Science for Communities
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SEXUALLY TRANSMITTED INFECTIONS IN NEW ZEALAND: SUPPLEMENTARY ANNUAL SURVEILLANCE REPORT 2023

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Disclaimer

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ACRONYMS AND ABBREVIATIONS

Acronym/Abbreviation	Description
AMR	Antimicrobial resistance
HIV	Human immunodeficiency viruses
LGV	Lymphogranuloma venereum
MELAA	Middle Eastern, Latin American, and African
MSM	Men who have sex with men
MSW	Men who have sex with women
NHI	National Health Index
PrEP	Pre-Exposure Prophylaxis
STIs	Sexually transmitted infections
WSM	Women who have sex with men

INTRODUCTION

The ‘Sexually transmitted infections in New Zealand: Supplementary Annual Surveillance Report’ summarises additional epidemiology of sexually transmitted infections (STIs) for 2023 (the reporting period) not shown on the dashboard, with findings from 2019 to 2022 included for comparison and context, where possible. This report presents findings from clinical notifications for syphilis and gonorrhoea, with a summary table for each disease followed by further detail on notifications by sexual behaviour, and for certain populations. It presents laboratory surveillance data for perinatal gonorrhoea and chlamydia infections. Additional clinical details for syphilis and gonorrhoea are presented in Appendix 1. For other key trends in syphilis, gonorrhoea, and chlamydia, please refer to the annual dashboard.

Sentinel clinic surveillance data for first presentation genital warts and lymphogranuloma venereum (LGV) are also described in this report.

The COVID-19 pandemic response affected behavioural patterns, access to healthcare, and availability of testing in 2020 and 2021, therefore all data from 2020–2021 should be interpreted with caution.

A full description of methodology can be found in Appendix 2.

TERMINOLOGY AND INTERPRETATION

Sex:

This refers to sex assigned at birth, (male, female and unknown where this information is not available in surveillance data). Laboratory data are provided with sex only, rather than gender identity.

Gender identity:

This refers to a person's social and personal identity as male, female or another gender such as non-binary. Cisgender refers to a person whose gender/identity is the same as the sex recorded at their birth. Transgender refers to a person whose gender is different from the sex recorded at their birth. In this report transgender people (male, female and transgender not specified), and non-binary people are reported together due to small numbers.

Age-group:

Based on age at diagnosis and rounded to the nearest year using normal rounding practices.

Geographic region:

Generally reported by district except for Auckland which is reported as a region (combining Auckland, Waitemata and Counties Manukau districts) and Wellington which is reported as a region (combining Capital & Coast, Hutt Valley and Wairarapa districts).

Ethnicity:

Generally reported using prioritised ethnicity including Māori, Pacific, Asian, MELAA (Middle Eastern, Latin American, and African), and European/Other. Clinic data does not specify Asian or MELAA ethnicity which are both reported as 'Other' for historical data capture reasons.

Reporting years:

This report is a 2023 supplementary annual report with data from 2018 to 2022 generally reported to provide context and trends. Clinical notification data for gonorrhoea is only presented from 2019 to 2023 as surveillance began in late 2018.

Surveillance data sources:

Three primary sources of data are used for surveillance; these include laboratory data, sentinel aggregate clinic data, and clinical notification data.

Laboratory data includes all laboratory results for gonorrhoea and chlamydia alongside demographic information.

Sentinel, aggregate data is received from sentinel Sexual Health clinics for first presentation genital warts and lymphogranuloma venereum (LGV).

Clinical notifications are received for gonorrhoea and syphilis directly from clinicians.

For further information on surveillance data sources and methodology please refer to the methods section.

Sexual Behaviour

Self-reported sexual behaviour of case as reported to the treating clinician at the time of diagnosis.

INFECTIOUS SYPHILIS

CHARACTERISTICS OF ALL SYPHILIS CASES

Table 1: Infectious syphilis cases by year and sexual behaviour, gender, age-group, ethnicity, and region: 2019–2023

Year	**2019**, N = 725[1]	**2020**, N = 514[1]	**2021**, N = 448[1]	**2022**, N = 508[1]	**2023**, N = 736[1]
Sexual Behaviour					
MSM	459(63.3%)	289(56.2%)	228(50.9%)	228(44.9%)	436(59.2%)
MSW	142(19.6%)	115(22.4%)	98(21.9%)	145(28.5%)	151(20.5%)
WSM	91(12.6%)	89(17.3%)	94(21.0%)	107(21.1%)	105(14.3%)
Other	4(0.6%)	2(0.4%)	4(0.9%)	5(1.0%)	5(0.7%)
Unknown	29(4.0%)	19(3.7%)	24(5.4%)	23(4.5%)	39(5.3%)
Gender Identity					
Cisgender female	97(13.4%)	97(18.9%)	101(22.5%)	126(24.8%)	122(16.6%)
Cisgender male	614(84.7%)	410(79.8%)	328(73.2%)	370(72.8%)	605(82.2%)
Transgender & non-binary	14(1.9%)	6(1.2%)	19(4.2%)	12(2.4%)	9(1.2%)
Unknown	0(0.0%)	1(0.2%)	0(0.0%)	0(0.0%)	0(0.0%)
Age Group (years)					
0–14	0(0.0%)	0(0.0%)	0(0.0%)	1(0.2%)	0(0.0%)
15–19	15(2.1%)	19(3.7%)	13(2.9%)	25(4.9%)	16(2.2%)
20–24	119(16.4%)	79(15.4%)	73(16.3%)	99(19.5%)	99(13.5%)
25–29	154(21.2%)	111(21.6%)	83(18.5%)	84(16.5%)	136(18.5%)
30–39	228(31.4%)	162(31.5%)	147(32.8%)	142(28.0%)	247(33.6%)
40+	209(28.8%)	143(27.8%)	132(29.5%)	157(30.9%)	238(32.3%)
Ethnicity					
European/Other	403(55.6%)	240(46.7%)	186(41.5%)	188(37.0%)	304(41.3%)
Māori	146(20.1%)	118(23.0%)	142(31.7%)	175(34.4%)	171(23.2%)
Pacific	54(7.4%)	50(9.7%)	51(11.4%)	69(13.6%)	74(10.1%)
Asian	80(11.0%)	63(12.3%)	53(11.8%)	57(11.2%)	125(17.0%)
MELAA	32(4.4%)	31(6.0%)	14(3.1%)	14(2.8%)	48(6.5%)
Unknown	10(1.4%)	12(2.3%)	2(0.4%)	5(1.0%)	14(1.9%)
Geographical Region					
Auckland	280(38.6%)	216(42.0%)	216(48.2%)	315(62.0%)	417(56.7%)
Canterbury	101(13.9%)	53(10.3%)	30(6.7%)	13(2.6%)	69(9.4%)
Wellington	94(13.0%)	80(15.6%)	64(14.3%)	37(7.3%)	62(8.4%)
Waikato	49(6.8%)	46(8.9%)	40(8.9%)	57(11.2%)	98(13.3%)
Southern	49(6.8%)	32(6.2%)	13(2.9%)	6(1.2%)	11(1.5%)
Bay of Plenty	48(6.6%)	24(4.7%)	21(4.7%)	19(3.7%)	23(3.1%)
Lakes	21(2.9%)	18(3.5%)	9(2.0%)	3(0.6%)	9(1.2%)
MidCentral	15(2.1%)	10(1.9%)	16(3.6%)	14(2.8%)	4(0.5%)
Hawkes Bay	18(2.5%)	6(1.2%)	4(0.9%)	12(2.4%)	8(1.1%)
Taranaki	12(1.7%)	5(1.0%)	3(0.7%)	4(0.8%)	5(0.7%)
Whanganui	15(2.1%)	6(1.2%)	6(1.3%)	8(1.6%)	3(0.4%)
Nelson Marlborough	4(0.6%)	5(1.0%)	5(1.1%)	4(0.8%)	5(0.7%)
Northland	13(1.8%)	6(1.2%)	19(4.2%)	15(3.0%)	18(2.4%)
Tairawhiti	3(0.4%)	4(0.8%)	0(0.0%)	0(0.0%)	2(0.3%)
West Coast	3(0.4%)	1(0.2%)	0(0.0%)	0(0.0%)	0(0.0%)
South Canterbury	0(0.0%)	2(0.4%)	2(0.4%)	1(0.2%)	2(0.3%)

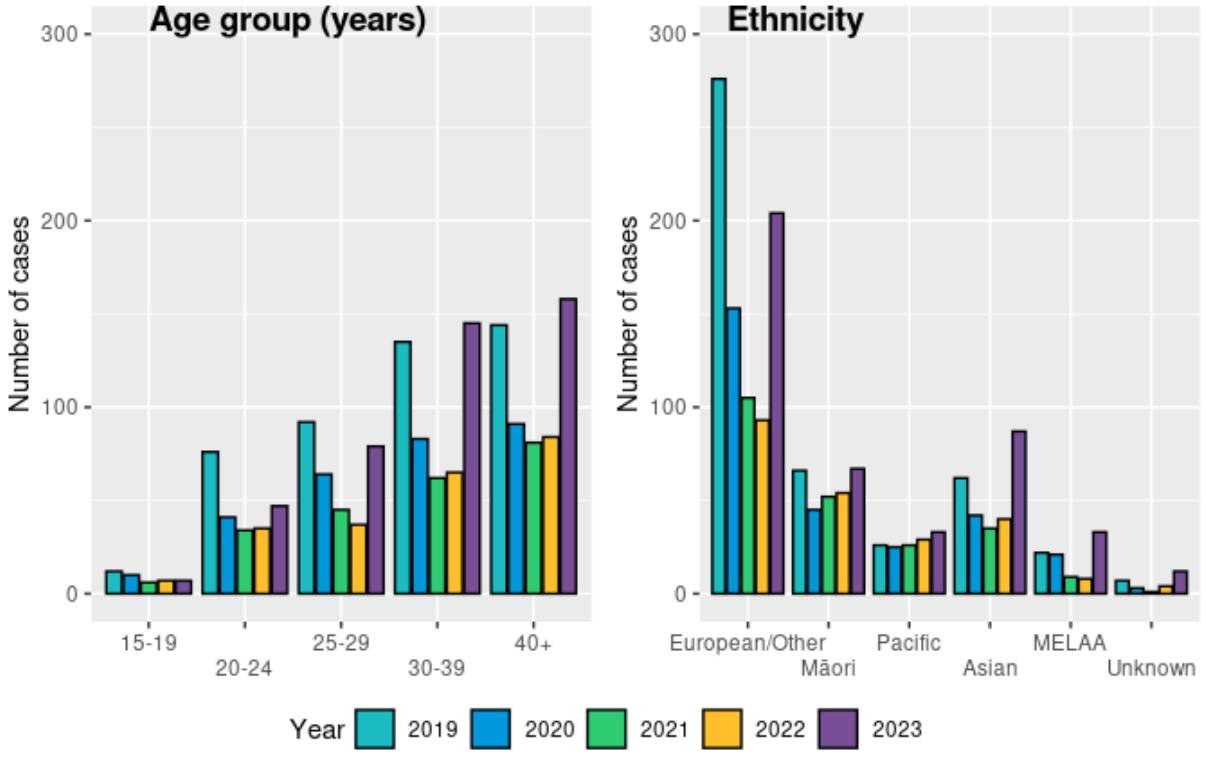
[1] n(%)
[2] Percentages may not total 100% due to rounding infectious syphilis cases in different risk groups

Infectious syphilis among MSM by age-group & ethnicity

Key findings (Figure 1)

- Of all infectious syphilis cases among men who have sex with men (MSM) in 2023, 204 cases (47%) were European/Other, 87 (20%) were Asian, 67 (15%) were Māori, 33 (8%) were Pacific, 33 (8%) were MELAA, and 12 cases were of unknown ethnicity.
- Infectious syphilis cases among MSM increased between 2022 and 2023 for all ethnic groups; Māori: 54 to 67 cases, European/Other: 93 to 204 cases, Asian: 40 to 87 cases, MELAA: 8 to 33 cases, Pacific: 29 to 33 cases.
- Cases increased across most age-groups of MSM between 2022 and 2023, with the largest increases observed for those aged 30–39 years (65 to 145 cases) and 40+ years (84 to 158 cases). The majority (70%) of MSM cases continue to be seen in the 30–39 and 40+ age groups.
- The highest number of cases among MSM by ethnicity and age group in 2023 were reported amongst those of European/Other ethnicity aged 40+ years (105/436 cases). A high number of cases were also reported for European/Other aged 30-39 (51/436 cases) and Asian aged 30–39 years (42/436 cases).
- Between 2022 and 2023, the number of reported infectious syphilis cases among MSM increased substantially across the country: Auckland (144 to 255 cases), Wellington (17 to 41 cases), Canterbury (8 to 54 cases), Waikato (26 to 50 cases).
- Of infectious syphilis cases among MSM, 59% were reported in the Auckland region (255 cases); with a further 12% in Waikato (50 cases), 9% in Wellington (41 cases), and 12% in Canterbury (8 cases). This represents a total of 92% of all cases reported as MSM nationally from these four regions).
- Between 2022 and 2023, a decrease in case numbers was observed in some regions with relatively few reported cases (Hawke's Bay: 6 to 2 cases; MidCentral: 5 to 2 cases; and Whanganui: 3 to 2 cases).

Figure 1: Infectious syphilis cases amongst MSM by age group and ethnicity: 2018–2023

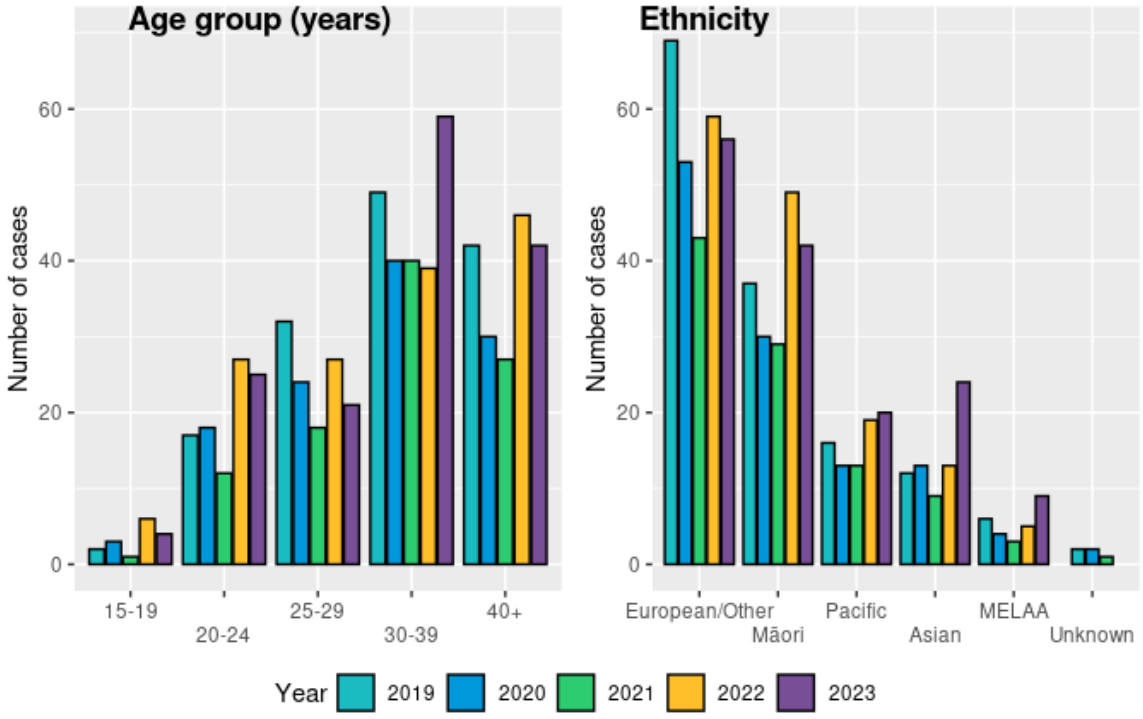


Infectious syphilis among MSW by age-group & ethnicity

Key findings (Figure 2)

- The number of infectious syphilis cases among men who have sex with women (MSW) increased slightly between 2022 (145 cases) and 2023 (151 cases).
- In 2023 the number of infectious syphilis cases among MSW increased for Asian (13 to 24 cases) and MELAA ethnicities (5 to 9 cases), decreased for European/Other (59 to 56 cases) and Māori (49 to 42 cases) compared to 2022. The highest number of cases among MSW were European/Other (56 cases), followed by Māori (42 cases), Asian (24 cases), Pacific peoples (20 cases), and MELAA (9 cases).
- In 2023, the proportion of infectious syphilis cases among MSW by ethnicity increased among Asian and MELAA ethnicities and decreased among European/Other and Māori compared with 2022. Those of Asian ethnicity accounted for 16% of all MSW cases in 2023 compared to 9% in 2022, MELAA accounted for 6% compared to 3%, European/Other accounted for 37% compared to 41%, and Māori accounted for 28% compared to 34%. The proportion of infectious syphilis cases among Pacific peoples in 2023 remained stable compared to 2022 with Pacific peoples accounting for 13% of infectious syphilis cases both years.
- Cases among MSW were highest in the 30–39 and 40+ year age-groups.
- MSW aged 30-39 had the largest increase between 2022 and 2023 (from 39 to 59 cases). Reported cases among all other age groups decreased.
- The highest number of cases by ethnicity and age-group in 2023 were reported amongst those of European/other ethnicity aged 30–39 years and 40+ years (27 and 17 of 151 cases) followed by those of Māori ethnicity aged 30–39 years and 40+ years (13 and 12 out of 151 cases).
- Cases among MSW doubled in Waikato (17 to 35 cases) and decreased in Auckland (86 to 73 cases). Case numbers remain low among MSW in other regions.
- 72% (108 of 151 cases) of MSW cases were reported in Auckland and Waikato.

Figure 2: Infectious syphilis cases amongst MSW by age-group and ethnicity: 2019–2023

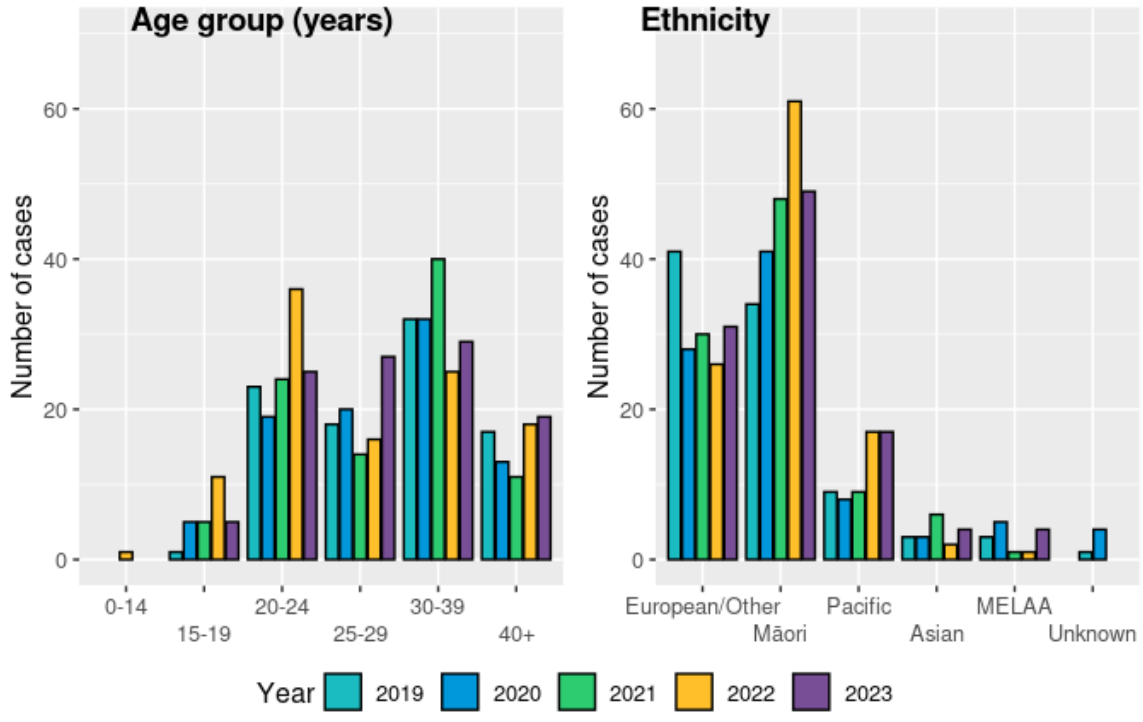


Infectious syphilis among WSM by age-group and ethnicity

Key findings (Figure 3)

- The total number of cases of infectious syphilis among women who have sex with men (WSM) in 2023 was similar to 2022 (107 and 105 cases, respectively).
- The number and proportion of cases among WSM of Māori ethnicity increased markedly from 2020 to 2022, and in every year since 2020, a higher number of cases have been reported among Māori WSM compared to other ethnicity groups. However, cases among Māori WSM decreased from 2022 to 2023 (61 to 49 cases), while case numbers increased for European/Other (26 to 31 cases), remained stable for Pacific peoples (17 cases each year) and remained low for MELAA (1 to 4 cases) and Asian ethnic groups (2 to 4 cases).
- The vast majority of infectious syphilis cases (96%) among WSM were of reproductive age (defined by the Ministry of Health as aged 15–44 years (Ministry of Health, 2021)).
- The highest number of cases by ethnicity and age-group in 2023 were reported among those of Māori ethnicity aged 20–24 (15/105 cases) and 25–29 (14/105 cases), and European/Other aged 25–29 years (11/105 cases).
- In 2023, 59 of 105 cases (56%) among WSM were reported in Auckland, 11 of the 105 cases (11%) were in Waikato, 8 of 105 (8%) were in Wellington, 7 of 105 (7%) were in Northland, 6 of 105 (6%) were in Canterbury. All other regions had between zero and four cases.
- Between 2022 to 2023, cases decreased in the Auckland (from 70 to 59 cases) and increased in Canterbury (0 to 6 cases), Southern (0 to 4 cases), and Northland (3 to 7 cases) regions. Cases remained stable in Wellington (8 cases in both years) and remained low in other regions.
- Nearly half of WSM cases in the European/Other ethnic group in 2023 were reported in the Auckland region (14/31 cases). Among cases of Māori ethnicity, 29/49 cases were in the Auckland region. Among cases of Pacific ethnicity 11/17 cases were in the Auckland region.

Figure 3: Infectious syphilis cases amongst WSM by age-group and ethnicity: 2019–2023



PARTICULAR POPULATIONS WITH INFECTIOUS SYPHILIS

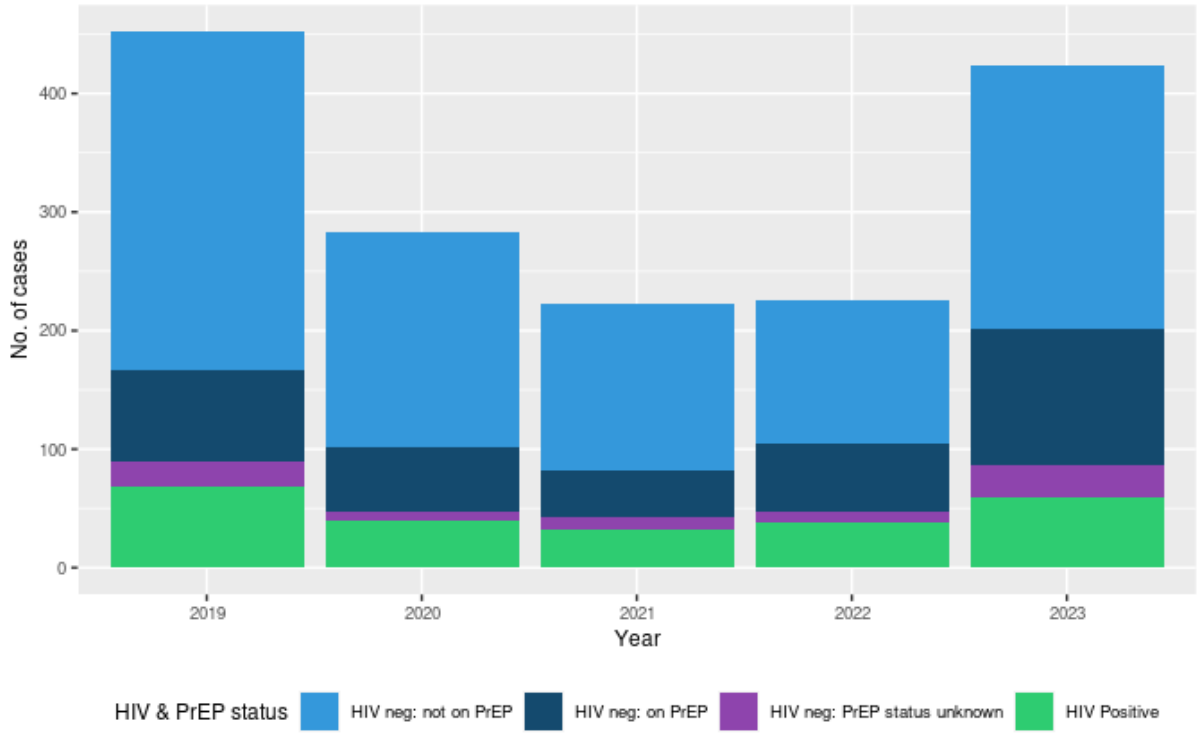
HIV and PrEP status amongst MSM

Pre-Exposure Prophylaxis (PrEP) is a medication for HIV-negative people which significantly reduces the chance of HIV acquisition. PrEP became available in New Zealand as part of a research trial and via importations in 2018, and since 2019 has been funded for those who meet special authority criteria (PHARMAC, 2018). Special authority criteria were expanded in 2022 (Pharmac Te Pātaka Whaioranga, 2022). PrEP users are primarily MSM.

Among the 436 MSM diagnosed with infectious syphilis in 2023, 59 were living with HIV (14%) (Figure 4). While the number of MSM diagnosed with infectious syphilis and living with HIV has increased, the proportion has decreased slightly compared to 2022 (38/229 cases, 17%).

Of the 436 MSM diagnosed with infectious syphilis, 364 had a known HIV negative status. Of these, 337 (77%) had a known PrEP status, with 115 (34%) reporting taking PrEP in 2023.

Figure 4: HIV and PrEP status amongst MSM with infectious syphilis: 2019–2023



Women of reproductive age and pregnant women

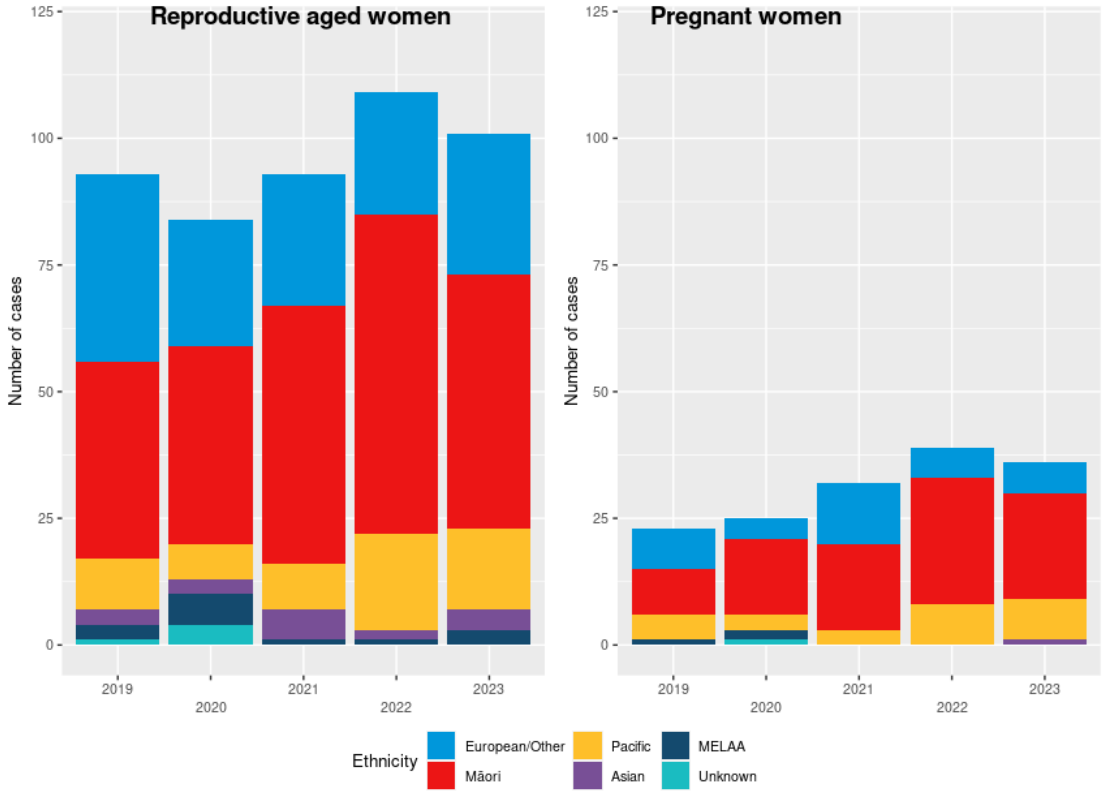
In 2023, (Figure 5) the total number of infectious syphilis cases among women of reproductive age (between 15–44 years) decreased by 8 cases (109 to 101) compared to 2022. Cases among Māori and Pacific women in this age group decreased between 2022 and 2023 (63 to 50 and 19 to 16 cases, respectively). Cases numbers increased slightly between 2022 and 2023 among the European/Other (24 to 28) and remained low for Asian (<5) and MELAA (<5) ethnic groups.

The number of infectious syphilis cases among pregnant women decreased from 39 cases in 2022 to 36 cases in 2023. Case numbers across ethnic groups remained relatively unchanged between 2022 and 2023.

Of the 101 infectious syphilis cases among women of reproductive age, 36 (36%) were reported to be pregnant, similar to 2021 (39/109 cases, 36%).

Most syphilis cases among pregnant women were in Auckland (23 cases, 64%).

Figure 5: Syphilis cases among women of reproductive age and pregnant women by ethnicity: 2019–2023

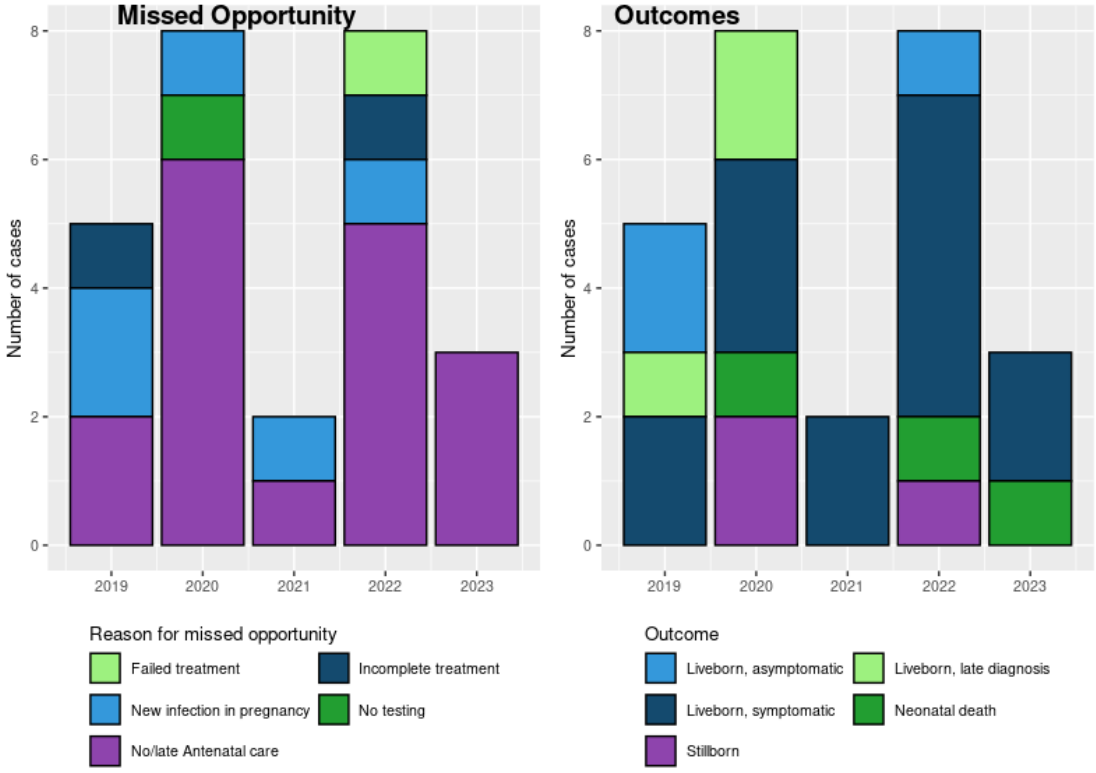


Congenital Syphilis

In order to prevent congenital syphilis, pregnant women must receive antenatal care, which includes first trimester screening for syphilis, receive treatment appropriate for the stage of disease and pregnancy at least four weeks prior to delivery and remain syphilis free at delivery (New Zealand Sexual Health Society, 2020). Analysis of information on case report forms for infants with congenital syphilis and their mothers was undertaken to identify where in the antenatal care pathway the opportunity to prevent a case of congenital syphilis was missed.

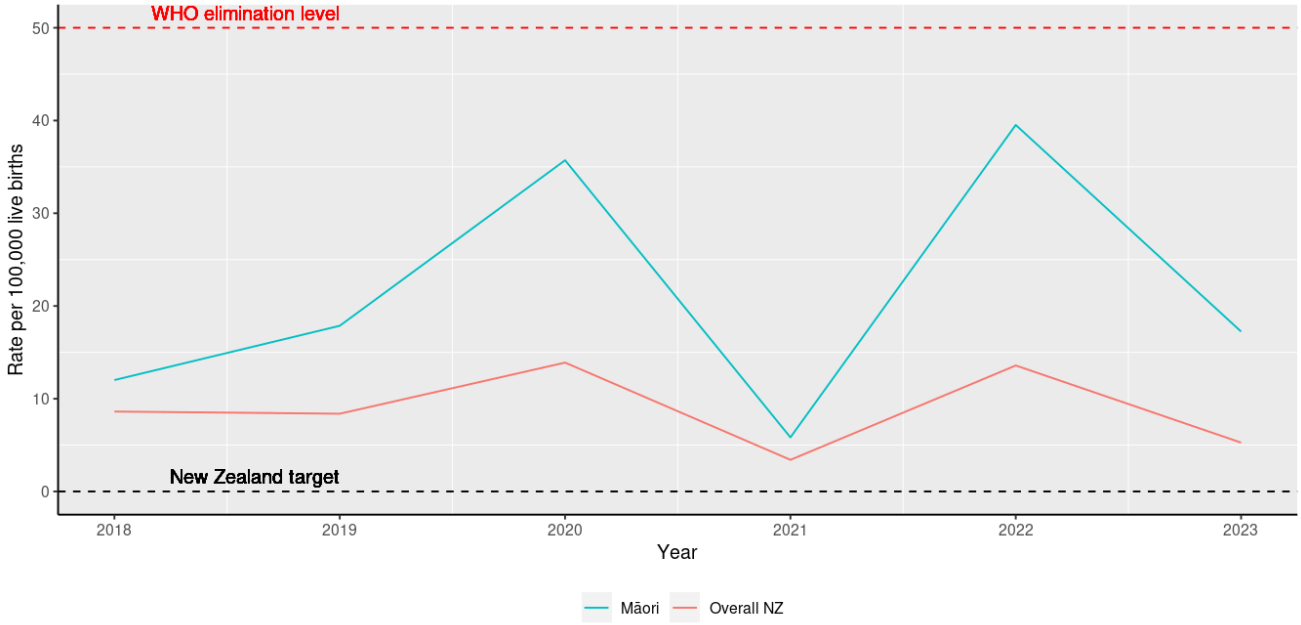
There were three cases of congenital syphilis reported in 2023. Two were liveborn with symptoms and one was a neonatal death. The mothers of all three cases received no/late antenatal care (Figure 6).

Figure 6: Congenital syphilis: missed opportunities to identify syphilis in pregnancy and outcomes of congenital syphilis cases: 2019–2023



The World Health Organization (WHO) defines the elimination of congenital syphilis as a rate of ≤50 per 100,000 live births, and has set process and impact targets for high prevalence countries. (World Health Organization, 2021) One of the goals of Ngā Pokenga Paipai Me Ngā Pokenga Huaketo Mā Te Toto: Te Rautaki O Aotearoa, the Aotearoa New Zealand Sexually Transmitted and Blood Borne Infection Strategy 2023–2030 is the elimination of congenital syphilis in New Zealand, which is defined as zero cases. (Ministry of Health, 2023) The 2023 rate of congenital syphilis, 5 per 100,000 live births, decreased from 14 per 100,000 in 2022, which was the highest level seen in recent years, equal to that observed in 2020. The 2023 rate of congenital syphilis among Māori and the overall rate reflects ongoing inequities in access to health care for Māori, including antenatal and sexual health care (Figure 7).

Figure 7: Congenital syphilis rates per 100,000 live births 2018–2023



Infectious syphilis in sex workers

In 2023, 11 people with infectious syphilis reported being a sex worker (Table 2).

In 2023, the majority of cases who reported being sex workers were Māori (7 cases). Due to low numbers no further analysis is provided.

Table 2: Sex worker status amongst infectious syphilis cases: 2019–2023

Sex Worker Status	2019	2020	2021	2022	2023
Case is a sex worker	24 (3.3%)	9 (1.8%)	11 (2.5%)	17 (3.3%)	11 (1.5%)
Case is not a sex worker	636 (87.7%)	464 (90.3%)	379 (84.6%)	431 (84.8%)	605 (82.2%)
Unknown	65 (9.0%)	41 (8.0%)	58 (12.9%)	60 (11.8%)	120 (16.3%)
Total	**725**	**514**	**448**	**508**	**736**

[1]Percentages may not total 100% due to rounding

CLINICAL NOTIFICATION SURVEILLANCE OF GONORRHOEA 2023

Clinical notifications for gonorrhoea have been collected since late 2018 (Table 3). In 2023 clinical notifications were received for a subset of laboratory confirmed cases (4,185/7,794, 54%).

CHARACTERISTICS OF ALL CLINICAL GONORRHOEA NOTIFICATIONS 2023

Table 3: Clinical gonorrhoea notifications by sexual behaviour and age, ethnicity, and region: 2023

	MSM, N = 1,159[1]	MSW, N = 982[1]	WSM, N = 1,139[1]	Unknown/other, N = 905[1]	Total n=4,185[1]
Age Group					
0–14	5(0.4%)	4(0.4%)	5(0.4%)	8(0.9%)	22(0.5%)
15–19	57(4.9%)	132(13.4%)	266(23.4%)	129(14.3%)	584(14.0%)
20–24	165(14.2%)	261(26.6%)	356(31.3%)	262(29.0%)	1,044(24.9%)
25–29	256(22.1%)	184(18.7%)	200(17.6%)	163(18.0%)	803(19.2%)
30–39	385(33.2%)	247(25.2%)	215(18.9%)	223(24.6%)	1,070(25.6%)
40+	291(25.1%)	154(15.7%)	97(8.5%)	120(13.3%)	662(15.8%)
Ethnicity					
European/Other	619(53.4%)	336(34.2%)	355(31.2%)	274(30.3%)	1,584(37.8%)
Māori	204(17.6%)	343(34.9%)	518(45.5%)	339(37.5%)	1,404(33.5%)
Pacific	81(7.0%)	199(20.3%)	196(17.2%)	195(21.5%)	671(16.0%)
Asian	195(16.8%)	69(7.0%)	48(4.2%)	51(5.6%)	363(8.7%)
MELAA	37(3.2%)	20(2.0%)	13(1.1%)	16(1.8%)	86(2.1%)
Unknown	23(2.0%)	15(1.5%)	9(0.8%)	30(3.3%)	77(1.8%)
Geographical Region					
Auckland Region	516(44.5%)	396(40.3%)	437(38.4%)	506(55.9%)	1,855(44.3%)
Canterbury	138(11.9%)	73(7.4%)	90(7.9%)	50(5.5%)	351(8.4%)
Wellington Region	205(17.7%)	77(7.8%)	108(9.5%)	94(10.4%)	484(11.6%)
Waikato	115(9.9%)	108(11.0%)	111(9.7%)	59(6.5%)	393(9.4%)
Southern	40(3.5%)	52(5.3%)	46(4.0%)	16(1.8%)	154(3.7%)
Bay of Plenty	30(2.6%)	71(7.2%)	112(9.8%)	38(4.2%)	251(6.0%)
Lakes	19(1.6%)	43(4.4%)	47(4.1%)	28(3.1%)	137(3.3%)
MidCentral	23(2.0%)	32(3.3%)	36(3.2%)	21(2.3%)	112(2.7%)
Hawke's Bay	11(0.9%)	30(3.1%)	25(2.2%)	22(2.4%)	88(2.1%)
Taranaki	17(1.5%)	<10	12(1.1%)	12(1.3%)	49(1.2%)
Whanganui	<10	15(1.5%)	16(1.4%)	11(1.2%)	50(1.2%)
Nelson Marlborough	13(1.1%)	22(2.2%)	28(2.5%)	17(1.9%)	80(1.9%)
Northland	16(1.4%)	34(3.5%)	35(3.1%)	23(2.5%)	108(2.6%)
Tairawhiti	<5	13(1.3%)	27(2.4%)	<5	46(1.1%)
West Coast	<5	<5	<5	<5	4(0.1%)
South Canterbury	<5	<10	<10	<10	23(0.5%)

[1] n(%)

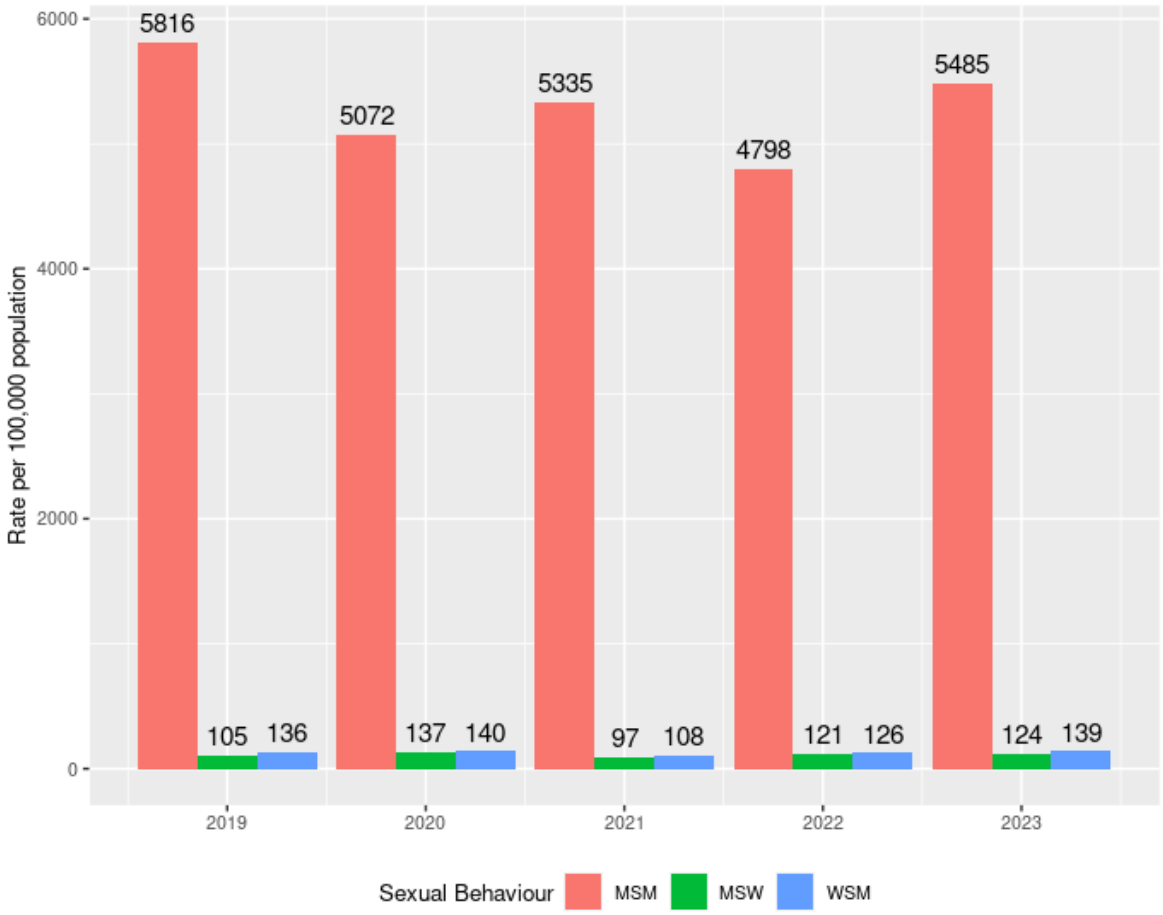
[2] Percentages may not total 100% due to rounding

CLINICAL GONORRHOEA NOTIFICATION COUNTS

Estimated rates of gonorrhoea by sexual behaviour

Estimated gonorrhoea rates by sexual behaviour show clear disparities for MSM compared to MSW and WSM (Figure 8). MSM rates increased from 4,798 per 100,000 in 2022 to 5,485 per 100,000 population in 2023. Rates for MSW and WSM have remained relatively stable over 2019–2023, with slight but consistently higher rates for WSM than MSW.

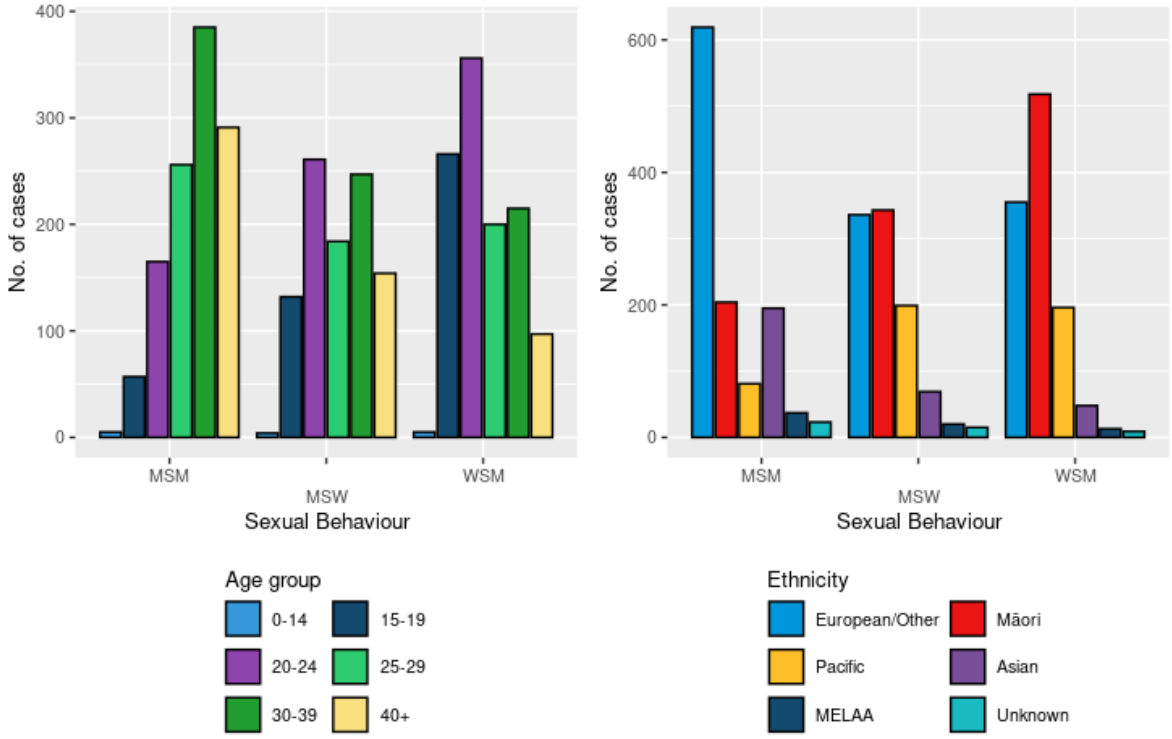
Figure 8. Estimated gonorrhoea rates per 100,000 population by sexual behaviour, 2019–2023



Sexual behaviour by age-group and ethnicity

- Of the clinical notifications for gonorrhoea, 1,139 cases (27%) were reported to be WSM, 982 (23%) MSW, and 1,159 (28%) MSM (Figure 9). Between 2022 and 2023, the proportion of cases in each sexual behaviour group remained relatively consistent. Together, women who have sex with women account for a small number of cases (2% of total cases and included in 'other' category in Table 3). For 20% of cases, clinicians reported sexual behaviour as 'unknown'. The 'other' and 'unknown' categories are not included in the following graphs.
- By age and sexual behaviour, gonorrhoea cases identified as MSM and MSW were predominantly in the 20–40+ age-groups, with the peak in the 30–39 age-group. Gonorrhoea cases among WSM were predominantly in the 15–39 years age-groups, with the peak in the 20–24 age-group.
- Among MSM, 53% of cases were of European/Other ethnicity, 18% were Māori, 17% were Asian, and 7% were Pacific peoples. In cases among MSW, 34% were of European/other ethnicity, 35% Māori, 20% Pacific peoples, and 7% were Asian. The highest number of WSM cases was reported amongst Māori (46% of cases), followed by European/other (31% of cases) and then Pacific peoples (17% of cases).
- The proportions of cases by ethnicity for WSM, MSW, and MSM have remained relatively stable in 2023 compared to 2022.

Figure 9: Clinical notifications for gonorrhoea by sexual behaviour and age-group and ethnicity: 2023



Sexual behaviour of cases notified with gonorrhoea in 2023 by district/region

In 2023, almost half (44%) of the clinical notifications for gonorrhoea were received from the Auckland region (Figure 10). Auckland, Wellington, and Canterbury regions accounted for 74% of all MSM cases, compared to 72% in 2022. Auckland, Canterbury, Wellington Region, Waikato, and Taranaki reported a higher proportion of MSM cases compared to other known sexual behaviours. Southern, Hawke's Bay, reported a higher proportion of cases among MSW than other sexual behaviours.

Bay of Plenty, Lakes, MidCentral, Whanganui, Nelson Marlborough, Northland, and Tairawhiti reported more cases amongst WSM than other sexual behaviours.

Figure 10: Clinical notifications for gonorrhoea by sexual behaviour and region: 2023

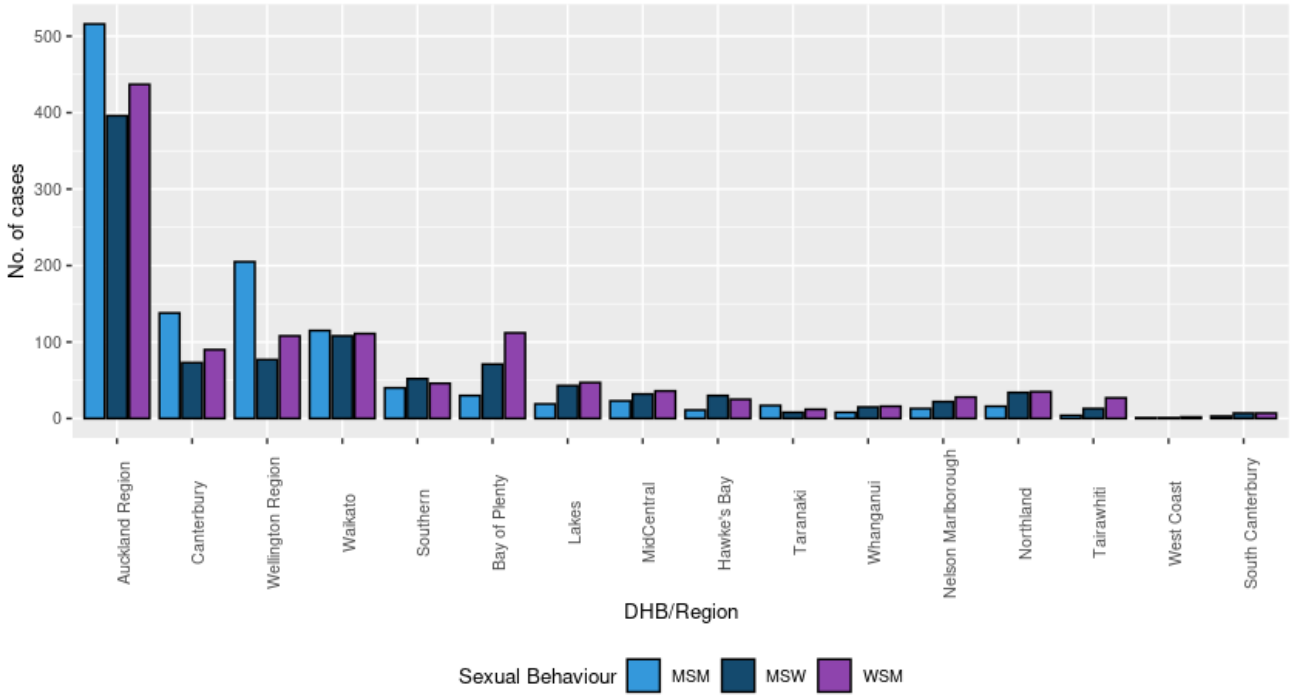


Table 4: Gonorrhoea cases by gender identity

Gender	2019	2020	2021	2022	2023
Cisgender female	1,215	1,463	1,257	1,349	1558
Cisgender male	1,836	2,229	2,273	2,191	2,454
Transgender and non-binary	18	24	25	27	28
Unknown	42	63	62	68	108

In 2023, 28 people with gonorrhoea identified as transgender or non-binary, 0.69% of all clinical notifications of gonorrhoea where gender identity was recorded. Case numbers of gonorrhoea in transgender and non-binary people have been stable in recent years.

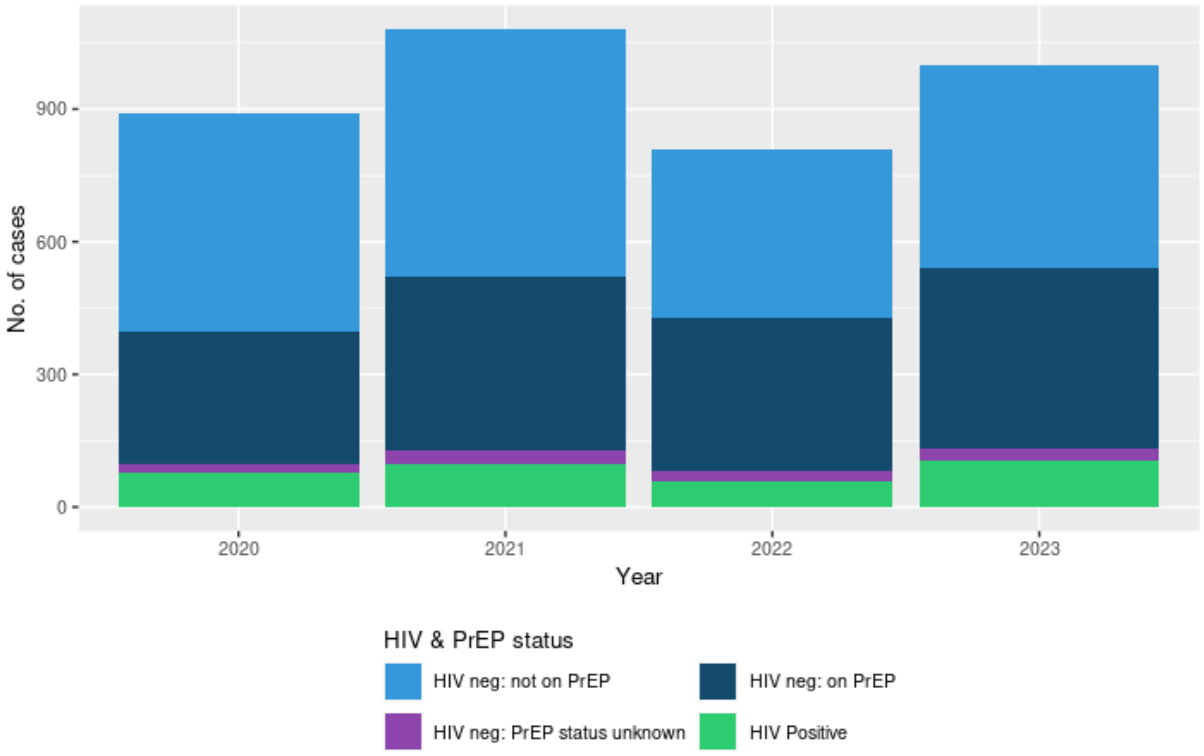
PARTICULAR POPULATIONS NOTIFIED WITH GONORRHOEA IN 2023

HIV and PrEP status amongst MSM

Of the 1,159 MSM with gonorrhoea, 894 (77.1%) were HIV negative and 105 (9.1%) were living with HIV (Figure 11). HIV status was unknown for 157 cases (13.6%). The proportion of MSM with gonorrhoea who were living with HIV increased compared to 2022 (from 6.0%).

Of the 894 MSM cases with a known HIV negative status, 458 (51.2%) were not on PrEP, 408 (45.6%) reported being on PrEP while PrEP status was unknown for 28 (3.0%).

Figure 11: HIV and PrEP status of clinical gonorrhoea notifications amongst MSM: 2020–2023



*Individuals with an unknown HIV status not included in this figure

Gonorrhoea in sex workers

Of all gonorrhoea clinical notifications received in 2023, 64 (1.5%) reported being sex workers, compared to 70 (1.9%) in 2022 (Table 55). Among female cases in 2023, 40 (2.5%) were reported to be sex workers compared to 55 cases (4.0%) in 2022. Among male cases, 23 (0.9%) were reported to be sex workers in 2023 and 15 were reported in 2022 (0.6%). Of the 64 cases identifying as sex workers, 8 were transgender women. In 2023, the sex work status of cases was unknown in 22.8% of female cases and 17.2% of male cases.

The highest numbers of gonorrhoea notifications identified as sex workers in 2023 were in Auckland (24 cases), followed by Canterbury (15 cases); the number of cases decreased in Auckland compared to 2022 (27 cases) but increased in Canterbury compared to 2022 (12 cases).

In 2023, most cases amongst sex workers were of European/Other (33/64, 52%) or Māori (23/64, 36%) ethnicity. By sexual behaviour, 33/64 (52%) were WSM, 14/64 (22%) were MSM.

Table 5: Sex worker status of gonorrhoea cases in 2020–2023

Sex Worker Status	2020	2021	2022	2023
Case is a sex worker	88 (2.3%)	60 (1.7%)	70 (1.9%)	64 (1.5%)
Case is not a sex worker	3,039 (80.4%)	2,918 (80.7%)	2,850 (78.2%)	3,304 (78.9%)
Unknown	652 (17.3%)	638 (17.6%)	723 (19.8%)	817 (19.5%)
Total	**3,779 (100.0%)**	**3,616 (100.0%)**	**3,643 (100.0%)**	**4,185 (100.0%)**

Gonorrhoea site of infection by sexual behaviour (clinical notifications) 2023

Of all gonorrhoea clinical notifications received in 2023, 78.4% (3,280/4,185) had both site of infection and sexual behaviour recorded. Pharynx was the most commonly reported site of infection for MSM, urogenital the most commonly reported for MSW and WSM.

Table 6. Gonorrhoea site of infection by sexual behaviour for clinically notified cases, 2023

Site of infection	MSM	MSW	WSM	Unknown	Total
Ano-rectal only	219 (18.9%)	19 (1.9%)	8 (0.7%)	26 (2.9%)	272 (6.5%)
Pharynx only	272 (23.5%)	38 (3.9%)	47 (4.1%)	41 (4.5%)	398 (9.5%)
Urogenital only	157 (13.5%)	797 (81.2%)	893 (78.4%)	678 (74.9%)	2,525 (60.3%)
Multiple sites	423 (36.5%)	40 (4.1%)	99 (8.7%)	41 (4.5%)	603 (14.4%)
Unknown	88 (7.6%)	88 (9.0%)	92 (8.1%)	119 (13.1%)	387 (9.2%)
Total	**1,159 (100.0%)**	**982 (100.0%)**	**1,139 (100.0%)**	**905 (100.0%)**	**4,185 (100.0%)**

ADDITIONAL LABORATORY SURVEILLANCE

GONORRHOEA AND CHLAMYDIA BY SITE OF INFECTION

Gonorrhoea

The site from which the specimen was taken was recorded for 96.8% (9,276/10,763) of positive specimens. The most common site recorded in 2023 was urogenital for females (86.2%) (Table 7) and males (56.9%)(Table 8). Of the 312 other/unknown specimen sites, 13 were from the eye. Totals in these tables are positive specimens rather than cases of gonorrhoea, therefore numbers are higher than total gonorrhoea case counts reported elsewhere.

The proportion of samples from urogenital sites has remained stable over 2019-2023 for females but decreased for males, while the proportion of samples from ano-rectal increased for males. Among males, pharyngeal samples have fluctuated between 2019 and 2023, but increased between 2022 and 2023. The number of positive urogenital specimens increased from 2019 to 2020 in both males and females, decreased in 2021 and rebounded in 2022 in line with overall gonorrhoea case count trends. Among females, the number of positive ano-rectal and pharyngeal specimens increased slightly between 2019 and 2023. Among males, the number of positive anorectal specimens increased steadily since 2019 rising more steeply between 2022 and 2023. While positive pharyngeal specimens decreased between 2019 to 2022, a rise was also seen between 2022 and 2023 (Figure 12).

Table 7. Gonorrhoea by site, female, 2019–2023

Specimen site	2019	2020	2021	2022	2023
Ano-rectal	64 (1.8%)	83 (2.1%)	79 (2.6%)	87 (2.5%)	107 (2.9%)
Pharyngeal	175 (4.9%)	181 (4.6%)	160 (5.3%)	214 (6.2%)	260 (7.1%)
Urogenital	3,122 (86.8%)	3,433 (87.8%)	2,636 (87.7%)	2,986 (86.8%)	3,163 (86.2%)
Other/Unknown	236 (6.6%)	213 (5.4%)	130 (4.3%)	155 (4.5%)	140 (3.8%)
Total	**3,597 (100.0%)**	**3,910 (100.0%)**	**3,005 (100.0%)**	**3,442 (100.0%)**	**3,670 (100.0%)**

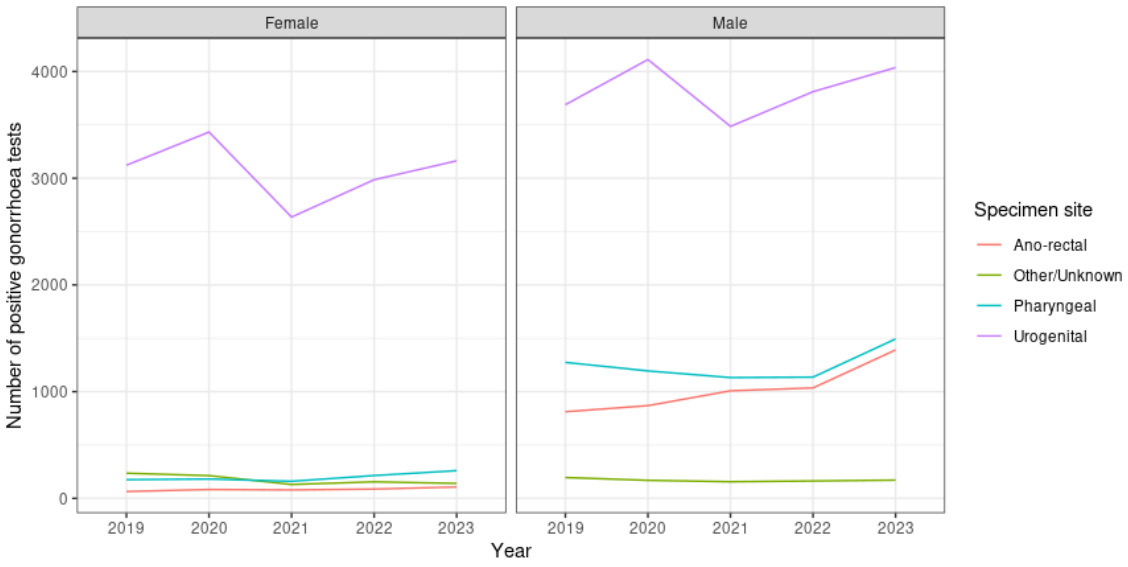
*Tests with unknown or indeterminant recorded for sex were removed from the table (33 – 62 tests per year).

Table 8. Gonorrhoea by site, male, 2019–2023

Specimen site	2019	2020	2021	2022	2023
Ano-rectal	812 (13.6%)	869 (13.7%)	1,008 (17.4%)	1,035 (16.8%)	1,391 (19.6%)
Pharyngeal	1,274 (21.3%)	1,194 (18.8%)	1,132 (19.6%)	1,136 (18.5%)	1,494 (21.1%)
Urogenital	3,688 (61.8%)	4,112 (64.8%)	3,486 (60.3%)	3,811 (62.0%)	4,037 (56.9%)
Other/Unknown	196 (3.3%)	169 (2.7%)	156 (2.7%)	163 (2.7%)	171 (2.4%)
Total	**5,970 (100.0%)**	**6,344 (100.0%)**	**5,782 (100.0%)**	**6,145 (100.0%)**	**7,093 (100.0%)**

*Tests with unknown or indeterminant recorded for sex were removed from the table (35 – 62 tests per year).

Figure 12. Number of positive gonorrhoea tests by sex and site of infection, 2018–2023



Chlamydia

The site from which the specimen was taken was recorded for 96.9% (29,953 /30,917) of positive specimens in 2023. The most common site recorded in 2023 was urogenital for males (75.4%) and females (92.9%). Of the 827 other/unknown specimens in 2023, 76 specimens were from the eye.

Between 2019 and 2022, there was a decrease in the number of positive tests for specimens taken from the urogenital site for males and females, though this increased into 2023 across both sexes. The number of positive tests remain higher for females than males. Among females between 2018 and 2022, the number of positive anorectal specimens fluctuated. The number of positive pharyngeal specimens among males and females remained relatively stable, increasing slightly between 2022 and 2023. Among males, the number of positive anorectal specimens have increased steadily since 2020 following a decrease between 2019 and 2020.

Table 9. Chlamydia by site, female, 2019–2023

Specimen site	2019	2020	2021	2022	2023
Ano-rectal	270 (1.2%)	221 (1.2%)	224 (1.3%)	218 (1.3%)	311 (1.6%)
Pharyngeal	179 (0.8%)	138 (0.8%)	168 (1.0%)	210 (1.2%)	322 (1.7%)
Urogenital	20,954 (91.6%)	17,085 (93.0%)	16,329 (93.6%)	16,175 (93.5%)	17,902 (92.9%)
Other/Unknown	1,483 (6.5%)	923 (5.0%)	723 (4.1%)	689 (4.0%)	743 (3.9%)
Total	**22,886 (100.0%)**	**18,367 (100.0%)**	**17,444 (100.0%)**	**17,292 (100.0%)**	**19,278 (100.0%)**

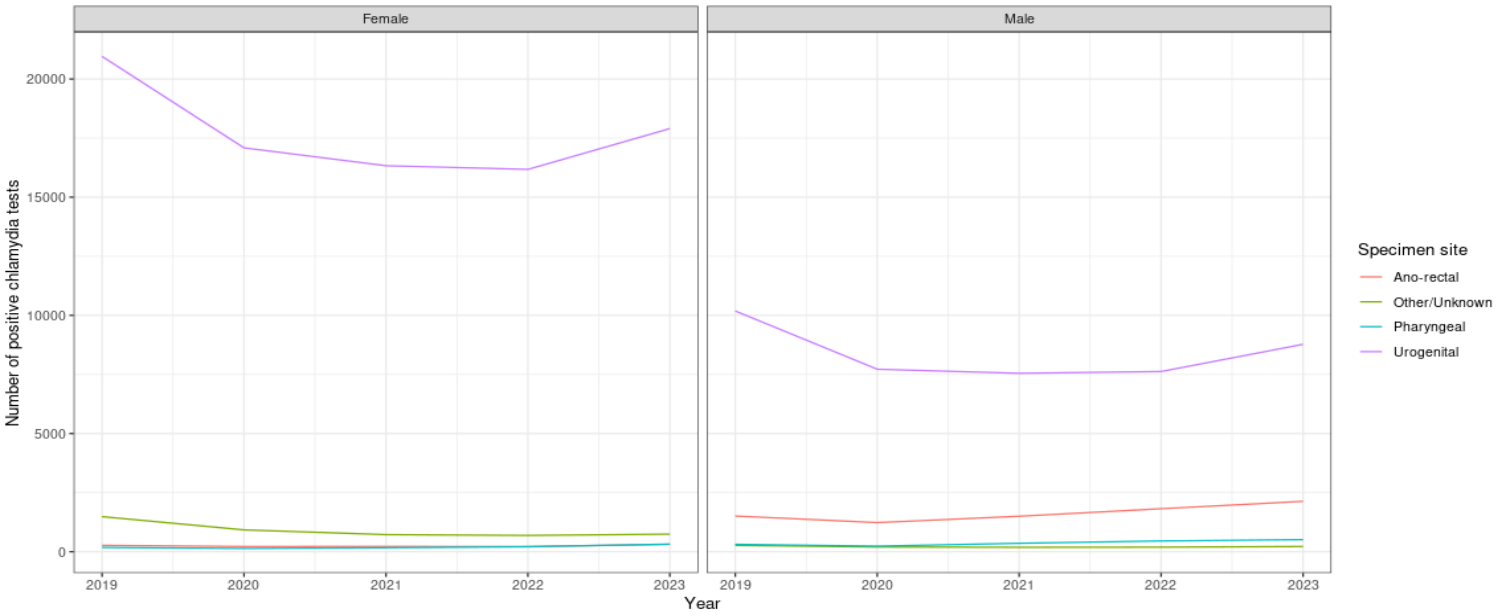
*Tests with unknown or indeterminant recorded for sex were removed from the table (34 – 238 tests per year)

Table 10. Chlamydia by site, male, 2019–2023

Specimen site	2019	2020	2021	2022	2023
Ano-rectal	1,508 (12.3%)	1,233 (13.1%)	1,501 (15.6%)	1,820 (18.0%)	2,132 (18.3%)
Pharyngeal	312 (2.5%)	236 (2.5%)	357 (3.7%)	455 (4.5%)	511 (4.4%)
Urogenital	10,183 (83.0%)	7,721 (82.2%)	7,549 (78.7%)	7,624 (75.5%)	8,775 (75.4%)
Other/Unknown	267 (2.2%)	200 (2.1%)	187 (1.9%)	193 (1.9%)	221 (1.9%)
Total	**12,270 (100.0%)**	**9,390 (100.0%)**	**9,594 (100.0%)**	**10,092 (100.0%)**	**11,639 (100.0%)**

* Tests with unknown or indeterminant recorded for sex were removed from the table (34 – 238 tests per year)

Figure 13. Number of positive chlamydia tests by sex and site of infection, 2018–2023



PERINATAL GONORRHOEA AND CHLAMYDIA LABORATORY SURVEILLANCE

If untreated during pregnancy, chlamydia and gonorrhoea can be transmitted from mother to child around the time of birth. The most common presentation in infants is conjunctivitis, which occurs in 30–50% of infants born to mothers with chlamydia or gonorrhoea (Hammerschlag, 2011). These perinatal infections are preventable through antenatal STI screening and maternal treatment.

CHARACTERISTICS OF ALL PAEDIATRIC CHLAMYDIA CASES

The number of cases of chlamydia in infants decreased in 2023 (42 cases) compared to 2022 (56 cases) (Table 11). The site of infection was the eye for all paediatric cases for whom a site of infection was reported (33 cases, 79%). The highest number of cases were reported in Māori infants in 2023 (23 cases, 55%), which is higher than previous years. From 2022 to 2023, cases decreased slightly for Pacific and Māori infants (by 23% and 4%, respectively), and decreased substantially for European/Other infants (63% decrease), and remained low and similar for Asian, MELAA and those of unknown ethnicity.

Table 11: Laboratory reported chlamydia among cases <1 year of age, by ethnicity, sex and site of infection: 2019–2023

	2019	2020	2021	2022	2023
Ethnicity					
Māori	36	29	21	24	23
Pacific	18	15	7	13	10
Asian	5	3	3	2	2
European/Other	23	10	11	16	6
MELAA	0	2	0	0	1
Unknown	4	2	2	1	0
Sex					
Female	45	29	27	31	22
Male	41	32	17	24	20
Site of Infection					
Eye	73	49	35	50	33
Unknown	13	12	9	6	9
Total	**86**	**61**	**44**	**56**	**42**

CHARACTERISTICS OF ALL PAEDIATRIC GONORRHOEA CASES

Paediatric gonorrhoea case numbers during 2023 were low (6 cases) (Table 12). Three cases were Māori and three were Pacific infants.

Table 12: Laboratory reported gonorrhoea by ethnicity, sex and site of infection: 2019–2023

	2019	2020	2021	2022	2023
Ethnicity					
Asian	0	2	0	0	0
European/Other	3	1	1	0	0
Māori	6	8	7	5	3
MELAA	0	0	1	0	0
Pacific	0	1	1	1	3
Unknown	0	0	0	0	0
Sex					
Female	4	9	7	4	4
Male	5	3	3	2	2
Site of Infection					
Eye	8	10	8	4	5
Unknown	1	2	2	2	1
Total	**9**	**12**	**10**	**6**	**6**

GENITAL WARTS

Prior to 2022, data on the first presentation of genital warts was reported to ESR by sexual health and Family Planning clinics across New Zealand. In 2022, genital warts surveillance shifted to a sentinel surveillance approach, focusing on data from eleven high-volume sexual health clinics across New Zealand which historically reported the majority of New Zealand's genital warts cases.

Genital warts surveillance helps monitor the impact of the vaccination for human papillomavirus (HPV). HPV is implicated in the development of genital warts, ano-genital, and head and neck cancers. HPV vaccination has been part of the national immunisation programme for girls aged 12 years since 2008 and was extended to include boys aged 12 years from 2017. The HPV vaccine may be offered from nine years of age but is usually given at age 11–12 years of age. (Ministry of Health, 2021). Table 13 shows the characteristics of genital warts cases between 2019 and 2023, from the eleven sexual health clinics participating in genital warts surveillance.

Table 13: Characteristics of first presentation genital warts cases in sentinel clinics by sex, age, ethnicity, and region: 2019–2023

Year	2019, N = 707[1]	2020, N = 678[1]	2021, N = 572[1]	2022, N = 473	2023, N = 550[1]
Sex					
Female	261(37%)	227(33%)	217(38%)	169(36%)	217(39%)
Male	446(63%)	451(67%)	355(62%)	302(64%)	330(60%)
Unknown/Other	0(0%)	0(0%)	0(0%)	2(0%)	3(1%)
Age Group					
0–14	0(0%)	0(0%)	2(0%)	0(0%)	0(0%)
15–19	36(5%)	29(4%)	16(3%)	5(1%)	6(1%)
20–24	178(25%)	174(26%)	130(23%)	83(18%)	81(15%)
25–29	163(23%)	173(26%)	133(23%)	107(23%)	124(23%)
30–39	172(24%)	174(26%)	155(27%)	147(31%)	154(28%)
40+	156(22%)	128(19%)	136(24%)	131(28%)	179(33%)
Unknown	2(0%)	0(0%)	0(0%)	0(0%)	6(1%)
Ethnicity					
European/Pakeha	428(61%)	458(68%)	358(63%)	303(64%)	330(60%)
Māori	110(16%)	75(11%)	80(14%)	62(13%)	74(14%)
Other	129(18%)	100(15%)	103(18%)	71(15%)	98(18%)
Pacific peoples	30(4%)	32(5%)	23(4%)	27(6%)	19(4%)
Unknown	10(1%)	13(2%)	8(1%)	10(2%)	29(5%)
Geographical Region					
Auckland	265(37%)	262(39%)	191(33%)	216(46%)	198(36%)
Christchurch	101(14%)	91(13%)	78(14%)	38(8%)	71(13%)
Dunedin	35(5%)	24(4%)	20(3%)	8(2%)	12(2%)
Hamilton	86(12%)	96(14%)	68(12%)	27(6%)	55(10%)
Hastings	13(2%)	19(3%)	19(3%)	1(0%)	17(3%)
Nelson	45(6%)	37(5%)	65(11%)	24(5%)	38(7%)
New Plymouth	29(4%)	40(6%)	32(6%)	67(14%)	25(4.5%)
Palmerston North/Levin/Dannevirke	10(1%)	5(1%)	5(1%)	17(4%)	11(2%)
Rotorua	10(1%)	18(3%)	35(6%)	4(1%)	10(2%)
Tauranga	38(5%)	44(6%)	42(7%)	31(7%)	25(5%)
Wellington	75(11%)	42(6%)	17(3%)	40(8%)	88(16%)

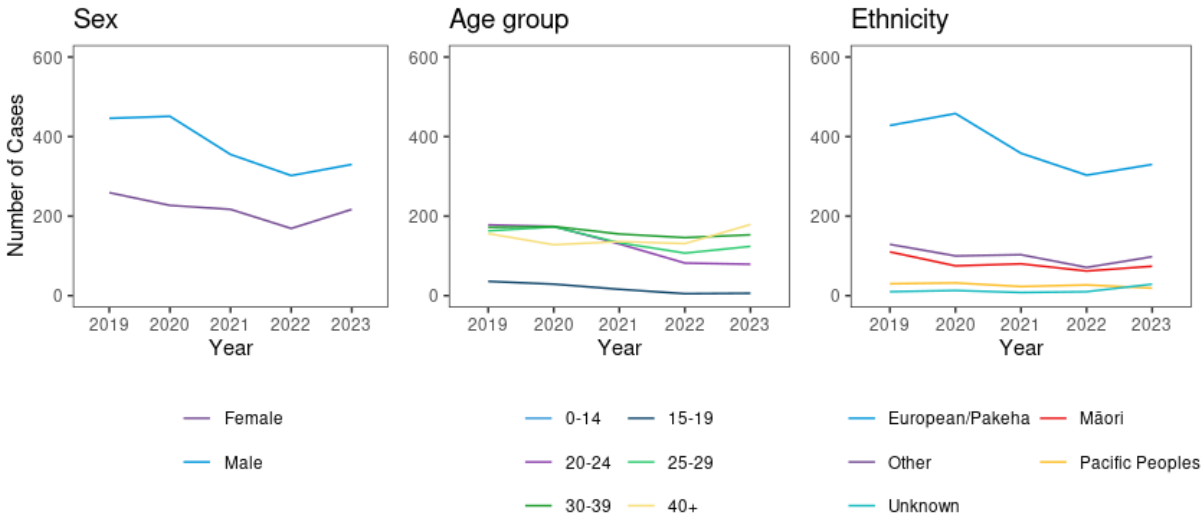
[1] n(%)

The number of first presentation of genital warts cases reported in 2023 increased by 77 cases (16%) compared to 2022, after a decrease from 2021 to 2022. The overall number of cases of first presentation genital warts remains substantially lower than that seen in 2019 to 2020 (and prior years), reflecting the impact of the HPV vaccine.

Genital warts by sex, age, and ethnicity

- Males continued to be overrepresented in genital warts cases in 2023 (Figure 14).
- Case numbers remained stable for 15–19 and 20–24 years in 2023 compared to 2022 but increased for older age groups.
- Case numbers increased for all ethnicity groups except Pacific peoples in 2023 compared to 2022.

Figure 14: Genital warts cases by sex, age-group, and ethnicity: 2019–2023



CLINIC SURVEILLANCE OF LYMPHOGRANULOMA VENEREUM (LGV)

There were thirteen cases of LGV reported in 2023. Ten cases were reported in the Auckland region, two in Canterbury, and one in Hawke's Bay. Only one case of LGV was reported in 2022.

INEQUITIES ANALYSIS

Inequities are differences in health that are avoidable, unfair, and unjust. “Equity recognises different people with different levels of advantage require different approaches and resources to get equitable health outcomes.” (Ministry of Health, 2019)

Describing inequities is a crucial first step to eliminating them. Inequities in STIs are likely to reflect differences in access to sexual health care and sexual network characteristics, rather than sexual behaviour alone. Health inequities in STIs in Aotearoa New Zealand are evident in the disproportionately high rates of STIs observed for Māori, Pacific, young people, and MSM. In communities in which there is higher prevalence of a particular STI, with each sexual encounter there is a greater chance of contact with someone with an infection than in lower prevalence communities (CDC, 2022). Differences persist in communities because access to quality and culturally safe STI prevention and treatment has not been equitably available. Higher rates of STIs in ethnic groups known to have inequitable access to the determinants of health, including health care access, are observed around the world, including in African American communities and Aboriginal Australians (CDC, 2022) (The Kirby Institute, 2022).

Ngā Pokenga Paipai Me Ngā Pokenga Huaketo Mā Te Toto: Te Rautaki O Aotearoa, the Aotearoa New Zealand Sexually Transmitted and Blood Borne Infection Strategy 2023–2030 was published in March 2023 (Ministry of Health, 2023). This strategy gives effect to the principles of Te Tiriti o Waitangi as a legal requirement and takes an equity first approach to address ongoing disparities. (Ministry of Health, 2023) The goals of the strategy are to:

1. reduce incidence of sexually transmitted and blood borne infections (STBBI) in Aotearoa New Zealand and eliminate congenital syphilis, hepatitis C and transmission of HIV
2. decrease mortality and the negative health and wellbeing outcomes of STBBI, including stigma and discrimination
3. improve Māori health and wellbeing in relation to STBBI through delivery on Te Tiriti o Waitangi obligations
4. increase equity in relation to all STBBI goals and objectives (Ministry of Health, 2023)

Until specific indicators are developed, this report will assess progress against the goals to reduce the incidence of STIs, eliminate congenital syphilis, and increase equity for the Strategy’s priority groups where possible; Māori, Pacific, young people aged under 29, MSM and sex workers. (Ministry of Health, 2023)

STBBI Strategy goal 1: Reduce incidence of STBBI and eliminate congenital syphilis

The rates of chlamydia, gonorrhoea, and syphilis increased between 2022 and 2023. Rates are similar to peaks observed in 2019 (chlamydia and syphilis) and 2020 (gonorrhoea).

The 2023 rate of congenital syphilis, 5 per 100,000 live births, decreased compared to 2022 (14 per 100,000), which was the highest level seen and equal to the rate seen in 2020. Despite the decrease, this rate remains unacceptably high and falls short of New Zealand’s goal to eliminate congenital syphilis.

Sentinel surveillance suggests there has been an increase in genital warts cases in 2023 compared to 2022, following a sustained decline since 2017. This rise was most marked among those 40 years and older, a group that was not eligible for the HPV funded vaccine.

STBBI strategy goal 3: Improve Māori health and wellbeing through delivery on Te Tiriti o Waitangi obligations

Inequities for Māori continue, with the differences increasing in gonorrhoea and chlamydia rates compared to European/other. While the gap in syphilis rates between Māori and the European/Other group did not widen in 2023, the rates among Māori remain substantially higher than the European/Other ethnic group. Syphilis rates among Māori were double that of the European/Other group. Similarly, gonorrhoea and chlamydia rates among Māori were 3.5 times that of the European/Other ethnic group. Syphilis in pregnancy continues to disproportionately affect Māori, with 50 cases among Māori compared to 28 among the European/other group in 2023. In 2023, all three cases of congenital syphilis cases were among Māori infants, with a considerably higher congenital syphilis rate among Māori infants (17.2 per 100,000) compared to the New Zealand population (5 per 100,000), highlighting persistent inequities in access to antenatal and sexual health care for Māori women. The highest numbers of chlamydia and gonorrhoea eye infections also continue to be notified in Māori infants (55% of chlamydia eye infections and half of the six gonorrhoea eye infections). These infections in infants demonstrate inequitable access to appropriate antenatal care and sexual health care, including in pregnancy, for Māori.

STBBI strategy goal 4: Increase equity for other priority groups

Inequities for Pacific peoples likewise continue to increase with the differences in gonorrhoea, and chlamydia rates between Pacific peoples and European/Other group increasing. Compared to most other ethnic groups, Pacific peoples experienced a sharp increase in chlamydia (13.8% increase) and gonorrhoea rates (21.6% increase) between 2022 and 2023. Rates among Pacific peoples compared to those among the European/Other ethnic group were 2 times higher for syphilis, 5.8 times higher for gonorrhoea, and 4.2 times higher for chlamydia. The number of syphilis cases reported in pregnancy for Pacific peoples was stable in 2023 compared to 2022 but remain higher compared to the European/Other and Asian ethnic groups. Three of six gonorrhoea eye infections, and 24% of chlamydia eye infections were notified in Pacific infants in 2023.

Inequities for young people continue, with gonorrhoea rates highest among those aged 20–29 years, syphilis rates highest among those aged 20–29 years, and rates of chlamydia highest among those aged 15–24. Among gonorrhoea cases, the rate increase was most pronounced in the 15–24 age group, while the greatest increase in chlamydia rates were among those aged 20 to 29.

MSM continue to be disproportionately impacted by STIs with rates of syphilis 108 times that of MSW. This disparity has grown since 2022, with syphilis rates among MSM rising steeply between 2022 and 2023 while rates among MSW and WSM remained stable. Gonorrhoea rates among MSM have also increased between 2022 and 2023, with the 2023 gonorrhoea rate 44 times that of MSW. While sexual behaviour information is not currently available for chlamydia, there are known barriers to gay and bisexual men accessing sexual health care, with many reporting being unable to discuss sexual health concerns, or their sexual orientation, with their GPs (Ludlam, 2015).

The number of cases of syphilis and gonorrhoea among those reporting sex work were lower in 2023 than 2022, but the same or similar to those reported in 2021. Interpretation of this data is limited by low numbers, and an unknown denominator. In addition, ongoing stigma and discrimination experienced by sex workers may affect access to sexual health care as well as the reporting of this information to clinicians.

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APPENDIX 1: ADDITIONAL TABLES

REASON FOR SYPHILIS TEST BY SEXUAL BEHAVIOUR: 2023

Table 14: Reason for test amongst infectious syphilis cases by sexual behaviour in New Zealand: 2023

Reason for test	MSM	MSW	Other	Unknown	WSM
Asymptomatic screening including PrEP	158 (36.24%)	25 (16.56%)	1 (20%)	8 (20.5%)	18 (17.14%)
Clinical symptoms/suspicion	189 (43.35%)	83 (54.97%)	1 (20%)	15 (38.5%)	24 (22.86%)
Contact of STI/HIV	10 (2.29%)	6 (3.97%)		1 (2.6%)	1 (0.95%)
Immigration	8 (1.83%)	15 (9.93%)	2 (40%)	3 (7.7%)	7 (6.67%)
Other	13 (2.98%)	5 (3.31%)		3 (7.7%)	3 (2.86%)
Syphilis Contact	42 (9.63%)	15 (9.93%)		4 (10.3%)	23 (21.90%)
Unknown	16 (3.67%)	2 (1.32%)		4 (10.3%)	1 (0.95%)
Antenatal screening			1 (20%)	1 (2.6%)	28 (26.67%)

INFECTIOUS SYPHILIS CASES BY ETHNICITY, COUNTRY OF INFECTION AND CLINICAL SETTING OF TEST: 2023

Table 15: Syphilis cases by ethnicity, country of infection and clinical setting of test in New Zealand: 2023

	MSM	MSW	WSM	Other	Unknown	Total
Ethnicity						
European/Other	204	56	31		13	304
Māori	67	42	49	2	11	171
Pacific	33	20	17	1	3	74
Asian	87	24	4	2	8	125
MELAA	33	9	4		2	48
Unknown	12				2	14
Country of Infection						
Australia	8	3	1			12
New Zealand	367	126	91	2	24	610
Other	29	17	8	1	1	56
Unknown	32	5	5	2	14	58
Clinical setting of initial syphilis test						
Corrections	1	6	2		2	11
ED	2	8	5		4	19
General Practice	136	65	49	2	20	272
ID clinic	19	1				20
NGO clinic	12	1	2			15
Other/Unknown	19	5	11	1	6	42
Sexual Health Clinic	247	65	24	2	6	344
Antenatal Clinic/Midwife			11			11
Obstetric Ward			1		1	2
Total	**436**	**151**	**105**	**5**	**39**	**736**

INFECTIOUS SYPHILIS CO-INFECTIONS BY SEXUAL BEHAVIOUR: 2023

Table 16: Infectious syphilis cases and co-infections by sexual behaviour: 2023

	MSM	MSW	WSM	Other	Unknown	Total
Chlamydia	74	22	12	2	3	113
Gonorrhoea	50	7	7	1	3	68
Trichomoniasis	0	3	13	0	2	18
Genital Herpes	3	3	2	0	0	8
Genital Warts	1	0	1	0	0	2
Mycoplasma Genitalium	0	0	1	0	0	1
NSU	3	1	0	0	0	4
LGV	1	0	0	0	0	1

INFECTIOUS SYPHILIS: NUMBER OF PARTNERS IN PAST 3 MONTHS BY SEXUAL BEHAVIOUR: 2023

Table 17: Number of partners in past three months by sexual behaviour of case and sex of partner: 2023

	MSM	MSW	WSM	Total
No. of male partners				
0	17	58	3	78
1	101	6	73	180
2–4	148	13	16	177
5–9	65	3	7	75
10–15	35	0	0	35
>15	27	5	0	32
Unknown	43	66	6	115
No. of female partners				
0	169	16	46	231
1	24	57	2	83
2–4	11	30	1	42
5–9	2	3	0	5
10–15	1	3	0	4
>15	1	1	0	2
Unknown	228	41	56	325

GONORRHOEA: NUMBER OF PARTNERS IN PAST 3 MONTHS BY SEXUAL BEHAVIOUR: 2023

Table 18: Number of partners in past three months by sexual behaviour of case and sex of partner: 2023

	MSM	MSW	WSM	Total
No. of male partners				
0	17	58	3	78
1	101	6	73	180
2-4	148	13	16	177
5-9	65	3	7	75
10-15	35	0	0	35
>15	27	5	0	32
Unknown	43	66	6	115
No. of female partners				
0	169	16	46	231
1	24	57	2	83
2-4	11	30	1	42
5-9	2	3	0	5
10-15	1	3	0	4
>15	1	1	0	2
Unknown	1	1	0	2
Total	**645**	**262**	**154**	**1,061**

APPENDIX 2: DESCRIPTION OF STI SURVEILLANCE AND METHODOLOGY

ESR undertakes sexually transmitted infection (STI) surveillance on behalf of the Ministry of Health. The purposes on New Zealand STI surveillance system are:

- to understand the burden of disease (as an input to planning, policy development, prioritisation and resource allocation),
- to monitor inequalities in the burden of disease between population groups,
- to monitor trends in the burden of disease over time,
- to identify emerging problems, and outbreaks or clusters of disease, and
- to evaluate the effectiveness of policies and programmes.

Before the Health (Protection) Amendment Act 2016 came into force, STI surveillance comprised a combination of voluntary sentinel clinic surveillance from Sexual Health and Family Planning Clinics, enhanced syphilis surveillance from these clinics, and laboratory surveillance of chlamydia and gonorrhoea. Significant changes were made to the STI surveillance system after the Health (Protection) Amendment Act 2016 came into force in January 2017, making syphilis, gonorrhoea, HIV and AIDS notifiable to the Medical Officer of Health without identifying information (name, address and place of work), whereas previously only AIDS was notifiable. Because these diseases were the first to require notification without identifying information, there were substantial administrative difficulties designing and implementing a system which would integrate with the existing notifiable disease database EpiSurv. After significant delays, an interim solution was put in place from November 2018 using REDCap, a secure web application hosted on an ESR server, to collect data for syphilis, gonorrhoea and HIV in a survey format. This interim system remains in place. Each part of the system is described below.

REDCAP

REDCap is a secure web application hosted on an ESR server to collect notification/enhanced data for syphilis, gonorrhoea and HIV in a survey format. Sexual health clinic staff have individual logins to REDCap, managed by ESR. This means they can enter data and update information as required.

Gonorrhoea enhanced data can also be entered by non-sexual health clinic staff, such as general practitioners, by entering a generic survey website link which provides one-time access to a REDCap survey. Clinicians are directed to this link along with the positive laboratory result. Once the form is completed the clinician cannot access the form again.

Gonorrhoea case notifications entered into REDCap can be matched with laboratory data by NHI which provides an indication of how many cases are not notified (underreporting), and by comparing basic demographics, how representative notified cases are.

For syphilis, laboratory results are not automatically notified. Clinicians are directed to notify the case when a reactive laboratory result is received. Clinicians notify either using REDCap (sexual health clinics) or faxing a PDF (all other clinicians). Sexual health clinics and public health units can access all syphilis data in REDCap from within their own region only without identifying details. Most large sexual health clinics report accessing and auditing cases in REDCap; very few PHU's report accessing data in REDCap for surveillance purposes although this has changed somewhat in 2021 with support from ESR and reactivation of the syphilis action plan.

Syphilis cases diagnosed by clinicians outside a sexual health clinic are directed from the laboratory result to download a PDF from the ESR website and notify via fax. PDF forms can be completed either digitally or by hand. Faxes are received by ESR reception, automatically converted to a PDF email attachment and forwarded to a generic ESR Episurv support email. This is then forwarded to an ESR syphilis surveillance email address after which the PDF is printed, entered into REDCap and filed.

Limitations of REDCap data

Comparison of gonorrhoea laboratory and REDCap notifications in 2023 show that clinical notifications were made for just over half (4185/7794, 54%) of total positive cases. Approximately 15% of clinical notifications could not be matched to laboratory notifications, either because no NHI was provided or data entry errors. Analysis has shown that cases in Auckland and cases of Māori and Pacific peoples ethnicity are underrepresented in clinical notifications. Representativeness with regard to sexual behaviour is unknown because this information is not collected for laboratory data.

Manual data entry to the REDCap forms and a large number of fields to complete, is likely to significantly contribute to underreporting.

Likewise, syphilis notifications are often incomplete. Because there is no laboratory reporting of syphilis, the degree of underreporting at a national level is currently unknown but there is no reason to assume this is much different from gonorrhoea notification. There is often requirement for follow up by ESR to determine the case definition. Long complex case report forms with multiple manual steps for access and data entry are a significant issue for clinicians and for the quality of surveillance data.

The numbers reported in this report reflect those in REDCap on date of extraction. As this surveillance database can be updated by clinicians at any time, the counts and rates presented here may differ from those included in previous reports.

LABORATORY DATA

All laboratories in NZ have provided all positive and negative test results for chlamydia and gonorrhoea monthly since 2015. Demographic information, individual identifiers (NHI or provisional individual identifier), and site of infection are provided with the laboratory results. Antimicrobial resistance (AMR) data is received from some but not all laboratories and hence incomplete. For further information about gonococcal AMR the latest AMR survey is available here.

Test results are received via excel spreadsheets into a portal, cleaned using R scripts and housed in SQL servers. Once cleaned, they are sent to the Ministry to be matched by NHI for ethnicity. This enables identification of all negative and positive results, duplicate results, testing coverage, proportion positive and reinfections by age, sex, region, and ethnicity. Identification of duplicate results by NHI ensure only one positive result is counted for each episode, and multiple tests and episodes for the same person can be identified over time.

Table 19: Time period to identify duplicate tests to determine one episode/case

Chlamydia	< 6 weeks after a previous positive test
Gonorrhoea	Culture <10 days after previous positive test (it does not matter if previous positive test was a NAAT or culture)
	NAAT <=21 days after the previous positive test (it does not matter if previous positive test was a NAAT or culture)

Limitations of laboratory data

Approximately 7% of laboratory notifications are missing NHI, and therefore cannot be matched to ethnicity. Although all laboratories report chlamydia and gonorrhoea tests and results, only a proportion of laboratories report AMR testing and results for gonorrhoea. ESR has no insight on how the proportion of reported AMR test results has been selected, and no AMR data are available for much of the country. Therefore, information on AMR collected is not generalizable.

SENTINEL CLINIC DATA

Annually, collaborating sentinel Sexual Health clinics manually extract data and provide aggregate data to ESR via excel spreadsheets. This includes the total number of clinic consultations for lymphogranuloma venereum and first episode genital warts by age, sex, ethnicity, gender identity and sexual behaviour where available.

In November 2018, sentinel enhanced syphilis surveillance ceased as the notification system using REDCap was implemented, and in January 2019, clinic collection of chlamydia and gonorrhoea ceased.

Generalisability of clinic data

Clinics participating in STI sentinel surveillance are located in cities and some larger rural towns. First episodes of genital warts are also be seen in other sexual health clinics, Sexual Wellbeing Aotearoa clinics and General Practices. The sentinel clinic surveillance data can provide an alert for changes occurring in the wider population.

Limitations of clinic data

Methods for data extraction and data quality and completeness vary by clinic and will depend on coding completeness. Manual processes for data extraction, aggregation, entry and transfer using excel spreadsheets and email introduces potential for errors. The representativeness of the data is unknown as there is no sample strategy.

ANALYTIC METHODS

Numerator data

- Gonorrhoea positive cases (episodes): the total number of laboratory-confirmed cases reported after exclusion of repeat tests for an individual within a defined episode period (Table 19).
- Chlamydia positive cases (episodes): the total number of laboratory-confirmed cases reported after exclusion of repeat tests for an individual within a defined episode period (Table 19).
- Gonorrhoea positive test: the total of all positive results for gonorrhoea regardless of type of test, specimen type or time in-between test (not deduplicated).
- Chlamydia positive test: the total of all positive results for chlamydia regardless of specimen type or time in-between test (not deduplicated).
- Number of syphilis cases by sexual behaviour: the number of cases reported by sexual behaviour.

Denominator data

- New Zealand population by ethnicity: the proportion of people in each ethnic group from the 2018 Census 'usually resident population' applied to the 2021 mid-year population estimates from Statistics New Zealand. Ethnicity is prioritised in the following order: Māori, Pacific peoples, Asian, Middle Eastern/Latin American/African (MELAA), European or Other (including New Zealander) ethnic groups.
- Estimated New Zealand population by sexual behaviour: The denominator for MSM was calculated by multiplying the male population between 16 and 74 years of age (by the proportion of MSM estimated by the health survey 2014/2015 (2.6%). The remaining 97.4% of the male population between 16 and 74 was considered to be MSW and for women, the entire female population between 16 and 74 was considered WSM.

Rates calculations:

- General: Calculating rates from fewer than five cases produces rates that are unstable for the purpose of comparison and are therefore not calculated. Caution is also advised when interpreting and comparing rates based on fewer than 20 cases. It is important when interpreting the results to consider the size of the risk group in the denominator, since rates calculated in smaller groups can have wide confidence intervals. Prioritised ethnicity is provided by the Ministry of Health using NHI number provided by the laboratories. Where NHI is not provided, ethnicity is described as 'unknown'.
- Testing coverage rates (people tested): the number of people tested based on NHI and patient ID numbers and using the age and location of the individual at the time of the first test of the year. These rates do not include multiple tests within the year for the same individual.
- Rate of syphilis by sexual behaviour: the reported number of cases by sexual behaviour was divided by the estimated NZ population by sexual behaviour and multiplied by 100,000 for a rate of syphilis per 100,000 population.
- Rate of gonorrhoea by sexual behaviour: the proportion of cases by sexual behaviour from clinical notifications is applied to laboratory notifications, divided by the estimated NZ population by sexual behaviour and multiplied by 100,000 for a rate of gonorrhoea per 100,000 population.

Age groups

For this publication we have adopted the age groups that are also used by the Kirby Institute to present Australian data: 0–14, 15–19, 20–24, 25–29, 30–39, 40+. Several different age groupings have been used previously across different New Zealand publications. Following the Australian data will allow us to directly compare by age groups to Australia. It provides for more detail at ages for which numbers are much higher. It is limited to six age categories, which gives enough detail and makes the graphs look clearer than with more age categories. However, it does result in loss of detail at higher ages and these data can be requested as needed.

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