

NSW Sexually Transmissible Infections Strategy 2016 – 2020

January to December
2020

Data Report



Key Data

| Reduce gonorrhoea infections | | | |
|--|------------------------------|---------|---------------------|
| | | 2020 | Change since 2019 |
| Gonorrhoea notification rate (per 100,000 population) | | 118.2 | 15% lower (139.0) |
| Number of tests | | 834,201 | 14% lower (969,429) |
| Reduce infectious syphilis infections | | | |
| | | 2020 | Change since 2019 |
| Infectious syphilis notification rate (per 100,000 population) | | 20.4 | 12% lower (23.2) |
| Reduce pelvic inflammatory disease (PID) associated with chlamydia: Hospitalisations (Data up to 2018 available) | | | |
| | | 2018 | Change since 2017 |
| Hospital admissions for chlamydia associated PID | | 173 | 8% lower (188) |
| Reduce pelvic inflammatory disease (PID) associated with chlamydia: Chlamydia notifications | | | |
| | | 2020 | Change since 2019 |
| Chlamydia notification rate (per 100,000 population) | | 329.4 | 17% lower (397.6) |
| Number of tests | | 568,259 | 15% lower (670,735) |
| Maintain high coverage of HPV vaccination for Year 7 school students | | | |
| | | 2019 | Change since 2018 |
| Course completion for human papillomavirus (HPV) vaccination | Female year 7 students | 81% | 1% lower (82%) |
| | Male year 7 students | 79% | Unchanged (79%) |
| Maintain levels of condom use for preventing the transmission of STIs | | | |
| | | 2020 | Change since 2019 |
| Proportion of gay and bisexual men ¹ reporting consistent condom use or abstaining from anal in- tercourse with casual partners | | 37.5% | 2% lower (38.4%) |
| Increase comprehensive STI testing in priority populations in accordance with risk | | | |
| | | 2020 | Change since 2019 |
| Any STI testing | Men who have sex with men | 79% | 1% lower (80%) |

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

Key Messages

Development of the NSW Sexually Transmissible Infections Strategy 2021–2025

NSW Health has begun drafting the NSW Sexually Transmissible Infections (STI) Strategy 2021–2025. The consultation draft of the Strategy focuses on the priority action areas of prevention, testing, and treatment, and introduces an additional priority area of equity and access of services. Development has been highly collaborative with stakeholders from clinical, academic, and community settings. The Strategy is expected to be launched in the second half of 2021.

The Effects of COVID-19

Surveillance data for 2020 (January to December) should be interpreted with caution as the effects of the COVID-19 pandemic on social behaviour, health-seeking behaviour, and service delivery are not yet fully known. Many Ministry of Health staff were redeployed to work on the COVID-19 response in early 2020. As a result, a short data report (January to June 2020) was produced in place of the 2019 full report (January to December).

Executive Summary

The **Gonorrhoea** notification rate in 2020 was the lowest it has been since 2017, at 118.2 notifications per 100,000 population. Rates continued to be highest among people aged 25 to 29 years and males. However, over the past five years there has been a greater relative increase in the female rate. Testing for gonorrhoea dropped significantly in 2020. Yet, the ratio of notifications to tests remained stable at 1.16 notifications per 100 tests, suggesting that testing continued to be well targeted.

The **Infectious Syphilis** notification rate in 2020 was 20.4 notifications per 100,000 population, 12% lower than the rate in 2019, yet 43% higher than the rate in 2016. Males continue to have a substantially higher rate than females. However, since 2016 there has been a four-fold increase in the female rate. Among females, most notifications are in women of reproductive age. The infectious syphilis rate among Aboriginal and/or Torres Strait Islander people was the highest it has ever been, at 28.4 notifications per 100,000 population. However, the numbers of notifications in this population are small. In 2020, Aboriginal and/or Torres Strait Islander people accounted for 4.2% of infectious syphilis notifications.

There were four cases reported of **Congenital Syphilis** in 2020, significantly higher than any year in the previous five years. Additional efforts are required to address this issue. A syphilis taskforce has been established to investigate and develop strategies to eliminate congenital syphilis.

The **Chlamydia** notification rate dropped to the lowest it has been since before 2016, at 329.4 notifications per 100,000 population, 17% lower than it was in 2019. Again, caution should be applied when interpreting these data as the effects of COVID-19 are not yet fully understood. Rates continue to be highest in people aged 20 to 29 years. Among notifications in 2020, 51% were reported as male and 49% were reported as female. Testing for chlamydia in 2020 dropped to the lowest levels since 2016, yet the ratio of notifications to tests remained relatively stable at 4.77 notification per 100 tests.

Vaccination against **Human Papillomavirus (HPV)** was significantly impacted by COVID-19 and Public Health Units have been undertaking a lot of catch-up vaccination during 2021 to initiate and complete vaccination courses. The data indicate that 81% of females and 79% of males in Year 7 in 2019 completed the two-dose course of HPV vaccine, including catch-up vaccination in Year 8 in 2020.

Self-reported **STI diagnoses among gay and bisexual men** increased in 2020 to one in four men reporting any STI diagnosis in the previous 12-months. The trend was consistent for chlamydia, gonorrhoea, and syphilis. **Condom use** among gay and bisexual men was the lowest levels since 2011.

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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

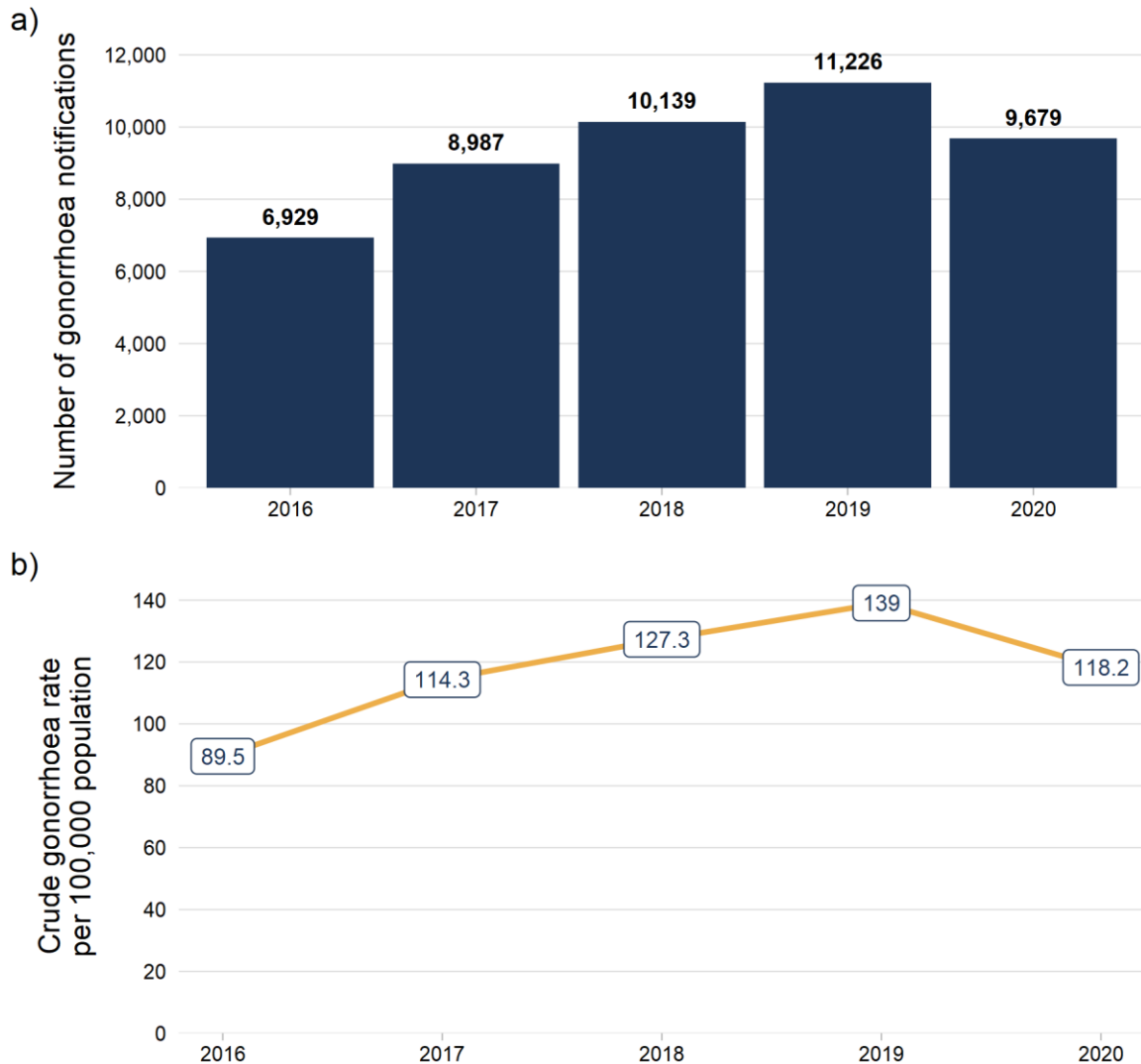
Prevention, testing and appropriate treatment and management with partner notification are the cornerstones of gonorrhoea control and are embedded in the current STI strategy. Gonorrhoea notification data does not reflect the true incidence of gonorrhoea infection as it only represents a proportion of 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 by year of onset, NSW, 1 January 2016 to 31 December 2020



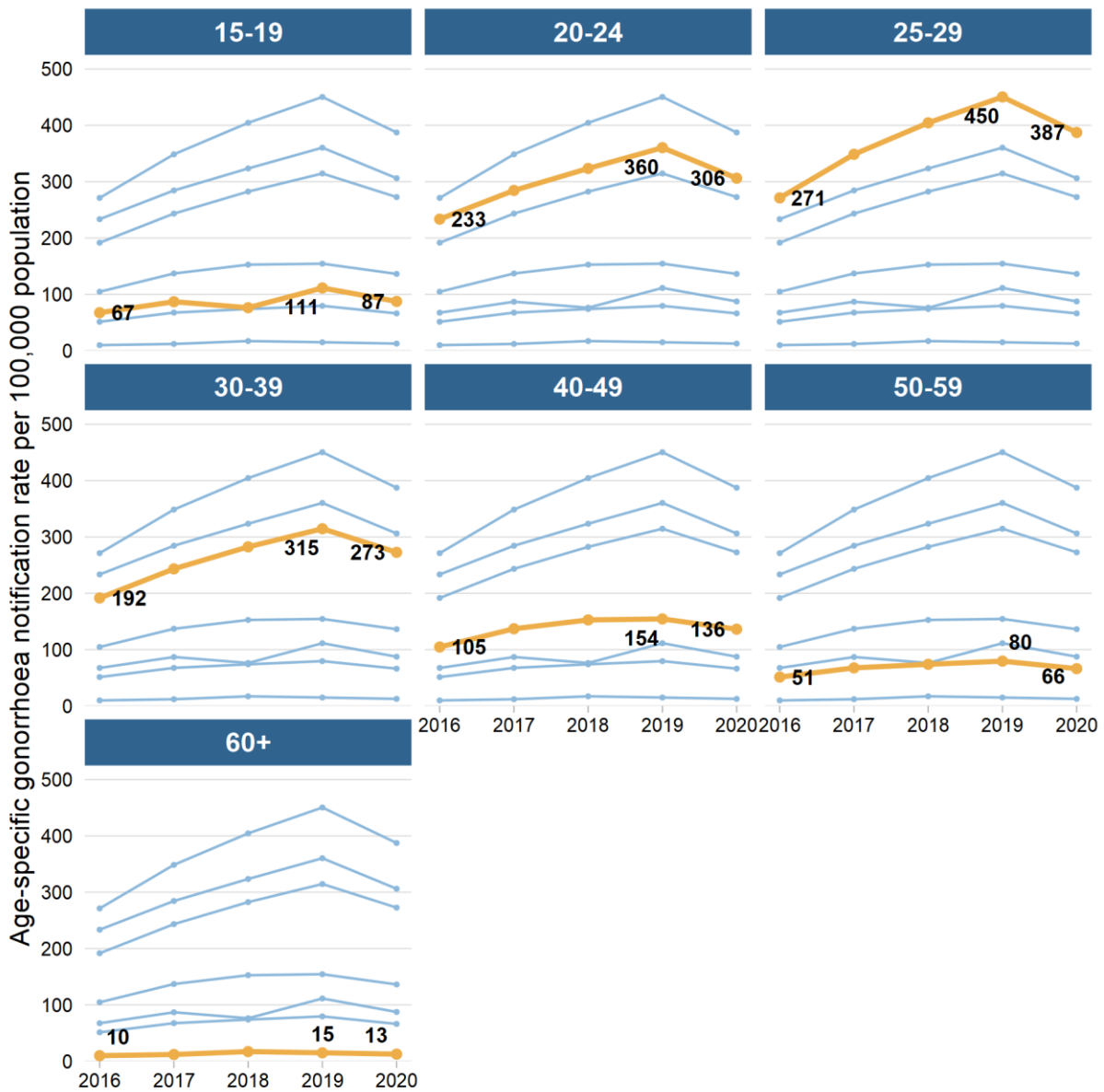
Data source: Data source: NCIMS and ABS population estimates (via SAPHARI), NSW Health; data extracted 13 May 2021.

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

In 2020:

- The gonorrhoea notification rate was 118.2 notifications per 100,000 population, 15% lower than 2019 when it was 139.0 notifications per 100,000 population.
- The gonorrhoea notification rate was the lowest it has been since 2017, however caution must be taken when interpreting this, due to the unknown effects COVID-19 had on STI risk and health seeking behaviours.

Figure 2: Age-specific gonorrhoea notification rates in people aged 15 years and over, NSW, 1 January 2016 to 31 December 2020



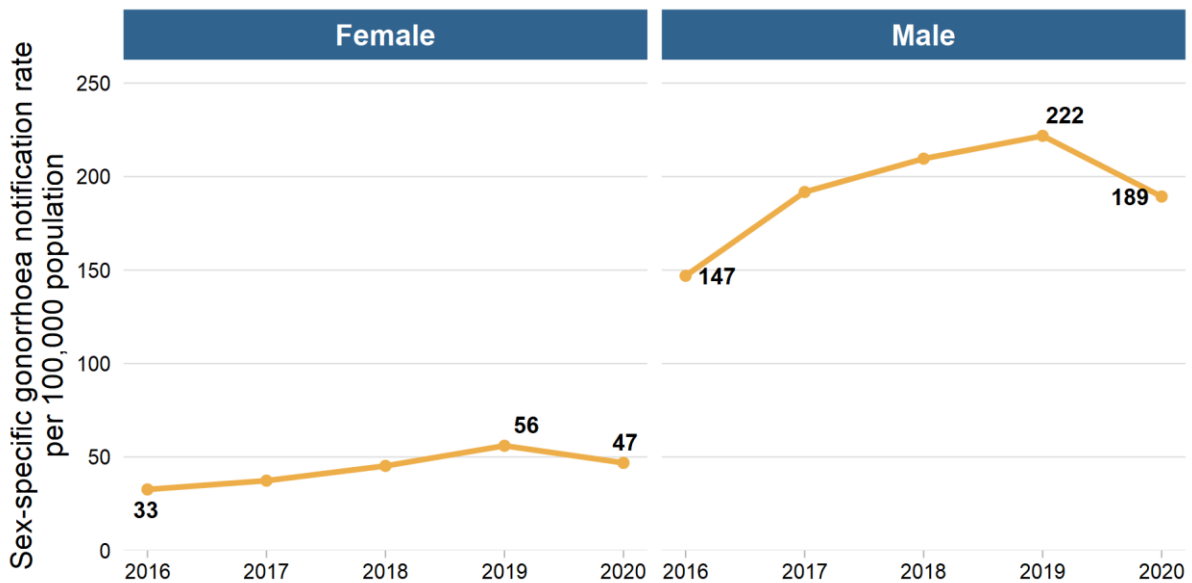
Data source: NCIMS and ABS population estimates (via SAPHARI), NSW Health; data extracted 13 May 2021.

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

In 2020:

- The highest gonorrhoea notification rates continue to occur among people aged 25 to 29 years, at 387 notifications per 100,000 population, followed by those aged 20 to 24 years, at 306 notifications per 100,000 population.
- Between 2019 and 2020, all age groups had a reduction in gonorrhoea notification rates. The greatest reduction was among people aged 15 to 19 years, with a notification rate 21.5% lower.

Figure 3: Sex-specific gonorrhoea notification rates, NSW, 1 January 2016 to 31 December 2020



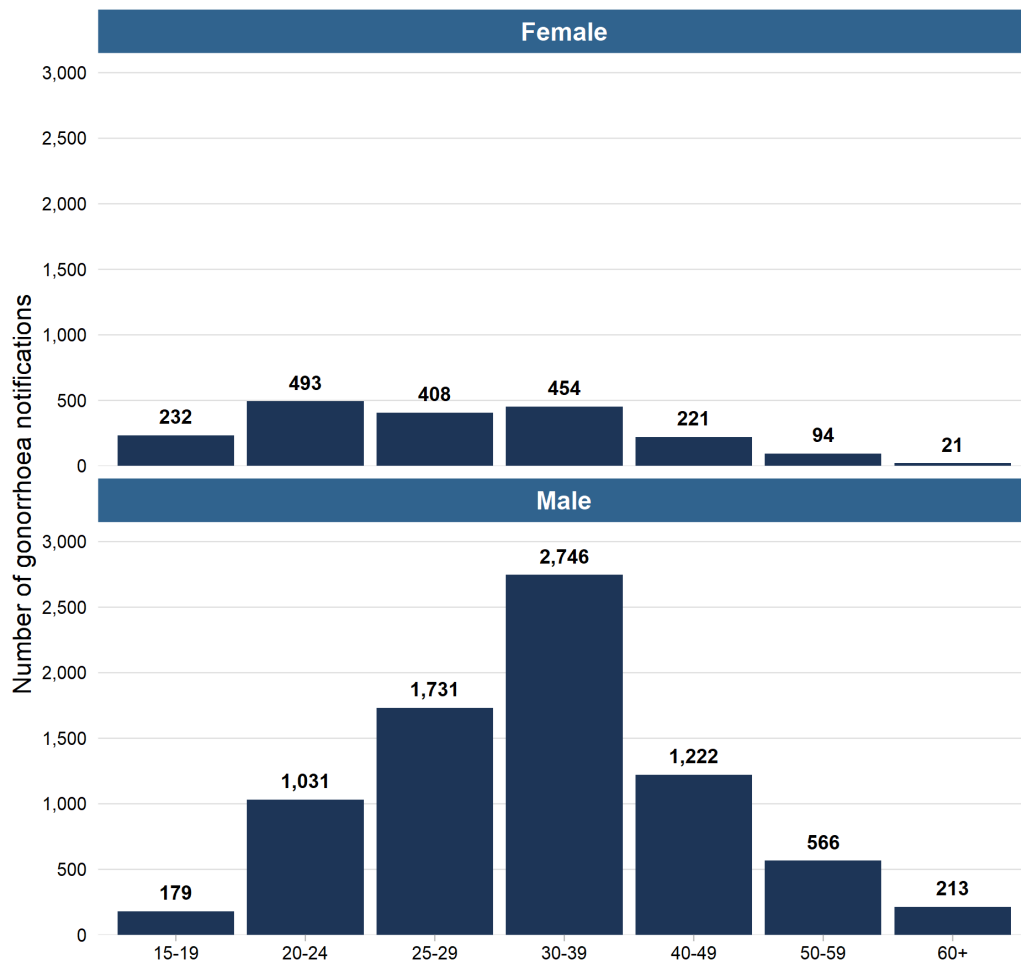
Data source: NCIMS and ABS population estimates (via SAPHaRI), NSW Health; data extracted 13 May 2021.

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

In 2020:

- Of the 9,679 gonorrhoea notifications, 79.5% (n=7,692) were reported as male and 20% (n=1,932) were reported as female. There were 17 notifications in persons reported as transgender and 38 notifications in persons whose sex was reported as not stated or inadequately described (for further notes on sex classification see Appendix D).
- The gonorrhoea notification rate in males was 189 notifications per 100,000 males, which is four times as high as the notification rate for females at 47 notifications per 100,000 females. In 2019, the gonorrhoea notification rate in males was more than five times as high as in females.
- The notification rates decreased by 15% from the 2019 rates for males and decreased by 16% for females.
- Since 2016, the female notification rate has increased 43.5%, while the male notification rate increased by 29%.

Figure 4: Number of gonorrhoea notifications by age group and sex in people aged 15 years and over, NSW, 1 January 2020 to 31 December 2020



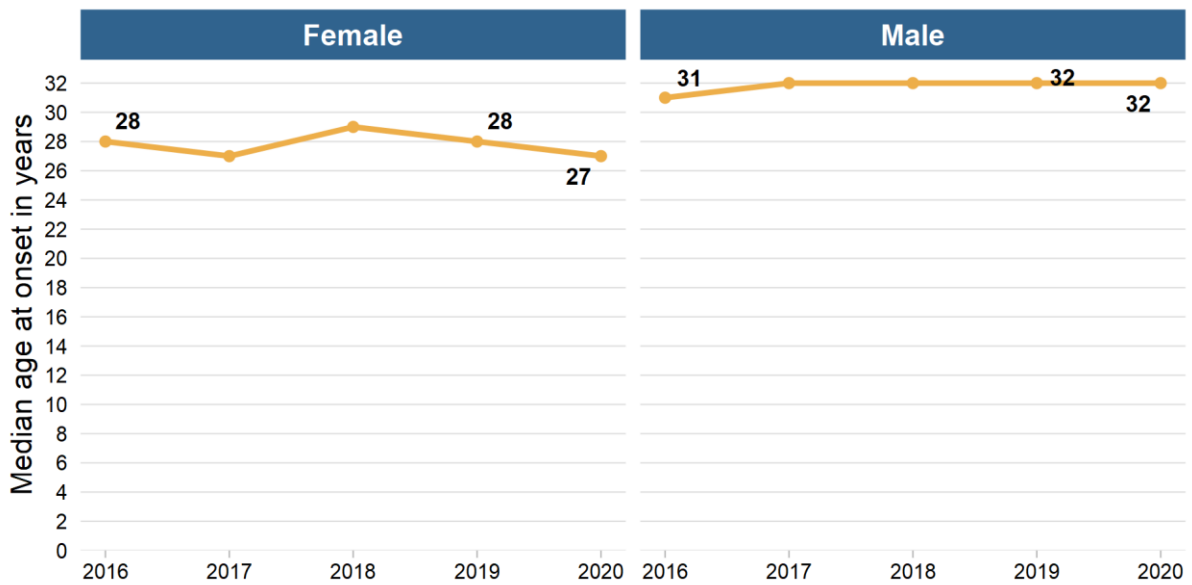
Data source: NCIMS (via SAPHaRI), NSW Health; data extracted 13 May 2021.

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

In 2020:

- In females, the highest absolute numbers of notifications were recorded in 20 to 24-year-olds, followed by 30 to 39-year-olds.
- In males, the highest absolute numbers of notifications were recorded in 30 to 39-year-olds, followed by 25 to 29-year-olds.

Figure 5: Median age of gonorrhoea notifications by sex, NSW, 1 January 2016 to 31 December 2020



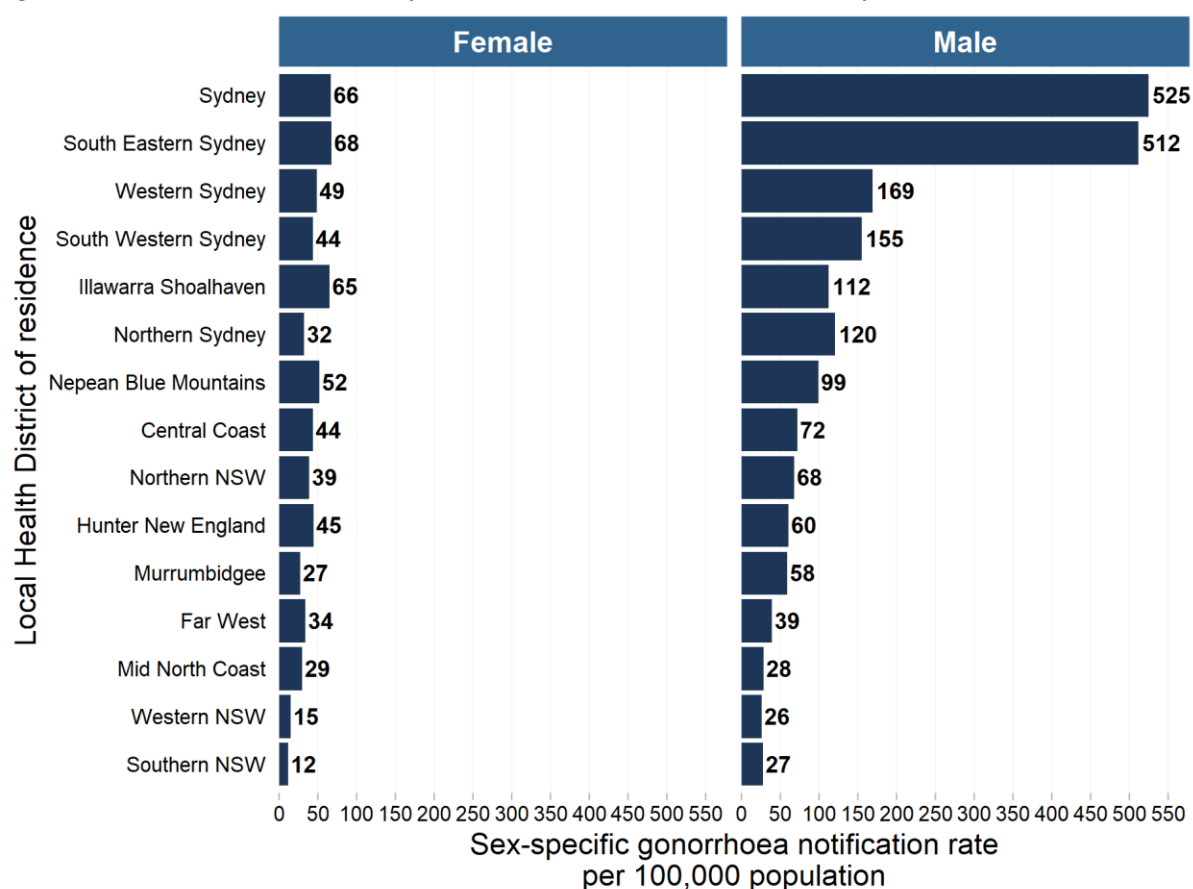
Data source: NCIMS (via SAPHaRI), NSW Health; data extracted 13 May 2021.

Note: Excludes non-NSW residents and persons whose age and sex were not reported.

In 2020:

- The median age of females notified with gonorrhoea was 27 years, which is higher compared to the median age of 28 years recorded in 2019. The median age for females has remained within the 27 to 29-year age range since 2016.
- The median age of males notified with gonorrhoea was 32 years, which has remained consistent since 2017. The median age for males has increased by one year since 2016. The median age of males remains older than that of females.

Figure 6: Gonorrhoea notification rates by sex and Local Health District, NSW, 1 January 2020 to 31 December 2020



Data source: NCIMS, NSW Health; data extracted 13 May 2021.

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

In 2020:

- The highest gonorrhoea notification rates continue to be observed in the Sydney and South Eastern Sydney Local Health Districts for both males and females.
- Since 2016, gonorrhoea notification rates continued to increase in all but one local health district (Southern NSW). The largest relative increases in gonorrhoea notification rates from 2016 levels occurred in the Illawarra Shoalhaven (193% increase from 2016), Murrumbidgee (150% increase), and Mid North Coast (140% increase) Local Health Districts.
- Overall, between 2019 and 2020 gonorrhoea notification rates decreased in all local health districts, apart from Illawarra Shoalhaven (20% increase from 2019) and Far West (10% increase) Local Health Districts.
- Increases in male gonorrhoea notification rates from 2019 levels were observed in the Illawarra Shoalhaven (16.5% increase from 2019) and Murrumbidgee Local Health Districts (9.5% increase from 2019). Male gonorrhoea notification rates decreased between 2019 and 2020 in all other local health districts.

- Increases in female gonorrhoea notification rates from 2019 levels were observed in the Mid North Coast (46% increase from 2019), Far West (25% increase), and Illawarra Shoalhaven (23% increase) Local Health Districts. Female gonorrhoea notification rates decreased between 2019 and 2020 in all other local health districts.
- It should be noted that MSM, who are at increased risk of acquiring STIs, are unequally distributed among local health districts. Continuing high notification rates among males in the Sydney and South Eastern Sydney Local Health Districts in particular reflect large concentrations of MSM in these areas. These populations also have a high uptake of pre-exposure prophylaxis (PrEP) for HIV.² Persons on PrEP are regularly tested for STIs.
- See **Appendix D** Table 8 for a full overview of notification rates by sex and year for each local health district.

Table 1: Number of gonorrhoea infections by anatomical site, NSW, 1 January 2020 to 31 December 2020

| Site of infection | Number of infections | | |
|---|----------------------|-------|---------|
| | Total* | Males | Females |
| Genitourinary tract (GU) only | 4,744 | 3,216 | 1,507 |
| Throat only | 1,735 | 1,524 | 201 |
| Rectum only | 1,479 | 1,444 | 22 |
| Rectum and throat | 748 | 731 | 13 |
| GU and rectum | 273 | 255 | 16 |
| GU and throat | 241 | 164 | 77 |
| GU and rectum and throat | 247 | 225 | 21 |
| Other (joints/conjunctiva/nasopharynx) only | 34 | 26 | 8 |
| Other (joints/conjunctiva/nasopharynx) and either of GU/throat/rectum | 11 | 10 | 1 |

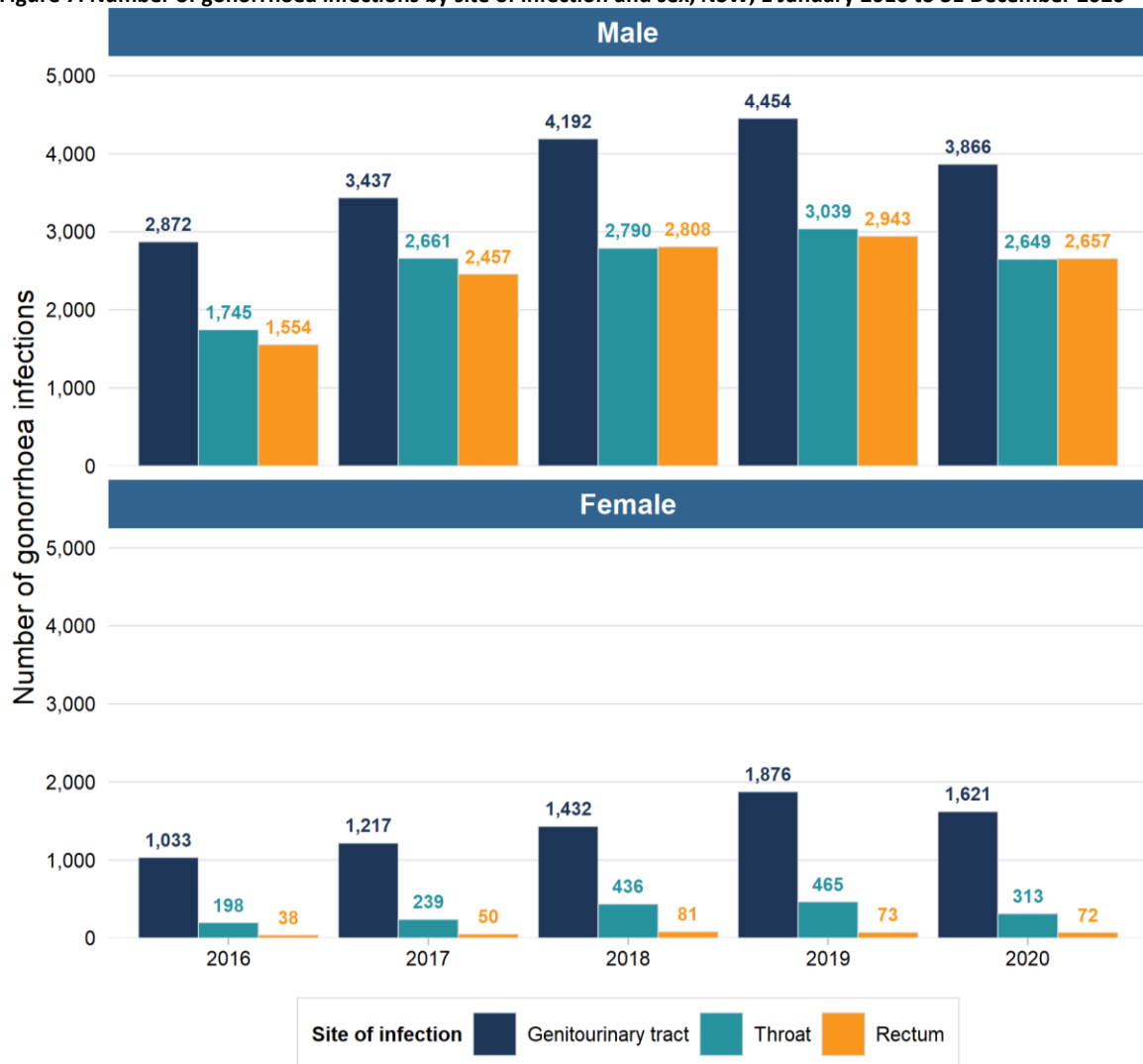
Data source: NCIMS, NSW Health; data extracted 13 May 2021.

Note: Excludes non-NSW residents.

*The total includes transgender people and people whose gender was not stated/ inadequately described.

² Grulich AE, Guy R, Amin J, Jin F, Selvey C, Holden J, Schmidt HM, Zablotska I, Price K, Whittaker B, Chant K. Population-level effectiveness of rapid, targeted, high-coverage roll-out of HIV pre-exposure prophylaxis in men who have sex with men: the EPIC-NSW prospective cohort study. *The Lancet HIV*. 2018;5(11):e629-37.

Figure 7: Number of gonorrhoea infections by site of infection and sex, NSW, 1 January 2016 to 31 December 2020



Data source: NCIMS, NSW Health; data extracted 13 May 2020.

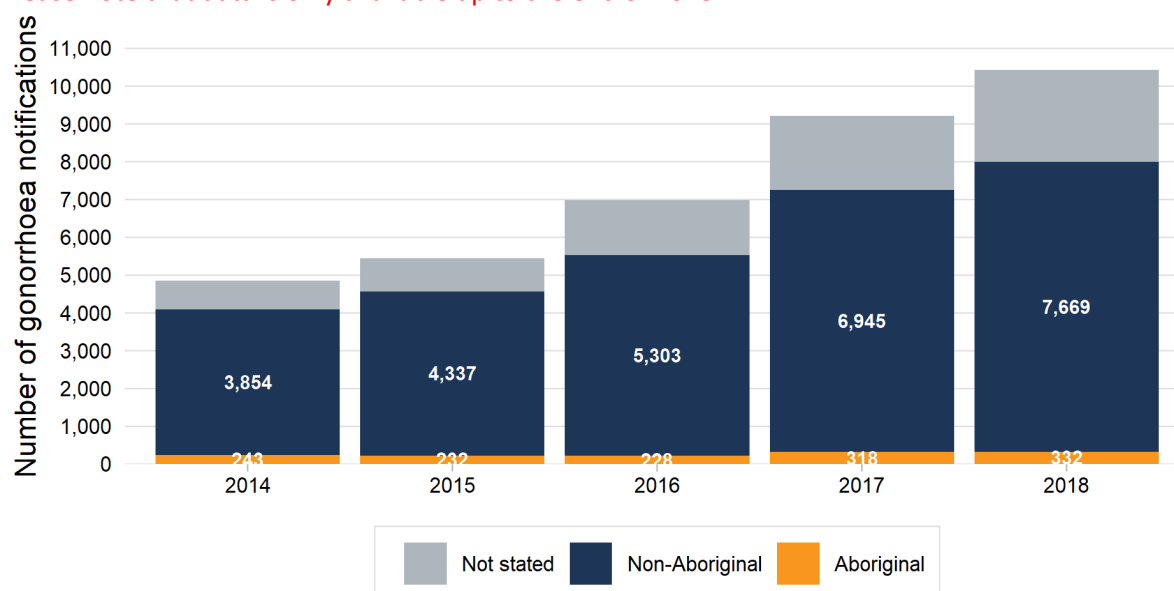
Note: Excludes non-NSW residents and 'other' site of infection or missing/unknown site of infection. The number of infections may exceed number of notifications due to infection at multiple sites. Excludes persons reported as transgender and persons whose gender was not reported.

- Among male gonorrhoea infections with anatomic sites recorded, the largest relative increase over the past five years has been in the number of rectal infections (increased by 71% between 2016 and 2020). The number of genitourinary and throat infections increased by 35% and 52%, respectively.
- The notification rate of male genitourinary gonorrhoea may be used as a broad indicator of gonorrhoea transmission, as these infections are usually symptomatic and therefore most likely to be diagnosed. Because infections are usually asymptomatic, trends in the rectal or throat notification rates likely reflect screening trends, as well as disease transmission.
- Prior to 2020, the number of male genitourinary infections had steadily increased annually with relatively smaller increases in rectal and throat infections, suggesting that transmission had increased in males, whilst screening was continuing at a high level.

- In females, up to 80% of genitourinary and most rectal and throat infections are asymptomatic, meaning that many infections may be undiagnosed.
- Gonorrhoea infections among women most likely reflect screening trends, as well as disease transmission. Between 2016 and 2020, the largest relative increase for females was observed for rectal infections (increased 89.5%). However, the absolute number of rectal infections remains small compared to genitourinary infections, which increased by 57%.

1.2 Gonorrhoea notifications among Aboriginal people

Figure 8: Number of gonorrhoea notifications by Aboriginal status, NSW, 1 January 2014 to 31 December 2018
Please note that data is only available up to the end of 2018.



Data source: Communicable Diseases Register, NSW Ministry of Health (via SAPHaRI); data extracted 13 May 2020. At time of report, data available until 2018.^{3,4}

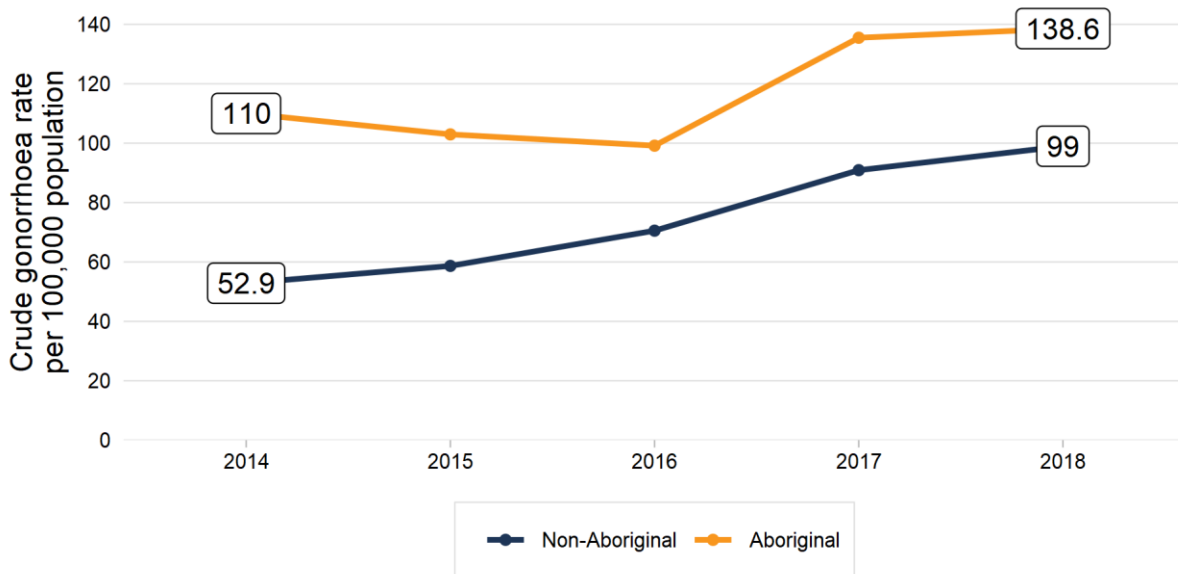
In 2018:

- There were 10,426 notifications for gonorrhoea recorded in the Communicable Diseases Register (CDR). Of these, 332 (3.2%) were among Aboriginal people, 7,669 (73.6%) were among non-Aboriginal people and Aboriginal status was not known for 2,425 (23.3%) people. Of those whose Aboriginal status was not known in 2018, 92% were living in metropolitan Sydney.
- Aboriginal status completeness was higher in 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.

³ Work is currently underway to update the data contained in the Communicable Diseases Register and this will be published in future reports

⁴ See **Appendix B: Table 6** for details about methodology

Figure 9: Gonorrhoea notification rate by Aboriginal status, NSW, 1 January 2014 to 31 December 2018
Please note that data is only available up to the end of 2018.



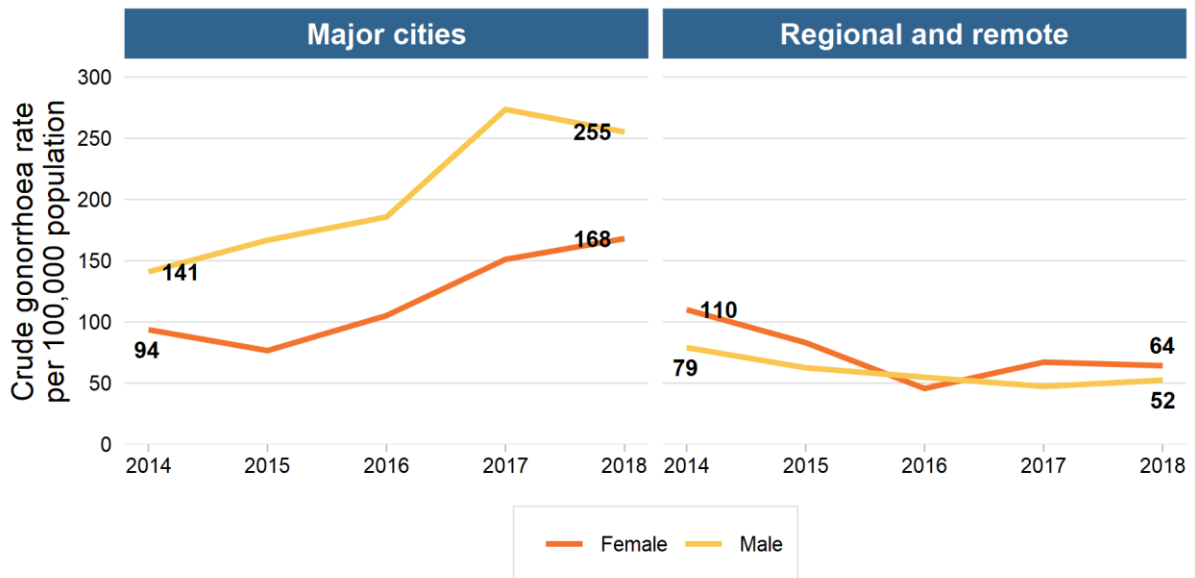
Data source: Communicable Diseases Register, NSW Ministry of Health, and ABS (via SAPHaRI); data extracted 13 May 2020. At time of report, data available until 2018.^{5,6}

Note: Excludes records where Aboriginal status was not known; rates were not age standardised due to small numbers within multiple age groups. 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 9) and are likely to be an underestimation.

- Notification rates of gonorrhoea increased among both Aboriginal and non-Aboriginal people between 2016 and 2018. Since 2014, gonorrhoea notification rates among Aboriginal people have increased by 26% and rates among non-Aboriginal people have increased by 87%.
- Among those whose Aboriginal status was known, the gonorrhoea notification rate was 40% higher among Aboriginal people than non-Aboriginal people (138.6 per 100,000 vs 99.0 per 100,000) in 2018.

Figure 10: Crude gonorrhoea notification rates among Aboriginal people, by gender and remoteness area, NSW, 1 January 2014 to 31 December 2018

Please note that data is only available up to the end of 2018.



Data sources: Communicable Diseases Register, NSW Ministry of Health (via SAPHaRI), data extracted 13 May 2020. At time of report, data available until 2018.^{5,6}

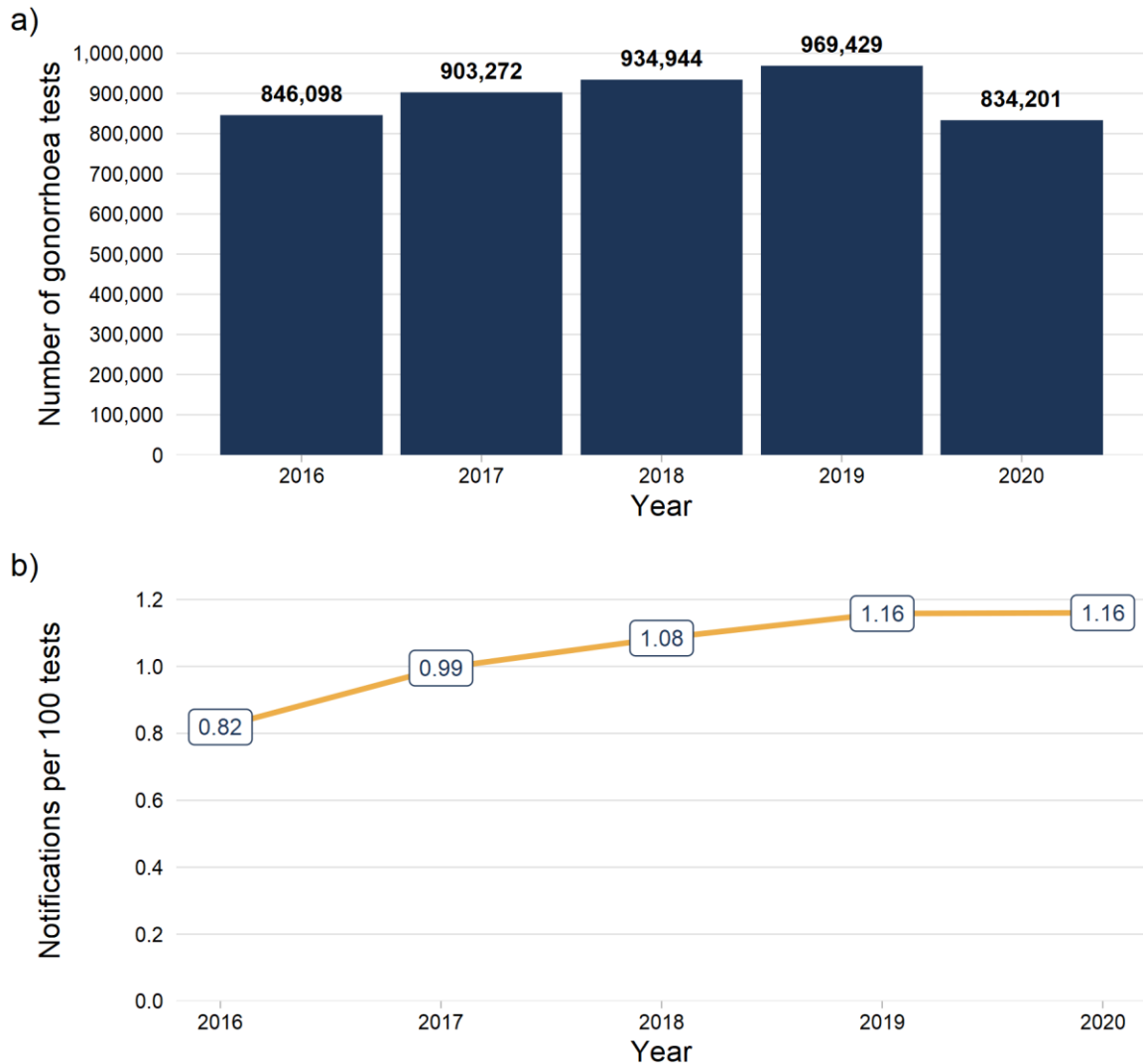
Note: Transgender persons not included. Population data are derived from ABS projections (3238.0) and 2011 census estimates and assumes proportions by remoteness and gender have remained constant since 2011.

In 2018:

- 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 regional and remote areas has dropped 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 9).

1.3 Gonorrhoea testing

Figure 11: Number of gonorrhoea tests and notification to test⁶ ratio, NSW, 1 January 2016 to 31 December 2020



Data source: NCIMS and NSW Denominator Data Project, NSW Health; data extracted 13 May 2020.

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

In 2020:

- The number of gonorrhoea tests (NAAT and culture) performed in NSW decreased as compared to 2019. Prior to 2020, the number of tests had continued to increase annually.
- A total of 834,201 tests for gonorrhoea were performed across 15 laboratories in NSW, a 14% decrease compared to 2019 (969,429), and a decrease of 1.5% compared to 2016 (846,098).
- There were 1.16 gonorrhoea notifications per 100 gonorrhoea tests. This was consistent with 2019. The increase in the ratio over 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.

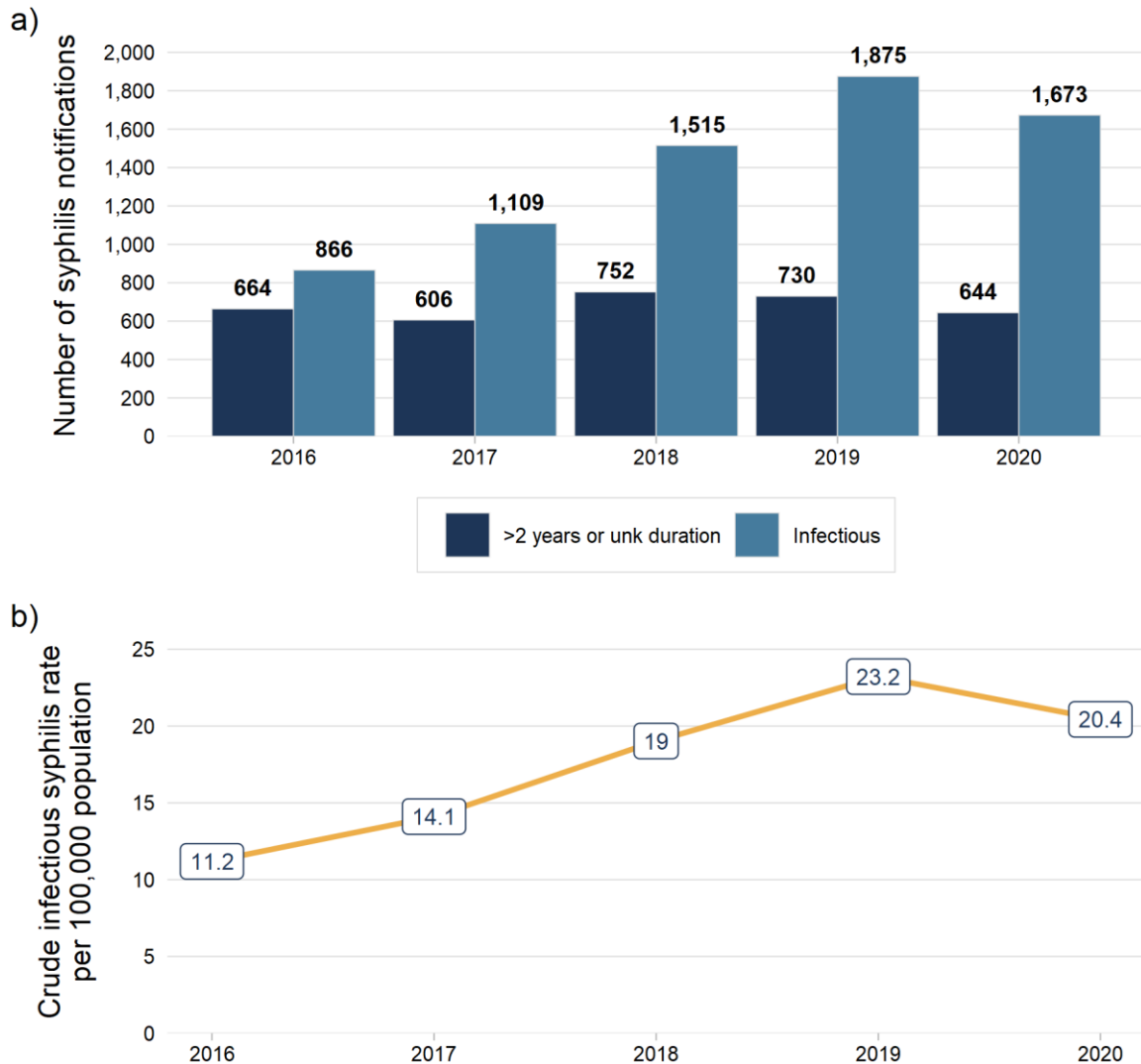
2. Reduce infectious syphilis infections

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 12: Number and crude rate of syphilis notifications, NSW, 1 January 2016 to 31 December 2020

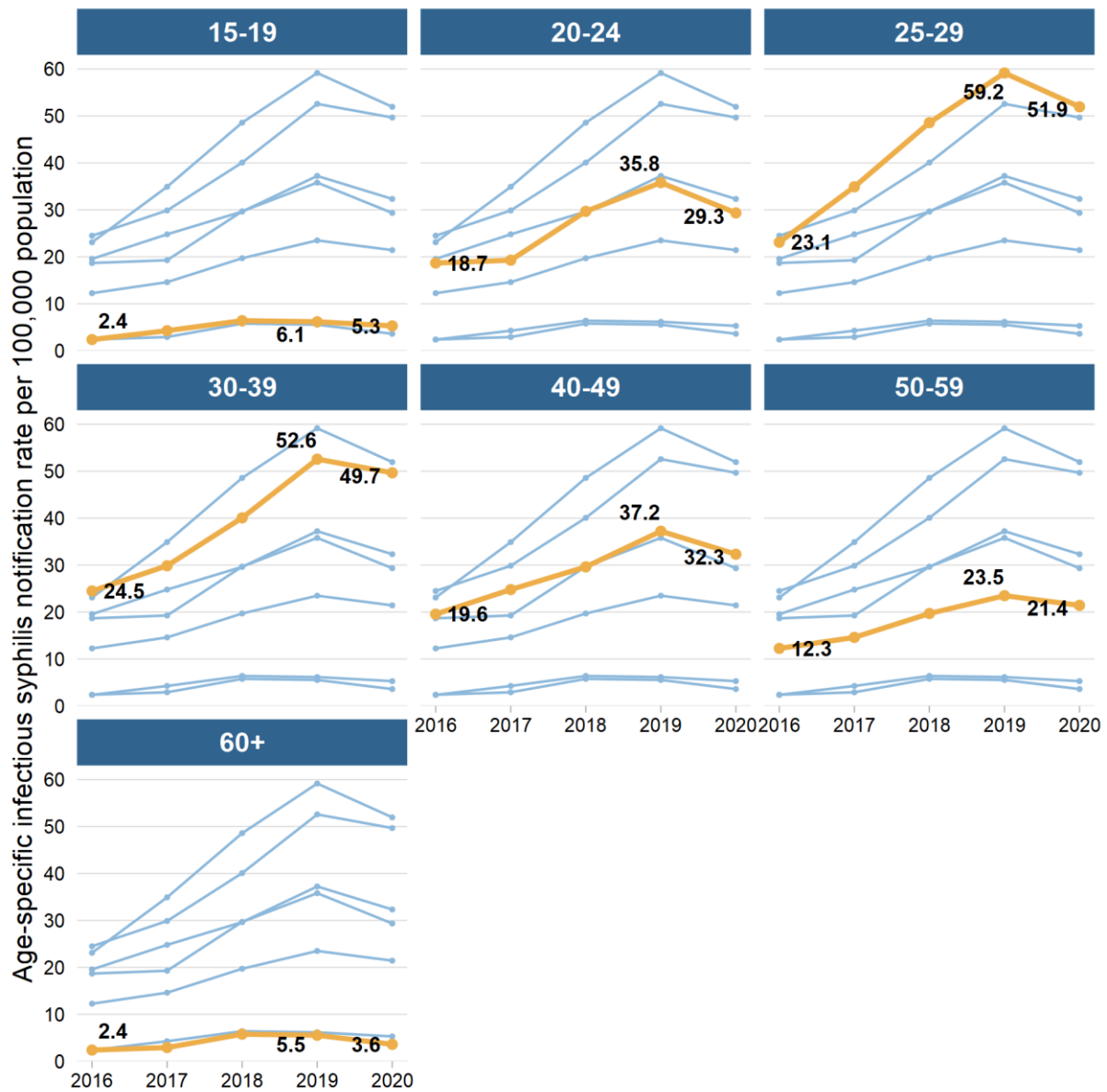


Data source: NCIMS and ABS population estimates (via SAPHaRI), NSW Health; data extracted 19 May 2021.

In 2020:

- There were 1,673 infectious syphilis notifications. The infectious syphilis notification rate was 20.4 notifications per 100,000 population, 12% lower than the rate in 2019 (23.2 per 100,000) and 43% higher compared with 2016.
- A small part of the increase in infectious syphilis notifications observed from 2016 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 13: Age specific infectious syphilis notification rates in people aged 15 years and over, NSW, 1 January 2016 to 31 December 2020

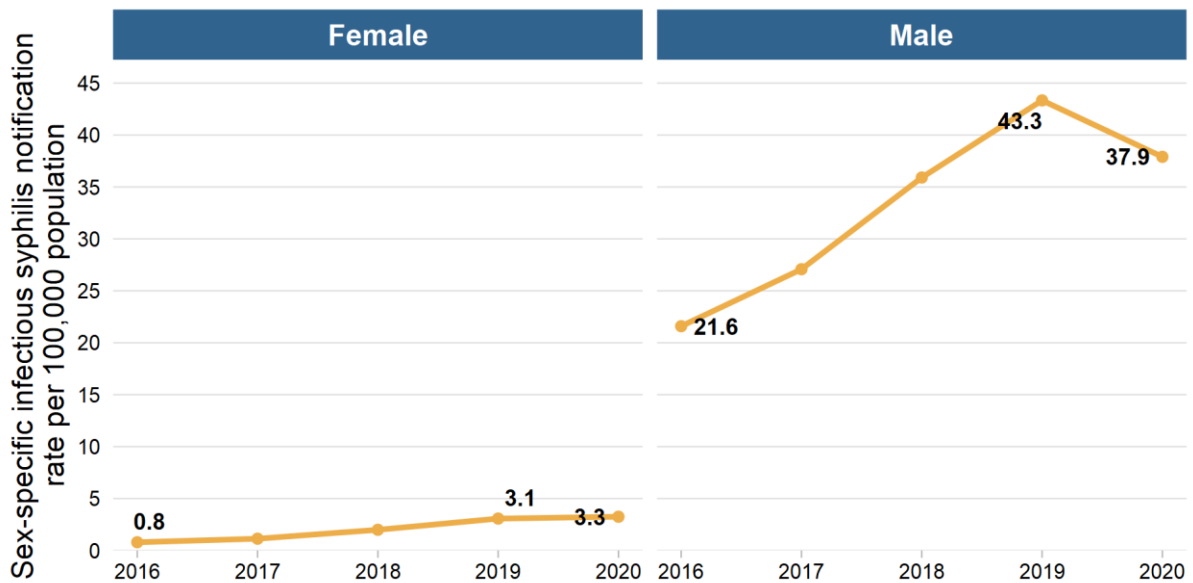


Data source: NCIMS (via SAPHaRI), NSW Health; data extracted 19 May 2021.

In 2020:

- The highest infectious syphilis notification rates occurred in the 25–29 years and 30–39 years age groups (52 and 50 notifications per 100,000 population respectively).
- The notification rate decreased as compared to 2019 in all age groups. The largest relative decreases in the infectious syphilis notification rates were observed in the 60+ years and 20–24 years age groups (35% and 18% decrease, respectively), the smallest relative decreases were observed in the 30–39 years and 50–59 years age groups (5.5% and 9% decrease, respectively).
- Since 2016, the notification rates in the 15–19 years, 25–29 years and 30–39 years age groups have more than doubled.

Figure 14: Sex specific infectious syphilis notification rates, NSW, 1 January 2016 to 31 December 2020



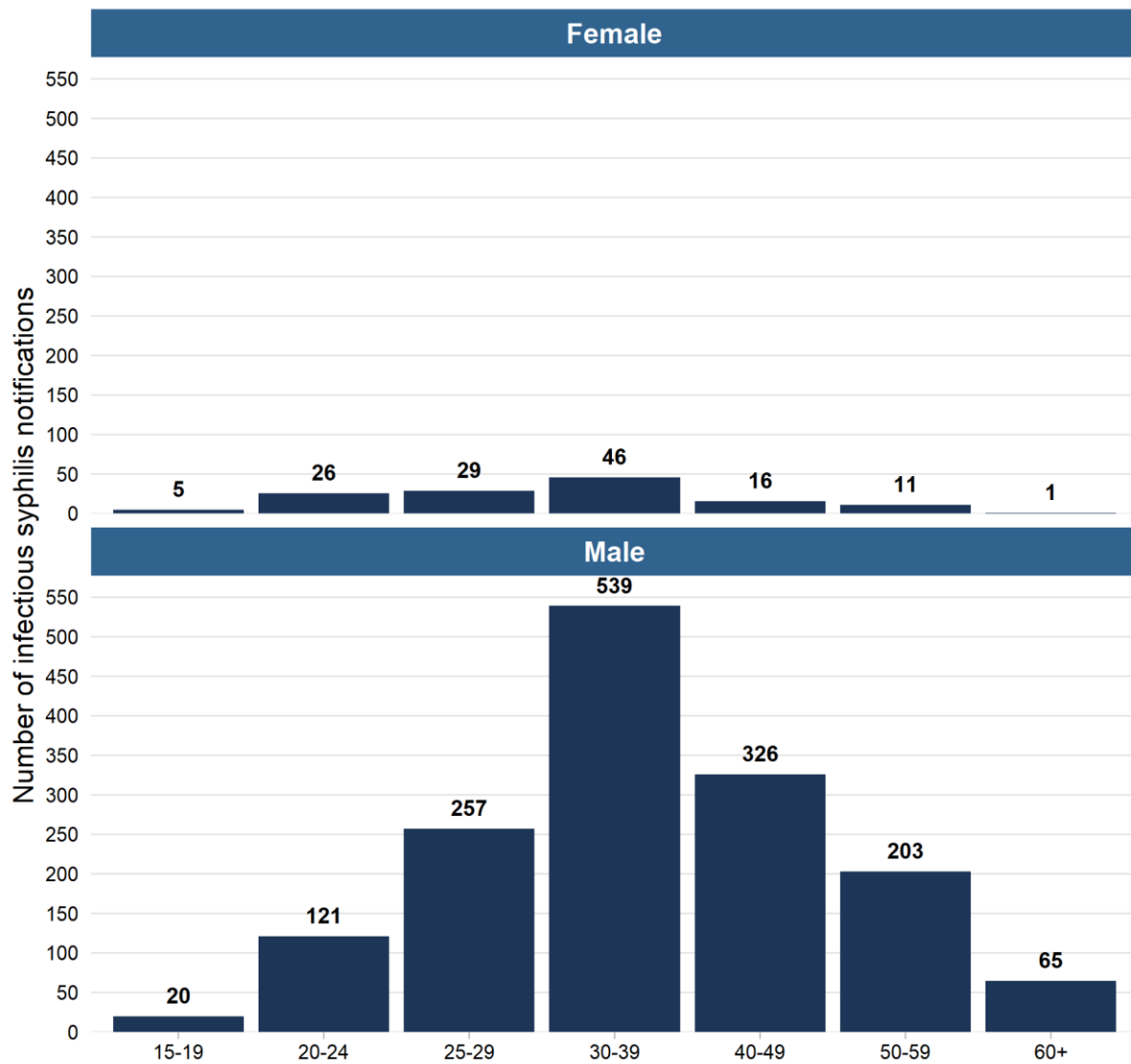
Data source: NCIMS (via SAPHaRI), NSW Health; data extracted 19 May 2021.

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

In 2020:

- Amongst males, there was a 13% decrease in the infectious syphilis notification rate compared with 2019 (43.2 notifications per 100,000 males).
- Amongst females, there was a 5% increase in the infectious syphilis notification rate compared with 2019 (3.1 notifications per 100,000 females). The number of notifications amongst females is small (134 notifications, representing 8% of total 2020 infectious syphilis notifications) but increasing annually. The female infectious syphilis rate in 2020 is more than four times higher than the 2016 rate.

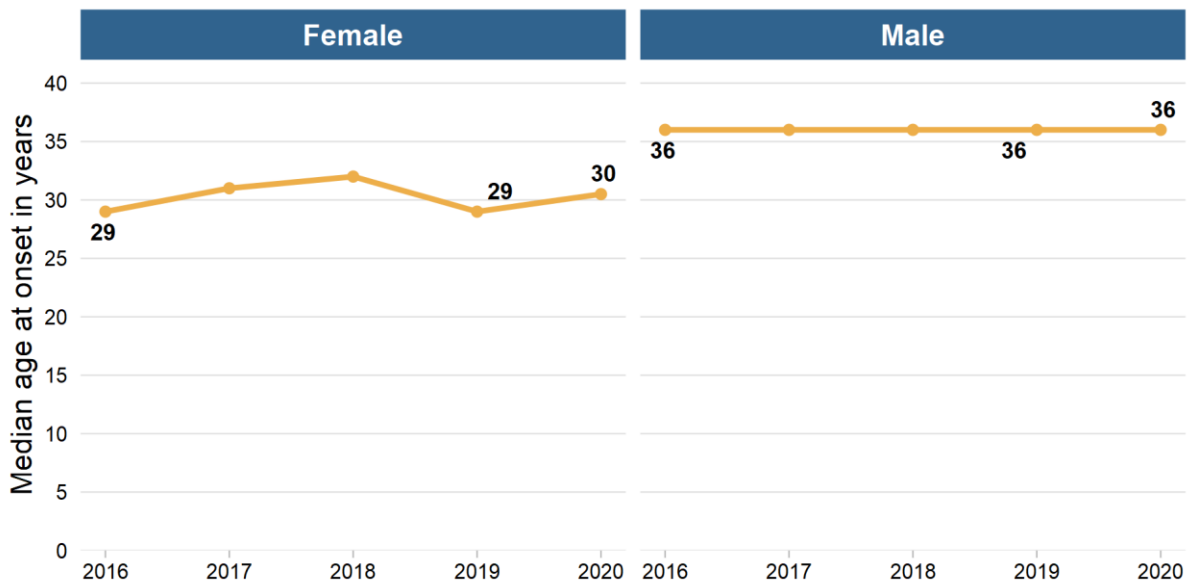
Figure 15: Infectious syphilis notifications by age and sex in people aged 15 years and over, NSW, 1 January 2020 to 31 December 2020



Data source: NCIMS (via SAPHaRI), NSW Health; data extracted 19 May 2021.

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

Figure 16: Median age of infectious syphilis notifications, NSW, 1 January 2016 to 31 December 2020



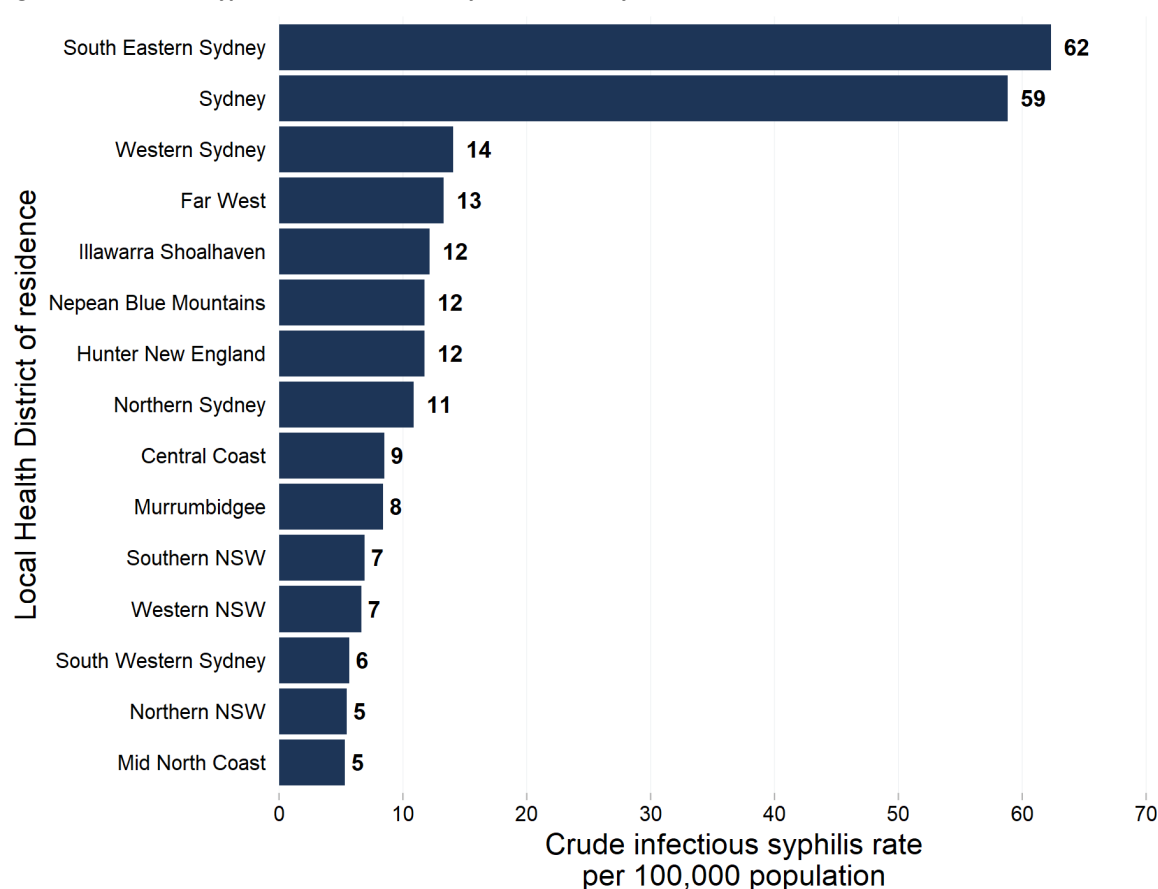
Data source: NCIMS (via SAPHaRI), NSW Health; data extracted 19 May 2021.

Note: Excludes non-NSW residents and persons whose age and sex were not reported.

In 2020:

- There were 1,673 notifications of infectious syphilis. Of these, 1,533 (91.6%) were in males, 134 (8.0%) were in females and four were in people reported as transgender.
- The most commonly notified groups were males aged 30–39 and 40–49 years
- The median age of males notified with infectious syphilis was 36 years, which has been consistent since 2016.
- The median age of females notified with infectious syphilis was 30 years and has ranged between 29 and 30 years since 2016.

Figure 17: Infectious syphilis notification rate by LHD, 1 January 2020 to 31 December 2020



Data source: NCIMS and ABS population estimates (SAPHaRI), NSW Health; data extracted 19 May 2021.

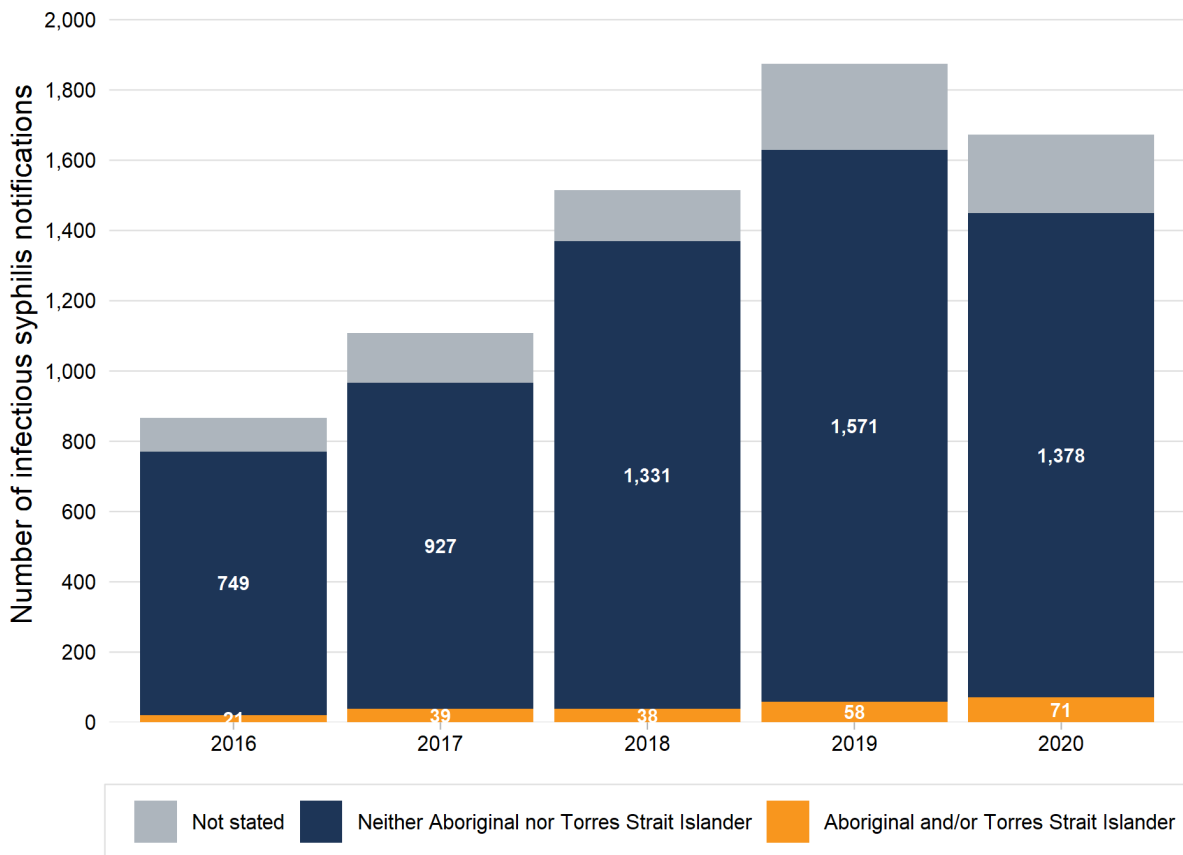
Note: Excludes non-NSW residents, persons whose residential postcode was not known and notifications from Justice Health. For Justice Health notifications, see **Appendix D**.

In 2020:

- The highest infectious syphilis notification rates continued in South Eastern Sydney and Sydney LHDs (62.4 and 59.1 notifications per 100,000 population, respectively). Similar to other STIs, it should be noted that MSM, who are at increased risk of acquiring STIs generally and infectious syphilis in particular, are unequally distributed among local health districts. Continuing high notification rates among males in the Sydney and South Eastern Sydney Local Health Districts in particular reflect large concentrations of MSM in these areas.
- The largest increase in the infectious syphilis notification rates compared with 2019 occurred in the Nepean Blue Mountains, Mid North Coast, and Murrumbidgee LHDs (33%, 19%, and 19% increases, respectively). A large relative increase was also observed in Western NSW LHD (136% increase). However, the rate remains lower than most LHDs. Relatively large decreases were observed in Central Coast, Far West (34%, 33.5%, and 27% decreases, respectively).
- The largest relative increase in the infectious syphilis notification rate over the past five year-period was observed in Mid North Coast, where the notification rate increased more than 11-fold from 0.5 notifications per 100,000 population in 2016 to 5.3 notifications per 100,000 population in 2020.

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

Figure 18: Infectious syphilis notifications by Aboriginality, NSW, 1 January 2016 to 31 December 2020



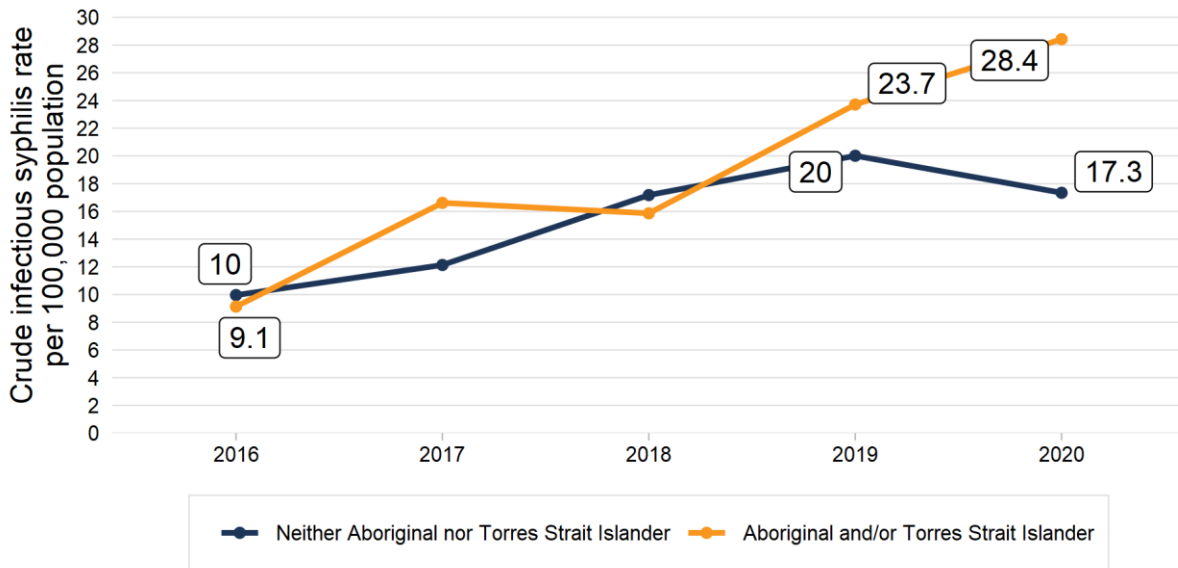
Data source: NCIMS, NSW Health; data extracted 19 May 2021.

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

In 2020:

- Of 1,673 infectious syphilis notifications, 71 (4.2%) were among Aboriginal people, 1,378 (82.4%) were among non-Aboriginal people and Aboriginal status was not known for 224 (13.4%).
- The proportion of infectious syphilis notifications that were among Aboriginal people was higher compared with 2019 (3.1%).

Figure 19: Infectious syphilis notification rate by Aboriginality, NSW, 1 January 2016 to 31 December 2020



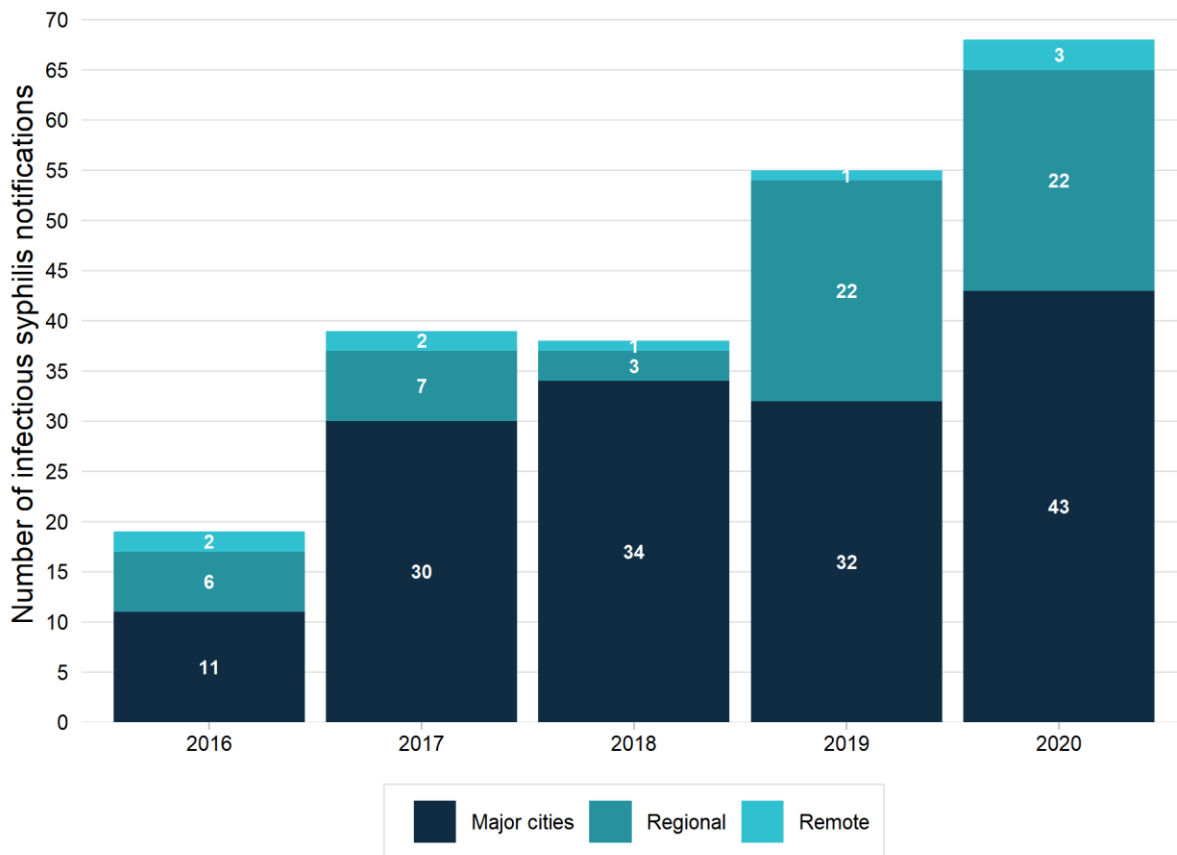
Data source: NCIMS and ABS (via SAPHaRI, NSW Health); data extracted 19 May 2021.

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

In 2020:

- Amongst those whose Aboriginal status was known, the infectious syphilis notification rate among Aboriginal people was 28.4 per 100,000 in 2020, 1.6 times higher than the rate among non-Aboriginal people (17.3 per 100,000).

Figure 20: Number of Infectious syphilis notifications in the Aboriginal population, by remoteness area, NSW, 1 January 2016 to 31 December 2020



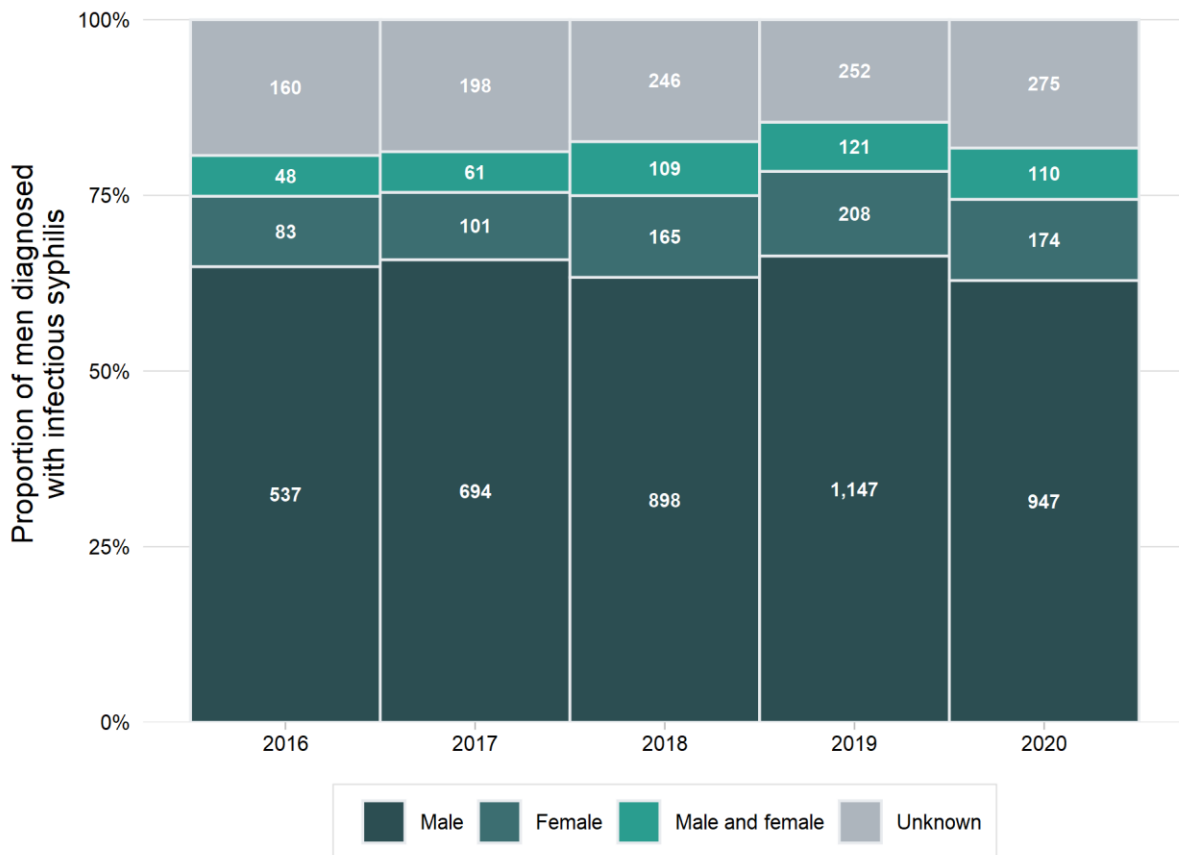
Data sources: NCIMS, NSW Health; data extracted 19 May 2021. Excludes persons whose remoteness area was not known. Population data are derived from ABS projections (3238.0) and 2011 census estimates and assumes proportions by remoteness have remained constant since 2011.

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 2021, 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](#).

In 2020:

- Of the 68 infectious syphilis notifications among Aboriginal people with remoteness area known, 43 (63%) were residing in major cities, 22 (32%) were residing in regional areas, and three were residing in remote 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.

Figure 21: Reported sexual exposure of men diagnosed with infectious syphilis, NSW, 1 January 2016 to 31 December 2020



Data source: NCIMS, NSW Health; data extracted 19 May 2021.

In 2020:

- The reported sexual exposure of men diagnosed with infectious syphilis continued to be predominantly (62.8%) male-to-male sex. Since 2016, the proportion reporting male-to-male sex has ranged between 62.8% to 66.4%.
- The proportion (7.3%) of men diagnosed with infectious syphilis that reported male and female sexual exposure was higher compared to 2019 (7.0%) and higher than 2016 (5.8%).
- The proportion (11.5%) of men diagnosed with infectious syphilis who reported female exposure only was also lower than 2019 (12.0%), but higher compared to 2016 (10.0%).

2.2 Congenital syphilis notifications

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

In the last five years there have been seven cases of congenital syphilis among NSW residents. Four cases (57%) occurred in 2020. Prior to 2020, the annual number of cases ranged between 0–1. Among the seven cases since 2016, six occurred in metropolitan Sydney (86%). One congenital syphilis case was in the Aboriginal population in NSW from 2016 to 2020.

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.

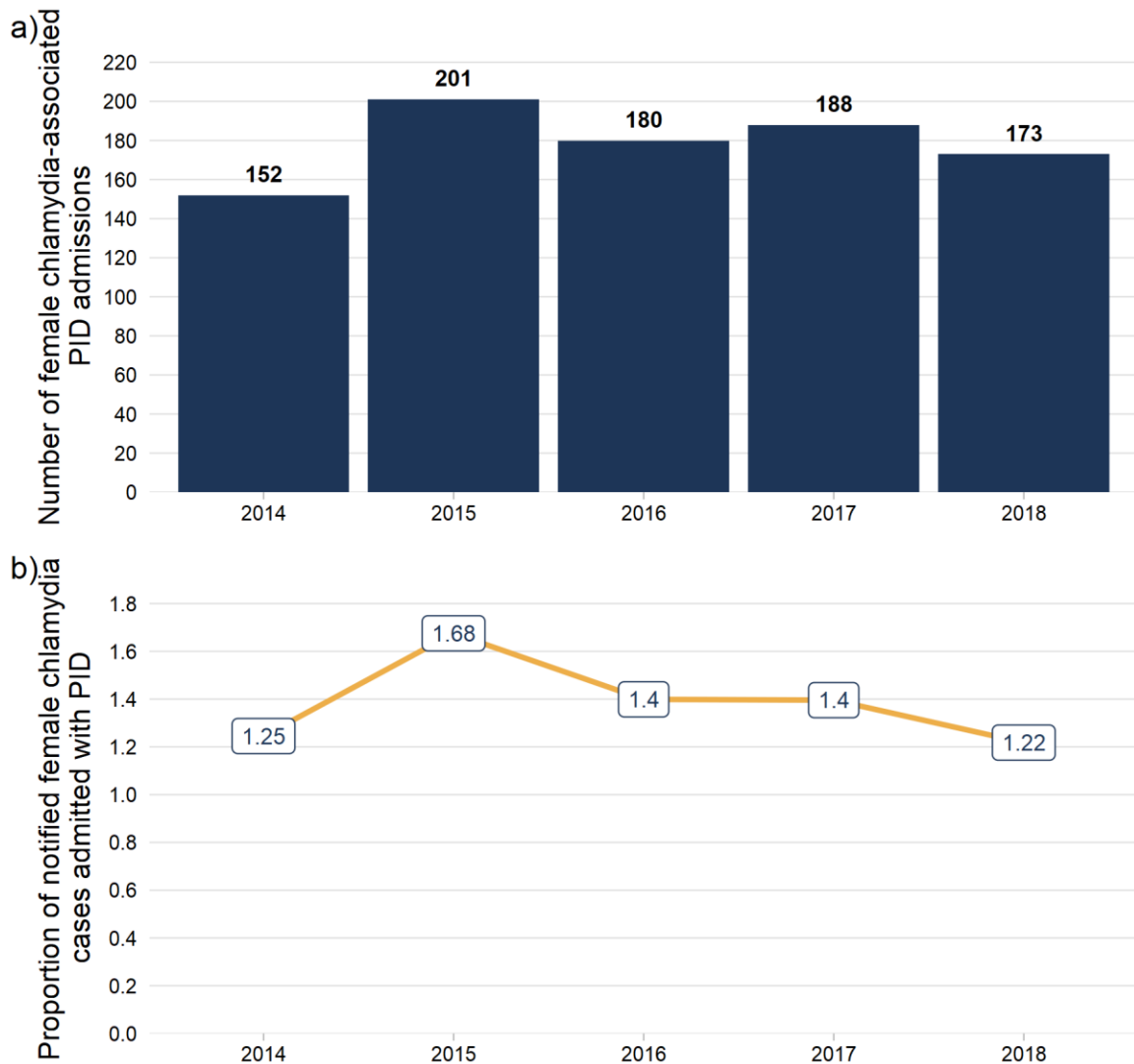
Chlamydia is a notifiable disease under the NSW *Public Health Act 2010*. A confirmed case requires isolation of *Chlamydia trachomatis* from culture or detection by nucleic acid testing (NAAT) or antigen. Only confirmed cases of chlamydia are counted when reporting chlamydia notification data. Patient 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 22: Number and proportion of women notified with chlamydia who are admitted with PID within 12 months of diagnosis, NSW, 1 January 2014 to 31 December 2018

Please note that data is only available up to the end of 2018.

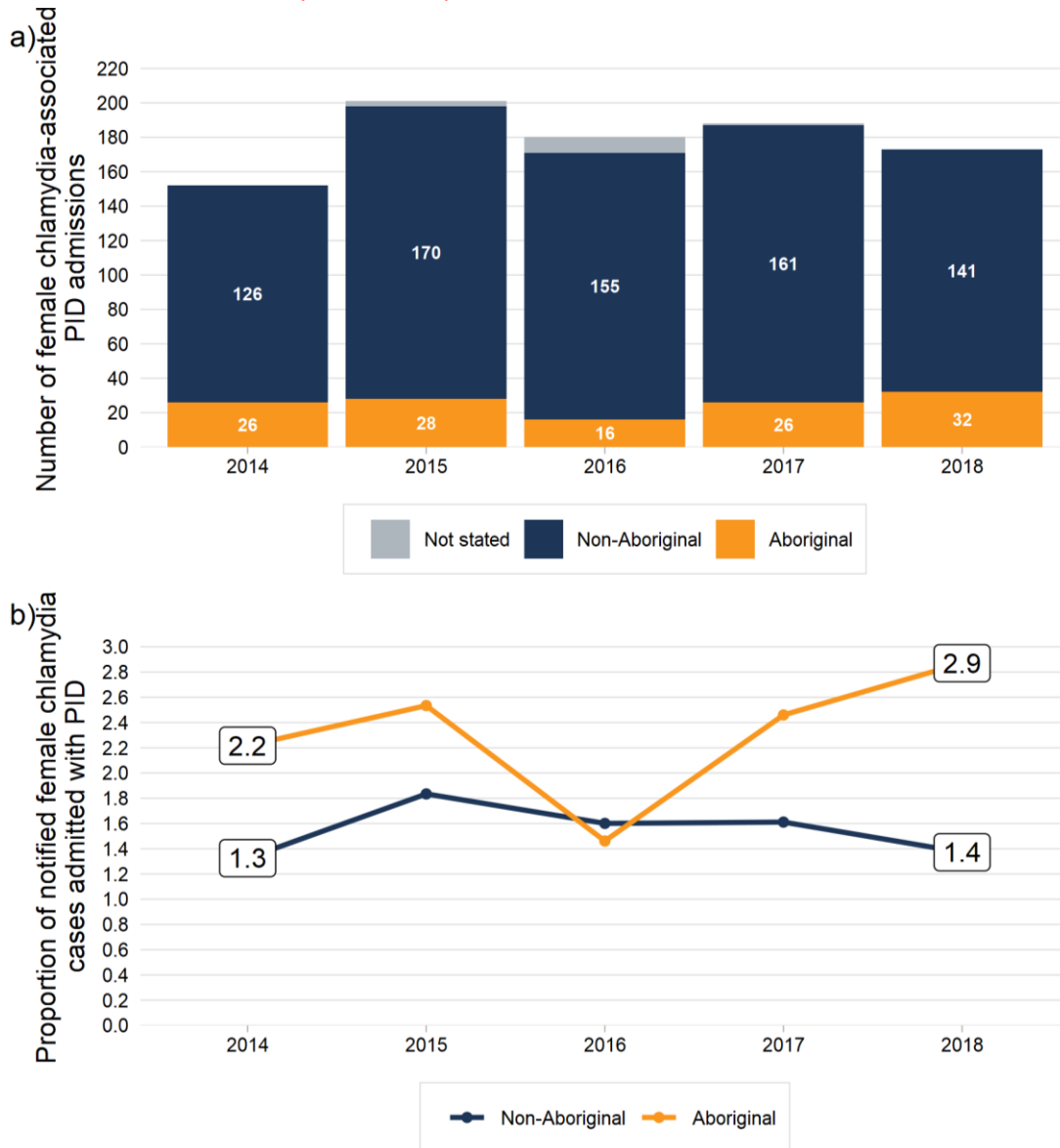


Data source: Communicable Diseases Register, NSW Ministry of Health (via SAPHaRI). Data extracted 18 May 2021.

- The number of women notified with chlamydia who were admitted to hospital with PID within 12 months varied over time from 2014 to 2018, ranging from 152-201 admissions.
- The proportion of all women notified with chlamydia who were admitted to hospital also varied over time from 2014 to 2017, ranging from 1.2–1.7%.
- Since 2015 there has been a generally declining trend in both the number of PID admissions and the proportion of women with chlamydia admitted with PID has been observed.

Figure 23: Number and proportion of women notified with chlamydia who are admitted with PID within 12 months of diagnosis, by Aboriginality, NSW, 1 January 2014 to 31 December 2018

Please note that data is only available up to the end of 2018.



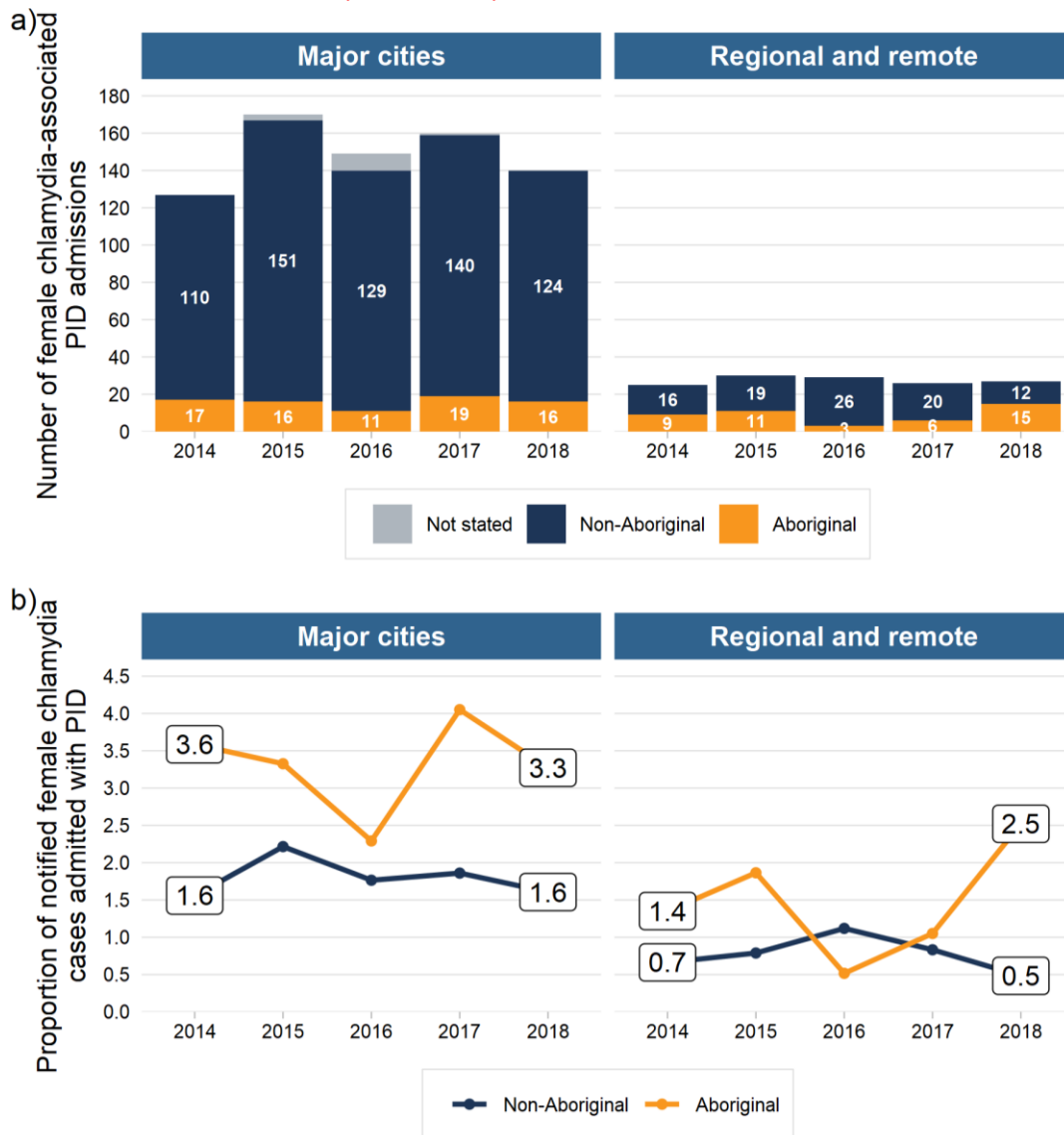
Data source: Communicable Diseases Register, NSW Ministry of Health (via SAPHaRI). Data extracted 18 May 2021.

Note: Excludes re-notifications within 12 months. As the number of PID admissions among Aboriginal women notified with chlamydia is small, yearly variation should be interpreted with caution.

- The number of Aboriginal women notified with chlamydia who were admitted to hospital with PID within 12 months varied over time from 2014 to 2018, ranging from 16–32 admissions per year.
- The proportion of Aboriginal women notified with chlamydia who were admitted to hospital also varied over time from 2014 to 2018, ranging from 1.5 – 2.9% each year, which is 1.5 to 2.1 times higher compared to non-Aboriginal women, except in 2016 where it was lower than non-Aboriginal women.

Figure 24: 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 2014 to 31 December 2018

Please note that data is only available up to the end of 2018.



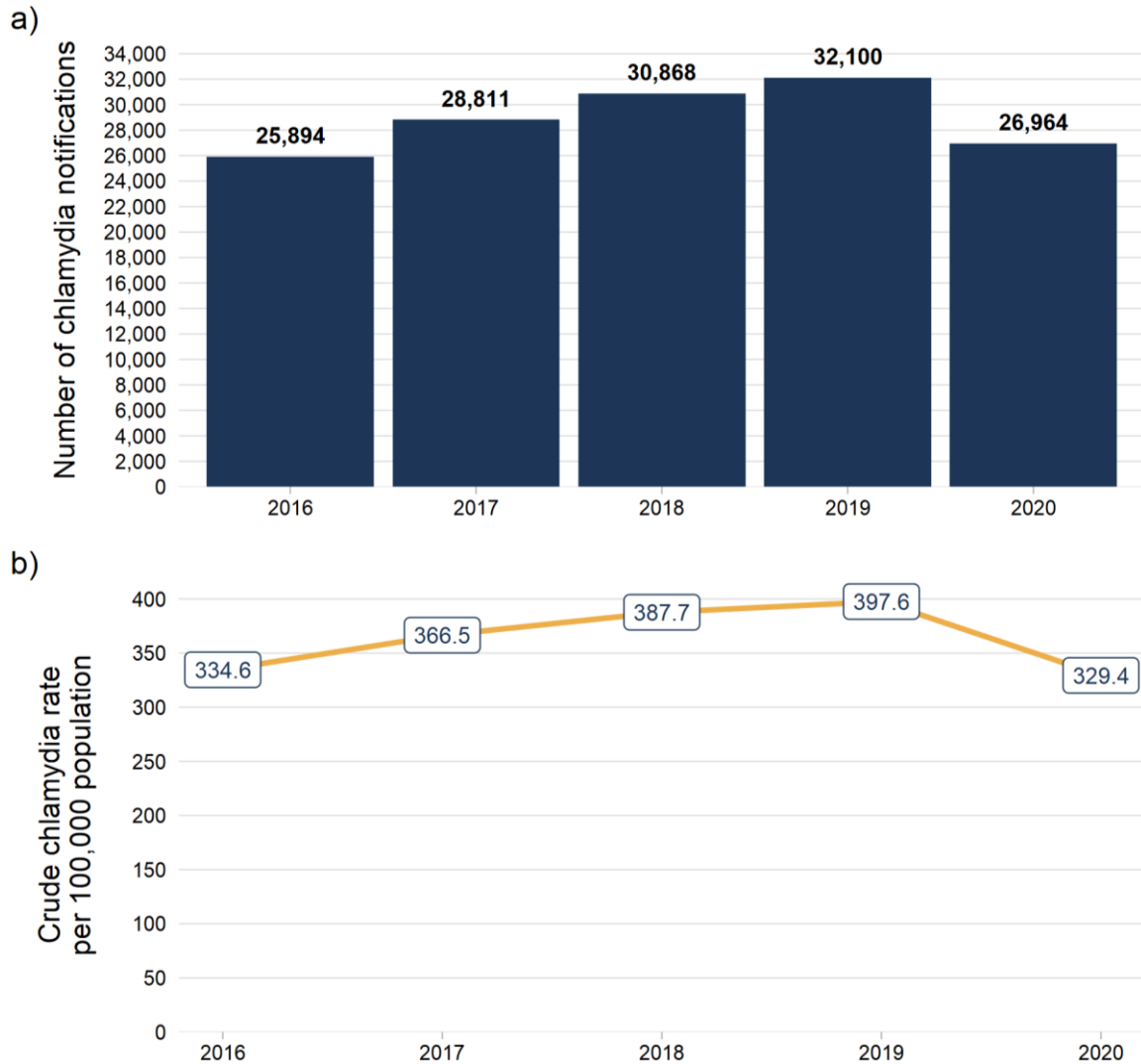
Data source: Communicable Diseases Register, NSW Ministry of Health (via SAPHaRI). Data extracted 18 May 2021.

Note: Excludes re-notifications within 12 months and chlamydia cases where residential postcode or Aboriginal status was unknown. As the number of PID admissions among Aboriginal women notified with chlamydia is small, yearly variation should be interpreted with caution.

- The number of Aboriginal women from major cities who were notified with chlamydia and admitted to hospital with PID within 12 months varied over time from 2014 to 2018, ranging from 11–19 admissions per year. The number of Aboriginal women from regional and remote areas ranged between 3–15 admissions per year.
- The proportion of Aboriginal women notified with chlamydia who were admitted to hospital with PID also varied over time from 2014 to 2018, ranging from 2.3% to 4.0% in major cities and 0.5% to 2.5% in regional and remote areas. This was 1.3 to 2.3 times higher compared to non-Aboriginal women in major cities and 1.3 to 5.2 times higher compared to non-Aboriginal women in regional and remotes areas, except for 2016.

3.2 Chlamydia notifications

Figure 25: Number and crude rate of chlamydia notifications, NSW, 1 January 2016 to 31 December 2020

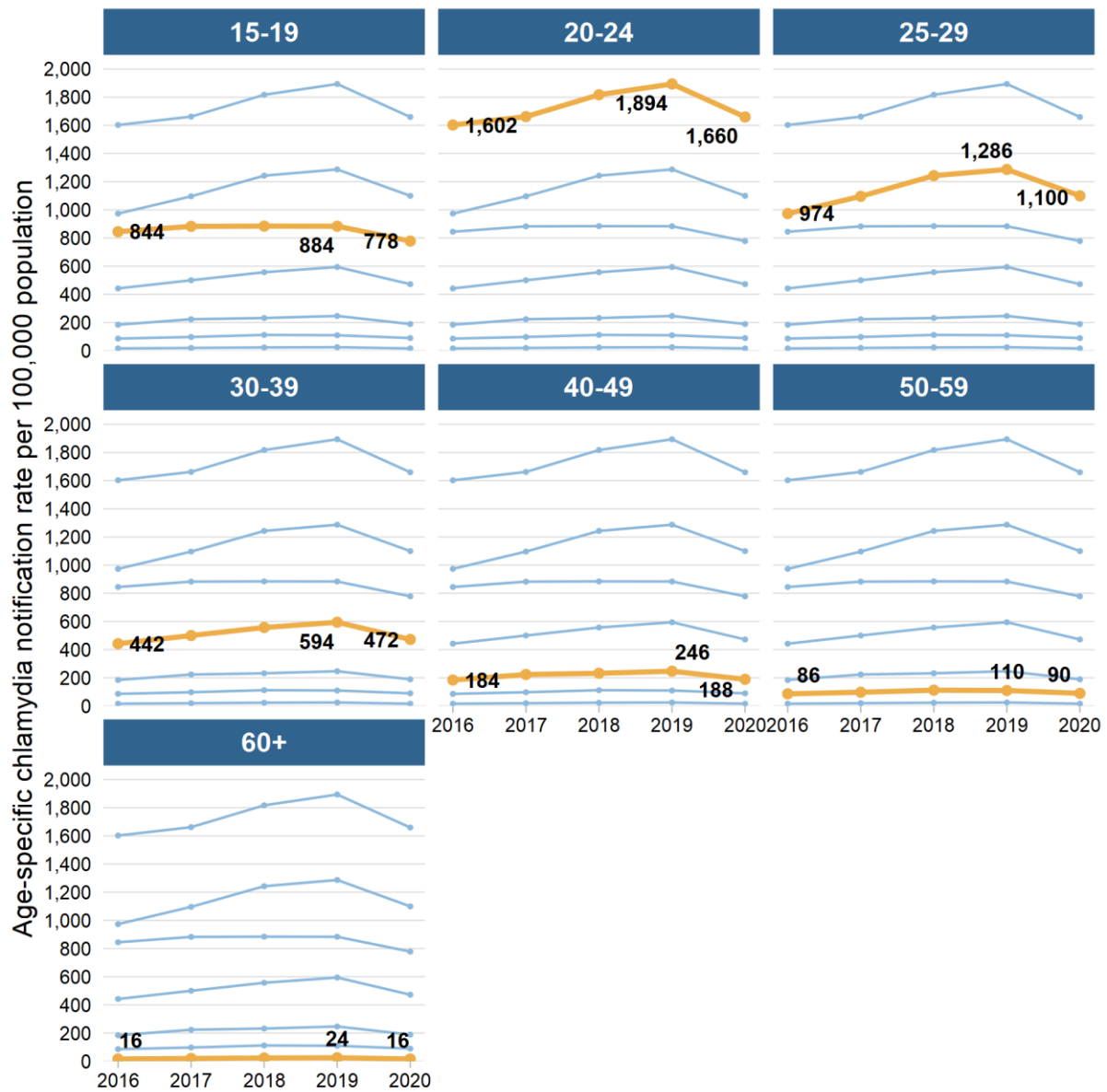


Data source: NCRES and ABS (via SAPHaRI), NSW Health; data extracted 14 May 2021.

In 2020:

- The chlamydia notification rate was 329 notifications per 100,000 population, 17% lower compared to 2019 (398 per 100,000 population), and 1.5% lower compared with 2016 (335 per 100,000 population).

Figure 26: Age-specific chlamydia notification rates in people aged 15 years and over, NSW, 1 January 2016 to 31 December 2020

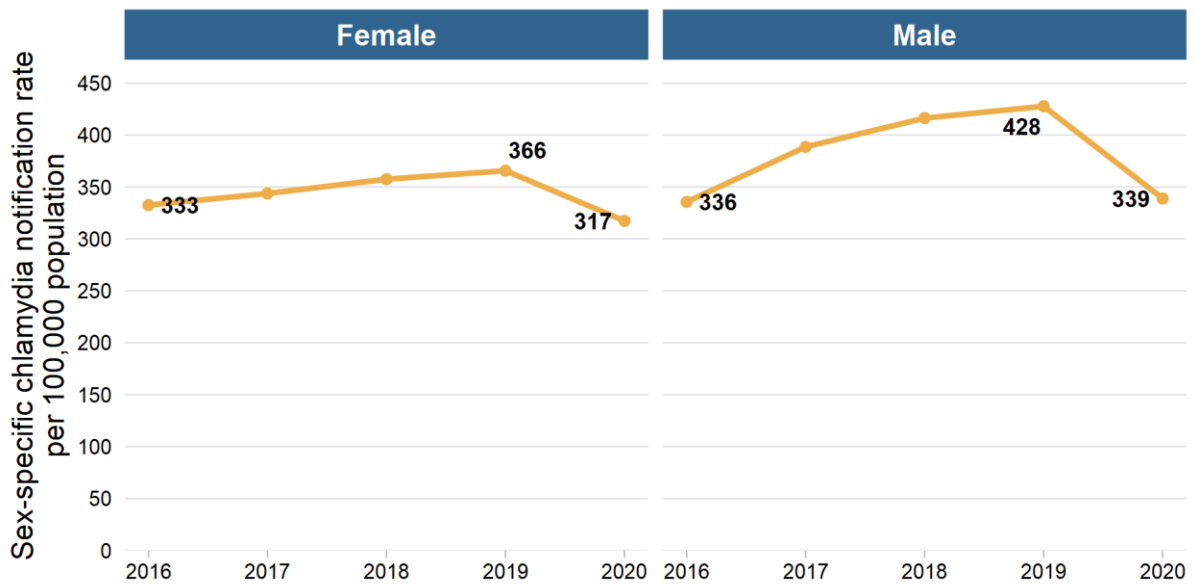


Data source: NCRIS (via SAPHaRI), NSW Health; data extracted 14 May 2021.

In 2020:

- Chlamydia notification rates decreased among all age groups (15 years and over) compared with 2019.
- The age-specific rates for the 25-29 years, 30-39 years, and 20-24 years age groups increased by 13%, 7% and 3.5% respectively compared to the rates in 2016. An increase was also observed in the 50-59 age group (4%), although actual numbers are smaller.

Figure 27: Sex specific chlamydia notification rate, NSW, 1 January 2016 to 31 December 2020



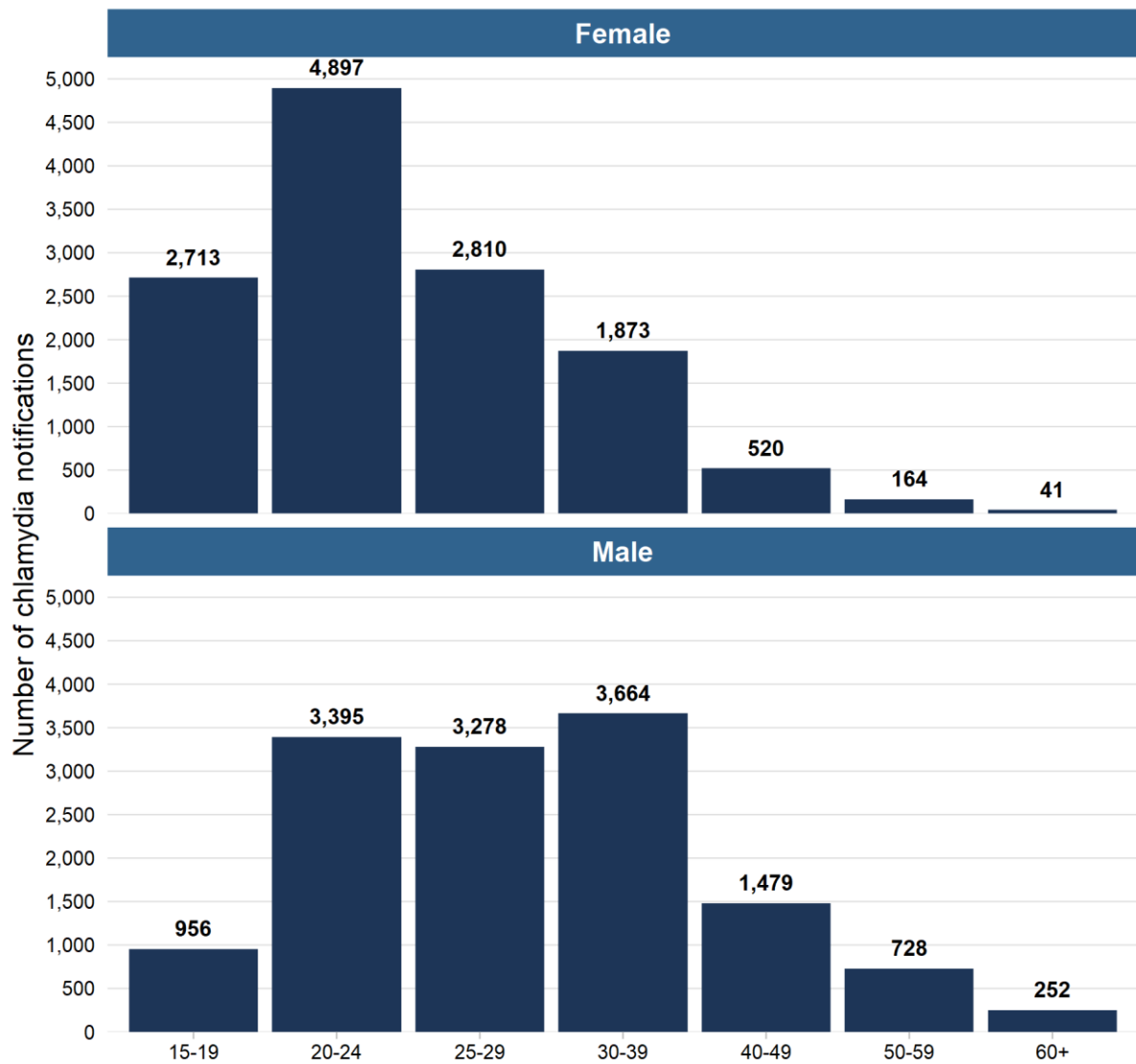
Data source: NCRIS (via SAPHaRI), NSW Health; data extracted 14 May 2021.

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

In 2020:

- Chlamydia notification rates decreased among both males and females. The rate in females decreased by 13% and the rate in males decreased by 20% compared to 2019.
- The chlamydia notification rate was 6% higher in males than in females (339 per 100,000 males compared to 317 per 100,000 females). In 2016, the rates were similar for males than females. However, since 2016 the male notification rate has been at least 10% higher than the female notification rate.

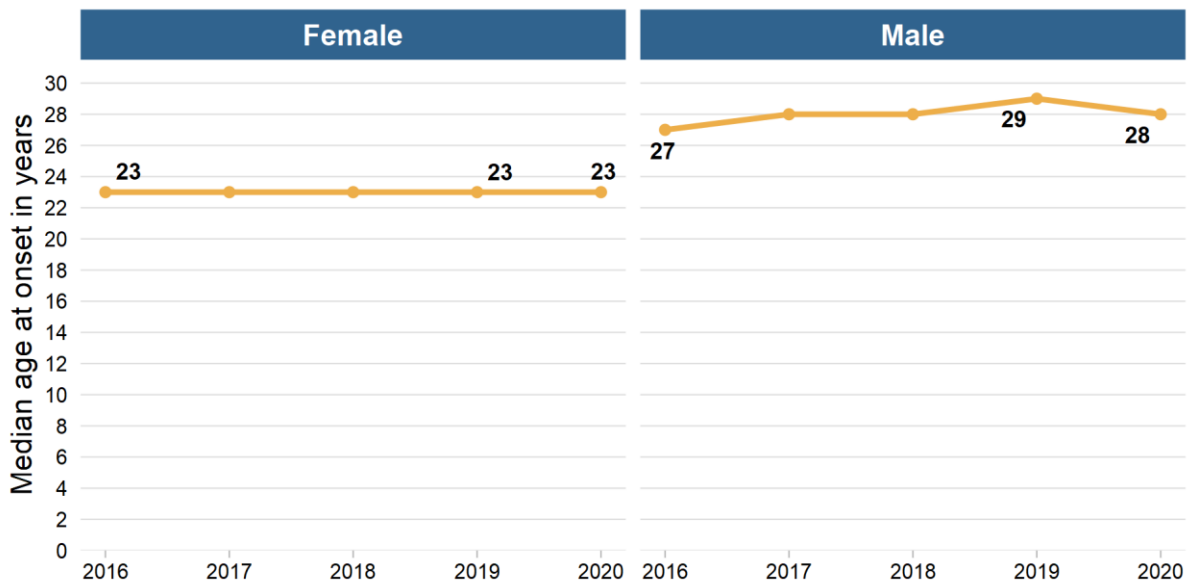
Figure 28: Chlamydia notifications by age and sex in people aged 15 years and over, NSW, 1 January 2020 to 31 December 2020



Data source: NCIMS, NSW Health; data extracted 14 May 2021.

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

Figure 29: Median age of chlamydia notifications by sex, NSW, 1 January 2016 to 31 December 2020



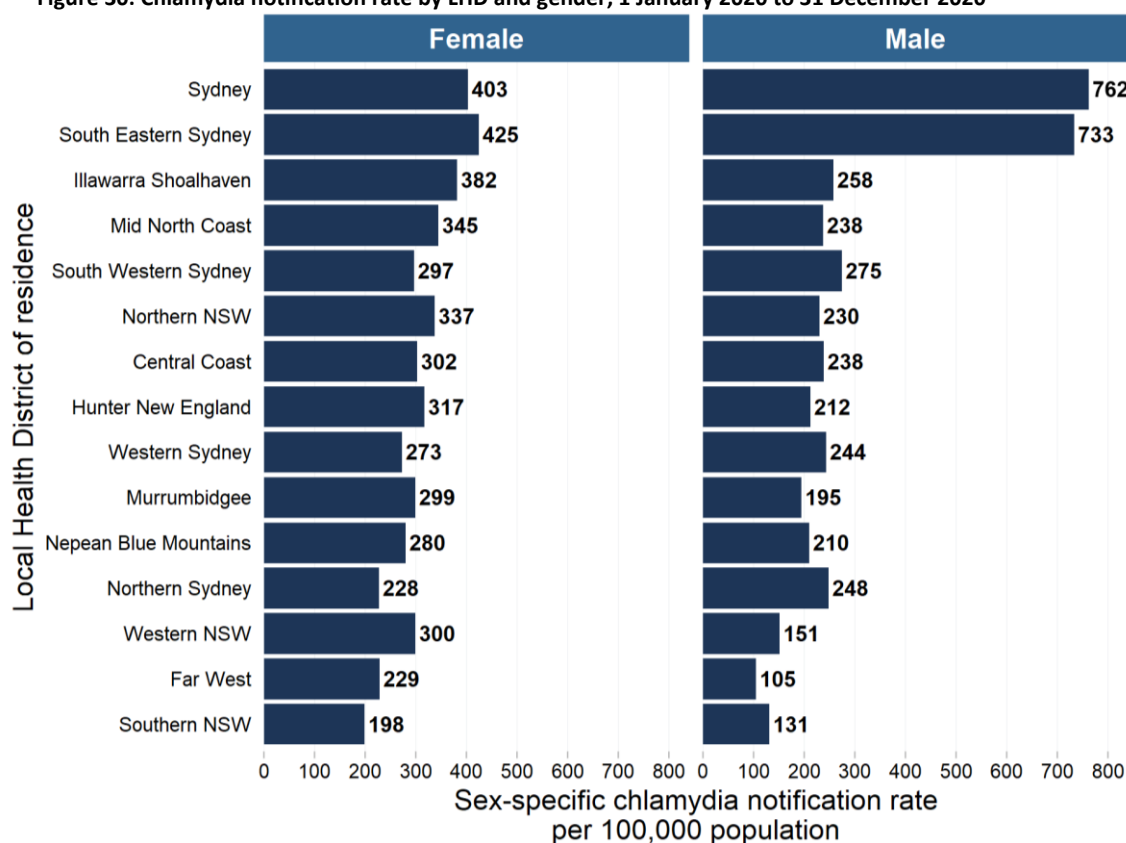
Data source: NCIMS (via SAPHaRI), NSW Health; data extracted 14 May 2021.

Note: Excludes non-NSW residents and persons whose age and sex was not reported.

In 2020:

- The most commonly notified groups were females aged 20-24 years and males aged 30-39 years, followed by males aged 20-24 years; 49% of chlamydia notifications were in females and 51% were in males.
- The median age of females was 23 years, which has been consistent since 2016.
- The median age of males was 28 years, the same as in 2017 and one year older than in 2016 when the median age was 27.

Figure 30: Chlamydia notification rate by LHD and gender, 1 January 2020 to 31 December 2020



Data source: NCRES and ABS population estimates (SAPHaRI), NSW Health; data extracted 14 May 2021.

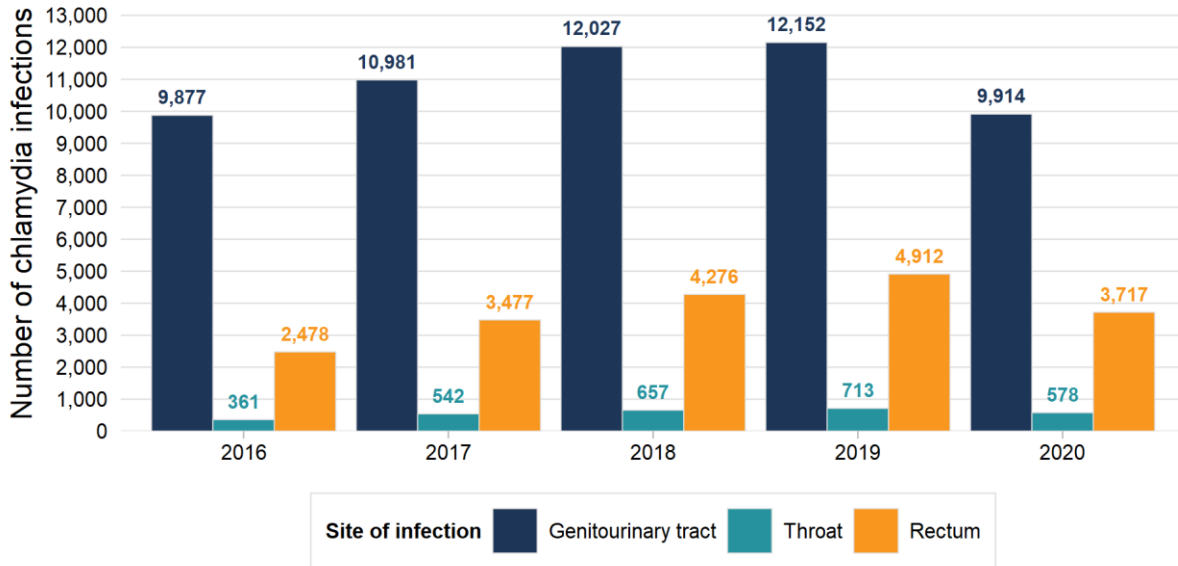
Note: Excludes non-NSW residents, persons whose residential postcode was not known and notifications from Justice Health. For Justice Health notifications, see **Appendix D**.

In 2020:

- Overall, the chlamydia notification rate decreased across all Local Health Districts between 2019 and 2020, except for South Western Sydney LHD where the notification rate increased 2.5% from 281 in 2019. Between 2016 and 2020, the largest relative increases in notification rate occurred in South Western Sydney (20% increase), Illawarra Shoalhaven (12% increase), Mid North Coast (11% increase) and Nepean Blue Mountains (9% increase). Prior to 2020, the largest relative increase in notification rates were observed in Far West and South Eastern Sydney LHDs, which increased between 2016 and 2019 by 31% and 30%, respectively.
- The highest chlamydia notification rates for both males and females were in South Eastern Sydney and Sydney LHDs.
- The largest relative increases in male chlamydia notification rates compared to 2016 were in the South Western Sydney, Mid North Coast, and Sydney LHDs (27.5%, 25%, and 10%, respectively).
- For females, the largest relative rate increases were in the Illawarra Shoalhaven, South Western Sydney, and Nepean Blue Mountains LHDs (16%, 13%, and 7% respectively).

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

Figure 31: Number of chlamydia infections in males, by site of infection, NSW, 1 January 2016 to 31 December 2020



Data source: NCIMS, NSW Health; data extracted 14 May 2021.

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.

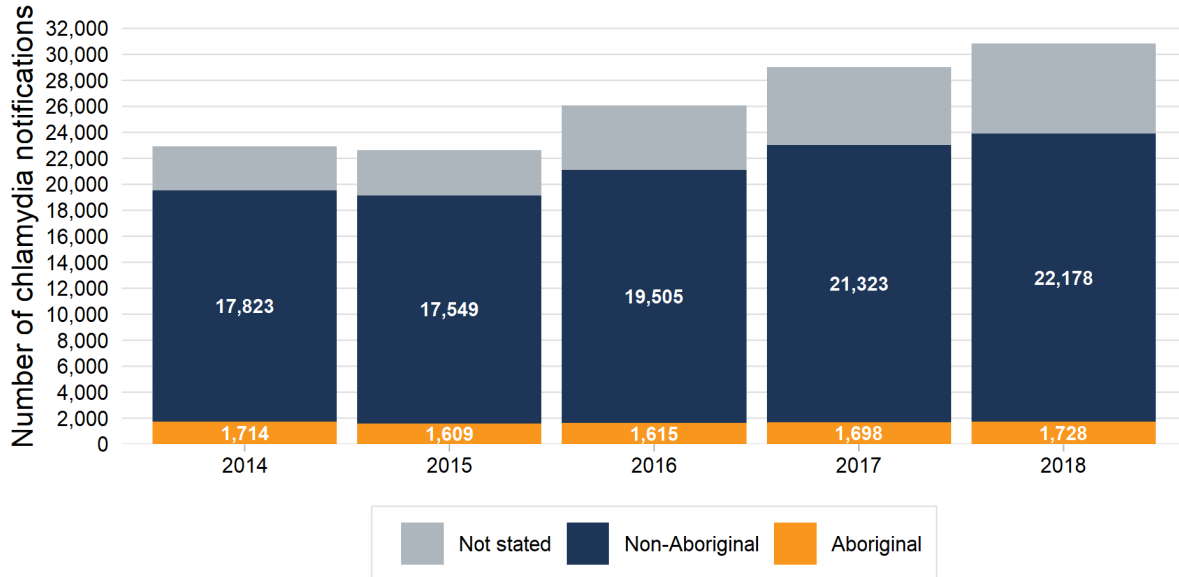
In 2020:

- Among men, the genitourinary tract is the main (69.4%) site of chlamydia infection notified to NSW Health, followed by the rectum (26.0%).
- Among women, the genitourinary tract is the main (97.0%) site of chlamydia infection notified to NSW Health, followed by the throat (1.6%) and rectum (1%).
- Compared with 2016, the largest relative increases among men were reported in the throat (60%) and rectum (50%); infections in the genitourinary tract remained at the same level. Among women, the number of throat infections almost doubled. Female rectal infections increased by 56.5%, whilst genitourinary tract infections only increased by 1.5%.

3.3 Chlamydia notifications among Aboriginal people

Figure 32: Chlamydia notifications by Aboriginality, NSW, 1 January 2014 to 31 December 2018

Please note that data is only available up to the end of 2018.



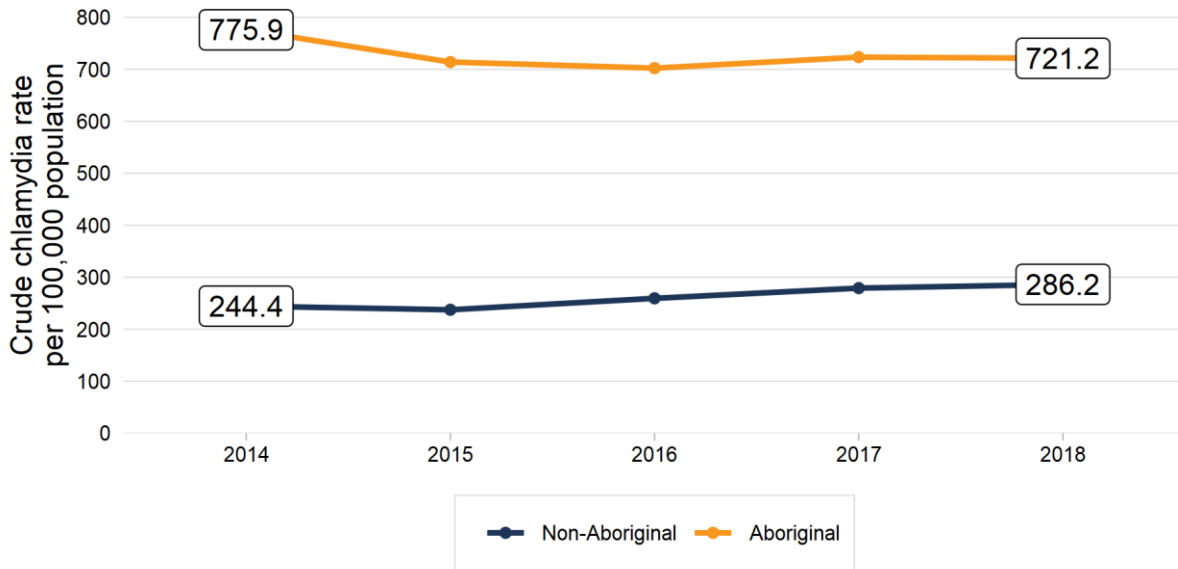
Data source: Communicable Diseases Register, NSW Ministry of Health (via SAPHaRI); data extracted 14 May 2021.

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.

In 2018:

- There were 30,815 notifications for chlamydia recorded in the Communicable Diseases Register (CDR). Of these, 1,728 (6%) were among Aboriginal people, 22,178 (72%) were among non-Aboriginal people and Aboriginal status was not known for 6,909 (22%) people. Of those notifications where Aboriginal status was not known in 2018, 86% were living in metropolitan Sydney.

Figure 33: Chlamydia notifications by Aboriginality, NSW, 1 January 2014 to 31 December 2018
Please note that data is only available up to the end of 2018.



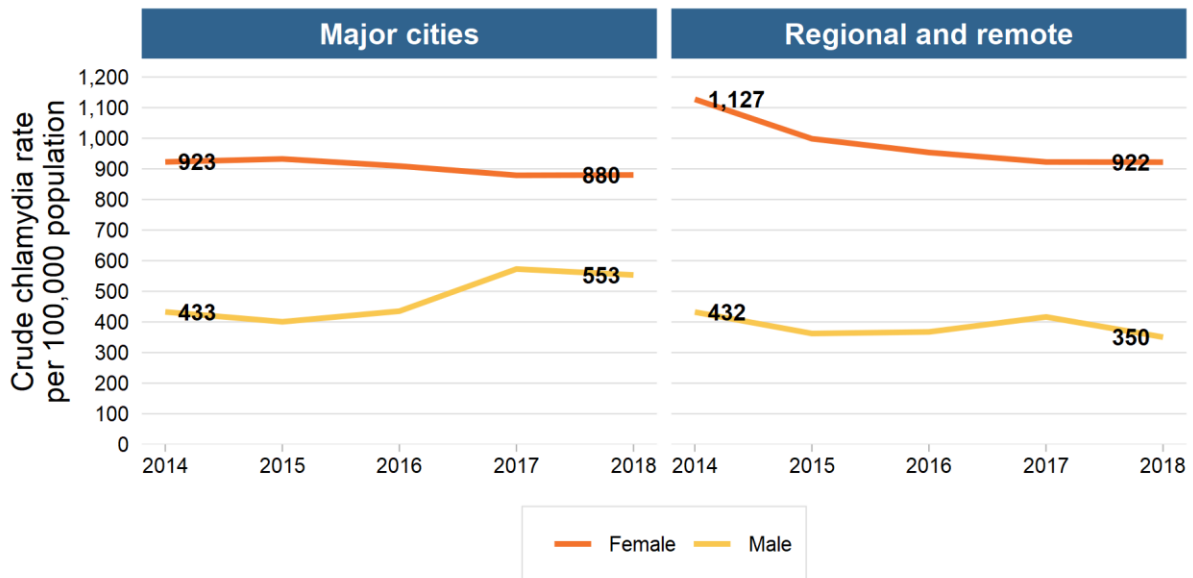
Data source: Communicable Diseases Register, NSW Ministry of Health, and ABS (via SAPHaRI); data extracted 14 May 2021

Note: Excludes records where Aboriginal status was not stated; rates were not age standardised due to small numbers within multiple age groups. These notification rates are influenced by variations in the number of people for whom Aboriginal status was not known and are likely to be an underestimation.

- Notification rates of chlamydia increased 17% among non-Aboriginal people between 2014 and 2018 and decreased by 7% among Aboriginal people.
- In 2018, among those whose Aboriginal status was known, the chlamydia notification rate was almost 2.5 times higher among Aboriginal people than among non-Aboriginal people (721 per 100,000 vs 286 per 100,000).

Figure 34: Crude chlamydia notification rates in the Aboriginal population, by gender and remoteness area, NSW, 1 January 2014 to 31 December 2018

Please note that data is only available up to the end of 2018.



Data sources: Communicable Diseases Register, NSW Ministry of Health (via SAPHaRI), data extracted 14 May 2021.

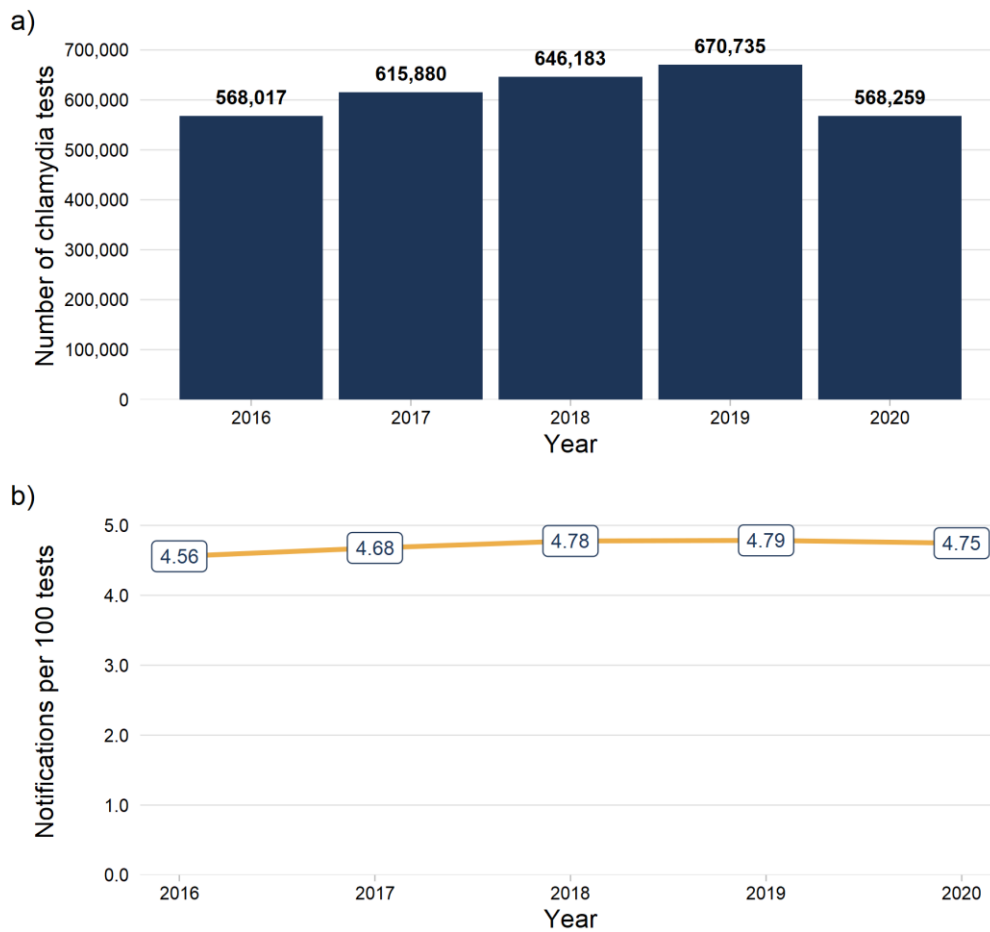
Note: Transgender persons not included. Population data are derived from ABS projections (3238.0) and 2011 census estimates and assumes proportions by remoteness and gender have remained constant since 2011. As the number of notifications in the Aboriginal population is relatively small, especially among 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.

- In 2018, the highest chlamydia notification rates in Aboriginal people were among females living in regional and remote areas. The female notification rate in regional and remote areas was more than double their male counterparts, and in major cities the female notification rate was 1.6 times higher than the male notification rate.
- Chlamydia notification rates among males and females in regional and remote areas and females in major cities have declined. Whilst notification rates among males in major cities have increased.

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 35: Number of chlamydia tests and notification to test ratio⁵, NSW, 1 January 2016 to 31 December 2020



Data source: NCIMS and NSW Denominator Data Project, NSW Health; data extracted 14 May 2021.

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

In 2020:

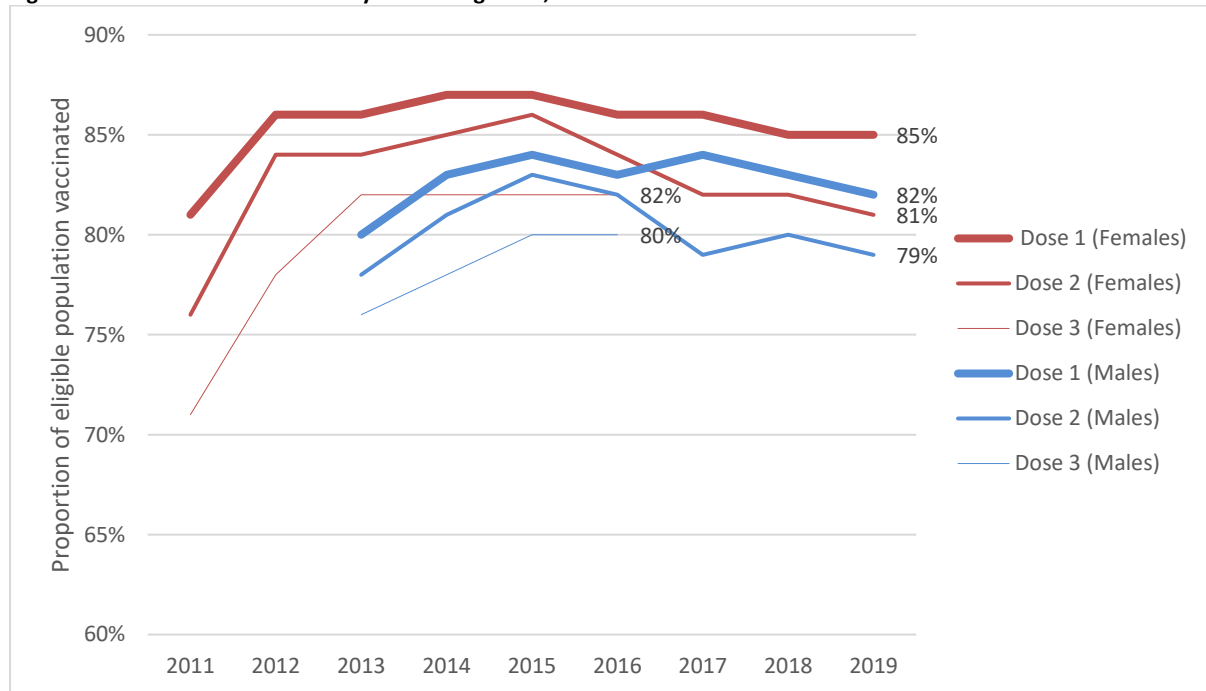
- A total of 568,259 tests for chlamydia were performed in 15 laboratories in NSW, a decrease of 14% compared to 2019 (670,735) and 1% decreased compared to 2016 (568,017). Prior to 2020, the annual number of tests was steadily increasing.
- There were 4.8 chlamydia notifications per 100 chlamydia tests. The number of notifications per 100 chlamydia tests has remained relatively stable over time.

⁵ See **Appendix B: Table 6** for more details about methodology

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 36: Year 7 HPV vaccination by dose and gender, 2011 - 2019⁶



Data source: Local Health Districts

Note: See **Appendix E** for full data for the HPV vaccination rate by gender

- The data indicate that 81% of females and 79% of males in Year 7 in 2019 completed the two-dose course of HPV vaccine, including catch-up vaccination in Year 8 in 2020.
- For all 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 to 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.
- The 2020 school vaccination program was significantly impacted by COVID-19 and PHUs are undertaking a lot of catch-up vaccination during 2021 to initiate and complete vaccination courses.

Note: Data on HPV dose 1 coverage for males and females in 2019 is included in **Appendix E**

⁶ 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.

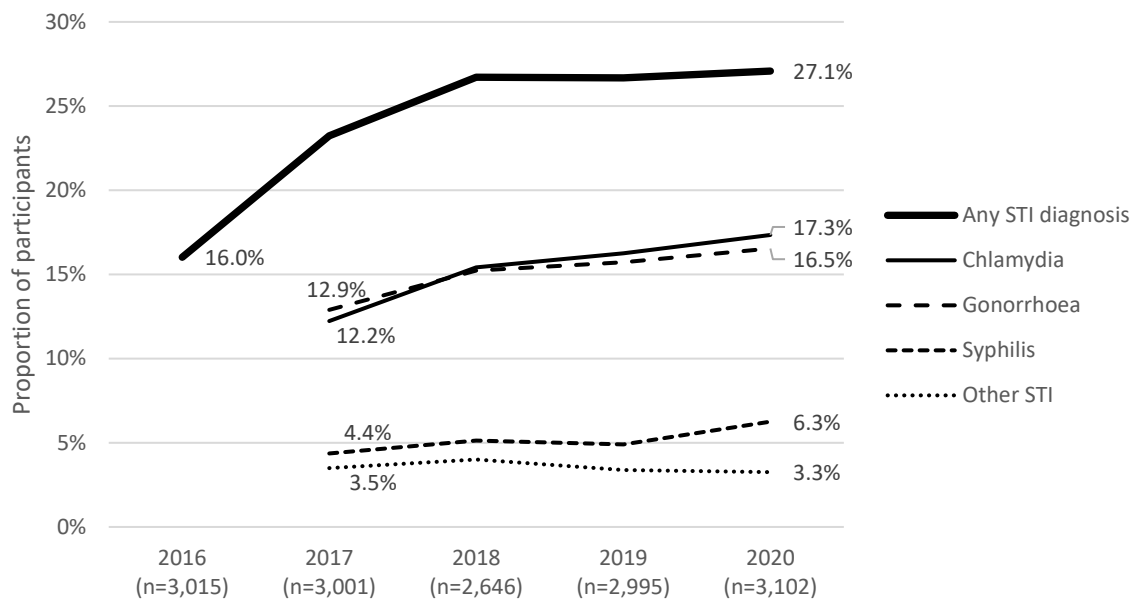
The Local Health District (LHD) improvement measure for two doses of HPV vaccine for the 2018 Year 7 cohort (including catch-up vaccination by the end of Year 8 in 2019) is 80%. From 2012, extended catch-up vaccination has been offered to students who commenced the course of HPV vaccine in Year 7 to support course completion.

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

5.1 STI diagnoses among gay and bisexual men

Gay-identified men were asked in the annual Sydney Gay Community Periodic Survey (SGCPS) if they had received an STI diagnosis within the 12 months prior to completing the survey. Due to a change in questions regarding STI diagnoses, type of STI diagnosis is only available from 2017 onwards.

Figure 37: Proportion of gay and bisexual men who reported any STI diagnosis in the previous 12 months



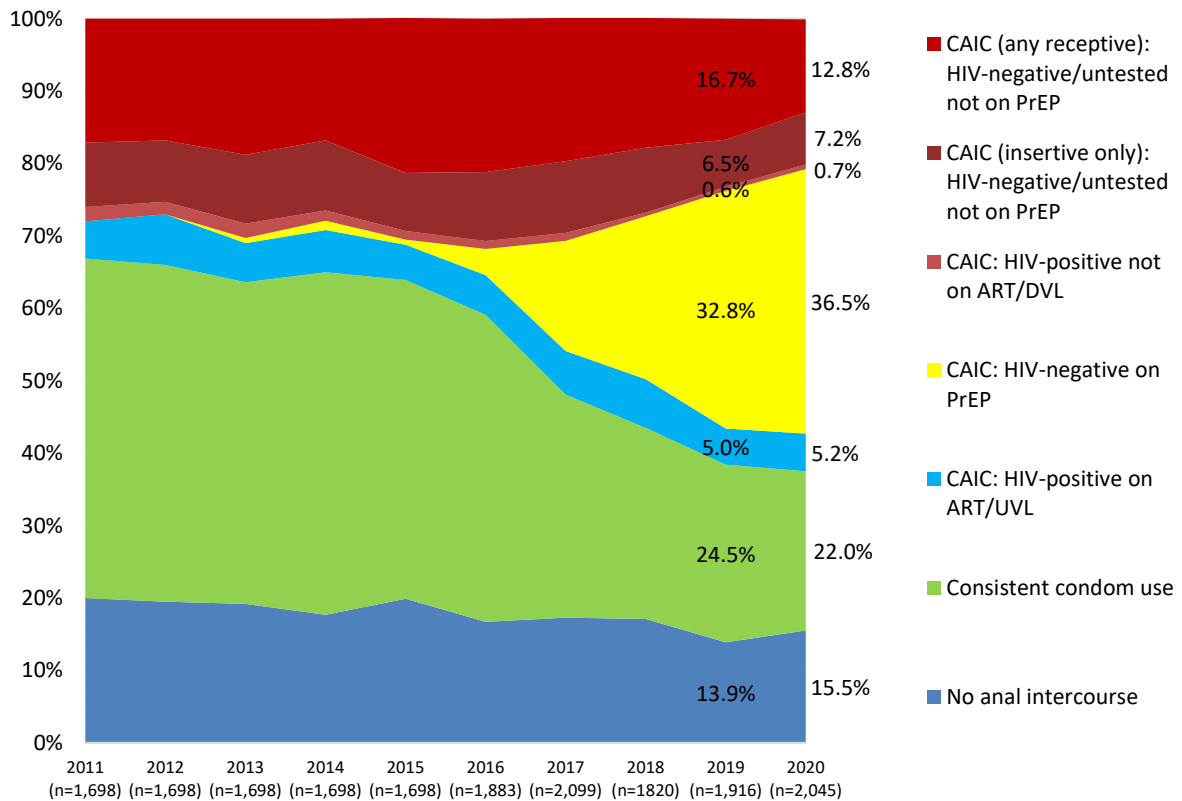
Data source: [Sydney Gay Community Periodic Survey](#), Centre for Social Research in Health, UNSW Sydney.

- Over one in four (27.1%) of gay and bisexual men reported having an STI diagnosis within the 12 months prior to completing the survey, increasing from one in six (16.0%) in 2016.
- In 2018, chlamydia surpassed gonorrhoea as the most frequent STI self-reported and remained the most frequent STI diagnosed in 2020.
- In 2020, one in 15 (6.3%) of participants had a syphilis diagnosis within the previous 12 months.

5.2 Condom use among gay and bisexual men

Condoms 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.

Figure 38: Proportion of gay and bisexual men with casual male 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: 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.

CAIC = condomless anal intercourse with casual male partners.

ART = antiretroviral treatment.

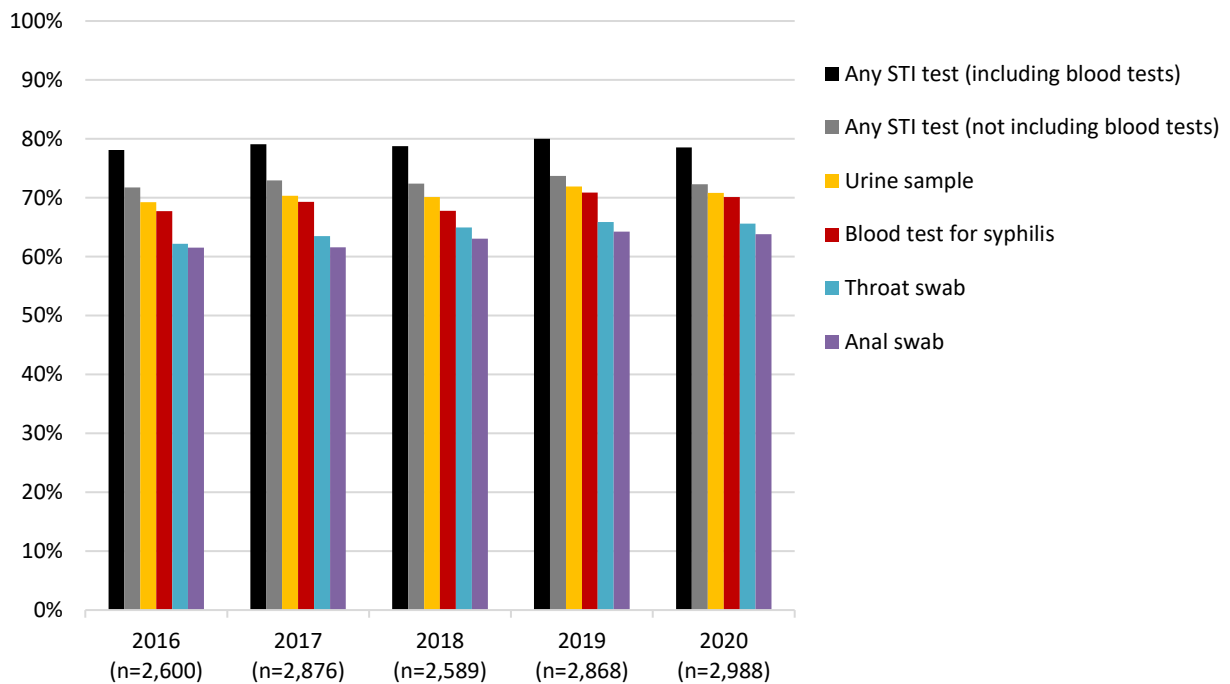
UVL = undetectable viral load.

- There has been a steady reduction in the proportion of GBM with casual partners reporting consistent condom, particularly since 2016 with the introduction of HIV Pre-Exposure Prophylaxis (PrEP), reducing from 42.4% of participants in 2016, to 22.0% in 2020.
- Nearly one in seven (15.5%) of GBM abstain from anal intercourse with casual male partners, this has remained relatively stable over time.
- HIV-negative men on PrEP who reported CAIC with casual partners increased from 3.6% in 2016, to 36.5% in 2020, making PrEP the most frequent HIV prevention strategy.
- In 2020, HIV-negative men not using PrEP who reported any CAIC (insertive or receptive) fell to 20.0% of casual partners.

5.3 Comprehensive STI testing among high risk MSM

Comprehensive STI testing includes blood samples to test for syphilis. According to the [Australian STI Management Guidelines for Use in Primary Care](#), high risk men who have sex with men should be comprehensively 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 and anatomical site of collection.

Figure 39: Different types of STI testing among MSM within the previous 12 months



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

- Nearly 80% of participants had an STI test including blood tests within the 12 months prior to completing the survey. This was consistent since 2016.
- The proportions of participants reporting most types of STI test (anal swab, throat swab, blood tests) remained stable between 2016 and 2020.
- Similar to previous years, in 2020 a higher proportion of HIV-positive participants reported having had any sexual health test (including blood tests) in the 12 months prior to the survey (85.5%), compared with HIV-negative participants (77.9%). Data not shown.

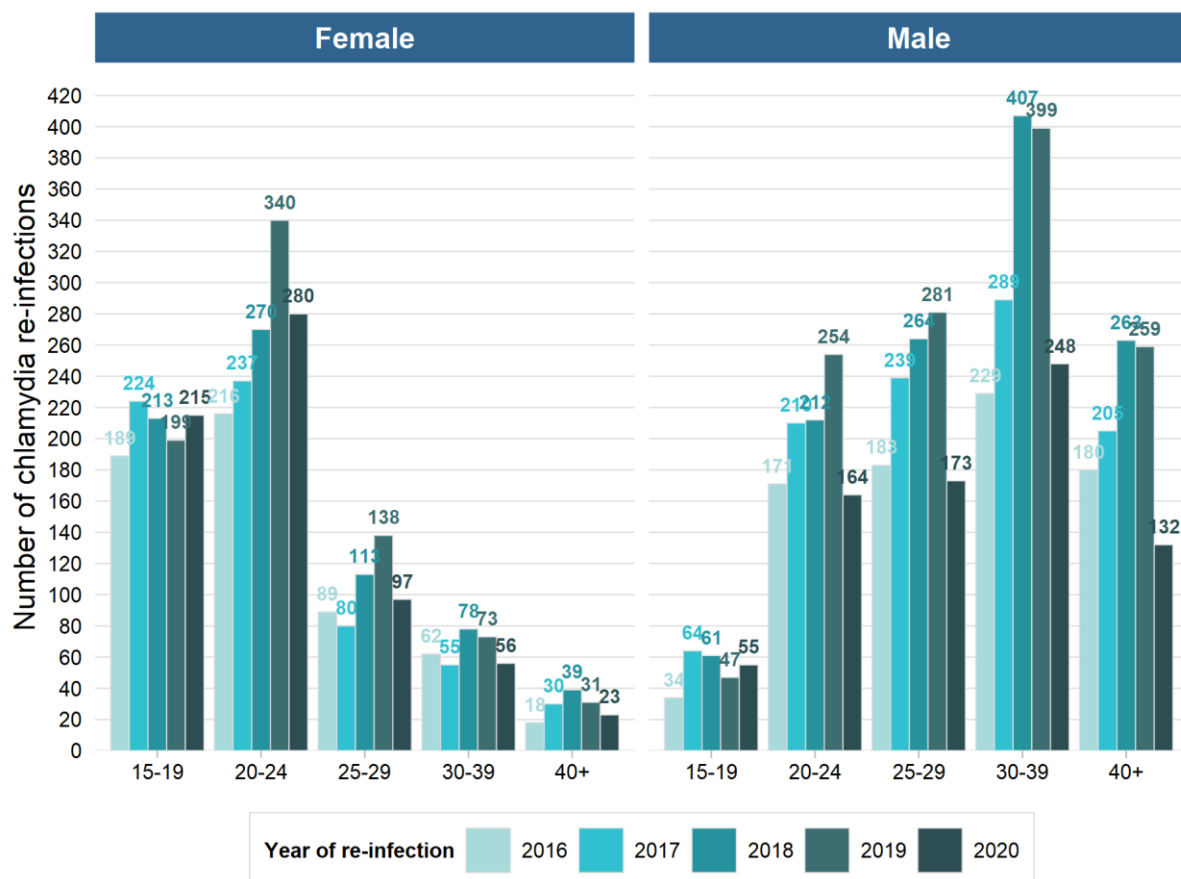
6. Increase the proportion of people diagnosed with chlamydia and gonorrhoea who get re-tested within 1-4 months after diagnosis

Chlamydia and gonorrhoea re-notification patterns are strongly influenced by initial screening practices and by clinical management once diagnosed, including partner notification and re-testing. Changes in STI screening patterns with the introduction of pre-exposure prophylaxis for HIV (PrEP) are likely to have contributed to the marked increase in both absolute numbers of re-notifications in males and the proportion of males that were re-notified at least once.

Chlamydia guidelines recommend follow-up at three months as a test of reinfection (TOR). Gonorrhoea recommendations based on baseline results (e.g. anti-microbial resistance) and anatomical site of infection and can be done after two to four weeks. A window of one to four months was used for this analysis as most PCR tests are thought to clear DNA within two weeks of treatment; any test within 29 days of the diagnosis was excluded.

6.1 Re-notifications of chlamydia

Figure 40: Number of chlamydia re-notifications within 1 to 4 months following initial notification, persons aged 15 years and over, by gender and year of onset of first notified infection, NSW, 1 January 2016 to 31 December 2020

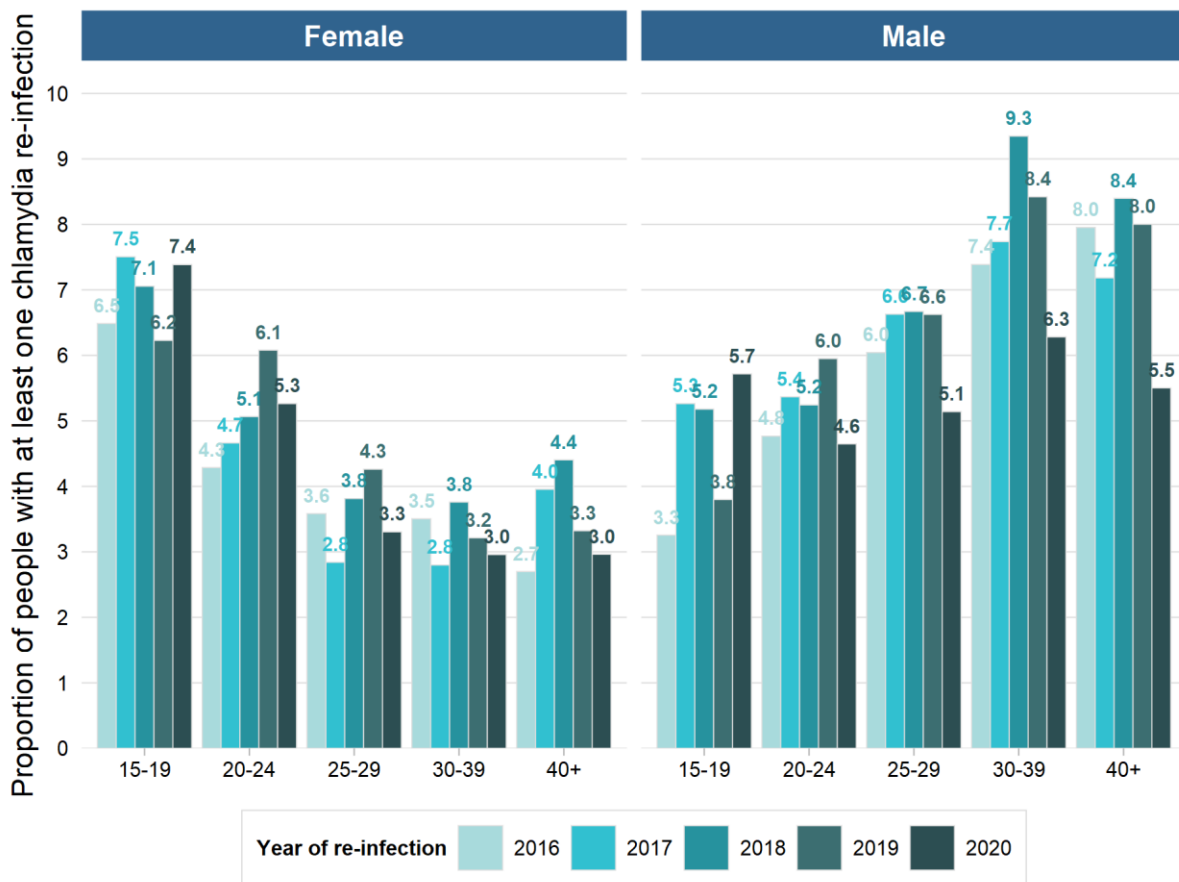


Data source: NCIMS (via SAPHaRI), NSW Health; data extracted 14 May 2021.

Note: Excludes non-NSW residents, persons reported as transgender (due to small numbers), and persons whose age or sex was not reported. Year of onset is based on calculated onset date. Excludes first notifications with an onset date 1 October–31 December to allow for re-notifications to occur within the 2020 reporting year. 2020 numbers are annualised based on quarters 1–3.

- Between 2016 and 2020, the number of chlamydia notifications that occurred one to four months after the time of first diagnosis increased for most age groups (decreases were observed among people aged 40+ years and those aged 25 to 29 years).
- In 2020, there were 1,443 re-notifications of chlamydia, 53.5% (n=772) of which occurred in men. However, over this period the number of re-infections among women increase by 17%, while the number declined by 3% for males. Prior to 2020, both males and females had increases in the number of re-infections (males increased 56% between 2016 and 2019 and females increased 36%).
- In 2020, the highest number of re-notifications from 2016 occurred in males aged 30–39 years.
- In women, the number of re-notifications was highest among 20–24-year old females. The highest relative increase in the time period 2016 to 2020 was also among males aged 15–19 years with 2020 re-notifications 62% higher than 2016 re-notifications, followed by males in 30–39-year age group (increase of 8%). Increases among most female age groups were smaller. However, females in the younger age groups of 15–19-years and 20–24 observed an increase the number of re-notifications of 14% and 30%, respectively.

Figure 41: Proportion of people notified with chlamydia who had at least one re-notification within 1 to 4 months following initial notification, persons aged 15 years and over, by gender and year of onset of first notified infection, NSW, 1 January 2016 to 31 December 2020



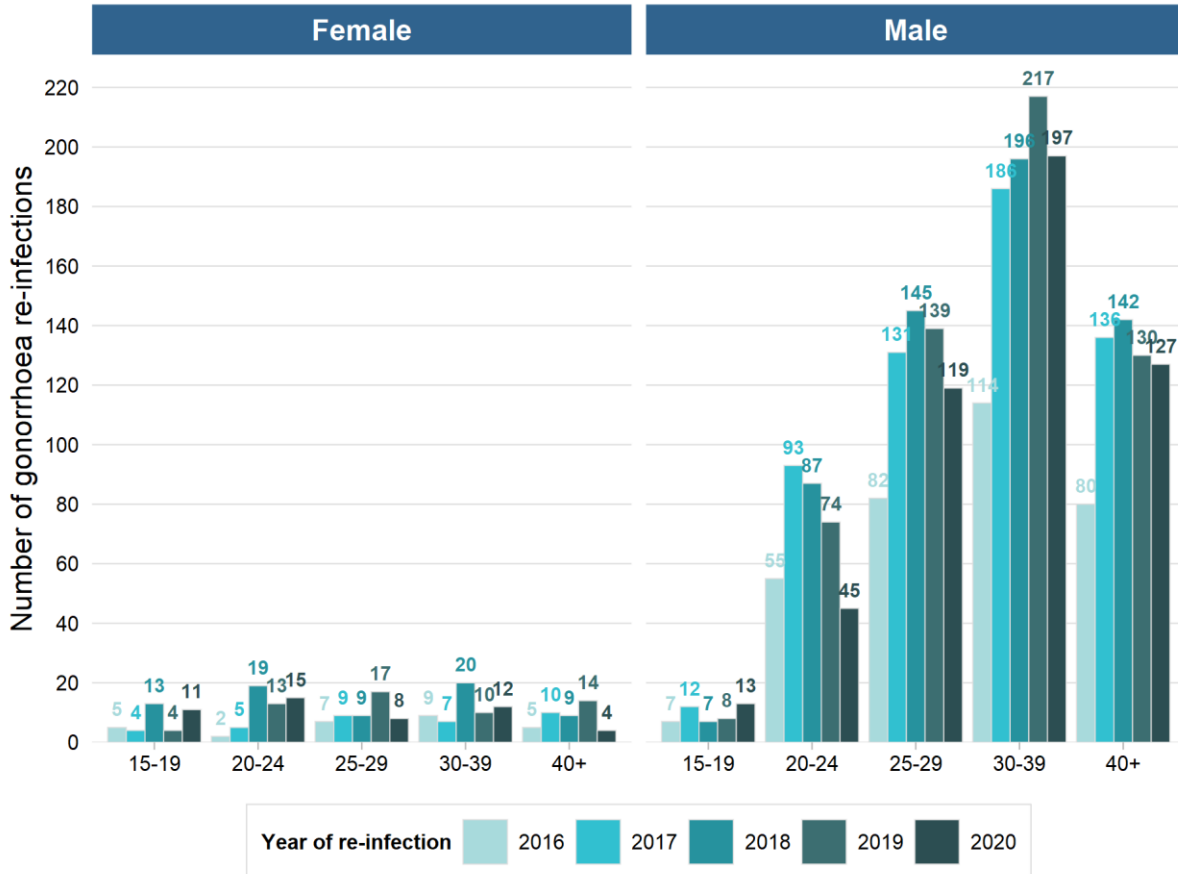
Data source: NCIMS (via SAPHaRI), NSW Health; data extracted 14 May 2020.

Note: Excludes non-NSW residents, persons reported as transgender (due to small numbers), and persons whose age or sex was not reported. Year of onset is based on calculated onset date. Excludes first notifications with an onset date 1 October-31 December to allow for re-notifications to occur within the 2020 reporting year. 2020 numbers are annualised based on quarters 1-3.

- Between 2016 and 2020, the proportion of persons notified with chlamydia in a calendar year who had at least one re-notification has increased in most age groups. Decreases were observed among the 25–29 years (decreased 14%) and 40+ years (decreased 2%) age groups. Overall, this suggests that increasing re-notifications are not only driven by an overall increase in notifications, but that re-infections are also becoming more common.
- In 2020, males aged 30-39 years had the highest proportions re-notified (6.3%). However, this represents a decrease of 15% compared to 2016. The largest relative increase in the proportion re-notified was in males aged 15–19 years, who increased 75%. In females, 15–19-year-olds continued to have the highest proportion of re-notifications in 2020 at 7.4%, representing a 14% increase since 2016. While the proportion of persons re-notified remained slightly lower in 20–24-year-olds compared to younger women, this age group experienced the greatest relative increase in females with 22% increase since 2016.

6.2 Re-notifications of gonorrhoea

Figure 42: Number of gonorrhoea re-notifications within 1 to 4 months following initial notification, persons aged 15 years and over, by sex and year of onset of first notified infection, NSW, 1 January 2016 to 31 December 2020

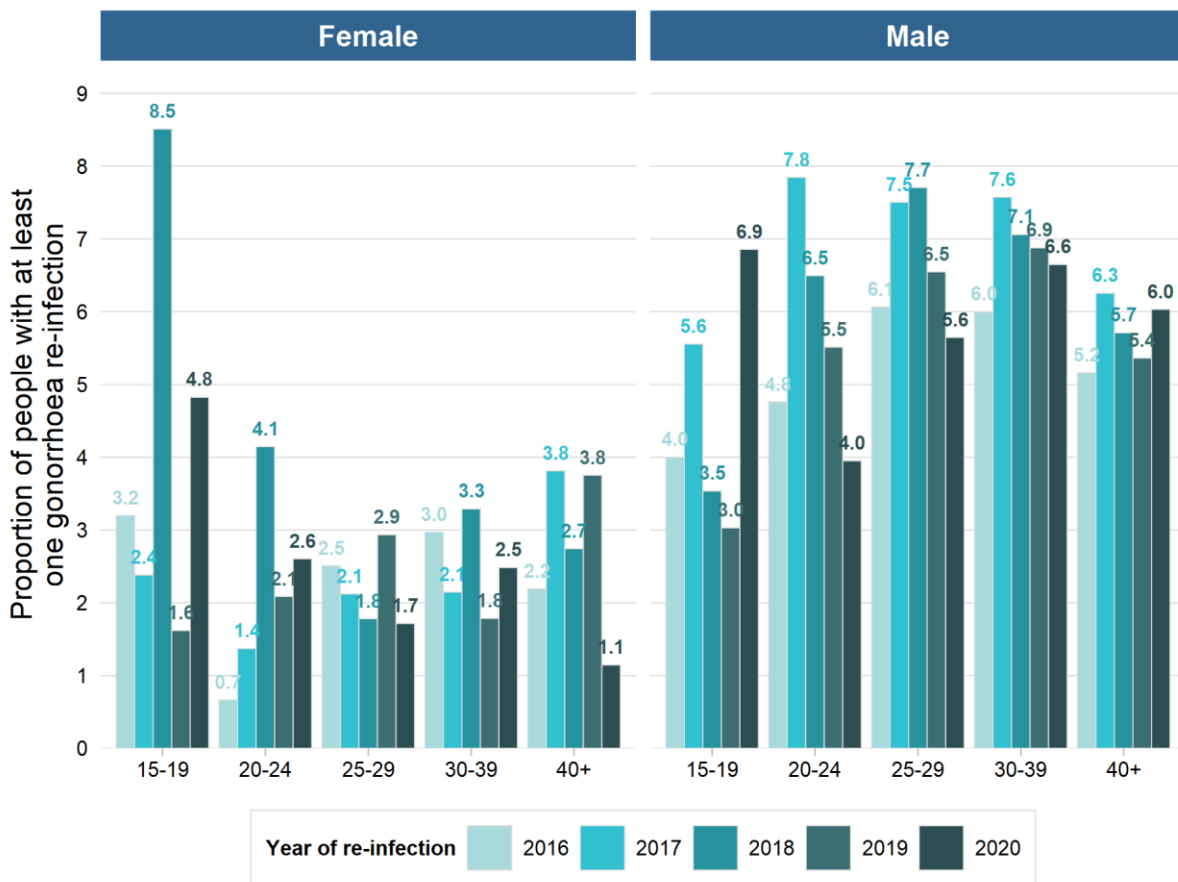


Data source: NCIMS (via SAPHaRI), NSW Health; data extracted 13 May 2020.

Note: Excludes non-NSW residents, persons reported as transgender (due to small numbers), and persons whose age or sex was not reported. Year of onset is based on calculated onset date. Excludes first notifications with an onset date 1 October-31 December to allow for re-notifications to occur within the 2020 reporting year. 2020 numbers are annualised based on quarters 1-3.

- Between 2016 and 2020, the number of gonorrhoea notifications that occurred one to four months after the time of first diagnosis decreased for males and females in all age groups, except in females and males aged 15–19 years and females 20–24 years. In 2020, there were 551 re-notifications of gonorrhoea, 91% (n=501) of which occurred in men. This represents an almost a doubling of re-notification numbers since 2016. The relative increase has been higher in females (79% increase) than males (48% increase).
- In 2020, the highest number of re-notifications occurred in males aged 30–39 years. In women, the number of re-notifications was highest among 20–24-year-olds. Among males, the highest relative increase in the time period 2016 to 2020 was in the age group 15–19 years with 2020 re-notifications 86% higher than 2016 re-notifications, followed by 30–39-year-olds with an increase of 73%. Small annual re-notification numbers among women mean that estimates of relative increases are unstable; however, the average annual number of re-notifications between 2016 and 2020 is highest among females 30–39-years-old (11.6 re-notifications) and 20–24-years-old.

Figure 43: Proportion of people notified with gonorrhoea who had at least one re-notification within 1 to 4 months following initial notification, persons aged 15 years and over, by sex and year of onset of first notified infection, NSW, 1 January 2016 to 31 December 2020



Data source: NCIMS (via SAPHaRI), NSW Health; data extracted 13 May 2020.

Note: Excludes non-NSW residents, persons reported as transgender (due to small numbers), and persons whose age or sex was not reported. Year of onset is based on calculated onset date. Excludes first notifications with an onset date 1 October–31 December to allow for re-notifications to occur within the 2020 reporting year. 2020 numbers are annualised based on quarters 1–3.

- Between 2016 and 2020, the proportion of persons notified with gonorrhoea in a calendar year who were re-notified at least once increased in younger age groups (62% increase in 15–19-year-olds, 21% increase 20–24-year-olds). This suggests that increasing re-notifications are not only driven by an overall increase in notifications, but that re-infections are also becoming more common. Proportions remained steady across the 5-year period for persons 30 years and over.
- Among males who were notified with gonorrhoea at least once in 2020, most age groups had 6% – 7% re-notified at least once (only 4% of males 20–24 years were re-notified at least once). For males, the largest increase in the proportion re-notified at least once between 2016 and 2020 was among the 15–19 age group (71% increase). Compared to males, females across most age groups had a lower proportion with at least one re-notification. Female 15-19-year-olds had the highest proportion of re-notifications in 2020 at 5%, only 1% lower than the male average. Re-notification percentages in females need to be interpreted with caution due to the small number of underlying re-notifications.

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

The number of re-notifications of infectious syphilis within 1 to 6 months from the time of initial diagnosis has increased since 2018. In 2020 there were 34 re-notifications of infectious syphilis, representing a 4.8-fold increase. All re-notifications occurred in males in the period 2016–2020.

Similar to the number of re-notifications, the percentage of males with at least one re-notification following an initial diagnosis of infectious syphilis has increased from 0.85% in 2016 to 1.8% in 2020. However, due to small numbers, re-notifications for infectious syphilis should be interpreted with caution.

As for chlamydia and gonorrhoea, syphilis re-notification patterns can be influenced by initial screening practices and by clinical management once diagnosed. However, re-notifications of syphilis are also dependent on the correct classification as re-infections rather than as part of an ongoing episode of infection with continued clinical monitoring.

8. Monitor the epidemiology of lymphogranuloma venereum (LGV)

Lymphogranuloma venereum (LGV) is a sexually transmissible infection that is caused by serovars L1, L2 and L3 of *Chlamydia trachomatis*. LGV is a comparatively rare STI in developed countries, including in Australia. However, increases primarily in men who have sex with men have been observed across Europe, the UK, and North America since a first cluster of rectal infections was reported in the Netherlands in 2003⁷. In NSW, an increase in cases prompted the release of clinician alerts in 2010 and 2017, advising LGV-specific testing for MSM presenting with symptoms of proctitis.

LGV is not included in the NSW Sexually Transmissible Infections Strategy 2016 – 2020. Therefore, disease control indicators have not yet been established and reporting is still under development.

In NSW, LGV is a notifiable disease under the *NSW Public Health Act 2010*. A confirmed case requires demonstration of *Chlamydia trachomatis* serovars L1 to L3 by immunofluorescence assays, enzyme immunoassays, molecular assays, culture, or serology. In practice, LGV testing in NSW is currently undertaken at two laboratories using PCR. Only confirmed cases of LGV are counted when reporting LGV notification data. Patient care and contact tracing are the responsibility of the treating doctor. Information on demographics (e. Aboriginal and Torres Strait Islander status) and risk exposures (e.g. sexual exposure, place of acquisition) is not routinely collected.

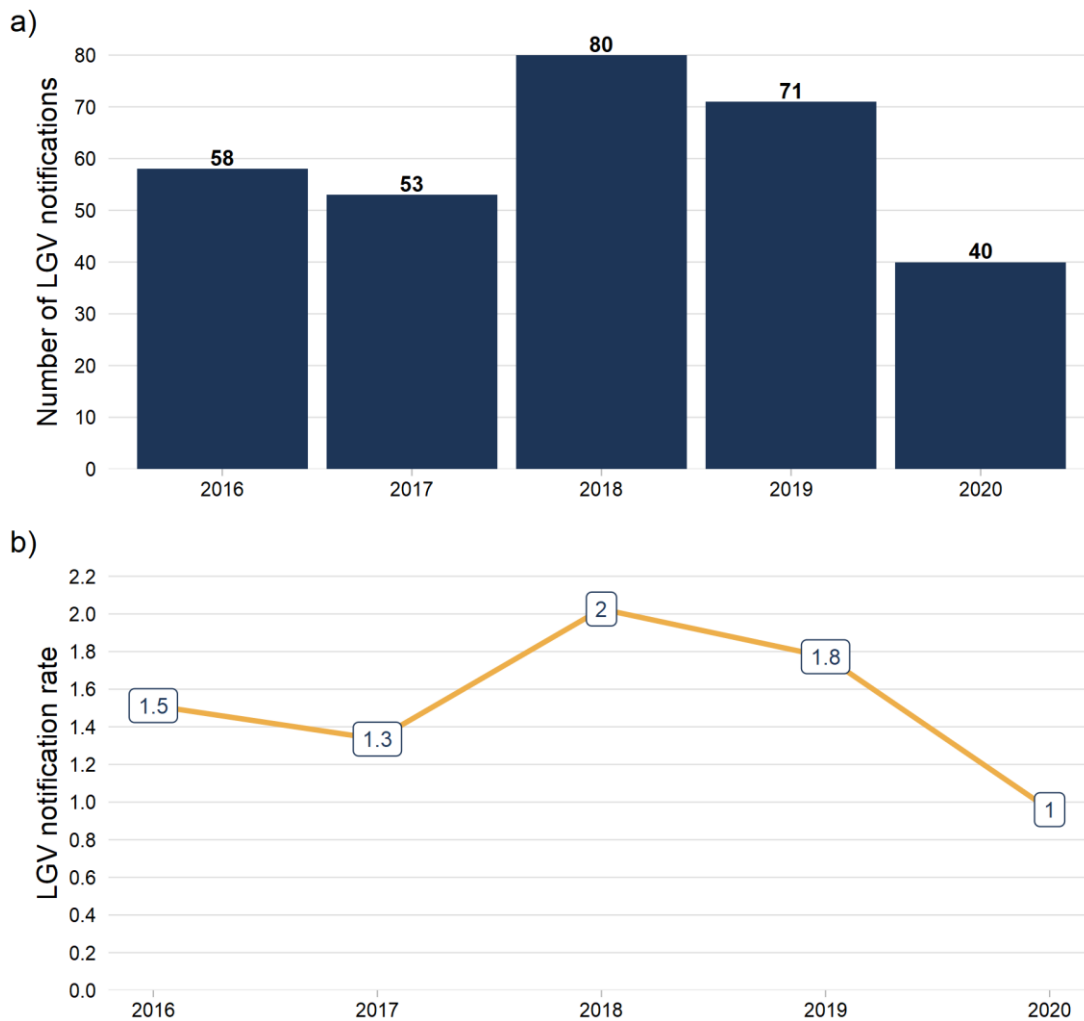
Although LGV is generally assumed to be symptomatic, asymptomatic rectal infections have been reported in more than a quarter of cases studied in the Netherlands and the UK.^{8,9} In Australia, routine screening of asymptomatic patients is not recommended. Samples that are positive for any *Chlamydia trachomatis* serovar are not automatically tested for LGV if LGV-specific tests are not ordered. As a result, changes in notification data over time may partially reflect changes in testing practices. In addition, the small number of notifications per year leads to considerable fluctuations in rates and percentages. Most characteristics of LGV notifications are therefore aggregated over the entire five-year reporting period.

⁷ Nieuwenhuis RF, Ossewaarde JM, Götz HM, Dees J, Thio HB, Thomeer MG, den Hollander JC, Neumann MH, van der Meijden WI. Resurgence of lymphogranuloma venereum in Western Europe: an outbreak of *Chlamydia trachomatis* serovar I2 proctitis in The Netherlands among men who have sex with men. *Clinical infectious diseases*. 2004;39(7):996-1003.

⁸ Saxon C, Hughes G, Ison C; UK LGV Case-Finding Group. Asymptomatic Lymphogranuloma Venereum in Men who Have Sex with Men, United Kingdom. *Emerging Infectious Diseases*. 2016;22(1):112–116.

⁹ de Vrieze NHN, van Rooijen M, Schim van der Loeff MF, et al Anorectal and inguinal lymphogranuloma venereum among men who have sex with men in Amsterdam, the Netherlands: trends over time, symptomatology and concurrent infections *Sexually Transmitted Infections* 2013;89:548-552.

Figure 44: Number and notification rate of LGV notifications in males, by year of onset, NSW, 1 January 2016 to 31 December 2020



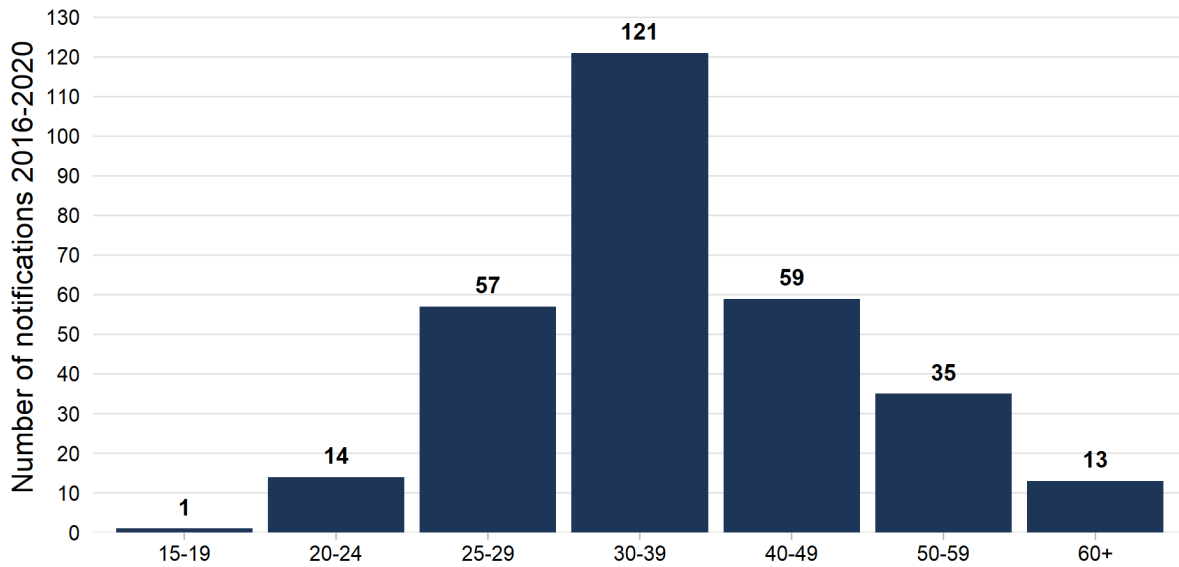
Data source: Data source: NCIMS and ABS population estimates (via SAPHARI), NSW Health; data extracted 14 May 2021.

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

In 2020:

- There were 40 cases of LGV notified to NSW Health. This represents a 44% decrease from the 71 cases notified in 2019. Among the cases notified in 2020, 97.5% were diagnosed in males. A total of 302 cases of LGV were notified in the five-year period 2016-2020.
- The notification rate has continued to decrease from the peak of 2.0 cases per 100,000 males in 2018 and in 2020 was at the lowest rate within the past five-years at 1.0 cases per 100,000 males. Only two female cases of LGV were notified in NSW in the period 2014–2018, which has been excluded from all rate calculations.
- Testing for LGV in 2020 should be interpreted with caution. As supplementary testing is required for LGV, testing for this condition was disproportionately affected by necessary redistribution of laboratory resources during the COVID pandemic.

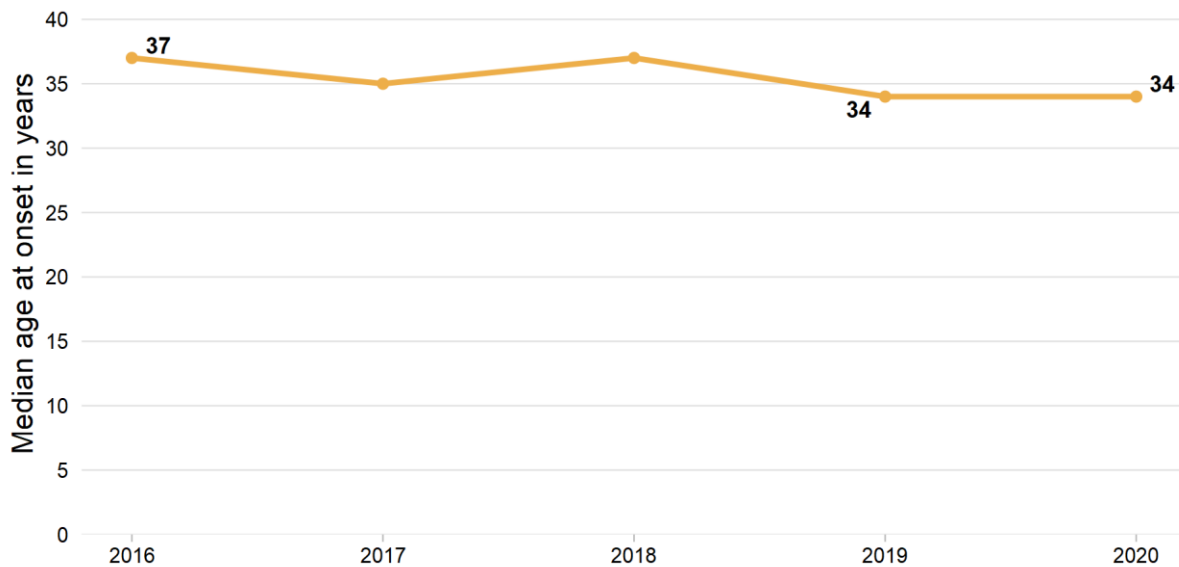
Figure 45: Number of LGV notifications in males by age group, NSW, 1 January 2016 to 31 December 2020



Data source: NCIMS (via SAPHaRI), NSW Health; data extracted 14 May 2021.

Note: Excludes non-NSW residents and persons whose age at diagnosis was not known.

Figure 46: Median age of people aged 15 years and over notified with LGV, NSW, 1 January 2016–31 December 2020

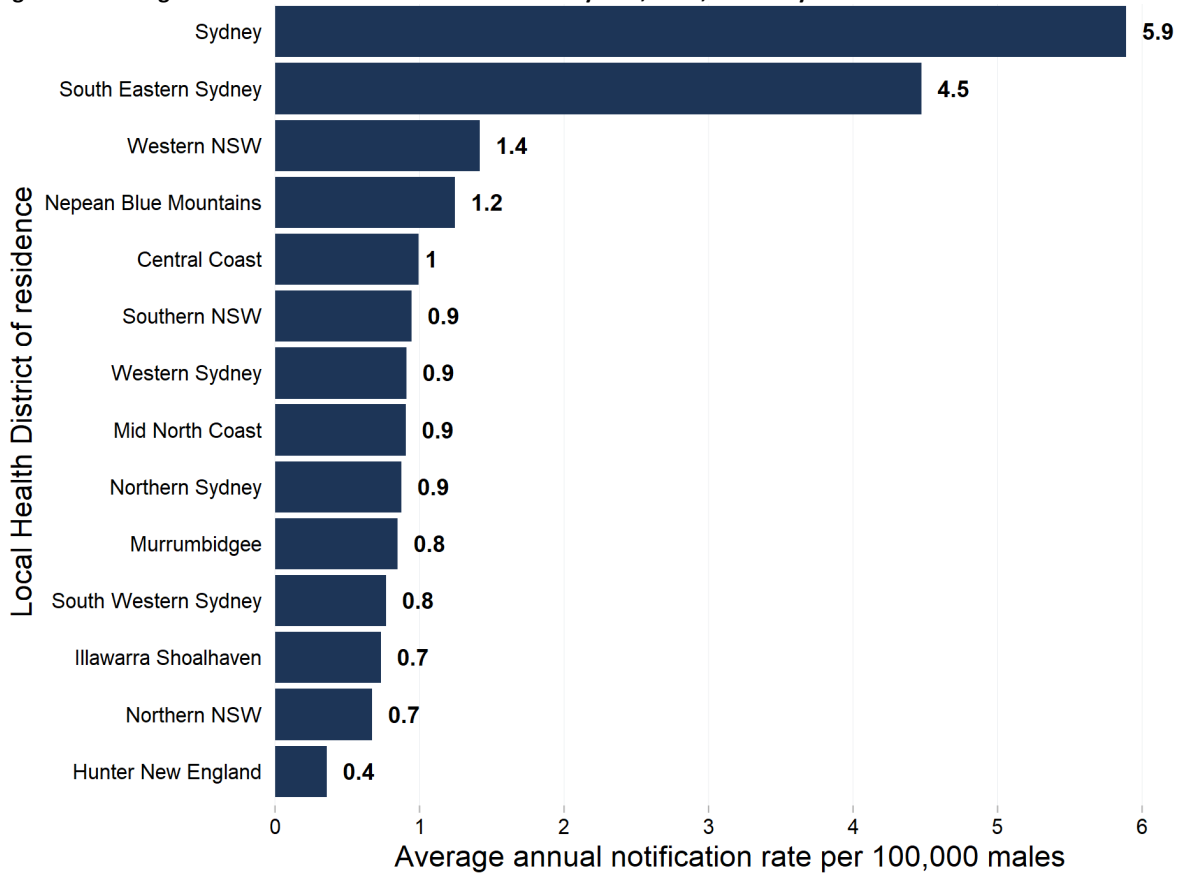


Data source: NCIMS and ABS population estimates (via SAPHaRI), NSW Health; data extracted 14 May 2021.

Note: Excludes non-NSW residents and persons whose age at diagnosis was not known.

- During the time period 2014–2018, the number of LGV notifications occurred in the 30–39 years age group (41% of total notifications), followed by the 40–49 years age group (19.5% of total notifications). The median age at onset ranged between 34 and 37 years and has been stable at 34 years since 2019.

Figure 47: Average annual LGV notification rates in males by LHD, NSW, 1 January 2016 to 31 December 2020



Data source: NCIMS, NSW Health; data extracted 14 May 2021.

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

- Over the past five years, the majority of notifications occurred in the Sydney and South Eastern Sydney Local Health Districts, which also have the highest average annual rates at 5.9 and 4.5 per 100,000 males, respectively. (Figure 55) Similar to other STIs, it should be noted that MSM, who are at increased risk of acquiring STIs generally and LGV in particular, are unequally distributed among local health districts. Continuing high notification rates among males in the Sydney and South Eastern Sydney Local Health Districts in particular reflect large concentrations of MSM in these areas.
- A number of regional local health districts reported either none or very low numbers of LGV notifications over the five-year reporting period. Rates in these areas should be interpreted with caution as small fluctuations in notification numbers cause considerable changes in rates. Also see Appendix D Table 11 for a detailed overview of total notification numbers and rates in males by local health district.

Appendix A: Indicators for monitoring and reporting

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

| NSW STI Strategy 2016-2020 indicator | Monitoring tool |
|---|--|
| Reduce gonorrhoea infections | NSW Notifiable Conditions Information Management System |
| Reduce infectious syphilis infections | NSW Notifiable Conditions Information Management System |
| 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 |
| 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 |
| 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 |

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. |
| 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 GBM in Sydney (self-reported). |
| 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 2018. |
| NSW Notifiable Conditions Information Management System (NCIMS) | Health Protection NSW, NSW Health | The NSW Notifiable Conditions Information Management System (NCIMS) contains records of all people notified to NSW Health with a notifiable condition under the NSW <i>Public Health Act</i> . Notification data may not reflect the true 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. |

| Name | Custodian | Description |
|------|-----------|---|
| | | <p>Re-infection periods: A person is only re-notified with chlamydia, gonorrhoea or infectious syphilis if the infection is acquired outside of the re-infection period as follows:</p> <p>Chlamydia - 29 days</p> <p>Gonorrhoea - 29 days</p> <p>Infectious syphilis - 89 days</p> <p>Multiple sites: A person who is notified with more than one site of infection simultaneously is counted as one notification.</p> |

Appendix C: Case definitions

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

Gonorrhoea

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

Infectious syphilis – less than two years duration

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

Syphilis - more than 2 years or unknown duration

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

Chlamydia

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

Appendix D: Notification data tables

Table 7: Number of infectious syphilis, gonorrhoea, chlamydia, and LGV notifications by sex, age group and local health district, NSW, 1 January 2014–31 December 2020

| | Infectious syphilis | | | | | Gonorrhoea | | | | | Chlamydia | | | | | LGV | | | | |
|--------------|---------------------|-------------|-------------|-------------|-------------|-------------|-------------|--------------|--------------|-------------|--------------|--------------|--------------|--------------|--------------|-----------|-----------|-----------|-----------|-----------|
| | 2016 | 2017 | 2018 | 2019 | 2020 | 2016 | 2017 | 2018 | 2019 | 2020 | 2016 | 2017 | 2018 | 2019 | 2020 | 2016 | 2017 | 2018 | 2019 | 2020 |
| TOTAL | 866 | 1109 | 1515 | 1875 | 1673 | 6929 | 8987 | 10139 | 11226 | 9679 | 25894 | 28811 | 30868 | 32100 | 26964 | 58 | 52 | 80 | 71 | 40 |
| Female | 31 | 46 | 79 | 126 | 134 | 1275 | 1481 | 1818 | 2279 | 1932 | 12987 | 13630 | 14350 | 14877 | 13082 | 0 | 1 | 0 | 0 | 1 |
| Male | 829 | 1055 | 1418 | 1732 | 1533 | 5634 | 7470 | 8274 | 8885 | 7692 | 12868 | 15139 | 16439 | 17134 | 13770 | 58 | 52 | 80 | 71 | 39 |
| Transgender* | 3 | 5 | 14 | 12 | 4 | 10 | 16 | 25 | 16 | 17 | 6 | 14 | 22 | 14 | 25 | 0 | 0 | 0 | 0 | 0 |
| Unknown | 3 | 3 | 4 | 5 | 2 | 10 | 20 | 22 | 46 | 38 | 33 | 28 | 57 | 75 | 87 | 0 | 0 | 0 | 0 | 0 |
| 00-04 | 0 | 0 | 0 | 0 | 0 | 3 | 5 | 4 | 6 | 2 | 23 | 24 | 14 | 21 | 23 | 0 | 0 | 0 | 0 | 0 |
| 05-09 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 2 | 0 | 2 | 1 | 2 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 |
| 10-14 | 0 | 0 | 0 | 0 | 0 | 2 | 3 | 3 | 9 | 8 | 60 | 64 | 64 | 56 | 52 | 0 | 0 | 0 | 0 | 0 |
| 15-19 | 11 | 20 | 30 | 29 | 25 | 314 | 408 | 358 | 525 | 414 | 3932 | 4147 | 4153 | 4167 | 3686 | 1 | 0 | 0 | 0 | 0 |
| 20-24 | 99 | 104 | 153 | 182 | 147 | 1238 | 1535 | 1668 | 1832 | 1534 | 8497 | 8969 | 9370 | 9627 | 8314 | 2 | 3 | 4 | 4 | 1 |
| 25-29 | 133 | 206 | 275 | 332 | 289 | 1563 | 2060 | 2290 | 2528 | 2155 | 5606 | 6468 | 7036 | 7223 | 6116 | 10 | 10 | 12 | 16 | 10 |
| 30-34 | 134 | 189 | 243 | 328 | 305 | 1237 | 1553 | 1884 | 2142 | 1836 | 3064 | 3616 | 4044 | 4349 | 3501 | 8 | 11 | 19 | 16 | 10 |
| 35-39 | 132 | 144 | 211 | 280 | 281 | 844 | 1157 | 1316 | 1496 | 1381 | 1737 | 1959 | 2267 | 2522 | 2070 | 13 | 11 | 12 | 13 | 9 |
| 40-44 | 101 | 145 | 160 | 196 | 187 | 631 | 800 | 886 | 920 | 835 | 1094 | 1298 | 1403 | 1534 | 1175 | 7 | 6 | 8 | 8 | 1 |
| 45-49 | 98 | 109 | 148 | 195 | 156 | 434 | 604 | 701 | 702 | 611 | 780 | 990 | 1007 | 1055 | 830 | 5 | 4 | 11 | 4 | 5 |
| 50-54 | 68 | 90 | 116 | 135 | 137 | 327 | 415 | 445 | 481 | 403 | 548 | 588 | 675 | 671 | 549 | 3 | 5 | 4 | 8 | 3 |
| 55-59 | 51 | 52 | 78 | 98 | 77 | 171 | 242 | 283 | 308 | 258 | 285 | 358 | 427 | 415 | 344 | 7 | 1 | 2 | 2 | 0 |
| 60-64 | 18 | 29 | 59 | 62 | 38 | 90 | 116 | 156 | 154 | 143 | 139 | 156 | 215 | 258 | 173 | 2 | 1 | 3 | 0 | 0 |
| 65-69 | 8 | 8 | 23 | 15 | 14 | 45 | 47 | 81 | 68 | 55 | 76 | 113 | 119 | 115 | 65 | 0 | 0 | 2 | 0 | 1 |
| 70-74 | 10 | 9 | 12 | 15 | 9 | 13 | 26 | 42 | 31 | 24 | 24 | 46 | 53 | 48 | 37 | 0 | 1 | 2 | 0 | 0 |
| 75-79 | 2 | 1 | 5 | 5 | 4 | 8 | 10 | 11 | 9 | 8 | 14 | 10 | 8 | 14 | 12 | 0 | 0 | 1 | 0 | 0 |
| 80-84 | 0 | 0 | 1 | 0 | 1 | 3 | 2 | 7 | 5 | 3 | 4 | 1 | 6 | 7 | 7 | 0 | 0 | 0 | 0 | 0 |
| 85 and over | 1 | 2 | 1 | 3 | 1 | 2 | 0 | 2 | 3 | 1 | 3 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| Unknown | 0 | 1 | 0 | 0 | 2 | 2 | 2 | 0 | 7 | 6 | 7 | 1 | 7 | 16 | 8 | 0 | 0 | 0 | 0 | 0 |

| | Infectious syphilis | | | | | Gonorrhoea | | | | | Chlamydia | | | | | LGV | | | | |
|-----------------------|---------------------|------|------|------|------|------------|------|------|------|------|-----------|------|------|------|------|------|------|------|------|------|
| | 2016 | 2017 | 2018 | 2019 | 2020 | 2016 | 2017 | 2018 | 2019 | 2020 | 2016 | 2017 | 2018 | 2019 | 2020 | 2016 | 2017 | 2018 | 2019 | 2020 |
| Central Coast | 20 | 17 | 17 | 45 | 30 | 131 | 211 | 206 | 228 | 203 | 1039 | 1032 | 1046 | 1154 | 956 | 0 | 2 | 1 | 2 | 0 |
| Far West | 1 | 0 | 1 | 6 | 4 | 0 | 10 | 6 | 10 | 11 | 71 | 80 | 115 | 94 | 50 | 0 | 0 | 0 | 0 | 0 |
| Hunter New England | 34 | 46 | 62 | 94 | 112 | 384 | 393 | 551 | 609 | 500 | 2956 | 2935 | 3200 | 3109 | 2523 | 1 | 0 | 1 | 0 | 3 |
| Illawarra Shoalhaven | 29 | 29 | 44 | 44 | 51 | 124 | 166 | 268 | 310 | 376 | 1158 | 1312 | 1381 | 1394 | 1346 | 1 | 0 | 2 | 2 | 1 |
| Justice Health | #N/A | 1 | 4 | 3 | 18 | 26 | 25 | 36 | 60 | 53 | 179 | 161 | 269 | 334 | 149 | 0 | 0 | 0 | 0 | 0 |
| Mid North Coast | 1 | 4 | 11 | 10 | 12 | 26 | 59 | 74 | 74 | 65 | 570 | 663 | 636 | 730 | 661 | 0 | 0 | 0 | 0 | 2 |
| Murrumbidgee | 15 | 16 | 12 | 21 | 25 | 51 | 69 | 72 | 120 | 130 | 835 | 831 | 919 | 979 | 738 | 0 | 1 | 2 | 1 | 1 |
| Nepean Blue Mountains | 16 | 21 | 35 | 34 | 46 | 183 | 229 | 321 | 324 | 297 | 846 | 1032 | 1081 | 1144 | 980 | 0 | 3 | 3 | 1 | 0 |
| Northern NSW | 11 | 14 | 19 | 23 | 17 | 136 | 158 | 147 | 175 | 166 | 935 | 970 | 936 | 922 | 886 | 0 | 0 | 1 | 0 | 0 |
| Northern Sydney | 58 | 67 | 136 | 112 | 104 | 630 | 665 | 804 | 910 | 718 | 2373 | 2564 | 2761 | 2738 | 2282 | 2 | 3 | 6 | 6 | 3 |
| South Eastern Sydney | 342 | 442 | 556 | 671 | 598 | 2043 | 2800 | 3002 | 3221 | 2784 | 5103 | 6108 | 6586 | 6895 | 5566 | 24 | 18 | 26 | 26 | 10 |
| South Western Sydney | 43 | 55 | 72 | 71 | 59 | 626 | 800 | 957 | 1076 | 1037 | 2310 | 2727 | 3009 | 2871 | 2996 | 3 | 4 | 7 | 2 | 3 |
| Southern NSW | 3 | 8 | 14 | 15 | 15 | 56 | 60 | 73 | 73 | 43 | 476 | 503 | 497 | 501 | 359 | 0 | 0 | 1 | 0 | 0 |
| Sydney | 233 | 304 | 392 | 539 | 412 | 1681 | 2275 | 2331 | 2663 | 2066 | 3786 | 4301 | 4556 | 4984 | 4073 | 20 | 20 | 26 | 20 | 13 |
| Western NSW | 8 | 10 | 8 | 8 | 19 | 45 | 57 | 66 | 90 | 60 | 785 | 777 | 818 | 939 | 642 | 1 | 0 | 0 | 3 | 0 |
| Western Sydney | 45 | 70 | 122 | 177 | 148 | 760 | 975 | 1186 | 1248 | 1155 | 2427 | 2748 | 3007 | 3253 | 2728 | 6 | 2 | 4 | 8 | 4 |
| Other NSW | 7 | 5 | 10 | 2 | 3 | 27 | 35 | 39 | 35 | 15 | 45 | 67 | 51 | 59 | 29 | 0 | 0 | 0 | 0 | 0 |

Data source: NCIMS, NSW Health; data extracted 13–19 May 2021; 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

Table 8: Gonorrhoea notification rate by LHD and sex, NSW, 1 January 2016 to 31 December 2020

| Local Health District | | Year | | | | | |
|-----------------------|--------|-------|-------|-------|-------|-------|----------------|
| | | 2016 | 2017 | 2018 | 2019 | 2020 | % change 19/20 |
| Far West | Female | 0.0 | 26.9 | 20.2 | 26.9 | 33.6 | +25.0% |
| | Male | 0.0 | 39.9 | 19.9 | 39.5 | 39.3 | -0.6% |
| | Total | 0.0 | 33.4 | 20.0 | 33.3 | 36.5 | +9.7% |
| Western NSW | Female | 7.8 | 11.4 | 12.0 | 24.7 | 14.8 | -40.2% |
| | Male | 24.4 | 29.3 | 34.7 | 38.0 | 25.9 | -31.9% |
| | Total | 16.1 | 20.3 | 23.4 | 31.7 | 21.1 | -33.7% |
| Murrumbidgee | Female | 8.8 | 14.9 | 15.5 | 27.5 | 27.5 | -0.3% |
| | Male | 26.1 | 32.1 | 33.3 | 53.4 | 58.5 | +9.5% |
| | Total | 17.4 | 23.4 | 24.4 | 40.4 | 43.6 | +7.9% |
| Mid North Coast | Female | 5.4 | 24.1 | 30.0 | 20.1 | 29.5 | +46.4% |
| | Male | 19.0 | 30.0 | 37.1 | 46.8 | 28.1 | -39.9% |
| | Total | 12.0 | 27.0 | 33.5 | 33.1 | 28.8 | -13.1% |
| Southern NSW | Female | 16.6 | 16.4 | 12.4 | 15.9 | 12.0 | -24.5% |
| | Male | 37.9 | 41.2 | 56.6 | 52.1 | 27.5 | -47.2% |
| | Total | 27.3 | 28.8 | 34.6 | 34.1 | 19.8 | -41.9% |
| Northern NSW | Female | 29.0 | 38.5 | 27.1 | 47.3 | 38.6 | -18.4% |
| | Male | 63.5 | 67.4 | 70.0 | 67.1 | 68.3 | +1.7% |
| | Total | 45.9 | 52.7 | 48.4 | 57.0 | 53.5 | -6.2% |
| Hunter New England | Female | 25.1 | 22.1 | 31.7 | 48.6 | 44.7 | -8.2% |
| | Male | 59.3 | 63.4 | 86.6 | 80.4 | 60.2 | -25.1% |
| | Total | 42.1 | 42.6 | 59.1 | 64.6 | 52.5 | -18.8% |
| Central Coast | Female | 25.6 | 47.7 | 32.4 | 47.6 | 43.7 | -8.2% |
| | Male | 53.1 | 77.2 | 88.7 | 84.1 | 72.0 | -14.3% |
| | Total | 39.1 | 62.1 | 59.9 | 65.4 | 57.5 | -12.1% |
| Illawarra Shoalhaven | Female | 18.0 | 23.7 | 39.4 | 52.9 | 65.3 | +23.4% |
| | Male | 43.4 | 57.8 | 91.0 | 96.4 | 112.3 | +16.5% |
| | Total | 30.6 | 40.6 | 65.0 | 74.5 | 89.6 | +20.3% |
| Nepean Blue Mountains | Female | 25.9 | 29.2 | 50.2 | 57.7 | 51.8 | -10.3% |
| | Male | 74.0 | 93.4 | 119.6 | 110.4 | 99.0 | -10.4% |
| | Total | 49.8 | 61.3 | 84.6 | 84.1 | 76.0 | -9.7% |
| Northern Sydney | Female | 27.8 | 23.5 | 32.0 | 37.4 | 31.9 | -14.7% |
| | Male | 111.6 | 122.0 | 142.3 | 157.2 | 120.1 | -23.6% |
| | Total | 68.9 | 71.9 | 86.0 | 96.2 | 75.1 | -22.0% |
| South Western Sydney | Female | 30.0 | 36.5 | 42.0 | 50.4 | 43.9 | -12.8% |
| | Male | 100.2 | 126.6 | 148.6 | 158.1 | 154.7 | -2.2% |
| | Total | 64.9 | 81.4 | 95.6 | 105.5 | 99.9 | -5.3% |
| Western Sydney | Female | 35.1 | 45.3 | 53.3 | 59.0 | 48.9 | -17.1% |
| | Male | 123.7 | 153.0 | 181.5 | 181.9 | 168.7 | -7.3% |
| | Total | 80.1 | 100.0 | 118.5 | 121.5 | 109.6 | -9.8% |
| South Eastern Sydney | Female | 58.8 | 63.9 | 78.0 | 88.6 | 67.9 | -23.4% |
| | Male | 387.4 | 539.9 | 561.1 | 589.2 | 511.8 | -13.1% |
| | Total | 223.5 | 302.6 | 320.5 | 339.8 | 290.3 | -14.6% |
| Sydney | Female | 64.3 | 66.9 | 81.6 | 100.7 | 66.4 | -34.1% |
| | Male | 449.2 | 615.7 | 606.4 | 673.8 | 524.6 | -22.1% |
| | Total | 256.1 | 341.3 | 344.5 | 387.8 | 296.5 | -23.5% |

Data source: NCIMS, NSW Health; data extracted 13 May 2021.

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

Table 9: Infectious syphilis notification rates by LHD, NSW, 1 January 2016–31 December 2020

| Local Health District | Year | | | | | |
|------------------------------|------|------|------|------|------|------------------|
| | 2016 | 2017 | 2018 | 2019 | 2020 | %change 19/20 |
| Mid North Coast | 0.5 | 1.8 | 5.0 | 4.5 | 5.3 | 18.8% |
| Western NSW | 2.9 | 3.6 | 2.8 | 2.8 | 6.7 | 136.3% |
| Southern NSW | 1.5 | 3.8 | 6.6 | 7.0 | 6.9 | -1.4% |
| Northern NSW | 3.7 | 4.7 | 6.3 | 7.5 | 5.5 | -26.9% |
| Murrumbidgee | 4.5 | 5.6 | 7.2 | 7.0 | 5.7 | -18.4% |
| South Western Sydney | 5.1 | 5.4 | 4.1 | 7.1 | 8.4 | 18.6% |
| Hunter New England | 3.7 | 5.0 | 6.6 | 10.0 | 11.8 | 17.9% |
| Central Coast | 6.0 | 5.0 | 4.9 | 12.9 | 8.5 | -34.2% |
| Nepean Blue Mountains | 4.4 | 5.6 | 9.2 | 8.8 | 11.8 | 33.3% |
| Illawarra Shoalhaven | 7.2 | 7.1 | 10.7 | 10.6 | 12.2 | 14.9% |
| Far West | 3.4 | 0 | 3.3 | 20.0 | 13.3 | -33.5% |
| Northern Sydney | 6.3 | 7.2 | 14.5 | 11.8 | 10.9 | -8.2% |
| Western Sydney | 4.7 | 7.2 | 12.2 | 17.2 | 14.0 | -18.5% |
| Sydney | 35.5 | 45.6 | 57.9 | 78.5 | 59.1 | -24.7% |
| South Eastern Sydney | 37.4 | 47.8 | 59.4 | 70.8 | 62.4 | -11.9% |

Data source: NCIMS, NSW Health; data extracted 19 May 2021.

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

Table 10: Chlamydia notification rates by LHD and sex, NSW, 1 January 2016–31 December 2020

| Local Health District | Sex | Year | | | | | |
|-----------------------|--------|-------|-------|-------|-------|-------|----------------|
| | | 2016 | 2017 | 2018 | 2019 | 2020 | % change 19/20 |
| Southern NSW | Female | 264.4 | 286.9 | 265.1 | 262.7 | 198.2 | -24.5% |
| | Male | 199.4 | 195.5 | 205.8 | 205.5 | 131.1 | -36.2% |
| | Total | 231.9 | 241.6 | 235.3 | 234.0 | 165.4 | -29.3% |
| Western NSW | Female | 358.9 | 351.2 | 375.4 | 432.0 | 299.6 | -30.6% |
| | Male | 201.8 | 201.9 | 204.2 | 230.4 | 151.2 | -34.4% |
| | Total | 280.9 | 276.7 | 289.8 | 331.1 | 225.3 | -32.0% |
| Murrumbidgee | Female | 353.0 | 335.8 | 383.3 | 404.4 | 298.7 | -26.1% |
| | Male | 215.0 | 228.1 | 237.8 | 254.7 | 194.9 | -23.5% |
| | Total | 284.8 | 282.2 | 310.8 | 329.8 | 247.6 | -24.9% |
| Mid North Coast | Female | 331.5 | 370.2 | 332.2 | 381.5 | 344.9 | -9.6% |
| | Male | 189.8 | 232.6 | 240.2 | 269.6 | 237.6 | -11.9% |
| | Total | 263.4 | 303.1 | 287.7 | 326.8 | 292.9 | -10.4% |
| Nepean Blue Mountains | Female | 262.6 | 295.8 | 309.1 | 326.1 | 280.2 | -14.1% |
| | Male | 196.9 | 256.4 | 259.9 | 264.3 | 209.8 | -20.6% |
| | Total | 230.0 | 276.2 | 284.9 | 297.0 | 250.6 | -15.6% |
| Northern NSW | Female | 340.4 | 347.9 | 335.2 | 339.4 | 337.2 | -0.7% |
| | Male | 288.4 | 297.7 | 279.9 | 259.2 | 229.8 | -11.3% |
| | Total | 315.3 | 323.3 | 308.5 | 300.4 | 285.5 | -5.0% |
| Illawarra Shoalhaven | Female | 328.8 | 356.8 | 385.3 | 385.3 | 381.5 | -1.0% |
| | Male | 241.4 | 282.5 | 280.8 | 283.9 | 257.7 | -9.2% |
| | Total | 285.5 | 320.7 | 334.7 | 335.0 | 320.8 | -4.3% |
| Hunter New England | Female | 377.8 | 366.0 | 401.8 | 384.8 | 317.5 | -17.5% |
| | Male | 268.1 | 269.3 | 282.6 | 273.6 | 211.7 | -22.6% |
| | Total | 324.0 | 318.2 | 343.2 | 329.9 | 264.9 | -19.7% |
| Far West | Female | 315.7 | 356.1 | 450.3 | 349.7 | 228.7 | -34.6% |
| | Male | 154.0 | 179.7 | 317.8 | 276.5 | 104.7 | -62.1% |
| | Total | 238.0 | 267.5 | 383.5 | 312.7 | 165.9 | -47.0% |
| Central Coast | Female | 364.3 | 350.3 | 311.1 | 364.9 | 302.2 | -17.2% |
| | Male | 252.2 | 253.9 | 295.3 | 294.0 | 238.1 | -19.0% |
| | Total | 309.9 | 303.8 | 304.0 | 331.2 | 270.9 | -18.2% |
| Western Sydney | Female | 262.4 | 283.6 | 299.1 | 309.5 | 272.7 | -11.9% |
| | Male | 248.4 | 279.4 | 300.3 | 321.0 | 243.8 | -24.0% |
| | Total | 255.9 | 281.9 | 300.4 | 316.7 | 259.0 | -18.2% |
| South Western Sydney | Female | 262.7 | 288.2 | 295.8 | 280.9 | 296.9 | 5.7% |
| | Male | 215.4 | 266.1 | 304.2 | 277.9 | 274.7 | -1.2% |
| | Total | 239.5 | 277.4 | 300.5 | 281.5 | 288.5 | 2.5% |
| Northern Sydney | Female | 243.2 | 248.5 | 260.4 | 265.9 | 227.9 | -14.3% |
| | Male | 275.4 | 305.7 | 328.0 | 311.6 | 248.1 | -20.4% |
| | Total | 259.6 | 277.3 | 295.3 | 289.6 | 238.7 | -17.6% |
| Sydney | Female | 465.7 | 460.4 | 472.4 | 477.9 | 403.4 | -15.6% |
| | Male | 687.4 | 829.0 | 872.3 | 973.2 | 762.4 | -21.7% |
| | Total | 576.7 | 645.3 | 673.3 | 725.8 | 584.6 | -19.5% |
| South Eastern Sydney | Female | 427.3 | 461.6 | 483.1 | 496.1 | 424.7 | -14.4% |
| | Male | 688.6 | 857.7 | 920.3 | 956.6 | 733.3 | -23.3% |
| | Total | 558.3 | 660.1 | 703.2 | 727.5 | 580.3 | -20.2% |

Data source: NCIMS, NSW Health; data extracted 14 May 2021.

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

Table 11: Total notifications 2016–2020 (males and females) and average annual LGV notification rates in males by LHD, NSW, 1 January 2016–31 December 2020

| Local Health District | 2014-2018 | |
|-----------------------|--|--|
| | Total number of notifications (males and females) | Average annual rate per 100,000 males |
| Far West | 0 | 0.00 |
| Northern NSW | 1 | 0.67 |
| Southern NSW | 1 | 0.94 |
| Mid North Coast | 2 | 0.91 |
| Western NSW | 4 | 1.42 |
| Central Coast | 5 | 0.99 |
| Hunter New England | 5 | 0.36 |
| Murrumbidgee | 5 | 0.85 |
| Illawarra Shoalhaven | 6 | 0.73 |
| Nepean Blue Mountains | 7 | 1.25 |
| South Western Sydney | 19 | 0.77 |
| Northern Sydney | 20 | 0.87 |
| Western Sydney | 24 | 0.91 |
| Sydney | 99 | 5.89 |
| South Eastern Sydney | 104 | 4.47 |

Data source: NCIMS, NSW Health; data extracted 14 May 2021.

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

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

Table 12: Year 7 HPV vaccination rate by LHD and gender, 2011 to 2019^[1]

| NSW | Gender | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 |
|-----------------------|---------|------|------|------|------|------|------|------|------|------|
| HPV (Year 7) - Dose 1 | Females | 81% | 86% | 86% | 87% | 87% | 86% | 86% | 85% | 85% |
| | Males | | | 80% | 83% | 84% | 83% | 84% | 83% | 82% |
| HPV (Year 7) - Dose 2 | Females | 76% | 84% | 84% | 85% | 86% | 84% | 82% | 82% | 81% |
| | Males | | | 78% | 81% | 83% | 82% | 79% | 80% | 79% |
| HPV (Year 7) - Dose 3 | Females | 71% | 78% | 82% | 82% | 82% | 82% | N/A | N/A | N/A |
| | Males | | | 76% | 78% | 80% | 80% | N/A | N/A | N/A |

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 from 2012 - 2017 includes catch-up vaccination for dose 2 and 3 in Year 8 in 2013 (to the end of term 2), and to the end of term 4 from 2014 onward.

Year 8 catch-up vaccination doses are not included in data reported for the 2018 year as catch-up data were not available at the time of publication.