

NSW HEPATITIS B AND C STRATEGIES

2014-2020

2014 ANNUAL DATA REPORT



Health

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%.

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 first Data Report, which provides baseline data for 2014. 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.

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

In 2014:

- The hepatitis B childhood vaccination coverage measured at 12 months was 90.6%. Coverage at 24 months was 94.4%.
- The proportion of women giving birth in a public or private hospital in NSW screened for hepatitis B was 98.7% in 2013.
- The proportion of babies born to mothers living with hepatitis B who receive hepatitis B immunoglobulin (HBIG) within 12 hours of birth is generally high, at 98.1% in 2013.
- 14% of respondents to the NSW NSP Enhanced Data Collection survey reported receptive sharing of needles and syringes (receptive syringe sharing) in the past month, compared with 22% in 2013¹.
- 3,975 people with chronic hepatitis C were assessed for treatment in publicly funded health services in NSW, compared with 3,467 in 2013 (14.7% increase)².
- 1,037 people with chronic hepatitis C commenced treatment in publicly funded health services in NSW, compared with 1,069 in 2013 (2.9% decrease)³.
- 5,871 people (unique patients) with chronic hepatitis B were dispensed antiviral therapy in public hospital, private hospital and community pharmacies in NSW in 2013^{4,5}.
- 2,519 people (unique patients) with chronic hepatitis B were dispensed antiviral therapy in public hospital pharmacies in 2014⁶.
- 1,385 people (unique patients) with chronic hepatitis C were dispensed antiviral therapy in public hospital pharmacies in 2014⁷.

¹ Findings from the 2015 NSW NSP Enhanced Data Collection will indicate whether the reduction in RSS observed between 2013 and 2014 is a continuing trend or a fluctuation, potentially attributable to selection bias arising from changes in client participation or response rates.

² These figures capture hepatitis C treatment assessment in NSW liver clinics; drug and alcohol services; and Justice Health custodial settings. It excludes activity in the private sector (including private liver clinics and GPs).

³ These figures capture hepatitis C treatment initiation in NSW 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 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).

⁵ This figure captures the number of people prescribed hepatitis B antiviral therapy through the Pharmaceutical Benefits Scheme (PBS) in NSW in the public and private sector in 2013. This includes people dispensed therapy in public hospital, private hospital and community pharmacies in NSW.

⁶ This figure captures the number of people dispensed hepatitis B antiviral therapy in NSW public hospital pharmacies. It excludes people dispensed therapy in private hospital and community pharmacies. It also excludes data from Hunter New England LHD which was not available at the time of the report. The hepatitis B dispensing data was revised on 15 May 2016 to correct a duplication error in the analysis of the NSW iPharmacy data.

⁷ This figure captures the number of people prescribed hepatitis C antiviral therapy in NSW public hospital pharmacies. It excludes people dispensed therapy in private hospital and community pharmacies. The hepatitis C dispensing data was revised on 15 May 2016 to correct a duplication error in the analysis of the NSW iPharmacy data.

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Glossary of Terms

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

1. GOALS

1.1 Improve health outcomes of people living with hepatitis B

1.1.1 Burden of disease of hepatitis B

It is estimated that there are approximately 77,000 people living with chronic hepatitis B in NSW¹. 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.

The Ministry of Health is currently developing updated incidence and prevalence modelling of infection and disease burden for hepatitis B under the BRISE² Research Program.

¹ MacLachlan JH, Allard N, Towell V, Cowie BC. The burden of chronic hepatitis B virus infection in Australia, 2011. *Australian and New Zealand Journal of Public Health*. 2013;37(5): 416-422

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

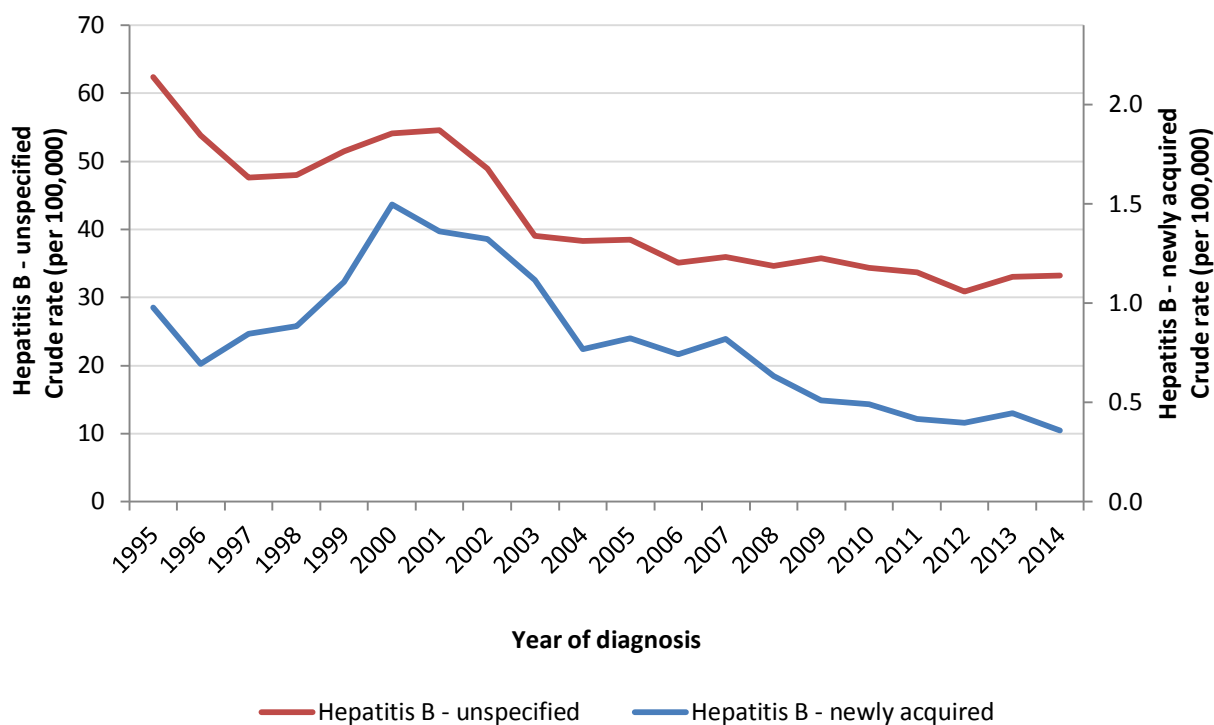
1.2 Reduce hepatitis B infections in NSW

Hepatitis B is a notifiable condition under the *Public Health Act 2010*, and is notified to NSW Health by laboratories³. 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 testing⁴. 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 diagnoses of hepatitis B are notified?

Figure 1: Notification rates of unspecified and newly acquired hepatitis B, NSW, 1995-2014



Data source: Notifiable Conditions Information Management System (NCIMS), NSW Health; data extracted 20 Feb 2015

Comment

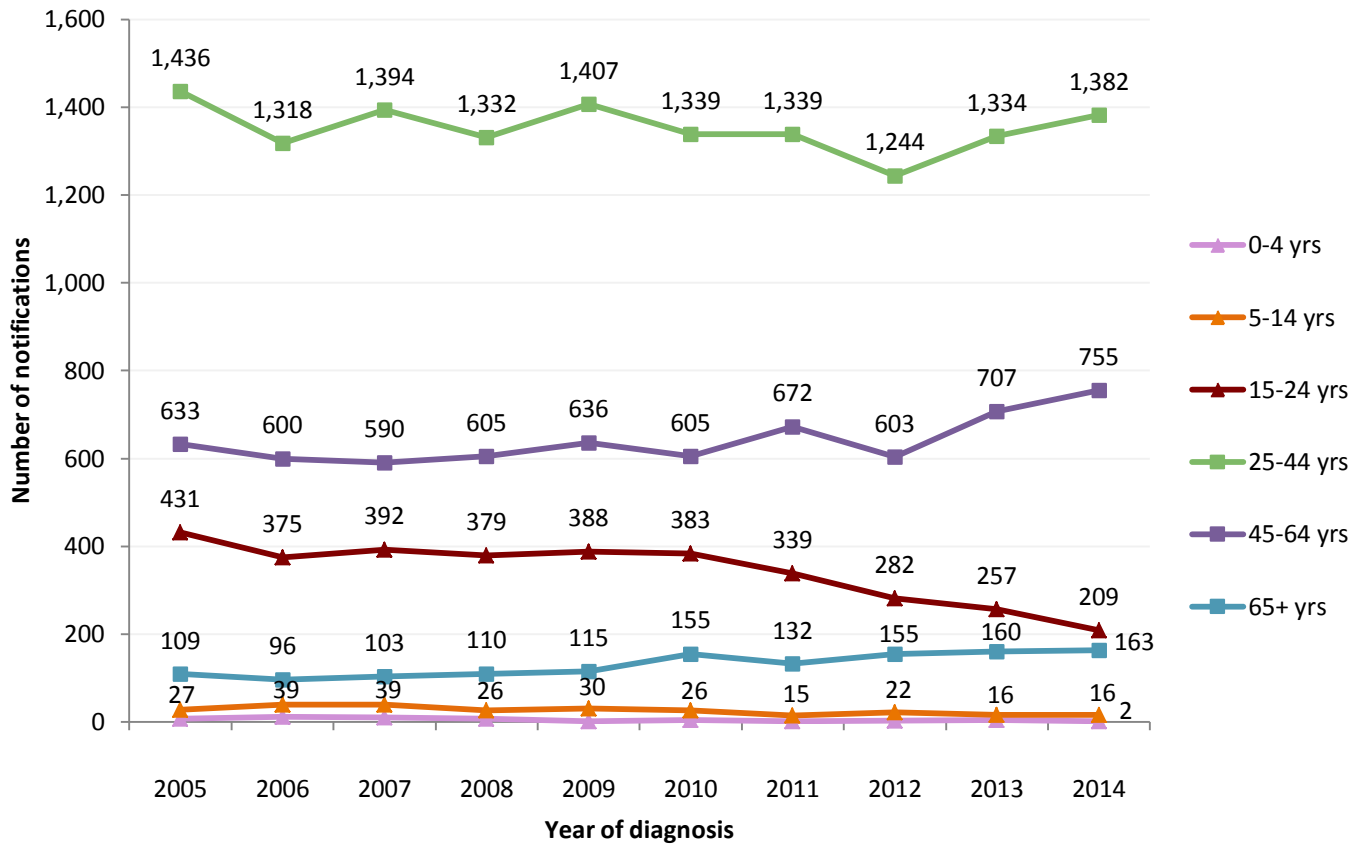
In 2014, there were 2,532 hepatitis B notifications in NSW. Of these, 2,504 (99%) were classified as 'unspecified' and 28 (1%) were classified as 'newly acquired'. The rate of notification of hepatitis B (unspecified) in NSW has declined gradually over the last decade, from 38.5 per 100,000 in 2005 to 33.2 in 2014. There has also been a decrease in notification of newly acquired hepatitis B, from 0.82 per 100,000 in 2005 to 0.36 in 2014. (Figure 1)

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: Notifications of hepatitis B in NSW, by age group, 2005-2014



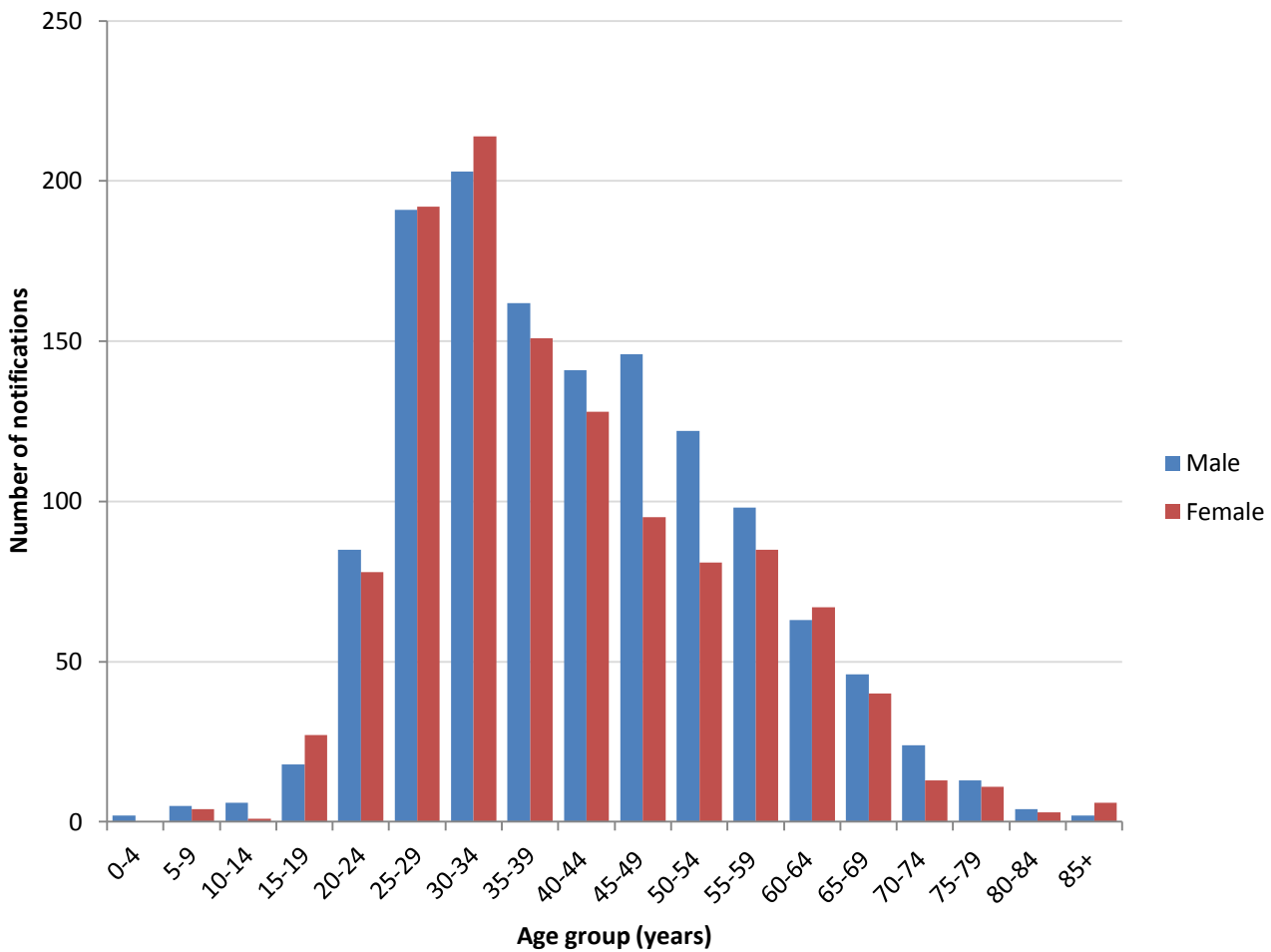
Data source: NCIMS, NSW Health; data extracted 21 July 2015

Note: Excludes persons whose age is unknown or not stated; data labels for 0-4 yrs age group not shown except for year 2014

Comment

The number of hepatitis B notifications amongst young people aged 15-24 years has halved over the last decade, from 431 notifications in 2005 to 209 in 2014. Notifications in children aged 5-14 years have also declined during this period (Figure 2). These reductions 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 at birth or overseas. Notifications in the 25-44 years age group have, despite yearly fluctuations, remained steady.

Figure 3: Notifications of hepatitis B in NSW, by age group and gender, 2014

Data source: NCIMS, NSW Health; data extracted 20 Feb 2015

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

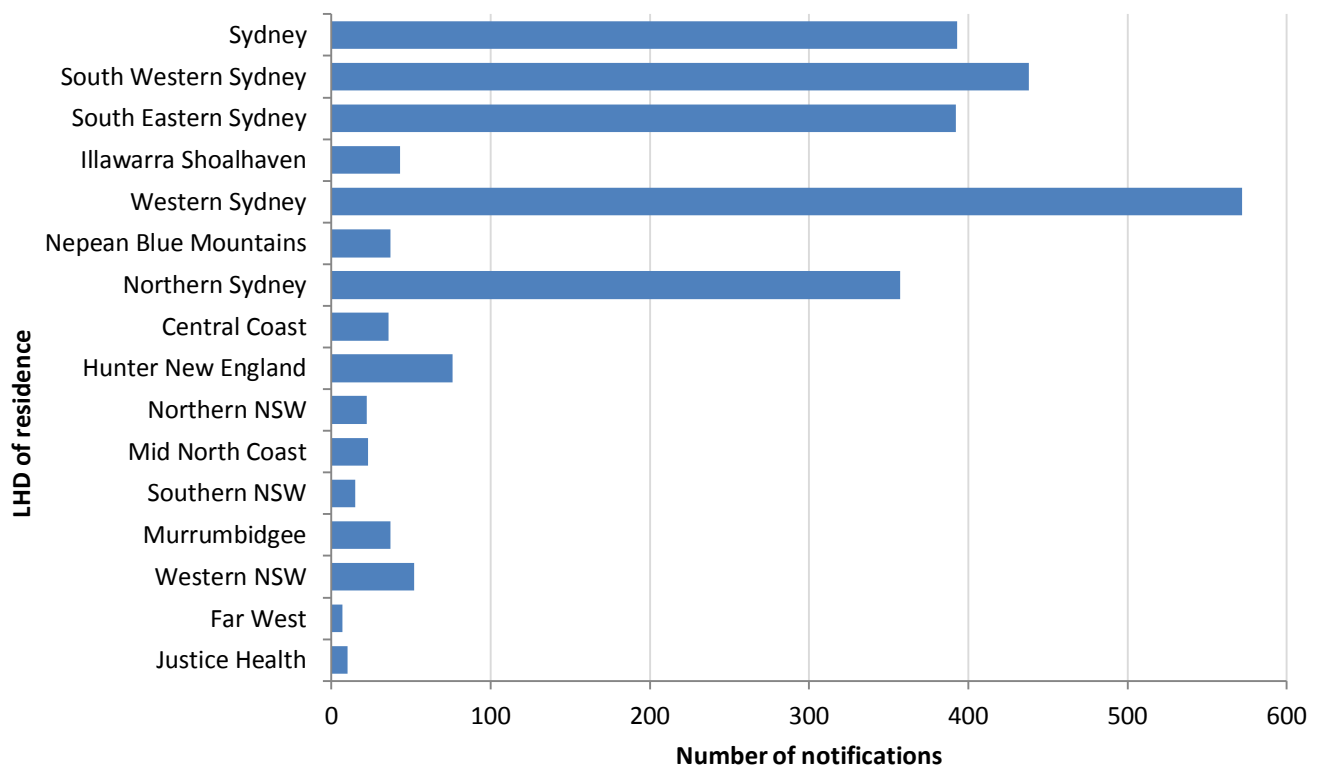
Comment

Of the 2,532 hepatitis B notifications in 2014, 1,331 (52.5%) were in males, 1,196 (47.2%) were in females, and 5 (0.3%) were in transgender persons or persons of unknown gender. The number of notifications increased with age up to 30-34 years, and then declined (Figure 3).

For both males and females, the most commonly diagnosed age groups were 30-34 years and 25-29 years. Females had a higher number of hepatitis B notifications than males in both of these age groups, which may be due to routine antenatal screening resulting in higher detection rates amongst pregnant women. (Figure 3)

1.2.3 Where are notifications occurring?

Figure 4: Notifications of hepatitis B, by LHD of residence, NSW, 2014



Data source: NCIMS, NSW Health; data extracted 27 March 2015

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

Comment

In 2014, Western Sydney LHD reported the highest number of hepatitis B notifications (572), followed by South Western Sydney (438), Sydney (393), South Eastern Sydney (392) and Northern Sydney (357) LHDs. These five Sydney metropolitan LHDs accounted for 85% of hepatitis B notifications in NSW in 2014. Far West LHD reported the fewest hepatitis B notifications (7) in 2014. (Figure 4)

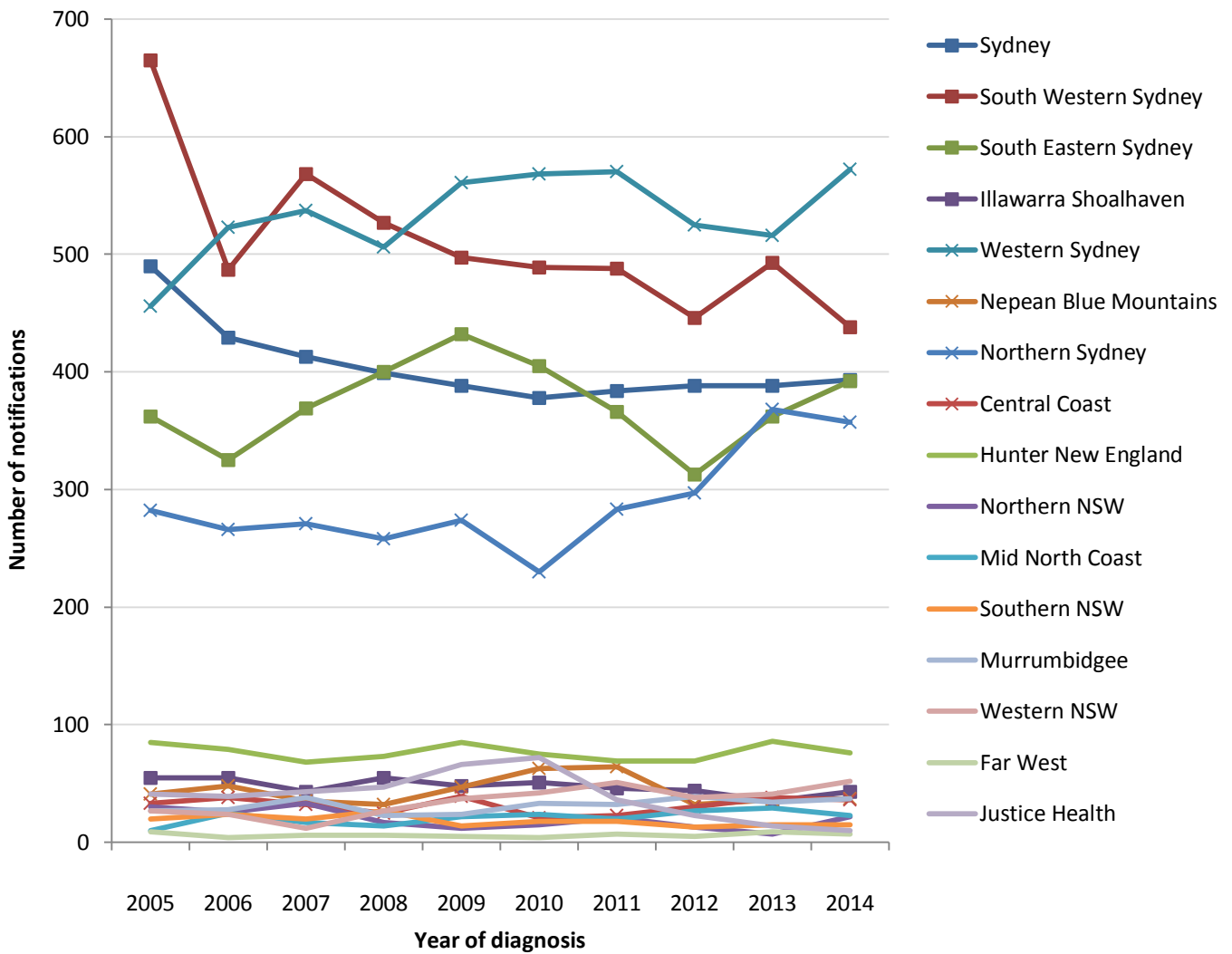
There were 10 notifications of hepatitis B in Justice Health (custodial settings) in 2014, accounting for 0.4% of hepatitis B notifications in NSW and a 29% decrease compared to the number in Justice Health in 2013 (14 notifications).

In NSW, an estimated 60% of people living with hepatitis B were born overseas⁵. 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 of residence, NSW, 2005-2014



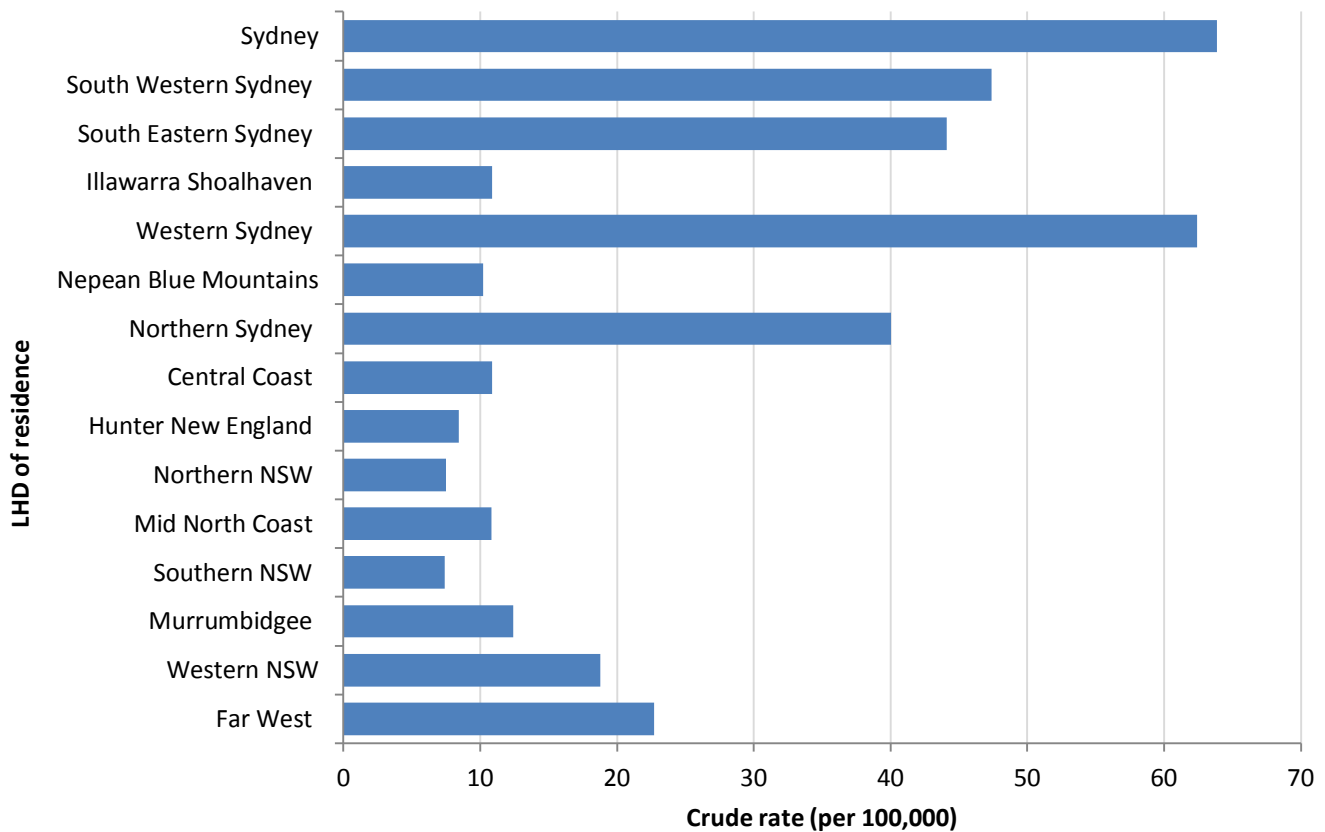
Data source: NCIMS, NSW Health; data extracted 27 March 2015

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

Comment

Between 2005 and 2014, the overall number of hepatitis B notifications in NSW has decreased from 2651 to 2541, a decline of 4%.

Local changes in the number of notifications can be difficult to interpret due to a number of factors, particularly changes in migrant settlement patterns of people who acquired infection at birth overseas. Because hepatitis B is often asymptomatic, people may be tested many years after infection and testing patterns vary across time and settings.

Figure 6: Notification rate of hepatitis B in NSW, by LHD of residence, 2014

Data source: NCIMS, NSW Health; data extracted 20 Feb 2015

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

Comment

Sydney and Western Sydney Local Health Districts (LHDs) recorded the highest rates of hepatitis B notification in NSW in 2014 (64 and 62 per 100,000 respectively). South Western Sydney, South Eastern Sydney and Northern Sydney LHDs also had high rates of hepatitis B notification compared to regional and remote LHDs (Figure 6). 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.

1.3 Improve health outcomes of people living with hepatitis C

1.3.1 Burden of disease of hepatitis C

It is estimated that there are approximately 90,000 living with chronic hepatitis C in NSW⁶. Living with hepatitis C is associated with increased morbidity, mortality and health-related costs. Although rates of new hepatitis C diagnoses have slightly declined in Australia, the number of people with chronic hepatitis C has increased. This has significant implications for the costs to the NSW Health system as chronic viral hepatitis is the leading cause of liver cancer and the most common reason for liver transplantation.

Currently treatment uptake is low, with approximately 2% of people living with hepatitis C commencing treatment each year⁷. This result is expected given that the anticipation of new interferon-free treatments has led many people to delay starting therapy. It is expected that the introduction of these new treatment regimens will lead to substantial increases in demand for hepatitis C treatment over the lifetime of the *NSW Hepatitis C Strategy 2014-2020*.

The Ministry of Health is currently developing updated incidence and prevalence modelling of infection and disease burden for hepatitis C under the BRISE⁸ Research Program.

⁶ Wilson D, Middleton M. National Blood-borne Virus and Sexually Transmissible Infections Surveillance and Monitoring Report, 2013. Sydney: The Kirby Institute, University of New South Wales; 2013

⁷ Dore G. The changing therapeutic landscape for hepatitis C. *Medical Journal of Australia*. 2012;196(10):629-632.

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 laboratories¹¹. 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 testing¹². 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

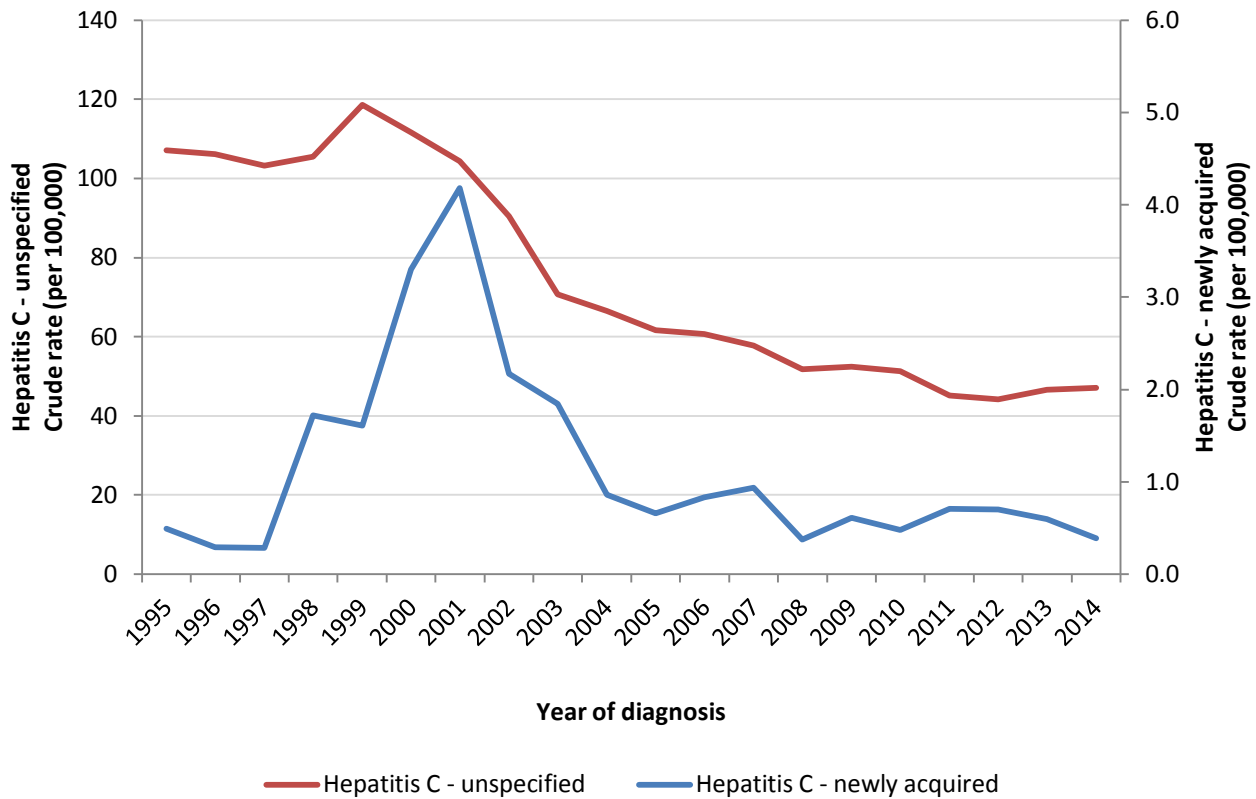
¹¹ NSW Health. Disease notification [webpage] <http://www.health.nsw.gov.au/Infectious/Pages/notification.aspx>

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, 1995-2014



Data source: NCIMS, NSW Health; data extracted 20 Feb 2015

Comment

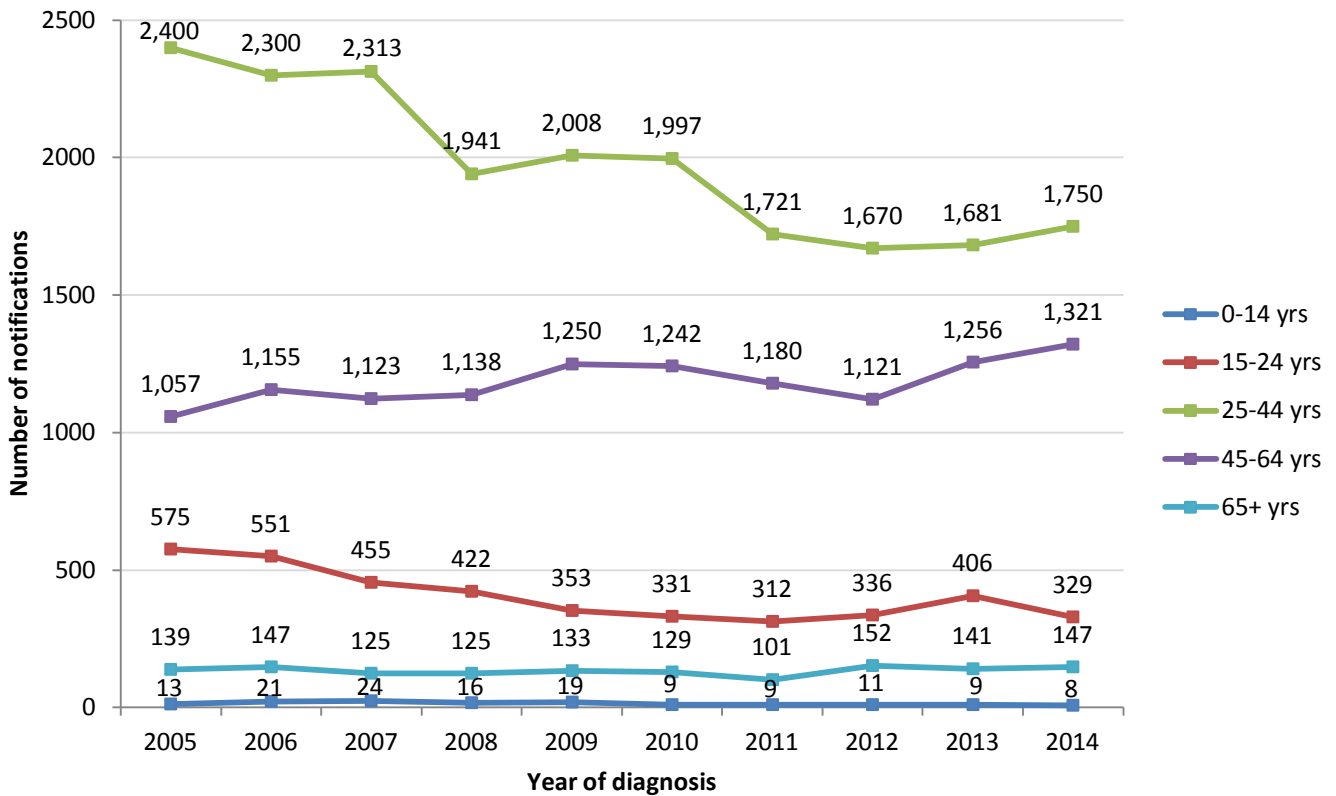
In 2014, there were 3,583 hepatitis C notifications in NSW. Of these, 3554 (99%) were classified as 'unspecified' and 29 (1%) were classified as 'newly acquired'. The notification rate of hepatitis C -unspecified in NSW has declined gradually over the last decade, from 61.7 per 100,000 in 2005 to 47.1 in 2014. There has also been a small decrease in notification of newly acquired hepatitis C, from 0.66 per 100,000 in 2005 to 0.39 in 2014. (Figure 7)

Notifications of newly acquired hepatitis C peaked in 2001, largely as a result of active case-finding conducted during a prospective cohort study¹³. The study recruited HCV negative injecting drug users in NSW between 1999 and 2002, and participants were followed up and tested for HCV every 3-6 months until seroconversion or study completion.

¹³ 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

1.4.2 Which groups are being notified?

Figure 8: Notifications of hepatitis C in NSW, by age group, 2005-2014



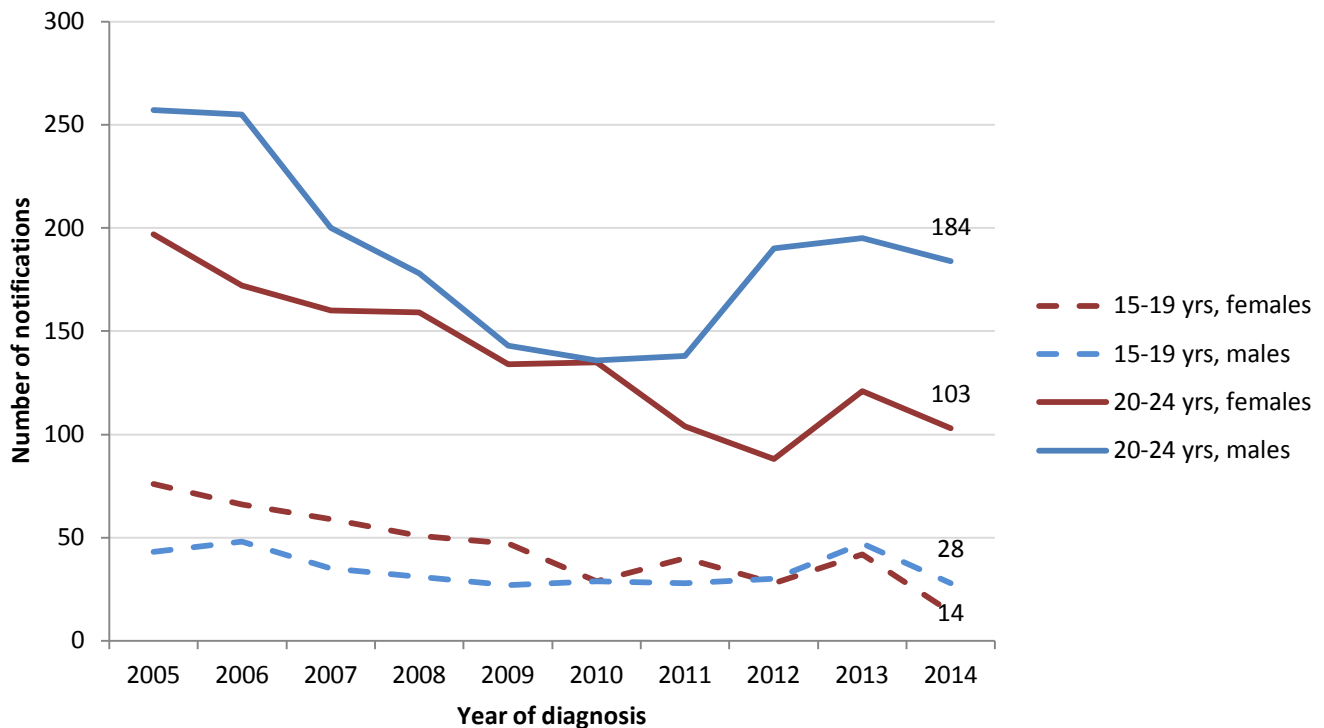
Data source: NCIMS, NSW Health; data extracted 8 May 2015

Note: Excludes persons whose age is unknown or not stated

Comment

There has been a decrease in the number of hepatitis C notifications amongst people aged 15-24 years and 25-44 years over the last decade, while notifications in people aged 45-64 years have increased over the same period. Notifications in the 0-14 years and 65+ years groups have remained relatively low. (Figure 8)

Figure 9: Notifications of hepatitis C in people aged between 15 and 24 years, by age group and gender, NSW, 2005-2014



Data source: NCIMS, NSW Health; data extracted 8 May 2015

Note: Excludes transgender persons and persons whose gender is not stated/unknown

Comment

In 2014, there were 42 notifications of hepatitis C in people aged 15-19 years and 287 in those aged 20-24 years. There were more notifications among males than females in both age groups.

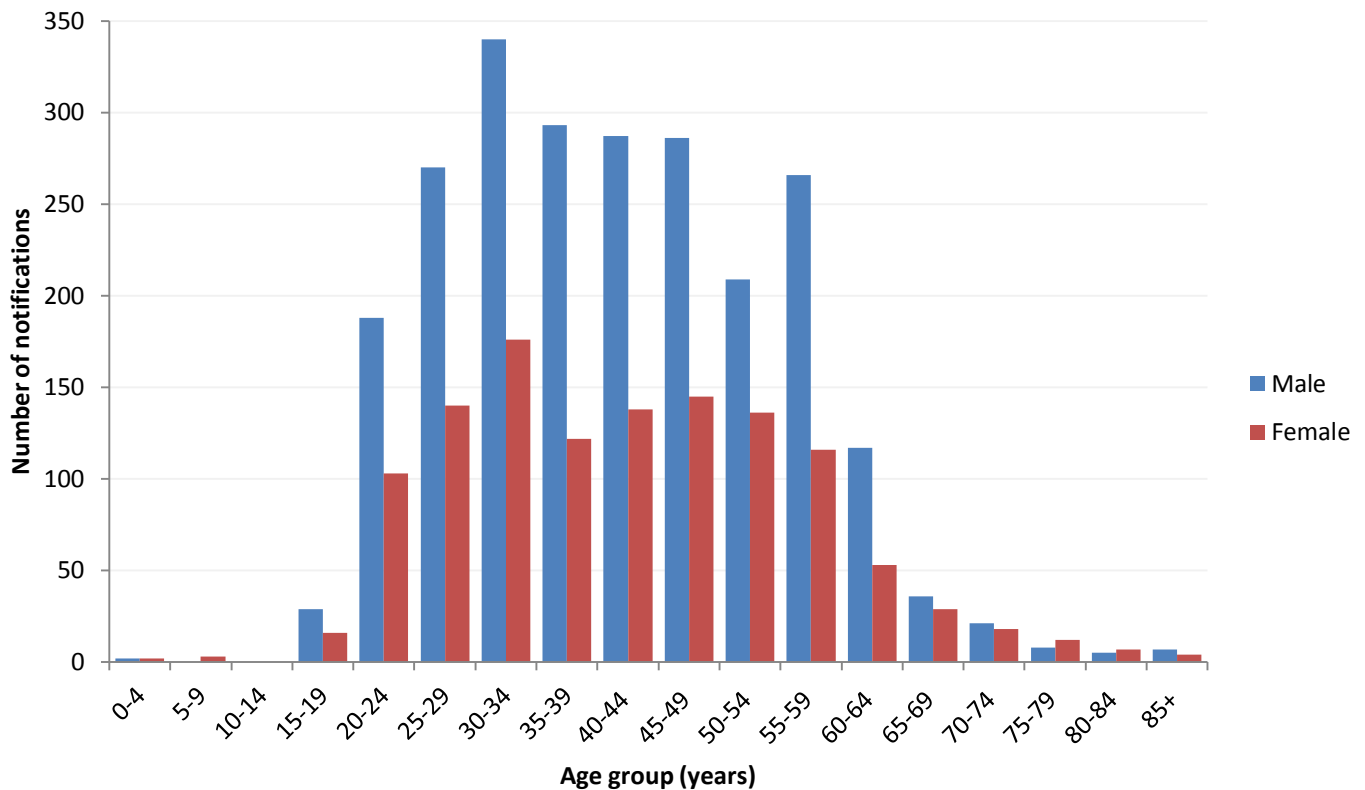
Younger age has been associated with hepatitis C incident infection in several studies conducted in NSW.^{14,15} Data from an observational study of people in NSW who inject drugs indicated that the mean time from age of first injection to HCV seroconversion was 4.4 years¹⁶.

Notifications of hepatitis C in young people may be 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. However, the number of hepatitis C infections that are detected (and subsequently notified) is dependent on the number of people in this age group who are tested.

¹⁴ Van Beek I, Dwyer R, Dore G, Luo K, Kaldor J. Infection with HIV and hepatitis C virus among injecting drug users in a prevention setting: retrospective cohort study. *BMJ* 1998; 317:433

¹⁵ 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

¹⁶ Maher L, Jalaludin B, Chant K, Jayasuriya R, Sladden T, Kaldor J, Sargent P. Incidence and risk factors for hepatitis C seroconversion in injecting drug users in Australia. *Addiction* 2006;101(10):1499-1508

Figure 10: Notifications of hepatitis C in NSW, by age group and gender, 2014

Data source: NCIMS, NSW Health; data extracted 20 Feb 2015

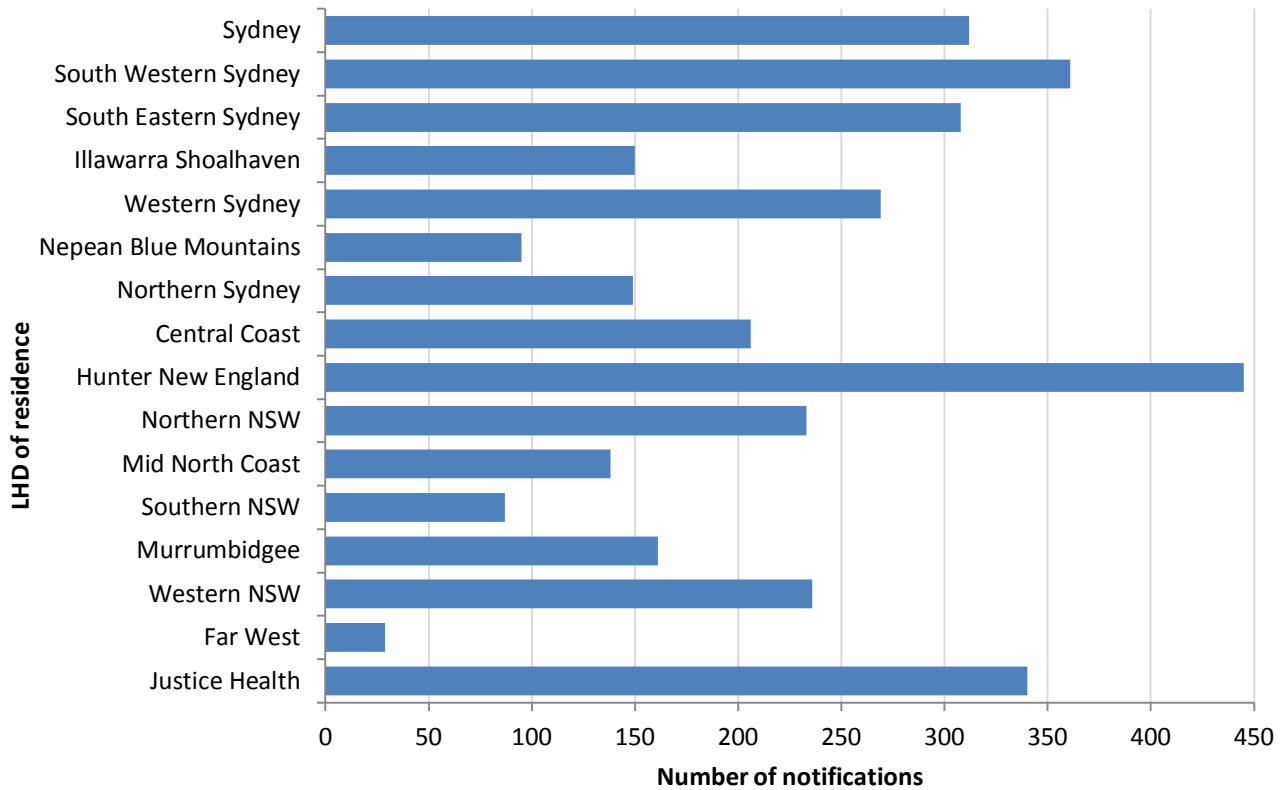
Note: Excludes persons whose age or sex is unknown or not stated; excludes transgender persons

Comment

Of the 3,583 hepatitis C notifications in 2014, 2,359 (65.8%) were in males, 1,214 (33.9%) were in females, and 10 (0.3%) were in transgender persons or persons of unknown gender. For both males and females, the most commonly diagnosed age groups were 30-34 years. 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. (Figure 10)

1.4.3 Where are notifications occurring?

Figure 11: Notifications of hepatitis C, by LHD of residence, NSW, 2014



Data source: NCIMS, NSW Health; data extracted 8 May 2015

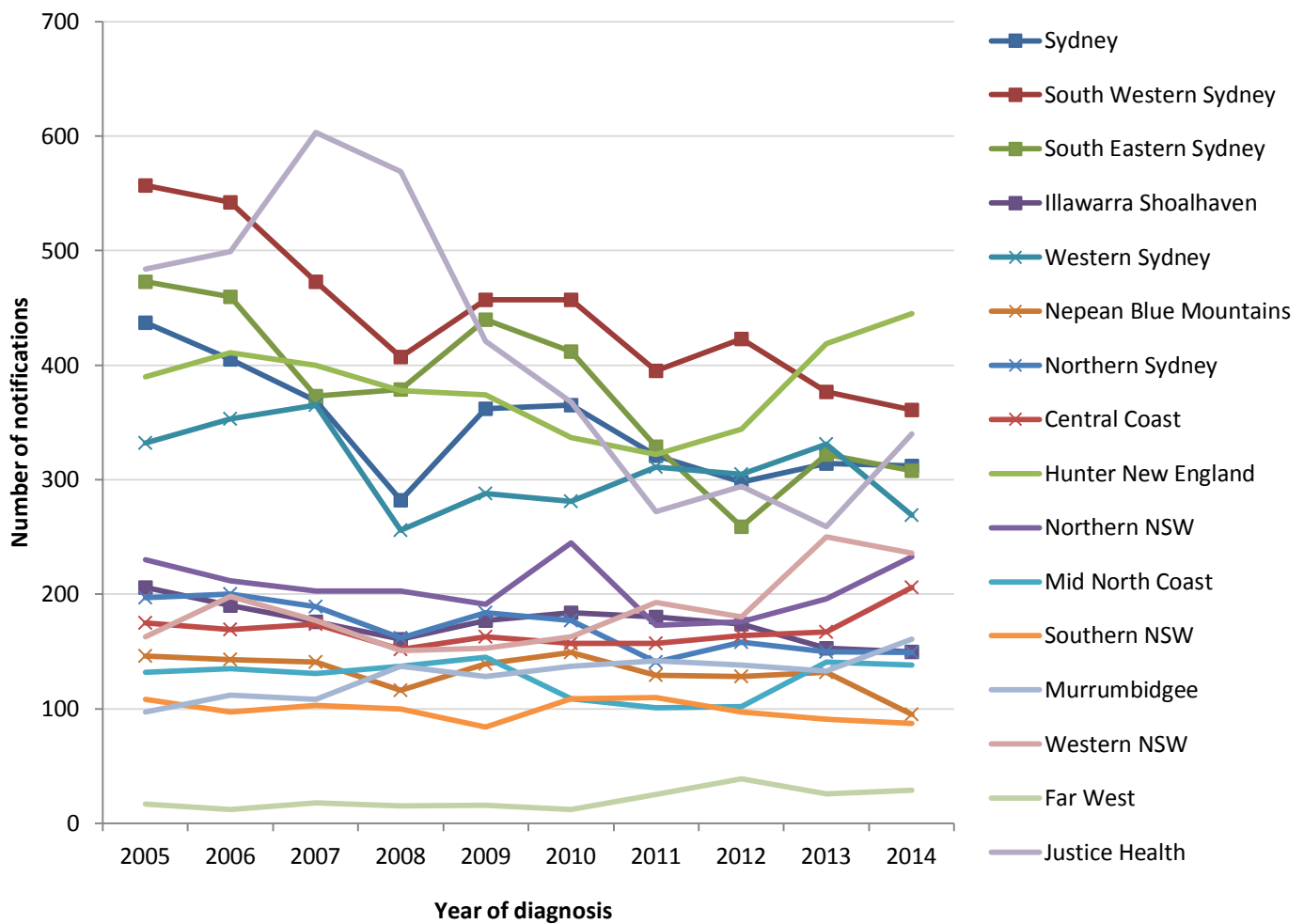
Note: Excludes persons whose place of residence in NSW was not known

Comment

In 2014, Hunter New England LHD reported the highest number of hepatitis C notifications (445), followed by South Western Sydney LHD (361) and Justice Health (340). Far West LHD reported the fewest hepatitis C notifications (29) in 2014. (Figure 11)

To account for the substantial variation in population size between the LHDs, notification rates have been shown in Figure 14.

Figure 12: Notifications of hepatitis C, by LHD of residence, NSW, 2005-2014



Data source: NCIMS, NSW Health; data extracted 8 May 2015

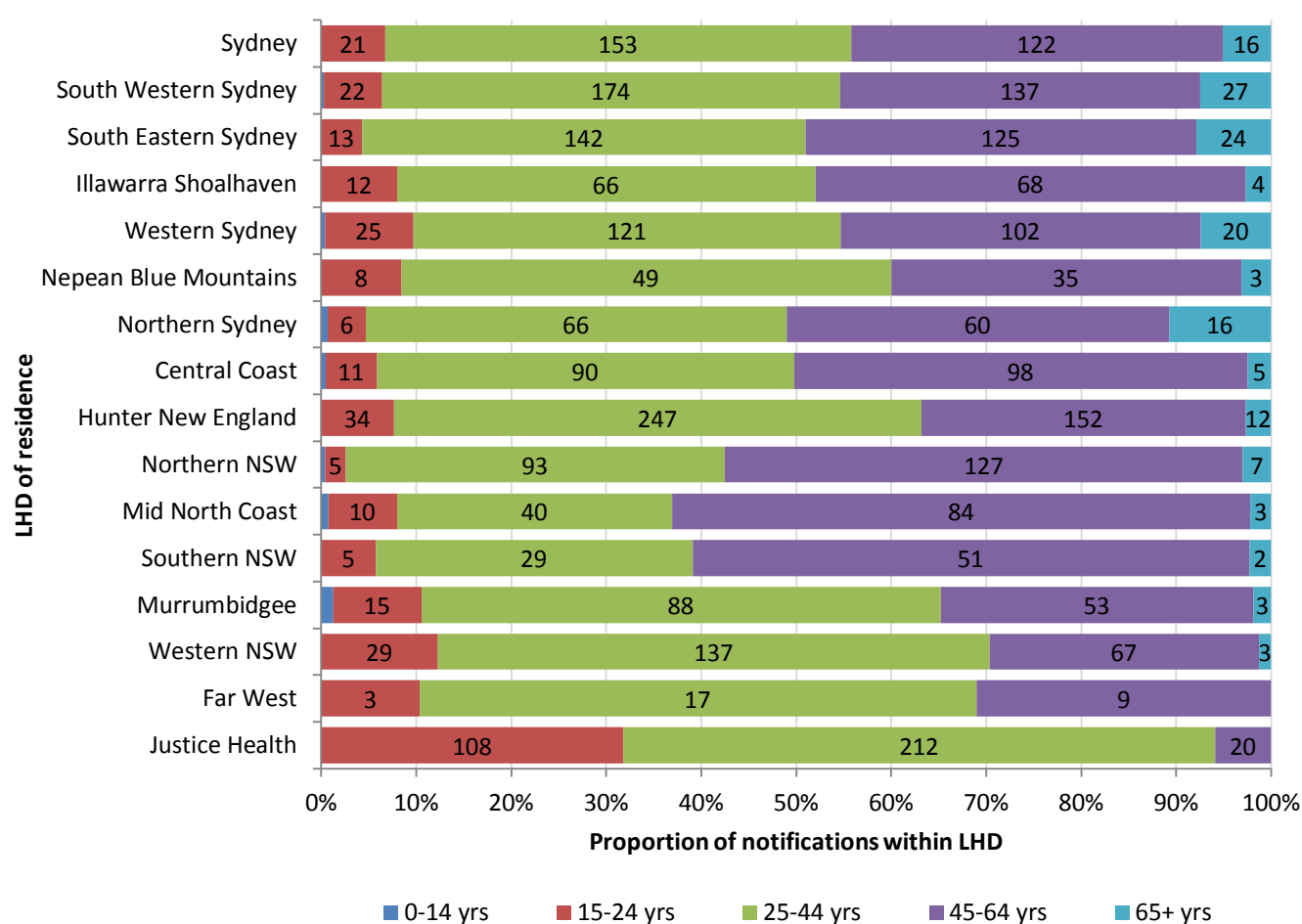
Note: Excludes persons whose place of residence in NSW was not known

Comment

Compared to other LHDs, Western NSW LHD reported the biggest increase in the number of hepatitis C notifications over the last ten years (from 163 notifications in 2005 to 236 in 2014), followed by Murrumbidgee LHD (97 notifications in 2005 to 161 in 2014) and Hunter New England LHD (390 notifications in 2005, dipping to 322 in 2011 before rising to 445 in 2014).

The largest decreases in the number of hepatitis C notifications over the last ten years have occurred in South Western Sydney LHD, South Eastern Sydney LHD, Justice Health and Sydney LHD.

Figure 13: Notifications of hepatitis C, by LHD and age group, NSW, 2014



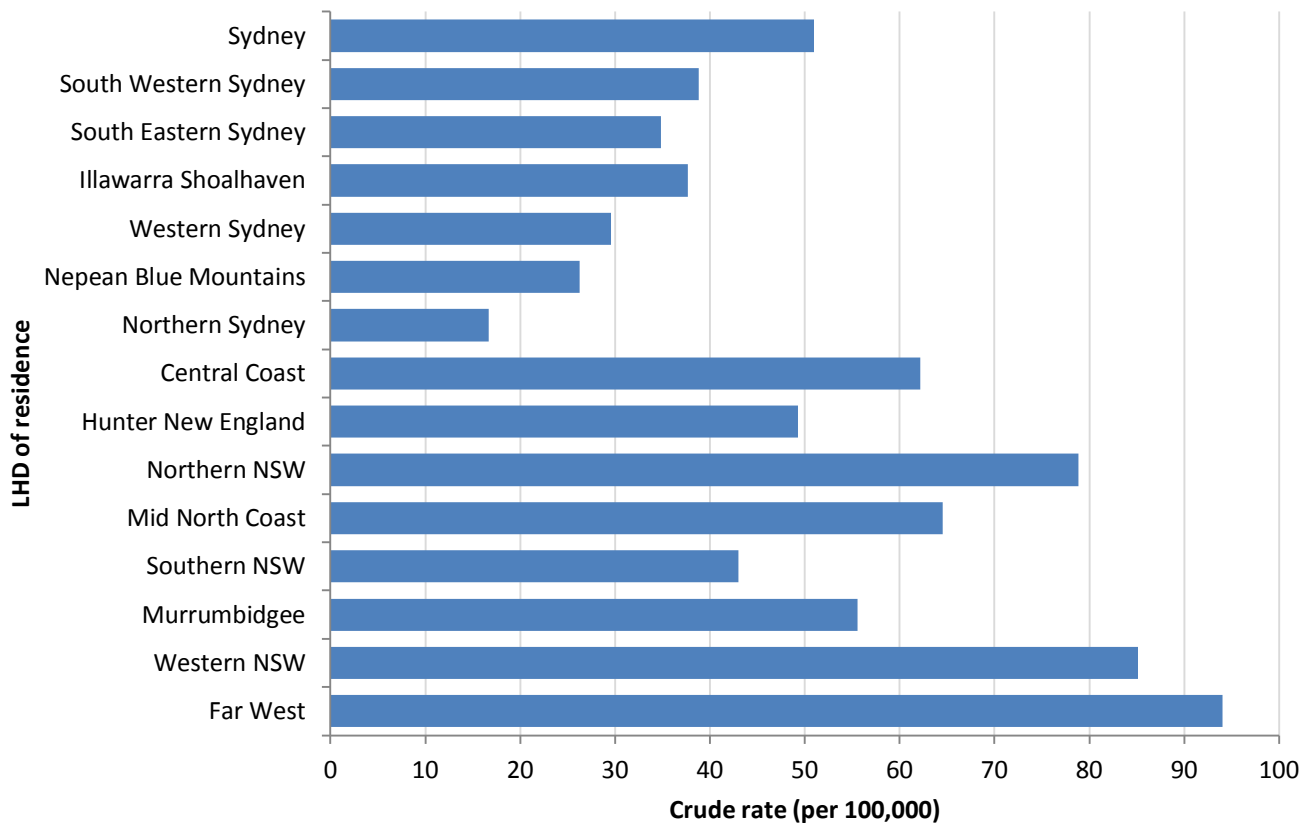
Data source: NCIMS, NSW Health; data extracted 8 May 2015

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

Comment

In 2014, Justice Health reported both the highest number (108) and the highest proportion (32%) of hepatitis C notifications in 15-24 year olds. Hunter New England LHD had the second highest number of notifications (34) in 15-24 year olds, while Western NSW LHD had the second highest proportion (12%) of hepatitis C notifications in the same age group. (Figure 13)

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 are partly due to targeted screening programs, and may include people who have been previously diagnosed interstate or overseas.

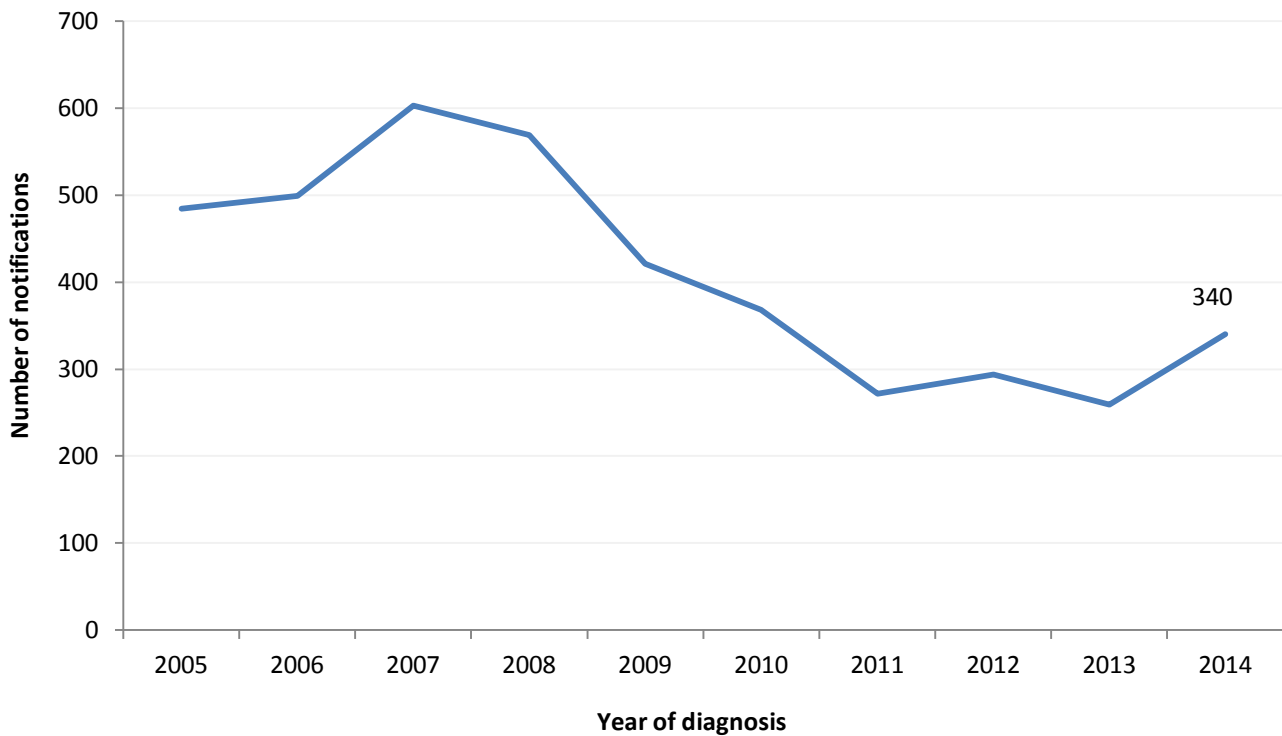
Figure 14: Notification rate of hepatitis C in NSW, by LHD of residence, 2014

Data source: NCIMS, NSW Health; data extracted 12 May 2015

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

Comment

Far West, Western NSW and Northern NSW Local Health Districts (LHDs) recorded the highest rates of hepatitis C notification in NSW in 2014 (94, 85 and 79 per 100,000 respectively). Mid North Coast and Central Coast LHDs also had high rates of hepatitis C notification (65 and 62 per 100,000 respectively) compared to most metropolitan LHDs. A notification rate has not been calculated for Justice Health as the population (the denominator) fluctuates. (Figure 14)

Figure 15: Notifications of hepatitis C in Justice Health, NSW, 2005-2014

Data source: NCIMS, NSW Health; data extracted 15 May 2015

Comment

There were 340 notifications of hepatitis C in Justice Health (custodial) settings in 2014, accounting for 10% of hepatitis C notifications in NSW, and an increase of 31% compared to the number in Justice Health in 2013 (259 notifications).

Of the 340 notifications in 2014, 37% were reported to be Aboriginal and/or Torres Strait Islander people and 39% were non-Indigenous. Aboriginality was unknown, not stated or missing for the remaining 24%. Although Aboriginal and Torres Strait Islander people are over-represented among NSW prison inmates, the number of notifications amongst Aboriginal and Torres Strait Islander people is still higher than expected. The NSW Inmate Census 2012 reported that 23% of the inmate population in NSW were of Aboriginal or Torres Strait Islander descent¹⁷.

High numbers of notifications in Justice Health settings are partly due to targeted screening programs, and may include people who have been previously diagnosed interstate or overseas.

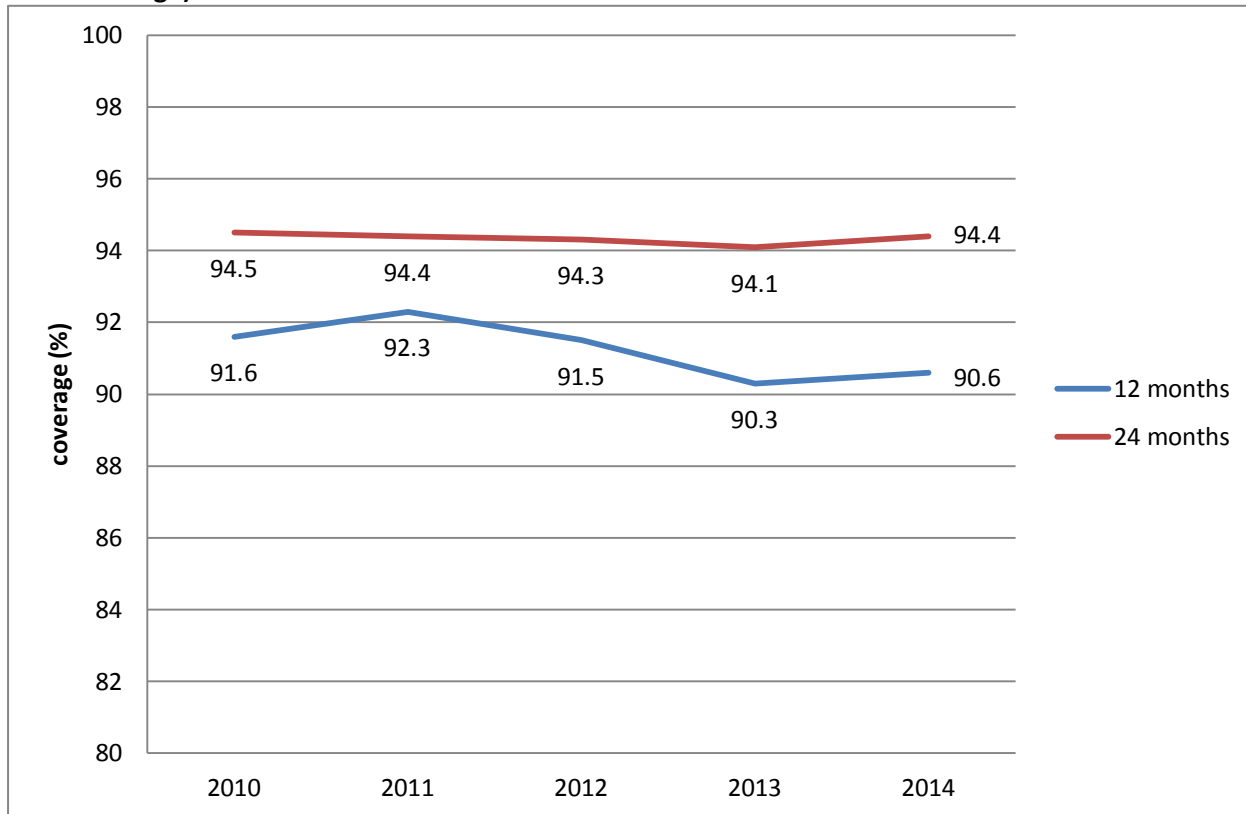
¹⁷ Corrective Services NSW. Facts and Figures. March 2013. [Available at http://www.correctiveservices.justice.nsw.gov.au/data/assets/pdf_file/0005/500954/Facts-and-Figures_V13_white.pdf; accessed 20 March 2015]

2. PREVENT – Build on established prevention efforts

2.2 Increase childhood vaccination coverage for hepatitis B

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

Figure 16: 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

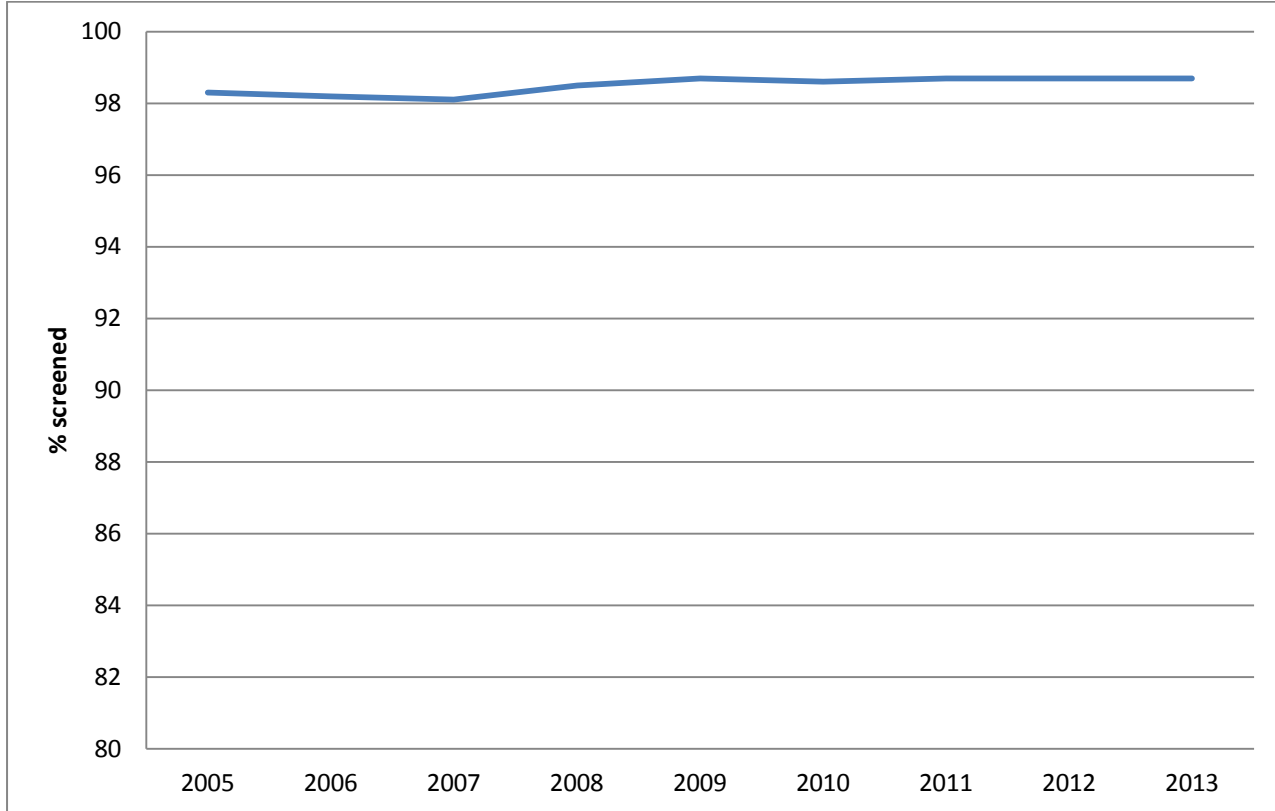
Hepatitis B vaccine is due at (birth), 6 weeks, 4 months and 6 months of age. Coverage for the 6-week, 4-month and 6-month doses measured at 12 months in 2014 was 90.6%.

Coverage at 24 months in 2014 was 94.4%, and higher than at 12 months, indicating that the timing of the vaccination, rather than non-vaccination, is an issue. (Figure 16)

2.3 Immunisation in babies born to mothers living with hepatitis B

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

Figure 17: Proportion of women giving birth in a public or private hospital in NSW who are screened for hepatitis B



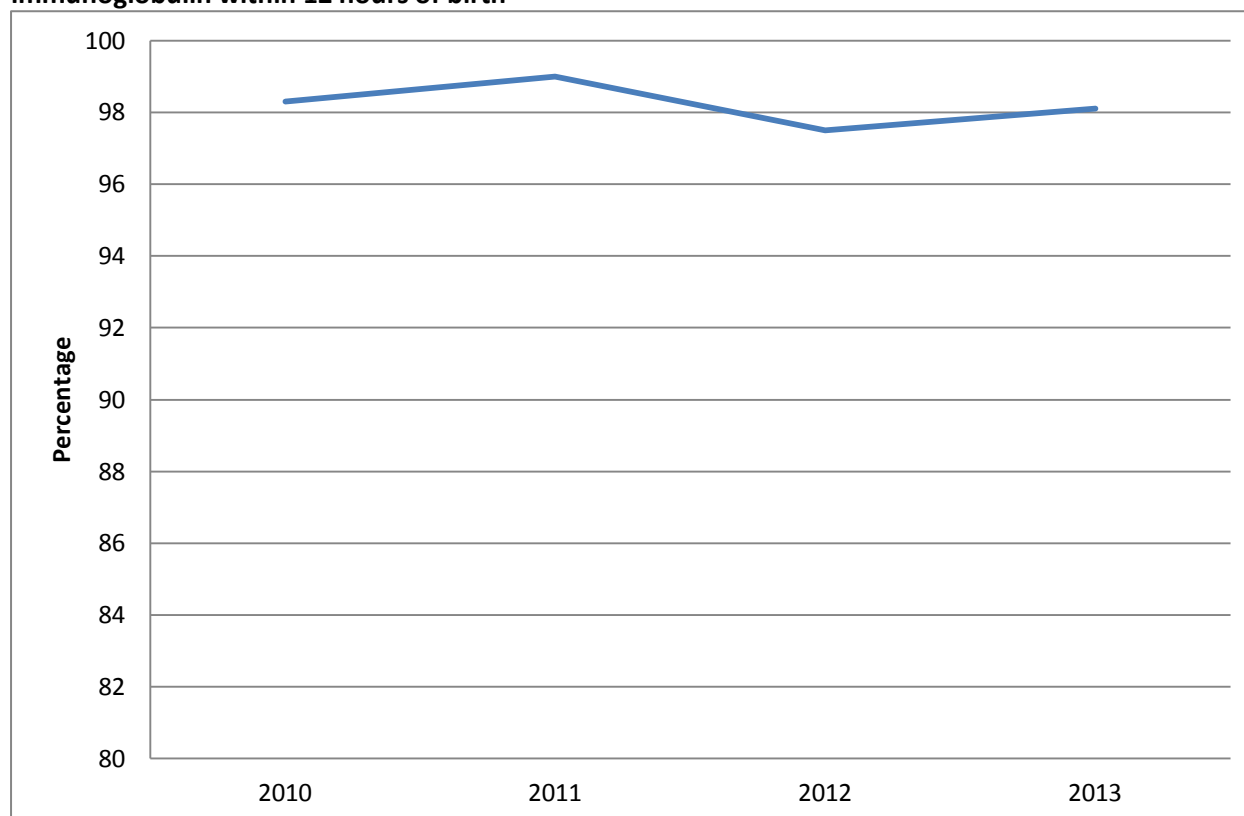
Data source: Neonatal Hepatitis B Vaccination Program Database, NSW Health

Comment

The proportion of women giving birth in a public or private hospital in NSW screened for hepatitis B was 98.7% in 2013. (Figure 17)

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

Figure 18: Proportion of babies born in NSW to mothers living 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 generally high, at 98.1% in 2013. (Figure 18 and Table 1)

Table 1: Neonatal hepatitis B immunoglobulin administration 2009-2013

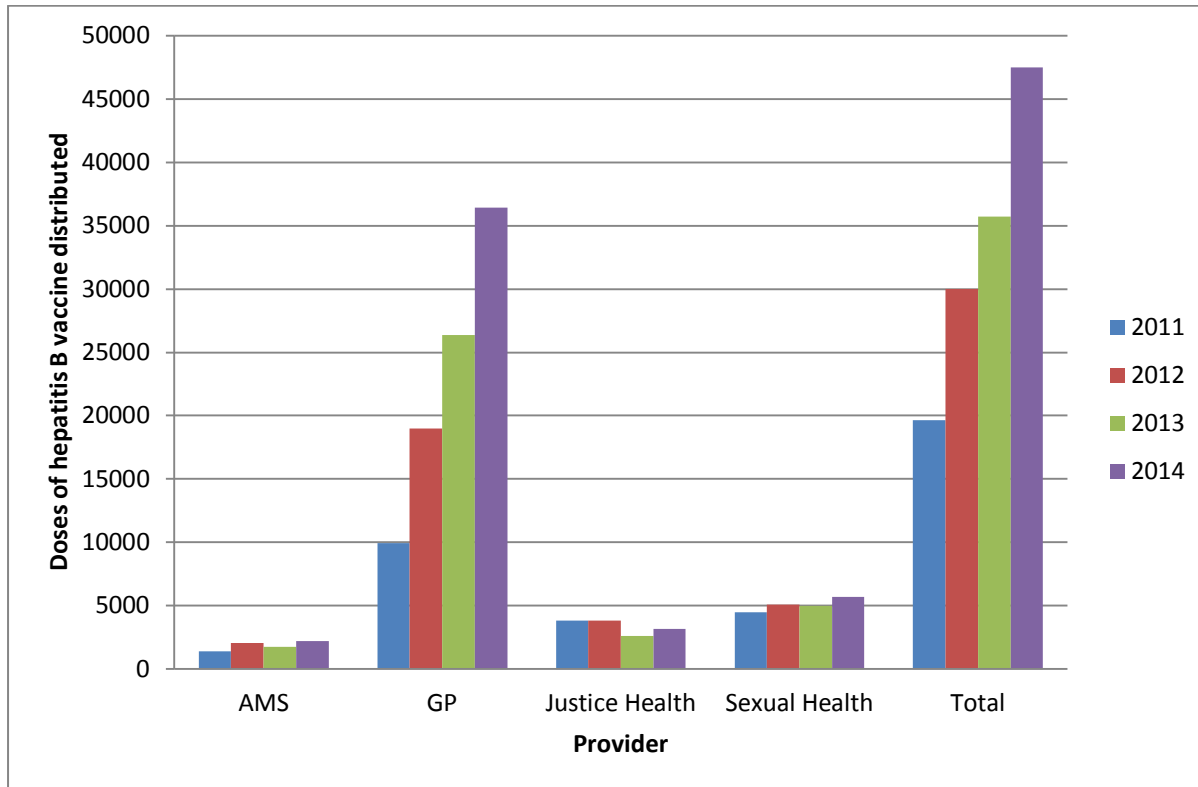
	No. neonates born to HBsAg+ mothers	No. neonates born to HBsAg+ mothers who received HBIG	No. neonates born to HBsAg+ mothers who received HBIG within 12 hours of birth (%)
2009	736	731	725 (98.5%)
2010	664	660	653 (98.3%)
2011	702	699	695 (99.0%)
2012	757	744	735 (97.1%)
2013	696	690	683 (98.1%)
Total	3,555	3524	3491 (98.2%)

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

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 19: 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 2014. This increase is related to expanded distribution of hepatitis B vaccine to GPs.

A significant annual increase is occurring in one setting, through the distribution of hepatitis B vaccine to GPs. The distribution of hepatitis B vaccine to high-risk groups at Aboriginal Medical Services, Sexual Health Clinics and Justice Health has remained steady between 2011 and 2014. (Figure 19)

It is important to note the limitations of this data. Despite targeting measures, some vaccine will be provided to people not in high-risk groups. This data does not identify the number of people who completed the full course.

2.5 Maintain safe behaviour for hepatitis B and hepatitis C

The NSW Needle and Syringe Program (NSP) is an evidence-based public health program that aims to prevent the transmission of HIV and hepatitis C 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 rates in the world of HIV amongst people who inject drugs: around 1%, compared to around 16% in the USA, and even higher figures in neighbouring countries.

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.¹⁸

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.

2.5.1 What proportion of people reuse other people's needles and syringes (receptive syringe sharing) in NSW?

Among respondents to the NSW NSP Enhanced Data Collection survey 2013¹⁹ who reported injection, 22% reported receptive sharing (RSS) of needles and syringes in the previous month. In 2014, the proportion who reported receptive sharing of needles and syringes declined to 14%.^{20 21}

These results are broadly comparable to the Australian NSP survey. In the Australian NSP survey, which surveys only primary NSW sites, the proportion of NSW respondents who reported receptive sharing of needles and syringes in the previous month was 13% in 2013 and 16% in 2014.²²

Findings from the 2015 NSW NSP Enhanced Data Collection will indicate whether the reduction in RSS observed between 2013 and 2014 is a continuing trend or a fluctuation, potentially attributable to selection bias arising from changes in client participation or response rates. Further information regarding RSS in the NSW NSP Enhanced Data Collection survey and the Australian NSP survey is shown in **Appendix 1**, including sample sizes and confidence intervals.

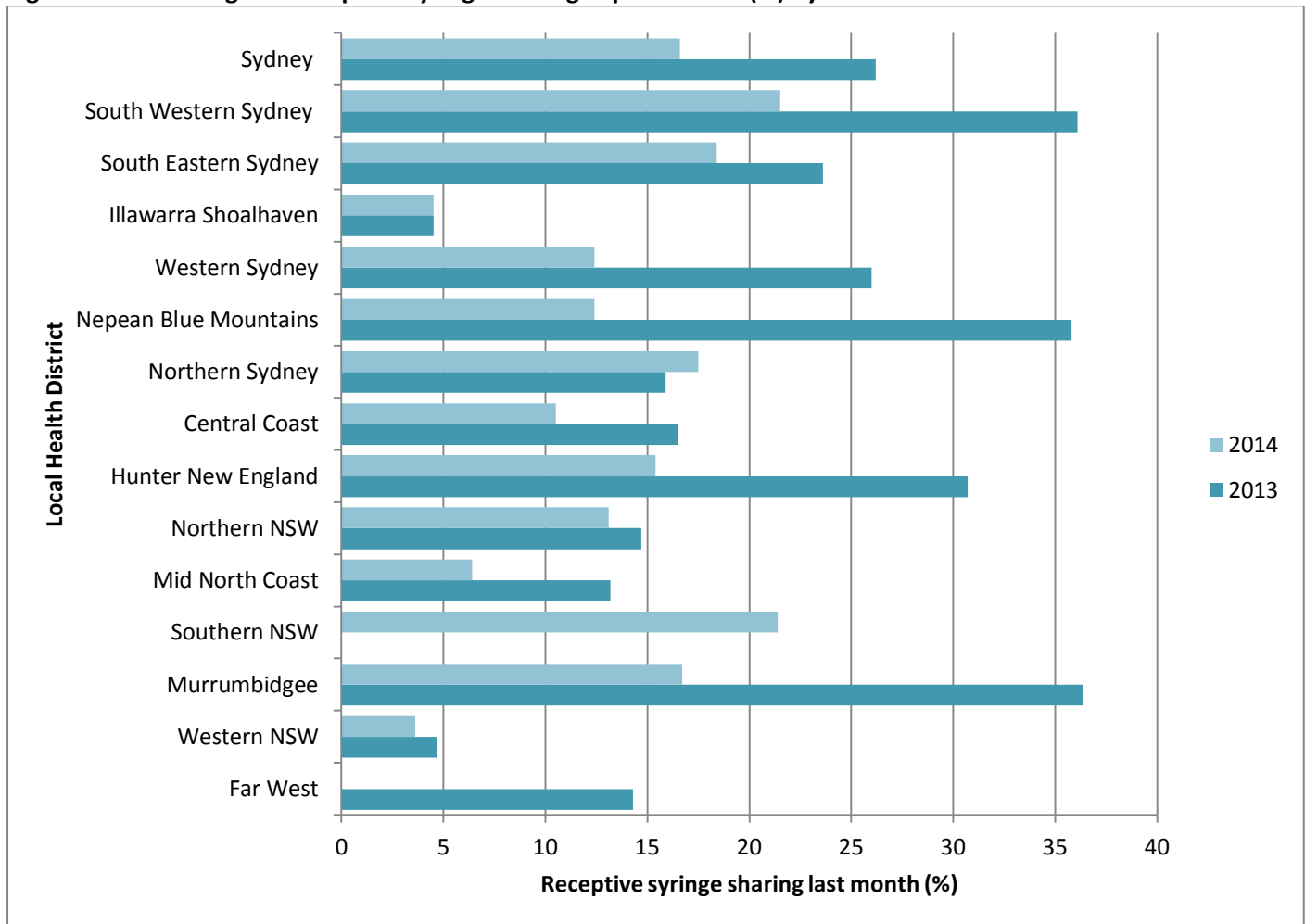
¹⁸ The National Centre in HIV Epidemiology and Clinical Research, *Return on investment 2: Evaluating the cost-effectiveness of needle and syringe programs in Australia*, University of NSW, 2009

¹⁹ In 2013, the first of three consecutive annual NSW NSP Enhanced Data Collections was conducted. The purpose of the survey is to collect 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; and 3029 people were surveyed in 2014. The majority of NSPs (n=50 NSPs) participated in the study in both 2013 and 2014. Refer to Appendix 1, table 1.

²⁰ 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.

²¹ Note 2013 and 2014 RSS in this Data Report has been calculated using a revised methodology compared with the NSW HIV Strategy 2012-2015 Data Report (<http://www.health.nsw.gov.au/endinghiv/Pages/tools-and-data.aspx>). The 2013 and 2014 HIV Data reports present RSS as a proportion of all NSP survey respondents. The revised methodology used in this Data Report for Hepatitis C and B presents RSS as a proportion of PWID respondents who reported injection in the last month (see Appendix 1). The revised methodology is consistent with the Australian NSP survey, and enables the results of the surveys to be compared.

²² Iversen J, Chow S and Maher L. Australian Needle and Syringe Program Survey National Data Report 2009-2013. The Kirby Institute, UNSW Australia, 2014. In 2013, 686 people in NSW were surveyed in 20 primary NSPs. Refer to Appendix 1, Table 2

Figure 20: Percentage of Receptive Syringe Sharing in past month (%) by LHD in 2013 and 2014

Data source: NSW Needle and Syringe Program Enhanced Data Collection 2013 A report for the Ministry of Health by the Kirby Institute, UNSW Australia, 2014

Note: Receptive Syringe Sharing (RSS) is calculated among respondents who reported injection in previous month. Findings from the 2015 NSW NSP Enhanced Data Collection will indicate whether the reduction in RSS observed between 2013 and 2014 is a continuing trend or a fluctuation, potentially attributable to selection bias arising from changes in client participation or response rates. **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 2014 or Southern NSW in 2013 due to small sample size participating in the survey.

Comment

The reported receptive sharing of needles and syringes in the previous month ('Receptive Syringe Sharing') among respondents of the NSW NSP Enhanced Data Collection survey by Local Health District in 2013 and 2014 is identified above (Figure 20). It is important to view Figure 20 alongside Figure 22 and Figure 23, in order to reflect on Receptive Syringe Sharing in each LHD alongside the total number of units of injecting equipment distributed via the NSW NSP over the same period.

The Ministry of Health is working with the Kirby Institute (UNSW) to examine the issue of receptive syringe sharing (RSS) in more depth in the upcoming 2015 Enhanced Data Collection report, including whether RSS is associated with injection of a particular drug type or frequency of injection. Additionally, RSS across priority populations will be examined in more detail. For instance, in 2014 among those reporting recent imprisonment in the Enhanced Data Collection, 27% reported receptive syringe sharing in the previous month (40% in 2013).

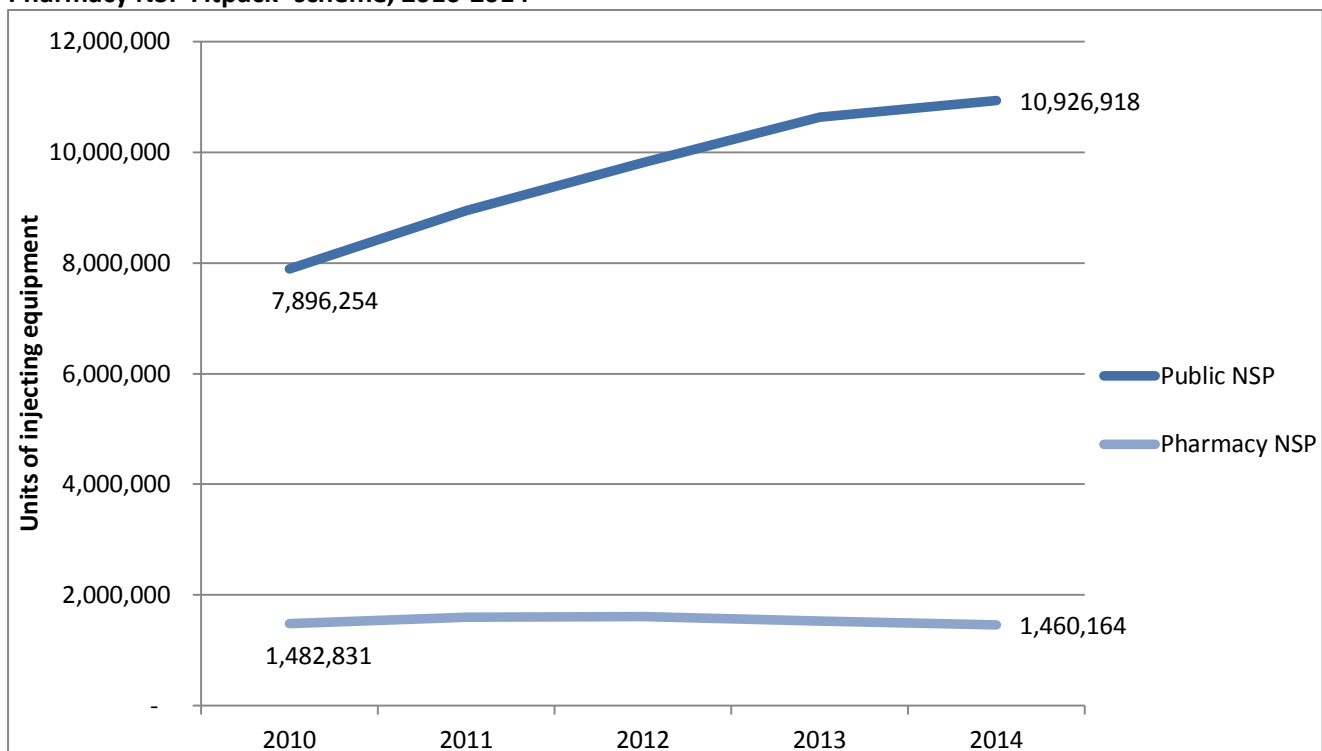
2.5.2 Who is accessing the Needle and Syringe Program in NSW?

The proportion of priority populations accessing the NSW NSP has remained relatively stable between 2013 and 2014. Among people participating in the NSW Enhanced Data Collection²³ in 2014:

- 16% identified as Aboriginal or as both Aboriginal and Torres Strait Islander (15% in 2013)
- 5% reported that their parents spoke a language other than English at home (4% in 2013)
- 4% reported being in prison in the past month (4% in 2013)
- 10% reported being aged less than 25 years (8% in 2013)

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

Figure 21: The total number of units of injecting equipment distributed in NSW by the public NSP and the Pharmacy NSP Fitpack[®] scheme, 2010-2014



Data sources:

- Public NSP - NSW Health NSP Minimum Data Set
- Pharmacy NSP - NSW Health Pharmacy Data (Pharmacy NSP Fitpack[®] scheme)
- 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); and secondary outlets in Aboriginal Community Controlled Health Services (ACCHS)

Comment

In the year ending 31 December 2014, a total of 12,387,082 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 219,435 additional units (2%) compared with the previous 12 months (NSW Health NSP Minimum Data Set). Over the past five years, the number of units of injecting equipment distributed by the Public NSP has increased from close to 8 million units in 2010 to almost 11 million units in 2014. Over the past five years, the number of units of injecting equipment distributed by the Pharmacy NSP scheme has remained steady at just under 1.5 million units (Figure 21).

²³ 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

Figure 22: Number of units of injecting equipment distributed in NSW by LHD in 2014

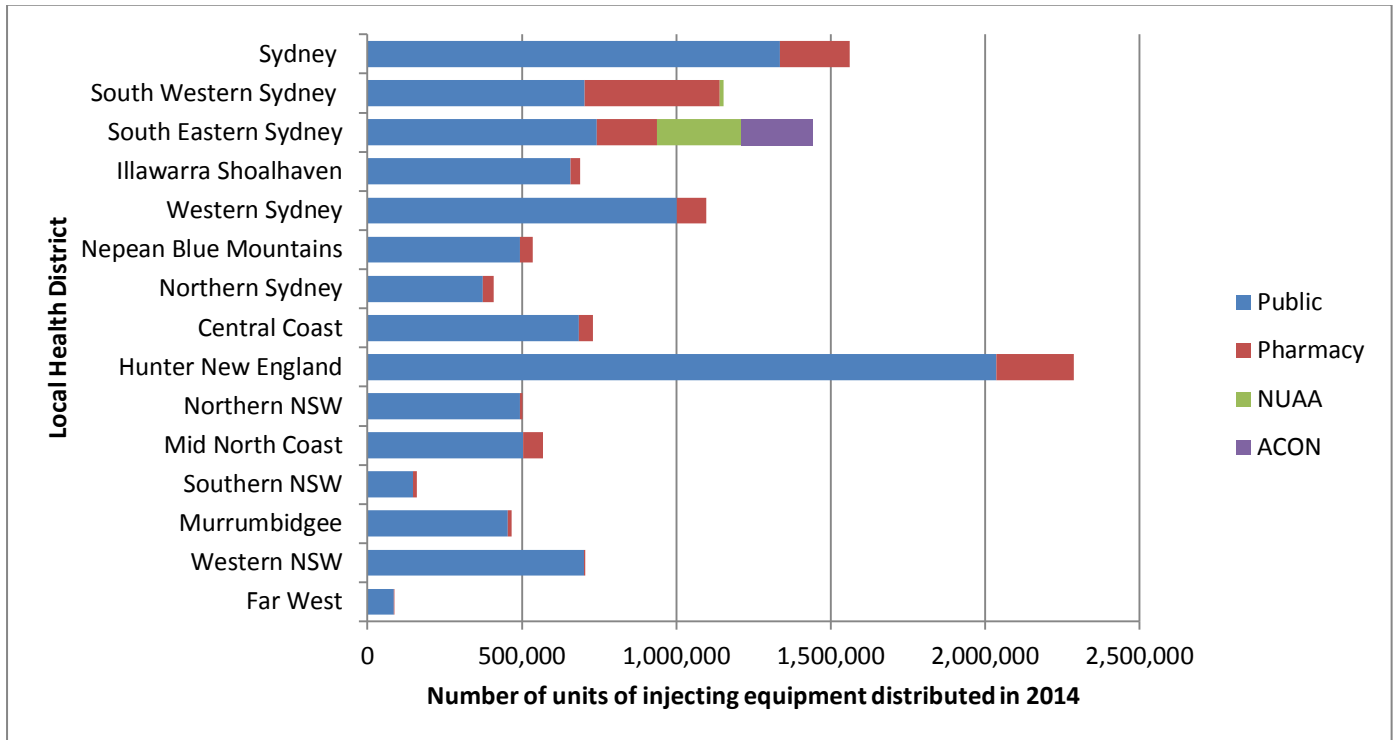
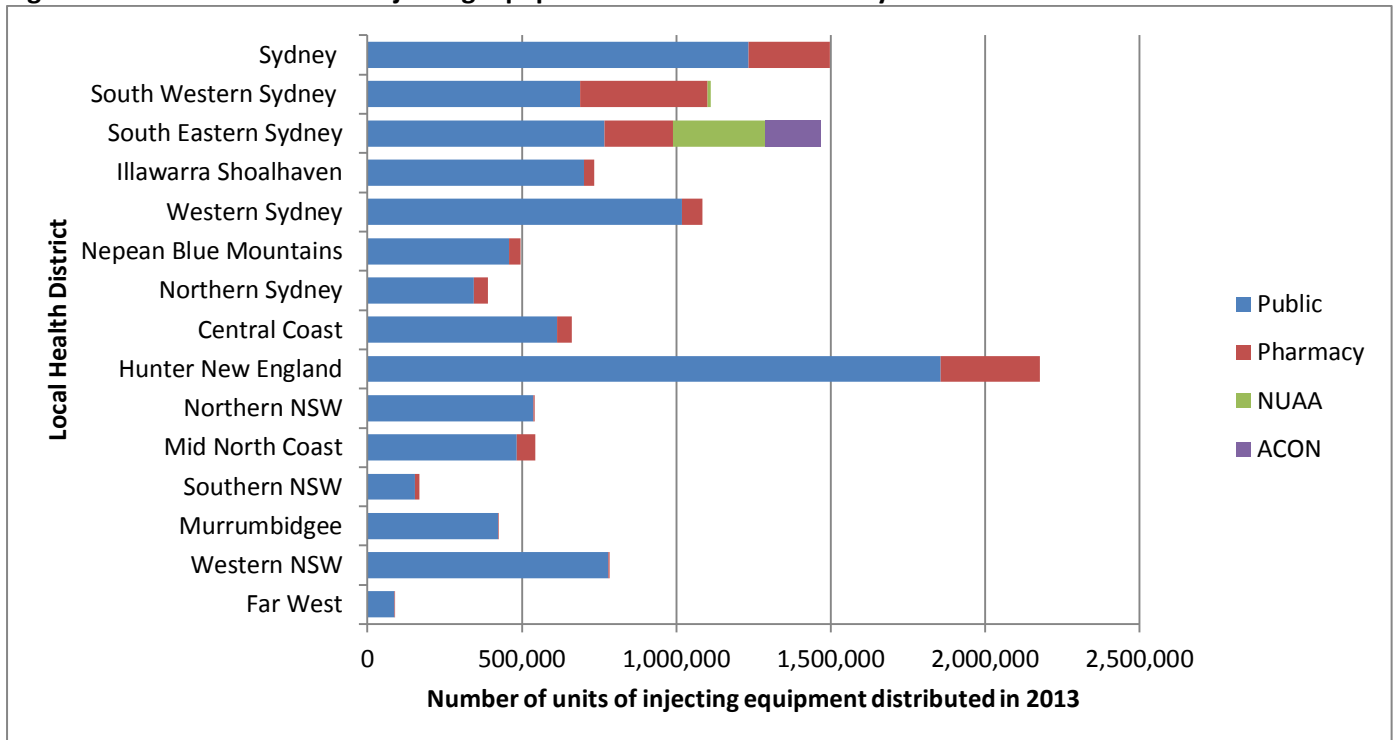


Figure 23: Number of units of injecting equipment distributed in NSW by LHD in 2013



Data sources for Figure 22 & Figure 23:

- 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

Note in Figure 22 & Figure 23:

- 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 and ACON
- South Western Sydney LHD includes injecting equipment distributed by NUAA
- South Eastern Sydney LHD does not include the number of units of injecting equipment distributed by the Sydney Medically Supervised Injecting Centre (MSIC).

Comment

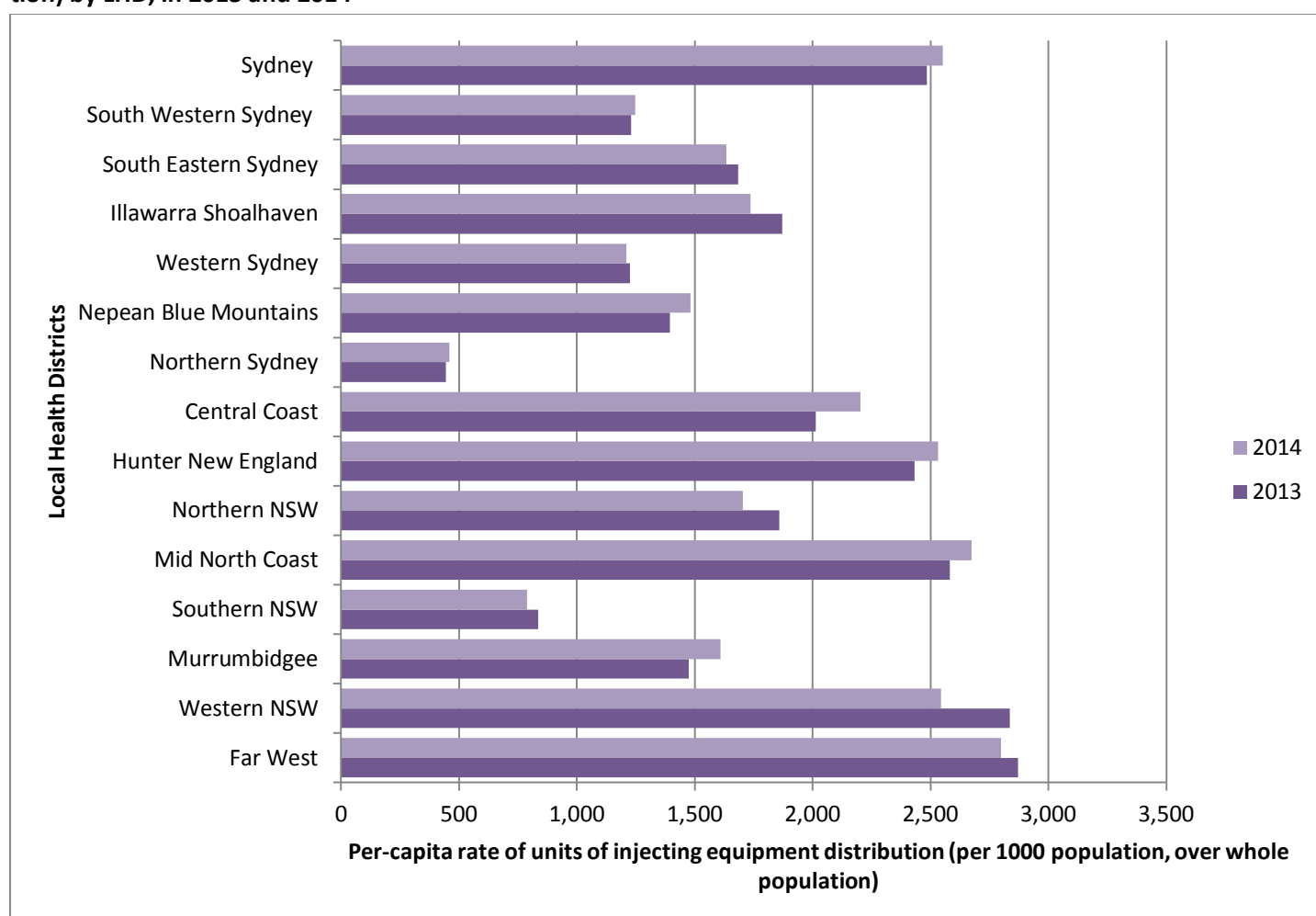
With some notable exceptions, the number of units of injecting equipment distributed by LHDs has remained steady between 2013 and 2014 (Figure 22 and Figure 23). The highest number of units of injecting equipment distributed occurs in Hunter New England, Sydney, South Eastern Sydney, South Western Sydney, and Western Sydney.

It is important to acknowledge that changes in the number of units of injecting equipment distributed may be a result of changes in drug delivery modality choices.

It is useful to view Figure 22 alongside Figure 23. For instance, a decrease in injecting equipment distributed by HNE LHD via the Pharmacy NSP between 2013 and 2014 corresponds with an increase in injecting equipment distributed by HNE LHD via the Public NSP over the same period.

It is also useful to view Figure 22 and Figure 23 alongside Figure 24, which identifies the per-capita rate of units of injecting equipment distribution by LHD in 2013 and 2014. Of particular note is Far West, which has the lowest number of units of injecting equipment distributed (Figure 22 and 23) but it has the highest per-capita rate of units of injecting equipment distribution (Figure 24).

Figure 24: Per-capita rate of units of injecting equipment distribution (per 1000 population, over whole population) by LHD, in 2013 and 2014



Data sources:

- Population by LHD - Centre for Epidemiology and Evidence. Health Statistics New South Wales
- Public - NSW Health NSP Minimum Data Set
- Pharmacy - NSW Health Pharmacy Data (Pharmacy NSP Fitpack[®] scheme)
- NUAA – The NSW Users and AIDS Association
- ACON - AIDS Council of NSW

Notes:

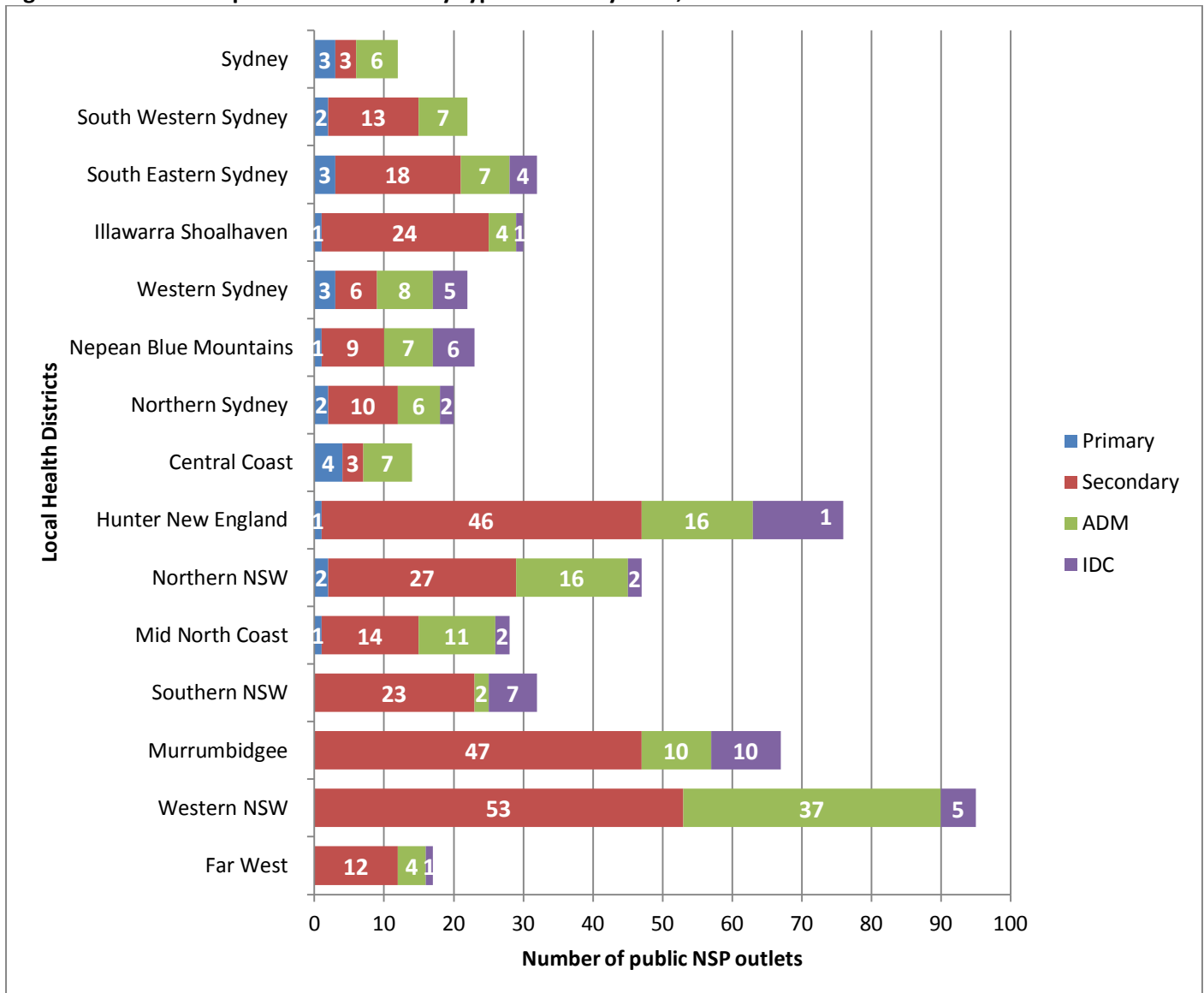
- The units of injecting equipment includes injecting equipment distributed by the NSW Public NSP; the Pharmacy NSP Fitpack Scheme; as well as secondary outlets in Aboriginal Community Controlled Health Services (ACCHS)
- South East Sydney LHD includes injecting equipment distributed by NUAA and ACON
- South Western Sydney LHD includes injecting equipment distributed by NUAA
- South Eastern Sydney LHD does not include the number of units of injecting equipment distributed by the Sydney Medically Supervised Injecting Centre (MSIC).

Comment

The highest per-capita rate of units of injecting equipment distribution occurs in Far West, Western NSW, Mid North Coast, Sydney, Hunter New England, and Central Coast.

The Ministry of Health is currently developing updated PWID population size estimates for NSW by LHD under the BRISE²⁴ Research Program, which will provide a more valuable indication of coverage of the NSP in NSW.

²⁴ BBV & STI Research, Intervention and Strategic Evaluation (BRISE) 2014-2019 – University of NSW

Figure 25: Number of public NSP outlets by type in NSW by LHDs, 30 June 2014

Data source: NSW NSP Data Collection

Comment

As of 30 June 2014, under the public NSP there were a total of 23 primary and 308 secondary outlets, 206 ADMs and IDCs located across NSW. The breakdown by outlet type by LHD is identified above (Figure 25).

In addition, there were 512 Pharmacies participating in the Pharmacy NSW Fitpack Scheme, making a total of 1,049 NSP outlets located across NSW as at 30 June 2014. This represents an increase of 20 additional outlets (1.9%) compared with same period in 2013 (NSW NSP Data Collection).

2.5.4 How many people in NSW are receiving pharmacotherapy treatment?

Three data sources are identified below to indicate the number of people in NSW who are receiving pharmacotherapy treatment for opioid dependence:

1. The Australian NSP Survey

Among NSW respondents in the Australian NSP Survey in 2013, 50% reported receiving pharmacotherapy treatment, a decline from the previous year where 57% reported current pharmacotherapy treatment in 2012.²⁵

2. Illicit Drug Reporting System (IDRS)

The majority (61%) of all PWID participants in the Illicit Drug Reporting System (IDRS) were in some form of drug treatment in the last 6 months in 2013, which is stable with the 60% who were in some form of treatment in 2012.²⁶

3. National opioid pharmacotherapy statistics 2013 (AIHW)

The number of people receiving pharmacotherapy in Australia increased from 13 people per 10,000 in 1998 to 21 in 2010, and has remained stable to 2013. NSW had the highest rate of clients on pharmacotherapy treatment (26 clients per 10,000 of population) in 2013.²⁷

Comment

Opioid substitution treatment (OST) for people who inject drugs (PWID) 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. However, despite strong evidence of the effectiveness of OST in reducing HIV transmission among PWID, less known about its impact on HCV and a recent review found that the evidence for OST was insufficient.

A recent study²⁸ 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 2.5.4 above).

The evidence base for the protective effects of OST against incident HCV infection has since been strengthened by the publication of similar results from cohort studies in Canada and North America. Results from the HITS-c study in Australia, 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%²⁹.

²⁵ Iversen J, Chow S and Maher L. Australian Needle and Syringe Program Survey National Data Report 2009-2013. The Kirby Institute, UNSW Australia, 2014

²⁶ McKell, D and Burns L (2014). New South Wales Drug Trends 2013. Findings from the Illicit Drug Reporting System (IDRS). *Australian Drug Trends Series No. 110*. Sydney, National Drug and Alcohol Research Centre, UNSW Australia.

²⁷ Australian Institute of Health and Welfare 2014. National opioid pharmacotherapy statistics 2013. Drug treatment series no. 23. Cat. No. HSE 147. Canberra: AIHW

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

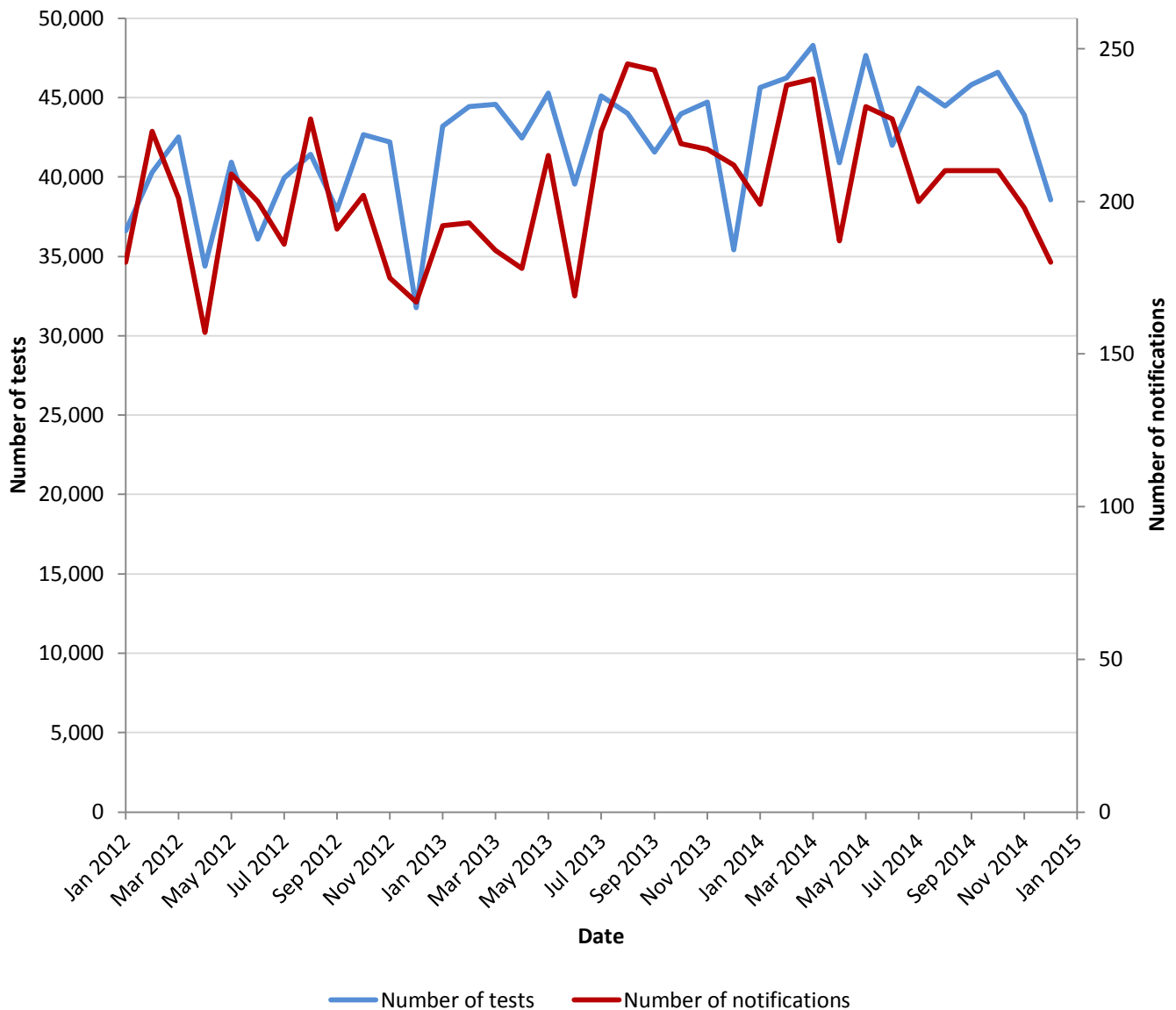
²⁹ Vickerman P, Page K, Maher L, Hickman M. Commentary on Nolan et al: Opiate substitution treatment and HCV prevention: Building an evidence base? *Addiction* 2014;109(12):2060-2061.

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. Information from laboratories does not provide any indication on whether there are repeat tests on the same individual.

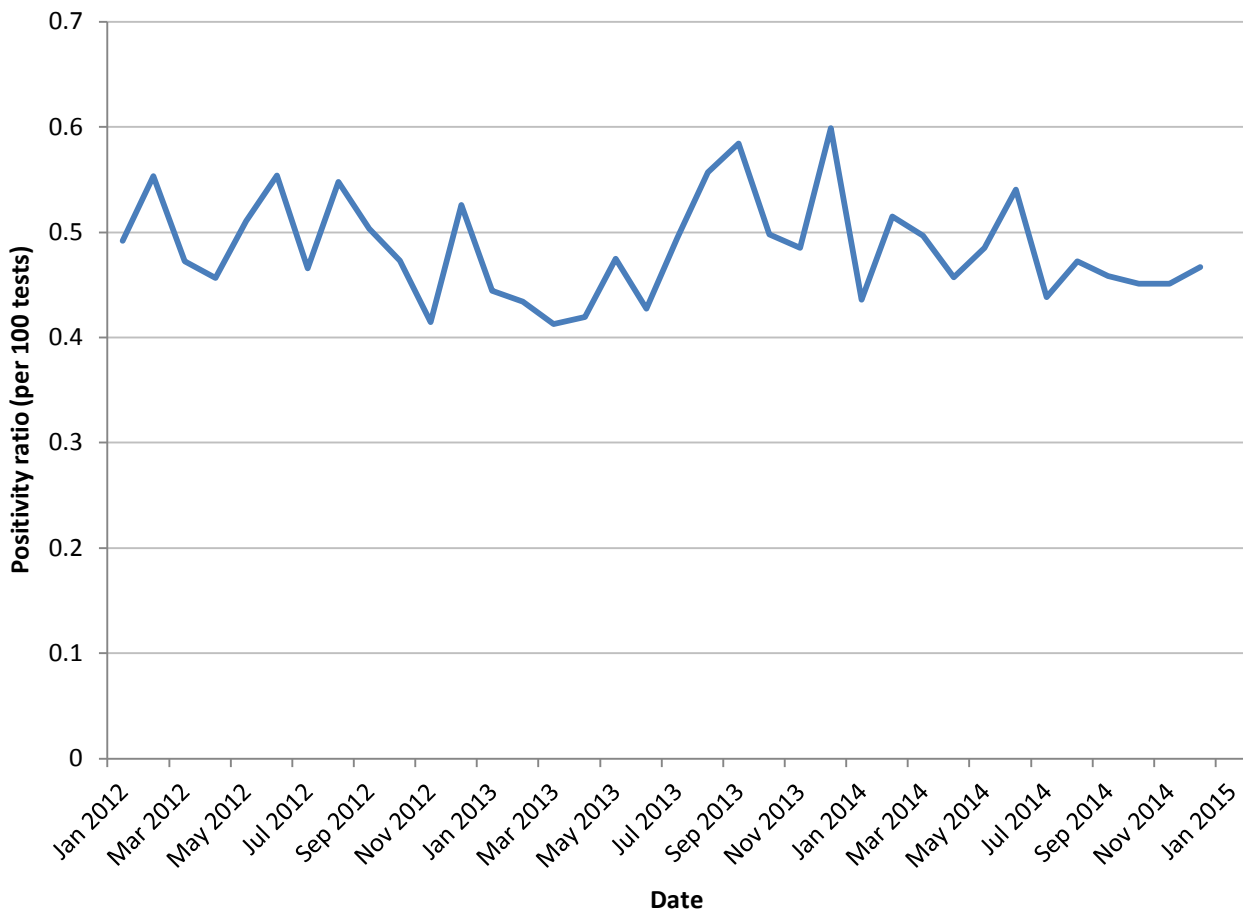
Figure 26: Number of tests for hepatitis B surface antigen performed at 15 NSW laboratories per month and number of hepatitis B notifications, 1 January 2012 to 31 December 2014



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

Comment

In 2014, 535,691 tests for hepatitis B surface antigen were performed in 15 laboratories in NSW, an average of 44,641 tests per month. This is a four per cent increase compared with the number of tests in 2013 (514,253) and a 15% increase compared with 2012 (466,792). (Figure 26)

Figure 27: Hepatitis B positivity ratio, NSW, 1 January 2012 to 31 December 2014

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

Comment

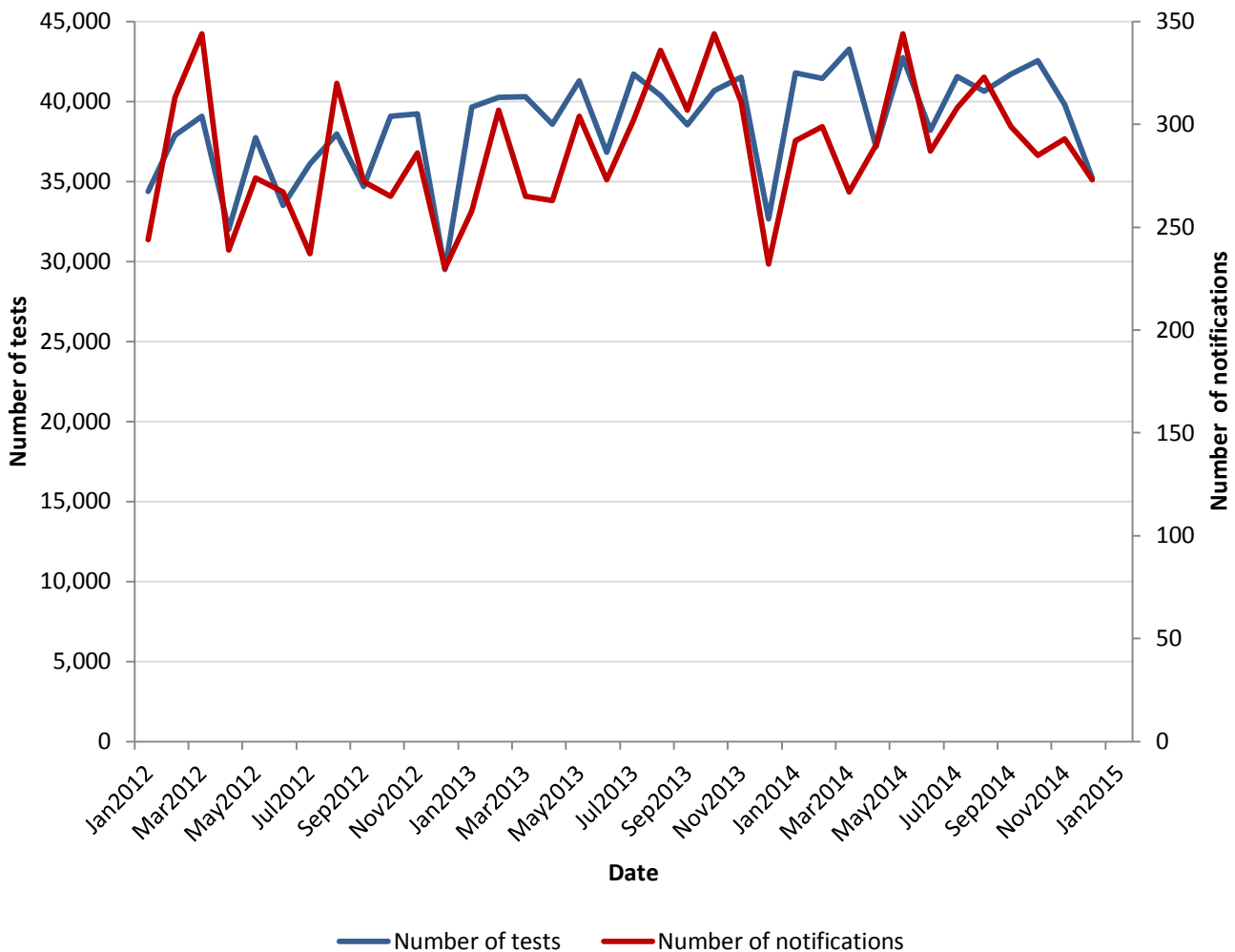
The ratio of positive hepatitis B notifications has been stable at 0.5 per 100 tests for the full years of 2012, 2013 and 2014.

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 are positive for the condition. (Figure 27)

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. Information from laboratories does not provide any indication on whether there are repeat tests on the same individual.

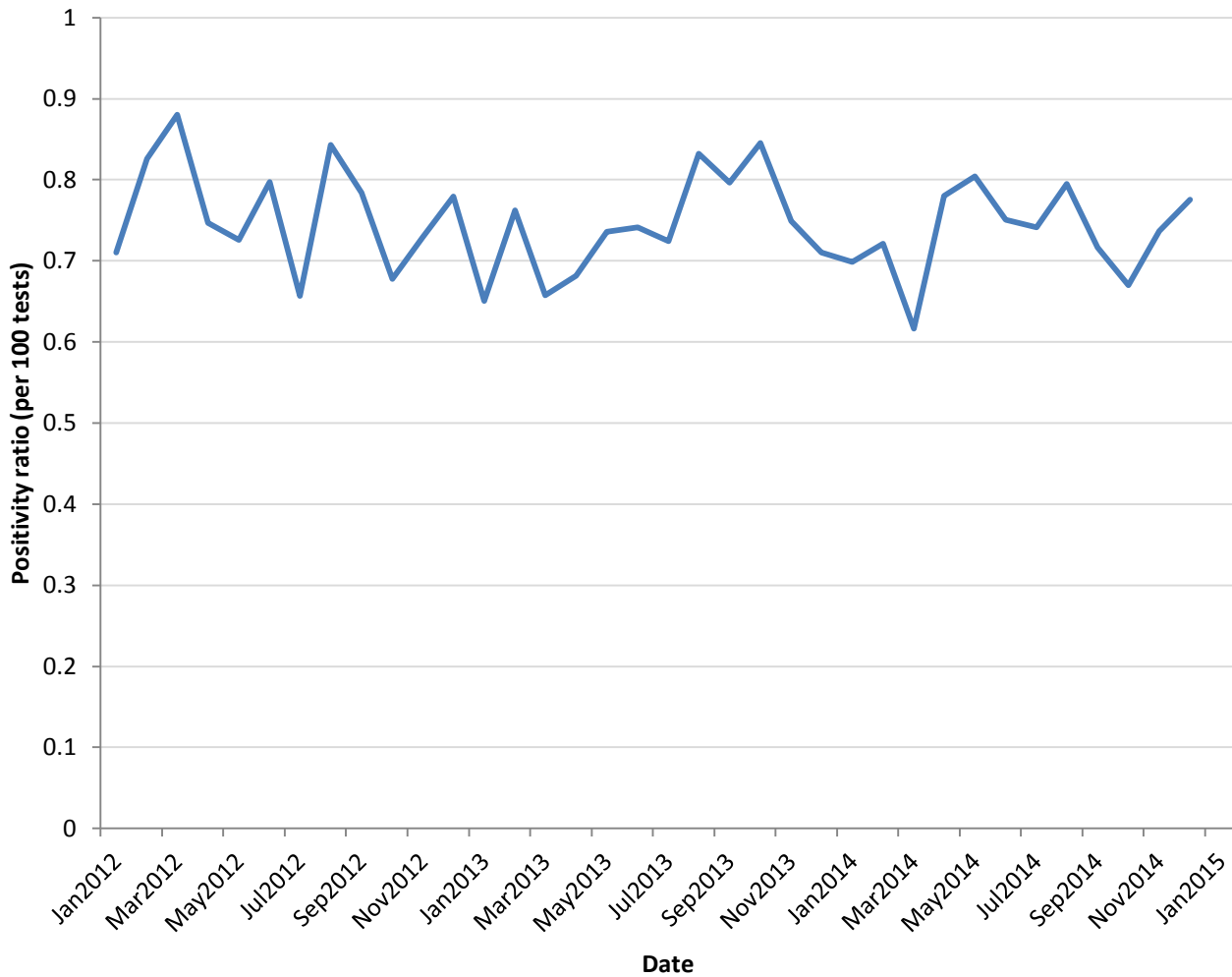
Figure 28: Number of tests for hepatitis C antibody performed at 15 NSW laboratories and number of hepatitis C notifications per month, 1 January 2012 to 31 December 2014



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

Comment

In 2014, 486,132 tests for hepatitis C antibody were performed in 15 laboratories in NSW, an average of 40,511 tests per month. This is a three per cent increase compared with the number of tests in 2013 (472,339) and a 13% increase compared with 2012 (431,106). (Figure 28)

Figure 29: Hepatitis C positivity ratio, NSW, 1 January 2012 to 31 December 2014

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

Comment

The ratio of positive hepatitis C notifications was 0.7 per 100 tests for the full year of 2014, and has been stable compared to 2012 and 2013 (0.8 and 0.7 per 100 tests, respectively)

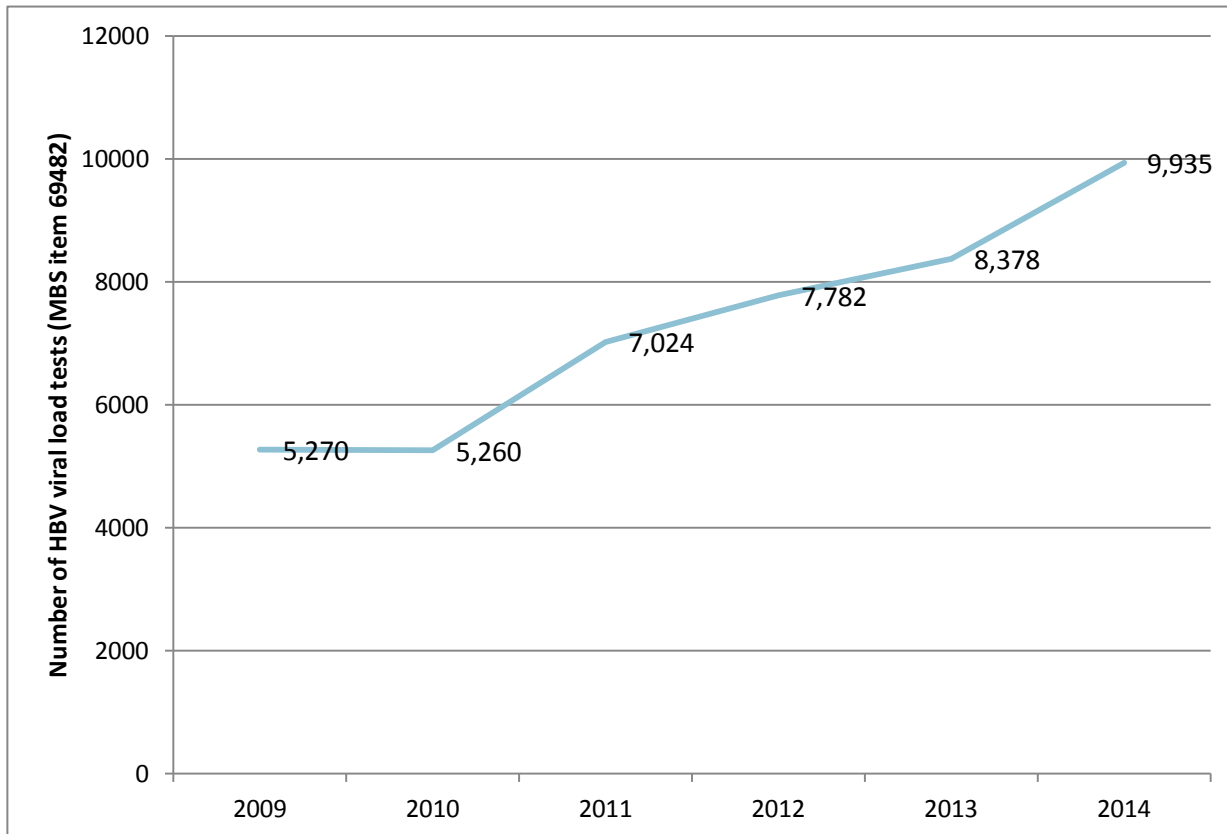
The ratio of positive notifications was calculated by dividing the overall positive results notified to NSW Health by all laboratories by the total number of tests performed as reported from the participating laboratories. The overall positive results included in the analysis are for individual people notified with hepatitis 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 are positive for the condition. (Figure 29)

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?

People living with chronic hepatitis B should either be receiving treatment or being monitored while not on treatment through an annual viral load test^{30 31}.

Figure 30: Number of viral load tests provided to people with chronic hepatitis B (and not receiving treatment) via Medicare in NSW, 2009-2014 (annual test)



Data source: Medicare Australia - Medicare Benefits Schedule (MBS) item 69482

Note: Data is based on Patient Enrolment Postcode

Note: HBV Viral load tests (MBS item 69482) are covered annually under Medicare, so this data indicates the number of people tested.

Comment

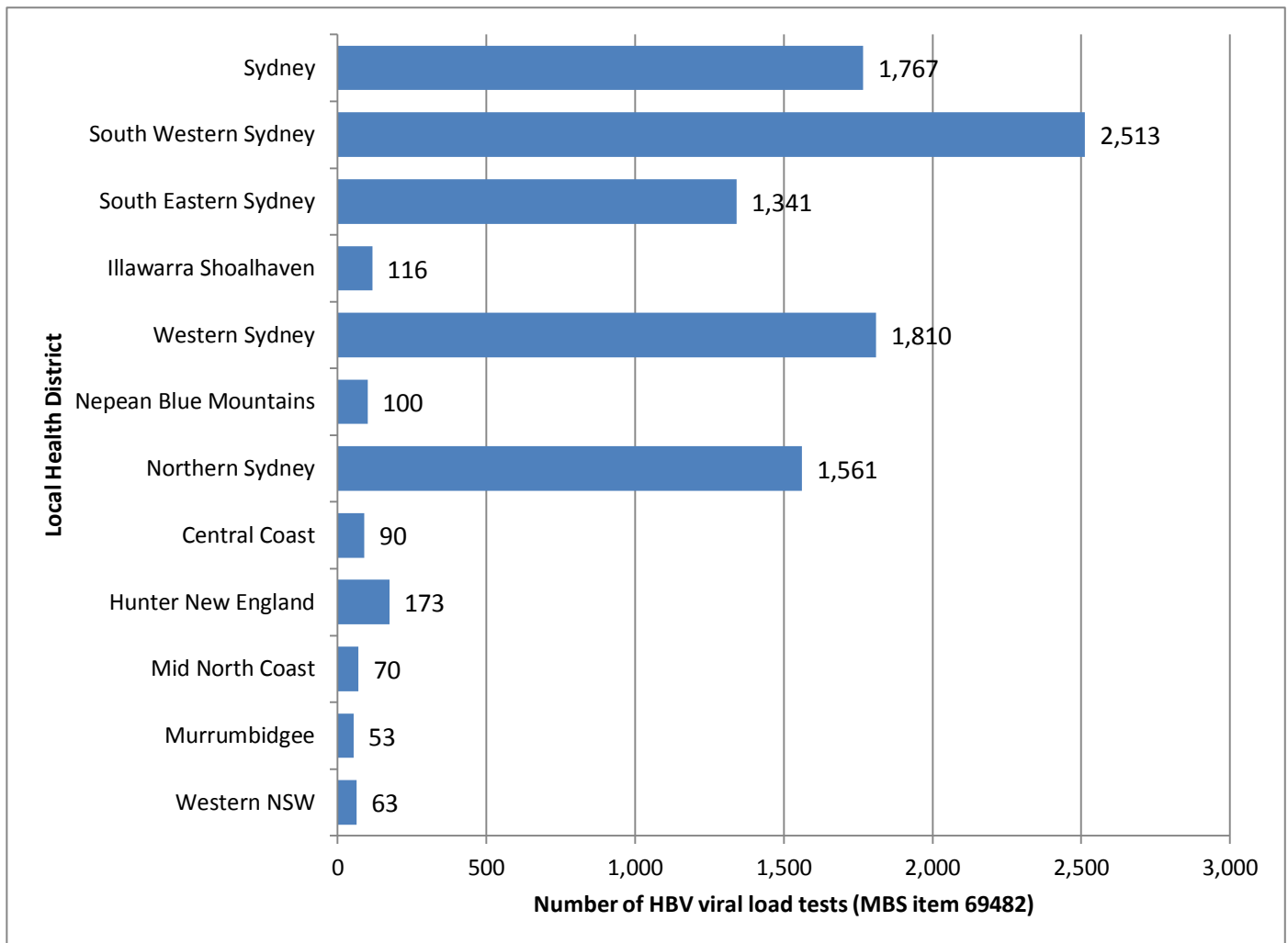
In 2014, there were 9,935 viral load tests provided to people with chronic hepatitis B and not receiving treatment in NSW. This represents a rise from 5,260 viral load tests in 2010; 7,024 viral load tests in 2011; 7,782 viral load tests in 2012; and 8,378 tests in 2013. (Figure 30)

³⁰ 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.

³¹ 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)

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

Figure 31: Number of viral load tests provided to people with chronic hepatitis B (and not receiving treatment) via Medicare in NSW by LHD in 2014 (annual test)



Data source: Department of Health (unpublished data)

Note: The number of viral load tests provided to people was **less than 50** in Northern NSW; Southern NSW; and Far West.

Note: Data is based on Patient Enrolment Postcode concorded to LHD. Of the total 9,935 tests in NSW, 169 were unallocated to an LHD.

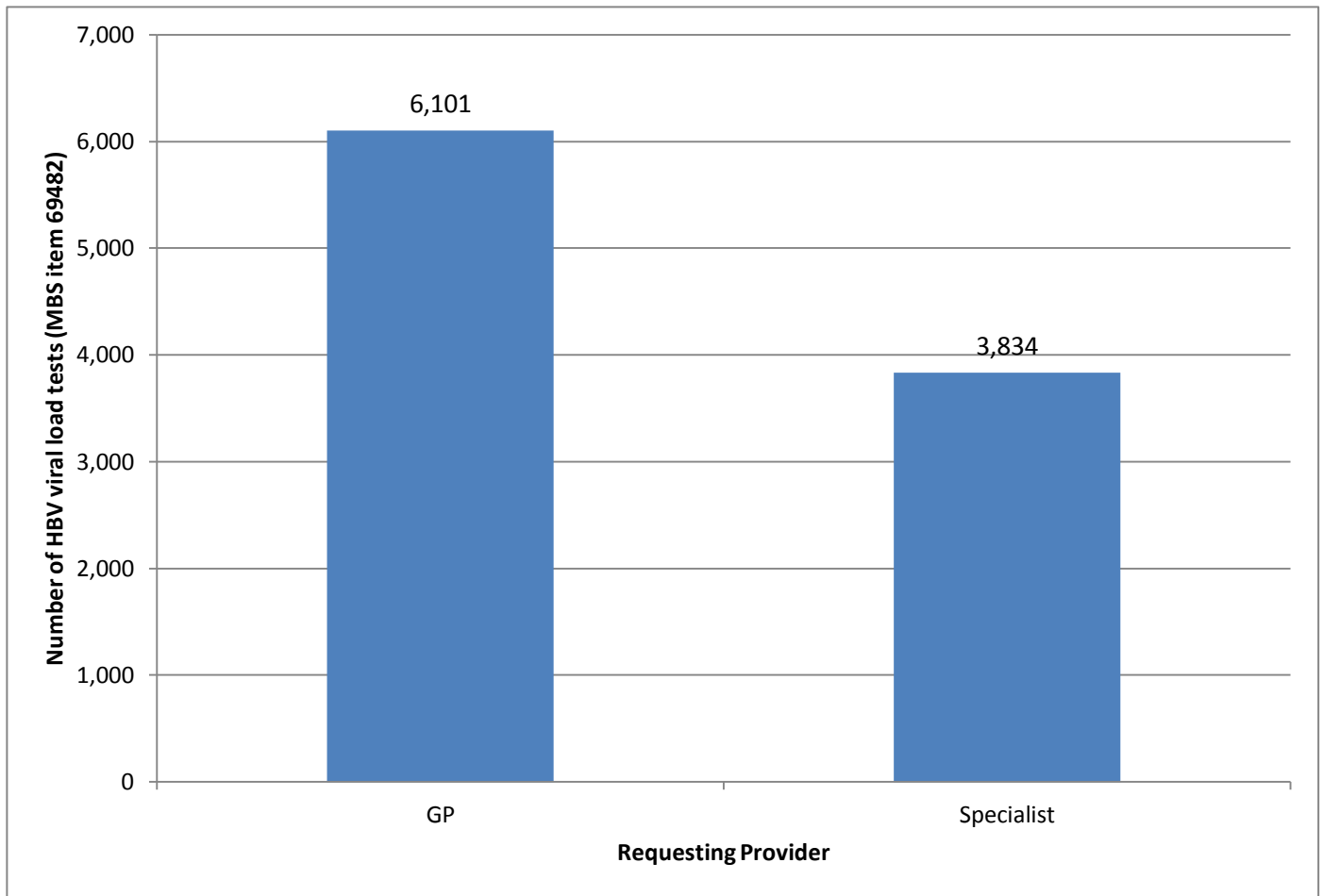
Note: HBV Viral load tests (MBS item 69482) are covered annually under Medicare, so this data indicates the number of people tested.

Comment

The highest number of viral load tests provided to people with chronic hepatitis B (and not receiving treatment) in NSW by LHD in 2014 occurs in: South Western Sydney, Western Sydney, Sydney, Northern Sydney and South Eastern Sydney. (Figure 31)

This geographic spread is consistent with the highest notifications and notification rates of hepatitis B in NSW (as reported in Figure 4 and Figure 6).

Figure 32: Number of HBV viral load tests (MBS item 69482) requested by General Practitioners and Specialists via Medicare in NSW in 2014 (annual test)



Data source: Department of Health (unpublished data)

Note: Data is based on Patient Enrolment Postcode

Note: HBV Viral load tests (MBS item 69482) are covered annually under Medicare, so this data indicates the number of people tested.

Comment

Of the 9,935 viral load tests provided to people with chronic hepatitis B (and not receiving treatment) in NSW in 2014, 6,101 were requested by General Practitioners and 3,834 were requested by Specialists.

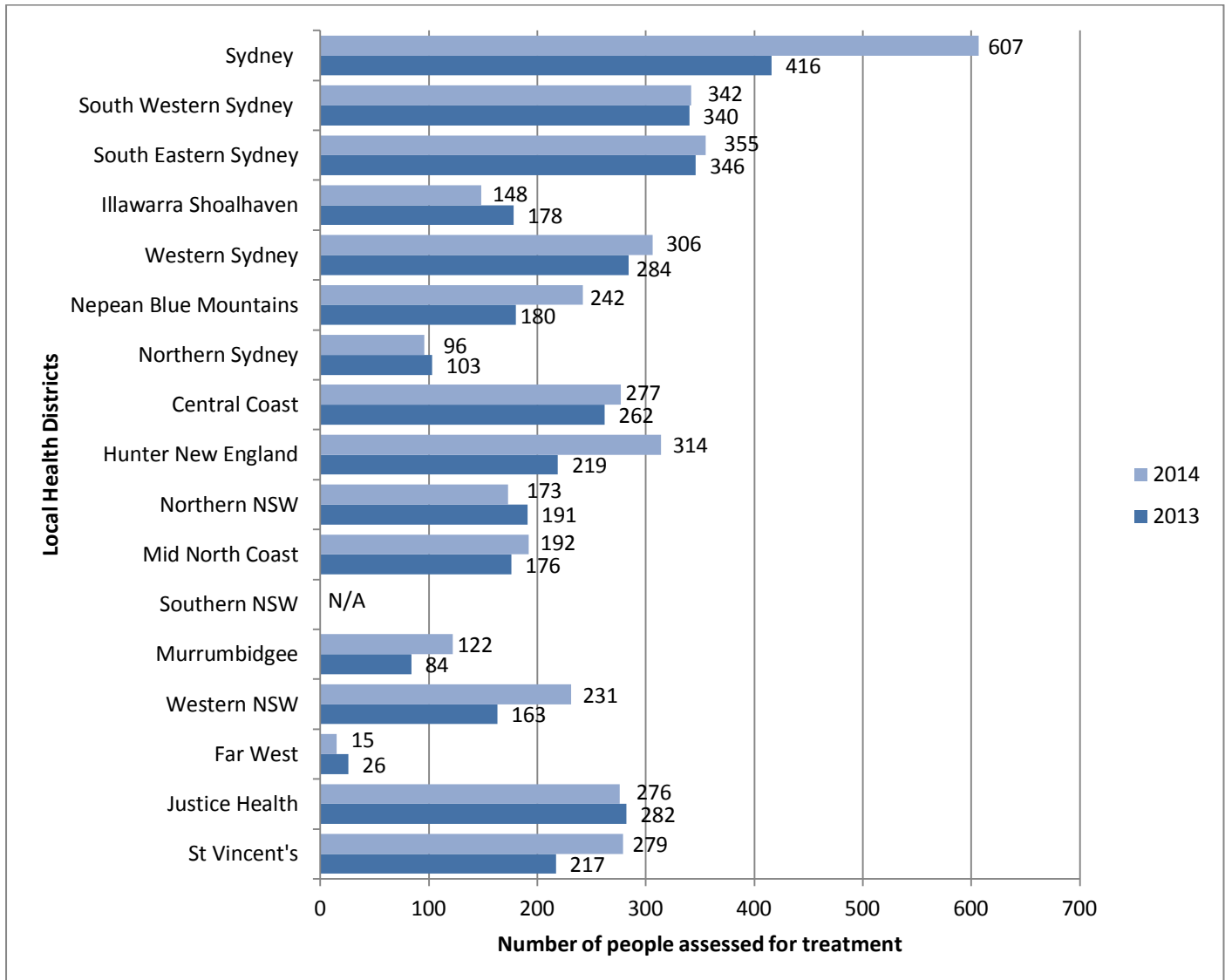
4.3 How many people with chronic hepatitis C are assessed for treatment in NSW?

The number of people with chronic hepatitis C assessed for treatment in publicly funded health services in NSW increased from 3,467 in 2013 to 3,975 in 2014 (14.7% increase).

The data indicates 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 33: Number of people assessed for treatment in NSW by LHD in 2013 and 2014



Data source: NSW Health Hepatitis C Minimum Data Set

Note: Data was not available for Southern NSW in 2013-2014

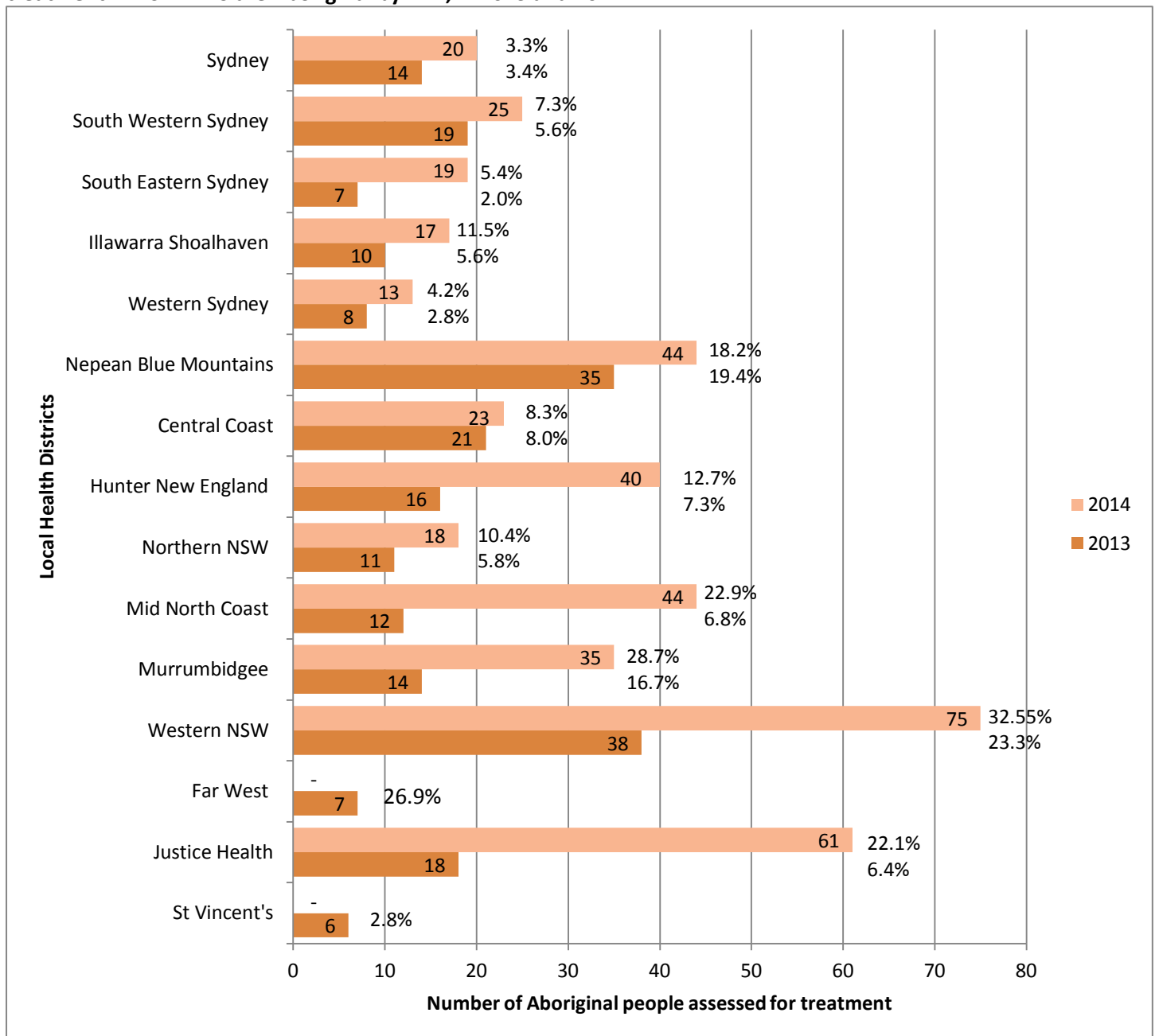
Note: NSW Health does not collect data on hepatitis C from the Sydney Children's Hospital Network

Comment

The number of people assessed for treatment in NSW increased between 2013 and 2014 in most LHDs, including Sydney, South Western Sydney, South Eastern Sydney, Western Sydney, Nepean Blue Mountains, Central Coast, Hunter New England, Mid North Coast, Murrumbidgee, Western NSW, as well as St Vincent's Health Network.

(Figure 33)

Figure 34: Number of Aboriginal people assessed for hepatitis C treatment in NSW and % of people assessed for treatment in NSW who are Aboriginal by LHD, in 2013 and 2014



Data source: NSW Health Hepatitis C Minimum Data Set

Note: Data was not available for Southern NSW in 2013-2014

Note: The number of Aboriginal people assessed for treatment is **zero** in 2013 and 2014 in Northern Sydney

Note: The number of Aboriginal people assessed for treatment is **5 or less** in 2014 in:

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

Comment

Of the 3,975 people assessed for hepatitis C treatment in NSW in 2014, 11% reported to be Aboriginal and/or Torres Strait Islander people and 88% were non-Indigenous. Indigenous status was unknown, not stated or missing for the remaining 1%. The Ministry of Health is producing this data by LHD, to be reported in the next Annual Data Report.

It is useful to view Figure 34 alongside: Table 2, which identifies the proportion of Aboriginal people of total population by LHD (in 2011); and Table 3, which identifies the proportion of NSW Aboriginal adult custodial population.

For instance, in 2014, 22.1% of people assessed for treatment in NSW Justice Health Custodial settings were Aboriginal people, which is slightly lower than the proportion of Aboriginal adult custodial population (daily average) in NSW, which was 23.7 % in 2013/14.

In 2011, the LHDs with the highest proportion of Aboriginal people of total population were: Far West, Western NSW, Mid North Coast, Hunter New England and Murrumbidgee (see Table 2).

In 2014, the LHDs with the highest proportion of Aboriginal people assessed for treatment were: Western NSW, Murrumbidgee, Mid North Coast, Nepean Blue Mountains, and Hunter New England.

The number of Aboriginal people assessed for treatment was zero in Northern Sydney in 2013 and 2014. The proportion of Aboriginal people of total population in Northern Sydney was 3.8% in 2011. However, this Data report does not identify the percentage of people assessed for hepatitis C treatment in Northern Sydney who reported to be Aboriginal.

In the next Annual Data report, the Ministry of Health will identify in the percentage of people assessed for hepatitis C treatment in each LHD who reported to be Aboriginal and/or Torres Strait Islander people (Indigenous status), which will enable a more accurate indication of access to HCV treatment assessment for Aboriginal people.

Table 2: The proportion of Aboriginal people of 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 3: The proportion of Aboriginal adult custodial population in NSW in 2012/13 and 2013/14

Justice health, custodial settings	Aboriginal proportion of NSW adult custodial population (daily average)
2013/14	23.7%
2012/13	22.9%

Data source: ABS statistics, Corrective Services NSW, Australia

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

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

Public Pharmacy dispensing data indicates that in the 12 months between 1 January to 31 December 2014, **2,519** people with hepatitis B were dispensed hepatitis B antiviral therapy at least once in NSW public hospital pharmacies³².

This data captures the number of people dispensed hepatitis B antiviral therapy in NSW public hospital pharmacies, but is an underestimate of the number of people dispensed hepatitis B antiviral therapy because it excludes people dispensed treatment in private hospital and community pharmacies. It does not include people who are accessing treatment through other sources, including those who purchase hepatitis B treatment from overseas or receive antiviral treatment through clinical trials. This total figure also excludes data from Hunter New England LHD, which was not available at the time of reporting.

In the period between January 2013 to December 2013, **5,871** people with chronic hepatitis B were dispensed hepatitis B antiviral therapy in public hospital, private hospital and community pharmacies³³. This includes all people accessing hepatitis B treatment subsidised through the Pharmaceutical Benefits Scheme, as part of the Highly Specialised Drugs Programme.

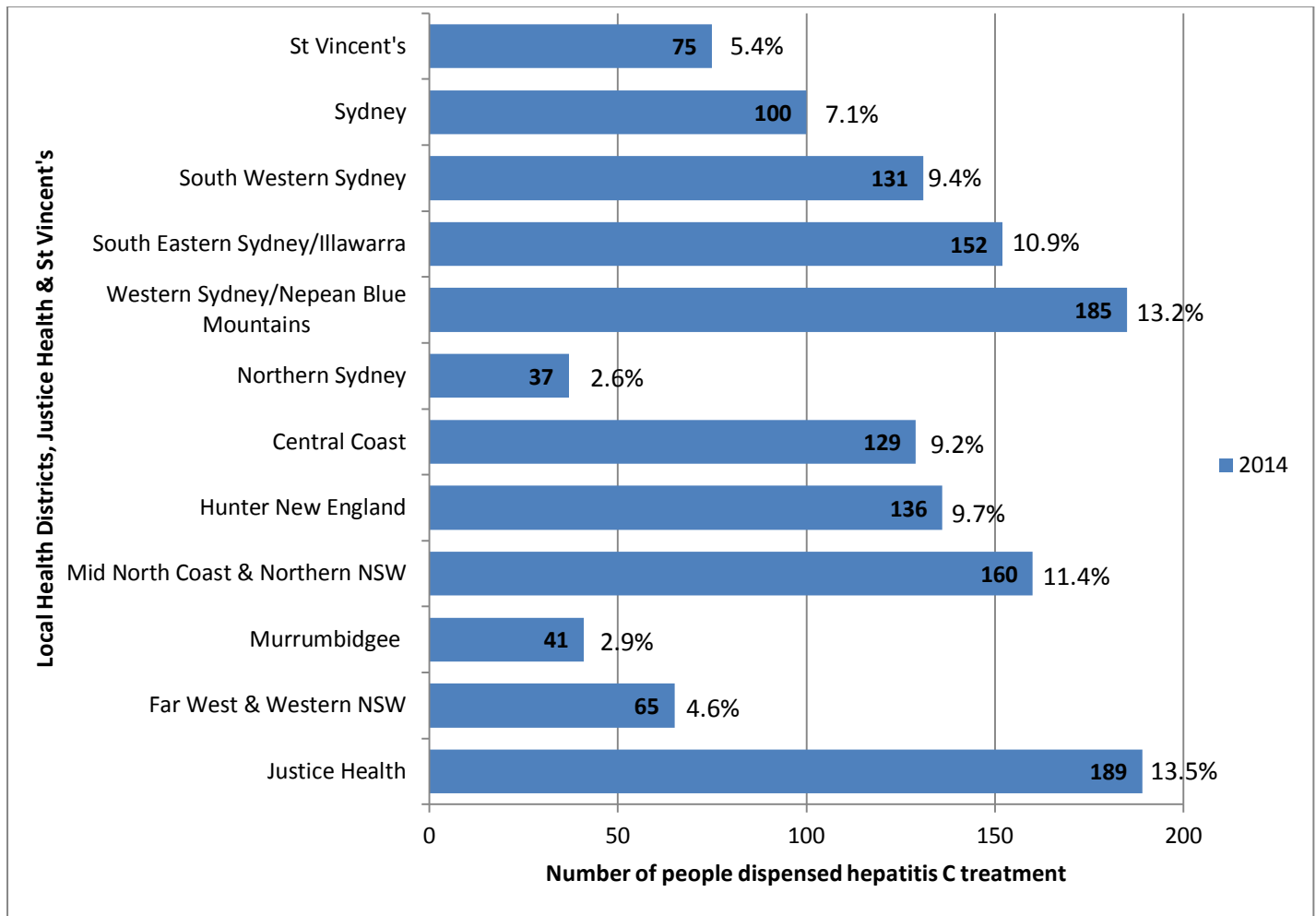
The NSW Ministry of Health is working towards accessing more comprehensive dispensing data.

³² Data source: Health Share NSW iPharmacy data and data submitted directly by Western Sydney, Nepean Blue Mountains LHDs. The hepatitis B and hepatitis C dispensing data was revised on 15 May 2016 to correct a duplication error in the analysis of the NSW iPharmacy data (incorporated above). Data from Hunter New England LHD was not available at the time of this report. In scope patients include anyone who received one or more of the following medications for the treatment of hepatitis B in 2014 peginterferon alfa-2a; peginterferon alfa-2b; interferon alfa-2a; lamivudine; adefovir; entecavir; tenofovir; or telbivudine.

³³ 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).

5.2 How many people in NSW are on hepatitis C antiviral treatment and where are they receiving treatment?

Figure 35: Number of patients dispensed hepatitis C antiviral treatment in NSW by LHD of dispensing pharmacy, 1 January 2014 to 31 December 2014³⁴



Data source: Health Share NSW iPharmacy data; and data submitted by Western Sydney, Nepean Blue Mountains, Hunter New England LHDs.
Notes:

- In Southern NSW, the number of people dispensed treatment is zero in 2014.
- In Sydney Children's Hospital Network, the number of people dispensed treatment is 5 or less in 2014.
- The numbers displayed in Figure 35 add up to a total that is greater than the overall total for 2014. This is because a small number of cross-LHD patient flows are not eliminated.
- The hepatitis B and hepatitis C dispensing data was revised on 15 May 2016 to correct a duplication error in the analysis of the NSW iPharmacy data (incorporated above).
- Figure 35 was also updated on 11 September 2015, with a revised total for HNE. The total for NSW was also updated.

Comment

Pharmacy dispensing data indicates that in the 12 months between 1 January to 31 December 2014, 1,385 people with hepatitis C were dispensed hepatitis C antiviral therapy in NSW at least once. This includes all people accessing hepatitis C treatment subsidised through the Pharmaceutical Benefits Scheme, as part of the Highly Specialised Drugs Programme. This data captures the number of people dispensed hepatitis C antiviral therapy in NSW public

³⁴ In scope patients include anyone who received one or more of the following medications for the treatment of hepatitis C in 2014: peginterferon alfa-2a; peginterferon alfa-2b; peginterferon alfa-2a and ribavirin; peginterferon alfa-2b and ribavirin; telaprevir; or boceprevir.

hospital pharmacies, including therapy prescribed by general practice and specialists. It excludes people dispensed hepatitis C antiviral therapy in private hospital based pharmacies and community pharmacies. It does not include people who may be accessing treatment through other sources, including those who purchase hepatitis C treatment from overseas or receive antiviral treatment through clinical trials. (Figure 35)

Treatment uptake among people with hepatitis C who are accessing the NSW NSP

The results of the Australian NSP Survey³⁵ show that among people attending a NSW NSP in 2013 who reported a previous positive HCV test (N=364) (self-report), less than 2% report current treatment for HCV, 14% report previous treatment and 82% report no treatment.

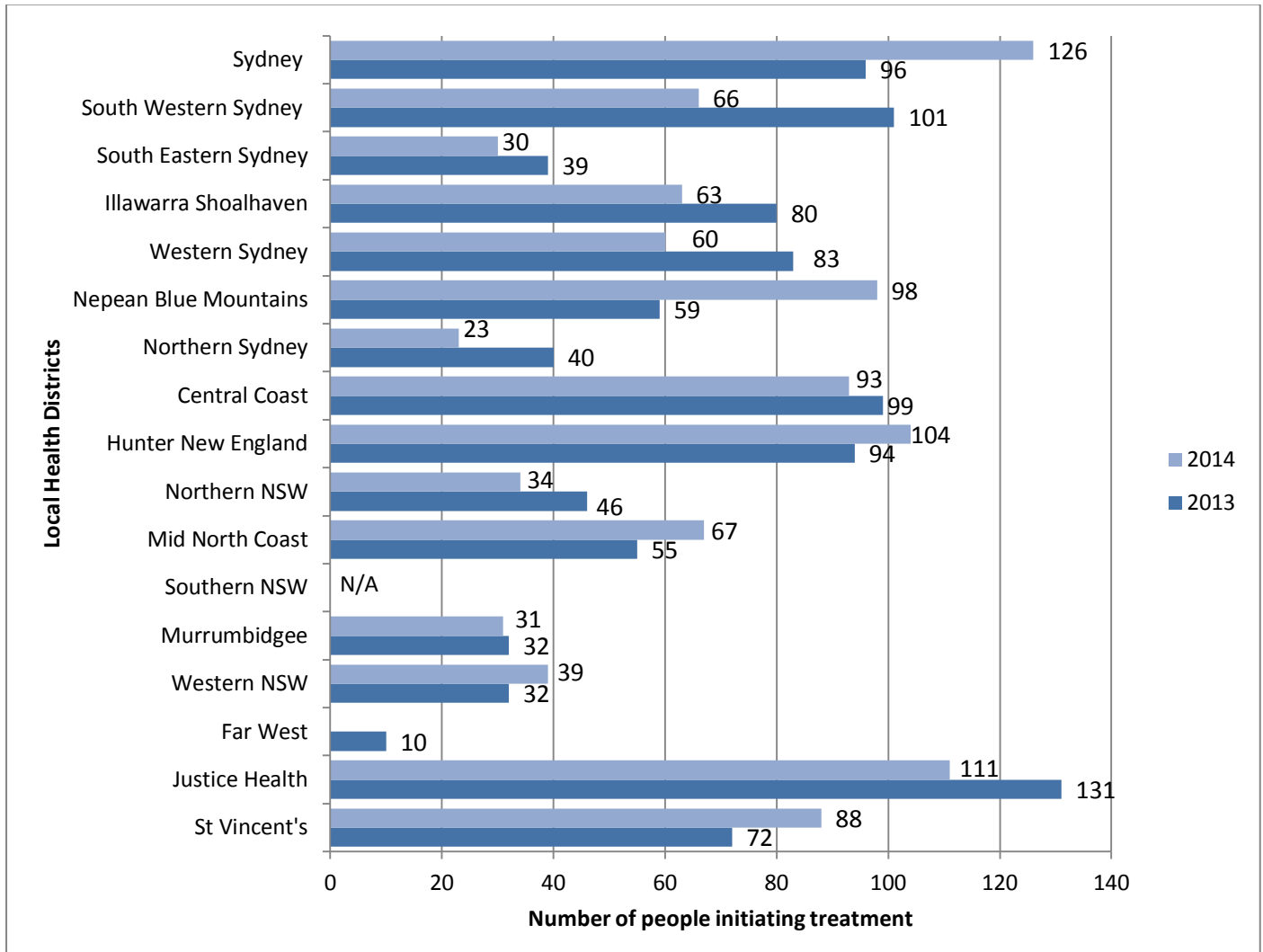
³⁵ Iversen J, Chow S and Maher L. Australian Needle and Syringe Program Survey National Data Report 2009-2013. The Kirby Institute, UNSW Australia, 2014

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

The number of people with chronic hepatitis C initiating treatment in publicly funded health services in NSW decreased from 1,069 in 2013 to 1,037 in 2014 (2.9% decrease).

This result is expected given that the anticipated availability of new interferon-free treatments has led many people to delay starting therapy. It is expected that these new treatment regimens will lead to substantial increases in demand for hepatitis C treatment given the significant efficacy and expedience of the treatment regime.

The data indicates the number of people initiating 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 initiated hepatitis C treatment was 100 in 2013 and 160 in 2014. These figures exclude activity in the private sector (including private liver clinics and GPs).

Figure 36: Number of people initiating treatment in NSW by LHD in 2013 and 2014

Data source: NSW Health Hepatitis C Minimum Data Set

Note: Data was not available for Southern NSW in 2013-2014

Note: The number of people initiating treatment is 5 or less in 2014 in Far West

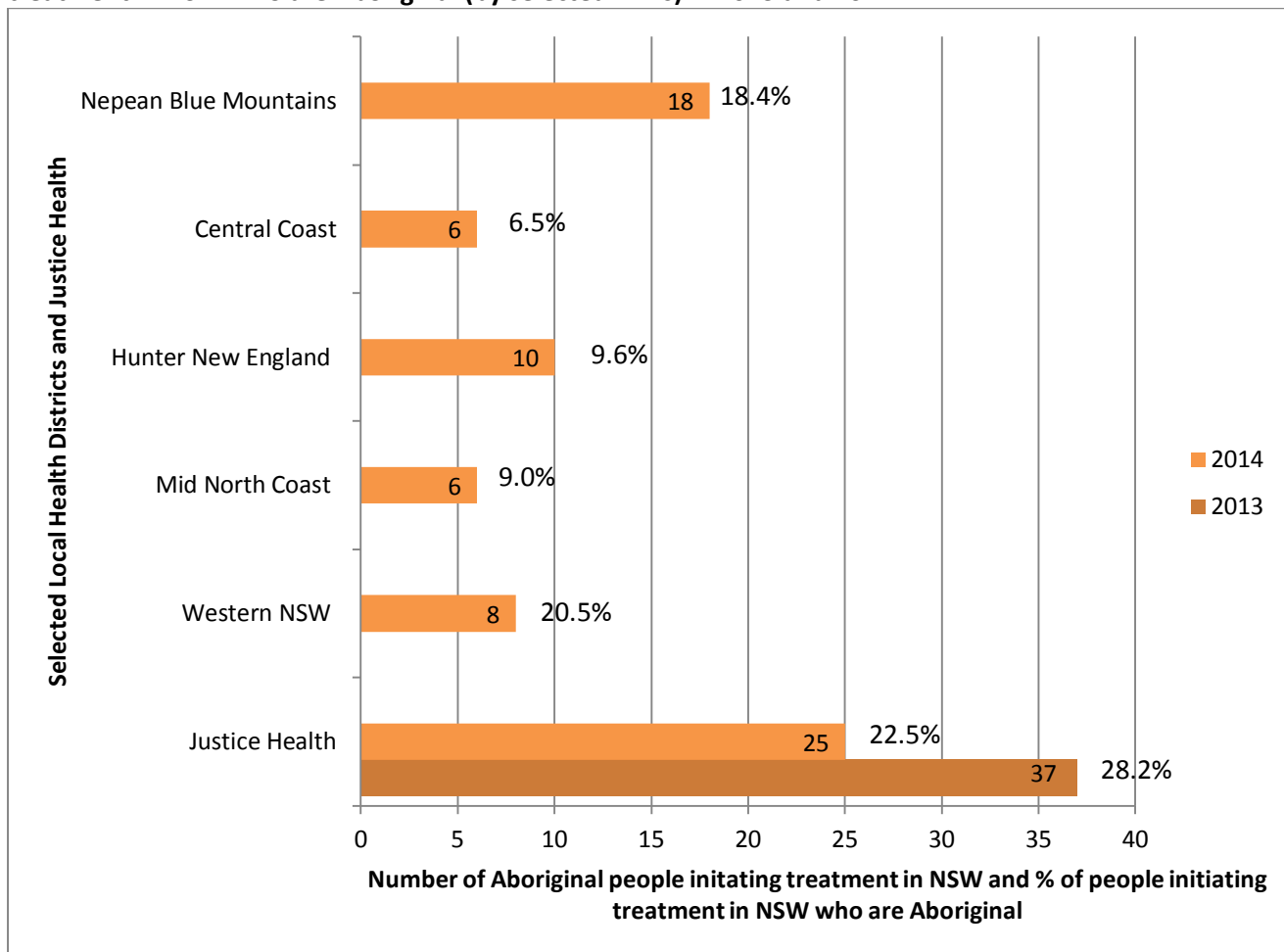
Note: NSW Health does not currently collect data on hepatitis C from the Sydney Children's Hospital Network

Comment

The number of people initiating treatment in publicly funded health services in Local Health Districts, St Vincent's Health Network as well as Justice Health is identified above (Figure 36).

The number of people initiating treatment in NSW between 2013 and 2014 has decreased in most LHDs. However increases in number of people initiating treatment have occurred in Sydney, Nepean Blue Mountains, Hunter New England, Mid North Coast, Western NSW, as well as St Vincent's Health Network.

Figure 37: Number of Aboriginal people initiating hepatitis C treatment in NSW and % of people initiating treatment in NSW who are Aboriginal (by selected LHDs) in 2013 and 2014



Data source: NSW Health Hepatitis C Minimum Data Set

Note: The number of Aboriginal people initiating treatment is zero in:

- 2013 & 2014 in: SES; NS; NNSW
- 2013 in: WS
- 2014 in: IS; FW

Note: The number of Aboriginal people initiating treatment is 5 or less in:

- 2013 in: CC; IS; NBM; WNSW; MNC; FW; and HNE
- 2013 and 2014 in SWS; Sydney; WS; St Vincent's; Murrumbidgee

Comment

Of the 1,037 people who initiated hepatitis C treatment in NSW in 2014, 8% reported to be Aboriginal and/or Torres Strait Islander people and 91% were non-Indigenous. Indigenous status was unknown, not stated or missing for the remaining 1%. The Ministry of Health is producing this data by LHD, to be reported in the next Data Report.

It is useful to view Figure 37 alongside: Table 2, which identifies the proportion of Aboriginal people of total population by LHD (in 2011); and Table 3, which identifies the proportion of NSW Aboriginal adult custodial population.

For instance, in 2014, 22.5% of people who initiated HCV treatment in NSW Justice Health custodial settings were Aboriginal people, which is slightly lower than the proportion of Aboriginal adult custodial population (daily average) in NSW, which was 23.7% in 2013/14. In 2013, 28.2% of people who initiated HCV treatment in NSW Justice Health custodial settings were Aboriginal people.

In 2011, the LHDs with the highest proportion of Aboriginal people of total population were: Far West, Western NSW, Mid North Coast, Hunter New England and Murrumbidgee.

In 2014, the LHDs with the highest proportion of Aboriginal people who initiated HCV treatment were: Western NSW, Nepean Blue Mountains, Murrumbidgee, Hunter New England, and Mid North Coast.

In 2014 Central Coast, 6.5% of people initiating HCV treatment were Aboriginal people, which exceeds the proportion of Aboriginal people of total population in CC in 2011 (2.1%).

In the next Data report, the Ministry of Health will identify in the percentage of people assessed for hepatitis C treatment in each LHD who reported to be Aboriginal and/or Torres Strait Islander people (Indigenous status), which will enable a more accurate indication of access to HCV treatment for Aboriginal people.

See Table 2 – **The proportion of Aboriginal people of total population by LHD in 2011** (page 44)

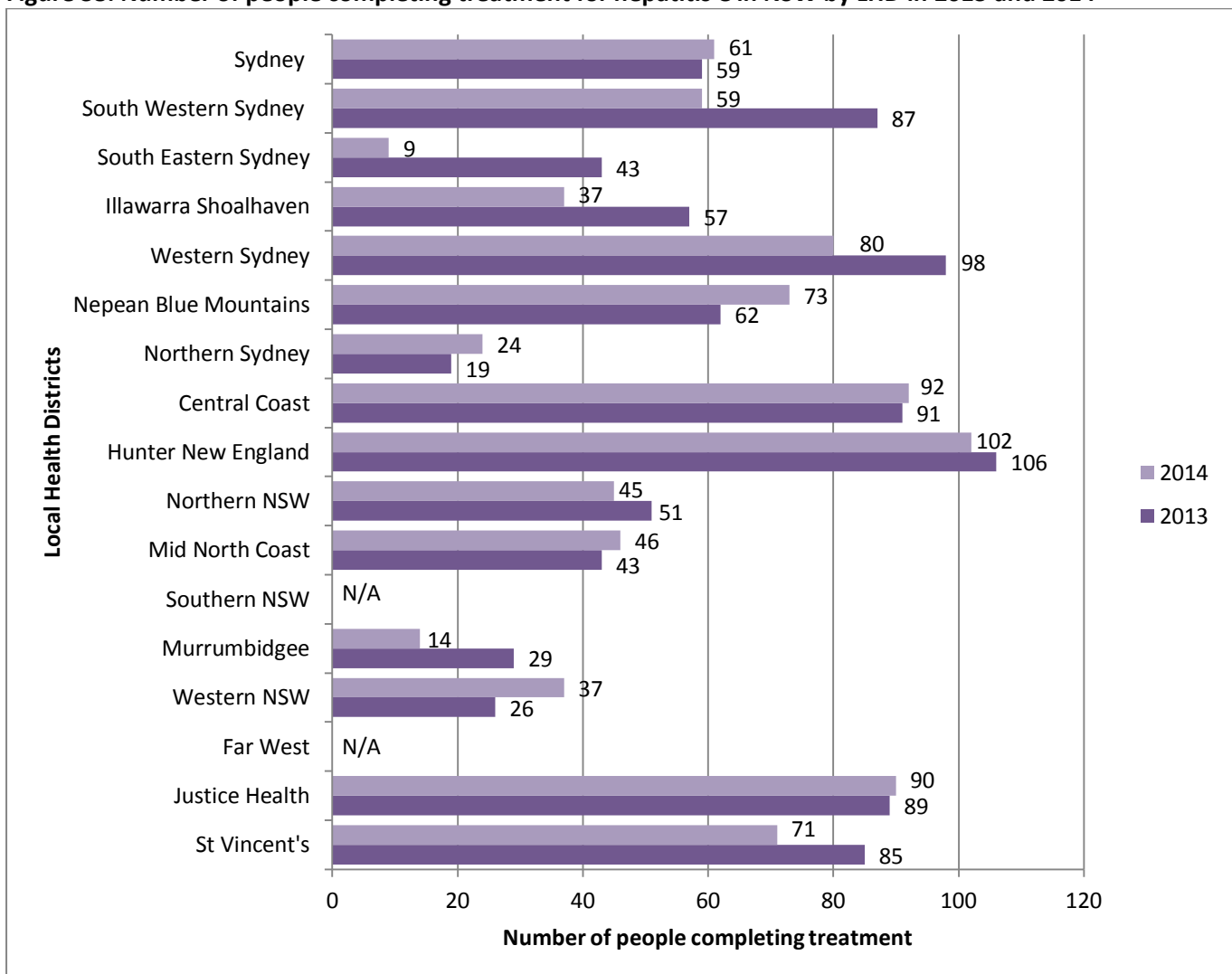
See Table 3 - **The proportion of Aboriginal adult custodial population in NSW in 2012/13 and 2013/14** (page 44)

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

The number of people completing treatment for hepatitis C in publicly funded health services in NSW has decreased from 946 people in 2013 to 844 people in 2014 (10.78% decrease). The Ministry of Health is working towards producing data on the percentage of people completing treatment in NSW, which would more accurately reflect the number of people completing treatment.

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 146 in 2013 and 146 in 2014.

Figure 38: Number of people completing treatment for hepatitis C in NSW by LHD in 2013 and 2014



Data source: NSW Health Hepatitis C Minimum Data Set

Note: Data was not available for Southern NSW in 2013-2014.

Note: The number of people completing treatment is 5 or less in 2013 and 2014 in Far West

Note: NSW Health does not currently collect data on hepatitis C from the Sydney Children's Hospital Network

Comment

The number of people completing treatment in publicly funded health services in Local Health Districts, St Vincent's Health Network, as well as Justice Health is identified above (Figure 38).

Appendix 1

Table 1: NSW NSP Enhanced Data Collection - Receptive syringe sharing (RSS) last month by LHD (n, %, CI) in 2013 & 2014

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

	2013				2014				
	N° RSS	%	Total N	95% CIs	N° RSS	%	Total N	95% CIs	2 year p trend
SYDNEY	68	26.2%	260	20.9 - 31.9	69	16.6%	416	13.1 - 20.5	0.015
SOUTH WESTERN SYDNEY	22	36.1%	61	24.2 - 49.4	14	21.5%	65	12.3 - 33.5	0.179
SOUTH EASTERN SYDNEY	167	23.6%	708	20.5 - 26.9	111	18.4%	603	15.4 - 21.7	0.065
ILLAWARRA SHOALHAVEN	4	4.5%	88	1.3 - 11.2	7	4.5%	155	1.8 - 9.1	0.992
WESTERN SYDNEY	88	26.0%	338	21.4 - 31.1	45	12.4%	364	9.2 - 16.2	<0.001
NEPEAN BLUE MOUNTAINS	38	35.8%	106	26.8 - 45.7	13	12.4%	105	6.8 - 20.2	0.002
NORTHERN SYDNEY	17	15.9%	107	9.5 - 24.2	11	17.5%	63	9.1 - 29.1	0.821
CENTRAL COAST	15	16.5%	91	9.5 - 25.7	18	10.5%	172	6.3 - 16.0	0.220
HUNTER NEW ENGLAND	50	30.7%	163	23.7 - 38.4	32	15.4%	208	10.8 - 21.0	0.005
NORTHERN NSW	51	14.7%	347	11.1 - 18.9	25	13.1%	191	8.7 - 18.7	0.066
MID NORTH COAST	19	13.2%	144	8.1 - 19.8	7	6.4%	110	2.6 - 12.7	0.107
SOUTHERN NSW	0	0.0%	3	--	3	21.4%	14	4.7 - 50.8	--
MURRUMBIDGEE	12	36.4%	33	20.4 - 54.9	9	16.7%	54	7.9 - 29.3	0.109
WESTERN NSW	2	4.7%	43	0.6 - 15.8	2	3.6%	55	0.4 - 12.5	0.809
FAR WEST	1	14.3%	7	0.3 - 57.9	0	0.0%	3	--	--
NNEDC NSW	554	22.2%	2499	20.6 - 23.8	366	14.2%	2,578	12.9 - 15.6	<0.001

Bold = significant at p<0.05

Table 2: Australian NSP survey comparable data – RSS among 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



