

NSW Sexually Transmissible Infections Strategy 2016 – 2020

January to December
2016

Data Report



Executive summary

Key messages to 31 December 2016

- In 2016, the number of notifications of gonorrhoea rose markedly compared to 2015. Some of this increase is likely to be due to the increase in the number of gonorrhoea tests performed during this time. However, the ratio of the number of notifications to the number of tests increased in 2016, suggesting there was an increase in the rate of gonorrhoea infection in NSW.
- Further scaling up and strengthening of initiatives to increase the use of condoms for the prevention of transmission of STIs is required.
- Efforts to increase the rate of testing and re-testing following treatment for gonorrhoea and chlamydia should continue, in accordance with STI testing guidelines.
- Partner notification is central to the prevention of STIs and should be comprehensively undertaken.
- Targeted strategies are required to improve comprehensive STI testing among priority populations.

Key data

<i>Reduce gonorrhoea infections</i>				
	2016	Change since 2015		
Gonorrhoea notification rate	90 per 100,000 population	27% higher (71 per 100,000 population)		
Monthly average number of tests	68,967	13% higher (60,752)		
<i>Reduce infectious syphilis infections</i>				
	2016	Change since 2015		
Infectious syphilis notification rate	11.1 per 100,000 population	5% higher (9.9 per 100,000 population)		
<i>Reduce pelvic inflammatory disease (PID) associated with chlamydia</i>				
	2016	Change since 2015		
Hospital admissions for chlamydia associated PID ¹	202 (2015)	2% higher than 2014 (198)		
Chlamydia notification rate	337 per 100,000 population	13% higher (297 per 100,000 population)		
Monthly average number of tests	45,747	15% higher (41,001)		
<i>Maintain levels of condom use for preventing the transmission of STIs</i>				
	2016	Change since 2015		
Proportion reporting condomless intercourse with casual partners	Men who have sex with men, anal intercourse	41%	Increased 5 percentage points (36%)	
	Young people aged 15-29 years, vaginal/anal intercourse	63%	-	
<i>Maintain high coverage of HPV vaccination for Year 7 school students</i>				
	2016	Change since 2015		
Human papilloma virus vaccination: first dose only	Female year 7 students	86%	Decreased 1 percentage point (87%)	
	Male year 7 students	83%	Decreased 1 percentage point (84%)	
<i>Increase comprehensive STI testing in priority populations in accordance with risk</i>				
	2016	Change since 2015		
Comprehensive STI testing rates	Men who have sex with men	PFSHSs ²	86%	Increased 4 percentage points (82%)
		GP ³	62%	Increased 7 percentage points (55%)
	Young people	29%	No change	
	Female sex workers	90%	Decreased 2 percentage points (92%)	

¹ Data to 2015 only.

² PFSHSs: Publicly funded sexual health services.

³ GP: General practice.

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List of acronyms

ABS	Australian Bureau of Statistics
ART	Antiretroviral therapy
CDR	Communicable Disease Register
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
PID	Pelvic inflammatory disease
SAPHaRI	Secure Analytics for Population Health Research and Intelligence

Introduction

Sexually transmissible infections (STIs) remain a significant public health burden in NSW. If left untreated, STIs can be transmitted to sexual partners, increase the risk of the sexual transmission of HIV, and contribute to the development of severe complications such as infertility, ectopic pregnancy and congenital infection. They can also cause pain, discomfort and are stigmatising for the affected individual.

The NSW STI Strategy 2016-2020⁴ (*the Strategy*) provides a framework to effectively respond to changes in STI epidemiology across NSW.

The Strategy outlines four goals:

1. To reduce gonorrhoea and syphilis infections and reduce the burden of disease of chlamydia infection.
2. Sustain the low rates of STIs amongst sex workers.
3. Sustain the virtual elimination of congenital syphilis.
4. Maintain high coverage of HPV vaccination.

The priority populations for the Strategy include Aboriginal people, gay and homosexually active men, sex workers and young people. The priority settings for action include publicly funded sexual health services, Aboriginal community controlled health services, antenatal settings, drug and alcohol services, mental health services and general practice and primary health care.

These Data Reports form the primary mechanism for reporting progress against the Strategy's indicators. They will be developed on a biannual basis, and undergo a review process from experts from research, policy, clinical, community and peer organisations.

The review process will drive the implementation of the Strategy and provide the basis for the development and refinement of innovative practice, service models, improved health service quality, clinical safety and performance.

This report is the second in a series of reports that maps the epidemiological and behavioural data relevant to STIs against the targets of the Strategy. It is intended to provide an indication of progress and success of the implementation of the NSW STI Strategy 2016-2020.

⁴ NSW Ministry of Health (2015). NSW Sexually Transmissible Diseases Strategy 2016-2020. Sydney: NSW Ministry of Health. <http://stipu.nsw.gov.au/wp-content/uploads/STI-Strategy-2016-2020.pdf>

Progress against the NSW Sexually Transmissible Infections Strategy 2016-2020

1 Reduce gonorrhoea infections

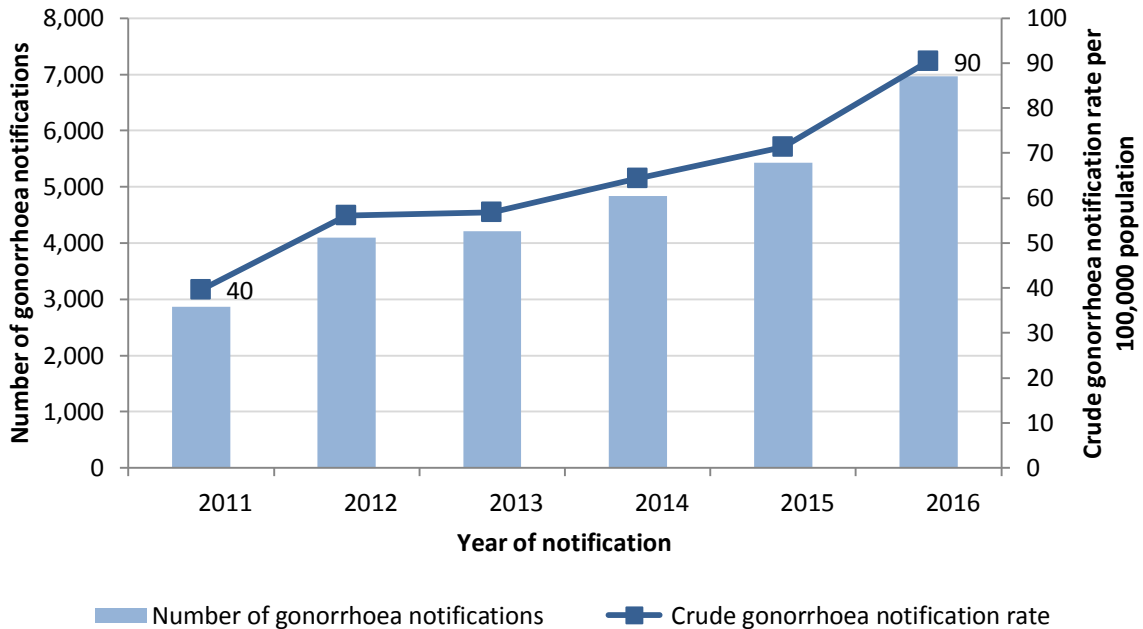
Prevention, testing and appropriate treatment and management are the cornerstones of gonorrhoea control and are embedded in the current STI strategy. Gonorrhoea notification data does not reflect the true incidence of gonorrhoea infection as it only represents a proportion of infections in the population, 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 gonorrhoea* from culture or detection by nucleic acid testing (NAT). Only confirmed cases of gonorrhoea are counted when reporting gonorrhoea notification data. Gonorrhoea infections are not routinely followed up by public health units so detailed information (e.g. sexual exposure) is difficult to ascertain.

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

1.1 Gonorrhoea notifications

Figure 1: Number and crude rate of gonorrhoea notifications, NSW, 1 January 2011- 31 December 2016



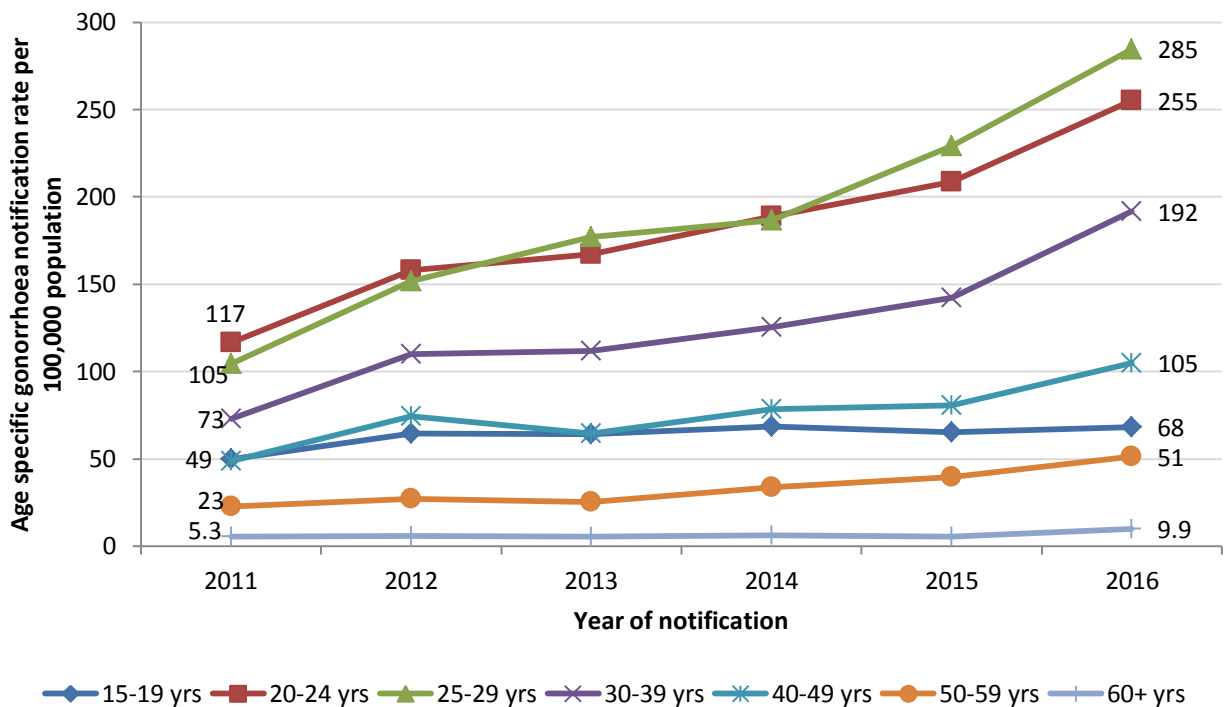
Data source: NCIMS (via SAPHaRI), NSW Health; data extracted 3 Apr 2017.

Note: Excludes non-NSW residents and persons whose place of residence in NSW was not known

Comment

The number and rate of gonorrhoea notifications continue to rise. There has been an increasing trend in gonorrhoea notifications since 2013. In 2016, a total of 6,969 gonorrhoea notifications were received by NSW Health for NSW residents. This represents a 28% increase in notifications compared to 2015 and is the largest annual increase since 2012.

Figure 2: Age specific gonorrhoea notification rates, NSW, 1 January 2011- 31 December 2016



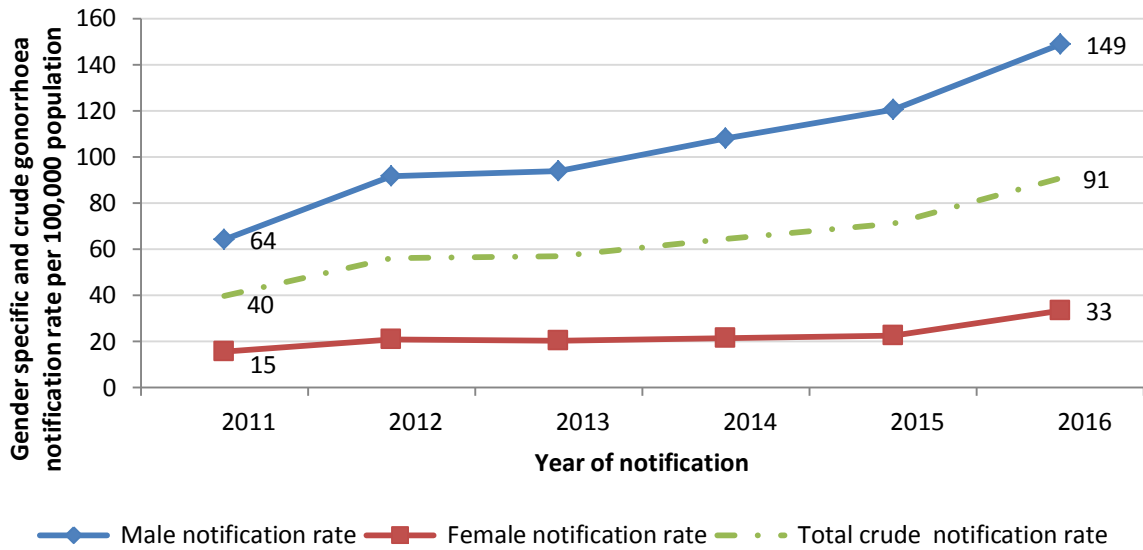
Data source: NCIMS (via SAPHaRI), NSW Health; data extracted 3 Apr 2017.

Comment

In 2016, increases in the gonorrhoea notification rate were observed across all age groups compared to 2015. The highest gonorrhoea notification rate was among the 25-29 years age group (285 notifications per 100,000 population) followed by the 20-24 years age group (255 per 100,000 population) and the 30-39 years age group (192 per 100,000 population).

The largest relative increases in the age specific gonorrhoea notification rates have occurred in the 60+ years and 30-39 years age groups. The age specific rate for the 60+ years age group was 9.9 per 100,000 population which represents a 76% increase compared to 2015, however the number of infections (365) is relatively small. The age specific rate for the 30-39 years age group was 192 per 100,000 population which represents a 35 % increase compared to 2015. The age specific rate for both the 40-49 years and 50-59 years age groups increased by 30%.

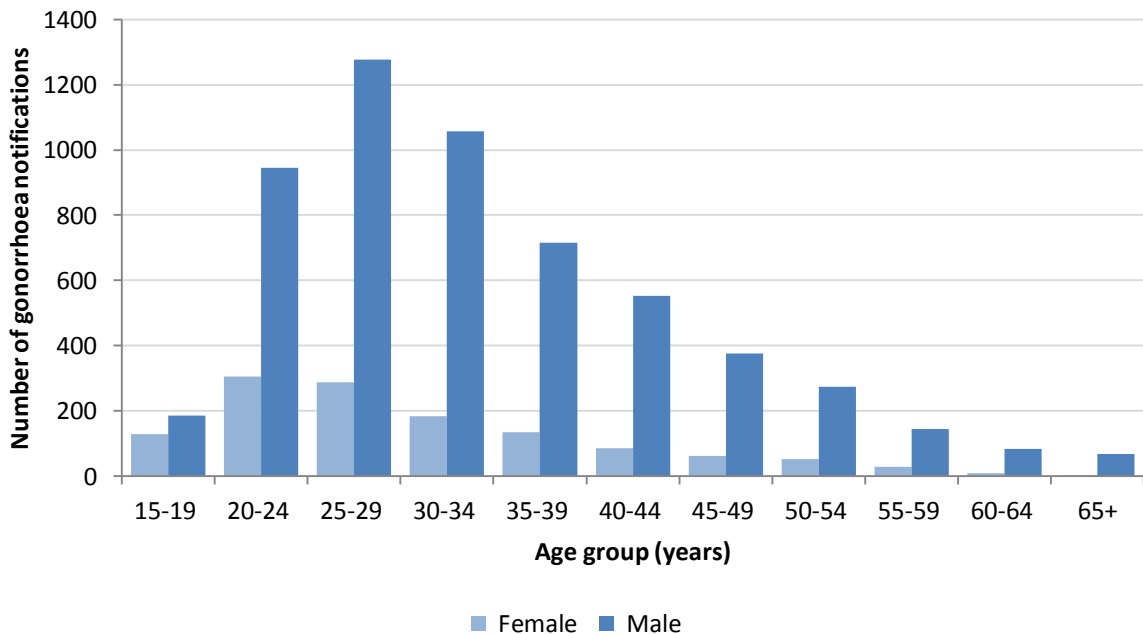
Figure 3: Gender specific gonorrhoea notification rate, NSW, 1 January 2011- 31 December 2016



Data source: NCIMS (via SAPHaRI), NSW Health; data extracted 3 Apr 2017.

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

Figure 4: Number of gonorrhoea notifications by age group and gender, NSW, 1 January 2016- 31 December 2016



Data source: NCIMS, NSW Health; data extracted 3 Apr 2017.

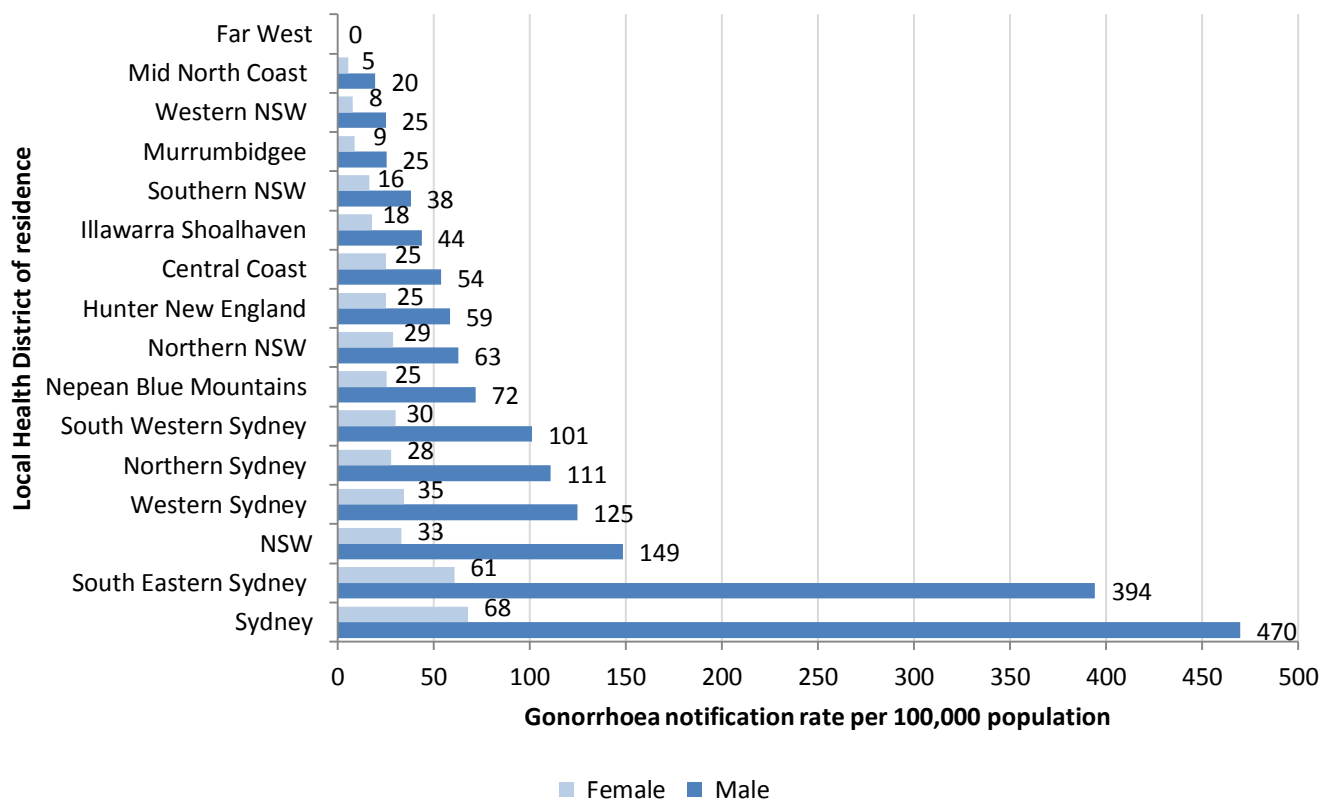
Note: Excludes persons reported as transgender (due to small numbers), and persons whose age or sex was not reported.

Comment

In 2016, there were 5685 (81%) gonorrhoea notifications in males, 1284 (18%) in females, 15 (<1%) in transgender persons and two (<1%) whose gender was not reported.

In 2016, the largest relative increase in the gonorrhoea notification rate was in females, with a gender specific rate of 34 per 100,000 females. This represents a 43% increase compared to 2015. The gonorrhoea notification rate for males was 149 per 100,000 males, a 23% increase compared to 2015. The transmission of gonorrhoea in NSW is historically thought to be associated with male-to-male sex, however the observed higher relative increase in notifications in females compared to males may indicate that heterosexual transmission is increasing. In 2016, the majority of female gonorrhoea notifications were observed in the 20-24 years, 25-29 years and 30-34 years age groups; the same age groups in which the majority of male notifications were observed.

Figure 5: Crude gonorrhoea notification rate by local health district and gender, NSW, 1 January 2016- 31 December 2016



Data source: NCIMS and ABS population estimates (SAPHaRI), NSW Health; data extracted 3 Apr 2017.

Note: Excludes non-NSW residents, persons whose place of residence in NSW was not known and notifications from Justice Health. For Justice Health notifications, see Table 4 in Appendix D: Notification data.

Comment

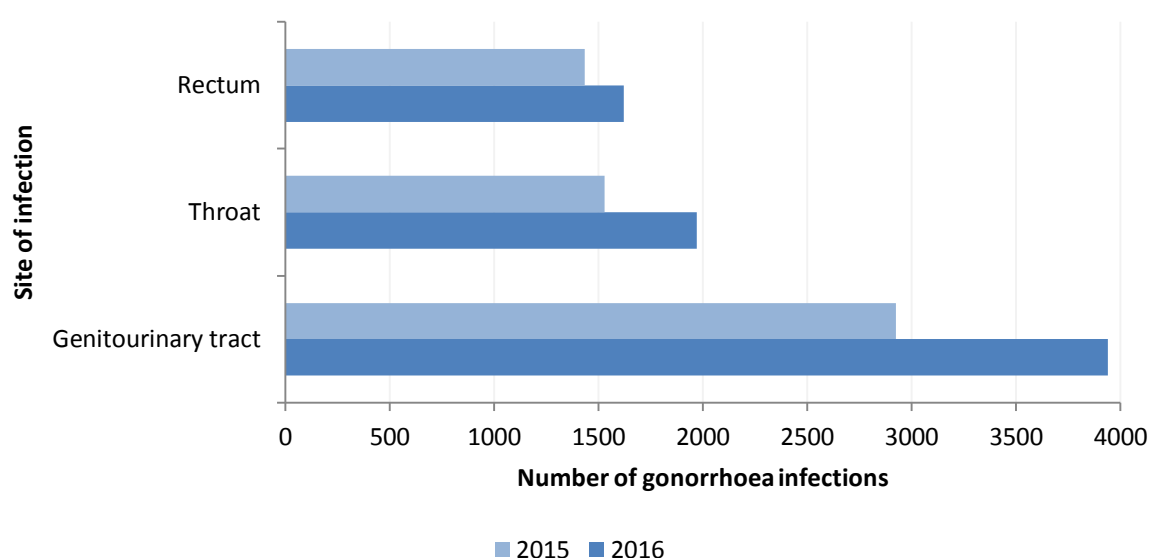
In 2016, Sydney and South Eastern Sydney Local Health Districts (LHDs) had the highest gonorrhoea notification rates in both males and females (Figure 5). In 2016, the largest relative increase in the female gonorrhoea notification rate was observed in the Murrumbidgee and Southern NSW LHDs (9 notifications and 16 notifications per 100,000 females respectively), with a more than two fold

increase compared to 2015. However, the number of notifications is relatively small (see Table 12 Appendix E).

Following Murrumbidgee and Southern NSW LHDs was Sydney LHD, with an 83% increase in the female gonorrhoea notification rate compared to 2015 (37 notifications per 100,000 females).

In 2016, the largest relative increase in the male gonorrhoea notification rate was observed in Hunter New England LHD (36%), closely followed by a 33% increase across Northern NSW, Murrumbidgee and Northern Sydney LHDs.

Figure 6: Number of gonorrhoea infections by site, NSW, 1 January- 31 December 2015 and 1 January-31 December 2016



Data source: NCIMS, NSW Health; data extracted 3 Apr 2017.

Notes: 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.

Table 1: Number of gonorrhoea infections by site combination, NSW, 1 January-31 December 2016

Site of infection	Number of infections
Genitourinary tract (GU) only	3520
Throat only	1361
Rectum only	1005
Rectum and throat	359
GU and rectum	156
GU and throat	152
GU and rectum and throat	100
Other (joints/conjunctiva) only	10
Other (conjunctiva) and rectum	1

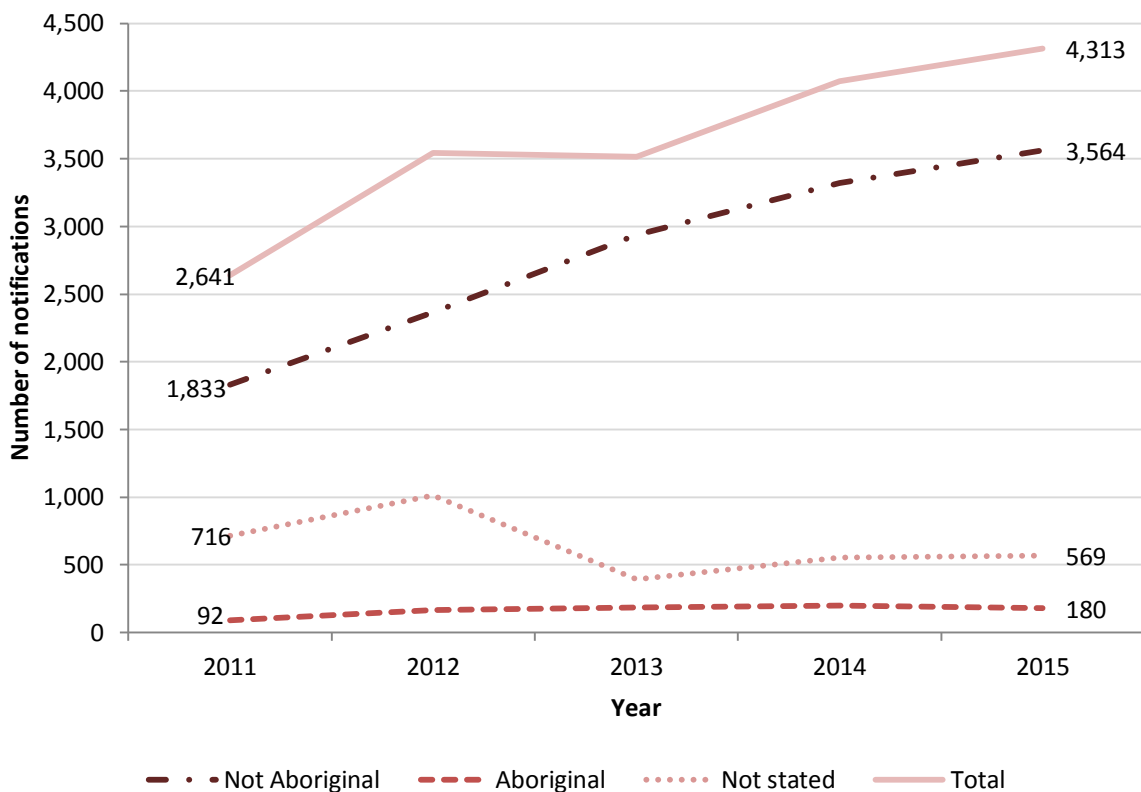
Data source: NCIMS, NSW Health; data extracted 3 Apr 2017.

Comment

The genitourinary tract is the main site of gonorrhoea infection notified to NSW Health (Figure 6). In 2016, the largest relative increases were observed in genitourinary and throat sites (35% and 21% respectively). A total of 778 co-infections were observed in 2016. The most commonly identified co-infection was rectum and throat (Table 1).

1.2 Gonorrhoea notifications among Aboriginal people

Figure 7: Gonorrhoea notifications by Aboriginality, NSW, 2011-2015



Data source: Communicable Diseases Register, NSW Health; data extracted 23 Mar 2017.

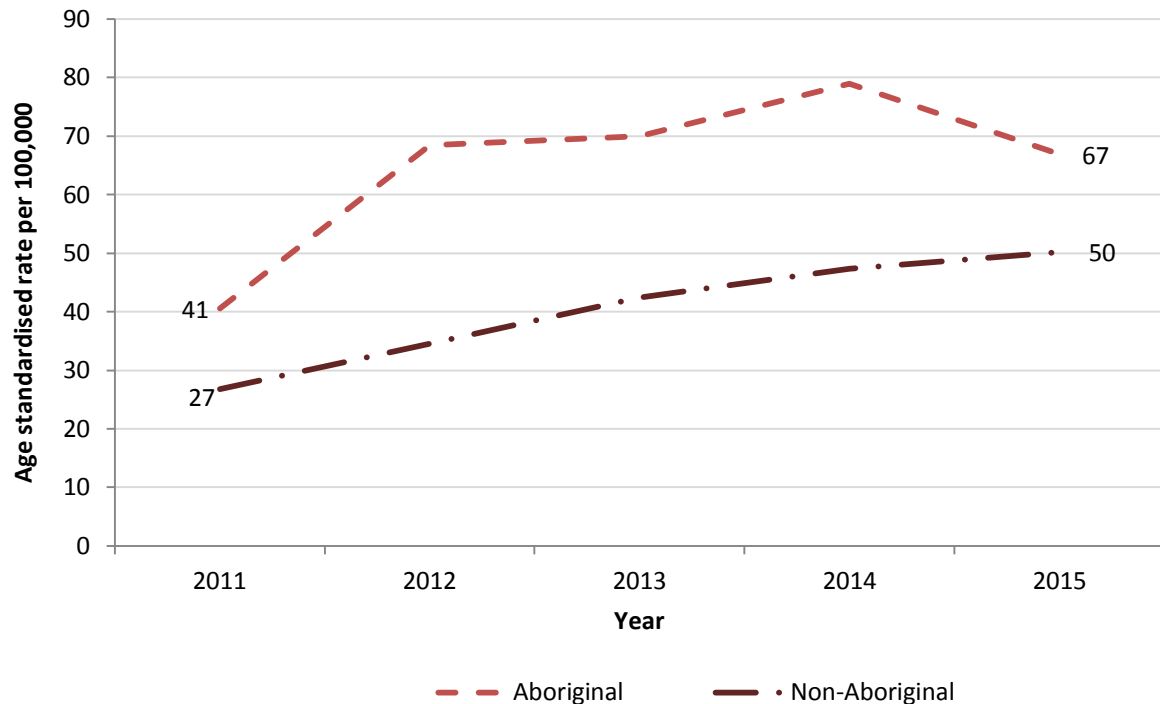
Comment

In 2015, 4,313 notifications for gonorrhoea were recorded in the Communicable Diseases Register (CDR). Of these, 180 (4%) were among Aboriginal people, 3,564 (83%) were among non-Aboriginal people and Aboriginal status was not known for 569 (13%) people. Aboriginal status completeness improved following implementation of a short-term, statewide enhanced surveillance project in 2013.

The Communicable Diseases Register (CDR) has been established under the Public Health and Disease Registers provisions of the NSW *Public Health Act 2010*. It contains de-identified records from the NSW Notifiable Conditions Information Management System (NCIMS), linked to emergency de-

partment, hospitalisation and deaths data. Data are currently available to the end of 2015⁵. After data linkage, Aboriginality remained unknown for 18% of gonorrhoea records between 2011 and 2015.

Figure 8: Gonorrhoea notification rate by Aboriginality, NSW, 2011-2015



Data source: Communicable Diseases Register and ABS (via SAPHaRI, NSW Health); data extracted 23 Mar 2017.
Note: Excludes records where Aboriginal status was not stated; rates standardised to the Australian Standard Population 2001.

Comment

The gap between Aboriginal and non-Aboriginal rates of gonorrhoea has narrowed.

Amongst those whose Aboriginal status was known, the age standardised gonorrhoea notification rate among Aboriginal people was 67 per 100,000 in 2015, 1.3 times higher than the rate among non-Aboriginal people (50 per 100,000).

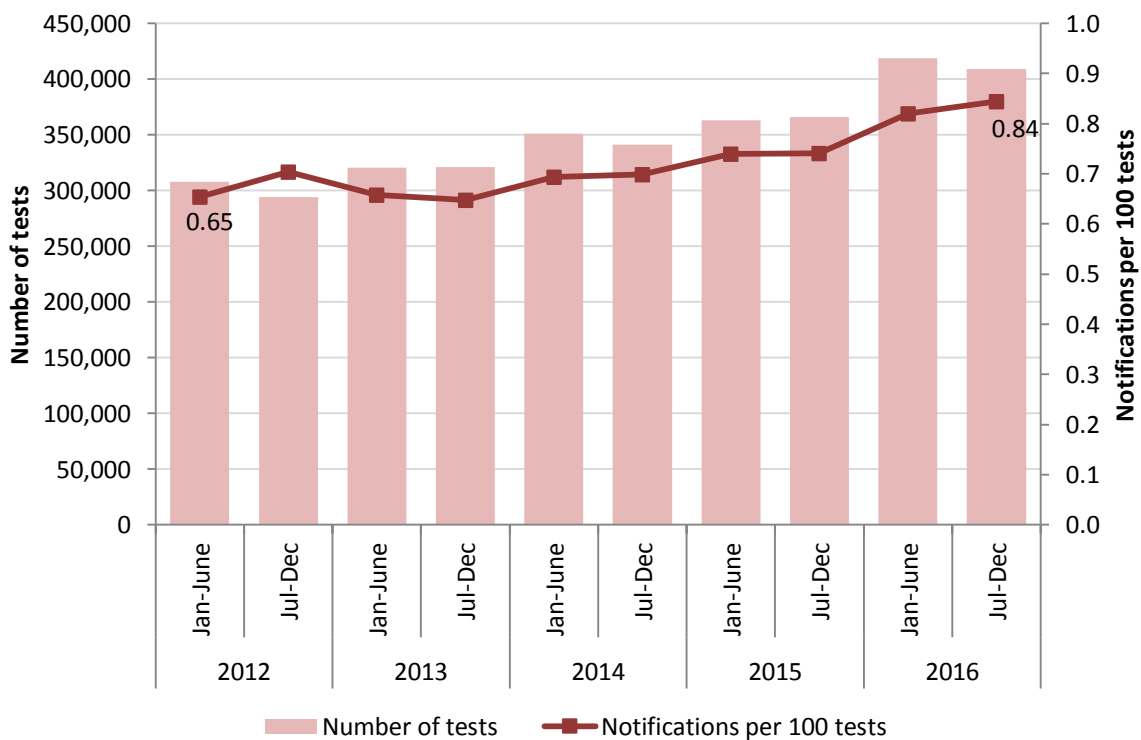
As the number of gonorrhoea notifications among Aboriginal people is relatively small, yearly variation in the rate should be interpreted with caution.

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

1.3 Gonorrhoea 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. More details on the data sources contained within this report can be found in Table 3, Appendix B. Almost all specimens submitted for chlamydia testing are also tested for gonorrhoea.

Figure 9: Number of gonorrhoea tests and notification to test⁶ ratio, NSW, January 2012 to December 2016



Data source: NCIMS and NSW Denominator Data Project, NSW Health; data extracted 3 Apr 2017

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

Comment

The number of gonorrhoea tests (NAT and culture) performed in NSW is continuing to increase. In 2016, 827,606 tests for gonorrhoea were performed in 15 laboratories in NSW, an average of 68,967

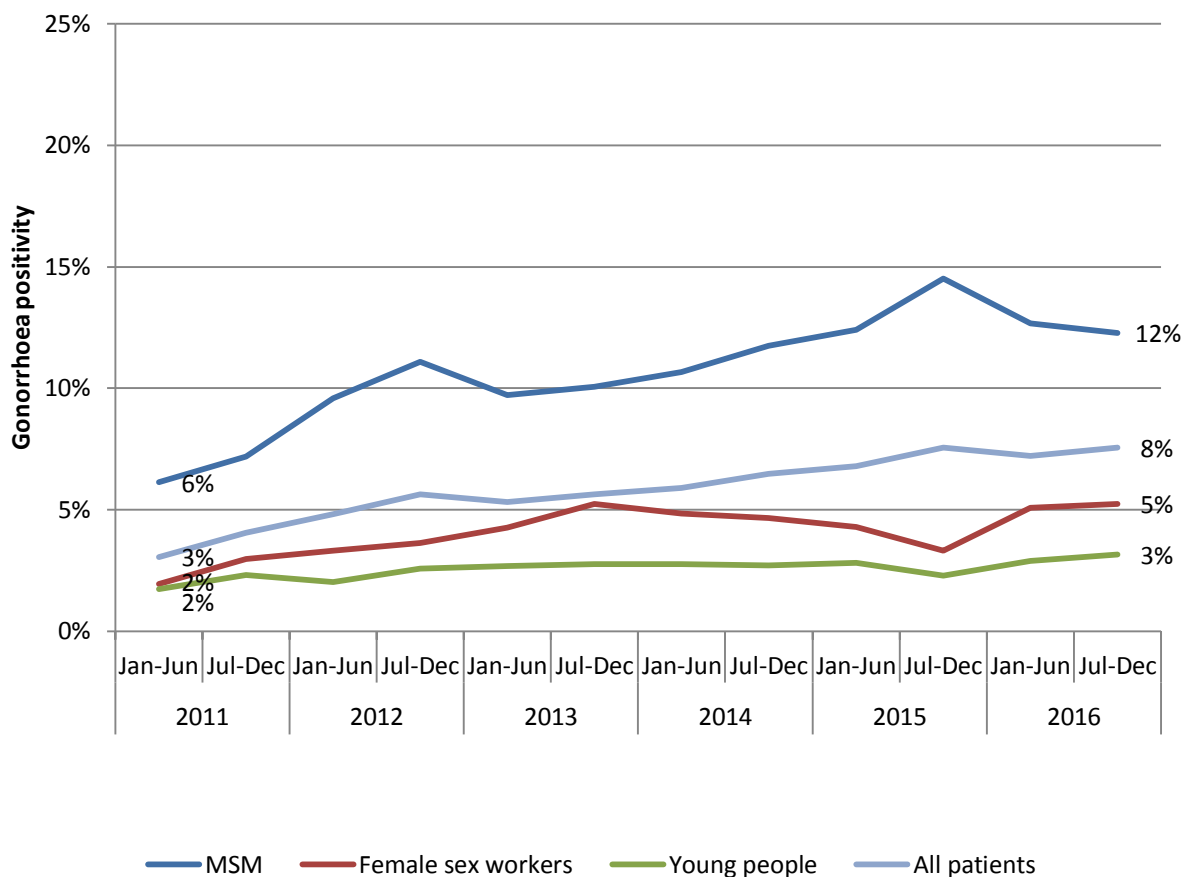
⁶ The notification to test ratio has been calculated by dividing the overall positive results notified to NSW Health by all laboratories by the total number of tests performed as reported from the participating laboratories, and multiplying by 100. Notifications are for individual people with gonorrhoea 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.

tests per month. The monthly average number of tests for 2016 is higher than the monthly average for 2015 (60,752), 2014 (57,663), 2013 (53,431) and 2012 (46,079).

There were 0.85 gonorrhoea notifications per 100 gonorrhoea tests during 2016, which is higher than the notification to test ratio for 2015 (0.74).

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

Figure 10: Proportion of individual patients⁷ attending PFSHs and GP clinics⁸ tested for gonorrhoea with a positive result (gonorrhoea positivity⁹), by priority population¹⁰, 1 January 2011 to 31 December 2016



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

Note: MSM refers to men who have sex with men.

Comment

Over time, gonorrhoea positivity increased among all MSM, female sex workers and young people. The gonorrhoea positivity increased from 6% among MSM tested in the first half of 2011 to 12% of those tested in the last half of 2016 and from 2% to 5% among female sex workers.

⁷ Patients only uniquely identified within a service.

⁸ GP clinics included those serving at least 50 gay and bisexual male patients annually.

⁹ Positivity is the proportion of individuals (i.e., de-duplicated) tested in each six-month period with any positive result.

¹⁰ While priority populations are not mutually exclusive those other than MSM exclude MSM-identified patients.

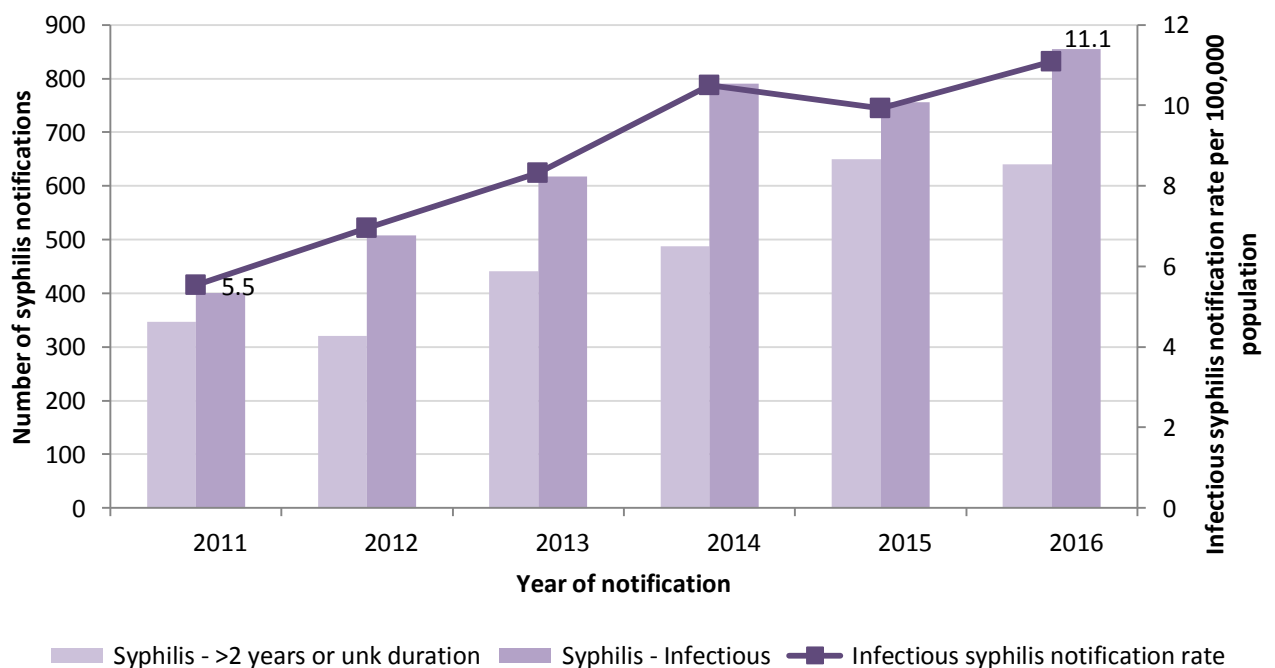
2 Reduce infectious syphilis infections

Prevention, testing and appropriate treatment and management 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 gonorrhoea, infectious syphilis – less than two years duration, syphilis – more than 2 years or unknown duration and chlamydia 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 11: Number and crude rate of Syphilis notifications, NSW, January 2011 to December 2016



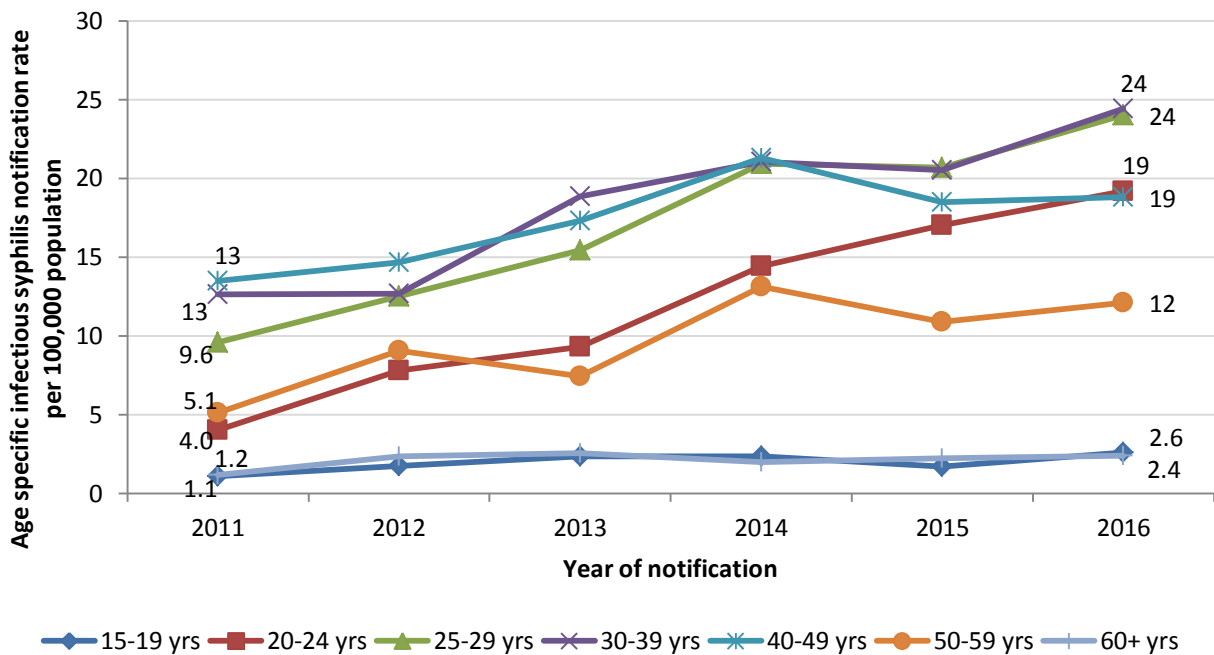
Data source: NCIMS and ABS (via SAPHaRI), NSW Health; data extracted 4 Apr 2017.

Comment

The infectious syphilis rate remains stable. In 2016, the infectious syphilis notification rate was 11.1 per 100,000 population, 16% higher than the 2015 rate (9.9 per 100,000) and similar to 2014 (10.5 per 100,000).

Infectious syphilis notifications declined in 2015 compared to 2014, while notifications for ‘syphilis greater than 2 years or unknown duration’ increased. It is possible that in some cases the available information did not meet the requirements of the ‘infectious syphilis’ case definition and these were therefore classified as ‘syphilis greater than 2 years or unknown duration’. For the period from 2011 to 2016, the rate for infectious syphilis increased two-fold from 5.5 notifications per 100,000 population to 11.1 per 100,000 population.

Figure 12: Age specific infectious syphilis notification rates, NSW, 1 January 2011- 31 December 2016

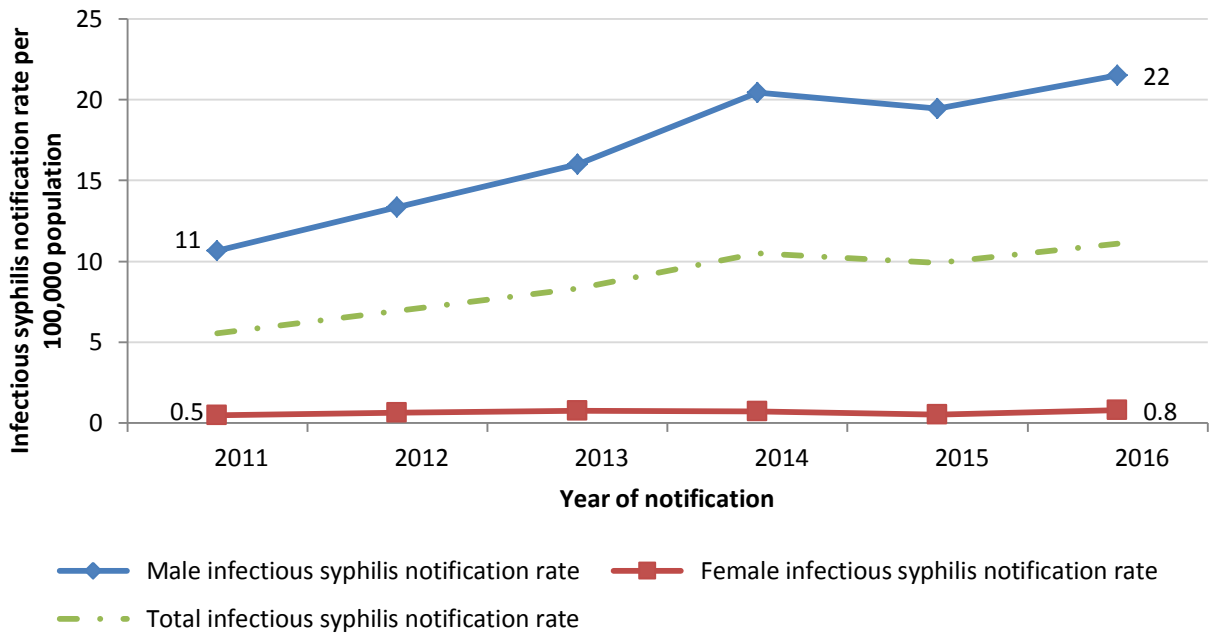


Data source: NCIMS (via SAPHaRI), NSW Health; data extracted 4 Apr 2017.

Comment

Infectious syphilis notification rates continue to increase in the 20-24 years, 25-29 years and 30-39 years age groups. In 2016, the highest age specific infectious syphilis notification rates were in the 25-29 years age group and the 30-39 years age group (24 per 100,000 population each). The largest relative increases in the age specific infectious syphilis notification rates were observed in the 25-29 years and 30-39 years groups with a 17% increase across both age groups.

Figure 13: Gender specific infectious syphilis notification rate, NSW, 1 January 2011- 31 December 2016



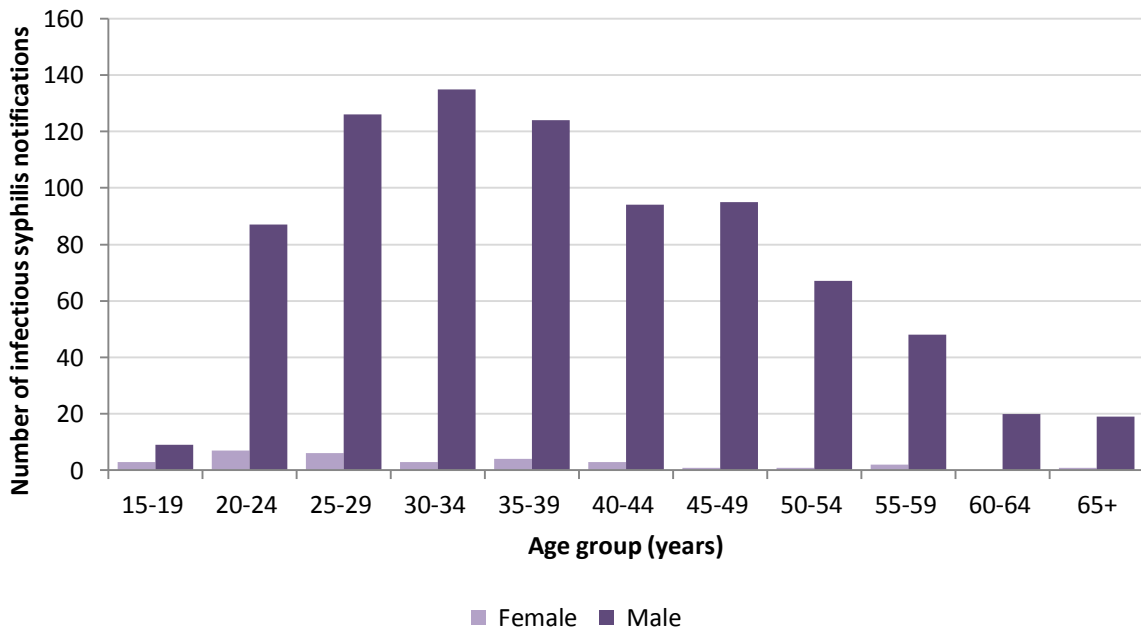
Data source: NCIMS (via SAPHaRI), NSW Health; data extracted 4 Apr 2017.

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

Comment

In 2016, the gender specific infectious syphilis notification rate was higher in males (22 notifications per 100,000 males) than females (0.8 notifications per 100,000 females). Rates of infectious syphilis have increased for both males and females in 2016. The largest relative increase was observed in females. The gender specific rate for females in 2016 was 0.8 per 100,000, which represents a 60% increase compared to 2015, however the number of female notifications is small (31 in 2016 and 20 in 2015). The male infectious syphilis notification rate increased by 17% in 2016 compared to 2015 (19 notifications per 100,000 males).

Figure 14: Infectious syphilis notifications by age and gender, NSW, 1 January to 31 December 2016



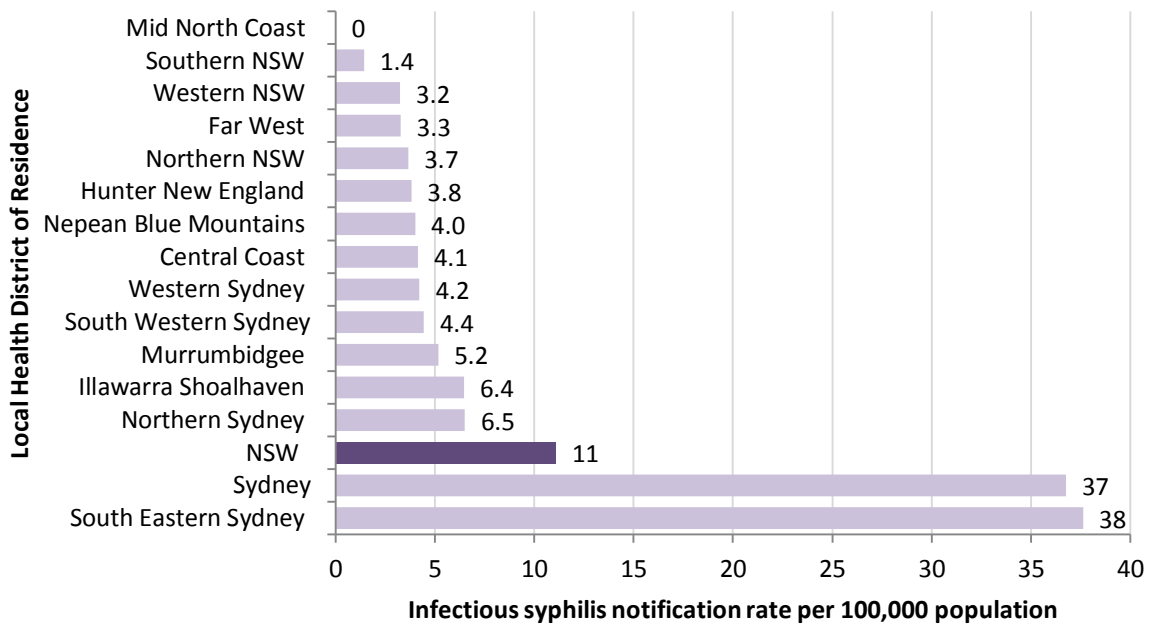
Data source: NCIMS and ABS (via SAPHARI), NSW Health; data extracted 8 Nov 2016.

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

Comment

In 2016, 96% of infectious syphilis notifications were in males, 3.6% were in females and <1% were in transgender persons or persons whose sex was not reported. The most commonly notified age groups amongst males were 25-29 years, 30-34 years, and 35-39 years. The most commonly notified age groups for females were the 20-24 years, 25-29 years, and 35-39 years age groups.

Figure 15: Infectious syphilis notification rate by LHD, NSW, 1 January to 31 December 2016



Data source: NCIMS and ABS population estimates (SAPHARI), NSW Health; data extracted 4 Apr 2017.

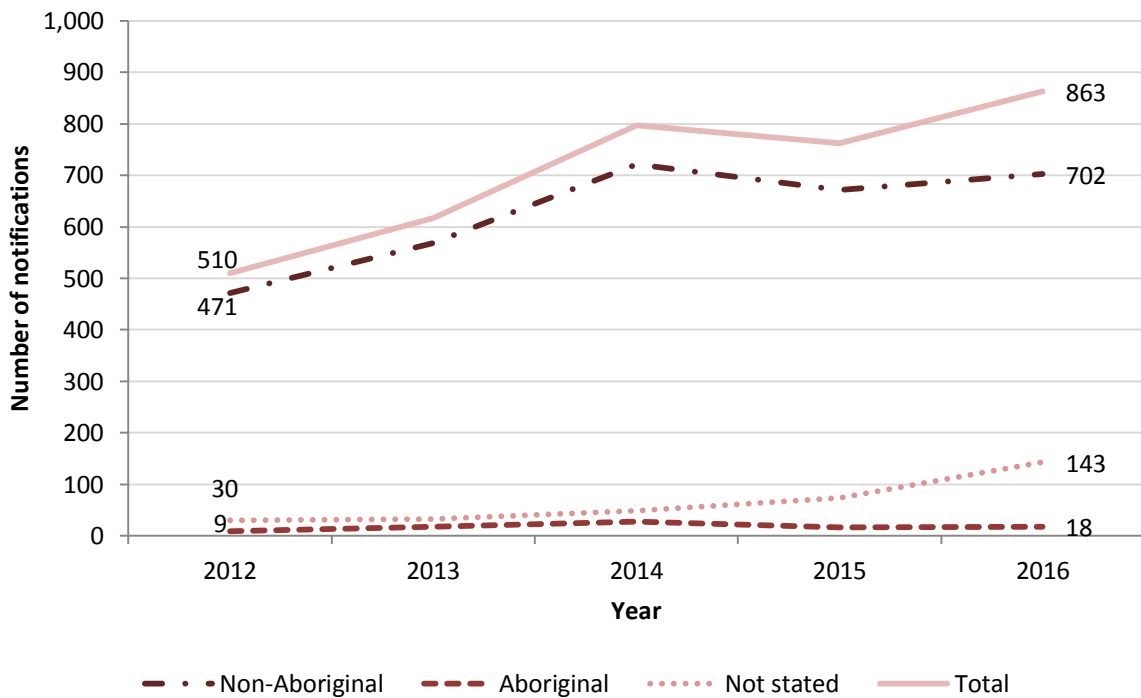
Note: Excludes non-NSW residents, persons whose place of residence in NSW was not known and notifications from Justice Health.

For Justice Health notifications, see Table 4 in Appendix D: Notification data.

Comment

In 2016, Sydney and South Eastern Sydney LHDs had the highest numbers of infectious syphilis notifications as well as the highest rates in NSW (Figure 15). The largest relative increase in infectious syphilis notification rates was in South Western Sydney, where the infectious syphilis rate was three-fold compared to 2015 (1.5 notifications per 100,000 population). This was followed by the Murrumbidgee and Nepean Blue Mountains LHDs where the rate was more than two-fold compared to 2015 (2.4 and 1.9 notifications per 100,000 population respectively), however notification numbers in these LHDs are small (15 notifications each).

Figure 16: Infectious syphilis notifications by Aboriginality, NSW, 2012-2016



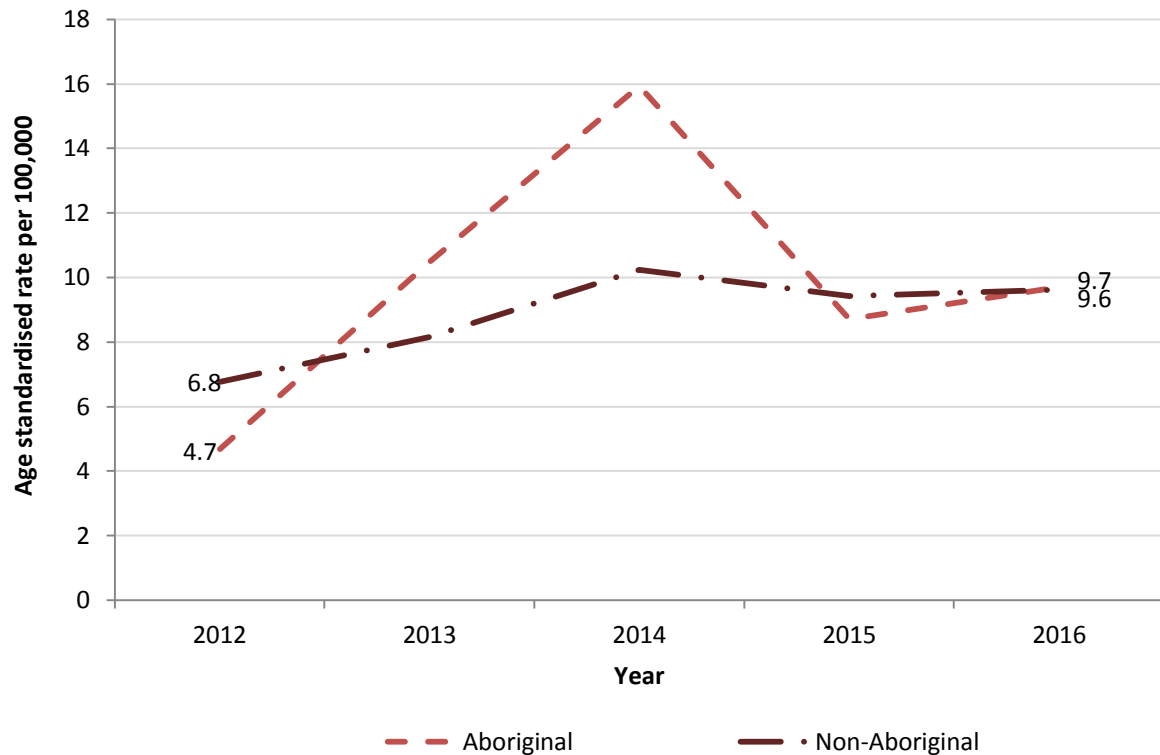
Data source: NCIMS, NSW Health; data extracted 6 Apr 2017.

Comment

Of the 863 infectious syphilis notifications in 2016, 18 (2.1%) were among Aboriginal people, 702 (81%) were among non-Aboriginal people and Aboriginal status was not known for 143 (17%) people. Overall, Aboriginality was not known for 9% of infectious syphilis notifications between 2012 and 2016.

In 2016, 44% of infectious syphilis notifications in the Aboriginal population were in major cities, 33% in regional areas of Australia and 11% in remote areas of Australia; area of residence was not known for 11%. Among the non-Aboriginal population, 93% of notifications were in major cities, 5.7% in regional areas of Australia and 0.1% in remote areas of Australia; area of residence was not known for 1.4%.

Figure 17: Infectious syphilis notification rate by Aboriginality, NSW, 2012-2016



Data source: NCIMS and ABS (via SAPHaRI, NSW Health); data extracted 6 Apr 2017.

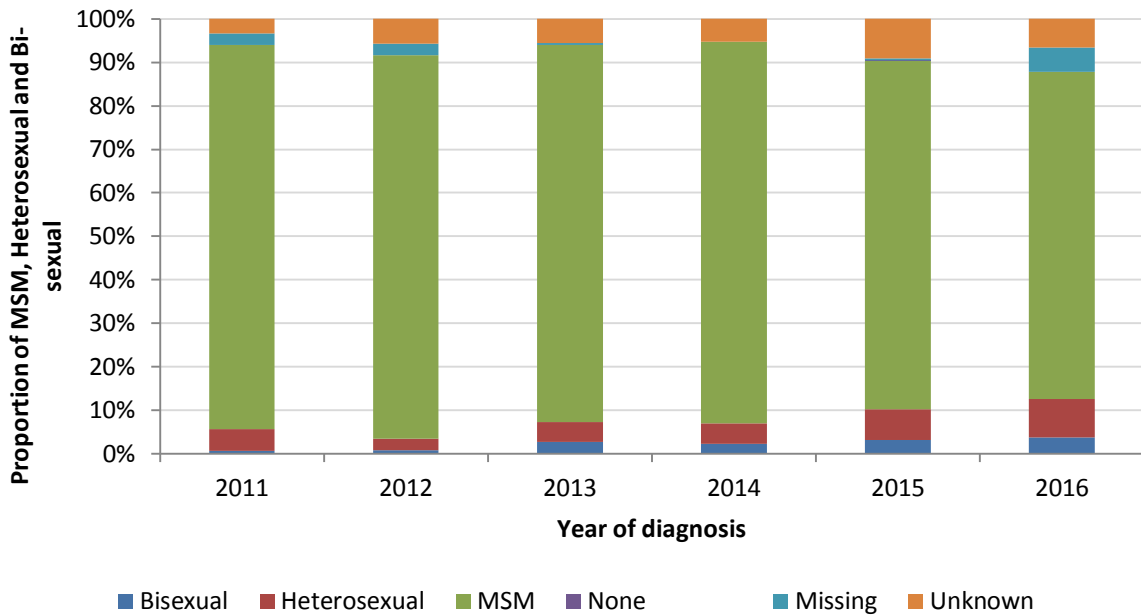
Comment

The gap between Aboriginal and non-Aboriginal rates of infectious syphilis has narrowed.

Amongst those whose Aboriginal status was known, the age standardised infectious syphilis notification rate among Aboriginal people was 9.7 per 100,000 in 2016, almost the same as the rate among non-Aboriginal people (9.6 per 100,000).

As the number of infectious syphilis notifications among Aboriginal people is relatively small, yearly variation in the rate should be interpreted with caution.

Figure 18: Sexual exposure of men diagnosed with infectious syphilis, Sydney and South Eastern Sydney LHDs, 1 January 2011- 31 December 2016

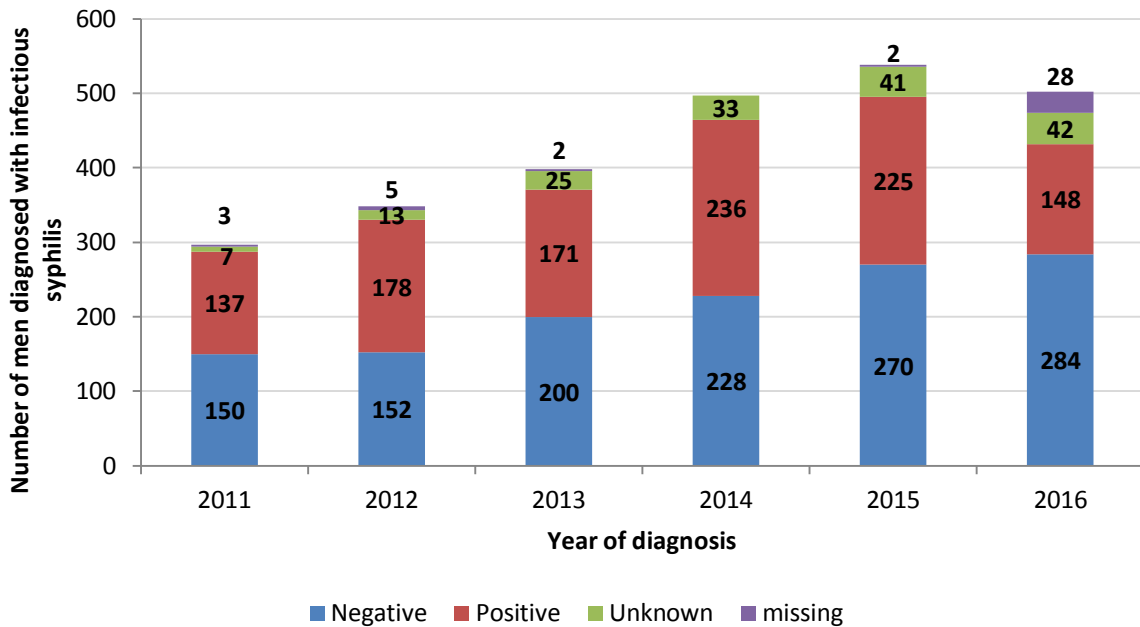


Data source: South Eastern Sydney and Sydney LHDs HREC enhanced surveillance research project for infectious syphilis.
Note: This data may not be representative of infectious syphilis cases across NSW.

Comment

The sexual exposure of men diagnosed with infectious syphilis is predominantly MSM and this trend has remained consistent over time. In 2016, 87% of men who were diagnosed with infectious syphilis were reported to have had male-to-male sex exposure.

Figure 19: HIV status of men diagnosed with infectious syphilis, Sydney and South Eastern Sydney LHDs, 1 January 2011- 31 December 2016

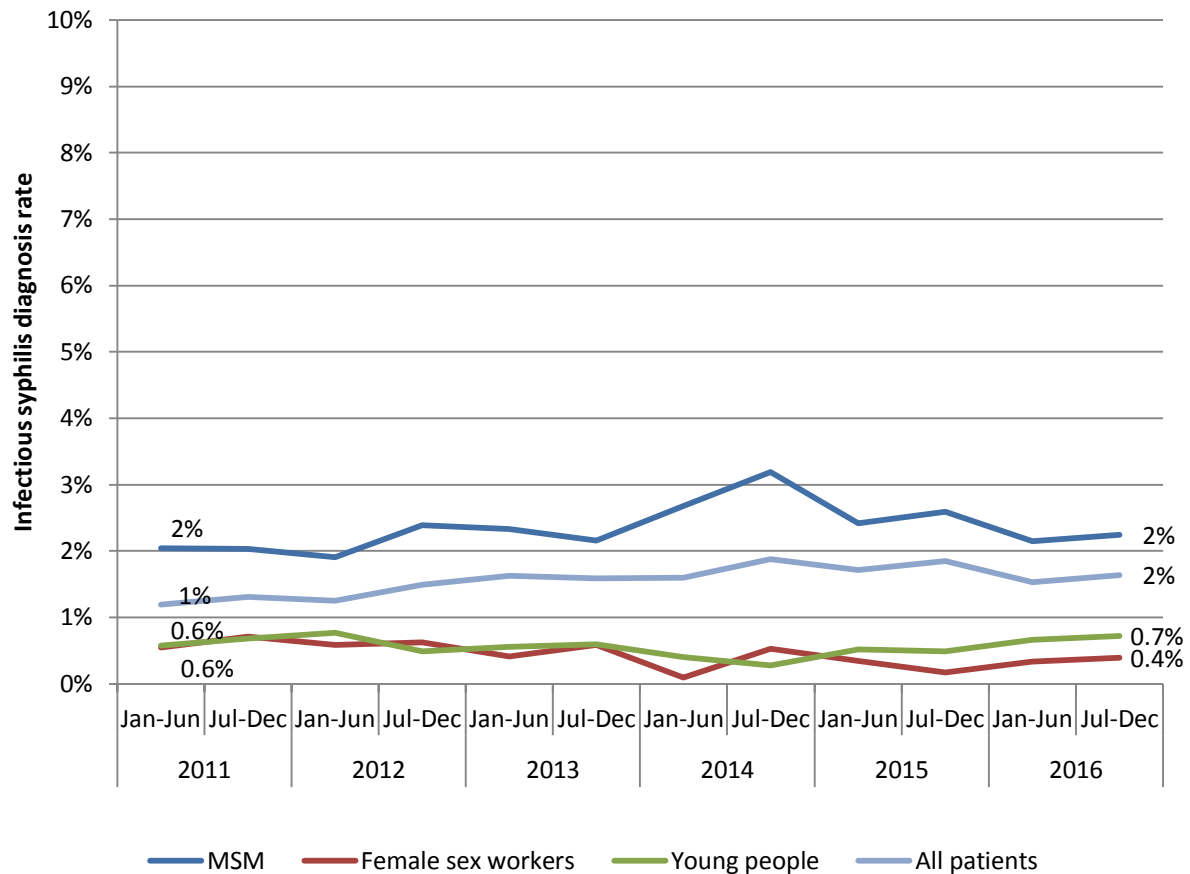


Data source: South Eastern Sydney and Sydney LHDs enhanced surveillance for infectious syphilis.

Comment

The proportion of men diagnosed with infectious syphilis in Sydney and South Eastern Sydney LHDs who were HIV negative was from 2011-2015, ranging from 44% to 50%. In 2016, the proportion of men diagnosed with infectious syphilis who were HIV negative increased by 6% to 56%, however there was also a small (6%) increase in the proportion of men diagnosed with syphilis where the HIV status was unknown or missing. The HIV status of men notified with infectious syphilis in Sydney and South Eastern Sydney LHDs is obtained through a research project approved by a human research ethics committee.

Figure 20: Proportion of individual patients¹¹ attending PFSHSs and GP clinics¹² tested for syphilis with a diagnosis of infectious syphilis (*syphilis diagnosis rate*¹³) among priority populations, 1 January 2011 to 31 December 2016



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

Note: MSM refers to men who have sex with men.

Comment

The syphilis diagnosis rate remained largely stable between 2011 and 2016. Among MSM the diagnosis rate of infectious syphilis remained stable over time at 2% while among other priority populations, diagnoses of infectious syphilis were uncommon (<1% diagnosis rate annually).

2.2 Congenital syphilis notifications

There were no congenital syphilis notifications in NSW in 2016.

¹¹ Patients only uniquely identified within a service.

¹² GP clinics included those serving at least 50 gay and bisexual male patients annually.

¹³ Diagnosis rate in sexual health clinics calculated as the proportion of individuals tested in a retrospective year period (excluding repeat tests among individuals) with a recorded diagnosis of primary, secondary or early latent (<2 years) syphilis and in general practice as the proportion of individuals tested with reactive syphilis antigen and antibody tests and, if relevant a fourfold increase in RPR titre.

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 guidelines over time.

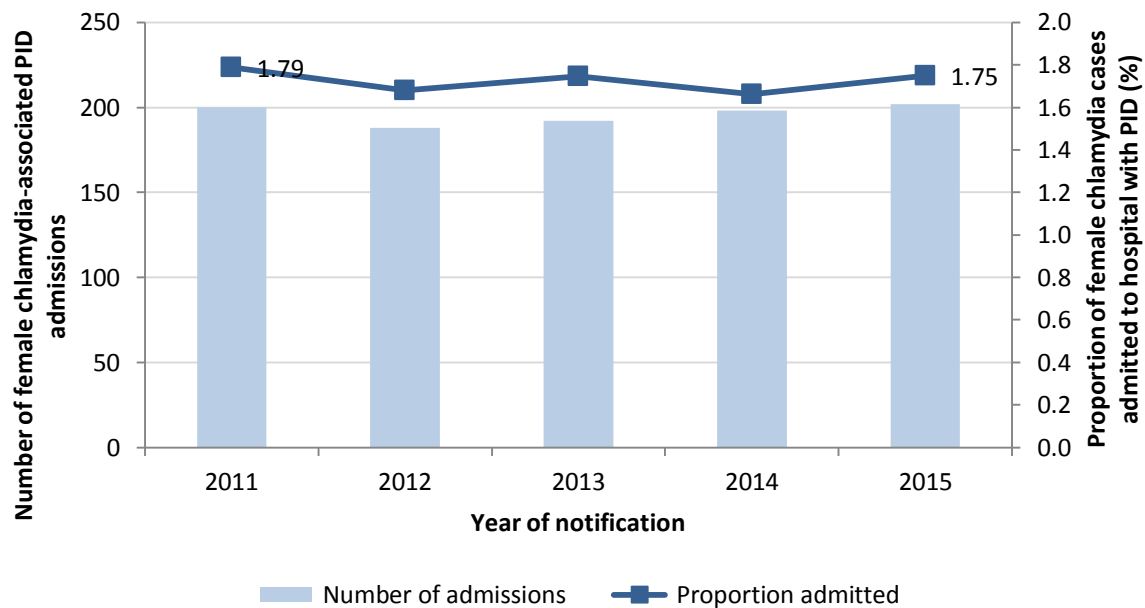
Prevention, testing and appropriate treatment and management are the cornerstones of chlamydia control and are embedded in the current STI strategy. Chlamydia notification data does not reflect the true incidence of chlamydia infection as it only represents a proportion of infections in the population, 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 (NAT) or antigen. Only confirmed cases of chlamydia are counted when reporting chlamydia notification data. Chlamydia infections are not routinely followed up by public health units so detailed information (e.g. sexual exposure) is difficult to ascertain.

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 21: Number and proportion of women notified with chlamydia who are admitted with PID within 12 months of diagnosis, NSW, 1 January 2011- 31 December 2015



Data source: Communicable Diseases Register, NSW Health.

Note: Excludes re-notifications within 12 months.

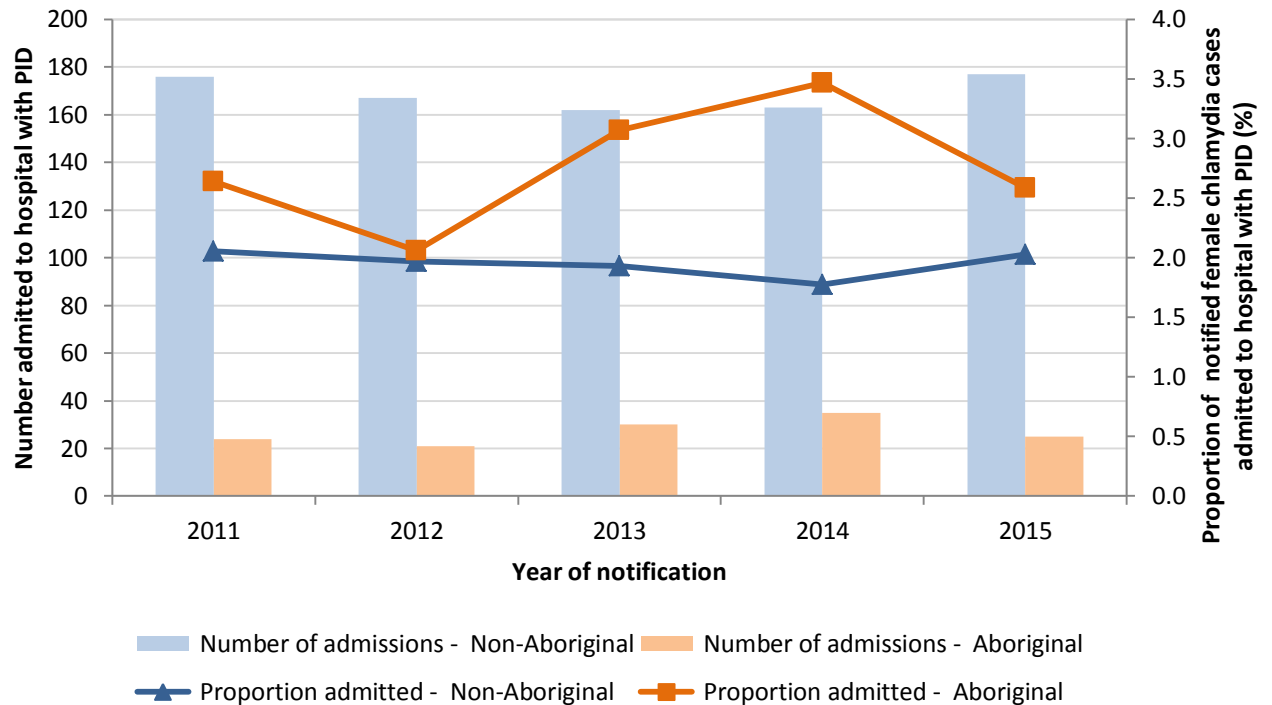
Comment

The number of women notified with chlamydia who were admitted to hospital with PID within 12 months was stable from 2011 to 2015, ranging from 188-202 admissions. The proportion of all women notified with chlamydia who were admitted to hospital was also stable from 2011 to 2015, ranging from 1.6-1.8%

The Communicable Diseases Register (CDR) has been established under the Public Health and Disease Registers provisions of the NSW *Public Health Act 2010*. It contains de-identified records from the NSW Notifiable Conditions Information Management System (NCIMS), linked to emergency department, hospitalisation and deaths data. Data are currently available to the end of 2015¹⁴. More details on the data sources contained within this report can be found in Appendix B

¹⁴ Work is currently underway to update the data contained in the Communicable Disease Register and this will be published in future reports.

Figure 22: Number and proportion of women notified with chlamydia who are admitted with PID within 12 months of diagnosis, by Aboriginality, NSW, 1 January 2011- 31 December 2015



Data source: Communicable Diseases Register, NSW Health.

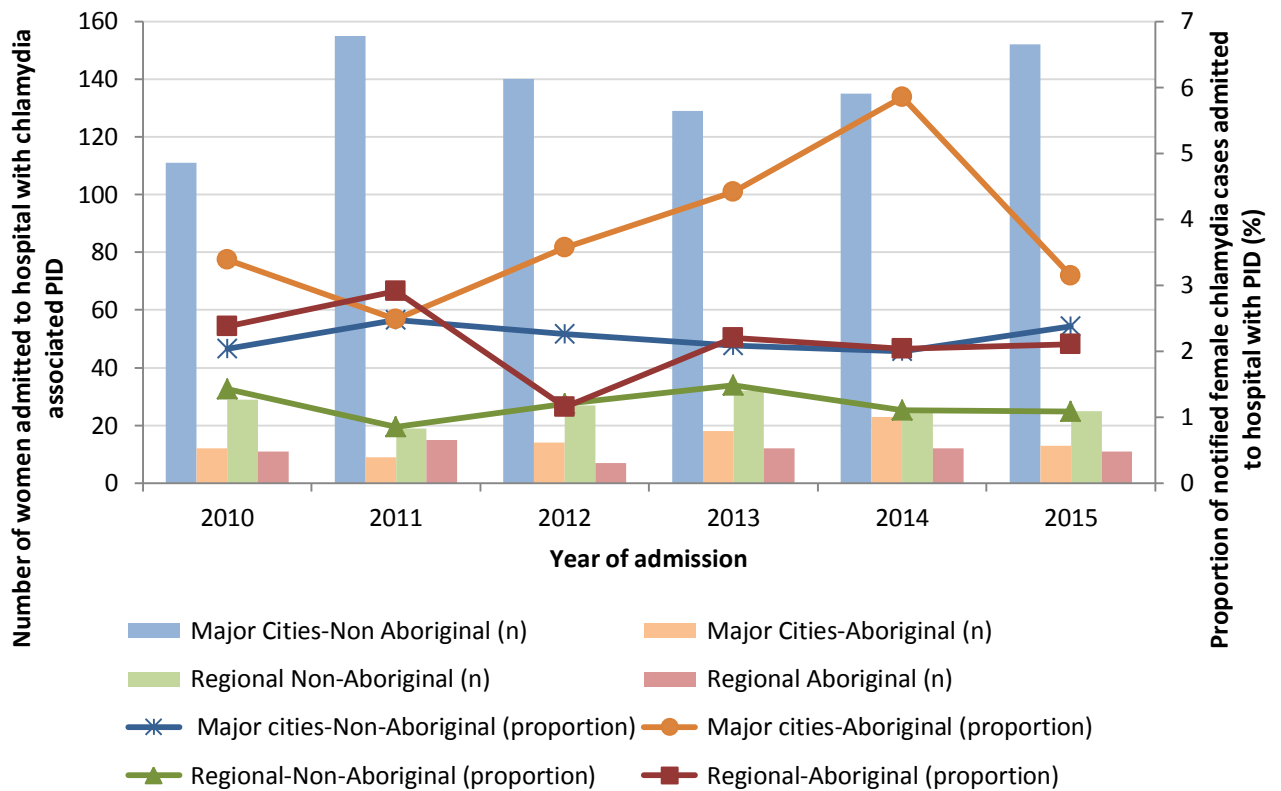
Note: Excludes re-notifications within 12 months

Comment

The number of Aboriginal women notified with chlamydia who were admitted to hospital with PID within 12 months varied over time from 2011 to 2015, ranging from 21-35 admissions per year. The proportion of all Aboriginal women notified with chlamydia who were admitted to hospital also varied over time from 2011 to 2015, ranging from 2.1-3.5%, which is 1.3-1.9 times higher compared to non-Aboriginal women.

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

Figure 23: 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 2011- 31 December 2015



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

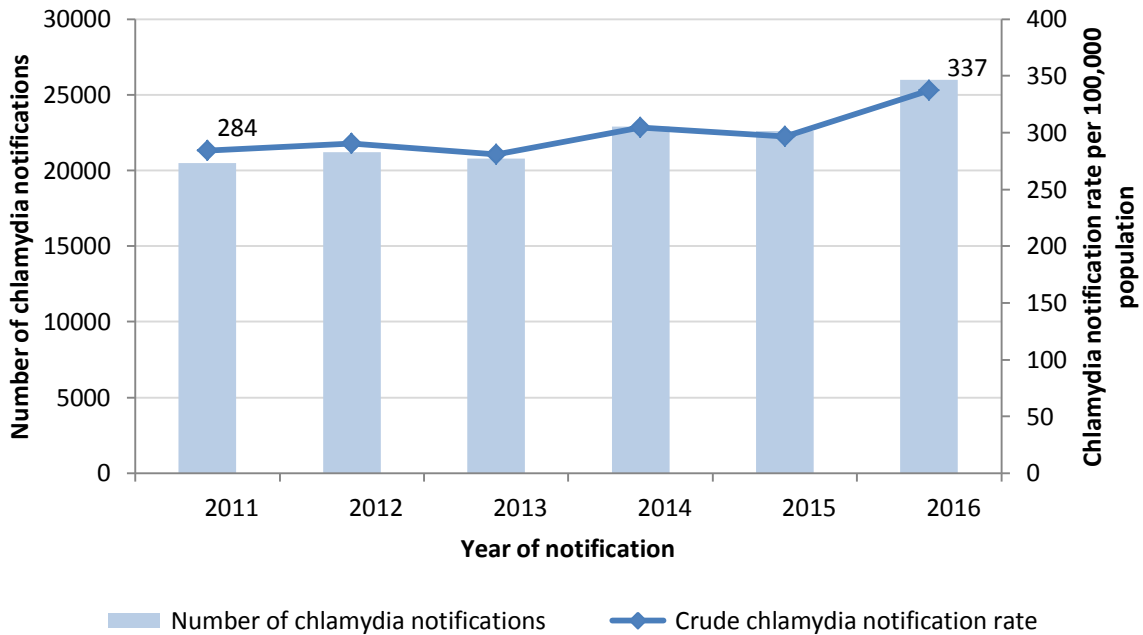
Comment

The number of Aboriginal women from both major cities and regional areas who were notified with chlamydia and admitted to hospital with PID within 12 months varied over time from 2011 to 2015, ranging from 9-23 admissions per year. The proportion of Aboriginal women notified with chlamydia who were admitted to hospital with PID was generally higher compared to Non-Aboriginal women in both major cities and regional areas.

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

3.2 Chlamydia notifications

Figure 22: Number and crude rate of chlamydia notifications, NSW, 1 January 2011 to 31 December 2016

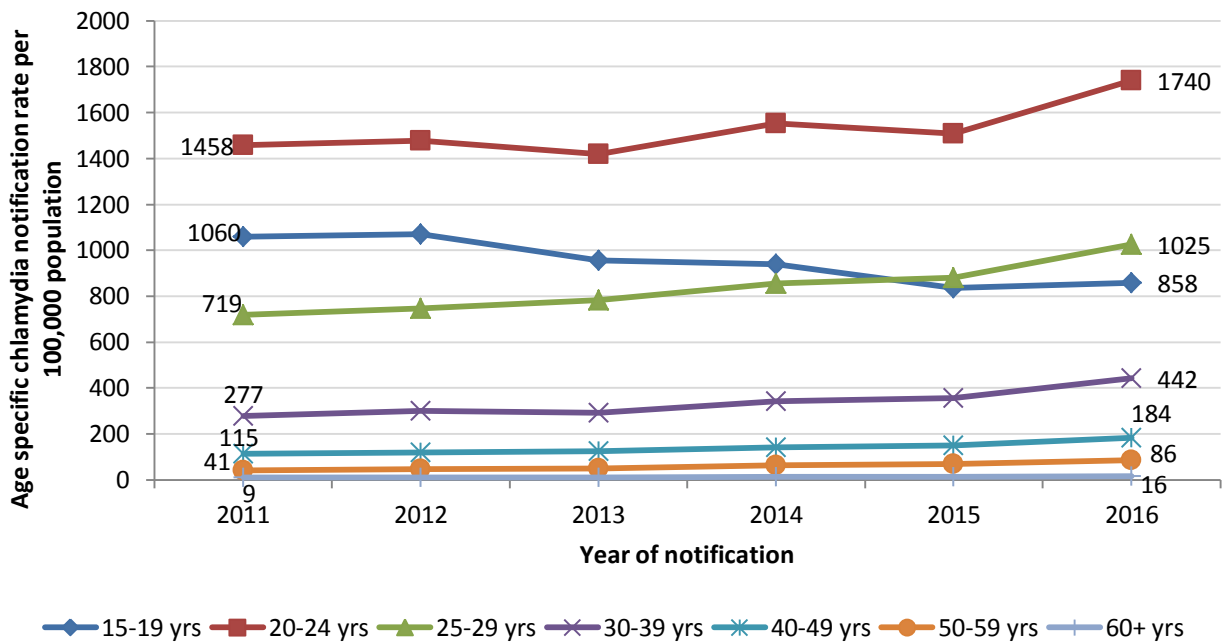


Data source: NCIMS and ABS (via SAPHaRI), NSW Health; data extracted 5 Apr 2017.

Comment

The number and rate of chlamydia notifications continues to trend higher. In 2016, there were 25,985 chlamydia notifications. The chlamydia notification rate was 337 notifications per 100,000 population, 13% higher than 2015 (297 per 100,000).

Figure 23: Age specific chlamydia notification rates, NSW, 1 January 2011- 31 December 2016

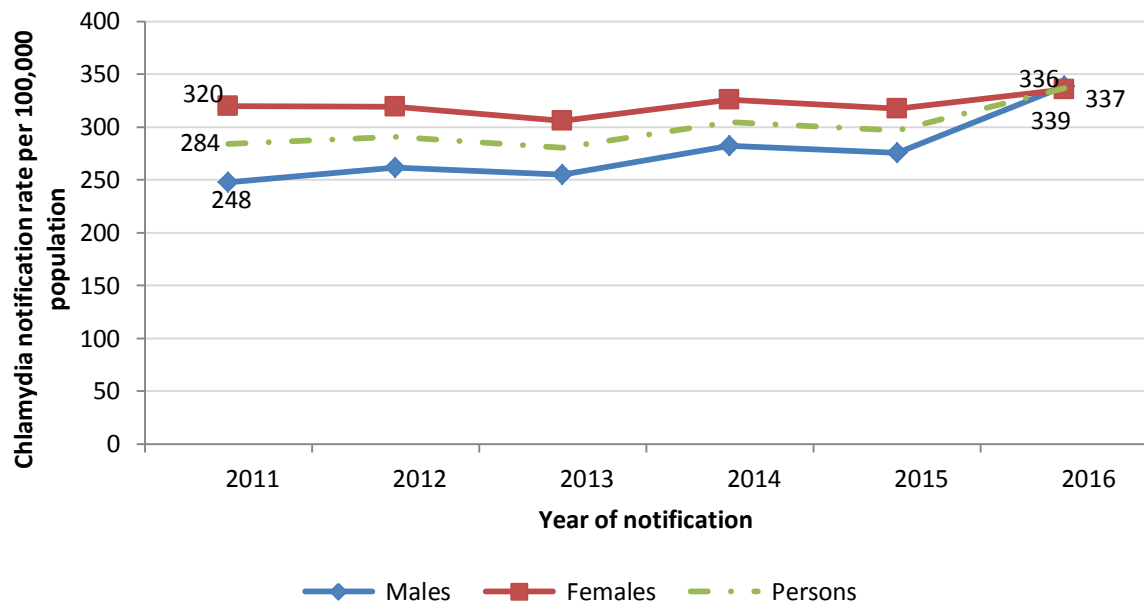


Data source: NCIMS (via SAPHaRI), NSW Health; data extracted 5 Apr 2017.

Comment

The highest rates of chlamydia notifications continue to occur in the 20-24 years age group. The largest relative increase was observed in the 50-59 years age group. The age-specific rate for the 50-59 years age group was 86 per 100,000 population, which represents a 27% increase compared to 2015. This was followed by the 30-39 years and 40-49 years age groups where a 24% increase across both age groups was observed. Chlamydia notification rates in the 15-19 years age group have declined since 2012, from 1,063 to 858 notifications per 100,000 population.

Figure 24: Gender specific chlamydia notification rate, NSW, 1 January 2011- 31 December 2016



Data source: NCIMS (via SAPHaRI), NSW Health; data extracted 5 Apr 2017.

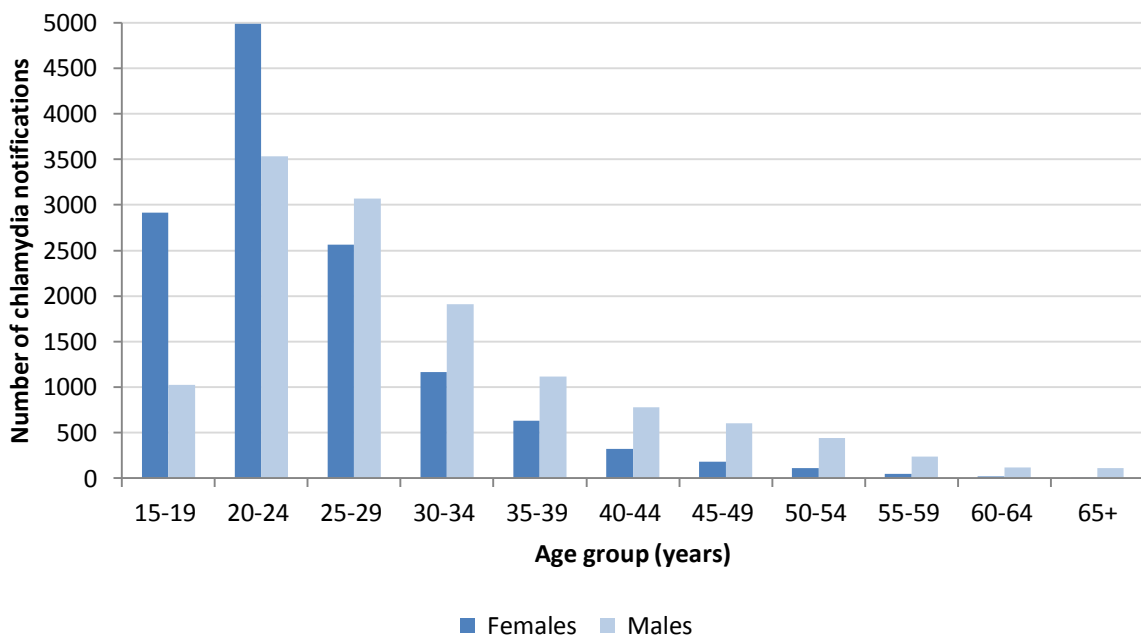
Notes: Excludes persons reported as transgender (due to small numbers), and persons who age or sex was not reported.

Comment

In 2016, there was an increase in the notification rate for chlamydia (from 297 to 337 per 100,000 population). A change in the chlamydia notification trend by gender was observed in 2016. In 2016, the rates of chlamydia notification in both males and females were very similar (339 per 100,000 males and 336 per 100,000 females respectively

Figure 24), whereas in previous years the female chlamydia notification rate was consistently higher than males. This change in the chlamydia notification trend was due to a 23% increase in the rate in males in 2016.

Figure 25: Chlamydia notifications by age and gender, NSW, 1 January to 31 December 2016



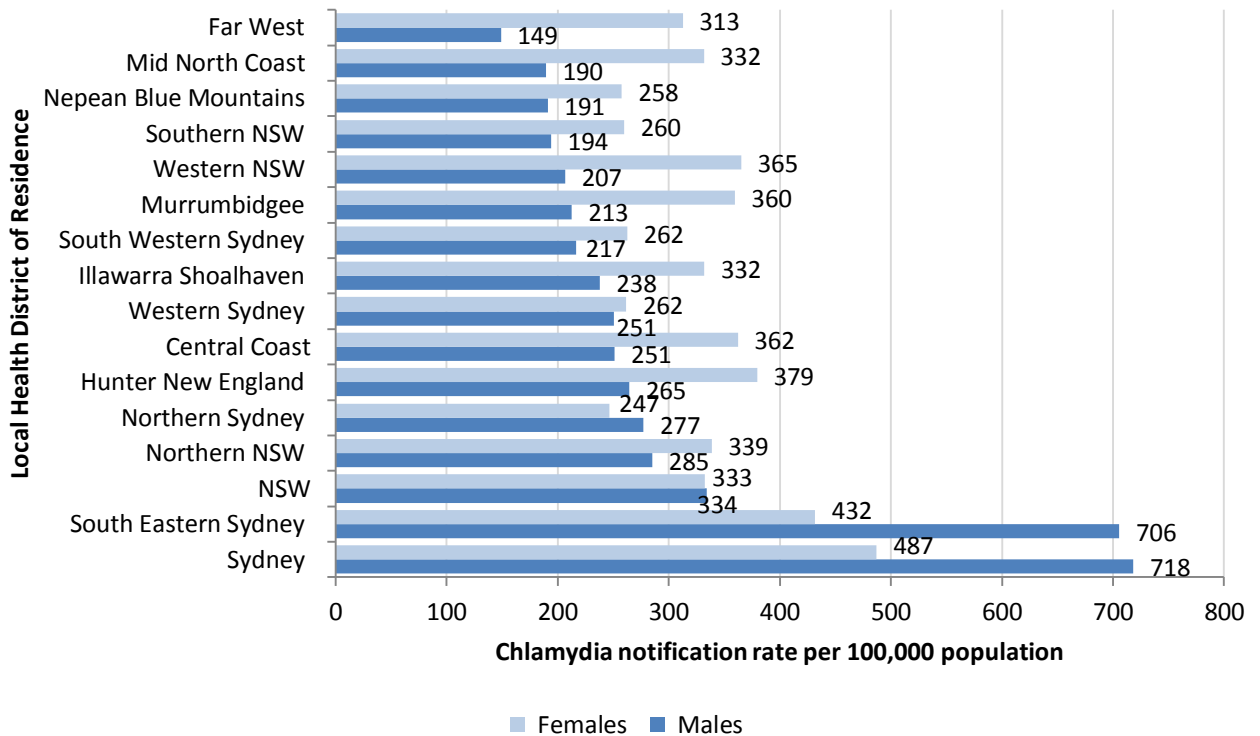
Data source: NCIMS, NSW Health; data extracted 5 Apr 2017.

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

Comment

In 2016, 51% of chlamydia notifications were in females and 49% were in males. The most commonly notified groups were females and males aged 20-24 years, females aged 15-19 years and males aged 25-29 years.

Figure 26: Chlamydia notification rate by LHD and gender, NSW, 1 January to 31 December 2016



Data source: NCIMS and ABS population estimates (SAPHaRI), NSW Health; data extracted 5 Apr 2017

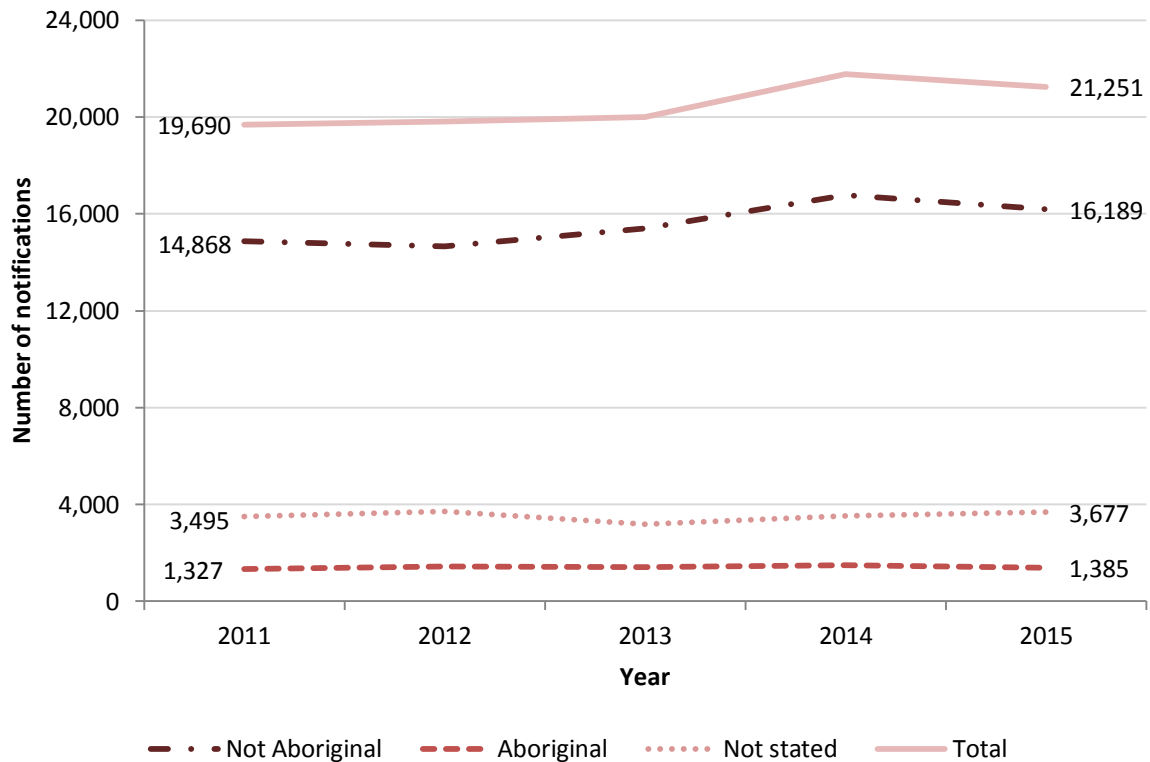
Note: Excludes non-NSW residents, persons whose place of residence in NSW was not known and notifications from Justice Health. For Justice Health notifications, see Table 4 in Appendix D: Notification data.

Comment

In 2016, the highest chlamydia notification rates for both males and females were in the Sydney and South Eastern Sydney LHDs. The largest relative increases (compared to 2015) in the male chlamydia notification rates were in the South Eastern Sydney and Sydney Local Health Districts (56% and 40% respectively). Similarly for females, the largest relative rate increases (compared to 2015) were also in the South Eastern Sydney and Sydney Local Health Districts (20% and 27% respectively).

3.3 Chlamydia notifications among Aboriginal people

Figure 27: Chlamydia notifications by Aboriginality, NSW, 2011-2015



Data source: Communicable Diseases Register, NSW Health; data extracted 21 Mar 2017.

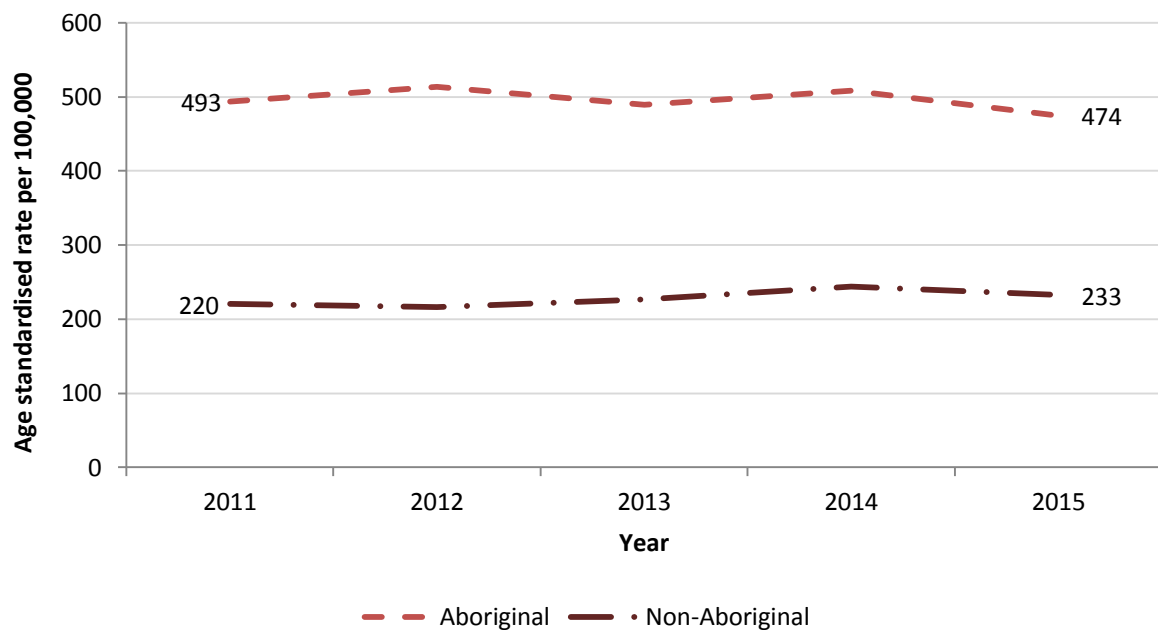
Comment

In 2015, 21,252 notifications for chlamydia were recorded in the Communicable Diseases Register (CDR). Of these, 1,385 (7%) were among Aboriginal people, 16,189 (76%) were among non-Aboriginal people and for 3,677 (17%) people, Aboriginality status was not known.

The Communicable Diseases Register (CDR) has been established under the Public Health and Disease Registers provisions of the NSW *Public Health Act 2010*. It contains de-identified records from the NSW Notifiable Conditions Information Management System (NCIMS), linked to emergency department, hospitalisation and deaths data. Data are currently available to the end of 2015¹⁵. After data linkage, Aboriginality remained unknown for 17% of chlamydia records between 2006 and 2015.

¹⁵ Work is currently underway to update the data contained in the Communicable Disease Register and this will be published in future reports.

Figure 28: Chlamydia notification rate by Aboriginality, NSW, 2011-2015



Data source: Communicable Diseases Register and ABS (via SAPHaRI, NSW Health); data extracted 21 Mar 2017.

Notes: Excludes records where Aboriginal status was not stated; rates standardised to the Australian Standard Population 2001.

Comment

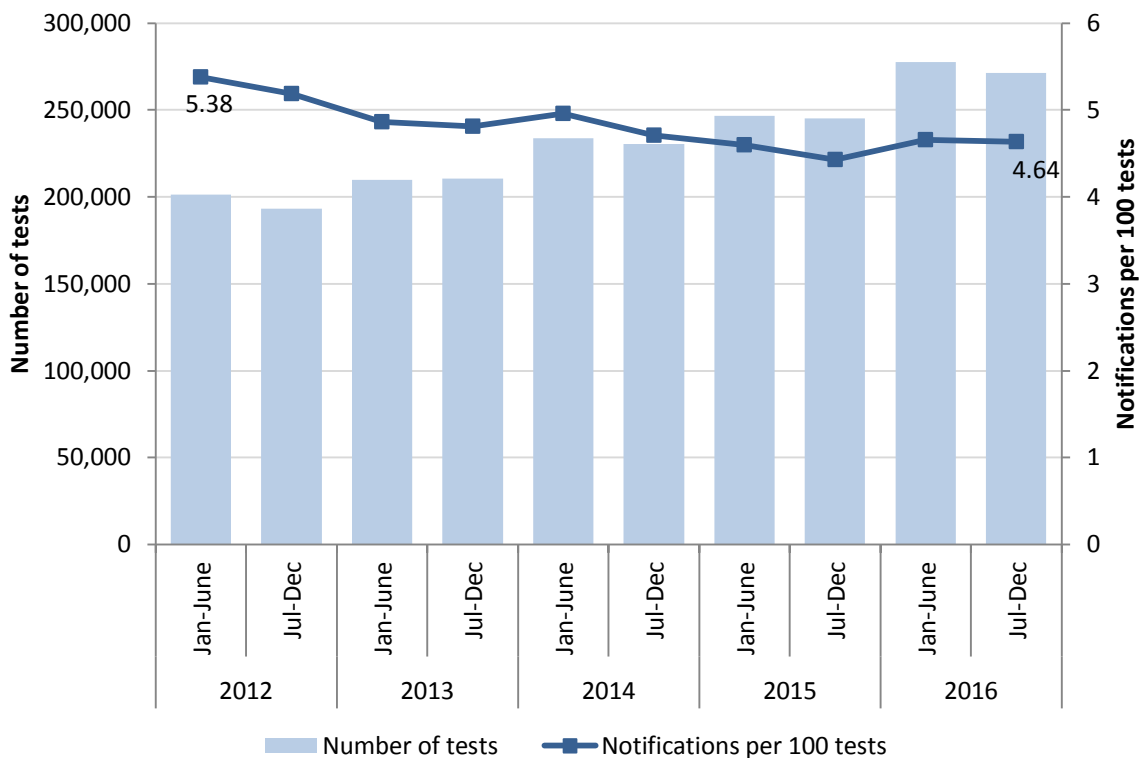
Notification rates of chlamydia between 2011 and 2015 have remained stable among both Aboriginal and non-Aboriginal populations.

In 2015, the chlamydia notification rate among Aboriginal people was 474 per 100,000, which is 2.0 times higher than the rate among non-Aboriginal people (233 per 100,000).

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 29: Number of chlamydia tests and notification to test ratio¹⁶, NSW, January 2012 to December 2016



Data source: NCIMS and NSW Denominator Data Project, NSW Health; data extracted 3 Apr 2017
Note: Testing multiple sites results in multiple tests being counted per person.

Comment

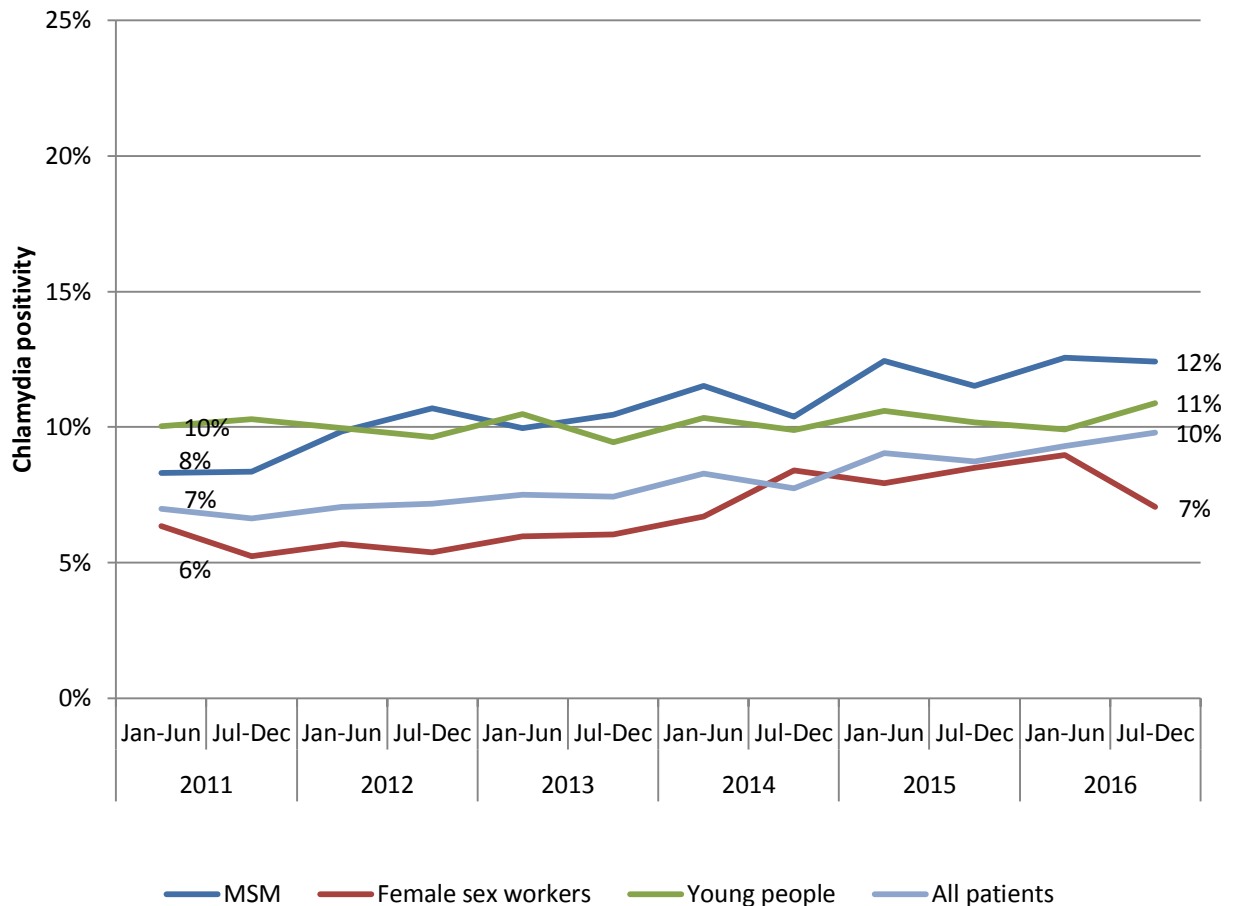
The number of chlamydia tests (NAT) performed in NSW is continuing to increase. In 2016, 548,971 tests for chlamydia were performed in 15 laboratories in NSW, an average of 45,747 tests per month. The monthly average number of tests for 2016 is higher than the monthly average for 2015 (41,001), 2014 (38,674), 2013 (35,032) and 2012 (30,189).

There were 4.7 chlamydia notifications per 100 chlamydia tests during 2016. This is a small increase compared to the notification to test ratio for the full year of 2015 (4.5).

¹⁶ 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 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 percentage of people tested who were positive in NSW for the condition.

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

Figure 30: Proportion of individual patients¹⁷ attending PFSHs and GP clinics¹⁸ tested for chlamydia with a positive result (*chlamydia positivity*¹⁹) among priority populations, 1 January 2011 to 31 December 2016



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

Note: MSM refers to men who have sex with men.

Comment

Chlamydia positivity has increased among all groups. The rate among MSM increased from 8% in the first half of 2011 to 12% in the last half of 2016.

¹⁷ Patients only uniquely identified within a service.

¹⁸ Medium to high caseload GP clinics included those serving at least 50 men who have sex with men annually.

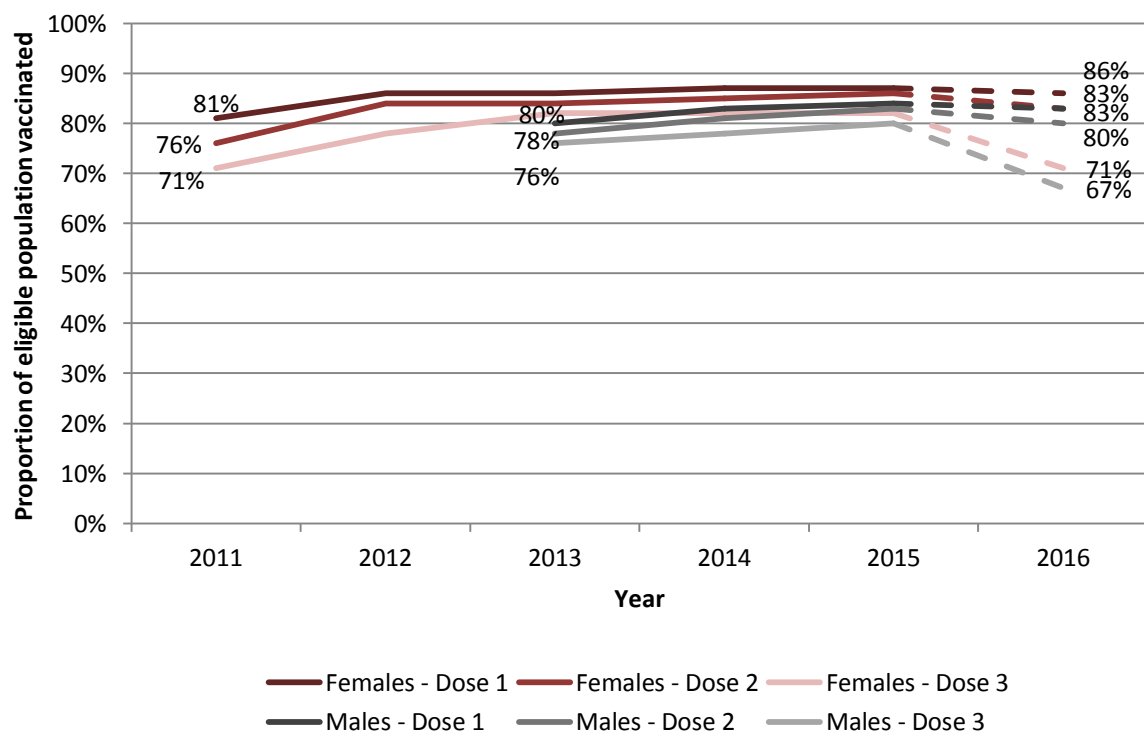
¹⁹ Chlamydia positivity calculated as the proportion of individuals tested in a retrospective year period (discounting repeat tests among individuals) with positive pathology or recorded diagnosis at any anatomical site.

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

Infection with human papilloma virus (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.

The HPV vaccine is given as three injections over a period of six months by qualified immunisation providers. Since 2011, the HPV vaccine protects against four HPV types.

Figure 31: Year 7 HPV vaccination by dose and gender, 2011 to 2016²⁰



Data source: NSW high schools, Local Health Districts and Health Protection NSW. Centre for Epidemiology and Evidence, NSW Ministry of Health.

²⁰ 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 and Local Health Districts may underestimate the true vaccination coverage as they represent only those vaccinations administered through the school program and do not include doses administered by general practitioners or other immunisation providers.

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

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

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

2013 data for HPV vaccination for South Eastern Sydney LHD are approximate only.

Full data for the HPV vaccination rate by gender and LHD are available in *Appendix E: Data table for the HPV vaccination rate by LHD*.

Comment

The complete data to the end of 2015 showed the vaccination rate for the full three-dose course of the drug was 82% for female and 80% for male Year 7 students.

For all three doses the proportion of the eligible population receiving the vaccination is higher for females than for males.

Across all LHDs in NSW, there was the same trend towards increasing vaccination coverage.

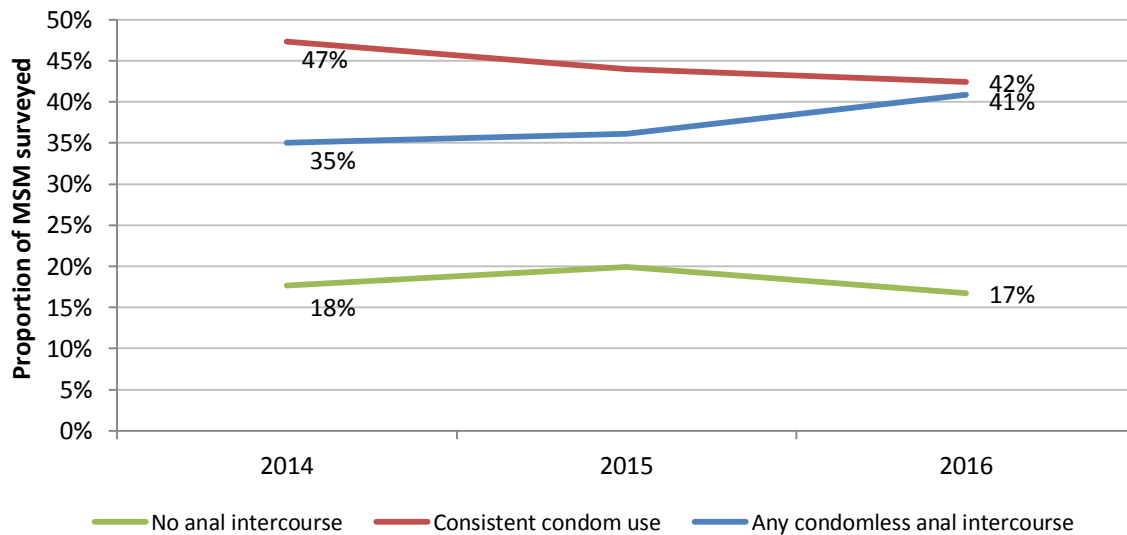
5 Maintain levels of condom use for preventing the transmission of STIs

5.1 Condom use among men who have sex with men

Condom use and other HIV/STI risk reduction strategies used by men who have sex with men are measured through the annual Sydney Gay Community Periodic Survey, conducted each year during February. More details on the data sources contained within this report can be found in Table 3 in the Appendix.

Of the men surveyed, a subpopulation of those who had casual partners was selected. Condom use among this group of men is presented below in Figure 32.

Figure 32: Proportion of MSM with casual partners reporting consistent condom use and any condomless anal intercourse in the previous six months



Data source: Sydney Gay Periodic Survey 2014-2016, Centre for Social Research in Health.

Comment

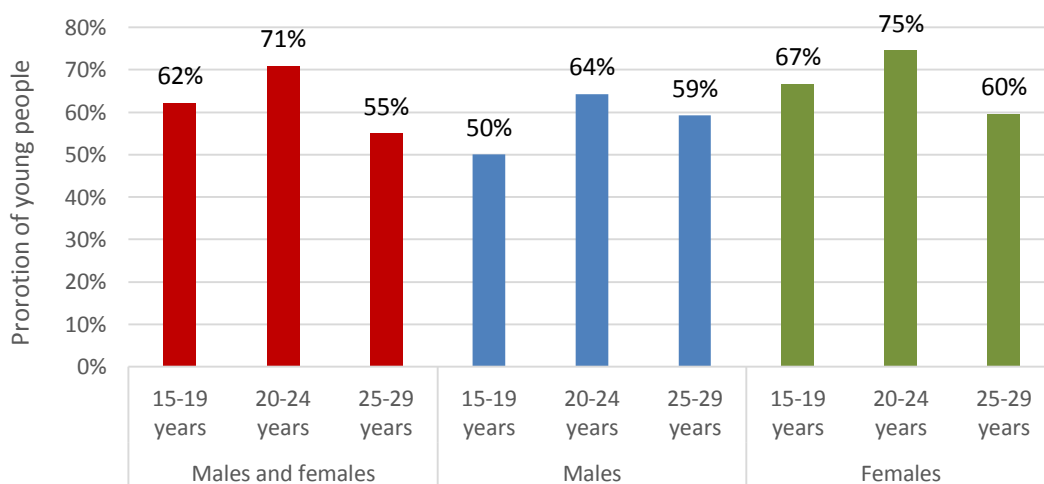
The proportion of MSM with casual partners reporting consistent condom use has been progressively declining from 47% in 2014 to 42% in 2016. Across the same period the proportion reporting any condomless anal intercourse has increased from 35% in 2014 to 41% in 2016.

5.2 Condom use among young people

In 2015, the Centre for Social Research in Health initiated an online periodic survey on sexual health among young people living in NSW. The survey was entitled 'It's Your Love Life'²¹ and the first round of data collection was conducted between December 2015 and March 2016. Overall, 2,120 heterosexually-identified participants aged 15-29 years and living in NSW were recruited.

Two third of participants (66%) were sexually active in the past 12 months. Of these sexually active participants, 94% had regular partners and 26.3% had casual partners in the past 12 months. Three quarters (75%) of the participants who had regular partners in the past 12 months had vaginal or anal intercourse without condoms with these partners in that period. Of the participants who had casual partners in the past 12 months, 63% had vaginal or anal intercourse without condoms with these partners in that period. Age- and gender-related differences in the proportion of young people who engaged in sexual intercourse without condoms with their casual partners are presented in Figure 33.

Figure 33: Proportion of sexually active heterosexual young people who had vaginal or anal intercourse without condoms with their casual partners in the past 12 months, among participants with casual partners in the past 12 months



Data source: *It's Your Love Life: A new periodic survey on sexual health among young people in NSW (2016)*. Centre for Social Research in Health.

²¹ Adam, P., Schippers, M., Schmidt, H., Modderman, K., Welsby, D., Slattery, C., Murray, C., Estoesta, J., Hearnshaw, G., Murphy, D., Britton, M., Jenkins, L., Dixon, K., Becket, N. & de Wit, J. (2016). *It's Your Love Life: A new periodic survey on sexual health among young people in NSW*. Sydney: Centre for Social Research in Health, UNSW Australia.

Comment

Of the participants who reported having one or more casual partners in the past 12 months, 63% had some vaginal or anal intercourse without condoms with their casual partners (43% used condoms sometimes and 20% never used condoms). 34.5% always used condoms during vaginal or anal intercourse.

Sexual intercourse without condoms is higher among heterosexual females compared to heterosexual males. The highest rate of condomless sex is found among young people aged 20-24 in both genders.

None of the age- and gender- related differences in reported vaginal or anal intercourse without condoms with casual partners presented in Figure 33 were statistically significant²².

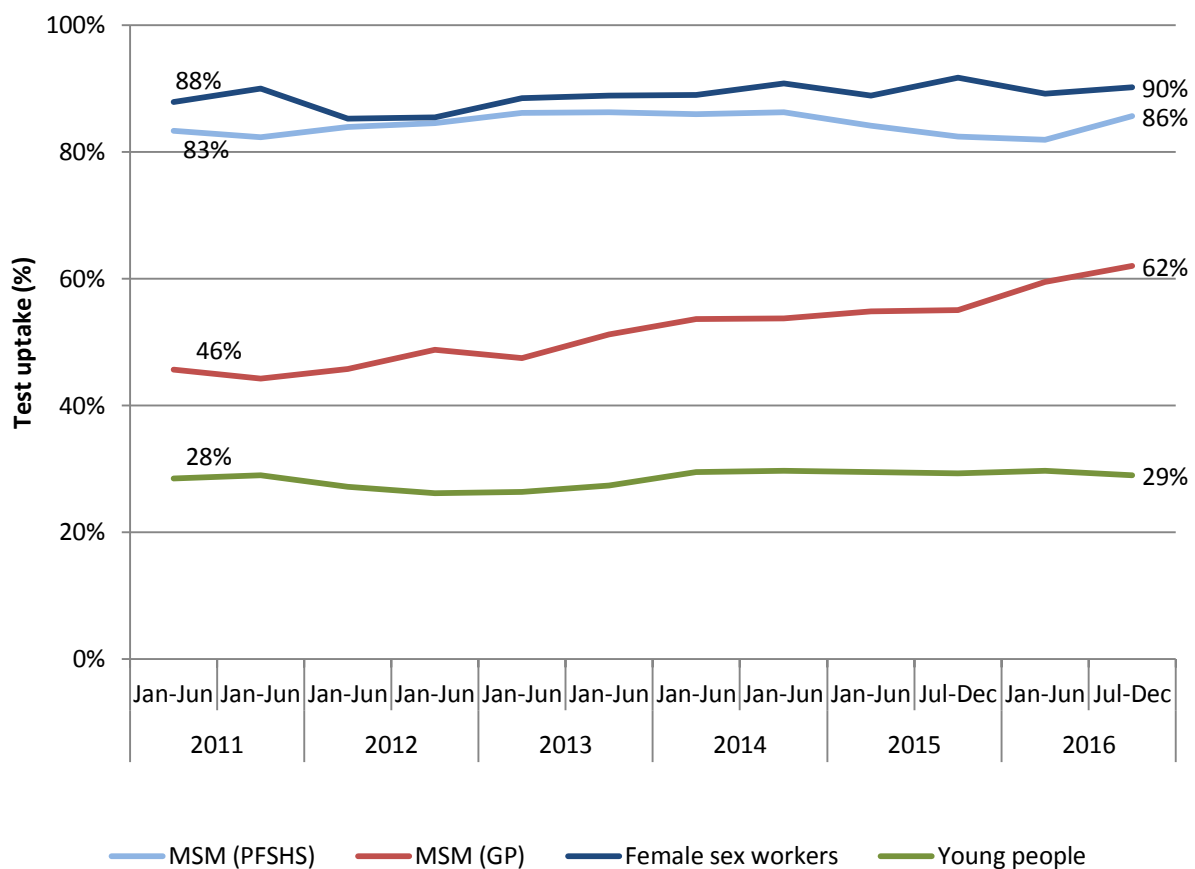
²² This may reflect low numbers of young people who reported (unprotected) sexual intercourse with casual partners, or be due to low numbers of participants in these analyses.

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

6.1 Comprehensive STI testing in priority populations

Integrating comprehensive STI screening²³ into routine care within general practice and primary care is a key activity within the Strategy. It ensures timely diagnoses and treatment of STIs among priority populations.

Figure 34: Proportion of individual patients²⁴ attending medium to high caseload GP (MHCL GP) clinics²⁵ tested for chlamydia, gonorrhoea²⁶ and syphilis, by priority population²⁷, 1 January 2011 to 31 December 2016



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

Note: MSM refers to men who have sex with men; PFSHS refers to publicly funded sexual health services; GP refers to general practice.

²³ Comprehensive ST testing is defined in this context as testing for chlamydia trachomatis, Neisseria gonorrhoea and syphilis (see Appendix C: Case definitions for gonorrhoea, infectious syphilis – less than two years duration, syphilis – more than 2 years or unknown duration and chlamydia for full details) at any anatomical site.

²⁴ Patients only uniquely identified within a service.

²⁵ Medium to high caseload GP clinics included those serving at least 50 gay and bisexual male patients annually.

²⁶ Testing for chlamydia and gonorrhoea included testing at any anatomical site.

²⁷ While priority populations are not mutually exclusive those other than MSM exclude MSM-identified patients.

Comment

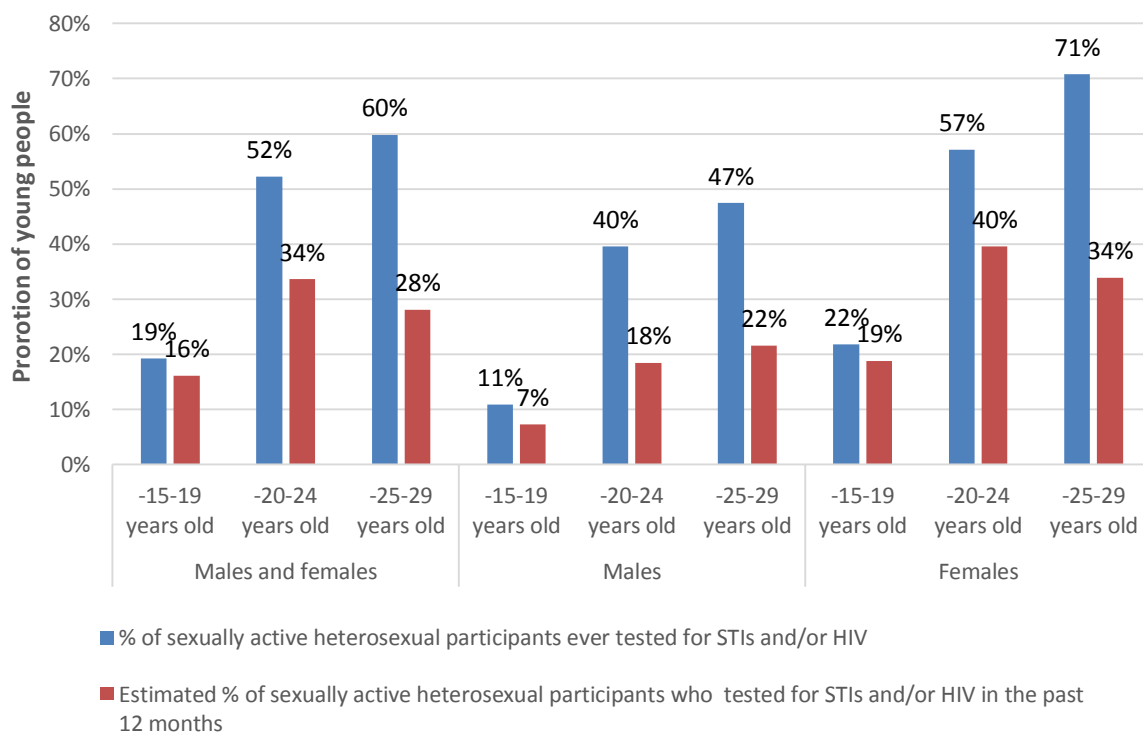
Over time, the proportion of patients who had a full screen for bacterial STIs was highest among MSM and female sex workers. In GP clinics, testing for bacterial STIs increased over time for MSM from 46% to 62%. The proportion remained stable for young people attending those services.

6.2 Comprehensive STI testing among young people

Of the 2,120 heterosexual young people aged 15-29 years and living in NSW who responded to the 2016 'It's Your Love Life' periodic survey^{28;29} most (71%) reported to have had oral, vaginal or anal sex. Of these participants, 43% had tested for STIs³⁰ and/or HIV; a quarter (24%) had tested in the past 12 months. Age- and gender-related differences in the percentage of these young people who ever tested for STIs and/or HIV and who tested in the past 12 months are presented in Figure 35.³¹

Regarding the comprehensiveness of testing, over half (59%) of participants who reported ever having had a sexual health check-up were last tested for both STIs and HIV, 26% were tested for STIs only, 2% were tested for HIV only, and 13% were unsure or did not know.

Figure 35: The proportion of sexually active heterosexual people aged 15-29 who ever tested for STIs and/or HIV, and who tested in the past 12 months.



Data source: *It's Your Love Life 2016 periodic survey on sexual health among young people aged 15-29 years in New South Wales*, Centre for Social Research in Health.

²⁸ See 5.2 for more details on the methodology of this survey.

²⁹ Adam, P., Schippers, M., Schmidt, H., Modderman, K., Welsby, D., Slattery, C., Murray, C., Estoesta, J., Hearnshaw, G., Murphy, D., Britton, M., Jenkins, L., Dixon, K., Becket, N. & de Wit, J. (2016). *It's Your Love Life: a new periodic survey on sexual health among young people in NSW*. Sydney: Centre for Social Research in Health, UNSW Australia.

³⁰ The *It's your love life* survey tests asks if STIs

³¹ More details on the data sources contained within this report can be found in Table 3 in the Appendix.

Comment

Testing for STIs and/or HIV was found to be lower in people aged 15 to 19 years of age, especially among young males. Rates of testing increased across age groups and were higher among the 25-29 years old group. Across age groups, and in each specific age group, rates of testing for STIs and/or HIV were higher among young females than young males.

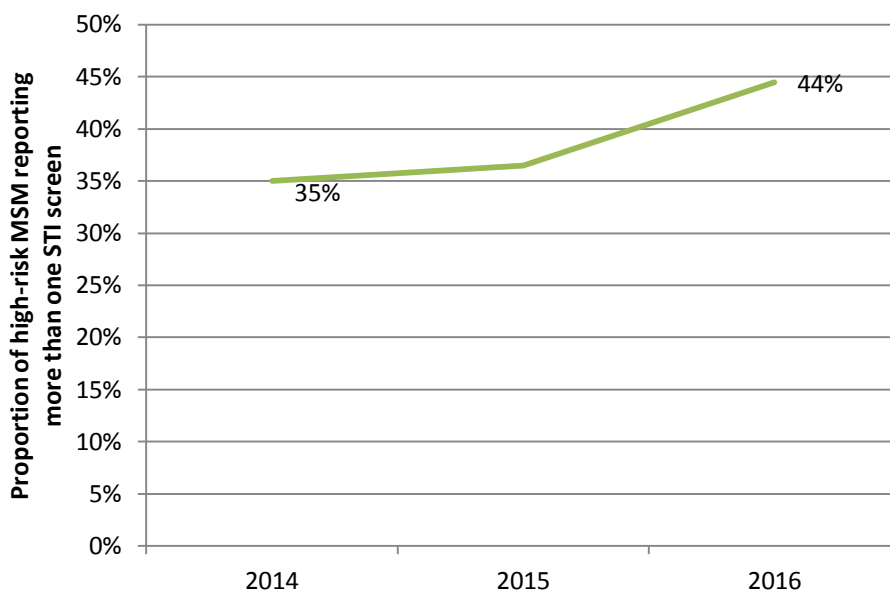
6.3 Comprehensive STI testing among high risk MSM

According to the *Australian STI Management Guidelines for Primary Care*³², high-risk men who have sex with men should be screened for STIs four times a year. The Sydney Gay Periodic Survey examines the frequency of STI testing among MSM, including high risk MSM. High-risk MSM are defined as those who:

- have any unprotected anal sex;
- have more than 10 sexual partners in six months;
- participate in group sex;
- use recreational drugs during sex.

The proportion of high risk MSM reporting comprehensive STI testing more than once in the previous 12 months is presented below in Figure 36.

Figure 36: Proportion of high risk MSM reporting comprehensive STI testing more than once in the previous 12 months



Data source: Sydney Gay Periodic Survey 2014-2016, Centre for Social Research in Health.

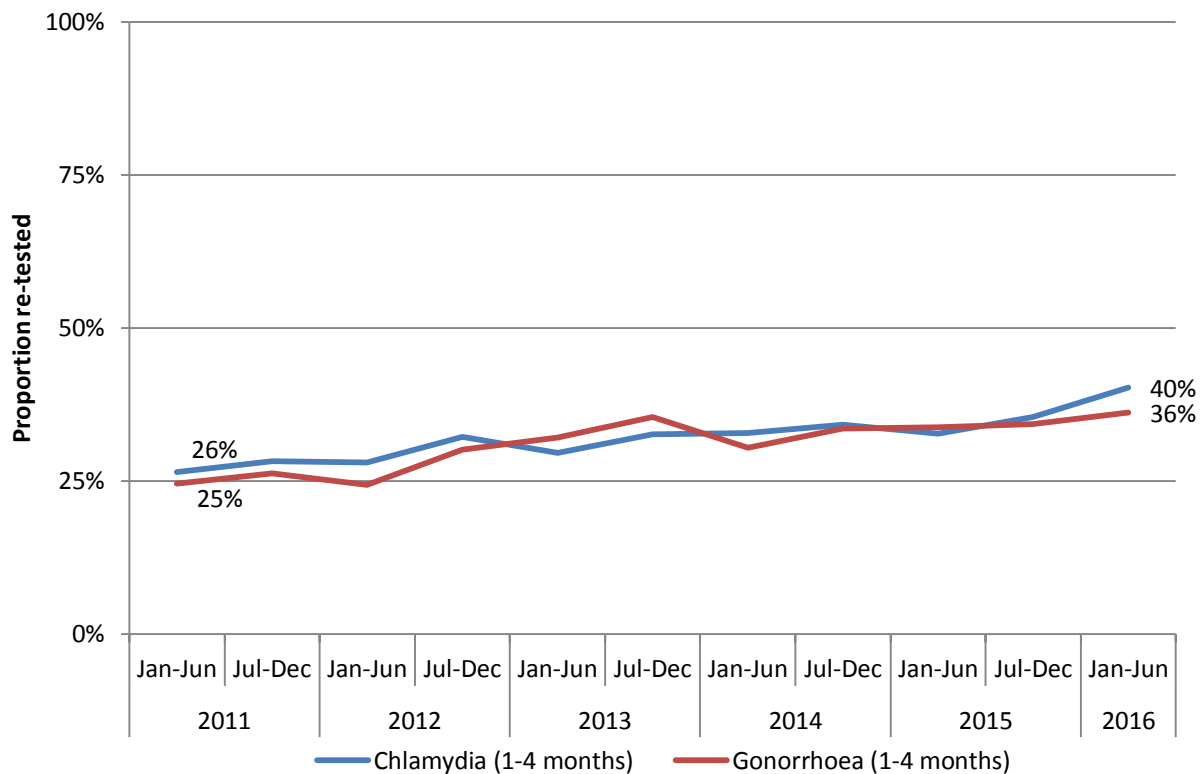
³² http://stipu.nsw.gov.au/wp-content/uploads/STIGMA_Testing_Guidelines_Final_v5.pdf

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

7.1 Re-testing for chlamydia and gonorrhoea

Re-testing for repeat chlamydial and gonorrhoea infections is recommended to detect reinfection of chlamydia and gonorrhoea³³.

Figure 37: Proportion of patients attending publicly funded sexual health services and GP clinics³⁴ diagnosed with a STI and re-tested within the recommended timeframe, by infection, 1 January 2011 to 30 June 2016ⁱ



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

Comment

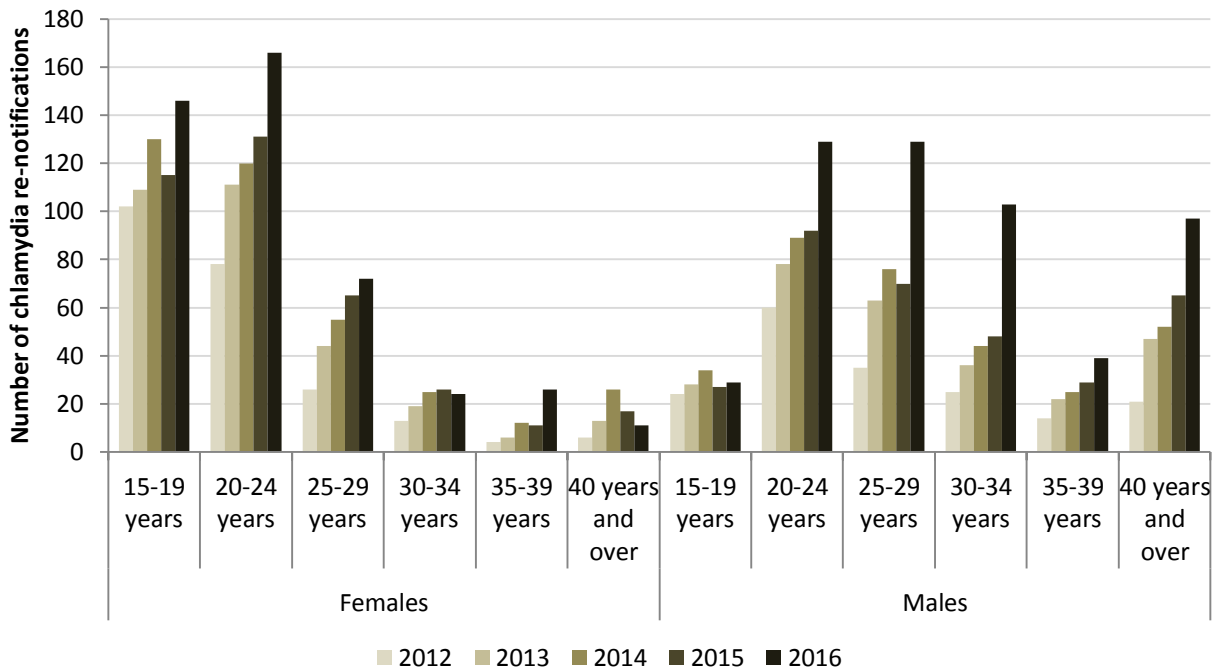
The proportion of people diagnosed with chlamydia and gonorrhoea who get re-tested within the recommended timeframe is increasing for both gonorrhoea and chlamydia. The increase is more pronounced with chlamydia, whereby the proportion increased from 26% in early 2011, to 40% in early 2016.

³³ http://stipu.nsw.gov.au/wp-content/uploads/STIGMA_Testing_Guidelines_Final_v5.pdf

³⁴ Medium to high caseload GP clinics included those serving at least 50 gay and bisexual male patients annually.

7.2 Re-notifications of chlamydia

Figure 38: Number of chlamydia re-notifications at 1 to 4 months after initial notification, persons aged 15 years and over, by gender and year of first notification, NSW, 2012-2016.



Data source: NCIMS, NSW Health; data extracted 23 May 2017.

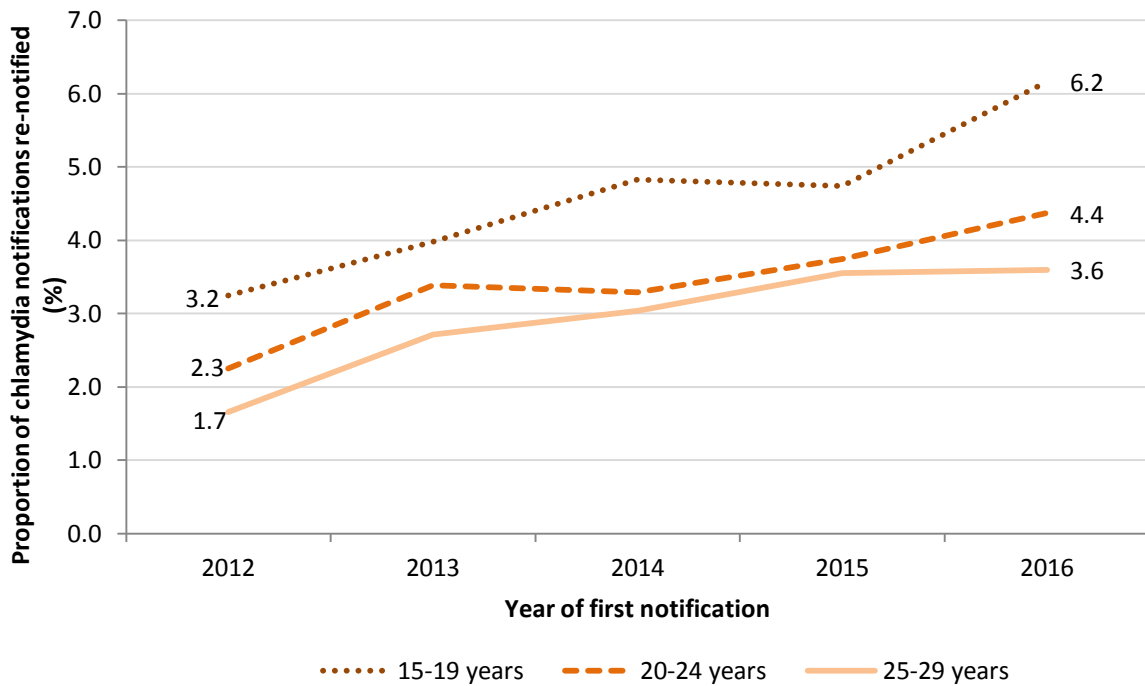
Comment

The numbers of people who are initially notified with chlamydia and then re-notified between one and four months after their first diagnosis has continued to increase.

In 2016, 971 people (445 women and 526 men) aged 15 years and over were re-notified, 40% higher than the number re-notified in 2015 (696; 365 women and 331 men).

Re-notification is influenced by initial screening practices, clinical treatment and management (such as partner notification), and re-testing.

Figure 39: Proportion of initial chlamydia notifications in females that are re-notified within 1 to 4 months of the initial notification, selected age groups, by year of first notification, NSW, 2012-2016.

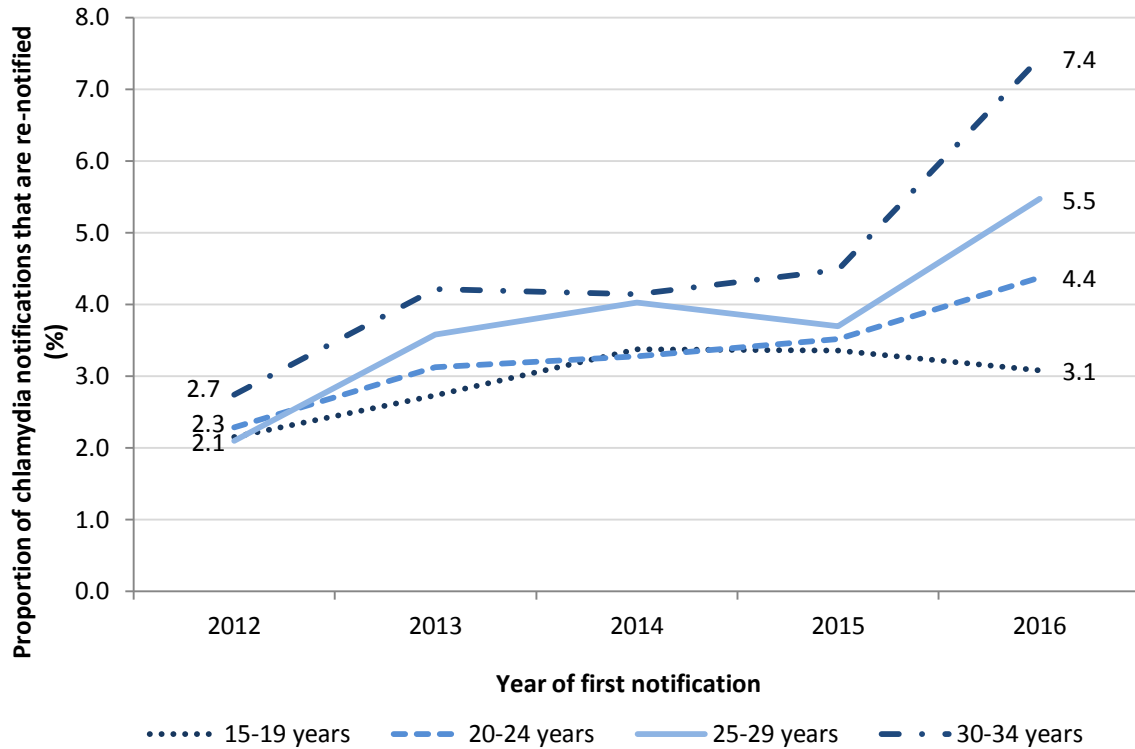


Data source: NCIMS, NSW Health; data extracted 23 May 2017.

Comment

Among females aged 15-19 years who were first notified with chlamydia in 2016, 6.2% were re-notified after one to four months, a higher proportion than among 20-24 year old females (4.4%) and 25-29 year old females (3.6%).

Figure 40: Proportion of chlamydia notifications in males that are re-notified within 1 to 4 months of the initial notification, selected age groups, by year of first notification, NSW, 2012-2016.



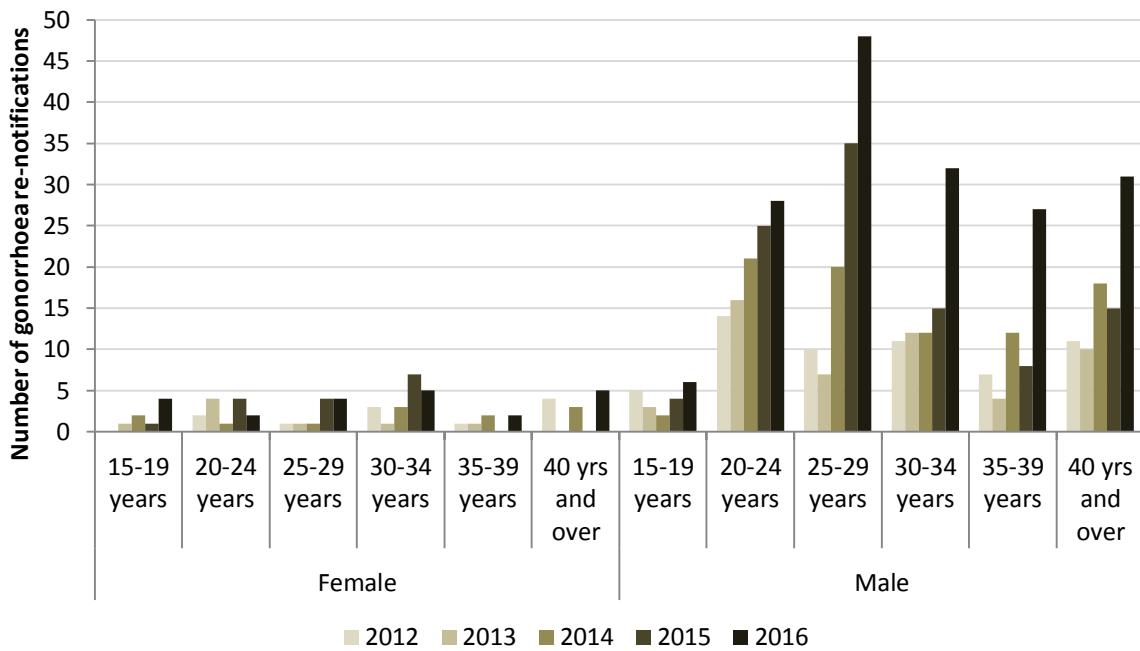
Data source: NCIMS, NSW Health; data extracted 23 May 2017.

Comment

Among males aged 30-34 years who were first notified with chlamydia in 2016, 7.4% were re-notified after one to four months, a higher proportion than among 25-29 year old males (5.5%), 20-24 year old males (4.4%) and 15-19 year old males (3.1%).

7.3 Re-notifications of gonorrhoea

Figure 41: Number of gonorrhoea re-notifications at 1 to 4 months after initial notification, persons aged 15 years and over, by gender and year of first notification, NSW, 2012-2016.



Data source: NCIMS, NSW Health; data extracted 23 May 2017.

Comment

The numbers of people who are initially notified with gonorrhoea and then re-notified between one and four months after their first diagnosis has continued to increase.

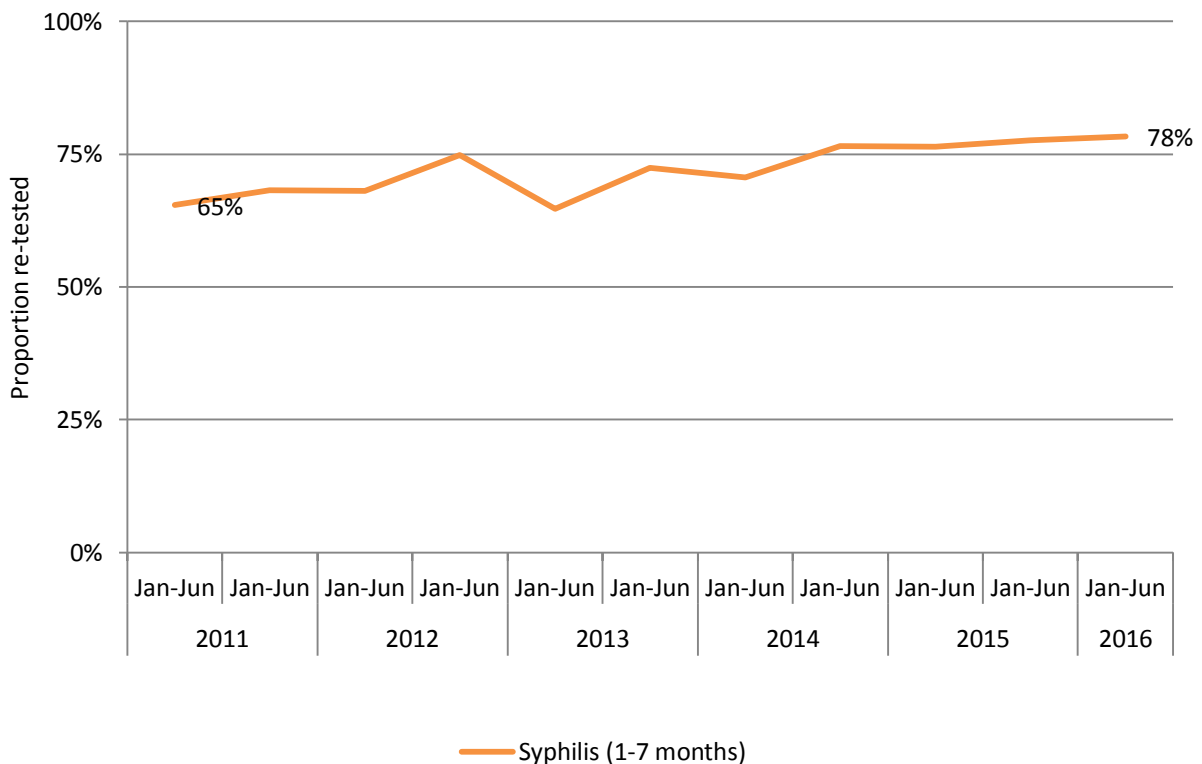
In 2016, 194 people (22 women and 172 men) aged 15 years and over were re-notified, 64% higher than the number re-notified in 2015 (118; 16 women and 102 men).

Re-notification is influenced by initial screening practices, clinical treatment and management (such as partner notification), and re-testing.

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

8.1 Re-testing for infectious syphilis

Figure 42: Proportion of patients attending PFSHs and GP clinics diagnosed with infectious syphilis and re-tested within one to seven months, 1 January 2011 to 30 June 2016



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

Comment

Overall, the majority of syphilis diagnoses were followed by a re-test within seven months, the proportion of which increased from 65% in early 2011 to 78% in early 2016.

8.2 Re-notifications for infectious syphilis

Updated data not yet available.

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

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

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

Appendix A: Indicators for monitoring and reporting

Table 2. Indicators for monitoring and reporting of the NSW STI Strategy 2016-2020

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

Appendix B: Data sources

Table 3: Details on data sources included in this report

Name	Custodian	Description
NSW Health denominator data project	Health Protection NSW, NSW Health	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.
NSW Health HIV Strategy Monitoring Database	NSW Ministry of Health, NSW Health	Aggregated testing data for public sexual health clinics by priority populations.
ACCESS Study	The Kirby Institute	Testing data for unique individuals attending public sexual health clinics by priority populations, and for select GP practices with high and medium case load of GBM in Sydney. ACCESS is a living database and retrospective and prospective data can change as new services are introduced or discontinued, data analyses evolve, and organisational structures are updated, which may introduce variations between reporting periods.
Sydney Gay Community Periodic Survey	Centre for Social Research in Health	Data on sexual, drug use and testing practices related to the transmission of HIV and other STIs among gay men in Sydney (self-reported).
It's Your Love Life Survey	Centre for Social Research in Health	Data about sexual health and health behaviours among approximately 4,000 young people living in NSW.
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. Data are currently available to the end of 2013 ³⁵ .
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

³⁵ Work is currently underway to update the data contained in the Communicable Disease Register and this will be published in future reports.

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

Appendix C: Case definitions for gonorrhoea, infectious syphilis – less than two years duration, syphilis – more than 2 years or unknown duration and chlamydia

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 4: Number of infectious syphilis, gonorrhoea and chlamydia notifications by gender, age group and local health district, NSW, 1 January 2011-31 December 2016

	Infectious syphilis						Gonorrhoea						Chlamydia					
	2011	2012	2013	2014	2015	2016	2011	2012	2013	2014	2015	2016	2011	2012	2013	2014	2015	2016
TOTAL	398	510	615	804	763	858	2882	4115	4226	4908	5436	6994	20578	21277	20785	23083	22582	26022
Gender																		
Female	18	24	29	28	20	31	563	776	755	820	865	1287	11633	11748	11405	12438	12158	13026
Male	380	486	586	774	740	822	2314	3337	3462	4081	4560	5690	8906	9501	9362	10630	10419	12978
Transgender*	0	0	0	1	3	4	2	1	4	6	7	15	3	2	2	0	1	7
Unknown	0	0	0	1	0	1	2	1	5	1	4	2	27	26	16	15	4	11
Age group (yrs)																		
00-04	0	0	0	0	0	0	0	1	3	3	2	3	0	0	2	2	0	2
05-09	0	0	0	0	0	0	0	0	1	2	0	2	0	0	0	1	0	1
10-14	0	0	0	0	0	1	0	11	4	16	6	2	137	123	109	101	70	59
15-19	0	5	8	11	11	8	12	299	299	325	302	315	4898	4957	4441	4412	3885	3939
20-24	0	20	40	47	76	85	96	796	854	981	1056	1253	7314	7421	7171	8040	7617	8536
25-29	0	51	66	81	115	116	131	811	941	1023	1254	1578	3773	3952	4164	4658	4815	5650
30-34	0	57	67	106	127	124	138	662	700	822	913	1244	1772	1925	1945	2346	2499	3082
35-39	1	69	61	87	97	96	130	450	451	503	604	853	1030	1120	1055	1231	1299	1747
40-44	1	66	72	89	115	88	95	444	370	439	467	638	693	713	743	868	880	1103
45-49	1	66	76	84	103	101	97	299	275	358	360	438	449	489	518	579	629	786
50-54	0	31	49	42	77	80	69	167	155	231	240	327	228	289	294	397	430	558
55-59	0	16	36	29	51	27	50	89	87	104	142	172	149	136	183	217	230	283
60-64	0	13	16	19	18	30	19	49	46	59	58	93	76	80	83	128	130	142
65-69	0	2	11	15	8	5	8	19	26	33	19	46	30	48	55	66	65	77
70-74	0	1	6	4	4	2	10	8	8	8	9	13	18	15	8	20	22	24
75-79	0	1	2	1	1	0	2	6	4	1	0	9	5	3	4	5	6	15
80-84	0	0	0	0	0	0	0	2	0	0	3	3	0	0	1	6	2	4

	Infectious syphilis						Gonorrhoea						Chlamydia					
	2011	2012	2013	2014	2015	2016	2011	2012	2013	2014	2015	2016	2011	2012	2013	2014	2015	2016
85 and over	0	0	0	0	1	0	1	1	1	0	1	2	3	3	2	3	0	3
Local Health Districts																		
Central Coast	4	12	2	5	12	14	47	62	96	76	99	133	944	1,039	857	1,037	915	1,042
Far West	0	2	0	1	0	1	2	33	6	7	2	0	88	90	109	138	109	71
Hunter New England	16	16	27	19	20	35	212	260	208	267	258	384	2,847	3,060	2,999	2,851	2,876	2,954
Illawarra Shoalhaven	16	15	12	24	24	26	74	100	107	72	115	123	1,103	1,094	1,120	1,180	1,201	1,149
Justice Health	0	0	0	1	1	0	11	17	15	23	24	26	196	181	137	179	164	174
Mid North Coast	4	3	14	7	2	0	23	23	27	37	36	27	581	520	426	630	583	571
Murrumbidgee	0	5	8	5	7	15	23	39	34	34	29	50	781	742	783	856	889	832
Nepean Blue Mountains	13	11	16	23	7	15	91	125	105	134	146	182	851	889	836	824	788	842
Northern NSW	3	8	15	9	12	11	59	72	98	72	86	137	945	936	819	814	877	938
Northern Sydney	13	34	37	33	46	60	210	294	313	416	418	628	1,575	1,731	1,824	2,009	1,998	2,374
Other NSW	6	7	8	3	7	13	41	15	23	30	26	62	208	71	151	127	70	114
Overseas	1	2	1	5	3	1	13	30	14	12	13	14	40	52	16	19	27	37
South Eastern Sydney	171	216	196	274	294	344	894	1,316	1,297	1,448	1,758	2,060	3,521	3,607	3,193	3,712	3,620	5,140
South Western Sydney	18	22	36	38	14	44	252	373	395	465	447	627	1,795	1,986	2,009	2,214	2,237	2,318
Southern NSW	11	1	2	4	5	3	21	20	24	19	34	57	439	392	404	409	423	473
Sydney	105	119	220	304	266	232	596	893	1,015	1,070	1,354	1,687	2,037	2,163	2,263	2,710	2,789	3,789
Western NSW	5	8	3	5	7	9	36	45	66	94	81	46	919	816	932	980	912	792
Western Sydney	15	29	20	37	35	40	276	411	393	584	527	757	1,711	1,941	1,954	2,233	2,144	2,430
Unknown																		

Data source: NCIMS, NSW Health; data extracted 24 Nov 2016.

Note: 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.

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

Table 5: Year 7 HPV vaccination rate by Local Health District and gender, 2011 to 2016³⁶

Local Health District	Gender	Year					
		2011	2012	2013	2014	2015	2016
Sydney	Females	77%	80%	86%	87%	89%	76%
	Males			80%	82%	83%	72%
South Western Sydney	Females	78%	79%	85%	83%	83%	69%
	Males			78%	78%	81%	67%
South Eastern Sydney	Females	70%	84%	84%	86%	87%	75%
	Males			79%	82%	84%	71%
Illawarra Shoalhaven	Females	63%	70%	87%	80%	82%	68%
	Males			77%	75%	79%	65%
Western Sydney	Females	71%	76%	82%	84%	84%	76%
	Males			78%	80%	83%	69%
Nepean Blue Mountains	Females	68%	73%	75%	79%	80%	69%
	Males			69%	75%	78%	63%
Northern Sydney	Females	75%	79%	80%	85%	83%	74%
	Males			73%	81%	83%	71%
Central Coast	Females	77%	84%	87%	83%	84%	73%
	Males			85%	83%	85%	70%
Hunter New England	Females	68%	77%	82%	82%	80%	68%
	Males			75%	78%	79%	65%
Northern NSW	Females	59%	71%	75%	70%	74%	58%
	Males			65%	73%	70%	54%
Mid North Coast	Females	65%	75%	77%	76%	77%	-
	Males			73%	72%	71%	-
Southern NSW	Females	68%	68%	72%	73%	73%	67%
	Males			67%	70%	72%	61%
Murrumbidgee	Females	75%	78%	79%	80%	83%	72%
	Males			75%	76%	80%	71%
Western NSW	Females	73%	78%	83%	79%	79%	81%
	Males			77%	73%	61%	71%
Far West	Females	77%	74%	79%	78%	64%	66%
	Males			56%	70%	51%	64%

Data source: NSW high schools, Local Health Districts and Health Protection NSW. Centre for Epidemiology and Evidence, NSW Ministry of Health.

³⁶ 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 and Local Health Districts may underestimate the true vaccination coverage as they represent only those vaccinations administered through the school program and do not include doses administered by general practitioners or other immunisation providers.

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

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

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

2013 data for HPV vaccination for South Eastern Sydney LHD are approximate only.