NSW HEPATITIS B AND C STRATEGIES 2014-2020

2016 MID-YEAR DATA REPORT (JAN-JUNE)

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 Mid-Year Data Report (Jan-June), which shows progress between 1 January to 30 June 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.

As at June 2016:

- The hepatitis B childhood vaccination coverage measured at 12 months was 94% in January to June 2016, which is higher than in the same period in 2015. Coverage at 24 months was 96%, which is higher than in the same period in 2015.
- The proportion of women giving birth in a public or private hospital in NSW screened for hepatitis B was 99% in January to June 2015. This result is consistent with the same period in 2014.
- The proportion of babies born to mothers living with hepatitis B who received hepatitis B immunoglobulin (HBIG) within 12 hours of birth is 99% in January to June 2015. This result is consistent with the same period in 2014.
- In 2014/15, 7,148 people (unique patients) with chronic hepatitis B were dispensed antiviral therapy in public hospital, private hospital and community pharmacies in NSW[1].
- 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].
- 3,956 people with chronic hepatitis C commenced treatment in publicly funded health services in NSW between January to June 2016, compared with 622 (536% increase) in the same period in 2015[3].
- 7,430 people with chronic hepatitis C were dispensed antiviral therapy in NSW public hospital, private hospital and community pharmacies since the listing of new-generation medicines on the Pharmaceutical Benefits Scheme (PBS), between 1 March to 30 June 2016[4].

The Ministry of Health has developed Key Performance Indicators with Aboriginal Medical Services (AMS) for 2016/17. These indicators will enable the reporting of additional data to monitor access for Aboriginal people in relation to hepatitis B testing and management; and hepatitis C testing and treatment. The Ministry is currently developing a governance structure with Aboriginal Community Controlled Health Services (ACCHS) to develop the reporting arrangements for this new data in NSW.

[1] Pharmaceutical Benefits Schedule Highly Specialised Drugs Programme data 14/15 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] These figures capture hepatitis C treatment intiation in liver clinics; drug and alcohol services; Justice Health custodial settings; as well as patients on clinical trials. It excludes activity in the private sector (including private liver clinics and GPs).

[4] The Kirby Institute. Monitoring hepatitis C treatment uptake in Australia (issue 4). The Kirby Institute, UNSW Australia, Sydney, August 2016 (available on line in August at http://kirby.unsw.edu.au/research-programs/vhcrp-newsletters)

Table of Contents

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 213,300 people are living with chronic hepatitis B[1], with approximately 77,000 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 (19,837). 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 (81,267). People from Sub-Saharan Africa account for an estimated 4% of people living with chronic hepatitis B in Australia (9,172).[1]

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.

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 BRISE[2] Research Program.

[1] The Kirby Institute. HIV, viral hepatitis and sexually transmissible infections in Australia Annual Surveillance Report 2015. The Kirby Institute, UNSW Australia, Sydney NSW 2052

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

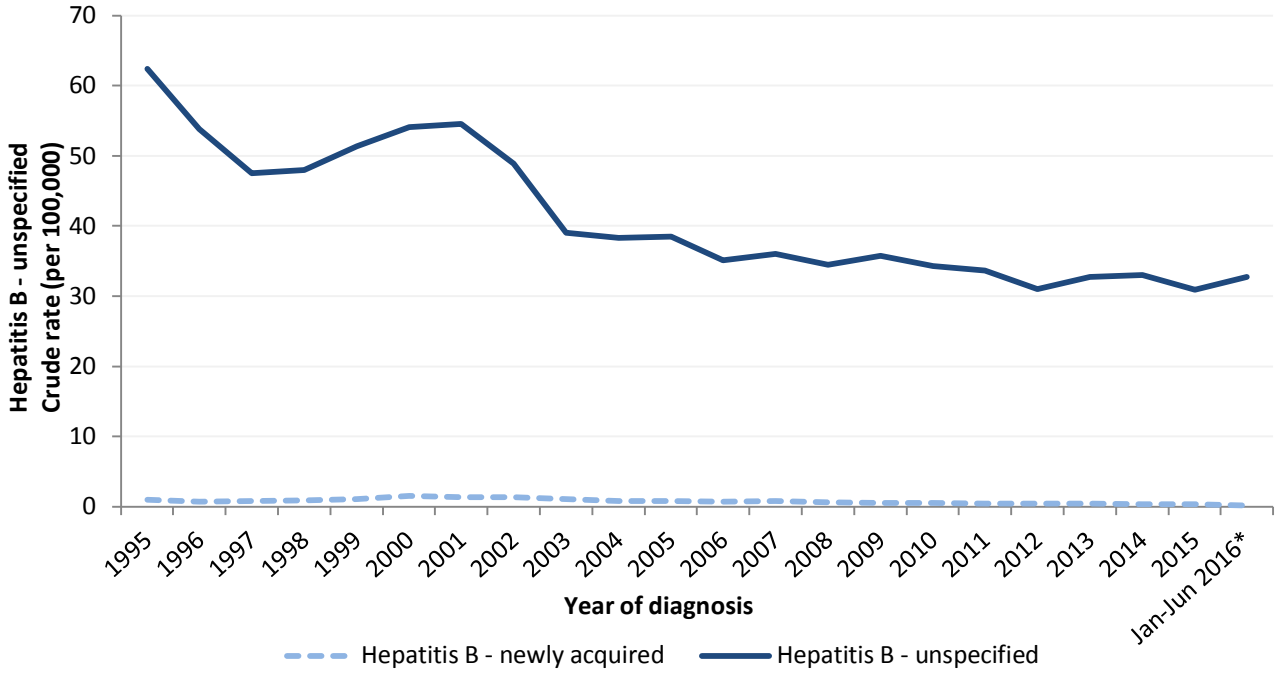
1.2 Reduce hepatitis B infections in NSW

Hepatitis B is a notifiable condition under the Public Health Act 2010, and is notified to NSW Health by laboratories[3]. 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 testing[4]. 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: Notification rates of unspecified and newly acquired hepatitis B, NSW, 1 January 1995 to 30 June 2016



Data source: NSW Notifiable Conditions Information Management System (NCIMS) and ABS population estimates (SAPHaRI), NSW Health; data extracted 16 August 2016; excludes non-NSW residents

*The rate in 2016 is based on 6 months of data from Jan-June 2016 adjusted to an annual rate and is subject to change once data from July-Dec 2016 becomes available

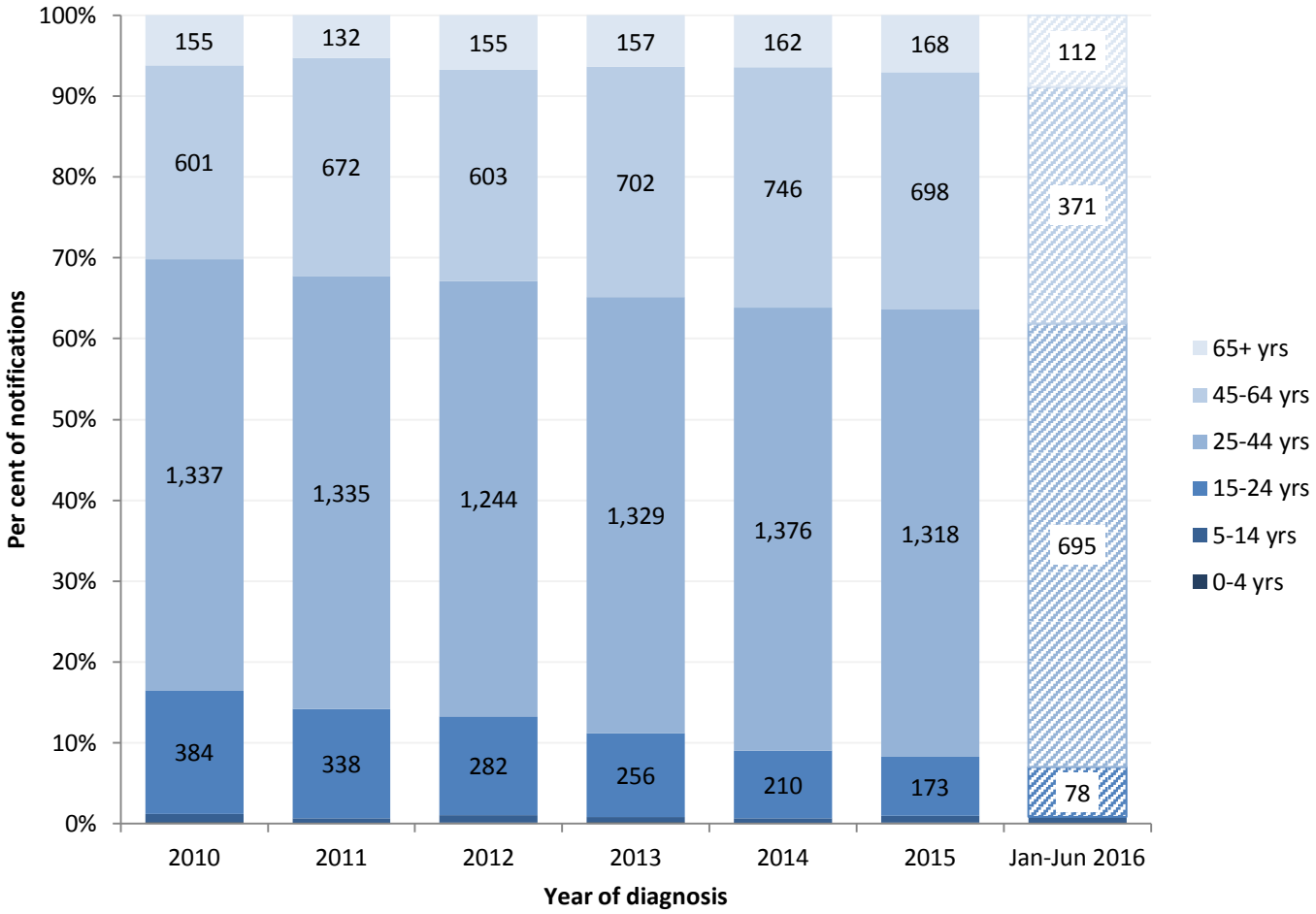
Comment

From January to June 2016, there were 1,267 hepatitis B notifications. Of these, 1,260 (99.4%) were classified as 'unspecified' and 7 (0.6%) were classified as 'newly acquired'. During this period, the notification rates of hepatitis B - unspecified and newly acquired hepatitis B in NSW residents were 33 and 0.2 per 100,000 per annum (respectively).

[3] NSW Health. Disease notification [webpage]. http://www.health.nsw.gov.au/Infectious/Pages/notification.aspx
[4] 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, 1 January 2010 to 30 June 2016



Data source: NCIMS, NSW Health; data extracted 16 August 2016

Note: Excludes non-NSW residents and persons whose age is unknown or not stated; data labels show number of notifications

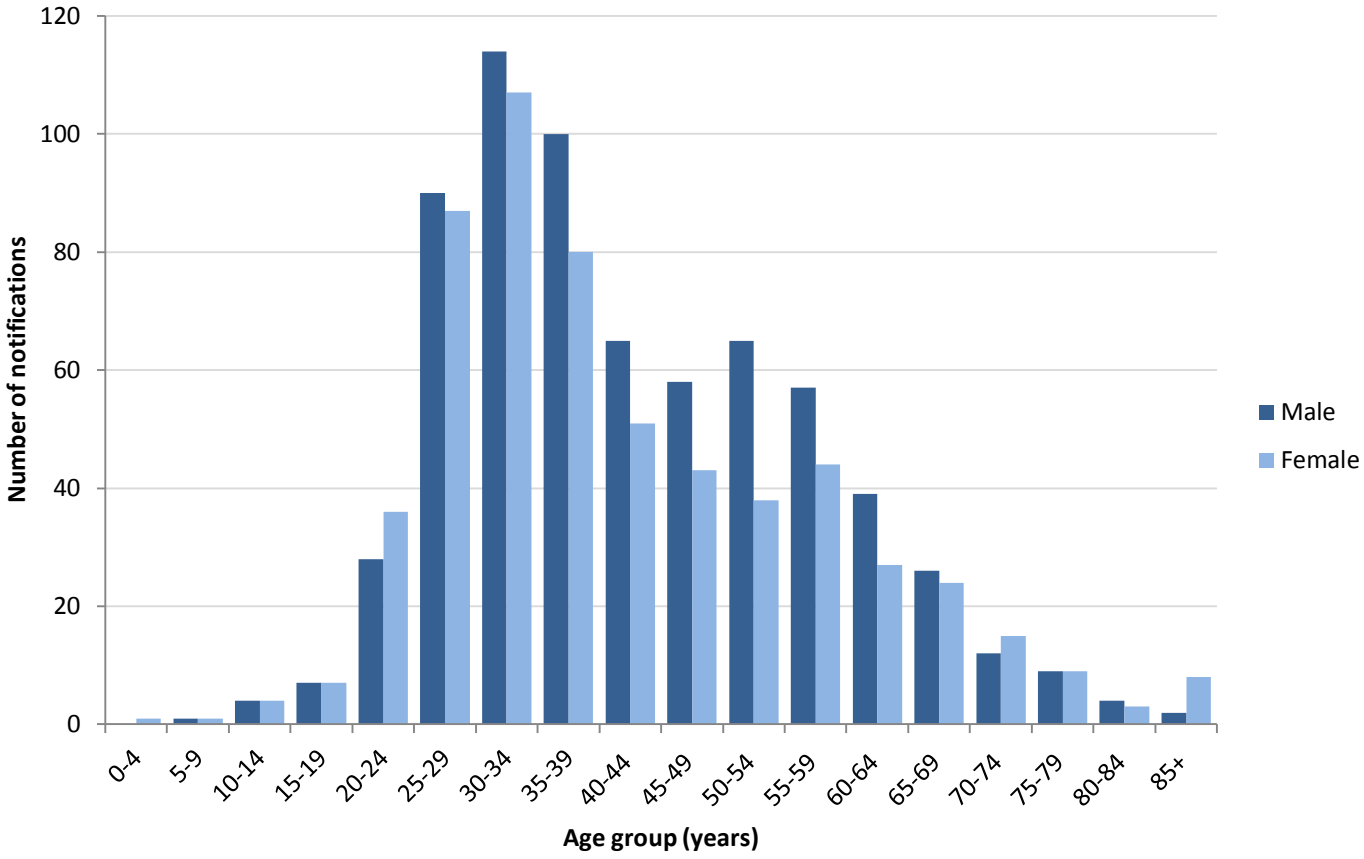
Comment

Of those people newly diagnosed with hepatitis B between January and June 2016, 1 (<1%) were 0-4 years, 10 (1%) were 5-14 years, 78 (6%) were 15-24 years, 695 (55%) were 25-44 years, 371 (29%) were 45-64 years and 112 (9%) were 65 years and over.

Notifications of hepatitis B in young people aged 15 – 24 years have continued to decline over the last five to ten years, which may be related to universal routine immunisation of infants in NSW since 2000 and the catch-up program for adolescents, which ran from 2004 until 2013.

Notifications in older adults (45-64 years, and 65+ years) have increased over the last decade, 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, 1 January to 30 June 2016



Data source: NCIMS, NSW Health; data extracted 16 August 2016
Note: Excludes non-NSW residents, transgender persons and persons whose age or sex is unknown or not stated

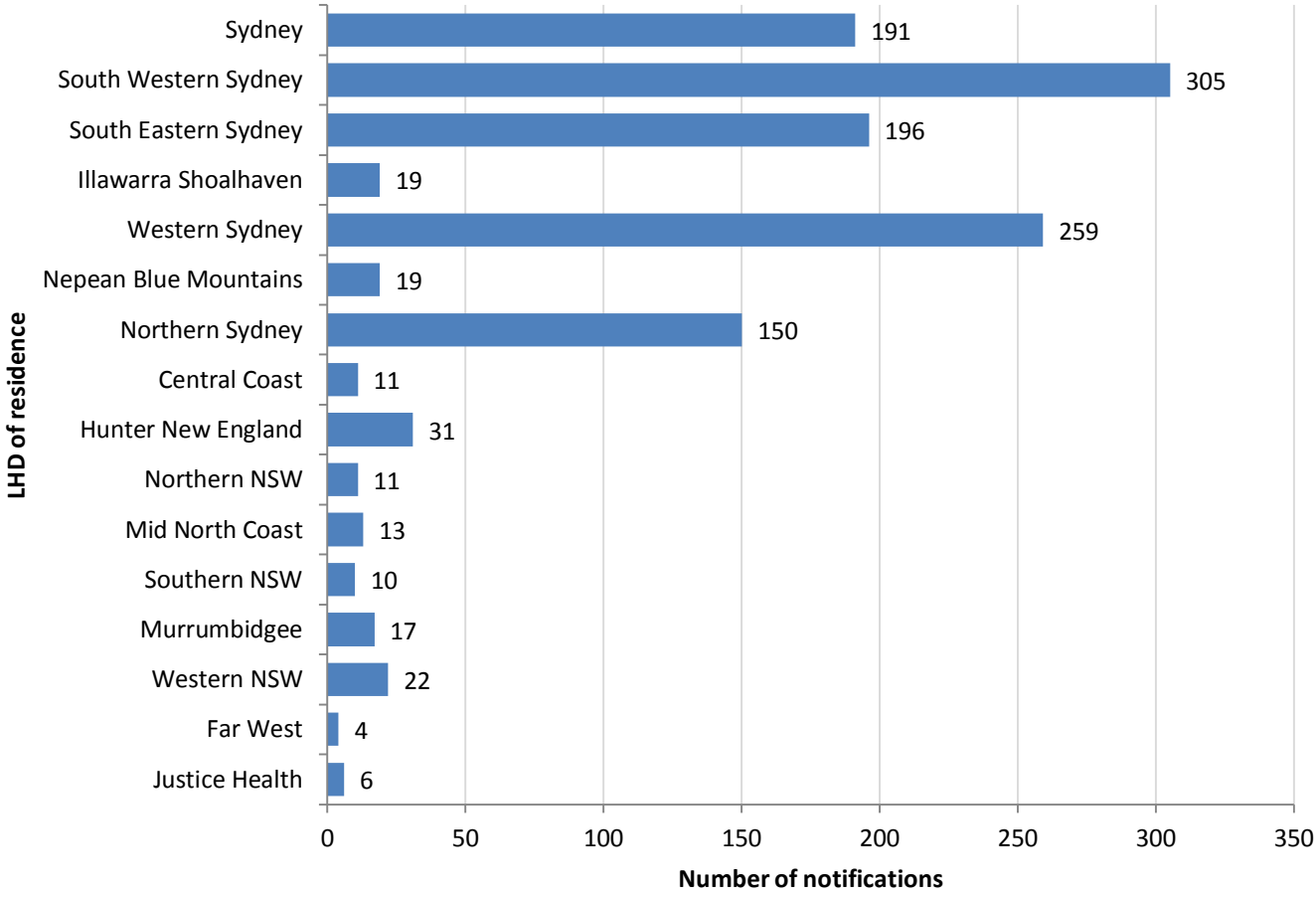
Comment

Between January and June 2016, 53.7% of hepatitis B notifications were in males and 46.2% were in females; the proportion of notifications in males was slightly higher than in 2015 (52.2%) and correspondingly lower in females (47.7%).

The age distribution of hepatitis notifications in the first half of 2016 is broadly similar to 2015, with the most commonly notified age group being 30-34 years. However, in January to June 2016, there have been more notifications amongst males 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. It is possible that the increase in hepatitis B notifications in males in the first half of 2016 is due to concurrent testing and notification of males tested for hepatitis C (see Figures 8 and 10).

1.2.3 Where are notifications occurring?

Figure 4: Notifications of hepatitis B, by LHD of residence, NSW, 1 January to 30 June 2016



Data source: NCIMS, NSW Health; data extracted 16 August 2016
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

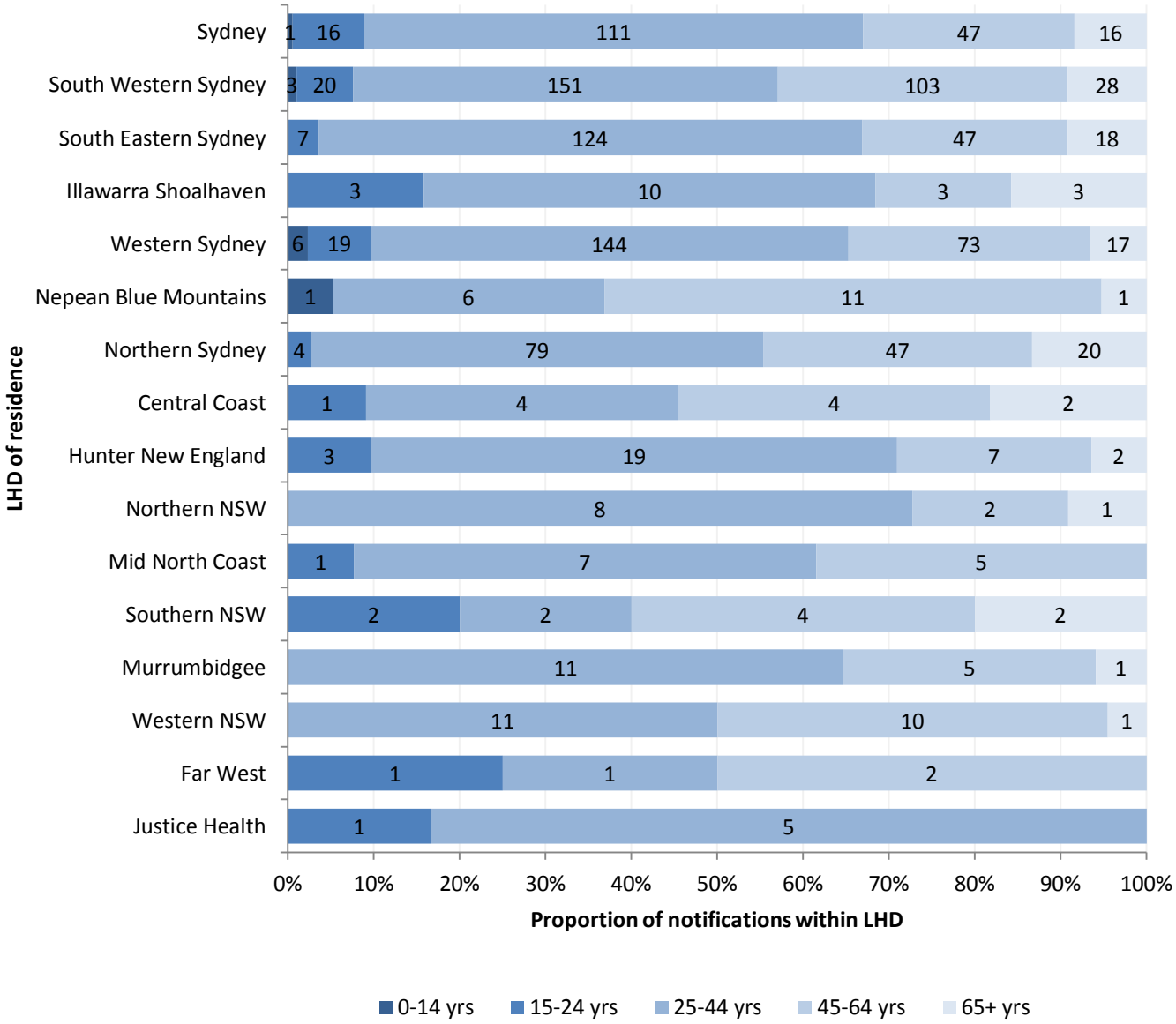
The geographic distribution of hepatitis B notifications from January to June 2016 is similar to 2015, with five Sydney metropolitan LHDs (South Western Sydney, Western Sydney, South Eastern Sydney, Sydney and Northern Sydney LHDs) accounting for 87% of hepatitis B notifications during this period.

In NSW, an estimated 60% of people living with hepatitis B were born overseas[5]. 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 have been shown in Figure 6.

[5] 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 5: Notifications of hepatitis B, by LHD and age group, NSW, 1 January to 30 June 2016



Data source: NCIMS, NSW Health; data extracted 16 August 2016

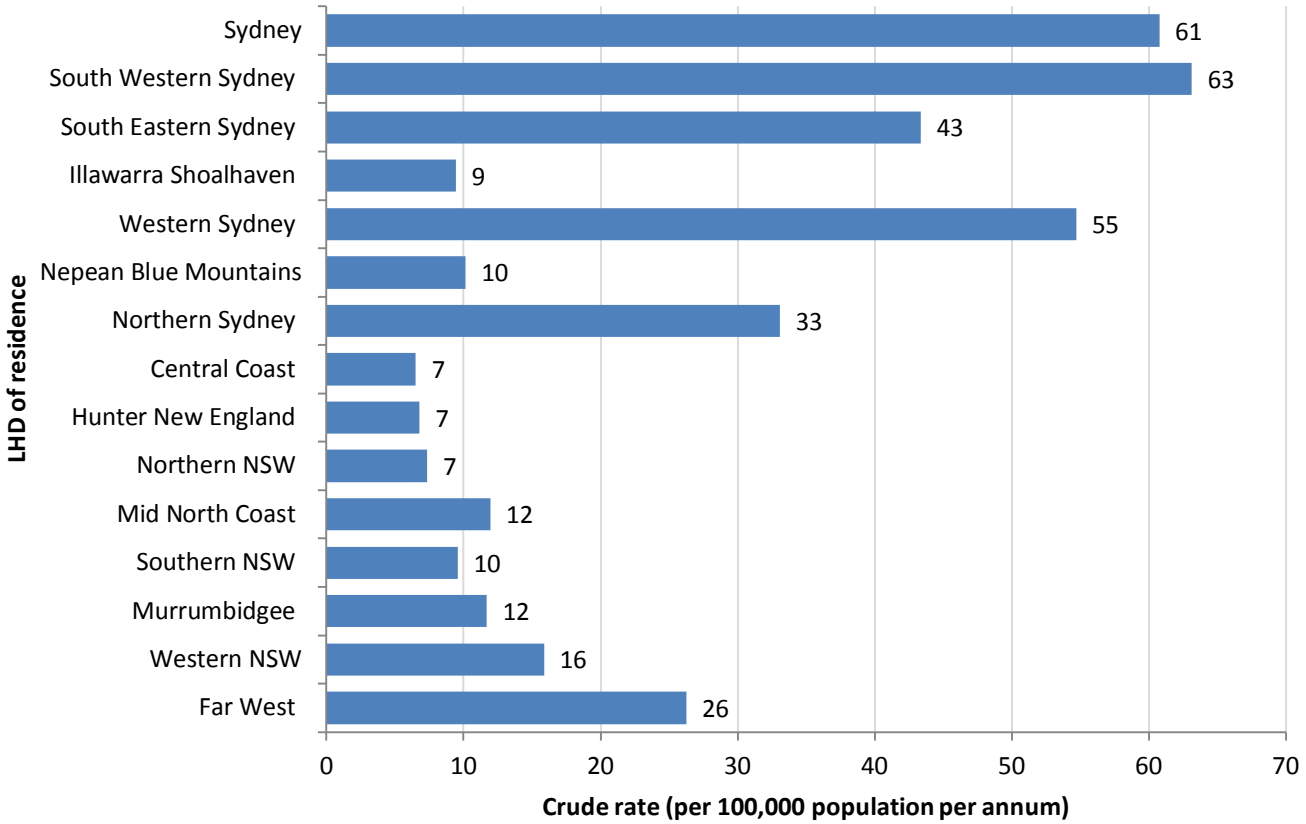
Note: Excludes non-NSW residents and persons whose age and/or place of residence in NSW was not known or not stated; data labels show number of notifications in age group for LHD; Justice Health data includes notifications from juvenile correctional centres

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 areas, the data from this six month period may not represent ongoing local trends.

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

Figure 6: Notification rate of hepatitis B in NSW, by LHD of residence, 1 January to 30 June 2016



Data source: NCIMS and ABS population estimates (SAPHaRI), NSW Health; data extracted 16 August 2016

Note: Excludes non-NSW residents, persons whose place of residence in NSW was not known and notifications from Justice Health

* The rate is based on 6 months of data between Jan-June 2015 adjusted to an annual rate and is subject to change once data between July-Dec 2015 becomes available

Comment

South Western Sydney and Sydney Local Health Districts (LHDs) recorded the highest rates of hepatitis B notification in NSW in the first half of 2016 (63 and 61 per 100,000 respectively). Western Sydney, 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 230,470 people are living with chronic hepatitis C, with approximately 81,900 people from NSW[6]. The rate of hepatitis C diagnosis among Aboriginal and Torres Strait Islander people in Australia is almost five times higher than the rate in the non-Indigenous population[7].

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. The number of Australians with severe hepatitis C related liver disease and cirrhosis has more than doubled over the past ten years to over 44,000 people in 2014.

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 BRISE[8] Research Program.

[6] The Kirby Institute. HIV, viral hepatitis and sexually transmissible infections in Australia Annual Surveillance Report 2015. The Kirby Institute, UNSW Australia, Sydney NSW 2052

[7] The Kirby Institute. Bloodborne viral and sexually transmissible infections in Aboriginal and Torres Strait Islander people: Surveillance and Evaluation Report 2015. The Kirby Institute, UNSW Australia Sydney NSW 2052

[8] 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[9,10] suggests that the incidence of hepatitis C infection among people who inject drugs (PWID) 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 PWID is changing.

Hepatitis C is a notifiable condition under the *Public Health Act 2010*, and is notified to NSW Health by laboratories[11]. 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 testing[12]. 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.

[9] 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

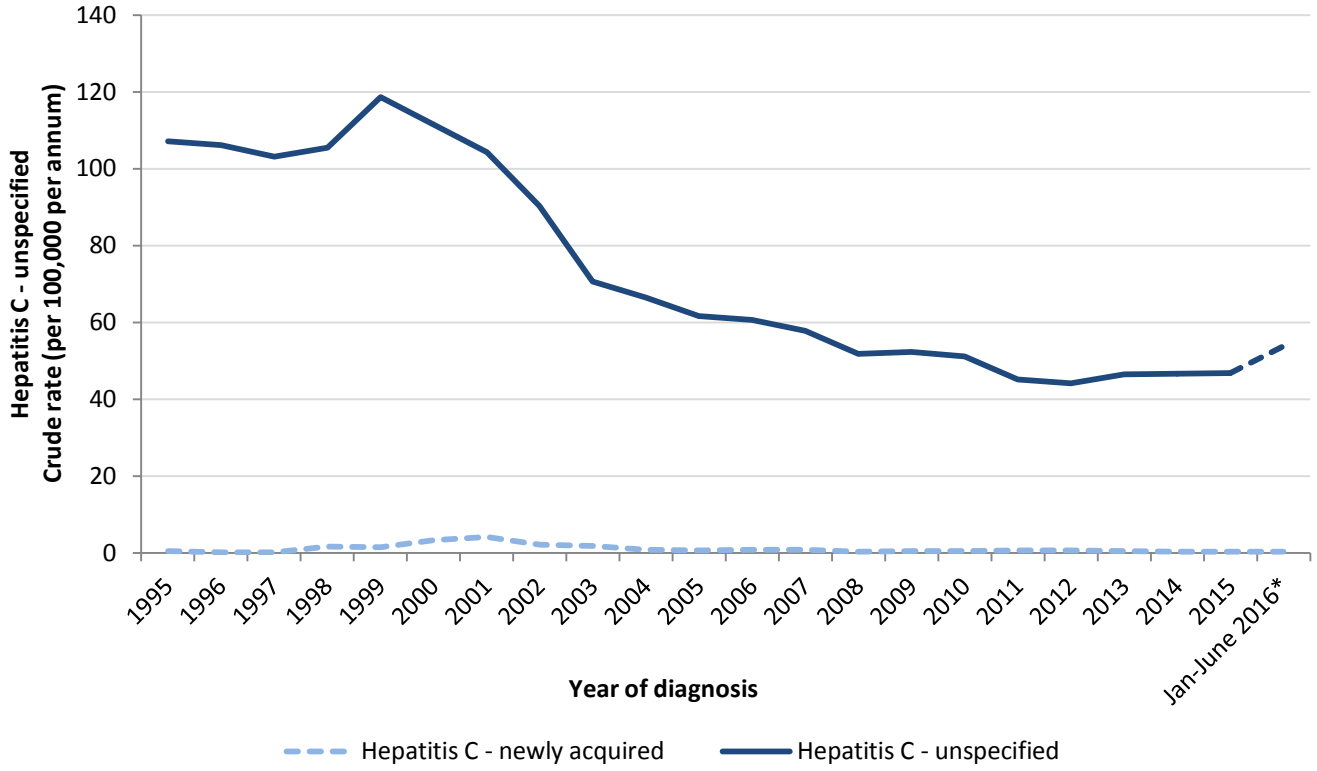
[10] Maher L, Jalaludin B, Chant K, Jayasuriya R, Sladden T, Kaldor J, Sargent P. Incidence and risk factors for hepatitis C seroconversion in injecting drug users in Australia. *Addiction* 2006;101(10):1499-1508

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

[12] 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 7: Notification rates of newly acquired and unspecified hepatitis C, NSW, 1 January 1995 to 30 June 2016



Data source: NCIMS and ABS population estimates (SAPHaRI), NSW Health; data extracted 22 Aug 2016

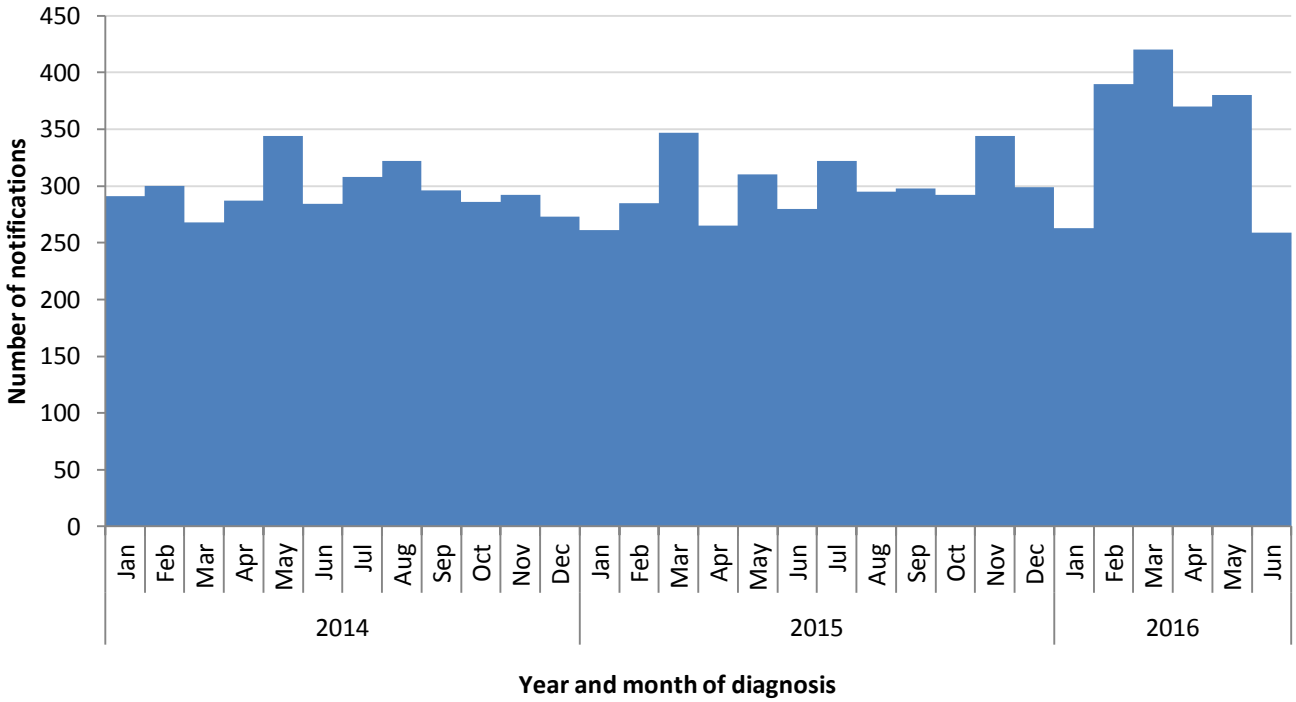
Note: Excludes non-NSW residents

* The rate in 2016 is based on 6 months of data from Jan-June 2016 adjusted to an annual rate and is subject to change once data from July-Dec 2016 becomes available

Comment

From January to June 2016, there were 2,082 hepatitis C notifications in NSW residents. Of these, 2,070 (99.4%) were classified as 'unspecified' and 12 (0.6%) were classified as 'newly acquired'. The notification rate of hepatitis C - unspecified was 54 per 100,000 per annum from January to June 2016, the highest rate since 2007 (58 notifications per 100,000).

Figure 8: Notifications of hepatitis C by month, NSW, 1 January 2014 to 30 June 2016



Data source: NCIMS, NSW Health; data extracted 22 Aug 2016
Note: Excludes non-NSW residents

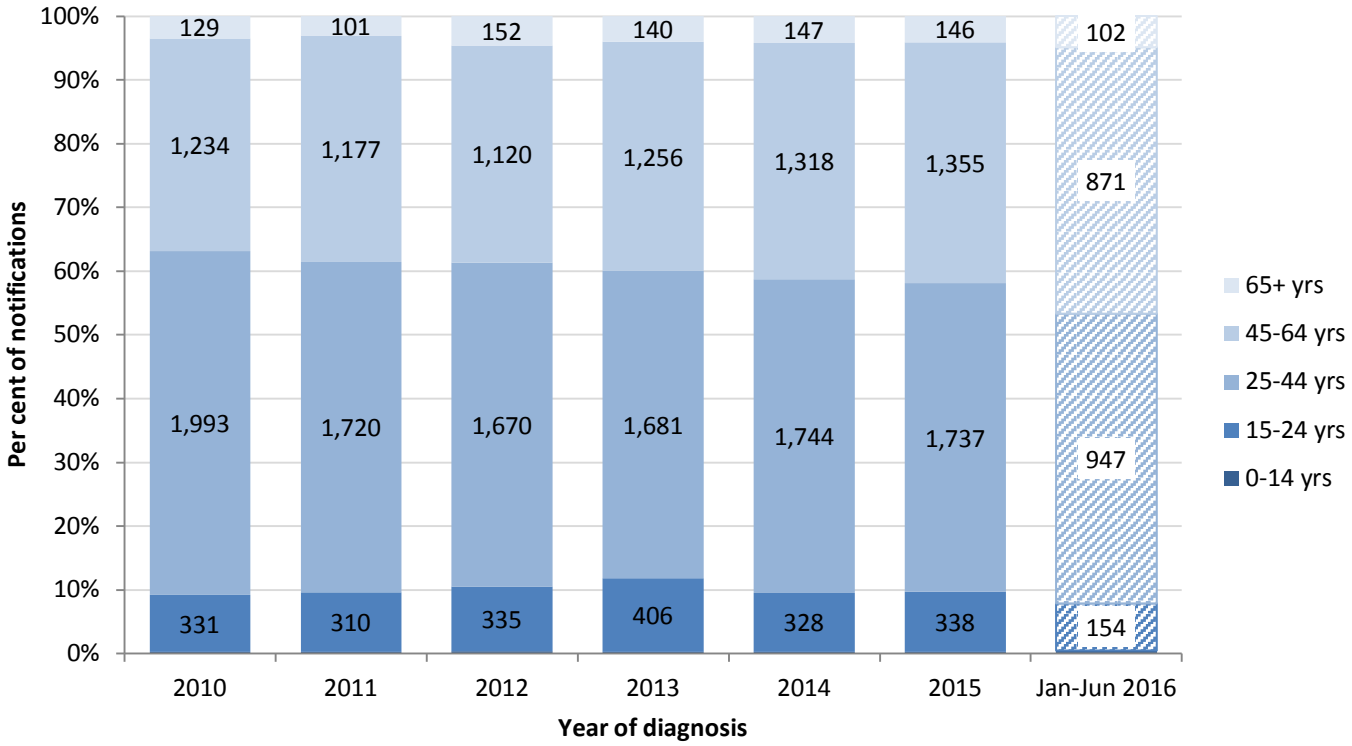
Comment

There was an upswing in the number of hepatitis C notifications from February to May 2016, peaking in March. 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 9: Notifications of hepatitis C in NSW, by age group, 1 January 2010 to 30 June 2016



Data source: NCIMS, NSW Health; data extracted 18 Aug 2016
Note: Excludes non-NSW residents and persons whose age is unknown or not stated

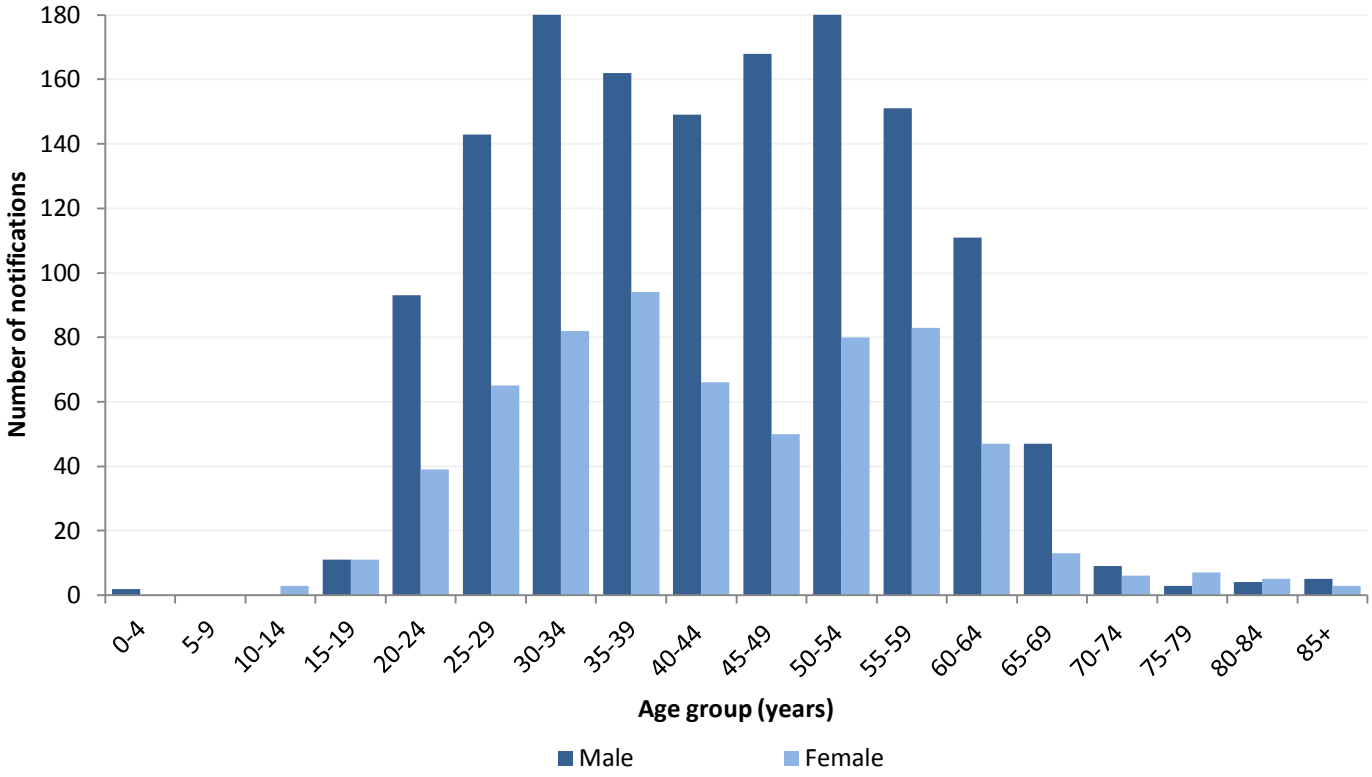
Comment

Of those people newly diagnosed with hepatitis C between January and June 2016, 5 (<1%) were 0-14 years, 154 (7%) were 15-14 years, 947 (45%) were 25-44 years, 871 (42%) were 45-64 years and 102 (5%) were 65 years and over; there were three (<1%) whose age was not reported. There are slightly higher proportions in the oldest age groups this period compared to previous years.

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

	0-14 years	15-24 years	25-44 years	45-64 years	65+ years
Jan-June 2016	<1%	7%	45%	42%	5%
2015 (Full year)	<1%	9%	48%	38%	4%

Figure 10: Notifications of hepatitis C in NSW, by age group and gender, 1 January to 30 June 2016



Data source: NCIMS, NSW Health; data extracted 22 Aug 2016
Note: Excludes non-NSW residents, transgender persons and persons whose age or sex is unknown or not stated

Comment

Between January and June 2016, 68.5% of hepatitis C notifications were in males and 31.4% were in females; there was a higher proportion in males and a lower proportion in females compared to 2015 (63.3% and 36.6% respectively).

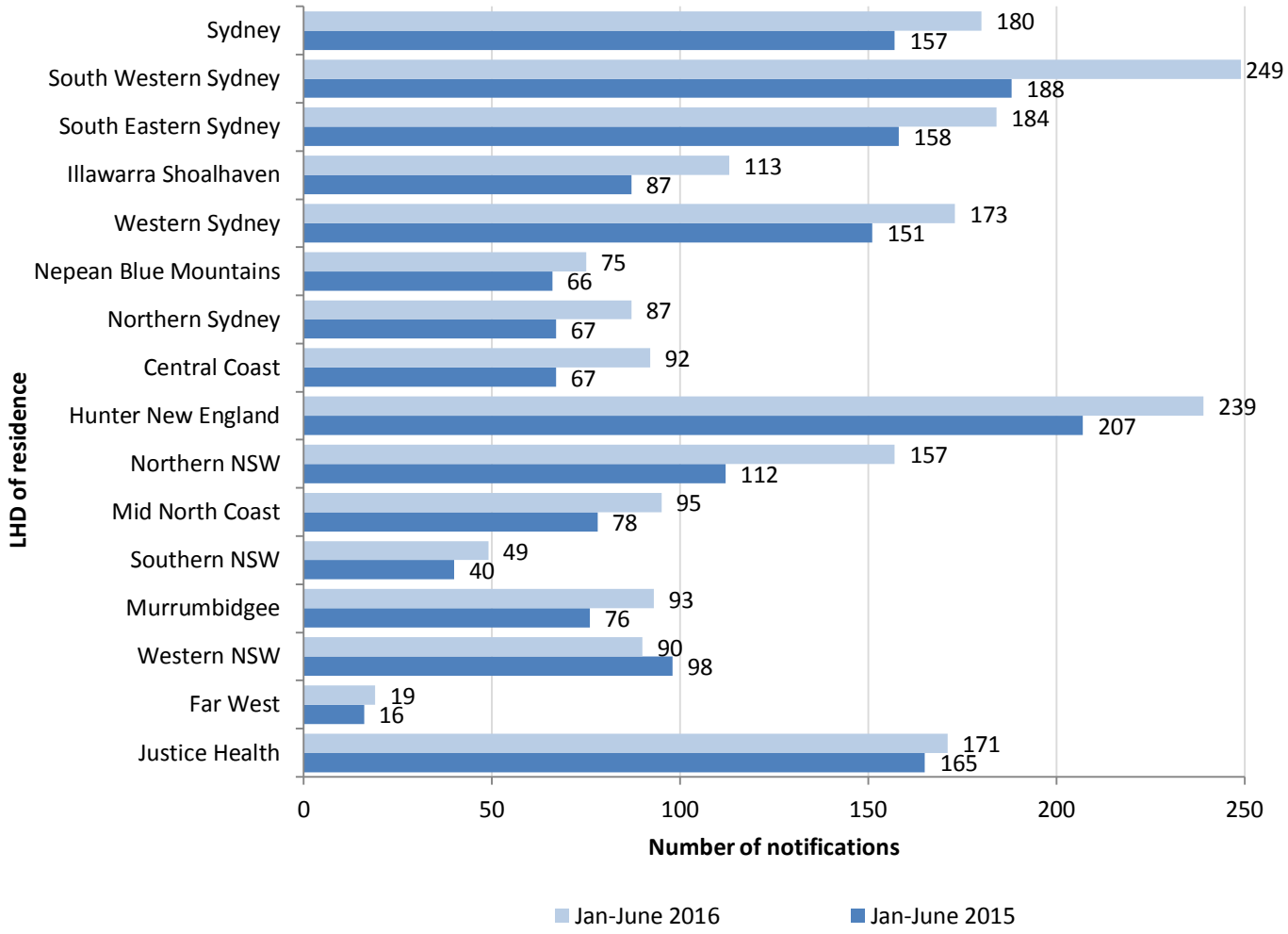
Males had a higher number of hepatitis C notifications than females in almost all age groups. These patterns may reflect risk behaviours in males and females. Approximately two thirds of NSW respondents in the Australian NSP Survey (ANSPS) were male in all survey years over the period 1995 to 2014.[13]

The age distribution among males is double-peaked, with the most commonly diagnosed age groups being 30-34 years and 50-54 years. The pattern among females is also double-peaked, but in slightly older age groups (35-39 years and 55-59 years).

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

1.4.3 Where are notifications occurring?

Figure 11: Notifications of hepatitis C, by LHD of residence, NSW, 1 January to 30 June 2016 and 1 January to 30 June 2015



Data source: NCIMS, NSW Health; data extracted 22 Aug 2016

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

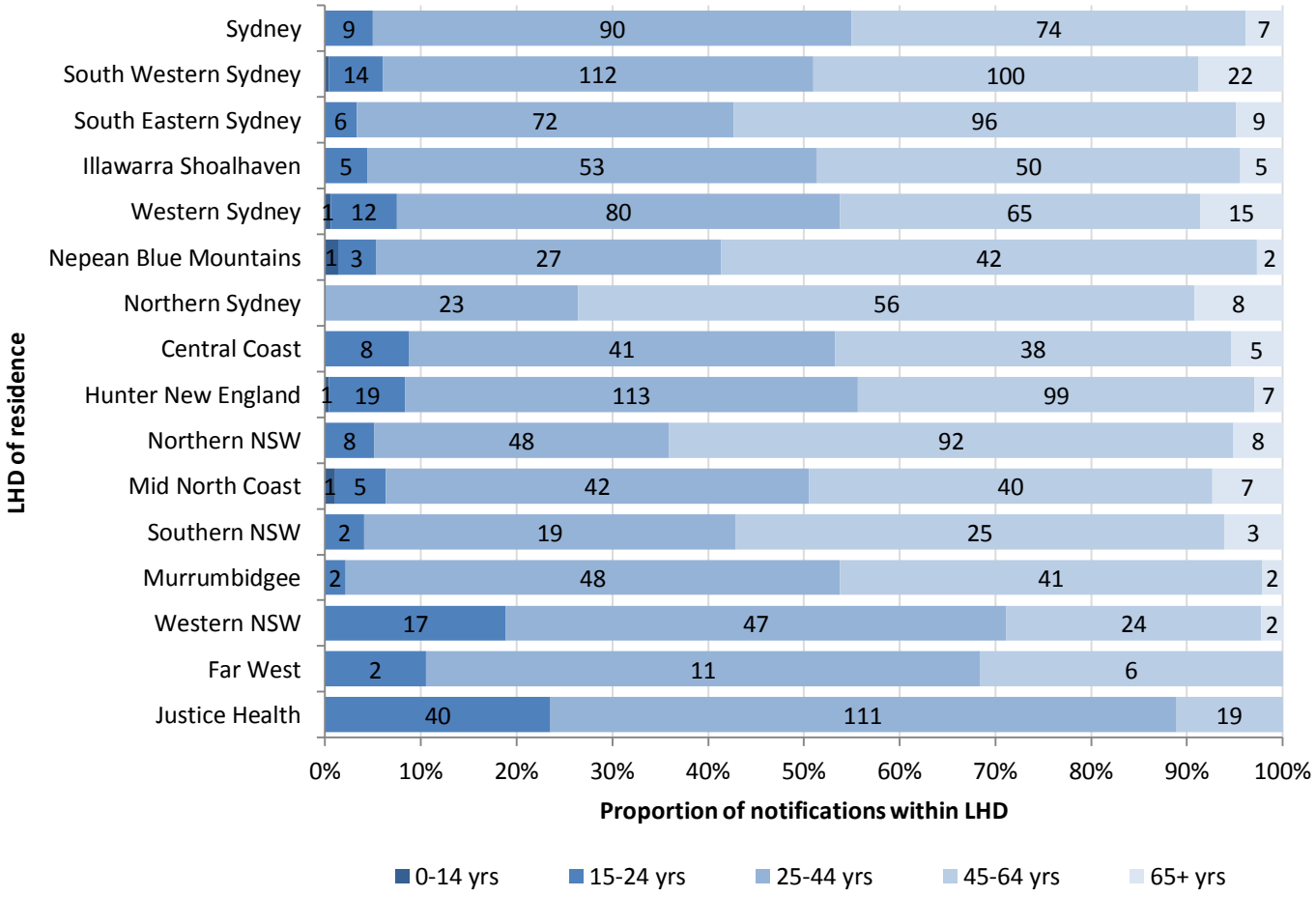
Comment

Between January and June 2016, South Western Sydney LHD reported the highest number of hepatitis C notifications (249), followed by Hunter New England LHD (239), South Eastern Sydney LHD (184) and Sydney (180); Far West LHD reported the fewest hepatitis C notifications (19).

All LHDs reported an increase in hepatitis C notifications between January and June in 2016 compared to the same period in 2015, except for Western NSW LHD.

To account for the substantial variation in population size between the LHDs, notification rates have been shown in Figure 13.

Figure 12: Notifications of hepatitis C, by LHD and age group, NSW, 1 January to 30 June 2016



Data source: NCIMS, NSW Health; data extracted 22 August 2016

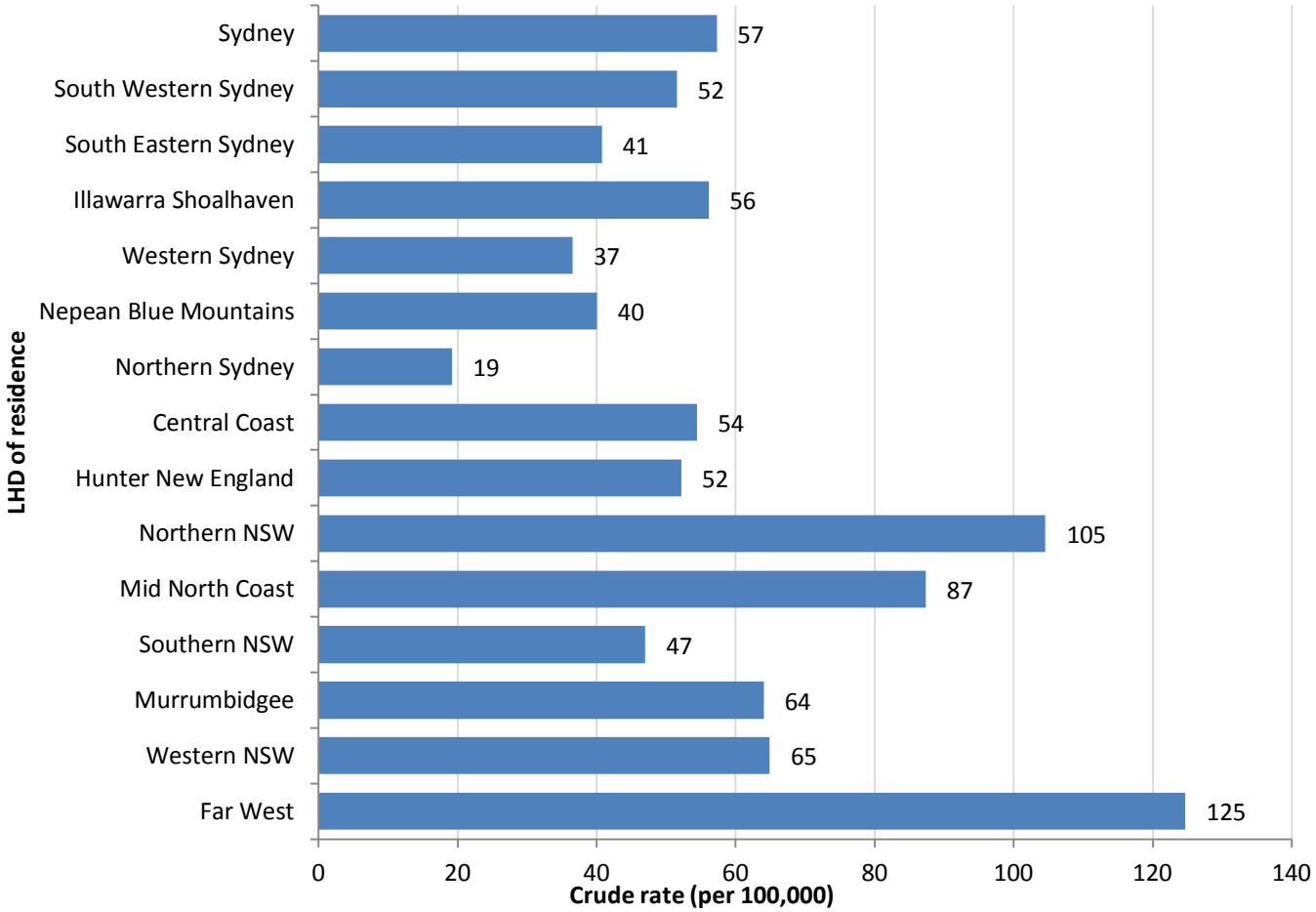
Note: Excludes non-NSW residents and persons whose age and/or place of residence in NSW was not known or not stated; data labels show number of notifications in age group for LHD; Justice Health data includes notifications from juvenile correctional centres

Comment

Justice Health reported both the highest number (40) and the highest proportion (24%) of hepatitis C notifications in 15-24 year olds during the first half of 2016. During the same period, Hunter New England LHD had the second highest number of notifications (19) in 15-24 year olds, while Western NSW LHD had the second highest proportion (19%) 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 13: Notification rate of hepatitis C in NSW, by LHD of residence, 1 January to 30 June 2016



Data source: NCIMS and ABS population estimates (SAPHaRI), NSW Health; data extracted 22 August 2016

Note: Excludes non-NSW residents, persons whose place of residence in NSW was not known and notifications from Justice Health

* The rate is based on 6 months of data between Jan-June 2015 adjusted to an annual rate and is subject to change once data between July-Dec 2016 becomes available

Comment

Far West, Northern NSW and Mid North Coast LHDs recorded the highest rates of hepatitis C notification in NSW in January to June 2016 (125, 105 and 87 notifications per 100,000 population respectively).

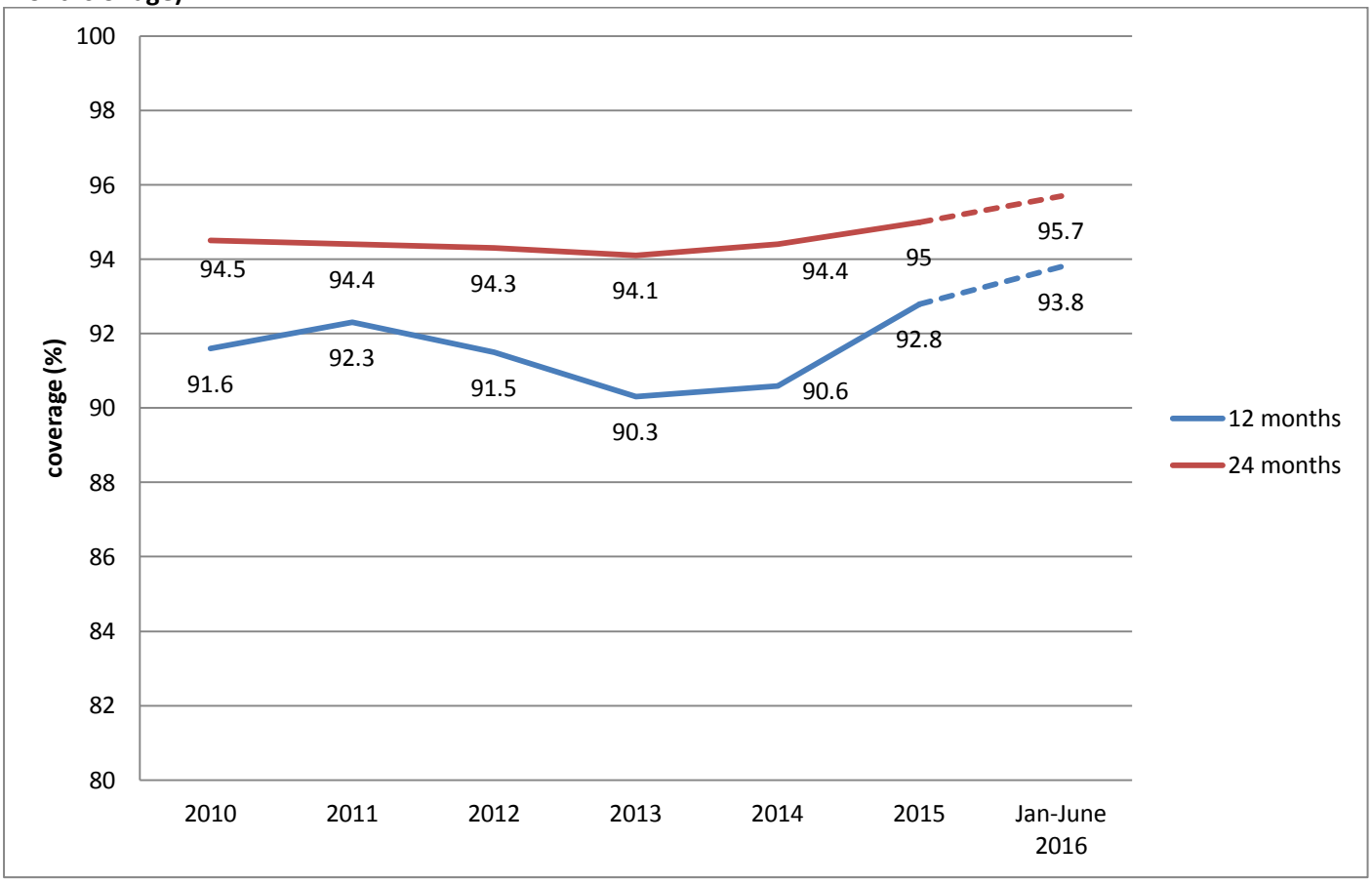
A notification rate has not been calculated for Justice Health as the population (the denominator) fluctuates considerably and data are available only for the annual number of incarcerations, not the number of people incarcerated.

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 is vaccinated for hepatitis B?

Figure 14: 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 Childhood 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 January to June 2016 was 93.8%. Coverage for Aboriginal children was 92.9%.

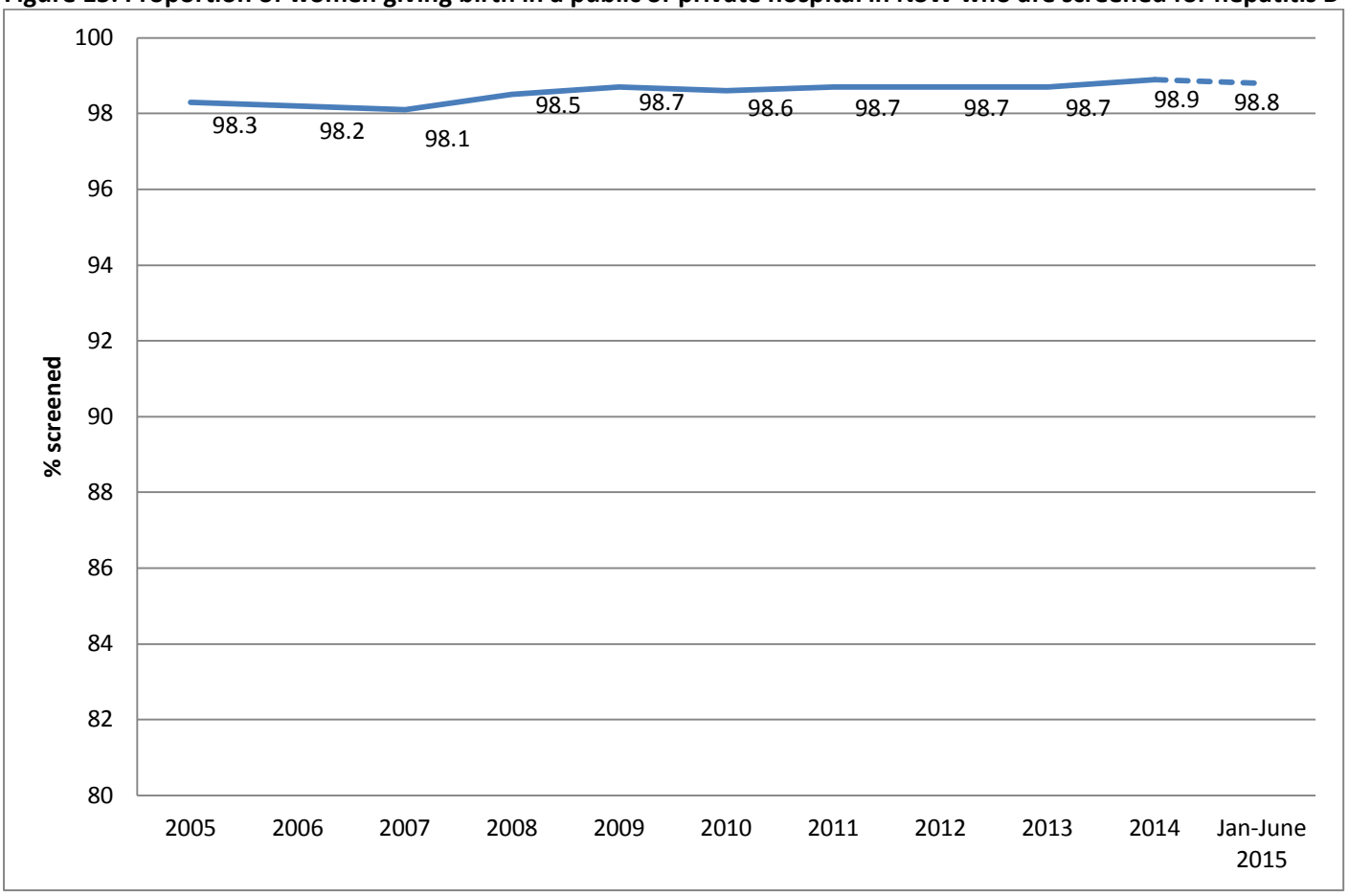
Coverage at 24 months in January to June 2016 was 95.7%, and for Aboriginal children was 97.1%. These rates are higher than at 12 months, indicating that delayed vaccination as well as under-vaccination and underreporting influence vaccination rates. (Figure 14)

Recurrrent funding has been provided to all LHDs for the employment of Aboriginal Immunisation Health Workers to follow up Aboriginal children due and overdue for vaccinations.

2.2 Immunisation in babies born to mothers diagnosed with hepatitis B

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

Figure 15: Proportion of women giving birth in a public or private hospital in NSW who are screened for hepatitis B



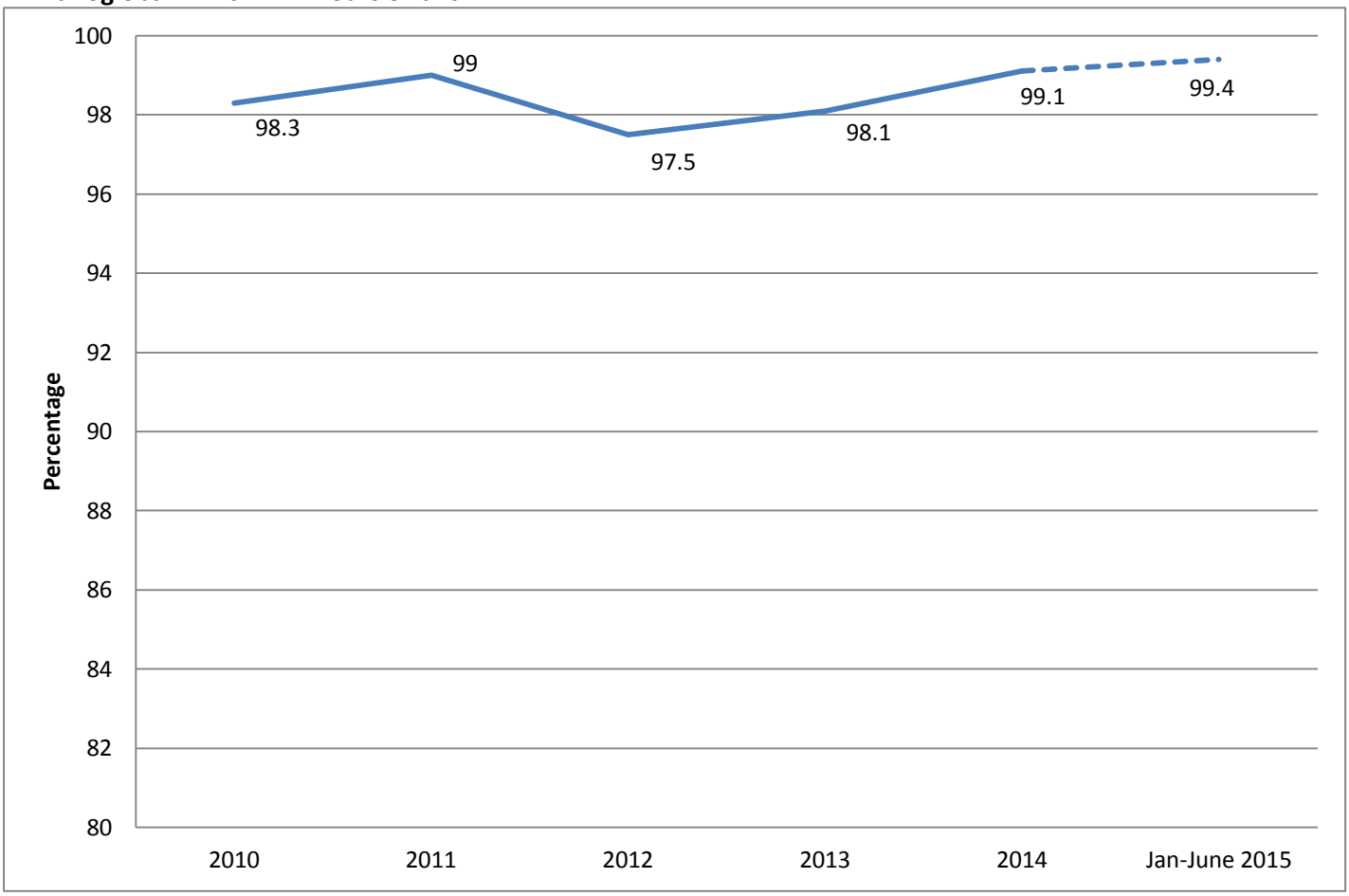
Data source: Neonatal Hepatitis B Vaccination Program Database, NSW Health

Comment

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

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

Figure 16: 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 is 99.4% in January-June 2015. (Figure 16 and Table 2)

Figure 15 and Table 2 provide the most current data available at the time of this report.

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

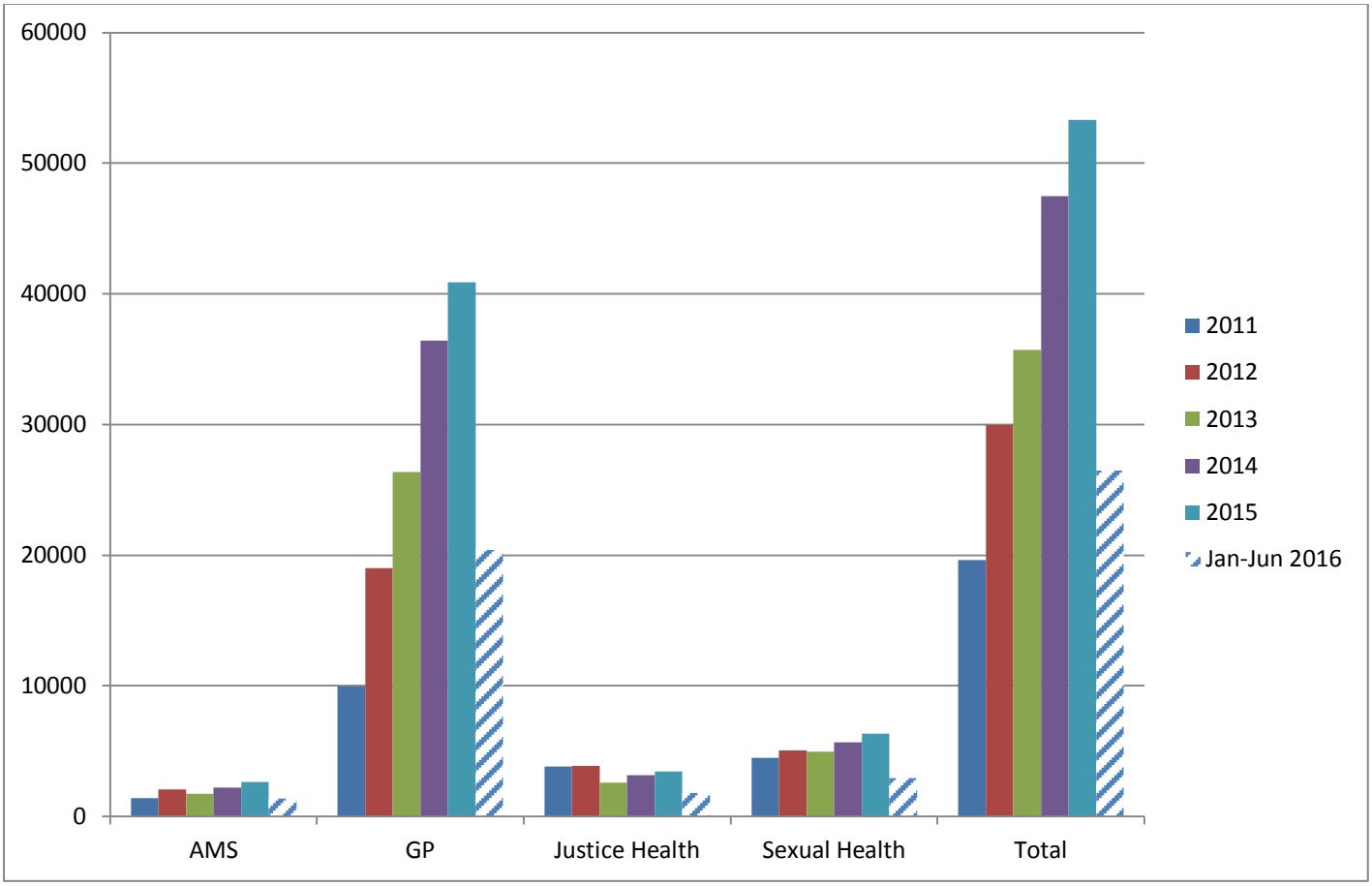
Year	No. neonates born to HBsAg+ mothers	No. neonates born to HBsAg+ mothers who received HBIG	No. neonates born to HBsAg+ mothers who received HBIG within 12 hours of birth (%)
2009	736	731	725 (98.5%)
2010	664	660	653 (98.3%)
2011	702	699	695 (99.0%)
2012	757	744	735 (97.1%)
2013	696	690	683 (98.1%)
2014	739	737	732 (98.9%)
Jan-Jun 2015	344	343	342 (99.4%)

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

2.4 Vaccinate groups at elevated risk of hepatitis B infection

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

Figure 17: 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

The total number of doses of adult hepatitis B vaccine distributed to health care providers in NSW has increased steadily over the last three years, more than doubling between 2011 and 2015. 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. (Figure 17)

During the first six months of 2016, 26,439 doses of hepatitis B vaccine were distributed to GPs, aboriginal medical services (AMS), sexual health clinics and Justice Health.

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,[14] some vaccine may be administered to other people.

[14] 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

2.4 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.[15]

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.

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

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)[16]. 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.[17]

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

[15] 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

[16] 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.

[17] 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.

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).[18]

Consistent with other studies[19], 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 PWID who are opioid dependent, OST is protective against HCV incident infection.[20,21]

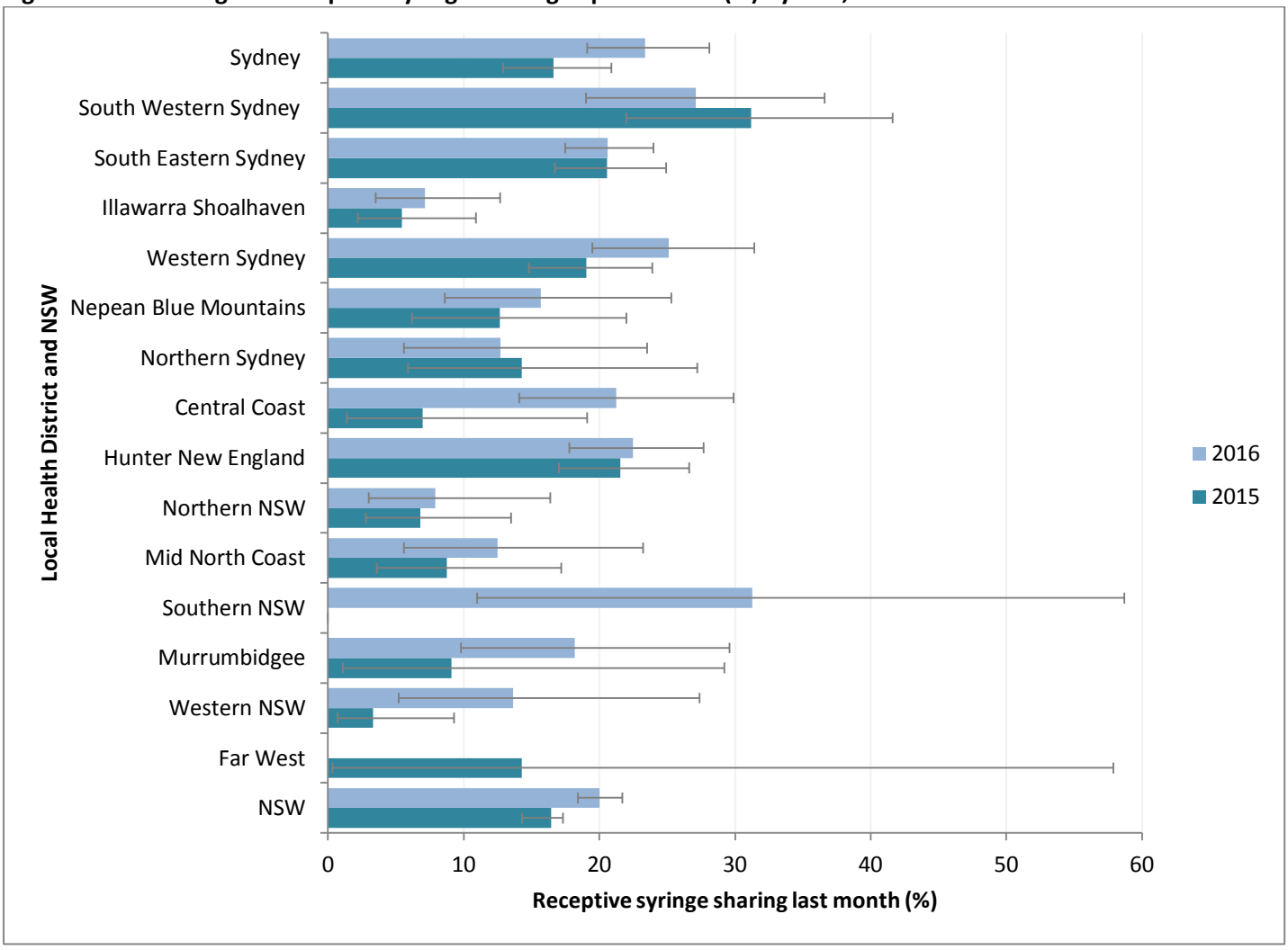
[18] Geddes, L, Iversen J, and Maher L. NSW Needle and Syringe Program Enhanced Data Collection Report 2016, The Kirby Institute, UNSW Australia, Sydney 2016.

[19] 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.

[20] 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

[21] 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.

Figure 18: Percentage of Receptive Syringe Sharing in past month (%) by LHD, 2015 and 2016



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. **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 18). 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**.

It is important to view Figure 18 alongside Figure 20, in order to reflect on RSS in each LHD alongside the total number of units of injecting equipment distributed via the NSW NSP.

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

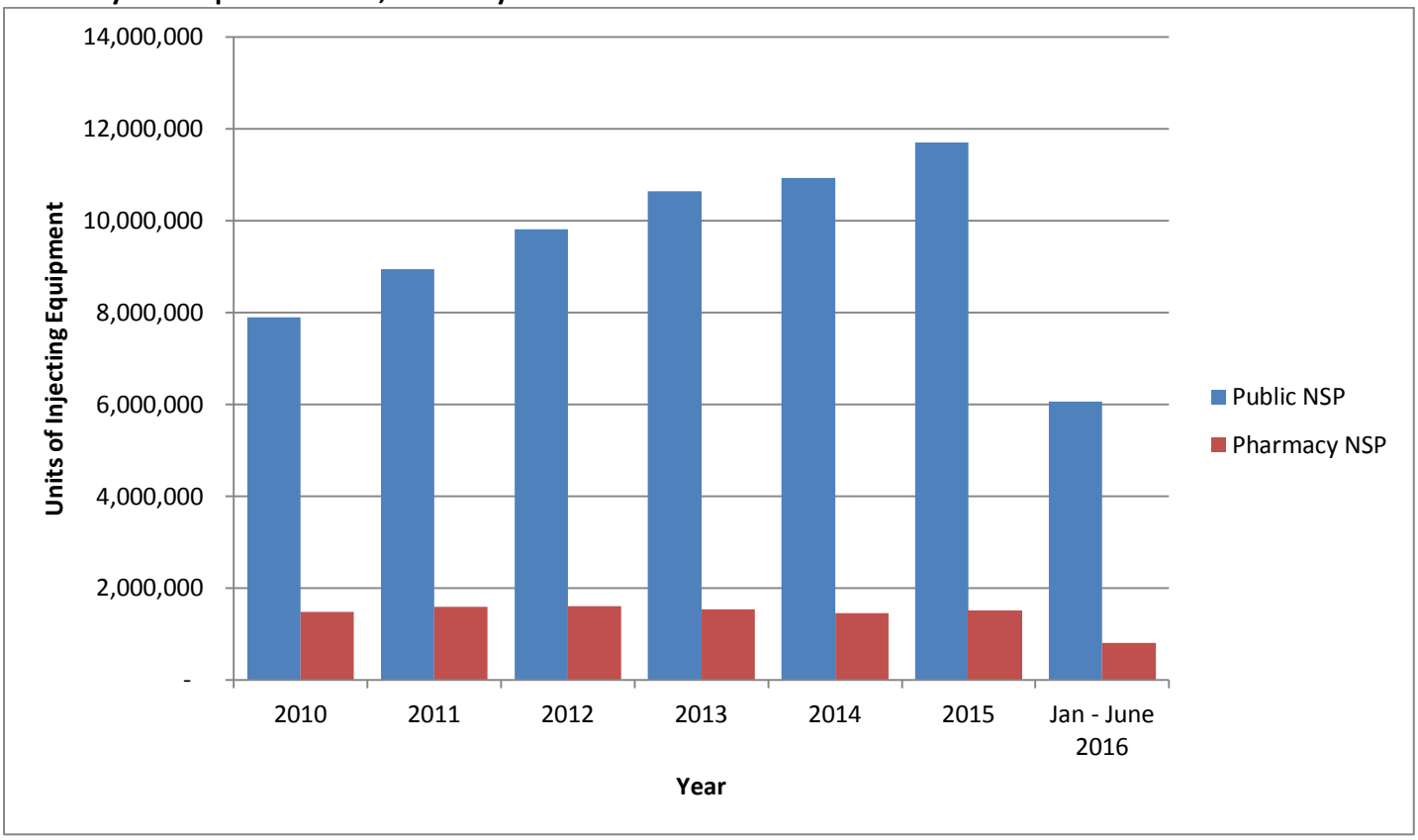
The proportion of priority populations accessing the NSW NSP has remained relatively stable between 2015 and 2016. Among people participating in the NNEDC[22] in 2016:

- 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)

[22] 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 19: The total number of units of injecting equipment distributed in NSW by the public NSP and the Pharmacy NSP Fitpack® scheme, 1 January 2010 to 30 June 2016



Data sources:

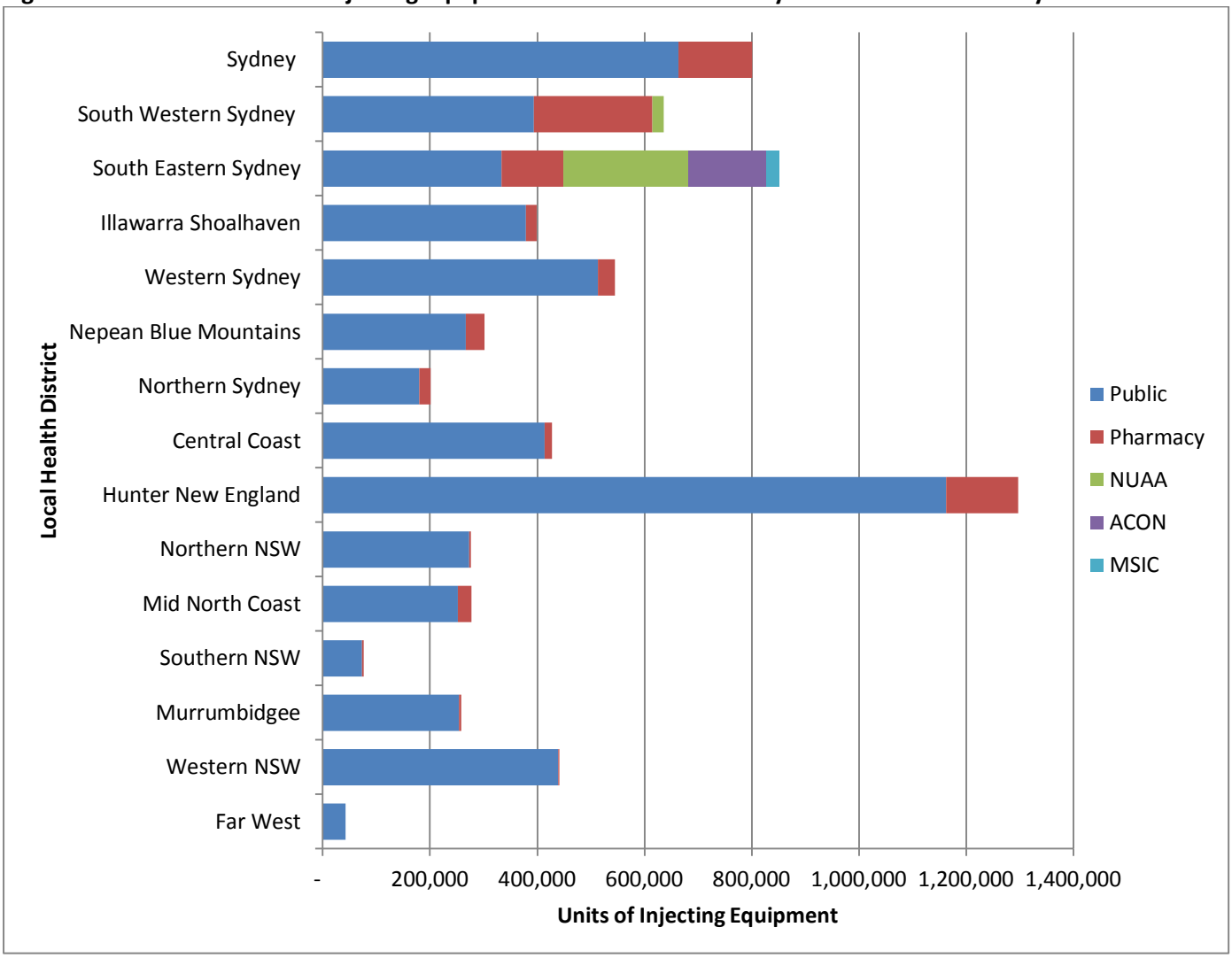
- Public NSP - NSW Health NSP Minimum Data Set
- Pharmacy NSP - NSW Health Pharmacy Data (Pharmacy NSP Fitpack® scheme). The total includes additional units ordered from The Pharmacy Guild of Australia (NSW Branch) by individual pharmacies, but not allocated to an LHD (45,800 units in 2014; 70,700 units in 2015; 83,500 units in 2015/16)
- 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

Between January to June 2016, there were 6,064,124 units of injecting equipment distributed in NSW by the Public NSP and 808,519 units distributed by the Pharmacy NSP Fitpack® scheme (Figure 19). This represents an increase of 410,743 additional units (7.3%) by the Public NSP and an increase of 159,981 units (24.7%) by the Pharmacy NSP compared with the same period in 2015 (NSW Health NSP Minimum Data Set).

In the financial year ending 30 June 2016, a total of 13,773,628 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 1,055,224 additional units (8%) compared with the previous 12 months. During the same period to 30 June 2016, the number of units of injecting equipment distributed by the Public NSP increased by 790,535 (7%), while the number of units of injecting equipment distributed by the Pharmacy NSP Fitpack® scheme increased by 264,689 (19%).
(NSW Health NSP Minimum Data Set)

Figure 20: Number of units of injecting equipment distributed in NSW by LHD between 1 January to 30 June 2016



Data sources:

- 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
- MSIC – The Sydney Medically Supervised Injecting Centre

Notes:

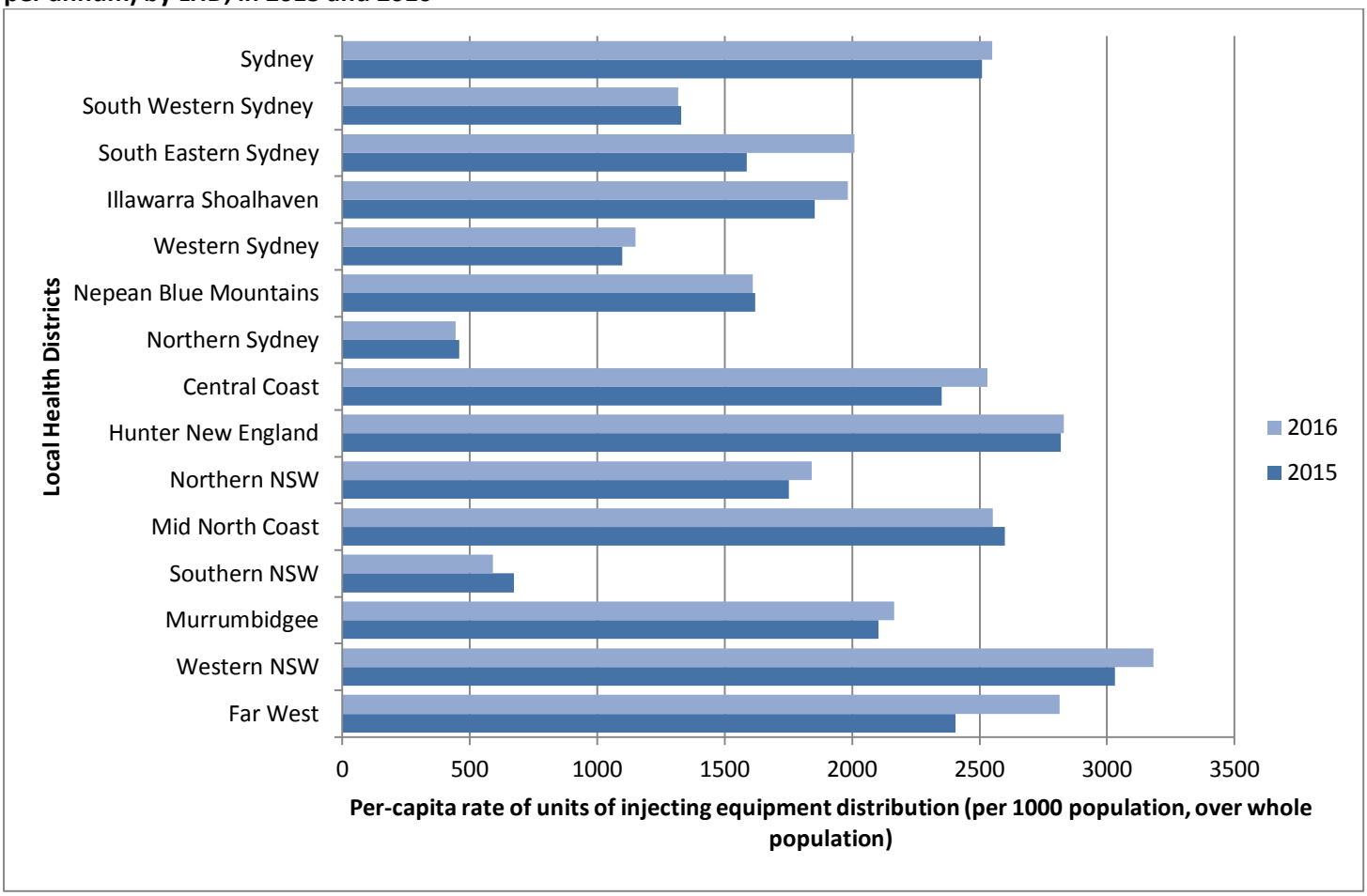
- The Public NSP includes injecting equipment distributed by secondary outlets including Aboriginal Community Controlled Health Services (ACCHS)
- South East Sydney LHD includes injecting equipment distributed by NUAA, ACON and MSIC
- South Western Sydney LHD includes injecting equipment distributed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

Comment

Between January to June 2016, the highest number of units of injecting equipment were distributed in Hunter New England, South Eastern Sydney, Sydney, South Western Sydney, and Western Sydney.

It is useful to view Figure 20 alongside Figure 21, which identifies the per-capita rate of units of injecting equipment distribution by LHD in 2015 and 2016. HNE had the highest number of units of injecting equipment distributed (Figure 20) between January to June 2016 and the second highest projected per-capita rate of units of injecting equipment distribution (Figure 21) in 2016.

Figure 21: 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 23 August 2016.
- 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

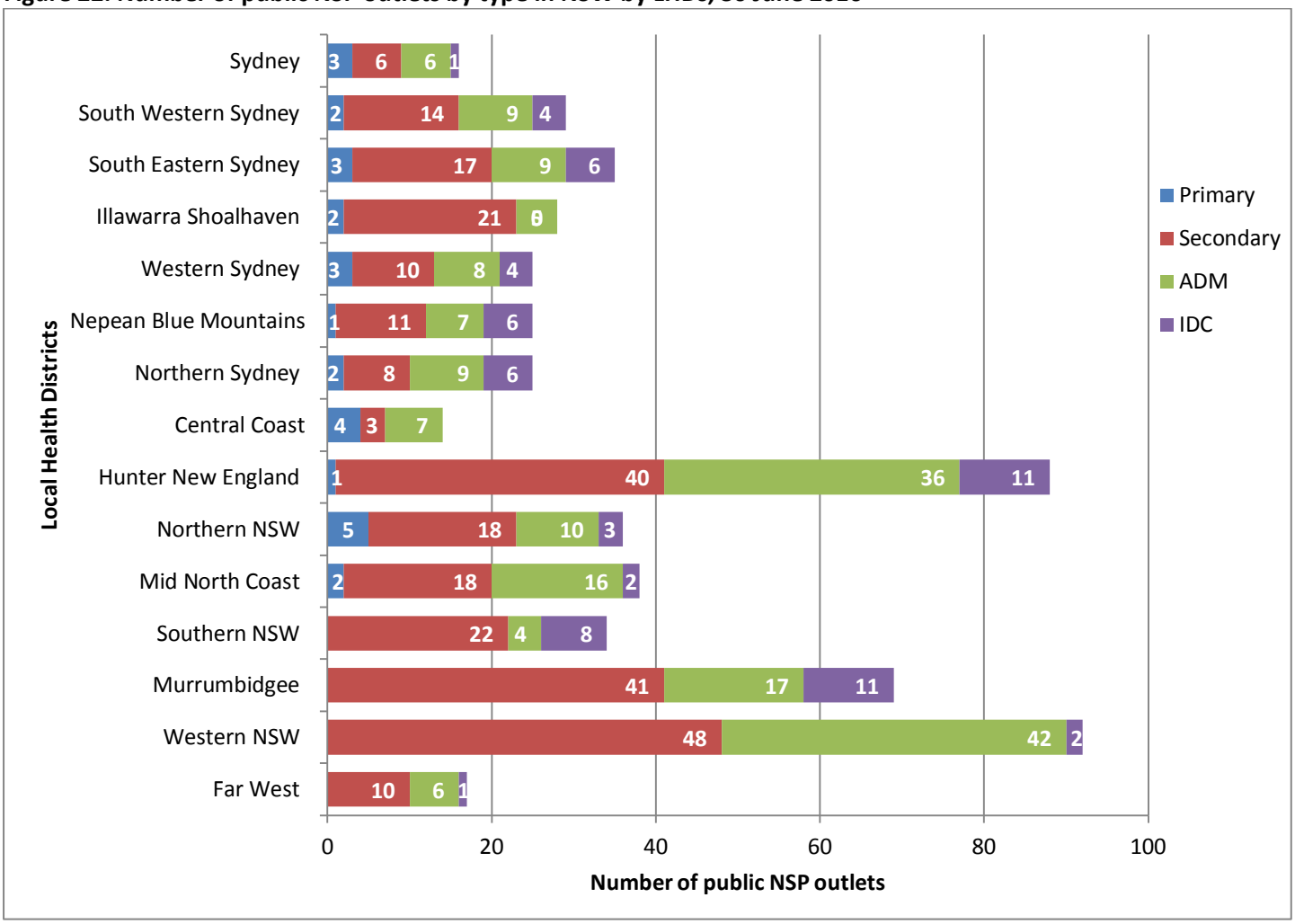
Notes:

- The rate in 2016 is based on 6-months of data between Jan-June 2016 adjusted to an annual rate and is subject to change once data between July-Dec 2016 becomes available.
- 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

Based on activity between January to June 2016, the highest projected per-capita rate of units of injecting equipment distribution was in Western NSW, Hunter New England, Far West, Mid North Coast, Sydney and Central Coast. This rate is subject to change once data for July-December 2016 are available.

Figure 22: Number of public NSP outlets by type in NSW by LHDs, 30 June 2016



Data source: NSW NSP Data Collection

Comment

As of 30 June 2016, under the public NSP there were a total of 28 primary and 287 secondary outlets, 256 automatic dispensing machines (ADMs) and internal dispensing chutes (IDCs) located across NSW. The breakdown by outlet type by LHD is identified above (Figure 22).

In addition, there were 522 Pharmacies participating in the Pharmacy NSW Fitpack Scheme, making a total of 1,093 NSP outlets located across NSW as at 30 June 2016. This represents a decrease of 12 outlets (1%) 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)[23].

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 study[24] 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%[25].

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.[26]

In NSW, almost 19,900 people received pharmacotherapy treatment for their opioid dependence on a snapshot day in June 2015 (see Figure 23) at 862 dosing points around NSW. There were 779 prescribers of opioid pharmacotherapy drugs in NSW in 2015. [27]

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%

[23] 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.
[24] 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.
[25] 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.
[26] Australian Institute of Health and Welfare. National opioid pharmacotherapy statistics 2015 http://www.aihw.gov.au/alcohol-and-other-drugs/nopsad/
[27] Ibid.

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.[28]

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.[29]

A recent study[30] 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:

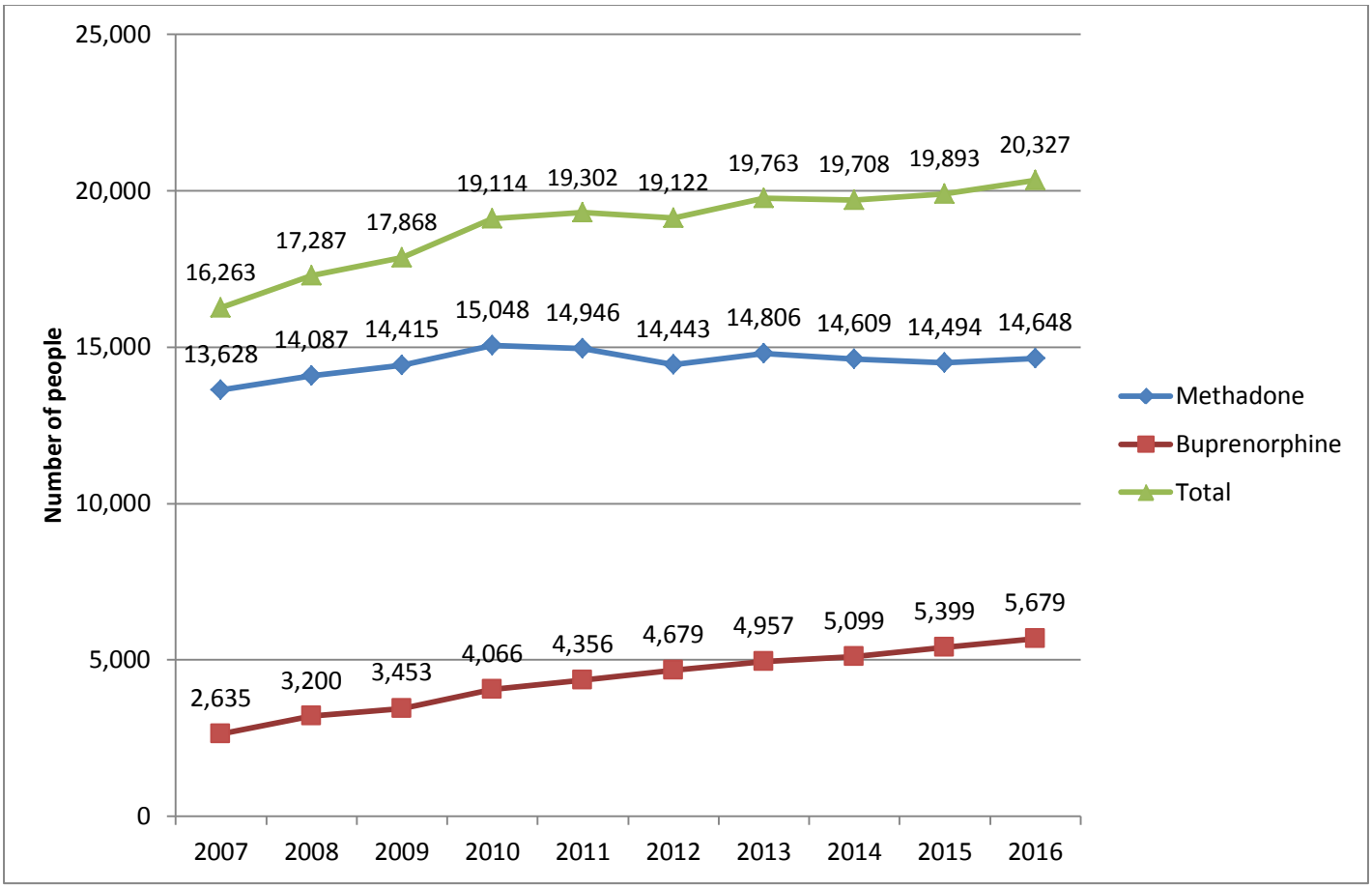
- **Prescriber** – a registered prescriber who is accredited and/or authorised to prescribe a pharmacotherapy drug
- **Justice Health prescriber** – prescribers who work in prisons or correctional facilities
- **Private Prescribers** – prescribers who work in organisations that are not controlled by 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

[28] 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

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

[30] 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 23: 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

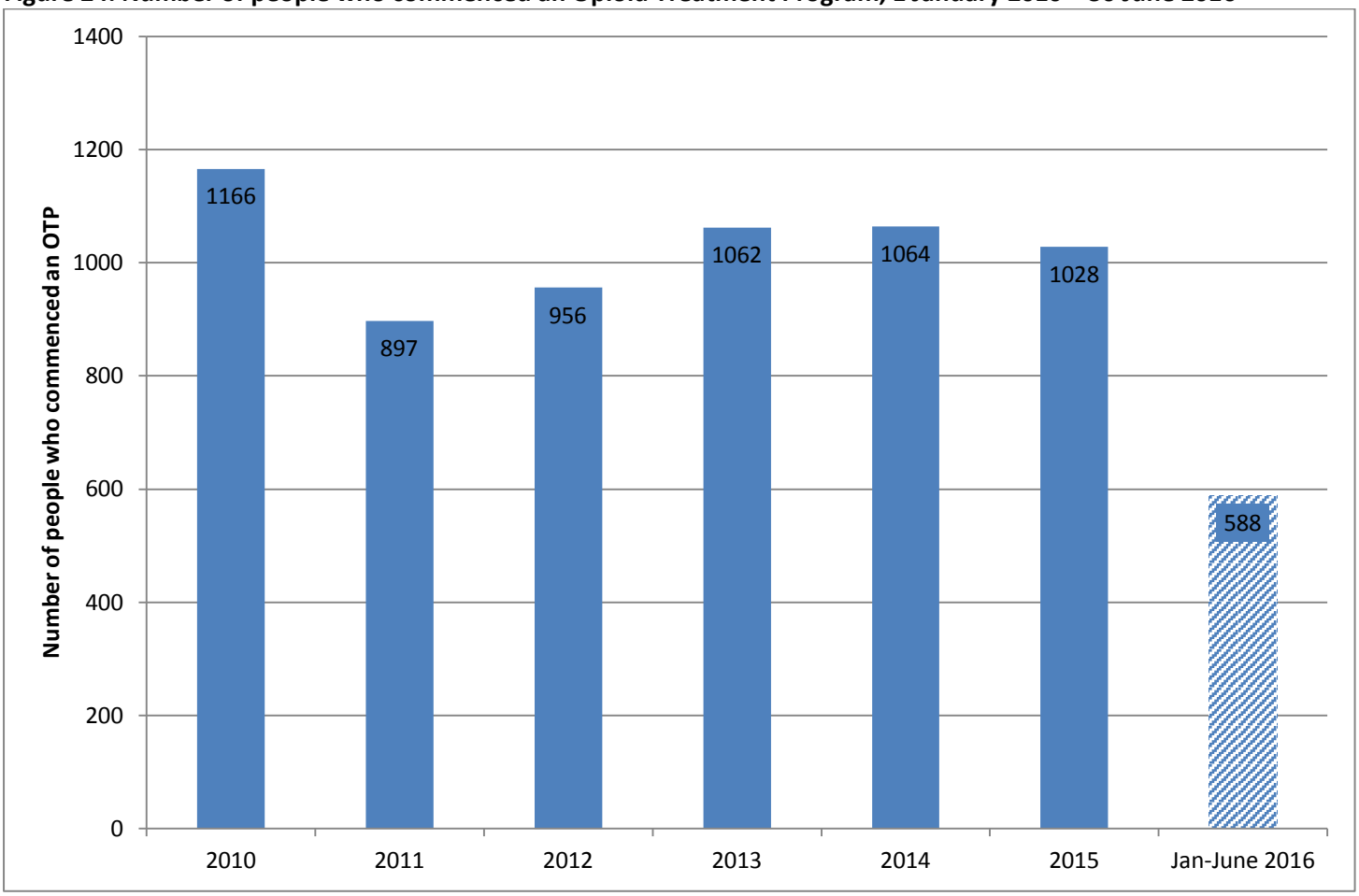
Between 30 June 2007 and 30 June 2016, the total number of clients being treated using opioid substitution therapy increased by 25%, from 16,263 in 2007 to 20,327 clients in 2016.

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

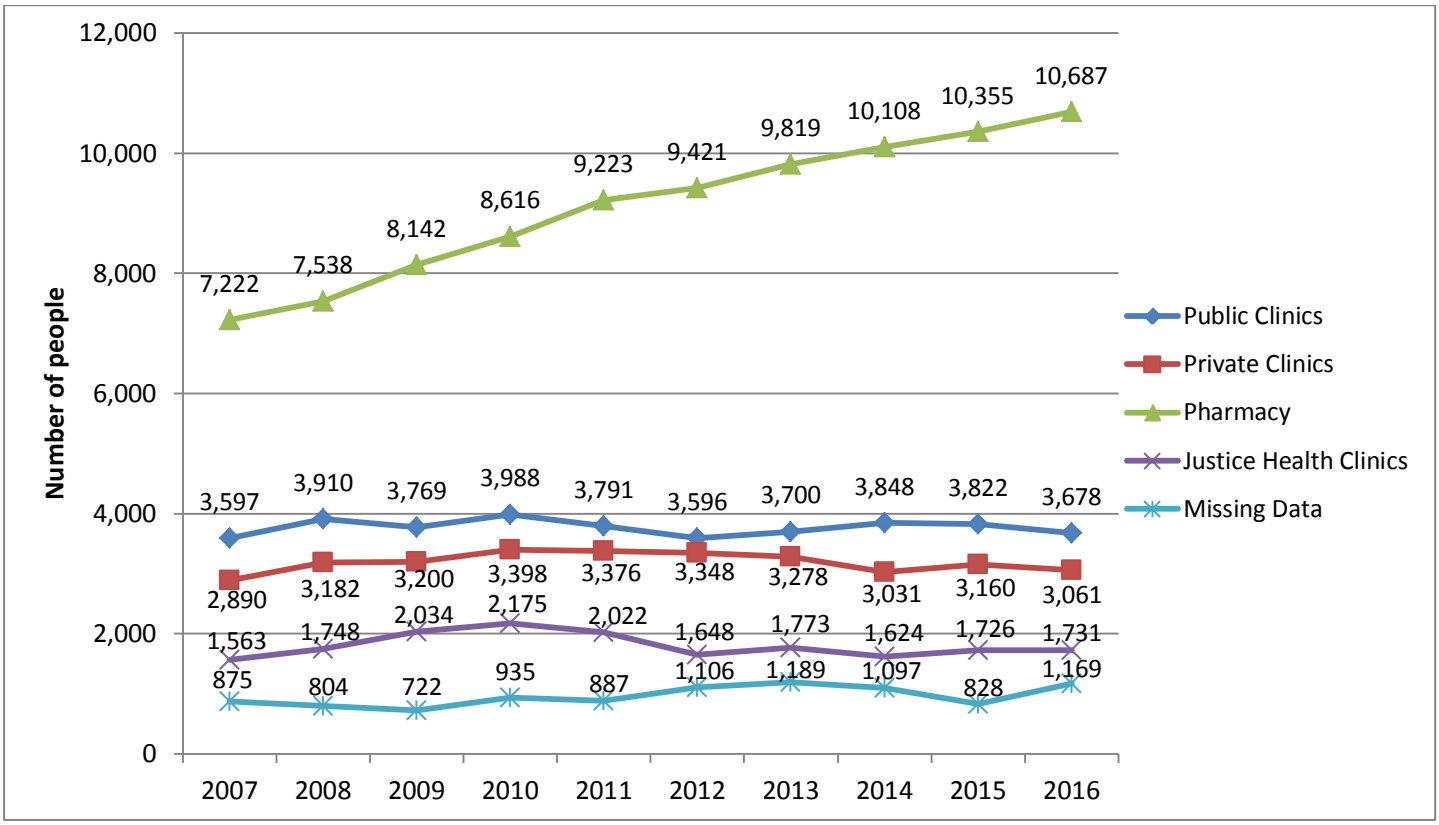


Data source: Pharmaceutical Drugs and Addiction System (PHDAS)
Note: The data in this Figure is the number of new clients each year calculated based on data collected six-monthly. Clients are included when having a program number of "1" which indicates initial application of the program.

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 25: 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 25, 26, 27 & 28 is consistent as the data represents the number of people who received their dose on the snapshot day. Figure 25 shows the number who received their dose at each dosing point type. Figure 28 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 25, 26, 27 & 28 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 28 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 25).

Specialist clinics (public or private) are generally best placed 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. Treatment in public clinics is free. 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 26: Number of people participating in the Opioid Treatment Program, by dosing point, by LHD, at 30 June 2016

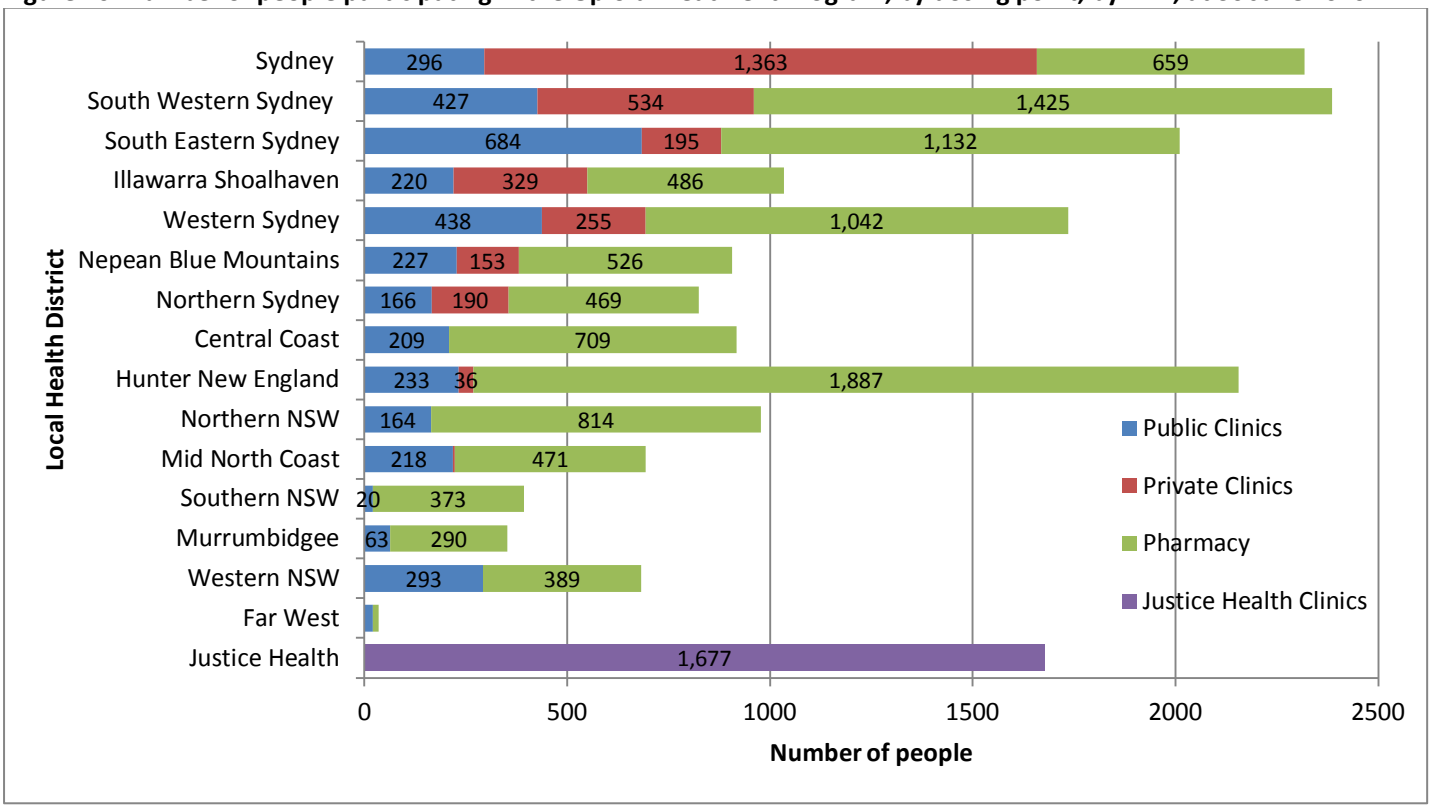
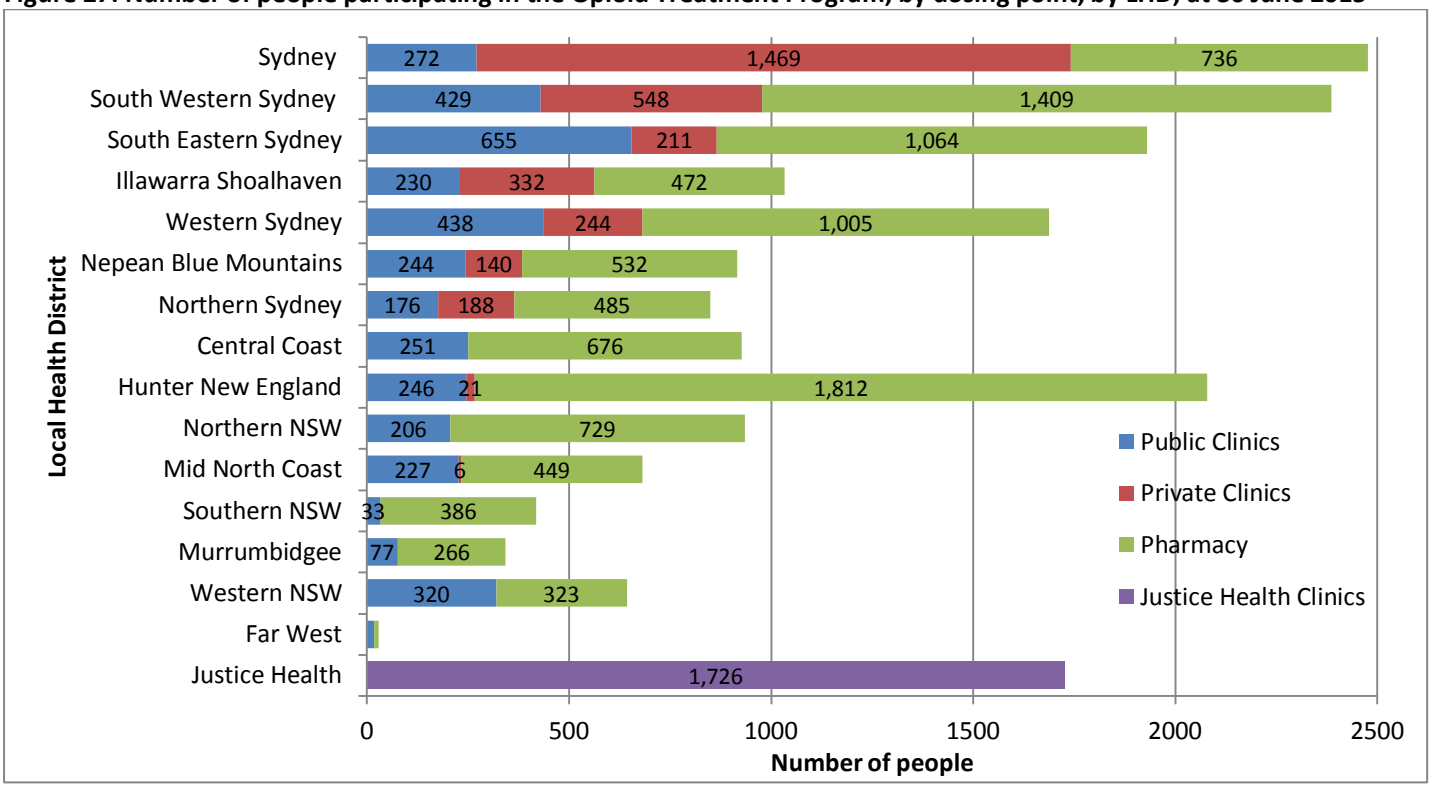


Figure 27: Number of people participating in the Opioid Treatment Program, by dosing point, by LHD, at 30 June 2015



Data sources (Figure 26 and 27): Pharmaceutical Drugs and Addiction System (PHDAS), NSW Health; data extracted: 7/7/2015, 7/7/2016
Note (Figure 26 and 27): 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.
Notes Figure 26: 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 27: 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 26 and Figure 27).

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

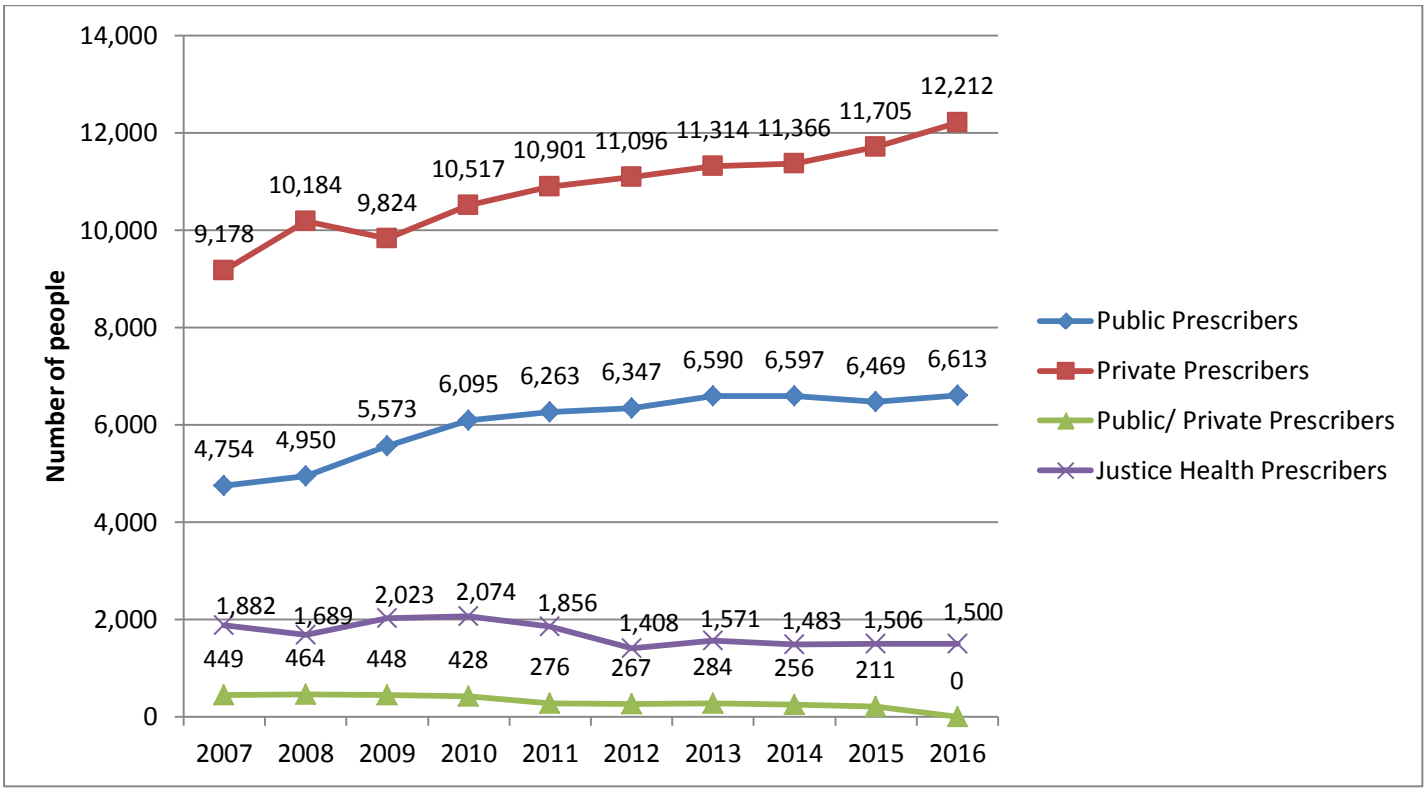
The highest number of people treated in public clinics occurs in South Eastern Sydney, Western Sydney, and South Western Sydney.

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 26 and Figure 27)

Figure 28: 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 total number of people participating in the OTP as shown in Figures 25, 26, 27 & 28 is consistent as the data represents the number of people who received their dose on the snapshot day. Figure 25 shows the number who received their dose at each dosing point type. Figure 28 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 25, 26, 27 & 28 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 28 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.

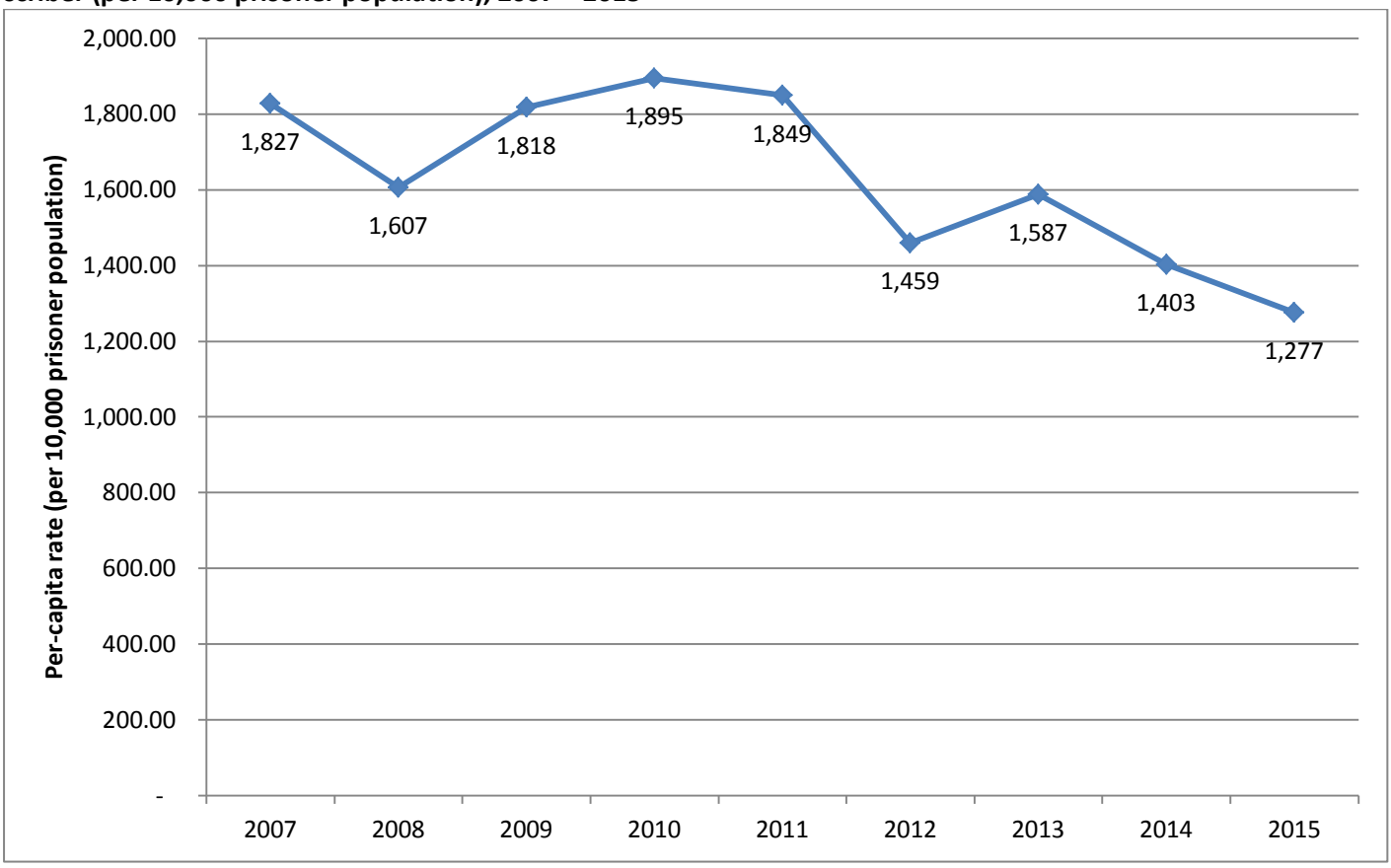
Comment

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 28). 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 23) 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 28 alongside Figure 25, Figure 26, and Figure 27 which identify the number of people participating in the OTP by dosing point.

Figure 29: Per-capita rate of people participating in the NSW Opioid Treatment Program by Justice Health prescriber (per 10,000 prisoner population), 2007 – 2015



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.

Note: The Figure does not identify the per-capita rate in 2016 as data for number of total prisoners in NSW is available to 2015.

Comment

Between 30 June 2007 and 30 June 2015, 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 1,277 per 10,000 prisoner population (Figure 29).

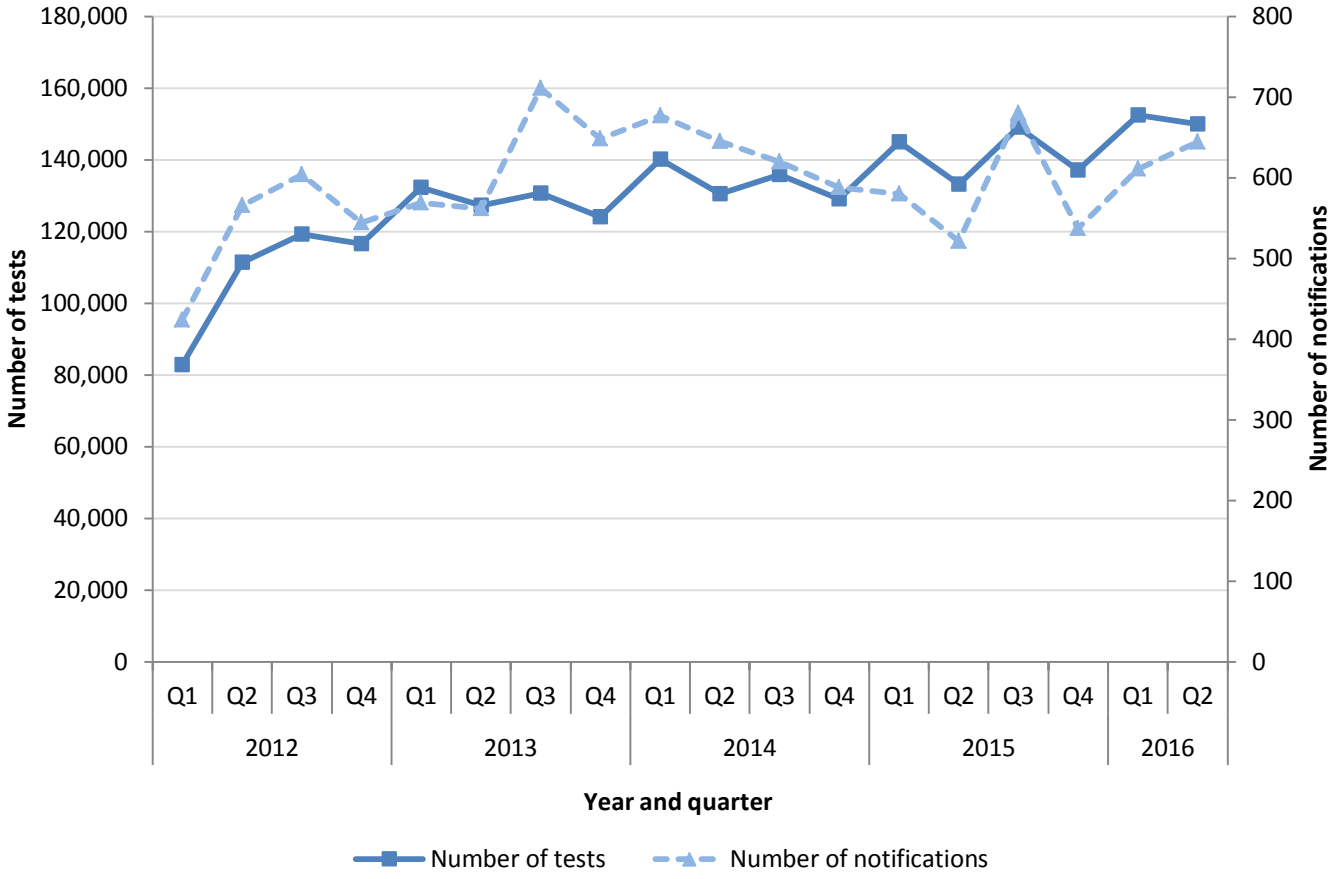
It is useful to view Figure 29 alongside Figure 28, which shows that the number of people participating in the OTP in Justice Health Settings has remained low in 2016 (n=1,500) compared to 2007 (n=1,882).

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 30: Number of tests for hepatitis B surface antigen performed at 15 NSW laboratories and number of hepatitis B notifications per quarter, 1 January 2012 – 30 June 2016

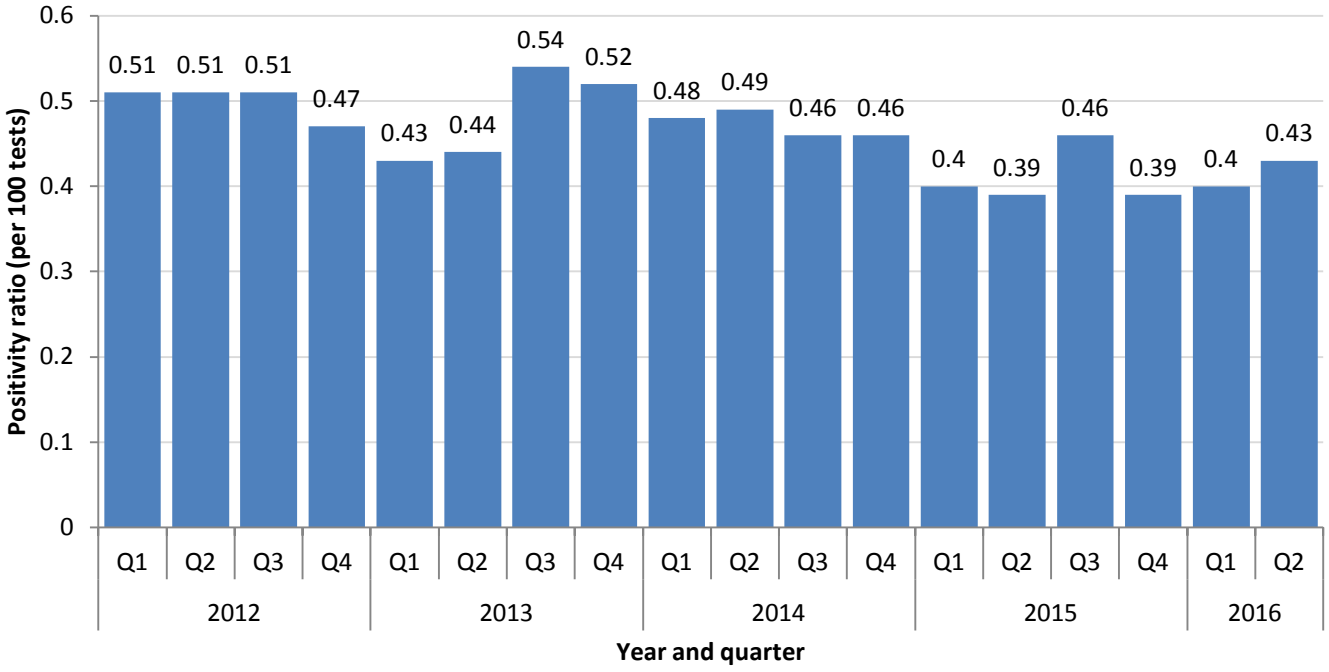


Data sources: NCIMS and NSW denominator data project, NSW Health

Comment

The number of hepatitis B tests performed in NSW is continuing to increase gradually. Between January and June 2016, 302,468 tests for hepatitis B surface antigen were performed in 15 laboratories in NSW, an average of 50,411 tests per month. The monthly average number of tests for January to June 2016 is higher than the monthly average for 2015 (47,022), 2014 (44,641), 2013 (42, 854) and 2012 (38,899).

Figure 31: Hepatitis B positivity ratio, NSW, 1 January 2012 – 30 June 2016



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

Comment

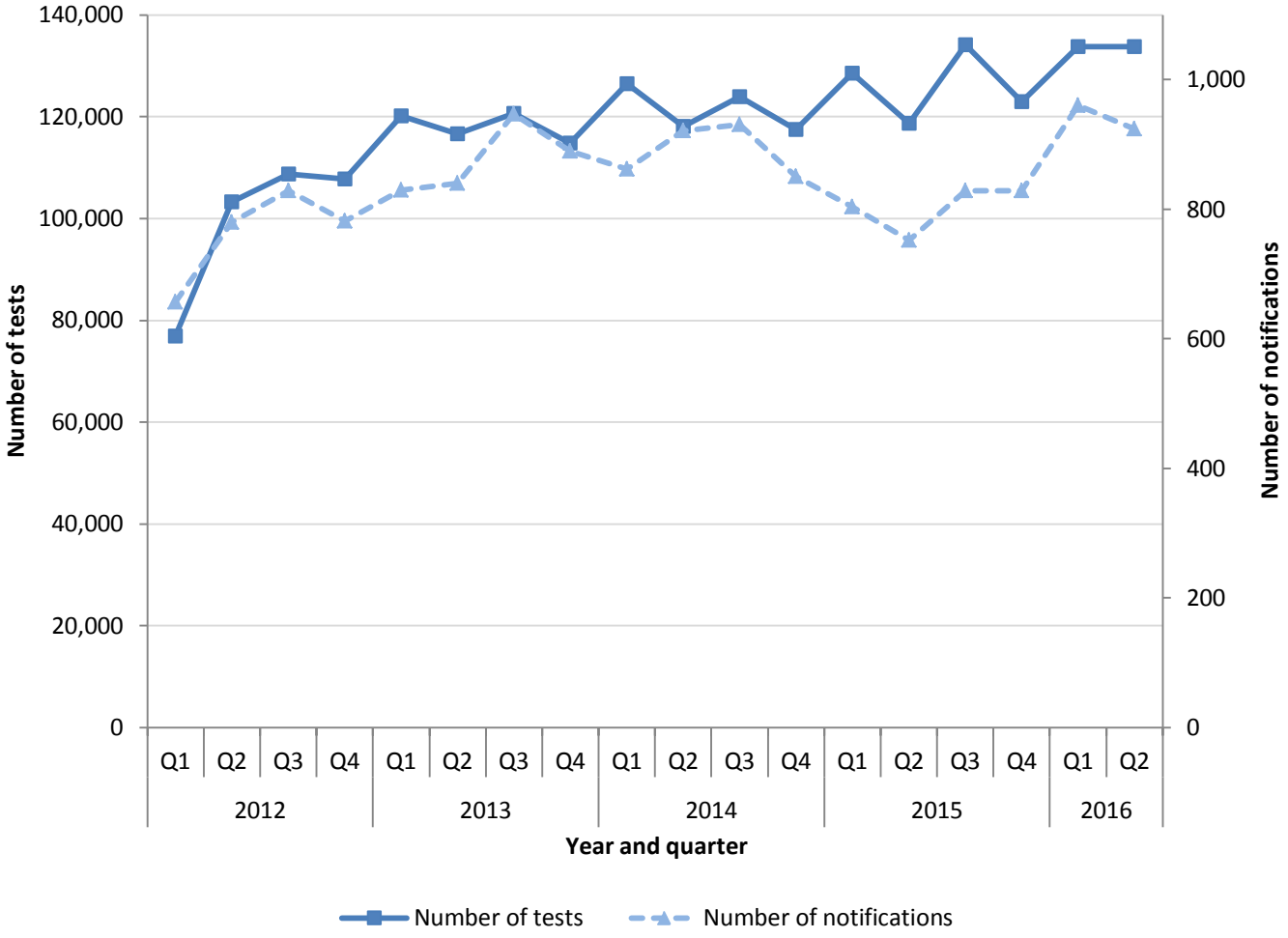
The ratio of positive hepatitis B notifications was 0.40 per 100 tests during the first quarter of 2016 and 0.43 in the second quarter, which is stable compared to the positivity ratio for the full year of 2015 (0.41). There appears to be a decreasing trend in the positivity ratio, with previous years' ratios of 2012, 2013 and 2014, being 0.50, 0.48 and 0.47 notifications per 100 tests respectively.

The ratio of positive notifications 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. 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 32: Number of tests for hepatitis C antibody performed at 15 NSW laboratories and number of hepatitis C notifications per quarter, 1 January 2012 – 30 June 2016

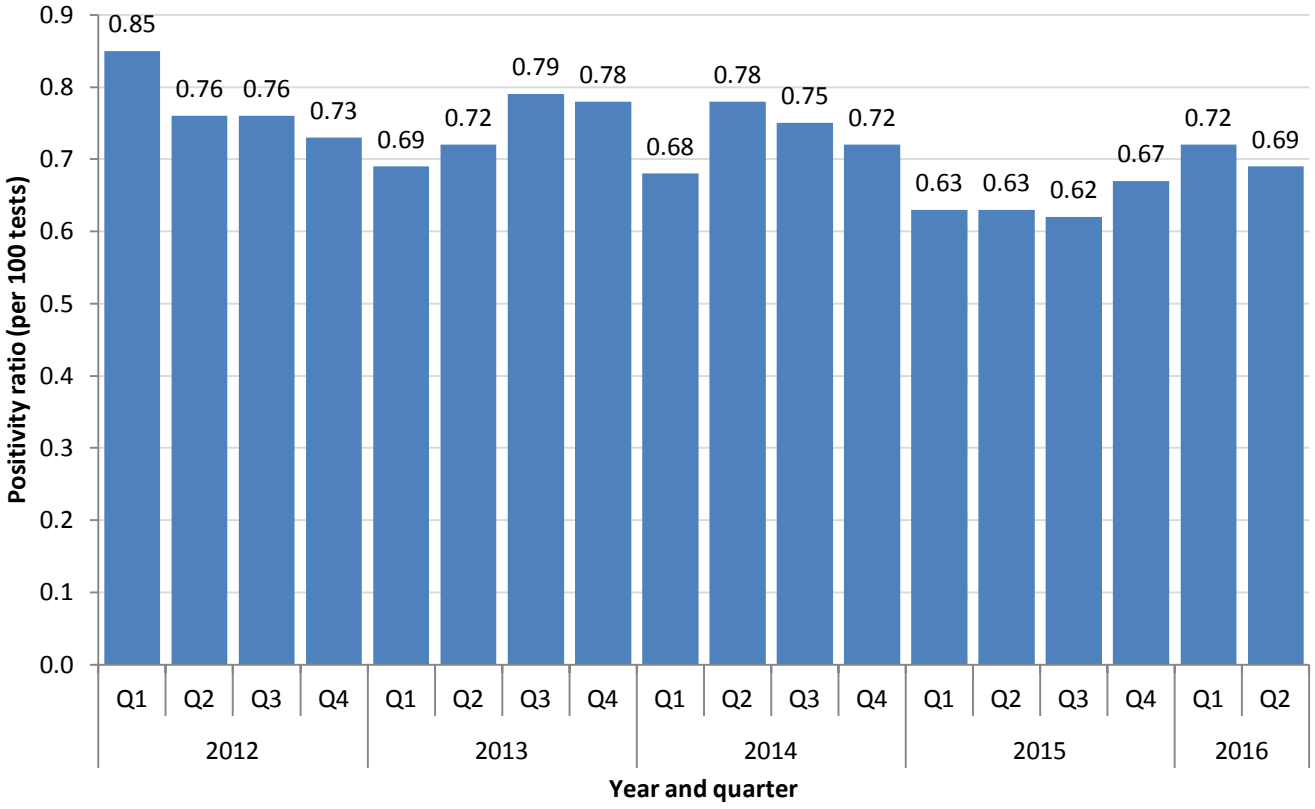


Data sources: NCIMS and NSW denominator data project, NSW Health

Comment

Between January and June 2016, 267,537 tests for hepatitis C antibody were performed in 15 laboratories in NSW, an average of 44,590 tests per month. The monthly average number of tests for January to June 2016 is marginally higher than the monthly average for 2015 (42,034), and also higher than 2014 (40,511), 2013 (39,362) and 2012 (35,926).

Figure 33: Hepatitis C positivity ratio, NSW, 1 January 2012 – 30 June 2016



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

Comment

The ratio of positive hepatitis c notifications was 0.72 per 100 tests during the first quarter of 2016 and 0.69 in the second quarter. In both quarters of 2016 so far, the positivity ratio has been higher than for the full year of 2015 (0.64), but lower than 2014 (0.73).

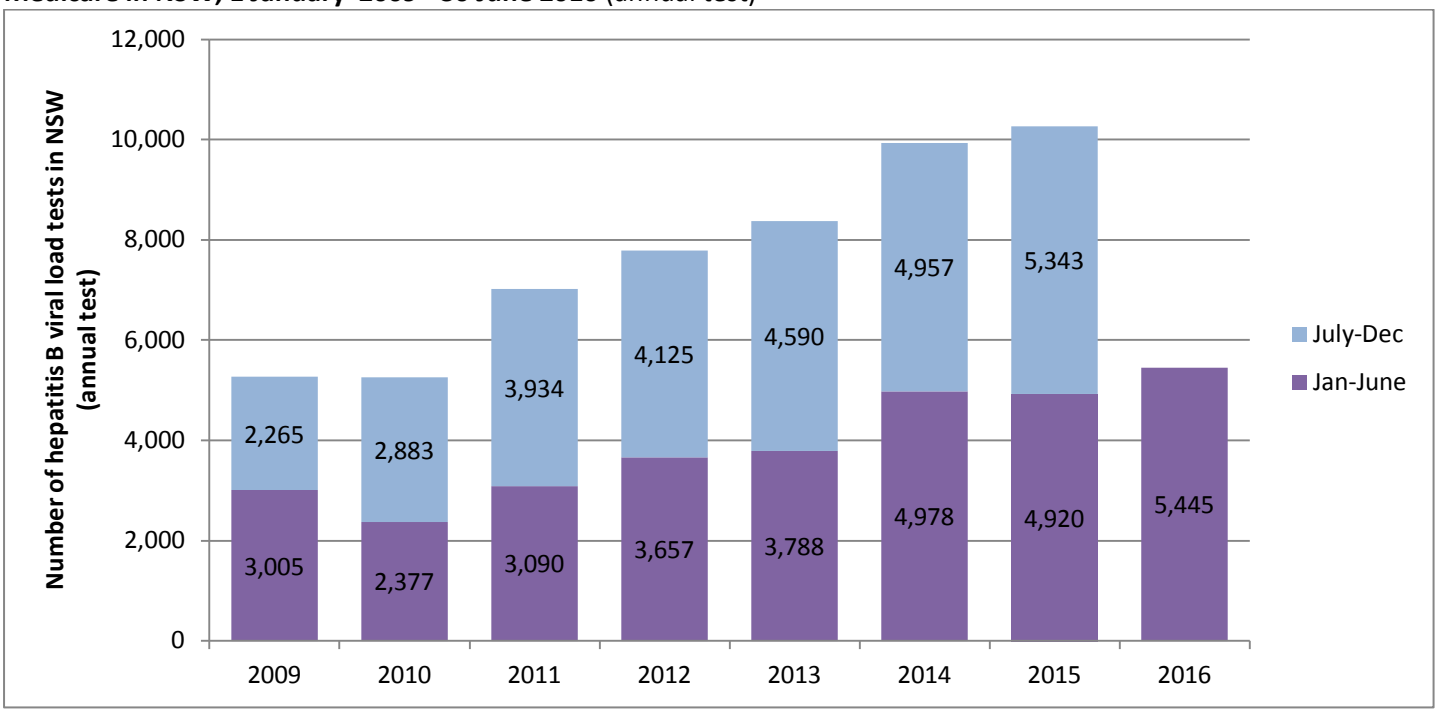
The ratio of positive notifications was calculated by dividing the overall positive results notified to NSW Health by all laboratories by the total number of tests performed as reported from the participating laboratories. The overall positive results included in the analysis are for individual people notified with hepatitis C 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.[31] [32]

Figure 34: 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 34 and Figures 35, 36, 37 & 38 because they are based on two very different dates. Figure 34 is based on Date of Processing (DOP). Figures 35, 36, 37 & 38 are based on Date of Service (DOS).

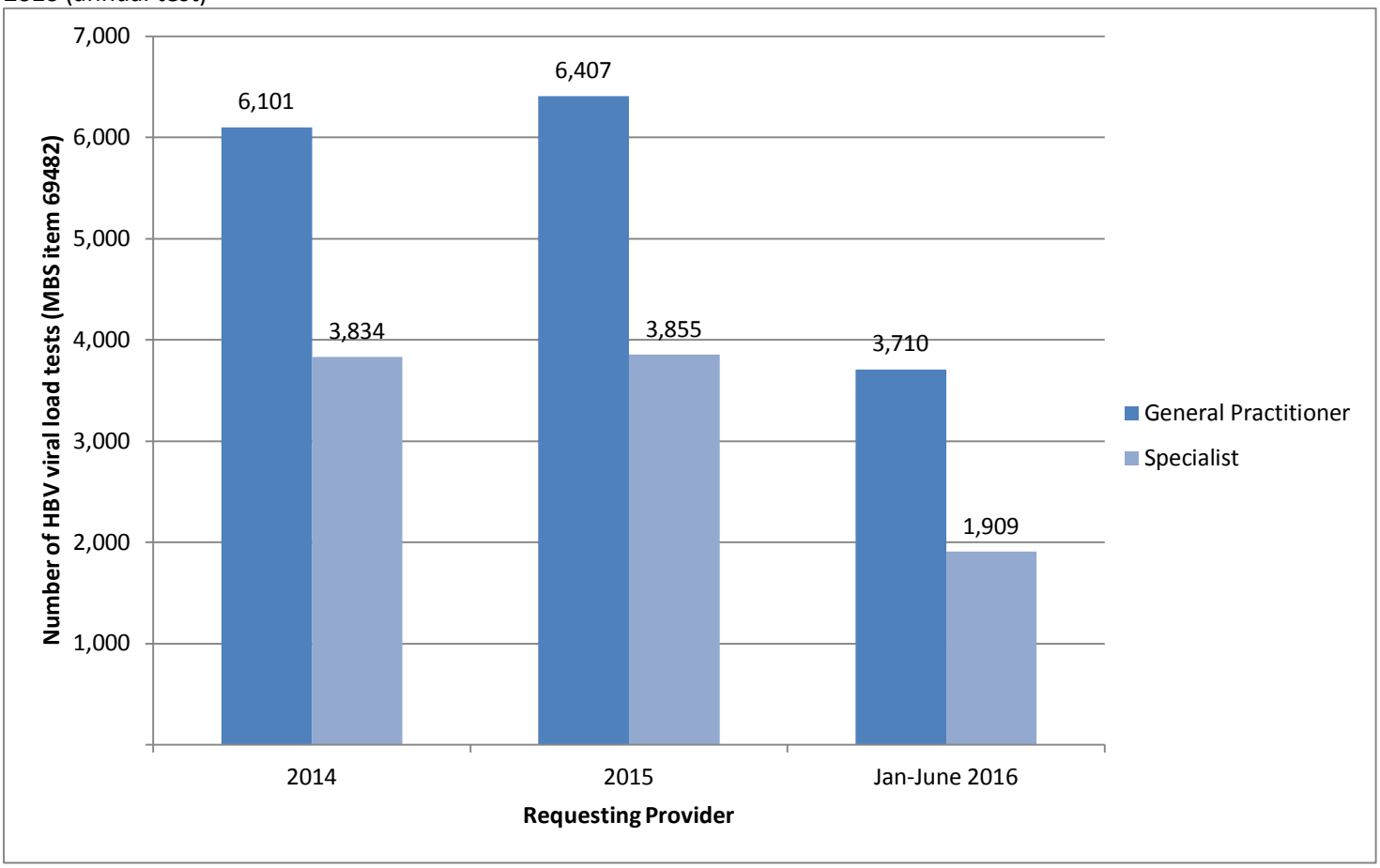
Comment

Between January and June 2016, there were 5,445 viral load tests provided to people with chronic hepatitis B not receiving treatment in NSW based on Date of Processing (Figure 34). This represents a 10.7% increase compared to the same period in 2015 (n=4,920). 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] [33]. The Ministry of Health is currently developing updated incidence and prevalence modelling of infection and disease burden for hepatitis B under the BRISE[34] Research Program. This will improve estimates of people with hepatitis B in NSW who are not being monitored.

[31] 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.
[32] Hepatitis B Mapping Project: Estimates of chronic hepatitis B diagnosis, monitoring and treatment by Medicare Local, 2012/13 – National Report. Published by the Australasian Society for HIV Medicine (ASHM)
[33] 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.
[34] 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 35: 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)



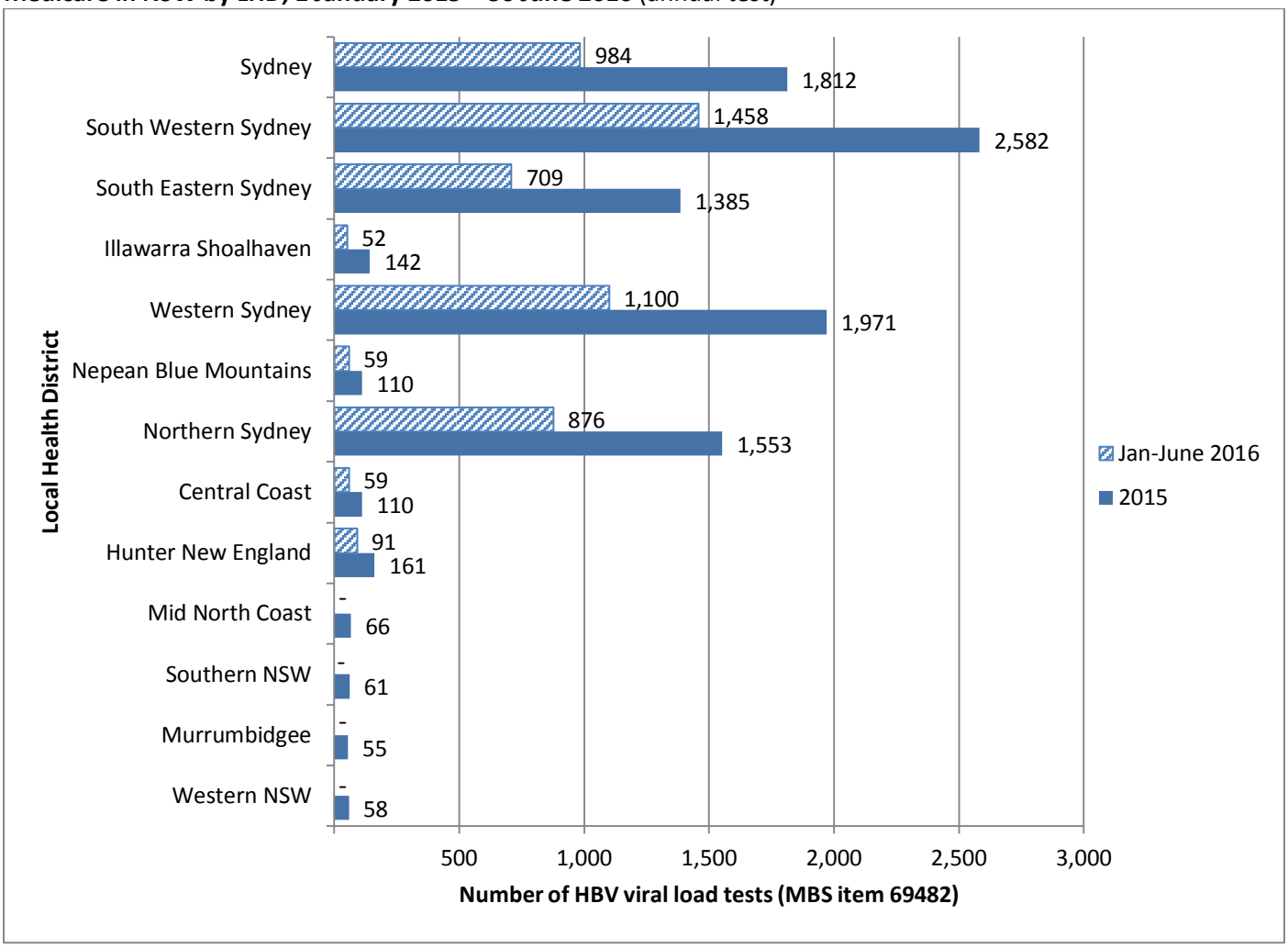
Data source: Medicare Benefits Schedule, Department of Human Services
Note: Data is based on Patient Enrolment Postcode; and date of Service.
Note: HBV Viral load tests (MBS item 69482) are covered annually under Medicare, so this data indicates the number of people tested. Note this data excludes tests 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 34 and Figures 35, 36, 37 & 38 because they are based on two very different dates. Figure 34 is based on Date of Processing (DOP). Figures 35, 36, 37 & 38 are based on Date of Service (DOS).

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 36: 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)

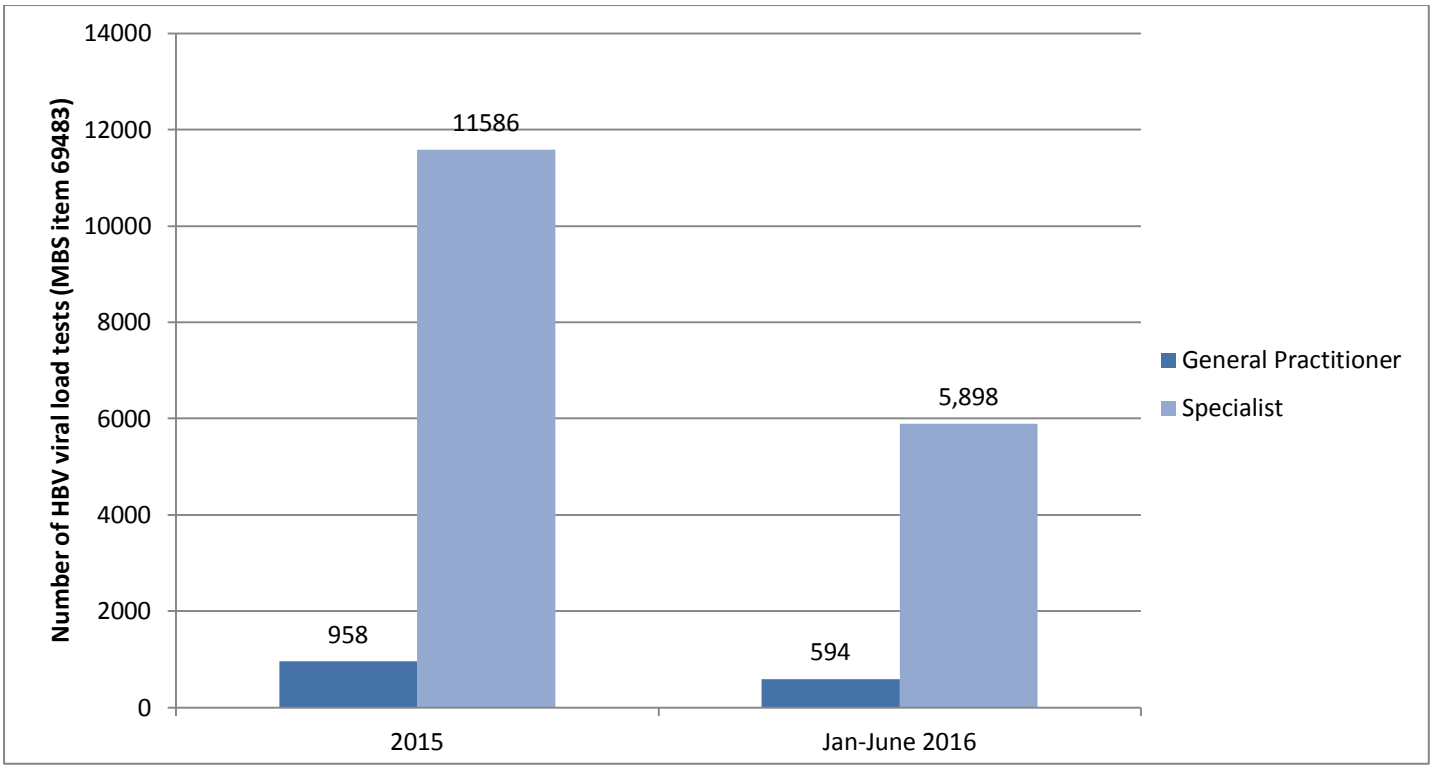


Data source: Medicare Benefits Schedule, Department of Human Services
Note: Data is based on Patient Enrolment Postcode; and date of Service.
Note: HBV Viral load tests (MBS item 69482) are covered annually under Medicare, so this data indicates the number of people tested. Note this data excludes tests 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 34 and Figures 35, 36, 37 & 38 because they are based on two very different dates. Figure 34 is based on Date of Processing (DOP). Figures 35, 36, 37 & 38 are based on Date of Service (DOS).
Note: The number of viral load tests provided via Medicare to people was **less than 50** in: Northern NSW; Mid North Coast in Jan-June 2016; Southern NSW in Jan-June 2016; Murrumbidgee in Jan-June 2016; Western NSW in Jan-June 2016; and Far West.
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.

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.

Figure 37: Number of HBV viral load tests (MBS item 69483) provided to people with chronic hepatitis B (who were receiving treatment) requested by General Practitioners and Specialists via Medicare in NSW, 1 January 2015 to 30 June 2016



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 69483) are covered four-times a year under Medicare to monitor people with chronic hepatitis B while they are on treatment, so it does not directly indicate the number of people being monitored. Information from the MBS does not provide any indication of the number of tests performed on the same individual during one year.
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 34 and Figures 35, 36, 37 & 38 because they are based on two very different dates. Figure 34 is based on Date of Processing (DOP). Figures 35, 36, 37 & 38 are based on Date of Service (DOS).

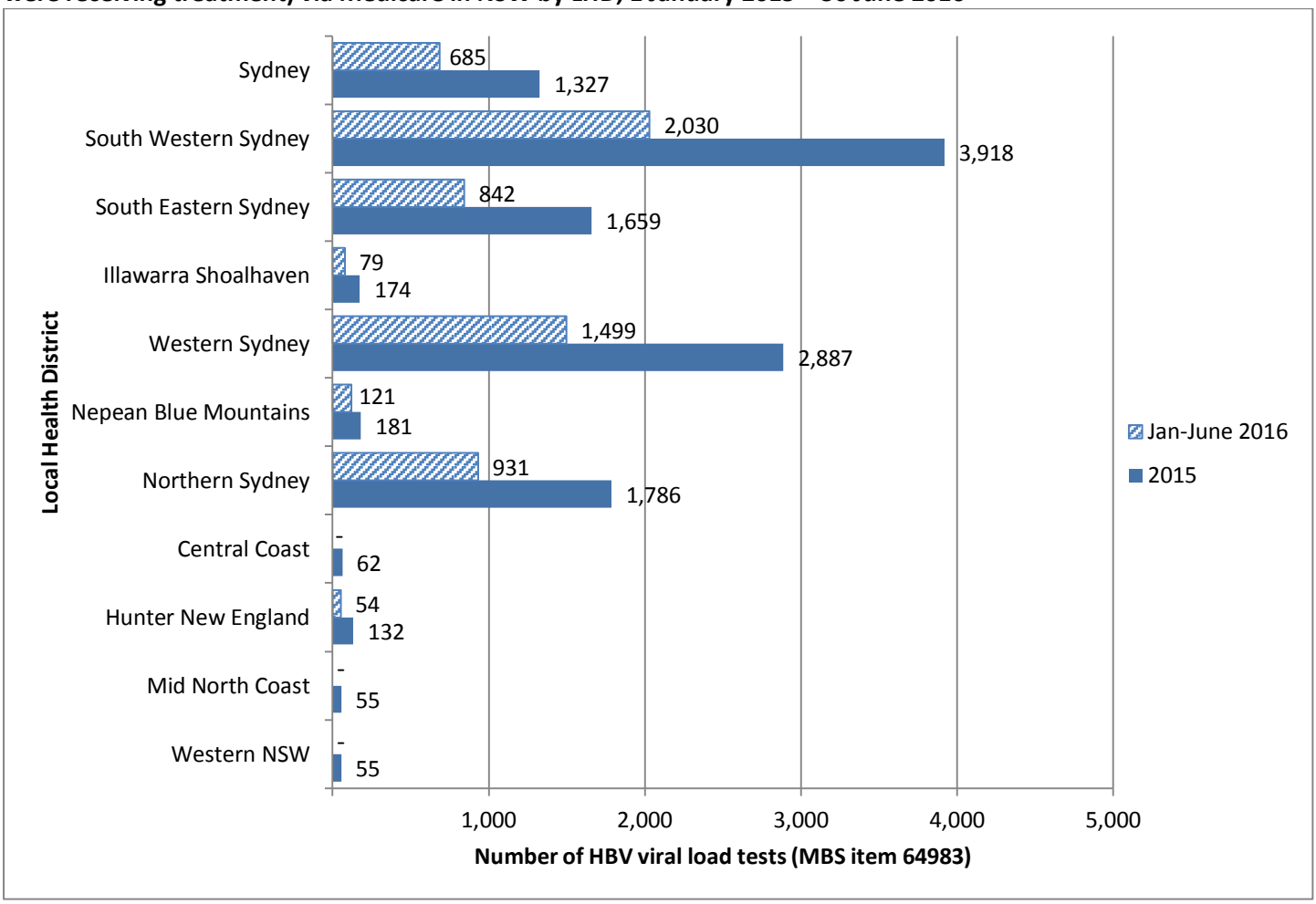
Comment

People living with chronic hepatitis B require regular monitoring to determine their clinical status which informs treatment plans. Monitoring is undertaken via a hepatitis B DNA viral load test for people on treatment as well as people not on treatment. HBV Viral load tests (MBS item 69483) are covered four-times a year under Medicare to monitor people with chronic hepatitis B while they are on treatment. Information from the MBS does not provide the number of tests performed on the same individual during one year so the number of tests does not directly indicate the number of people being monitored (Figures 37 and 38).

Between January to June 2016, there were 6,492 viral load tests provided to people with chronic hepatitis B who were receiving treatment in NSW based on Date of Service. This represents an increase of 6% compared to the same period in 2015 (n=6,120).

Between January to June 2016, 91% (n=5,898) of viral load tests (MBS item 69483) were requested by specialists and 9% (n=594) were requested by general practitioners in NSW (Figure 37). During this period, the number of tests requested by specialists increased by 4% compared to the same period in 2015 (n=5,646), while the number of viral load tests requested by general practitioners increased by 25% compared to January to June 2015 (n=474).

Figure 38: Number of HBV viral load tests (MBS item 64983) provided to people with chronic hepatitis B (who were receiving treatment) via Medicare in NSW by LHD, 1 January 2015 – 30 June 2016



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 69483) are covered four-times a year under Medicare to monitor people with chronic hepatitis B while they are on treatment, so it does not directly indicate the number of people being monitored. Information from the MBS does not provide any indication of the number of tests performed on the same individual during one year.
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 34 and Figures 35, 36, 37 & 38 because they are based on two very different dates. Figure 34 is based on Date of Processing (DOP). Figures 35, 36, 37 & 38 are based on Date of Service (DOS).
Note: The number of viral load tests provided via Medicare to people was **less than 50** in: Central Coast in Jan-June 2016; Northern NSW; Mid North Coast in Jan-June 2016; Southern NSW; Murrumbidgee; Western NSW in Jan-June 2016; and Far West.
Note: Data is based on Patient Enrolment Postcode concorded to LHD. Of the total 12,544 tests in NSW in 2015, 167 were unallocated to an LHD. Of the 6,492 tests in NSW based on date of service in Jan-June 2016, 65 were unallocated to an LHD.

Comment

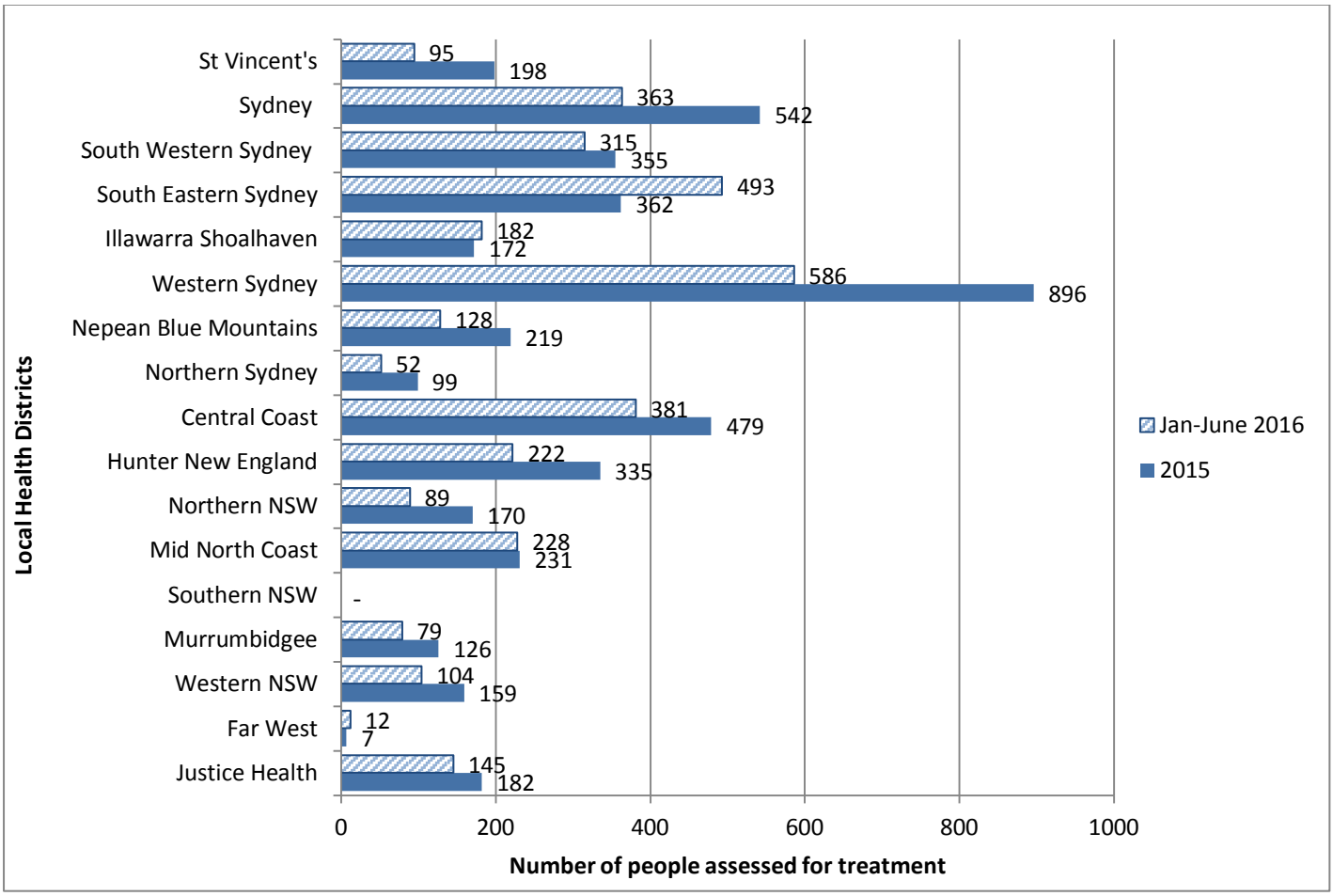
Between January 2015 and 30 June 2016, the highest number of viral load tests provided to people with chronic hepatitis B (who were receiving treatment) in NSW occurs in: South Western Sydney, Western Sydney, Northern Sydney, South Eastern Sydney and Sydney. This geographic spread is broadly consistent with the districts that have higher notification rates of hepatitis B.

4.3 How many people with chronic hepatitis C are assessed for treatment in NSW?

Between January to June 2016, the number of people with chronic hepatitis C assessed for treatment suitabilty in publicly funded health services in NSW was **3,474**, a 63% increase compared to the same period in 2015 (n=2,132).
To increase the number of people with hepatitis C who are assessed for treatment suitability is a key priority in the NSW Hepatitis C Strategy 2014-2020.
The data captures the number of people assessed for treatment in publicly funded liver clinics; drug and alcohol services; Justice Health; and St Vincent's Health Network.

4.4 Where are people with chronic hepatitis C assessed for treatment in NSW?

Figure 39: Number of people assessed for treatment in NSW publicly funded services by LHD, 1 January 2015 to 30 June 2016

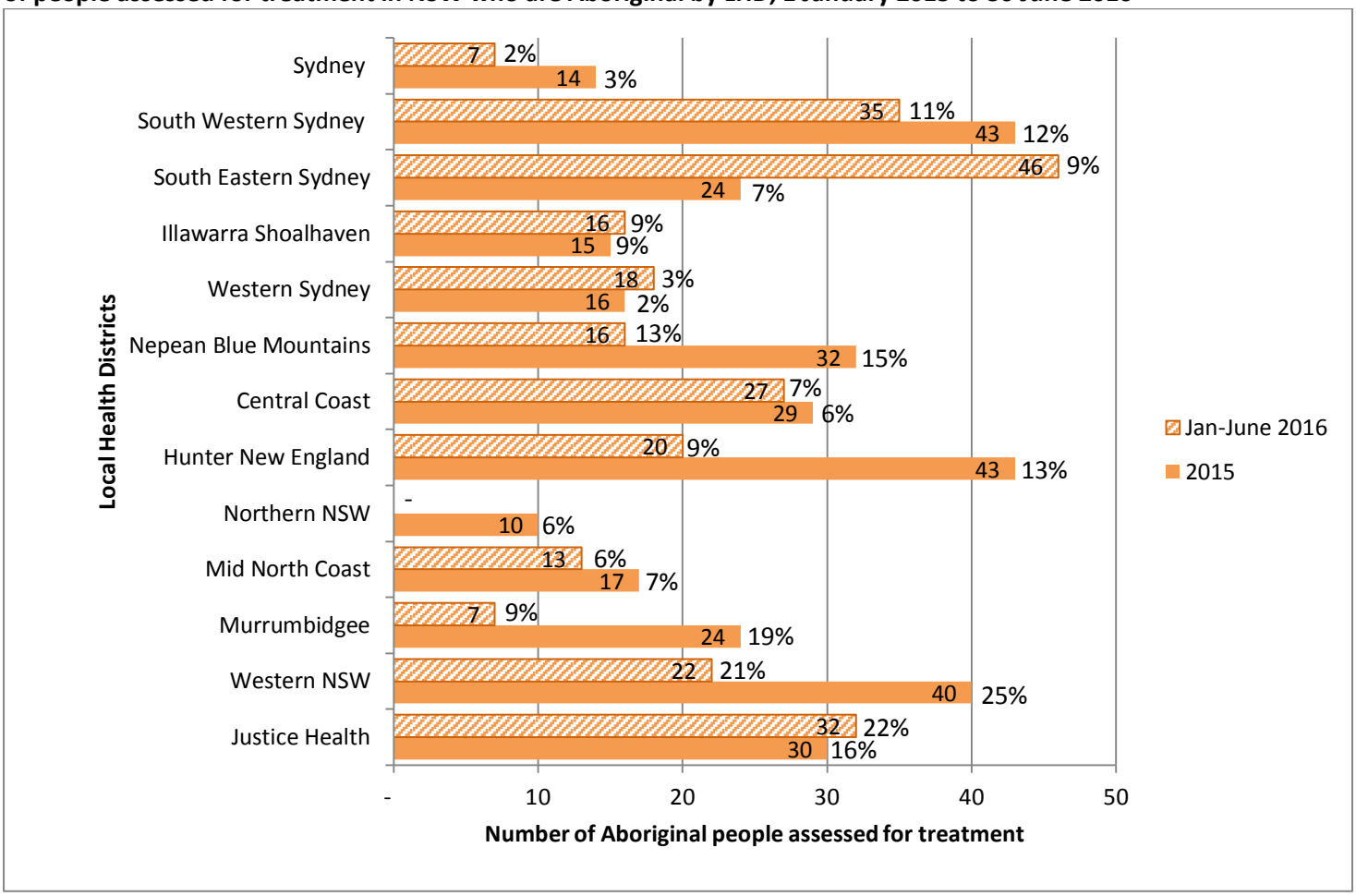


Data source: NSW Health Hepatitis C Minimum Data Set
Note: Data was not available for Southern NSW, 1 January 2015 to 30 June 2016
Note: NSW Health does not currently collect data on hepatitis C from the Sydney Children's Hospital Network

Comment

Between January to June 2016, the number of people assessed for hepatitis C treatment in NSW increased significantly in the majority of districts compared to the same period in 2015.

Figure 40: Number of Aboriginal people assessed for hepatitis C treatment in NSW publicly funded services and % of people assessed for treatment in NSW who are Aboriginal by LHD, 1 January 2015 to 30 June 2016



Data source: NSW Health Hepatitis C Minimum Data Set

Note: Data was not available for Southern NSW between 1 January 2015 to June 2016

Note: The number of Aboriginal people assessed for treatment is **zero** between 1 January to 31 December 2015 in Northern Sydney

Note: The number of Aboriginal people assessed for treatment is **5 or less** between 1 January to 31 December 2015 in:

- St Vincent's Health Network; and
- Far West

The number of Aboriginal people assessed for treatment is **5 or less** between 1 January to 30 June 2016 in:

- St Vincent's Health Network
- Northern Sydney
- Northern NSW
- Far West

Comment

Of the 3,474 people assessed for hepatitis C treatment in NSW publicly funded services between 1 January – 30 June 2016, 8% (269 people) were reported to be Aboriginal and/or Torres Strait Islander people and 91% were reported as non-Indigenous. Indigenous status was unknown, not stated or missing for the remaining 1%.

Between January to June 2016, the number of people who were assessed for hepatitis C treatment who reported to be Aboriginal increased to 269 Aboriginal people from 165 people in the same period in 2015 (63% increase). During this period, the number of Aboriginal people assessed for treatment increased significantly in the majority of districts compared to the same period in 2015 (Figure 40).

It is useful to view Figure 40 alongside: Table 3, which identifies the proportion of Aboriginal people in the total population by LHD (in 2011); and Table 4, which identifies the proportion of NSW adult prisoners who are Aboriginal people (as at June 2014).

Table 3: The proportion of Aboriginal people in the total population by LHD in 2011

LHD	Aboriginal proportion of total population in 2011
Sydney	1.1%
South Western Sydney	1.6%
South Eastern Sydney	0.9%
Illawarra Shoalhaven	2.4%
Western Sydney	1.6%
Nepean Blue Mountains	2.5%
Northern Sydney	3.8%
Central Coast	2.1%
Hunter New England	4.0%
Northern NSW	3.8%
Mid North Coast	4.5%
Southern NSW	2.7%
Murrumbidgee	3.9%
Western NSW	8.6%
Far West	9.7%

Data source: ABS statistics 2011

Table 4: The proportion of NSW adult prisoners who are Aboriginal people as at June 2014

Justice health, custodial settings	Aboriginal proportion of NSW adult custodial population
As at June 2014	24% (2,492 people)

Data source: Australian Bureau of Statistics. Catalogue 4517.0 Prisoners in Australia, 2014. New South Wales profile. [Available at http://www.abs.gov.au/ausstats/abs@.nsf/Lookup/by%20Subject/4517.0~2014~Main%20Features~New%20South%20Wales~10015; accessed 1 March 2016]

4.5 Uptake of Liver assessment using Fibroscan in the 2016 NNEDC

The 2016 NSW NSP Enhanced Data Collection (NNEDC) investigated the level of uptake of liver disease assessment using a Fibroscan among respondents who were aware they were chronically infected with HCV. Among respondents who self-reported chronic HCV infection in 2016 (n=748), 40% reported having had a liver assessment using a Fibroscan; 51% had not had a Fibroscan; and 6% were unsure[35].

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

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

5.1 How many people in NSW are on hepatitis B antiviral treatment?

In the period between 1 July 2014 to 30 June 2015, **7,148**[36] people with chronic hepatitis B were dispensed hepatitis B antiviral therapy at least once in public hospital, private hospital and community pharmacies in NSW [37]. This represents approximately 9.3% of the 77,000 people estimated to be living with chronic hepatitis B in NSW.

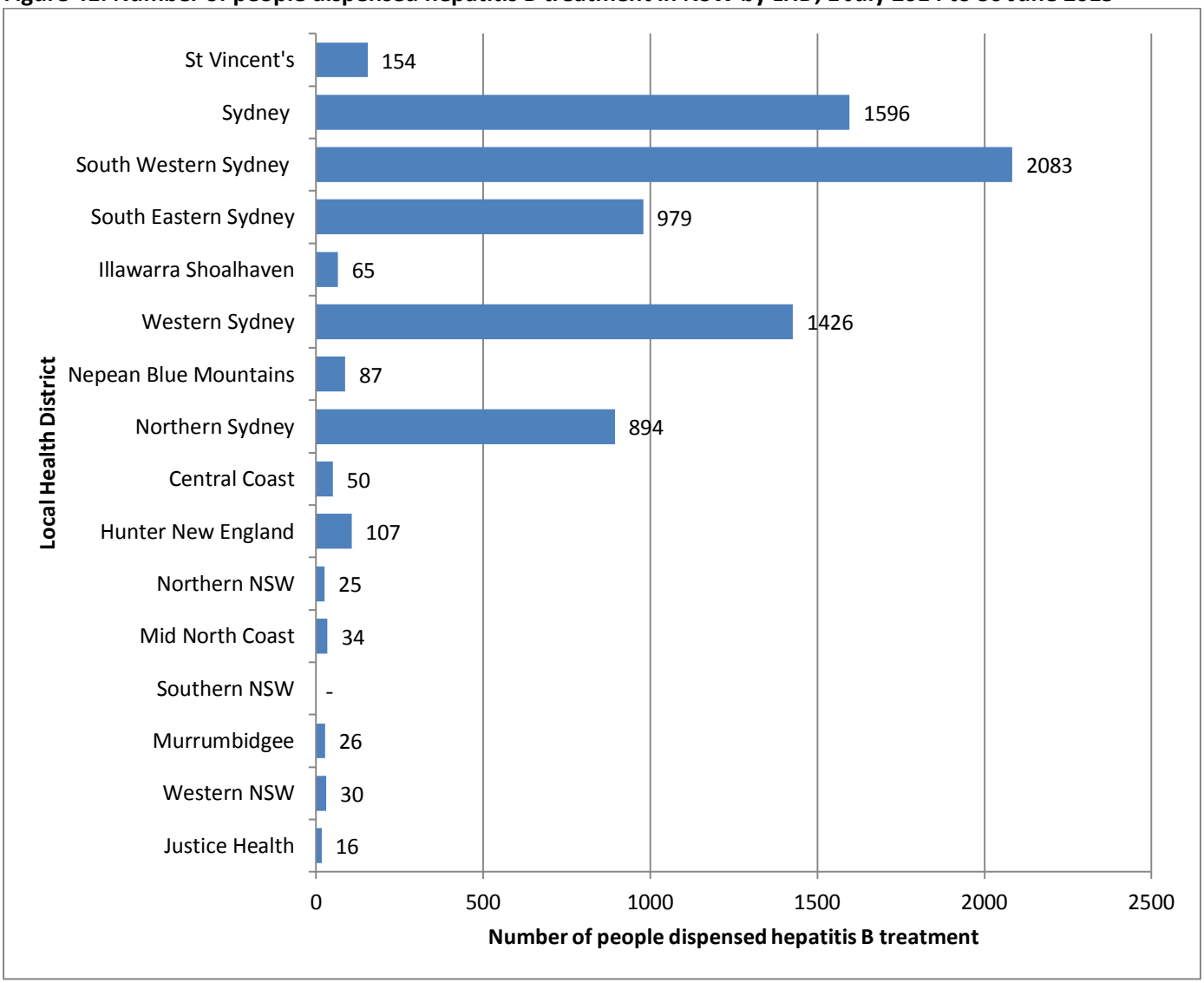
Australian and international estimates indicate that that between 10-25 per cent of people living with chronic hepatitis B are eligible for treatment[38,39,40]. The Second National Hepatitis B Strategy 2014-2017 sets a target that 15 per cent of people living with chronic hepatitis B should be receiving treatment, which equates to about 11,550 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 BRISE[41] 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.

[36] This figure includes 102 people who are NSW residents but dispensed hepatitis B antiviral therapy in pharmacies outside of NSW.
[37] Pharmaceutical Benefits Schedule Highly Specialised Drugs Programme data 14/15 prepared for NSW Health. Data extracted 30 June 2016
[38] 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
[39] 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
[40] 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.
[41] BBV & STI Research, Intervention and Strategic Evaluation (BRISE), 2014-2019 – University of NSW

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

Figure 41: Number of people dispensed hepatitis B treatment in NSW by LHD, 1 July 2014 to 30 June 2015



Data source: Pharmaceutical Benefits Schedule Highly Specialised Drugs Programme data 14/15 prepared for NSW Health. Data extracted 30 June 2016

Note: The number of people dispensed treatment in Southern NSW was 5 or less in 2014/15. The number of NSW residents dispensed hepatitis B antiviral therapy in pharmacies outside of NSW was 102 in 2014/15.

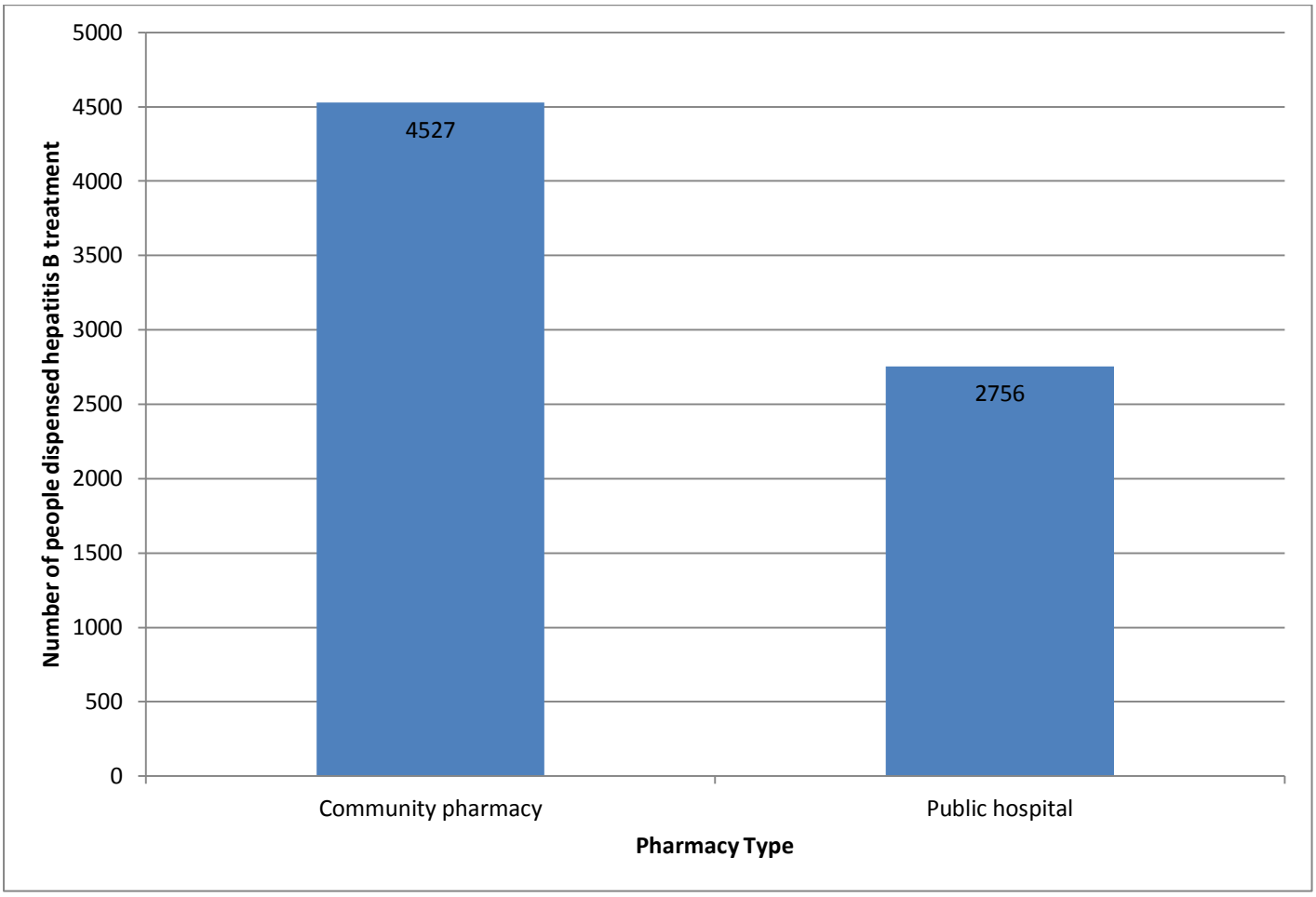
Note: Figure 41 is based on pharmacy type post code (not patient post code).

Note: The numbers displayed in Figure 36 add up to a total that is greater than the overall total for 2014/15. This is because a small number of cross-pharmacy type patient flows are not eliminated.

Comment

In 2014/15 the number of people dispensed hepatitis B treatment in NSW was highest in five Sydney metropolitan LHDs (South Western Sydney, Sydney, Western Sydney, South Eastern Sydney and Northern Sydney LHDs) accounting for over 90% of hepatitis B treatment dispensed during this period.

Figure 42: Number of people dispensed hepatitis B treatment in NSW by pharmacy type, 1 July 2014 to 30 June 2015



Data source: Pharmaceutical Benefits Schedule Highly Specialised Drugs Programme data 14/15 prepared for NSW Health. Data extracted 30 June 2016

Note: The number of people dispensed treatment by a private hospital was 10 or less in 2014/15. The number of people dispensed treatment by the Friendly Society was 10 or less in 2014/15.

Note: The number of people dispensed treatment in Figure 42 is based on pharmacy type post code (not patient post code).

Note: The numbers displayed in Figure 42 add up to a total that is greater than the overall total for 2014/15. This is because a small number of cross-pharmacy type patient flows are not eliminated.

Comment

Of the **7,148**[42] people with chronic hepatitis B who were dispensed hepatitis B antiviral therapy in NSW in 2014/15, 61.6% (n=4,527) were dispensed by community pharmacies and 37.5% (n=2,756) were dispensed by public hospital pharmacies.

[42] This figure includes 102 people who are NSW residents but dispensed hepatitis B antiviral therapy in pharmacies outside of NSW.

5.3 How many people in NSW are on hepatitis C antiviral treatment?

Since the listing of new-generation medicines on the Pharmaceutical Benefits Scheme (PBS), it is estimated that over **7,430** people chronic hepatitis C were dispensed antiviral therapy at least once in NSW public hospital, private hospital and community pharmacies, between 1 March to 30 June 2016. This represents approximately 9% of the 81,940 people living with chronic hepatitis C in NSW.[43]

This data does not include people receiving hepatitis C antiviral treatment through clinical trials. It also excludes people who may be accessing treatment through other sources, including those who purchase hepatitis C treatment from overseas.

The NSW Ministry of Health will have access to more comprehensive dispensing data in mid to late 2016.

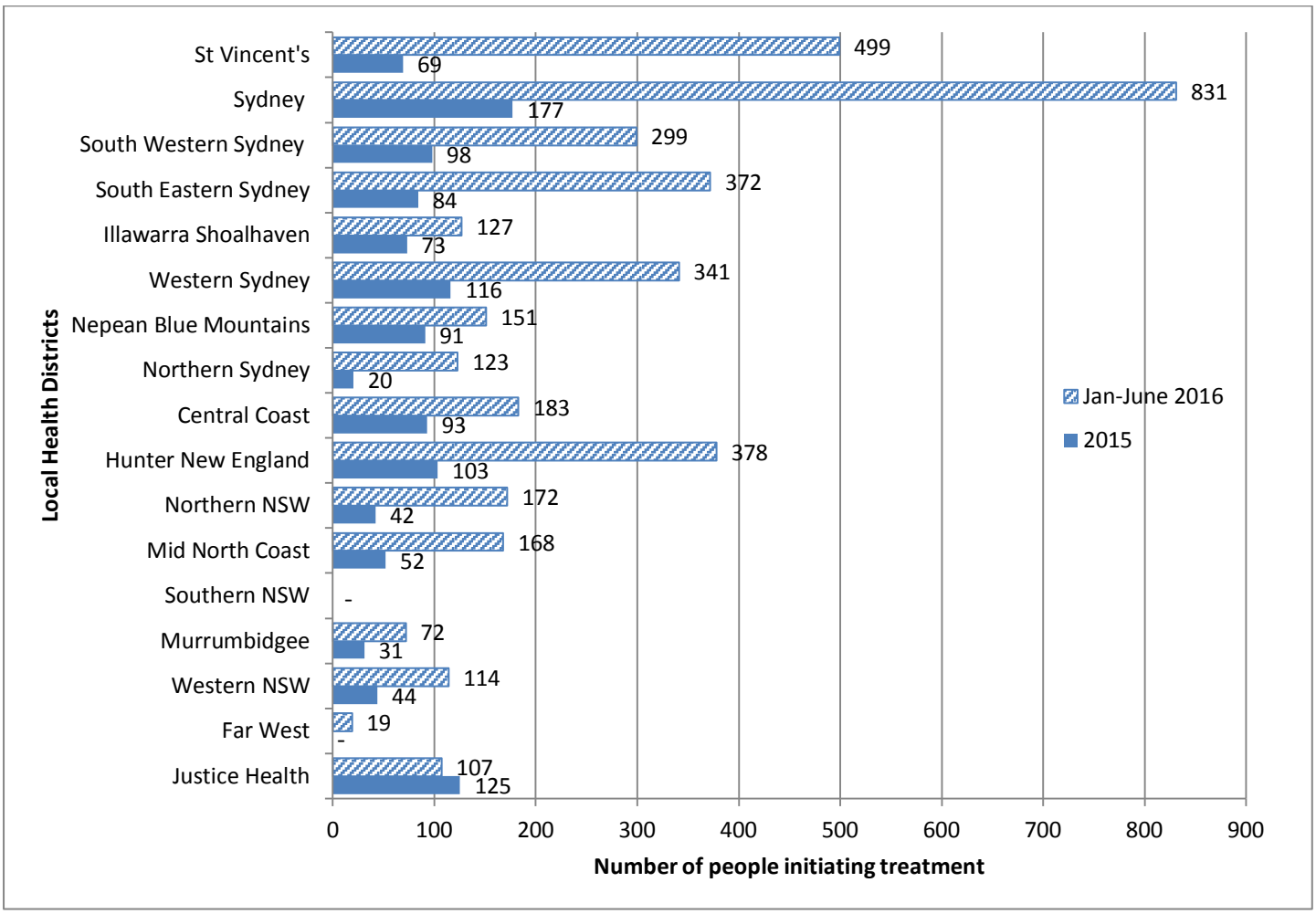
[43] The Kirby Institute. Monitoring hepatitis C treatment uptake in Australia (issue 4). The Kirby Institute, UNSW Australia, Sydney, August 2016 (available on line in August at http://kirby.unsw.edu.au/research-programs/vhcrp-newsletters)

5.4 How many people in NSW with chronic hepatitis C are initiating treatment and where are they receiving this treatment?

Between January to June 2016, the number of people with chronic hepatitis C initiating treatment in publicly funded health services in NSW was **3,956**, an 536% increase compared to the same period in 2015 (n=622). This result reflects the listing of new direct acting antiviral medicines for the treatment of hepatitis C on the Pharmaceutical Benefits Scheme (PBS) on 1 March 2016.

The data captures the number of people assessed for treatment in publicly funded liver clinics; drug and alcohol services; Justice Health; and St Vincent's Health Network. The data also includes the number of patients on clinical trials. The total number of patients on clinical trials who initiated hepatitis C treatment was 197 between 1 January to 30 December 2015 and 118 between 1 January to 30 June 2016.

Figure 43: Number of people initiating treatment in NSW publicly funded services by LHD, 1 January 2015 to 30 June 2016

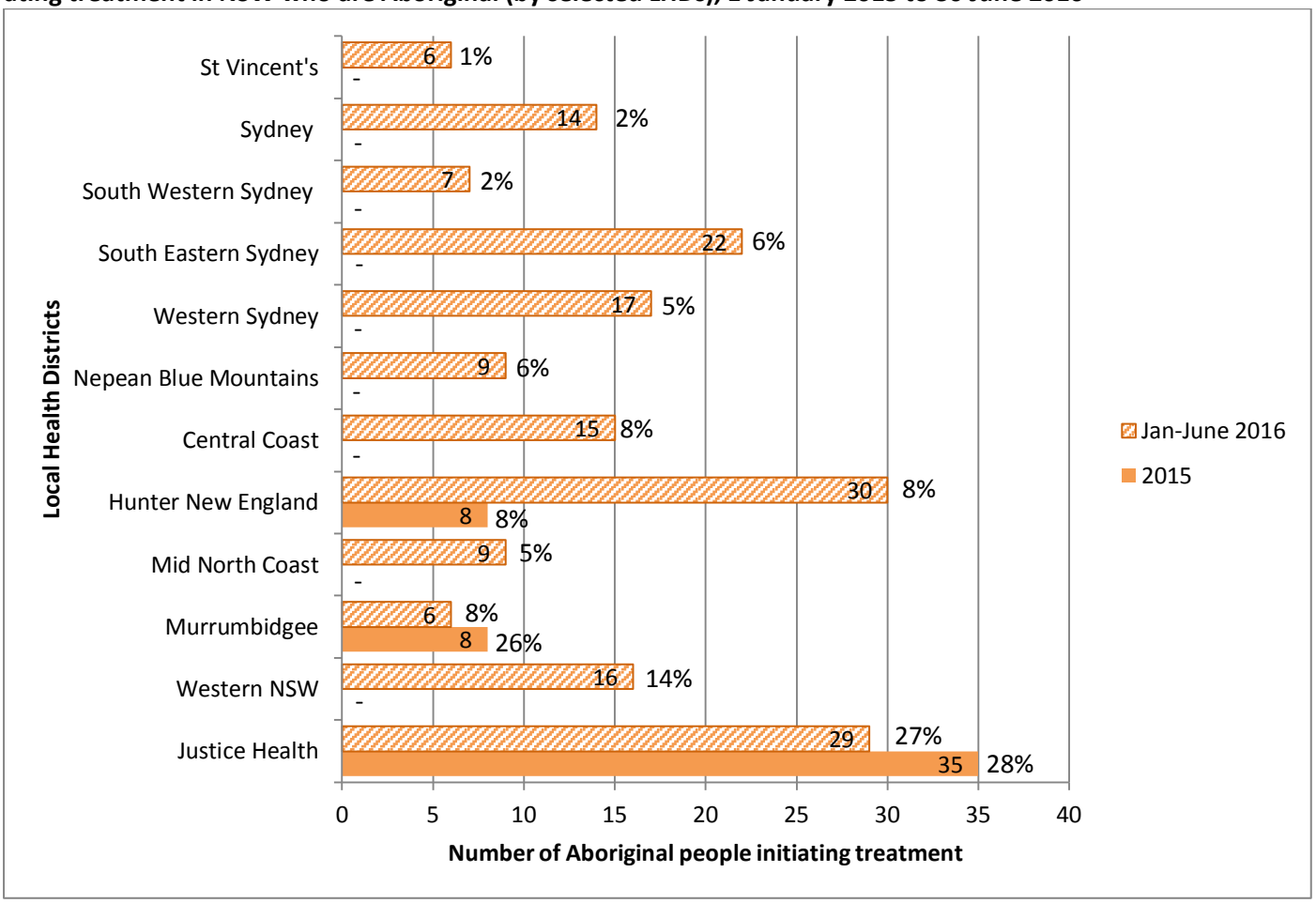


Data source: NSW Health Hepatitis C Minimum Data Set
Note: Data was not available for Southern NSW, 1 January 2015 to 30 June 2016
Note: The number of people initiating treatment was five or less in Far West, 1 January to 31 December 2015
Note: NSW Health does not currently collect data on hepatitis C from the Sydney Children's Hospital Network

Comment

Between January to June 2016, the number of people initiating treatment increased significantly in all districts compared to the same time last year, and particularly in St Vincent's Health Network, South Eastern Sydney, Northern Sydney, Mid North Coast, Hunter New England, Northern NSW, and Sydney LHDs.

Figure 44: Number of Aboriginal people initiating treatment in NSW publicly funded services and % of people initiating treatment in NSW who are Aboriginal (by selected LHDs), 1 January 2015 to 30 June 2016



Data source: NSW Health Hepatitis C Minimum Data Set

Note: Data was not available for Southern NSW between 1 January 2015 to June 2016

Note: The number of Aboriginal people initiating treatment is **zero** between 1 January to 31 December 2015 in:

- St Vincent's Health Network; Northern Sydney; Northern NSW; Far West

Note: The number of Aboriginal people initiating treatment is **5 or less** between 1 January to 31 December 2015 in:

- Sydney; South Western Sydney; South Eastern Sydney; Illawarra Shoalhaven; Western Sydney; Nepean Blue Mountains; Central Coast; Mid North Coast; Western NSW

The number of Aboriginal people initiating treatment is **5 or less** between 1 January to 30 June 2016 in:

- Illawarra Shoalhaven; Northern Sydney; Northern NSW; Far West

Comment

Of the 3,956 people who initiated hepatitis C treatment in NSW between 1 January – 30 June 2016, 5% (190 people) were reported to be Aboriginal and/or Torres Strait Islander people and 93% were reported as non-Indigenous. Indigenous status was unknown, not stated or missing for the remaining 2%.

Between January to June 2016 the number of people who initiated hepatitis C treatment in NSW who reported to be Aboriginal increased to 190 people from 36 in the same period in 2015 (428% increase). During this period, the number of Aboriginal people initiating treatment has increased significantly in the majority of districts compared to the same time last year.

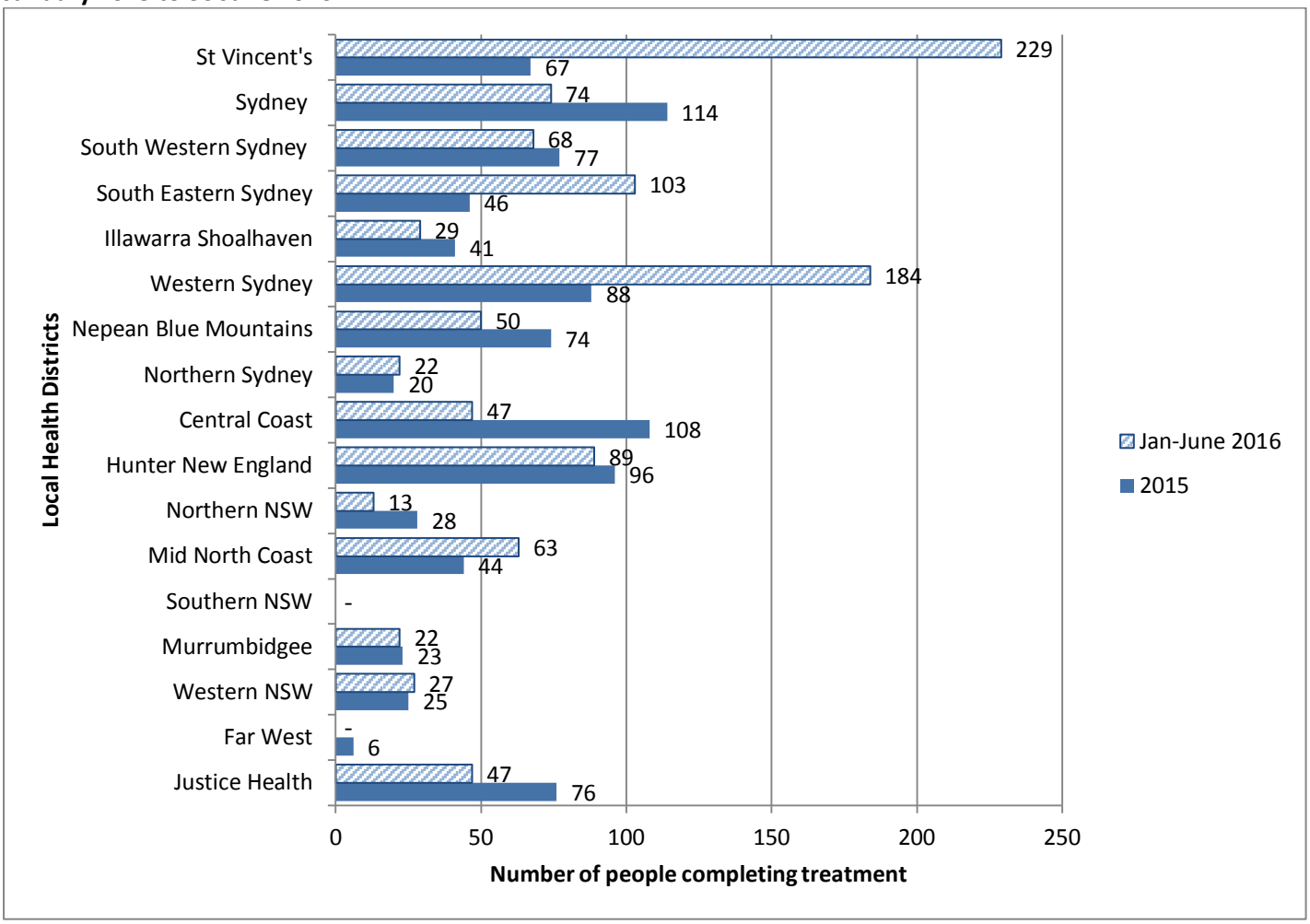
See Table 3 – **The proportion of Aboriginal people of total population by LHD in 2011** (page 48)
See Table 4 - **The proportion of NSW adult prisoners who are Aboriginal people as at June 2014** (page 48)

5.5 How many people in NSW are completing hepatitis C treatment and where are they receiving this care?

Between 1 January to 30 June 2016, the number of people completing treatment for hepatitis C in publicly funded health services in NSW was 1,067, a 150% increase compared to the same period in 2015 (n=427).

The data indicates the number of people completing hepatitis C treatment in publicly funded liver clinics; drug and alcohol services; Justice Health; and St Vincent's Health Network. The data also includes the number of patients on clinical trials. The total number of patients on clinical trials who completed hepatitis C treatment was 147 between 1 January to 30 December 2015 and 130 between 1 January to 30 June 2016.

Figure 45: Number of people completing treatment for hepatitis C in NSW publicly funded services by LHD, 1 January 2015 to 30 June 2016



Data source: NSW Health Hepatitis C Minimum Data Set
Note: Data was not available for Southern NSW, 1 January 2015 to 30 June 2016
Note: The number of people completing treatment is 5 or less in Far West, 1 January to 31 December 2015
Note: NSW Health does not currently collect data on hepatitis C from the Sydney Children's Hospital Network

Comment

Between January to June 2016, the number of people completing treatment in NSW increased significantly in the majority of districts compared to the same period in 2015. The highest number of people completing hepatitis C treatment during this period was in St Vincent's Health Network, Western Sydney, South Eastern Sydney, Hunter New England, Sydney, South Western Sydney and Mid North Coast.

Appendix 1

Table 5: 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 6: 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