

NSW Sexually Transmissible Infections Strategy 2016 – 2020

January to June
2018

Data Report



Key Data

Reduce gonorrhoea infections				
	Jan-June 2018	Change since 2017		
Gonorrhoea notification rate (per 100,000 population)	132	14% higher (116)		
Number of tests	471,350	4.6% higher (450,553)		
Reduce infectious syphilis infections				
	Jan-June 2018	Change since 2017		
Infectious syphilis notification rate (per 100,000 population)	17.3	24% higher (14)		
Reduce pelvic inflammatory disease (PID) associated with chlamydia: Hospitalisations				
	2017	Change since 2016		
Hospital admissions for chlamydia associated PID	181	13% lower (209)		
Reduce pelvic inflammatory disease (PID) associated with chlamydia: Chlamydia notifications				
	Jan-June 2018	Change since 2017		
Chlamydia notification rate (per 100,000 population)	404	10% higher (368)		
Number of tests	315,511	4.7% higher (301,330)		
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 men¹	69%	Increased by 12 per cent (57%)	
	Young people aged 15-29 years²	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	PFSHSs³	87%	Increased 1 per cent (86%)
		GP⁴	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%)	

¹ Sydney Gay Community Periodic Survey, Centre for Social Research, UNSW

² It's Your Love Life Periodic Survey, Centre for Social Research, UNSW

³ PFSHSs: Publicly funded sexual health services

⁴ 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 the number of gonorrhoea notifications has been increasing each year, with marked rises in 2016 and 2017. Some of the 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 gonorrhoea notifications among females, which is being investigated further.

Syphilis notifications continue to increase in NSW

There has been a continued increase in the number of notifications of infectious syphilis. The available data suggests this is most likely due to increased and well-targeted testing with no change in the proportion of syphilis tests done in men who have sex with men which were positive. Fewer than 5 per cent of infectious syphilis notifications in the first six months of 2018 were in women. While there were only 33 notifications in women during this period this represents a 45 per cent increase in the notification rate compared to 2017.

The ongoing outbreak of syphilis among Aboriginal and Torres Strait Islander people living largely in remote and rural areas of the Northern Territory, Queensland, South Australia and Western Australia has the potential to spread to NSW and requires vigilance. However, the number of syphilis notifications among Aboriginal people in NSW remains small. Eighty per cent of notifications in Aboriginal people in 2018 to 30 June were in men, and only two resided outside major cities.

From January to June 2018, 1.9 per cent of infectious syphilis notifications were reported to be among Aboriginal people in NSW; the annualised rate in Aboriginal people for this period was 14 per 100,000 population compared to 16 per 100,000 for non-Aboriginal people. Aboriginality was unknown for 13 per cent of notifications. Changes in NSW notification rates among Aboriginal people may be due to variation in transmission trends, screening rates and/or the number of notifications for whom Aboriginal status was known. Ongoing efforts are needed to increase STI screening and reporting of Aboriginal identity for people in NSW

Chlamydia associated pelvic inflammatory disease decreased in 2017

Evidence suggests that repeated genital chlamydial infections increase the risk of pelvic inflammatory disease (PID) and infertility. The number of hospital admissions for chlamydia associated PID fell by 13 per cent in 2017 compared to the previous year. The proportion of women notified with chlamydia who were admitted to hospital with PID also declined in 2017.

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

STI screening among gay and bisexual men and young people continues to increase. Further scale up and strengthening of initiatives to promote condom use and innovative ways to make comprehensive STI testing easier and more accessible is needed to prevent STI transmission.

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 STI and should be comprehensively undertaken for people diagnosed with an STI.

Table of Contents

1	Reduce gonorrhoea infections	1
1.1	Gonorrhoea notifications.....	2
1.2	Gonorrhoea notifications among Aboriginal people	9
1.3	Gonorrhoea testing.....	12
1.4	Gonorrhoea test positivity among men who have sex with men, female sex workers and young people	13
2	Reduce infectious syphilis infections	14
2.1	Infectious syphilis notifications.....	15
2.2	Congenital syphilis notifications	26
3	Reduce pelvic inflammatory disease associated with chlamydia	27
3.1	Chlamydia-associated hospitalisations for pelvic inflammatory disease	28
3.2	Chlamydia notifications	31
3.3	Chlamydia notifications among Aboriginal people	37
3.4	Chlamydia testing.....	40
3.5	Chlamydia positivity among men who have sex with men, female sex workers and young people	41
4	Maintain high coverage of HPV vaccination for Year 7 school students	42
4.1	Condom use among men who have sex with men	43
4.2	Condom use among young people	44
5	Increase comprehensive STI testing in priority populations in accordance with risk	46
5.1	Comprehensive STI testing in priority populations.....	46
5.2	STI testing among young people.....	47
5.3	Comprehensive STI testing among high risk MSM	48
5.4	What is the prevalence of STIs among EPIC-NSW participants?	49
6	Increase the proportion of people diagnosed with chlamydia and gonorrhoea who get re-tested within 1-4 months after diagnosis	51
6.1	Re-testing for chlamydia and gonorrhoea	51
6.2	Re-notifications of chlamydia	52
6.3	Re-notifications of gonorrhoea.....	52
7.	Increase the proportion of people diagnosed with syphilis who get re-tested within 1-6 months after diagnosis	52
7.1	Re-notifications of infectious syphilis	52
8.	Increase the proportion of Aboriginal people diagnosed with chlamydia or gonorrhoea who get tested for HIV and syphilis	52
8.1	Proportion of Aboriginal people diagnosed with chlamydia or gonorrhoea who get tested for HIV and syphilis	52
	Appendix A: Indicators for monitoring and reporting	53
	Appendix B: Data sources	54
	Appendix C: Case definitions	56
	The STI notifications in this report meet the case definitions in the relevant Control Guideline for Public Health Units as listed below:	56
	Gonorrhoea	56
	Infectious syphilis – less than two years duration.....	56
	Syphilis - more than 2 years or unknown duration	56

Chlamydia 56

Appendix D: Notification data tables.....57

Appendix E: Data table for the HPV vaccination rate by LHD59

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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

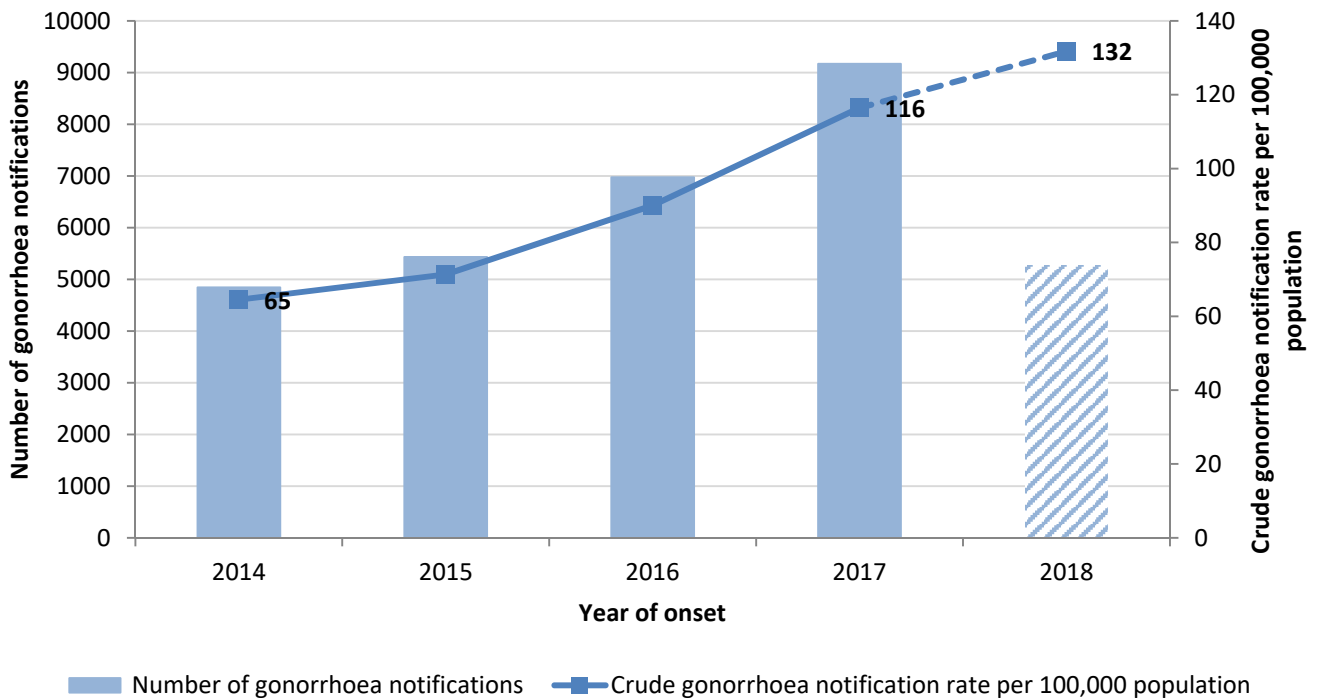
Prevention, testing and appropriate treatment and management with partner notification are the cornerstones of gonorrhoea control and are embedded in the current STI strategy. Gonorrhoea notification data does not reflect the true incidence of gonorrhoea infection as it only represents a proportion of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

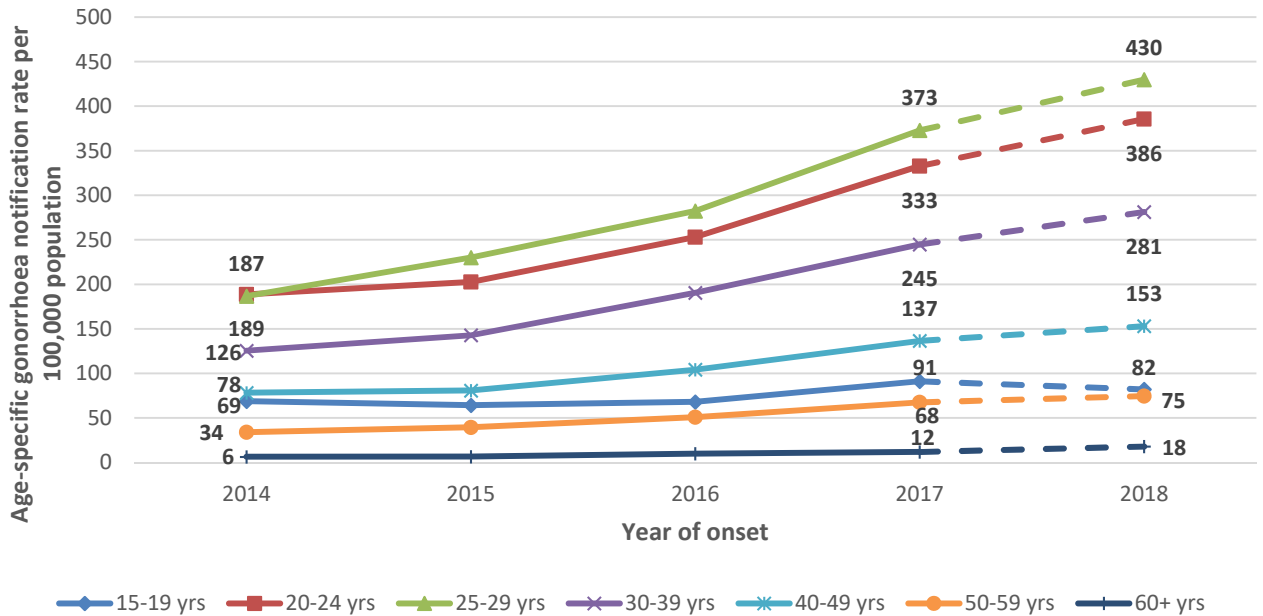
Figure 1: Number and crude rate of gonorrhoea notifications, NSW, 1 January 2014- 30 June 2018



Data source: NCIMS and ABS population estimates (via SAPHaRI), NSW Health; data extracted 20 Sep 2018. The rate is based on six months of data between Jan-June 2018 adjusted to an annual rate and is subject to change once data from July to December 2018 becomes available. Excludes non-NSW residents and persons whose residential postcode was not known.

From January to June 2018, the annualised gonorrhoea notification rate was 132 notifications per 100,000 population, 14% higher compared to 2017 (116 per 100,000 population) and more than double the rate compared to 2014 (65 per 100,000 population).

Figure 2: Age specific gonorrhoea notification rates in people aged 15 years and over, NSW, 1 January 2014- 30 June 2018

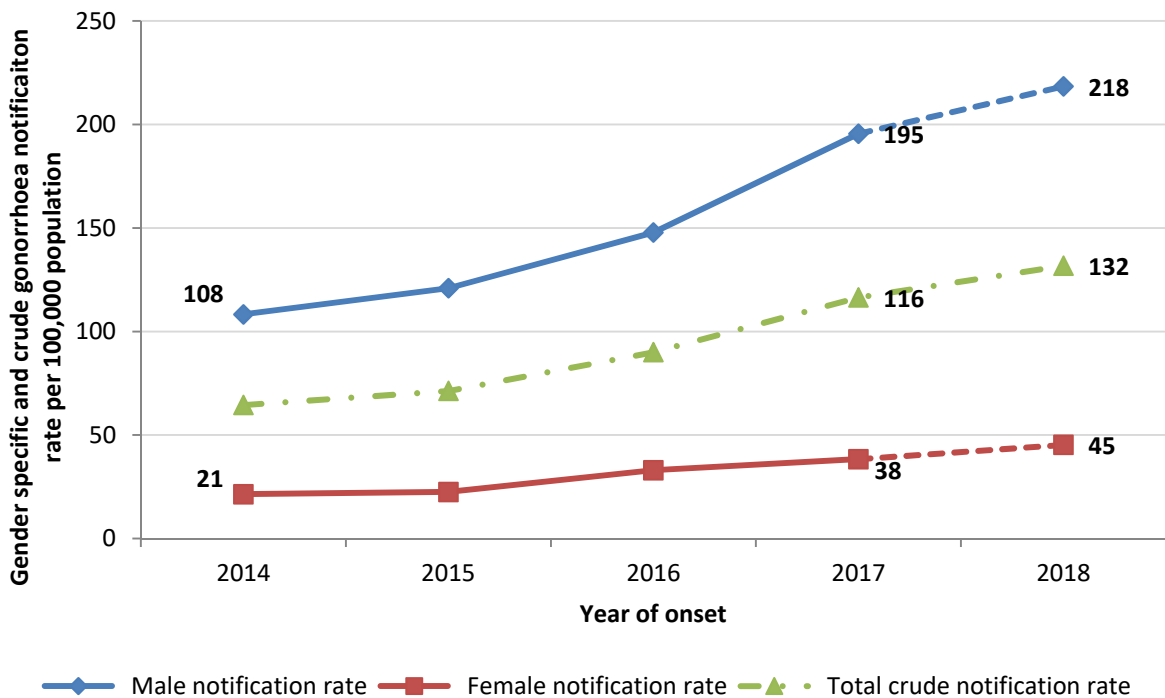


Data source: NCIMS and ABS population estimates (via SAPHARI), NSW Health; data extracted 11 Oct 2018. The rate is based on six months of data between Jan-June 2018 adjusted to an annual rate and is subject to change once data from July to December 2018 becomes available. Excludes non-NSW residents

From January to June 2018:

- 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 60+ years age group, followed by the 20-24 years, 25-29 years and 30-39 years age groups (50%, 15%, 16%, 15% respectively) compared with 2017. Since 2014, notification rates have more than doubled for every age group except the 15-19 and 40-49 years age groups.
- There was a 10% decline in the gonorrhoea notification rate in the 15-19 years age group.

Figure 3: Gender specific gonorrhoea notification rate, NSW, 1 January 2014- 30 June 2018



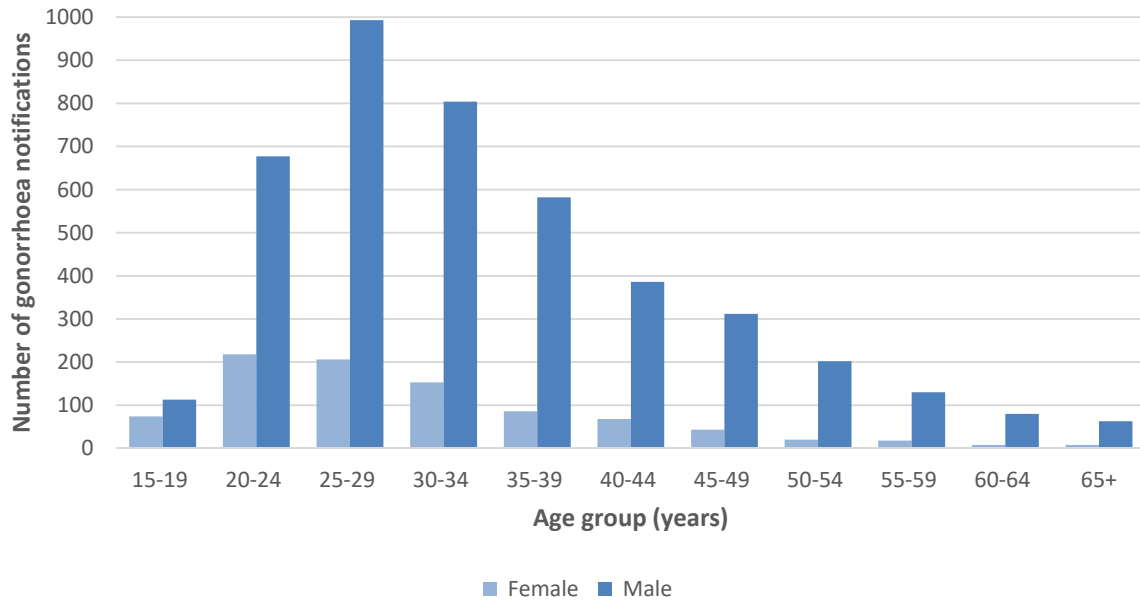
Data source: NCIMS and ABS population estimates (via SAPHARI), NSW Health; data extracted 20 Sep 2018. The rate is based on six months of data between Jan-June 2018 adjusted to an annual rate and is subject to change once data from July to December 2018 becomes available

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.

From January to June 2018:

- Of the 5,263 gonorrhoea notifications, 4,336 (82%) were reported as male, 909 (17%) were reported as female, 9 people were reported as transgender and there were 9 people whose gender was reported as not stated/ inadequately described (for further notes on gender classification, see **Appendix D**).
- The annualised crude gonorrhoea notification rate in males was 218 notifications per 100,000 males, 4.8 times higher than that for females. In 2017, the gonorrhoea notification rate in males was 5.1 times higher than that for females.
- An 11% relative increase in the gender specific gonorrhoea notification rate was observed in males and an 18% relative increase was observed in females compared to 2017. Since 2014, the gonorrhoea notification rate in both males and females has more than doubled.

Figure 4: Number of gonorrhoea notifications by age group and gender in people aged 15 years and over, NSW, 1 January - 30 June 2018



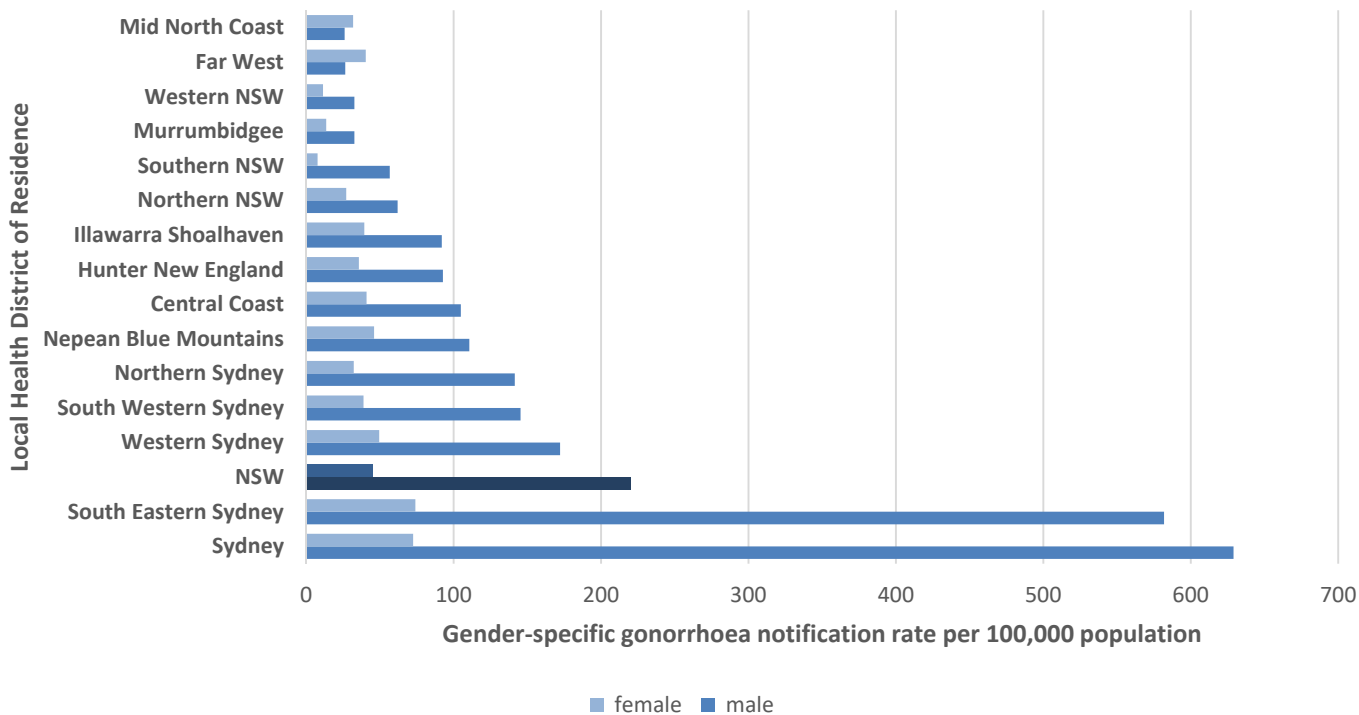
Data source: NCIMS, NSW Health; data extracted 12 Oct 2018.

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

From January to June 2018:

- The median age of females notified with gonorrhoea was 28 years, higher compared with 2017 (27 years).
- The median age of males notified with gonorrhoea was 32 years, the same as that in 2017.

Figure 5: Annualised gonorrhoea notification rate by local health district and gender, NSW, 1 January - 30 June 2018



Data source: NCIMS and ABS population estimates (SAPHaRI), NSW Health; data extracted 12 Oct 2018. The rate is based on six months of data between Jan-June 2018 adjusted to an annual rate and is subject to change once data from July to December 2018 becomes available

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.

From January to June 2018:

- The largest overall relative increases in the gonorrhoea notification rate compared with 2017 occurred in the Illawarra Shoalhaven and Hunter New England Local Health Districts (LHDs) (38% and 34% respectively).
- The highest gonorrhoea notification rates continue to be observed in the Sydney and South Eastern Sydney LHDs for both males and females.
- The largest relative increases in the male gonorrhoea notification rates compared with 2017 were in the Illawarra Shoalhaven, Hunter New England, Southern NSW and Central Coast LHDs (37%, 33%, 29% and 28% respectively).
- The largest relative increases in the female gonorrhoea notification rates compared with 2017 were in the Nepean Blue Mountains, Illawarra Shoalhaven and Hunter New England LHDs (39%, 38% and 37% respectively).

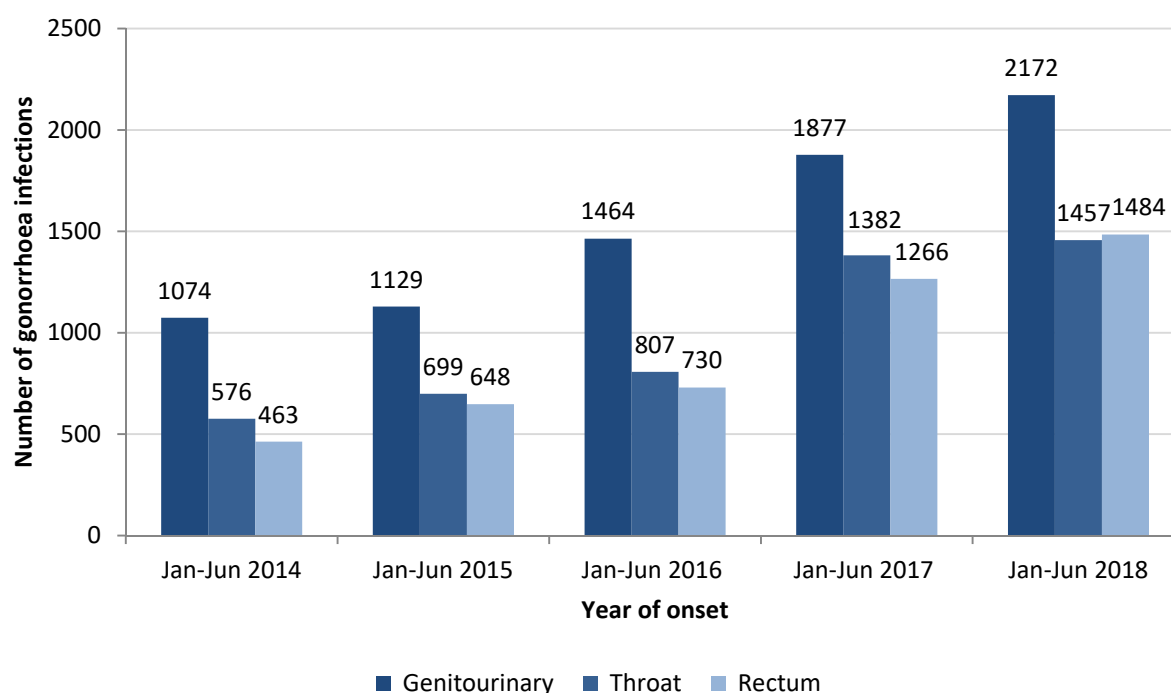
Table 1: Number of gonorrhoea infections by site, NSW, 1 January - 30 June 2018

Site of infection	Number of infections (total*)	Males	Females
Genitourinary tract (GU) only	2494	1815	675
Throat only	1001	861	136
Rectum only	851	832	13
Rectum and throat	407	399	4
GU and rectum	162	156	6
GU and throat	148	101	47
GU and rectum and throat	101	94	7
Other (joints/conjunctiva) only	10	3	7

Data source: NCIMS, NSW Health; data extracted 15 Oct 2018.

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

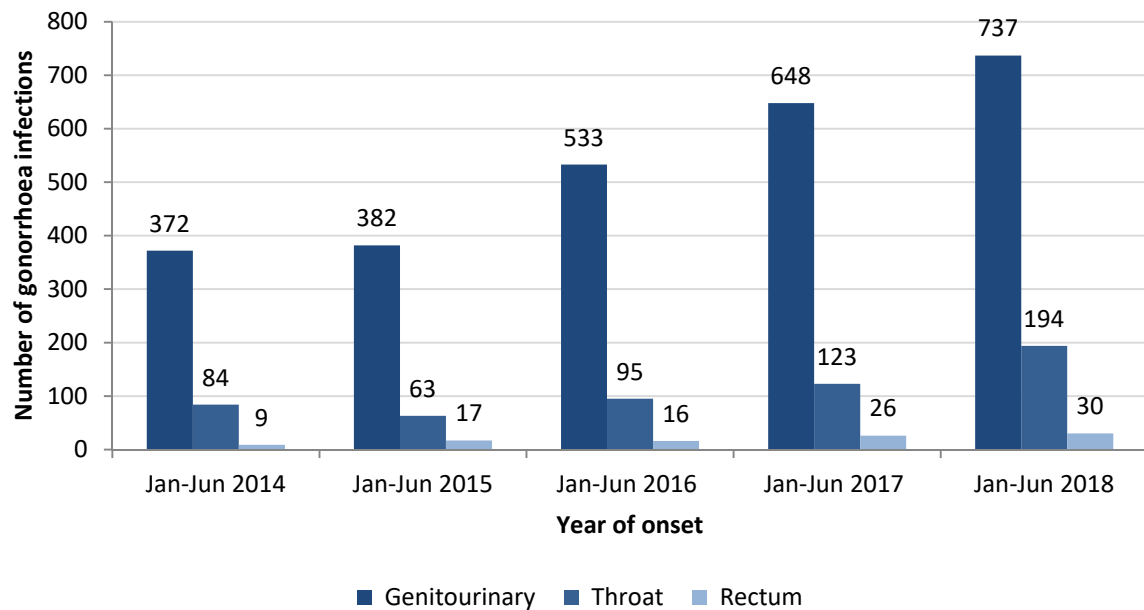
Figure 6: Number of male gonorrhoea infections by site of infection, NSW, 1 January - 30 June, 2014- 2018



Data source: NCIMS, NSW Health; data extracted 15 Oct 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 - 30 June, 2014-2018



Data source: NCIMS, NSW Health; data extracted 15 Oct 2018.

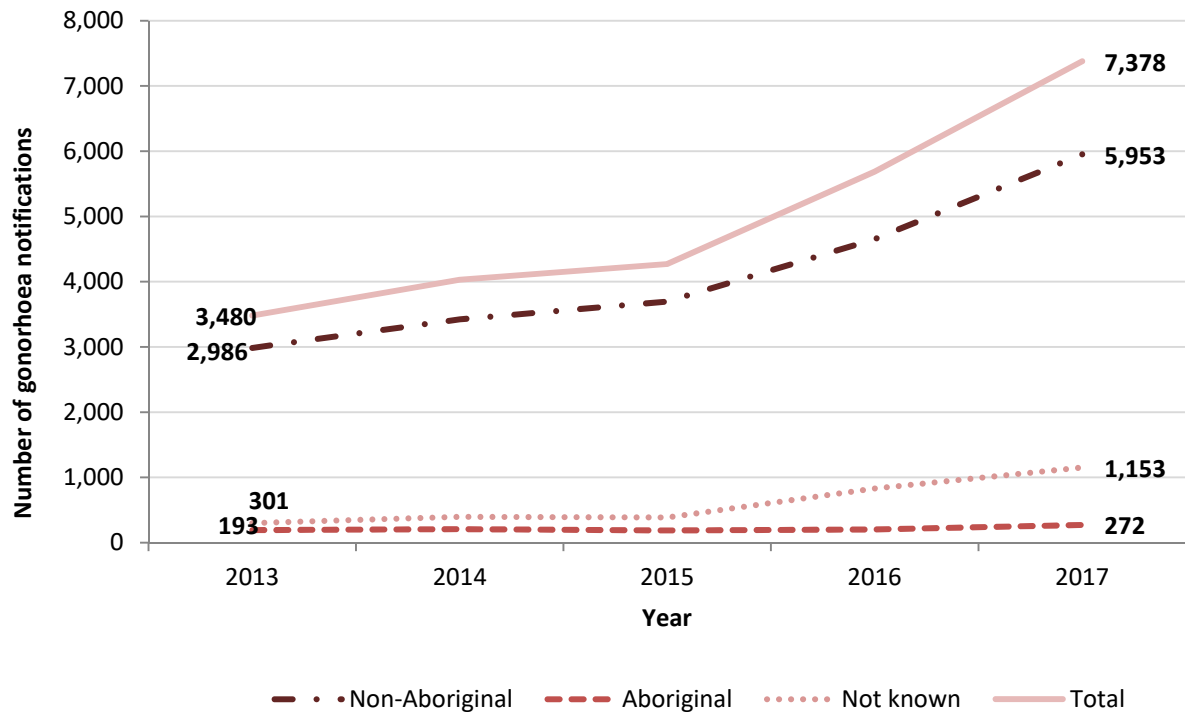
Note: Does not include 'other' (including conjunctiva and joints) site of infection or missing/unknown site of infection; number of infections may exceed number of notifications due to infection at multiple sites. Excludes persons reported as transgender and persons whose gender was not reported

From January to June 2018:

- The largest relative increases in the site of infection for males were observed in rectal and genitourinary infections (17% and 16% respectively) compared with 2017. A 5% relative increase in the number of male throat infections was also observed. Since 2014, genitourinary and throat infections in males have more than doubled while the number of rectal infections has more than tripled.
- 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 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 (58%) relative increase in the site of infection for females was observed in throat infections compared with 2017. Relative increases in the number of female genitourinary and rectal infections were also observed (14% and 15% respectively). Throat and rectal infections in women have more than doubled since 2014.

1.2 Gonorrhoea notifications among Aboriginal people

Figure 8: Number of gonorrhoea notifications by Aboriginality, NSW, 2013-2017



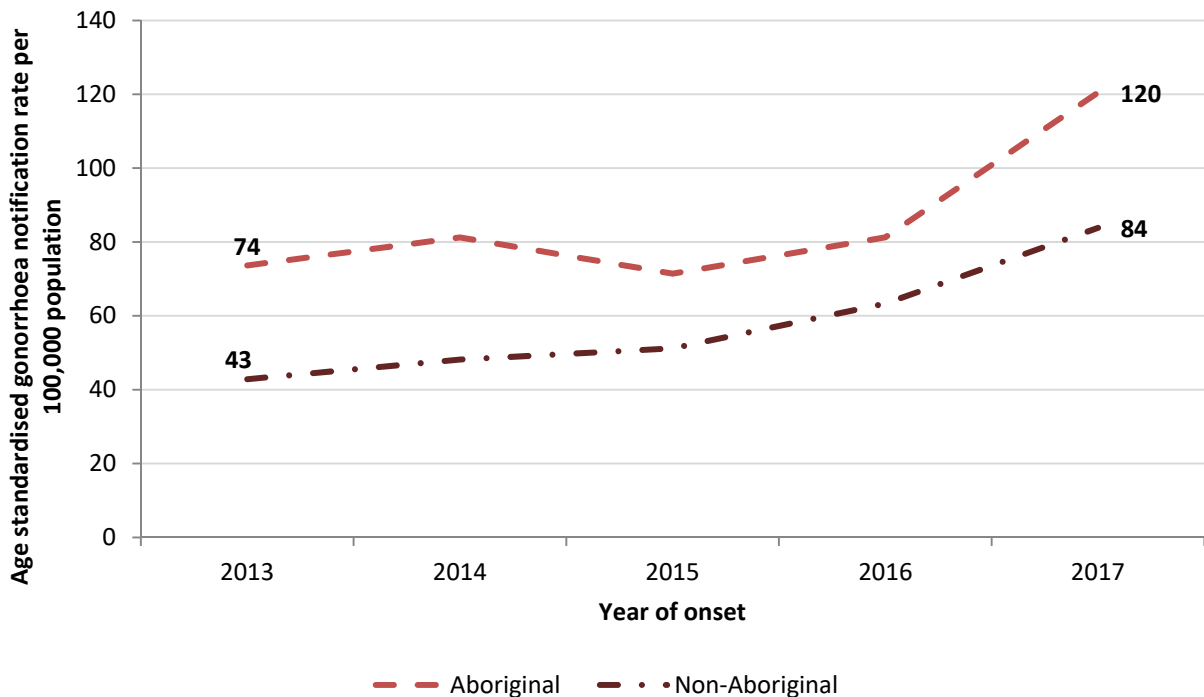
Data source: Communicable Diseases Register, NSW Ministry of Health (via SAPHaRI); data extracted 17 Oct 2018. At time of report, data available until 2017.^{5,6}

- In 2017, 7,378 notifications for gonorrhoea were recorded in the Communicable Diseases Register (CDR). Of these, 272 (3.7%) were among Aboriginal people, 5,953 (80.7%) were among non-Aboriginal people and Aboriginal status was not known for 1,153 (15.6%) people. Of those whose Aboriginal status was not known in 2017, 98% 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 who are Aboriginal people.

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

⁶ See **Appendix B: Table 6** for more details about methodology

Figure 9: Gonorrhoea notification rate by Aboriginality, NSW, 2013-2017

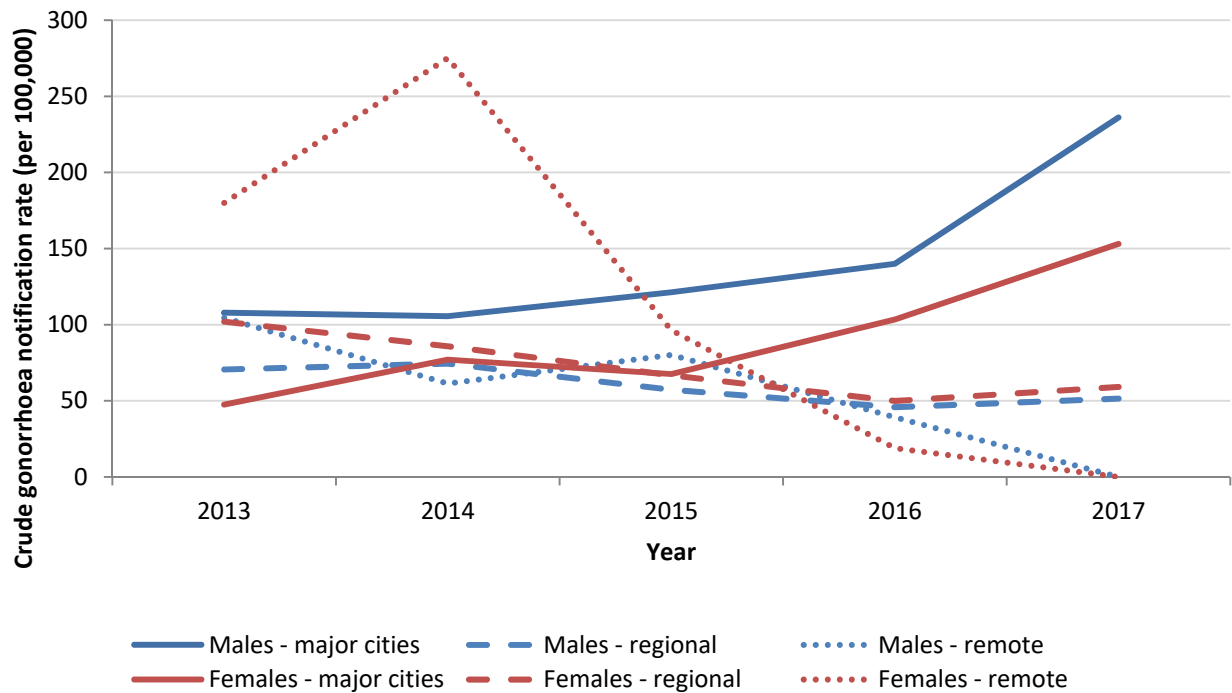


Data source: Communicable Diseases Register, NSW Ministry of Health, and ABS (via SAPHaRI); data extracted 17 Oct 2018. At time of report, data available until 2016.^{5,6} Note: Excludes records where Aboriginal status was not known; rates standardised to the Australian Standard Population 2001.

- Notification rates of gonorrhoea increased among both Aboriginal and non-Aboriginal people between 2016 and 2017. Since 2013, gonorrhoea notification rates among Aboriginal people have increased by 62% and rates among non-Aboriginal people have increased by 95%.
- Among those whose Aboriginal status was known, the gonorrhoea notification rate was 1.3 times higher among Aboriginal people than non-Aboriginal people (120 per 100,000 vs 84 per 100,000) in 2017.

Note: As the number of gonorrhoea notifications among Aboriginal people is relatively small, yearly fluctuations 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: Crude gonorrhoea notification rates in the Aboriginal population, by gender and remoteness area, NSW, 2013-2017

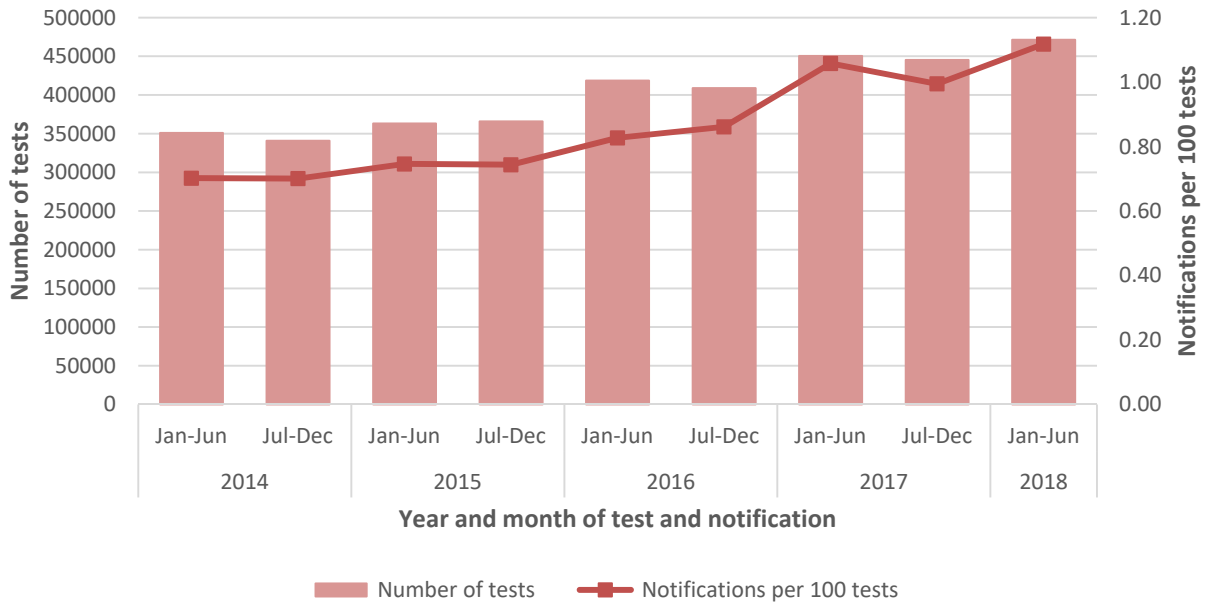


Data sources: Communicable Diseases Register, NSW Ministry of Health (via SAPHaRI), data extracted 17 Oct 2018. At time of report, data available until 2016.^{5,6} Transgender persons not included. Population data are derived from ABS projections (3238.0) and 2011 census estimates, and assumes proportions by remoteness and gender have remained constant since 2011.

- In 2017, the highest gonorrhoea notification rates in Aboriginal people were among males and females living in major cities
- The gonorrhoea notification rates in Aboriginal males and females in remote areas has dropped markedly since 2014, however notification rates have been rising among Aboriginal males and females in major cities.
- 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).

1.3 Gonorrhoea testing

Figure 11: Number of gonorrhoea tests and notification to test⁶ ratio, NSW, 1 January 2014 to 30 June 2018



Data source: NCIMS and NSW Denominator Data Project, NSW Health; data extracted 12 Oct 2018

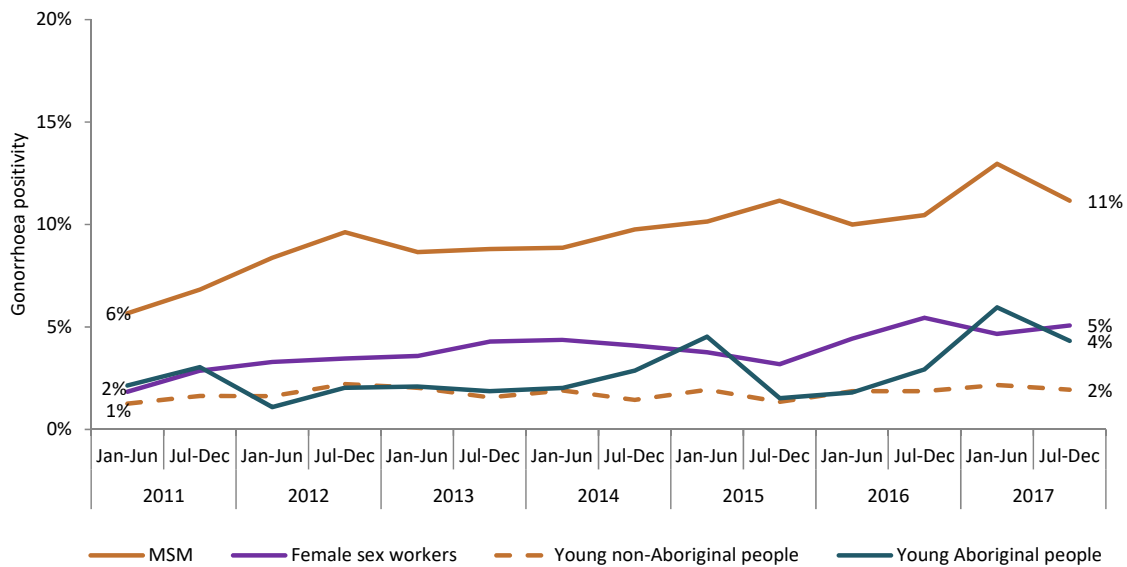
Note: Testing multiple sites results in multiple tests being counted per person

From January to June 2018:

- The number of gonorrhoea tests (NAAT and culture) performed in NSW is continuing to increase.
- A total of 471,358 tests for gonorrhoea were performed in 15 laboratories in NSW, an increase of 4.6% compared to the same period in 2017 (450,553).
- There were 1.12 gonorrhoea notifications per 100 gonorrhoea tests. This is the highest ratio for the last five years and suggests 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 clinics⁷ in NSW tested for gonorrhoea with a positive result (gonorrhoea positivity⁸), by priority population⁹, 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.pdf¹⁰

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

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

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

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

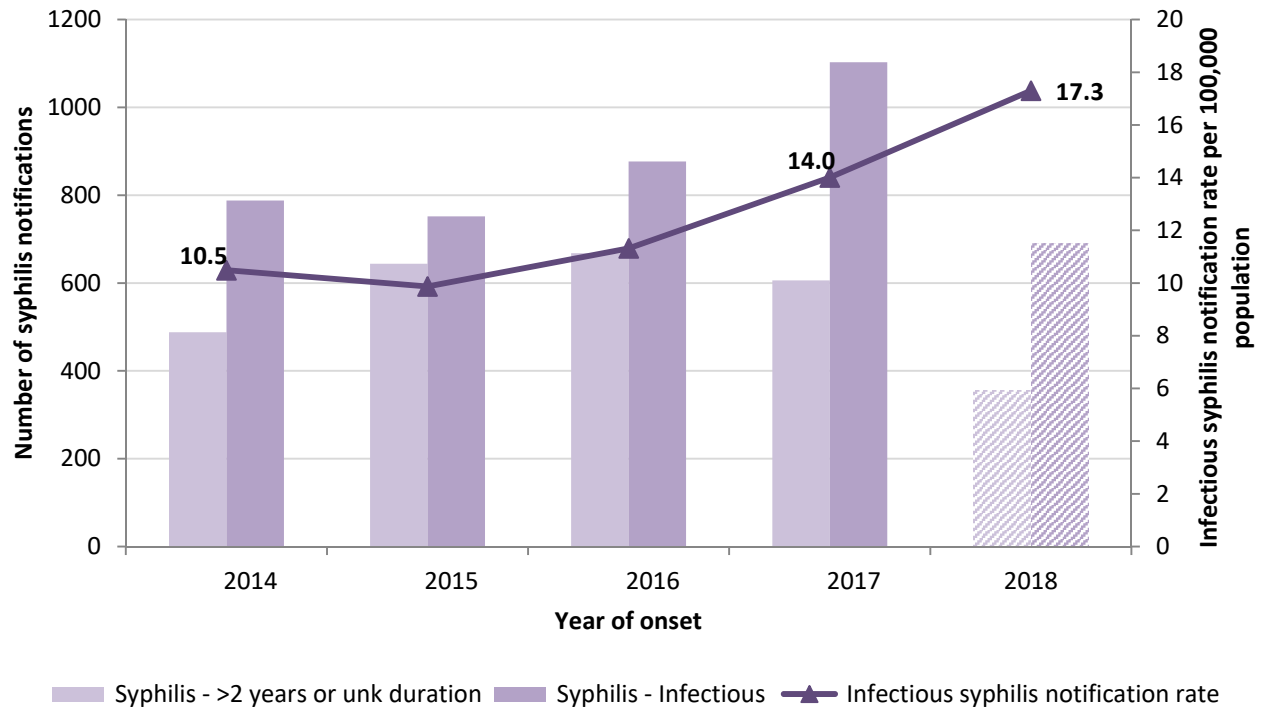
2 Reduce infectious syphilis infections

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, 1 January 2014 - 30 June 2018

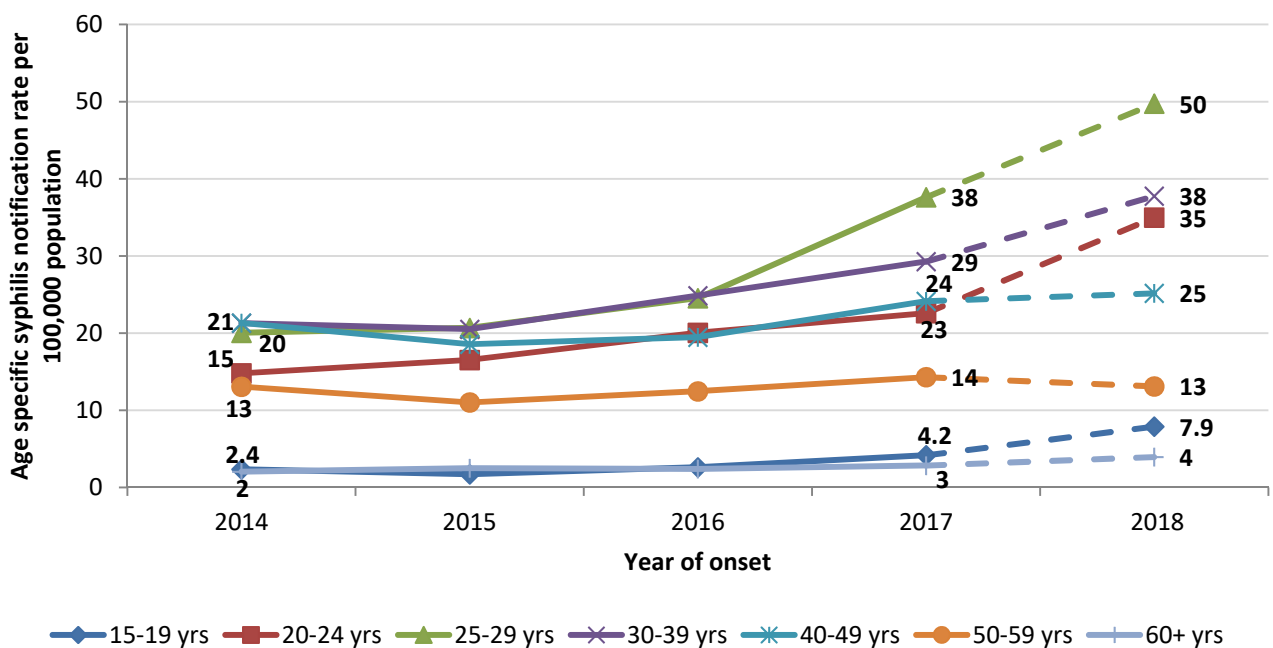


Data source: NCIMS and ABS population estimates (via SAPHaRI), NSW Health; data extracted 15 Oct 2018. The rate is based on six months of data between Jan-June 2018 adjusted to an annual rate and is subject to change once data from July to December 2018 becomes available

From January to June 2018:

- There were 691 infectious syphilis notifications. The annualised infectious syphilis notification rate was 17.3 notifications per 100,000 population, 24% higher than the rate in 2017 (14 per 100,000) and 65% higher compared with 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 14: Age specific infectious syphilis notification rates in people aged 15 years and over, NSW, 1 January 2014-June 2018

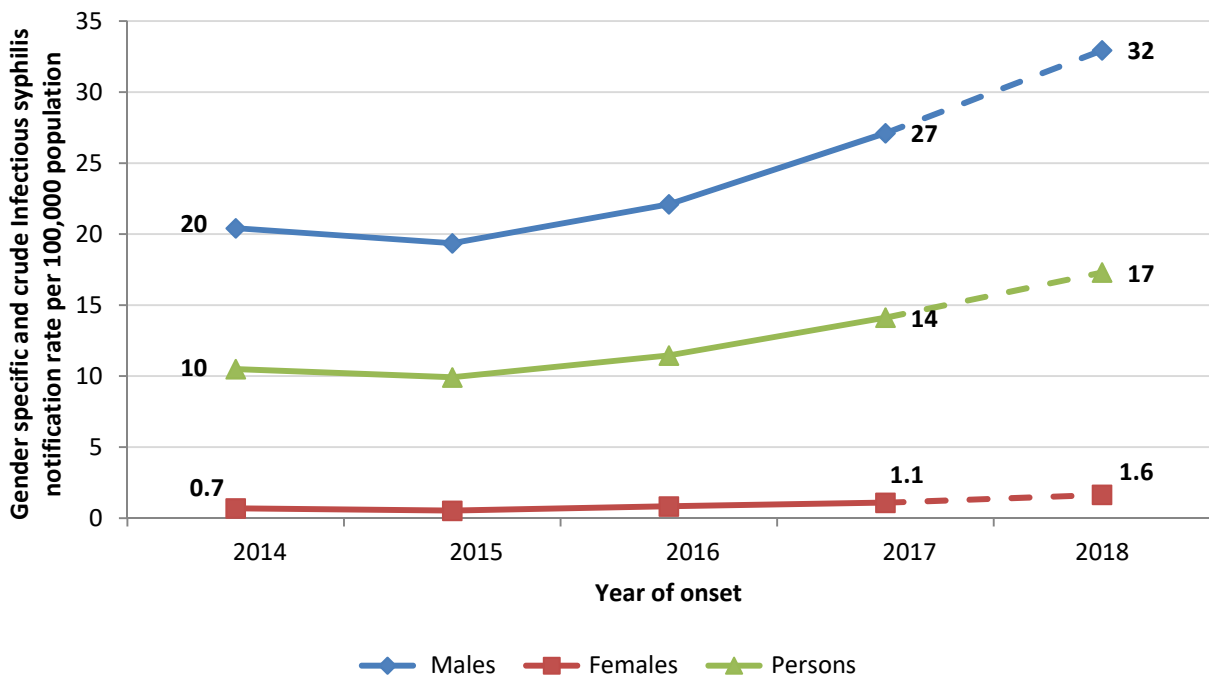


Data source: NCIMS (via SAPHaRI), NSW Health; data extracted 15 Oct 2018. The rate is based on six months of data between Jan-June 2018 adjusted to an annual rate and is subject to change once data from July to December 2018 becomes available

From January to June 2018:

- The highest infectious syphilis notification rates occurred in the 25-29 years and 30-39 years age groups (50 and 38 notifications per 100,000 population respectively).
- The largest relative increases in the infectious syphilis notification rates were observed in the 15-19 years and 20-24 years age groups (47% and 35% respectively), however the annualised number of notifications in the 15-19 years age group was small (36).
- A small (9%) decline was observed in the 50-59 years age group.
- Since 2014, the notification rate in the 20-24 years, 25-29 years and 15-19 years age groups has more than doubled.

Figure 15: Annualised gender specific infectious syphilis notification rates, NSW, 1 January 2014- 30 June 2018

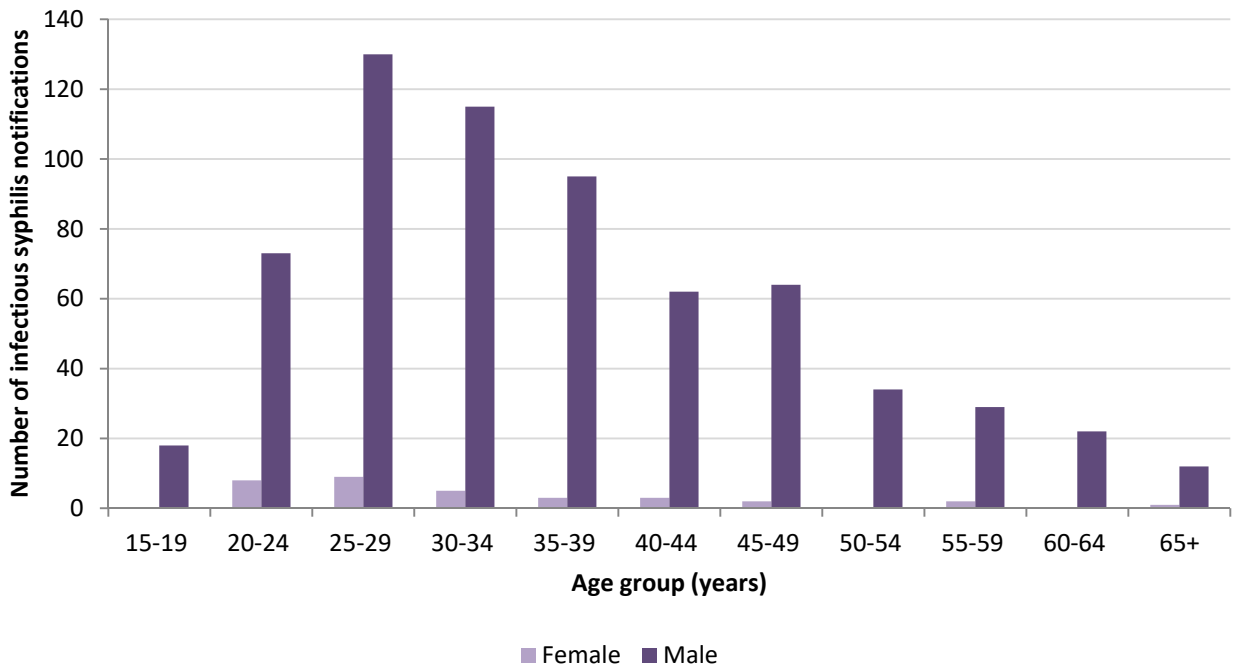


Data source: NCIMS (via SAPHaRI), NSW Health; data extracted 15 Oct 2018. The rate is based on six months of data between Jan-June 2018 adjusted to an annual rate and is subject to change once data from July to December 2018 becomes available
 Note: Excludes persons reported as transgender (due to small numbers), and persons whose age or sex was not reported.

From January to June 2018:

- Amongst males, there was a 19% increase in the infectious syphilis notification rate compared with 2017 (32 notifications per 100,000 males).
- Amongst females, there was a 45% increase in the infectious syphilis notification rate compared with 2017 (1.6 notifications per 100,000 females). However, the annualised number of notifications amongst females is small (66).

Figure 16: Infectious syphilis notifications by age and gender in people aged 15 years and over, NSW, 1 January to 30 June 2018

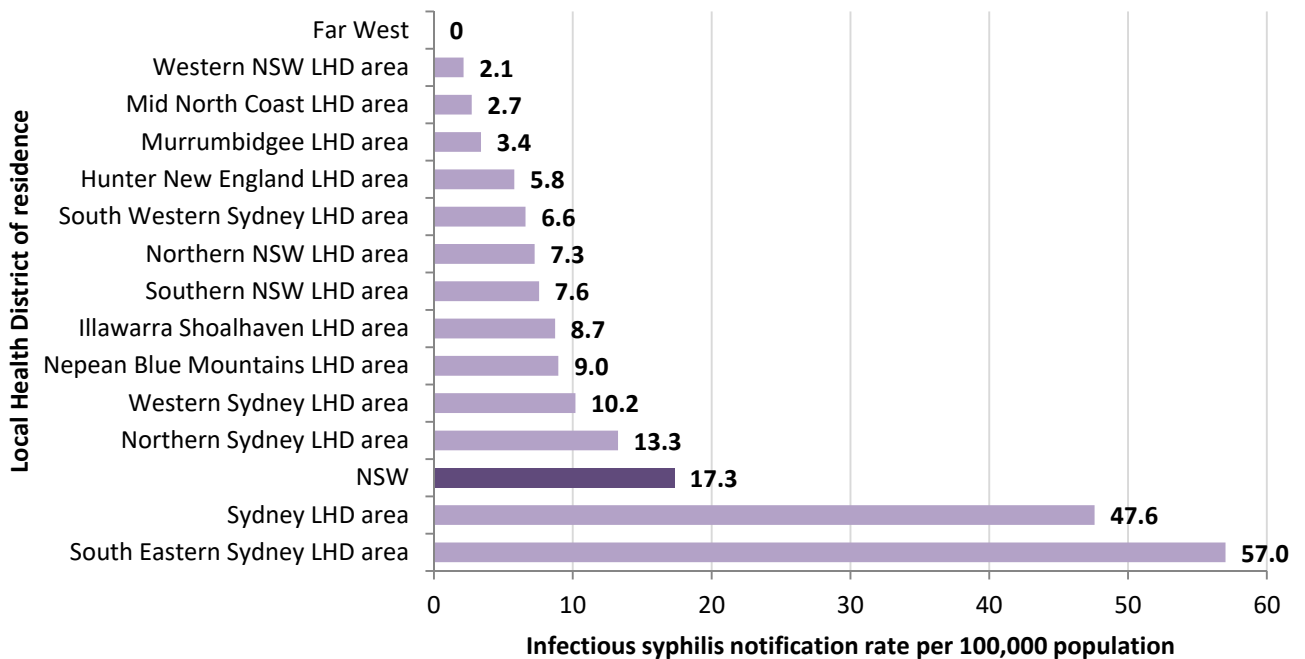


Data source: NCIMS (via SAPHaRI), NSW Health; data extracted 15 Oct 2018.

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

From January to June 2018:

- There were 691 notifications of infectious syphilis. Of these, 654 (94.6%) were in males, 33 (4.8%) were in females and four (0.6%) were in people reported as transgender.
- 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 was 34.4 years, slightly younger compared with the same period in 2017 (36.0 years).
- The median age of females notified with infectious syphilis was 29.0 years, slightly older compared with the same period in 2017 (27.0 years).

Figure 17: Infectious syphilis notification rate by LHD, NSW, 1 January to 30 June 2018.

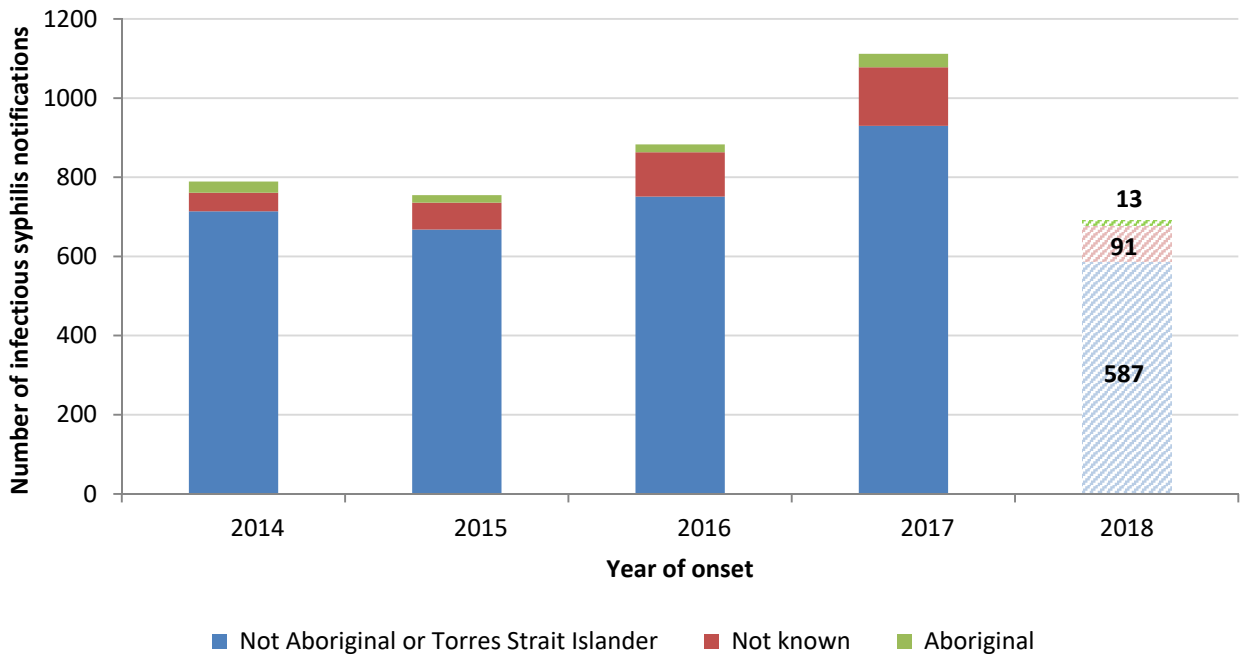
Data source: NCIMS and ABS population estimates (SAPHaRI), NSW Health; data extracted 15 Oct 2018. The rate is based on six months of data between Jan-June 2018 adjusted to an annual rate and is subject to change once data from July to December 2018 becomes available

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

From January to June 2018:

- The highest infectious syphilis notification rates continued to be observed in South Eastern Sydney and Sydney LHDs (57 and 47.6 notifications per 100,000 population, respectively)
- The largest increase in the annualised infectious syphilis notification rates occurred in the Southern NSW LHD where the rate more than doubled compared to 2017 (3.3 notifications per 100,000), however the annualised number was small (16).

Figure 18: Infectious syphilis notifications by Aboriginality, NSW, 1 January 2014 - 30 June 2018



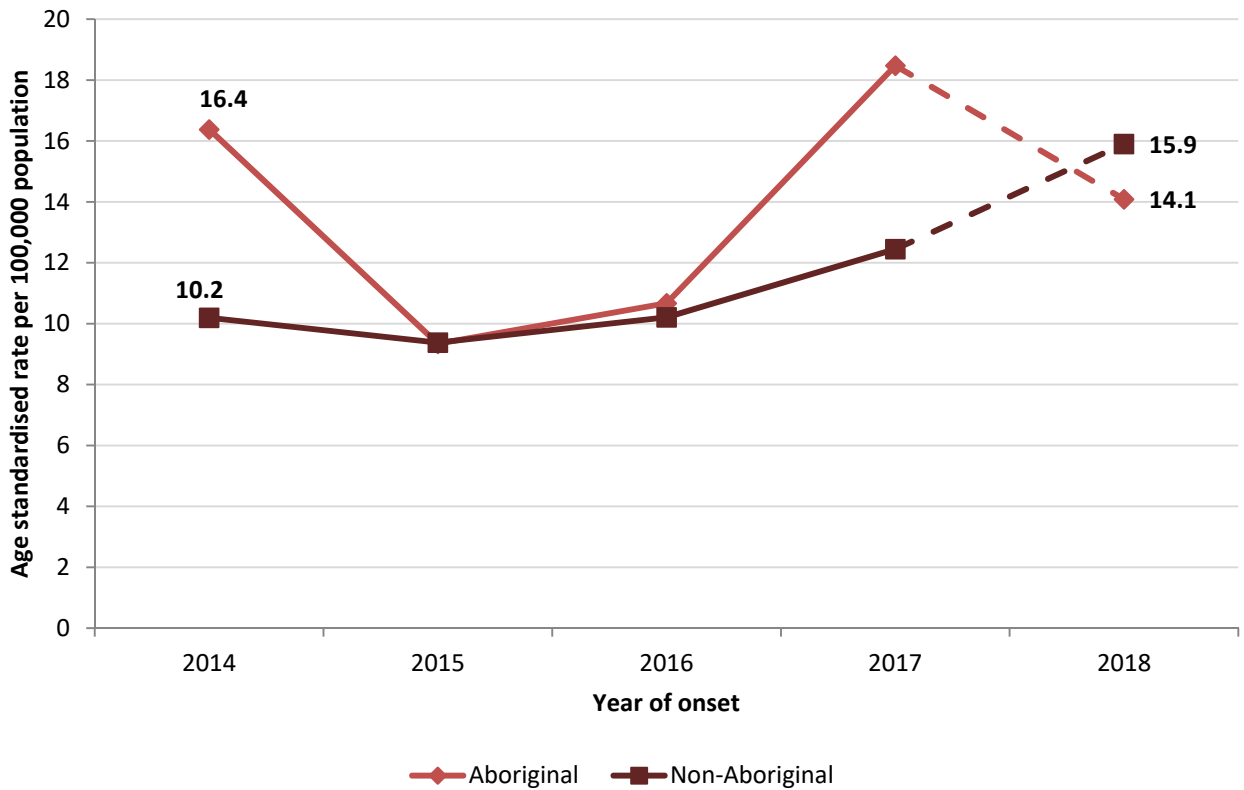
Data source: NCIMS, NSW Health; data extracted 15 Oct 2018.

From January to June 2018:

- Of 691 infectious syphilis notifications, 13 (1.9%) were among Aboriginal people, 587 (85%) were among non-Aboriginal people and Aboriginal status was not known for 91 (13.1%).
- The proportion of infectious syphilis notifications that were among Aboriginal people was lower compared with the full year of 2017 (3.1%).
- Of the 13 infectious syphilis notifications among Aboriginal people, 12 (79%) were male and one was female.

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, 1 January 2014 - 30 June 2018



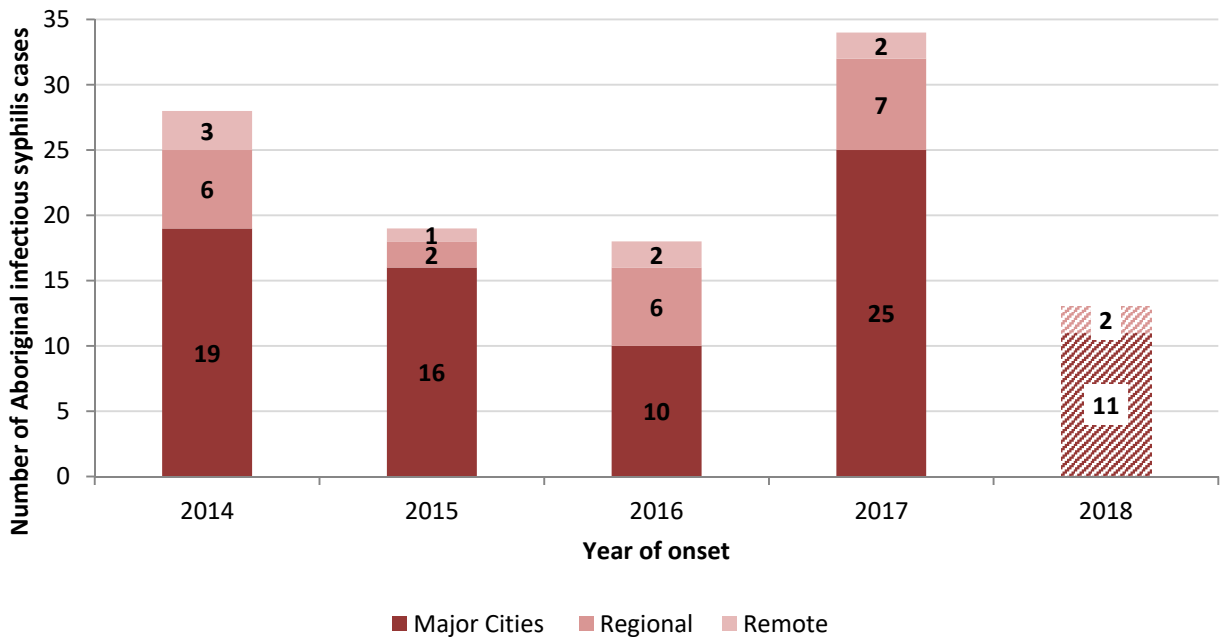
Data source: NCIMS and ABS (via SAPHaRI, NSW Health); data extracted 17 Oct 2018. The rate is based on six months of data between Jan-June 2018 adjusted to an annual rate and is subject to change once data from July to December 2018 becomes available

From January to June 2018:

- Amongst those whose Aboriginal status was known, the annualised age standardised infectious syphilis notification rate among Non-Aboriginal people was 15.9 per 100,000 in 2018, 1.1 times higher than the rate among Aboriginal people (14.1 per 100,000).

Note: As the number of infectious syphilis notifications among Aboriginal people is small fluctuations in the rate should be interpreted with caution.

Figure 20: Number of Infectious syphilis notifications in the Aboriginal population, by remoteness area, NSW, 1 January 2014 - 30 June 2018.



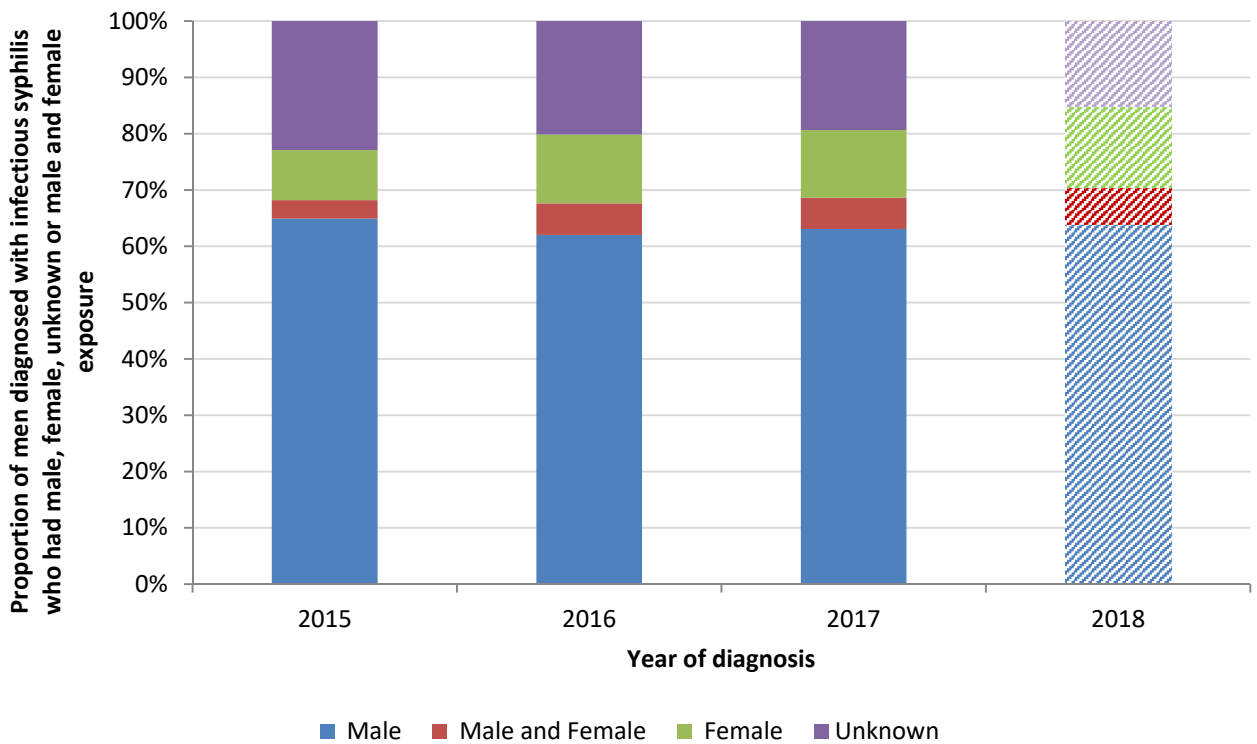
Data sources: NCIMS, NSW Health; data extracted 16 Oct 2018. Population data are derived from ABS projections (3238.0) and 2011 census estimates, and assumes proportions by remoteness have remained constant since 2011.

From January to June 2018:

- Of the 13 infectious syphilis notifications among Aboriginal people, 11 were residing in major cities and 2 were residing in regional areas. 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 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 June 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 - 30 June 2018

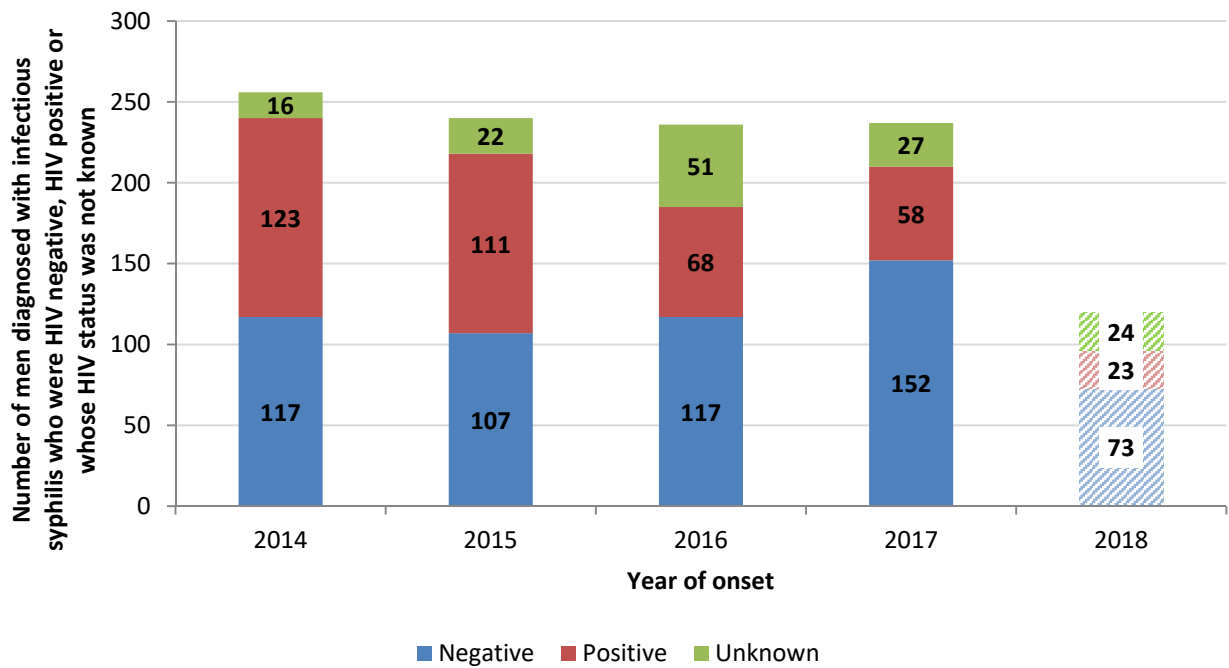


Data source: NCIMS, NSW Health; data extracted 7 May 2018.

From January to June 2018:

- The sexual exposure of men diagnosed with infectious syphilis continued to be predominantly (64%) male-to-male sex.
- The proportion (6.5%) of men diagnosed with infectious syphilis that had male and female sexual exposure was higher compared to 2017 (5.8%).
- The proportion (14.4%) of men diagnosed with infectious syphilis who reported female exposure only was also higher compared to 2017 (12%).

Figure 22: HIV status of men diagnosed with infectious syphilis, Sydney LHD, 1 January 2014 - 30 June 2018

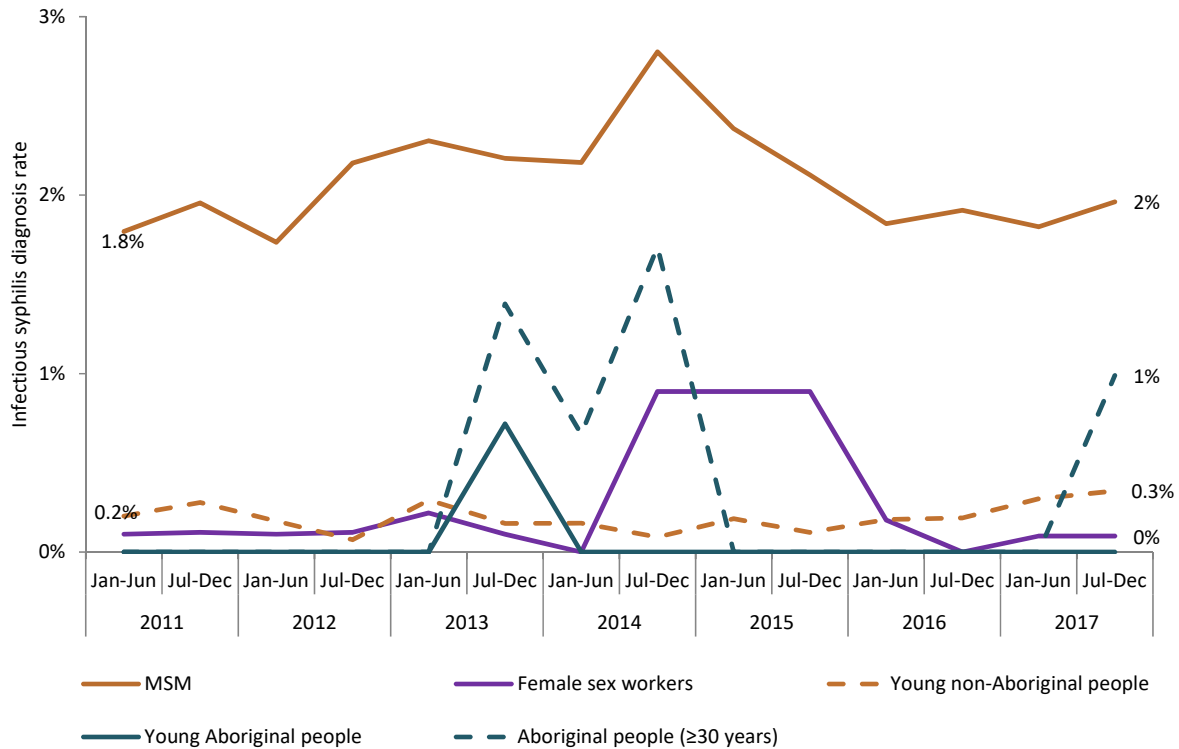


Data source: Sydney LHD – Ethics approved study on syphilis and HIV coinfection enhanced surveillance for infectious syphilis. HIV status is collected from diagnosing clinicians as part of enhanced follow up of all men diagnosed with infectious syphilis.

From January to June 2018:

- The proportion of men diagnosed with infectious syphilis residing in Sydney LHD who were known to be HIV negative (61%) was similar to that in 2017 (64%).

Figure 23: Proportion of individual patients attending PFSHSs and GP clinics¹¹ tested for syphilis with a diagnosis of infectious syphilis (syphilis diagnosis rate¹², by priority population¹³, 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.

¹¹ GP clinics included those serving at least 50 gay and bisexual male patients annually

¹² 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

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

2.2 Congenital syphilis notifications

From January to June 2018 there were no congenital syphilis notification in NSW.
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.

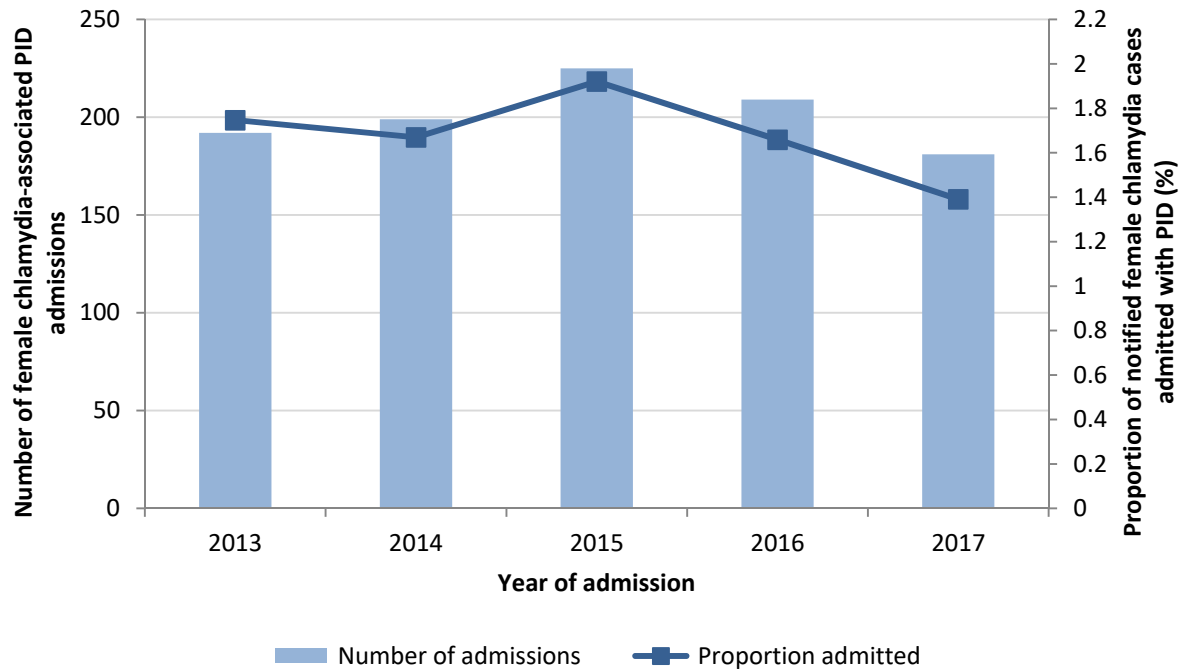
Prevention, testing and appropriate treatment and management are the cornerstones of chlamydia control and are embedded in the current STI strategy. Chlamydia notification data does not reflect the true incidence of chlamydia infection as it only represents a proportion of infections in the population,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

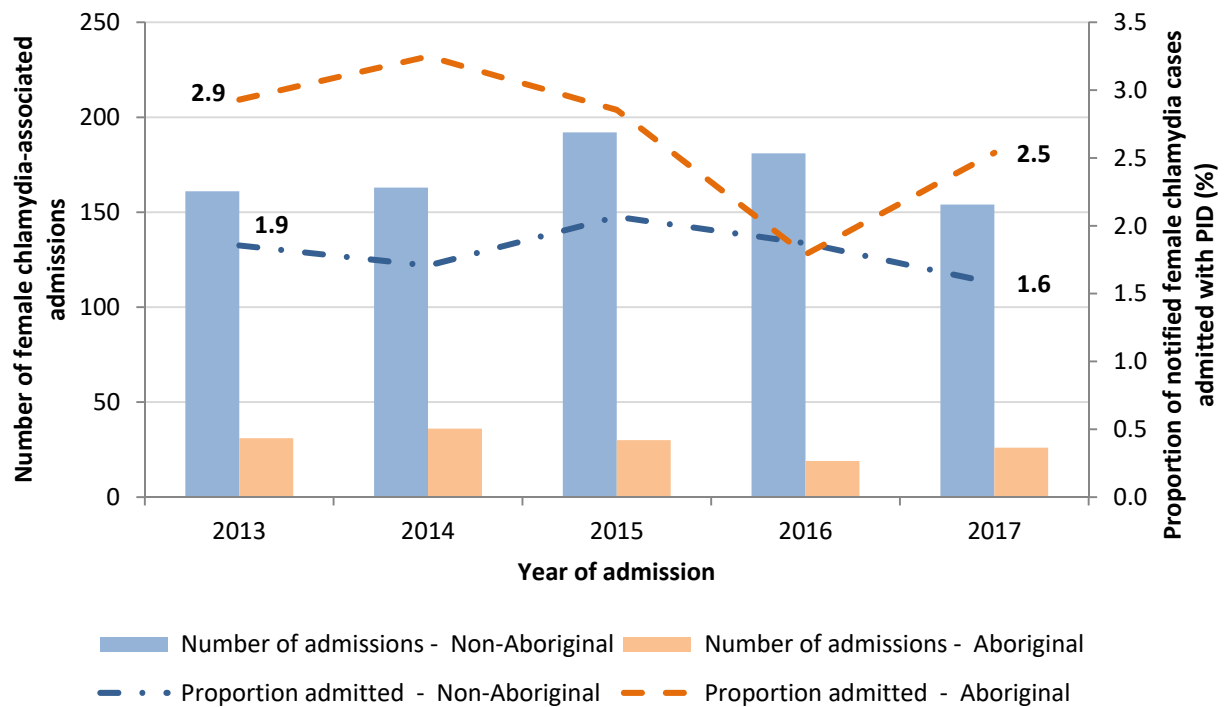
Figure 24: Number and proportion of women notified with chlamydia who are admitted with PID within 12 months of diagnosis, NSW, 1 January 2013 - 31 December 2017



Data source: Communicable Diseases Register, NSW Ministry of Health (via SAPHaRI). Data extracted 18 Oct 2018.

- The number of women notified with chlamydia who were admitted to hospital with PID within 12 months varied over time from 2013 to 2017, ranging from 181-225 admissions.
- The proportion of all women notified with chlamydia who were admitted to hospital also varied over time from 2013 to 2017, ranging from 1.4-1.9%.
- A decline in both the number of PID admissions and the proportion of women with chlamydia admitted with PID has been observed in 2017.

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

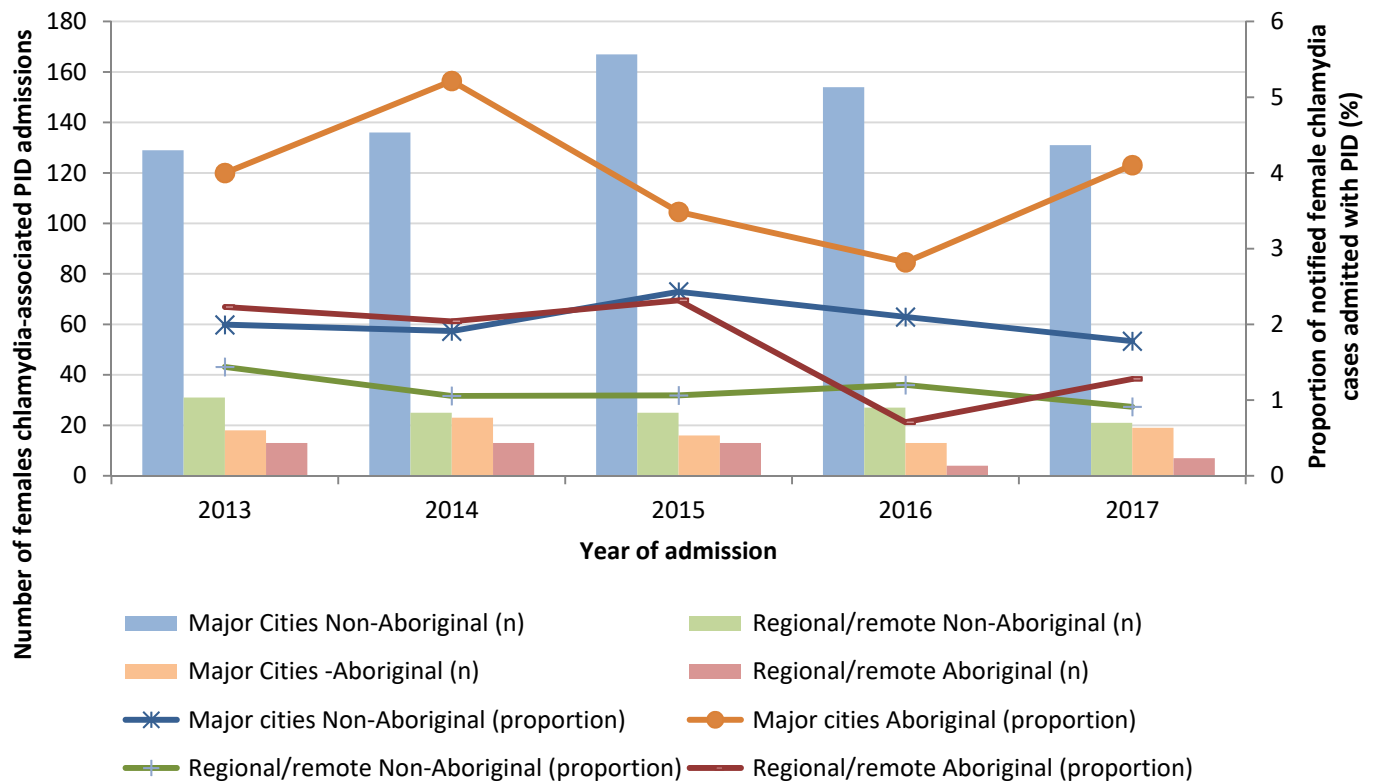


Data source: Communicable Diseases Register, NSW Ministry of Health (via SAPHaRI). Data extracted 18 Oct 2018.
Note: Excludes re-notifications within 12 months

- The number of Aboriginal women notified with chlamydia who were admitted to hospital with PID within 12 months varied over time from 2013 to 2017, ranging from 19-36 admissions per year.
- The proportion of Aboriginal women notified with chlamydia who were admitted to hospital also varied over time from 2013 to 2017, ranging from 1.8-3.2% each year, which is 1.4 to 1.6 times higher compared to non-Aboriginal women, except in 2016 where it was lower than non-Aboriginal women.
- An increase in both the number of PID admissions and the proportion of women with chlamydia admitted with PID among Aboriginal women was observed in 2017 compared to 2016.

Note: As the number of PID admissions among Aboriginal women notified with chlamydia is small, 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 2013 - 31 December 2017



Data source: Communicable Diseases Register, NSW Ministry of Health (via SAPHaRI), data extracted 18 Oct 2018

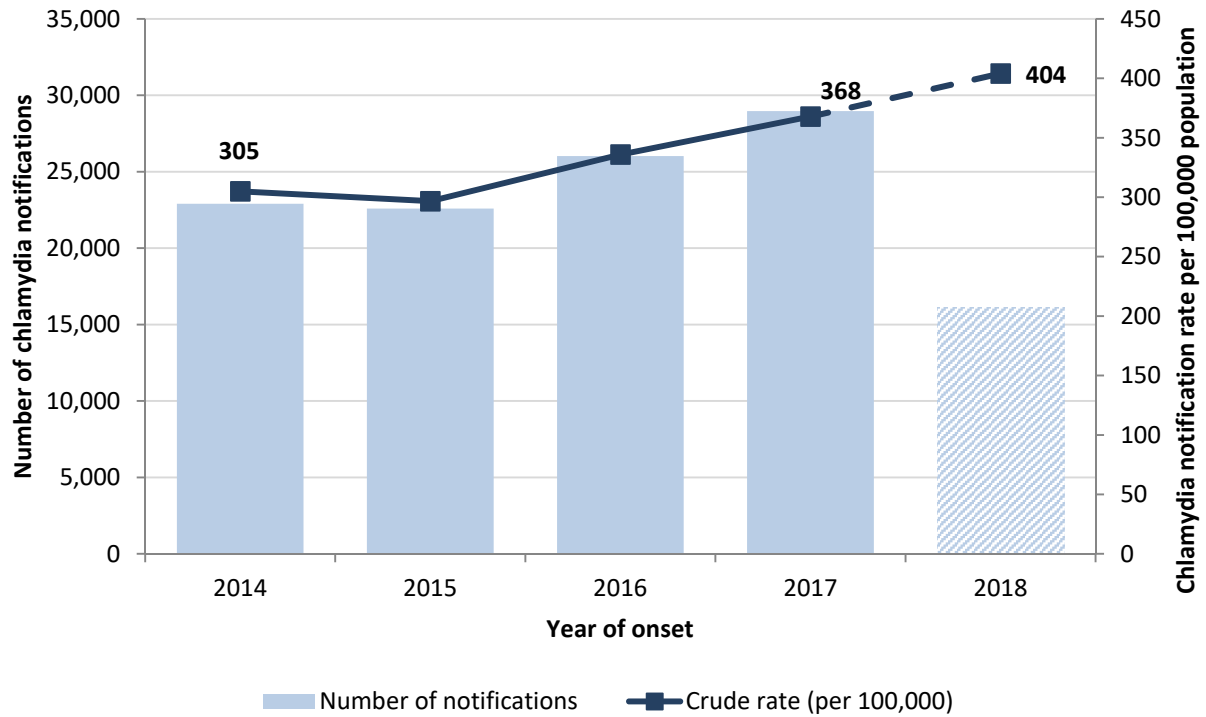
Note: Excludes re-notifications within 12 months and chlamydia cases where residential postcode or Aboriginal status was unknown.

- 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 2013 to 2017, 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 notified with chlamydia is small, yearly variation should be interpreted with caution.

3.2 Chlamydia notifications

Figure 27: Number and crude rate of chlamydia notifications, NSW, 1 January 2014 - 30 June 2018.

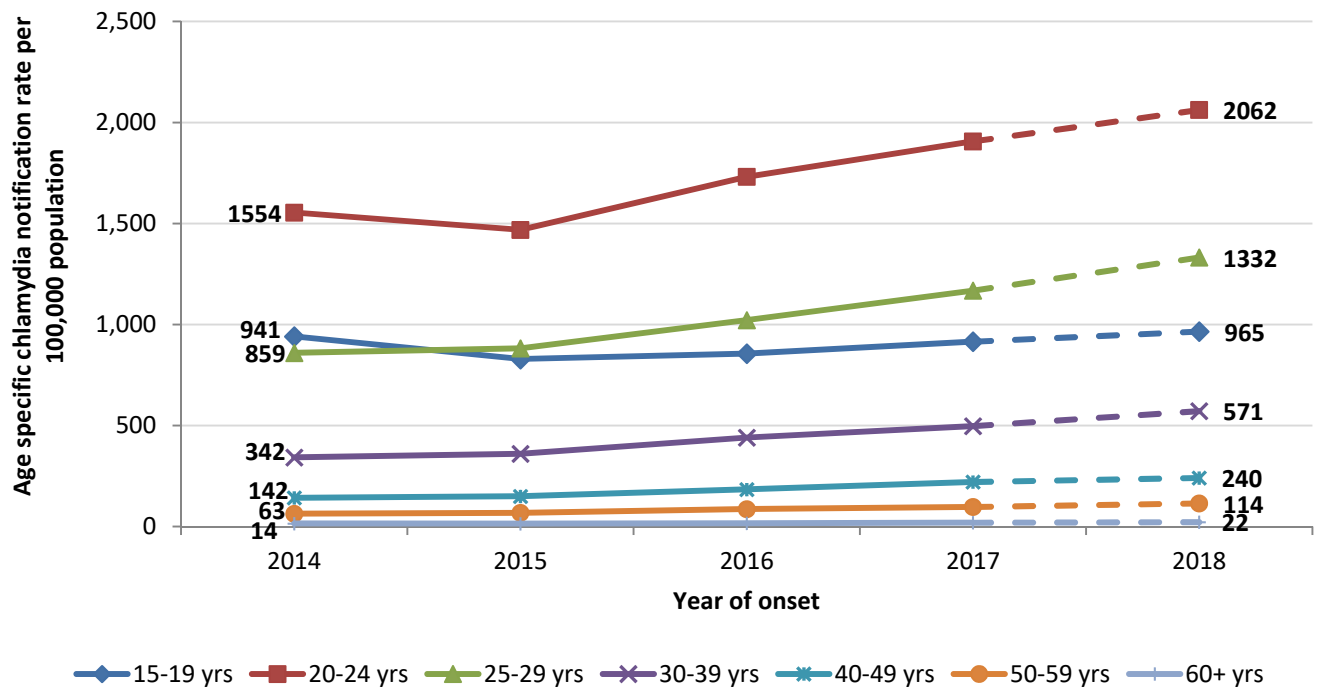


Data source: NCIMS and ABS (via SAPHaRI), NSW Health; data extracted 16 Oct 2018. The rate is based on six months of data between Jan-June 2018 adjusted to an annual rate and is subject to change once data from July to December 2018 becomes available

From January to June 2018:

- The annualised chlamydia notification rate was 404 notifications per 100,000 population, 10% higher compared to 2017 (368 per 100,000 population) and 32% higher compared with 2014.

Figure 28: Age specific chlamydia notification rates in people aged 15 years and over, NSW, 1 January 2014 - 30 June 2018

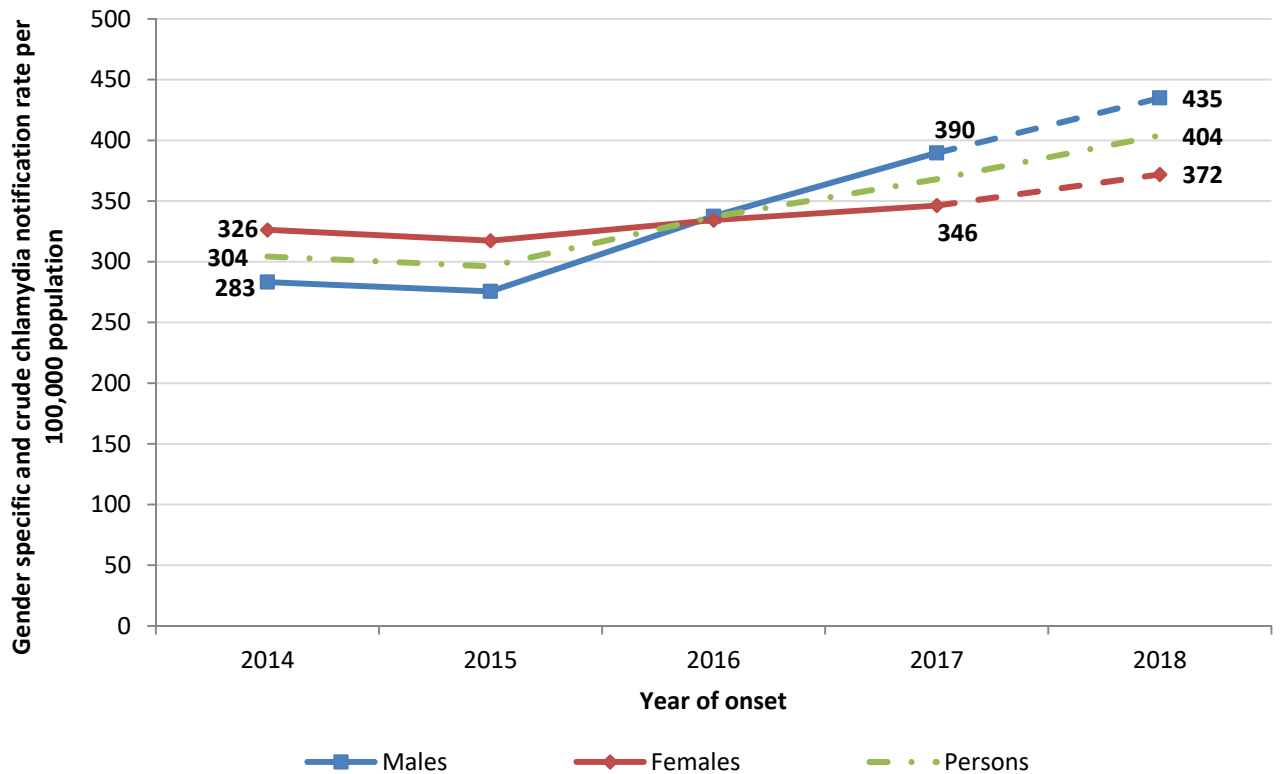


Data source: NCIMS (via SAPHaRI), NSW Health; data extracted 16 Oct 2018. The rate is based on six months of data between Jan-June 2018 adjusted to an annual rate and is subject to change once data from July to December 2018 becomes available

From January to June 2018:

- 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 5%, 8%, 14% and 15% respectively compared to the rates in 2017. A larger relative increase (17%) was observed in the 50-59 and 60-69 years age groups, although actual numbers are smaller.
- Since 2014, notification rates among those aged 30-39 years, 40-49 years and 50-59 years have increased by over 60%.

Figure 29: Gender specific chlamydia notification rate, NSW, 1 January 2014 - 30 June 2018

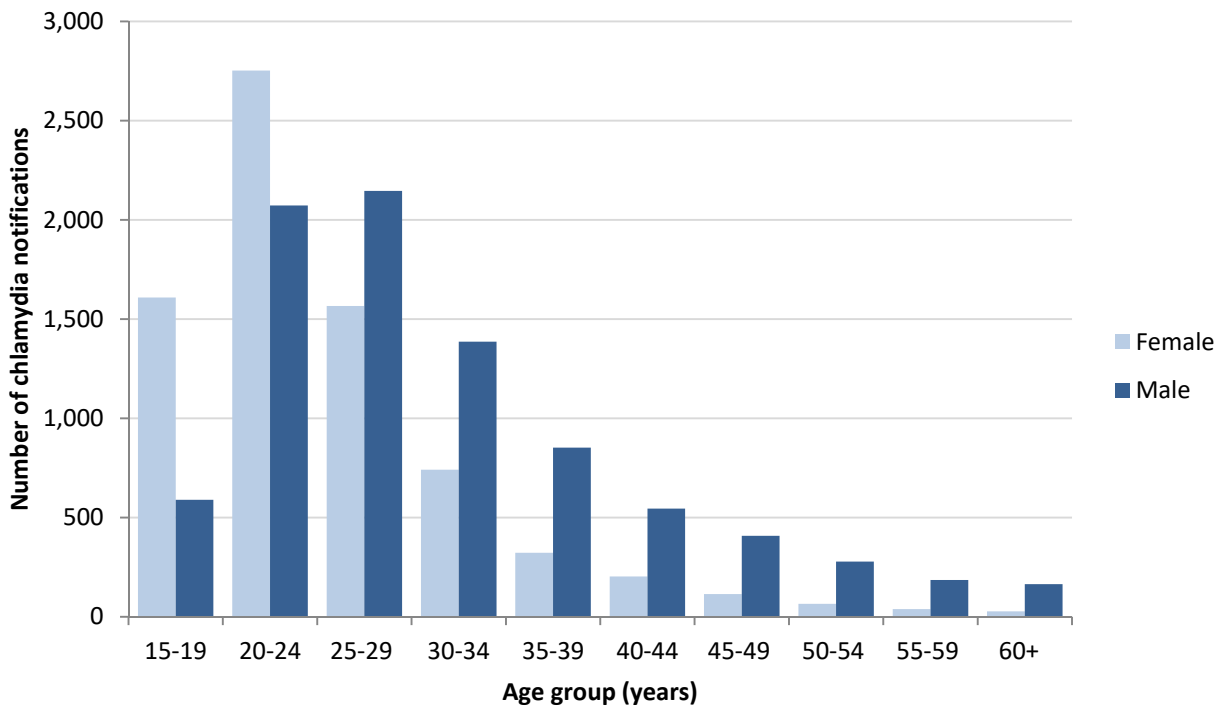


Data source: NCIMS (via SAPHaRI), NSW Health; data extracted 16 Oct 2018. The rate is based on six months of data between Jan-June 2018 adjusted to an annual rate and is subject to change once data from July to December 2018 becomes available
Note: Excludes persons reported as transgender (due to small numbers), and persons whose sex was not reported.

From January to June 2018:

- Annualised crude chlamydia notification rates increased among both males and females. The rate in males increased by 11% compared to 2017, whereas the rate in females increased by 8%.
- The chlamydia notification rate was 17% higher in males than in females (435 per 100,000 males compared to 372 per 100,000 females). Prior to 2016, the rate was higher in females than males.

Figure 30: Chlamydia notifications by age and gender in people aged 15 years and over, NSW, 1 January - 30 June 2018.

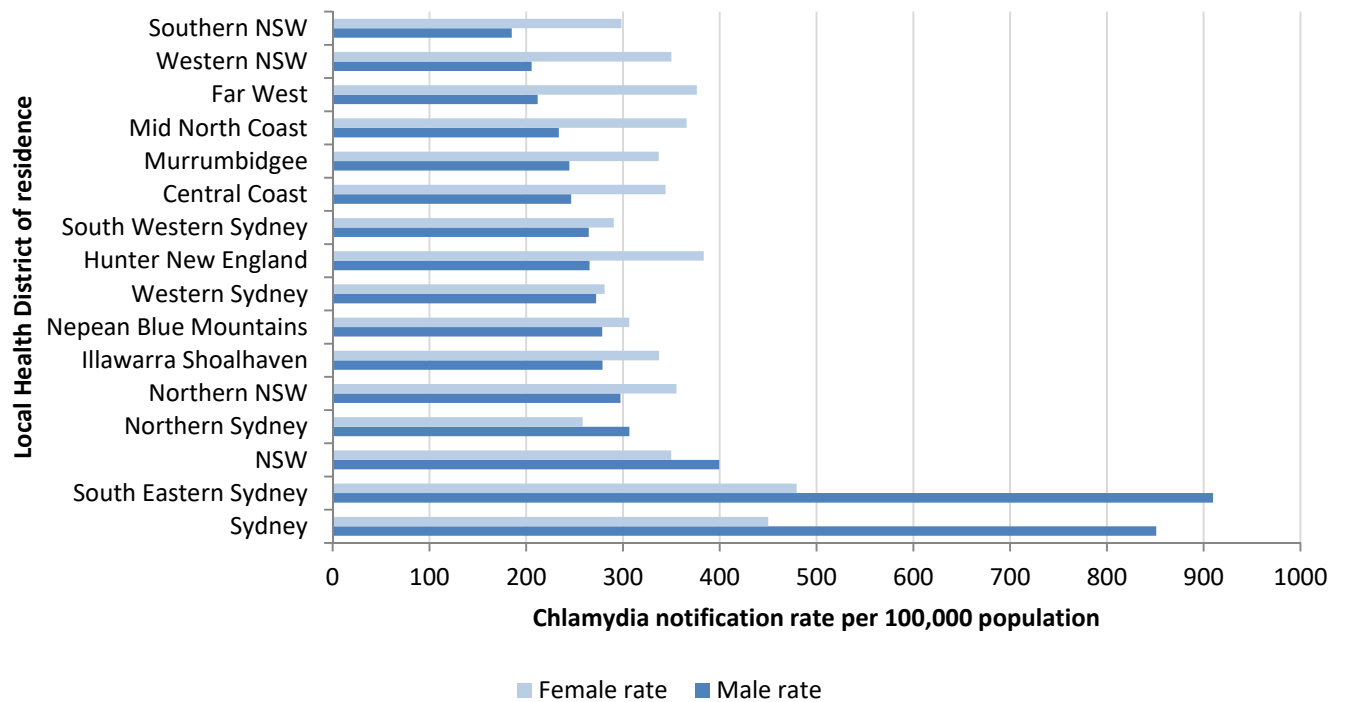


Data source: NCIMS, NSW Health; data extracted 16 Oct 2018.

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

From January to June 2018:

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

Figure 31: Chlamydia notification rate by LHD and gender, NSW, 1 January - 30 June 2018

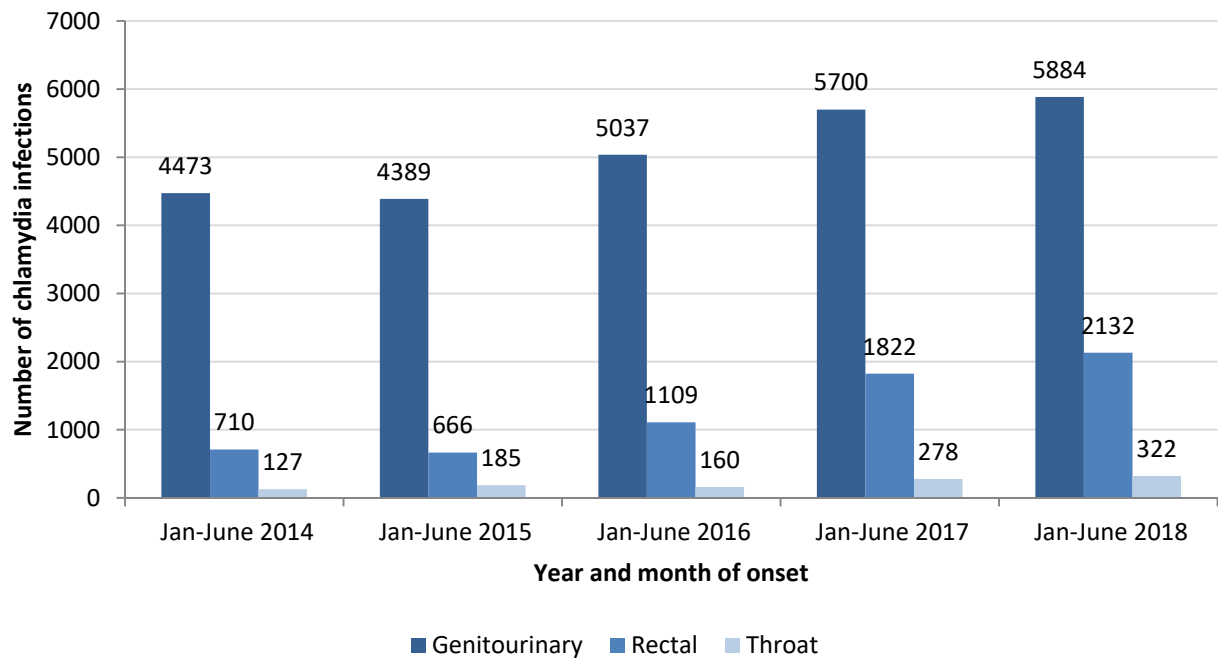
Data source: NCIMS and ABS population estimates (SAPHaRI), NSW Health; data extracted 16 Oct 2018. The rate is based on six months of data between Jan-June 2018 adjusted to an annual rate and is subject to change once data from July to December 2018 becomes available

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**.

From January to June 2018:

- 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 2017) were in the Far West and Nepean Blue Mountains LHDs (22% and 13% respectively). For females, the largest relative rate increases were in the Far West, Nepean Blue Mountains and Southern NSW LHDs (7%, 6% and 6% respectively).

Figure 32: Number of chlamydia infections in males, by site of infection, NSW, 1 January 2014 - 30 June 2018



Data source: NCIMS, NSW Health; data extracted 17 Oct 2018.

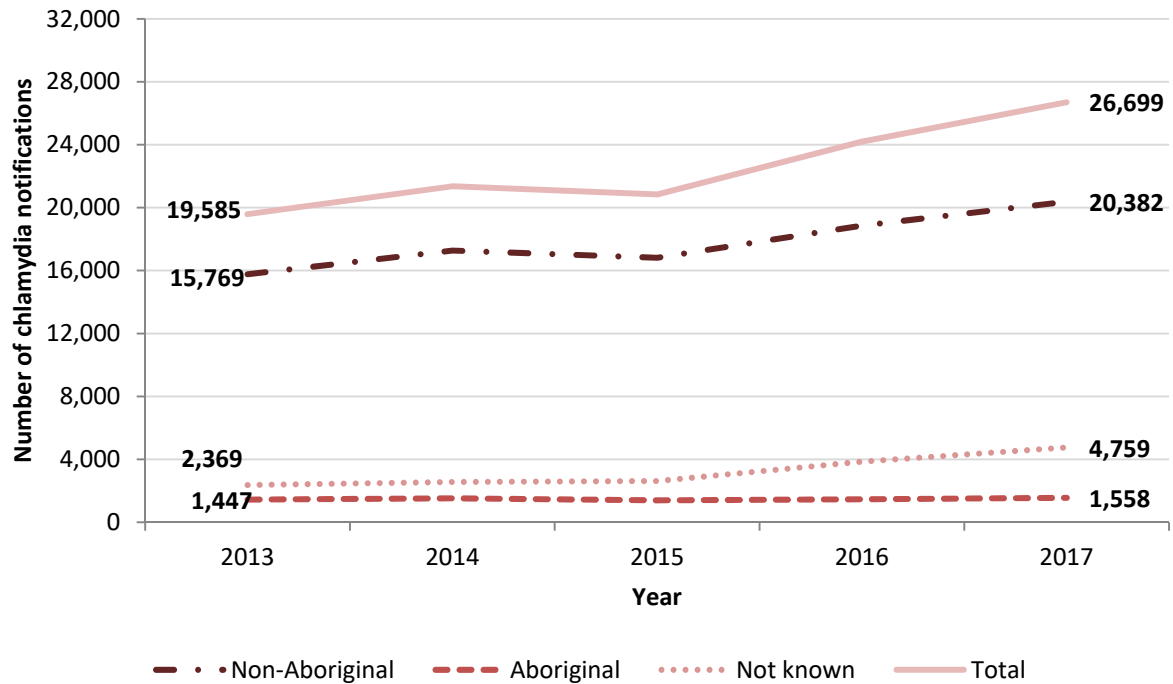
Note: Does not include 'other' (including conjunctiva and joints) site of infection or missing/unknown site of infection; number of infections may exceed number of notifications due to infection at multiple sites.

From January to June 2018:

- Among men, the genitourinary tract is the main site of chlamydia infection notified to NSW Health, followed by the rectum.
- Compared with 2017, the largest relative increases among men were reported in the throat (17%) and rectum (16%); infections in the genitourinary tract increased by 3%.
- Since 2014, the number of throat infections among men has tripled.

3.3 Chlamydia notifications among Aboriginal people

Figure 33: Chlamydia notifications by Aboriginality, NSW, 2013 - 2017

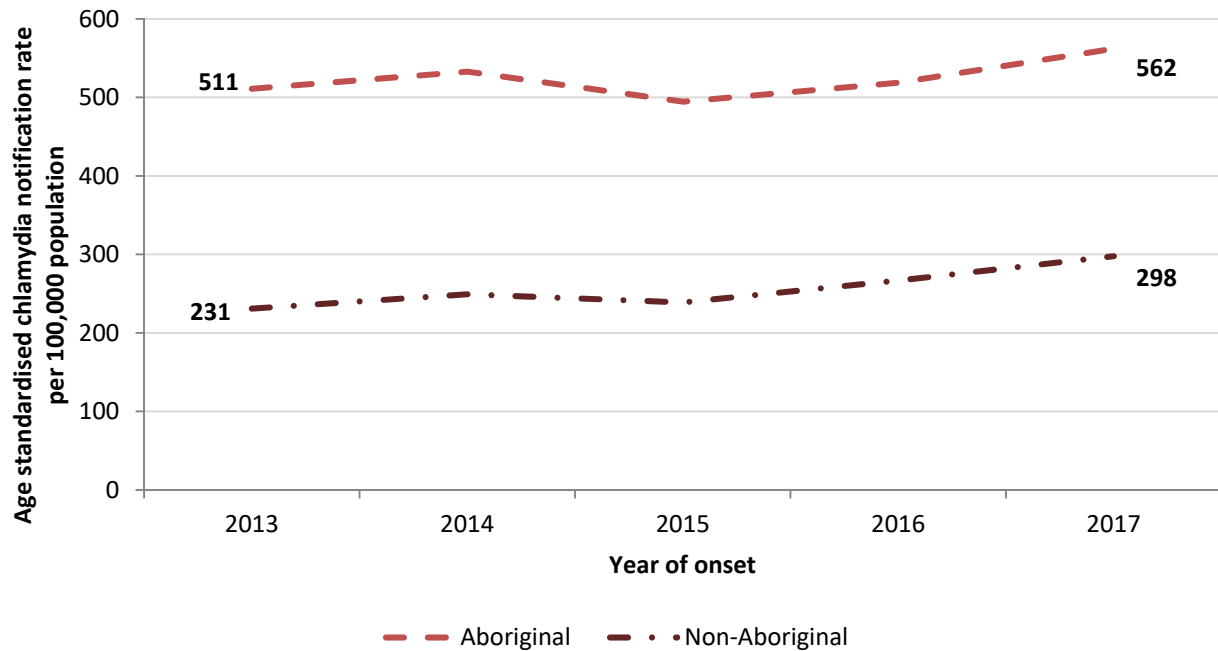


Data source: Communicable Diseases Register, NSW Ministry of Health (via SAPHaRI); data extracted 17 Oct 2018

- In 2017, 26,699 notifications for chlamydia were recorded in the Communicable Diseases Register (CDR). Of these, 1,558 (5.8%) were among Aboriginal people, 20,382 (76.4%) were among non-Aboriginal people and Aboriginal status was not known for 4,759 (17.8%) people. Of those notifications where Aboriginal status was not known in 2016, 93% 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, 2013 - 2017

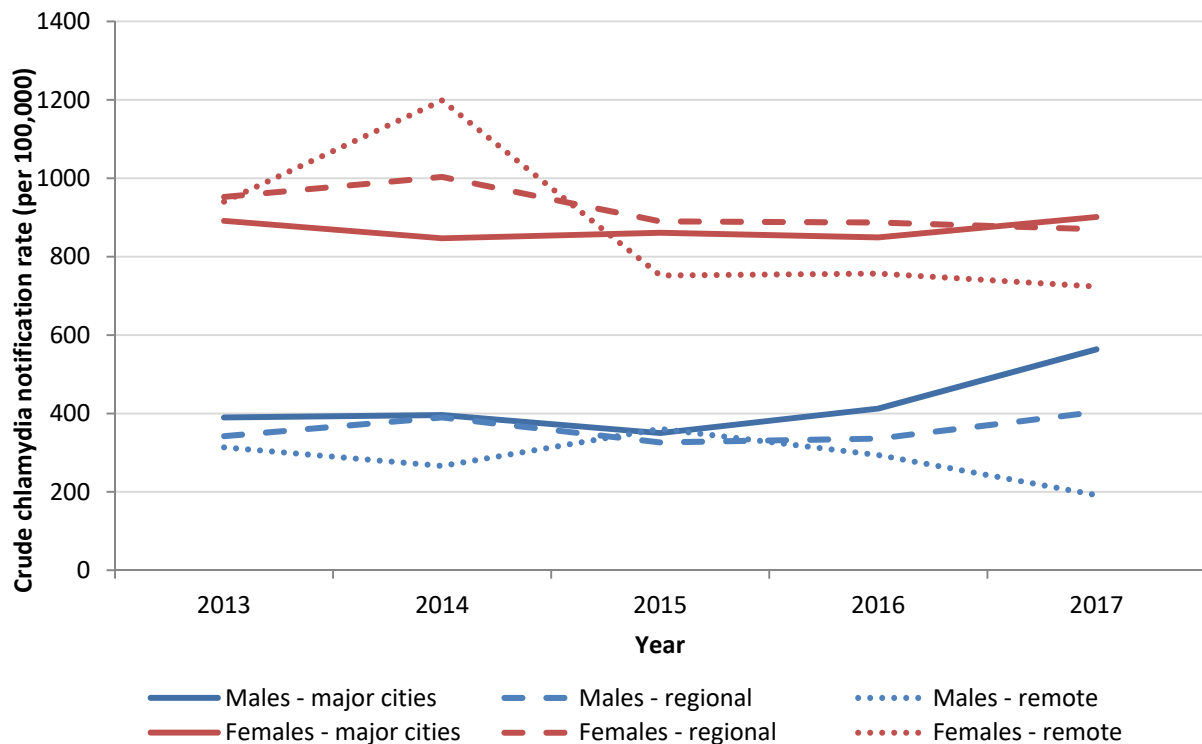


Data source: Communicable Diseases Register, NSW Ministry of Health, and ABS (via SAPHaRI); data extracted 17 Oct 2018. Notes: Excludes records where Aboriginal status was not stated; rates standardised to the Australian Standard Population 2001.

- Notification rates of chlamydia increased among both Aboriginal and non-Aboriginal people between 2016 and 2017.
- Amongst those whose Aboriginal status was known, the chlamydia notification rate was 1.9 times higher among Aboriginal people than among non-Aboriginal people (562 per 100,000 vs 298 per 100,000) in 2017. Since 2013, gonorrhoea notification rates among non-Aboriginal people have increased by 29% and rates among Aboriginal people have increased by 10%.

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: Crude chlamydia notification rates in the Aboriginal population, by gender and remoteness area, NSW, 2013 - 2017



Data sources: Communicable Diseases Register, NSW Ministry of Health (via SAPHaRI), data extracted 17 Oct 2018. 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.

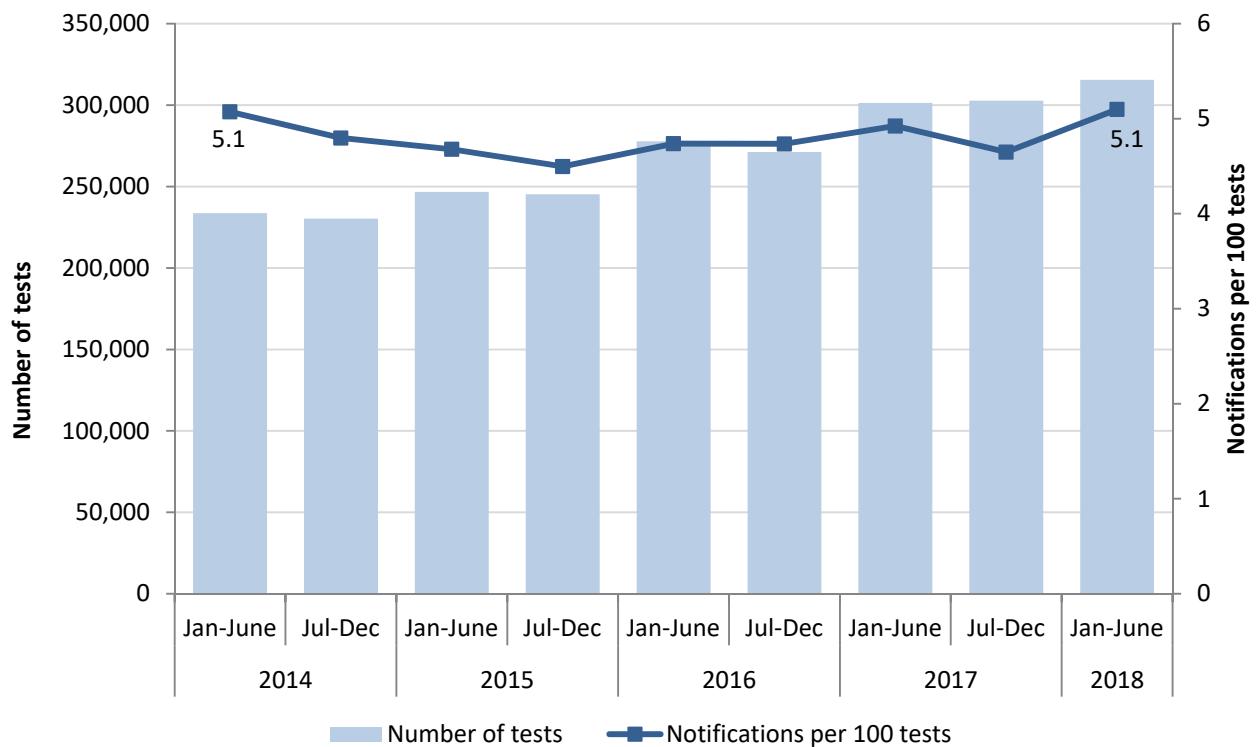
- In 2017, the highest chlamydia notification rates in Aboriginal people were among females living in major cities, regional and remote areas, and, in regional and remote areas were more than double their male counterparts.
- Chlamydia notification rates among males and females in remote areas have declined whilst notification rates among males and females in major cities have increased

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).

3.4 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 ratio¹⁴, NSW, 1 January 2014 - 30 June 2018



Data source: NCIMS and NSW Denominator Data Project, NSW Health; data extracted 16 Oct 2018.

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

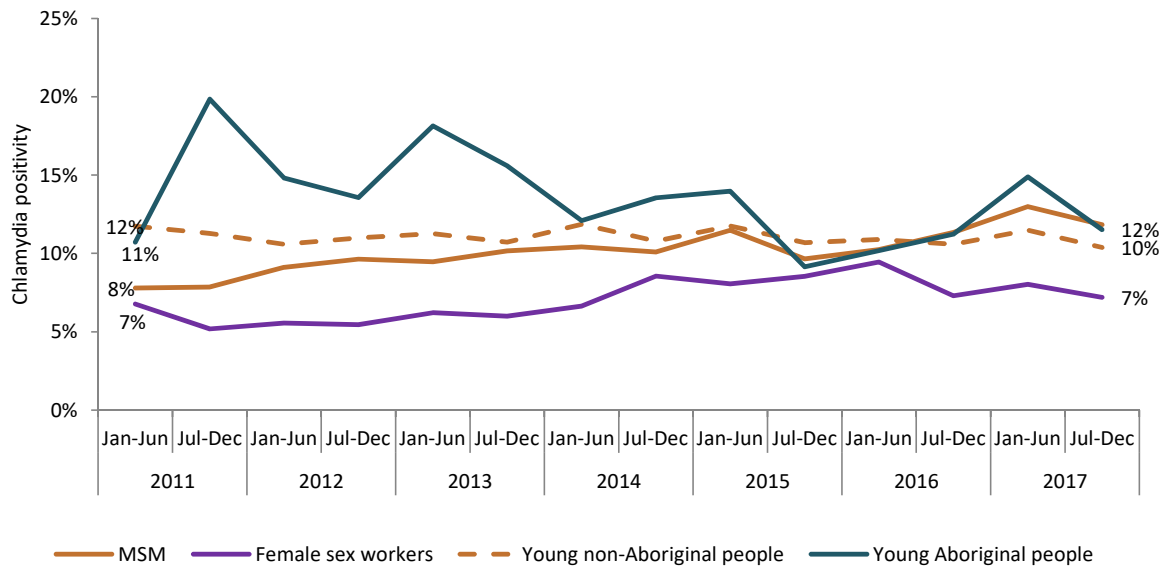
From January to June 2018:

- The number of chlamydia tests (NAAT) performed in NSW continued to increase.
- A total of 315,511 tests for chlamydia were performed in 15 laboratories in NSW, an increase of 4.7% compared to the same period in 2017 (301,330).
- There were 5.1 chlamydia notifications per 100 chlamydia tests; the highest notification to test ratio since January to June 2014.

¹⁴ See **Appendix B: Table 6** for more details about methodology

3.5 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 clinics¹⁵ tested for chlamydia with a positive result (chlamydia positivity¹⁶), by priority population¹⁷, 1 January 2011 - 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.

¹⁵ GP clinics included those serving at least 50 gay and bisexual male patients annually

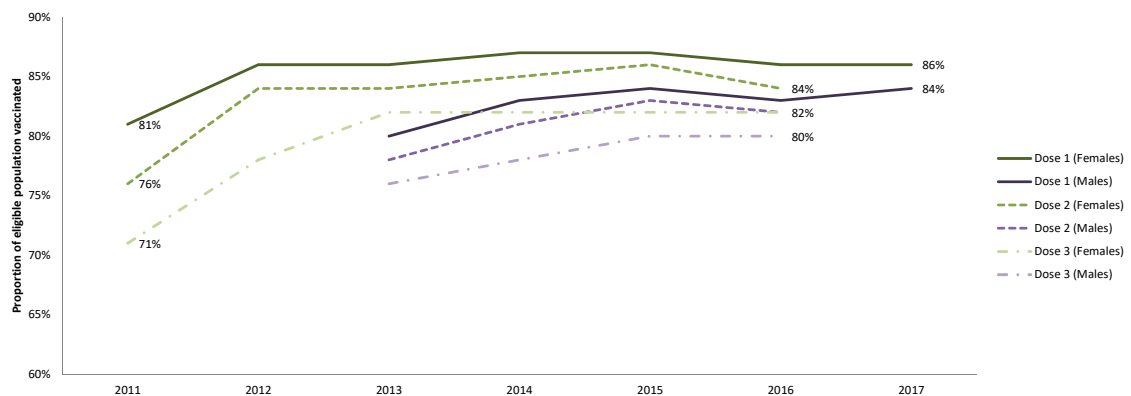
¹⁶ Positivity is the proportion of individuals (i.e., de-duplicated) tested in each six-month period with any positive result

¹⁷ 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 - 2017¹⁸



Data source: Local Health Districts

- The data indicate that 82% of females and 80% of males in Year 7 in 2016 completed the three-dose course of HPV vaccine, 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.
- Since 2017 a two-dose course of HPV vaccine at least 6 months apart has been offered in NSW in Year 7 students based on the latest international studies that demonstrate that this gives equivalent protection to a three-dose course of vaccine given at 0, 2 and 6 months for most students.

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 **Appendix E** for full data for the HPV vaccination rate by gender.

¹⁸ 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.

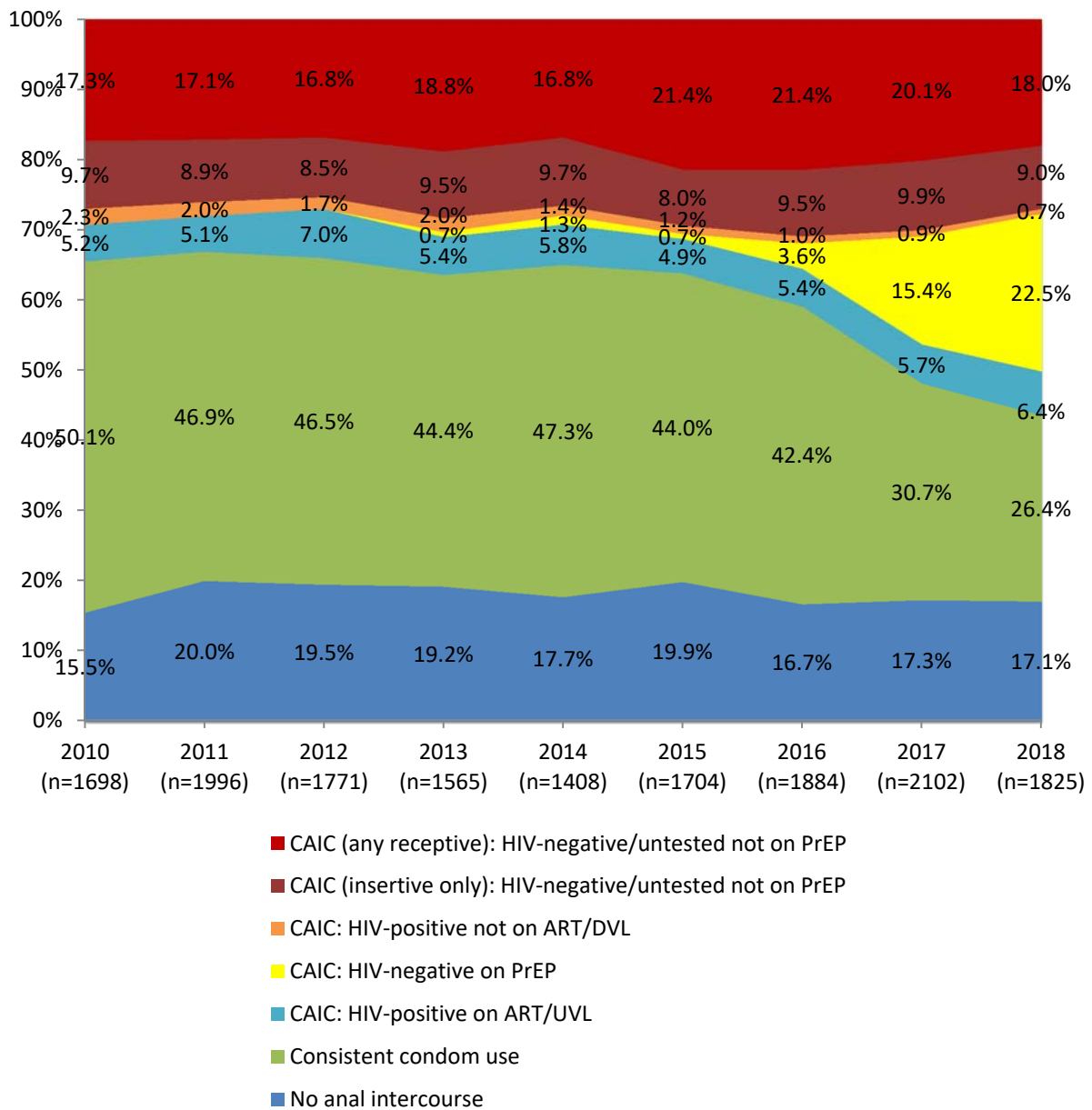
The HPV vaccination coverage target for 2017/18 is 75%.

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. ART = antiretroviral treatment. UVL = undetectable viral load. 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.
- The proportion of gay men with casual partners reporting consistent condom use has declined, particularly since 2016, falling to 26.4% in 2018.
- The proportion of HIV-positive men not on treatment or with a detectable viral load who reported CAIC declined to 0.7% of men with casual partners in 2018.
- Between 2016 and 2018, HIV-negative men on PrEP who reported CAIC increased from 3.6% to 22.5% of men with casual partners.
- In 2018, HIV-negative men not using PrEP who reported any CAIC (insertive or receptive) fell to 27.0% of casual partners.
- 2018 was the first year in which over half of men reporting CAIC were HIV-positive, on treatment and with an undetectable viral load or HIV-negative men using PrEP i.e. the majority of CAIC was protected by PrEP or HIV treatment.

4.2 Condom use among young people

A cross-sectional periodic survey 'It's Your Love Life'¹⁹ 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
Age (continuous)				
Mean age	20.9	20.8	20.9	
Standard deviation	4.45	4.82	4.16	
Range	15-29	15-29	15-29	ns
Gender				
Male	38.0%	35.3%	40.0%	
Female	62.0%	64.7%	60.0%	.001
Area of residence				
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
Sexual activity				
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%	

¹⁹ 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.

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%).

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.

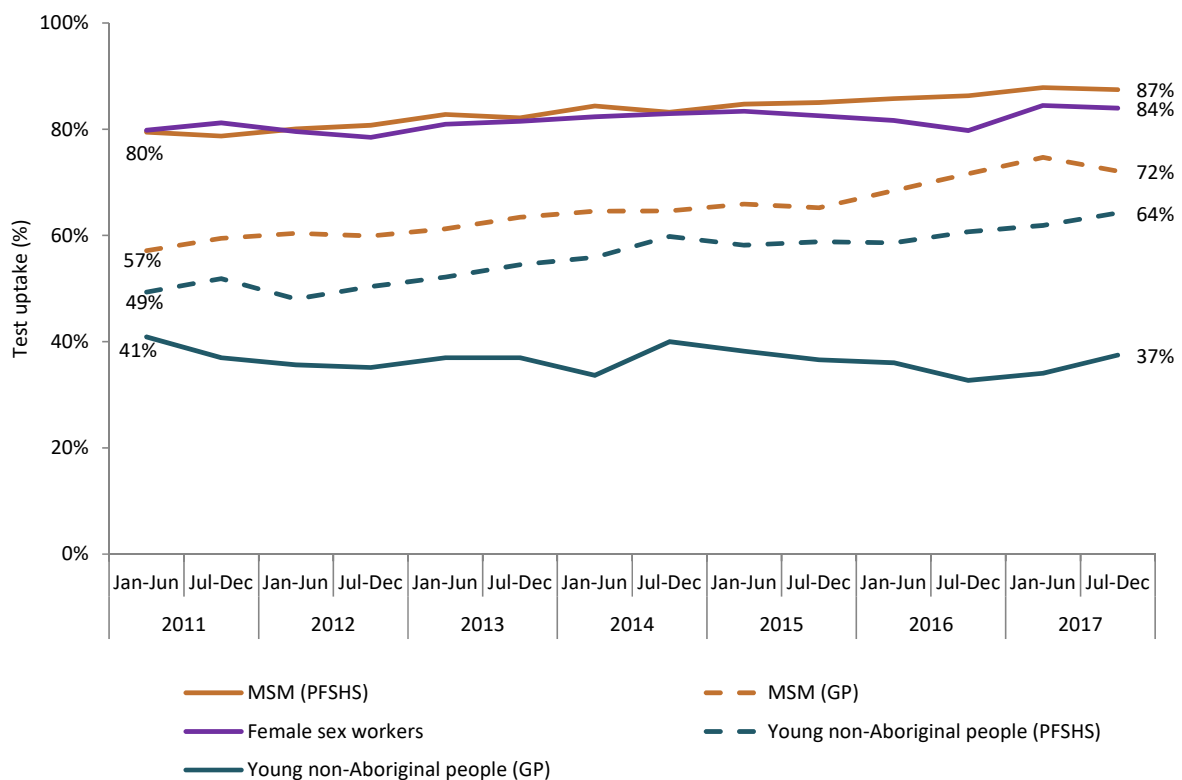
In 2016, of the respondents who were sexually active in the previous 12 months, 16.6% (194/1167) reported condomless sexual intercourse with casual partners. In the 2017 survey the percentage increased slightly to 17.6% (139/788) but was not significant compared to 2016 (odds Ratio=1.07, p=ns) and the percentage was similar between male and female participants.

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

5.1 Comprehensive STI testing in priority populations

Integrating comprehensive STI screening²⁰ 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, gonorrhoea²¹ and syphilis, by priority population²², 1 January 2011 - 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.

²⁰ 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.

²¹ Testing for chlamydia and gonorrhoea included testing at any anatomical site

²² 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

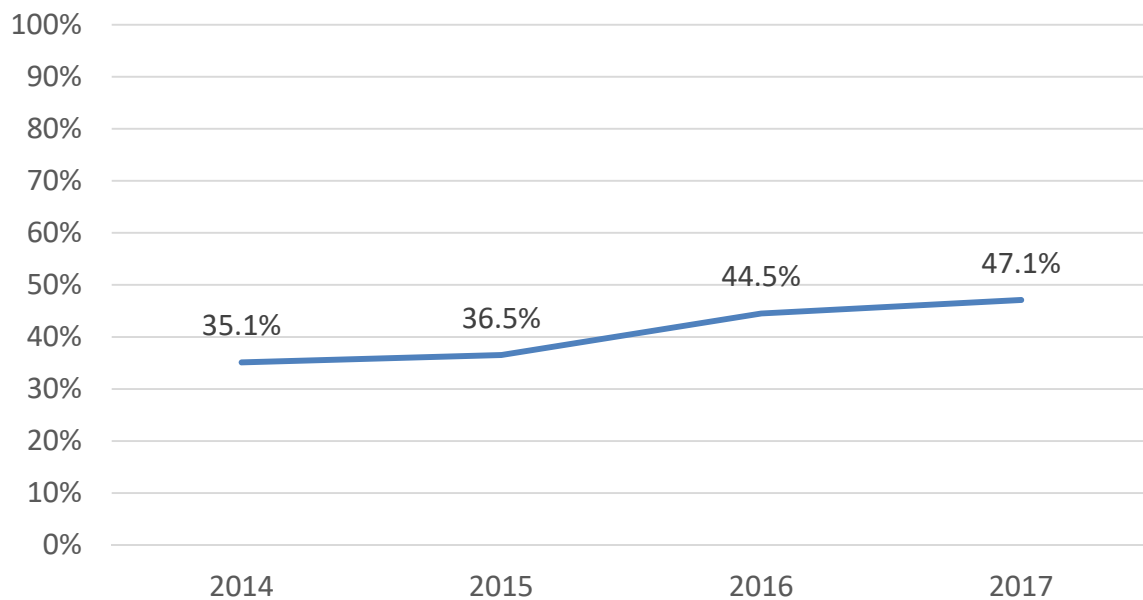
The percentage of participants who had tested for STIs or HIV in the past 12 months increased from 25.1% in 2016 to 27.3% in 2017.

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%.

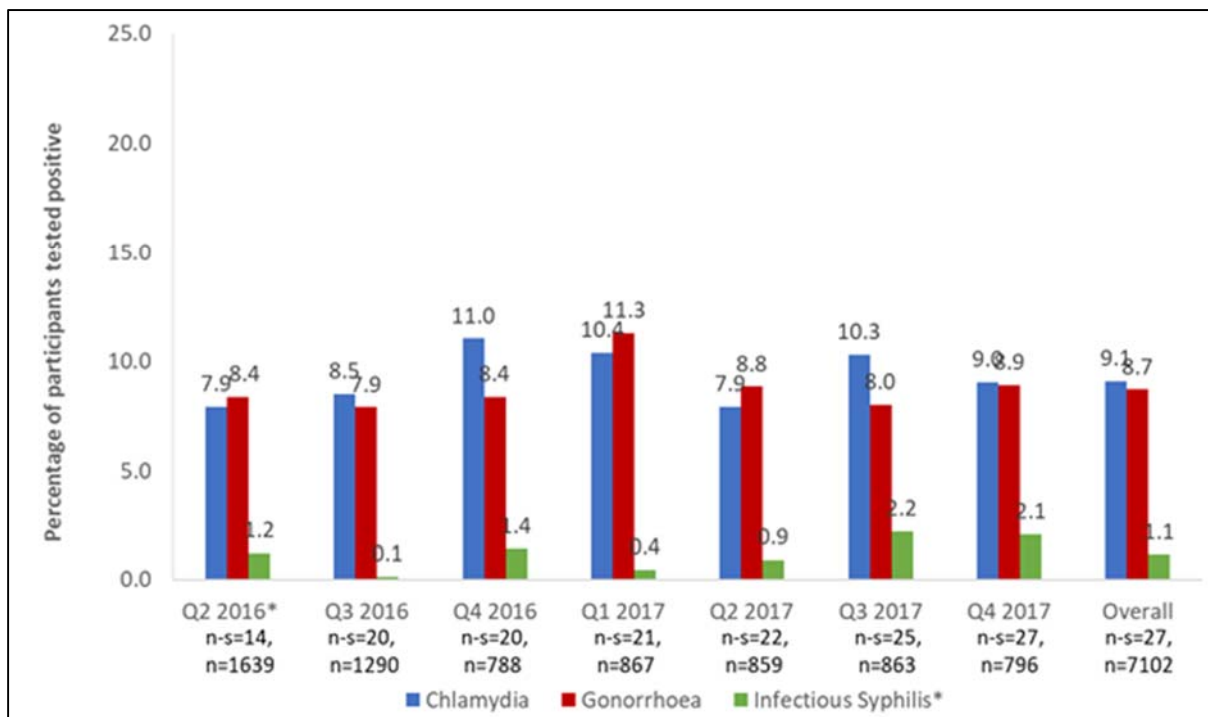
5.4 What is the prevalence of STIs among EPIC-NSW participants?

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

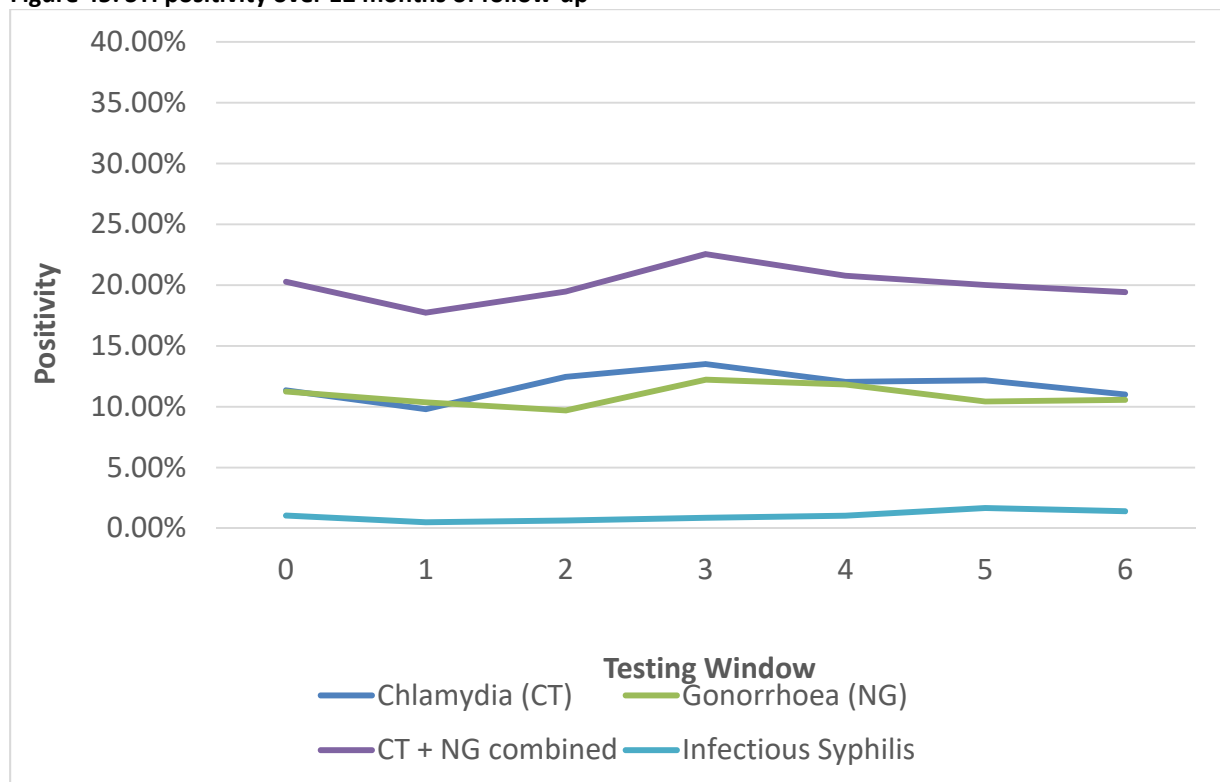
Note: There has been a slight increase in the overall diagnosis rate for infectious syphilis, but this is based on only a handful of new cases, with the small numerator. The prevalence of STI rates remained reasonably stable over time, with some fluctuations by quarter, suggesting the program is continuing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

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

This report is on STI longitudinal trends in chlamydia, gonorrhoea, and infectious syphilis positivity among the first 3700 participants enrolled in EPIC-NSW during their first 18 months of study follow-up. Enrolment was completed by 31 October 2016, and follow-up data was included up until 30 June 2018.

A total of 3564 (96.3%) 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 over 12 months of follow-up



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

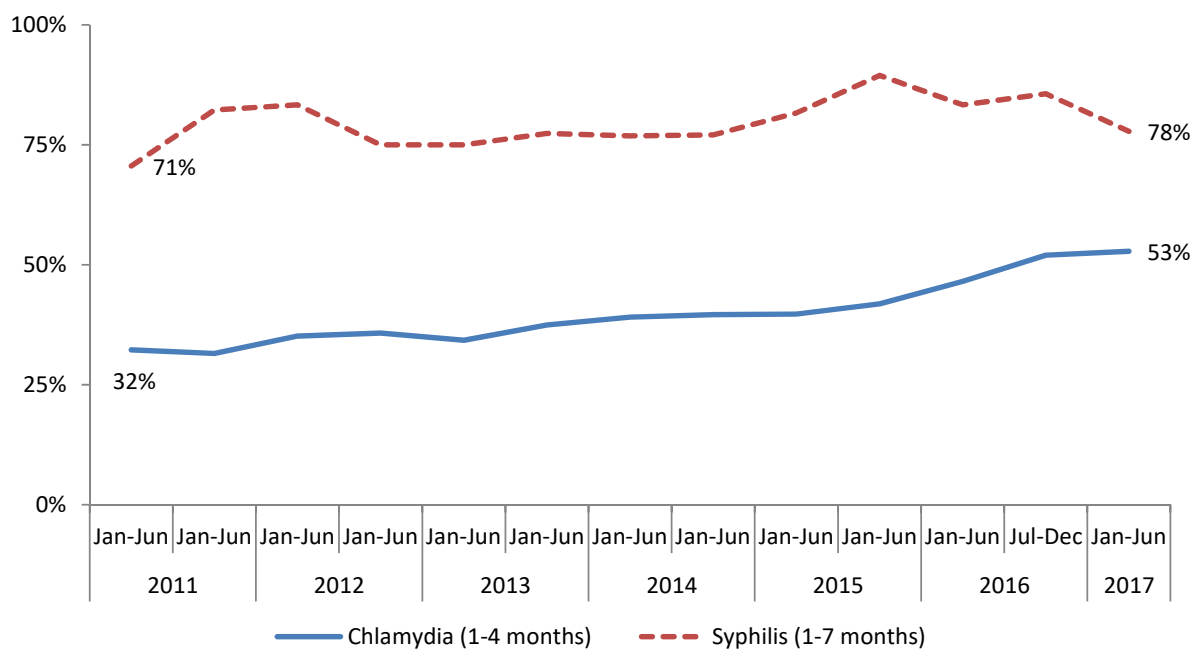
- The number of chlamydia/gonorrhoea tests conducted in each testing window declined over time; from 3057 in testing window 0, to 2188 in testing window 6. Data on infectious syphilis were only available from public clinics, with 1338 tests conducted in window 0 and 858 in window 6.
- Chlamydia positivity increased slightly from 9.8% in window 1, to 13.5% in window 3, and was 11.0% in window 6.
- Gonorrhoea positivity ranged from 10.4% in window 1, 12.2% in window 3, and 10.6% in window 6, and infectious syphilis from 0.5% in window 1 to 0.9% in window 3 and 1.4% in testing window 6.
- 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.

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

5.5 Re-testing for chlamydia and gonorrhoea

Re-testing for repeat chlamydial and gonorrhoea infections is recommended to detect reinfection of chlamydia and gonorrhoea²³.

Figure 46: Proportion of patients attending PFSHs and GP clinics²⁴ diagnosed with an STI and re-tested²⁵ recommended time frame, 1 January 2011 to 30 June 2017²⁶



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%).

²³ http://stipu.nsw.gov.au/wp-content/uploads/STIGMA_Testing_Guidelines_Final_v5.pdf.

²⁴ GP clinics included those serving at least 50 gay and bisexual male patients annually

²⁵ Only re-testing at participating ACCESS sites is represented here

²⁶ Because of the re-testing timeframe, data from the second half of 2017 have been excluded

5.6 Re-notifications of chlamydia

To follow.

Data source: NCIMS, NSW Health

5.7 Re-notifications of gonorrhoea

To follow.

Data source: NCIMS, NSW Health

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

6.1 Re-notifications of infectious syphilis

To follow

Data source: NCIMS, NSW Health.

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

7.1 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 (www.cherel.org.au), 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 2013-30 June 2018

	Infectious syphilis						Gonorrhoea						Chlamydia					
	2013	2014	2015	2016	2017	Jan-Jun 2018	2013	2014	2015	2016	2017	Jan-Jun 2018	2013	2014	2015	2016	2017	Jan-Jun 2018
TOTAL	611	789	755	883	691	1,039	4,232	4,855	5,447	6,995	9,217	5,272	20,833	22,928	22,602	26,042	29,005	16,139
Gender																		
Female	29	26	20	32	43	34	757	811	863	1,288	1,520	910	11,421	12,355	12,180	13,037	13,719	7,473
Male	582	762	732	846	1,061	653	3,466	4,035	4,571	5,689	7,660	4,344	9,392	10,554	10,413	12,986	15,248	8,633
Transgender*	0	0	0	1	1	0	5	2	5	2	18	9	2	0	1	9	17	10
Unknown	0	1	3	4	7	4	4	7	8	16	19	9	18	19	8	10	21	23
Age group (years)																		
00-04	0	0	0	0	0	0	3	3	2	3	5	4	2	2	0	1	2	3
05-09	0	0	0	0	0	0	1	2	0	2	2	2	0	1	0	1	2	36
10-14	0	0	1	0	0	0	4	16	6	2	4	2	109	101	70	59	64	2,199
15-19	11	11	8	12	19	18	301	322	303	314	417	187	4,442	4,397	3,886	3,942	4,165	4,834
20-24	47	76	86	99	107	83	852	971	1,062	1,251	1,592	905	7,190	7,980	7,638	8,548	9,030	3,721
25-29	81	108	113	136	210	139	945	1,007	1,263	1,582	2,096	1,201	4,173	4,626	4,819	5,665	6,521	2,132
30-34	106	126	121	139	189	121	698	816	914	1,244	1,600	960	1,948	2,332	2,504	3,081	3,653	1,182
35-39	86	95	96	134	143	98	454	499	602	855	1,189	671	1,058	1,220	1,300	1,749	1,979	749
40-44	89	115	85	101	147	67	369	438	462	639	822	454	746	862	884	1,101	1,308	522
45-49	81	100	103	100	106	65	277	350	357	437	614	355	522	569	627	786	1,000	344
50-54	41	75	80	71	90	34	154	228	242	326	425	222	297	392	422	556	595	223
55-59	29	51	27	51	51	31	88	102	143	171	244	148	185	215	230	282	359	102
60-64	19	18	28	19	29	22	46	60	58	93	121	88	84	128	129	141	158	61
65-69	15	8	5	8	8	6	26	32	20	46	48	36	56	66	62	77	112	23
70-74	5	4	2	10	9	5	8	8	9	13	24	22	8	20	20	24	43	3
75-79	1	1	0	2	1	1	4	1	0	9	10	8	4	5	6	15	9	2
80-84	0	0	0	0	0	0	0	0	3	3	2	3	1	6	2	4	1	3

	Infectious syphilis						Gonorrhoea						Chlamydia					
	2013	2014	2015	2016	2017	Jan-Jun 2018	2013	2014	2015	2016	2017	Jan-Jun 2018	2013	2014	2015	2016	2017	Jan-Jun 2018
85 and over	0	1	0	1	2	1	1	0	1	2	0	2	2	3	0	3	1	36
Unknown	0	0	0	0	1	0	1	0	0	3	2	2	6	3	3	7	3	3
Local Health Districts#																		
Central Coast	2	5	12	20	11	0	96	76	99	133	211	124	857	1,037	914	1,041	1,031	532
Far West	0	1	0	1	0	0	6	7	2	0	10	5	109	138	109	71	80	58
Hunter New England	26	18	19	34	43	27	208	267	258	384	394	299	2,996	2,853	2,877	2,954	2,935	1,706
Illawarra Shoalhaven	13	24	23	28	28	18	107	72	115	123	167	136	1,120	1,180	1,199	1,149	1,312	725
Justice Health		1	1	0	0	0	15	23	24	26	25	15	137	179	164	181	160	132
Mid North Coast	14	7	1	0	5	3	27	37	36	27	58	32	426	630	583	571	660	345
Murrumbidgee	8	5	6	15	16	5	34	34	29	50	69	34	782	855	888	831	826	465
Nepean Blue Mountains	16	23	6	17	21	18	103	133	145	183	228	147	835	823	789	842	1,031	540
Northern NSW	15	9	12	11	13	11	98	72	86	136	158	67	818	813	876	937	970	469
Northern Sydney	36	33	45	58	66	62	313	416	412	625	661	399	1,819	1,998	1,989	2,371	2,562	1,396
Other NSW	9	9	12	17	17	24	43	45	46	77	237	207	197	175	112	174	247	137
South Eastern Sydney	197	271	296	340	438	267	1,296	1,444	1,753	2,056	2,806	1,534	3,191	3,711	3,612	5,129	6,108	3,487
South Western Sydney	37	36	13	46	59	33	395	463	444	627	803	463	2,008	2,212	2,232	2,315	2,747	1,576
Southern NSW	2	4	5	3	8	8	24	19	34	57	60	34	404	408	423	474	503	280
Sydney	213	304	262	243	310	161	1,009	1,070	1,355	1,684	2,276	1,188	2,262	2,709	2,784	3,789	4,312	2,349
Western NSW	3	5	6	9	11	3	64	93	80	46	60	33	919	976	910	787	777	393
Western Sydney	20	34	36	40	65	51	393	584	528	760	985	554	1,951	2,228	2,139	2,424	2,743	1,549

Data source: NCIMS, NSW Health; data extracted 18 Oct 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 residents

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^[1]

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%	²⁷
	Males			78%	81%	83%	82%	²⁸
HPV (Year 7) - Dose 3	Females	71%	78%	82%	82%	82%	82%	N/A ²⁹
	Males			76%	78%	80%	80%	N/A ³⁰

Data source: Local Health Districts

^[1] 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.

²⁷ Data for HPV dose 2 for 2017 are not yet complete as catch-up vaccination is being provided in Year 8 in 2018 for courses commenced in 2017.

²⁸ Ibid

²⁹ In 2017 NSW introduced a two-dose course of HPV vaccine at least 6 months apart based on the latest international studies that demonstrate that this gives equivalent protection to a three-dose course of vaccine given at 0, 2 and 6 months for most students.

³⁰ Ibid

