

# NSW Sexually Transmissible Infections Strategy 2016 – 2020

January to June  
2019

Data Report



## Key Data

Reduce gonorrhoea infections		
	January-June 2019 (annualised rate)	Change since 2018
Gonorrhoea notification rate (per 100,000 population)	144	13% higher (from 128)
Number of tests	487,951 tests	2% increase (from 479,653 tests in January-June 2018)
Reduce infectious syphilis infections		
	January-June 2019 (annualised rate)	Change since 2018
Infectious syphilis notification rate (per 100,000 population)	22	16% higher (from 19)
Reduce pelvic inflammatory disease (PID) associated with chlamydia: Hospitalisations		
	2018	Change since 2017
Hospital admissions for chlamydia associated PID	181	13% lower (209)
Reduce pelvic inflammatory disease (PID) associated with chlamydia: Chlamydia notifications		
	January-June 2019 (annualised rate)	Change since 2018
Chlamydia notification rate (per 100,000 population)	397	2% higher (from 388)
Number of tests	337,170 tests	2% increase (from 331,102 in Janu- ary-June 2018)
Maintain levels of condom use for preventing the transmission of STIs		
	2018	Change since 2017
Proportion re- porting condom- less intercourse with casual part- ners	Men who have sex with men <sup>1</sup>	74% Increased by 5 per cent (69%)
	Young people aged 15-29 years <sup>2</sup>	20.1% Increased by 2.5 per cent (17.6%)

<sup>1</sup> Sydney Gay Community Periodic Survey, Centre for Social Research, UNSW

<sup>2</sup> It's Your Love Life Periodic Survey, Centre for Social Research, UNSW

## Key Messages

### **Gonorrhoea notifications continue to increase in NSW**

The 2019 annualised gonorrhoea notification rate was 13 per cent higher compared to 2018. Since 2014, the female notification rate has almost tripled while the male notification rate has more than doubled. The increase in the notification to test ratio and the rise in the number of genitourinary gonorrhoea notifications in males suggest there has been an increase in gonorrhoea transmission in NSW.

### **Syphilis notifications continue to increase in NSW**

The 2019 annualised infectious syphilis notification rate was 16 per cent higher compared to 2018. The rate in the first half of 2019 shows a doubling in the rate of notifications since 2014. Much of the increase amongst men is most likely due to increased and well-targeted testing of gay and bisexual men using HIV pre-exposure prophylaxis (PrEP) and having regular syphilis testing. Increased syphilis notifications amongst urban women has been observed internationally and across Australia. The reasons are being investigated.

There is an ongoing outbreak of infectious syphilis among Aboriginal and Torres Strait Islander people in predominantly rural and remote areas of the Northern Territory, Queensland, South Australia and Western Australia. To the end of June 2019, there have been no syphilis cases detected in Aboriginal communities in NSW associated with this outbreak and the number of syphilis notifications among Aboriginal people in NSW remains small. Concerted efforts continue to promote increased sexually transmitted infections (STI) screening in Aboriginal communities and reporting of Aboriginal identity of all notified cases in NSW.

### **Efforts to promote condom use and make comprehensive STI screening easier and more accessible will continue to be priorities**

STI screening among gay and bisexual men and young people continues to increase while condom use, particularly among HIV negative gay and bisexual men on PrEP and young females, has decreased.

Efforts to increase STI testing and re-testing following treatment in accordance with STI testing guidelines should continue. Partner notification is also central to preventing STIs and should be comprehensively undertaken for all people diagnosed with an STI. Further scale up and strengthening of initiatives to promote condom use and innovative ways to make comprehensive STI testing easier and more accessible are needed to prevent STI transmission.

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## Glossary of Terms

ABS	Australian Bureau of Statistics
ART	Antiretroviral therapy
CDR	Communicable Diseases Register
GBM	Gay and bisexual men
GU	Genitourinary tract
HIV	Human immunodeficiency virus
LHD	Local Health District
MHCL	Medium to high caseload
MSM	Men who have sex with men
NAAT	Nucleic acid amplification testing
NAT	Nucleic acid testing
NCIMS	Notifiable Conditions Information Management System
NSW	New South Wales
PFSHSs	Publicly funded sexual health services
PID	Pelvic inflammatory disease
SAPHaRI	Secure Analytics for Population Health Research and Intelligence

**SHPN: (CPH) 190418**

**ISBN: 978-1-76081-223-2**

## 1 Reduce gonorrhoea infections

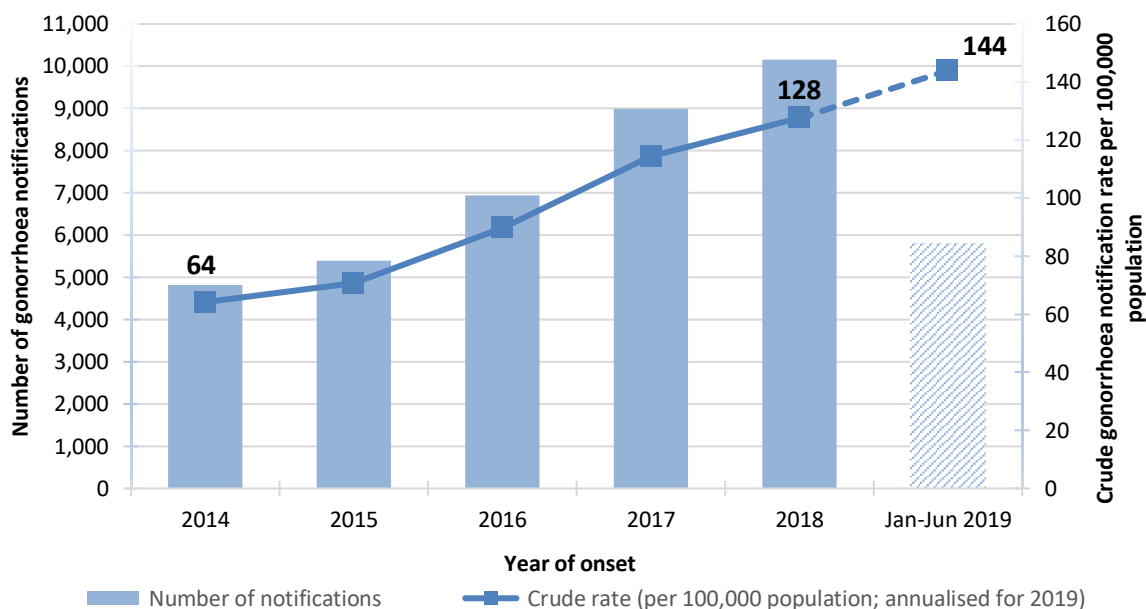
Prevention, testing and appropriate treatment and management with partner notification are the cornerstones of gonorrhoea control and are embedded in the current STI strategy. Gonorrhoea notification data does not reflect the true incidence of gonorrhoea infection as it only represents a proportion of infections in the population, however it is useful for monitoring notification trends over time. Gonorrhoea notification data are heavily influenced by testing practices, and hence, may not be representative of the NSW population.

Gonorrhoea is a notifiable disease under the NSW *Public Health Act 2010*. A confirmed case requires isolation of *Neisseria gonorrhoeae* from culture or detection by nucleic acid amplification testing (NAAT). Only confirmed cases of gonorrhoea are counted when reporting gonorrhoea notification data. Patient care and contact tracing are the responsibility of the treating doctor. Information on risks (e.g. sexual exposure) is not routinely collected.

It is important to note that there may be multiple specimens collected for each individual tested for gonorrhoea. Hence the number of gonorrhoea tests done is greater than the number of individuals tested. However, an individual with multiple specimens that are positive for gonorrhoea will generate only one notification.

### 1.1 Gonorrhoea notifications

Figure 1: Number and crude rate of gonorrhoea notifications by year of onset, NSW, 1 January 2014 - 30 June 2019



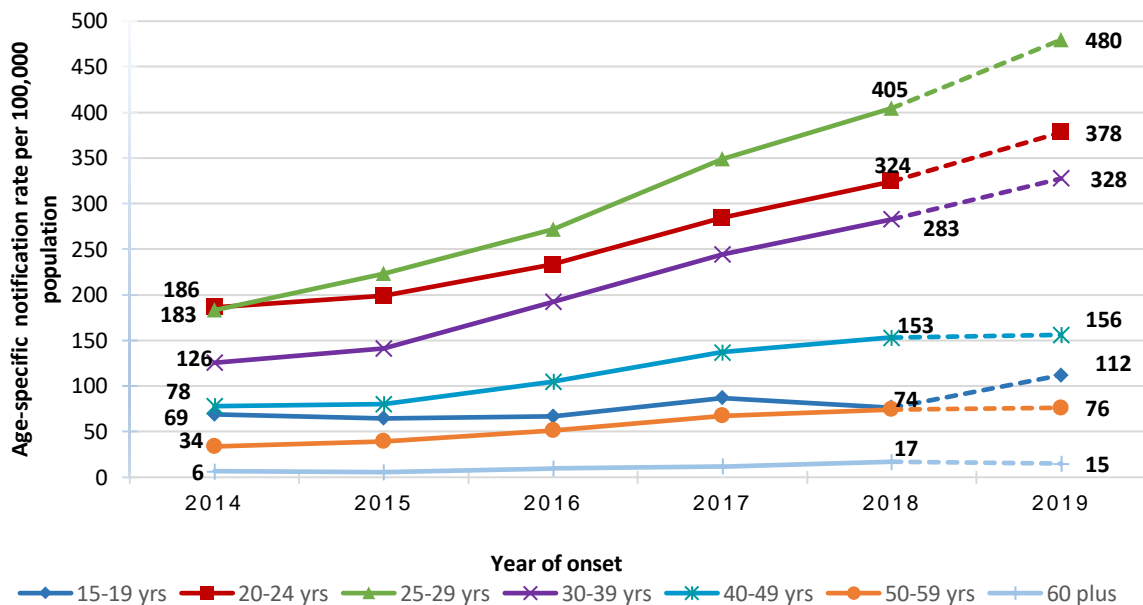
Data source: NCIMS and ABS population estimates (via SAPHARI), NSW Health; data extracted 6 November 2019.

Note: Excludes non-NSW residents. Year is based on calculated onset date.

In January -June 2019:

- The annualised gonorrhoea notification rate was 144 notifications per 100,000 population, 13% higher compared to 2018 when it was 128 notifications per 100,000 population.
- The notification rate has more than doubled since 2014 when it was 64 notifications per 100,000 population.

Figure 2: Age-specific gonorrhoea notification rates in people aged 15 years and over, NSW, 1 January 2014 - 30 June 2019



Data source: NCIMS and ABS population estimates (via SAPHaRI), NSW Health; data extracted 6 November 2019.

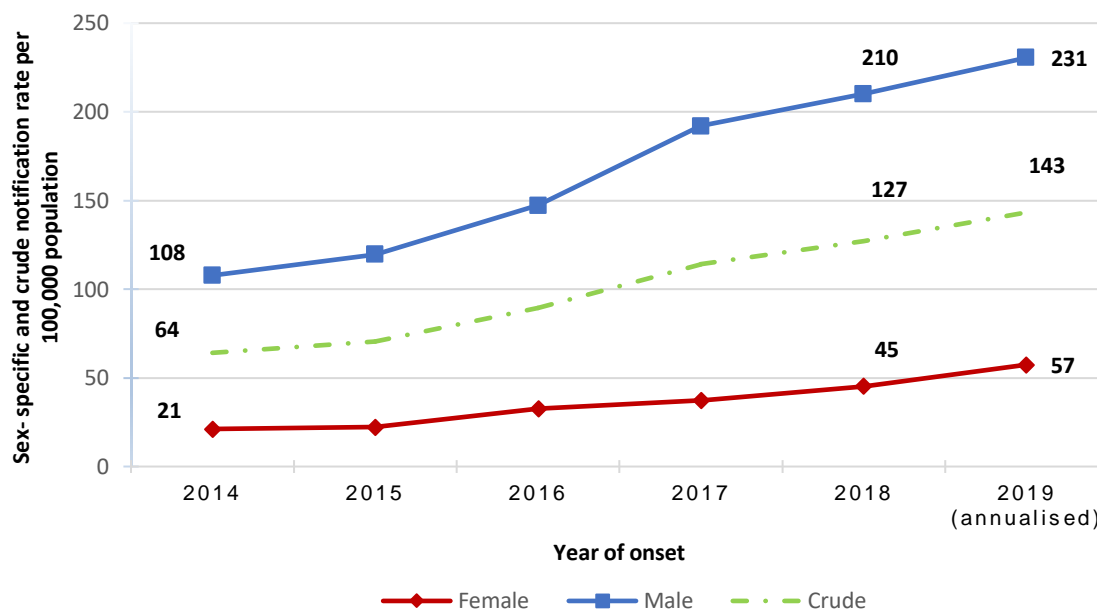
Note: Excludes non-NSW residents and persons whose age at diagnosis was not stated. Year is based on calculated onset date.

In January – June 2019:

- The highest annualised gonorrhoea notification rates continue to occur in the 25-29 years and 20-24 years age groups.
- Compared with the previous year, the largest relative increase in gonorrhoea notification rates were observed in the age group 15-19 years with over 50% increase from 2018. People aged 25 years to 39 years showed moderate rate increases of 16%-19%, while those aged 40-59 years stayed stable. The only age group to experience a small decrease from 2018 levels were 60 plus year-olds.



Figure 3: Sex-specific gonorrhoea notification rates, NSW, 1 January 2014 - 30 June 2019



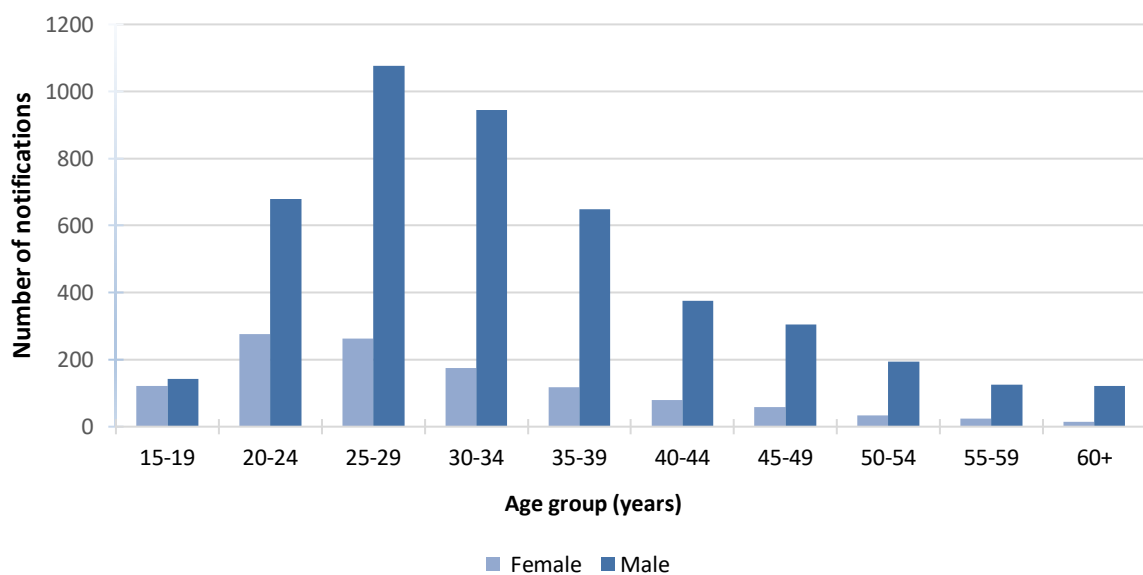
Data source: NCIMS and ABS population estimates (via SAPHARI), NSW Health; data extracted 6 November 2019.

Note: Excludes non-NSW residents, persons reported as transgender (due to small numbers), and persons whose sex was not reported. Year is based on calculated onset date.

In January – June 2019:

- Of 5,812 gonorrhoea notifications, 79% (n= 4,617) were reported as male and 20% (n=1,168) were reported as female. There were 9 notifications in persons reported as transgender and 18 notifications in persons whose sex was reported as not stated or inadequately described (for further notes on sex classification see Appendix D).
- The annualised gonorrhoea notification rate in males was 231 notifications per 100,000 males, which is 4.1 times as high as the notification rate in females of 57 notifications per 100,000 females. In 2018, the gonorrhoea notification rate in males was 4.6 times as high as in females.
- The annualised 2019 notification rates increased by 10% from the 2018 rates for males and by 27% for females.
- Since 2014, the female notification rate has almost tripled (2.7 times as high in 2019 as in 2014), while the male notification rate has more than doubled (2.1 times as high in 2019 as in 2014).

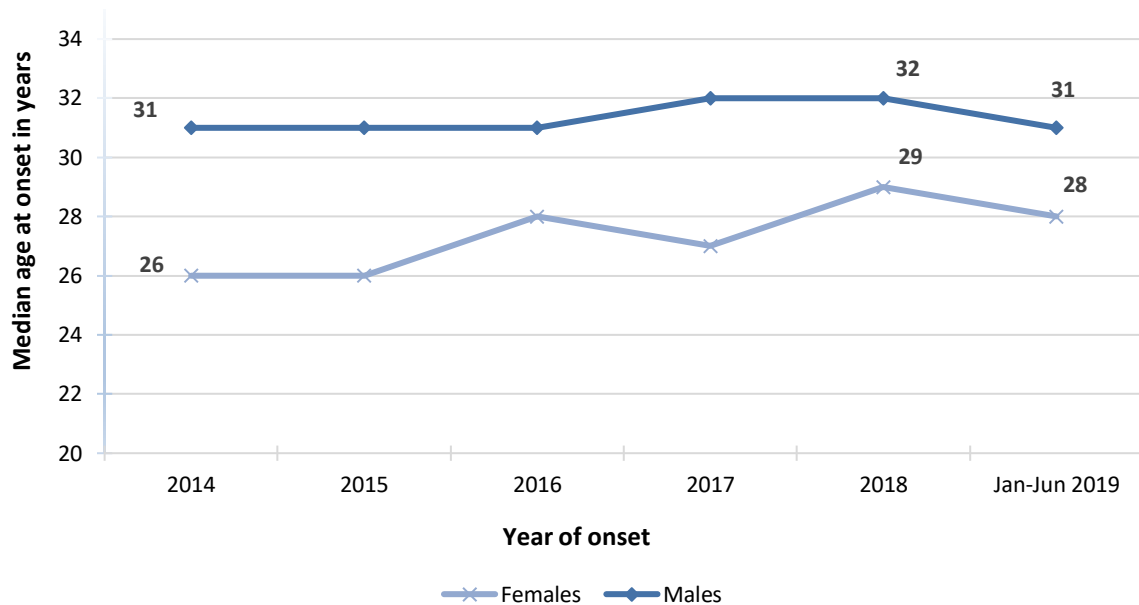
**Figure 4: Number of gonorrhoea notifications by age group and sex in people aged 15 years and over, NSW, 1 January - 30 June 2019**



Data source: NCIMS (via SAPHaRI), NSW Health; data extracted 6 November 2019.

Note: Excludes non-NSW residents, persons reported as transgender (due to small numbers), and persons whose age or sex was not reported. Year is based on calculated onset date.

**Figure 5: Median age of gonorrhoea notifications by sex, NSW, 1 January 2014-30 June 2019**



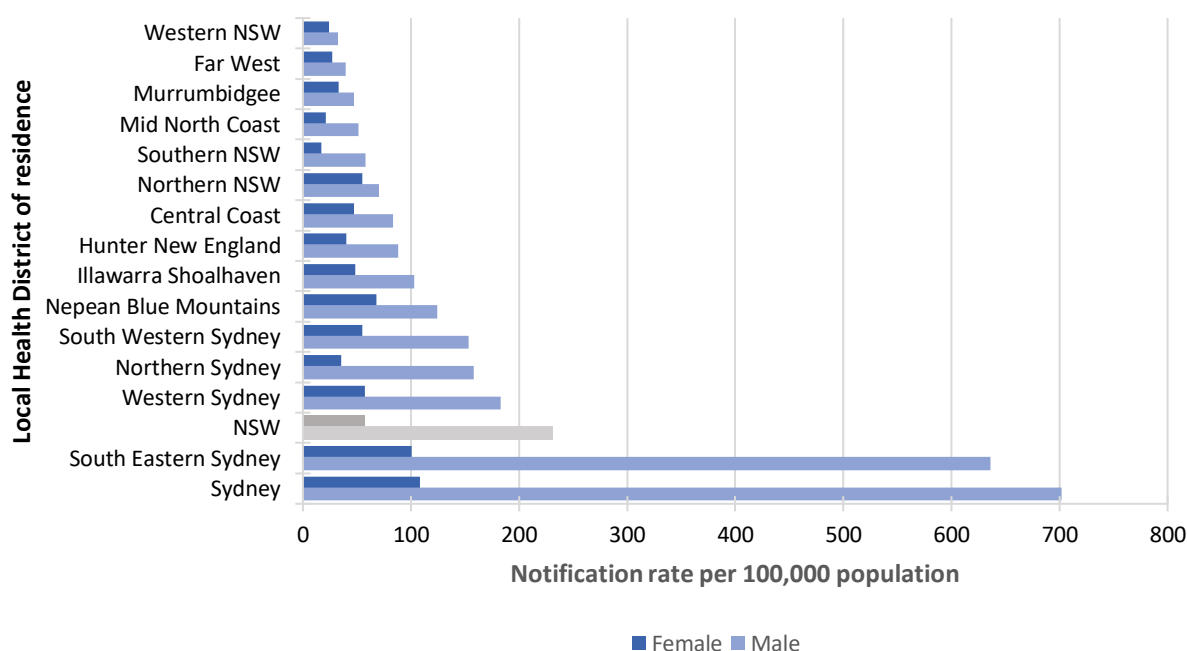
Data source: NCIMS (via SAPHaRI), NSW Health; data extracted 6 November 2019.

Excludes non-NSW residents, persons reported as transgender (due to small numbers), and persons whose age or sex was not reported. Year is based on calculated onset date.

In January – June 2019:

- In males, the highest absolute numbers of notifications were recorded in 25-29 year-olds, followed by 30-34 year-olds.
- In females, the highest absolute numbers of notifications were recorded in 20-24 year-olds, followed by 25-29 year-olds.
- The median age of females notified with gonorrhoea was 28 years, which is slightly lower compared to the median age of 29 years recorded in 2018. The median age for females has increased by two years since 2014.
- The median age of males notified with gonorrhoea was 31 years, which is slightly lower compared to the median age of 32 years recorded in 2018. The median age for males in the first half of 2019 was the same as in 2014. The median age of males remains older than that of females.

Figure 6: Annualised gonorrhoea notification rates by sex and LHD, NSW, 1 January - 30 June 2019



Data source: NCIMS and ABS population estimates (via SAPHARI), NSW Health; data extracted 6 November 2019.

Note: Excludes non-NSW residents, persons reported as transgender (due to small numbers), persons whose sex was not reported, and notifications from Justice Health. For Justice Health notifications, see Table in Appendix D: Notification data. Year is based on calculated onset date.

In January – June 2019:

- Overall, annualised gonorrhoea notification rates continued to increase in all local health districts. The largest relative increases in notification rates compared to 2018 occurred in the Far West (66% increase), Murrumbidgee (36% increase), and Nepean Blue Mountains (29% increase) Local Health Districts.
- The highest gonorrhoea notification rates continue to be observed in the Sydney and South Eastern Sydney Local Health Districts for both males and females.
- Among males, the notification rate almost doubled compared to 2018 in Far West Local Health District, with the next highest relative increase observed in Mid North Coast Local Health District at 38%. Western NSW and Central Coast Local Health Districts experienced small decreases of 7%.
- Among females, the notification rate more than doubled compared to 2018 in Northern NSW Local Health District and almost doubled in Western NSW Local Health District, with the next highest relative increase observed in Murrumbidgee Local Health Districts at 74%. Mid North Coast Local Health District was the only area to experience a decrease in notification rates (26% reduction).

- Gay men, who are at increased risk of acquiring STIs, are unequally distributed among local health districts. Continuing high notification rates among males in the Sydney and South Eastern Sydney Local Health Districts in particular reflect large concentrations of gay men in these areas. These populations also have a high uptake of pre-exposure prophylaxis (PrEP) for HIV.<sup>3</sup> Persons on PrEP are regularly tested for STIs.

See **Appendix D Table 8** for a full overview of notification rates by sex and year for each local health district.

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<sup>3</sup> Grulich AE, Guy R, Amin J, Jin F, Selvey C, Holden J, Schmidt HM, Zablotska I, Price K, Whittaker B, Chant K. Population-level effectiveness of rapid, targeted, high-coverage roll-out of HIV pre-exposure prophylaxis in men who have sex with men: the EPIC-NSW prospective cohort study. *The Lancet HIV*. 2018; 5(11):e629-37.

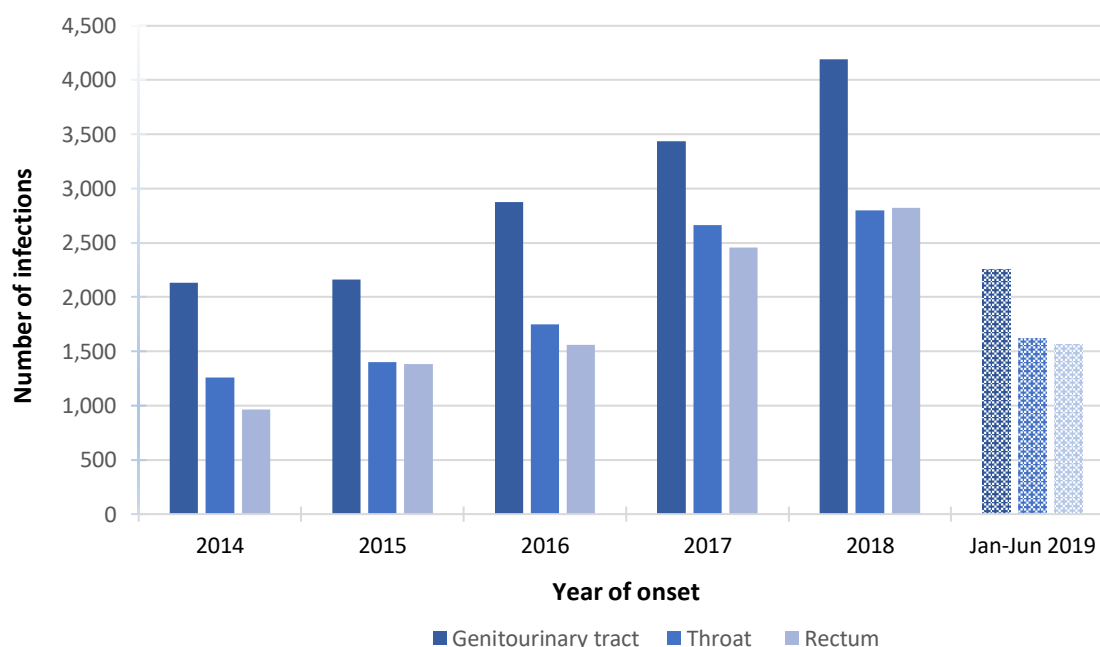
**Table 1: Number of gonorrhoea infections by anatomical site of infection, NSW 1 January - 30 June 2019**

Site of infection	Number of infections		
	Total*	Males	Females
Genitourinary tract (GU) only	2,779	1,903	876
Throat only	1,141	970	171
Rectum only	878	867	11
Rectum and throat	446	441	5
GU and rectum	160	149	11
GU and throat	147	95	52
GU and rectum and throat	118	108	10
Other (joints/conjunctiva/nasopharynx) only	12	10	2
Other (joints/conjunctiva/nasopharynx) and either of GU/throat/rectum	6	4	2

Data source: NCIMS and ABS population estimates (via SAPHaRI), NSW Health; data extracted 6 November 2019.

Note: Excludes non-NSW residents, persons reported as transgender (due to small numbers), and persons whose sex was not reported. Year is based on calculated onset date. Number of infections exceeds number of notifications due to infection at multiple anatomical sites.

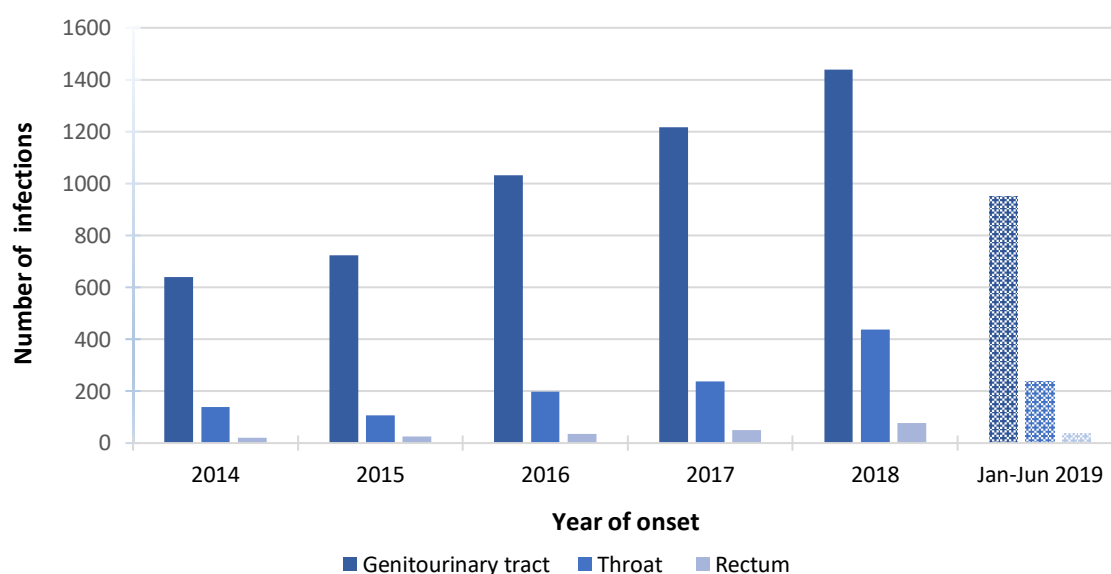
**Figure 7: Number of gonorrhoea infections in males by anatomical site of infection, NSW, 1 January 2014 - 30 June 2019**



Data source: NCIMS and ABS population estimates (via SAPHaRI), NSW Health; data extracted 6 November 2019.

Note: Excludes non-NSW residents, persons reported as transgender (due to small numbers), and persons whose sex was not reported. Year is based on calculated onset date. Number of infections exceeds number of notifications due to infection at multiple anatomical sites.

**Figure 8: Number of gonorrhoea infections in females by anatomical site of infection, NSW, 1 January 2014 - 30 June 2019**



Data source: NCIMS and ABS population estimates (via SAPHaRI), NSW Health; data extracted 6 November 2019.  
Note: Excludes non-NSW residents, persons reported as transgender (due to small numbers), and persons whose sex was not reported. Year is based on calculated onset date. Number of infections exceeds number of notifications due to infection at multiple anatomical sites.

In January-June 2019:

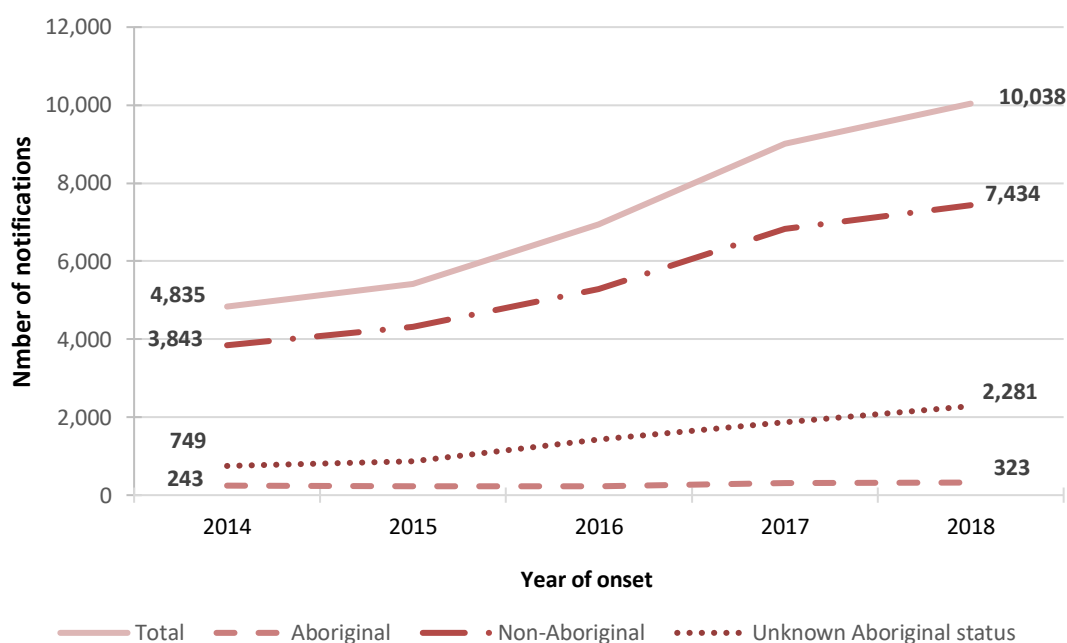
- On an annualised basis, throat infections had the largest relative increase from 2018 levels in males at 15%, followed by rectal infections at 9% and genitourinary infections at 8%. This is different from the time period 2017 to 2018, when genitourinary infections had the largest relative increase. In males, genitourinary infections are usually symptomatic, which means the majority are likely to be diagnosed. Therefore, the notification rate of male genitourinary gonorrhoea may be used as a broad indicator of gonorrhoea transmission. Rectal and throat infections however, are usually asymptomatic. Therefore, trends in the notification rate of these infections is likely to reflect screening trends, as well as disease transmission. In the first half of 2019, the increase in the number of male throat infections suggests that comprehensive screening may have increased, while transmission also continues to increase.
- In females, up to 80% of genitourinary infections are asymptomatic, which means that many infections may be undiagnosed. Infections of the rectum and throat are usually asymptomatic. Therefore, gonorrhoea notifications among women are likely to reflect screening trends, as well as disease transmission. On an annualised basis, for females the largest relative increase compared to 2018 was observed for genitourinary infections at 32%, followed by rectal infections at 8%. By contrast, the annualised number of throat infections decreased by 5%. Between 2017 and 2018, larger relative increases had been seen in throat

and rectal infection, despite the number of infections at both sites remaining small compared to genitourinary infections.

Note: The count of infections by site is annualised for comparison to the full previous year. Trends may change when taking into consideration data for the second half of 2019.

## 1.2 Gonorrhoea notifications among Aboriginal people

Figure 9: Number of gonorrhoea notifications by Aboriginal status, NSW, 2014 - 2018



Data source: Communicable Diseases Register, NSW Ministry of Health (via SAPHaRI); data extracted 11 November 2019.  
Note: Excludes non-NSW residents. Year is based on calculated onset date.

In 2018:

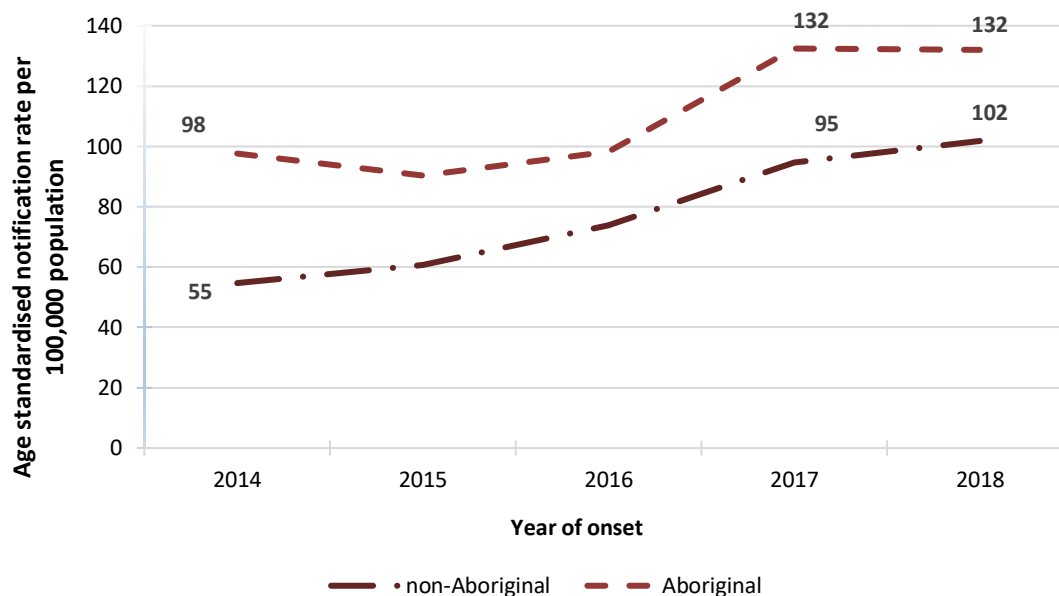
- A total of 10,038 notifications for gonorrhoea were recorded in the Communicable Diseases Register (CDR).
- Aboriginality was not stated for 2,281 (22.7%) notifications. Of those whose Aboriginal status was not stated in 2018, 98% resided in a major city area.
- Of those for whom Aboriginality was stated, 323 (4.2%) notifications were among Aboriginal people, and 7,434 (95.8%) were among non-Aboriginal people.
- Aboriginal status data completeness was higher in 2014 due to short-term, state-wide enhanced surveillance of gonorrhoea notifications.



Note: Trends in the Aboriginal population are difficult to interpret due to variation in the yearly number of people for whom Aboriginal status was not stated, and the relatively high proportion of incomplete data compared to the proportion who are Aboriginal people.

Differences in notification numbers captured in the CDR compared to previous reports are due to improved record linkage and inclusion of NCIMS records that were unable to be matched to any of the other contributing data sources.

Figure 10: Age-standardised gonorrhoea notification rate by Aboriginal status, NSW, 2014 - 2018



Data source: Communicable Diseases Register, NSW Ministry of Health, and ABS population estimates (via SAPHaRI); data extracted 11 November 2019.

Note: Excludes non-NSW residents, records where Aboriginal status was not stated (see Figure 9), and records where age was not stated; rates directly age-standardised standardised to the Australian Standard Population 2001. Year is based on calculated onset date.

In 2018:

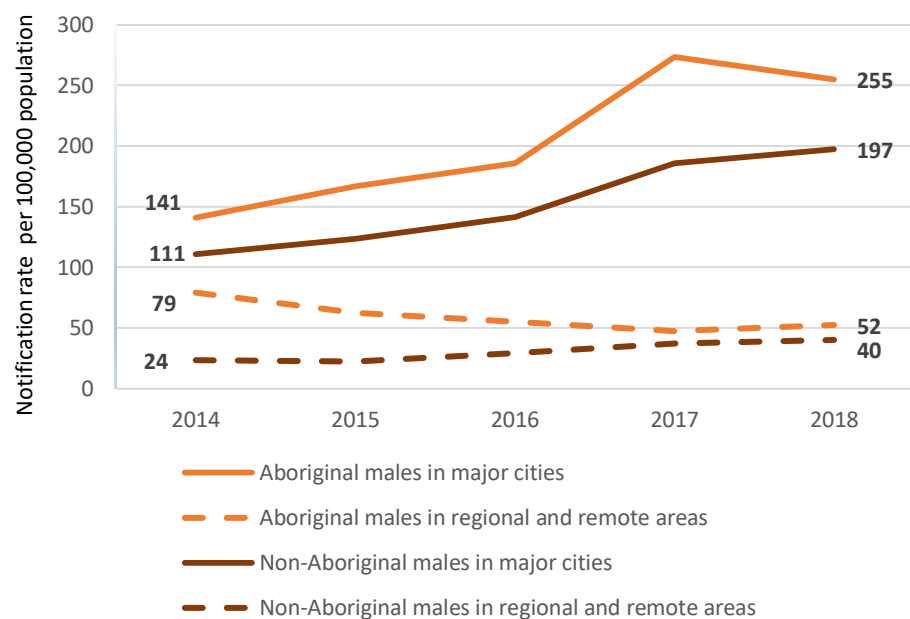
- Notification rates of gonorrhoea among non-Aboriginal people increased by 8% from 95 notifications per 100,000 population in 2017 to 102 notifications per 100,000 population in 2018.
- Notification rates remained stable among Aboriginal people at 132 notifications per 100,000 population in both 2017 and 2018, although data should be interpreted with caution. Between 2014 and 2018, gonorrhoea notification rates among non-Aboriginal people increased by 85% and rates among Aboriginal people increased by 35%. Among those whose Aboriginal status was stated, the gonorrhoea notification rate was 1.3 times as high among Aboriginal people as among non-Aboriginal people (132 per 100,000 vs 102 notifications per 100,000 population) in 2018.

Note: As the number of notifications among Aboriginal people is relatively small, yearly fluctuations in the rate should be interpreted with caution. Changes in notification rates may be due to variation in incidence of disease, screening rates and/or the number of people for whom Aboriginal status was not stated (see Figure 9).

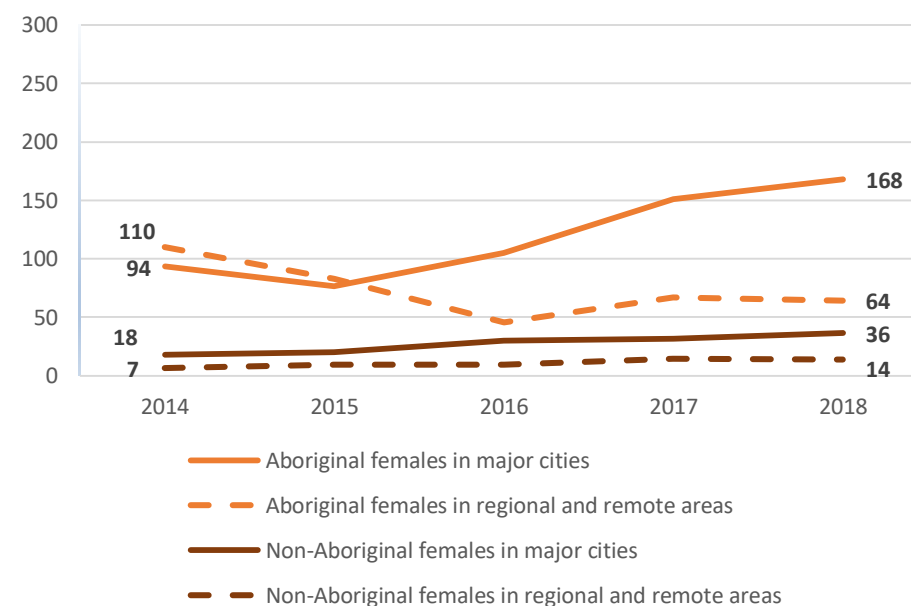
Differences in notification numbers captured in the CDR compared to previous reports are due to improved record linkage and inclusion of NCIMS records that were previously unable to be matched to any of the other contributing data sources.

Figures 11a & 11b: Crude gonorrhoea notification rates in males and females, by Aboriginal status and remoteness area, NSW, 2014 - 2018

**Males**



**Females**



Data sources: Communicable Diseases Register, NSW Ministry of Health, and ABS population estimates (via SAPHaRI), NSW Health; data extracted 6 November 2019.

Note: Excludes non-NSW residents, records where Aboriginal status was not stated (see Figure 9), records where sex was not stated, and records where residential postcode was not stated. Population estimates by geographic remoteness area apply the proportion of residents by Aboriginal status and remoteness area at 30 June 2016 (ABS 3238.0.55.001 - Estimates of Aboriginal and Torres Strait Islander Australians, June 2016) which was the most recent estimate available at the time of publication.

In 2018:

- The highest gonorrhoea notification rates were among Aboriginal males living in major city areas of NSW, followed by non-Aboriginal males also living in major city areas. Aboriginal males living in regional and remote areas experienced a rate decrease between 2014 and 2018, but continued to have higher rates than non-Aboriginal males in the same areas for whom the notification rate increased by 70% since 2014.
- Among females, Aboriginal females living in major city areas had the highest notification rates, followed by Aboriginal females living in regional and remote areas. Rates for Aboriginal females in major cities increased since 2014, whereas rates for Aboriginal females in regional and remote areas decreased over the same period. Although non-Aboriginal females continue to have the lowest rates of the population groups shown here, this group experienced the highest relative rate increases, with rates doubling between 2014 and 2018 in both major city areas and regional and remote areas. Despite these relative increases among non-Aboriginal females, Aboriginal females continue to be disproportionately affected. This is particularly evident in major city areas, where the gonorrhoea notification rate was 4.6 times as high among Aboriginal women as among non-Aboriginal women.

Note: As the number of notifications in the Aboriginal population is relatively small, especially among residents of remote areas, trends should be interpreted with caution. To avoid excessive rate fluctuations based on small numbers of notifications arising from small populations, rates for regional and remote areas are presented together.

Differences in notification numbers captured in the CDR compared to previous reports are due to improved record linkage and inclusion of NCIMS records that were previously unable to be matched to any of the other contributing data sources.

### 1.3 Antimicrobial susceptibility of *Neisseria gonorrhoeae*

Since the introduction of antibiotics as a curative treatment for gonorrhoea in the 1930s, *Neisseria gonorrhoeae* has rapidly developed resistance to successive classes of antimicrobials. Dual therapy consisting of ceftriaxone, an injectable cephalosporin, and oral azithromycin, a macrolide, is now recommended in most high income countries and regions, including Australia<sup>4</sup>. Nationally, surveillance of *Neisseria gonorrhoeae* antimicrobial resistance has been undertaken by the National Neisseria Network through the Australian Gonococcal Surveillance Program<sup>5</sup> since the 1980s. In NSW, *Neisseria gonorrhoeae* antimicrobial susceptibility data have been collected and integrated with notification data since April 2019, with retrospective data collection to January 2017. Public health follow-up is undertaken for cases with isolates exhibiting high-level resistance to azithromycin (MIC  $\geq$ 256 mg/L) or decreased susceptibility to ceftriaxone (MIC  $\geq$ 0.125 mg/L).

**Table 2: Availability of *Neisseria gonorrhoeae* susceptibility testing for azithromycin and ceftriaxone by episode of infection, NSW, 1 January - 30 June 2019**

	No susceptibility testing	Susceptibility testing available
<b>Gender<sup>1</sup></b>		
Male	3,136 (68%)	1,481 (32%)
Female	893 (76%)	275 (24%)
<b>Remoteness of residential postcode<sup>2</sup></b>		
Major cities	3,704 (69%)	1,682 (31%)
Regional	305 (78%)	84 (22%)
Remote & very remote	3 (100%)	0
<b>Total</b>	<b>4,046 (70%)</b>	<b>1,766 (30%)</b>

Data source: NCIMS, NSW Health; notification data extracted 6 November 2019, laboratory data extracted 14 November 2019.

Note: Excludes non-NSW residents. Year of onset is based on calculated onset date.

Excludes persons reported as transgender (due to small numbers).

Excludes persons with unknown residential postcode.

<sup>4</sup> Australian STI Management Guidelines for use in Primary Care; Australasian Society for HIV, Viral Hepatitis and Sexual Health Medicine

<http://www.sti.guidelines.org.au/sexually-transmissible-infections/gonorrhoea#management>

<sup>5</sup> Australian Gonococcal Surveillance Programme Annual Reports; Australian Government Department of Health <https://www1.health.gov.au/internet/main/publishing.nsf/Content/cda-pubs-annlrpt-gonoanrep.htm>

**Table 3: Susceptibility of *Neisseria gonorrhoea* isolates to azithromycin, ceftriaxone, and ciprofloxacin by episode of infection, NSW, 1 January - 30 June 2019**

	Azithromycin			Ceftriaxone		Ciprofloxacin	
	Susceptible	Low-level resistant	High-level resistant <sup>1</sup>	Susceptible	Decreased susceptibility	Susceptible	Intermediate or resistant
<b>Number of notifications with susceptibility reported</b>	1,643	124	0	1,770	1	1,116	657
<b>Percentage</b>	93%	7%	NA	99%	<1%	63%	37%

Data source: NCIMS, NSW Health; notification data extracted 6 November 2019, laboratory data extracted 14 November 2019.

Note: Excludes non-NSW residents and notifications without susceptibility results. Year of onset is based on calculated onset date.

<sup>1</sup>Defined as MIC  $\geq$ 256 mg/L.

<sup>2</sup>Excludes persons with unknown residential postcode.

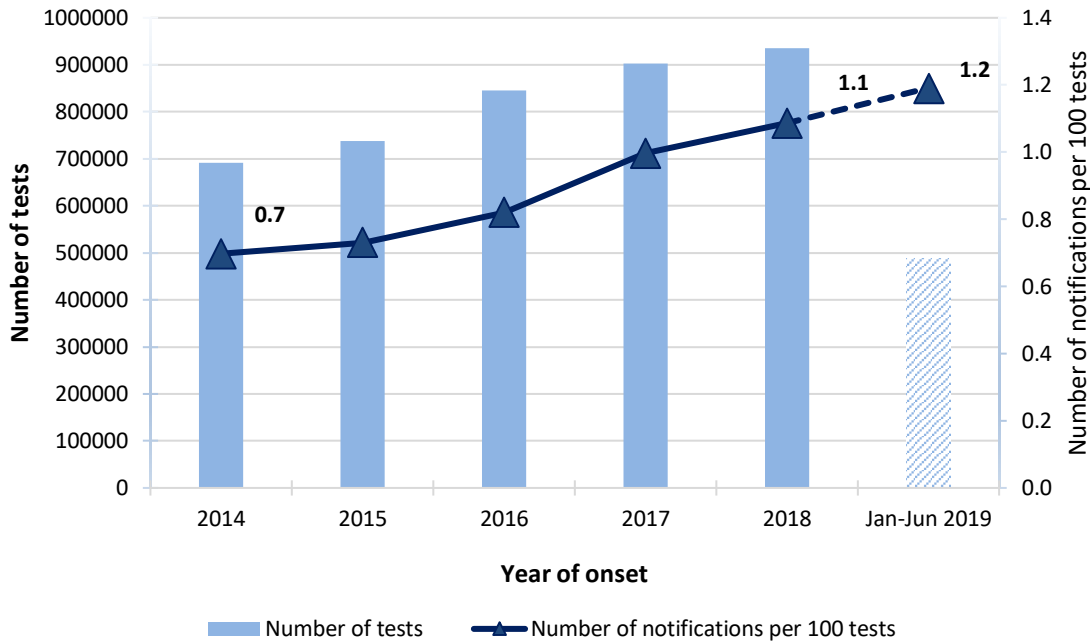
From January - June 2019:

- Susceptibility results for ceftriaxone and azithromycin were available for 30% of notifications (Table 2). This is approximately equivalent to the number of notifications with at least one culture-positive result, as virtually all isolates cultured in NSW undergo susceptibility testing. The gap between total notifications and notifications with susceptibility results is due to PCR frequently being the only diagnostic test that is ordered, while susceptibility testing requires an isolate from bacterial culture.
- Proportionally by demographic characteristics, the availability of susceptibility results was skewed towards isolates from males and persons residing in major city areas.
- Of all notifications with susceptibility results, 93% were susceptible to azithromycin, >99% were susceptible to ceftriaxone, and 63% were susceptible to ciprofloxacin.
- A single case of gonococcal infection with decreased susceptibility to ceftriaxone (MIC=0.5) occurred in a resident of metropolitan Sydney. This overseas-acquired infection was susceptible to azithromycin and was cured with the standard treatment of ceftriaxone and azithromycin. No cases with high-level resistance to azithromycin were recorded in the first half of 2019.

Note: The susceptibility results are presented by episode of infection rather than by specimen. As a result, infections at several anatomical sites with discordant susceptibilities are not represented separately and the most resistant category was counted.

### 1.4 Gonorrhoea testing

Figure 12: Number of gonorrhoea tests and notification to test ratio, NSW, 1 January 2014 - 30 June 2019



Data source: NCIMS and NSW Denominator Data Project, NSW Health; notification data extracted 6 November 2019, testing data extracted 15 November 2019

Note: Testing of multiple anatomical sites results in multiple tests being counted per person and episode of infection. Year is based on calculated onset date.

In January - June 2019:

- The number of gonorrhoea tests (NAAT and culture) performed in NSW continued to increase.
- A total of 487,951 tests for gonorrhoea were performed in 15 laboratories in NSW in the first half of 2019, a 2% increase compared to the same period in 2018 when 479,653 tests were performed.
- There were 1.2 gonorrhoea notifications per 100 gonorrhoea tests. This is the highest ratio for the last five and a half years and suggests that transmission of gonorrhoea has increased and/or screening is better targeted at people at higher risk of infection.

## 2 Reduce infectious syphilis infections

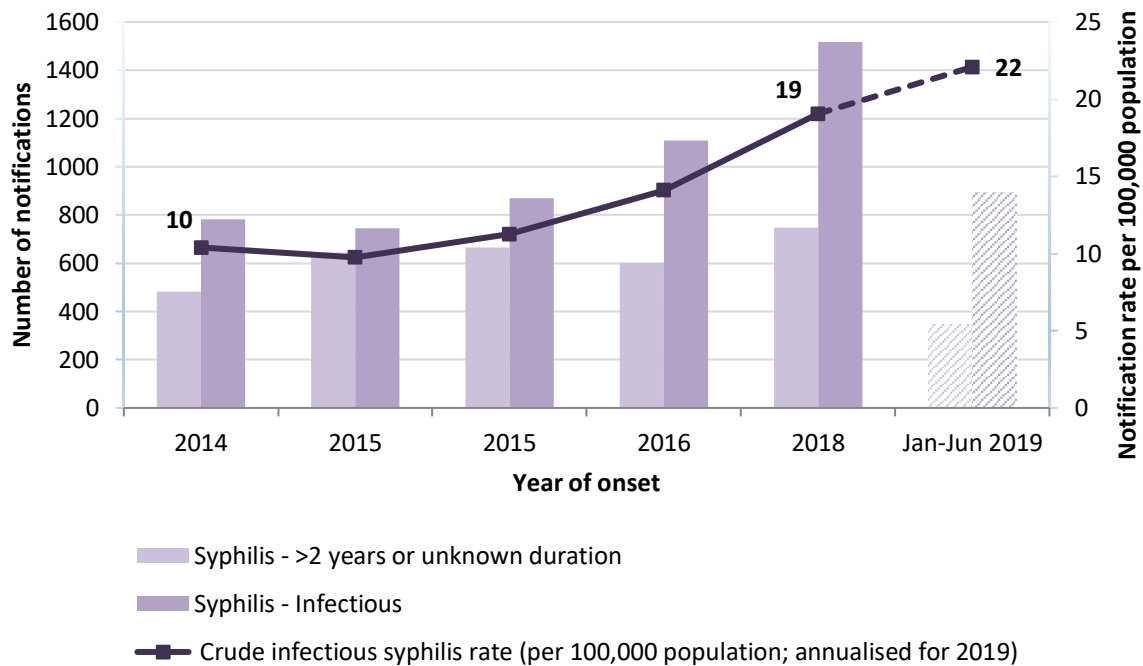
Prevention, testing and appropriate treatment and management including partner notification are the cornerstones of syphilis control and are embedded in the current STI strategy. Syphilis notification data does not reflect the true incidence of syphilis infection as it only represents a proportion of infections in the population, however it is useful for monitoring notification trends over time. Syphilis notification data are heavily influenced by testing practices, availability of enhanced surveillance information and classification of syphilis cases as 'infectious' or 'greater than 2 years or unknown duration'. Therefore, the reported syphilis data may not be representative of the NSW population.

Syphilis is a notifiable disease under the NSW *Public Health Act 2010*. A confirmed or probable infectious syphilis case requires laboratory evidence or a combination of laboratory, clinical and epidemiological evidence (see Appendix C: Case definitions for full details). Only probable or confirmed cases of infectious syphilis and confirmed cases of syphilis >2 years or unknown duration are included when reporting syphilis notification data. Enhanced surveillance information is routinely collected for people notified with syphilis which includes demographic, testing, treatment and risk exposure information.



## 2.1 Infectious syphilis notifications

Figure 14: Number and crude rate of syphilis notifications, NSW, 1 January 2014 – 30 June 2019

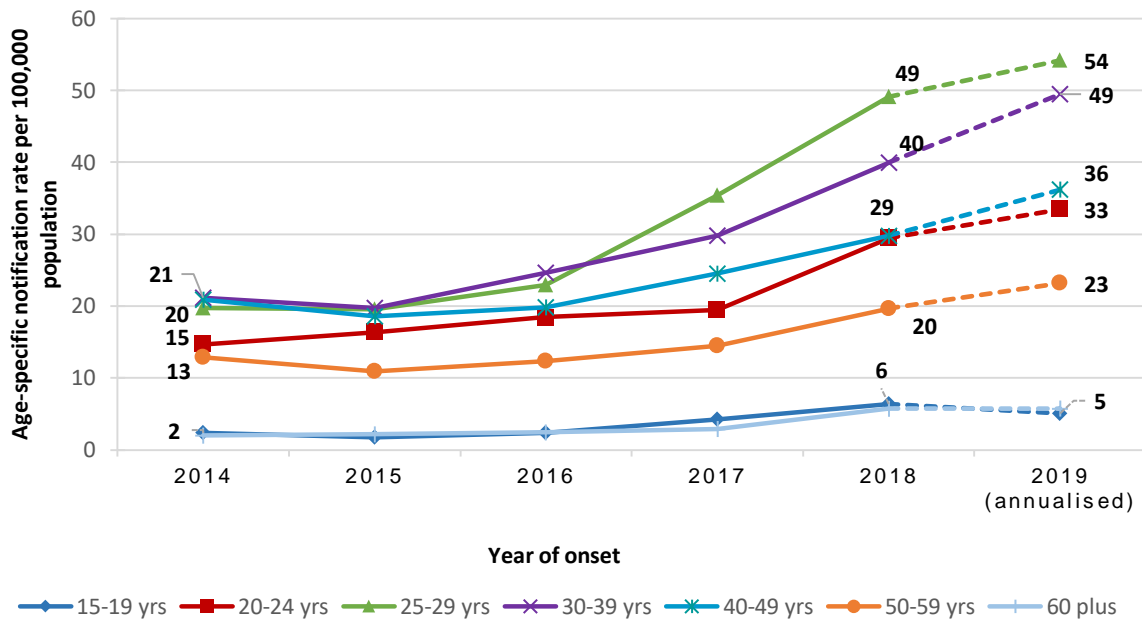


Data source: NCIMS and ABS population estimates (via SAPHaRI), NSW Health; data extracted 6 November 2019.  
Note: Excludes non-NSW residents. Year is based on date of calculated onset.

In January-June 2019:

- There were 892 infectious syphilis notifications. The annualised infectious syphilis notification rate was 22 notifications per 100,000 population, 16% higher than in 2018 when the rate was 19 per 100,000 population. The rate in the first half of 2019 was 2.2 times as high as the rate in 2014.
- A small part of the increase in infectious syphilis notifications observed from 2016-2018 is due to a change in the case definition in August 2016, resulting in improved reporting of infectious syphilis cases. See **Appendix C** for links to the full case definitions for syphilis.

Figure 15: Age-specific infectious syphilis notification rates in people aged 15 years and over, NSW, 1 January 2014 - 30 June 2019

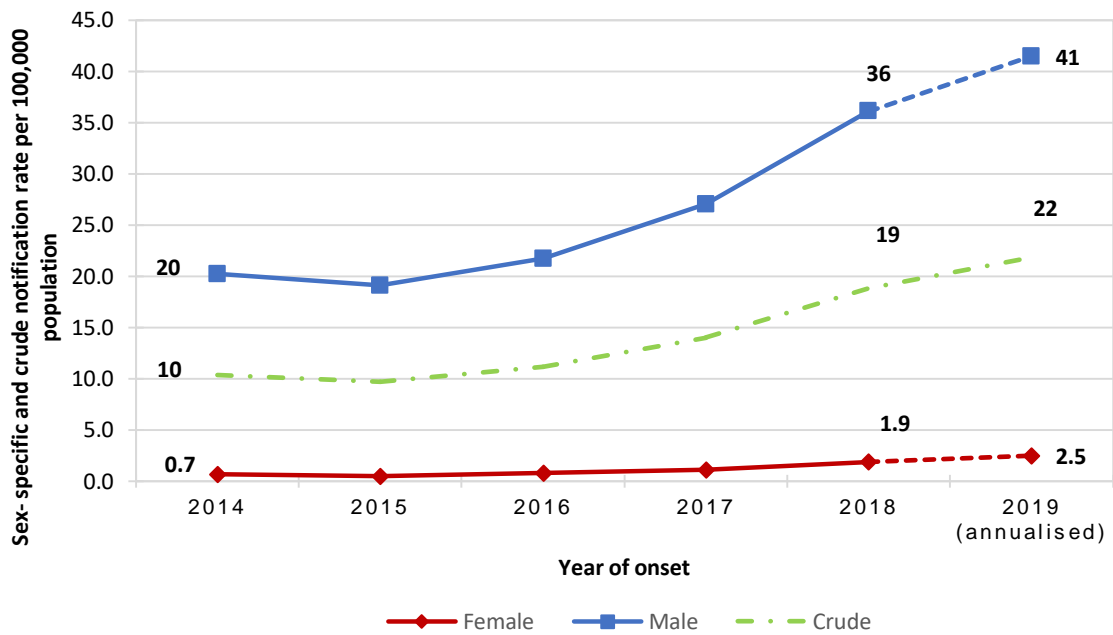


Data source: NCIMS and ABS population estimates (via SAPHaRI), NSW Health; data extracted 6 November 2019.  
Note: Excludes non-NSW residents and persons whose age at diagnosis was not stated. Year is based on calculated onset date.

In January-June 2019:

- The highest annualised infectious syphilis notification rates occurred in the 25-29 years and 30-39 years age groups with 54 and 49 notifications per 100,000 population, respectively.
- The 30-39 years and 40-49 years age groups experienced the largest relative increases in notification rates. In 30-39 year olds, the rate increased by 24% to 49 notifications per 100,000 population from the 2018 rate of 40 notifications per 100,000 population; in 40-49 year olds, the rate increased by 21% to 36 from the 2018 rate of 30 notifications per 100,000 population.
- Since 2014, the notification rate in all age groups except 40-49 year olds (73% increase) and 50-59 year olds (78% increase) has more than doubled.

Figure 16: Sex-specific infectious syphilis notification rates, NSW, 1 January 2014 - 30 June 2019



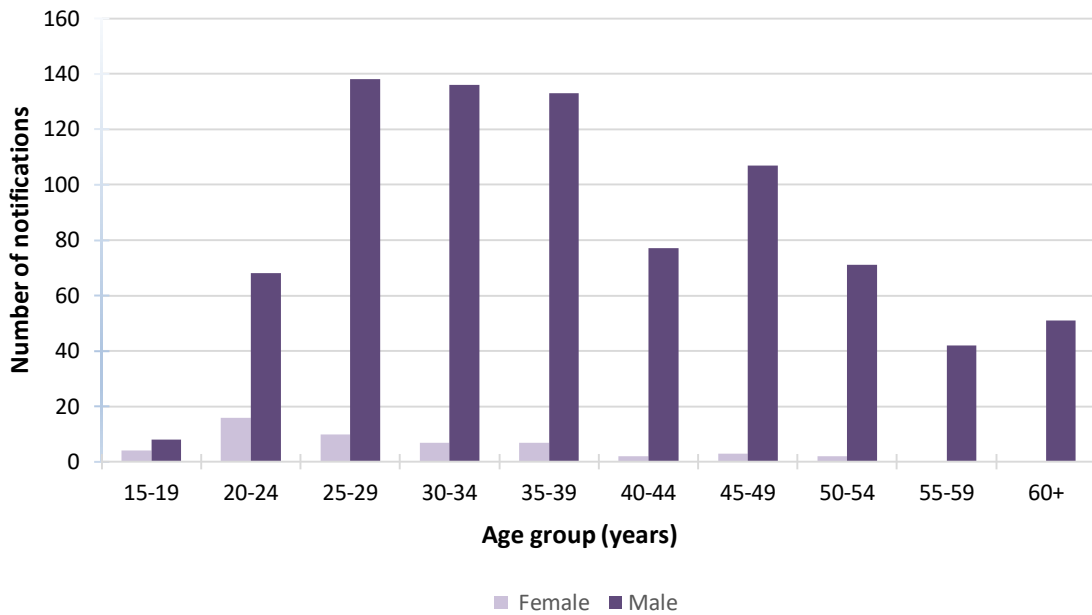
Data source: NCIMS and ABS population estimates (via SAPHaRI), NSW Health; data extracted 6 November 2019.

Note: Excludes non-NSW residents, persons reported as transgender (due to small numbers), and persons whose sex was not reported. Year is based on calculated onset date.

In January-June 2019:

- Amongst males, the annualised notification rate was 41 notifications per 100,000 population. This represents a 15% increase from 2018 when the rate was 36 per 100,000 population.
- Amongst females, the annualised notification rate was 2.5 notifications per 100,000 population. This represents a 32 % increase from 2018 when the rate was 1.9 per 100,000 population. At 51 notifications, the number of notifications amongst females remained small in the first half of 2019. However, the case count has increased each year since 2015.

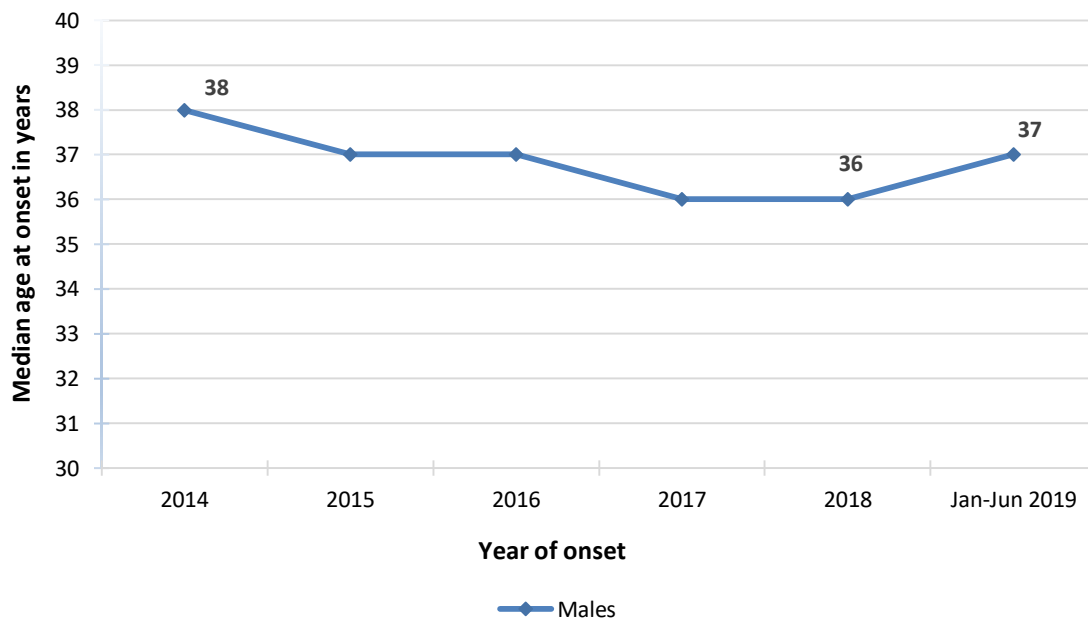
**Figure 17: Infectious syphilis notifications by age and sex in people aged 15 years and over, NSW, 1 January - 30 June 2019**



Data source: NCIMS (via SAPHaRI), NSW Health; data extracted 6 November 2019.

Note: Excludes non-NSW residents, persons reported as transgender (due to small numbers), and persons who age or sex was not reported. Year is based on calculated onset date.

**Figure 18: Median age of infectious syphilis notifications in males, NSW, 1 January 2014 - 30 June 2019**



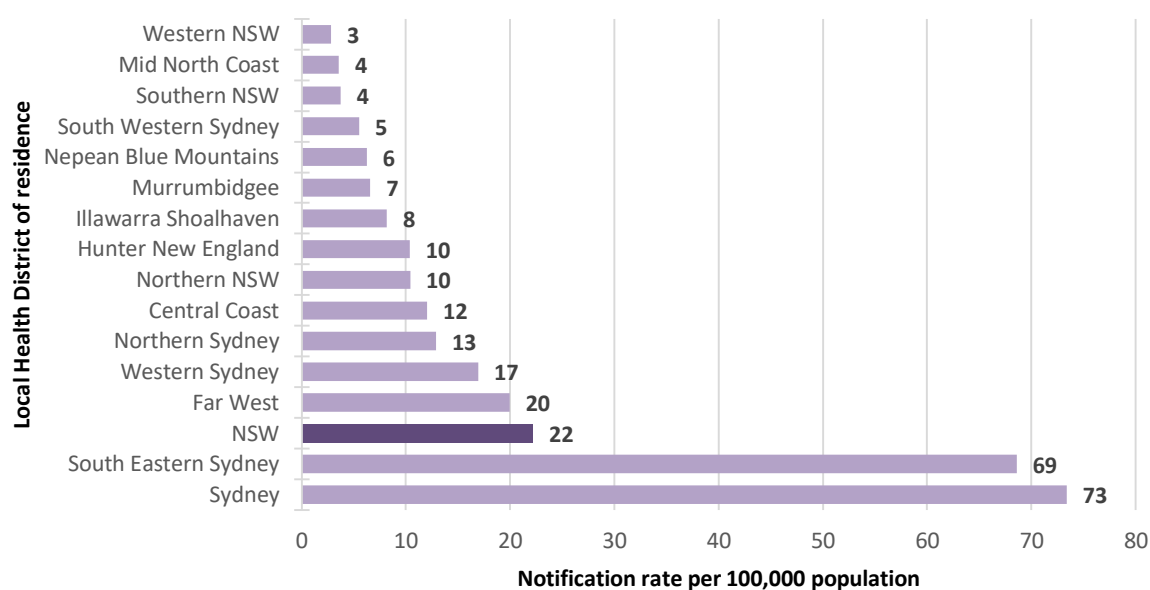
Data source: NCIMS (via SAPHaRI), NSW Health; data extracted 6 November 2019.

Note: Excludes non-NSW residents. Year is based on calculated onset date.

In January-June 2019:

- Of the 892 notifications of infectious syphilis, 831 notifications (93%) were in males, and 51 (6%) were in females. Seven notifications (0.8%) were in people reported as transgender and sex was not stated for three persons (0.3%).
- The most commonly notified age groups were males aged 25-29 years, 30-34 years, and 35-39 years with 133-138 notifications in each group. Among females, the most commonly notified age groups were 20-24 years and 25-29 years. Overall, 90% of females notified in the first half of 2019 were under 45 years old.
- The median age of males notified with infectious syphilis was 37 years, one year older compared with 2018 and one year younger than in 2014 when it was 38 years.
- The median age of females notified with infectious syphilis was 28 years. Due to small numbers, the median age of females fluctuates considerably between reporting years (data not shown).

Figure 19: Annualised infectious syphilis notification rate by LHD, NSW, 1 January - 30 June 2019



Data source: NCIMS and ABS population estimates (via SAPHaRI), NSW Health; data extracted 6 November 2019.  
Note: Excludes non-NSW residents, persons whose residential postcode was not stated and notifications from Justice Health. For Justice Health notifications, see **Appendix D**.

Table 4: Number of infectious syphilis notifications in females by LHD, NSW, 1 January 2014 – 30 June 2019

Local Health District	Number of notifications January-June	
	5 year average January-June 2014-2018	January-June 2019
Central Coast	0.2	6
Far West	0	1
Hunter New England	1.2	2
Illawarra Shoalhaven	1.2	1
Mid North Coast	0	0
Murrumbidgee	0.8	1
Nepean Blue Mountains	1.8	0
Northern NSW	0.2	2
Northern Sydney	1.2	2
South Eastern Sydney	4	14
South Western Sydney	2.4	7
Southern NSW	0.6	0
Sydney	3.8	4
Western NSW	0.6	0
Western Sydney	1.8	11

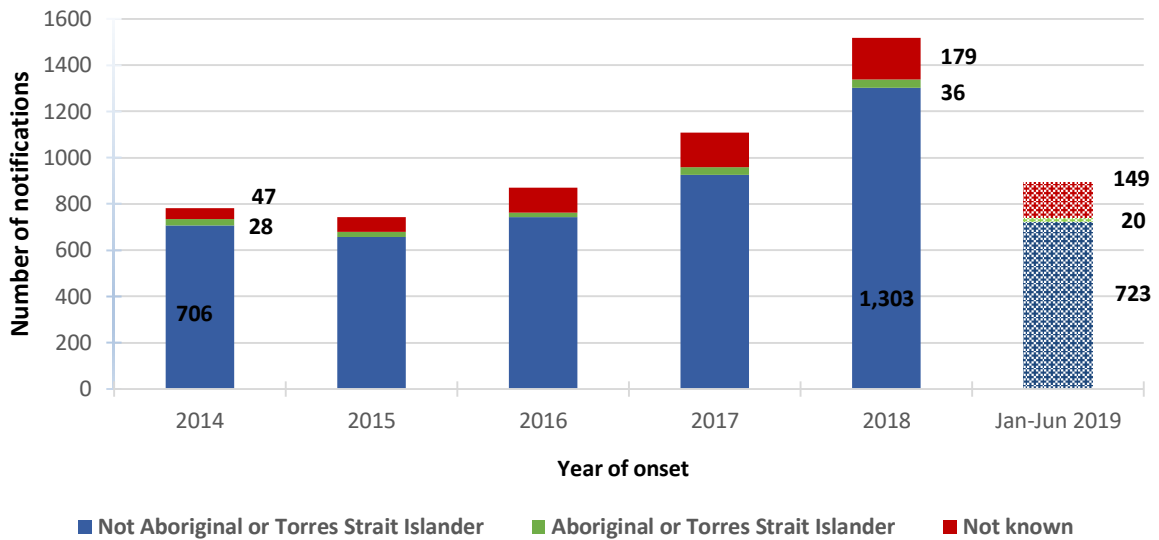
Data source: NCIMS and ABS population estimates (via SAPHaRI), NSW Health; data extracted 6 November 2019.  
Note: Excludes non-NSW residents, persons whose residential postcode was not stated and notifications from Justice Health. For Justice Health notifications, see **Appendix D**.

In January-June 2019:

- The highest annualised notification rates continued to be observed in South Eastern Sydney and Sydney LHDs (73 and 69 notifications per 100,000 population, respectively). Similar to other STIs, it should be noted that gay men, who are at increased risk of acquiring STIs generally and infectious syphilis in particular, are unequally distributed among local health districts. Continuing high notification rates among males in the Sydney and South Eastern Sydney Local Health Districts in particular reflect large concentrations of gay men in these areas.
- The largest increase in the infectious syphilis notification rate occurred in Central Coast LHD where the rate was 2.3 times as high as in 2018 (12 notifications per 100,000 in the first half of 2019 compared to 5 notifications per 100,000 in 2018). Northern NSW experienced a 58% increase, followed by Hunter New England LHD with a 56% increase. The three LHDs with the highest rate increases in the first half of 2019 are all in the northern region of NSW.
- There were three notifications in the Far West LHD. Although the rate is unreliable due to small numbers, this represents an increase from zero to one notification per year in the area in the years 2014-2018.
- Southern NSW LHD, Nepean Blue Mountains LHD, and Mid North Coast LHD experienced the largest relative decreases compared to 2018. Mid North Coast LHD borders Northern NSW and Hunter New England LHD.
- Due to the small number of infectious syphilis notifications in females (n=51 in January-June 2019), reliable sex-specific rates by LHD cannot be calculated and the rates above reflect notification patterns among males. Table 4 shows the number of notifications in females received in the first half of 2019 compared to the annual average number of notifications received in the previous five years. These data should be interpreted with caution as small numbers are likely to fluctuate between reporting years. However, the comparison shows that a number of LHDs in metropolitan Sydney with large populations have seen a considerable rise in notification numbers in recent years, including Western Sydney, South Eastern Sydney, and South Western Sydney LHDs.

See **Appendix D Table 9** for an overview of notification rates by year for each local health district. Note that rates in areas with small annual numbers of notifications fluctuate and should be interpreted with caution.

Figure 20: Infectious syphilis notifications by Aboriginal status, NSW, 1 January 2014 - 30 June 2019



Data source: NCIMS (via SAPHaRI), NSW Health; data extracted 6 November 2019.

Note: Excludes non-NSW residents, and persons with unknown Aboriginal status. Year is based on calculated onset date.

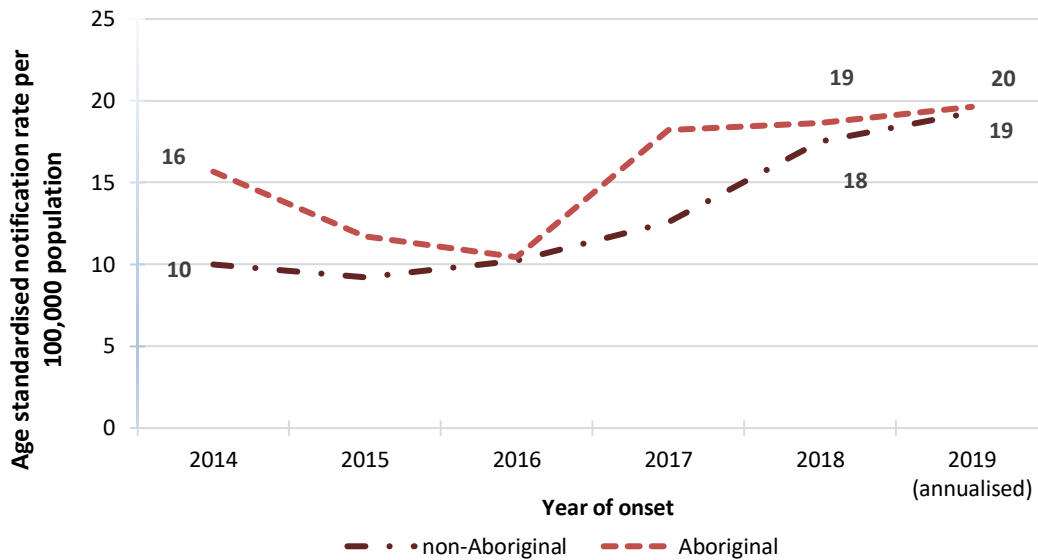
In January - June 2019:

- Of the 892 infectious syphilis notifications, 20 (2.2%) were among Aboriginal people, 723 (81%) were among non-Aboriginal people and Aboriginal status was not stated for 149 (17%).
- The proportion of infectious syphilis notifications that were among Aboriginal people was the same as in 2018.

Note: As the number of infectious syphilis notifications in the Aboriginal population is small, trends should be interpreted with caution.



Figure 21: Infectious syphilis notification rate by Aboriginal status, NSW, 1 January 2014 – 30 June 2019



Data source: NCIMS and ABS population estimates (via SAPHaRI), NSW Health; data extracted 6 November 2019.

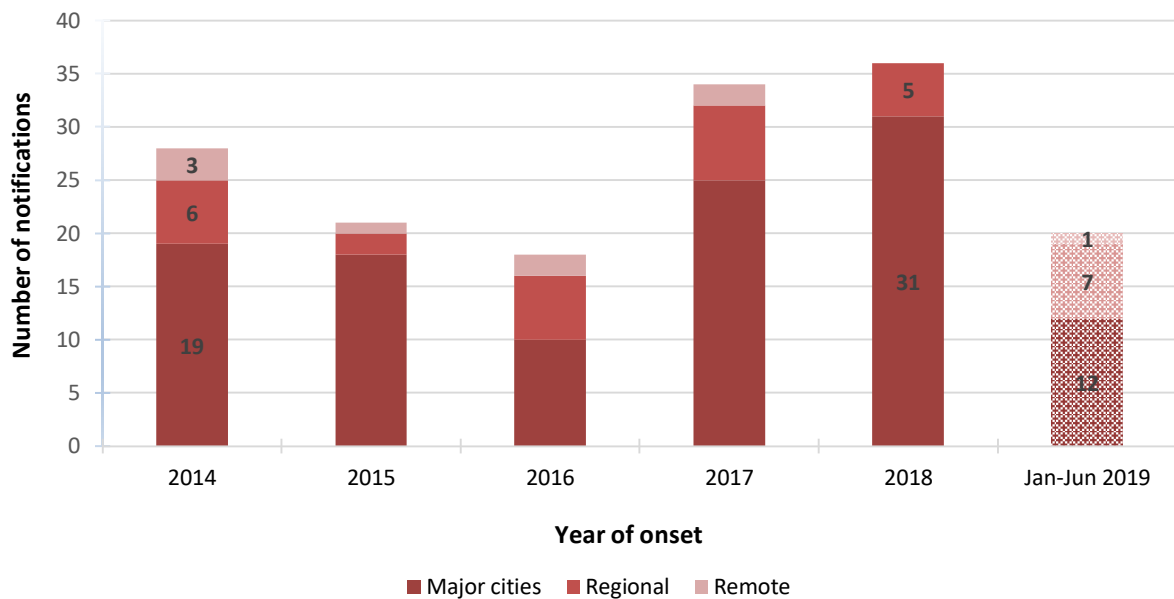
Note: Excludes non-NSW residents and persons with unknown Aboriginal status. Year is based on calculated onset date. Rates directly age-standardised standardised to the Australian Standard Population 2001.

In January-June 2019:

- Age standardised notification rates amongst those whose Aboriginal status was known were comparable between Aboriginal and non-Aboriginal people. The annualised notification rate among Aboriginal people was 19.6 notifications per 100,000 population. Among non-Aboriginal people, the rate was 19.3 notifications per 100,000 population

Note: As the number of infectious syphilis notifications among Aboriginal people is small, fluctuations in the rate should be interpreted with caution. In addition, there is variation in screening rates between populations groups and areas, and opportunistic sexual health screening may not include syphilis serology.

**Figure 22: Number of Infectious syphilis notifications in the Aboriginal population, by remoteness area, NSW, 1 January 2014 - 30 June 2019**



Data sources: NCIMS, NSW Health; data extracted 6 November 2019.

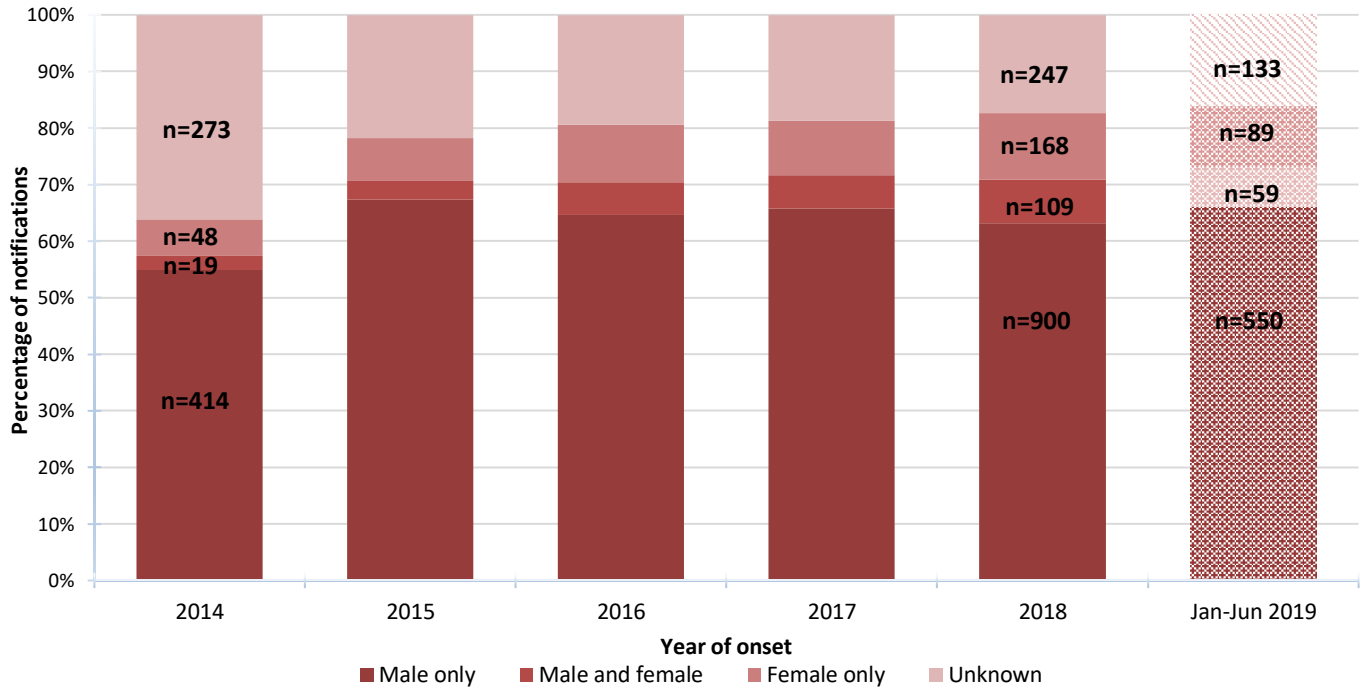
Note: Excludes non-NSW residents; persons with unknown Aboriginal status, and persons whose residential postcode was not stated. Year is based on calculated onset date.

In January-June 2019:

- Of the 20 infectious syphilis notifications among Aboriginal people with known postcode at notification, 12 (60%) resided in major areas, 7 (35%) in regional areas, and one in a remote area. As the number of infectious syphilis notifications in the Aboriginal population is small, particularly in regional and remote areas, fluctuations are to be expected and trends should be interpreted with caution.

Note: There is an ongoing outbreak of infectious syphilis among Aboriginal and Torres Strait Islander people in predominantly rural and remote areas of Queensland, the Northern Territory, Western Australia, and South Australia. To the end of June 2019, there have been no syphilis cases detected in Aboriginal communities in NSW associated with this outbreak. Further information regarding the outbreak is available on the [Australian Government Health Department website](#).

**Figure 23: Reported sexual exposure of men diagnosed with infectious syphilis, NSW, 1 January 2014 – 30 Jun 2019**



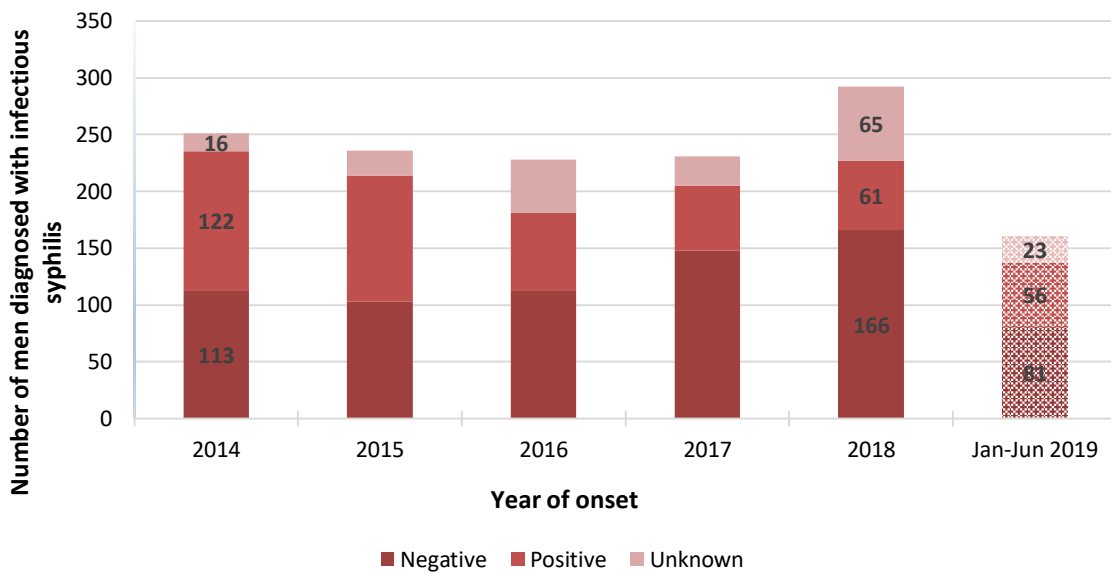
Data sources: NCIMS, NSW Health; data extracted 18 November 2019.

Note: Excludes non-NSW residents. Year is based on calculated onset date.

In January-June 2019:

- Male-to-male sex continued to be the predominant reported sexual exposure of men diagnosed with infectious syphilis, accounting for 66% of cases. Compared to 2018, this represents a slight increase by three percentage points.
- The proportions of men diagnosed with infectious syphilis who reported both male and female sexual exposure (7%) and female exposure only (11%) were both one percentage point lower compared to 2018.

Figure 24: HIV status of men diagnosed with infectious syphilis, Sydney LHD, 1 January 2014 – 30 June 2019



Data source: Sydney LHD – Ethics approved study on syphilis and HIV coinfection enhanced surveillance for infectious syphilis. HIV status is collected from diagnosing clinicians as part of enhanced follow up of all men diagnosed with infectious syphilis. Year is based on calculated onset date.

In January-June 2019:

- The proportion of men diagnosed with infectious syphilis residing in Sydney LHD who were known to be HIV negative declined to 51% from 57% in 2018.
- The proportion of men diagnosed with infectious syphilis residing in Sydney LHD who were known to be HIV positive increased to 35% from 21% in 2018.
- HIV status was missing or unknown for a smaller proportion of men diagnosed with infectious syphilis in the first half of 2019 (14%) compared with 2018 (22%).

## 2.2 Congenital syphilis notifications

Congenital syphilis is an entirely preventable disease. Its occurrence reflects a failure of delivery systems for antenatal care and for syphilis control programs. In NSW, all cases of congenital syphilis are investigated to identify and remedy gaps in service delivery.

In the last five years there were three cases of congenital syphilis among NSW residents, one each in the first half of 2019, in 2018 and in 2017, all three occurring in metropolitan Sydney. There were no congenital syphilis cases in the Aboriginal population in NSW from January 2014 to June 2019.

Data source: NCIMS, NSW Health

### 3 Reduce pelvic inflammatory disease associated with chlamydia

Chlamydia infection is usually a self-limiting disease, however in women it is associated with an increased risk of pelvic inflammatory disease (PID), ectopic pregnancy, and infertility. The risk of these outcomes increases with the number of chlamydia infections that a woman contracts. For this reason, the burden of pelvic inflammatory disease may be a better measure of chlamydia morbidity than chlamydia notification data.

Chlamydia associated PID hospitalisation data are used in this report as an indicator of the burden of pelvic inflammatory disease. Emergency department presentations (without a subsequent hospital admission) have not been included as the diagnoses of PID in the admitted patient data collections are likely to be more reliably and consistently applied than in the emergency department data. As only the most severe cases of PID are likely to be hospitalised, chlamydia associated PID hospitalisations do not reflect the true incidence or full burden of PID, but are used to monitor trends over time. PID hospitalisation data are influenced by changes in coding practices and changes in PID management over time.

Prevention, testing and appropriate treatment and management are the cornerstones of chlamydia control and are embedded in the current STI strategy. Chlamydia notification data does not reflect the true incidence of chlamydia infection as it only represents a proportion of infections in the population, however it is also useful for monitoring trends over time. Chlamydia notification data are heavily influenced by testing practices.

Chlamydia is a notifiable disease under the NSW *Public Health Act 2010*. A confirmed case requires isolation of *Chlamydia trachomatis* from culture or detection by nucleic acid testing (NAAT) or antigen. Only confirmed cases of chlamydia are counted when reporting chlamydia notification data. Patient care and contact tracing are the responsibility of the treating doctor. Information on risks (e.g. sexual exposure) is not routinely collected.

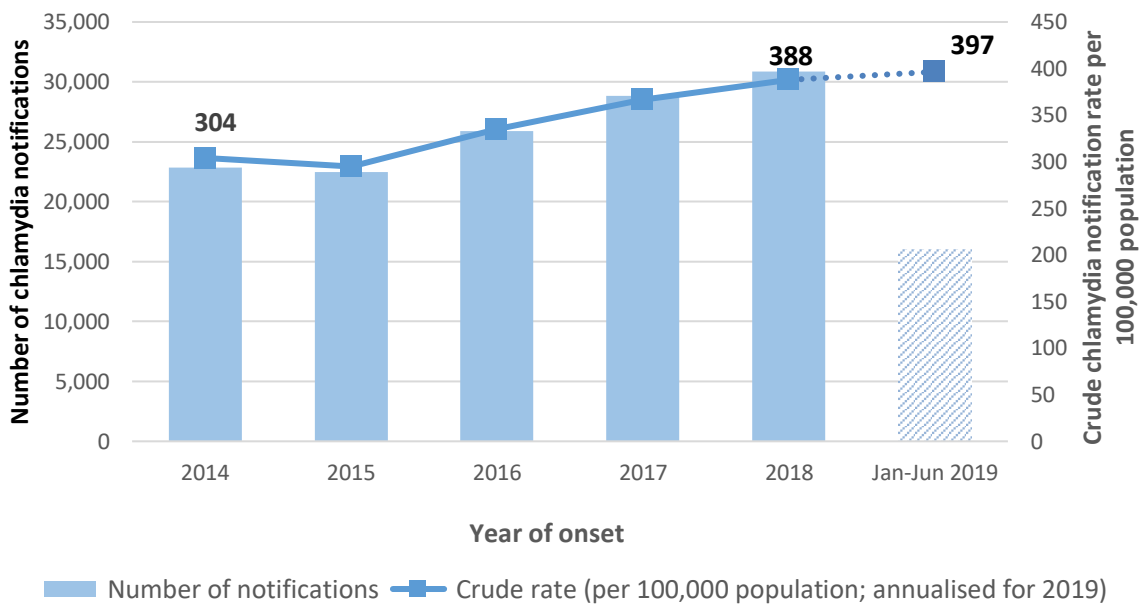
It is important to note that there may be multiple specimens collected for each individual tested for chlamydia. Hence the number of chlamydia tests done is greater than the number of individuals tested. However, an individual with multiple specimens within a 28 day period that are positive for *Chlamydia trachomatis* will generate only one notification.

### 3.1 Chlamydia-associated hospitalisations for pelvic inflammatory disease

\*See forthcoming STI Data Report January – December 2019

### 3.2 Chlamydia notifications

Figure 25: Number and crude rate of chlamydia notifications, NSW, 1 January 2014 – 30 June 2019

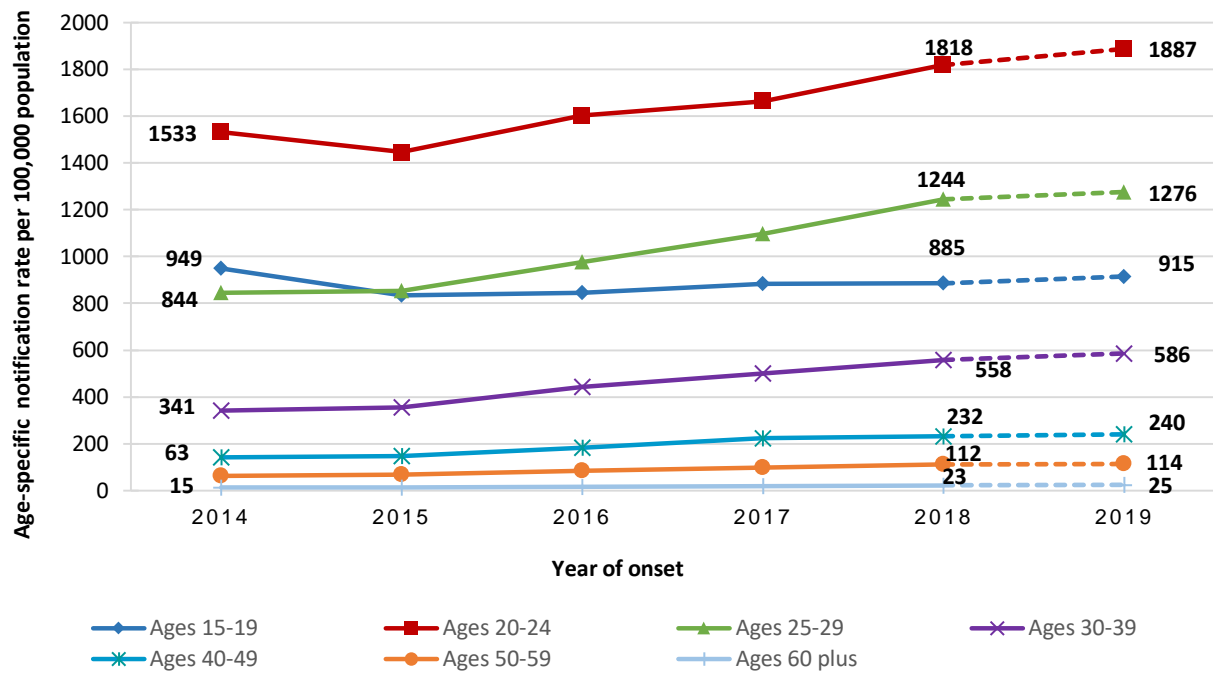


Data source: NCIMS and ABS population estimates (via SAPHaRI), NSW Health; data extracted 6 November 2019.  
Note: Excludes non-NSW residents. Year is based on calculated onset date.

In January to June 2019:

- The annualised chlamydia notification rate was 397 notifications per 100,000 population, 2% higher compared to 2018 when it was 388 notifications per 100,000 population.
- The notification rate has increased by 31% since 2014 when it was 304 notifications per 100,000 population.

Figure 26: Age-specific chlamydia notification rates in people aged 15 years and over, NSW, 1 January 2014 – 30 June 2019



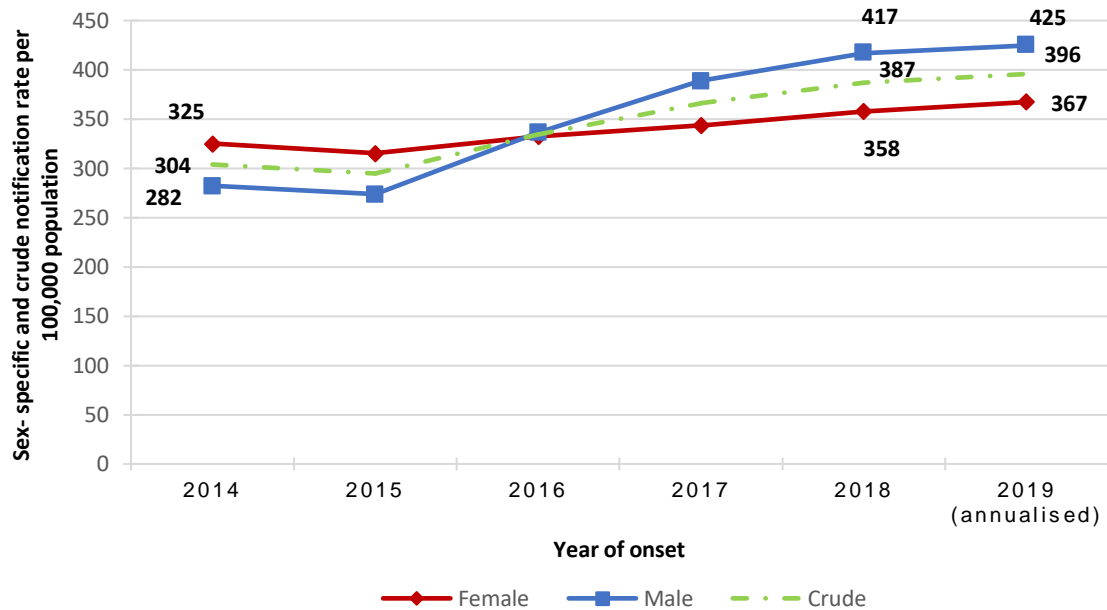
Data source: NCIMS and ABS population estimates (via SAPHARI), NSW Health; data extracted 6 November 2019.  
Note: Excludes non-NSW residents and persons whose age at diagnosis was not stated. Year is based on calculated onset date.

In January – June 2019:

- The highest annualised chlamydia notification rates continue to occur in the 20-24 years and 25-29 years age groups.
- Annualised chlamydia notification rates increased among all age groups compared with 2018, although relative increases were smaller and more uniform across groups than in 2017-2018.
- The highest increases occurred in the 60 years and over (8% increase, but small absolute notification numbers) and 30-39 years (5% increase) age groups.



Figure 27: Sex-specific chlamydia notification rate, NSW, 1 January 2014 – 30 June 2019



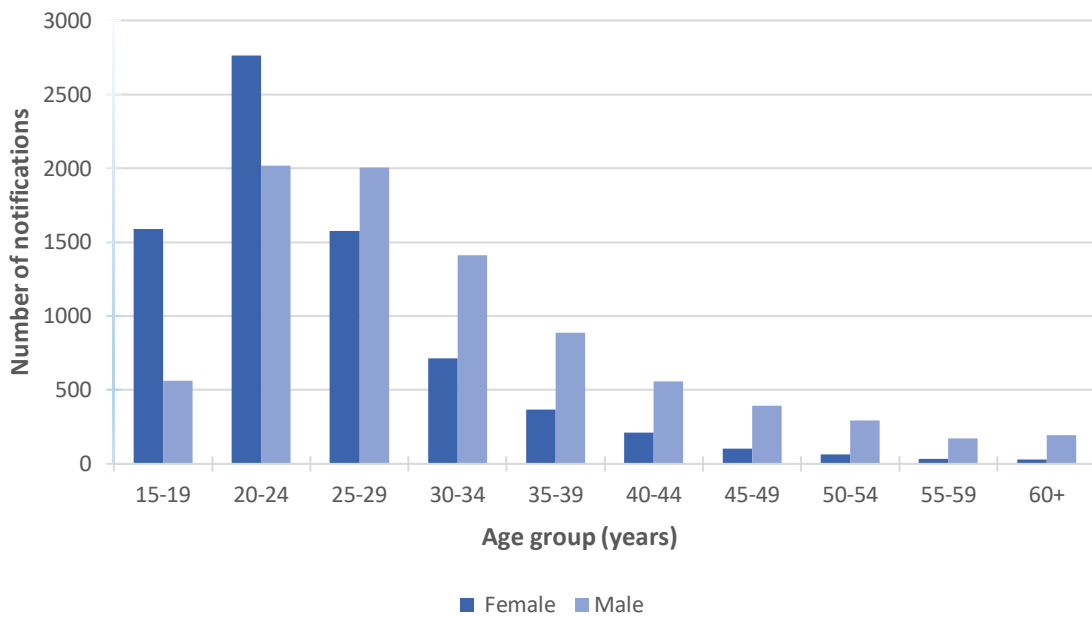
Data source: NCIMS and ABS population estimates (via SAPHaRI), NSW Health; data extracted 6 November 2019.

Note: Excludes non-NSW residents, persons reported as transgender (due to small numbers), and persons whose sex was not reported. Year is based on calculated onset date.

In January – June 2019:

- Of 16,008 chlamydia notifications, 53% (n= 8,507) were reported as male and 47% (n= 7,471) were reported as female. There were 7 notifications in persons reported as transgender and 23 notifications in persons whose sex was reported as not stated or inadequately described (for further notes on sex classification see Appendix D).
- The annualised chlamydia notification rate in males was 425 notifications per 100,000 males, which is 16% higher than the notification rate in females of 367 notifications per 100,000 females. The male-to-female ratio has stayed stable since 2018. Prior to 2016, the rate was higher in females than males.
- The annualised 2019 notification rates increased by 2% from the 2018 rates for males and by 2.5% for females.

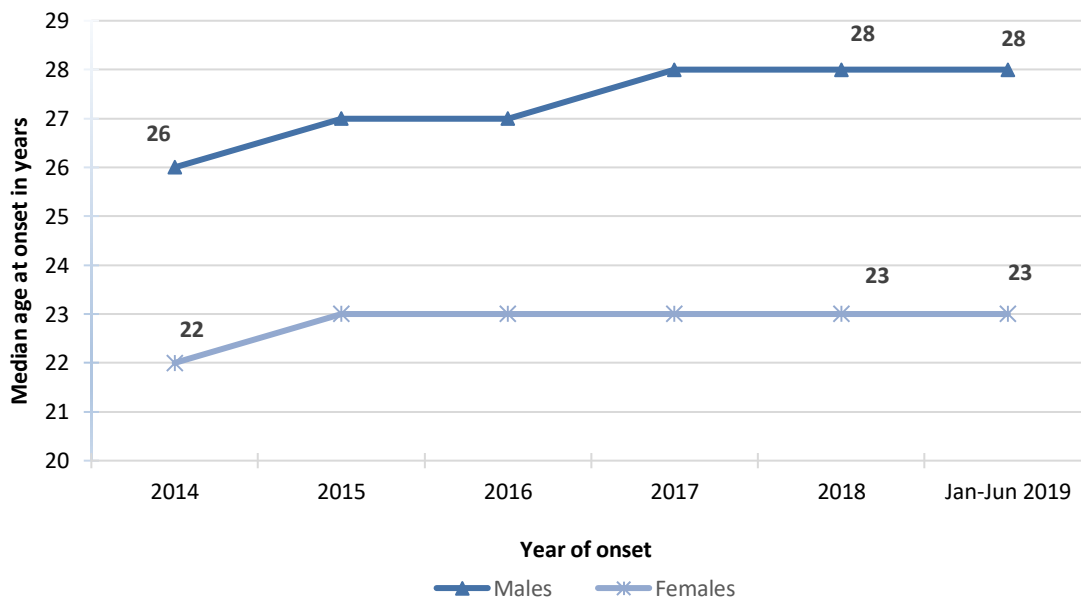
**Figure 28: Chlamydia notifications by age and sex in people aged 15 years and over, NSW, 1 January – 30 June 2019**



Data source: NCIMS (via SAPHaRI), NSW Health; data extracted 6 November 2019.

Note: Excludes non-NSW residents, persons reported as transgender (due to small numbers), and persons whose age or sex was not reported. Year is based on calculated onset date.

**Figure 29: Median age of chlamydia notifications by sex, NSW, 1 January 2014 - 31 December 2018**



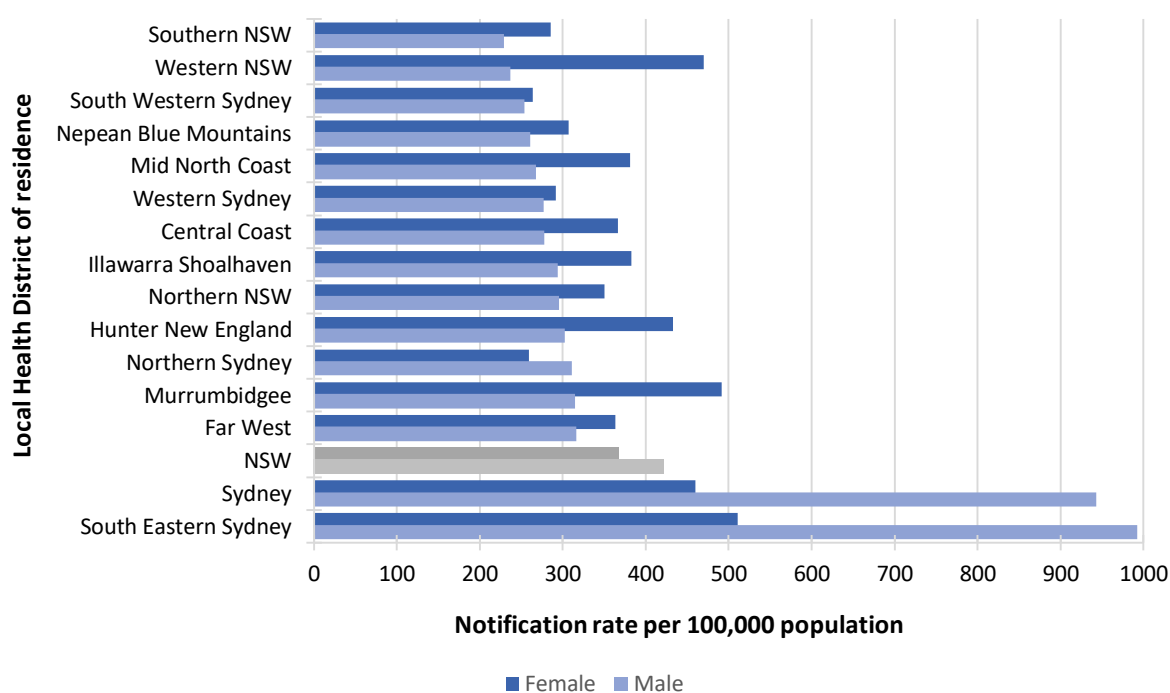
Data source: NCIMS (via SAPHaRI), NSW Health; data extracted 6 November 2019.

Note: Excludes non-NSW residents and persons whose age and sex was not reported. Year is based on calculated onset date.

In January – June 2019:

- The most commonly notified groups were females aged 20-24 years and males aged 20-24 years, followed by males aged 25-29 years and females aged 15-19 years.
- The median age of females was 23 years, the same as in 2018 and one year older than in 2014 when the median age was 22.
- The median age of males was 28 years, the same as in 2018 and two years older than in 2014 when the median age was 26.

Figure 30: Annualised chlamydia notification rate by LHD and gender, NSW, 1 January – 30 June 2019



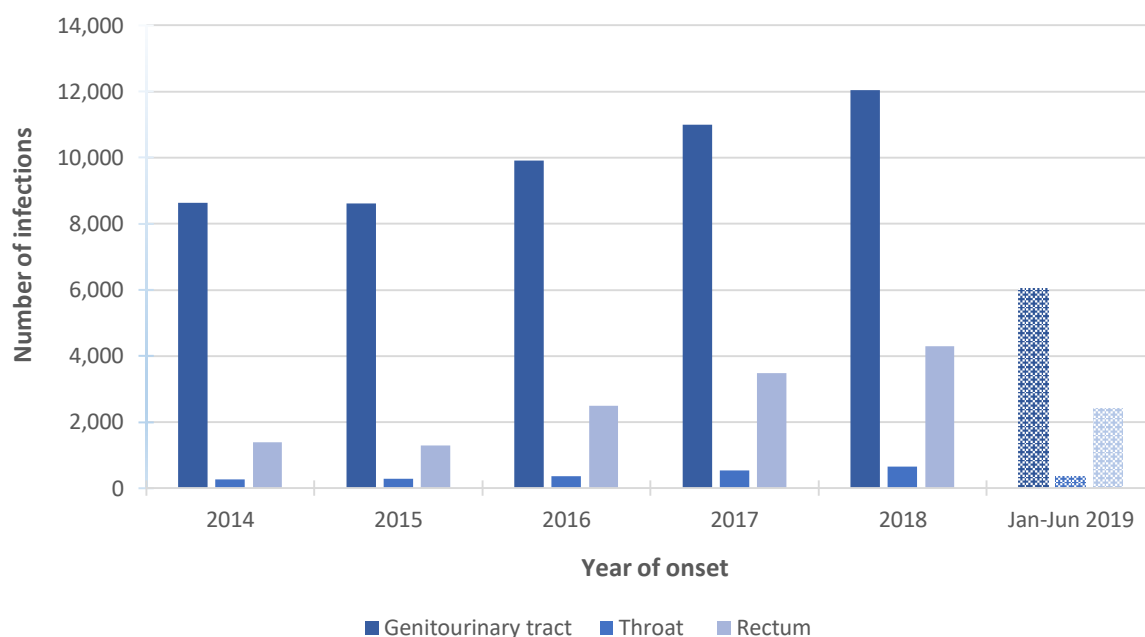
Data source: NCIMS and ABS population estimates (via SAPHaRI), NSW Health; data extracted 6 November 2019.  
Note: Excludes non-NSW residents, persons reported as transgender (due to small numbers), persons whose sex was not reported, and notifications from Justice Health. For Justice Health notifications, see Table in Appendix D: Notification data. Year is based on calculated onset date.

In January – June 2019:

- Overall, one third of local health districts experienced slight decreases in annualised chlamydia notification rates compared to 2018. The largest relative increases in notification rates occurred in the Western NSW (22%) and Mid North Coast (13% increase) Local Health Districts, followed by a number of local health districts with small increases of 5%-10%.
- Among males, the highest annualised notification rates continue to be observed in the Sydney and South Eastern Sydney Local Health Districts. The largest relative increase occurred in Western NSW Local Health District at 15%, followed by a number of local health districts with increases of 9%-11%. Small rate decreases were observed in South Western Sydney (17% reduction), Western Sydney, Central Coast, and Northern Sydney LHD Local Health Districts (all <10% reduction).
- Among females, annualised notification rates remained stable or decreased among a majority of local health districts. The largest relative increase occurred in Western NSW Local Health District at 25%, followed by Central Coast Local Health District at 17%. Rate decreases were most pronounced in Far West (17% reduction) and South Western Sydney (11% reduction) Local Health Districts.

See **Appendix D Table 10** for a full overview of notification rates by sex and year by local health district.

**Figure 31: Number of chlamydia infections in males, by site of infection, NSW, 1 January 2014 – 30 June 2019**



Data source: NCIMS and ABS population estimates (via SAPHARI), NSW Health; data extracted 6 November 2019.

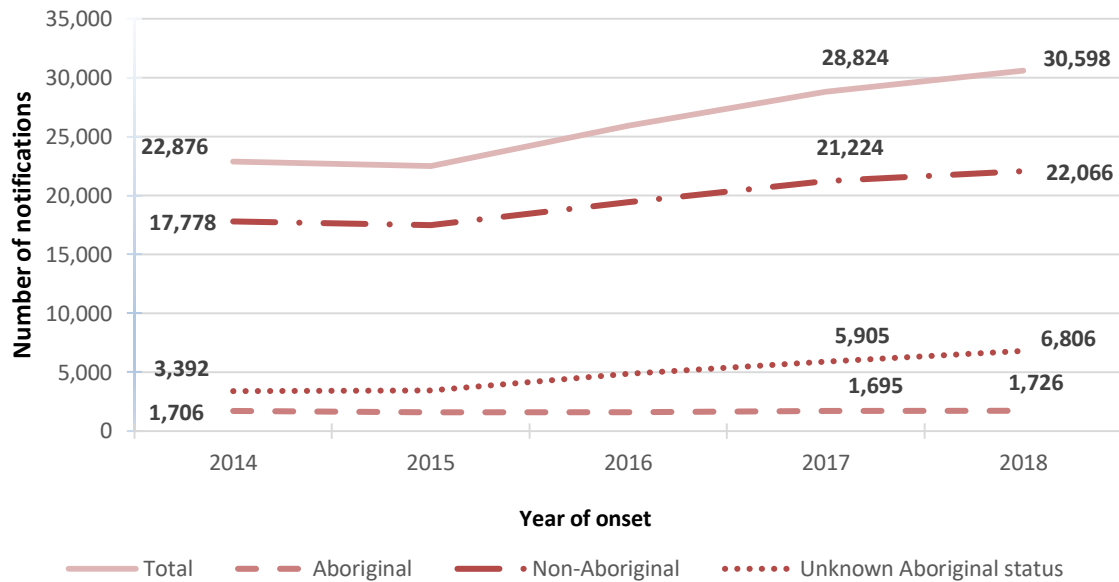
Note: Excludes non-NSW residents, persons reported as transgender (due to small numbers), and persons whose sex was not reported. Year is based on calculated onset date. Number of infections exceeds number of notifications due to infection at multiple anatomical sites.

In January-June 2019:

- The genitourinary tract remained the main site of chlamydia infection in males. On an annualised basis, the number of infections at this site stayed stable compared to 2018. By contrast, relative increases were seen in rectal infections at 21% and in throat infections at 10%. These increases are smaller than in 2017-2018.
- Infections in females continued to be detected almost exclusively in the genitourinary tract. On an annualised basis, the number of infections at this site compared to 2018 were largely stable. However, while absolute numbers at other sites remain small, throat infections (144 infections in January-June 2019) showed a large relative increase of 35%, followed by rectal infections at 11% (79 infections in January-June 2019; data not shown). These increases were larger than in 2017-2018 for throat infections, but smaller for rectal and genitourinary tract infections.

### 3.3 Chlamydia notifications among Aboriginal people

Figure 32: Number of chlamydia notifications by Aboriginal status, NSW, 2014 – 2018



Data source: Communicable Diseases Register, NSW Ministry of Health (via SAPHaRI); data extracted 11 November 2019  
Note: Excludes non-NSW residents.

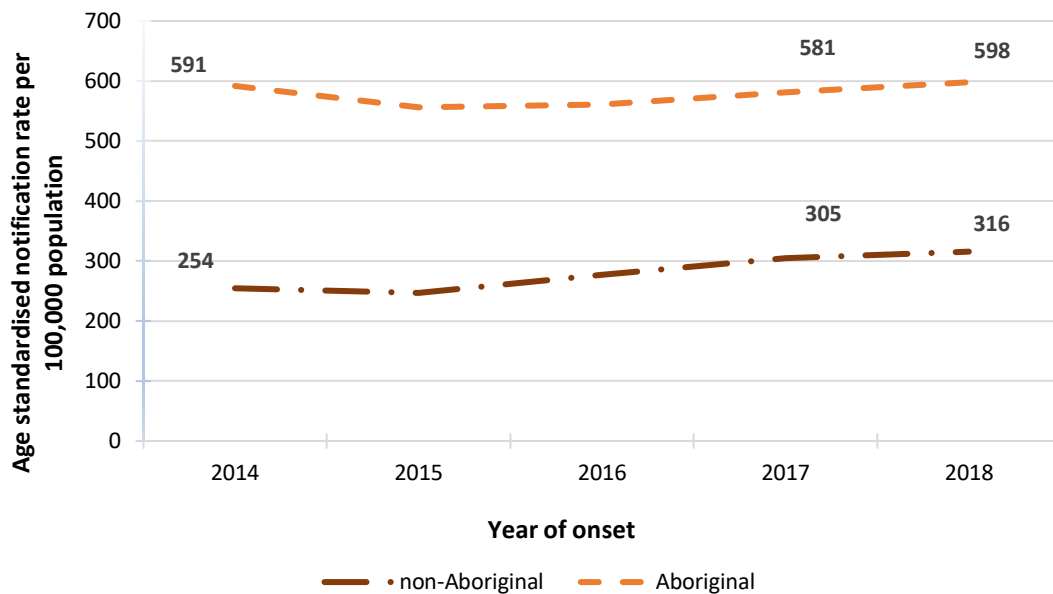
In 2018:

- In total, 30,598 chlamydia notifications were recorded in the Communicable Diseases Register (CDR).
- Aboriginality was not stated for 6,806 (22.2%) notifications. Of those whose Aboriginal status was not stated, 92% resided in a major city area.
- Of those for whom Aboriginality was stated, 1,726 (7.3%) notifications were among Aboriginal people, and 22,066 (92.7%) were among non-Aboriginal people.

Note: Trends in the Aboriginal population are difficult to interpret due to variation in the yearly number of people for whom Aboriginal status was not stated, and the relatively high proportion of incomplete data compared to the proportion who are Aboriginal people.

Differences in notification numbers captured in the CDR compared to previous reports are due to improved record linkage and inclusion of NCIMS records that were unable to be matched to any of the other contributing data sources.

Figure 33: Age-standardised chlamydia notification rate by Aboriginal status, NSW, 2014 - 2018



Data source: Communicable Diseases Register, NSW Ministry of Health, and ABS population estimates (via SAPHaRI) (via SAPHaRI); data extracted 11 November 2019.

Note: Excludes non-NSW residents, records where Aboriginal status was not stated (see Figure 32), and records where age was not stated; rates directly age-standardised standardised to the Australian Standard Population 2001.

In 2018:

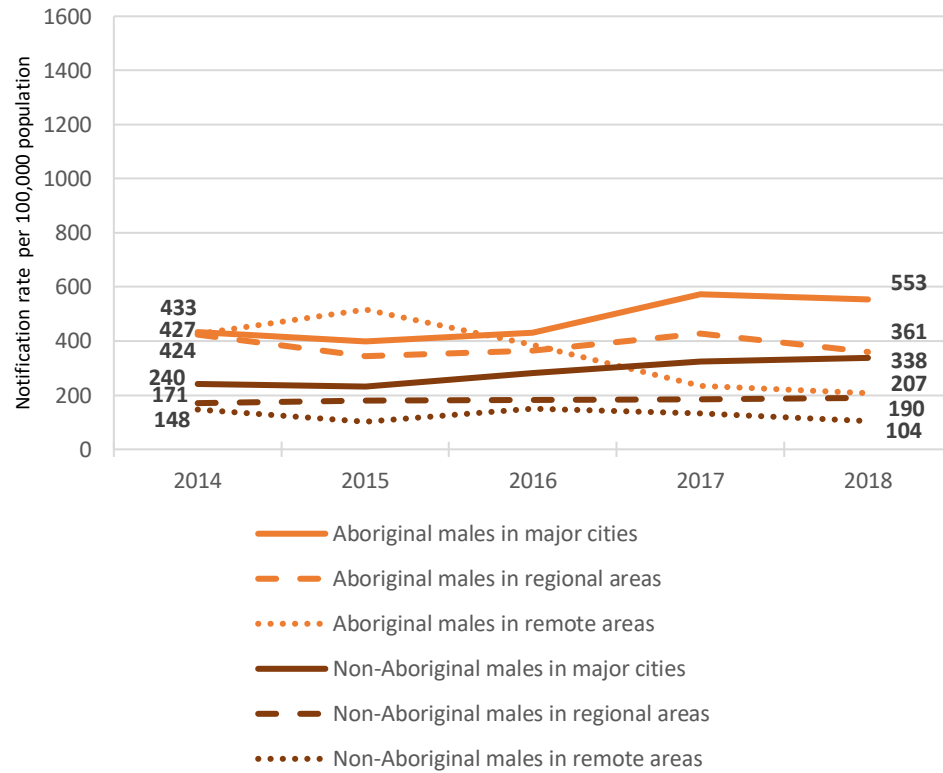
- Notification rates of chlamydia among both Aboriginal and non-Aboriginal people increased by 3% from 2017 to 2018. Between 2014 and 2018, chlamydia notification rates among Aboriginal people increased by 1% from 591 notifications per 100,000 population to 598 notifications per 100,000 population, with lower rates recorded in the intervening years 2015-2017. Rates among non-Aboriginal people rose by 25% over the same period, increasing steadily from 254 notifications per 100,000 population in 2014 to 316 notifications per 100,000 population in 2018.
- Among those whose Aboriginal status was known, the chlamydia notification rate was almost twice as high among Aboriginal people as among non-Aboriginal people (598 per 100,000 vs 316 notifications per 100,000 population) in 2018.

Note: As the number of notifications among Aboriginal people is relatively small, yearly fluctuations in the rate should be interpreted with caution. Changes in notification rates may be due to variation in incidence of disease, screening rates and/or the number of people for whom Aboriginal status was not stated (see Figure 32).

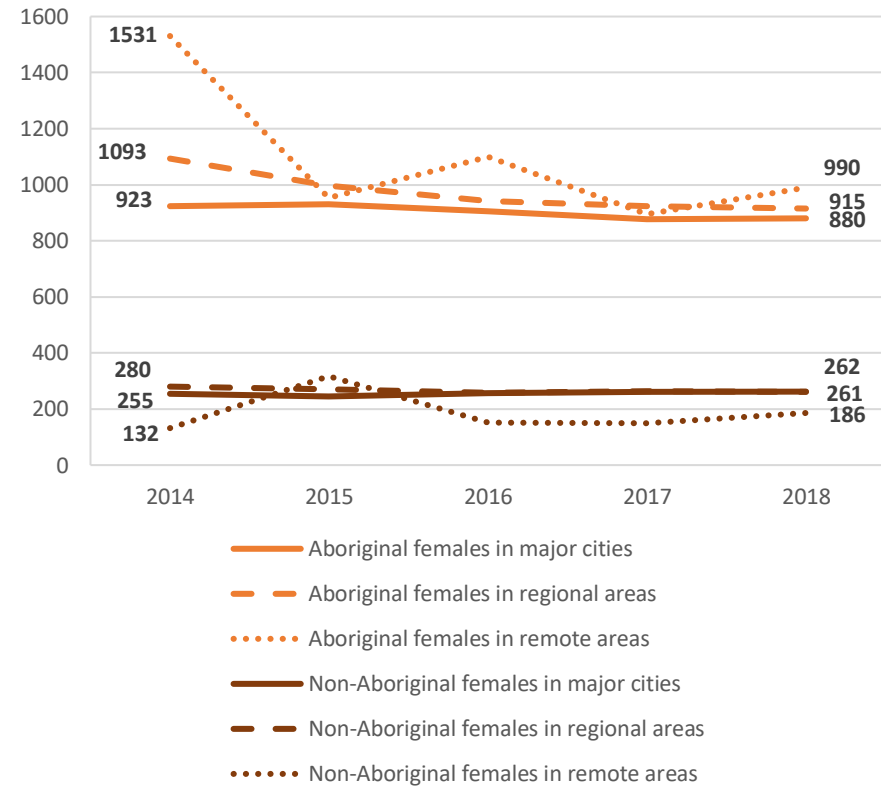
Differences in notification numbers captured in the CDR compared to previous reports are due to improved record linkage and inclusion of NCIMS records that were previously unable to be matched to any of the other contributing data sources.

Figures 34a & 34b: Crude chlamydia notification rates in males and females, by Aboriginal status and remoteness area, NSW, 2014 - 2018

**Males**



**Females**



Data sources: Communicable Diseases Register, NSW Ministry of Health (via SAPHaRI), data extracted 11 November 2019.

Note: Excludes non-NSW residents, records where Aboriginal status was not stated (see Figure 32), records where sex was not stated, and records where residential postcode was not stated. Population estimates by remoteness area apply the proportion of residents by Aboriginal status and remoteness area at 30 June 2016 (ABS 3238.0.55.001 - Estimates of Aboriginal and Torres Strait Islander Australians, June 2016) which was the most recent estimate available at the time of publication.



In 2018:

- The highest chlamydia notification rates were among Aboriginal females living in remote areas of NSW, followed closely by Aboriginal females living in regional areas and major city areas. Among females, disparities between Aboriginal and non-Aboriginal populations are more pronounced than among males and consistent across remoteness areas.
- Among males, Aboriginal males living in major city areas had the highest notification rates. Prior to 2016, Aboriginal males living in remote areas had the highest rates; however, the rate has since fallen below the rate for non-Aboriginal males living in major cities.

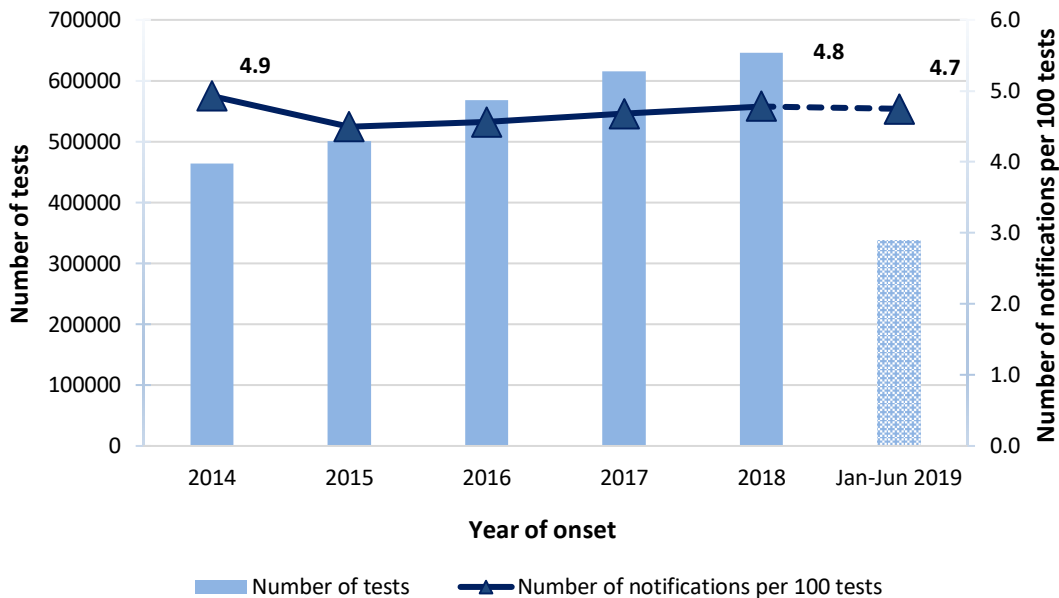
Note: As the number of notifications in the Aboriginal population is relatively small, especially among residents of remote areas, trends should be interpreted with caution.

Differences in notification numbers captured in the CDR compared to previous reports are due to improved record linkage and inclusion of NCIMS records that were previously unable to be matched to any of the other contributing data sources.

### 3.4 Chlamydia testing

In 2012, NSW Health commenced collection of 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 35: Number of chlamydia tests and notification to test ratio<sup>6</sup>, NSW, 1 January 2014 – 30 June 2019



Data source: NCIMS and NSW Denominator Data Project, NSW Health; notification data extracted 6 November 2019, testing data extracted 15 November 2019

Note: Testing of multiple anatomical sites results in multiple tests being counted per person and episode of infection

In January - June 2019:

- The number of chlamydia tests (NAAT) performed in NSW continued to increase.
- A total of 337,170 tests for chlamydia were performed in 15 laboratories in NSW in the first half of 2019, a 2% increase compared to the same period in 2018 when 331,102 tests were performed.
- There were 4.7 chlamydia notifications per 100 chlamydia tests. The number of notifications per 100 chlamydia tests has remained roughly stable over time.

<sup>6</sup> See Appendix B: Table 6 about methodology

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#### **4 Maintain high coverage of HPV vaccination for Year 7 school students**

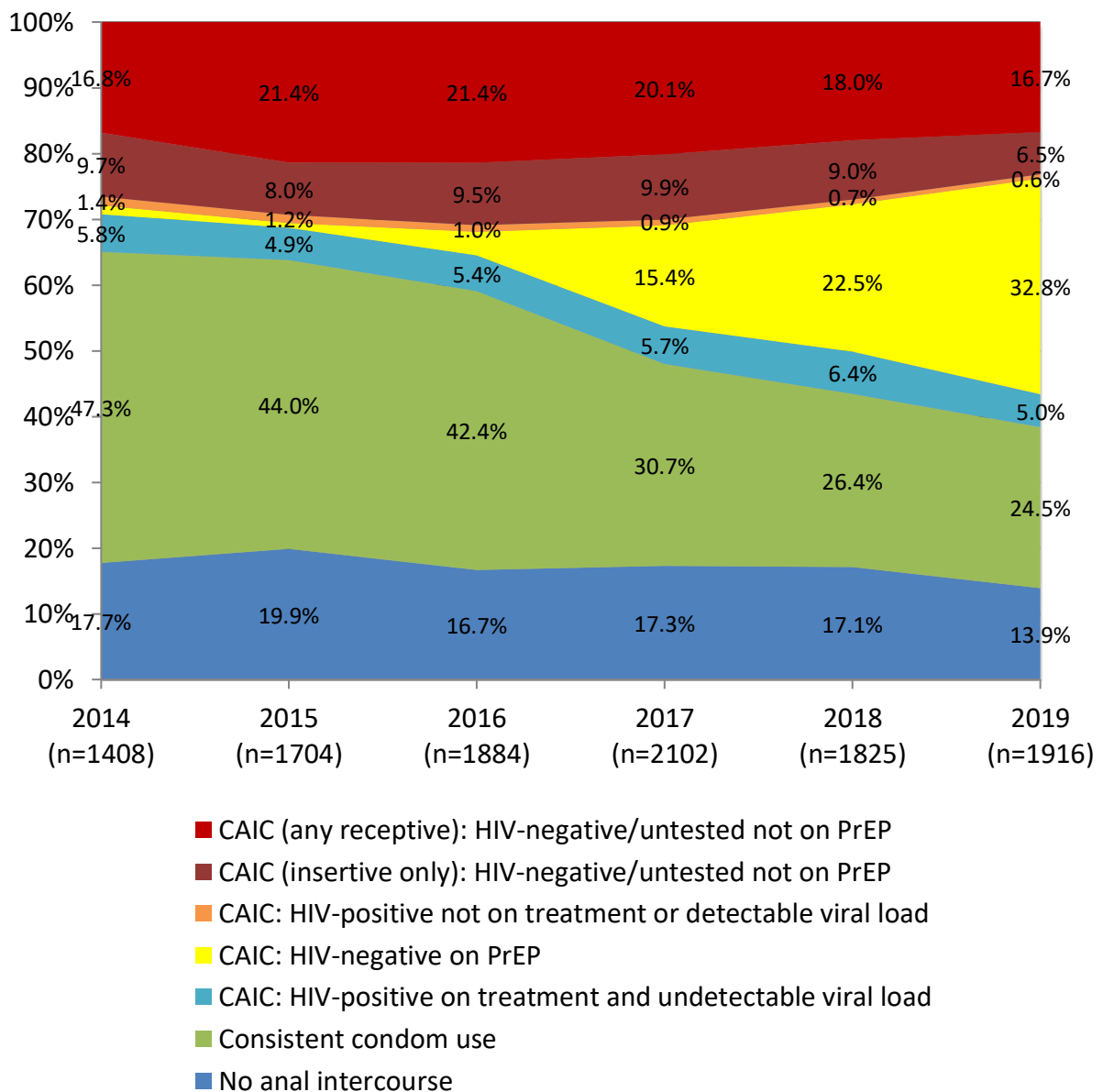
**\*See forthcoming STI Data Report January – December 2019**

## 5 Maintain high condom use

### 5.1 Condom use among men who have sex with men

Condom use and other HIV risk reduction strategies used by gay and bisexual men are measured through the annual Sydney Gay Community Periodic Survey (SGCPS), conducted each year during February/March. With the introduction of pre-exposure prophylaxis (PrEP) in NSW and the focus on the preventative benefits of HIV treatment in the current NSW HIV Strategy, reporting of condomless anal intercourse with casual partners (CAIC) in the SGCPS has been modified, distinguishing between HIV-positive men who are virally suppressed or not and HIV-negative men who are protected by PrEP or not.

**Figure 36: Proportion of MSM with casual partners reporting consistent condom use and any condomless anal intercourse in the previous six months**



Data source: [Sydney Gay Community Periodic Survey](#), Centre for Social Research in Health, UNSW Sydney.

Note: CAIC = condomless anal intercourse with casual male partners. PrEP = pre-exposure prophylaxis. Consistent condom use includes men who report condom use for anal sex with casual male partners in the 6 months prior to survey and no condomless anal intercourse with those partners.

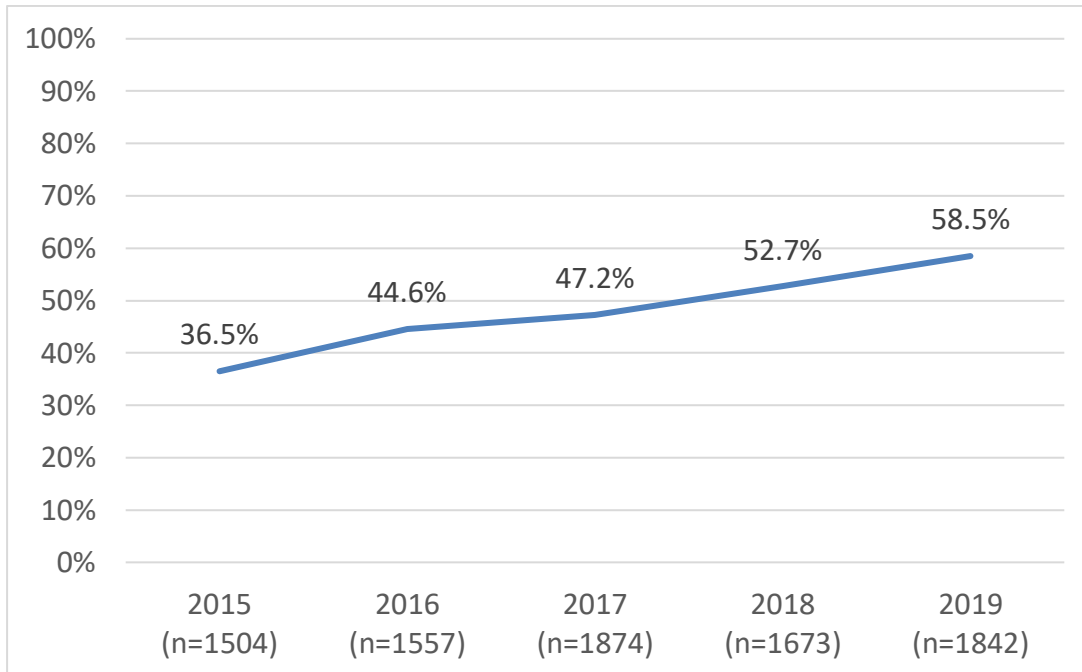
- The SGCPs data show a rapid increase in PrEP use, particularly from 2017 onwards. The proportion of gay men with casual male partners who reported PrEP use and condomless anal intercourse was 32.8% in 2019, compared to 15.4% in 2017.
- As PrEP use has increased, consistent condom use has fallen. In 2019, 24.5% of gay men with casual partners reported consistent condom use, compared to 47.3% in 2014.
- The proportion of gay men with casual partners who reported being HIV-positive, on treatment and having an undetectable viral load and who reported condomless anal intercourse has remained relatively stable between 2014 and 2019 at around 5-6%.
- The proportion of HIV-positive men who reported not being on treatment or having a detectable viral load and who reported CAIC decreased to 0.6% of men with casual partners in 2019, compared to 1.4% in 2014.
- In 2019, the proportion of gay men with casual partners who were HIV-negative or untested, not on PrEP and who reported any CAIC (insertive or receptive) decreased to 23.2%, compared to 26.5% in 2017. This suggests the proportion of gay men who are susceptible to HIV infection has decreased in Sydney as PrEP use has progressed.
- 'Net prevention coverage', i.e. the proportion of gay men with casual partners who report any form of safe sex, such as avoiding anal intercourse, condom use, PrEP use or undetectable viral load, has increased over the last few years, from 68.1% in 2016 to 76.2% in 2019.

### **Comprehensive STI testing among high risk MSM**

According to the [Australian STI Management Guidelines for Use in Primary Care](#), high risk men who have sex with men should be screened for STIs up to four times a year, and it is recommended that HIV-positive MSM be screened at the same frequency. The Sydney Gay Community Periodic Survey measures the frequency of STI testing among MSM. High risk behaviour is defined as recently engaging in any of the following:

- condomless anal sex with casual partners;
- having more than 10 sexual partners;
- participating in group sex;
- using recreational drugs during sex.

**Figure 37: Proportion of high risk MSM reporting comprehensive STI testing more than once in the previous 12 month**



Data source: [Sydney Gay Community Periodic Survey](#), Centre for Social Research in Health, UNSW Sydney.

From 2015 to 2019, the proportion of high risk MSM and HIV-positive MSM reporting more than one comprehensive STI screen has increased by 22.0%.

## 5.2 Condom use among young people

\*See forthcoming STI Data Report January – December 2019

## 6 Increase comprehensive STI testing in priority populations in accordance with risk

### 6.1 STI testing among young people

\*See forthcoming STI Data Report January – December 2018

### 6.2 Comprehensive STI testing among high risk MSM

\* See forthcoming STI Data Report January – December 2018

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## 7 Re-testing and Re-notifications

### 7.1 Re-notifications of chlamydia

This section was presented in the January to December 2018 Data Report and will be updated in the forthcoming January to December 2019 Data Report.

### 7.2 Re-notifications of gonorrhoea

This section was presented in the January to December 2018 Data Report and will be updated in the forthcoming January to December 2019 Data Report.

### 7.3 Re-notifications of infectious syphilis

This section was presented in the January to December 2018 Data Report and will be updated in the forthcoming January to December 2019 Data Report.

## 8 Increase the proportion of Aboriginal people diagnosed with chlamydia or gonorrhoea who get tested for HIV and syphilis

Note: These data are being collected and will be included in later reports.

## 9 Monitor the epidemiology of lymphogranuloma venereum (LGV)

Lymphogranuloma venereum (LGV) is a sexually transmissible infection that is caused by serovars L1, L2 and L3 of *Chlamydia trachomatis*. LGV is a comparatively rare STI in developed countries, including in Australia. However, increases primarily in men who have sex with men have been observed across Europe, the UK, and North America since a first cluster of rectal infections was reported in the Netherlands in 2003. In NSW, an increase in cases prompted the release of clinician alerts in 2010 and 2017, advising LGV-specific testing for MSM presenting with symptoms of proctitis.

LGV is not included in the NSW Sexually Transmissible Infections Strategy 2016 – 2020. Therefore, disease control indicators have not yet been established and reporting is still under development. In NSW, LGV is a notifiable disease under the *NSW Public Health Act 2010*. A confirmed case requires isolation or detection by nucleic acid testing of *Chlamydia trachomatis* serovars L1 to L3. Only confirmed cases of LGV are counted when reporting LGV notification data. Patient care and contact tracing are the responsibility of the treating doctor. Information on demographics (e.g. Aboriginal and Torres Strait Islander status) and risk exposures (e.g. sexual exposure, place of acquisition) is not routinely collected.

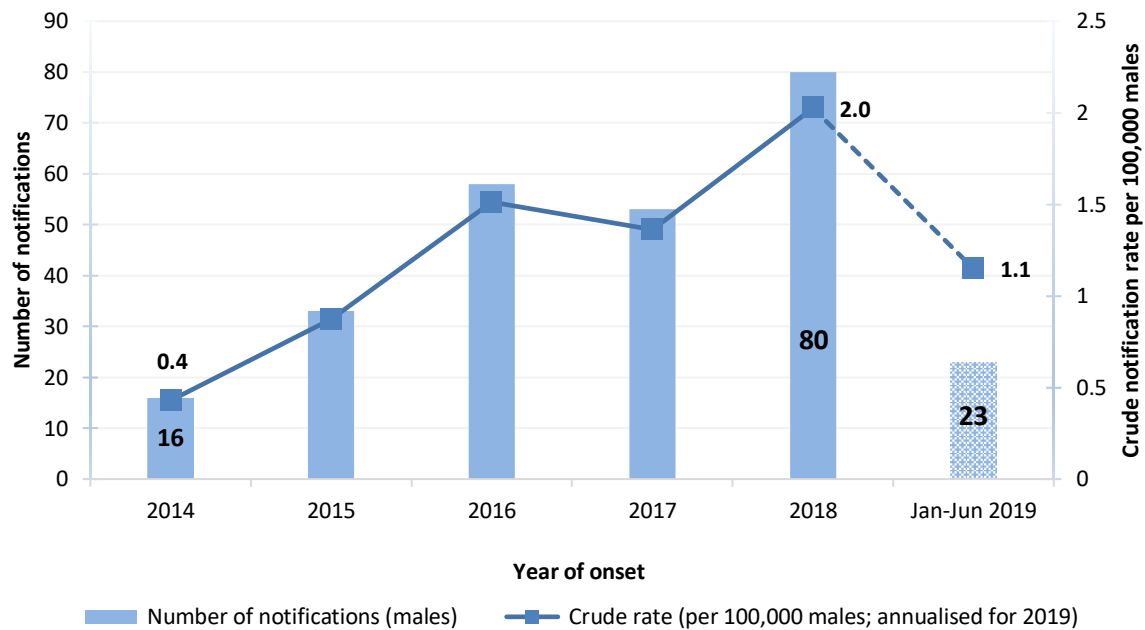
Although LGV is generally assumed to be symptomatic, asymptomatic rectal infections have been reported in more than a quarter of cases studied in the Netherlands and the UK.<sup>7,8</sup> In Australia, routine screening of asymptomatic patients is not recommended. Samples that are positive for any *Chlamydia trachomatis* serovar are not automatically tested for LGV if LGV-specific tests are not ordered. As a result, changes in notification data over time may partially reflect changes in testing practices. In addition, the small number of notifications per year leads to considerable fluctuations in rates and percentages. Most characteristics of LGV notifications are therefore aggregated over the entire 5.5 year reporting period.

<sup>7</sup> Saxon C, Hughes G, Ison C; UK LGV Case-Finding Group. Asymptomatic Lymphogranuloma Venereum in Men who Have Sex with Men, United Kingdom. *Emerging Infectious Diseases*. 2016;22(1):112–116.

<sup>8</sup> de Vrieze NHN, van Rooijen M, Schim van der Loeff MF, et al Anorectal and inguinal lymphogranuloma venereum among men who have sex with men in Amsterdam, the Netherlands: trends over time, symptomatology and concurrent infections *Sexually Transmitted Infections* 2013;89:548-552.



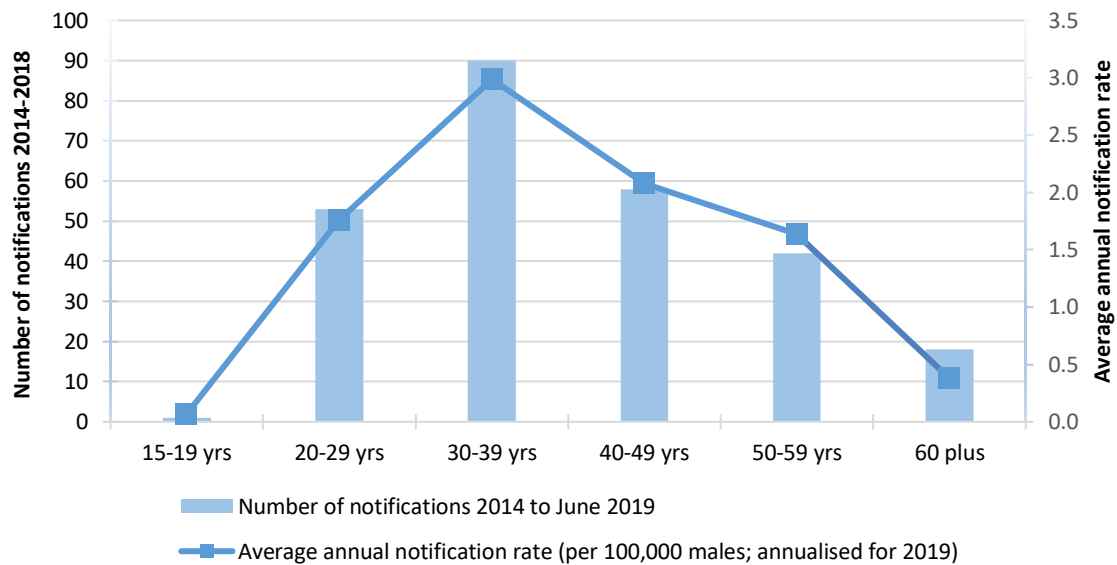
**Figure 42: Number and rate of LGV notifications in males by year of onset, NSW, 1 January 2014 - 30 June 2019**



Data source: NCIMS and ABS population estimates (via SAPHARI), NSW Health; data extracted 6 November 2019.  
Note: Excludes non-NSW residents. Year of onset is based on calculated onset date.

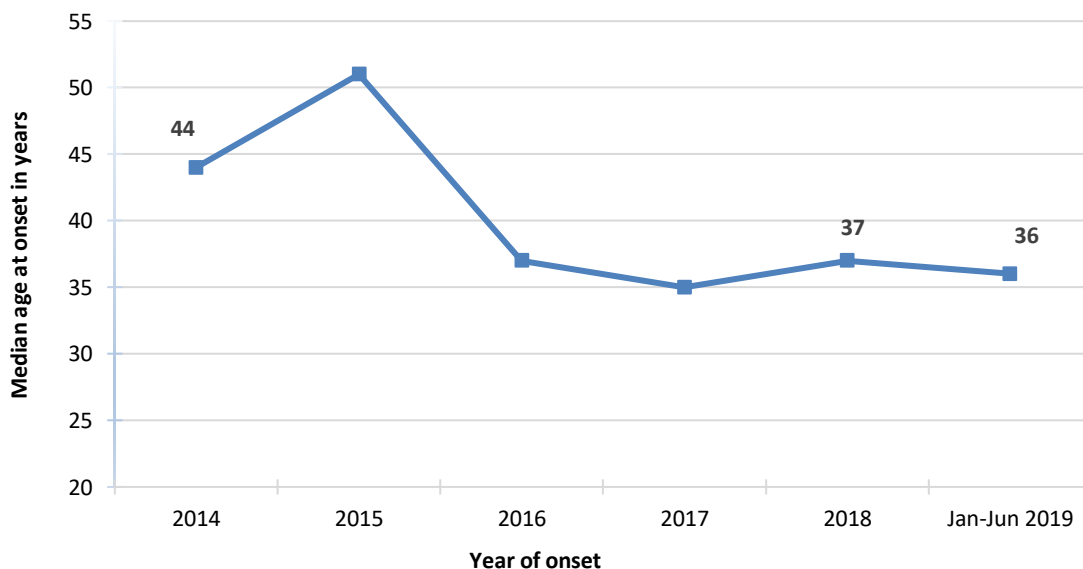
- From 1 January 2019 to 30 June 2019, 23 cases of LGV were notified to NSW Health (Figure 1). All cases notified in the first half of 2019 were diagnosed in males. A total of 263 cases of LGV were notified in the period January 2014 - June 2019.
- The annualised notification rate was 1.1 cases per 100,000 males in the first half of 2019. This was 43% lower compared to 2018 when the notification rate was 2 cases per 100,000 males. Only one female case of LGV was notified in NSW in the period January 2014 - June 2019, which has been excluded from all rate calculations.
- In the period January 2014 – December 2018, Aboriginal and Torres Strait Islander status was known for 83% (n=201) of notifications. Six cases of LGV in Aboriginal and Torres Strait Islander males were notified in the five year time period (CDR data).

**Figure 43: Average annual age-specific LGV notification rates in males aged 15 years and over, NSW, 1 January 2014 - 30 June 2019**



Data source: NCIMS and ABS population estimates (via SAPHaRI), NSW Health; data extracted 6 November 2019.  
Note: Year of onset is based on calculated onset date. Excludes non-NSW residents and persons whose age at diagnosis was not stated.

**Figure 44: Median age of people aged 15 years and over notified with LGV, NSW, 1 January 2014 - 30 June 2019**

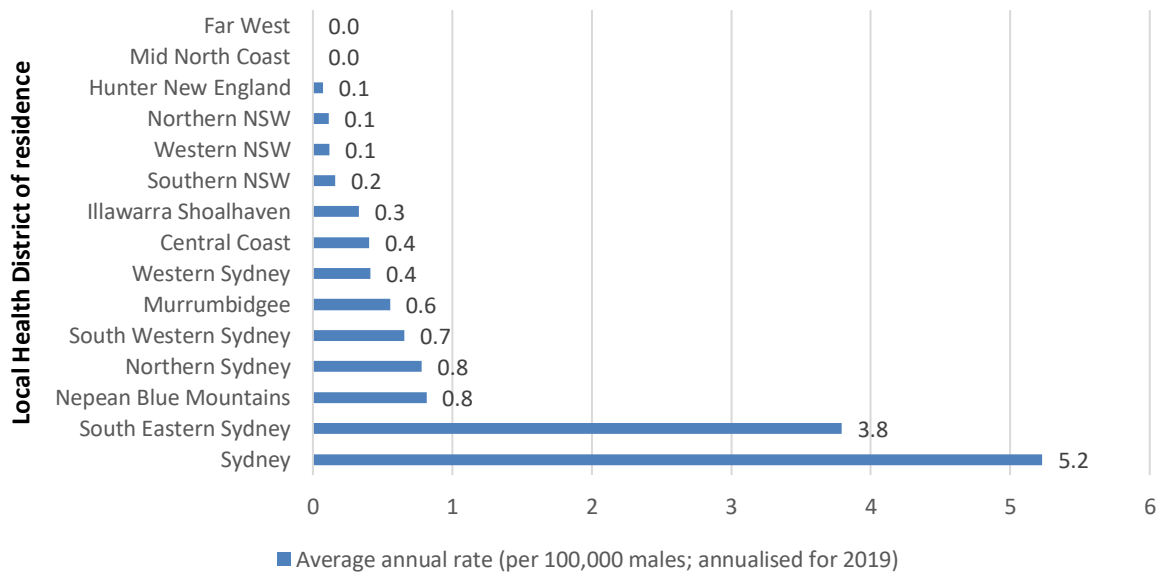


Data source: NCIMS and ABS population estimates (via SAPHaRI), NSW Health; data extracted 6 November 2019.  
Note: Year of onset is based on calculated onset date. Excludes non-NSW residents and persons whose age at diagnosis was not stated.

- During the time period January 2014-June 2019, the highest average annual LGV notification rate occurred in the 30-39 years age group at 3 cases per 100,000 males, followed by the 40-49 years age group at 2.1 cases per 100,000 males (Figure 53). The median age at onset varied

considerably during this time, ranging from 51 years in 2015 to 35 years in 2017 (Figure 54). Small case numbers and changes in testing practices over the reporting period may contribute to these fluctuations.

**Figure 45: Average annual LGV notification rates in males by LHD, NSW, 1 January 2014 - 30 June 2019**



Data source: NCIMS, NSW Health; data extracted 6 November 2019

Note: Excludes non-NSW residents and notifications from Justice Health. For Justice Health notifications, see Table in Appendix D: Notification data.

- In the period January 2014 – June 2019, the majority of notifications occurred in the Sydney and South Eastern Sydney Local Health Districts, which also have the highest average annual rates at 5.2 and 3.8 per 100,000 males, respectively. (Figure 55) Similar to other STIs, it should be noted that gay men, who are at increased risk of acquiring STIs generally and LGV in particular, are unequally distributed among local health districts. Continuing high notification rates among males in the Sydney and South Eastern Sydney Local Health Districts in particular reflect large concentrations of gay men in these areas.
- A number of regional local health districts did not report any or only a single LGV notification over the five year reporting period. Rates in these areas should be interpreted with caution as small fluctuations in notification numbers cause considerable changes in rates. Also see **Appendix D Table 11** for a detailed overview of total notification numbers and rates in males by local health district.

## Appendix A: Indicators for monitoring and reporting

Table 5: Indicators for monitoring and reporting of the NSW STI Strategy 2016-2020

NSW STI Strategy 2016-2020 indicator	Monitoring tool
Reduce gonorrhoea infections	NSW Notifiable Conditions Information Management System
Reduce infectious syphilis infections	NSW Notifiable Conditions Information Management System ACCESS Database
Reduce pelvic inflammatory disease associated with chlamydia	NSW Health data collection systems
Maintain high coverage of HPV vaccination for Year 7 school students	HealthStats NSW
Maintain levels of condom use for preventing the transmission of STIs	Sexual health survey of young people in NSW aged 15-29 years Sexual health survey of gay and homosexually active men in NSW
Increase comprehensive STI testing in priority populations in accordance with risk	NSW Health data collection systems Sexual health survey of gay and homosexually active men in NSW ACCESS Database
Increase the proportion of people diagnosed with chlamydia and gonorrhoea who get re-tested within 1-4 months after diagnosis	NSW Health data collection systems ACCESS Database
Increase the proportion of people diagnosed with syphilis who get re-tested within 1-6 months after diagnosis	NSW Health data collection systems
Increase the proportion of Aboriginal people diagnosed with chlamydia or gonorrhoea who get tested for HIV and syphilis	NSW Health data collection systems ACCESS Database

## Appendix B: Data sources

Table 6: Data sources included in this report

Name	Custodian	Description
NSW Health denominator data project	Health Protection NSW, NSW Health	<p>Monthly aggregated testing data for selected notifiable conditions from 15 NSW public and private laboratories. These laboratories account for more than 90% of the total notifications for the selected conditions in NSW. Information from laboratories does not provide any indication on whether there are repeat tests or multiple site tests for the same individual.</p> <p>The notification to test ratio has been calculated by dividing the overall positive results notified to NSW Health by all laboratories by the total number of tests performed as reported from the participating laboratories, and multiplying by 100. Notifications are for individual people with gonorrhoea/chlamydia 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 notification to test ratio may be an underestimate of the per cent of people tested that were positive in NSW for the condition.</p>
NSW Health HIV Strategy Monitoring Database	NSW Ministry of Health, NSW Health	Aggregated testing data for public sexual health clinics by priority populations.
Sydney Gay Community Periodic Survey	Centre for Social Research in Health	Data on sexual, drug use and testing practices related to the transmission of HIV and other STIs among gay men in Sydney (self-reported).
It's Your Love Life Survey	Centre for Social Research in Health	Data about sexual health and health behaviours among approximately 4,000 young people living in NSW.
Communicable Diseases Register (CDR)	Health Protection NSW, NSW Health	The Communicable Diseases Register (CDR) contains de-identified records from the NSW Notifiable Conditions Information Management System (NCIMS), linked to emergency department, hospitalisation and deaths data, and includes the Enhanced Reporting of Aboriginality (ERA) variable. Record linkage was carried out by the Centre for Health Record Linkage ( <a href="http://www.cherel.org.au">www.cherel.org.au</a> ), NSW Ministry of Health. Data are currently available to the end of 2018.
NSW Notifiable Conditions Information	Health Protection NSW, NSW Health	The NSW Notifiable Conditions Information Management System (NCIMS) contains records of all people notified to NSW Health with a notifiable condition under the NSW <i>Public Health Act</i> . Notification data may not reflect the true

Name	Custodian	Description
Management System (NCIMS)		<p>incidence of notifiable sexually transmitted diseases as they only represent a proportion of notifiable diseases in the population, however they are useful for monitoring trends over time.</p> <p>Re-infection periods: A person is only re-notified with chlamydia, gonorrhoea or infectious syphilis if the infection is acquired outside of the re-infection period as follows:</p> <p>Chlamydia - 29 days</p> <p>Gonorrhoea- 29 days</p> <p>Infectious syphilis- 89 days</p> <p>Multiple sites: A person who is notified with more than one site of infection simultaneously is counted as one notification.</p>

## Appendix C: Case definitions

The STI notifications in this report meet the case definitions in the relevant Control Guideline for Public Health Units as listed below:

### **Gonorrhoea**

<http://www.health.nsw.gov.au/Infectious/controlguideline/Pages/gonorrhoea.aspx>

### **Infectious syphilis – less than two years duration**

<http://www.health.nsw.gov.au/Infectious/controlguideline/Pages/syphilis.aspx>

### **Syphilis - more than 2 years or unknown duration**

<http://www.health.nsw.gov.au/Infectious/controlguideline/Pages/syphilis.aspx>

### **Chlamydia**

<http://www.health.nsw.gov.au/Infectious/controlguideline/Pages/chlamydia.aspx>

### **Lymphogranuloma venereum (LGV)**

<https://www.health.nsw.gov.au/Infectious/controlguideline/Pages/lymphogranuloma.aspx>

## Appendix D: Notification data tables

Table 7: Number of infectious syphilis, gonorrhoea, chlamydia, and LGV notifications by sex, age group and local health district, NSW, 1 January 2014 - 30 June 2019

	Infectious syphilis						Gonorrhoea						Chlamydia						LGV					
	2014	2015	2016	2017	2018	1/2019	2014	2015	2016	2017	2018	1/2019	2014	2015	2016	2017	2018	1/2019	2014	2015	2016	2017	2018	1/2019
<b>TOTAL</b>	<b>781</b>	<b>744</b>	<b>871</b>	<b>1109</b>	<b>1518</b>	<b>892</b>	<b>4826</b>	<b>5389</b>	<b>6941</b>	<b>8996</b>	<b>10157</b>	<b>5812</b>	<b>22864</b>	<b>22492</b>	<b>25900</b>	<b>28810</b>	<b>30885</b>	<b>16008</b>	<b>16</b>	<b>33</b>	<b>58</b>	<b>53</b>	<b>80</b>	<b>23</b>
Female	26	19	32	46	76	51	803	858	1274	1480	1818	1168	12328	12136	12981	13628	14357	7471	0	0	0	1	0	0
Male	754	722	833	1055	1425	831	4016	4519	5647	7481	8298	4617	10519	10350	12900	15145	16462	8507	16	33	58	52	80	23
Transgender*	1	2	4	7	13	7	6	7	14	19	21	9	0	2	7	15	25	7	0	0	0	0	0	0
Unknown	0	1	2	1	4	3	1	5	6	16	20	18	17	4	12	22	41	23	0	0	0	0	0	0
00-04	0	0	0	0	0	0	3	2	3	5	5	5	2	0	1	2	2	0	0	0	0	0	0	0
05-09	0	0	0	0	0	0	2	0	2	2	2	0	1	0	1	2	0	0	0	0	0	0	0	0
10-14	0	1	0	0	0	0	16	6	2	3	3	4	100	69	60	64	64	26	0	0	0	0	0	0
15-19	11	8	11	20	30	12	319	299	311	408	358	264	4390	3873	3932	4150	4157	2157	0	0	1	0	0	0
20-24	76	86	98	105	152	85	966	1044	1239	1536	1672	961	7949	76595	8504	8977	9374	4796	0	2	2	3	4	2
25-29	108	110	132	209	278	152	1002	1255	1566	2059	2291	1346	4617	4799	5618	6466	7045	3580	2	3	10	10	12	3
30-34	126	116	135	188	239	145	808	906	1239	1569	1882	1126	2328	2489	3068	3621	4053	2132	2	2	8	11	19	5
35-39	94	94	133	144	214	141	498	594	849	1165	1322	768	1215	1295	1740	1963	2271	1257	1	4	13	11	12	3
40-44	114	88	101	145	160	79	437	457	633	801	889	456	861	877	1095	1301	1401	766	3	1	7	6	8	3
45-49	97	103	101	107	150	111	350	356	434	6043	703	364	567	627	782	990	1013	496	4	4	5	4	11	2
50-54	74	79	68	90	116	73	2254	239	3267	415	445	228	391	421	552	591	674	358	2	7	3	5	4	5
55-59	50	27	52	51	78	42	101	141	171	239	286	150	214	228	282	357	426	206	1	5	7	1	2	0
60-64	17	28	19	29	59	34	59	57	90	116	156	66	127	127	138	157	215	125	1	0	2	1	3	0
65-69	8	5	8	8	23	7	31	20	45	47	81	39	66	61	76	112	120	59	0	2	0	0	2	0
70-74	4	2	10	9	12	8	9	9	13	24	41	17	20	20	23	44	52	28	0	3	0	1	2	0
75-79	1	0	2	1	5	2	1	0	8	10	11	6	5	6	14	9	7	8	0	0	0	0	1	0
80-84	0	0	0	0	1	0	0	3	3	2	7	5	6	2	4	1	6	3	0	0	0	0	0	0
85 and over	1	0	1	2	1	1	0	1	2	0	3	4	3	0	3	1	0	1	0	0	0	0	0	0



Un-known	0	0	0	1	0	0	0	0	3	2	0	5	2	3	7	2	5	10	0	0	0	0	0	0
	Infectious syphilis						Gonorrhoea						Chlamydia						LGV					
	2014	2015	2016	2017	2018	1/2019	2014	2015	2016	2017	2018	1/2019	2014	2015	2016	2017	2018	1/2019	2014	2015	2016	2017	2018	1/2019
Central Coast	5	12	20	17	18	21	76	98	131	211	207	113	1035	913	1039	1031	1045	564	0	1	0	2	1	0
Far West	1	0	1	0	0	3	7	2	0	10	6	5	138	109	70	80	108	51	0	0	0	0	0	0
Hunter New England	18	20	34	44	62	49	267	258	386	393	552	301	2854	2879	2979	2945	3218	1734	0	0	1	0	1	0
Illawarra Shoalhaven	24	24	29	29	44	17	73	116	124	167	268	157	1187	1203	1156	1312	1382	704	0	1	1	0	2	0
Justice Health	1	1	0	0	4	0	22	24	26	25	36	29	179	164	179	160	269	148	0	0	0	0	0	0
Mid North Coast	7	1	0	4	11	4	37	36	26	59	74	40	630	583	570	662	638	364	0	0	0	0	0	
Murrumbidgee	5	6	15	16	12	8	34	29	51	69	72	49	856	884	819	817	898	490	1	0	0	1	2	0
Nepean Blue Mountains	23	6	17	21	34	12	132	146	183	227	322	186	822	788	843	1032	1080	549	0	1	0	3	3	1
Northern NSW	8	12	11	14	20	16	72	86	135	158	147	96	811	873	930	967	931	496	0	0	0	0	1	0
Northern Sydney	33	47	59	67	135	61	415	415	630	662	807	452	2014	1996	2372	25676	2766	1344	2	4	2	3	6	2
Other NSW	2	2	7	4	7	1	16	12	26	31	27	5	83	24	47	64	40	19	0	0	0	0	0	

South East-ern Sydney	273	296	343	442	560	325	1448	1745	2050	2800	3017	1749	3715	3604	5112	6108	6606	3567	5	11	24	18	24	11
South West-ern Sydney	34	13	44	57	75	28	460	437	627	800	955	533	2211	2222	2312	2728	3020	1328	1	3	3	4	8	0
South-ern NSW	4	5	3	8	14	4	19	34	56	60	73	40	410	423	475	503	495	275	0	0	0	0	1	0
Sydney	304	258	239	308	392	252	1070	1345	1685	2285	2337	1393	2710	2779	3791	4312	4560	2408	7	12	20	20	28	8
West-ern NSW	5	6	8	11	8	4	94	80	45	57	66	40	976	910	790	776	819	501	0	0	1	0	0	0
West-ern Sydney	34	35	41	67	122	87	584	526	760	982	1191	624	2233	2138	2421	2747	3010	1466	0	0	6	2	3	1

Data source: NCIMS, NSW Health; data extracted 6 November 2019. Data are provisional and subject to change. Year is based on calculated onset date.

\*'Transgender' is recorded according to information provided on the notification, and overall numbers reported as transgender may be an underestimation.

# Excludes non-NSW residents

Table 8: Gonorrhoea notification rate by LHD and sex, NSW, 1 January 2014 - 30 June 2019

Local Health District	Sex	Year						
		2014	2015	2016	2017	2018	Jan-Jun 2019 <sup>1</sup>	% change 17/18
Central Coast	Male	34.9	42.6	53.1	77.2	89.3	83.5	-6%
	Female	11.8	17.0	25.6	47.7	32.4	47.1	+45%
Far West Western NSW	Male	13.1	6.6	0.0	39.9	19.9	39.5	+98%
	Female	32.9	6.7	0.0	26.9	20.2	26.9	+33%
Hunter New England	Male	46.3	38.2	59.7	63.2	86.2	88.1	+2%
	Female	13.4	19.0	25.1	22.1	32.1	40.0	+25%
Illawarra Shoalhaven	Male	27.5	40.8	43.4	57.8	91.5	102.7	+12%
	Female	9.5	17.3	18.0	24.2	38.9	48.6	+25%
Mid North Coast	Male	26.0	20.1	19.0	30.0	37.1	51.3	+38%
	Female	9.2	13.6	5.4	24.1	30.0	21.0	-30%
Murrumbidgee	Male	22.6	20.8	31.6	38.9	40.4	47.5	+18%
	Female	5.9	3.3	10.8	18.2	19.0	33.0	+74%
Nepean Blue Mountains	Male	55.6	62.1	73.5	91.2	119.6	124.5	+4%
	Female	18.2	18.5	25.3	29.2	50.2	68.0	+35%
Northern NSW	Male	34.9	42.4	62.8	67.4	70.6	70.5	0
	Female	14.7	16.6	29.0	38.5	27.1	55.0	+103%
Northern Sydney	Male	78.3	74.1	112.0	122.5	142.8	158.1	+11%
	Female	16.5	18.8	27.6	23.0	32.4	35.6	+10%
South Eastern Sydney	Male	292.3	350.1	388.3	540.1	564.7	636.0	+13%
	Female	34.3	38.2	59.4	63.9	78.6	100.8	+28%
South Western Sydney	Male	79.6	73.4	100.6	126.2	148.4	153.4	+3%
	Female	20.6	19.8	30.0	36.9	42.0	54.9	+31%
Southern NSW	Male	14.8	26.5	37.9	41.2	56.6	57.7	+2%
	Female	4.0	6.9	16.6	16.4	12.4	16.9	+36%
Sydney	Male	305.4	384.4	450.4	618.4	609.1	701.8	+15%
	Female	37.3	35.4	64.3	66.6	81.0	108.0	+33%
Western NSW	Male	37.5	34.6	24.4	29.3	34.7	32.4	+93%
	Female	30.3	23.0	7.8	11.4	12.0	24.0	+100%
Western Sydney	Male	99.2	88.5	123.9	154.7	182.1	183.1	+1%
	Female	29.2	24.0	34.9	45.5	53.5	57.2	+7%

Data source: NCIMS, NSW Health; data extracted 6 November 2019. Data are provisional and subject to change.

Note: Excludes non-NSW residents and notifications from Justice Health. Year is based on calculated onset date.

<sup>1</sup>Annualised rate.

**Table 9: Infectious syphilis notification rates by LHD, NSW, 1 January 2014 - 30 June 2019**

Local Health District	Year						
	2014	2015	2016	2017	2018	Jan-Jun 2019 <sup>1</sup>	% change 18/19
<b>Central Coast</b>	1.5	3.6	6.0	5.0	5.2	12.1	+230%
<b>Far West</b>	3.3	0	3.4	0	0	20.0	Increase from 0
<b>Hunter New England</b>	2.0	2.2	3.7	4.8	6.6	10.4	+56%
<b>Illawarra Shoalhaven</b>	6.1	6.0	7.2	7.1	10.7	8.2	-23%
<b>Mid North Coast</b>	3.3	0.5	0	1.8	5.0	3.6	-28%
<b>Murrumbidgee</b>	2.1	2.5	6.2	6.6	4.9	6.6	+33%
<b>Nepean Blue Mountains</b>	6.4	1.6	4.6	5.6	9.0	6.2	-30%
<b>Northern NSW</b>	2.7	4.1	3.7	4.7	6.6	10.4	+58%
<b>Northern Sydney</b>	3.7	5.2	6.5	7.2	14.4	12.9	-11%
<b>South Eastern Sydney</b>	30.8	32.9	37.5	47.8	59.8	68.6	+15%
<b>South Western Sydney</b>	3.7	1.4	4.6	5.8	7.5	5.5	-27%
<b>Southern NSW</b>	2.0	2.5	1.5	3.8	6.6	3.7	-46%
<b>Sydney</b>	48.6	40.2	36.4	46.2	57.9	73.4	+27%
<b>Western NSW</b>	1.8	2.2	2.9	3.9	2.8	2.8	0
<b>Western Sydney</b>	3.8	3.8	4.3	6.9	12.2	16.9	+39%

Data source: NCIMS, NSW Health; data extracted 6 November 2019. Data are provisional and subject to change.

Note: Excludes non-NSW residents and notifications from Justice Health. Year is based on calculated onset date.

<sup>1</sup>Annualised rate.

Table 10: Chlamydia notification rates by LHD and sex, NSW, 1 January 2014 - 30 June 2019<sup>1</sup>

Local Health District	Sex	Year						
		2014	2015	2016	2017	2018	Jan-Jun 2019 <sup>1</sup>	% change 17/18
Central Coast	Male	233.4	227.0	252.2	255.1	295.3	277.6	-4%
	Female	390.2	319.9	364.9	349.7	311.7	366.6	+18%
Far West Western NSW	Male	294.0	337.4	147.3	179.7	284.7	316.0	+11%
	Female	599.5	385.8	315.7	356.1	436.8	363.1	-17%
Hunter New England	Male	239.1	241.3	270.1	269.5	283.9	302.4	+7%
	Female	393.8	392.6	380.4	368.0	404.2	432.6	+7%
Illawarra Shoalhaven	Male	251.1	246.7	240.9	281.5	281.3	251.1	+4%
	Female	346.6	352.1	328.3	357.7	385.8	382.5	-1%
Mid North Coast	Male	214.6	184.5	191.7	231.7	240.2	214.6	+12%
	Female	373.8	354.8	330.6	370.2	333.9	381.5	+14%
Murrumbidgee	Male	267.6	280.0	256.0	273.8	273.8	281.6	+3%
	Female	449.7	456.8	422.7	402.1	459.2	491.3	+7%
Nepean Blue Mountains	Male	183.0	179.7	195.8	254.8	259.9	260.6	0
	Female	273.2	252.9	262.1	297.3	308.0	307.1	-0.5%
Northern NSW	Male	222.5	268.0	286.3	296.4	279.9	295.1	+5%
	Female	329.6	323.9	339.7	347.2	332.6	350.3	+5%
Northern Sydney	Male	229.3	227.7	275.0	306.3	329.6	310.9	-6%
	Female	224.5	215.1	244.4	249.8	261.9	258.9	-1%
South Eastern Sydney	Male	472.4	445.8	691.9	860.5	924.6	992.2	+7%
	Female	365.2	354.5	426.4	458.6	484.2	511.2	+6%
South Western Sydney	Male	217.8	202.9	216.2	265.3	304.6	253.4	-17%
	Female	260.5	268.2	262.5	288.8	297.2	264.1	-11%
Southern NSW	Male	160.0	151.0	198.5	195.5	203.9	228.8	+12%
	Female	246.6	265.0	264.4	286.9	265.1	285.2	+8%
Sydney	Male	508.0	496.2	690.1	830.5	872.3	943.1	+8%
	Female	358.3	370.7	465.4	461.9	473.2	459.9	-3%
Western NSW	Male	241.8	239.0	206.1	202.6	204.9	236.7	+16%
	Female	461.5	414.2	358.9	349.8	375.4	470.1	+25%
Western Sydney	Male	223.9	209.1	248.4	279.0	302.1	276.7	-8%
	Female	269.2	252.9	261.6	283.8	297.8	291.5	-2%

Data source: NCIMS, NSW Health; data extracted 6 November 2019. Data are provisional and subject to change.

Note: Excludes non-NSW residents and notifications from Justice Health. Year is based on calculated onset date.

<sup>1</sup>Annualised rate.

**Table 11: Total notifications 2014-2018 (males and females) and average annual LGV notification rates in males by LHD, NSW, 1 January 2014 - 30 June 2019<sup>1</sup>**

Local Health District	January 2014 - June 2019	
	Total number of notifications (males and females)	Average annual rate per 100,000 males
Central Coast	4	0.4
Far West	0	0.0
Hunter New England	2	0.1
Illawarra Shoalhaven	4	0.3
Mid North Coast	0	0.0
Murrumbidgee	4	0.6
Nepean Blue Mountains	8	0.8
Northern NSW	1	0.1
Northern Sydney	19	0.8
South Eastern Sydney	93	3.8
South Western Sydney	19	0.7
Southern NSW	1	0.2
Sydney	95	5.2
Western NSW	1	0.1
Western Sydney	12	0.4

Data source: NCIMS, NSW Health; data extracted 6 November 2019. Data are provisional and subject to change.  
Note: Excludes non-NSW residents and notifications from Justice Health. Year is based on calculated onset date.

<sup>1</sup>Annualised rate for Jan-Jun 2019.

