

## **BACKGROUND**

ESR operates the following surveillance systems for gonorrhoea, chlamydia and syphilis.

- For gonorrhoea and chlamydia a laboratory-based surveillance system is in place whereby all laboratory results for gonorrhoea and chlamydia are sent to ESR along with demographic information (age, sex, ethnicity and geographic region).
- For gonorrhoea, there is also an online clinician notification system in place to collect additional information for cases including risk factor information such as sexual behaviour
- For Syphilis, there is a clinician notification system in place to collect demographic, laboratory and risk factor information.

## **OVERALL**

The dashboard utilises quarterly rolling 12-month case counts (for syphilis) or rates per 100,000 (for gonorrhoea and chlamydia) which provides insight into slow-moving trends. The COVID-19 pandemic caused a highly unusual, rapid change in the epidemiology of many infectious diseases, including STIs. To highlight these changes, we provide this more detailed commentary to the dashboard data with additional graphics, including qualitative comparisons between 2019 and 2020 trends.

On 28 February, the first COVID-19 case was reported in New Zealand. On 25 March, New Zealand moved to COVID-19 alert level 4, followed by alert level 3 on 27 April and alert level 2 on May 11. At the end of the first quarter, and in the second quarter of 2020 STI case numbers were impacted by changes in the delivery of care, availability of testing, and likely changes to both health-seeking behaviour and sexual behaviour over this time. There was a reduction in face-to-face consultations with increased telephone triaging to prioritise symptomatic patients, innovative use of technology to facilitate remote consultations, with procedures varying between DHBs and between services (Sexual Health Clinics, General Practice and Family Planning).

Due to the demand for laboratory resources for COVID-19 testing, chlamydia and gonorrhoea testing was restricted from late March in most DHBs. In many DHBs, at least for part of Q1 and Q2, no asymptomatic screening for chlamydia and gonorrhoea was available, and clinical indications for testing were restricted. People may also have been less likely to seek care during this time.

While much of the observed decrease in chlamydia and gonorrhoea cases in Q1 and Q2 of 2020 is likely to be the result of reduced testing, the true number of new infections is also likely to have decreased as a result of public health measures including social distancing and resulting change in sexual behaviours.

The impact of COVID-19 on syphilis cases is less pronounced as syphilis serology testing continued throughout alert level changes, including the 3-monthly screening for men who have sex with men (MSM) on HIV pre-exposure prophylaxis (PrEP) in some HIV centres. The long incubation period for syphilis also means that short term changes should be interpreted with caution. Importantly, the syphilis notifications have been levelling off since mid-2019, before the emergence COVID-19.

## **SYPHILIS NOTIFICATIONS**

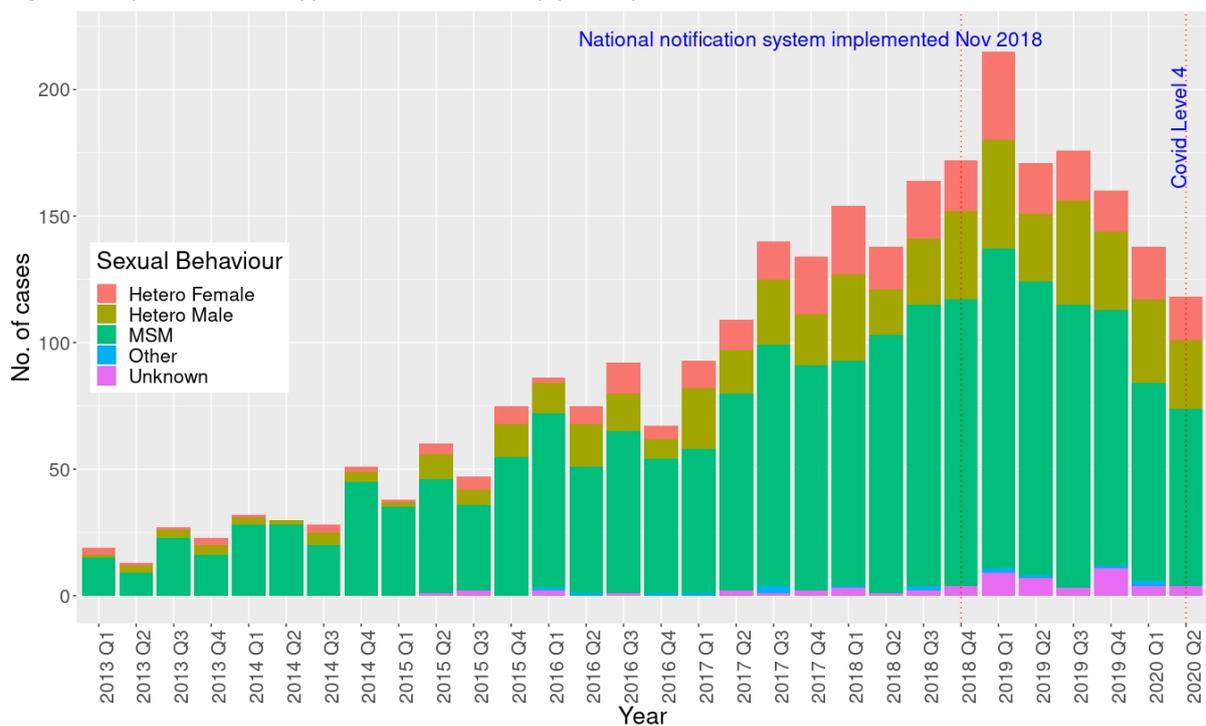
Syphilis notifications have been levelling off since early 2019, and this trend continues into the first 2 quarters of 2020 (see Figure 1). The largest decrease was seen among MSM. The apparent sharp

decrease in the syphilis 12 months rolling case counts in the first quarters of 2020 on the quarterly dashboard is due to a delayed effect of the levelling off that started in 2019.

Although syphilis testing, including 3-monthly screening for MSM on PrEP, continued in many DHBs throughout alert level changes, syphilis notification numbers are also likely to have been impacted by changes in social behaviour, health seeking behaviour and clinical interactions at this time. Given the potential long incubation period for syphilis and possible delays in diagnosis, any true reduction in cases may not be evident until later.

The number of syphilis notifications amongst women identified during or immediately after pregnancy was consistent in 2020 Q1/2, suggesting that antenatal and perinatal testing continued at similar levels to the previous two years. The proportion of symptomatic notifications remained the same during 2020 Q1/2 compared to previous years, including when compared by sexual behaviour. There has been an approximate 50% relative decrease in syphilis notifications among those with a European/other (52% decrease) or Maori (55% decrease) ethnicity since 2019 Q1, and these decreases carried forward through COVID-19 lockdown.

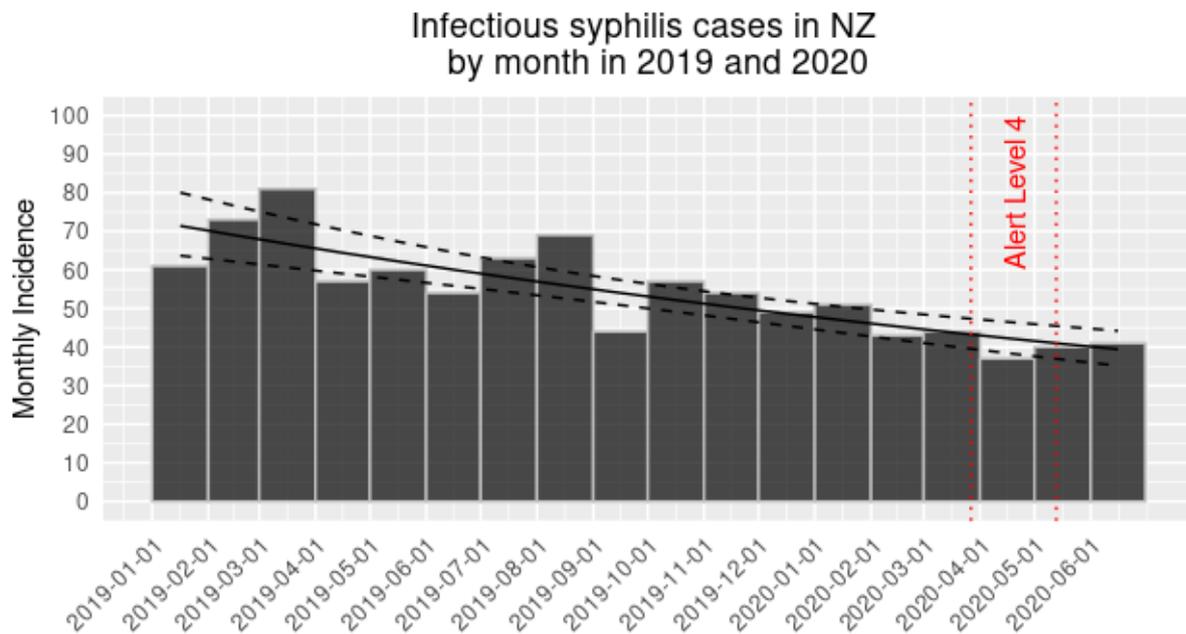
Figure 1: Epicurve with syphilis cases in NZ by year, quarter and sexual behaviour



Source: Infectious syphilis surveillance extracted from REDCap 21/4/2021

The monthly notification numbers show that the numbers in 2020 are lower than in 2019. (Figure 2). There is no large decrease in notifications during the COVID-19 lockdown suggesting that the COVID-19 alert levels did not have an immediate noticeable effect on the number of syphilis cases notified.

Figure 2: Epicurve with monthly Total of Syphilis Notifications from 2019 Q1 to 2020 Q2

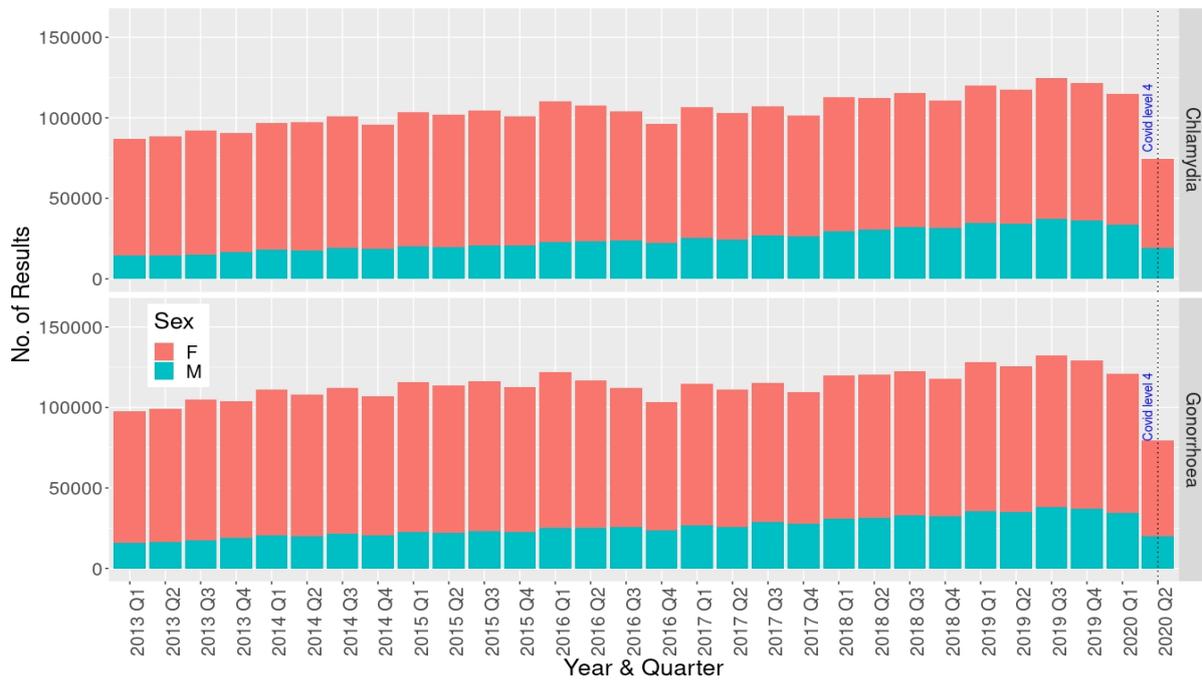


**GONORRHOEA AND CHLAMYDIA LABORATORY SURVEILLANCE**

The quarterly rolling 12-month rates presented on the dashboard show a decrease in Q2 for both chlamydia and gonorrhoea. Unlike the number of syphilis notifications, gonorrhoea rates were increasing through 2019, and chlamydia rates remained stable.

Since 2013, a steady increase in the number of chlamydia and gonorrhoea tests has been observed, with the highest number of tests consistently in young females, although there had also been an increase in testing in males (Figure 3).

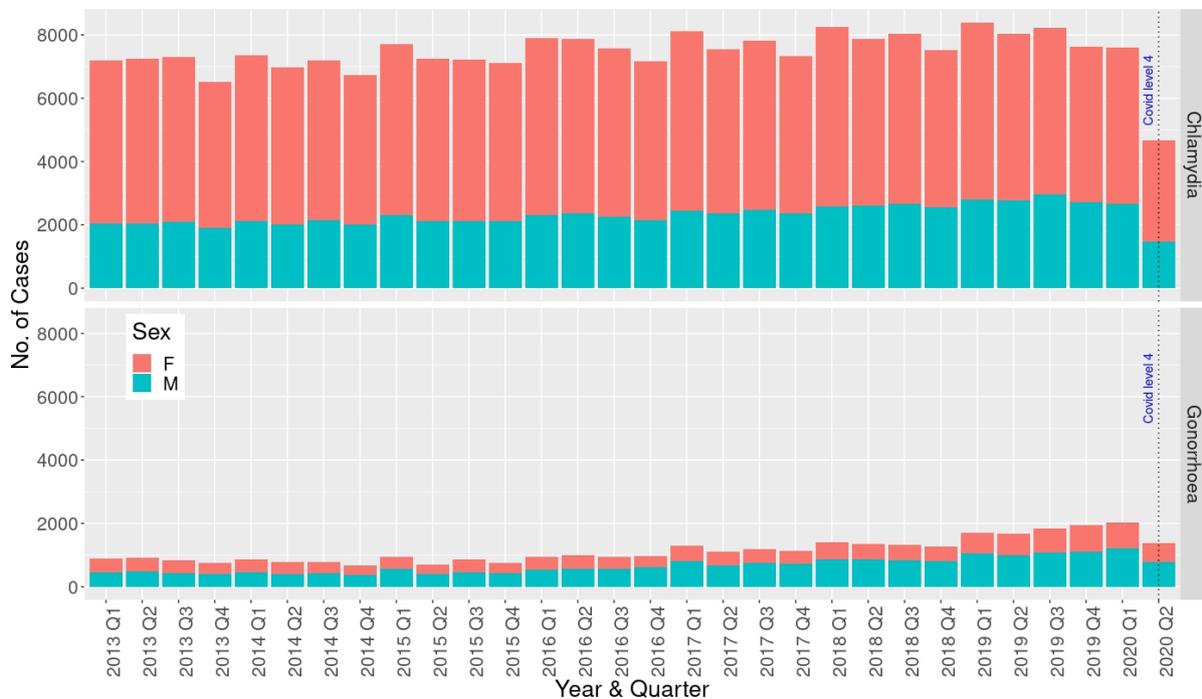
Figure 3: Gonorrhoea and Chlamydia Tests in NZ by Quarter and Sex, 2013 Q1 to 2020 Q2



Source: Laboratory surveillance extracted from SQL 21/4/2021

Between 2013 Q1 and 2020 Q1, a small rise in the number of chlamydia cases can be seen over time but there has been a noticeable increase in gonorrhoea cases, particularly amongst males.

Figure 4: Gonorrhoea and Chlamydia cases in NZ by Quarter and Sex, 2013 Q1 to 2020 Q2.



Source: Laboratory surveillance extracted from SQL 21/4/2021

The trends in gonorrhoea cases are illustrated in more detail in Table 2, comparing notifications by month between 2019 and 2020. The number of notifications for gonorrhoea in January and February 2020 were more 25% compared to January and February 2019 (see Table 2). In April and May 2020,

after testing restrictions were implemented for asymptomatic gonorrhoea and chlamydia and alert level changes altered clinical interactions, notifications decreased below levels seen in the same months of 2019, by 45% in April 2020 when compared to 2019.

Table 2: Monthly Total of Gonorrhoea Notifications for 2019 and 2020

Notifications of laboratory confirmed gonorrhoea cases in New Zealand						
	Jan	Feb	Mar	Apr	May	June
2019	561	553	600	486	637	565
2020	707	725	599	269	465	661
% Change from 2019	↑ 26%	↑ 31%	~ =	↓ 45%	↓ 27%	↑ 17%

In 2020 Q2 there was a substantial drop in testing numbers observed, consistent with restrictions to laboratory testing and changes to health care interactions with alert level changes described above (see Figure 4). Testing numbers decreased proportionally by age and sex, with a steep drop observed in April, returning to near expected levels from June. As seen in Figure 5, the tests in April 2020 were likely targeted toward more symptomatic cases as the positivity rate increased before decreasing again in May. The increase in proportion positive was more marked for males and for gonorrhoea testing. Although the absolute decrease in cases is larger amongst Maori and Pacific, proportionally the decrease is the same across different ethnicities.

Figure 5: Monthly Chlamydia and Gonorrhoea Tests and Positivity Rate for 2019 and 2020, by Sex

