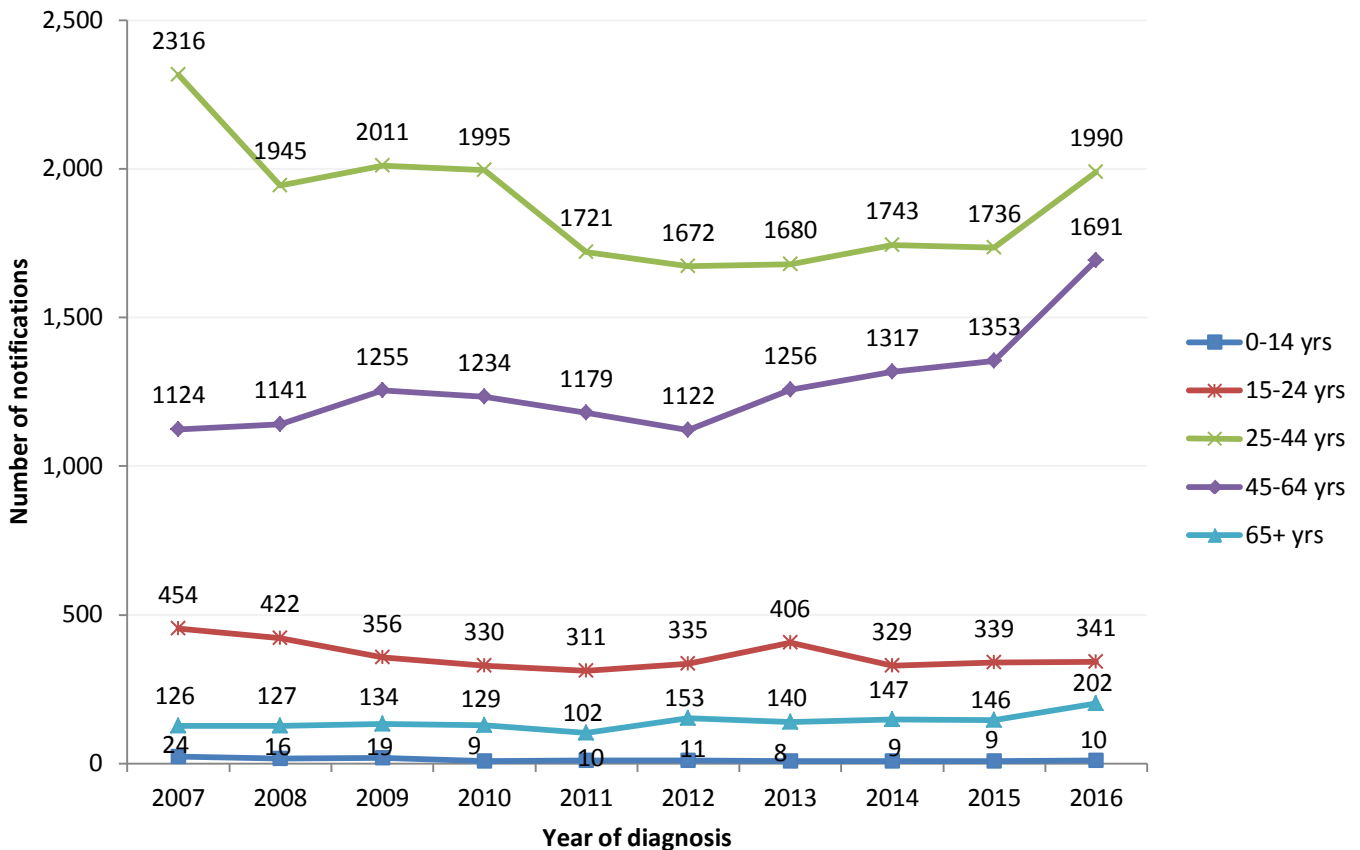
There was an upswing in the number of hepatitis C notifications from February to May 2016, peaking in March, and to a lesser degree, from August to November. New treatments for hepatitis C, called direct acting antivirals (DAAs), became available in Australia from 1 March 2016.

It is likely that the increase in notifications is due to people considering or seeking treatment, including:

- 1) those at risk of hepatitis C infection who have come forward for testing for the first time, and
- 2) the retesting of people already diagnosed with hepatitis C who did not have a notification in NSW ie. those who were either previously notified interstate or overseas (but not in NSW), or previously notified in NSW anonymously or de-identified.

1.4.2 Which groups are being notified?

Figure 12: Notifications of hepatitis C in NSW, by age group, 2007-2016



Data source: NCIMS, NSW Health; data extracted 13 Mar 2017

Note: Excludes persons whose age is unknown or not stated

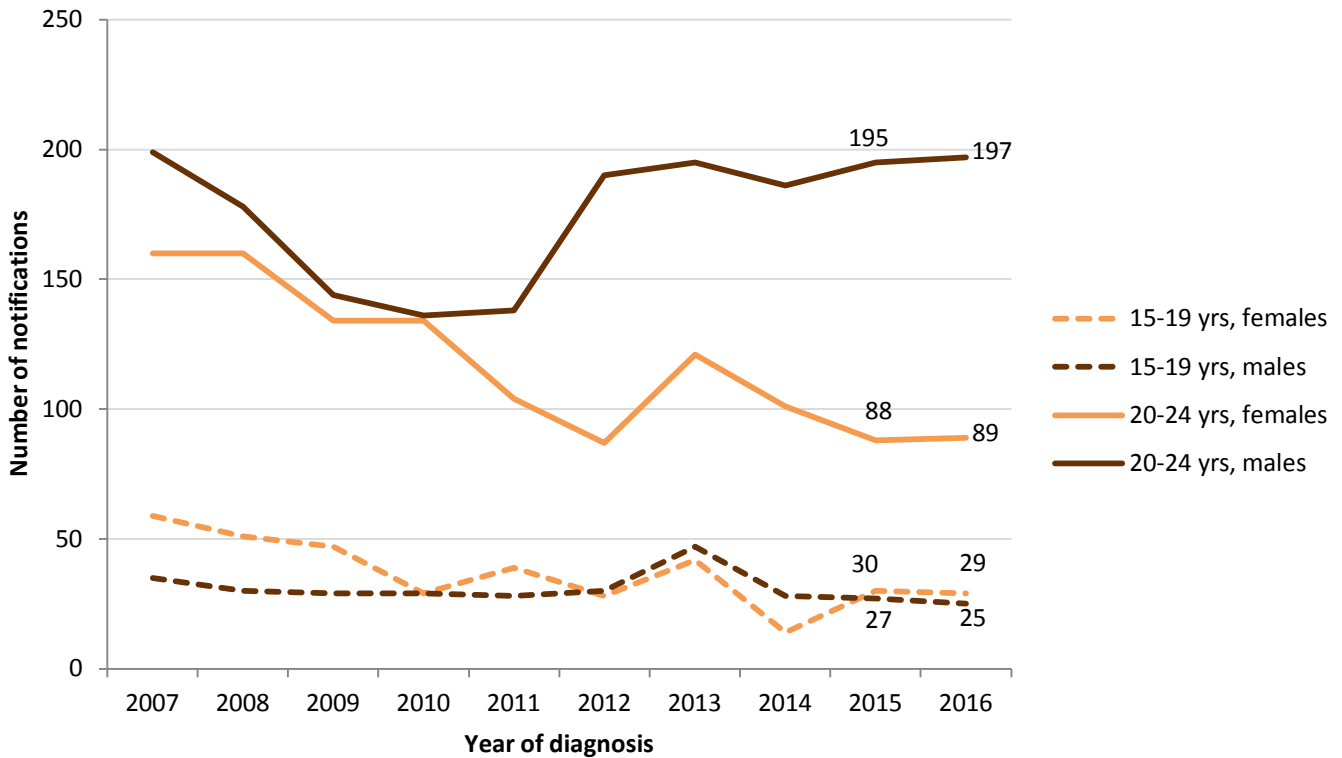
Comment

Hepatitis C notifications amongst people aged 45-64 years have risen markedly in NSW in 2016 compared to 2015. Increases were also seen amongst those aged 25-44 years and 65 years and over, while notifications amongst people under 24 years of age have remained stable.

Table 1: Proportion of hepatitis C notifications in NSW by age group, 2015 and 2016

	0-14 years	15-24 years	25-44 years	45-64 years	65+ years
2016	<1%	8%	47%	40%	5%
2015	<1%	9%	48%	38%	4%

Figure 13: Notifications of hepatitis C in people aged between 15 and 24 years, by age group and gender, NSW, 2005-2016



Data source: NCIMS, NSW Health; data extracted 13 Mar 2017

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

Comment

In 2016, hepatitis C notifications remained stable amongst males and females aged between 15 and 24 years, compared to the previous year.

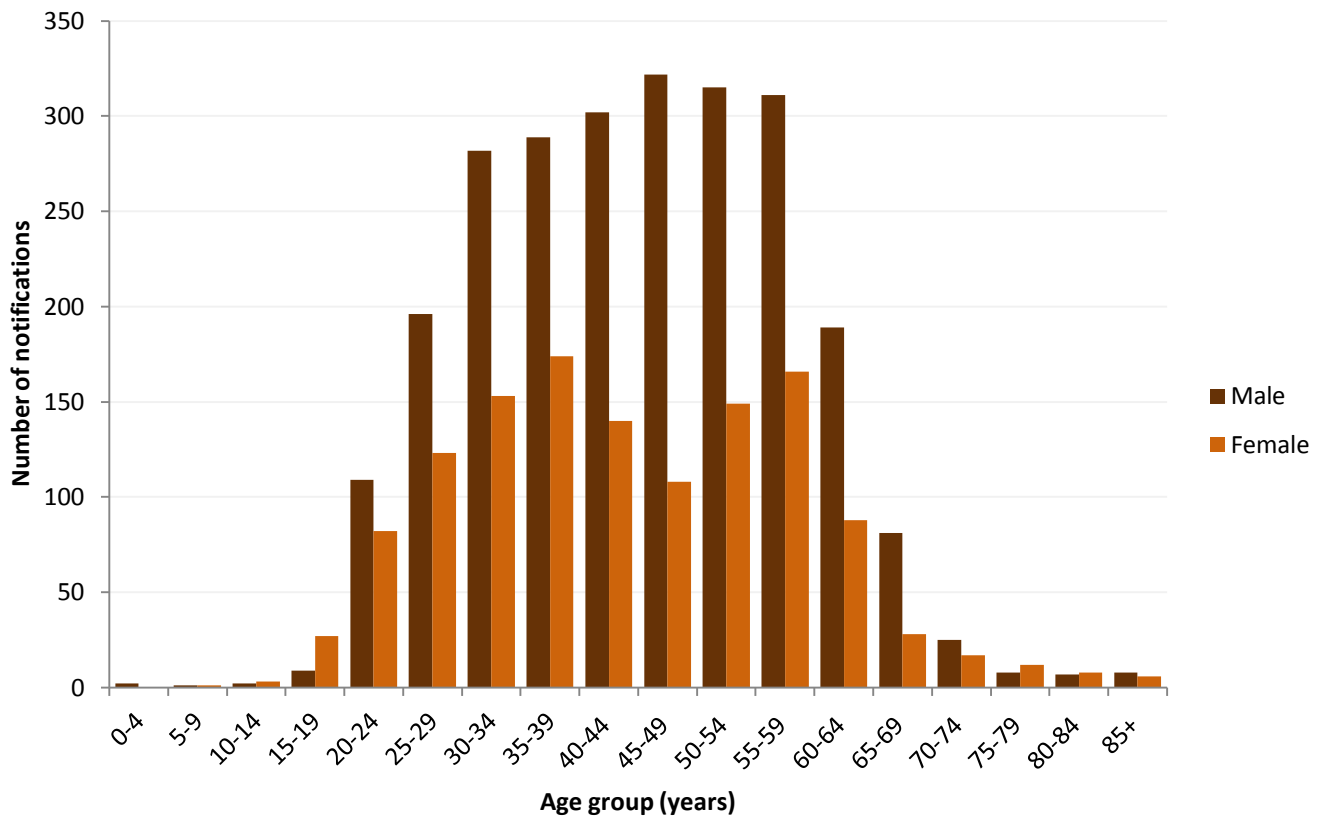
Younger age has been associated with hepatitis C incident infection in several studies conducted in NSW.^{15,16} An observational study conducted in NSW between 1999 and 2002 found that in people who inject drugs, the mean time from age of first injection to HCV seroconversion was 4.4 years¹⁷.

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.

¹⁵ Van Beek I, Dwyer R, Dore G, Luo K, Kaldor J. Infection with HIV and hepatitis C virus among injecting drug users in a prevention setting: retrospective cohort study. *BMJ* 1998; 317:433

¹⁶ White B, Dore G, Lloyd A, Rawlinson W, Maher L. Opioid substitution therapy protects against hepatitis C virus acquisition in people who inject drugs: the HITS-c study. *MJA* 2014;201(6):326-329

¹⁷ Maher L, Jalaludin B, Chant K, Jayasuriya R, Sladden T, Kaldor J, Sargent P. Incidence and risk factors for hepatitis C seroconversion in injecting drug users in Australia. *Addiction* 2006;101(10):1499-1508

Figure 14: Notifications of hepatitis C in NSW (excluding Justice Health), by age group and gender, 2016

Data source: NCIMS, NSW Health; data extracted 9 Feb 2017

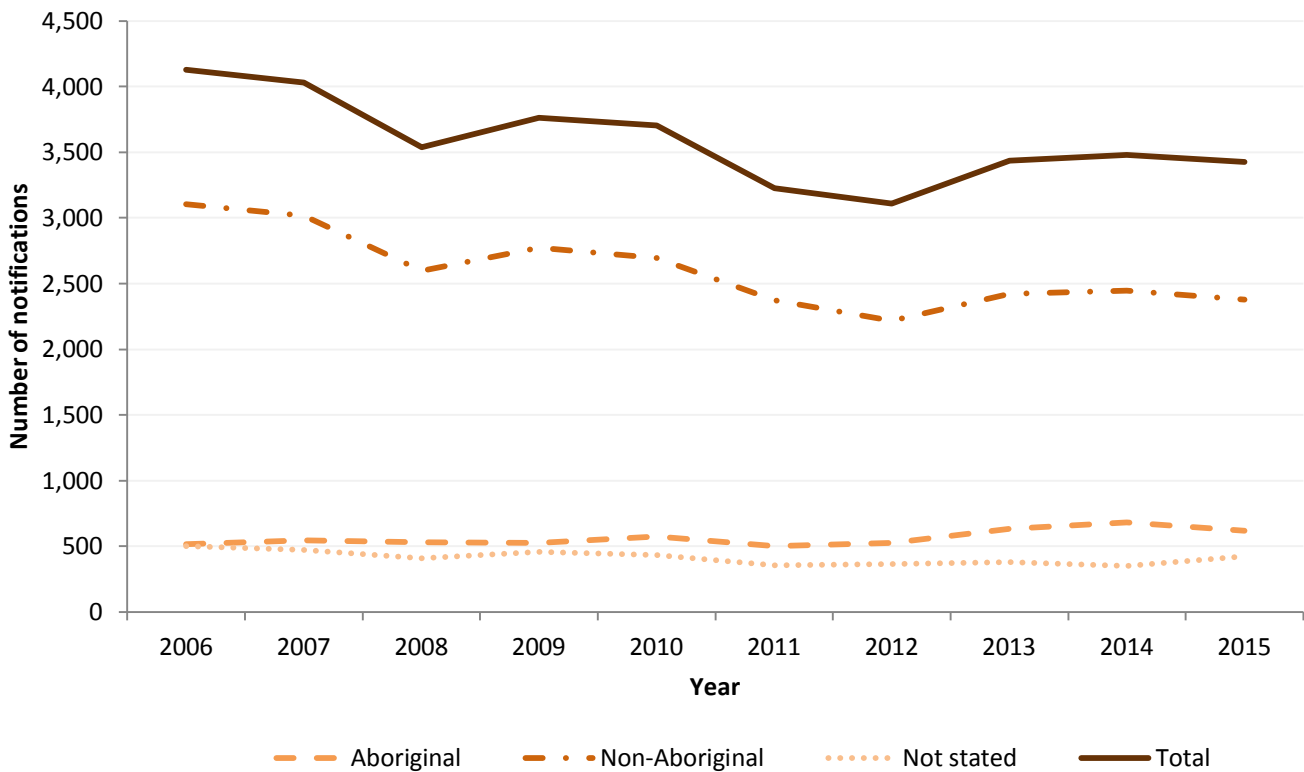
Note: Excludes transgender persons and persons whose age or sex is unknown or not stated

Comment

Of the 3,752 hepatitis C notifications in NSW (excluding Justice Health) in 2016, 2,460 (66%) were in males, 1,287 (34%) were in females, and 5 (0<1%) were in transgender persons or persons of unknown gender. Males had a higher number of hepatitis C notifications than females in almost all age groups. These patterns may reflect risk behaviours in males and females. Approximately two thirds of NSW respondents in the Australian NSP Survey (ANSPS) were male in all survey years over the period 1995 to 2014.¹⁸

The distribution of hepatitis C notifications by age group and gender changed in 2016 compared to the previous two years. For males, the most commonly diagnosed age group in 2016 was 45-49 years, and for females, 35-39 years; in 2014 and 2015, the most commonly diagnosed age group for both males and females was 30-34 years. As DAAs are more commonly prescribed in older people, this shift may reflect increased testing in the older age groups due to the availability of DAAs.

¹⁸ Iversen J, and Maher L. Australian Needle and Syringe Program Survey National Data Report 1995-2014. The Kirby Institute, UNSW Australia, 2015.

Figure 15: Hepatitis C notifications in NSW, by Aboriginality, 2006-2015.

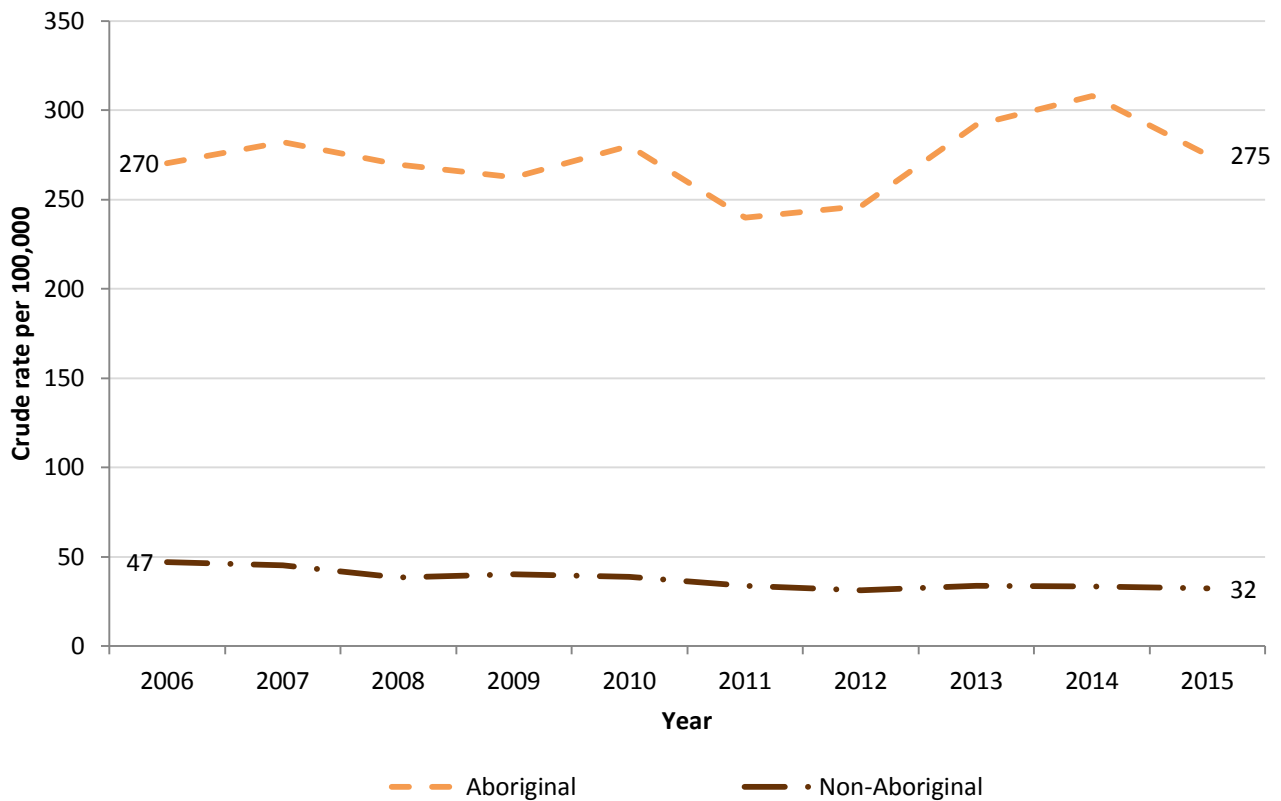
Data source: Communicable Diseases Register, NSW Health; data extracted 16 Feb 2017.

Comment

From 2006 to 2015, 35,838 notifications for hepatitis C were recorded in the Communicable Diseases Register (CDR). Of these, 5,655 (16%) were in Aboriginal people and 26,027 (73%) were in non-Aboriginal people; for 4156 (12%) Aboriginality was not known after data linkage.

The Communicable Diseases Register (CDR) has been established under the Public Health and Disease Registers provisions of the NSW *Public Health Act 2010*. It contains de-identified records from the NSW Notifiable Conditions Information Management System (NCIMS), linked to emergency department, hospitalisation and deaths data. Data are currently available to the end of 2015.

Figure 16: Hepatitis C notification rate by Aboriginality, NSW, 2006-2015.



Data source: Communicable Diseases Register, NSW Health; data extracted 16 Feb 2017.

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

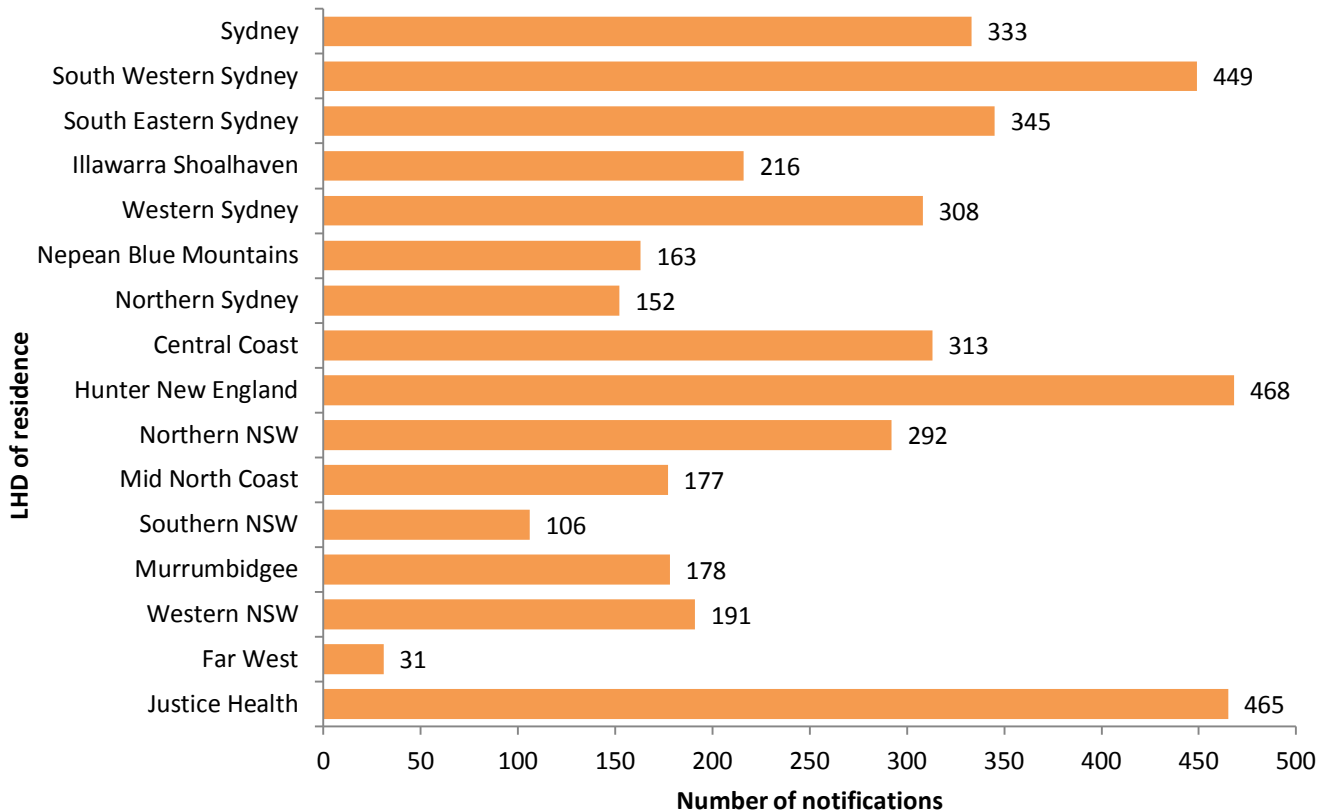
Comment

Amongst those whose Aboriginal status was known, the hepatitis C notification rate in Aboriginal people was 275 per 100,000 population in 2015, which is 8.5 times higher than the rate in non-Aboriginal people (32 per 100,000).

Screening rates may be higher in Aboriginal populations than in non-Aboriginal populations, contributing to higher rates of notification.

1.4.3 Where are notifications occurring?

Figure 17: Notifications of hepatitis C, by LHD of residence, NSW, 2016



Data source: NCIMS, NSW Health; data extracted 13 March 2017

Note: Excludes non-NSW residents and persons whose place of residence in NSW was not known; Justice Health data includes notifications from juvenile correctional centres

Comment

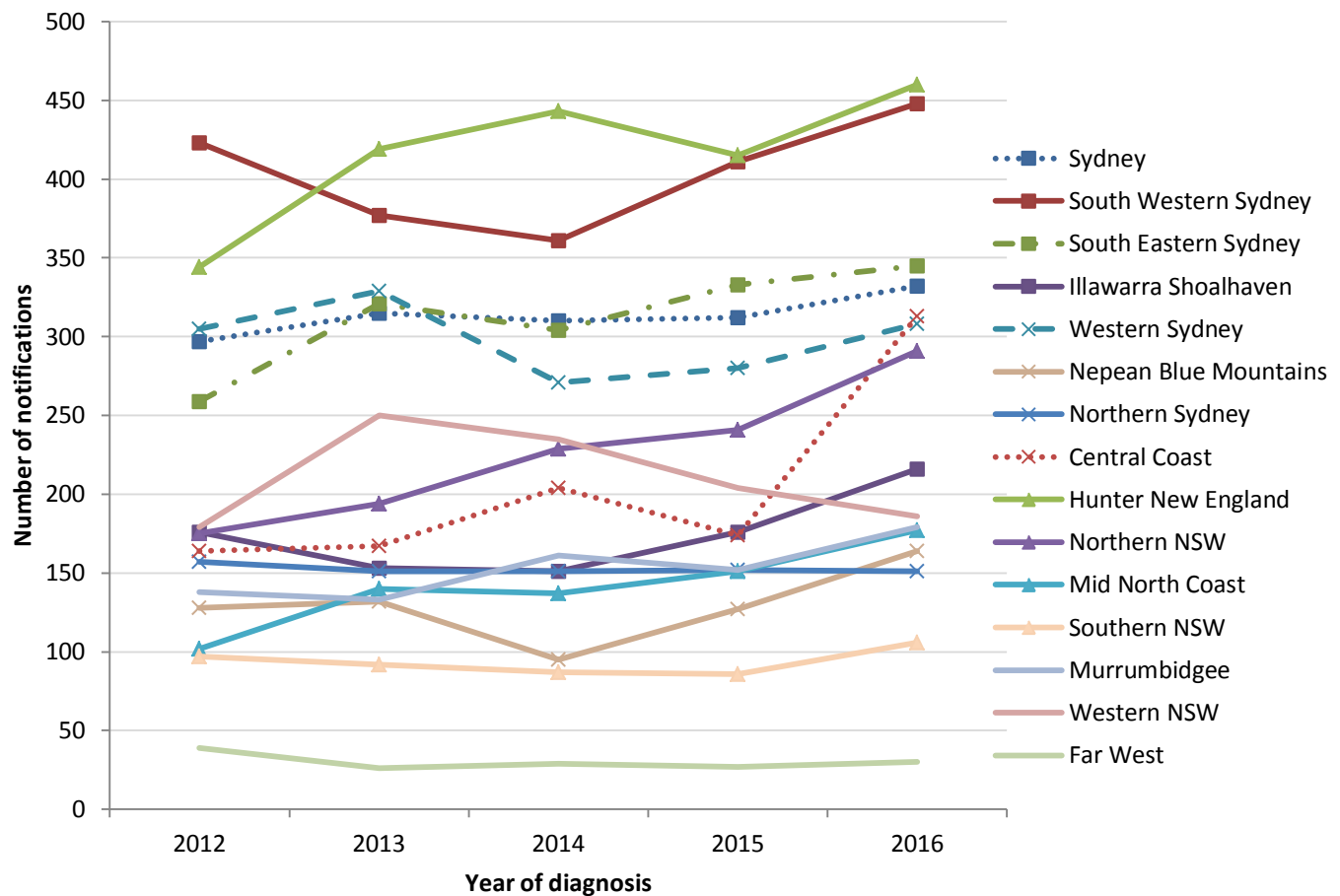
The geographic distribution of hepatitis C notifications in 2016 is similar to that seen in 2015.

In 2016, Hunter New England LHD reported the highest number of hepatitis C notifications (468), followed by Justice Health (465) and South Western Sydney LHD (449); Far West LHD reported the fewest hepatitis C notifications (31).

Local trends in hepatitis C notifications are shown in Figure 18.

To account for the substantial variation in population size between the LHDs, notification rates are shown in Figure 20.

Figure 18: Notifications of hepatitis C, by LHD of residence, NSW, 2012-2016



Data source: NCIMS, NSW Health; data extracted 7 Feb 2017

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

Comment

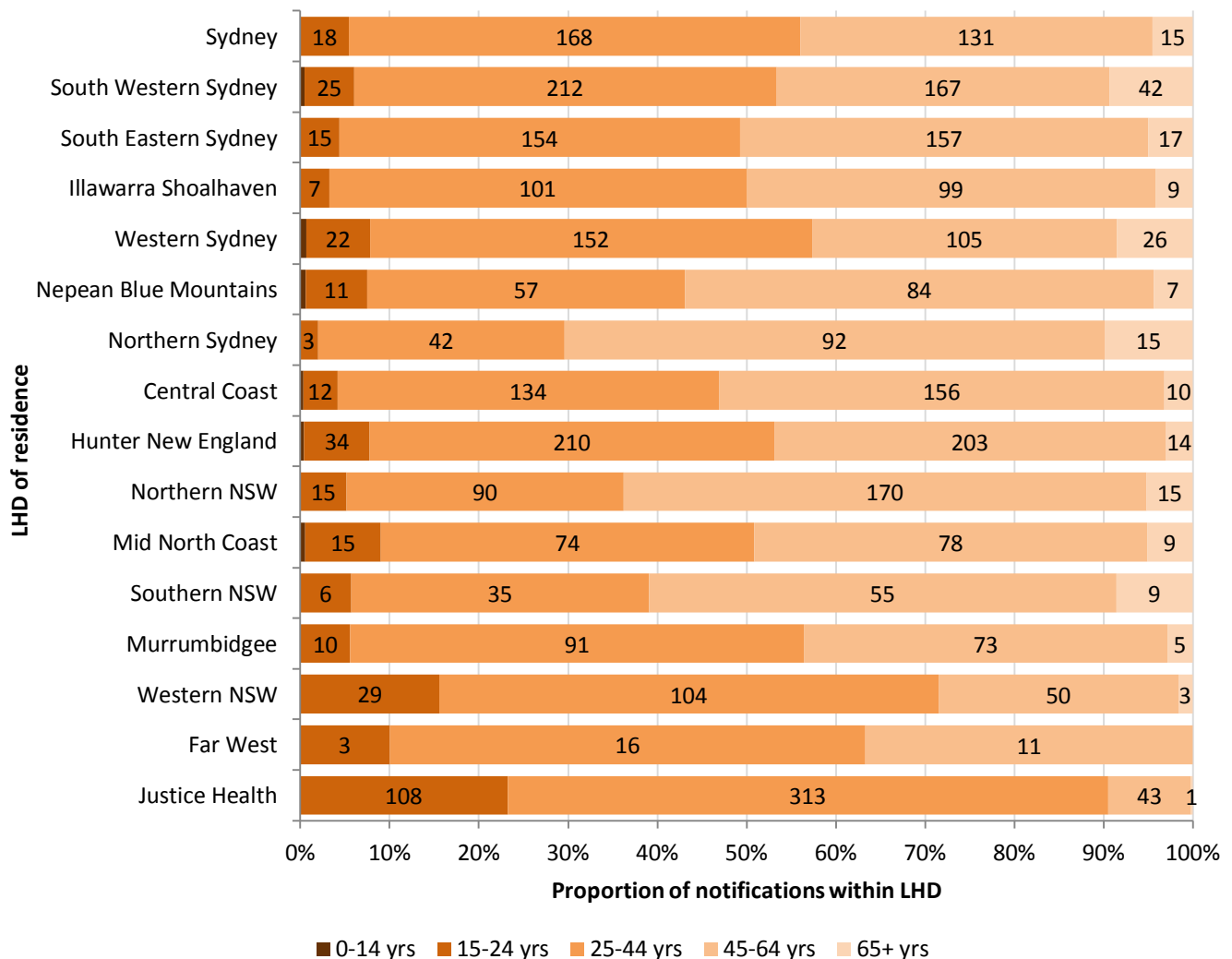
All LHDs reported an increase in the number of hepatitis C notifications in 2016 compared to 2015, except for Western NSW and Northern Sydney LHDs.

The largest proportional increases over this period occurred in Central Coast LHD (80%) and Nepean Blue Mountains LHD (34%). Notifications declined in Western NSW LHD by 9%, but remained stable in Northern Sydney LHD. The LHDs with the largest number of notifications in 2016, Hunter New England LHD and South Western Sydney LHD, had increases of 11% and 9%, respectively.

Local changes in the number of notifications 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.

Trends in Justice Health hepatitis C notifications are shown in Figure 21.

Figure 19: Notifications of hepatitis C, by LHD and age group, NSW, 2016



Data source: NCIMS, NSW Health; data extracted 13 March 2017

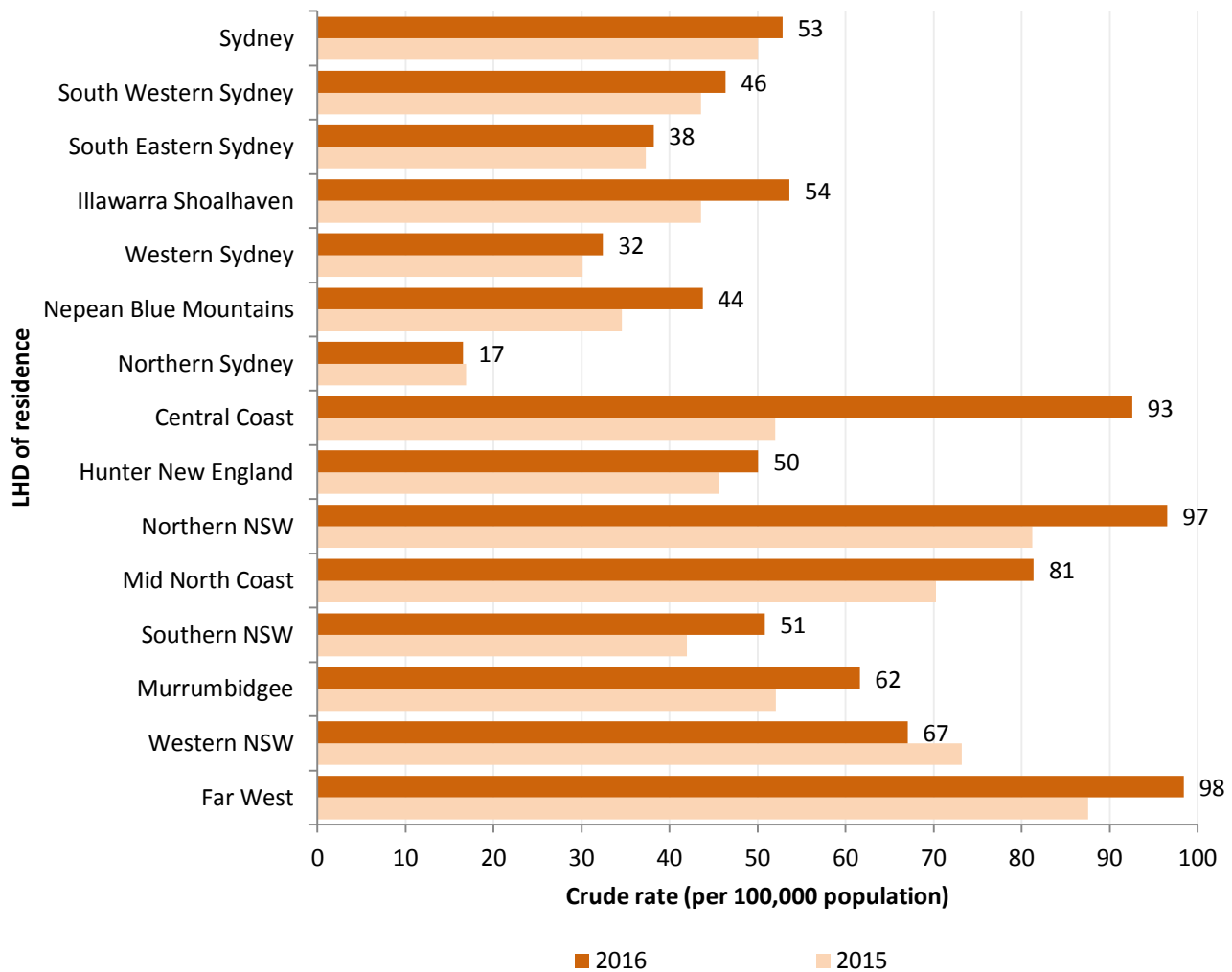
Note: Excludes non-NSW residents and persons whose age and/or place of residence in NSW was not known; data labels show number of notifications in age group for LHD; Justice Health data includes notifications from juvenile correctional centres

Comment

As in previous years, the highest number and highest proportion of hepatitis C notifications in 15-24 year olds were reported by Justice Health in 2016.

In 2016, Justice Health reported 108 hepatitis C notifications in 15-24 year olds, 23% of their notifications. Hunter New England LHD had the second highest number of notifications (34) in 15-24 year olds, while Western NSW LHD had the second highest proportion (16%) of hepatitis C notifications in the same age group.

Notifications of hepatitis C in young people are an indicator of newly acquired infections as these are the ages when injecting drug behaviours often commence, and hepatitis C infection is more likely to be acquired early in an injecting career than later. 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.

Figure 20: Notification rate of hepatitis C in NSW, by LHD of residence, 2015 and 2016

Data source: NCIMS, NSW Health; data extracted 7 Feb 2017

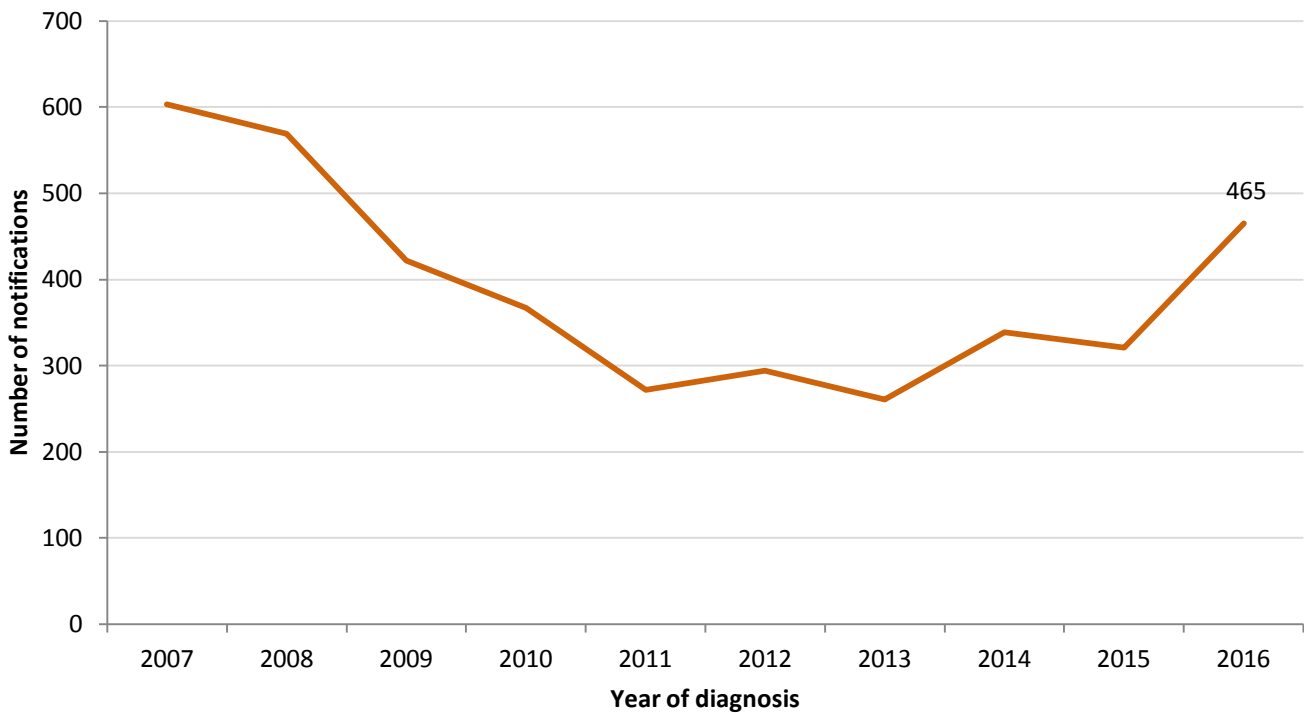
Note: Excludes non-NSW residents and persons whose place of residence in NSW was not known.

Comment

All LHDs reported an increase in the hepatitis C notification rate in 2016 compared to 2015, except for Western NSW and Northern Sydney LHDs.

In 2016, Far West, Northern NSW and Central Coast LHDs recorded the highest rates of hepatitis C notification in NSW (98, 97 and 93 notifications per 100,000 respectively), while Northern Sydney LHD had the lowest rate (17 notifications per 100,000).

A notification rate has not been calculated for Justice Health as the population (the denominator) fluctuates.

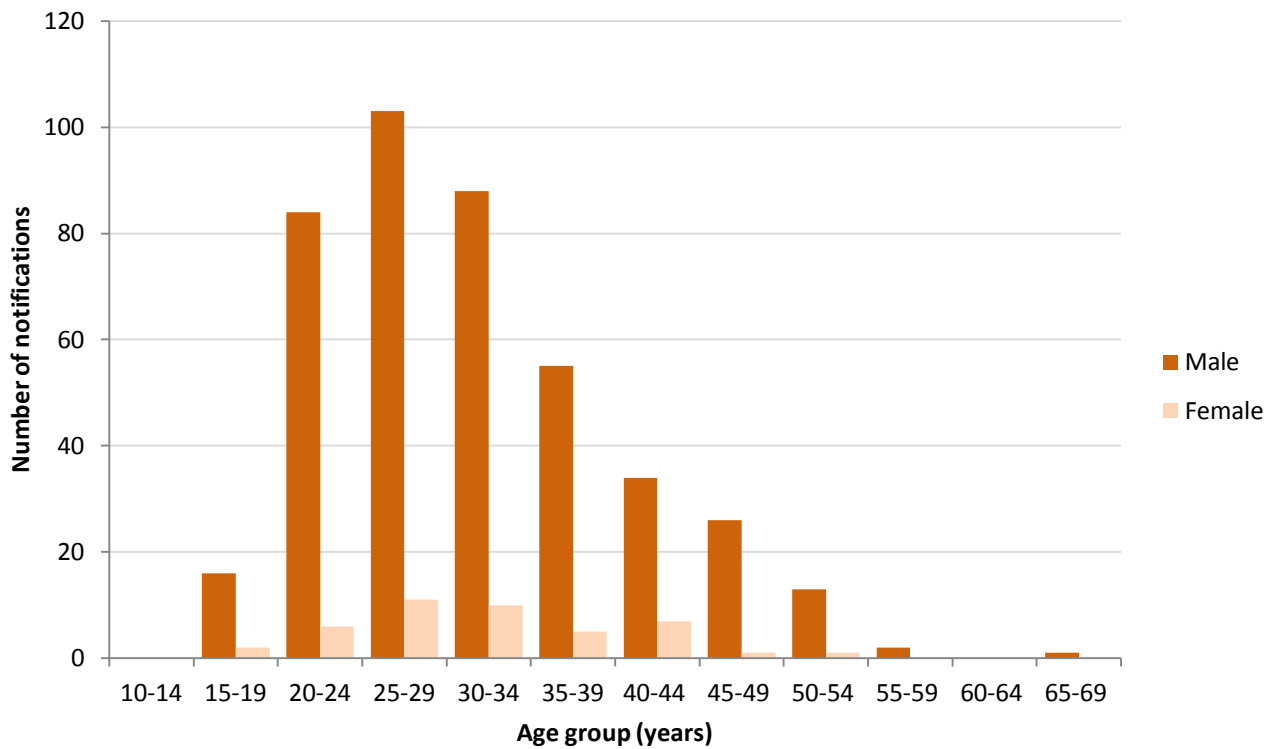
Figure 21: Notifications of hepatitis C in Justice Health, NSW, 2007-2016

Data source: NCIMS, NSW Health; data extracted 13 March 2017; Justice Health data includes notifications from juvenile correctional centres

Comment

There were 465 notifications of hepatitis C in Justice Health (custodial) settings in 2016, accounting for 11% of hepatitis C notifications in NSW, and an increase of 45% compared to the number in Justice Health in 2015 (321).

High numbers of notifications in Justice Health settings are partly due to targeted screening programs. Justice Health provides health assessments to all people commencing full-time custody, including those remanded into custody. Screening for blood-borne and sexually transmissible infections is offered to those who report risk factors. Patients may also be tested through other health services while in custody.

Figure 22: Notifications of hepatitis C, Justice Health, NSW, by age group and gender, 2016

Data source: NCIMS, NSW Health; data extracted 13 March 2017; Justice Health data includes notifications from juvenile correctional centres

Comment

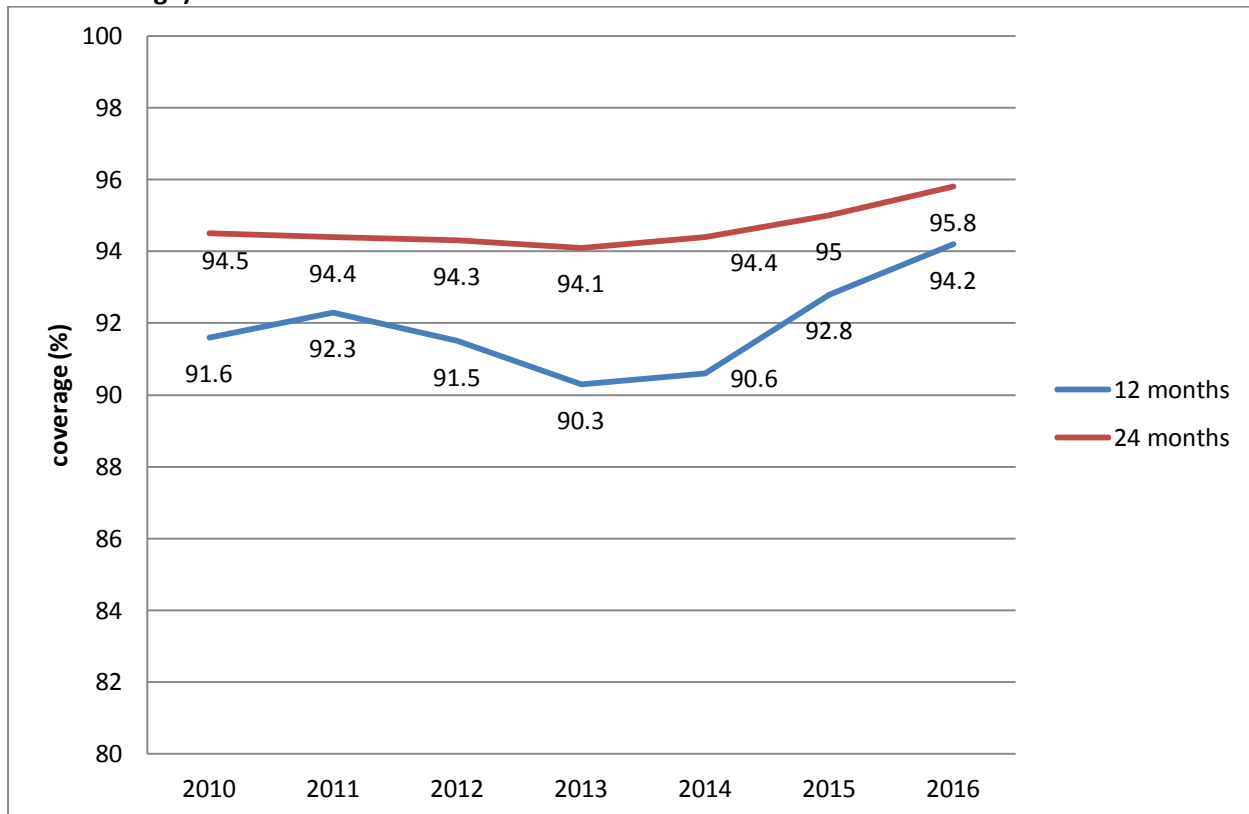
Of the 465 hepatitis C notifications in Justice Health in 2016, 422 (91%) were in males and 43 (9%) were in females. Hepatitis C infection was most commonly diagnosed in those aged 25-29 years amongst both males and females.

2. PREVENT – Build on established prevention efforts

2.1 Increase childhood vaccination coverage for hepatitis B

2.1.1 What proportion of children in NSW are vaccinated for hepatitis B?

Figure 23: Proportion of infants in NSW who have received 3 doses of hepatitis B vaccine (measured at 12 and 24 months of age)



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

Comment

Hepatitis B vaccine is due at birth, 6 weeks, 4 months and 6 months of age. Coverage for the 6-week, 4-month and 6-month doses measured at 12 months in 2016 was 94.2%. Coverage for Aboriginal children was 93.9%.

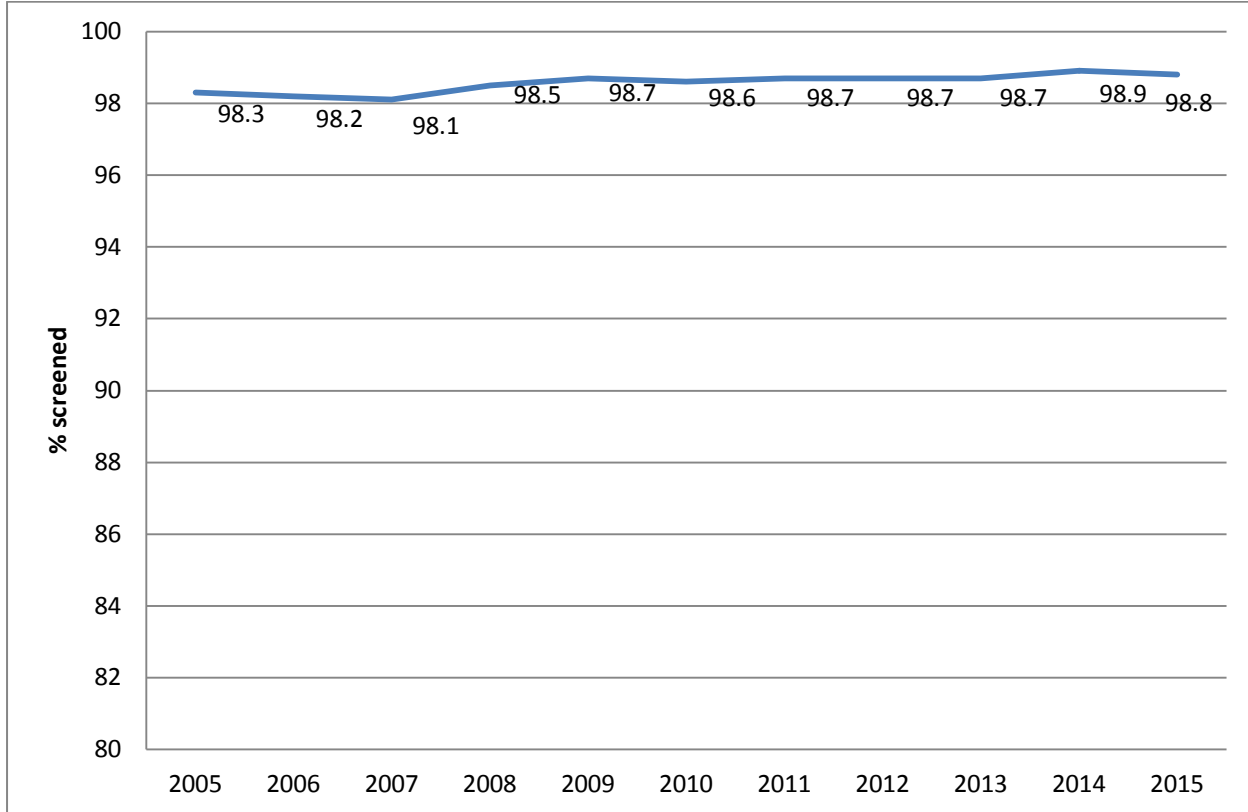
Coverage at 24 months in 2016 was 95.8%, and for Aboriginal children was 97%. These rates are higher than at 12 months, indicating that delayed vaccination as well as underreporting influence vaccination rates. (Figure 23)

Recurrent funding has been provided to all LHDs for the employment of Aboriginal Immunisation Health Workers (AIHW) to follow up Aboriginal children due and overdue for vaccinations. An external evaluation of this program has shown that vaccination coverage and on-time vaccination in Indigenous children in NSW have improved substantially following implementation of the AIHW program. Compared to the rest of Australia, the gaps in coverage between Aboriginal and non-Aboriginal children in NSW have been consistently closing.

2.2 Immunisation in babies born to mothers diagnosed with hepatitis B

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

Figure 24: Proportion of women giving birth in a public or private hospital in NSW who are screened for hepatitis B



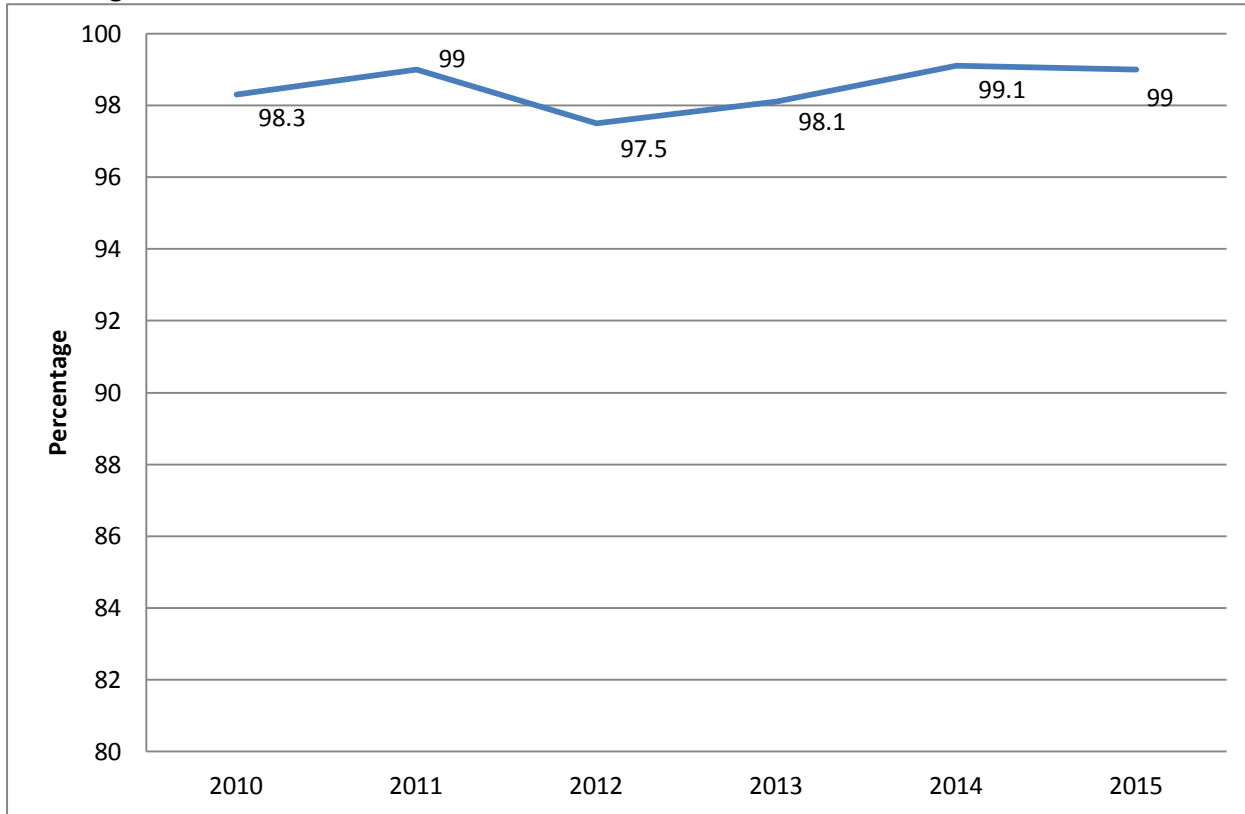
Data source: Neonatal Hepatitis B Vaccination Program Database, NSW Health

Comment

The proportion of mothers giving birth in a public or private hospital in NSW screened for hepatitis B was 99% in 2015 (the latest year for which data is available).

2.2.2 What proportion of babies born to mothers diagnosed with hepatitis B receive hepatitis B immunoglobulin in NSW on time?

Figure 25: Proportion of babies born in NSW to mothers diagnosed with hepatitis B who received hepatitis B immunoglobulin within 12 hours of birth



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

Comment

The proportion of babies born to mothers living with hepatitis B who receive hepatitis B immunoglobulin (HBIG) within 12 hours of birth was 99% in 2015. (Figure 25 and Table 2)

Figure 25 and Table 2 provide the most current data available at the time of this report.

Table 2: Neonatal hepatitis B immunoglobulin administration (2009 - 2015)

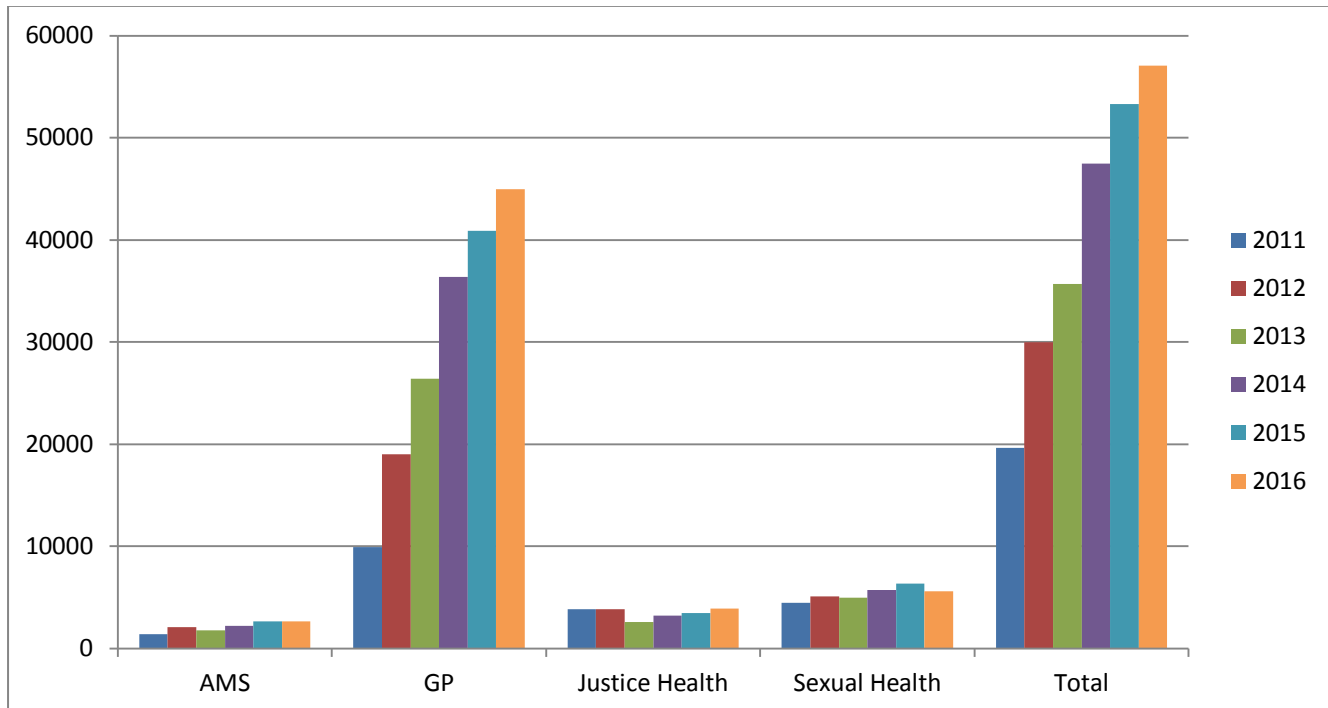
Year	No. neonates born to HBsAg+ mothers	No. neonates born to HBsAg+ mothers who received HBIG	No. neonates born to HBsAg+ mothers who received HBIG within 12 hours of birth (%)
2009	736	731	725 (98.5%)
2010	664	660	653 (98.3%)
2011	702	699	695 (99.0%)
2012	757	744	735 (97.1%)
2013	696	690	683 (98.1%)
2014	739	737	732 (98.9%)
2015	677	673	670 (99.0%)

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

2.3 Vaccinate groups at elevated risk of hepatitis B infection

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

Figure 26: Number of adult doses of hepatitis B vaccine distributed to health care providers through the NSW Vaccine Centre



Data source: NSW Vaccine Centre Database

Comment

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 has increased steadily over the last five years, almost trebling between 2011 and 2016. The increase is most marked for doses distributed to GPs, but has also increased to Aboriginal medical services and sexual health clinics. Numbers of doses distributed have been steady to Justice Health.

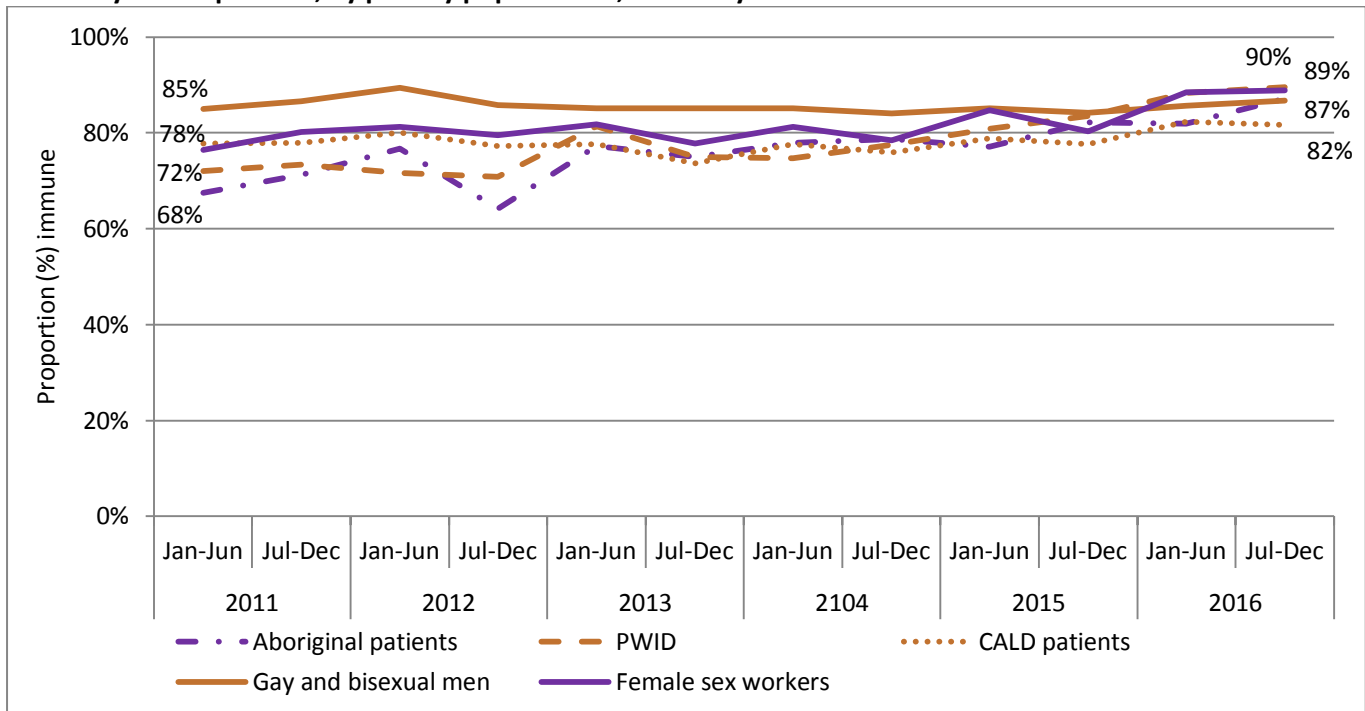
During 2016, 57,080 doses of adult formulation hepatitis B vaccine were distributed to GPs, Aboriginal medical services (AMS), sexual health clinics and Justice Health for vaccination of individuals at elevated risk of hepatitis B infection. Some of the increase in GP doses in 2016 may represent catch-up vaccination of 10-19 year olds under the Commonwealth's No Jab No Pay program who may not be from at-risk groups. (Figure 26)

These data show the distribution of vaccine to providers, rather than administration of vaccines or whether the vaccine course is completed. While much of the vaccine is expected to be administered to people recommended to be vaccinated,¹⁹ some vaccine may be administered to other people.

¹⁹ National Health and Medical Research Council (NHMRC) The Australian Immunization Handbook 10th Edition, The Australian Government 2015 <http://www.immunise.health.gov.au/internet/immunise/publishing.nsf/Content/Handbook10-home>

2.3.2 What proportion of patients in NSW Publicly Funded Sexual Health Clinics (PFSHCs) have vaccine acquired immunity to hepatitis B?

Figure 27: Proportion of patients in selected NSW publicly funded sexual health clinics²⁰ with vaccine-acquired immunity²¹ to hepatitis B, by priority population²², 1 January 2011 to 31 December 2016



	2011		2012		2013		2014		2015		2016	
	Jan Jun	Jul Dec	Jan Jun	Jul Dec	Jan Jun	Jul Dec	Jan Jun	Jul Dec	Jan Jun	Jul Dec	Jan Jun	Jul Dec
Aboriginal patients	79	82	109	111	112	114	131	111	138	115	91	108
CALD patients	116	99	114	119	140	153	166	155	195	168	196	189
PWID	995	964	1,037	936	1,014	1,044	1,247	1,274	1,403	1,462	1,608	1,466
Gay/bi men	1,258	1,318	1,546	1,481	1,579	1,672	1,915	1,984	2,169	2,215	2,405	2,254
Female sex workers	418	386	421	378	390	409	433	456	477	542	548	508

Data source: ACCESS Database, The Kirby Institute

Comment

Vaccine-acquired immunity for patients of publicly funded sexual health clinics in NSW was highest among female sex workers (89% in late 2016) and patients reporting injecting drug use (89%). Both groups also saw increases in the proportion vaccinated from the start of 2011 to the end of 2016 ($p < 0.001$). Promisingly, immunity was similarly high among other priority populations, including Aboriginal men and women (86% in late 2016, an increase from 68% in early 2011, $p < 0.001$) and patients from culturally and linguistically diverse backgrounds (81%, an increase from 78% in 2011, $p < 0.001$). The proportion of gay and bisexual men with hepatitis B immunity was 86% in the last half of 2016, unchanged from the start of 2011 ($p = 0.5$).

²⁰ This report includes data from 23 sexual health clinics in New South Wales: Albury Community Health Service, Griffith Community Health Service, Wagga Community Health Service, Bega Community Health Service, Goulburn Community Health Service, Narooma Community Health Service, Queanbeyan Community Health Service, Foster Sexual Health Clinic, Bligh Street Clinic (Tamworth), Pacific Clinic (Newcastle), Taree Manning Sexual Health Clinic, Lismore Sexual Health Service, Clinic 145 (Tweeds Head), Short Street Centre Sexual Health Clinic, Sydney Sexual Health Centre, Western Sydney Sexual Health Centre, Nepean Sexual Health Clinic, Blue Mountains Sexual Health Clinic, Liverpool Sexual Health Clinic, Nowra Sexual Health Clinic, Campbelltown Sexual Health Clinic, RPA Sexual Health Service, and Illawarra Sexual Health Service.

²¹ HBV vaccine immunity status was determined using either recorded vaccination status, a documented three-dose vaccine administration, or HBV pathology results; patients with chronic HBV or without any HBV-related evidence were excluded. Of the 89,237 individual patients who attended during this period, HBV details were available for 22,494 (25%).

²² PWID=people who inject drugs, CALD=culturally and linguistically diverse; categorisation of priority populations relied on self-reported clinical data

2.4 Maintain safe behaviour for hepatitis B and hepatitis C

In the current environment of new effective treatments for hepatitis C, the NSW Government is committed to a strong focus on prevention, by enhancing drug and alcohol services and improving the targeting, efficiency and effectiveness of the NSW Needle and Syringe Program (NSP). This section of the report focuses on the NSW NSP. **Section 2.5** provides information on the Opioid Treatment Program in NSW.

The NSP is an evidence-based public health program that aims to prevent the transmission of blood-borne viruses among people who inject drugs and the broader community. NSPs have been part of the National HIV/AIDS Strategy since 1989, part of the National Drug Strategy since 1993, and part of the National Hepatitis C Strategy since 1999. As a result, Australia has one of the lowest prevalences of HIV among people who inject drugs globally: between 1 and 2%, compared to approximately 16% in the USA.

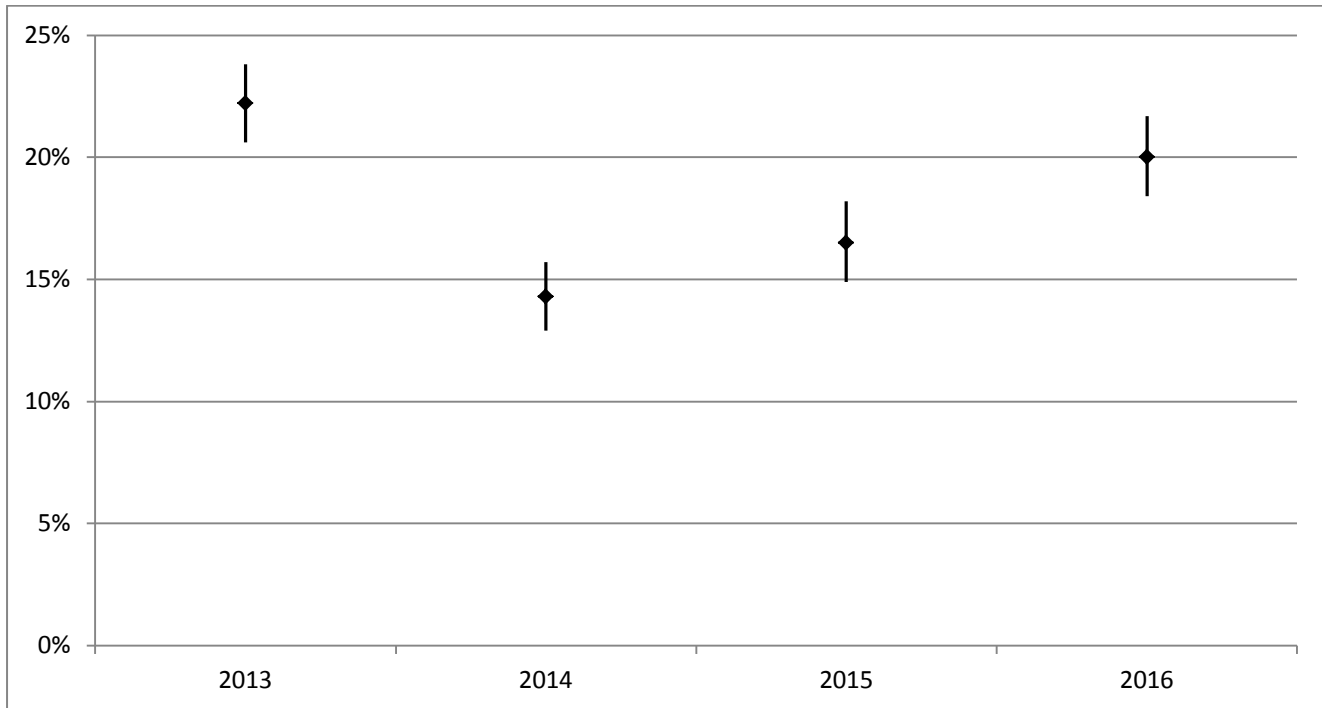
Studies show the effectiveness and cost-effectiveness of needle and syringe programs for HIV and hepatitis C prevention. In the decade from 2000 to 2009, needle and syringe programs directly prevented 32,000 HIV infections and over 96,000 hepatitis C infections in Australia, saving more than \$5.8 billion in health care and other costs. For every one dollar invested in NSPs, more than four dollars were returned in healthcare cost-savings.²³

NSPs also provide other important services, including primary healthcare, education, referrals to other services including treatment and the safe disposal of injecting equipment. The *NSW Needle and Syringe Program Guidelines 2013* provide the framework for the delivery of the NSP in New South Wales.

²³ The National Centre in HIV Epidemiology and Clinical Research, *Return on investment 2: Evaluating the cost-effectiveness of needle and syringe programs in Australia*, University of NSW, 2009

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

Figure 28: Receptive Syringe Sharing in previous month in NSW, 2013 - 2016 (% , 95% CI)



Data source: NSW Needle and Syringe Program Enhanced Data Collection 2013-2016. A report for the Ministry of Health by the Kirby Institute, UNSW Australia

Note: Receptive Syringe Sharing (RSS) is calculated among respondents who reported injection in previous month and includes people who were imprisoned in the previous month.

Comment

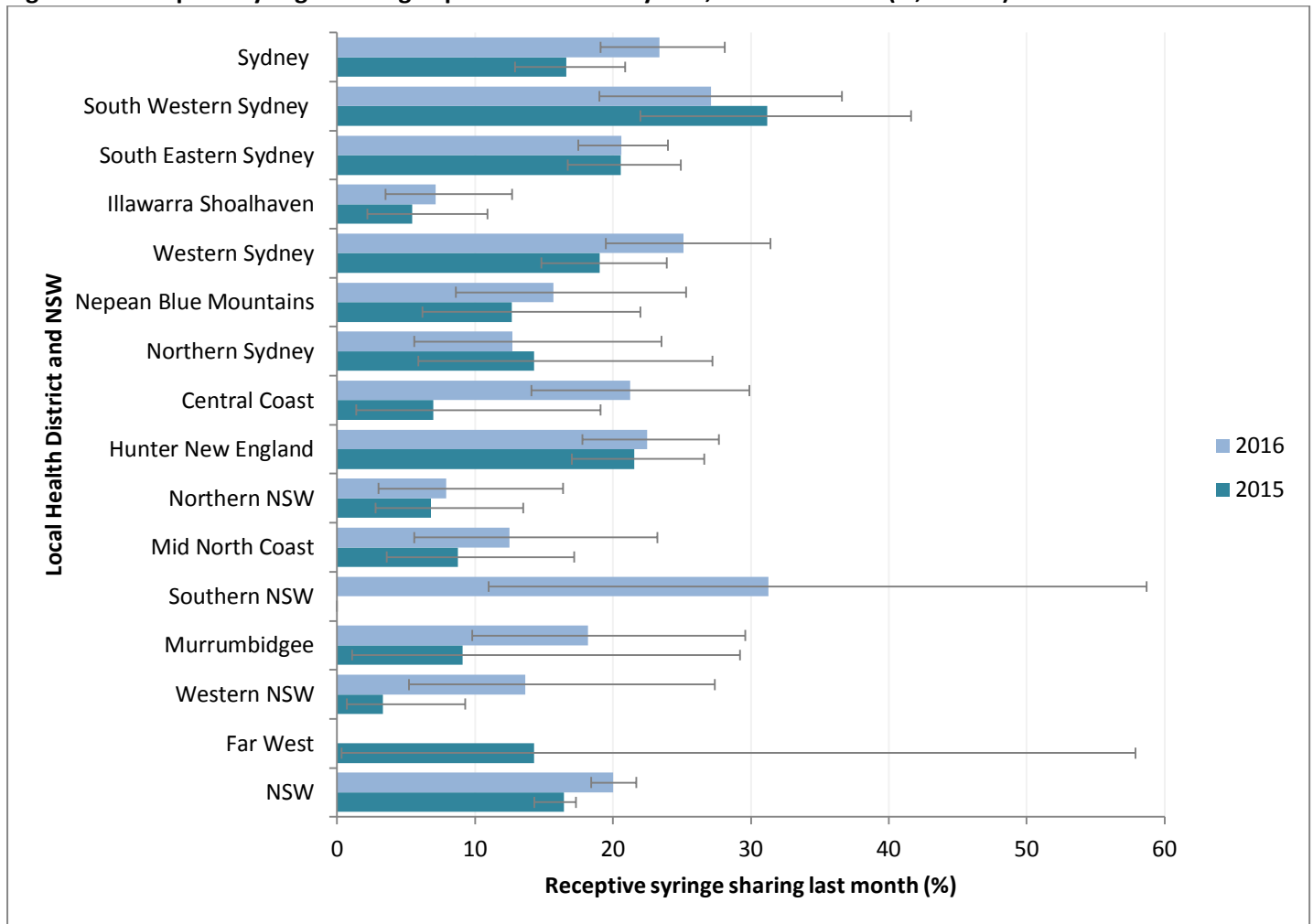
Among respondents in the 2016 NSW NSP Enhanced Data Collection (NNEDC), reports of receptive syringe sharing (RSS) in the previous month increased from 16% in 2015 to 20% in 2016 ($p=0.003$)²⁴. In the four years between 2013 and 2016, RSS remained stable, with 22% of respondents reporting RSS in 2013 (4 year trend, $p = 0.333$).

The Australian NSP Survey (ANSPS) indicates that the proportion of NSW respondents who reported receptive sharing of needles and syringes in the previous month was 13% in 2013; 16% in 2014; and 14% in 2015.²⁵

Further information regarding RSS in the NNEDC and the ANSPS is shown in **Appendix 1**, including sample sizes and confidence intervals.

²⁴ Geddes L, Iversen J, and Maher L. New South Wales Needle and Syringe Program Enhanced Data Collection Report 2016. The Kirby Institute, UNSW Australia, Sydney 2016. The purpose of the data collection is to report NSP client demographic, behavioural and drug use data on an annual basis to strengthen the state-wide prevention approach, and also inform LHDs in planning for NSP service delivery at the local level. Methodology: Clients are surveyed over a 2 week period in February. A total of 2938 individual NSW NSP clients were surveyed in 2013; 3029 people were surveyed in 2014; 2,453 in 2015; and 2,584 in 2016. The majority of NSPs ($n=50$ NSPs) participated in the study in both 2013 and 2014; 49 NSPs participated in 2015; and 52 in 2016. Refer to Appendix 1, Table 1.

²⁵ Memedovic S, Iversen J, Geddes L, and Maher L. Australian Needle and Syringe Program Survey National Data Report 2011-2015: Prevalence of HIV, HCV and Injecting and sexual behaviour among NSP attendees. Sydney: Kirby Institute, UNSW Australia; 2016. ISSN: 1448-5915 In 2015, 556 people in NSW were surveyed in 16 primary NSPs. Refer to Appendix 1, Table 2.

Figure 29: Receptive Syringe Sharing in previous month by LHD, 2015 and 2016 (% , 95% CI)

Data source: NSW Needle and Syringe Program Enhanced Data Collection 2016. A report for the Ministry of Health by the Kirby Institute, UNSW Australia, 2016

Note: Receptive Syringe Sharing (RSS) is calculated among respondents who reported injection in previous month and includes people who were imprisoned in the previous month.

Appendix 1, Table 1 identifies LHD sample sizes and confidence intervals of RSS in the NSW NSP Enhanced Data Collection.

Note: Data is not available for Far West NSW in 2016 due to small sample size participating in the survey.

Note: Data is not available for Southern NSW in 2015 due to small sample size participating in the survey.

Comment

The proportion of respondents who reported RSS in the previous month in the NNEDC by LHD in 2015 and 2016 is illustrated above (Figure 29). These estimates have some degree of uncertainty (thin lines represent 95% confidence intervals), with higher uncertainty among LHDs with fewer respondents. For example, in NSW the estimate for RSS in 2016 was 20% and it is 95% certain that RSS was between 18% and 21% (the 95% confidence intervals). Estimates and 95% confidence intervals for RSS by LHD are included in **Appendix 1**.

The NSW Users and AIDS Association (NUAA) is the peak drug user organisation in NSW, which provides blood borne virus prevention strategies, primarily through peer based education for people who inject drugs, and the provision of Needle and Syringe Program services. NUAA is one of four needle and syringe program sites from South Eastern Sydney LHD operated by non-government organisations that participate in the NSW Needle and Syringe Program Enhanced Data Collection. Among NNEDC respondents who attended the NSP at NUAA, the proportion who reported RSS in the previous month was 15% in 2015 and 16% in 2016. NUAA's data on RSS is included in South Eastern Sydney LHD in Figure 29.

It is important to view Figure 29 alongside Figures 31 and 32 in order to reflect on RSS in each LHD alongside the total number of units of injecting equipment distributed via the NSW NSP.

Factors associated with RSS in the 2016 NNEDC

Among people who injected drugs in the previous month in 2016, those who reported injecting daily or more frequently were 1.3 times more likely to report RSS compared to respondents who injected less frequently (22% vs 17% respectively, $p=0.011$).²⁶

Consistent with other studies²⁷, homelessness in the previous 12 months was also associated with RSS, with respondents who were homeless in the previous 12 months 1.6 times more likely to report RSS than respondents with stable housing (26% vs 18% respectively, $p<0.001$).¹⁷

Opioid substitution therapy (OST)

People who were not prescribed OST in the previous year were 1.6 times more likely to report RSS in the previous month compared to people who were prescribed OST (22% vs 15% respectively, $p<0.001$).¹⁷ Studies in NSW and elsewhere have now demonstrated that among people who inject drugs who are opioid dependent, OST is protective against HCV incident infection.^{28,29}

2.4.2 Who is accessing the Needle and Syringe Program in NSW?

The proportion of priority populations accessing the NSW NSP has remained relatively stable between 2015 and 2016. Among people participating in the NNEDC³⁰ in 2016:

- 18% identified as Aboriginal or as both Aboriginal and Torres Strait Islander (17% in 2015)
- 6% reported that their parents spoke a language other than English at home (6% in 2015)
- 9% reported being in prison in the past year (in 2015, 5% reported being in prison in the past month)
- 8% were aged less than 25 years (8% in 2015)

²⁶ Geddes, L, Iversen J, and Maher L. NSW Needle and Syringe Program Enhanced Data Collection Report 2016, The Kirby Institute, UNSW Australia, Sydney 2016.

²⁷ Topp L, Iversen J, Baldry E, Maher L, Collaboration of Australian NSPs. Housing instability among people who inject drugs attending Needle and Syringe Programs in Australia, 1999-2011. *Journal of viral hepatitis*. 2014 Mar 1;21(3):198-207.

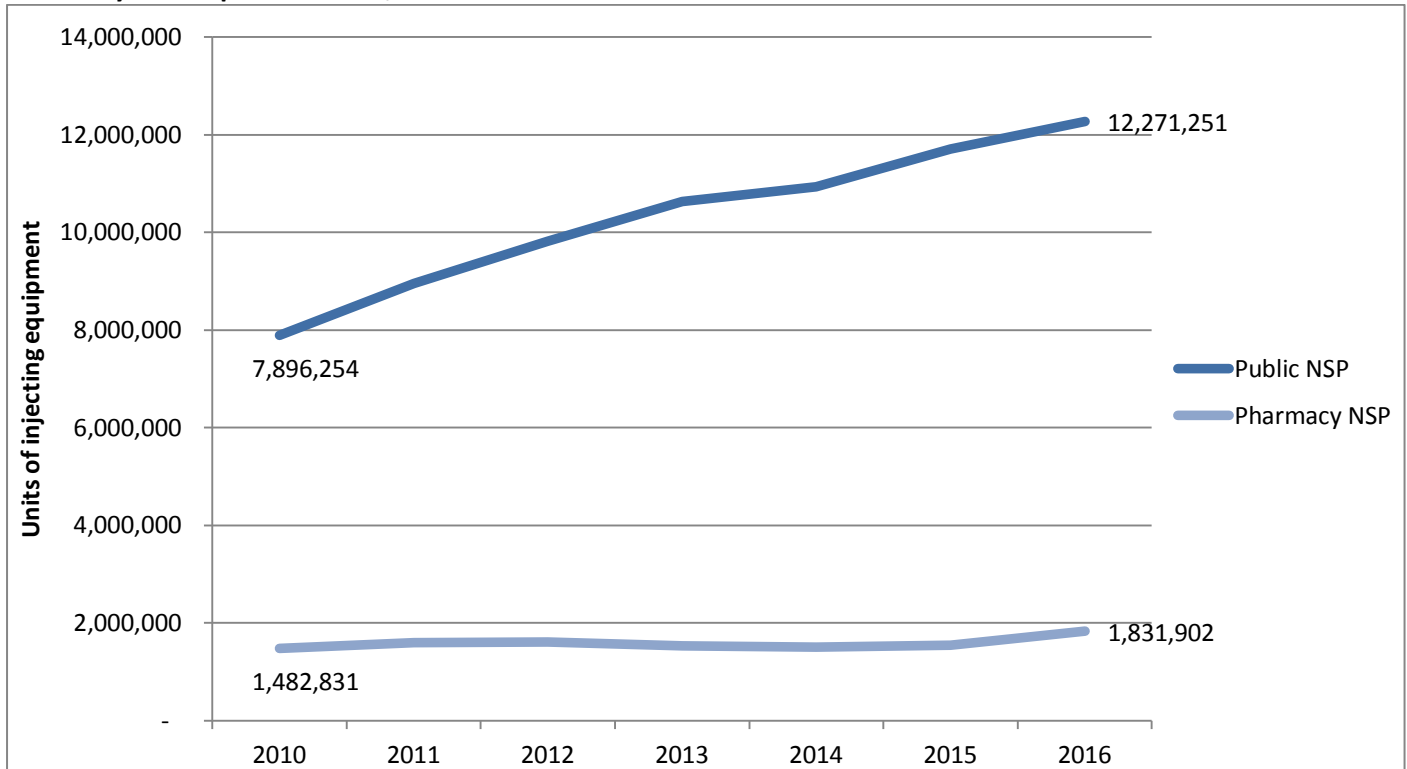
²⁸ White B, Dore G, Lloyd A, Rawlinson W, Maher L. Opioid substitution therapy protects against hepatitis C virus acquisition in people who inject drugs: The HITS-c study. *Medical Journal of Australia* 2014;201(6):326-329

²⁹ Vickerman P, Page K, Maher L, Hickman M. Commentary on Nolan et al: Opiate substitution treatment and HCV prevention: Building an evidence base? *Addiction* 2014;109(12):2060-2061.

³⁰ Currie B, Iversen J, Maher L NSW Needle and Syringe Program Enhanced Data Collection 2013 A report for the Ministry of Health by the Kirby Institute, UNSW Australia, 2014

2.4.3 How accessible is the Needle and Syringe Program in NSW?

Figure 30: The total number of units of injecting equipment distributed in NSW by the public NSP and the Pharmacy NSP Fitpack[®] scheme, 2010-2016



Data sources:

- Public NSP - NSW Health NSP Minimum Data Set
- Pharmacy NSP - NSW Health Pharmacy Data (Pharmacy NSP Fitpack[®] scheme). The total includes additional units ordered from The Pharmacy Guild of Australia (NSW Branch) by individual pharmacies, but not allocated to an LHD (45,800 units in 2014; 114,800 units in 2015; 105,500 units in 2016)

Note: The Public NSP includes the units of injecting equipment distributed by the following services: The NSW Users and AIDS Association (NUAA); AIDS Council of NSW (ACON); The Sydney Medically Supervised Injecting Centre (MSIC) in 2016 only; and secondary outlets in Aboriginal Community Controlled Health Services (ACCHS)

Comment

In the year ending 31 December 2016, a total of 14,103,153 units of injecting equipment were distributed in NSW. This figure includes injecting equipment distributed by pharmacies participating in the Pharmacy NSP Fitpack[®] scheme and by the Public NSP. This represents an increase of 856,149 additional units (6%) compared with the previous 12 months (NSW Health NSP Minimum Data Set).

During the same period to 31 December 2016, the number of units of injecting equipment distributed by the Public NSP increased by 567,081 units (5%) compared to the previous 12 months. Between 2015 and 2016, the number of units of injecting equipment distributed by the Pharmacy NSP Fitpack[®] scheme increased by 289,068 units (19%). (NSW Health NSP Minimum Data Set)

Figure 31: Number of units of injecting equipment distributed in NSW by LHD in 2016

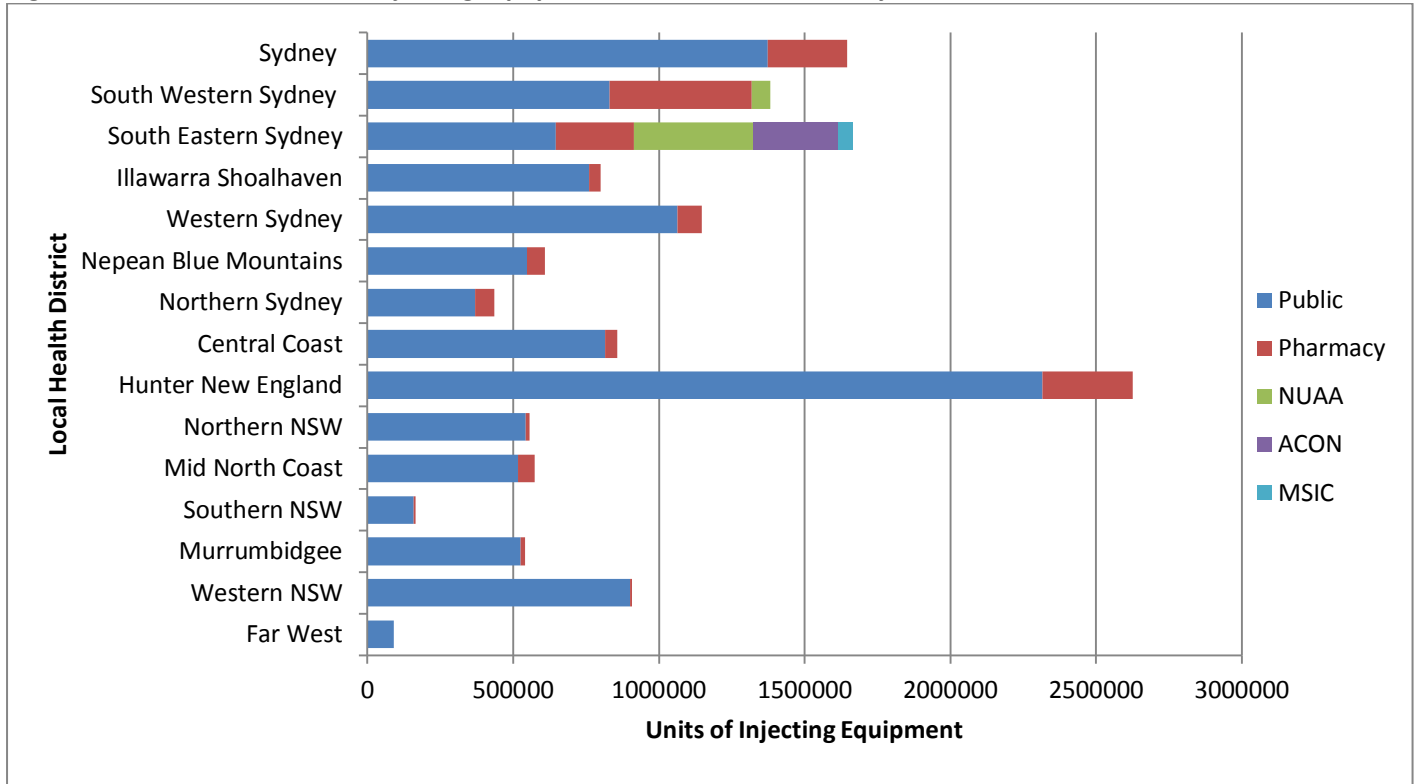
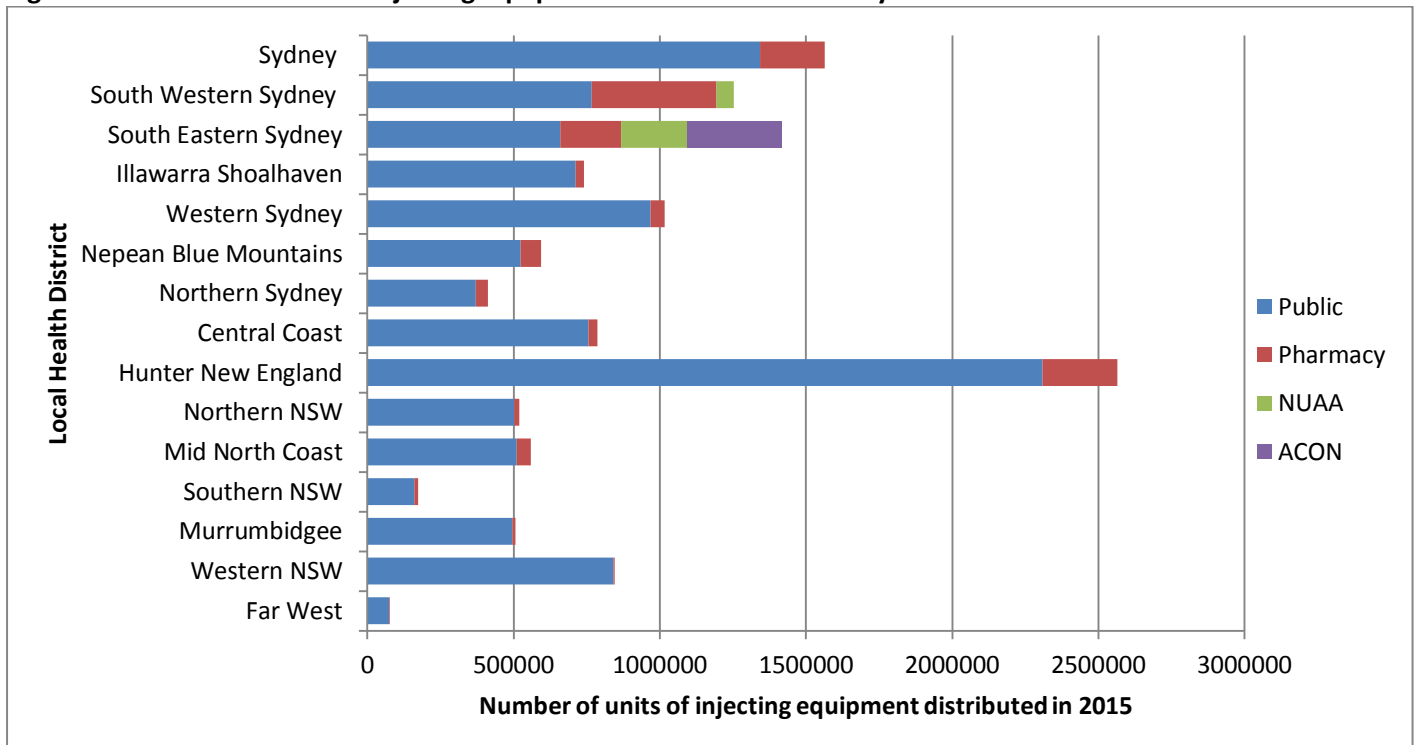


Figure 32: Number of units of injecting equipment distributed in NSW by LHD in 2015



Data sources:

- Public - NSW Health NSP Minimum Data Set
- Pharmacy - NSW Health Pharmacy Data (Pharmacy NSP Fitpack[®] scheme)
- NUA - The NSW Users and AIDS Association
- ACON - AIDS Council of NSW
- MSIC - The Sydney Medically Supervised Injecting Centre

Notes:

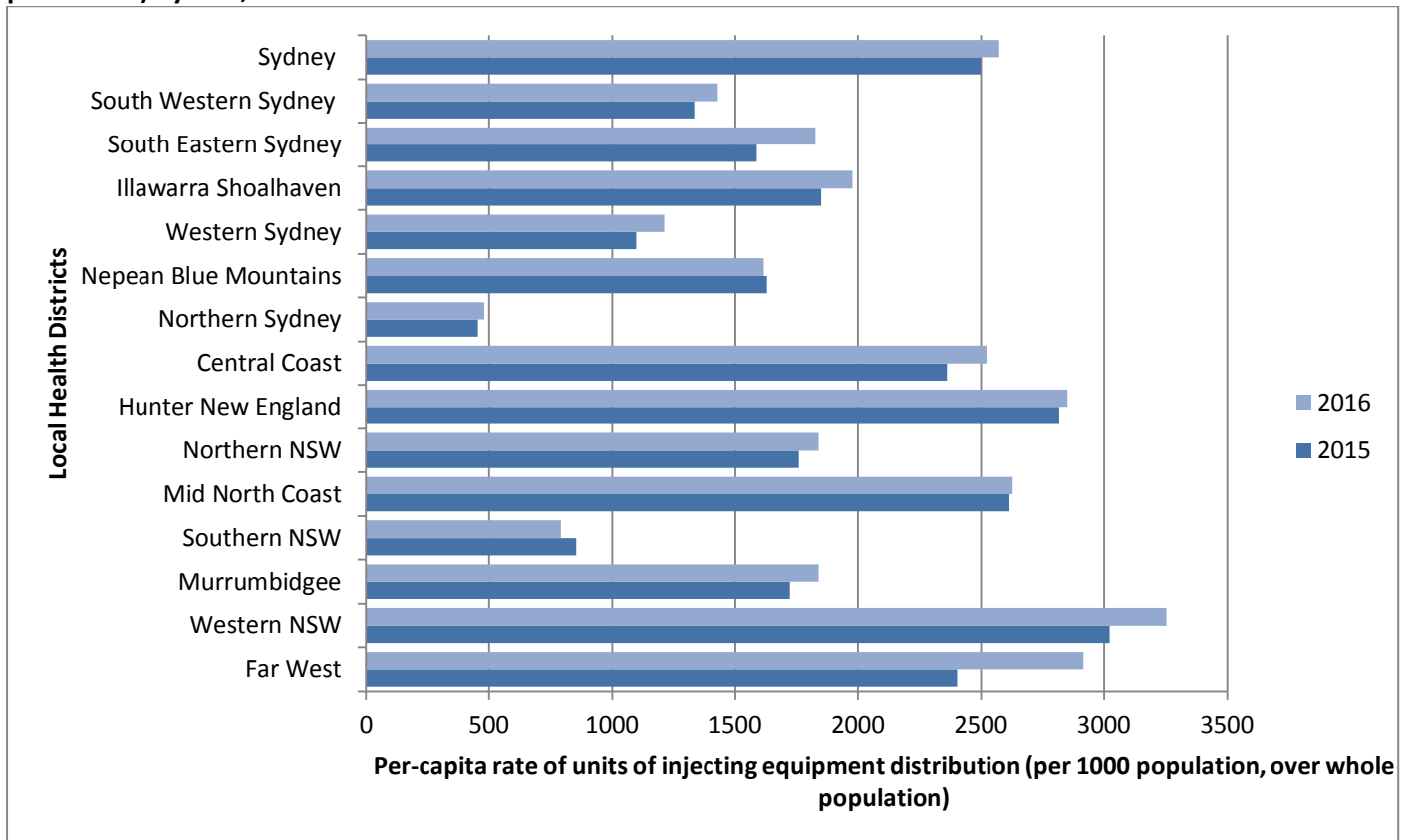
- The Public NSP includes injecting equipment distributed by secondary outlets including Aboriginal Community Controlled Health Services (ACCHS)
- South East Sydney LHD includes injecting equipment distributed by NUA; ACON; and MSIC for 2016 only
- South Western Sydney LHD includes injecting equipment distributed by NUA

Comment

With a number of notable exceptions, the number of units of injecting equipment distributed in NSW has remained steady in most LHDs between 2015 and 2016 (Figure 31 and Figure 32). The highest number of units of injecting equipment distributed occurs in Hunter New England, South Eastern Sydney, Sydney, South Western Sydney, and Western Sydney.

It is useful to view Figure 30 and Figure 31 alongside Figure 32, which identifies the per-capita rate of units of injecting equipment distribution by LHD in 2015 and 2016. Of particular note is Far West, which has the lowest number of units of injecting equipment distributed (Figure 31 and 32) but it has one of the highest per-capita rate of units of injecting equipment distribution (Figure 33).

Figure 33: Per-capita rate of units of injecting equipment distribution (per 1000 population, over whole population per annum) by LHD, in 2015 and 2016



Data sources:

- Population by LHD – Centre for Epidemiology and Evidence. Health Statistics New South Wales. Sydney: NSW Ministry of Health. Available at: www.healthstats.nsw.gov.au. Accessed 15 February 2017.
- Public - NSW Health NSP Minimum Data Set
- Pharmacy - NSW Health Pharmacy Data (Pharmacy NSP Fitpack[®] scheme)
- NUAA – The NSW Users and AIDS Association
- ACON - AIDS Council of NSW

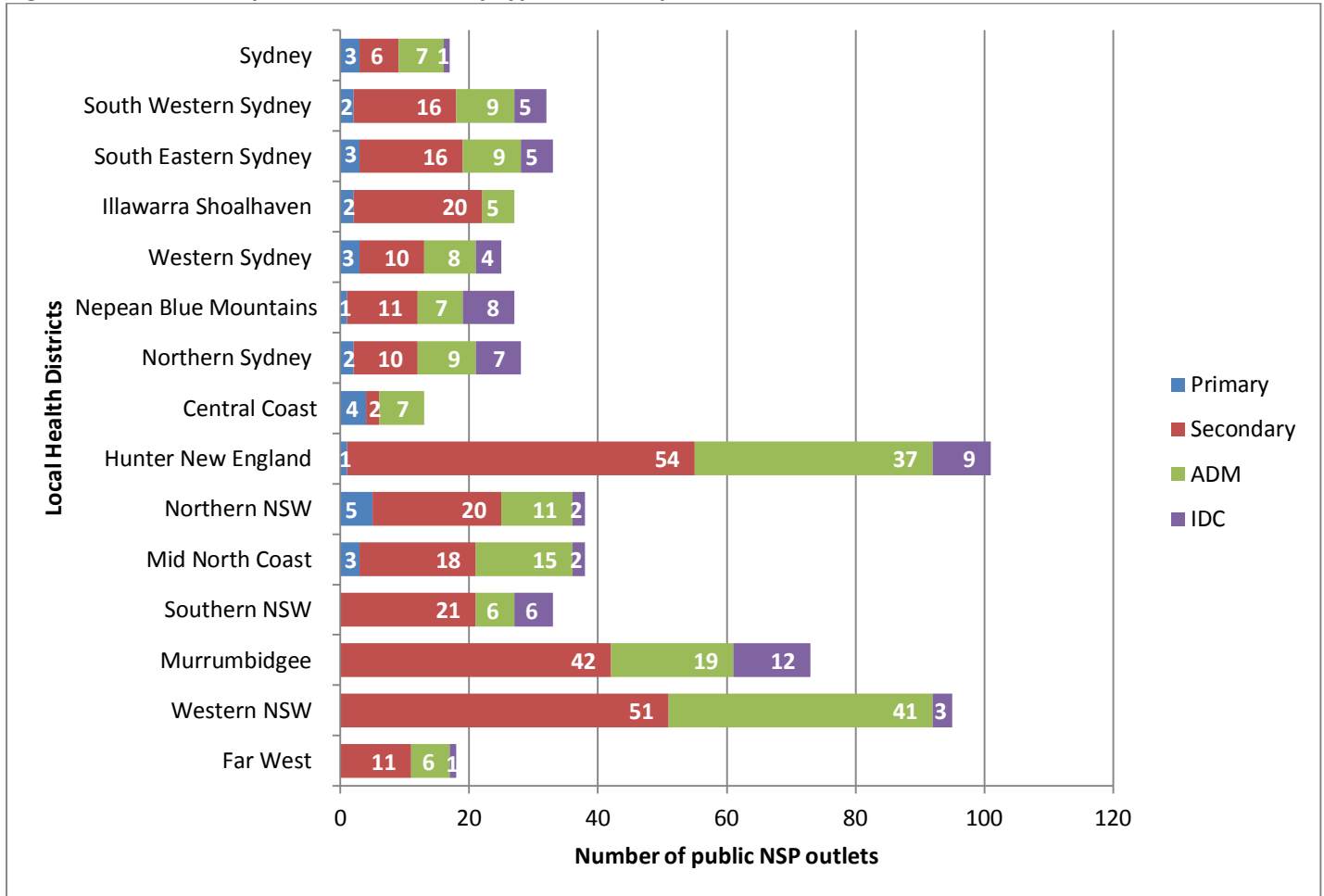
Notes:

- The units of injecting equipment includes injecting equipment distributed by the NSW Public NSP; the Pharmacy NSP Fitpack Scheme; as well as secondary outlets in Aboriginal Community Controlled Health Services (ACCHS)
- South East Sydney LHD includes injecting equipment distributed by NUAA; ACON; and MSIC (2016 only).
- South Western Sydney LHD includes injecting equipment distributed by NUAA

Comment

In 2016 the highest projected per-capita rate of units of injecting equipment distribution was in Western NSW, Far West, Hunter New England, Sydney, Mid North Coast and Central Coast.

Between 2015 and 2016, the per-capita rate of units of injecting equipment distribution increased in most LHDs, particularly Far West, Western NSW, South Eastern Sydney and Central Coast.

Figure 34: Number of public NSP outlets by type in NSW by LHDs, 31 December 2016

Data source: NSW NSP Data Collection

Comment

As of 31 December 2016, under the public NSP there were a total of 29 primary and 308 secondary outlets, 261 automatic dispensing machines (ADMs) and internal dispensing chutes (IDCs) located across NSW. The breakdown by outlet type by LHD is identified above (Figure 34).

In addition, there were 525 Pharmacies participating in the Pharmacy NSW Fitpack Scheme, making a total of 1,123 NSP outlets located across NSW as at 30 June 2016. This represents an increase of 18 outlets (1.6%) compared with same period in 2015 (NSW NSP Data Collection).

2.5 Enhance drug and alcohol services

The *NSW Hepatitis C Strategy 2014-2020* identifies the importance of continuing to implement, and identify opportunities to enhance, drug and alcohol services and drug diversion programs. In Australia, research suggests that many new hepatitis C infections have been prevented from occurring through improved access to opioid substitution therapy (OST) and increased investment in Needle and Syringe Programs (NSPs)³¹.

Studies show that OST for people who inject drugs (PWID) and are opioid dependent has multiple beneficial effects, including decreased HIV acquisition risk and drug-related mortality, increased quality of life and reduced crime and the societal costs associated with drug use. A recent Australian study³² found for the first time that OST was protective against HCV seroconversion and associated with a reduced risk of incident infection among those who mainly injected heroin or other opioids. This finding is encouraging, given improving access in Australia where the number of people receiving OST nationally has almost doubled since 1998 (see 2.5.1).

The evidence base for the protective effects of OST against incident HCV infection is also reflected in the results of cohort studies in Canada and North America. Taken together, results from the HITS-c study in Sydney, the VIDUS cohort in Vancouver and the UFO Cohort in San Francisco indicate that OST can reduce the risk of HCV acquisition by 50–80%³³.

2.5.1 How many people in NSW are receiving pharmacotherapy treatment?

In Australia, over 48,000 people received pharmacotherapy treatment for their opioid dependence on a snapshot day in June 2015 at 2,589 dosing points around Australia. The number of people receiving opioid pharmacotherapy treatment almost doubled between 1998 (from around 25,000) and 2015. However growth in client numbers has increased at a slower rate in recent years - with an overall increase of 5% over the 5-year period from 2010 compared to an average increase of 5% each year between 1998 and 2010.

In 2016, methadone was the most common pharmacotherapy drug, with around two-thirds (66%) of clients treated with this drug in Australia. There were 2,556 prescribers of opioid pharmacotherapy drugs in Australia in 2015, an increase of 10.2% from 2014.

The number of people receiving pharmacotherapy in Australia increased from 13 people per 10,000 in 1998 to 21 in 2010, where it remained until it dropped to 20 in 2015. NSW had the highest rate of clients on pharmacotherapy treatment (26 clients per 10,000 of population) in 2015.³⁴

In NSW, over 20,300 people received pharmacotherapy treatment for their opioid dependence on a snapshot day in June 2015 (see Figure 35) at 862 dosing points around NSW. In 2016, there were 834 prescribers of opioid pharmacotherapy drugs in NSW.³⁵

Based on available knowledge, and taking a state-wide perspective, the estimates for unmet need and unmet demand in NSW for OTP vary widely. They may be as low as 10% of the opioid dependent population or as high as 65%

³¹ Iversen J, Wand H, Topp L, Kaldor J, Maher L. Reduction in HCV incidence among injecting drug users attending needle and syringe programs in Australia: a linkage study. *American Journal of Public Health*. 2013;103(8):1436-1444.

³² White B, Dore G, Lloyd A, Rawlinson W, Maher L. Opioid substitution therapy protects against hepatitis C virus acquisition in people who inject drugs: The HITS-c study. *Medical Journal of Australia* 2014;201(6):326-329.

³³ Vickerman P, Page K, Maher L, Hickman M. Commentary on Nolan et al: Opiate substitution treatment and HCV prevention: Building an evidence base? *Addiction* 2014;109(12):2060-2061.

³⁴ Australian Institute of Health and Welfare. National opioid pharmacotherapy statistics 2015 <http://www.aihw.gov.au/alcohol-and-other-drugs/nopsad/>

³⁵ Australian Institute of Health and Welfare. National opioid pharmacotherapy statistics 2016 <http://www.aihw.gov.au/alcohol-and-other-drugs/data-sources/nopsad-2016/prescribers/>

of the opioid dependent population. The primary reason for these large ranges is that the underlying prevalence of opioid dependence is not known with any degree of precision.³⁶

Aboriginal people

In Australia in 2015, 10% of clients engaged in the OTP identified as being Aboriginal or Torres Strait Islander people. Aboriginal and Torres Strait Islander people were 3 times as likely to have received pharmacotherapy treatment (55 clients per 10,000 Indigenous Australians) as the non-Indigenous population (17 clients per 10,000) in 2015. Note that the analysis of the 2015 data that follows should be treated with caution due to the high proportion of clients (42%) for whom Indigenous status is either not reported or not stated.³⁷

A recent study³⁸ found that compared to non-Indigenous opioid-dependent people, opioid-dependent Aboriginal or Torres Strait Islander people in contact with the criminal justice system are charged with a greater number of offences, spend longer in custody and commonly initiate OST in prison. 30% of Aboriginal and Torres Strait Islander people commencing OST commenced in prison; this is three times higher than the proportion for non-Indigenous people (11.2%) ($p < 0.001$). Aboriginal and Torres Strait Islander males spent less time in OST compared to non-Indigenous males (median percentage of follow-up time in treatment: 40.5% vs. 43.15, $p < 0.001$).

Glossary for section 2.5:

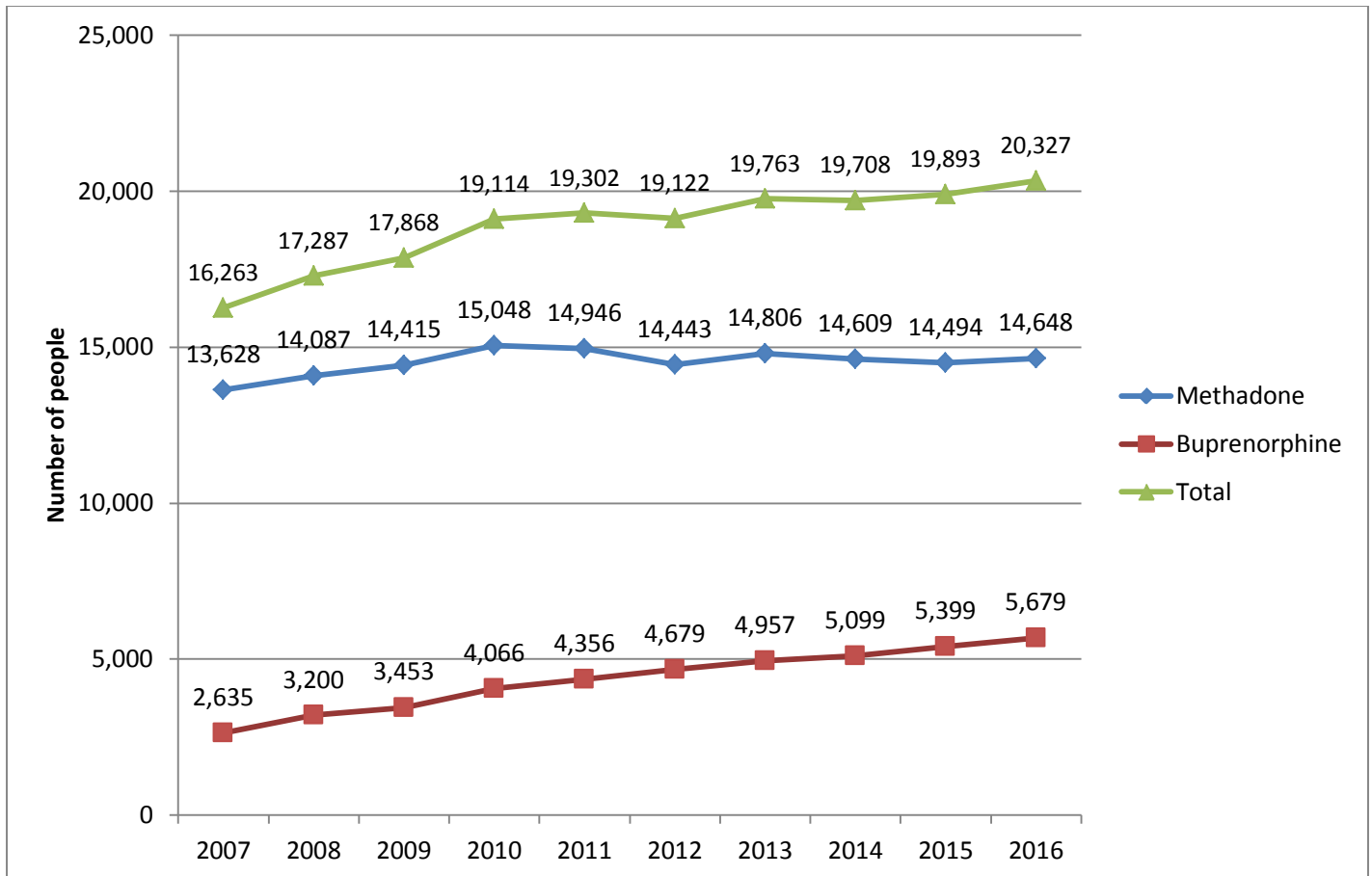
- **Prescriber** – a registered prescriber who is accredited and/or authorised to prescribe a pharmacotherapy drug
- **Justice Health prescriber** – prescribers who work in prisons or correctional facilities
- **Private Prescribers** – prescribers who work in organisations that are not controlled by government, such as private general practice clinics
- **Public prescribers** – prescribers who work in organisations that are part of government or are government-controlled, such as public drug and alcohol clinics and public hospitals

³⁶ Alison Ritter, Matthew Sunderland, Jennifer Chalmers: *Estimating the Unmet Need and Demand for Opioid Treatment in NSW*, Drug Policy Modelling Program, National Drug and Alcohol Research Centre, University of NSW, October 2012

³⁷ Australian Institute of Health and Welfare (AIHW) National opioid pharmacotherapy statistics 2015 <http://www.aihw.gov.au/alcohol-and-other-drugs/nopsad/>

³⁸ Gisev N, Gibson A, Larney S, Kimber J, Williams M, Clifford A, Doyle M, Burns L, Butler T, Weatherburn DJ, Degenhardt L. Offending, custody and opioid substitution therapy treatment utilisation among opioid-dependent people in contact with the criminal justice system: comparison of Indigenous and non-Indigenous Australians. *BMC Public Health* 2014, 14:920

Figure 35: Number of people participating in the NSW Opioid Treatment Program, by treatment type, 30 June 2007 – 30 June 2016



Data source: Pharmaceutical Drugs and Addiction System (PHDAS), NSW Health; data extracted: 8/7/2013, 7/7/2014, 7/7/2015, 7/7/2016

Note: As this data is collected at a point in time (ie. the last day of every month), this data represents the number of clients participating in the OTP at 30 June in the given year.

Note: The data is likely to be higher than the actual number of people participating in the OTP due to the lag in the recording of program end dates for some people ending OTP.

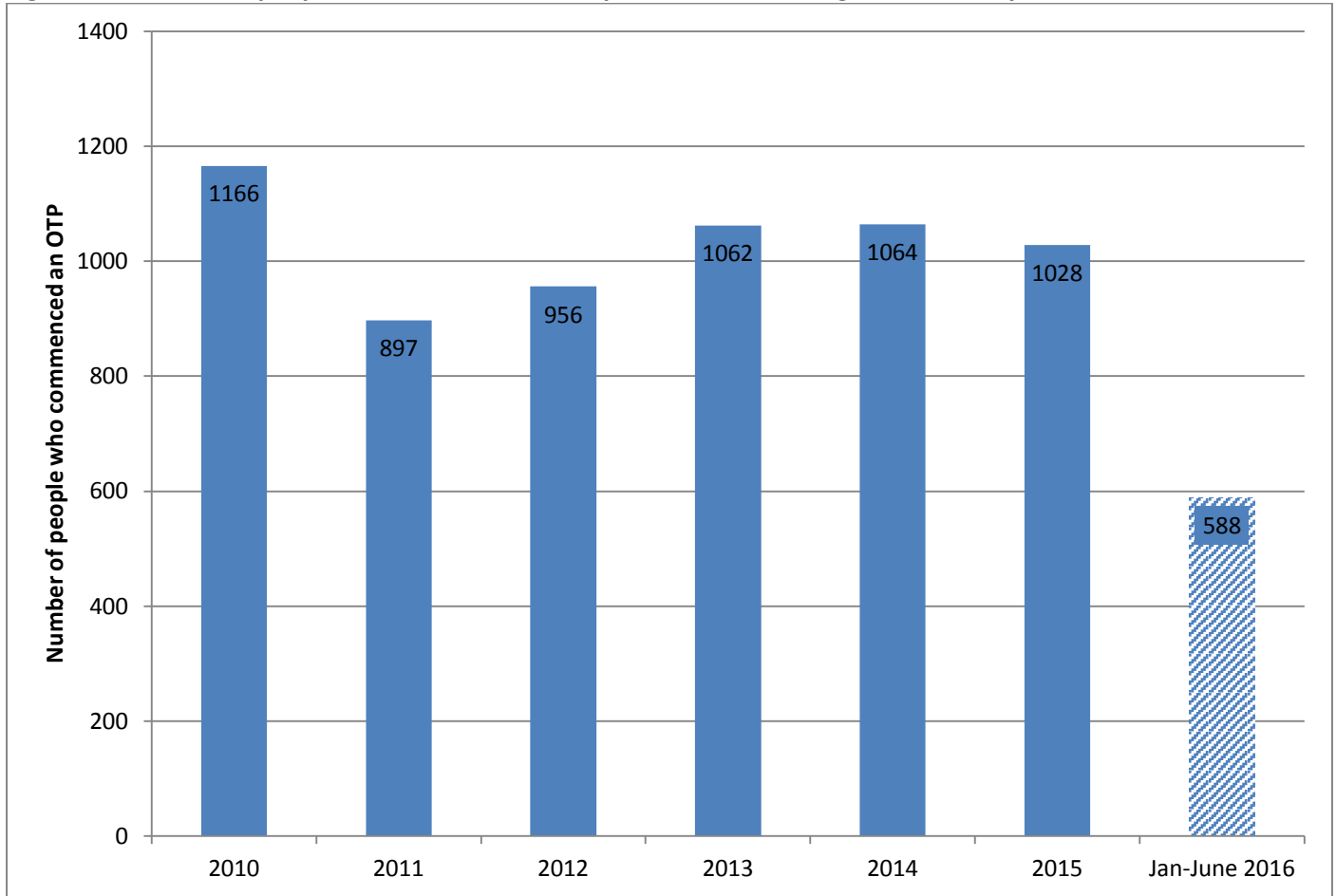
Comment

Between 30 June 2007 and 30 June 2016, the total number of clients being treated using opioid substitution therapy increased by 25%, from 16,263 in 2007 to 20,327 clients in 2016.

Between 2015 and 2016, the total number of clients being treated using opioid substitution therapy increased by 2%.

In 2016, methadone was the most common pharmacotherapy drug, with around 72% of clients (14,648) treated with this drug. In 2016, around 28% of clients (5,679) were treated with buprenorphine.

As a treatment option, the use of methadone across the OTP population decreased by 12% between 30 June 2007 and 30 June 2016, with a corresponding increase in the use of buprenorphine.

Figure 36: Number of people who commenced an Opioid Treatment Program, 1 January 2010 – 30 June 2016

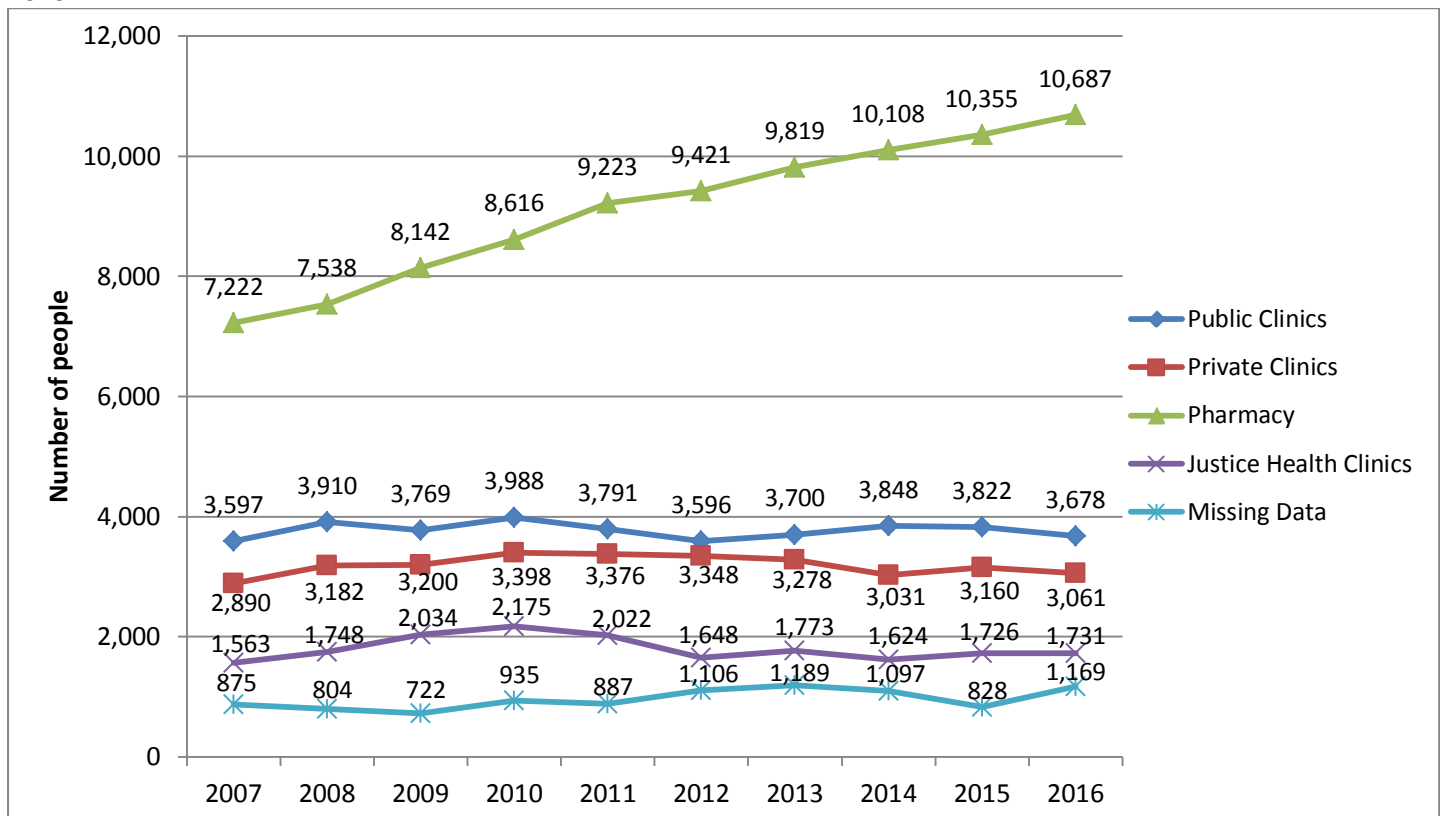
Data source: Pharmaceutical Drugs and Addiction System (PHDAS)

Note: The data in this Figure is the number of new clients each year calculated based on data collected six-monthly. Clients are included when having a program number of "1" which indicates initial application of the program.

Note: Data beyond Jan-June 2016 was not available at the time of reporting.

Comment

Between 1 January to 30 June 2016, there were 588 people who commenced an Opioid Treatment Program in NSW, which is an 18.6% increase compared to the same period in 2015 (n=496).

Figure 37: Number of people participating in the Opioid Treatment Program, by dosing point, at 30 June, 2007 – 2016

Data source: Pharmaceutical Drugs and Addiction System (PHDAS), NSW Health; data extracted: 8/7/2013, 7/7/2014, 7/7/2015, 7/7/2016

Note: As this data is collected at a point in time (ie. the last day of every month), this data represents the number of clients participating in the OTP at 30 June in the given year. Data is by dosing point by LHD, not by patient's residential address.

Note: The data is likely to be higher than the actual number of people participating in the OTP due to the lag in the recording of program end dates for some people ending OTP.

Note: The number of people participating in the OTP (by dosing point) was less than 6 (less than 0.03%) in Public/Private clinics, 2007-2016. (Public/Private clinics - These numbers relate to dosing that cannot be separated into a private or public clinic type.)

Note: The total number of people participating in the OTP as shown in 37, 38, 39 & 40 is consistent as the data represents the number of people who received their dose on the snapshot day. Figure 37 shows the number who received their dose at each dosing point type. Figure 40 shows those same people who received their dose on the snapshot day against their prescriber type. For example, a person receiving their dose at a pharmacy can have a prescriber who is either (1) public, (2) private, (3) justice health or (4) public/ private.

Note: There will be variation across Figures 37, 38, 39 & 40 due to counting number of people in the OTP by different groupings and criteria. For a client participating in the OTP, the dosing point type with its funding type and the prescriber funding type are recorded. If a client is dosed at Justice Health, the dosing point type will be Justice Health but can be prescribed by a public, private or a Justice Health funded prescriber. For example, if a client is dosed at Justice Health but prescribed by a public funded prescriber, when this data is depicted in Figure 40 by prescriber type, the client will not be counted under Justice Health funded prescriber. This accounts for the variation for Justice Health across the Figures.

Note: Missing data: Dosing point data is recorded as missing in cases where the dosing point information not available in the database at the time of extract and reporting.

Comment

Between 30 June 2007 and 30 June 2016, community pharmacy dosing was consistently the most common dosing point in each time period. In 2016, almost 53% of clients (10,687) received treatment at a community pharmacy; 18% of clients (3,678) received treatment at a public clinic; and 15% of clients (3,061) received treatment at a private clinic (Figure 37).

Specialist clinics (public or private) generally have greater resources to manage clients with complex clinical needs. Specialist clinics are usually the most appropriate dispensing points for more vulnerable clients who require greater monitoring due to high risk drug use or medical/psychiatric conditions. For treatment in public clinics, there is no dosing charge. For stable clients who require less monitoring, treatment is available through general practitioners and community pharmacy dosing. Clients who achieve stability in public clinics can transition to the community setting, which may be more suitable and convenient for them. Conversely, a patient undergoing a period of instability may return to a specialist public clinic for treatment.

Figure 38: Number of people participating in the Opioid Treatment Program, by dosing point, by LHD, at 30 June 2016

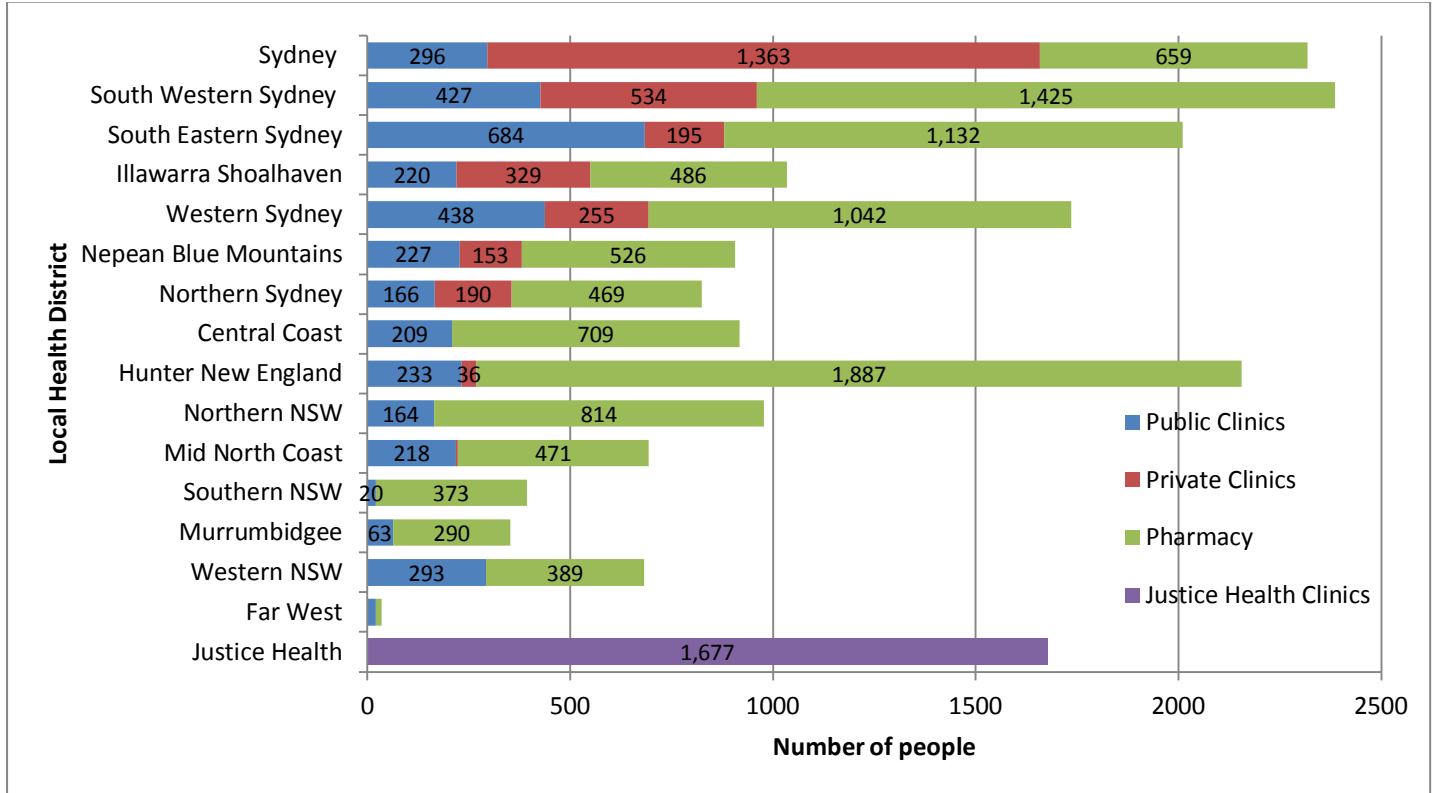
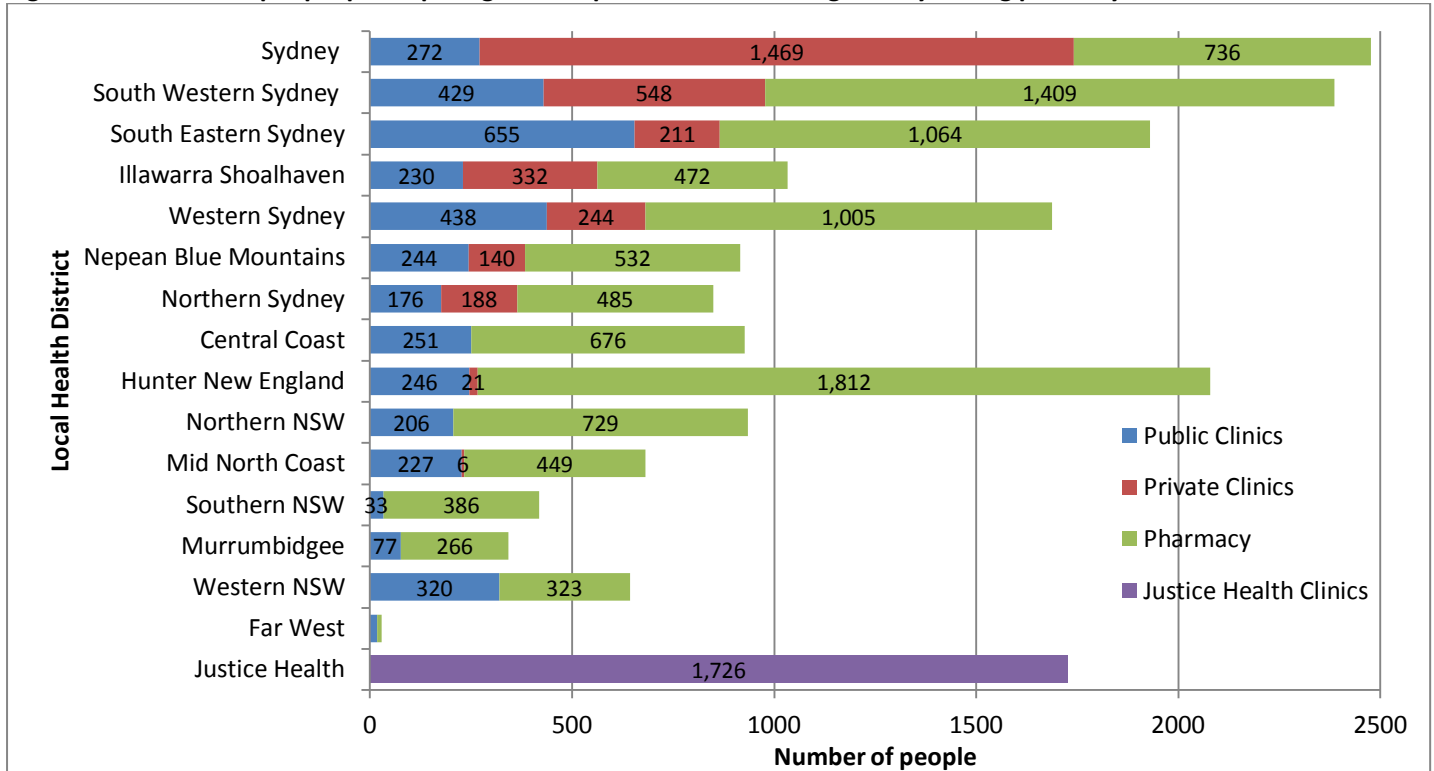


Figure 39: Number of people participating in the Opioid Treatment Program, by dosing point, by LHD, at 30 June 2015



Data sources (Figure 38 and 39): Pharmaceutical Drugs and Addiction System (PHDAS), NSW Health; data extracted: 7/7/2015, 7/7/2016
 Note: As this data is collected at a point in time (ie. the last day of every month), this data represents the number of clients participating in the OTP at 30 June in the given year. Data is by dosing point by LHD, not by patient’s residential address.

Note: The data is likely to be higher than the actual number of people participating in the OTP due to the lag in the recording of program end dates for some people ending OTP.

Note Figure 38: In Far West in 2016 there were 20 people treated in Public Clinics and 15 people treated in community pharmacies; In Mid North Coast in 2016 the number of people treated in private clinics was 5 or less.

Note Figure 39: In Far West, in 2015 there were 18 people treated in Public Clinics, and 11 people treated in community pharmacies.

Comment

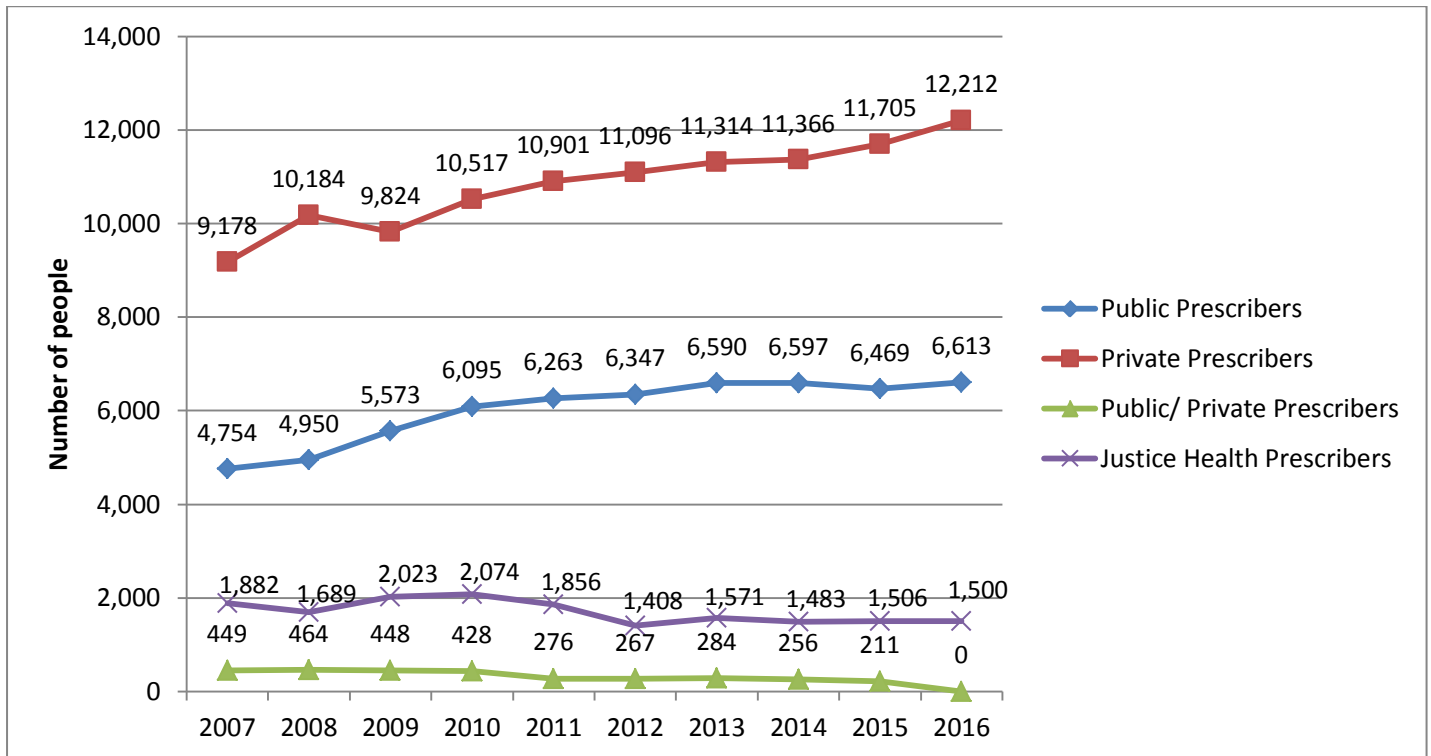
The number of people receiving OST has increased or remained steady in the majority of LHDs between 2015 and 2016 (Figure 38 and Figure 39).

The highest number of people receiving OST occurs in South Western Sydney, Sydney, Hunter New England, South Eastern Sydney, Western 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, Illawarra Shoalhaven and Western Sydney.

The highest number of people treated in community pharmacies occurs in Hunter New England, South Western Sydney, South Eastern Sydney and Western Sydney.

Figure 40: Number of people participating in the Opioid Treatment Program, by prescriber type, at 30 June, 2007 – 2016

Data source: Pharmaceutical Drugs and Addiction System (PHDAS), NSW Health; data extracted one week after the last day of the year.

Note: As this data is collected at a point in time (ie. the last day of every month), this data represents the number of clients participating in the OTP at 30 June in the given year.

Note: The data is likely to be higher than the actual number of people participating in the OTP due to the lag in the recording of program end dates for some people ending OTP.

Note: The number of people participating in the OTP (by dosing point) was less than 6 (less than 0.03%) in Public/Private clinics, 2007-2016. (Public/Private clinics - These numbers relate to dosing that cannot be separated into a private or public clinic type.)

Note: The total number of people participating in the OTP as shown in 37, 38, 39 & 40 is consistent as the data represents the number of people who received their dose on the snapshot day. Figure 37 shows the number who received their dose at each dosing point type. Figure 40 shows those same people who received their dose on the snapshot day against their prescriber type. For example, a person receiving their dose at a pharmacy can have a prescriber who is either (1) public, (2) private, (3) justice health or (4) public/ private.

Note: There will be variation across Figures 37, 38, 39 & 40 due to counting number of people in the OTP by different groupings and criteria. For a client participating in the OTP, the dosing point type with its funding type and the prescriber funding type are recorded. If a client is dosed at Justice Health, the dosing point type will be Justice Health but can be prescribed by a public, private or a Justice Health funded prescriber. For example, if a client is dosed at Justice Health but prescribed by a public funded prescriber, when this data is depicted in Figure 40 by prescriber type, the client will not be counted under Justice Health funded prescriber. This accounts for the variation for Justice Health across the Figures.

Note: Missing data was less than 6 (less than 0.03%), 2007-2016

Public/Private Prescribers – These numbers relate to prescribing that cannot be separated into a single prescriber type.

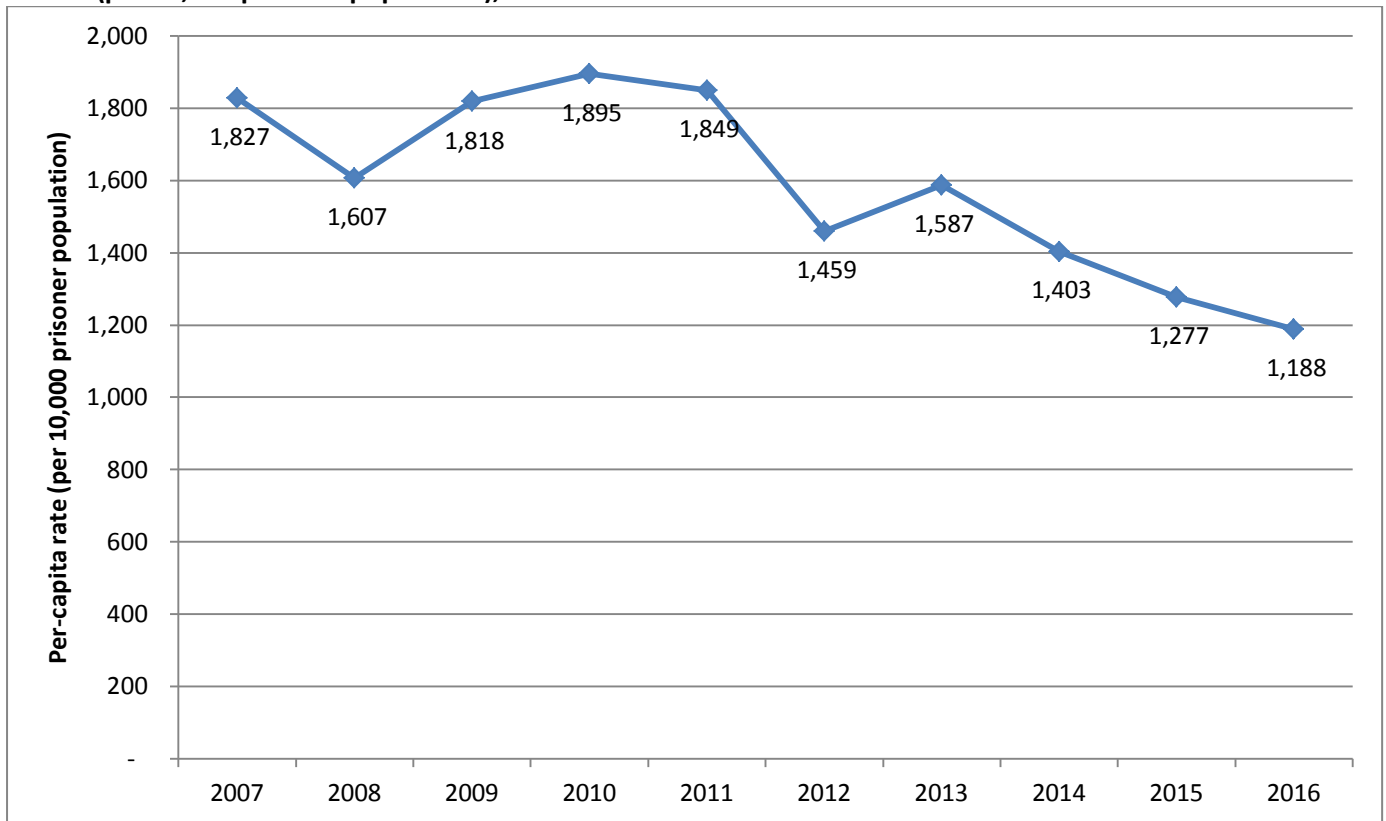
Comment

In 2016, 60% of NSW clients (n=12,212) were prescribed OST by a private prescriber. Over 32% of NSW clients (n=6,613) were prescribed by a public prescriber in 2016 (Figure 40). 7.4% of NSW clients (n=1,500) in 2016 were prescribed OST in Justice Health settings.

Between 30 June 2007 and 30 June 2016, the increase in clients being treated using OST (from 16,263 in 2007 to 20,327 in 2016) (Figure 34) was mostly undertaken by public and private prescribers in NSW. There was a decrease in the number and proportion of people in NSW who were prescribed OST in Justice Health settings. During this period, the number of people in NSW prescribed OST in Justice Health settings declined by over 25%, from 1,882 in 2007 (11.6% of NSW clients) to 1,500 in 2016 (7.4% of NSW clients).

Between 30 June 2007 and 30 June 2016, people receiving OST in NSW were most likely to be prescribed OST by a private prescriber – usually a GP. It is useful to view Figure 39 alongside Figure 36, Figure 37, and Figure 38 which identify the number of people participating in the OTP by dosing point.

Figure 41: Per-capita rate of people participating in the NSW Opioid Treatment Program by Justice Health prescriber (per 10,000 prisoner population), 2007 – 2016



Data sources: (1) Pharmaceutical Drugs and Addiction System (PHDAS), NSW Health; data extracted one week after the last day of the year. (2) Australian Bureau of Statistics - 4517.0 - Prisoners in Australia, 2015

Note: As this data is collected at a point in time (ie. the last day of every month), this data represents the number of clients participating in the OTP at 30 June in the given year.

Note: The data is likely to be higher than the actual number of people participating in the OTP due to the lag in the recording of program end dates for some people ending OTP.

Comment

Between 30 June 2007 and 30 June 2016, the per-capita rate of people participating in the NSW Opioid Treatment Program by Justice Health prescriber has decreased from 1,827 per 10,000 prisoner population to 1,188 per 10,000 prisoner population. This downward trend is magnified by the increase in NSW prisoner population numbers from 10,300 in 2005, to 12,629 in 2016.

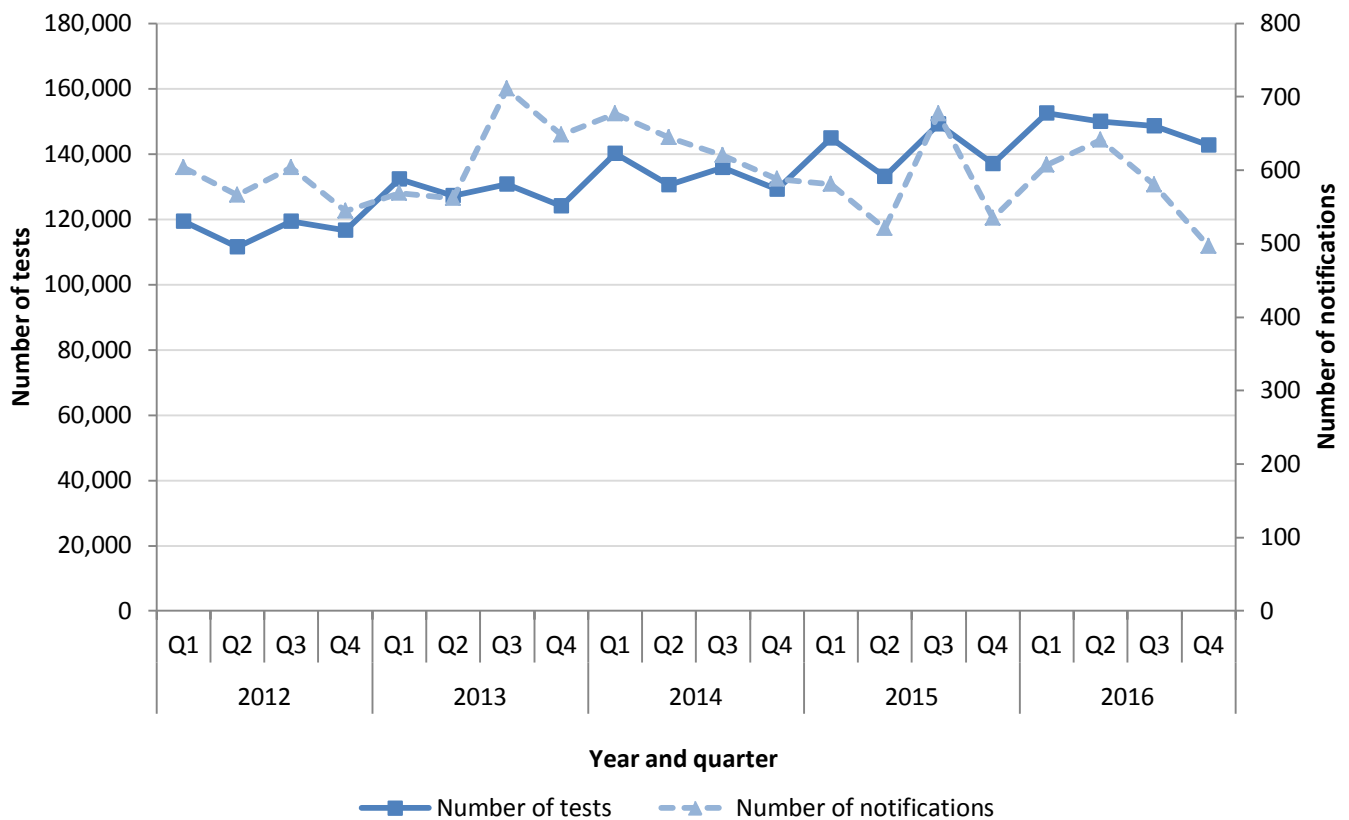
It is useful to view Figure 41 alongside Figure 40, which shows that the number of people participating in the OTP in Justice Health settings has remained low in 2016 (n=1,500) compared to 2007 (n=1,882).

3. TEST – Increase testing for hepatitis B and hepatitis C

3.1 Is hepatitis B virus testing increasing in NSW?

In 2012, NSW Health commenced collection of monthly testing data for selected notifiable conditions from 15 NSW public and private laboratories under the NSW denominator data project. 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 on the same individual.

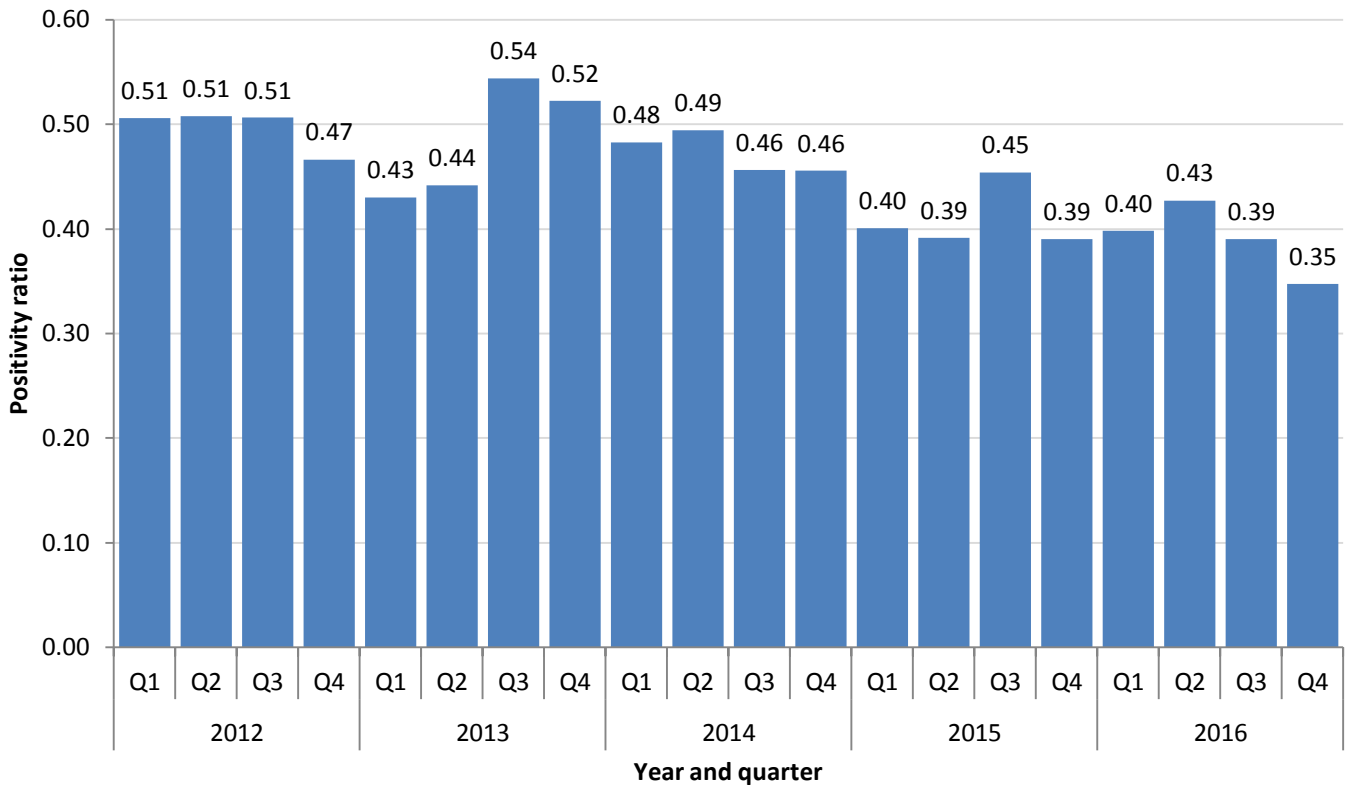
Figure 42: Number of tests for hepatitis B surface antigen performed at 15 NSW laboratories and number of hepatitis B notifications per quarter, January 2012 – December 2016



Data sources: NCIMS and NSW denominator data project, NSW Health

Comment

The number of hepatitis B tests performed in NSW is continuing to increase gradually each year. In 2016, 593,778 tests for hepatitis B surface antigen were performed in 15 laboratories in NSW, a 5.2% increase from 2015 (564,264 tests).

Figure 43: Hepatitis B positivity ratio³⁹, NSW, January 2012 – December 2016

Data sources: NCIMS and NSW denominator data project, NSW Health

Comment

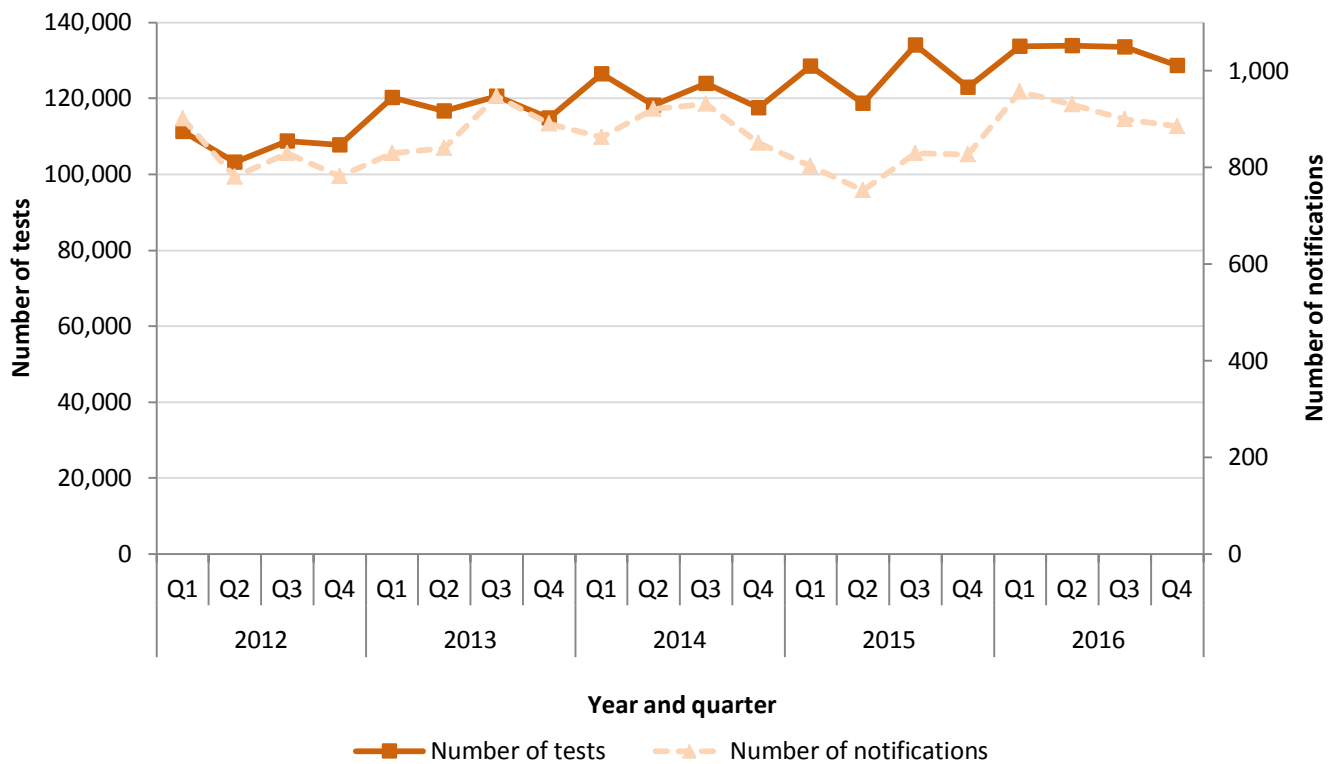
Although the number of hepatitis B tests performed in NSW is continuing to increase gradually each year, the positivity ratio is declining. In 2016, the hepatitis B positivity ratio was 0.39, down from 0.41 in 2015 and 0.50 in 2012. This suggests that there is increased testing amongst a broader population that is at lower risk.

³⁹ The positivity ratio was calculated by dividing the overall positive results notified to NSW Health by all laboratories by the total number of tests performed as reported from the participating laboratories, and multiplying by 100. The overall positive results included in the analysis are for individual people notified with hepatitis B reported from all laboratories. However, the testing data are for individual tests reported from participating laboratories and may include multiple specimens per individual. As such, the ratio of positive notifications per test may be an underestimate of the per cent of people tested that were positive for the first time in NSW for the condition.

3.2 Is hepatitis C virus testing increasing in NSW?

In 2012, NSW Health commenced collection of monthly testing data for selected notifiable conditions from 15 NSW public and private laboratories under the NSW denominator data project. 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 on the same individual.

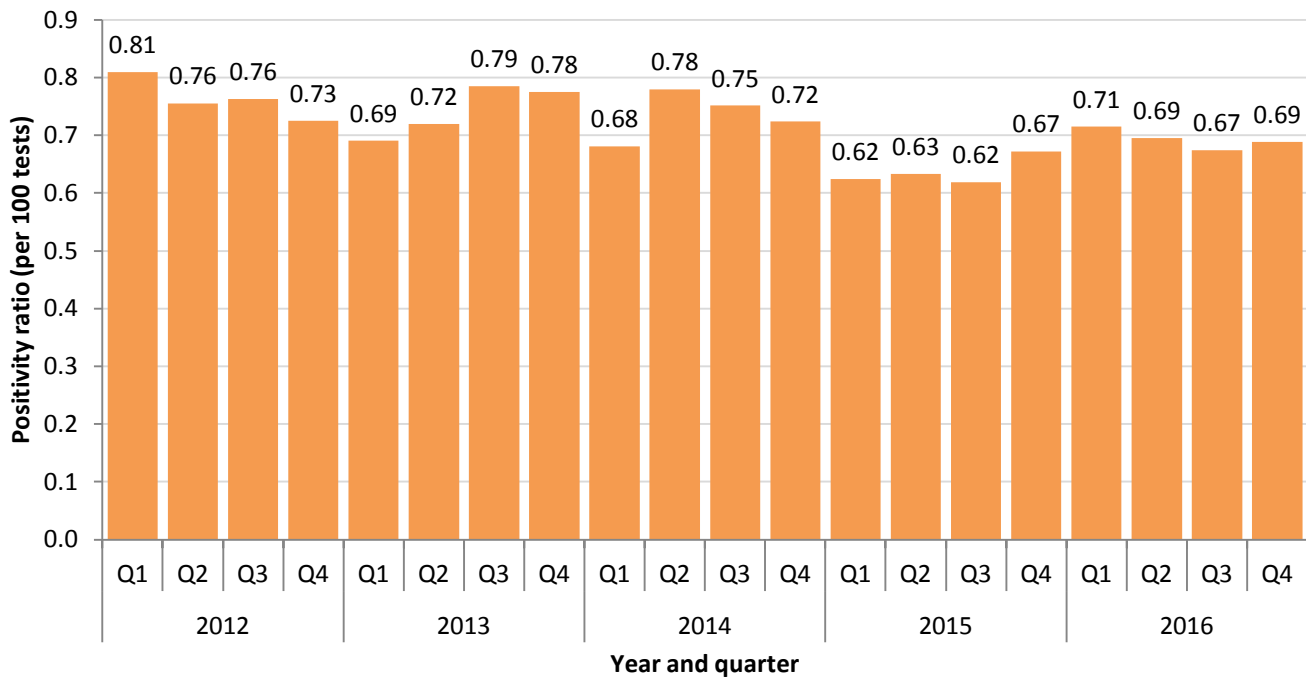
Figure 44: Number of tests for hepatitis C antibody performed at 15 NSW laboratories and number of hepatitis C notifications per quarter, January 2012 – December 2016



Data sources: NCIMS and NSW denominator data project, NSW Health

Comment

The number of hepatitis C tests performed in NSW is continuing to increase gradually each year. In 2016, 529,651 tests for hepatitis C antibody were performed in 15 laboratories in NSW, a 5.0% increase from 2015 (504,405 tests). Testing was relatively high across all quarters of 2016.

Figure 45: Hepatitis C positivity ratio⁴⁰, NSW, January 2012 – December 2016

Data sources: NCIMS and NSW denominator data project, NSW Health

Comment

In 2016, the hepatitis C positivity ratio was 0.69, up from 2015 (0.64) in but lower than in 2014 (0.73).

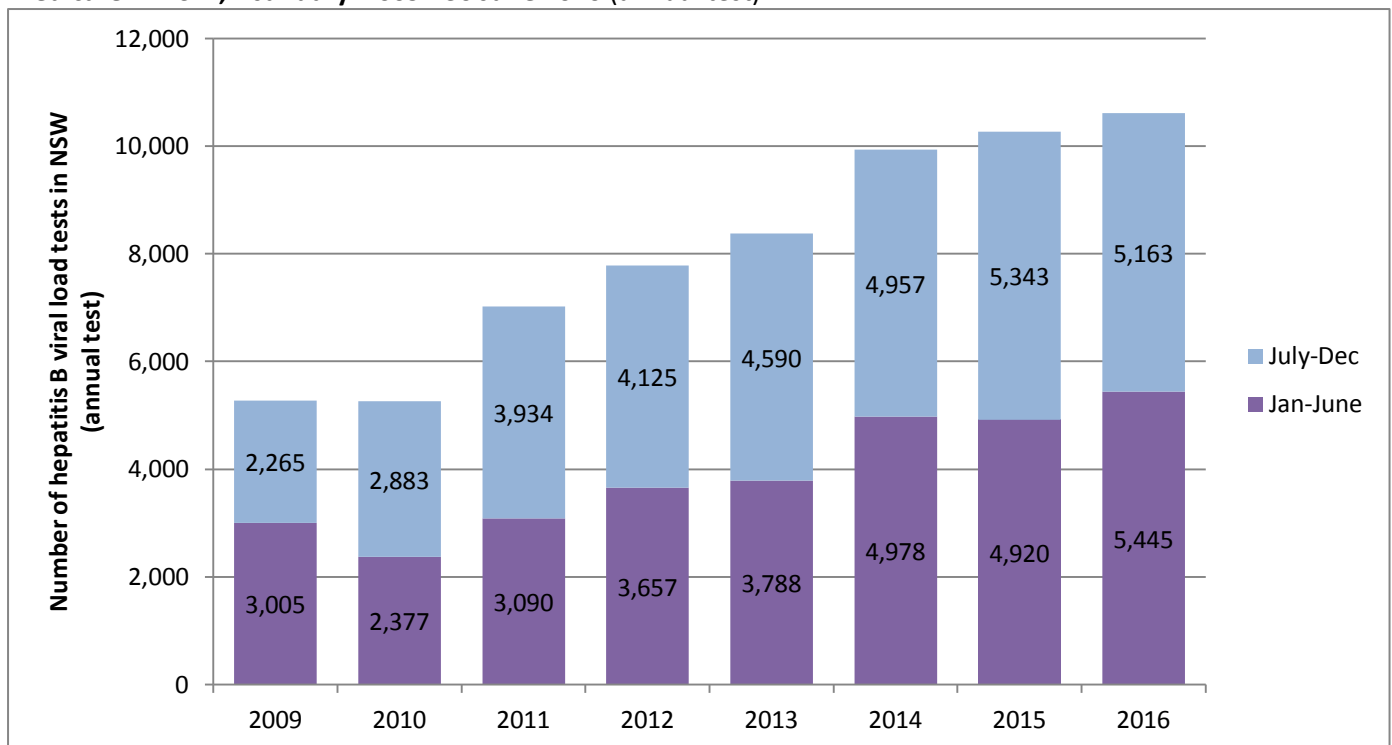
⁴⁰ The positivity ratio was calculated by dividing the overall positive results notified to NSW Health by all laboratories by the total number of tests performed as reported from the participating laboratories, and multiplying by 100. The overall positive results included in the analysis are for individual people notified with hepatitis B reported from all laboratories. However, the testing data are for individual tests reported from participating laboratories and may include multiple specimens per individual. As such, the ratio of positive notifications per test may be an underestimate of the per cent of people tested that were positive for the first time in NSW for the condition.

4. MANAGE - Improve management of hepatitis B and hepatitis C

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

Everyone living with chronic hepatitis B 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.^{41 42}

Figure 46: Number of viral load tests provided to people with chronic hepatitis B (and not receiving treatment) via Medicare in NSW, 1 January 2009 - 30 June 2016 (annual test)



Data source: Medicare Australia - Medicare Benefits Schedule (MBS) item 69482 http://medicarestatistics.humanservices.gov.au/statistics/mbs_item.jsp

Note: Data is based on Patient Enrolment Postcode; and Date of Processing.

Note: HBV Viral load tests (MBS item 69482) are covered annually under Medicare, so this data indicates the number of people tested. Note this data excludes tests not ordered under Medicare and therefore is an underestimate of the number of people being monitored.

Note: This figure includes viral load tests performed by a registered provider, for tests that qualify for Medicare Benefit for which a claim has been processed by Medicare Australia. The figure 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.

Note: There will be variation between Figure 46 and Figures 47 & 48 because they are based on two very different dates. Figure 46 is based on Date of Processing (DOP). Figures 47 & 48 are based on Date of Service (DOS).

Comment

In 2016, there were 10,608 viral load tests provided to people with chronic hepatitis B not receiving treatment in NSW based on Date of Processing (Figure 46). This represents a 3% increase compared to the same period in 2015 (n=10,263). People living with chronic hepatitis B should either be receiving treatment or being monitored while not on treatment through an annual viral load test^{31 43}. The Ministry of Health is currently developing updated incidence and prevalence modelling of infection and disease burden for hepatitis B under the BRISE⁴⁴ Research Program. This will improve estimates of people with hepatitis B in NSW who are not being monitored.

⁴¹ 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.

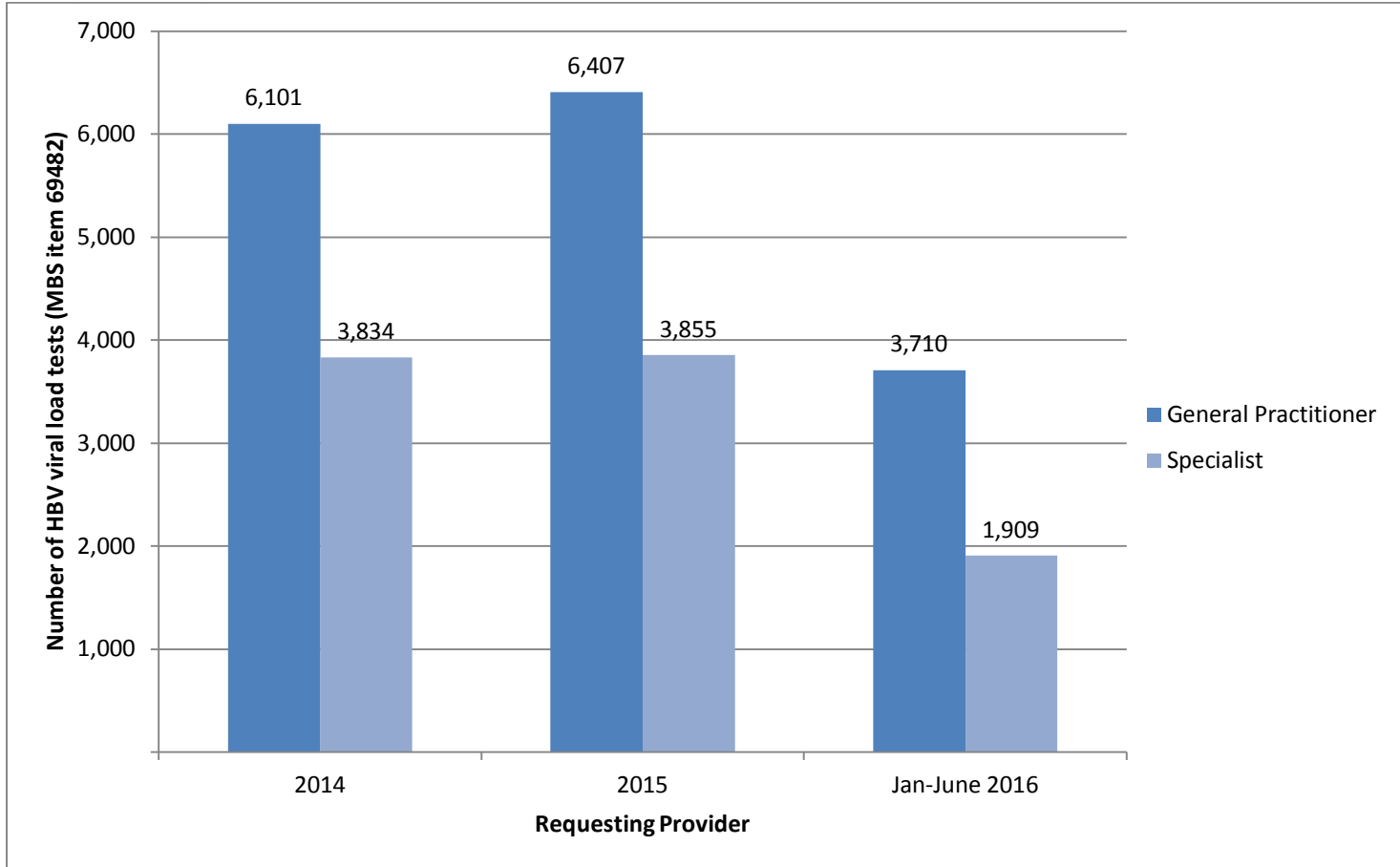
⁴² Hepatitis B Mapping Project: Estimates of chronic hepatitis B diagnosis, monitoring and treatment by Medicare Local, 2014/15 – National Report. Published by the Australasian Society for HIV Medicine (ASHM)

⁴³ 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.

⁴⁴ BBV & STI Research, Intervention and Strategic Evaluation (BRISE), 2014-2019 – University of NSW

4.2 Where are people with chronic hepatitis B having their condition monitored in NSW?

Figure 47: Number of HBV viral load tests (MBS item 69482) provided to people with chronic hepatitis B (and not receiving treatment) requested by General Practitioners and Specialists via Medicare in NSW, 1 Jan 2014 – 30 June 2016 (annual test)



Data source: Medicare Benefits Schedule, Department of Human Services

Note: Data is based on Patient Enrolment Postcode; and date of Service.

Note: HBV Viral load tests (MBS item 69482) are covered annually under Medicare, so this data indicates the number of people tested. Note this data excludes tests not ordered under Medicare and therefore is an underestimate of the number of people being monitored.

Note: This figure includes viral load tests performed by a registered provider, for tests that qualify for Medicare Benefit for which a claim has been processed by Medicare Australia. The figure 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.

Note: There will be variation between Figure 46 and Figures 47 & 48 because they are based on two very different dates. Figure 46 is based on Date of Processing (DOP). Figures 47 & 48 are based on Date of Service (DOS).

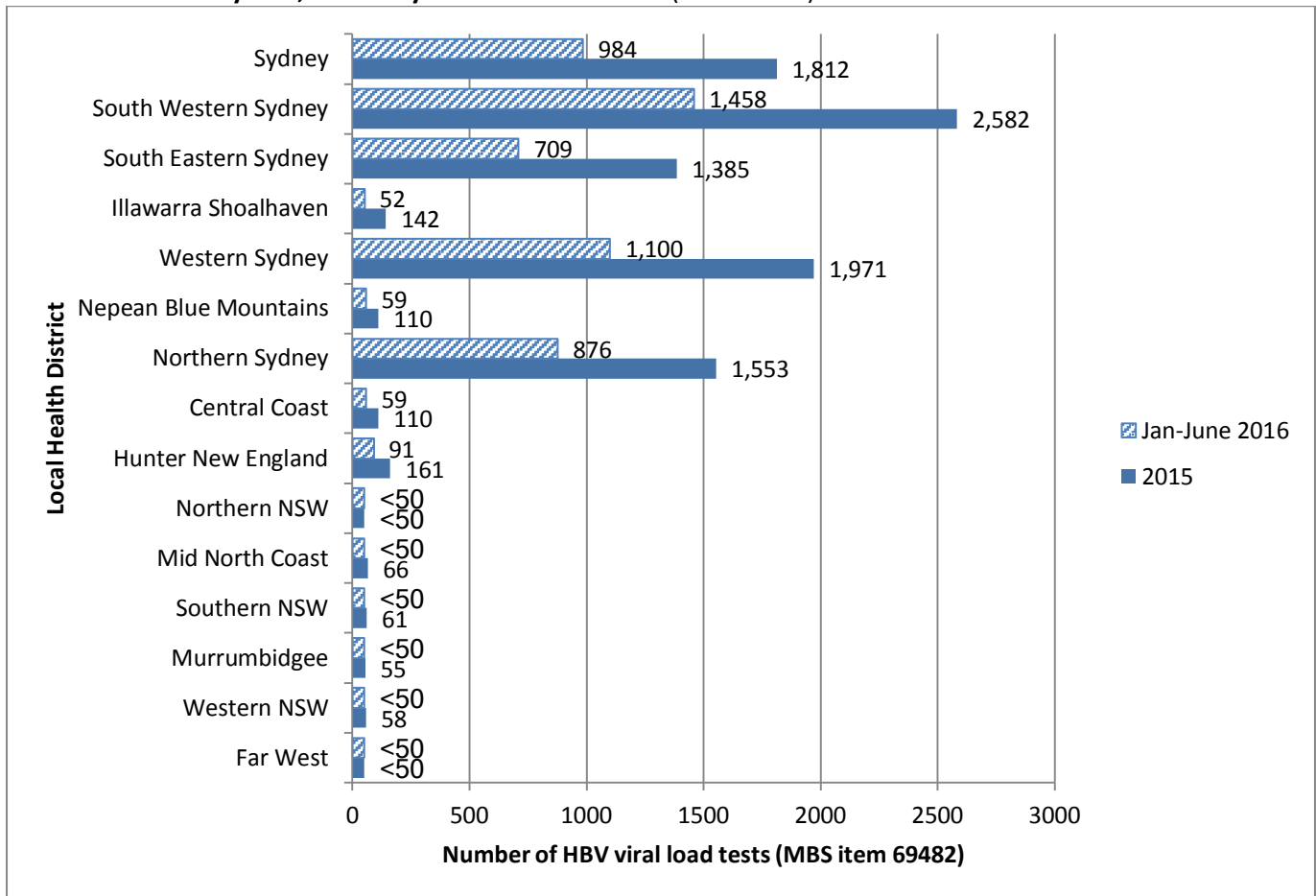
Note: Data beyond Jan-June 2016 was not available at the time of reporting.

Comment

Between January to June 2016, there were 5,619 viral load tests provided to people with chronic hepatitis B (and not receiving treatment) in NSW based on Date of Service. This represents an increase of 12% compared to the same period in 2015 (n=5,023).

Between January to June 2016, 66% (3,710) of viral load tests (MBS item 69482) were requested by general practitioners and 34% (n=1,909) were requested by specialists in NSW (Figure 35). During this period, the number of tests requested by general practitioners increased by 18% compared to the same period in 2015 (n=3,137), while the number of viral load tests requested by specialists was stable (increased by 1%) compared to January to June 2015 (n=1,885).

Figure 48: Number of viral load tests provided to people with chronic hepatitis B (and not receiving treatment) via Medicare in NSW by LHD, 1 January 2015 – 30 June 2016 (annual test)



Data source: Medicare Benefits Schedule, Department of Human Services

Note: Data is based on Patient Enrolment Postcode; and date of Service.

Note: HBV Viral load tests (MBS item 69482) are covered annually under Medicare, so this data indicates the number of people tested. Note this data excludes tests not ordered under Medicare and therefore is an underestimate of the number of people being monitored.

Note: This figure includes viral load tests performed by a registered provider, for tests that qualify for Medicare Benefit for which a claim has been processed by Medicare Australia. The figure 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.

Note: There will be variation between Figure 46 and Figures 47 & 48 because they are based on two very different dates. Figure 46 is based on Date of Processing (DOP). Figures 47 & 48 are based on Date of Service (DOS).

Note: Data is based on Patient Enrolment Postcode concorded to LHD. Of the total 10,263 tests in NSW in 2015, 136 were unallocated to an LHD. Of the 5,619 tests in NSW based on date of service in Jan-June 2016, 67 were unallocated to an LHD.

Note: Data beyond Jan-June 2016 was not available at the time of reporting.

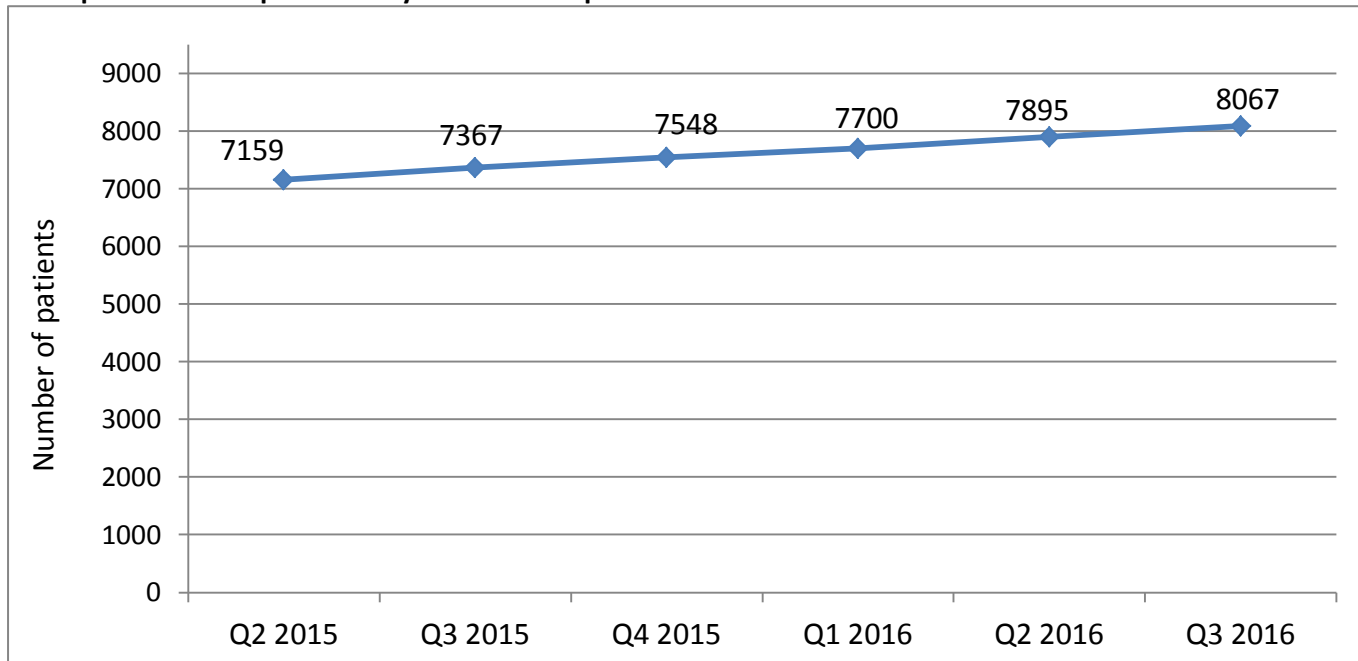
Comment

Between January 2015 and 30 June 2016, the highest number of viral load tests provided to people with chronic hepatitis B (and not receiving treatment) in NSW occurred in: South Western Sydney, Western Sydney, Sydney, Northern Sydney and South Eastern Sydney. This geographic spread is broadly consistent with the districts that have higher notification rates of hepatitis B.

5. TREAT - Improve access to hepatitis B and hepatitis C treatment

5.1 How many people in NSW are accessing hepatitis B treatment in public and primary care?

Figure 49: Number of NSW residents (unique patients) dispensed hepatitis B treatment in the previous year of each quarter for the period 1 July 2014 to 30 September 2016



Data source: Pharmaceutical Benefits Schedule Highly Specialised Drugs Programme data prepared for NSW Health.

Comment

Between 1 October 2015 and 30 September 2016 (Q3 2016), a total of **8,067** NSW residents were dispensed treatment for chronic hepatitis B at least once in public hospital, private hospital and community pharmacies in NSW⁴⁵. This result is almost 10% higher than the same period in 2015 (Q3 2015; n=7,367) (Figure 49).

The number of people treated between 1 October 2015 to 30 September 2016 represents approximately 10% of the 84,600⁴⁶ people estimated to be living with chronic hepatitis B in NSW. Australian and international estimates indicate that that between 10-25 per cent of people living with chronic hepatitis B are eligible for treatment^{47,48,49}. The Second National Hepatitis B Strategy 2014-2017 sets a target that 15 per cent of people living with chronic hepatitis B should be receiving treatment, which equates to about 12,700 people on treatment in NSW.

The Ministry of Health is currently developing updated incidence and prevalence modelling of infection and disease burden for hepatitis B under the BRISE⁵⁰ Research Program. This will improve estimates of people with hepatitis B in NSW who are not being monitored (see section 4.1) or receiving antiviral treatment.

⁴⁵ Pharmaceutical Benefits Schedule Highly Specialised Drugs Programme prepared for NSW Health.

⁴⁶ 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)

⁴⁷ Hutton, D.W., et al., Cost-Effectiveness of Screening and Vaccinating Asian and Pacific Islander Adults for Hepatitis B. *Annals of Internal Medicine*, 2007. 147(7):p.460-469

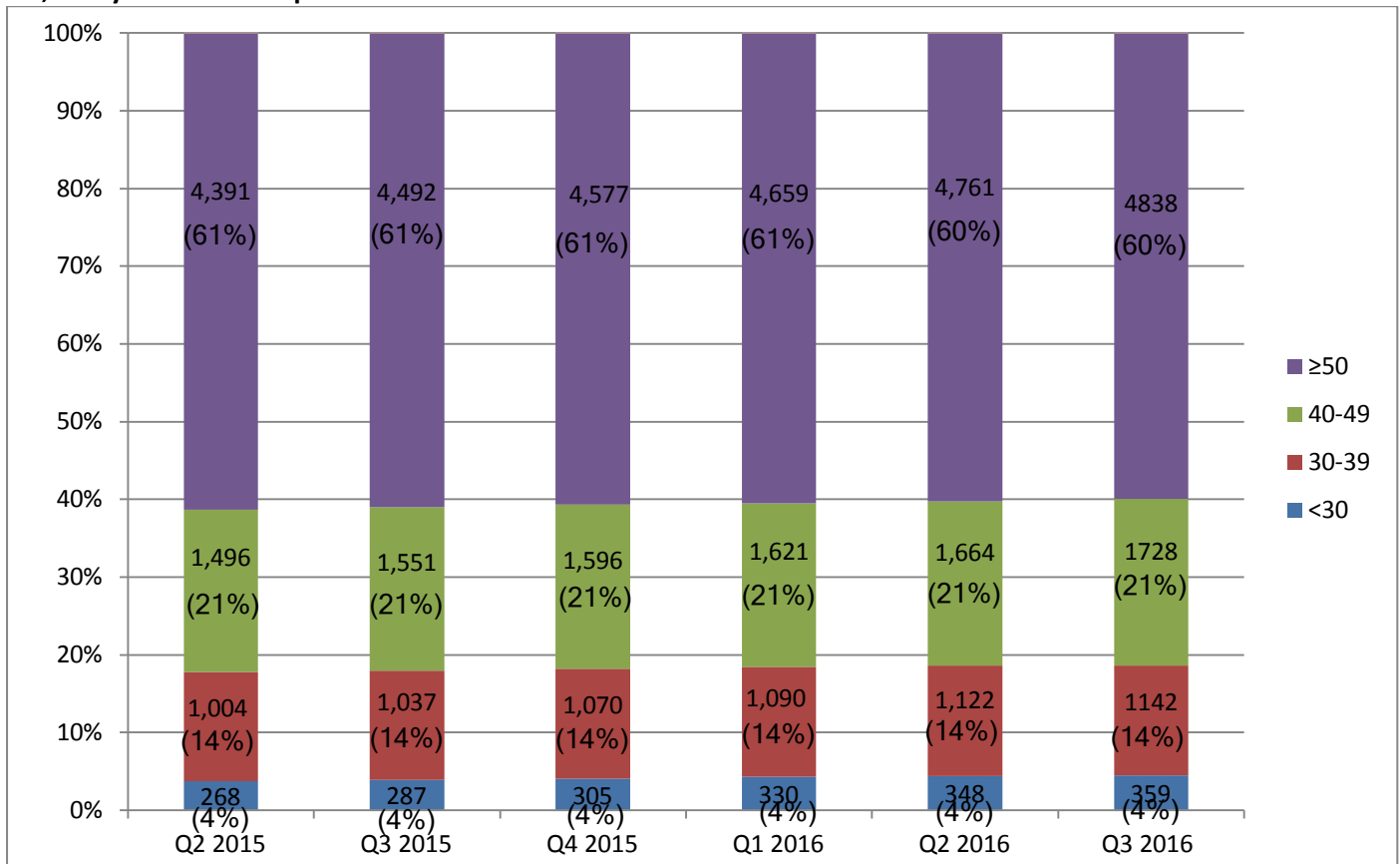
⁴⁸ Robotin, M., et al., Using a population-based approach to prevent hepatocellular cancer in New South Wales, Australia: effects on health services utilisation. *BMC Health Services Research* 2010. 10(1): p.215

⁴⁹ Butler, J., et al., *The impact of chronic hepatitis B in Australia: Projecting mortality, morbidity and economic impact, 2009*, Australian Centre for Economic Research on Health: Canberra.

⁵⁰ BBV & STI Research, Intervention and Strategic Evaluation (BRISE), 2014-2019 – University of NSW

5.2 Which groups with chronic hepatitis B are being treated?

Figure 50: Number and proportion of NSW residents dispensed hepatitis B treatment by age category and by quarter, 1 July 2014 to 30 September 2016



Data source: Pharmaceutical Benefits Schedule Highly Specialised Drugs Programme data prepared for NSW Health.

Note: The age category <20 years was merged with 20-29 years presented in the Figure due to small numbers (<30 years)

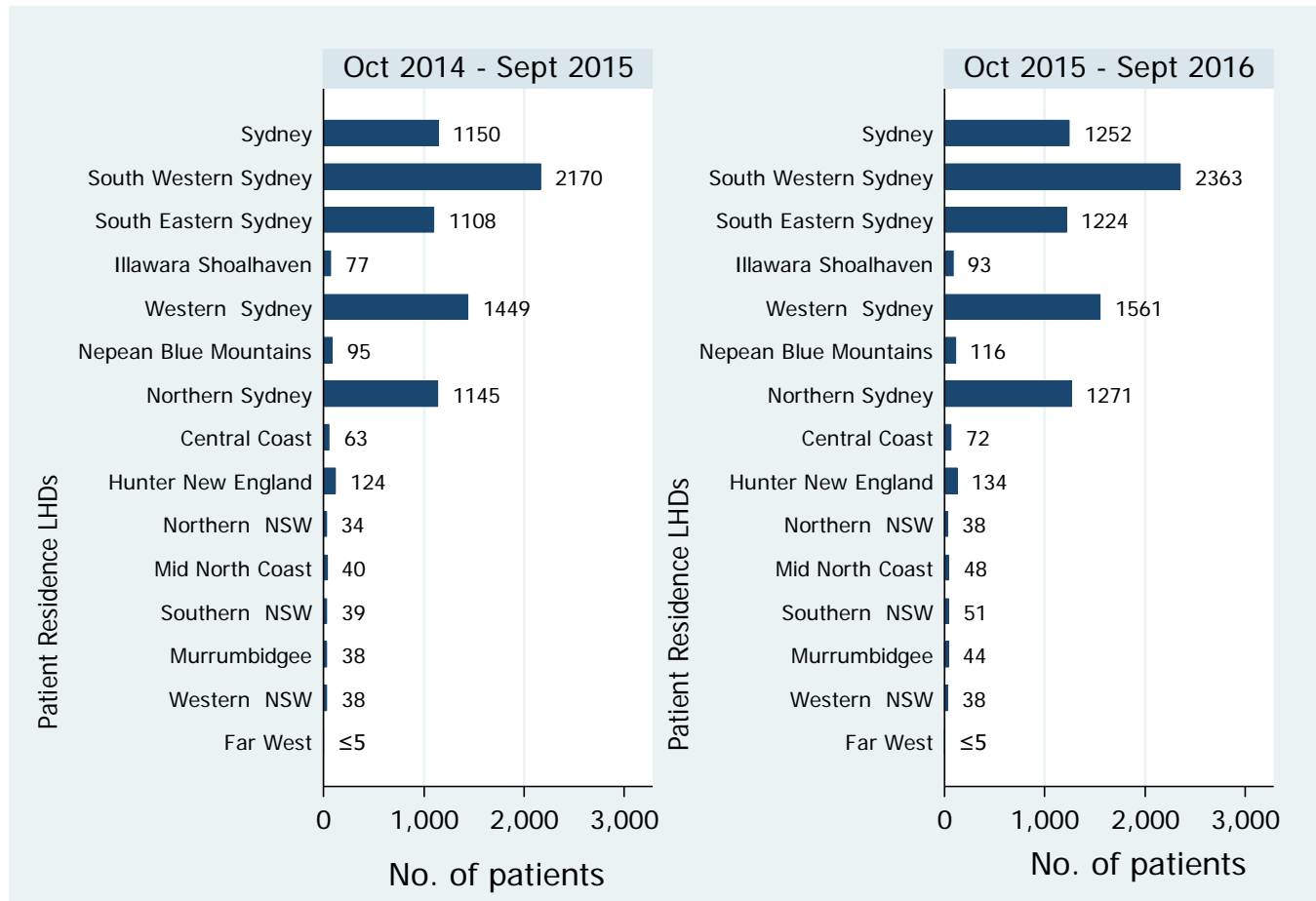
Comment

Of the 8,067 NSW residents dispensed hepatitis B treatment between 1 October 2015 to 30 September 2016, 62% were male and 38% were female. The majority were older with 60% aged 50 years or older; 21% were aged 40-49 years; 14% were aged 30-39 years; and 4% were aged 29 years or younger.

The proportion of NSW residents who have been dispensed hepatitis B treatment by age category has remained stable between 1 July 2014 to 30 September 2016 (Figure 50).

5.3 Where are people with chronic hepatitis B receiving treatment in NSW?

Figure 51: Number of NSW residents (unique patients) dispensed hepatitis B treatment by LHD of patient residence, 1 October 2014 to 30 September 2016



Data source: Pharmaceutical Benefits Schedule Highly Specialised Drugs Programme data prepared for NSW Health.

Note: The Figure above identifies the number of people initiating treatment according to a patient's residential address, which also incorporates patients who were dispensed treatment in Justice Health settings. A total of 25 NSW residents dispensed treatment in Justice Health settings are residents of the following LHDs: Sydney (n=5 or less); South Western Sydney (n=5 or less); South Eastern Sydney (n=6); Western Sydney (n=5 or less); Nepean Blue Mountains (n=5 or less); Northern Sydney (n=5 or less); Hunter New England (n=5 or less); Southern NSW (n=5 or less); Murrumbidgee (n=5 or less); Western NSW (n=5 or less).

Note: The number of people dispensed hepatitis B treatment in Far West was 5 or less.

Note: The numbers displayed in the Figure add up to a total that is greater than the overall total for the period. This is because a small number of cross-pharmacy type patient flows are not eliminated.

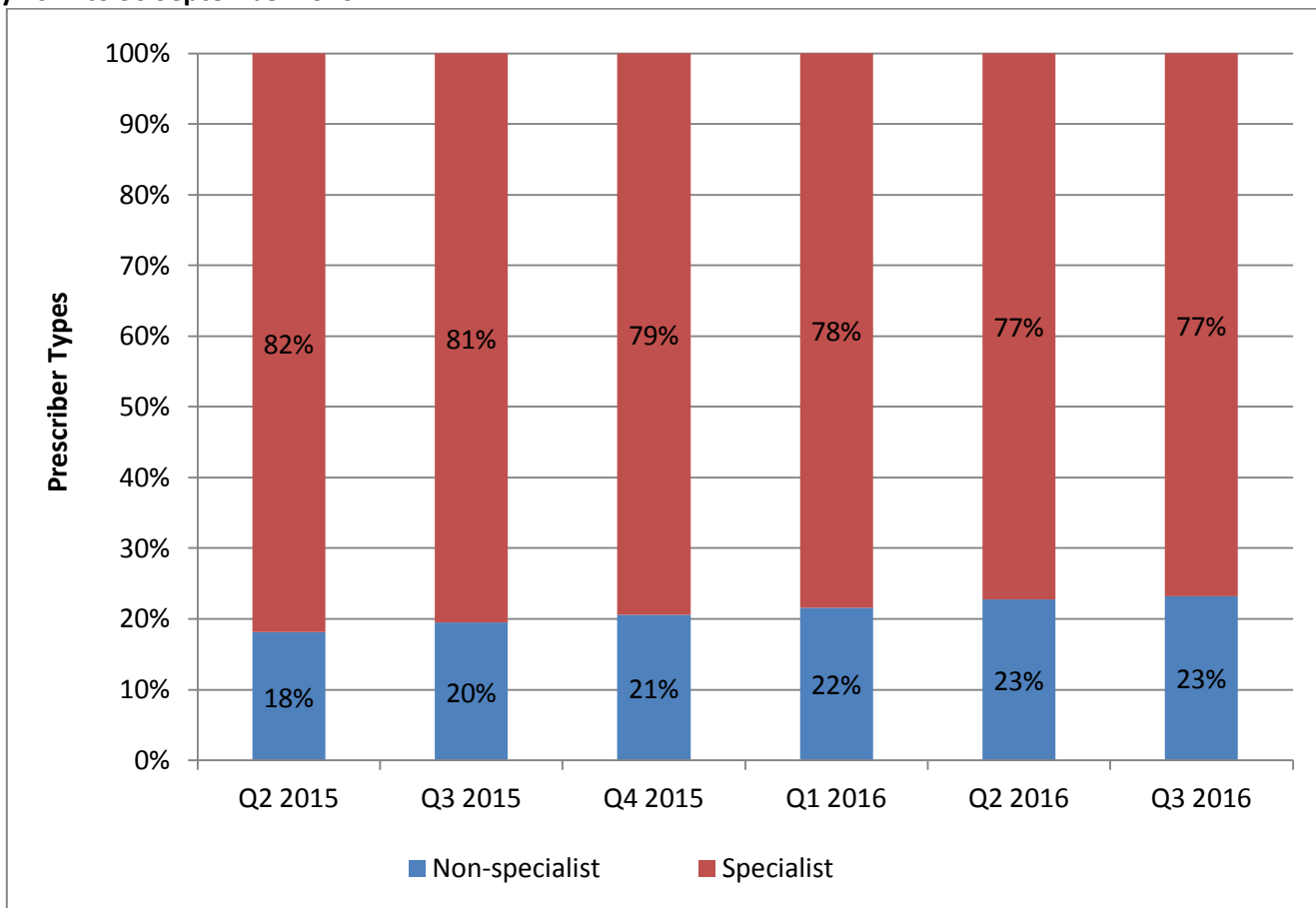
Comment

Between 1 October 2015 to 30 September 2016, the number of people dispensed hepatitis B treatment was highest in five Sydney metropolitan LHDs (South Western Sydney, Western Sydney, Sydney, Northern Sydney and South Eastern Sydney LHDs) accounting for over 90% of hepatitis B treatment dispensed during this period. This data captures all hepatitis B treatment dispensing in NSW through the PBS in public hospital, private hospital and community pharmacies.

The number of NSW residents dispensed hepatitis B treatment increased in most LHDs in the period between 1 October 2014 to 30 September 2015 and 1 October 2015 to 30 September 2016 (Figure 51).

Prescriber Characteristics

Figure 52: Proportion of NSW residents dispensed hepatitis B treatment, by prescriber type⁵¹, and by month, 1 July 2014 to 30 September 2016



Data source: Pharmaceutical Benefits Schedule Highly Specialised Drugs Programme data prepared for NSW Health.

Note: The prescriber type was recorded as unknown for 13 people and this has been excluded from this figure.

Note: The prescriber type for each dispensing episode is provided to NSW Health as part of the PBS dataset by the Australian Government Department of Health. The Department has advised that this information is derived from other data fields and is not guaranteed to be completely accurate. As a result, a prescriber can appear in more than one category over time. Two categories are shown in the report: specialists and non-specialists.

Comment

Between 1 October 2015 to 30 September 2016, there were 1,148 prescribers for the treatment of HBV. Of these, 741 (65%) were non-specialists (which includes GPs and other prescribers); 400 (35%) were specialists; and the specialty of prescribers was unknown for less than 1%. Although there were more non-specialists than specialists, the majority of NSW residents were prescribed HBV treatment by specialists.

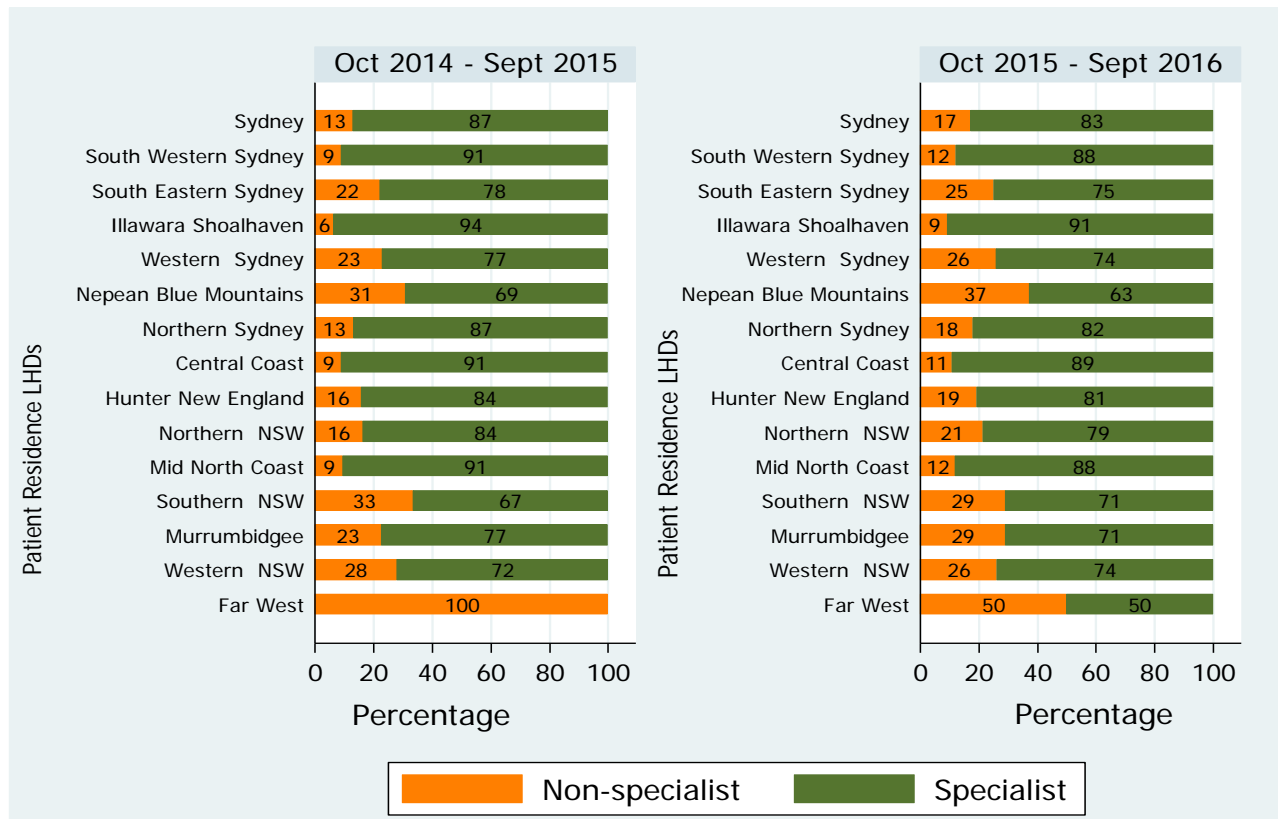
77% of NSW residents were prescribed hepatitis B treatment by specialists (n=8,259) and 23% of NSW residents were prescribed by non-specialists (n=2,496) during this period⁵².

Between 1 July 2014 to 30 September 2016, the proportion of NSW residents who were prescribed hepatitis B treatment by a non-specialist (which includes GPs) has increased each quarter (Figure 52).

⁵¹ The prescriber type/specialty is derived for each quarter based on the prescriber's registered specialties and Medicare services. As a result, a prescriber can have more than one specialty.

⁵² The number of NSW residents dispensed treatment by specialists and non-specialists adds up to a total that is greater than the overall total for that time period as some patients were prescribed treatment by more than one type of prescriber.

Figure 53: Proportion of NSW residents dispensed hepatitis B treatment by LHD of patient residence, by prescriber type⁵³, 1 October 2014 to 30 September 2016



Data source: Pharmaceutical Benefits Schedule Highly Specialised Drugs Programme data prepared for NSW Health.

Note: The prescriber type was recorded as unknown for 13 people dispensed treatment in S, SES, WS, SWS, NS and SNSW during the period and this has been excluded from this figure.

Note: The Figure identifies the number of NSW residents who were dispensed hepatitis B treatment by specialist or non-specialist by LHD of patient residence. The LHD was identified based on patient residence address as provider type address was unknown at the time of reporting.

Note: The prescriber type for each dispensing episode is provided to NSW Health as part of the PBS dataset by the Australian Government Department of Health. The Department has advised that this information is derived from other data fields and is not guaranteed to be completely accurate. As a result, a prescriber can appear in more than one category over time. Two categories are shown in the report: specialists and non-specialists.

Comment

The proportion of NSW residents who were dispensed hepatitis B treatment by a non-specialist (including GPs) increased in all LHDs except Western NSW and Far West in the period between 1 October 2014 to 30 September 2015 and 1 October 2015 to 30 September 2016 (Figure 53).

Figure 53 identifies the number of people dispensed hepatitis B treatment at each LHD of patient residence by prescriber type, which also incorporates patients who were dispensed treatment in Justice Health settings. Between 1 October 2015 to 30 September 2016, a total of 25 NSW residents were dispensed hepatitis B treatment in Justice Health with 60% of patients (n=15) prescribed by a non-specialist (including GPs and other prescribers) and 40% (n=10) prescribed by a specialist. Between 1 October 2014 to 30 September 2015, a total of 9 NSW residents were dispensed hepatitis B treatment in Justice Health with 56% of patients (n=5) prescribed by a non-specialist (including GPs and other prescribers) and 44% (n=4) prescribed by a specialist.

⁵³ The prescriber type/specialty is derived for each quarter based on the prescriber's registered specialties and Medicare services. As a result, a prescriber can have more than one speciality.

The case load of Specialists and Non-specialists in NSW

Figure 54: Proportion of Specialists treating 1, 2-9 and ≥10 patients with hepatitis B treatment in NSW by LHD of patient residence, 1 October 2015 to 30 September 2016

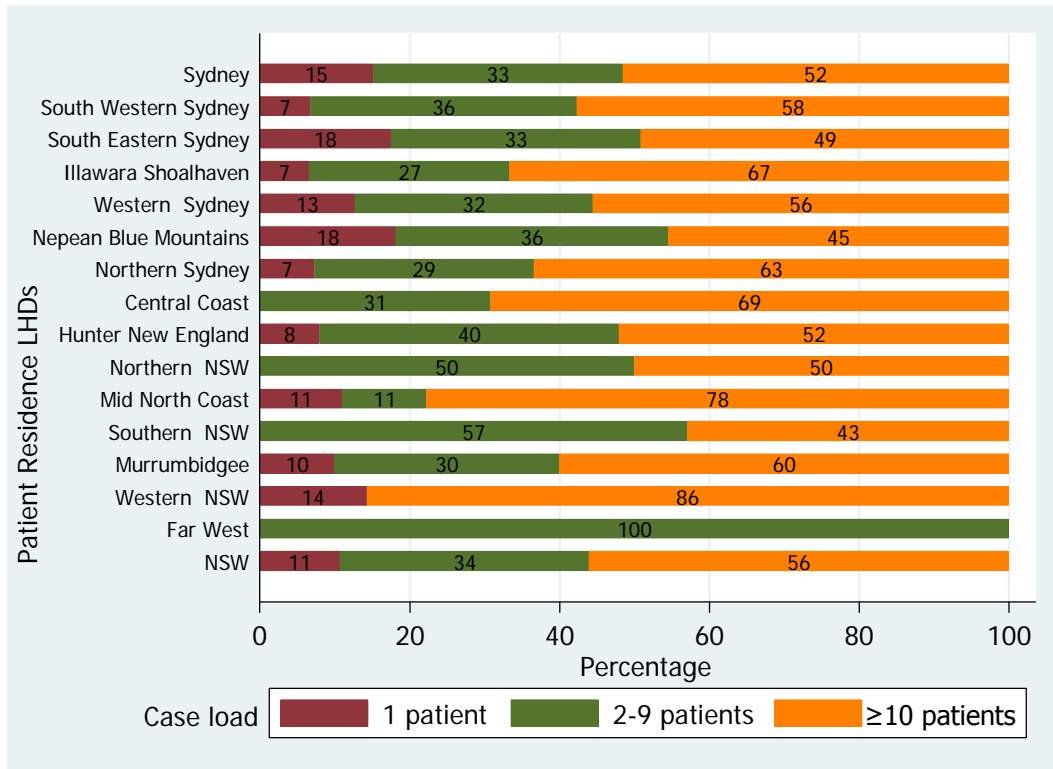
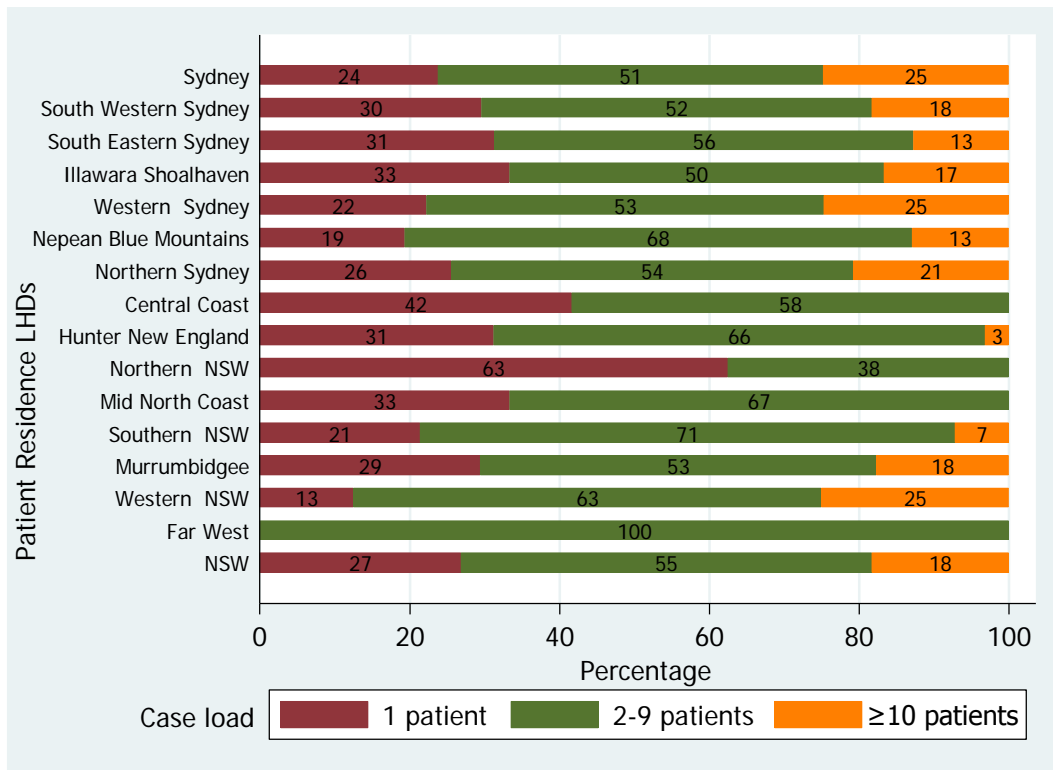


Figure 55: Proportion of Non-specialists (including GPs) treating 1, 2-9 and ≥10 patients with hepatitis B treatment in NSW by LHD of patient residence, 1 October 2015 to 30 September 2016



Data source: Pharmaceutical Benefits Schedule Highly Specialised Drugs Programme data prepared for NSW Health.

Comment

The patient case load of specialists and non-specialists (including GPs and other prescribers) treating people with hepatitis B treatment in NSW and by LHD of patient residence is shown in Figures 54 and 55 respectively.

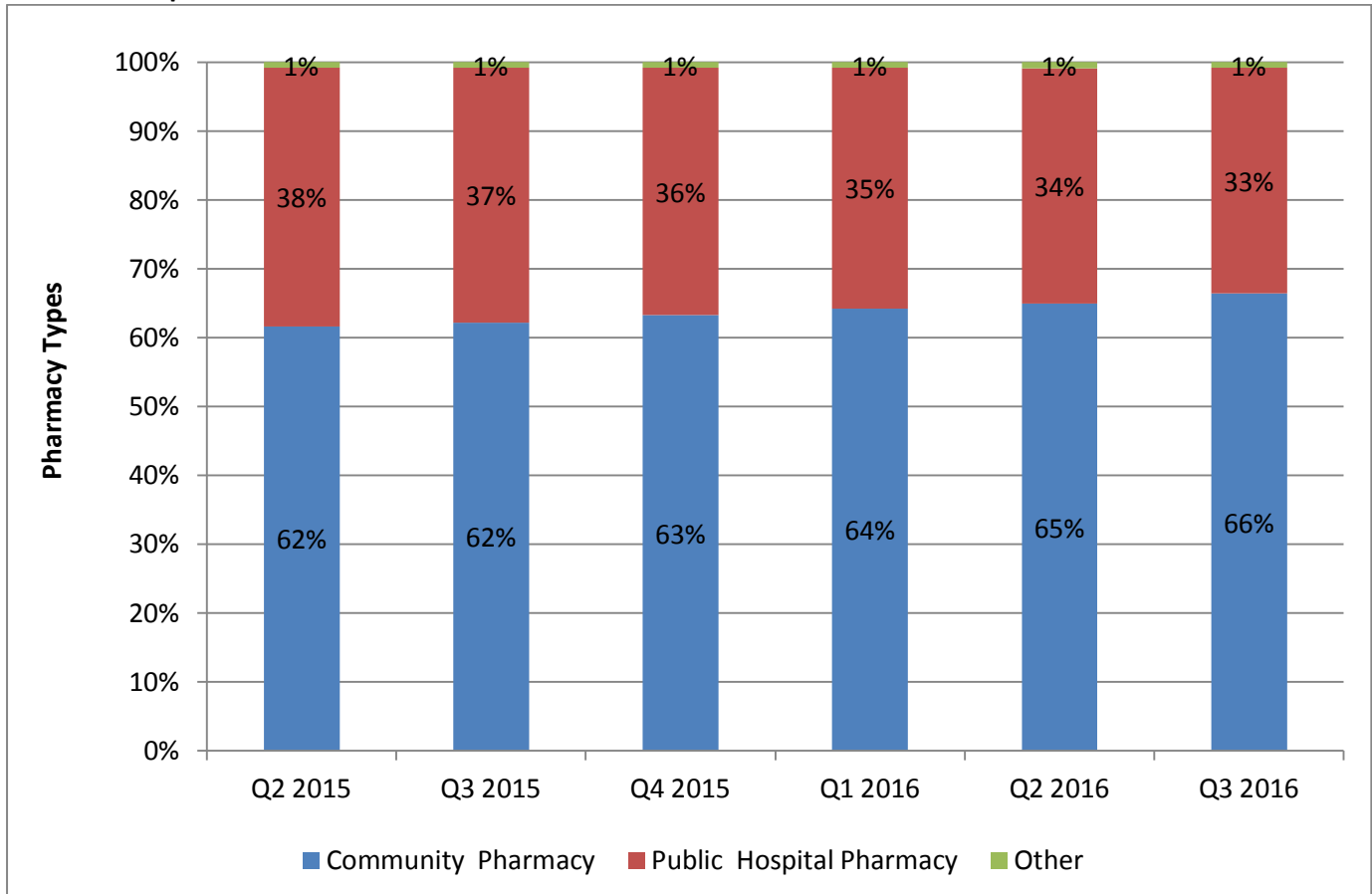
In NSW during the period between 1 October 2015 and 30 September 2016 the case load of specialists was higher compared to non-specialists. In NSW the majority of specialists treated ≥ 10 patients (56%) and the majority of non-specialists treated between 2-9 patients (55%).

Similarly, in most LHDs the majority of specialists treated ≥ 10 patients and the majority of non-specialists treated between 2-9 patients.

To support primary care to play a larger role in monitoring, managing and treating hepatitis B is a key priority under the NSW Hepatitis B Strategy 2014-2020.

Dispensing Characteristics

Figure 56: Proportion of NSW residents dispensed hepatitis B treatment, by pharmacy type and quarter, 1 July 2014 to 30 September 2016



Data source: Pharmaceutical Benefits Schedule Highly Specialised Drugs Programme data prepared for NSW Health.

Note: 'Other' includes: private pharmacy; public hospital – reforms; and friendly society. The number of unique patients at each pharmacy type adds up to a total that is greater than the overall total for that time period. This is because some patients may have received treatment from more than one pharmacy type.

Comment

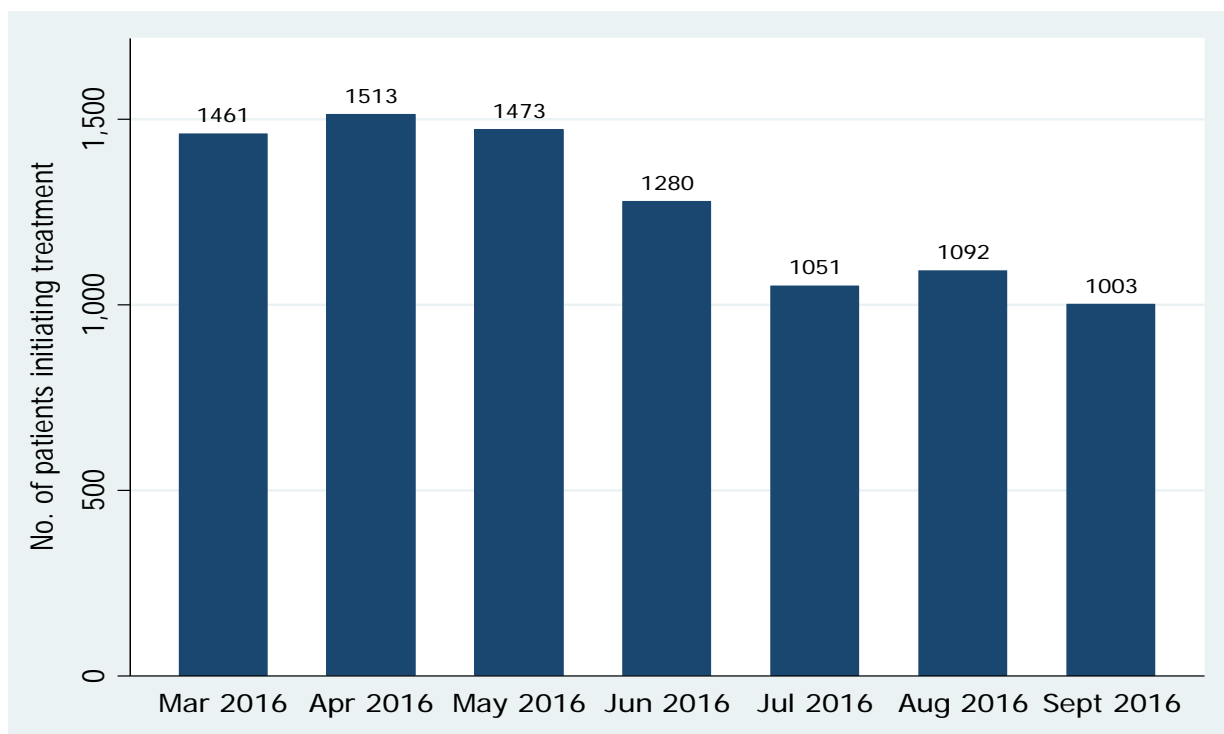
Between 1 October 2015 to 30 September 2016, 66% of NSW residents were dispensed hepatitis B treatment from community pharmacies, and 33% of residents were dispensed treatment from public hospital pharmacies.

The proportion of NSW residents who were dispensed hepatitis B treatment through community or public hospital pharmacies was roughly stable between 1 July 2014 to 30 September 2016 (Figure 56).

5.4 How many people in NSW are initiating hepatitis C treatment in public and primary care?

Since the listing of new-generation medicines on the Pharmaceutical Benefits Scheme (PBS), a total of **8,873** people in NSW initiated treatment for chronic hepatitis C during the period 1 March to 30 September 2016. This represents approximately 11% of the 80,700⁵⁴ people living with chronic hepatitis C in NSW. This data captures all hepatitis C treatment dispensing in NSW through the PBS in public hospital, private hospital and community pharmacies. It does not include non-PBS dispensing or people who may be accessing treatment through other sources, including those who purchase hepatitis C treatment from overseas or receive treatment through clinical trials.

Figure 57: Number of NSW residents initiating hepatitis C treatment by month, 1 March to 30 September 2016



Data source: Pharmaceutical Benefits Schedule Highly Specialised Drugs Programme data from March 2016 to September 2016 prepared for NSW Health.

Comment

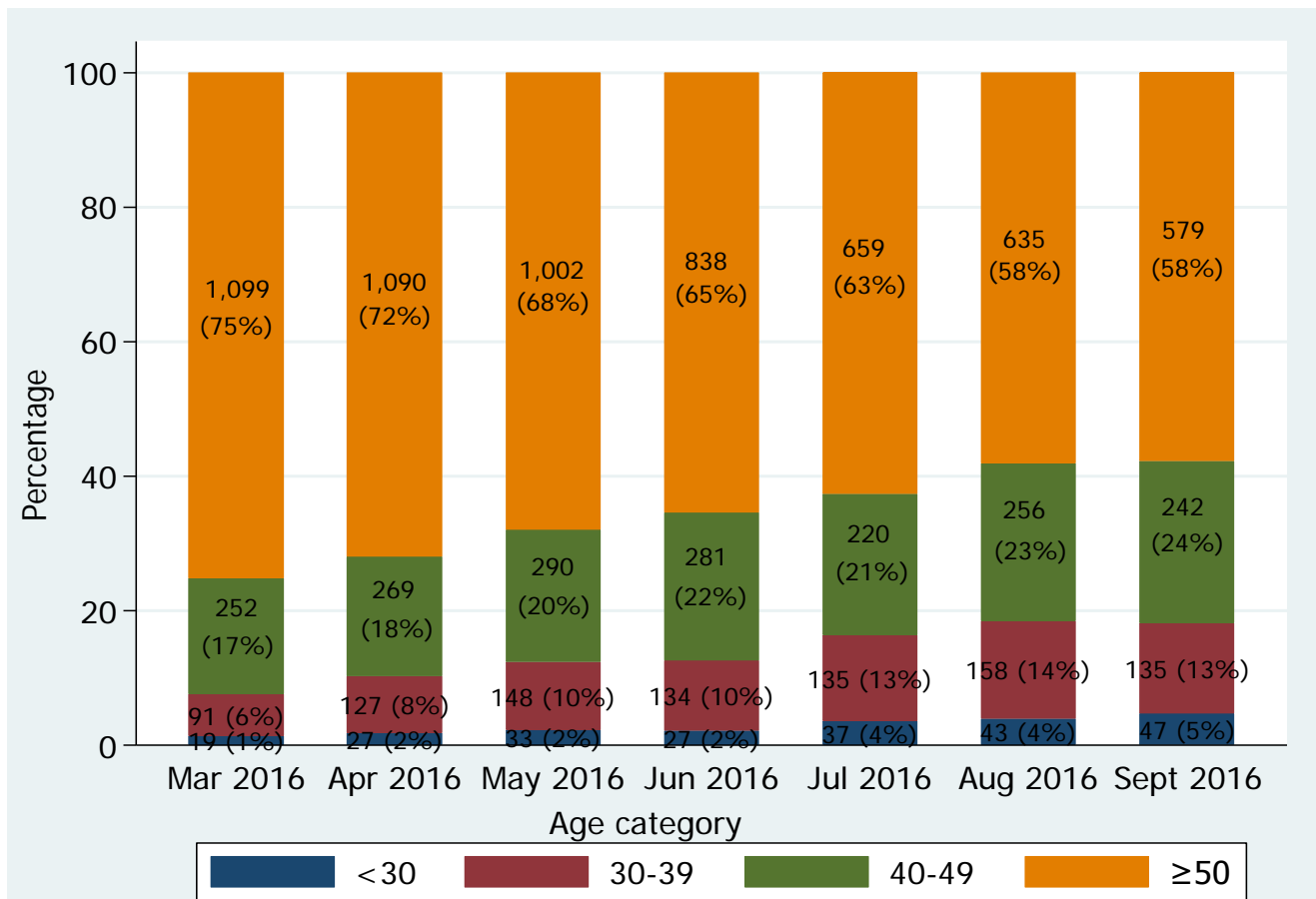
On 1 March 2016, new direct acting antiviral (DAA) medicines for the treatment of hepatitis C were listed on the Pharmaceutical Benefits Scheme (PBS). The number of NSW residents initiating hepatitis C treatment was higher in the early months of the listing of new treatments (Figure 57). This result is expected due to the high numbers of patients who had been assessed and were waiting to access the new medications when they became available. This result also corresponds with the higher proportion of older age groups associated with a more progressed disease stage accessing treatment in the early months (Figure 58).

Ongoing engagement by GPs and other primary care providers in treating hepatitis C will be essential to increase the capacity of the public health system to focus on patients from vulnerable groups and on those with complex needs. The Ministry of Health will monitor changes over time in the proportion of people being prescribed in specialist and GP settings (see 5.6). It will also be important to monitor changes in which groups are being treated (see 5.5).

⁵⁴ The Kirby Institute. Monitoring hepatitis C treatment uptake in Australia (issue 6). The Kirby Institute, UNSW Australia, Sydney, February 2017 (available at <http://kirby.unsw.edu.au/research-programs/vhcrp-newsletters>)

5.5 Which groups with chronic hepatitis C are being treated?

Figure 58: Number and proportion of NSW residents initiating hepatitis C treatment by age, and by month, 1 March to 30 September 2016



Data source: Pharmaceutical Benefits Schedule Highly Specialised Drugs Programme data, March 2016 to September 2016 prepared for NSW Health.

Note: The age category <20 years was merged with 20-29 years in the Figure due to small numbers (<30 years)

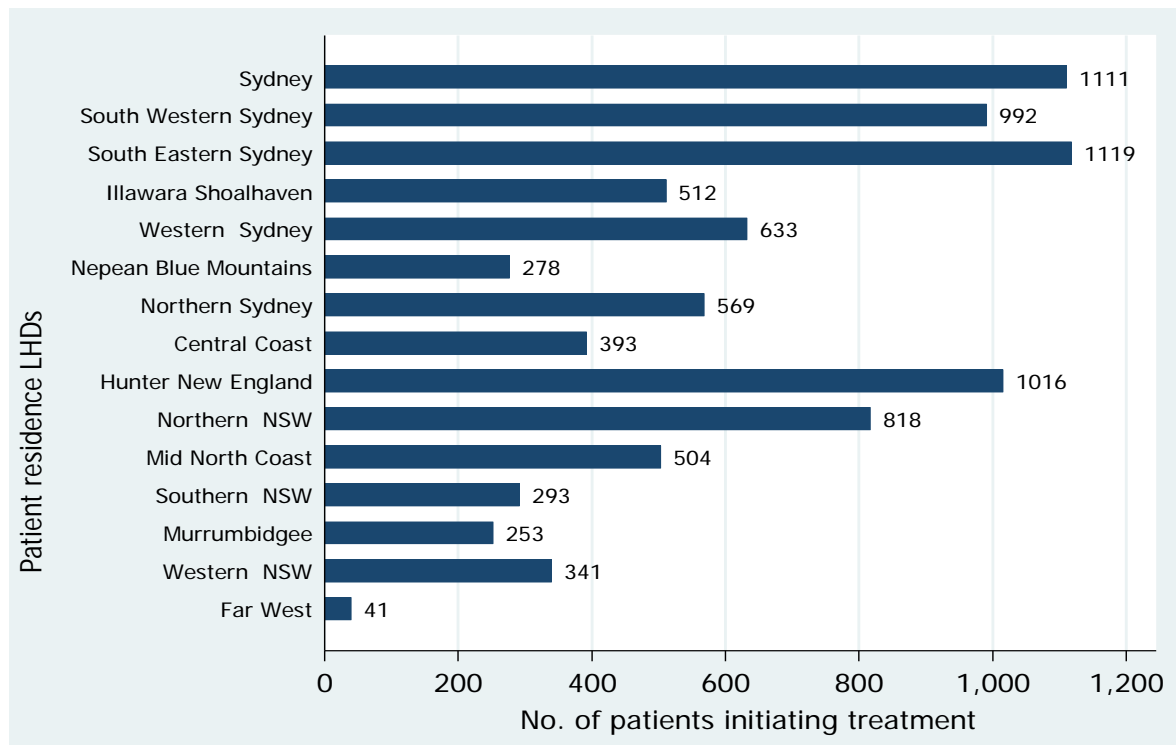
Comment

Of the 8,873 NSW residents who initiated hepatitis C treatment between 1 March to 30 September 2016, 67% were male and 34% were female. The majority were older with 67% aged 50 years or older; 20% were aged 40-49 years; 11% were aged 30-39 years; and 3% were aged 29 years or younger.

Between 1 March to 30 September 2016, the number and proportion of younger age groups (<50 years) initiating hepatitis C treatment each month increased in NSW. A higher proportion of older age groups associated with a more progressed disease stage were accessing treatment in the early months of the listing of new treatments (Figure 58).

5.6 Where are people with chronic hepatitis C accessing treatment?

Figure 59: Number of unique NSW residents initiating hepatitis C treatment by patient residence LHD, 1 March to September 2016



Data source: Pharmaceutical Benefits Schedule Highly Specialised Drugs Programme data, March 2016 to September 2016 prepared for NSW Health.

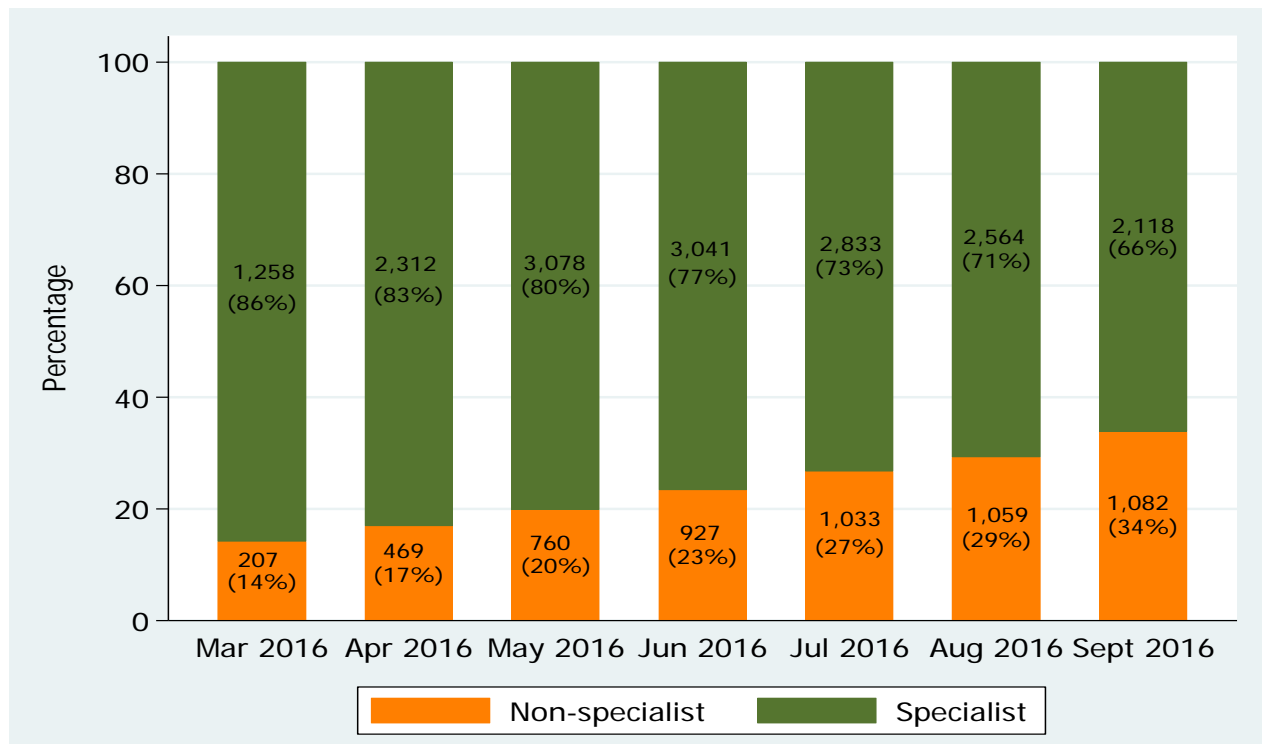
Comment

Between 1 March to 30 September 2016, the highest number of people initiating treatment in NSW were residents from South Eastern Sydney, Sydney, South Western Sydney, Hunter New England and Northern NSW LHDs, which together account for over half of total dispensing of hepatitis C treatment during this period. This data captures all hepatitis C treatment dispensing in NSW through the PBS in public hospital, private hospital and community pharmacies (Figure 59).

Figure 59 identifies the number of people initiating treatment according to a patient's residential address, which also incorporates patients who were dispensed treatment in Justice Health settings. A total of 297 NSW residents who initiated treatment in Justice Health settings during the period are residents of the following LHDs: Sydney (n=23); South Western Sydney (n=50); South Eastern Sydney (n=30); Illawarra Shoalhaven (n=19); Western Sydney (n=26); Nepean Blue Mountains (n=19); Northern Sydney (n=5); Central Coast (n=12); Hunter New England (n=38); Northern NSW (n= 5 or less); Mid North Coast (n=5); Southern NSW (n=10); Murrumbidgee (n=23); Western NSW (n=35); Far West (n=5 or less).

Prescriber Characteristics

Figure 60: Proportion of NSW residents dispensed hepatitis C treatment, by prescriber type⁵⁵, and by month, 1 March to 30 September 2016



Data source: Pharmaceutical Benefits Schedule Highly Specialised Drugs Programme data, March 2016 to September 2016 prepared for NSW Health.

Note: The prescriber type was recorded as unknown for 20 people and this has been excluded from this figure.

Note: The prescriber type for each dispensing episode is provided to NSW Health as part of the PBS dataset by the Australian Government Department of Health. The Department has advised that this information is derived from other data fields and is not guaranteed to be completely accurate. As a result, a prescriber can appear in more than one category over time. Two categories are shown in the report: specialists and non-specialists.

Comment

Hepatitis C treatment can be prescribed by specialists such as gastroenterologists, hepatologists or infectious diseases specialists or by experienced general practitioners (GPs). To increase the proportion of people with chronic hepatitis C treated through primary care is a key priority under the NSW Hepatitis C Strategy 2014-2020.

Between 1 March to 30 September 2016, there were 981 prescribers for hepatitis C treatment in NSW. Of these, 691 (70%) were non-specialists, which includes GPs; 285 (29%) were specialists; and the specialty of 5 prescribers was unknown (<1%). Although there were more non-specialists than specialists, the majority of NSW residents were prescribed hepatitis C treatment by specialists.

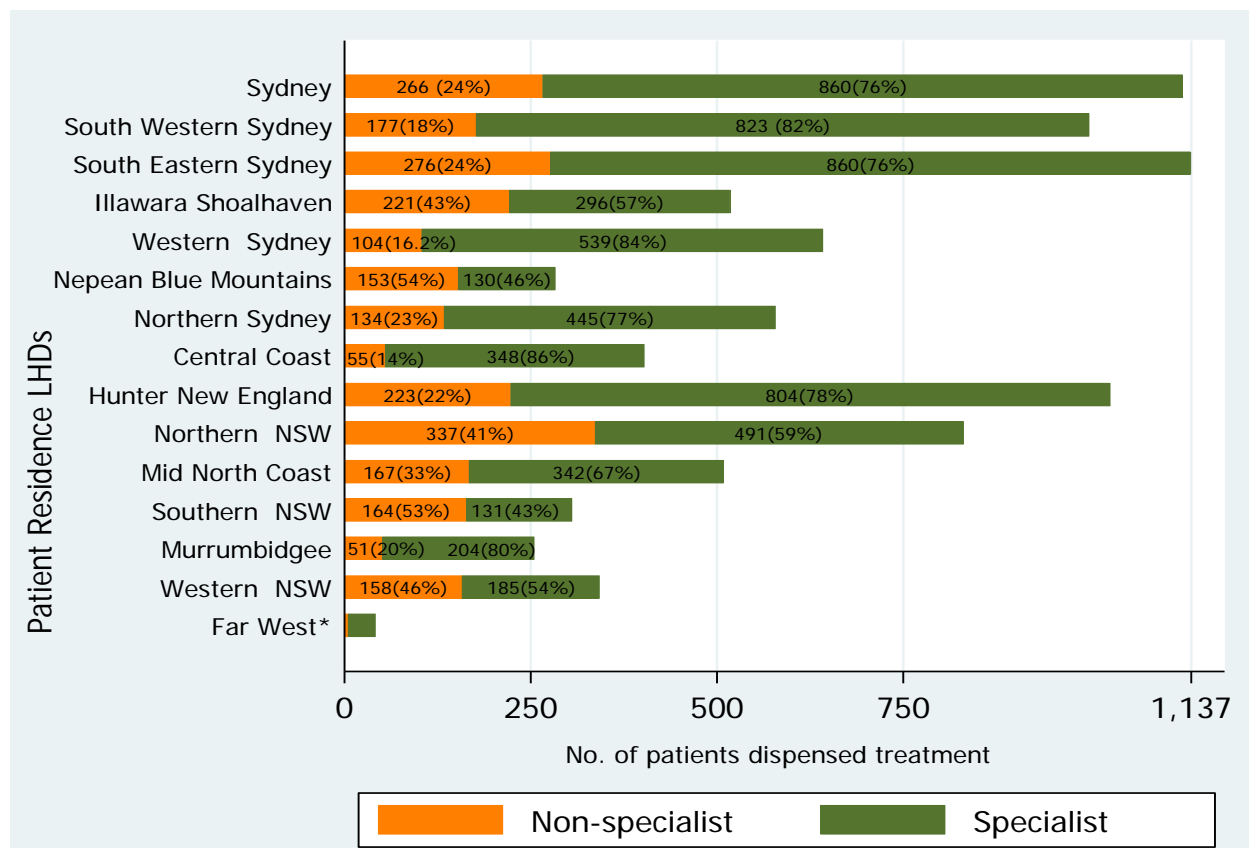
72% of NSW residents were prescribed hepatitis C treatment by specialists (n=6,442) and 28% of prescriptions were by non-specialists (n=2,467) during this period⁵⁶.

Between 1 March to 30 September 2016, the proportion of NSW residents who were prescribed hepatitis C treatment by a non-specialist (including a GP) increased each month (Figure 60).

⁵⁵ The prescriber type/specialty is derived for each quarter based on the prescriber's registered specialties and Medicare services. As a result, a prescriber can have more than one specialty.

⁵⁶ The number of NSW residents dispensed treatment by specialists and non-specialists adds up to a total that is greater than the overall total for that time period as some patients were prescribed treatment by more than one type of prescriber.

Figure 61: Number of NSW residents dispensed hepatitis C treatment by LHD of patient residence, by prescriber type⁵⁷, 1 March to 30 September 2016



Data source: Pharmaceutical Benefits Schedule Highly Specialised Drugs Programme data, March 2016 to September 2016 prepared for NSW Health.

Notes:

* In Far West, 12% of patients (n=5) were dispensed treatment by a GP; and 88% of patients (n=37) were dispensed treatment by a specialist. The prescriber type was recorded as unknown for 20 people dispensed treatment in SES, IS, HNE, NNSW, SNSW during the period and this has been excluded from this figure.

The Figure identifies the number of NSW residents who were dispensed hepatitis C treatment by specialist or non-specialist by LHD of patient residence. The LHD was identified based on patient residence address as provider type address was unknown at the time of reporting.

Note: The prescriber type for each dispensing episode is provided to NSW Health as part of the PBS dataset by the Australian Government Department of Health. The Department has advised that this information is derived from other data fields and is not guaranteed to be completely accurate. As a result, a prescriber can appear in more than one category over time. Two categories are shown in the report: specialists and non-specialists.

Comment

Between 1 March to 30 September 2016, the proportion of NSW residents who were prescribed hepatitis C treatment by a specialist was higher than the proportion of people prescribed by a non-specialist (including a GP) in the majority of LHDs (Figure 61).

Figure 61 identifies the number of people dispensed treatment at each LHD of patient residence by prescriber type, which also incorporates patients who were dispensed treatment in Justice Health settings. In Justice Health, a total of 297 NSW residents initiated hepatitis C treatment, with 68% of patients (n=201) initiating hepatitis C treatment that was prescribed by a non-specialist (including GPs and other prescribers) and 32% (n=96) initiating treatment prescribed by a specialist.

⁵⁷ The prescriber type/specialty is derived for each quarter based on the prescriber's registered specialties and Medicare services. As a result, a prescriber can have more than one speciality.

The case load of Specialists and Non-specialists in NSW

Figure 62: Proportion of Specialists treating 1, 2-9 and ≥10 patients with hepatitis C treatment in NSW by LHD of patient residence, 1 March to 30 September 2016

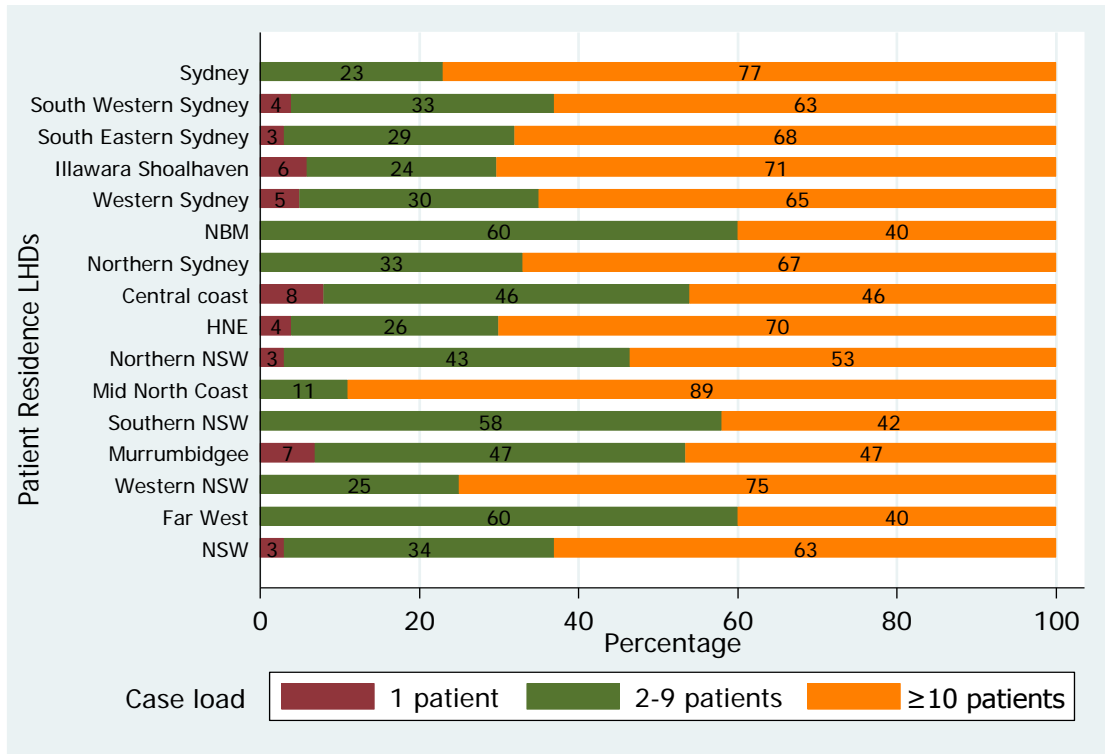
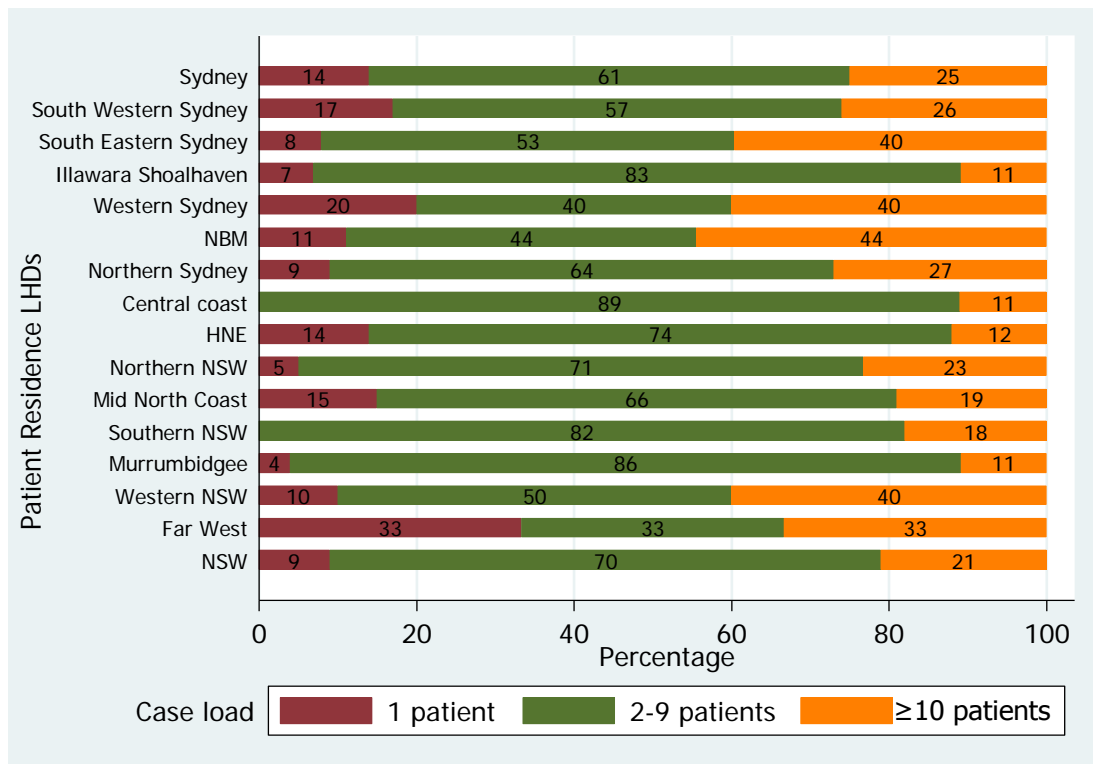


Figure 63: Proportion of Non-specialists treating 1, 2-9 and ≥10 patients with hepatitis C treatment in NSW by LHD of patient residence, 1 March to 30 September 2016



Comment

The patient case load of specialists and non-specialists (including GPs and other prescribers) treating people with hepatitis C treatment in NSW and by LHD of patient residence is shown in Figures 62 and 63 respectively.

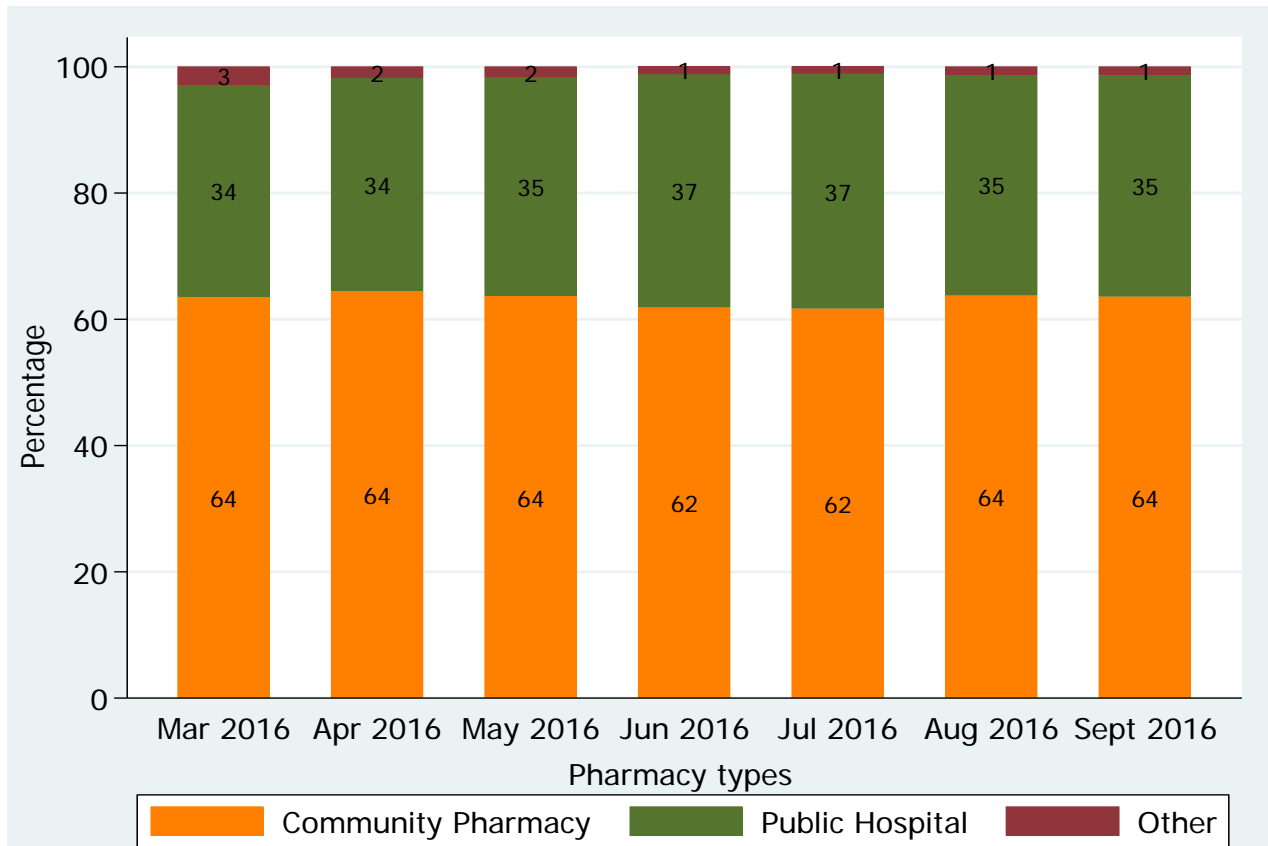
In NSW during the period between 1 October 2015 and 30 September 2016 the case load of specialists was higher compared to non-specialists. In NSW the majority of specialists treated ≥ 10 patients (63%) and the majority of non-specialists (including GPs) treated between 2-9 patients (70%).

Similarly, in most LHDs the majority of specialists treated ≥ 10 patients and the majority of non-specialists treated between 2-9 patients.

To increase the proportion of people with chronic hepatitis C treated through primary care is a key priority under the NSW Hepatitis C Strategy 2014-2020.

Dispensing Characteristics

Figure 64: Proportion of NSW residents dispensed hepatitis C treatment, by pharmacy type and month, 1 March to 30 September 2016

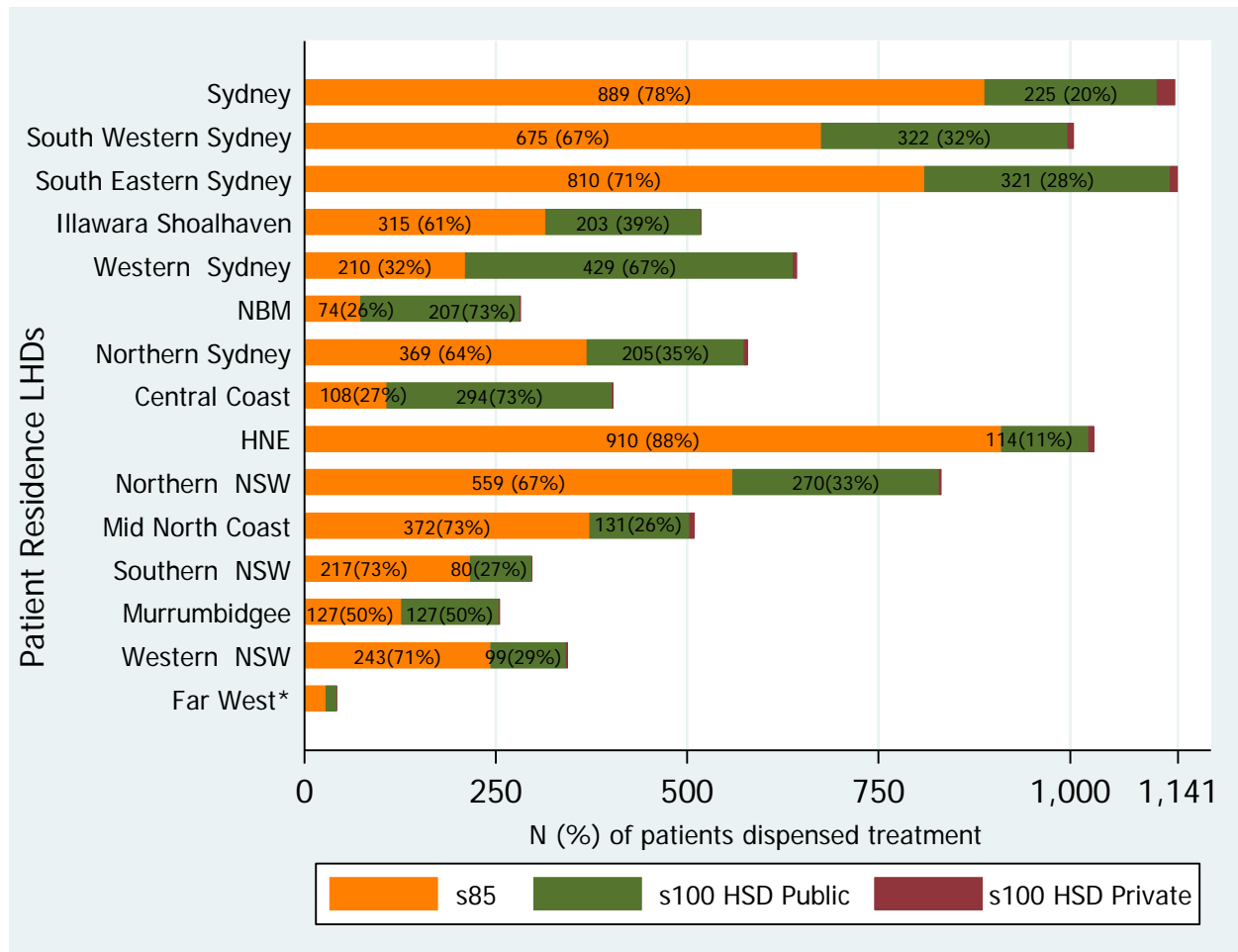


Data source: Pharmaceutical Benefits Schedule Highly Specialised Drugs Programme data, March 2016 to September 2016 prepared for NSW Health.

Comment

Between 1 March to 30 September 2016, the proportion of NSW residents who were dispensed hepatitis C treatment through community or public hospital pharmacies each month was stable (Figure 64).

Figure 65: Number of NSW residents dispensed hepatitis C treatment by LHD of patient residence, by program code, 1 March to 30 September 2016



Data source: Pharmaceutical Benefits Schedule Highly Specialised Drugs Programme data, March 2016 to September 2016 prepared for NSW Health.

Notes:

*In Far West, 65% of patients (n=28) were dispensed treatment under PBS S85; 33% (n=14) under s100 HSD Public; and s100 HSD Private was 5 or less.

In Figure 65 less than 2% of patients were dispensed treatment under s100 HSD Private in LHDs NSW.

The Figure identifies the number of people dispensed treatment at each LHD of patient residence by program code, which also incorporates patients who were dispensed treatment in Justice Health settings. A total of 297 NSW residents initiated hepatitis C treatment in Justice Health, and all were dispensed treatment via S100 HSD Public.

Comment

Between 1 March to 30 September 2016, 65% of NSW residents (n=5,859) were dispensed hepatitis C treatment under the PBS General Schedule ('Section 85'), higher than in the period 1 March to 30 June (64%).

A third of NSW residents (34%; n=3,013) were dispensed treatment under the PBS Section 100 Highly Specialised Drugs (HSD) Public Program, lower than in the period 1 March to 30 June (35%).

The proportion of NSW residents dispensed hepatitis C treatment under s85 was higher than the proportion of people dispensed under s100 in the majority of LHDs (Figure 65).

Appendix 1

Table 3: NSW NSP Enhanced Data Collection - Receptive syringe sharing (RSS) last month by LHD (n, %, CI) in 2015 & 2016

RSS among respondents who reported injection in previous month (excluding respondents with missing RSS data)

	2015				2016			
	N° RSS	%	Total N	95% CIs	N° RSS	%	Total N	95% CIs
SYDNEY	60	16.6%	361	12.9 -20.9	83	23.4%	355	19.1-28.1
SOUTH WESTERN SYDNEY	29	31.2%	93	22.1 - 41.6	29	27.1%	107	19.0-36.6
SOUTH EASTERN SYDNEY	80	20.6%	389	16.7 -24.9	130	20.6%	631	17.5-24.0
ILLAWARRA SHOALHAVEN	7	5.4%	129	2.2 - 10.9	10	7.1%	140	3.5-12.7
WESTERN SYDNEY	58	19.0%	305	14.8 - 23.9	55	25.1%	219	19.5-31.4
NEPEAN BLUE MOUNTAINS	10	12.7%	79	6.2 - 22.0	13	15.7%	83	8.6-25.3
NORTHERN SYDNEY	7	14.3%	49	5.9 - 27.2	8	12.7%	63	5.6-23.5
CENTRAL COAST	3	7.0%	43	1.4 - 19.1	24	21.2%	113	14.1-29.9
HUNTER NEW ENGLAND	65	21.5%	302	17.0 - 26.6	65	22.5%	289	17.8-27.7
NORTHERN NSW	7	6.8%	103	2.8 - 13.5	6	7.9%	76	3.0-16.4
MID NORTH COAST	7	8.8%	80	3.6 - 17.2	8	12.5%	64	5.6-23.2
SOUTHERN NSW	0	0.0%	6	--	5	31.3%	16	11.0-58.7
MURRUMBIDGE	2	9.1%	22	1.1 - 29.2	12	18.2%	66	9.8-29.6
WESTERN NSW	3	3.3%	91	0.7 - 9.3	6	13.6%	44	5.2-27.4
FAR WEST	1	14.3%	7	0.3 - 57.9	--	--	--	--
NNEDC NSW	339	16.5%	2,059	14.3 - 17.3	454	20.0%	2,268	18.4-21.7

Table 4: Comparable Australian NSP survey data - NSW respondents

RSS among NSW respondents who reported injection in previous month (excluding respondents with missing RSS data)

ANSPS NSW year	N° RSS	%	Total N	95% CIs
2008	140	19%	744	16.1 - 21.8
2009	112	17%	672	13.9 - 19.7
2010	83	17%	483	13.9 - 20.9
2011	58	11%	544	8.2 - 13.6
2012	82	14%	573	11.5 -17.4
2013	75	13%	560	10.7 -16.5
2014	105	16%	653	13.3-19.1
2015	75	14%	553	10.8-16.7



