

# NSW Sexually Transmissible Infections Strategy 2016 – 2020

## January to December 2017

### Data Report



### Key Data

Reduce gonorrhoea infections				
		2017	Change since 2016	
Gonorrhoea notification rate (per 100,000 population)		116	29% higher (90)	
Number of tests		895,998	8% higher (827,606)	
Reduce infectious syphilis infections				
		2017	Change since 2016	
Infectious syphilis notification rate (per 100,000 population)		13.9	23% higher (11.3)	
Reduce pelvic inflammatory disease (PID) associated with chlamydia: Hospitalisations				
		2016	Change since 2015	
Hospital admissions for chlamydia associated PID		204	9% lower (225)	
Reduce pelvic inflammatory disease (PID) associated with chlamydia: Chlamydia notifications				
		2017	Change since 2016	
Chlamydia notification rate (per 100,000 population)		367	10% higher (335)	
Number of tests		604,106	10% higher (548,971)	
Maintain levels of condom use for preventing the transmission of STIs				
		2017	Change since 2016	
Proportion reporting condomless intercourse with casual partners	Men who have sex with men <sup>1</sup>	69%	Increased by 12 per cent (57%)	
	Young people aged 15-29 years <sup>2</sup>	17.6%	Increased by 1 per cent (16.6%)	
Maintain high coverage of HPV vaccination for Year 7 school students				
		2016	Change since 2015	
Course completion for human papillomavirus (HPV) vaccination	Female year 7 students	82%	Unchanged at 82%	
	Male year 7 students	80%	Unchanged at 80%	
Increase comprehensive STI testing in priority populations in accordance with risk				
		2017	Change since 2016	
Comprehensive STI testing rates	Men who have sex with men	PFSHSs <sup>3</sup>	87%	Increased 1 per cent (86%)
		GP <sup>4</sup>	72%	Increased 4 per cent (68%)
	Young people	PFSHSs	64%	Increased by 5 per cent (59%)
		GP	37%	Increased by 1 per cent (36%)
	Female sex workers		84%	Increased by 2 per cent (82%)

<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

<sup>3</sup> PFSHSs: Publicly funded sexual health services

<sup>4</sup> General practices with high and medium case load of GBM in Sydney

## Key Messages

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

Data from the last five years shows that the number of notifications of gonorrhoea have been increasing each year, with marked rises in 2016 and 2017. Some of this increase is likely due to increased and well-targeted testing. However, the increase in notification to test ratio in 2017 and the increase in the number of genitourinary gonorrhoea notifications in males suggests there has been an increase in gonorrhoea transmission in NSW. There has been an increase in the gonorrhoea notifications among females, which needs further investigation.

### **STI screening has increased and is well targeted in NSW**

There has also been a continued increase in the number of syphilis and chlamydia notifications in NSW. However, the available data suggests this is mostly due to increased and well-targeted testing. Comprehensive STI screening among high risk populations such as gay and bisexual men and young people continues to increase. The chlamydia notification to test ratio is similar to 2016, suggesting the increase in the number of chlamydia notifications is due to the increased number of tests. Comprehensive STI screening of gay and bisexual men who were enrolled in the EPIC-NSW PrEP clinical trial which commenced on 1 March 2016 continued throughout 2017. Data from the EPIC-NSW PrEP clinical trial has shown that while STI prevalence among participants at baseline and follow up is high, there has been little to no change in the prevalence of STIs in people on PrEP in the first twelve months of the trial, apart from a slight increase in chlamydia.

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

2017 NSW survey data suggests condom use in gay and bisexual men with casual sexual partners is gradually declining in NSW. Further scale up and strengthening of initiatives to promote condom use is needed to prevent STI transmission.

Innovative ways to make STI testing easier and more accessible are required. Efforts to increase the rate of testing and re-testing following treatment for gonorrhoea and chlamydia in accordance with STI testing guidelines should continue. Partner notification is also central to preventing STIs and should be comprehensively undertaken for people diagnosed with an STI.

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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

## 1 Reduce gonorrhoea infections

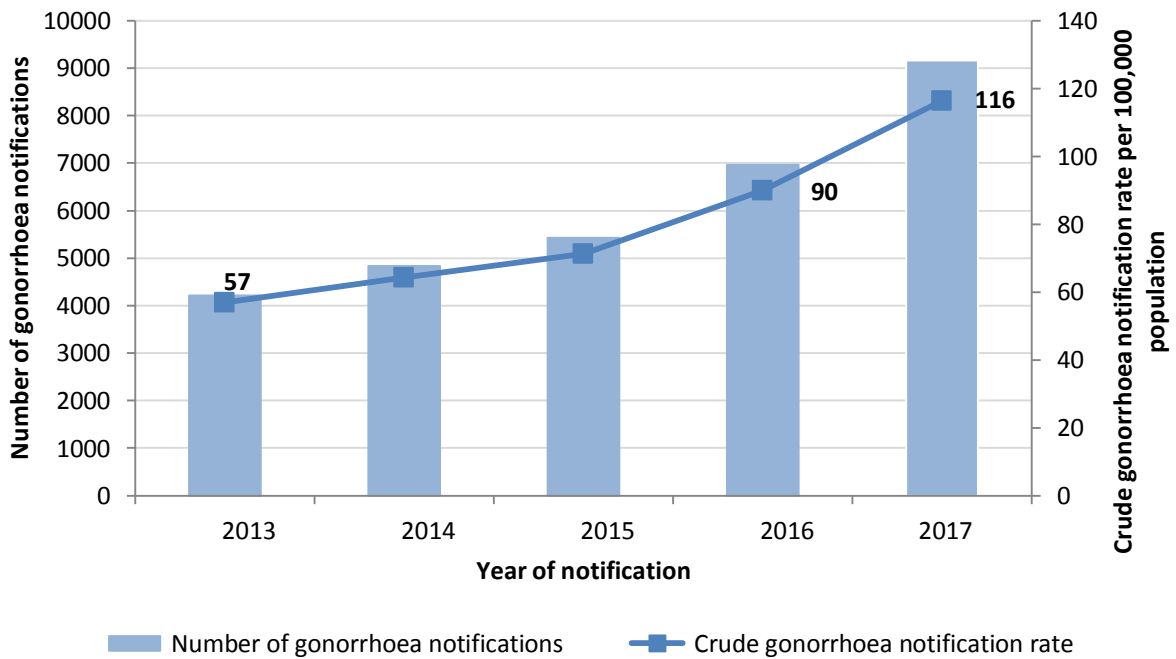
Prevention, testing and appropriate treatment and management with partner notification are the cornerstones of gonorrhoea control and are embedded in the current STI strategy. Gonorrhoea notification data does not reflect the true incidence of gonorrhoea infection as it only represents a proportion of 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, NSW, 1 January 2013- 31 December 2017

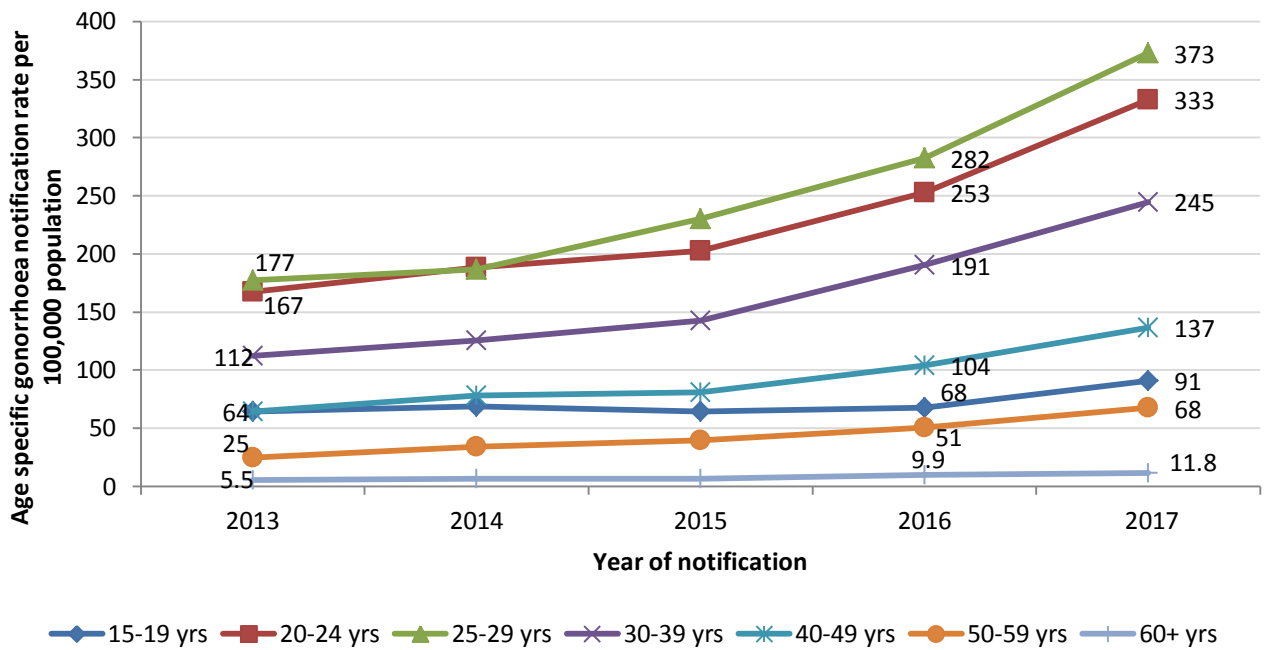


Data source: NCIMS and ABS population estimates (via SAPHARI), NSW Health; data extracted 20 Apr 2018.  
Excludes non-NSW residents and persons whose residential postcode was not known

In 2017, the gonorrhoea notification rate was 116 notifications per 100,000 population, 29% higher compared to 2016 (90 per 100,000 population).



Figure 2: Age specific gonorrhoea notification rates in people aged 15 years and over, NSW, 1 January 2013-31 December 2017

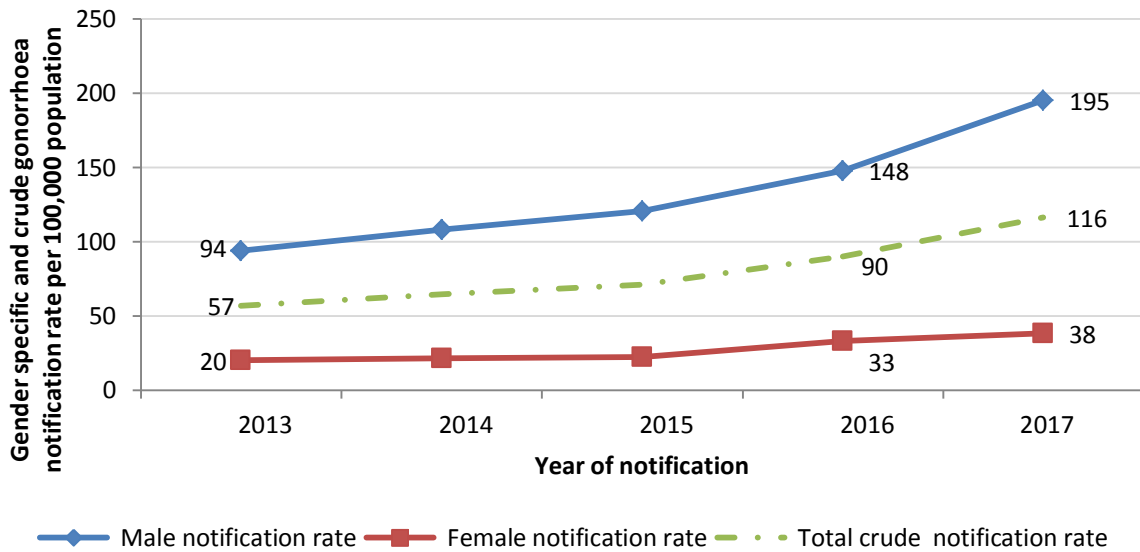


Data source: NCIMS and ABS population estimates (via SAPHaRI), NSW Health; data extracted 20 Apr 2018.  
Excludes non-NSW residents and persons whose residential postcode was not known

In 2017:

- The highest gonorrhoea notification rates continue to occur in the 20-24 years and 25-29 years age groups.
- The largest relative increases in the gonorrhoea notification rates were observed in the 15-19 years and 50-59 years age groups with a 25% increase in both groups compared with 2016.

Figure 3: Gender specific gonorrhoea notification rate, NSW, 1 January 2013- 31 December 2017



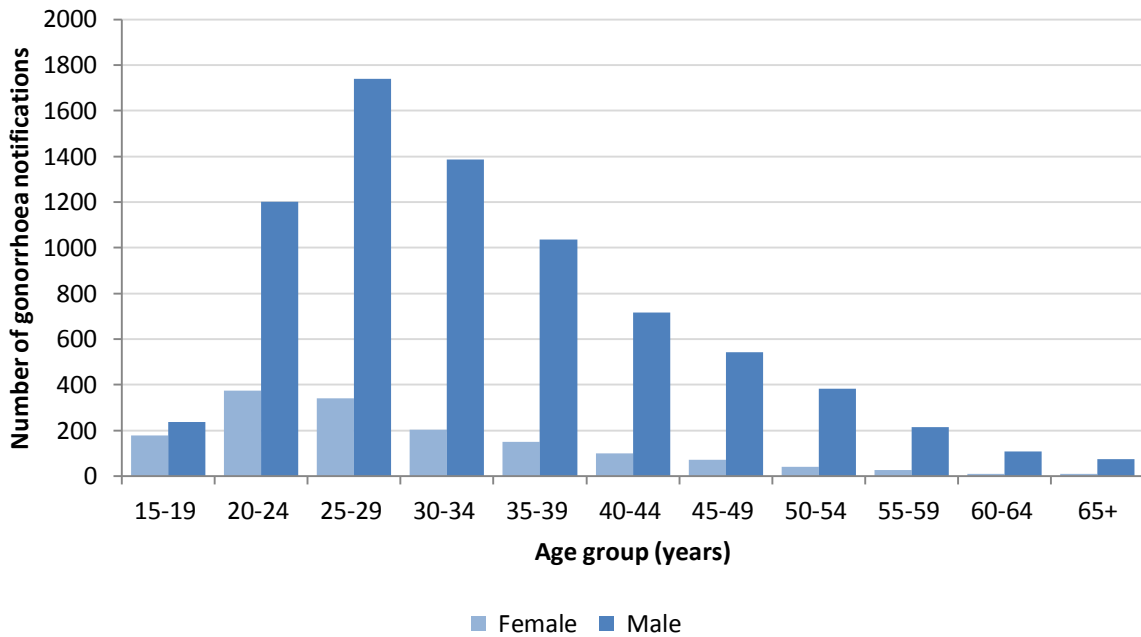
Data source: NCIMS and ABS population estimates (via SAPHaRI), NSW Health; data extracted 20 Apr 2018.

Note: Excludes persons reported as transgender (due to small numbers), and persons whose age or sex was not reported. Excludes non-NSW residents and persons whose residential postcode was not known.

In 2017:

- Of the 9,219 gonorrhoea notifications, 7,660 gonorrhoea notifications were reported as male, 1,522 notifications were reported as female, 18 people were reported as transgender and there were 19 people whose gender was reported as not stated/ inadequately described (for further notes on gender classification, see Appendix D).
- The gonorrhoea notification rate in males was 195 notifications per 100,000 males, 5.1 times higher than that for females. In 2016, the gonorrhoea notification rate in males was 4.5 times higher than that for females.
- A 32% relative increase in the gender specific gonorrhoea notification rate was observed in males and a 15% relative increase was observed in females compared to 2016.

**Figure 4: Number of gonorrhoea notifications by age group and gender in people aged 15 years and over, NSW, 1 January 2017- 31 December 2017**

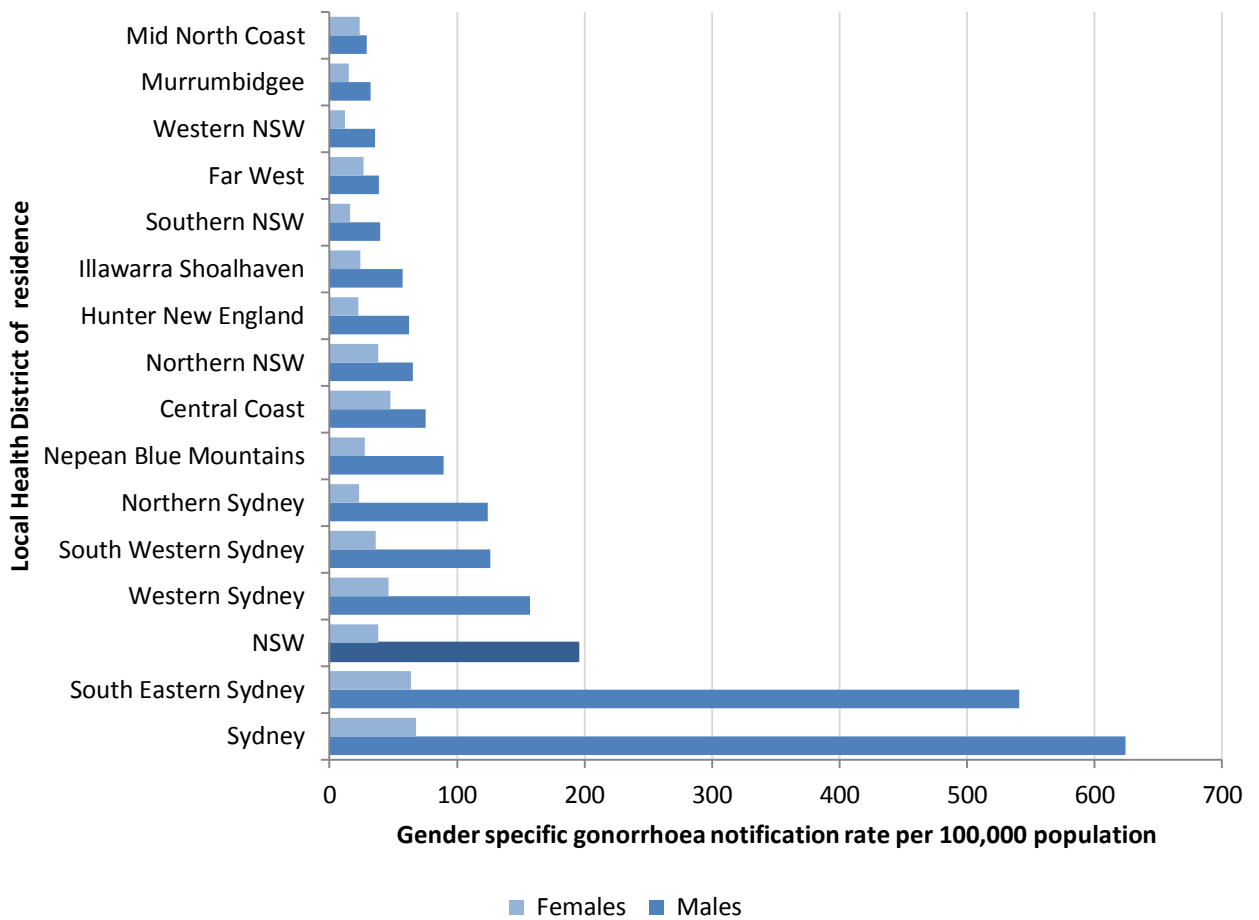


Data source: NCIMS, NSW Health; data extracted 20 Apr 2018.

Note: Excludes persons reported as transgender (due to small numbers), and persons whose age or sex was not reported. Excludes non-NSW residents and persons whose postcode of residence was not known.

- The median age of females notified with gonorrhoea was 27 years, lower compared with 2016 (28.4 years).
- The median age of males notified with gonorrhoea was 32 years, similar to 2016 (31.9 years).

**Figure 5: Crude gonorrhoea notification rate by local health district and gender, NSW, 1 January 2017- 31 December 2017**



Data source: NCIMS and ABS population estimates (SAPHaRI), NSW Health; data extracted 20 Apr 2018.

Note: Excludes non-NSW residents, persons whose residential postcode was not known and notifications from Justice Health. For Justice Health notifications, see Table in Appendix D: Notification data.

In 2017:

- The largest overall relative increases in the gonorrhoea notification rate compared with 2016 occurred in the Mid North Coast and Central Coast LHDs (114% and 56% respectively).
- The highest gonorrhoea notification rates continue to be observed in the Sydney and South Eastern Sydney Local Health Districts (LHDs) for both males and females.
- The largest relative increases in the male gonorrhoea notification rates compared with 2016 were in the Western NSW, Central Coast and South Eastern Sydney LHDs (29%, 28% and 27% respectively).
- The largest relative increases in the female gonorrhoea notification rates compared with 2016 were in the Mid North Coast, Far West and Central Coast LHDs (77%, 51% and 46% respectively).

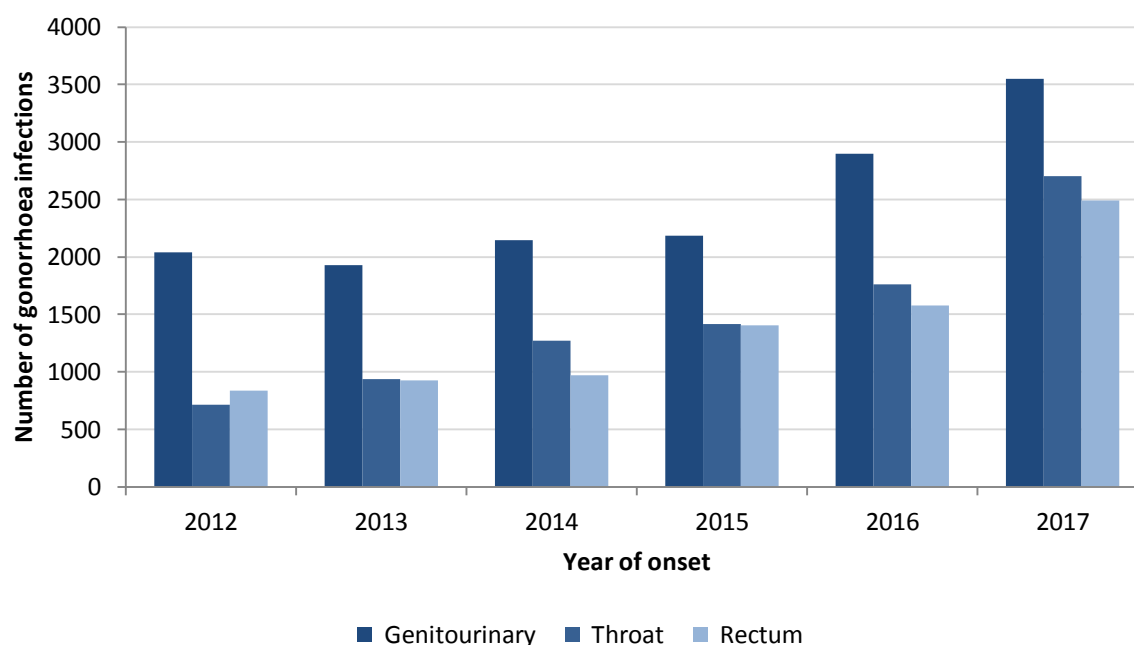
**Table 1: Number of gonorrhoea infections by site, NSW, 1 January-31 December 2017**

Site of infection	Number of infections (total*)	Males	Females
Genitourinary tract (GU) only	4075	2923	1141
Throat only	1864	1689	165
Rectum only	1426	1396	21
Rectum and throat	667	657	6
GU and rectum	283	270	12
GU and throat	253	187	66
GU and rectum and throat	180	167	12
Other (joints/conjunctiva) only	17	10	7

Data source: NCIMS, NSW Health; data extracted 02 May 2018.

Note: Includes transgender people and people whose gender was not stated/ inadequately described

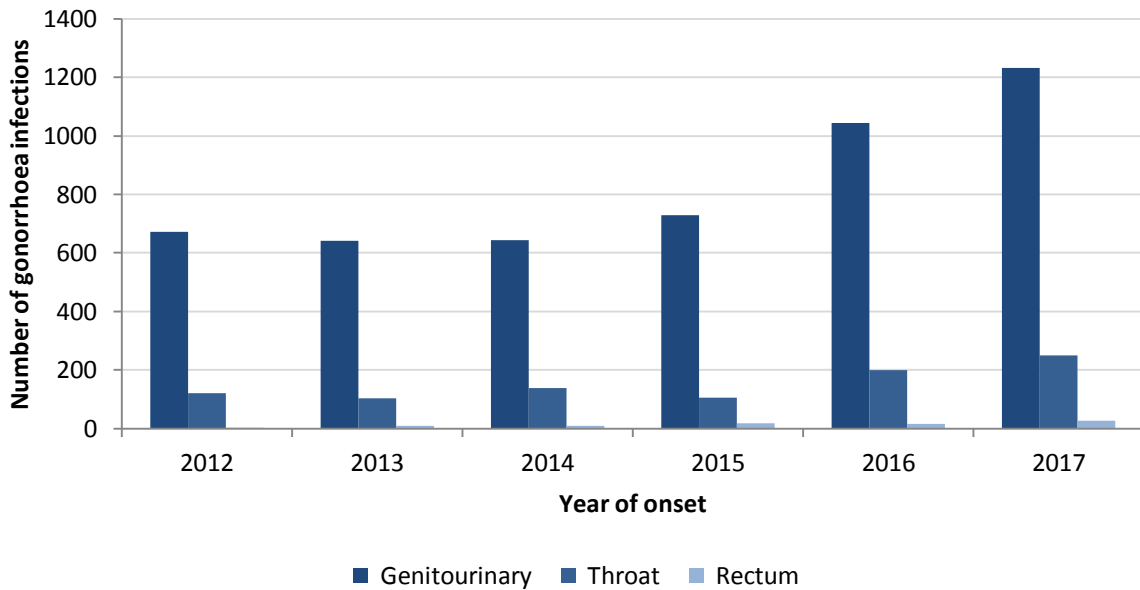
**Figure 6: Number of male gonorrhoea infections by site of infection, NSW, 1 January 2012 - 31 December 2017**



Data source: NCIMS, NSW Health; data extracted 02 May 2018.

Note: Does not include 'other' (including conjunctiva and joints) site of infection or missing/unknown site of infection; number of infections may exceed number of notifications due to infection at multiple sites. Excludes persons reported as transgender and persons whose gender was not reported

Figure 7: Number of female gonorrhoea infections by site, NSW, 1 January 2012 - 31 December 2017



Data source: NCIMS, NSW Health; data extracted 02 May 2018.

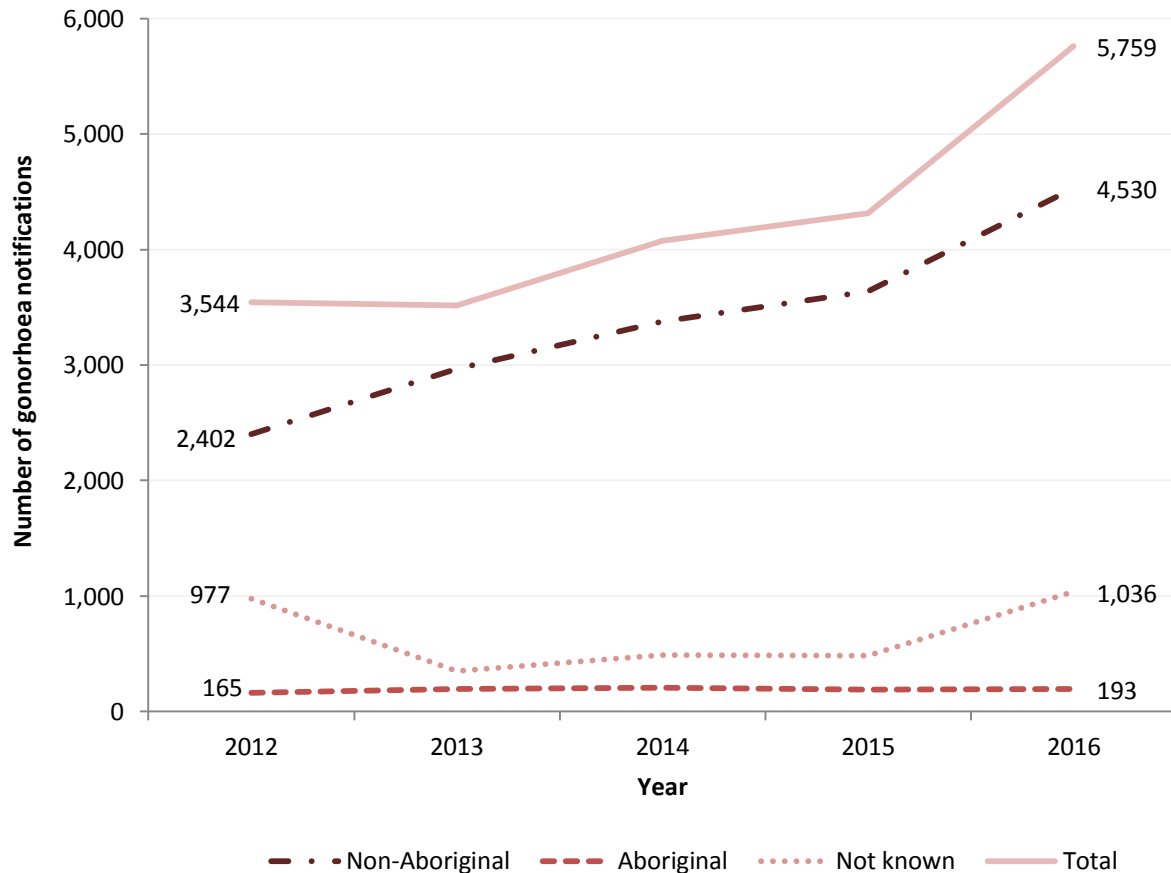
Note: Does not include 'other' (including conjunctiva and joints) site of infection or missing/unknown site of infection; number of infections may exceed number of notifications due to infection at multiple sites. Excludes persons reported as transgender and persons whose gender was not reported

In 2017:

- The largest relative increases in the site of infection for males were observed in rectal and throat infections (58% and 53% respectively). A 24% relative increase in the number of male genitourinary infections was also observed.
- 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 and so trends in the notification rate of these infections is likely to reflect screening trends, as well as disease transmission. In 2017, the increase in the number of male genitourinary infections suggests transmission increased in males, and the larger increases in rectal and throat infections suggests screening also increased.
- In females, up to 80% of genitourinary infections are asymptomatic, which means that many may be undiagnosed. Infections of the rectum and throat are usually asymptomatic. Therefore, gonorrhoea infections among women are likely to reflect screening trends, as well as disease transmission. The largest (69%) relative increase in the site of infection for females was observed in rectal infections compared with 2016; however the number of infections is small. Relative increases in the number of female genitourinary and throat infections were also observed (18% and 25% respectively).

## 1.2 Gonorrhoea notifications among Aboriginal people

Figure 8: Gonorrhoea notifications by Aboriginality, NSW, 2012-2016



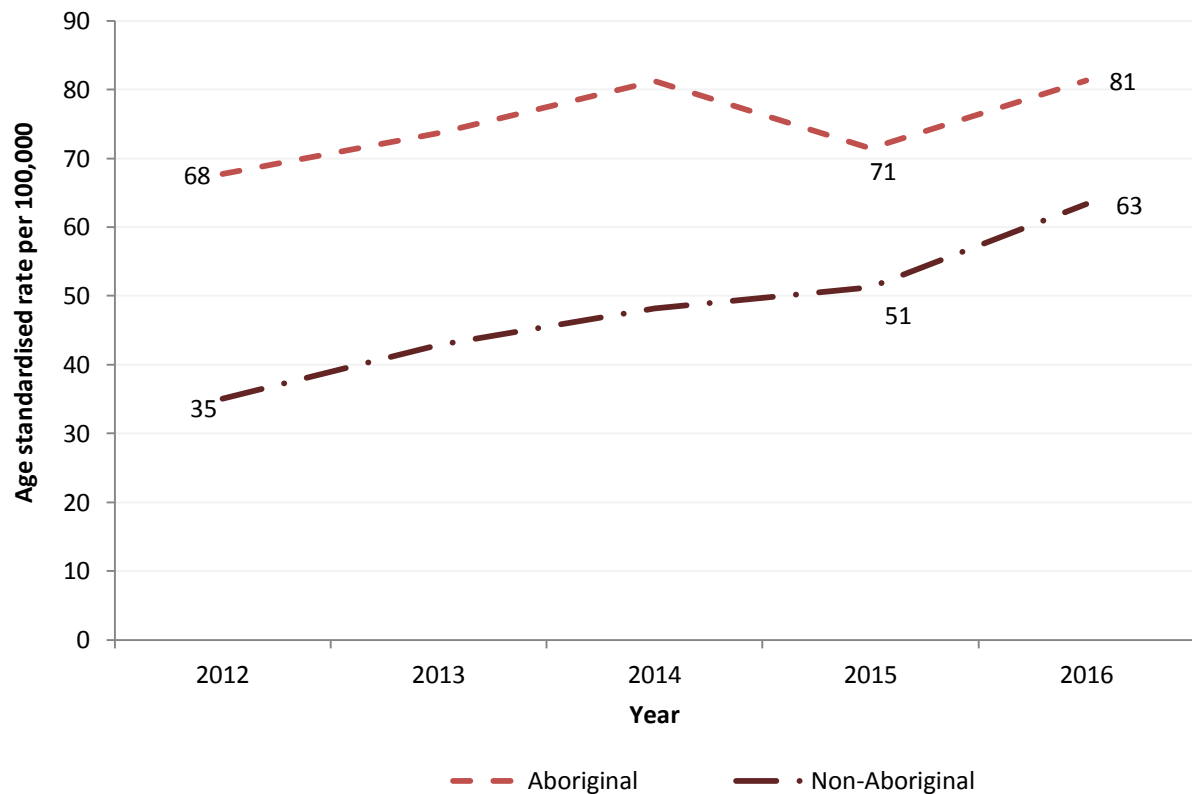
Data source: Communicable Diseases Register, NSW Ministry of Health (via SAPHaRI); data extracted 17 Oct 2017. At time of report, data available until 2016.<sup>5,6</sup>

- In 2016, 5,759 notifications for gonorrhoea were recorded in the Communicable Diseases Register (CDR). Of these, 193 (3.4%) were among Aboriginal people, 4,530 (79%) were among non-Aboriginal people and Aboriginal status was not known for 1,036 (18%) people. Of those whose Aboriginal status was not known in 2016, at least 95% were living in metropolitan Sydney.
- Aboriginal status completeness was higher in 2013 and 2014 due to short-term, state-wide enhanced surveillance of gonorrhoea notifications.
- Trends in the Aboriginal population are difficult to interpret due to variation in the yearly number of people for whom Aboriginal status was not known, and the relatively high proportion of incomplete data compared to the proportion in Aboriginal people.

<sup>5</sup> Work is currently underway to update the data contained in the Communicable Diseases Register and this will be published in future reports

<sup>6</sup> See **Appendix B: Table 6** for more details about methodology

Figure 9: Gonorrhoea notification rate by Aboriginality, NSW, 2012-2016



Data source: Communicable Diseases Register, NSW Ministry of Health, and ABS (via SAPHaRI); data extracted 17 Oct 2017. At time of report, data available until 2016.<sup>5,6</sup> Note: Excludes records where Aboriginal status was not known; rates standardised to the Australian Standard Population 2001.

- Notification rates of gonorrhoea increased among both Aboriginal and non-Aboriginal people between 2015 and 2016.
- Among those whose Aboriginal status was known, the gonorrhoea notification rate was 1.3 times higher among Aboriginal people than non-Aboriginal people (81 per 100,000 vs 63 per 100,000) in 2016.
- The gonorrhoea notification rate ratio between Aboriginal and non-Aboriginal people dropped slightly, from 1.4 in 2015 to 1.3 in 2016.

Note: As the number of gonorrhoea notifications among Aboriginal people is relatively small, yearly fluctuation in the rate should be interpreted with caution. These notification rates are influenced by variations in the number of people for whom Aboriginal status was not known (see Figure 8), and are likely to be an underestimation.



Figure 10: Gonorrhoea notification rates in the Aboriginal population, by gender and remoteness area, NSW, 2012-2016

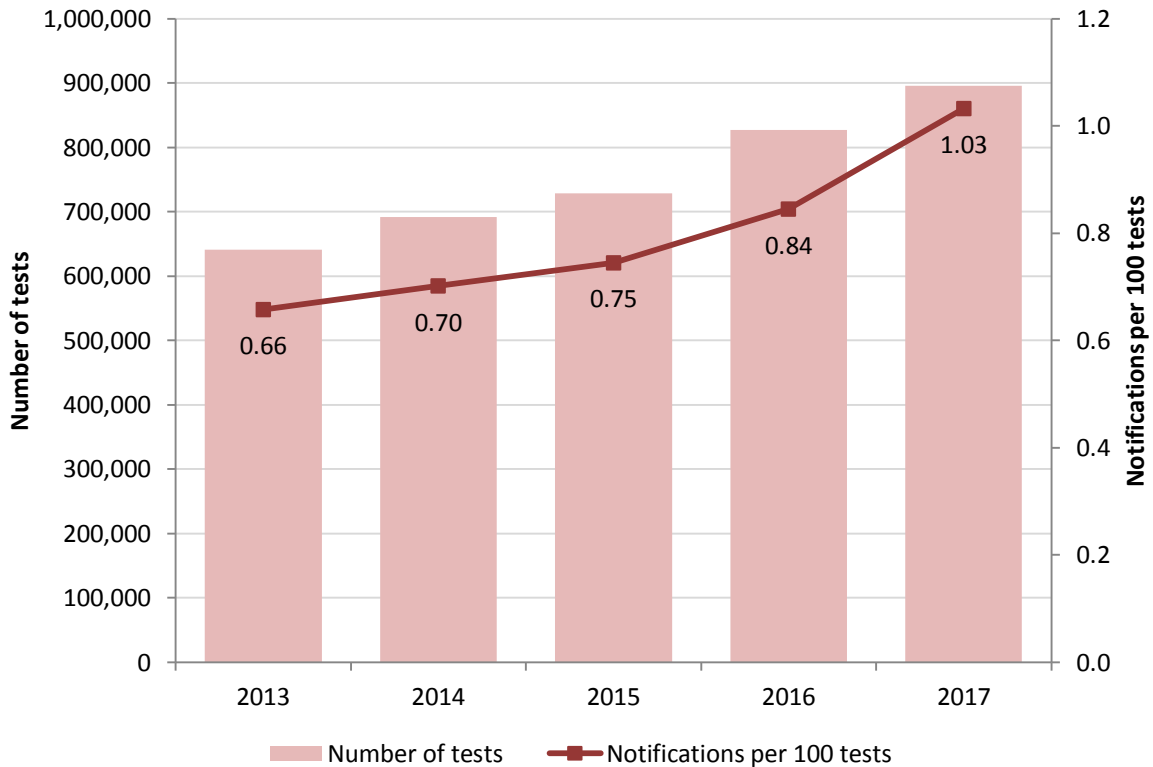


Data sources: Communicable Diseases Register, NSW Ministry of Health (via SAPHaRI), data extracted 17 Oct 2017. At time of report, data available until 2016.<sup>5,6</sup> Transgender persons not included. Population data are derived from ABS projections (3238.0) and 2011 census estimates, and assumes proportions by remoteness and gender have remained constant since 2011.

- In 2016, the highest gonorrhoea notification rates in Aboriginal people were among males and females living in major cities, and were more than double their regional counterparts.
- As the number of notifications in the Aboriginal population is small, especially among males and females in regional and remote areas, trends 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 known (see Figure 8).
- The gonorrhoea notification rate in females in remote areas has dropped markedly in 2016, however the chlamydia rate in this group has remained stable compared to 2015 (Figure 35). As gonorrhoea testing is conducted at the same time as chlamydia testing, chlamydia notification rates give an indication of gonorrhoea screening; these data suggest that this group is continuing to be screened for both chlamydia and gonorrhoea.

### 1.3 Gonorrhoea testing

Figure 11: Number of gonorrhoea tests and notification to test<sup>6</sup> ratio, NSW, 1 January 2013 to 31 December 2017



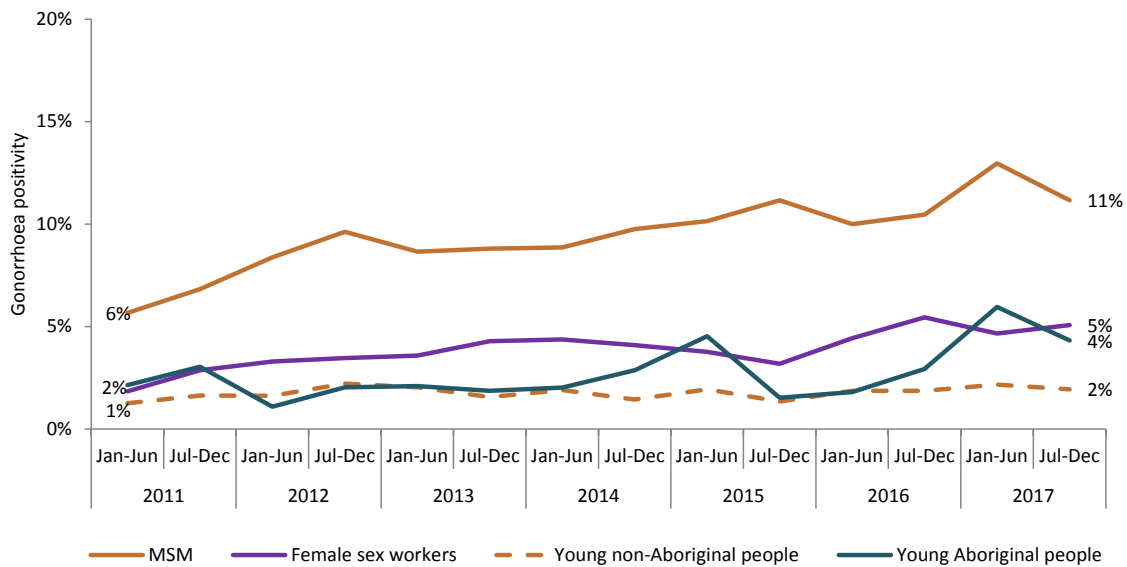
Data source: NCIMS and NSW Denominator Data Project, NSW Health; data extracted 24 April 2018

Note: Testing multiple sites results in multiple tests being counted per person

- The number of gonorrhoea tests (NAAT and culture) performed in NSW is continuing to increase.
- In 2017, 895,998 tests for gonorrhoea were performed in 15 laboratories in NSW, an increase of 8.3% compared to 2016 (827,606).
- There was 1.0 gonorrhoea notification per 100 gonorrhoea tests in 2017. This is higher than the notification to test ratio for 2016 (0.8), suggesting that transmission of gonorrhoea has increased and/or screening is better targeted at people at higher risk of infection.

## 1.4 Gonorrhoea test positivity among men who have sex with men, female sex workers and young people

Figure 12: Proportion of individual patients attending PFSHs and GP clinics<sup>7</sup> tested for gonorrhoea with a positive result (gonorrhoea positivity<sup>8</sup>), by priority population<sup>9</sup>, 1 January 2011 to 31 December 2017



Data source: ACCESS Database, The Kirby Institute and the Burnet Institute

- Gonorrhoea positivity among MSM was 11% in late 2017, an increase of 5 percentage points when compared to early 2011.
- Among female sex workers positivity was 5% in late 2017, an increase of 3 percentage points when compared to early 2011.

Note: National and jurisdictional data is available at:

[https://kirby.unsw.edu.au/sites/default/files/kirby/report/SERP\\_Annual-Surveillance-Report-2017\\_compressed.pdf](https://kirby.unsw.edu.au/sites/default/files/kirby/report/SERP_Annual-Surveillance-Report-2017_compressed.pdf)<sup>10</sup>

<sup>7</sup> GP clinics included those serving at least 50 gay and bisexual male patients annually.

<sup>8</sup> Positivity is the proportion of individuals (i.e., de-duplicated) tested in each six-month period with any positive result.

<sup>9</sup> While priority populations are not mutually exclusive those other than MSM exclude MSM-identified patients.

<sup>10</sup> HIV, viral hepatitis and sexually transmissible infections in Australia, Annual Surveillance Report 2017, Kirby Institute, UNSW

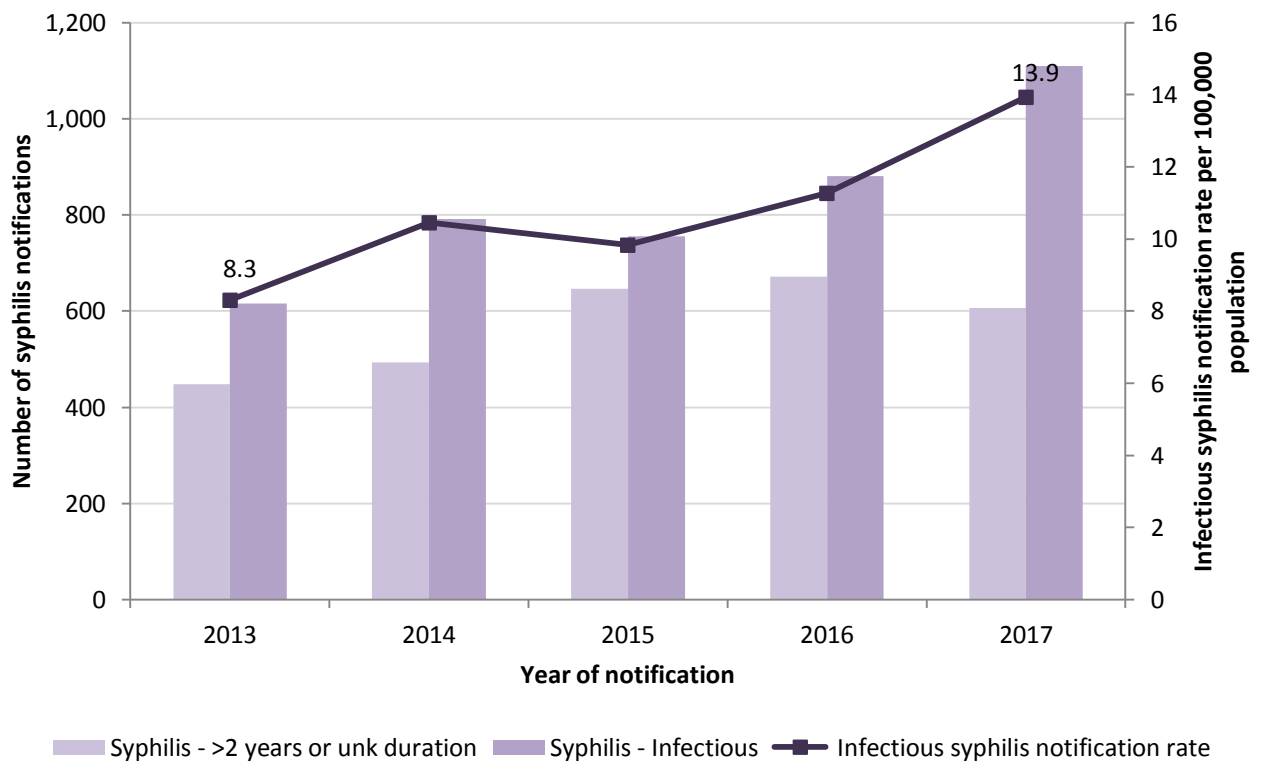
## 2 Reduce infectious syphilis infections

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, 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

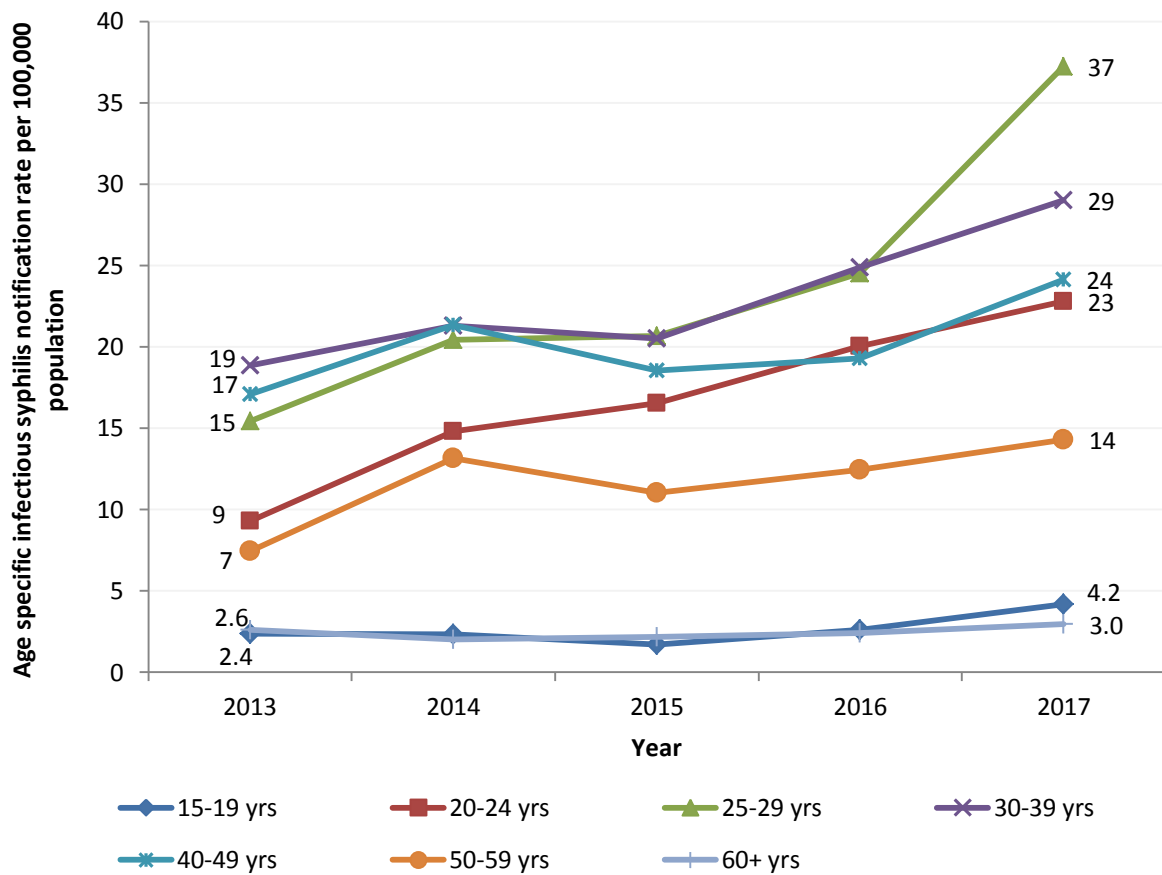
Figure 13: Number and crude rate of syphilis notifications, NSW, 2013- 2017



Data source: NCIMS and ABS population estimates (via SAPHaRI), NSW Health; data extracted 1 May 2018.

- In 2017, there were 1,110 infectious syphilis notifications. The infectious syphilis notification rate was 13.9 notifications per 100,000 population, 24% higher than the rate in 2016 (11.3 per 100,000).
- A part of the increase in infectious syphilis notifications observed in 2016 and 2017 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 14: Age specific infectious syphilis notification rates in people aged 15 years and over, NSW, 2013-2017

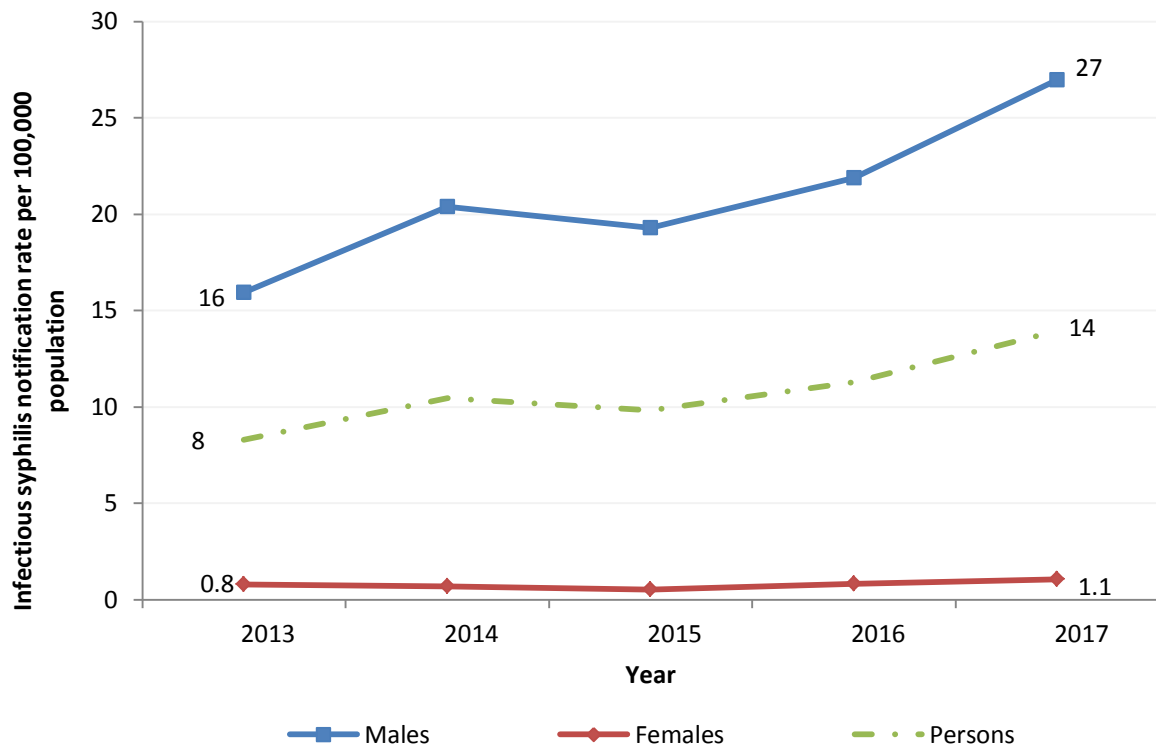


Data source: NCIMS (via SAPHaRI), NSW Health; data extracted 3 May 2018.

In 2017:

- Infectious syphilis notification rates increased among all age groups (15 years and over).
- The highest infectious syphilis notification rates occurred in the 25-29 years and 30-39 years age groups (37 and 29 notifications per 100,000 population respectively).
- The largest relative increases in the infectious syphilis notification rates were observed in the 15-19 years and 25-29 years age groups (60% and 52% respectively), however the number of notifications in the 15-19 years age group was small (19).

Figure 15: Gender specific infectious syphilis notification rates, NSW, 2013- 2017

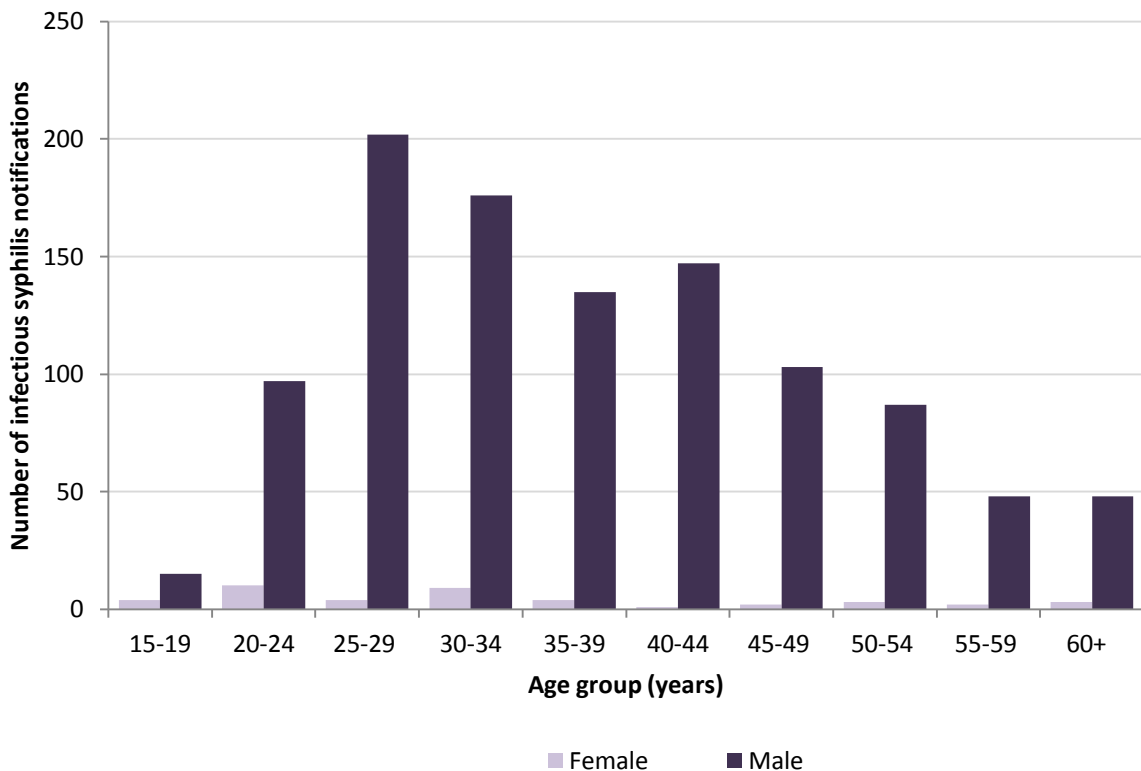


Data source: NCIMS (via SAPHaRI), NSW Health; data extracted 3 May 2018.

Note: Excludes persons reported as transgender (due to small numbers), and persons whose age or sex was not reported.

- Amongst males, there was a 23% increase in the infectious syphilis notification rate (27 notifications per 100,000 males in 2017)
- Amongst females, there was a 29% increase in the infectious syphilis notification rate (1.1 notifications per 100,000 females in 2017). However, the actual number of notifications amongst females is small.

**Figure 16: Infectious syphilis notifications by age and gender in people aged 15 years and over, NSW, 1 January to 31 December 2017**



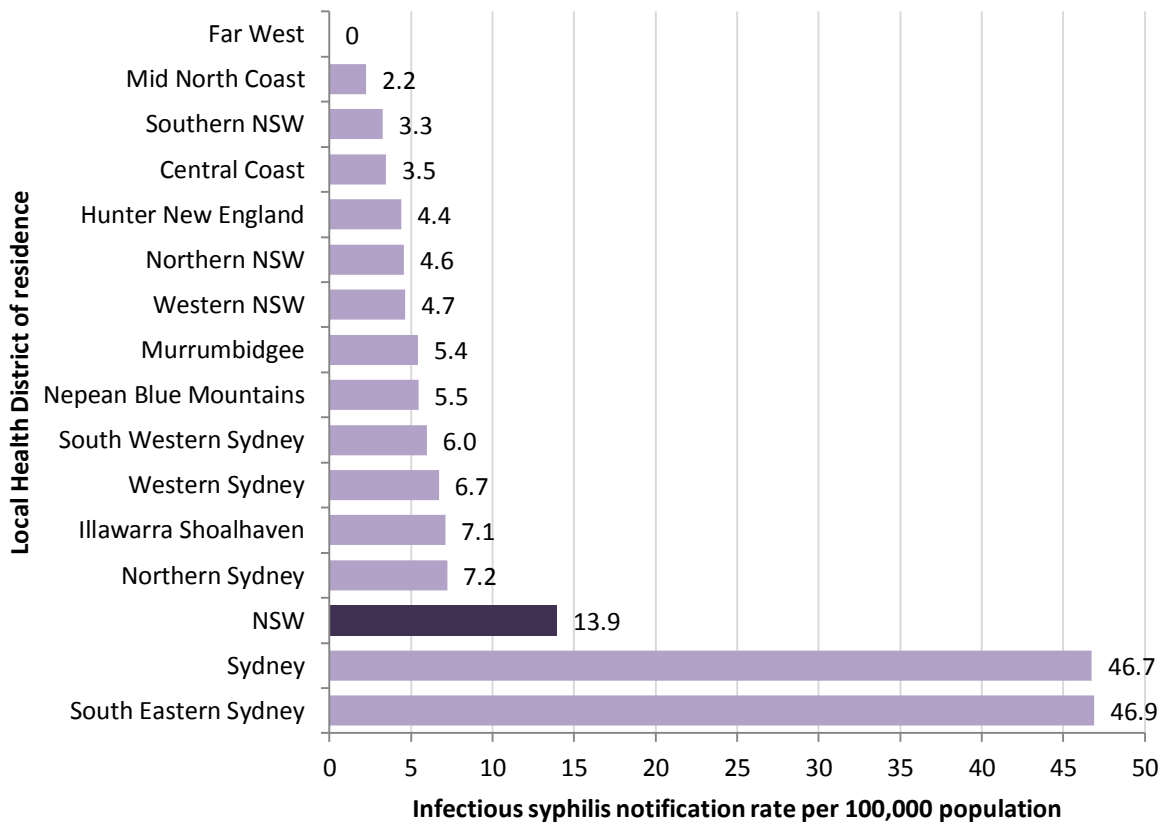
Data source: NCIMS (via SAPHaRI), NSW Health; data extracted 3 May 2018.

Note: Excludes persons reported as transgender (due to small numbers), and persons who age or gender was not reported.

- There were 1,110 notifications of infectious syphilis in 2017. Of these, 1059 (95%) were in males, 42 (4%) were in females, eight (0.7%) were in people reported as transgender and there was one person whose gender was not stated.
- The most commonly notified groups were males aged 25-29 years and males aged 30-34 years.
- The median age of males notified with infectious syphilis in 2017 was 38.2 years, slightly younger than in 2016 (38.8 years).
- The median age of females notified with infectious syphilis in 2017 was 36.0 years, slightly older than in 2016 (34.1 years).



Figure 17: Infectious syphilis notification rate by LHD, NSW, 1 January to 31 December 2017.



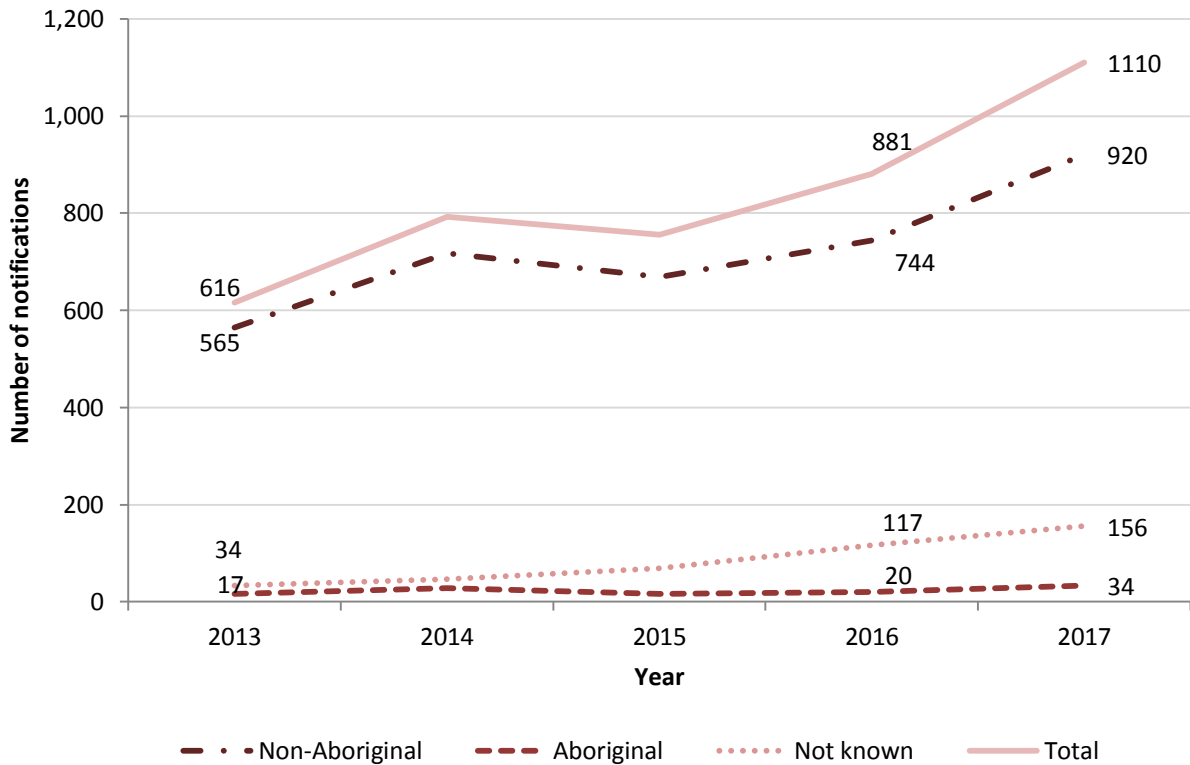
Data source: NCIMS and ABS population estimates (SAPHaRI), NSW Health; data extracted 3 May 2018.

Note: Excludes non-NSW residents, persons whose residential postcode was not known and notifications from Justice Health. For Justice Health notifications, see **Table Appendix D: Notification data**.

In 2017:

- The highest infectious syphilis notification rates continue to be observed in South Eastern Sydney and Sydney LHDs (46.9 and 46.7 notifications per 100,000 population, respectively)
- The largest relative increases in the infectious syphilis notification rates compared to 2016 were in Western Sydney, Western NSW, South Eastern Sydney and Sydney LHDs (55%, 44%, 26% and 25% respectively), however the number of notifications for Western NSW was small (13).

Figure 18: Infectious syphilis notifications by Aboriginality, NSW, 2013-2017

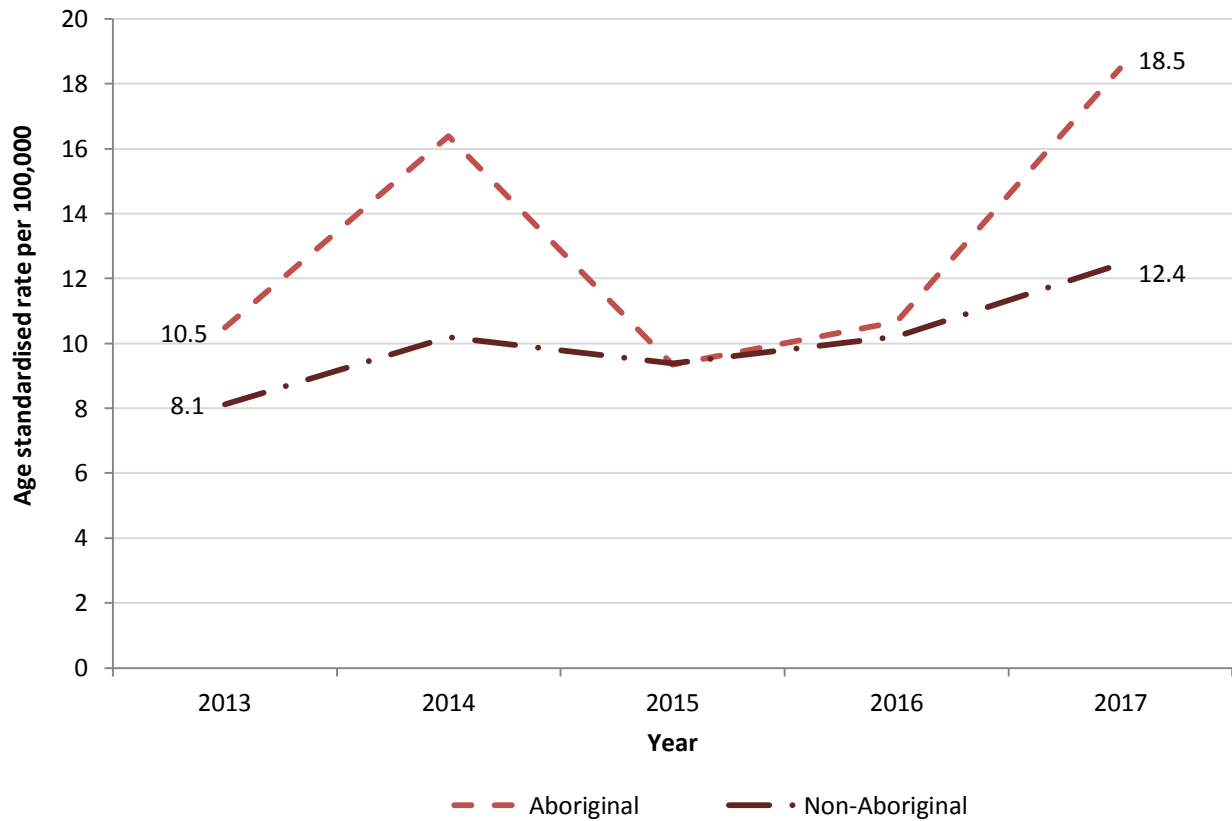


Data source: NCIMS, NSW Health; data extracted 1 May 2018.

- Of 1,110 infectious syphilis notifications in 2017, 34 (3.1%) were among Aboriginal people, 920 (83%) were among non-Aboriginal people and Aboriginal status was not known for 156 (14%). Of those whose Aboriginal status was not known in 2017, at least 81% were living in metropolitan Sydney.
- The proportion of infectious syphilis notifications that were among Aboriginal people was slightly higher in 2017 than in 2016 (2.3%).
- Of the 34 infectious syphilis notifications among Aboriginal people in 2017, 27 (79%) were male, six (18%) were female and one (3%) was reported as transgender.

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

Figure 19: Infectious syphilis notification rate by Aboriginality, NSW, 2013-2017

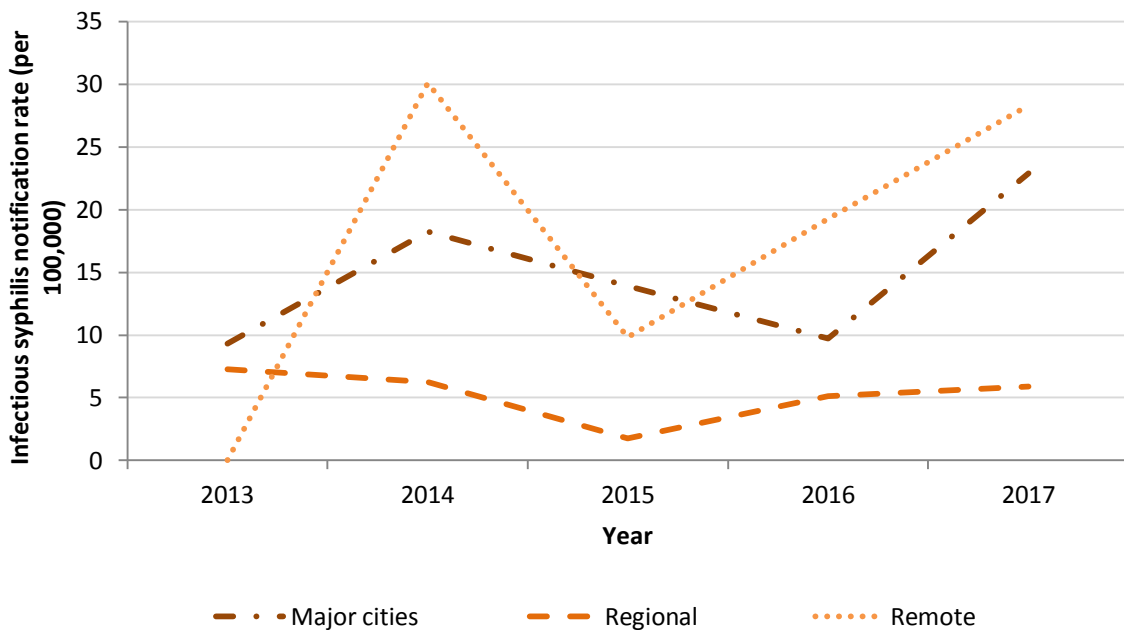


Data source: NCIMS and ABS (via SAPHaRI, NSW Health); data extracted 1 May 2018.

Amongst those whose Aboriginal status was known, the age standardised infectious syphilis notification rate among Aboriginal people was 18.5 per 100,000 in 2017, 1.5 times higher than the rate among non-Aboriginal people (12.4 per 100,000).

Note: As the number of infectious syphilis notifications among Aboriginal people is smaller than that among non-Aboriginal people, yearly fluctuations in the rate should be interpreted with caution.

Figure 20: Infectious syphilis notification rates in the Aboriginal population, by remoteness area, NSW, 2013-2017.

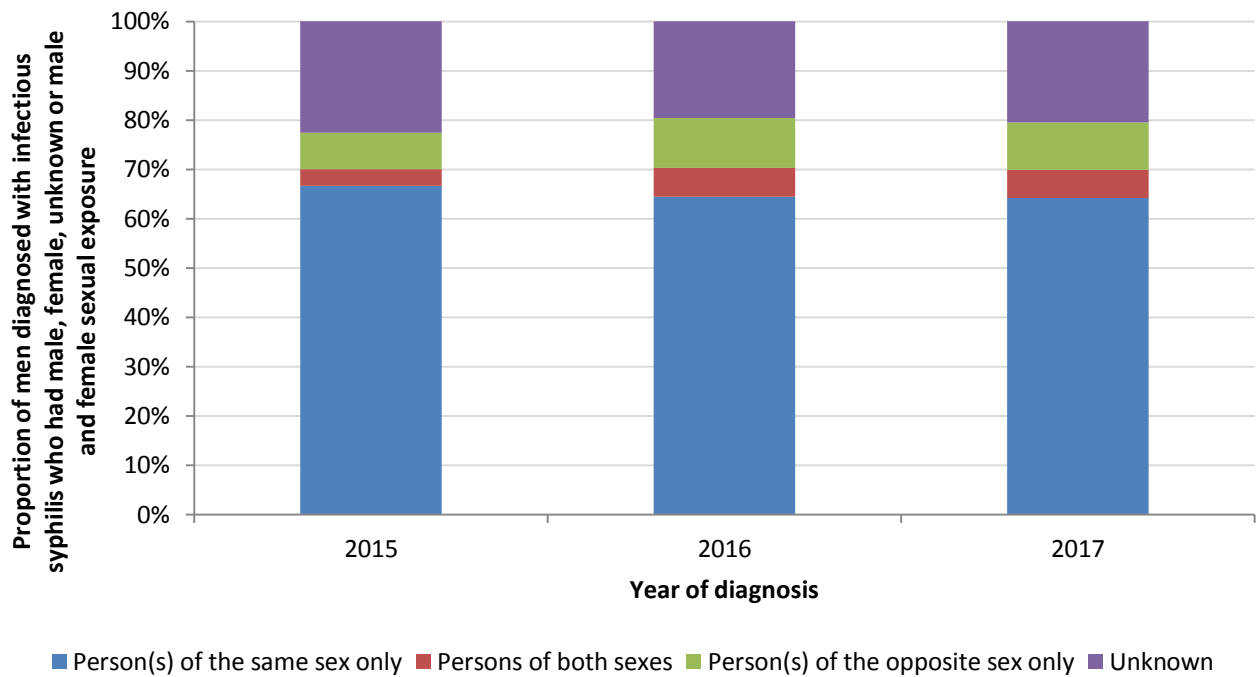


Data sources: NCIMS, NSW Health; data extracted 1 May 2018. Population data are derived from ABS projections (3238.0) and 2011 census estimates, and assumes proportions by remoteness have remained constant since 2011.

- In 2017, the infectious syphilis notification rate in the Aboriginal population was highest in remote areas, followed by major cities and regional areas (28, 23 and 6 notifications per 100,000 respectively).
- Between 2016 and 2017, the largest relative increase in syphilis notifications among Aboriginal people has occurred in major cities (135%). In remote and regional areas, there were relative increases of 47% and 14% respectively over the same period.
- Of the 34 infectious syphilis notifications among Aboriginal people in 2017, 24 (71%) were living in major cities, seven (21%) were in regional areas and three (9%) were in remote areas. As the number of infectious syphilis notifications in the Aboriginal population is small, particularly in regional and remote areas, yearly fluctuations are to be expected and trends should be interpreted with caution.
- Among Aboriginal people in regional and remote areas, the male to female ratio of infectious syphilis notification was 4:1 in 2017, suggesting exposure was predominantly male-to-male sex.

Note: There is an ongoing infectious syphilis outbreak among young Aboriginal and Torres Strait Islander people in Northern and Central Australia beginning in North West Queensland in 2011. To the end of April 2018, there have been no syphilis cases detected in Aboriginal communities in NSW associated with this outbreak. Information on the outbreak is available on the [Australian Government Health Department website](#).

Figure 21: Sexual exposure of men diagnosed with infectious syphilis, NSW, 1 January 2015- 31 December 2017

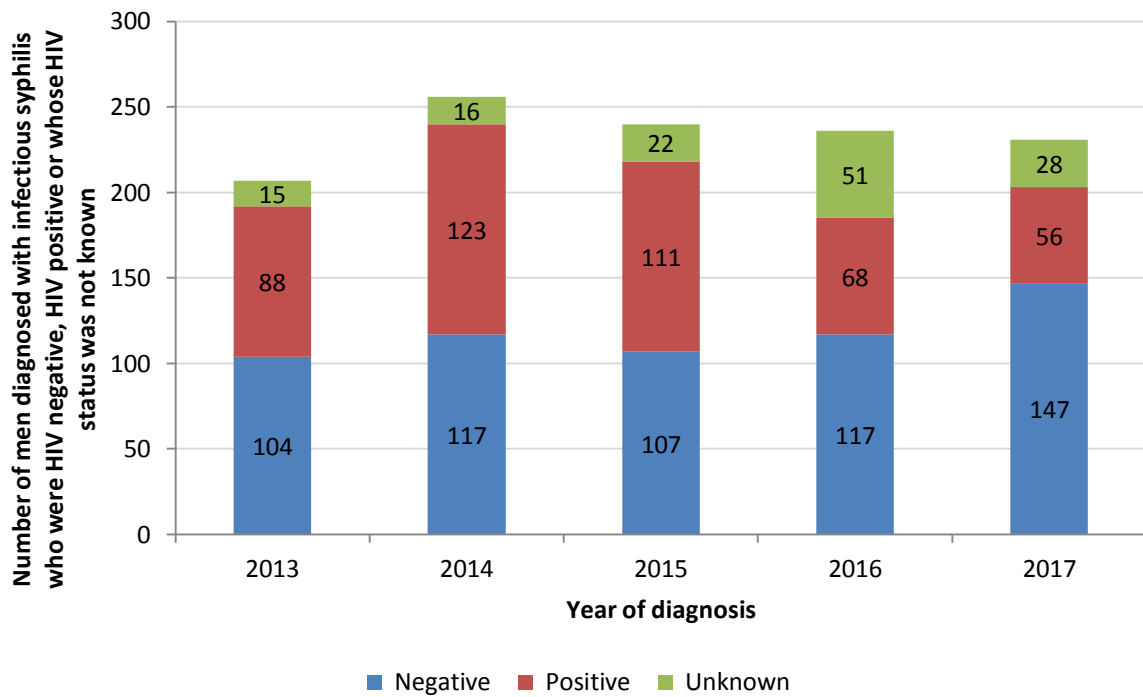


Data source: NCIMS, NSW Health; data extracted 7 May 2018.

In 2017:

- The sexual exposure of men diagnosed with infectious syphilis continued to be predominantly (64%) male-to-male sex.
- The proportion (5.8%) of men diagnosed with infectious syphilis that had male and female sexual exposure was similar compared to 2016 (5.9%).
- There was a small (4%) relative decline in the proportion of men diagnosed with infectious syphilis who reported only heterosexual sex, compared to 2016.

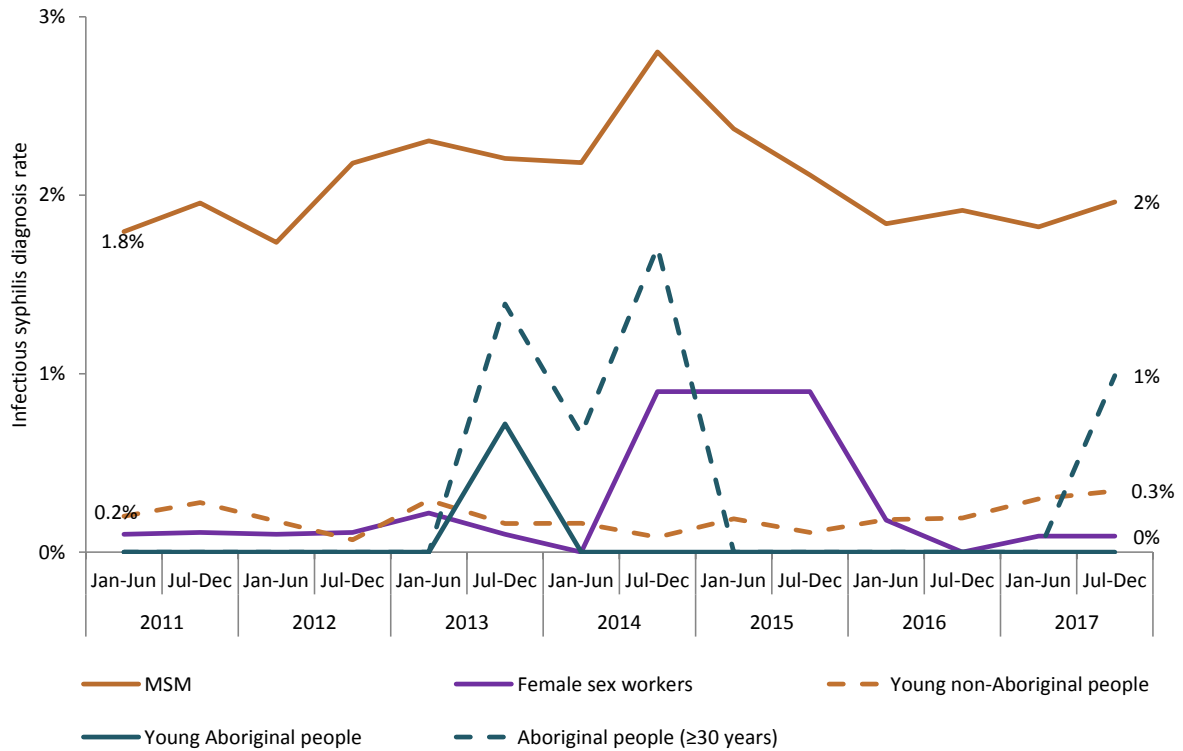
Figure 22: HIV status of men diagnosed with infectious syphilis, Sydney LHD, 1 January 2013- 31 December 2017



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.

In 2017 the proportion of men diagnosed with infectious syphilis residing in Sydney LHD who were HIV negative has increased from 50% in 2016 to 64% in 2017 and is the highest proportion of men diagnosed with infectious syphilis that were HIV negative from 2013 to 2017.

**Figure 23: Proportion of individual patients attending PFSHSs and GP clinics<sup>11</sup> tested for syphilis with a diagnosis of infectious syphilis (syphilis diagnosis rate<sup>12</sup>, by priority population<sup>13</sup>, 1 January 2011 to 31 December 2017**



Data source: ACCESS Database, The Kirby Institute and the Burnet Institute.

- Diagnoses of infectious syphilis were generally rare.
- The diagnosis rate of infectious syphilis remained stable among gay and bisexual men: 1.8% in early 2011 and 2% in late 2017.

<sup>11</sup> GP clinics included those serving at least 50 gay and bisexual male patients annually

<sup>12</sup> Diagnosis rate is the proportion of individuals (i.e., de-duplicated) tested in each six-month period with any positive result. In PFSHS, infectious syphilis was defined as a diagnosis of primary, secondary or early latent (<2 years) syphilis and in general practice as the proportion of individuals tested with reactive syphilis antigen and antibody tests and, if relevant a fourfold increase in RPR titre

<sup>13</sup> While priority populations are not mutually exclusive those other than MSM exclude MSM-identified patients

## 2.2 Congenital syphilis notifications

In 2017, there was one congenital syphilis notification in NSW, in metropolitan Sydney. There were no congenital syphilis cases in Aboriginal communities in NSW in 2017.

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.

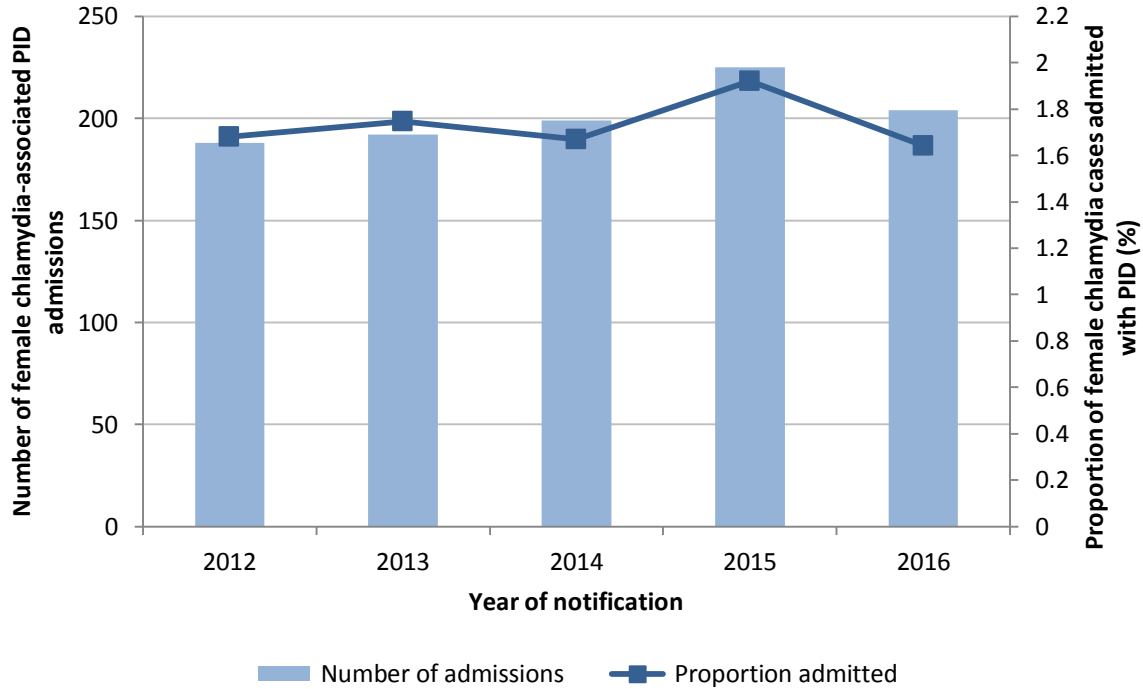
Prevention, testing and appropriate treatment and management are the cornerstones of chlamydia control and are embedded in the current STI strategy. Chlamydia notification data does not reflect the true incidence of chlamydia infection as it only represents a proportion of infections in the population, 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 that are positive for *Chlamydia trachomatis* will generate only one notification.

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

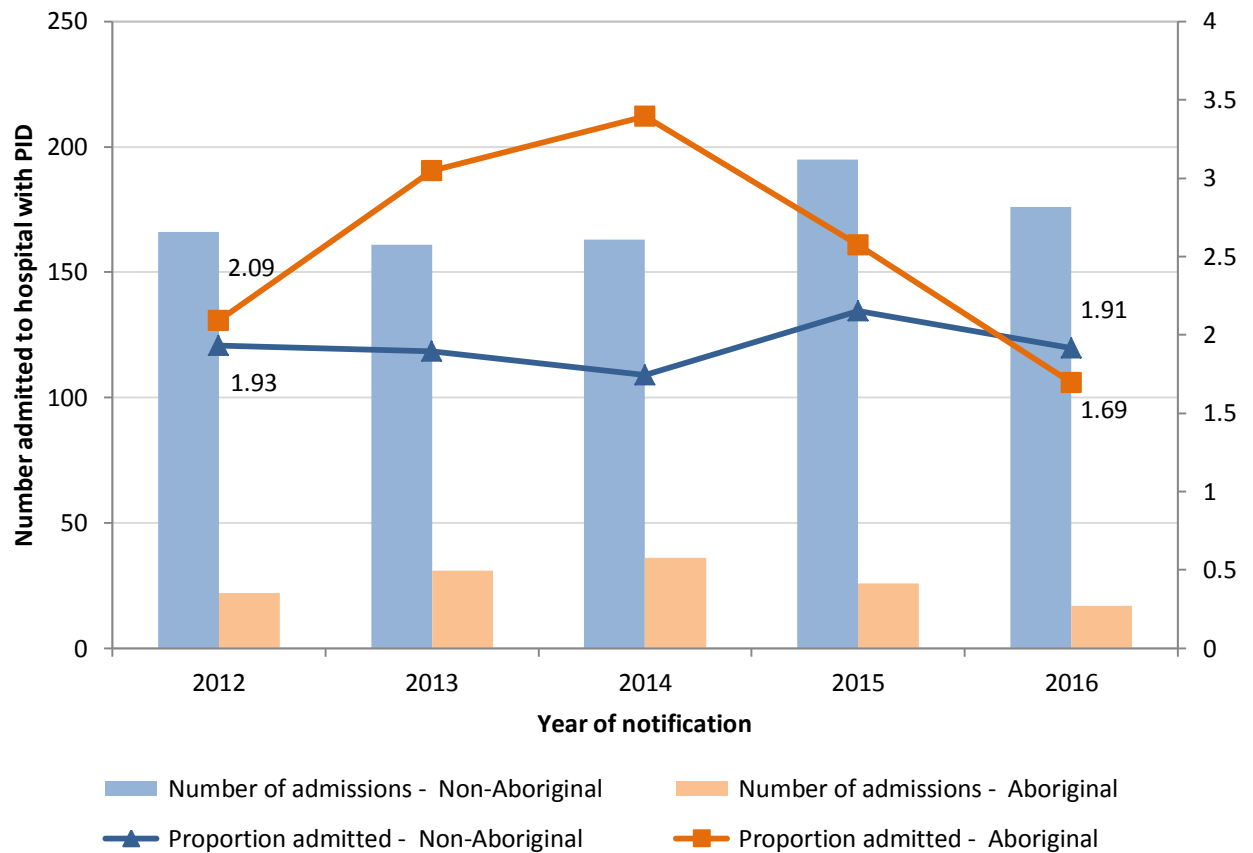
Figure 24: Number and proportion of women notified with chlamydia who are admitted with PID within 12 months of diagnosis, NSW, 1 January 2012- 31 December 2016



Data source: Communicable Diseases Register, NSW Ministry of Health (via SAPHaRI)

- The number of women notified with chlamydia who were admitted to hospital with PID within 12 months varied over time from 2012 to 2016, ranging from 188-225 admissions.
- The proportion of all women notified with chlamydia who were admitted to hospital also varied over time from 2012 to 2016, ranging from 1.6-1.9%.

Figure 25: Number and proportion of women notified with chlamydia who are admitted with PID within 12 months of diagnosis, by Aboriginality, NSW, 1 January 2012- 31 December 2016



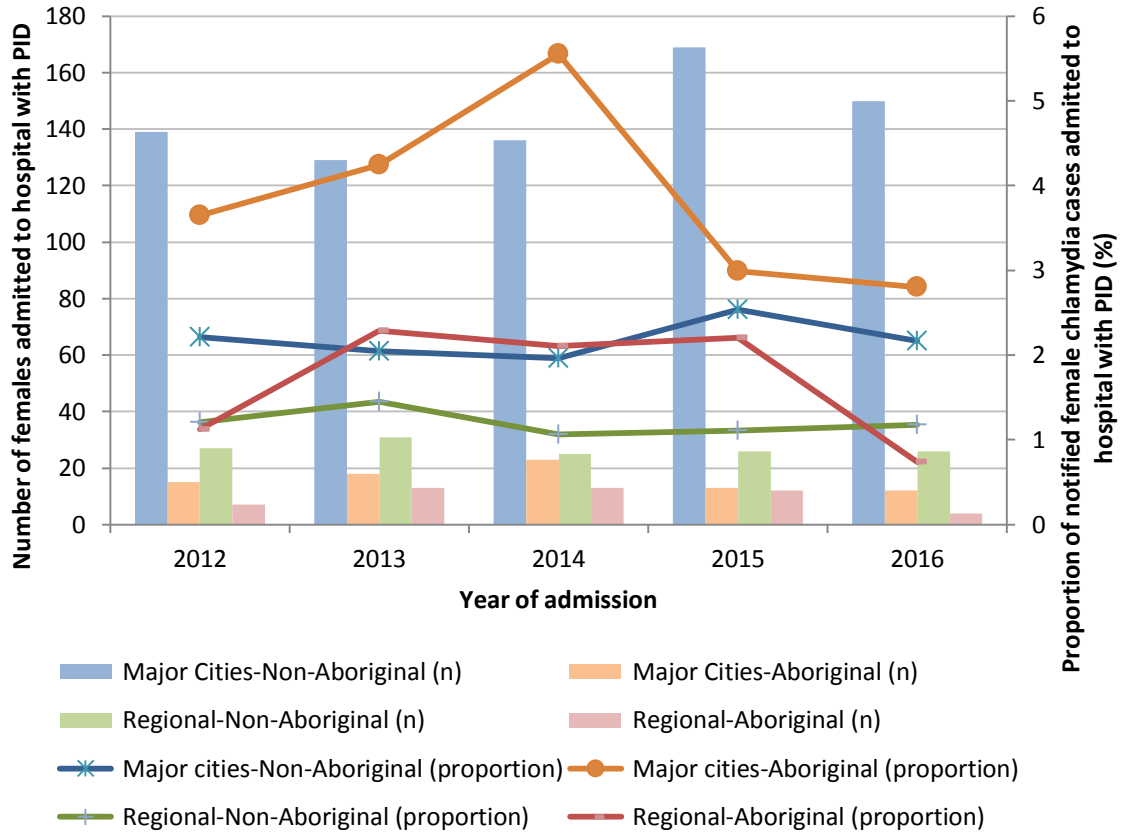
Data source: Communicable Diseases Register, NSW Ministry of Health (via SAPHaRI)

Note: Excludes re-notifications within 12 months

- The number of Aboriginal women notified with chlamydia who were admitted to hospital with PID within 12 months varied over time from 2012 to 2016, ranging from 17-36 admissions per year.
- The proportion of all Aboriginal women notified with chlamydia who were admitted to hospital also varied over time from 2012 to 2016, ranging from 1.7-3.4%, which is 1.1 to 1.9 times higher compared to non-Aboriginal women, except in 2016 where it was lower than non-Aboriginal women.

Note: As the number of PID admissions among Aboriginal women is relatively small compared to non-Aboriginal women, yearly variation should be interpreted with caution.

**Figure 26: Number and proportion of women notified with chlamydia who are admitted with PID within 12 months of diagnosis, by Aboriginality and residential region, NSW, 1 January 2012- 31 December 2016**



Data source: Communicable Diseases Register, NSW Ministry of Health (via SAPHaRI).

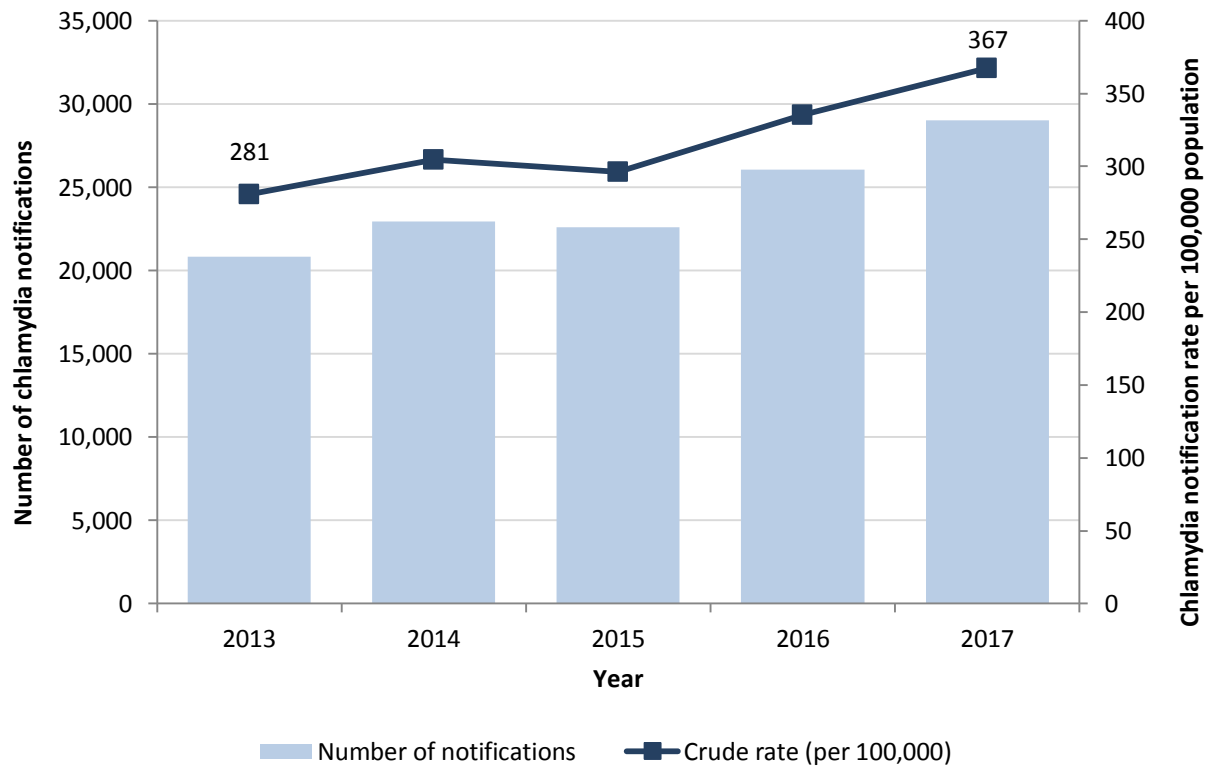
Note: Excludes re-notifications within 12 months and chlamydia cases where residential postcode or Aboriginal status was unknown

- The number of Aboriginal women from both major cities and regional areas who were notified with chlamydia and admitted to hospital with PID within 12 months varied over time from 2012 to 2016, ranging from 4-23 admissions per year.
- The proportion of Aboriginal women notified with chlamydia who were admitted to hospital with PID was generally higher compared to Non-Aboriginal women in both major cities and regional areas.

Note: As the number of PID admissions among Aboriginal women is relatively small compared to non-Aboriginal women, yearly variation should be interpreted with caution.

### 3.3 Chlamydia notifications

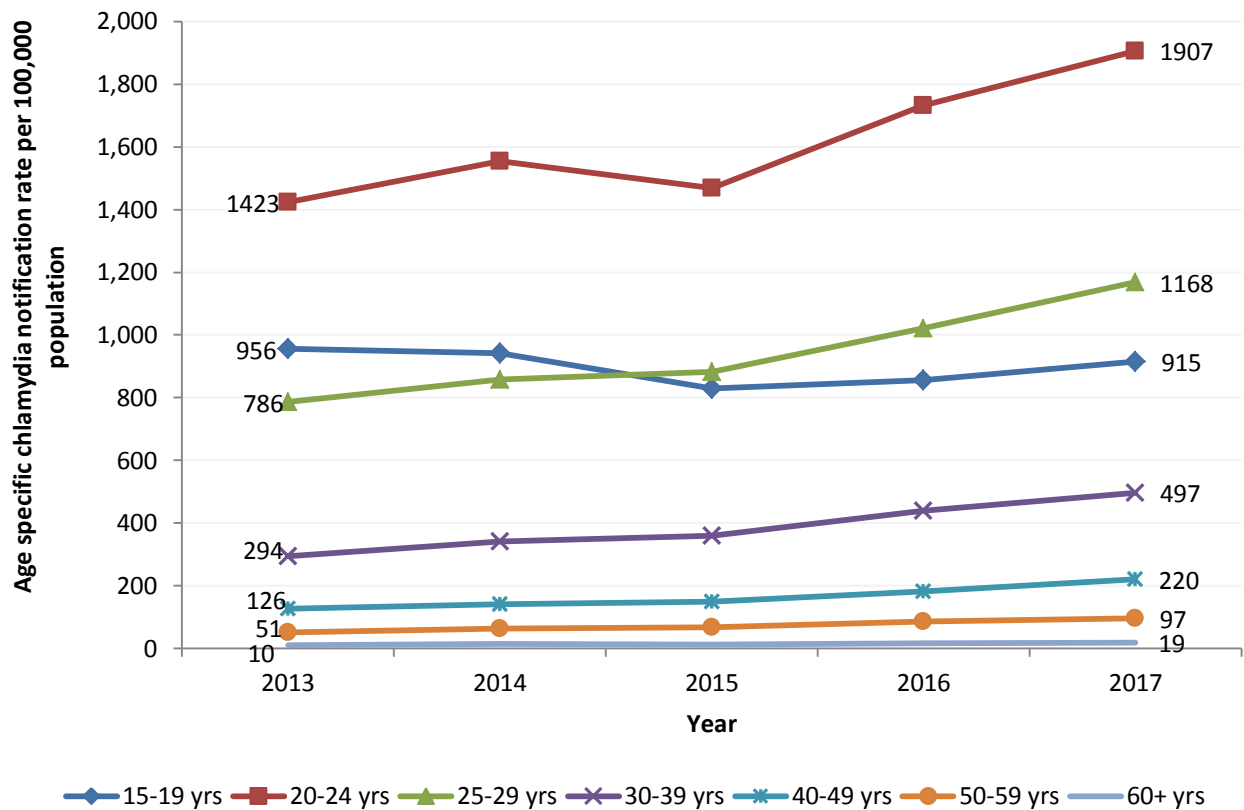
Figure 27: Number and crude rate of chlamydia notifications, NSW, 1 January 2013 to 31 December 2017.



Data source: NCIMS and ABS (via SAPHaRI), NSW Health; data extracted 23 April 2018.

- The number and rate of chlamydia notifications continues to increase.
- In 2017, there were 29,007 chlamydia notifications in NSW.
- The chlamydia notification rate in 2017 was 367 notifications per 100,000 population, 9.6% higher than in 2016 (335 per 100,000).

Figure 28: Age specific chlamydia notification rates in people aged 15 years and over, NSW, 1 January 2013 to 31 December 2017

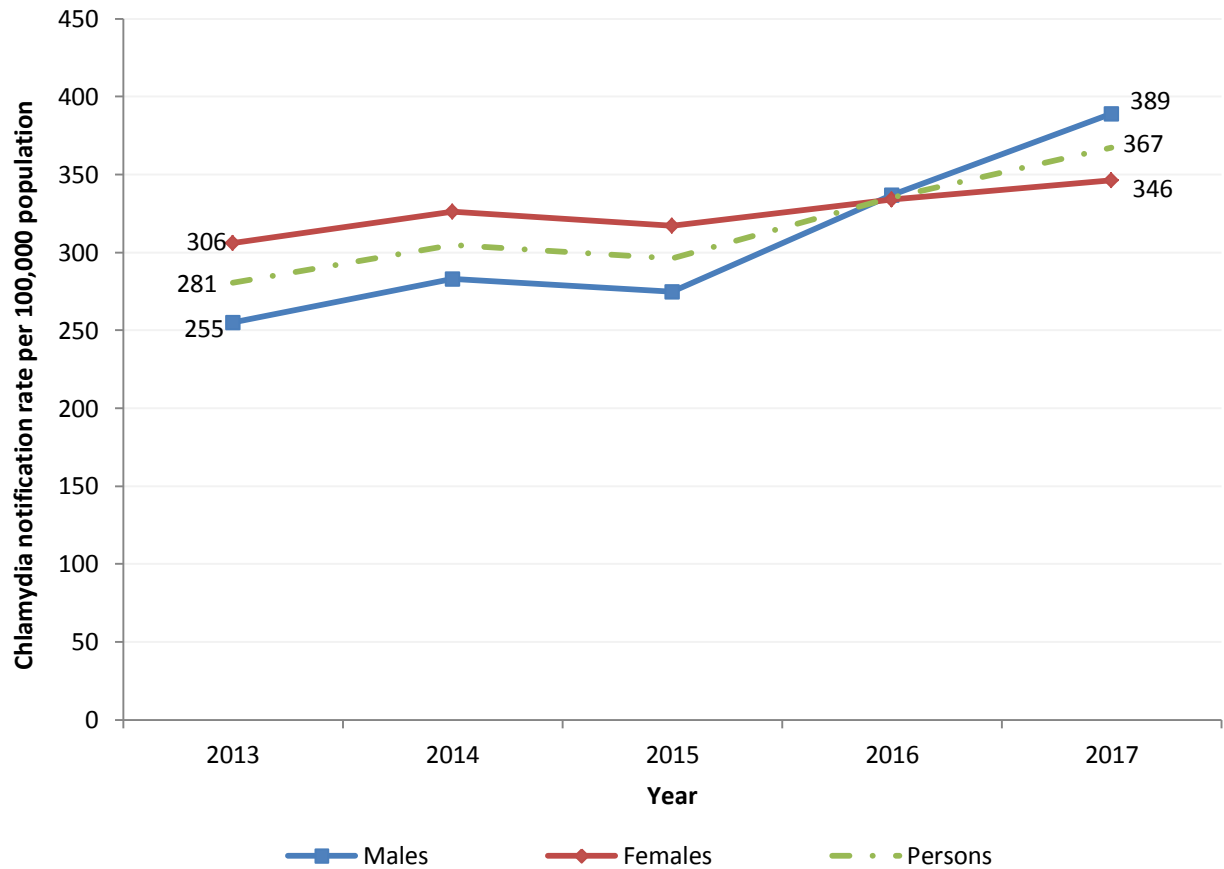


Data source: NCIMS (via SAPHaRI), NSW Health; data extracted 23 April 2018.

In 2017:

- Chlamydia notification rates increased among all age groups (15 years and over).
- The age-specific rates for the 15-19 years, 20-24 years, 25-29 years and 30-39 years age groups increased by 7%, 10%, 14% and 13% (respectively) compared to the rates in 2016. A larger relative increase (20%) was observed in the 40-49 years age group, although actual numbers are smaller.
- The median age of males notified with chlamydia was 28.3 years, higher than in 2016 (27.9 years).
- The median age of females notified with chlamydia was 23.4 years, slightly higher than in 2016 (23.3 years).

Figure 29: Gender specific chlamydia notification rate, NSW, 1 January 2013 to 31 December 2017

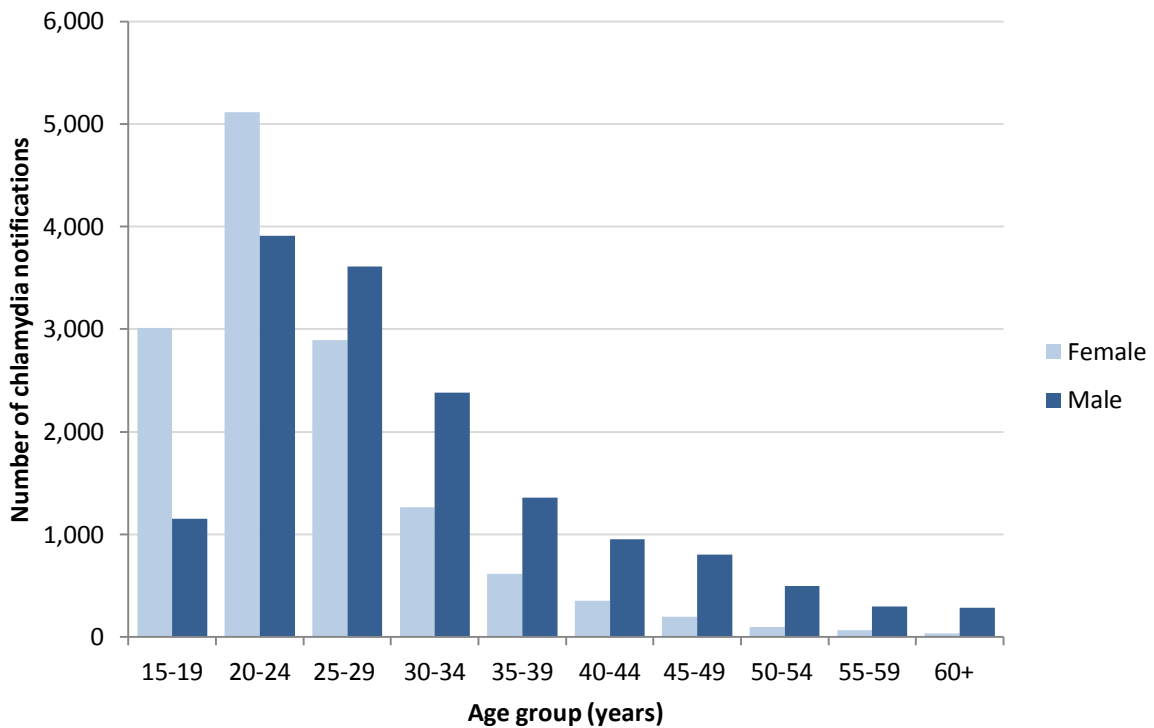


Data source: NCIMS (via SAPHaRI), NSW Health; data extracted 23 April 2018.

Note: Excludes persons reported as transgender (due to small numbers), and persons whose sex was not reported.

- Chlamydia notification rates increased among both males and females in 2017. The rate in males increased by 15% compared to 2016, whereas the rate in females increased by 4%.
- In 2017, the chlamydia notification rate was higher in males than females (389 per 100,000 males compared to 346 per 100,000 females).

**Figure 30: Chlamydia notifications by age and gender in people aged 15 years and over, NSW, 1 January to 31 December 2017.**



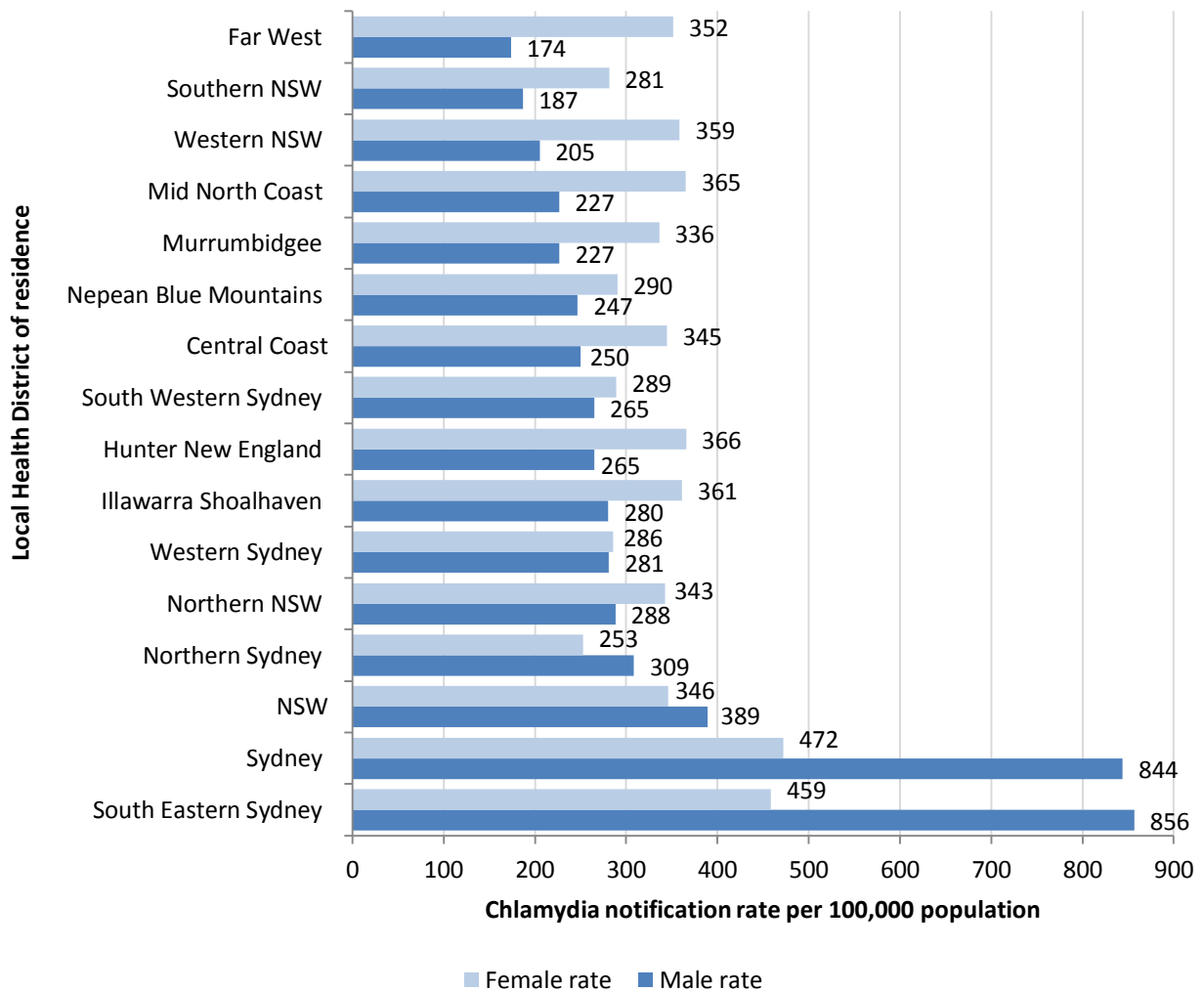
Data source: NCIMS, NSW Health; data extracted 23 April 2018.

Note: Excludes persons reported as transgender (due to small numbers) and persons whose age or sex was not known or reported.

In 2017, 47% of chlamydia notifications were in females and 53% were in males; the most commonly notified groups were females and males aged 20-24 years, followed by males aged 25-29 years and females aged 15-19 years.



Figure 31: Chlamydia notification rate by LHD and gender, NSW, 1 January to 31 December 2017

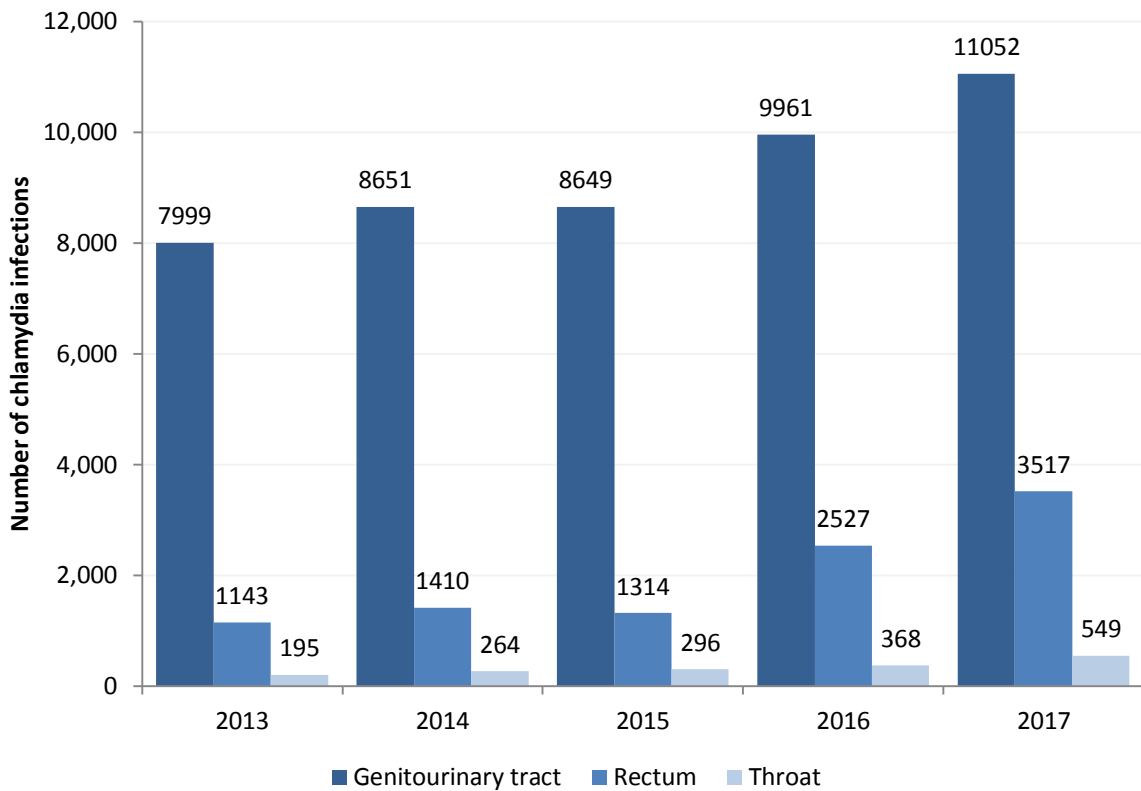


Data source: NCIMS and ABS population estimates (SAPHaRI), NSW Health; data extracted 24 April 2018.

Note: Excludes non-NSW residents, persons whose residential postcode or gender was not known, persons reported as transgender (due to small numbers) and notifications from Justice Health. For Justice Health notifications, see Appendix D: Notification data.

- In 2017, the highest chlamydia notification rates for both males and females were in South Eastern Sydney and Sydney LHDs.
- The largest relative increases in the male chlamydia notification rates (compared to 2016) were in Nepean Blue Mountains, South Western and South Eastern Sydney LHDs (29%, 23% and 23% respectively). For females, the largest relative rate increases were in Far West, Nepean Blue Mountains and Mid North Coast LHDs (13%, 13% and 11% respectively).

**Figure 32: Number of chlamydia infections in males, by site of infection, NSW, 1 January 2013 to 31 December 2017**



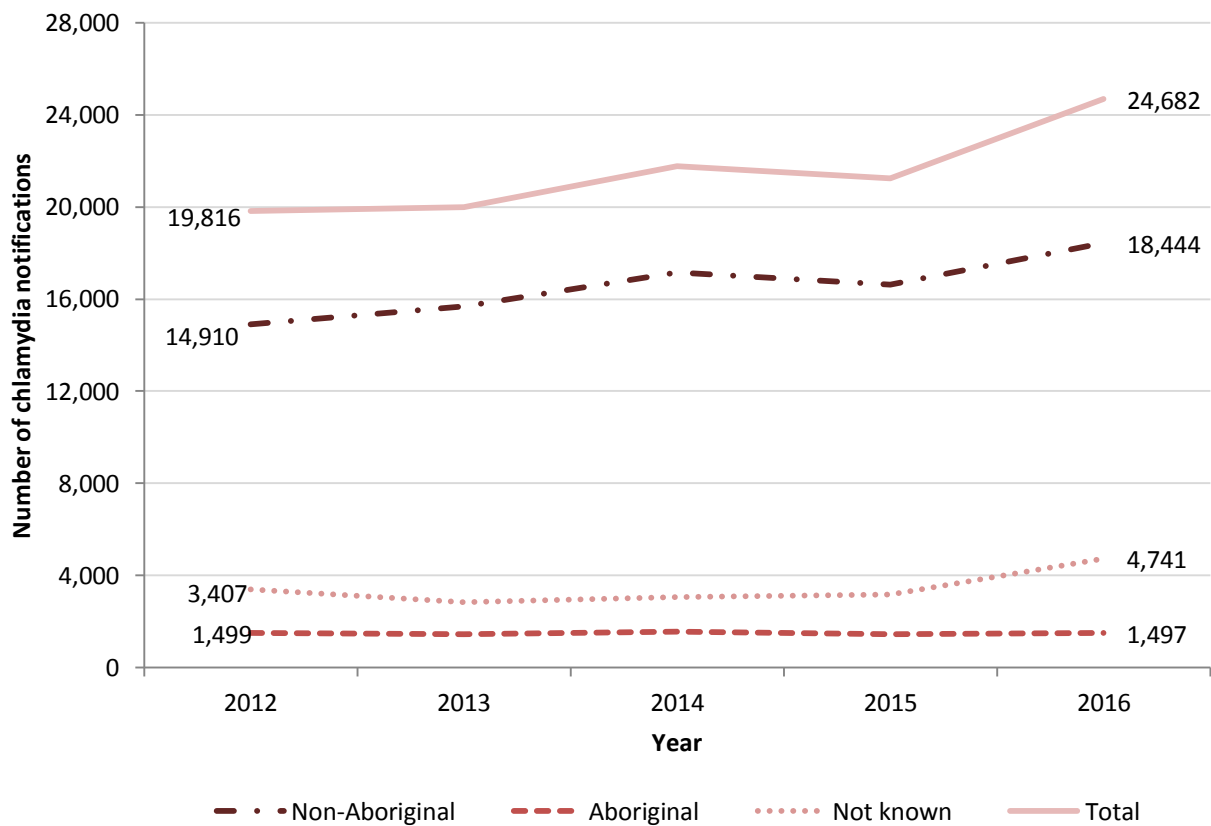
Data source: NCIMS, NSW Health; data extracted 24 April 2018.

Note: Does not include 'other' (including conjunctiva and joints) site of infection or missing/unknown site of infection; number of infections may exceed number of notifications due to infection at multiple sites.

- Among men, the genitourinary tract is the main site of chlamydia infection notified to NSW Health, followed by the rectum and throat.
- Compared with 2016, the largest relative increases in 2017 among men were reported in the throat (49%) and rectum (39%); infections in the genitourinary tract increased by 11%.

### 3.4 Chlamydia notifications among Aboriginal people

Figure 33: Chlamydia notifications by Aboriginality, NSW, 2012-2016

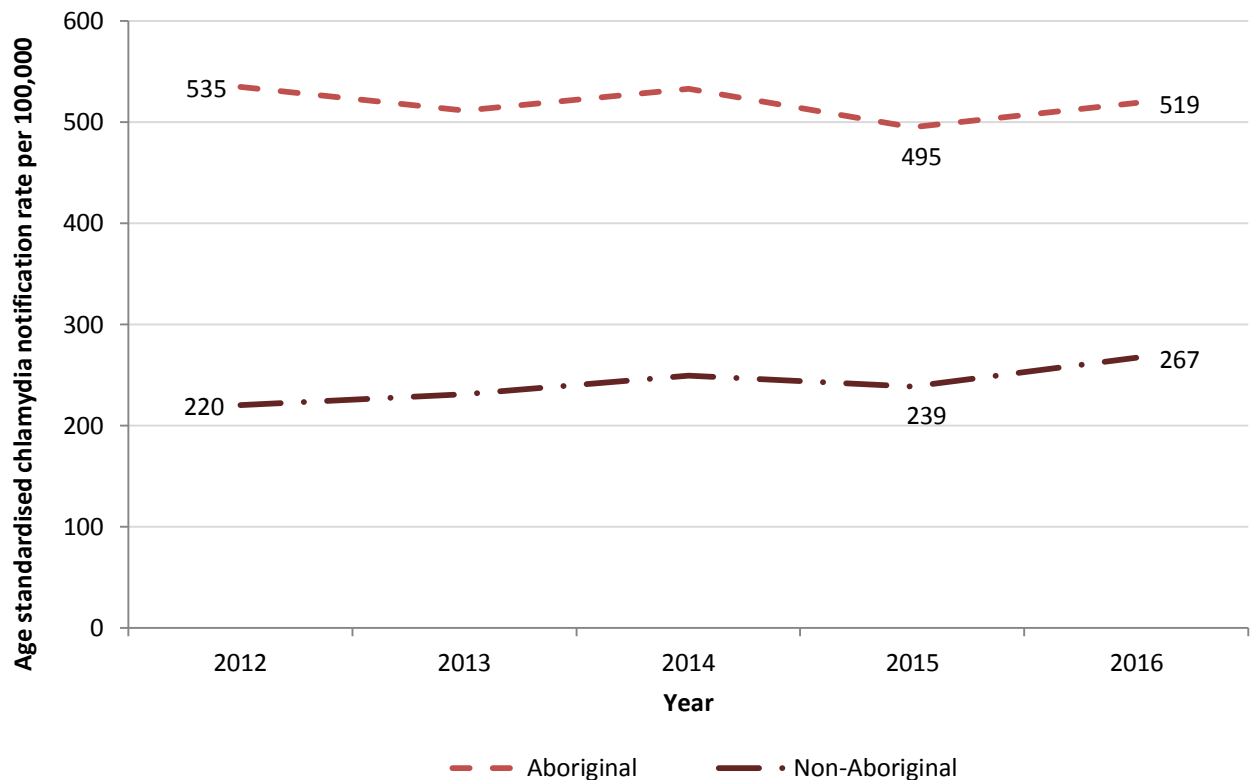


Data source: Communicable Diseases Register, NSW Ministry of Health (via SAPHaRI); data extracted 17 Oct 2017

In 2016, 24,682 notifications for chlamydia were recorded in the Communicable Diseases Register (CDR). Of these, 1,497 (6%) were among Aboriginal people, 18,444 (75%) were among non-Aboriginal people and Aboriginal status was not known for 4,741 (19%) people. Of those notifications where Aboriginal status was not known in 2016, at least 83% were living in metropolitan Sydney.

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 known, and the relatively high proportion of incomplete data compared to the proportion in Aboriginal people.

Figure 34: Chlamydia notification rate by Aboriginality, NSW, 2012-2016

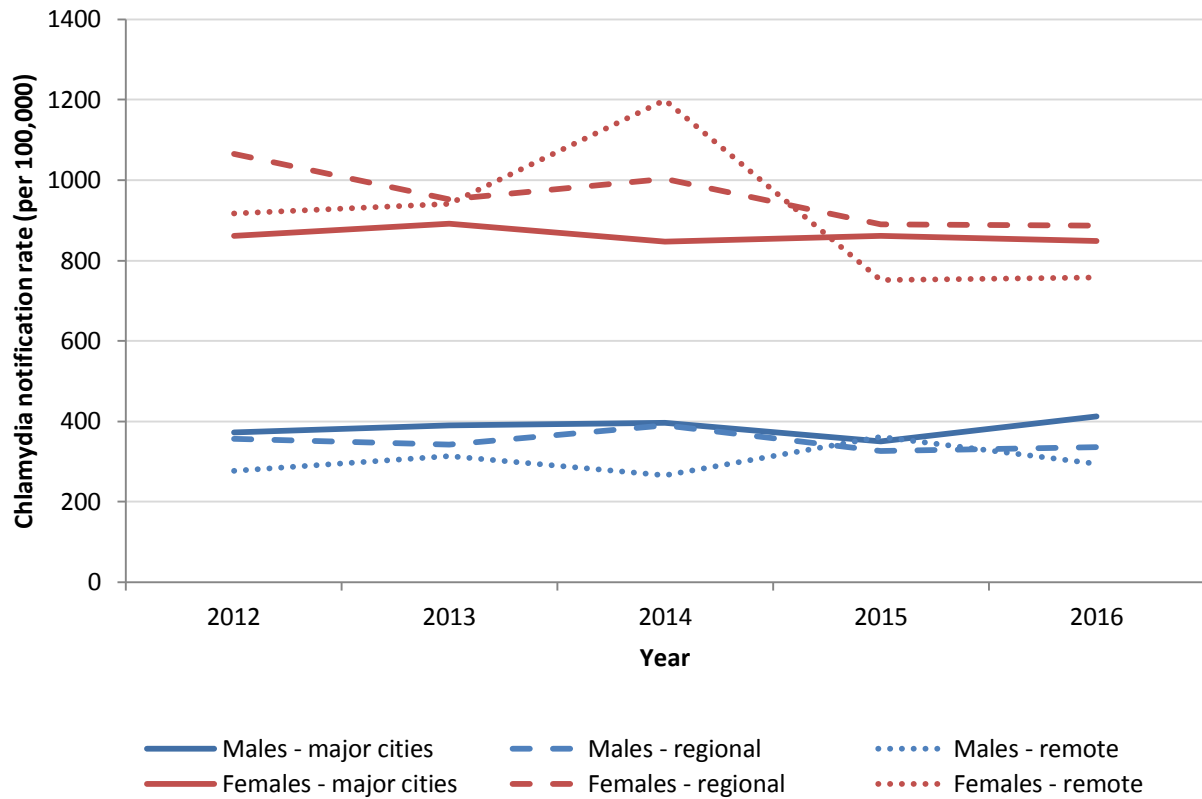


Data source: Communicable Diseases Register, NSW Ministry of Health, and ABS (via SAPHaRI); data extracted 17 Oct 2017. Notes: Excludes records where Aboriginal status was not stated; rates standardised to the Australian Standard Population 2001.

- Notification rates of chlamydia increased among both Aboriginal and non-Aboriginal people between 2015 and 2016.
- Amongst those whose Aboriginal status was known, the chlamydia notification rate was 1.9 times higher among Aboriginal people than among non-Aboriginal people (519 per 100,000 vs 267 per 100,000) in 2016.
- The chlamydia notification rate ratio between Aboriginal and non-Aboriginal people dropped from 2.1 in 2015 to 1.9 in 2016.

Note: These notification rates are influenced by variations in the number of people for whom Aboriginal status was not known (see Figure 33), and are likely to be an underestimation.

Figure 35: Chlamydia notification rates in the Aboriginal population, by gender and remoteness area, NSW, 2012-2016



Data sources: Communicable Diseases Register, NSW Ministry of Health (via SAPHaRI), data extracted 17 Oct 2017. Transgender persons not included. Population data are derived from ABS projections (3238.0) and 2011 census estimates, and assumes proportions by remoteness and gender have remained constant since 2011.

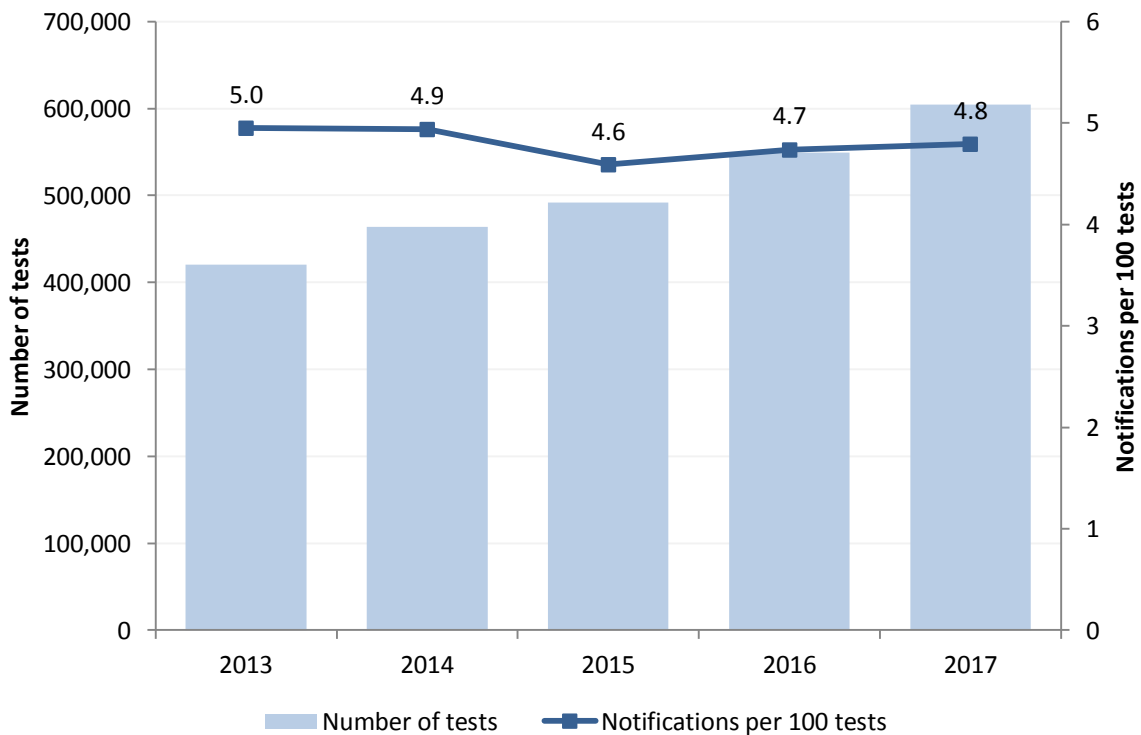
In 2016, the highest chlamydia notification rates in Aboriginal people were among females living in regional areas, major cities and remote areas, and were more than double their male counterparts.

Note: As the number of notifications in the Aboriginal population is relatively small, especially among males and females in remote areas, trends 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 known (see Figure 33)

### 3.5 Chlamydia testing

In 2012, NSW Health commenced collection of monthly testing data for selected notifiable conditions from 15 NSW public and private laboratories under the NSW Denominator Data Project. These laboratories account for more than 90% of the total notifications for the selected conditions in NSW. Information from laboratories does not provide any indication on whether there are repeat tests on the same individual.

**Figure 36: Number of chlamydia tests and notification to test ratio<sup>14</sup>, NSW, 1 January 2013 to 31 December 2017**



Data source: NCIMS and NSW Denominator Data Project, NSW Health; data extracted 24 April 2018.

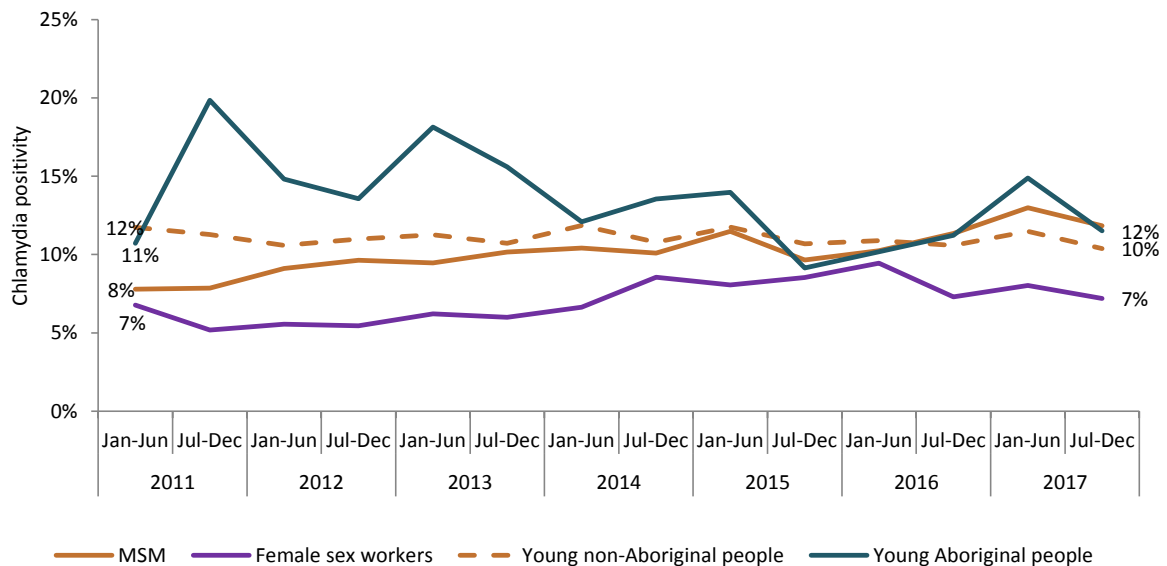
Note: Testing multiple sites results in multiple tests being counted per person.

- The number of chlamydia tests (NAAT) performed in NSW is continuing to increase.
- In 2017, 604,106 tests for chlamydia were performed in 15 laboratories in NSW, an increase of 10% compared to 2016 (548,971).
- There were 4.8 chlamydia notifications per 100 chlamydia tests in 2017.

<sup>14</sup> See **Appendix B: Table 6** for more details about methodology

### 3.6 Chlamydia positivity among men who have sex with men, female sex workers and young people

Figure 37: Proportion of individual patients attending PFSHs and GP clinics<sup>15</sup> tested for chlamydia with a positive result (chlamydia positivity<sup>16</sup>), by priority population<sup>17</sup>, 1 January 2011 to 31 December 2017



Data source: ACCESS Database, The Kirby Institute and the Burnet Institute.

- Chlamydia positivity among MSM increased from 8% in the first half of 2011 to 12% in the second half 2017
- Positivity among female sex workers increased from 7% in early 2011 to 9% in early 2016 it then decreased to 7% in late 2017.

<sup>15</sup> GP clinics included those serving at least 50 gay and bisexual male patients annually

<sup>16</sup> Positivity is the proportion of individuals (i.e., de-duplicated) tested in each six-month period with any positive result

<sup>17</sup> While priority populations are not mutually exclusive those other than MSM exclude MSM-identified patients

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

Infection with human papillomavirus (HPV) is very common in both men and women, with initial infection with any one of many types of HPV occurring close to the time of sexual debut. The National HPV Vaccination Program began in 2007 for females, and was extended to include males in 2013.

Figure 40: Year 7 HPV vaccination by dose and gender, 2011 to 2017<sup>18</sup>



Data source: Local Health Districts

- The data indicate that 82% of females and 80% of males in Year 7 completed the three-dose course of HPV vaccine in 2016, including catch-up vaccination in Year 8 in 2017.
- For all three doses the proportion of the eligible population receiving the vaccination is higher for females than for males

Note: Data on HPV dose 1 coverage for males and females in 2017 is included in Figure 40. Final course completion data are not available as catch-up vaccination is being provided in Year 8 in 2018. See **Table 5 Appendix E** for full data for the HPV vaccination rate by gender.

<sup>18</sup> The coverage rates for NSW may underestimate the true vaccination coverage as they represent only those vaccinations administered through the school program and do not include doses administered by general practitioners or other immunisation providers.

The HPV vaccination coverage target for 2017/18 is 75%.

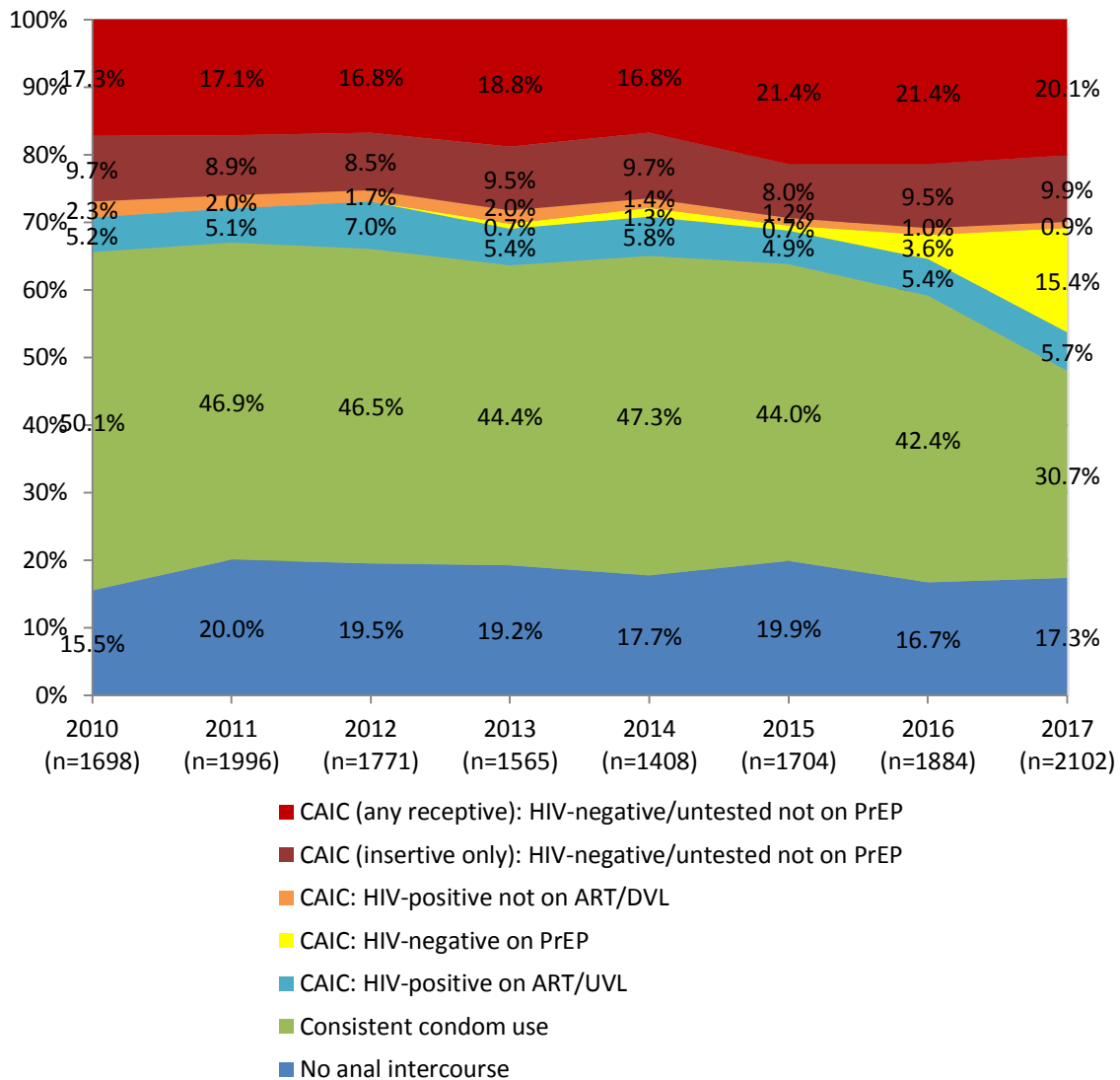
From 2012, extended catch-up vaccination has been offered to students who commenced the course of HPV vaccine in Year 7 to support course completion.



#### 4.1 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 41: 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. 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.

- Among gay men with casual male partners, the proportion avoiding anal intercourse has remained relatively stable since 2010, while consistent condom use has declined.

- Between 2016 and 2017, the combined proportion of respondents reporting no anal intercourse or consistent condom use with casual partners decreased from 59.1% to 48.0% with consistent condom use alone declining from 42.4% to 30.7%.
- Between 2016 and 2017, HIV-negative men on PrEP reporting CAIC increased from 3.6% to 15.4% of men with casual partners. The majority of men who report CAIC continue to be HIV-negative and untested, and *not* using PrEP.
- In 2017, HIV-negative men not using PrEP and who reported any CAIC (insertive or receptive) remained unchanged at 30.0% of casual partners.

## 4.2 Condom use among young people

A cross-sectional periodic survey 'It's Your Love Life'<sup>19</sup> on sexual health among young people is carried out by Centre for Social Research in Health, UNSW. Participants (male and female young people aged 15 to 29 years and living in NSW) who identified themselves heterosexual were invited to answer a digital questionnaire on sexual health. The survey is designed to capture potential trends of self-reported condomless sexual intercourse with casual partners. Overall, 4,951 male and female participants who self-identified as heterosexual responded to either of the surveys, with 2,210 participants in 2016 and 2,831 in 2017.

**Table 2: Sample characteristics**

	All	2016	2017	p-value
<b>Age (continuous)</b>				
Mean age	20.9	20.8	20.9	
Standard deviation	4.45	4.82	4.16	
Range	15-29	15-29	15-29	ns
<b>Gender</b>				
Male	38.0%	35.3%	40.0%	
Female	62.0%	64.7%	60.0%	.001
<b>Area of residence</b>				
Capital city	61.3%	55.3%	65.7%	
Major regional centre or city	18.1%	21.2%	15.7%	
Smaller city or town	14.4%	15.7%	13.4%	
Rural area	6.3%	7.8%	5.2%	<.001
<b>Sexual activity</b>				
Never had oral, vaginal or anal sex	29.7%	26.1%	32.5%	
Ever had sex but not in the past 12 months	4.2%	5.5%	3.2%	
Had sex in the past 12 months	64.7%	65.9%	63.6%	
Preferred not to report this information	1.4%	2.5%	0.6%	<.001

- More than half of the participants were female (62%) and 38% were male.
- A significant proportion (61.3%) of respondents resided in the capital city with a smaller proportion in the rural area (6.3%).

<sup>19</sup> Adam, P., Schippers, M., Schmidt, H., Modderman, K., Welsby, D., Slattery, C., Murray, C., Estoesta, J., Hearnshaw, G., Murphy, D., Britton, M., Jenkins, L., Dixon, K., Becket, N. & de Wit, J. (2016). It's Your Love Life: A new periodic survey on sexual health among young people in NSW. Sydney: Centre for Social Research in Health, UNSW Australia.

### Condomless sexual intercourse

The analyses consisted of assessing potential trends in the rate of self-reported condomless sexual intercourse with casual partners. The percentage was calculated among all participants who had been engaged in condomless sexual intercourse with casual partners in the 12 months prior to the survey.

Logistic regression analysis was used to assess changes in rates of condomless sex with casual partners and if participants had ever had a test for STIs or HIV, controlling for any differences in gender and area of residence between the two samples.

**Table 3: Participants who reported condomless sexual intercourse with casual partners in the past 12 months**

	2016			2017		
	All* (n=1,167)	Males (n=376)	Females (n=791)	All (n=788)	Males (n=254)	Females (n=534)
Across age groups	16.6%	20.7%	14.7%	17.6%	22.8%	15.2%
15–19	13.3%	13.8%	13.2%	16.6%	17.8%	16.1%
20–24	23.0%	28.1%	21.1%	20.4%	29.2%	18.1%

Note: \*Participants who were sexually active in the 12 months prior to the survey.

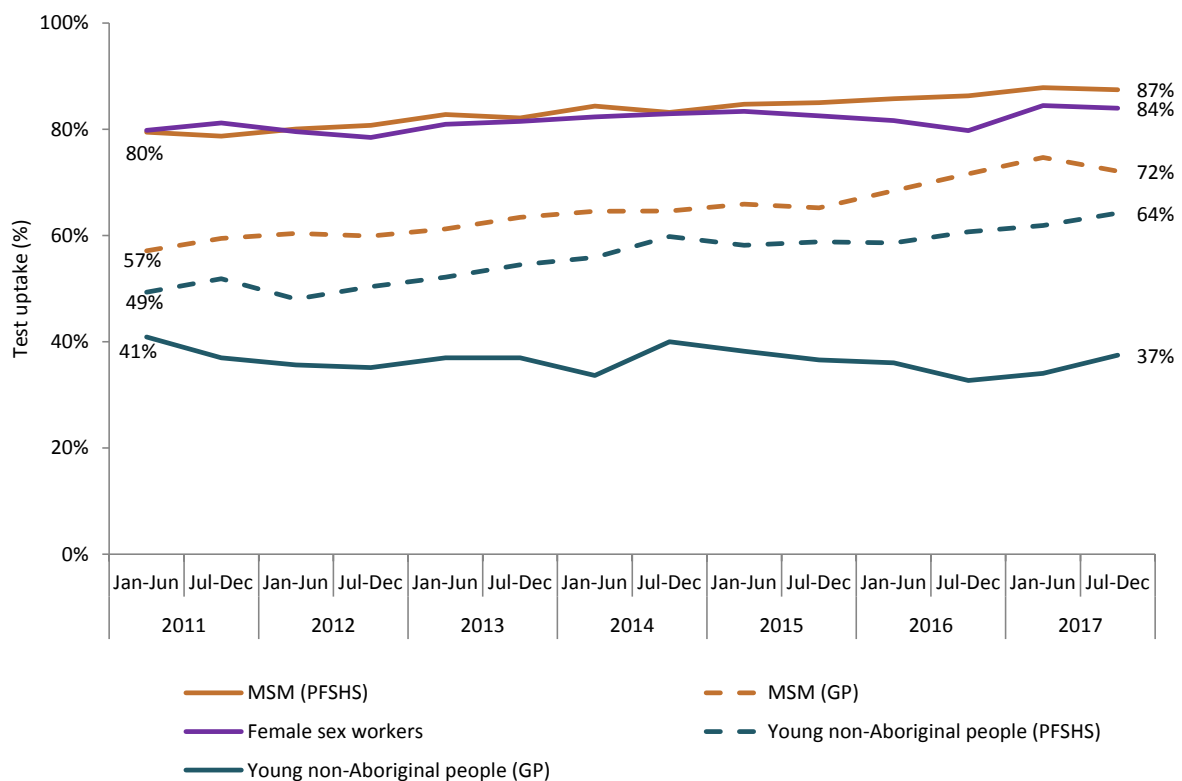
In 2016, 16.6% (194/1167) of the respondents who were sexually active in the 12 months prior to the survey reported condomless sexual intercourse with casual partners. This percentage slightly increased to 17.6% (139/788) but the difference with the 2016 estimate was not significant (odds Ratio=1.07, p=ns).

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

### 5.1 Comprehensive STI testing in priority populations

Integrating comprehensive STI screening<sup>20</sup> into routine care within general practice and primary care is a key activity within the Strategy. It ensures timely diagnoses and treatment of STIs among priority populations.

**Figure 42: Proportion of individual patients attending PFSHSs and GP clinics tested for chlamydia, gonorrhoea<sup>21</sup> and syphilis, by priority population<sup>22</sup>, 1 January 2011 to 31 December 2017**



Data source: ACCESS Database, The Kirby Institute and the Burnet Institute

- Uptake of a full screen for bacterial STIs was consistently highest among MSM (87%) and female sex workers (84%).
- Among young, non-Aboriginal people attending GP clinics, test uptake decreased slightly from 41% tested in the first half of 2011 to 37% tested in the last half of 2017.

<sup>20</sup> Comprehensive ST testing is defined in this context as testing for chlamydia trachomatis, Neisseria gonorrhoea and syphilis (see Appendix C: Case definitions for full details) at any anatomical site.

<sup>21</sup> Testing for chlamydia and gonorrhoea included testing at any anatomical site

<sup>22</sup> While priority populations are not mutually exclusive those other than MSM exclude MSM-identified patients

## 5.2 STI testing among young people

STI testing among young people who identified themselves as heterosexual is based on “It’s Your Love Life” cross-sectional digital survey. Respondents who ever had oral, vaginal or anal sex were asked if they ever tested for STIs or HIV.

Of the respondents who ever had oral, vaginal or anal sex, 42.8% (648/1514) in 2016 reported that they had ever tested for STIs or HIV. This percentage rose significantly to 47.5% (704/1483) in 2017 (Odds Ratio=1.21, p=.01). The increase remained significant after controlling for gender and area of residence (Adjusted Odds Ratio=1.21, p=.01).

**Table 4: The proportion of sexually active heterosexual people aged 15-29 who ever tested for STIs and/or HIV in the past 12 months**

	2016			2017		
	All (n=1,255)	Males (n=419)	Females (n=836)	All (n=1,482)	Males (n=552)	Females (n=930)
Across age groups	25.1%	17.7%	28.8%	27.3%	21.7%	30.6%
15–19	15.0%	5.9%	17.6%	21.2%	11.8%	26.4%
20–24	34.2%	18.4%	40.5%	33.3%	23.4%	37.3%
25–29	29.3%	22.4%	35.1%	28.4%	28.7%	28.2%

Note: Participants who ever had oral, vaginal or anal sex

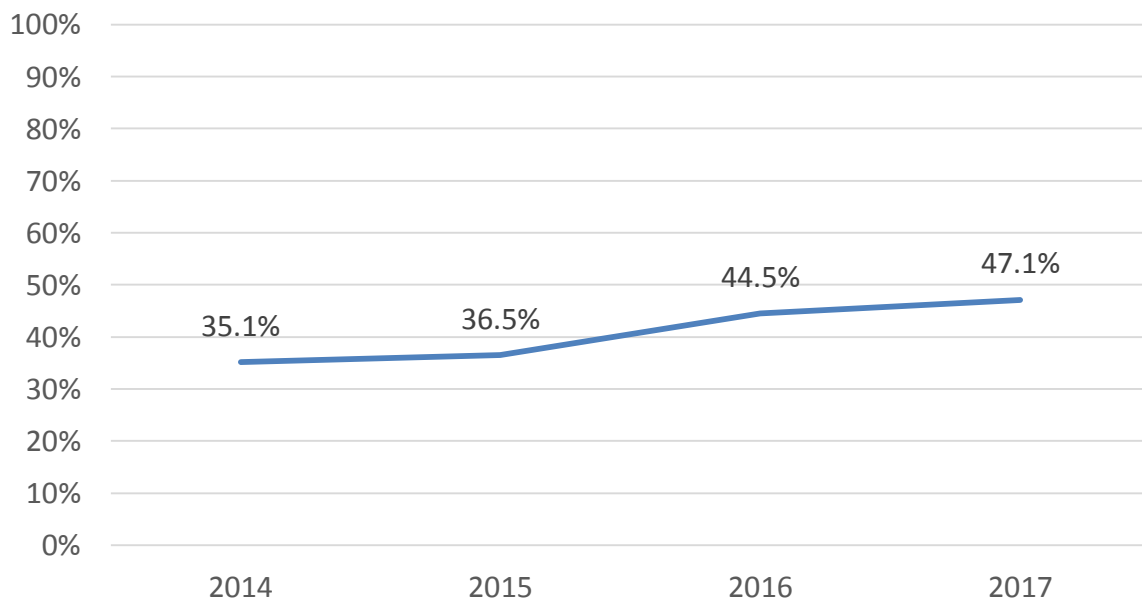
The percentage of participants who had tested for STIs or HIV in the past 12 months increased from 25.1% in 2016 to 27.3% in 2017.

### 5.3 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 43: Proportion of high risk MSM reporting comprehensive STI testing more than once in the previous 12 months**



Data source: Sydney Gay Community Periodic Survey, Centre for Social Research in Health, UNSW Sydney.

From 2014 to 2017, the proportion of high risk MSM and HIV-positive MSM reporting more than one comprehensive STI screen has increased by 12%.

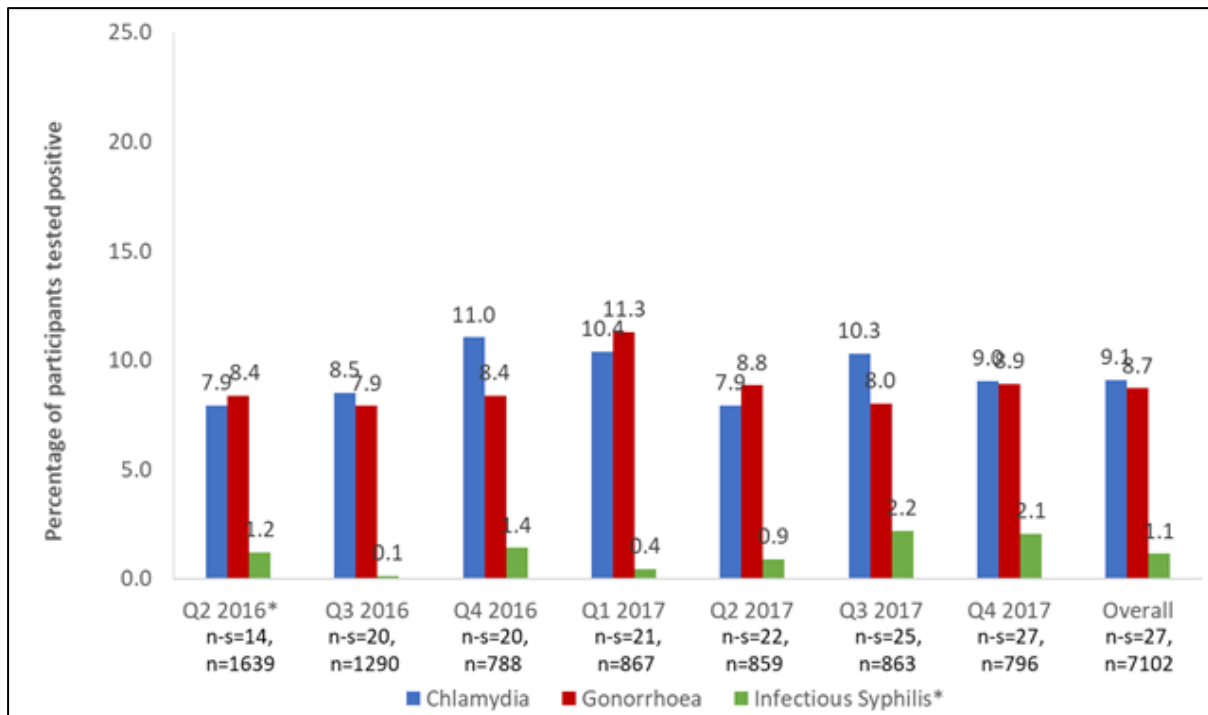
#### 5.4 What is the prevalence of STIs among EPIC-NSW participants?

*Expanded PrEP Implementation in Communities in NSW (EPIC-NSW)* is NSW’s implementation trial to assess the impact of the rapid expansion in access to pre-exposure prophylaxis (PrEP) amongst those at high risk of acquiring HIV.

HIV and sexually transmissible infection testing is recommended for all EPIC-NSW participants at baseline (enrolment), 1 month (HIV only) and every three months, in accordance with the NSW Health Guidelines on the Pre-Exposure Prophylaxis of HIV with Antiretroviral Medications.

Of the 8,206 EPIC-NSW participants up to the end of Quarter 4 2017, STI testing data were available for 7,596 (92.6%) participant enrolled in 27 sites. The sites are: Albion Street, Albury Sexual Health, Brookong Centre Wagga Wagga, Clinic 16, Coffs Harbour Sexual Health, Dubbo Sexual Health, HNE Sexual Health, Holden St Clinic, Illawarra Shoalhaven Sexual Health, Kirketon Road Centre, Lismore Sexual Health, Liverpool Sexual Health, Nepean Sexual Health, Orange Sexual Health, RPA Sexual Health, Short Street Clinic, Site 203, Site 206, Site 215, Site 229, Site 266, Site 267, Site 271, Site 272, Site 276, Sydney Sexual Health and Western Sydney Sexual Health.

**Figure 44: Proportion of individuals tested for chlamydia, gonorrhoea and infectious syphilis\* at baseline with a positive result, by quarter, 1 March 2016 to 31 December 2017**



Note: CT, chlamydia; NG, gonorrhoea; SY, infectious syphilis. n-s, the number of sites. \*Q2 2016 data was from 1 March 2016 to 30 June 2016. \*Infectious syphilis was based on pathology test results and clinical information available from public clinics only.

Of the EPIC-NSW participants tested for STIs at baseline between 1 March 2016 and 31 December 2017:

- 9.1% had a positive test result for chlamydia and 8.7% for gonorrhoea
- 1.1% had a positive test result at public clinics for infectious syphilis

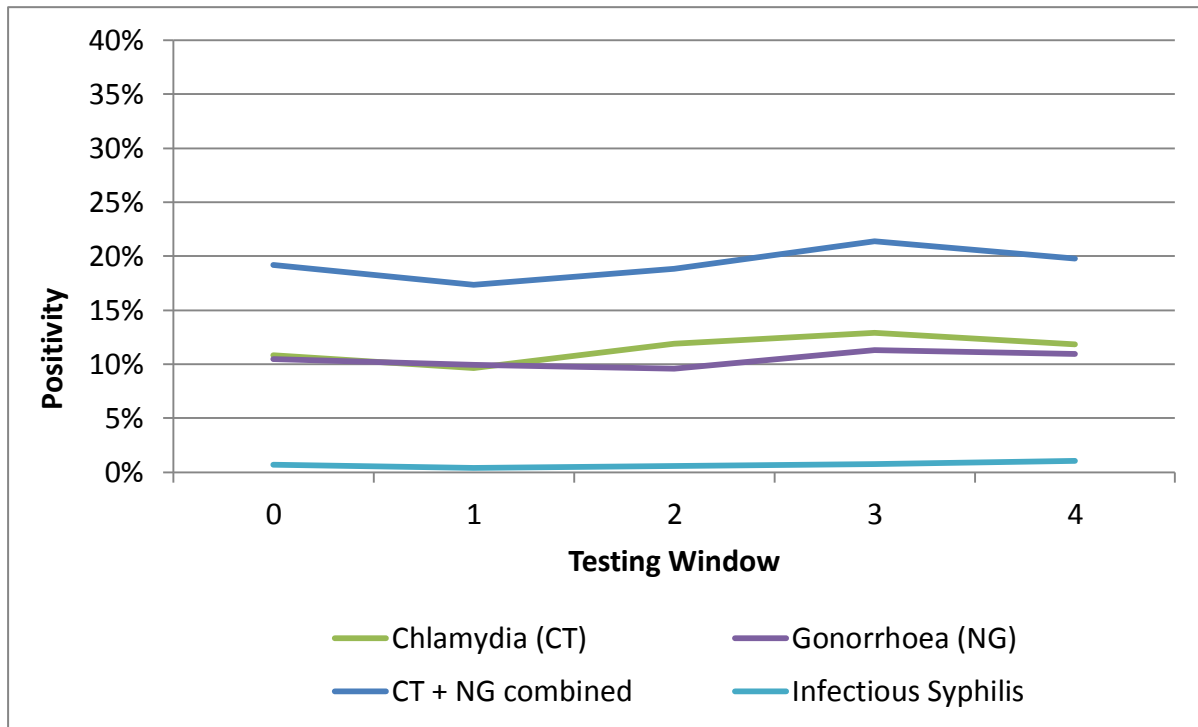
Note: There has been a slight increase in the overall diagnosis rate for infectious syphilis, but this is based on only a handful of new cases, with the small numerator. The prevalence of STI rates remained reasonably stable over time, with some fluctuations by quarter, suggesting the program is continuing to reach men at risk of HIV.



### STI positivity over 12 months of follow-up in EPIC-NSW participants

EPIC-NSW collected STI longitudinal trends in chlamydia, gonorrhoea, and infectious syphilis positivity among the first 3700 participants enrolled in EPIC-NSW during their first 12 months of study follow-up. Enrolment was completed by 31 October 2016, and follow-up data was included up until 31 December 2017. A total of 3487 (94%) of participants had a record of one or more STI tests, and were included in this analysis. Not every participant had an STI test conducted at baseline, as this was not a study eligibility requirement.

**Figure 45: STI positivity<sup>23</sup> over 12 months of follow-up**



Note: Testing window 1 represents the first recommended STI test after enrolment, at three months after enrolment  $\pm 45$  days. Each subsequent window covers a similar three-month period.

- The number of chlamydia/gonorrhoea tests conducted in each testing window declined over time; from 3345 in testing window 0 (baseline), to 2502 in testing window 4 (12 month follow-up  $\pm 45$  days). Data on infectious syphilis were only available from public clinics, with 1683 tests conducted in window 0 and 1117 in window 4
- Chlamydia positivity increased slightly from 10.9% in testing window 0 to 11.8% in window 4
- Gonorrhoea positivity ranged from 9.6% in window 2 to 11.3% in window 3, and infectious syphilis from 0.4% in window 1 to 1.1% in testing window 4
- In each 3-month testing window about 20% of participants who were tested were diagnosed with chlamydia and/or gonorrhoea, and over time the rate of detection increased slightly.

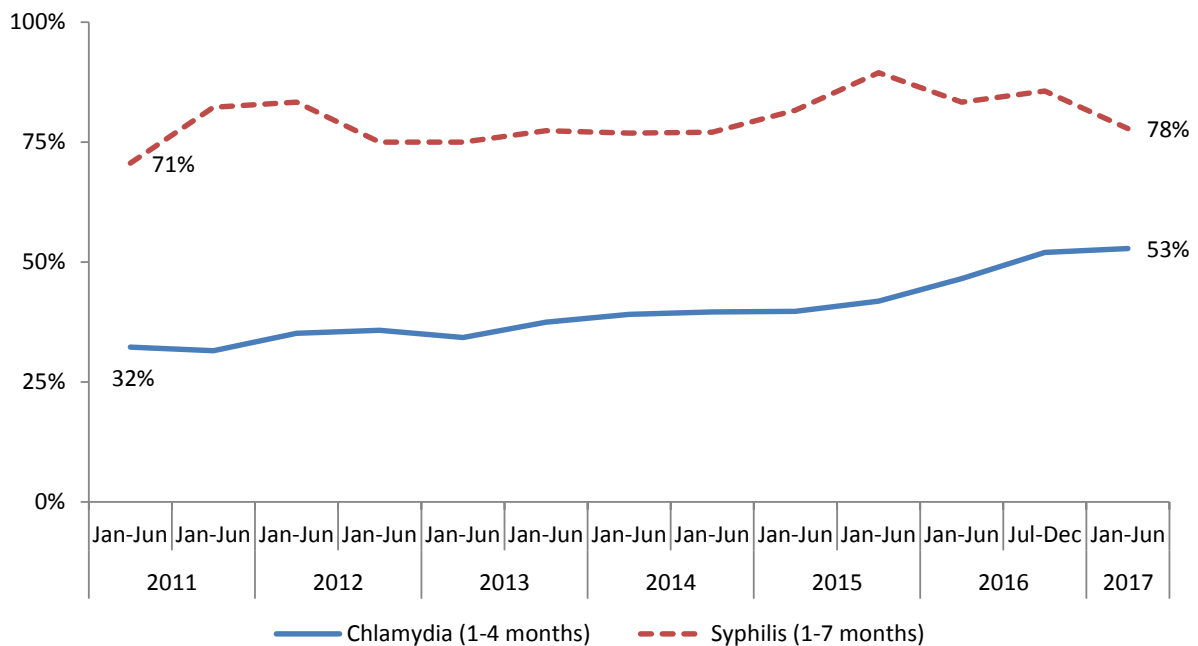
<sup>23</sup> Chlamydia and gonorrhoea positivity was calculated as a positive test at any anatomical site (ano-rectal, pharyngeal, or urethral).

## 6 Increase the proportion of people diagnosed with chlamydia and gonorrhoea who get re-tested within 1-4 months after diagnosis

### 6.1 Re-testing for chlamydia and gonorrhoea

Re-testing for repeat chlamydial and gonorrhoea infections is recommended to detect reinfection of chlamydia and gonorrhoea<sup>24</sup>.

**Figure 46: Proportion of patients attending PFSHs and GP clinics<sup>25</sup> diagnosed with an STI and re-tested<sup>26</sup> recommended time frame, 1 January 2011 to 30 June 2017<sup>27</sup>**



Data source: ACCESS Database, The Kirby Institute and the Burnet Institute

- Retesting following an infectious syphilis attending GP clinics was 78% in the early half of 2017, which increased by 7 per cent when compared to the first half of 2011.
- Re-testing following a chlamydia diagnosis was 53% in early 2017, which increased by 21 per cent when compared to early 2011 (32%).

<sup>24</sup> [http://stipu.nsw.gov.au/wp-content/uploads/STIGMA\\_Testing\\_Guidelines\\_Final\\_v5.pdf](http://stipu.nsw.gov.au/wp-content/uploads/STIGMA_Testing_Guidelines_Final_v5.pdf).

<sup>25</sup> GP clinics included those serving at least 50 gay and bisexual male patients annually

<sup>26</sup> Only re-testing at participating ACCESS sites is represented here

<sup>27</sup> Because of the re-testing timeframe, data from the second half of 2017 have been excluded

## **6.2 Re-notifications of chlamydia**

To be included in the next report.

Data source: NCIMS, NSW Health

## **6.3 Re-notifications of gonorrhoea**

To be included in the next report.

Data source: NCIMS, NSW Health

# **7. Increase the proportion of people diagnosed with syphilis who get re-tested within 1-6 months after diagnosis**

## **7.1 Re-notifications of infectious syphilis**

To be included in the next report.

Data source: NCIMS, NSW Health.

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

## **8.1 Proportion of Aboriginal people diagnosed with chlamydia or gonorrhoea who get tested for HIV and syphilis**

These data are still being collected and will be included in later reports

## 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 ACCESS Database
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: Details on 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.
ACCESS Study	The Kirby Institute	Testing data for unique individuals attending public sexual health clinics by priority populations, and for select GP practices with high and medium case load of GBM in Sydney. ACCESS is a living database and retrospective and prospective data can change as new services are introduced or discontinued, data analyses evolve, and organisational structures are updated, which may introduce variations between reporting periods.
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.

Name	Custodian	Description
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 2016.
NSW Notifiable Conditions Information Management System (NCIMS)	Health Protection NSW, NSW Health	<p>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 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 Gonorrhoea- 29 days 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>

**Appendix D: Notification data tables**

**Table 5: Number of infectious syphilis, gonorrhoea and chlamydia notifications by gender, age group and local health district, NSW, 1 January 2012-31 December 2017**

	Infectious syphilis						Gonorrhoea						Chlamydia					
	2012	2013	2014	2015	2016	2017	2012	2013	2014	2015	2016	2017	2012	2013	2014	2015	2016	2017
<b>TOTAL</b>	<b>506</b>	<b>616</b>	<b>792</b>	<b>755</b>	<b>881</b>	<b>1,110</b>	<b>4,128</b>	<b>4,233</b>	<b>4,855</b>	<b>5,449</b>	<b>6,998</b>	<b>9,219</b>	<b>21,317</b>	<b>20,836</b>	<b>22,928</b>	<b>22,603</b>	<b>26,047</b>	<b>29,007</b>
<b>Gender</b>																		
Female	24	29	26	20	32	42	777	757	809	864	1,286	1,522	11,763	11,422	12,356	12,185	13,035	13,720
Male	482	587	765	732	844	1,059	3,348	3,468	4,038	4,573	5,693	7,660	9,525	9,394	10,556	10,412	12,991	15,247
Transgender*	0	0	1	3	4	8	2	4	7	7	16	18	2	2	1	2	8	16
Unknown	0	0	0	0	1	1	1	4	1	5	3	19	25	16	15	5	10	24
<b>Age group (years)</b>																		
00-04	0	0	0	0	0	0	1	3	3	2	3	5	0	2	2	0	1	2
05-09	0	0	0	0	0	0	0	1	2	0	2	2	0	0	1	0	1	2
10-14	0	0	0	1	0	0	11	4	16	6	2	4	123	109	101	70	59	64
15-19	8	11	11	8	12	19	298	301	322	303	315	417	4,969	4,442	4,397	3,887	3,942	4,166
20-24	38	47	76	86	99	108	799	853	972	1,061	1,252	1,592	7,433	7,192	7,981	7,638	8,548	9,029
25-29	66	82	110	113	136	208	812	946	1,007	1,262	1,582	2,097	3,957	4,173	4,626	4,819	5,666	6,521
30-34	67	107	126	121	139	188	668	697	815	917	1,244	1,600	1,930	1,948	2,331	2,505	3,082	3,655
35-39	60	86	95	96	134	141	450	454	499	602	855	1,190	1,122	1,058	1,220	1,300	1,749	1,978
40-44	72	90	115	85	100	148	446	369	438	463	639	822	714	746	862	884	1,101	1,308
45-49	77	82	100	103	99	105	301	277	351	357	437	614	490	523	569	627	786	1,000
50-54	49	42	76	80	71	90	167	154	228	242	327	425	290	296	392	422	556	595
55-59	35	29	51	27	51	51	89	88	102	143	171	244	135	185	215	230	282	359
60-64	16	19	18	28	19	30	49	46	59	58	93	121	80	83	128	129	141	158
65-69	10	15	8	5	8	9	19	26	32	20	46	48	48	56	66	62	77	112
70-74	6	5	4	2	10	9	8	8	8	9	13	24	15	8	20	20	24	43
75-79	2	1	1	0	2	1	6	4	1	0	9	10	3	4	5	6	15	9
80-84	0	0	0	0	0	0	2	0	0	3	3	2	0	1	6	2	4	1



	Infectious syphilis						Gonorrhoea						Chlamydia					
	2012	2013	2014	2015	2016	2017	2012	2013	2014	2015	2016	2017	2012	2013	2014	2015	2016	2017
85 and over	0	0	1	0	1	2	1	1	0	1	2	0	3	2	3	0	3	1
Unknown	0	0	0	0	0	1	1	1	0	0	3	2	3	7	3	3	7	1
<b>Local Health Districts<sup>#</sup></b>																		
Central Coast	12	2	5	12	20	12	62	96	76	99	133	211	1,039	857	1,037	914	1,042	1,031
Far West	2	0	1	0	1	0	33	6	7	2	0	10	90	109	138	109	71	80
Hunter New England	14	27	18	19	34	43	260	208	267	258	384	395	3,058	2,998	2,853	2,877	2,954	2,938
Illawarra Shoalhaven	15	13	24	23	28	29	100	107	72	115	124	167	1,094	1,120	1,180	1,200	1,150	1,313
Justice Health	0	0	1	1	0	0	17	15	23	24	26	25	181	137	179	164	181	160
Mid North Coast	3	14	8	1	0	5	23	27	37	36	27	59	520	426	630	583	571	661
Murrumbidgee	5	8	5	7	15	16	39	34	34	29	50	69	742	783	856	889	832	830
Nepean Blue Mountains	11	16	23	6	17	21	124	105	133	146	183	228	889	836	824	789	842	1,034
Northern NSW	8	15	9	12	11	14	72	98	72	86	136	158	937	820	813	876	937	968
Northern Sydney	34	36	33	46	58	66	294	314	416	417	627	664	1,730	1,823	2,009	1,993	2,376	2,566
Other NSW	7	8	3	7	13	9	15	23	30	26	61	208	71	151	127	69	116	178
South Eastern Sydney	216	197	274	295	341	439	1,317	1,297	1,445	1,755	2,056	2,810	3,607	3,192	3,711	3,613	5,133	6,106
South Western Sydney	23	37	36	13	47	59	373	395	464	445	627	802	1,987	2,009	2,214	2,233	2,316	2,746
Southern NSW	1	2	4	5	3	7	20	24	19	34	57	60	392	404	409	423	475	503
Sydney	118	217	302	263	241	309	893	1,012	1,070	1,354	1,687	2,275	2,163	2,264	2,709	2,785	3,790	4,315
Western NSW	8	3	5	7	9	13	45	66	94	81	46	67	816	932	981	912	791	787
Western Sydney	27	20	36	35	41	65	411	392	584	528	759	991	1,940	1,953	2,233	2,145	2,427	2,754

Data source: NCIMS, NSW Health; data extracted 7 May 2018; Data are provisional and subject to change.

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

## Appendix E: Data table for the HPV vaccination rate by LHD

**Table 6: Year 7 HPV vaccination rate by Local Health District and gender, 2011 to 2016<sup>[1]</sup>**

NSW	Gender	Year						
		2011	2012	2013	2014	2015	2016	2017
HPV (Year 7) - Dose 1	Females	81%	86%	86%	87%	87%	86%	86%
	Males			80%	83%	84%	83%	84%
HPV (Year 7) - Dose 2	Females	76%	84%	84%	85%	86%	84%	
	Males			78%	81%	83%	82%	
HPV (Year 7) - Dose 3	Females	71%	78%	82%	82%	82%	82%	
	Males			76%	78%	80%	80%	

Data source: Local Health Districts

<sup>[1]</sup> There have been significant changes to the NSW School Vaccination Program over time relating to the introduction or cessation of vaccines, changes in the recommended sex and ages for vaccination and policy changes to extend the opportunity to provide catch-up vaccination.

The coverage rates for NSW may underestimate the true vaccination coverage as they represent only those vaccinations administered through the school program and do not include doses administered by general practitioners or other immunisation providers.

The data for HPV vaccination for 2011 to 2012 relates to female students in Year 7 only as the program was expanded to include males from 2013.

From 2012, extended catch-up vaccination was offered to students who commenced the three-dose course of HPV vaccine in Year 7 to support course completion. HPV vaccination coverage for students in Year 7 in 2012, 2013, 2014 and 2015 includes catch-up vaccination for dose 2 and 3 in Year 8 in 2013 (to the end of term 2), 2014 and 2015 (to the end of term 4), and 2016 (to the end of term 3) respectively.

Year 8 catch-up vaccination doses are not included in data reported for the 2016 year as catch-up data were not available at the time of publication.