Sentinel Surveillance of Sexually Transmitted Infections (STIs) in South Australia, 2018

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Adelaide Sexual Health Centre (ASHC)



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List of abbreviations

	Australian Collaboration for Coordinated Enhanced Sentinel
ACCESS	Surveillance of Sexually Transmitted Infections (STIs) and Blood
	Borne Viruses
ASHC	Adelaide Sexual Health Centre
BBVs	Blood Borne Viruses
CALD	Culturally and linguistically diverse
ChEx	An express chlamydia screening service
СТ	Chlamydia trachomatis
HIV	Human immunodeficiency virus
HPV	Human papillomavirus
MSHC	Melbourne Sexual Health Centre
MSM	Men who have sex with men
NSU	Non-specific urethritis
PCR	Polymerase chain reaction
PN	Partner notification
PrEP	Pre-Exposure Prophylaxis
RCT	Randomised control trial
RTS	Rectal Treatment Study
SAHMRI	South Australian Health and Medical Research Institute
STI/STIs	Sexually transmitted infection/ Sexually transmitted infections

Executive Summary

This is the 10th sentinel surveillance report of STIs and HIV in South Australia. The data period in this report is between 1 Jan 2018 to 31 Dec 2018. The main findings of the report are presented as text, supported by tables and figures.

In 2018, there were a total of 12161 episodes of care for 7992 individual clients resulting in 16272 clinic attendances at Adelaide Sexual Health Centre (ASHC) (Table 1). Unlike previous years, clinic attendances, new episodes of care and individual patients have marginally decreased since the clinic limited its testing and treatment services to people within "priority groups" for the first time, amid overwhelming demand for the service and the closure of other STI clinics. New client registrations accounted for 31% of all episodes and 47% of all clients seen in 2018. Twelve percent (2025/16272) of the overall attendances reported homosexual or bisexual behaviour in the preceding twelve months.

Clinic attendances have decreased from 17256 in 2017 to 16272 in 2018. There has been a simultaneous decline in the episodes of care and individual patients, with a 6.6% and 3.2% decline compared to 2017. The average number of visits per episode is 1.3 in 2018, similar to 2017. The follow-ups have increased from 3995 in 2017 to 4111 in 2018. This is probably due to the increase in uptake of Pre-exposure Prophylaxis (PrEP) among gay and bisexual men, which was introduced to ASHC in May 2017.

In 2018, a total of 954 new cases were diagnosed with genital chlamydia, out of which 658 (70%) were male and 296 (30%) were female. There was a slightly decrease in the number of chlamydia diagnoses at ASHC, 954 cases compared to 1005 in 2017. In men, nearly half of the cases of chlamydia diagnosed at ASHC were heterosexual men. The majority of males and females diagnosed with chlamydia were asymptomatic (67.5% and 61.5% respectively).

In 2018, a total of 321 new cases were diagnosed with gonorrhoea, out of which 282 (88%) were male and 39 (12%) were female. There was a decrease in the number of gonorrhoea diagnoses at ASHC, 321 cases compared to 416 in 2017. The cases of gonorrhoea diagnosed at ASHC were predominantly men who have sex with men (MSM) (81%). The majority of males and females diagnosed with gonorrhoea were asymptomatic (61.7% and 61.5% respectively).

A total of 90 new syphilis cases were diagnosed with 73 being infectious syphilis in 2018, which is similar to that in the previous year, 90 cases compared to 92 cases in 2017. Most of these cases (97%) were diagnosed in men and only 3 cases were diagnosed in women (3%).

A striking increase has been noted in the diagnoses of mycoplasma genitalium in 2018, with 209 cases compared to 127 in 2017. This is probably due to the increase in testing. In addition, there were 15 newly diagnosed cases of HIV in 2018, with 11 in males and 4 in females.

The number of diagnoses of genital warts has continued to decrease in men and women at ASHC since the Australian national human papillomavirus (HPV) vaccination program commenced in April 2007.

Overall, these data highlighted the need to maintain and strengthen strategies of STI and HIV testing, treatment and risk reduction, but also to expand and promote PrEP and other forms of prevention to people who could benefit from these strategies and increase prevention initiatives in the priority populations in South Australia.

1 Introduction

Clinic 275 has a new name in 2018. It is now called Adelaide Sexual Health Centre (ASHC). ASHC is part of the Royal Adelaide Hospital and is a sentinel surveillance site for STIs in South Australia. Sentinel surveillance is an active surveillance system that can provide early indication of an outbreak and provide accurate detailed data.

The clinic routinely records a standard sexual history and risk markers for infection as well as offering screening for STIs to all clients seen. Hence information is gathered not only on notifiable diseases but also for other STIs that are not notifiable.

Notifications alone may give a distorted view of the disease in the community. Notifications from the general medical community indicate twice as many women are infected with chlamydia as men but the Unit detects twice as many chlamydial infections in men as women. This is largely due to the high proportion of attendance by males, including men who have sex with men (MSM) at ASHC, as well as the policy of screening all symptomatic and asymptomatic patients attending ASHC, including triple anatomical site testing (pharyngeal, rectal and urethral) in MSM. The main findings in this epidemiological report are presented as text, tables and figures. The data period in this report is between 1 Jan 2018 to 31 Dec 2018. These data are subject to revision as additional information becomes available.

2 Activities at ASHC

Overview

During 2018 there were 12161 episodes of care for 7992 clients resulting in 16272 clinic attendances (Table 1). New client registrations accounted for 31% of all episodes, 47% of all patients seen and similar to 2017. Follow up visits have decreased since 2013, but increased from 3995 in 2017 to 4111 in 2018 (Figure 1). There has been a striking increase in the diagnoses of *mycoplasma genitalium* (65%), but a notable decrease in the new diagnoses of genital chlamydia (5%), gonorrhoea (23%) and HIV (25%) compared with 2017 (Table 1).

Twelve percent (2025/16272) of the overall attendances and thirty seven percent (2025/5436) of males attending the clinic reported homosexual or bisexual behaviour in the preceding twelve months. 25.7% of new male registrants were men who have sex with men in 2018, which was higher than 2016 (23.6%) (Table 3).

New registrants at ASHC

Data on client attendances, episodes of care and individual clients have been extracted from the SHIP. The number of follow up visits has increased from 3995 in 2017 to 4111 in 2018. This is probably due to the increase in uptake of Pre-exposure Prophylaxis (PrEP) among gay and bisexual men, which was introduced to ASHC in May 2017.

A client may have more than one diagnosis for an episode of care; therefore the total diagnoses may exceed total episodes of care. An individual client may have several episodes of care each year, each requiring one or more attendances at ASHC. The average number of visits per episode of care is 1.3 in 2018 and similar to that in 2017.

Among all new client registrations, the male to female ratio was 1.6:1 (2299/1448), similar to that in 2017. The proportion of new female registrants (21.1%) under 20 years of age exceeded that for males (10.7%) of the same age group by about 10% (Table 2). The median age of male and female new registrants was 25.9 years and 22.9 years respectively, similar to that in 2017 (Table 2).

Characteristics of new male registrants

Among 2299 new male registrants who attended ASHC in 2018, 25.7% reported male-to-male sexual activity (Table 3).

Around half of new male registrants were under 25 years old. The median age of male new registrants was 25.9 years. Most of the new registrants were Caucasian (68.8%) and only 1.1% of new male registrants were Aboriginal Australians. Around 70% of new registrants were born in the region of Oceania and Antarctic where data were available (Table 2).

30% of new male registrants were symptomatic, 44.6% were asymptomatic. Only 2.2% reported to have 5 or more sexual partners in the past three months (Table 2).

Among new male registrants, 23.2% reported no previous HIV test, 2.5% of new male registrants reported a past history of injecting drug use and 1.1% reported current injecting drug use (Table 3).

Characteristics of new female registrants

Amongst 1448 new female registrants who attended ASHC in 2018, over half of the new registrants were under 25 years old. The median age of female new registrants was 22.9 years of age (Table 2).

Like male patients, most of the new female registrants were Caucasian (78.8%) and less than 1% of new female registrants were Aboriginal Australians. 70.4% of new female registrants were born in the region of Oceania and Antarctic where data was available (Table 2).

33.6% were symptomatic, 38.8% were asymptomatic. 1.7% reported to have 5 or more sexual partners in the past three months (Table 3).

Among new female registrants, 22.7% reported no previous HIV test, 1.5% of new female registrants reported a past history of injecting drug use and only 0.8% reported current injecting drug use (Table 3).

Priority groups of clients

In 2018, due to the overwhelming demand for the service, ASHC was unable to provide STI screening to those who:

- are over 25 years of age
- and have no symptoms
- and only have sexual partners of the opposite sex
- and have a Medicare card

That means heterosexual people over the age of 25 have been excluded from South Australia's statewide sexual health clinic for the first time. The clinic was also forced to reduce its hours of service earlier this year to manage the workload of results processing and management of diagnosed infections. The clinic has been under pressure from increased demand since it began providing the HIV prevention drug PrEP in late 2016, and since STI epidemics have appeared globally and in Australia.

The clinic now tests and treats people from the following "priority groups":

- men who have sex with men
- people who identify as Trans or Gender Diverse
- sex workers, clients of sex workers, and anyone who trades sex for money, goods or services
- Aboriginal and Torres Strait Islander people
- people from culturally and linguistically diverse backgrounds and migrants
- young people (less than 25 years of age)
- people with sexual health related symptoms
- people with a sexual partner who has recently been diagnosed with a sexually transmitted infection

Research projects

ASHC has been involved in several research projects with Kirby Institute and Melbourne Sexual Health Centre (MSHC). These include the Australian Collaboration for Coordinated Enhanced Sentinel Surveillance of Sexually Transmitted Infections (STIs) and Blood Borne Viruses (BBVs) (ACCESS), PrEPX study, MARS study and rectal chlamydia randomised clinical trial.

ACCESS involves four separate sentinel surveillance networks that provide important and unique information on testing and positivity of a range of STIs and BBVs in a range of priority populations: young heterosexuals, men who have sex with men; Indigenous people; and sex workers. The aim of the ACCESS surveillance system is to maintain a comprehensive surveillance system that will help to evaluate the

impact of interventions designed to control BBVs and STIs in Australia. ASHC has been a site for ACCESS since 2013.

Alfred Health's highly successful PrEPX study for those at risk for HIV infection has expanded into South Australia. Patients have the opportunity to enrol in a local Pre-Exposure Prophylaxis (PrEP) research study delivered through a partnership between Victoria's Alfred Health, the South Australian Health and Medical Research Institute (SAHMRI) and SA Health. PrEPX-SA will enroll people whose sexual or injecting drug use activities means there is a high risk of acquiring HIV infection. Participants take daily antiretroviral medication to prevent HIV acquisition. Data is collected on demographic and behavioral characteristics of participants, HIV incidence, complications and STI rates.

MARS study is a questionnaire-based study and conducted among MSM attending the Sexual Health Centre in Australia. The objective of this study was to determine the association between specific oral sex practices and frequency of mouthwash use.

Rectal Treatment Study (RTS) is the first RCT (randomised control trial) evidence of the efficacy of azithromycin versus doxycycline for the treatment of rectal chlamydia, led by Professor Jan Hocking from Melbourne University. A double blind RCT will compare the efficacy of 1g dose of azithromycin with doxycycline 100mg twice daily for 7 days among 700 gay and bisexual men attending participating STI clinics. The results will inform chlamydia treatment guidelines in Australia and worldwide.

Partner Notification (PN) Activities at ASHC

Partner notification (PN) is the process of identifying the relevant contacts of a person with an infectious disease and ensuring that they are aware of their exposure and the best option for testing and or treatment. PN is a state wide service located at ASHC which provides contact tracing for people diagnosed with sexually transmitted infections (STI), not only at ASHC, but also includes people diagnosed at other health care facilities, such as Defence Health, Prison Health or General Practice.

3 Chlamydia

In 2018, Chlamydia trachomatis (CT) was the most frequently diagnosed STI at ASHC, consistent with previous years (Table 4).

There were 954 chlamydia cases diagnosed at ASHC in 2018, a marginal decrease compared to 2017 (1005) (Table 4), with consistently more males than females diagnosed per year (Figure 2).

Chlamydia by gender

New chlamydia cases diagnosed at ASHC were predominantly male. There were 658 (69%) males and 296 (31%) females. The male to female ratio was 2.2 but this varied with age (Figure 3). In males, nearly half of the new chlamydia diagnoses were in heterosexual men (282, 42.9%) (Figure 2).

Chlamydia by symptomatology

Only 31.2% of males and 37.2% of females diagnosed with Chlamydia at ASHC in 2017 had symptoms where data was available (Table 5). The low rate of symptomatic chlamydia in males may be related to the significant proportion of chlamydial infections diagnosed on extra-genital swabs among males (Table 6). Extra-genital (rectal and pharyngeal) chlamydia infections are typically asymptomatic in nature, as are the majority of cervical chlamydia infections in women.

Chlamydia by specimen site

About 56.3% of males were diagnosed with chlamydia using polymerase chain reaction (PCR) from urogenital samples, while around 76% of females were diagnosed with chlamydia infection using the samples collected from cervix or vagina. The proportion of rectal chlamydia diagnosed was 36.5% in males and 23.3% in women. It has been routine practice to ask female patients for history of anal sex since 2013. Rectal chlamydia testing has become routine in asymptomatic women reporting anal sex at ASHC since 2014 (Table 6).

Chlamydia by age

In 2018, the highest age-specific rates of diagnosed chlamydia were among those aged 20-24 years for both males and females. The number of diagnosed chlamydia among males and females aged 20-24

years were (217, 33% of males with chlamydia) and (141, 47.6% of females with chlamydia) respectively (Table 7, Figure 3).

Chlamydia by ethnicity

Among 954 diagnosed cases at ASHC in 2018, there were 712 (74.6%) and 116 (12.2%) diagnoses in people who identified as Caucasian and Asian respectively and only 18 (1.9%) diagnoses in 2018 in people who identified as Aboriginal (Table 8).

4 Gonorrhoea

In 2018, a total of 321 cases were diagnosed with gonococcal infection (Table 10), which represented a 22.8% decrease compared to gonorrhoea diagnoses in 2017.

Of all the patients diagnosed with gonorrhoea in 2018, nearly half of them were under 30 years old, 77.6% were of Caucasian ethnicity (Table 13).

Gonorrhoea by gender

New gonorrhoea diagnoses in 2018 were predominantly in males, 282 (88%) in males and only 39 (12%) in female cases, consistent with previous years (Table 10). Of the 321 gonorrhoea diagnoses in 2018, 198 (61.7%, 24 females and 174 males) were reported as asymptomatic infections and 120 (37.4%, 15 females and 105 males) were reported as symptomatic infections (Table 11). In males, the new gonorrhoea diagnoses were predominantly in MSM (228, 81%) (Table 15).

Gonorrhoea by specimen site

In 2018, 34.6%, 30.4% and 34.8% of the male patients with newly diagnosed gonorrhoea were from urogenital, rectal and pharyngeal specimen sites respectively in males; 61.4%, 21.1% and 17.5% of females were diagnosed with gonorrhoea from urogenital site, rectum and throat respectively in females (Table 12).

Gonorrhoea by age

In 2018, the highest age-specific rates for gonorrhoea diagnoses were among those aged 20-24 years for both males and females and the number of diagnosed gonococcal infections in this age group were (66, 23.4%) in males and (14, 35.9%) in females respectively (Table 13).

Gonorrhoea by ethnicity

Among the 321 gonorrhoea diagnosed at ASHC in 2018, there were 249 (77.6%) and 41 (12.8%) diagnoses in people who identified as Caucasian and Asian respectively and only 6 (1.9%) diagnoses in people who identified as Aboriginal (Table 14).

5 Infectious Syphilis

In 2018, a total of 90 cases were diagnosed with infectious syphilis, the majority in male patients and only 3 in female patients (Table 16).

Infectious syphilis by gender

Most of the patients diagnosed with infectious syphilis were male (87, 97%) and only 3% were diagnosed in female (Table 16). In males, the syphilis diagnoses were predominantly in MSM (73, 84%) (Table 19).

Infectious syphilis by age

The highest age-specific rates for syphilis diagnoses were among those aged over 50 years in males (23, 26.4%) and (1, 33.3%) in females (Table 17).

Infectious syphilis by ethnicity

Among these 75 diagnosed male cases, there were 60 (66.7%) and 15 (16.7%) diagnoses in people who identified as Caucasian and Asian respectively and only 3 (3.3%) diagnoses in 2018 in people who identified as Aboriginal (Table 20).

6 Human Immunodeficiency virus infection

In 2018, there were 15 newly diagnosed cases of HIV with 11 in males and only 4 in females; the male to female ratio was 2.8:1 (Table 1).

HIV by age

The highest age-specific rates for HIV diagnoses were among those aged 30-34 years in both genders (Table 20).

HIV by ethnicity

In 2018, 4 and 8 cases with newly diagnosed HIV were identified as Asian and Caucasian respectively and only 1 (6.7%) HIV new diagnosis in people was identified as Aboriginal (Table 21).

HIV by sex preference

In 2018, 8 cases of newly diagnosed HIV were reported as MSM, which represents 72.7% of new HIV cases diagnosed in male patients (Table 22).

7 Mycoplasma genitalium

In 2018, there were 209 newly diagnosed cases of *Mycoplasma genitalium*, 171 in males and 38 in females; the male to female ratio was 4.5:1 (Table 24).

Mycoplasma genitalium by age

The highest age-specific rates for mycoplasma genitalium diagnoses were among those aged 20-24 years for both males and females (Table 25).

Mycoplasma genitalium by ethnicity

In 2018, 79.4% of male cases of Mycoplasma genitalium were Caucasian, 6.2% Asian, and 0.5% Aboriginal Australian (Table 26).

Mycoplasma genitalium by sexual preference

Around half of men diagnosed with Mycoplasma genitalium reported heterosexual sexual preference (98, 57.3% of males) (Table 27).

8 Genital wart

Genital warts at first presentation have decreased in women under 30 years and heterosexual men under 30 years since 2007 (Table 23), concomitant with the introduction of the national human papillomavirus vaccination program.

9 Rates of STIs among priority populations

Figures 9-13 show the rates of bacterial STIs and HIV among priority groups attending ASHC in 2018. The denominator used is episodes of care for men who have sex with men (MSM), people under 30 years of age, Aboriginal people, people of CALD (Culturally and linguistically diverse) backgrounds and sex workers. Note absolute numbers vary between priority groups, with relatively few episodes of care for Aboriginal clients and sex workers annually, while youth and MSM make up the majority of attendances at ASHC.

Figures 14-18 compare the rates of each STI and HIV among priority groups compared to the average rate for all attendances at ASHC (dotted line).

Chlamydia remains the most common STI in every priority group (Fig 9-13).

Those at highest risk of chlamydia are Aboriginal clients and clients under 30 years of age (Figure 11). Chlamydia is far more common than any other STI affecting youth (Figure 10).

Groups at highest risk of gonorrhoea are MSM and Aboriginal clients (Figure 9,11). There was a peak of gonorrhoea diagnoses among sex workers attending ASHC in 2008. The rate of gonorrhoea among sex workers attending ASHC has remained lower than the clinic average except 2014 since 2010 (Figure 15).

Infectious syphilis (Figure 16) has disproportionately affected MSM and Aboriginal Australian attending ASHC, with a striking increase in MSM in 2018. People born overseas also have a higher than average rate of infectious syphilis diagnoses. Absolute numbers of Aboriginal clients and sex workers attending ASHC are low, hence MSM represent the major group seen at ASHC with infectious syphilis.

HIV diagnoses remain consistently above the ASHC average in Aboriginal Australian and MSM in 2018 (Figure 17). Over the past 15 years, very small numbers of cases of HIV have been recorded among patients reporting former or current sex work. Most of these cases were in males reporting sexual contact with men. These cases do not necessarily represent occupational exposure, and absolute risk of HIV among sex workers attending ASHC appears to be very low.

Table 1 Summary statistics at ASHC, 2018

Diagnoses	Male	Female	Total
Bacterial vaginosis	na	112	112
Balanitis	42	na	42
Chlamydia	658	296	954
Genital herpes	16	14	30
Genital warts	124	26	150
Gonorrhoea	282	39	321
HIV	11	4	15
Infectious syphilis	72	1	73
Molluscum contagiosum	42	10	52
Mycoplasma genitalium	171	38	209
Non STI illness	17	3	20
Non-gonoccocal urethritis	54	na	54
Non-specific genital infection	2	na	2
NSU	5	na	5
Pelvic inflammatory disease	na	22	22
Scabies	2	0	2
Trichomoniasis	0	3	3
Urethral irritation	11	na	11
Vulvo-vaginal candidiasis	na	74	74
Clinic attendances	11911	4361	16272
Episodes of care	8694	3467	12161
Individual clients	5436	2556	7991
New registrations	2299	1448	3747

na: not applicable

Characteristics	Male		Female	
	n	%	n	%
New registrants	2299	61.2	1448	38.8
Age				
<20	247	10.7	306	21.1
20-24	805	35.0	613	42.3
25-29	453	19.7	237	16.4
30-34	275	12.0	107	7.4
35-39	162	35.8	66	4.6
40-44	117	5.1	40	2.8
45-49	78	3.4	29	2.0
50+	162	7.0	50	3.5
Median age (years)	25.9		22.9	
Age range (years)	Age range (years) 15.3-88.4 14.4		14.0	-71.4
Race				
Aboriginal	23	1.1	9	0.7
Asian	304	14.0	190	13.9
Caucasian	1674	77.2	1077	78.8
Other	112	5.3	52	3.8
African	54	2.5	39	2.8
Country of Birth				
Oceania and Antarctic	1582	68.8	1017	70.4
North-West Europe	195	8.5	140	9.5
Southern and Eastern Europe	49	2.1	22	1.5
North Africa and the Middle East	41	1.8	10	0.7
South-East Asia	98	4.2	64	4.5
North-East Asia	104	4.4	65	4.5
Southern and Central Asia	80	3.7	21	1.4
American	70	3.0	56	3.9
Sub-Saharan Africa	56	2.4	40	2.7

 Table 2 Demographic characteristics of new registrants for the first time at ASHC, 2018

Table 3 Characteristics of clinic presentation of new registrants seen for the first time at ASHC, 2018

Characteristics	Male		Fen	nale
	n	%	n	%
No previous HIV test	534	23.2	329	22.7
Reason for visit				
Asymptomatic	1026	44.6	562	38.8
Symptomatic	689	30.0	487	33.6
Other	537	23.4	364	25.1
Partners in last 3 months				
0	16	0.7	10	0.7
1	90	3.9	71	4.9
2	103	4.5	46	3.2
3	58	2.5	33	2.3
4	28	1.2	23	1.6
5 or more	50	2.2	24	1.7
Injecting drug use				
Past history – ever used IDU	58	2.5	21	1.5
Current use	26	1.1	11	0.8
Male-to-male sex*	590	25.7		

*: denominator is new male registrant

Year	Male	Female	Total
2009	357	228	585
2010	446	244	690
2011	513	313	826
2012	514	299	813
2013	545	309	854
2014	553	298	851
2015	583	301	884
2016	484	268	752
2017	733	272	1005
2018	658	296	954

Table 5 Number of chlamydia diagnoses by symptomatology at ASHC, 2018

Symptomatology	Male		Male Female		Total	
	n	%	n	%	n	%
Symptomatic*	205	31.2	110	37.2	315	33.0
Asymptomatic	444	67.5	182	61.5	626	65.6
Unknown	9	1.4	4	1.4	13	1.4
Total	658	100	296	100	954	100

*: Cases are classified as "symptomatic" if genital discharge and/or dysuria are reported in male; and genital discharge and /or dysuria and/or pelvic pain are reported in female

Specimen site	Male		Female		Total	
	n	%	n	%	n	%
Urogenital	440	56.3	294	76.2	734	62.9
Rectum	285	36.5	90	23.3	375	32.1
Throat	56	7.2	2	0.5	58	5.0
Total	781	100	386	100	1167	100

Table 6 Number of chlamydia diagnoses by specimen site at ASHC, 2018

NB: Patients may have infections at multiple sites; hence the total number of infections might be more than the total number of diagnoses.

Table 7 Number of chlamydia diagnoses by age groups at ASHC, 2018

Age groups (yrs)	Ма	ale	Fen	nale	То	tal
	n	%	n	%	n	%
<20	28	4.3	73	24.7	101	10.6
20-24	217	33.0	141	47.6	358	37.5
25-29	144	21.9	44	14.9	188	19.7
30-34	93	14.1	13	4.4	106	11.1
35-39	60	9.1	15	5.1	75	7.9
40-44	21	3.2	5	1.7	26	2.7
45-49	35	5.3	3	1.0	38	4.0
50+	60	9.1	2	0.7	62	6.5
Total	658	100	296	100	954	100

Table 8 Number of chlamydia diagnoses by ethnicity at ASHC, 2018

Ethnicity	Male		Fen	Female		otal
	n	%	n	%	n	%
Aboriginal	9	1.4	9	3.0	18	1.9
Asian	84	12.8	32	10.8	116	12.2
Caucasian	495	75.2	217	73.3	712	74.6
Other	24	3.6	6	2.0	30	3.1
African	22	3.3	18	6.1	40	4.2
Unknown	24	3.6	14	4.7	38	4.0
Total	658	100	296	100	954	100

Gender and sexual preference	Male		Fem	Female		Total	
	n	%	n	%	n	%	
MSM	355	54.0			355	37.2	
Heterosexual Men	282	42.9			282	29.6	
Female			286	96.6	286	30.0	
Unknown	21	3.2	10	3.4	31	3.2	
Total	658	100	296	100	954	100	

Table 9 Number of chlamydia diagnoses by gender and sexual preference at ASHC, 2018

Table 1 Number of gonorrhoea diagnoses at ASHC, 2009-2018

Year	Male	Female	Total
2009	72	20	92
2010	94	11	105
2011	121	16	137
2012	161	21	182
2013	174	47	221
2014	238	31	269
2015	252	35	287
2016	256	73	329
2017	343	73	416
2018	282	39	321

Table 2 Number of gonorrhoea diagnoses by symptomatology at ASHC, 2018

Symptomatology	Male		Fen	nale	То	Total		
	n	%	n	%	n	%		
Symptomatic	105	37.2	15	38.5	120	37.4		
Asymptomatic	174	61.7	24	61.5	198	61.7		
Unknown	3	1.1	0	0.0	3	0.9		
Total	282	100	39	100	321	100		

NB: Cases are classified as "symptomatic" only if genital discharge and/or dysuria are reported

Specimen site	Male		Fema	le	Total		
	n	%	n	%	n	%	
Urogenital	172	34.6	35	61.4	207	37.4	
Rectum	151	30.4	12	21.1	163	29.4	
Throat	173	34.8	10	17.5	183	33.0	
Eye	1	0.2	0	0.0	1	0.2	
Total	497	100	57	100	554	100	

Table 3 Number of gonorrhoea diagnoses by specimen site at ASHC, 2018

NB: Patients may have infections at multiple sites; hence the total number of infections might be more than the total number of diagnoses.

Table 4 Number of gonorrhoea diagnoses by age groups at ASHC, 2018

Age groups (yrs)	M	ale	Fen	nale	То	tal
	n	%	n	%	n	%
<20	12	4.3	7	17.9	19	5.9
20-24	66	23.4	14	35.9	80	24.9
25-29	55	19.5	8	20.5	63	19.6
30-34	50	17.7	3	7.7	53	16.5
35-39	37	13.1	3	7.7	40	12.5
40-44	13	4.6	2	5.1	15	4.7
45-49	13	4.6	1	2.6	14	4.4
50+	36	12.8	1	2.6	37	11.5
Total	282	100	39	100	321	100

Table 5 Number of gonorrhoea diagnoses by ethnicity at ASHC, 2018

Ethnicity	M	ale	Fer	nale		Total
	n	%	n	%		n %
Aboriginal	6	2.1	0	0.0	6	1.9
Asian	35	12.4	6	15.4	41	12.8
Caucasian	221	78.4	28	71.8	249	77.6
Other	11	3.9	1	2.6	12	3.7
African	4	1.4	1	2.6	5	1.6
Unknown	5	1.8	3	7.7	8	2.5
Total	282	100	39	100	321	100

Gender and sexual preference	Male		Fen	Female		Total	
	n	%	n	%	n	%	
MSM	228	80.9			228	71.0	
Heterosexual Men	42	14.9			42	13.1	
Female			34	87.2	34	10.6	
Unknown	12	4.3	5	12.8	17	5.3	
Total	282	100	39	100	321	100	

Table 6 Number of gonorrhoea diagnoses by gender and sexual preference at ASHC, 2018

Table 7 Number of infectious syphilis diagnoses at ASHC, 2009-2018

Year	Male	Female	Total
2009	20	0	20
2010	16	6	22
2011	17	1	18
2012	23	2	25
2013	33	2	35
2014	25	1	26
2015	42	5	47
2016	63	4	67
2017	67	4	71
2018	72	1	73

Table 8 Number of infectious syphilis diagnoses by age groups at ASHC, 2018

Age groups (yrs)		Male		Female	2		Total	
		n %		n	%		n	%
<20	0	0.0	0		0.0	0		0.0
20-24	15	20.8	1		100	16		21.9
25-29	14	19.4	0		0.0	14		19.2
30-34	6	8.3	0		0.0	6		8.2
35-39	10	13.9	0		0.0	10		13.7
40-44	6	8.3	0		0.0	6		8.2
45-49	3	4.2	0		0.0	3		4.1
50+	18	25.0	0		0.0	18		24.7
Total	72	100	1		100	73		100

Ethnicity	Ма	ale	Fen	nale	То	otal
	n	%	n	%	n	%
Aboriginal	2	3.4	0	0.0	2	2.7
Asian	8	16.1	0	33.3	8	11.0
Caucasian	53	67.8	0	33.3	53	72.6
Other	7	2.3	1	0.0	8	11.0
Unknown	2	2.3	0	0.0	2	2.7
Total	72	100	1	100	73	100

 Table 9 Number of infectious syphilis diagnoses by ethnicity at ASHC, 2018

Table 19 Number of infectious syphilis diagnoses by gender and sexual preference at ASHC,2018

Gender and sexual		Male	Fen	nale		Total
preference						
	n	%	n	%	n	%
MSM	61	84.7			61	83.6
Heterosexual Men	6	8.3			6	8.2
Female			1	100.0	1	1.4
Unknown	5	6.9			5	6.8
Total	72	100	1	100	73	100

 Table 10 Number of HIV diagnoses by age groups at ASHC, 2018

Age groups (yrs)	Male		Female		Total	
	n	%	n	%	n	%
<20	0	0.0	0	0.0	0	0.0
20-24	1	9.1	0	9.1	1	6.7
25-29	1	9.1	1	9.1	2	13.3
30-34	3	27.3	1	27.3	4	26.7
35-39	1	9.1	1	9.1	2	13.3
40-44	3	27.3	0	27.3	3	20.0
45-49	0	0.0	0	0.0	0	0.0
50+	2	18.2	1	18.2	3	20.0
Total	11	100.0	4	100	15	100

Ethnicity	M	Male		nale		Total	
	n	%	n	%	n	%	
Aboriginal	1	9.1	0	0.0	1	6.7	
Asian	2	18.2	2	50.0	4	26.7	
Caucasian	8	72.7	0	0.0	8	53.3	
Other	0	0.0	1	25.0	1	6.7	
African	0	0.0	1	25.0	1	6.7	
Total	11	100	4	100	15	100	

Table 11 Number of HIV diagnoses by ethnicity at ASHC, 2018

Table 12 Number of HIV diagnoses by gender and sexual preference at ASHC, 2018

Gender and sexual	/	Male	Ferr	ale		Total
preference						
	n	%	n	%	n	%
MSM	8	72.7		0	8	53.3
Heterosexual Men	2	18.2		0	2	13.3
Female		0.0	4	100	4	26.7
Unknown	1	9.1		0	1	6.7
Total	11	100	4	100	15	100

Year		All ep	isodes		New patient 1	^t presentation	
	Gonorrhoea	Syphilis	Chlamydia	NSU	Herpes	Warts	
Male							
2009	72	20	357	100	40	246	
2010	94	16	446	83	56	242	
2011	121	17	513	111	55	228	
2012	161	23	514	109	60	209	
2013	174	33	545	136	39	177	
2014	238	25	553	130	49	175	
2015	252	42	583	125	59	173	
2016	254	63	486	119	49	188	
2017	343	67	733	79	27	176	
2018	282	72	658	5	15	80	
	Conorrhooo	Synchilic	Chlamudia	Bacterial	Horpos	Warts	
	Gonornioea	зурттт	Chiamyula	vaginosis	neipes	Warts	
Female							
2009	20	0	228	245	62	133	
2010	11	6	244	343	57	78	
2011	16	1	313	273	67	80	
2012	21	2	299	250	54	77	
2013	47	2	309	271	53	62	
2014	31	1	298	289	45	64	
2015	35	5	301	301	47	53	
2016	74	4	269	261	43	53	
2017	73	4	272	177	19	41	
2018	39	1	296	112	14	20	

Table 13 Number of diagnoses of genital gonorrhoea, syphilis, chlamydia, NSU, Bacterialvaginosis, Herpes and Warts by gender at ASHC, 2009-2018

Year	Male	Female	Total
2010	13	3	16
2011	34	4	38
2012	66	12	78
2013	58	5	63
2014	62	7	69
2015	82	5	87
2016	95	17	112
2017	122	3	125
2018	171	38	209

 Table 14 Number of mycoplasma genitalium diagnoses at ASHC, 2010-2018

 Table 15 Number of mycoplasma genitalium diagnoses by age groups at ASHC, 2018

Age groups (yrs)	M	ale	Fen	nale	То	tal
	n	%	n	%	n	%
<20	4	2.3	2	5.3	6	2.9
20-24	40	23.4	22	57.9	62	29.7
25-29	51	29.8	8	21.1	59	28.2
30-34	25	14.6	3	7.9	28	13.4
35-39	8	4.7	1	2.6	9	4.3
40-44	6	3.5	0	0.0	6	2.9
45-49	13	7.6	0	0.0	13	6.2
50+	24	14.0	2	5.3	26	12.4
Total	171	100	38	100	209	100

Table 16 Number of *mycoplasma genitalium* diagnoses by ethnicity at ASHC, 2018

Ethnicity	M	Male		nale	То	Total	
	n	%	n	%	n	%	
Aboriginal	1	0.6	0	0.0	1	0.5	
Asian	10	5.8	3	7.9	13	6.2	
Caucasian	134	78.4	32	84.2	166	79.4	
African	9	5.3	0	0.0	9	4.3	
Other	7	4.1	1	2.6	8	3.8	
Unknown	10	5.8	2	5.3	12	5.7	
Total	171	100	38	100	209	100	

Gender and sexual preference	Male		Fen	Female		Total	
	n	%	n	%	n	%	
MSM	50	29.2			50	23.9	
Heterosexual Men	98	57.3			98	46.9	
Female			29	76.3	29	13.9	
Unknown	23	13.5	9	23.7	32	15.3	
Total	171	100	38	100	209	100	

Table 17 Number of mycoplasma genitalium diagnoses by gender and sexual preference at ASHC,2018

*: denominator is new male registrants

Year	MSM	<30 yrs	Sex worker	Born overseas	Aboriginal Australian	all attenders
2009	7.8%	11.7%	4.0%	7.3%	8.8%	8.7%
2010	8.3%	12.5%	2.9%	8.8%	14.9%	9.7%
2011	10.7%	14.7%	5.5%	9.1%	15.5%	11.1%
2012	12.0%	14.3%	5.5%	9.8%	12.0%	10.8%
2013	12.6%	14.8%	9.5%	10.7%	11.0%	11.5%
2014	12.4%	12.4%	3.3%	11.1%	10.6%	10.4%
2015	11.7%	12.7%	12.0%	10.6%	7.9%	10.4%
2016	7.7%	10.2%	5.7%	6.0%	7.3%	8.6%
2017	17.6%	13.4%	7.9%	14.5%	9.5%	11.4%
2018	17.5%	13.7%	9.9%	12.1%	26.1%	11.8%

Table 18 Proportion of chlamydia diagnoses among risk groups and compared with all clinic attenders by episode of care, 2009-2018

Year	MSM	<30 yrs	Sex worker	Born overseas	Aboriginal Australian	all attenders
2009	3.5%	1.0%	4.0%	1.1%	5.0%	1.4%
2010	5.2%	1.4%	1.0%	1.1%	4.0%	1.5%
2011	7.4%	1.8%	0.0%	1.5%	11.7%	1.8%
2012	10.6%	2.5%	2.8%	1.7%	4.3%	2.4%
2013	8.7%	2.8%	1.2%	2.5%	3.7%	3.0%
2014	13.2%	3.1%	4.3%	3.2%	4.8%	3.3%
2015	11.9%	2.8%	0.9%	3.3%	5.9%	3.4%
2016	8.8%	3.6%	3.4%	2.6%	6.3%	3.7%
2017	14.1%	4.4%	4.4%	4.9%	17.9%	4.7%
2018	11.3%	3.4%	5.0%	3.5%	8.7%	4.0%

Table 29 Proportion of gonorrhoea diagnoses among risk groups and compared with all clinic attenders by episode of care, 2009-2018

Year	MSM	<30 yrs	Sex worker	Born overseas	Aboriginal Australian	all attenders
2009	1.6%	0.2%	0.0%	0.5%	0.0%	0.3%
2010	0.9%	0.2%	0.0%	0.6%	0.0%	0.3%
2011	0.8%	0.1%	0.0%	0.6%	1.0%	0.2%
2012	1.3%	0.1%	0.9%	0.4%	0.0%	0.3%
2013	1.8%	0.3%	1.2%	0.7%	1.2%	0.5%
2014	1.1%	0.1%	1.1%	0.5%	1.0%	0.3%
2015	2.1%	0.4%	0.9%	0.6%	0.0%	0.6%
2016	2.4%	0.5%	0.0%	0.5%	1.0%	0.8%
2017	3.2%	0.5%	0.0%	1.8%	1.2%	1.0%
2018	3.6%	0.7%	0.0%	1.3%	4.3%	1.1%

Table 19 Proportion of syphilis diagnoses among risk groups and compared with all clinic attenders by episode of care, 2009-2018

Year	MSM	<30 yrs	Sex worker	Born overseas	Aboriginal Australian	all attenders
2009	0.9%	0.1%	0.0%	0.4%	0.0%	0.2%
2010	0.6%	0.0%	0.0%	0.2%	1.0%	0.2%
2011	1.2%	0.2%	0.0%	0.6%	0.0%	0.3%
2012	1.0%	0.2%	0.0%	0.5%	0.0%	0.3%
2013	1.2%	0.2%	0.0%	0.6%	1.2%	0.3%
2014	0.9%	0.1%	0.0%	0.3%	0.0%	0.2%
2015	1.0%	0.2%	0.0%	0.4%	1.0%	0.3%
2016	0.9%	0.3%	0.0%	0.1%	4.2%	0.3%
2017	0.7%	0.2%	0.0%	0.5%	0.0%	0.2%
2018	0.4%	0.1%	0.0%	0.2%	1.4%	0.2%

Table 20 Proportion of HIV diagnoses among risk groups and compared with all clinic attenders by episode of care, 2009-2018

Table 21 Proportion of mycoplasma genitalium diagnoses among risk groups and compared with all clinic attenders by episode of care,2010-2018

Year	MSM	<30 yrs	Sex worker	Born overseas	Aboriginal Australian	all attenders
2010	0.3%	0.2%	0.0%	0.3%	0.0%	0.2%
2011	0.4%	0.5%	0.0%	1.2%	1.9%	0.5%
2012	0.8%	1.1%	0.9%	1.5%	0.0%	1.0%
2013	0.9%	0.9%	0.0%	1.0%	0.0%	0.9%
2014	0.9%	0.9%	0.0%	1.1%	0.0%	0.8%
2015	1.6%	0.8%	0.9%	0.9%	1.0%	1.0%
2016	1.0%	1.5%	0.0%	0.7%	2.1%	1.3%
2017	1.8%	1.3%	0.0%	1.0%	2.4%	1.4%
2018	2.6%	2.8%	2.8%	2.4%	1.4%	2.6%

Year	ear Chlamydia				Gonorrhoea			Syphilis			HI	V	Mycoplasma genitalium			
	n	Total	%	n	Total	%	n	Total	%	n	Total	%	n	Total	%	
2009	76	585	13.0%	34	92	37.0%	16	20	80.0%	9	12	75.0%				
2010	92	690	13.3%	58	105	55.2%	10	22	45.5%	7	11	63.6%	3	16	18.8%	
2011	135	826	16.3%	93	137	67.9%	10	18	55.6%	15	22	68.2%	5	38	13.2%	
2012	154	813	18.9%	136	182	74.7%	17	25	68.0%	13	20	65.0%	10	78	12.8%	
2013	176	854	20.6%	121	221	54.8%	25	35	71.4%	17	23	73.9%	12	63	19.0%	
2014	196	851	23.0%	209	269	77.7%	17	26	65.4%	14	20	70.0%	14	69	20.3%	
2015	209	884	23.6%	212	287	73.9%	37	47	78.7%	17	23	73.9%	29	87	33.3%	
2016	158	752	21.0%	181	329	55.0%	49	66	74.2%	19	28	67.9%	21	112	18.8%	
2017	339	1005	33.7%	271	416	65.1%	61	92	66.3%	13	20	65.0%	35	127	27.6%	
2018	355	954	37.2%	228	321	71.0%	73	90	81.1%	8	15	53.3%	50	209	23.9%	

 Table 22 Proportion of major STIs and HIV diagnoses in MSM, 2009-2018

Year	ar Chlamydia			Gonorrhoea			Syphilis			HIV			Mycoplasma genitalium		
	n	Total	%	n	Total	%	n	Total	%	n	Total	%	n	Total	%
2009	448	585	76.6%	39	92	42.4%	7	20	35.0%	5	12	41.7%			
2010	514	690	74.5%	59	105	56.2%	7	22	31.8%	2	11	18.2%	8	16	50.0%
2011	646	826	78.2%	78	137	56.9%	6	18	33.3%	8	22	36.4%	20	38	52.6%
2012	634	813	78.0%	112	182	61.5%	5	25	20.0%	11	20	55.0%	51	78	65.4%
2013	667	854	78.1%	127	221	57.5%	14	35	40.0%	10	23	43.5%	42	63	66.7%
2014	625	851	73.4%	158	269	58.7%	3	26	11.5%	7	20	35.0%	45	69	65.2%
2015	650	884	73.5%	145	287	50.5%	20	47	42.6%	8	23	34.8%	42	87	48.3%
2016	534	752	71.0%	187	329	56.8%	28	66	42.4%	15	28	53.6%	78	112	69.6%
2017	707	1005	70.3%	226	416	54.3%	26	92	28.3%	9	20	45.0%	56	127	44.1%
2018	647	954	67.8%	162	321	50.5%	32	90	35.6%	3	15	20.0%	127	209	60.8%

 Table 23 Proportion of major STIs and HIV diagnosed in patients (<30 years), 2009-2018</th>

Year		Chlamydia	1	Gonorrhoea				Syphilis			ΗΙν		Mycoplasma genitalium		
	n	Total	%	n	Total	%	n	Total	%	n	Total	%	n	Total	%
2009	4	585	0.7%	4	92	4.3%	0	20	0.0%	0	12	0.0%			
2010	3	690	0.4%	1	105	1.0%	0	22	0.0%	0	11	0.0%	0	16	0.0%
2011	6	826	0.7%	0	137	0.0%	0	18	0.0%	0	22	0.0%	0	38	0.0%
2012	6	813	0.7%	3	182	1.6%	1	25	4.0%	0	20	0.0%	1	78	1.3%
2013	8	854	0.9%	1	221	0.5%	1	35	2.9%	0	23	0.0%	0	63	0.0%
2014	3	851	0.4%	4	269	1.5%	1	26	3.8%	0	20	0.0%	0	69	0.0%
2015	13	884	1.5%	1	287	0.3%	1	47	2.1%	0	23	0.0%	1	87	1.1%
2016	5	752	0.7%	3	329	0.9%	0	66	0.0%	0	28	0.0%	0	112	0.0%
2017	14	1005	1.4%	8	416	1.9%	1	92	1.1%	0	20	0.0%	0	127	0.0%
2018	14	954	1.5%	7	321	2.2%	0	90	0.0%	0	15	0.0%	4	209	1.9%

Table 24 Proportion of major STIs and HIV diagnoses in sex workers, 2009-2018

Year		Chlamydi	а	Gonorrhoea			Syphilis			ΗΙν			Mycoplasma genitalium		
	n	Total	%	n	Total	%	n	Total	%	n	Total	%	n	Total	%
2009	107	585	18.3%	16	92	17.4%	8	20	40.0%	6	12	50.0%			
2010	126	690	18.3%	16	105	15.2%	8	22	36.4%	3	11	27.3%	4	16	25.0%
2011	149	826	18.0%	25	137	18.2%	10	18	55.6%	9	22	40.9%	19	38	50.0%
2012	168	813	20.7%	29	182	15.9%	7	25	28.0%	8	20	40.0%	25	78	32.1%
2013	201	854	23.5%	46	221	20.8%	13	35	37.1%	11	23	47.8%	18	63	28.6%
2014	228	851	26.8%	65	269	24.2%	11	26	42.3%	6	20	30.0%	23	69	33.3%
2015	226	884	25.6%	70	287	24.4%	13	47	27.7%	9	23	39.1%	19	87	21.8%
2016	123	752	16.4%	54	329	16.4%	11	66	16.7%	3	28	10.7%	14	112	12.5%
2017	255	1005	25.4%	82	416	19.7%	23	92	25.0%	9	20	45.0%	22	127	17.3%
2018	244	954	25.6%	70	321	21.8%	27	90	30.0%	5	15	33.3%	33	209	15.8%

 Table 25 Proportion of major STIs and HIV diagnoses in patients born overseas, 2009-2018

	r														
Year		Chlamydia	7	Gonorrhoea				Syphilis			HIV		Mycoplasma genitalium		
	n	Total	%	n	Total	%	n	Total	%	n	Total	%	n	Total	%
2009	7	585	1.2%	4	92	4.3%	0	12	0.0%	0	20	0.0%			
2010	15	690	2.2%	4	105	3.8%	1	11	9.1%	0	22	0.0%	0	16	0.0%
2011	16	826	1.9%	12	137	8.8%	0	22	0.0%	1	18	5.6%	2	38	5.3%
2012	11	813	1.4%	4	182	2.2%	0	20	0.0%	0	25	0.0%	0	78	0.0%
2013	9	854	1.1%	3	221	1.4%	1	23	4.3%	1	35	2.9%	0	63	0.0%
2014	11	851	1.3%	5	269	1.9%	0	20	0.0%	1	26	3.8%	0	69	0.0%
2015	8	884	0.9%	6	287	2.1%	1	23	4.3%	0	47	0.0%	1	87	1.1%
2016	7	752	0.9%	6	329	1.8%	4	28	14.3%	1	66	1.5%	2	112	1.8%
2017	9	1005	0.9%	12	416	2.9%	0	20	0.0%	1	92	1.1%	3	127	2.4%
2018	18	954	1.9%	6	321	1.9%	1	15	6.7%	3	90	3.3%	1	209	0.5%

Table 26 Proportion of major STIs and HIV diagnoses in Aboriginal Australians, 2009-2018



Figure 1 Number of clients by attendance categories, 2008-2018

Figure 2 Number of chlamydia diagnoses by gender at ASHC, 1987-2018





Figure 3 Number of chlamydia diagnoses by gender and age groups at ASHC, 2018

Figure 4 Number of gonorrhoea diagnoses by gender at ASHC, 2008-2018





Figure 5 Number of gonorrhoea diagnoses by gender and age groups at ASHC, 2018

Figure 6 Number of infectious syphilis diagnoses by gender at ASHC, 1987-2018







Figure 8 Number of HIV diagnoses by gender at ASHC, 2008-2018





Figure 9 Proportion of STIs and HIV among MSM by episode of care, 2000-2018



Figure 10 Proportion of STIs and HIV among patients aged less than 30 years by episode of care, 2000-2018



Figure 11 Proportion of STIs and HIV among Aboriginal patients by episode of care, 2000-2018

*: Denominator is episodes of care



Figure 12 Proportion of STIs and HIV among patients who were born overseas by episode of care, 2000-2018



Figure 13 Proportion of STIs and HIV among sex workers by episode of care, 2000-2018

Figure 14 Proportion of chlamydia diagnoses from all sites among relevant risk groups compared with all clinic attenders by episode of care, 2000-2018



20% 18% Proportion of gonorrhoea diagnoses by risk groups 16% 14% 12% 10% 8% 6% 4% 2% 0% 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 All ASHC attenders - MSM Under 30 Sex worker ------ Aboriginal Born overseas

Figure 15 Proportion of gonorrhoea diagnoses from all sites among relevant risk groups compared with all clinic attenders by episode of care, 2000-2018

Figure 16 Proportion of infectious syphilis diagnoses among relevant risk groups compared with all clinic attenders by episode of care, 2000-2018





Figure 17 Proportion of HIV diagnoses among relevant risk groups compared with all clinic attenders by episode of care, 2000-2018

Figure 18 Proportion of *mycoplasma genitalium* diagnoses among relevant risk groups compared with all clinic attenders by episode of care, 2000-2018

