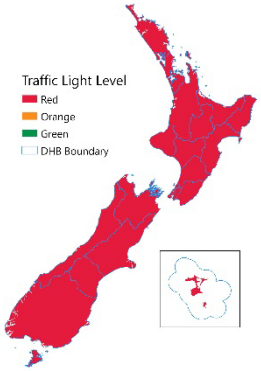
COVID-19

Trends and Insights Report

Updated 27 February 2022

Current State of Aotearoa

The whole of New Zealand is under the red traffic light, and the health sector response is in Phase 3.



Snapshot of the past 7 days

- Cases are rising rapidly as Omicron spreads with a 45% increase from the previous week with **25,012 cases reported for the week of 18-24 February,** out of which almost **7000 cases were reported in the last two days** (23 & 24 February).
- **European or Other** are now the most affected ethnic group (40%) overall, overtaking Pacific Peoples who remain the second-most-affected (31%). New cases for Māori are lower but increasing noticeably in the Midland Region.
- New cases are highest in those between the ages of 10-39 with the 20-19 age group specifically most represented.
- The Northern Region continues to have the highest number of new cases. Counties Manukau remains the DHB most affected, with 26% of new cases. Its share is decreasing as cases become more widespread throughout the country.
- The outbreak continues to have an inequitable impact, with **49% of cases being from areas with high housing deprivation** (7-10 score).
- Hospitalisations are rising rapidly**.** As of 27 February, there are **303 active cases in hospital**, three times the peak level from the 2021 Delta outbreak. This is a **net increase of 191 active cases in hospital in the past 7 days**.
- Testing rates and test positivity continue to be highest in the **Northern Region** but have decreased since last reported from 7 to 6 tests per 1000 with test positivity rates ranging from 2% to 13%. **Eight DHBs are above the WHO target of 5%**. The highest test positivity is in **Southern DHB** (13%) having displaced Counties Manukau which has now considerably decreased from 14% to 5%. The **Southern Region** generally is increasing rapidly as cases begin to spread in the South Island.
- **"Nowcasting" to 21 February** estimates the effective reproduction number **R_{eff} at 1.9** both nationally and in the Auckland region (95% Credible Interval: 1.3-2.7 for NZ). The **modelled doubling time is 3.0 days** (95%CI 1.7 – 8.2 for NZ). This will be updated in the next report released on 2 March 2022.

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Exposure Events and Clusters of Concern

Please refer to daily SitReps for recent exposure events.

Future versions of this report may use National Contact Tracing System data to evaluate patterns and risks of contacts by location.

Recent cases

Table 1 to Table 4 show new cases reported in the week to 24 February 2022 by DHB, age, sex and ethnicity.

Cases have continued to significantly increase in the week to 24 February with over 25,000 new cases reported; **almost 7,000 of these cases were reported in the past two days (23 and 24 February)**. In the previous week 13,759 cases were reported.

- The DHBs with most new cases were Counties Manukau, Auckland, Waitemata and Southern (Table 1). **Cases in these DHBs account for 70% of all cases** reported in the week (26%, 19% 16%, and 10% respectively).
- **40% of recent cases were European & Other,** followed by Pacific Peoples (31%), Māori (15%), and then Asians (12%). While cases in Māori are low, they are increasing, especially in the Midlands Region.
- New cases remain evenly distributed between sexes (Table 3).
- **Cases continue to be highest for 20–29-year-olds (30%)** then 10-19-year-olds (24%) (Table 4). Though other age groups have generally lower case numbers, they too are increasing, with 30-39 -year-olds having the second-highest increase since last reported (up 47% from last week).

Table 1: Community cases by DHB from 18 February to 24 February 2022

DHB	Community cases reported since 18 February
Northland	361
Waitemata	3946
Auckland	4667
Counties Manukau	6463
Bay of Plenty	1189
Waikato	2007
Tairawhiti	132
Lakes	322
Taranaki	148
Hawke's Bay	233
Whanganui	67
MidCentral	337
Hutt Valley	258
Capital and Coast	726
Wairarapa	52
Nelson Marlborough	464
West Coast	15
Canterbury	1142
South Canterbury	33
Southern	2433
Unknown	17
Total	25012

Source: NCTS/EpiSurv 2359hrs 24 February 2022

Table 2: Community cases by ethnicity from 18 February to 24 February 2022

Ethnicity	New community cases since 18 February
Māori	3849
Pacific Peoples	7746
Asian	3227
European or Other	10019
Unknown	171
Total	25012

Source: NCTS/EpiSurv 2359hrs 24 February 2022

Table 3: Community cases by sex from 18 February to 24 February 2022

Sex	New community cases since 18 February
Female	13033
Male	11930
Unknown	49
Total	25012

Source: NCTS/EpiSurv 2359hrs 24 February 2022

Table 4: Community cases by age from 18 February to 24 February 2022

Age	New community cases since 18 February
0-9	1776
10-19	5951
20-29	7554
30-39	4374
40-49	2628
50-59	1595
60-69	734
70+	400
Total	25012

Source: NCTS/EpiSurv 2359hrs 24 February 2022

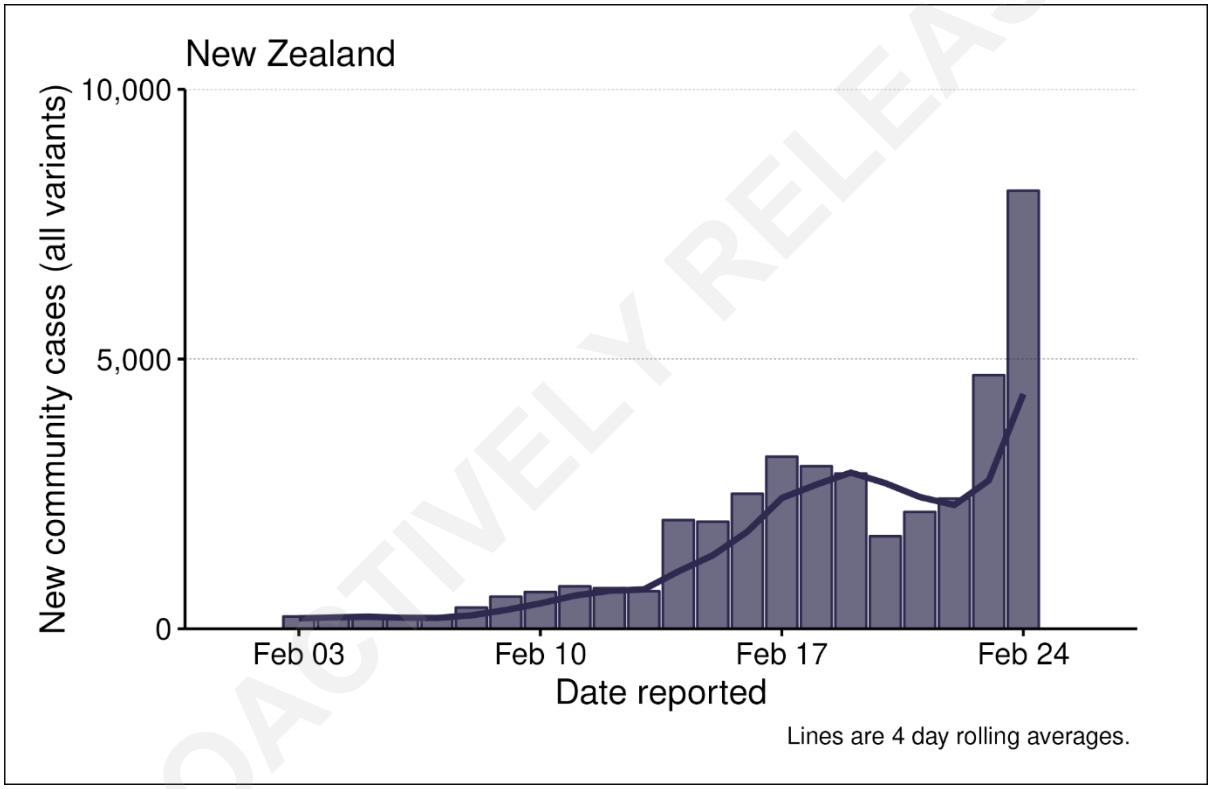
Epidemic Curves

Figure 1 and Figure 2 below show the number of new cases reported in the three weeks from 3 February 2022 to 24 February 2022 nationally and by DHB respectively.

There has been a rapid rise in national case numbers since 9 February. The fluctuations from day to day may reflect changes in how and when cases are reported by laboratories through the National Contact Tracing System (NCTS) to EpiSurv. Case numbers rapidly spiked on 23 February with 3,297 and 24 February with 6,137 new cases.

Throughout this period, the outbreak has been most established in the Northern Region followed by the Midlands Region (Figure 2). Cases in the Southern Region began to rise in late February onwards and are noted in the Southern DHB especially (Figure 3). Central Region has had fewer cases but appears to be slowly increasing on a lesser scale (Figure 2).

Figure 1: Daily community cases nationally from 3 February to 24 February 2022



Source: NCTS/EpiSurv as at 2359hrs 24 February 2022

Figure 2: Daily community cases by region from 3 February to 24 February 2022

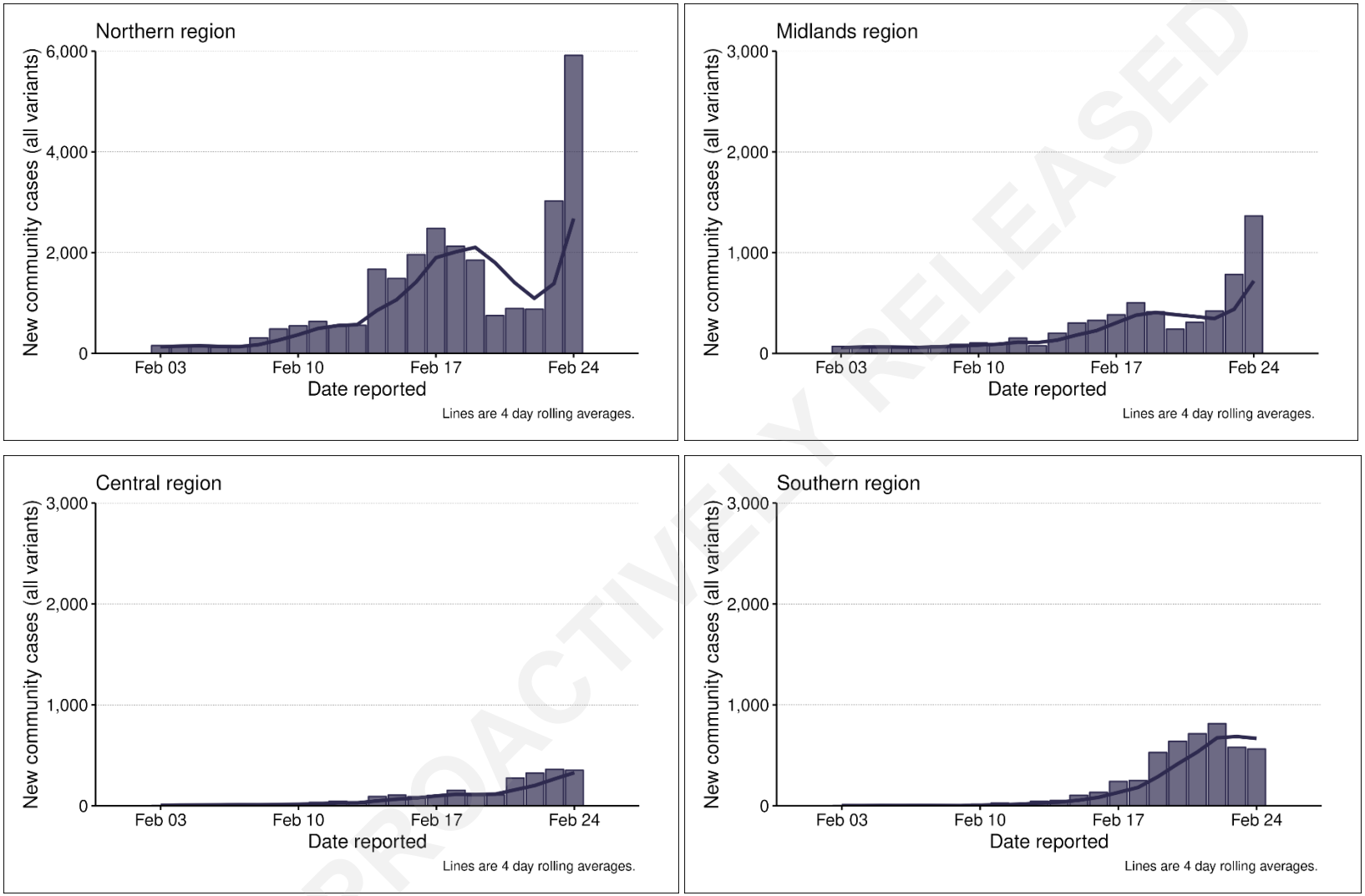
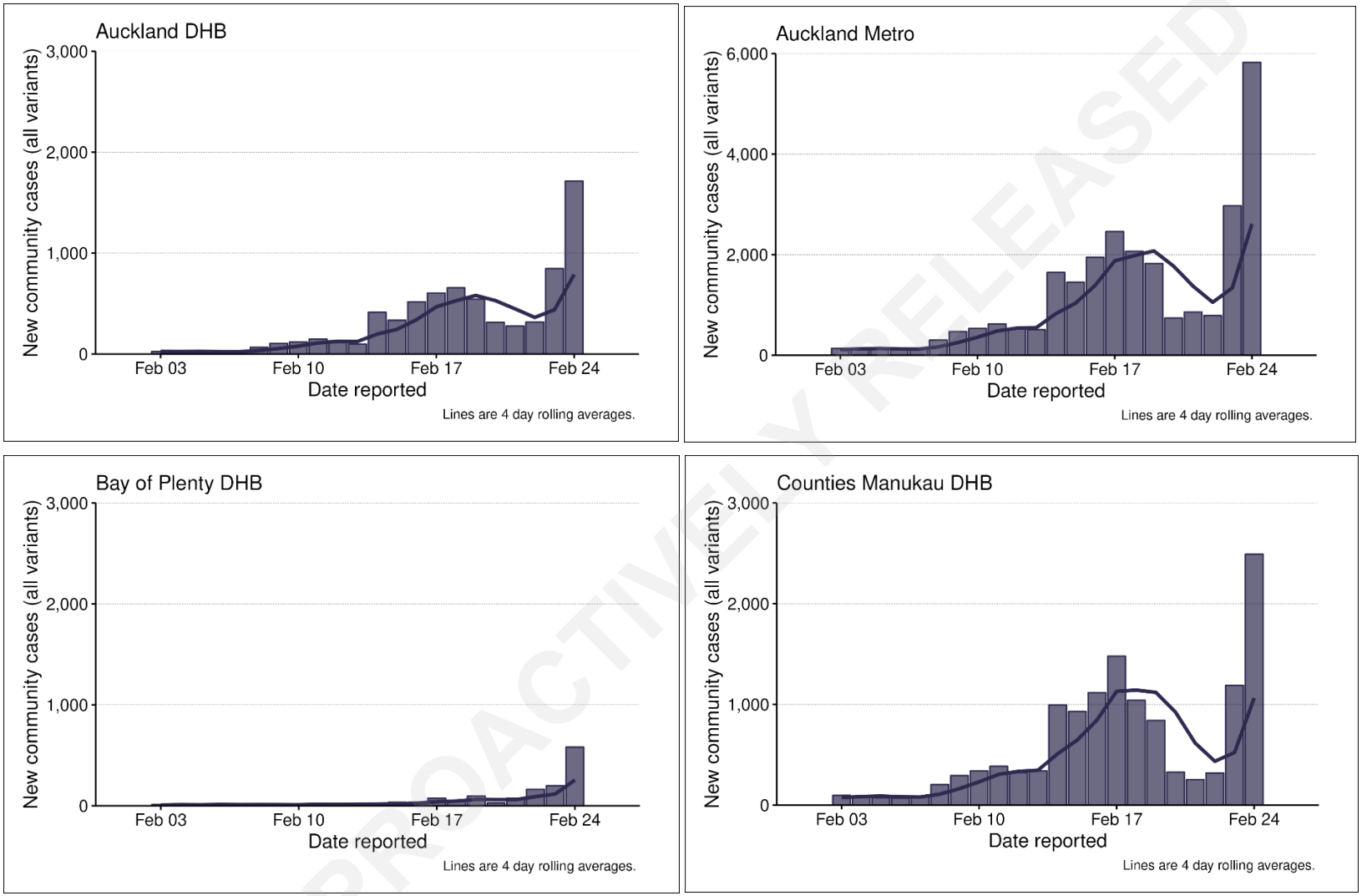
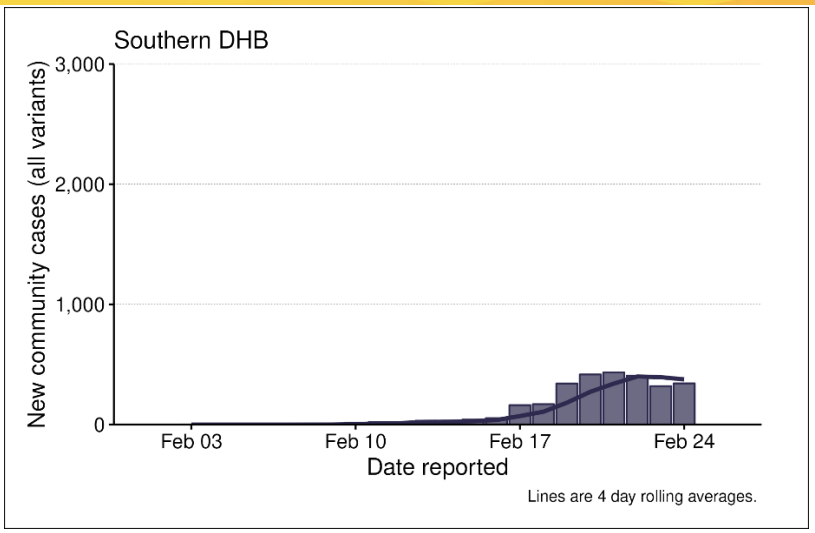
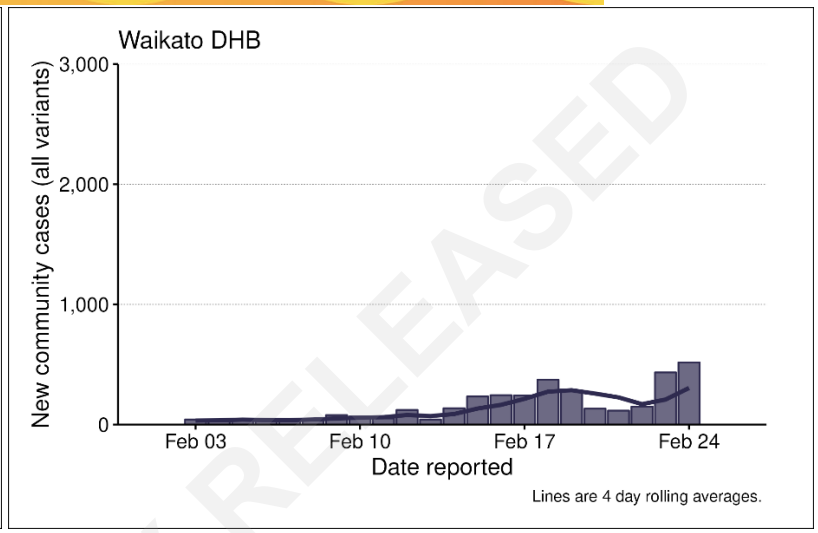
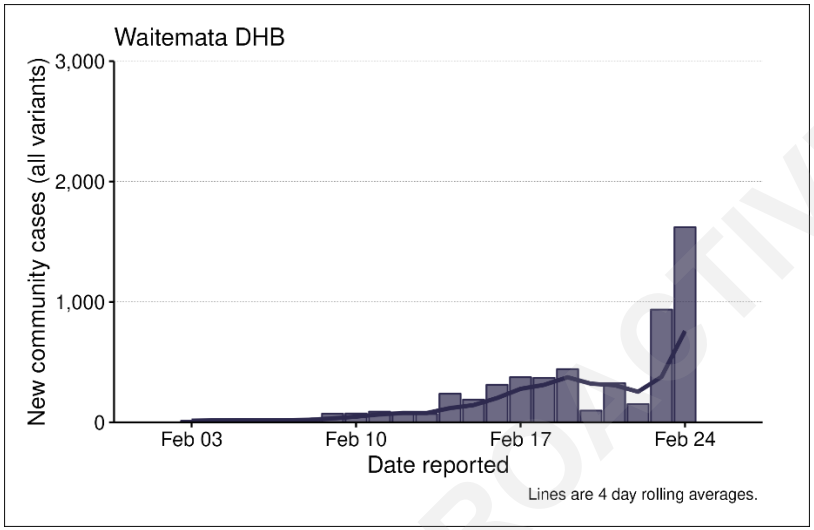


Figure 3: Daily community cases 3 February to 24 February 2022, selected DHBs









Source: NCTS/EpiSurv as at 2359hrs 24 February 2022

Cases by Ethnicity

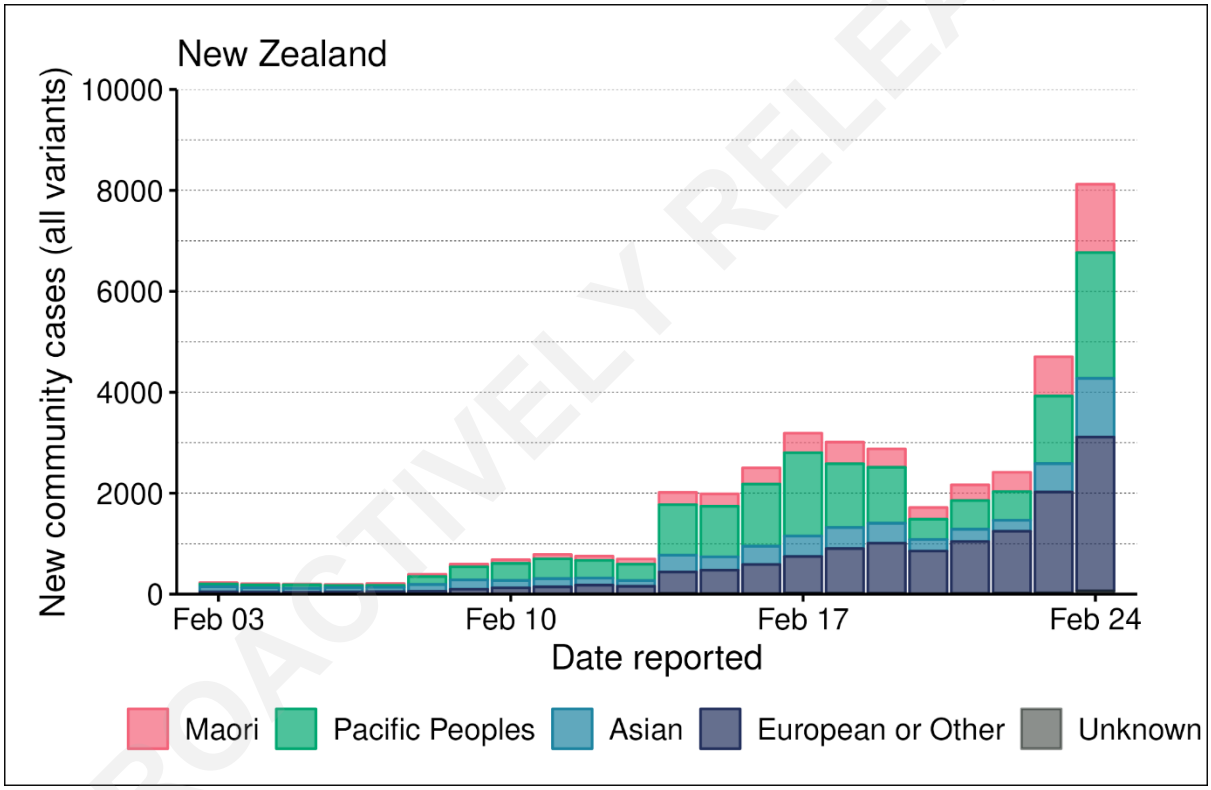
Figure 4 to Figure 7 show the ethnicity of new cases reported in the three weeks from 3 February 2022 to 24 February 2022.

At the beginning of the Omicron outbreak[1], which was identified around 19 January, a high proportion of cases were reported to have Asian ethnicity, consistent with known early exposure events. Since 9 February, that group's case numbers have been overtaken by people of Pacific and then European or Other ethnicities.

The number of cases with European or Other ethnicities has risen rapidly as the outbreak spreads into the Southern region particularly Canterbury, Nelson Marlborough and Southern DHBs.

The number of cases in Māori, while still low, is now gradually rising as the outbreak spreads beyond Counties-Manukau into Bay of Plenty, Lakes, Northland, Waikato and Tairawhiti DHBs.

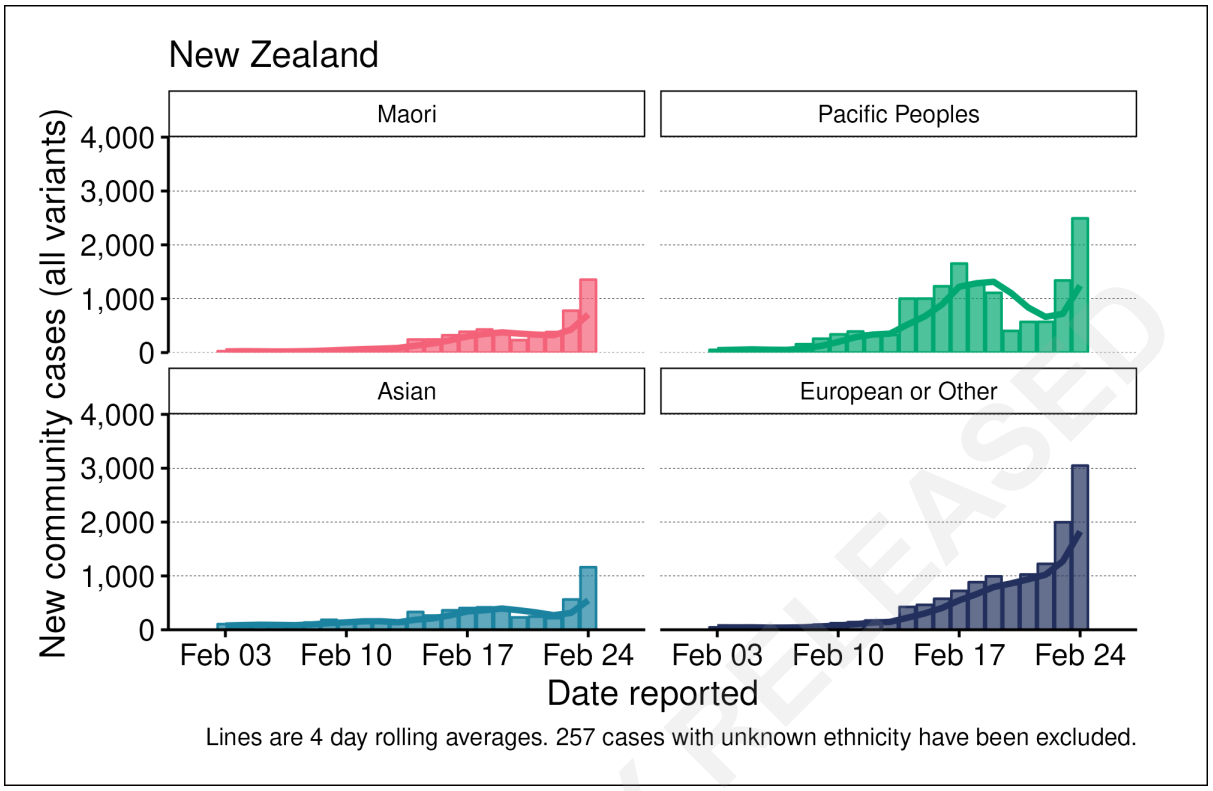
Figure 4: Daily community cases across New Zealand by ethnicity from 3 February to 24 February 2022



Source: NCTS/EpiSurv 2359hrs 24 February 2022

[1] The Delta variant is likely to still be in circulation after 19 January 2022. Case numbers include all confirmed COVID-19 cases, regardless of variant.

Figure 5: Daily and rolling 4 day of average community cases across New Zealand, by ethnicity from 3 February to 24 February 2022



Source: NCTS/EpiSurv 2359hrs 24 February 2022

Figure 6: Daily cases by ethnicity and region from 3 February to 24 February 2022

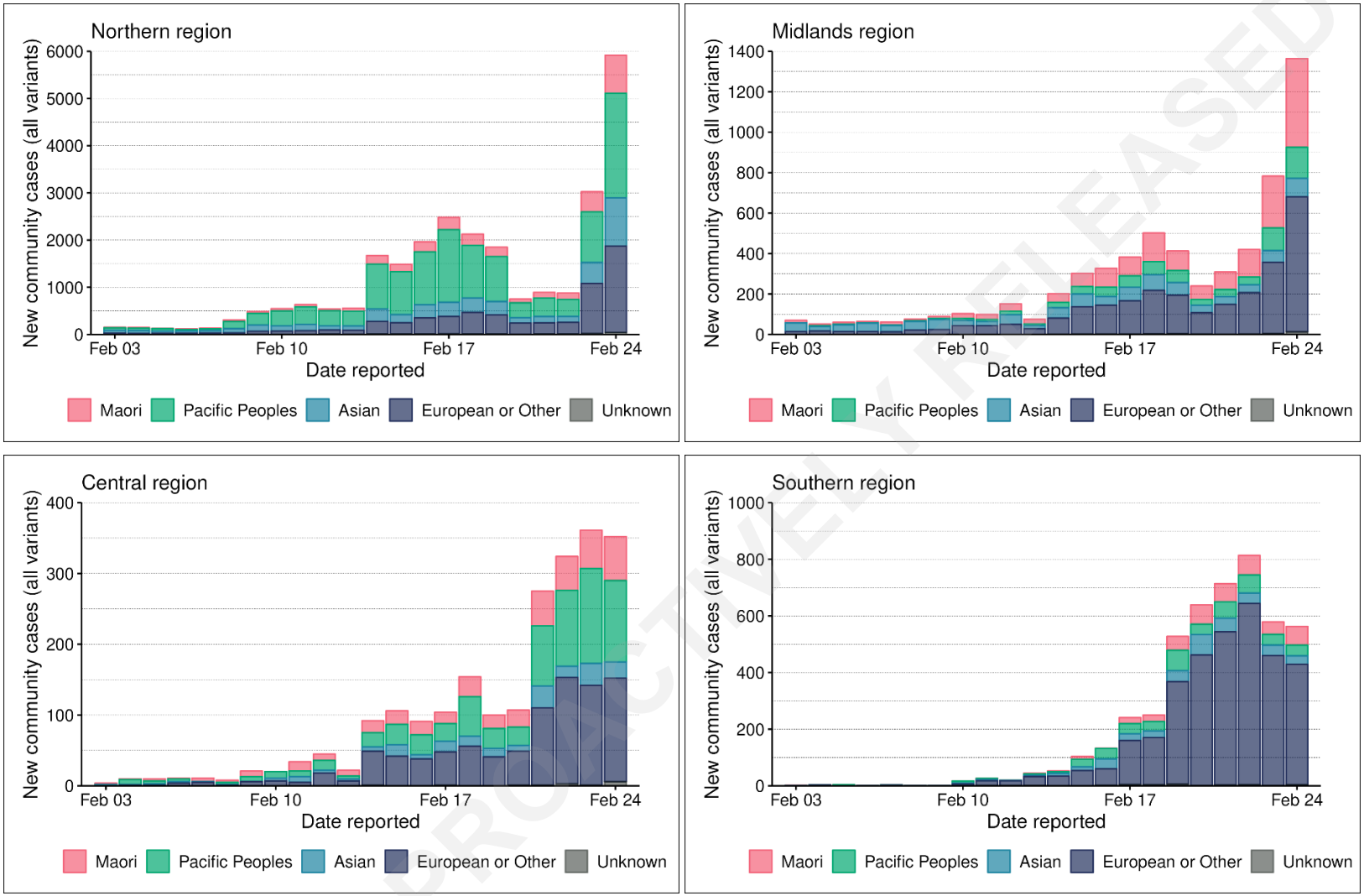
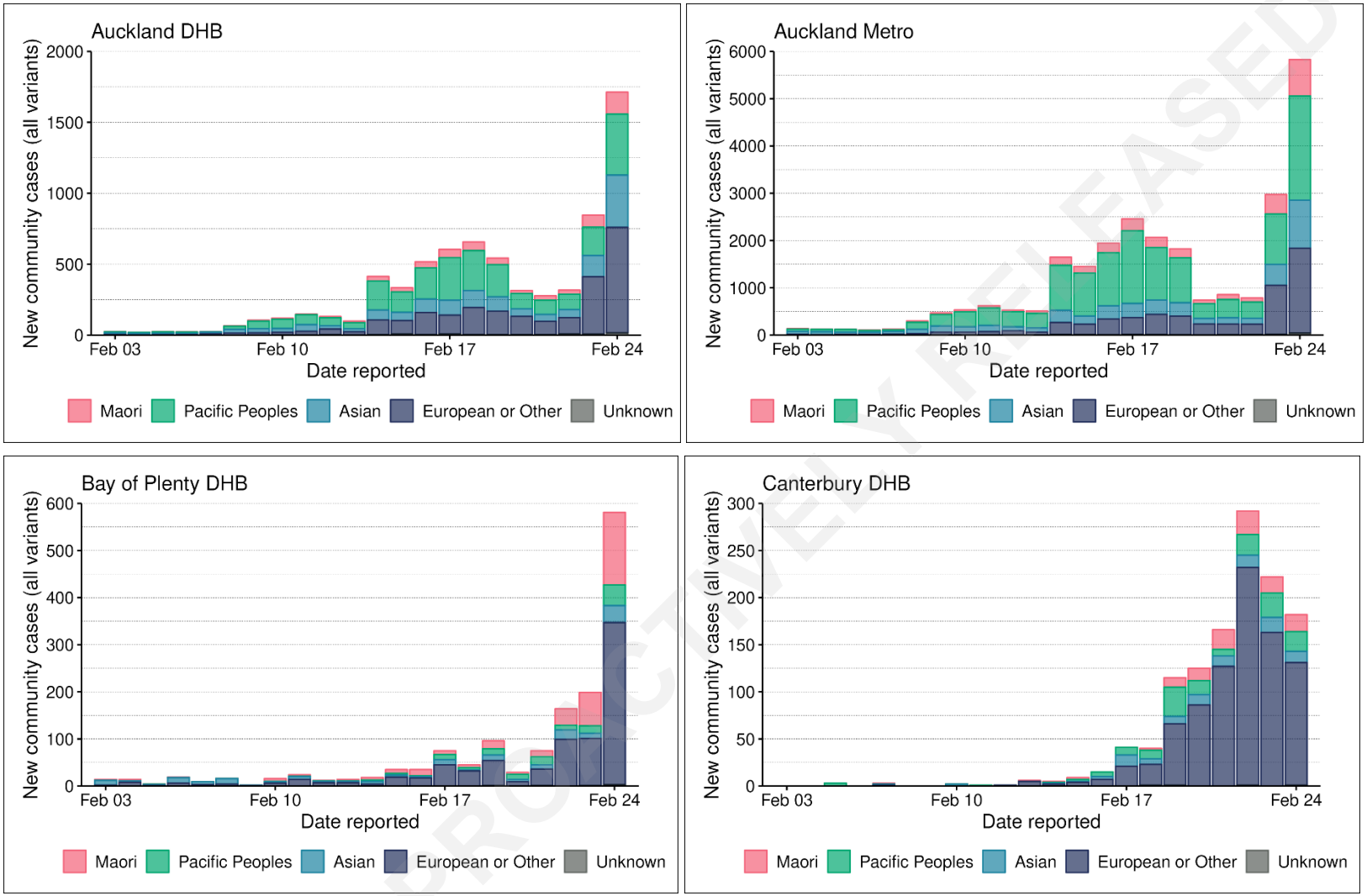
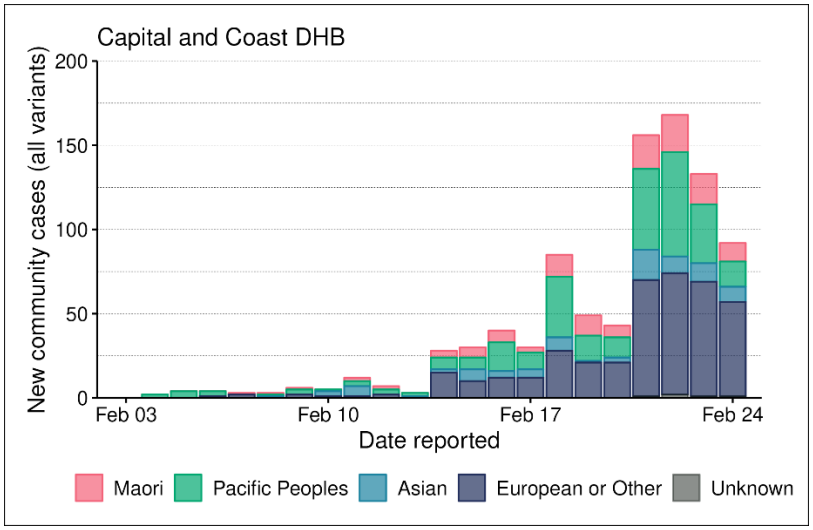
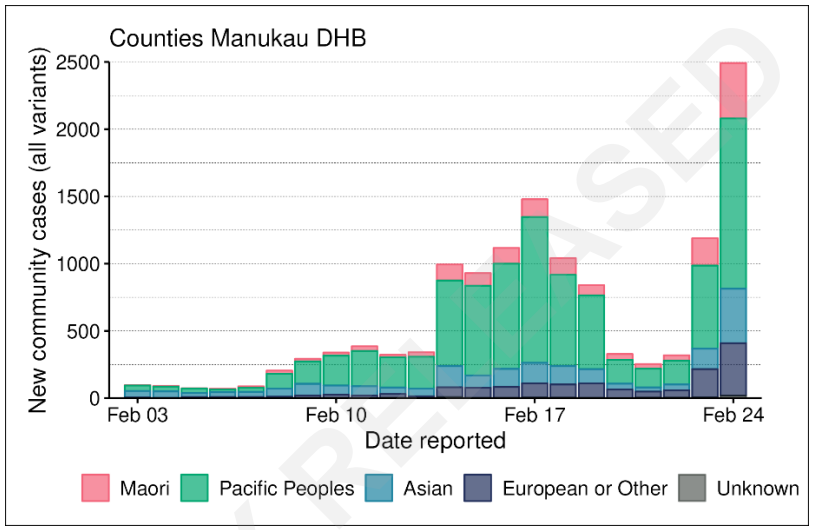
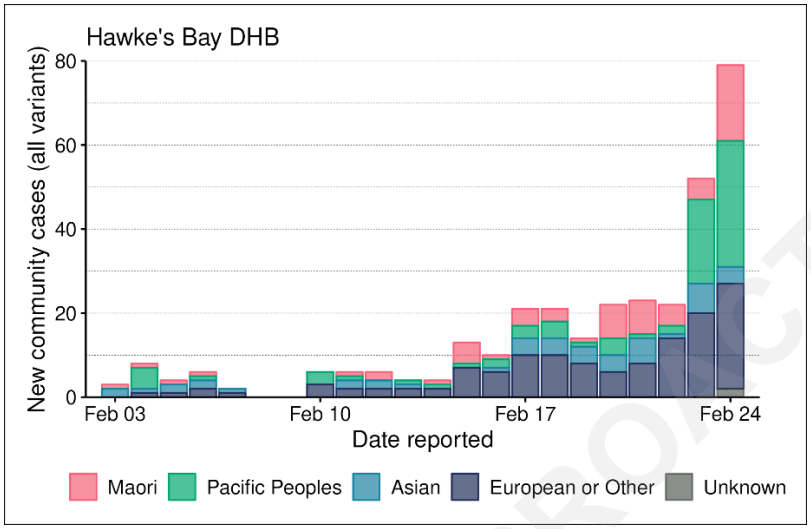


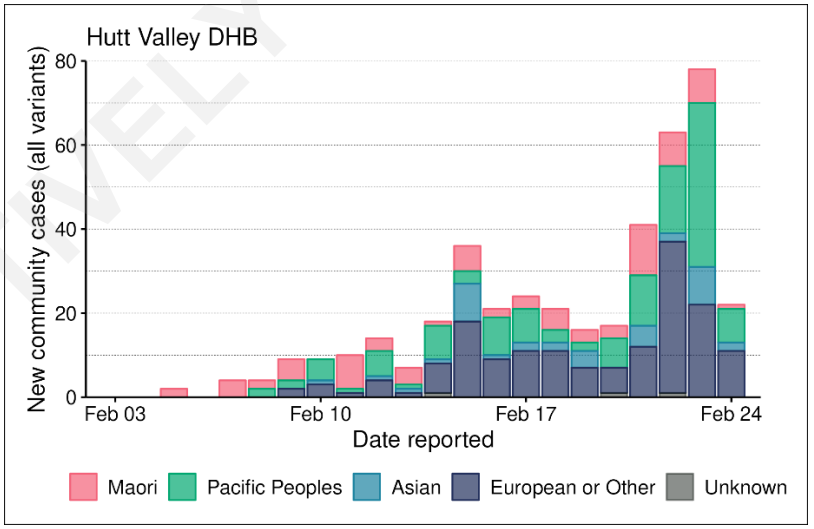
Figure 7: Daily cases by ethnicity from 3 February to 24 February 2022 by selected DHB

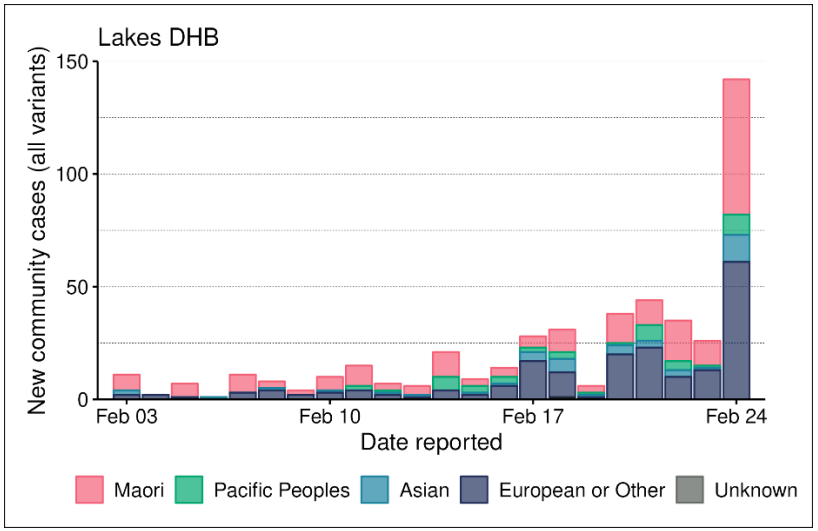


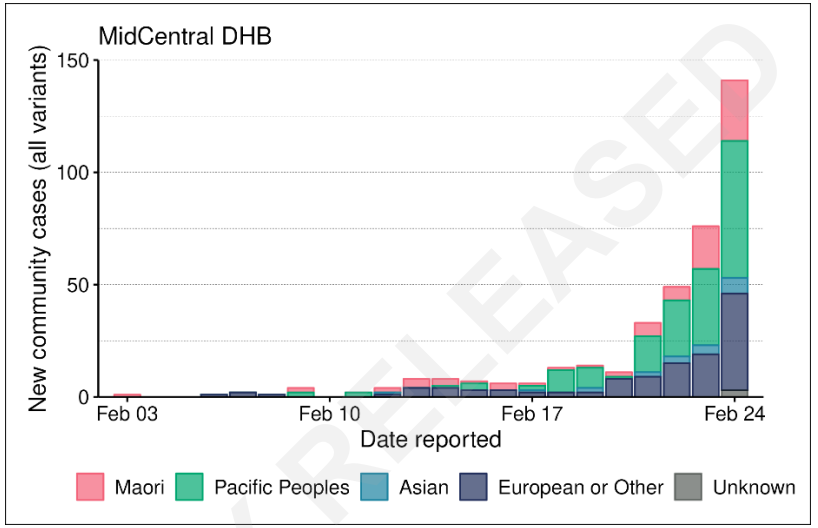


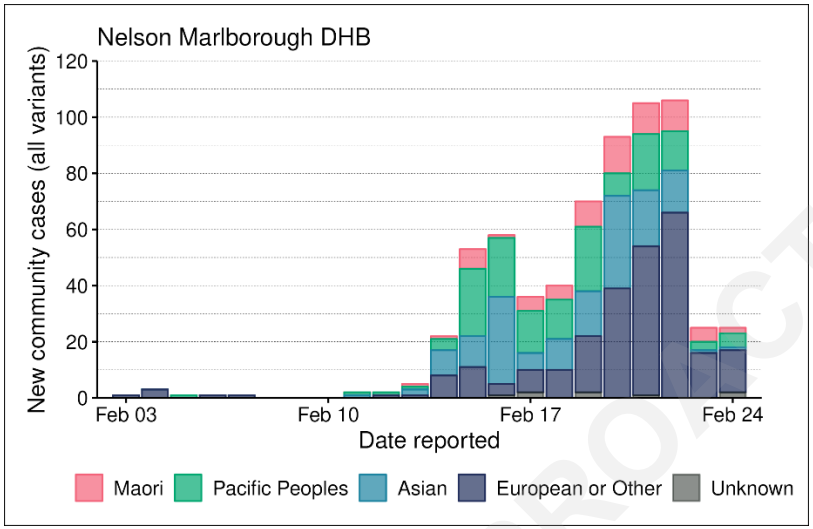


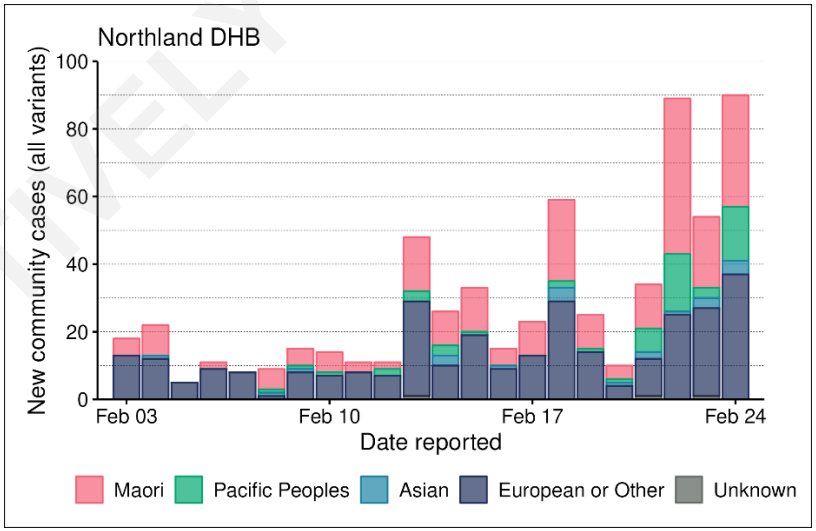


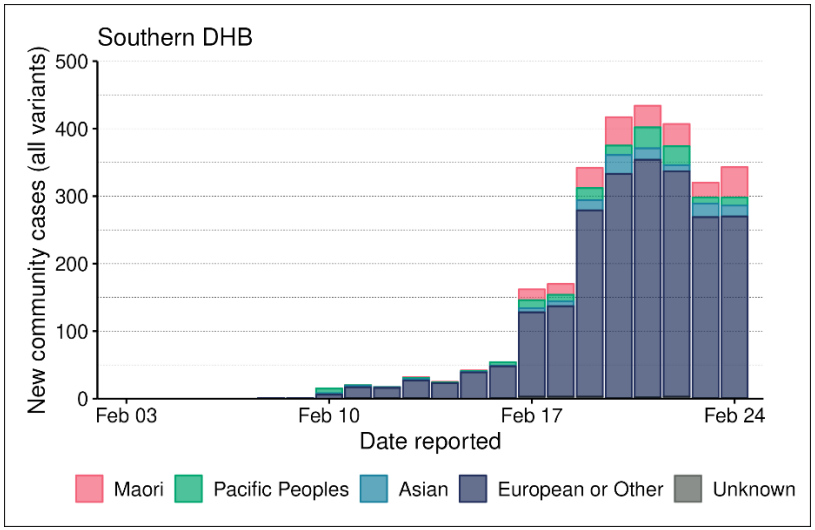


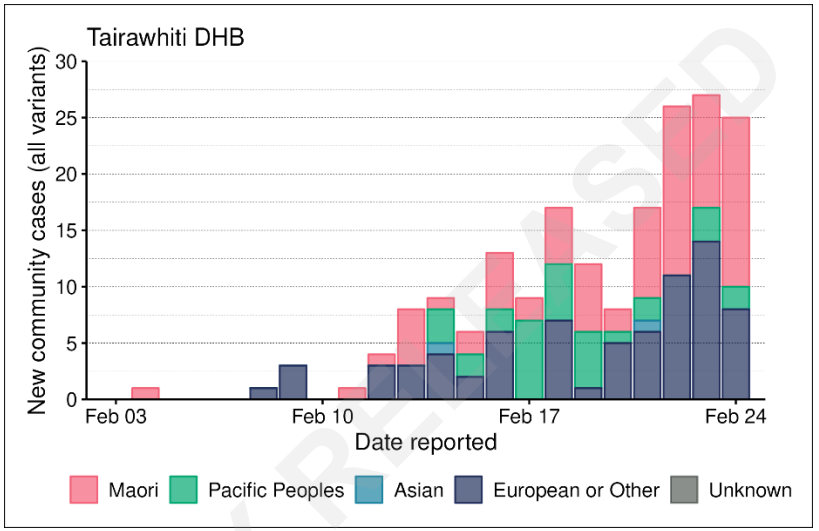


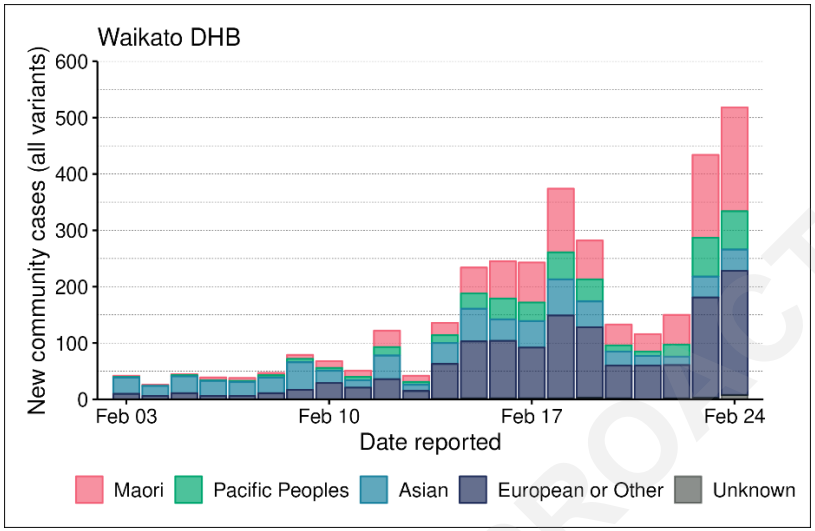


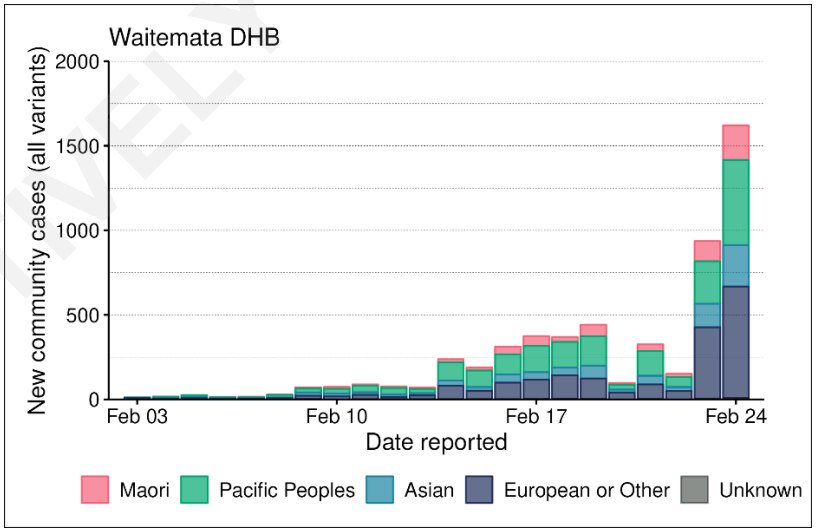












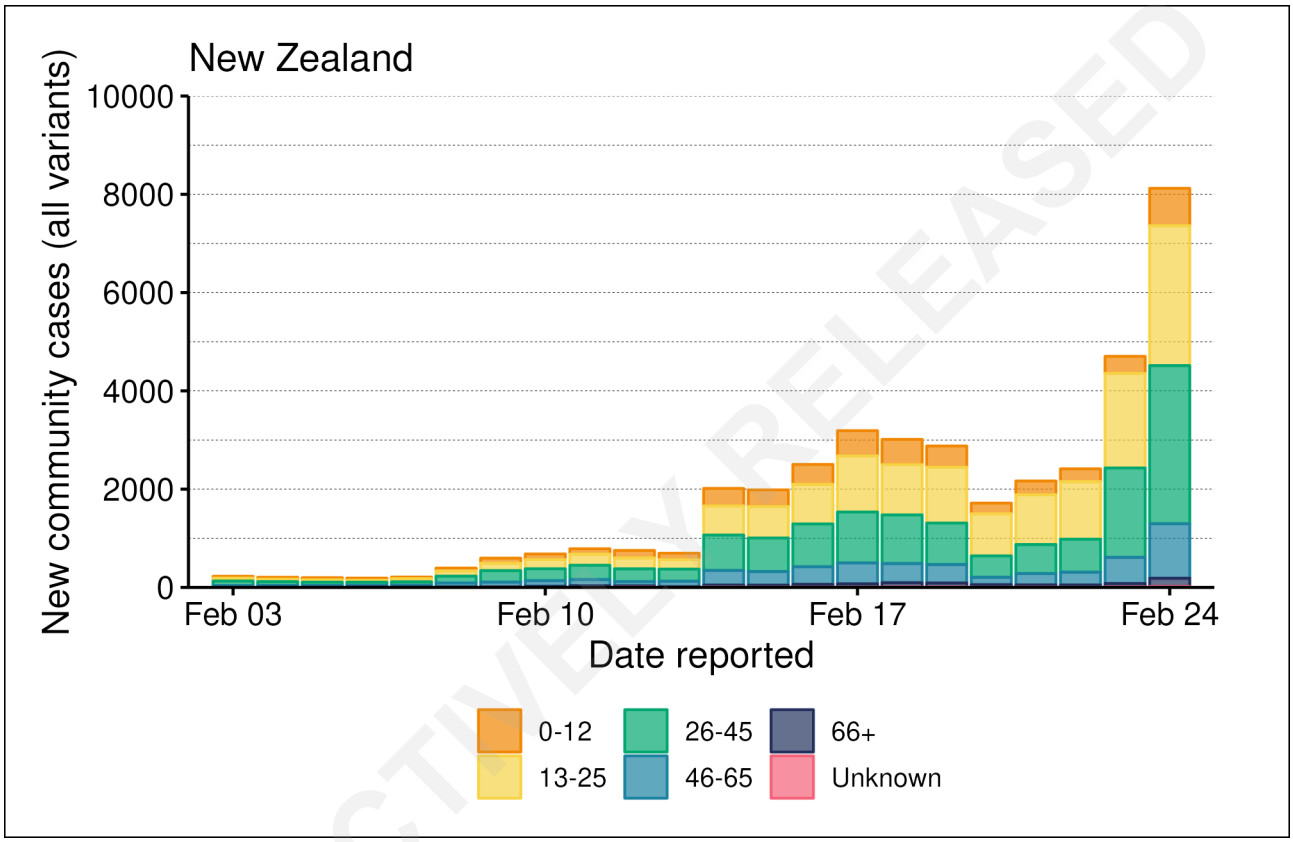
Source: NCTS/EpiSurv 2359hrs 24 February 2022

Cases by Age

Figure 8 and Figure 9 show new cases by age group from 3 February to 24 February 2022.

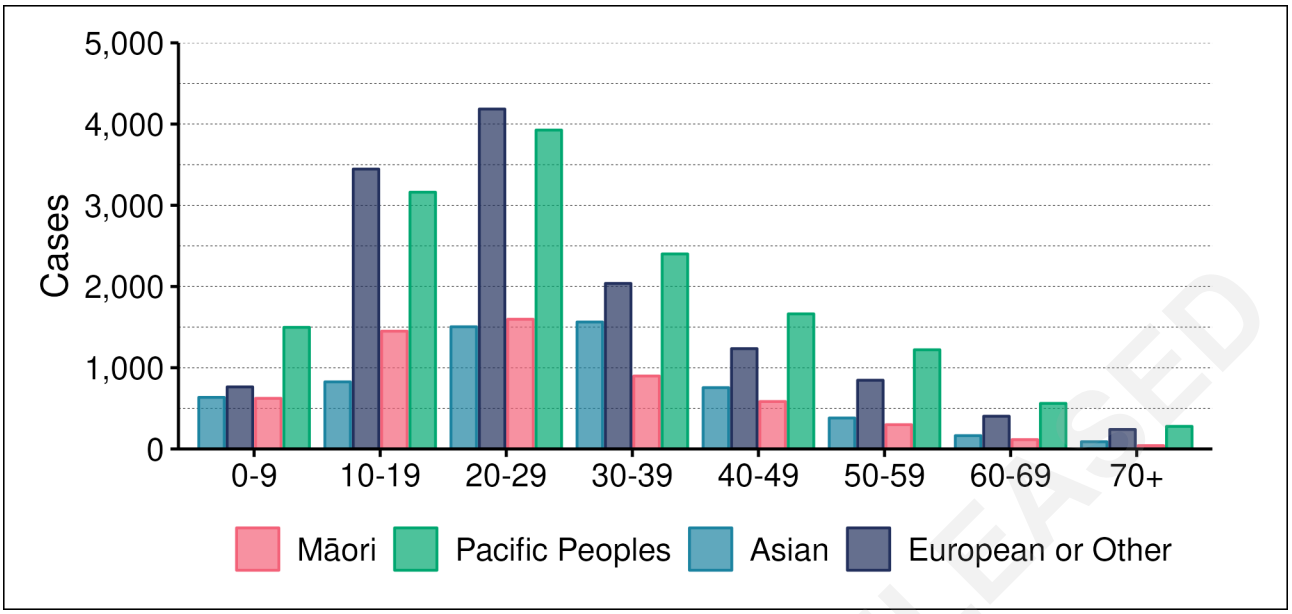
Cases continue to be predominantly in the 13-25 and 26-45 age groups (Figure 8). The breakdown of ages by ethnicity shows the large proportion of cases in Pacific Peoples and European or Other is most apparent in the 10-19 and 20-29 age brackets (Figure 9). The proportion of cases in Pacific Peoples is also highest in the 30-39, 40-49, 50,59 and 60-69 age brackets, with European or other being the next highest proportion.

Figure 8: COVID-19 community case numbers by age from 3 February to 24 February 2022



Source: NCTS/EpiSurv 2359hrs 24 February 2022

Figure 9: COVID-19 community case numbers by prioritised ethnic group and age group 3 February to 24 February 2022

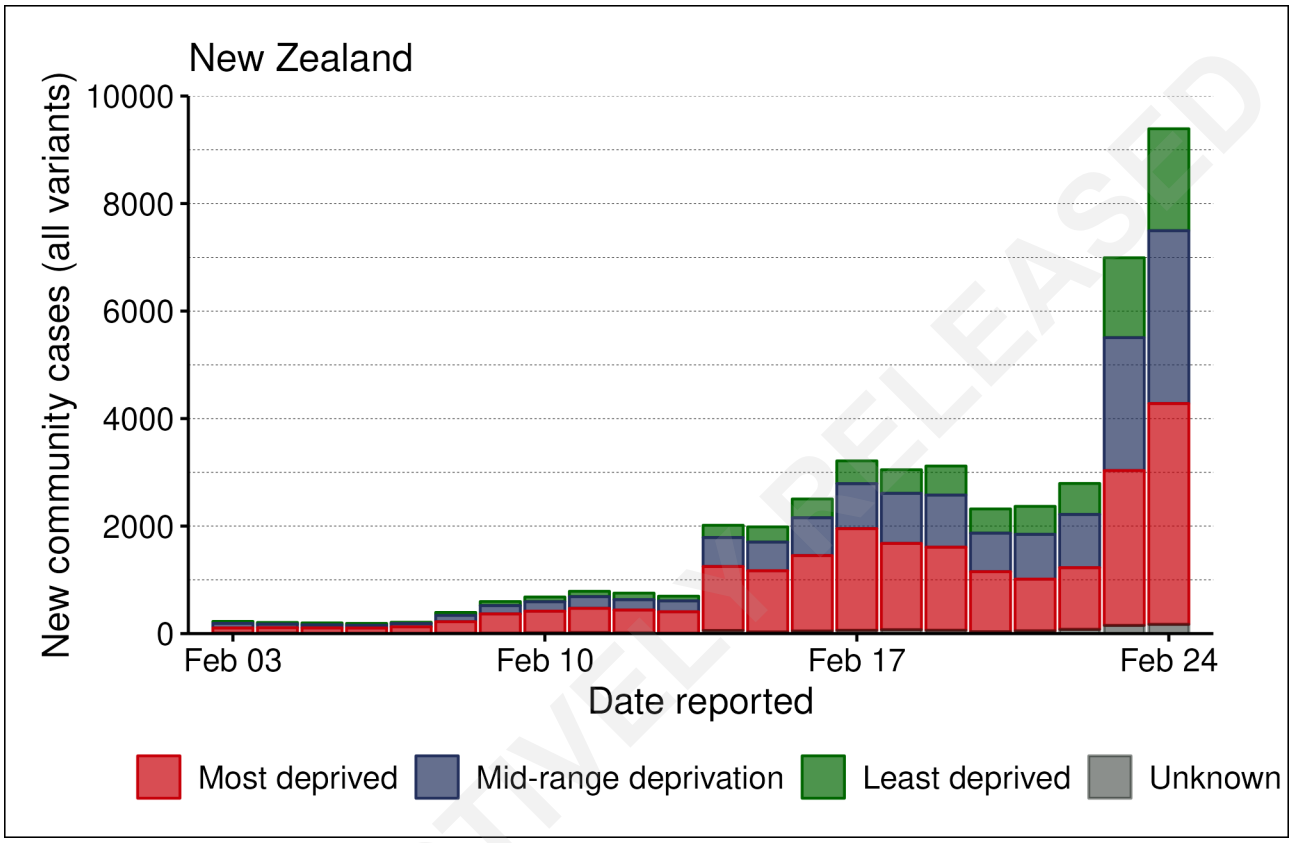


Source: NCTS/EpiSurv 2359hrs 24 February 2022

Cases by socio-economic indicators

Figure 10 shows cases based on the Index of Multiple Deprivation 2018, housing deprivation scores. The increase in cases observed from 9 February 2022 onwards has largely affected people living in the most deprived areas. However, as case numbers increase, there is an increasing proportion of cases in mid-and least-deprived areas.

Figure 10: COVID-19 community cases between 3 February 2022 and 24 February 2022 by housing deprivation level

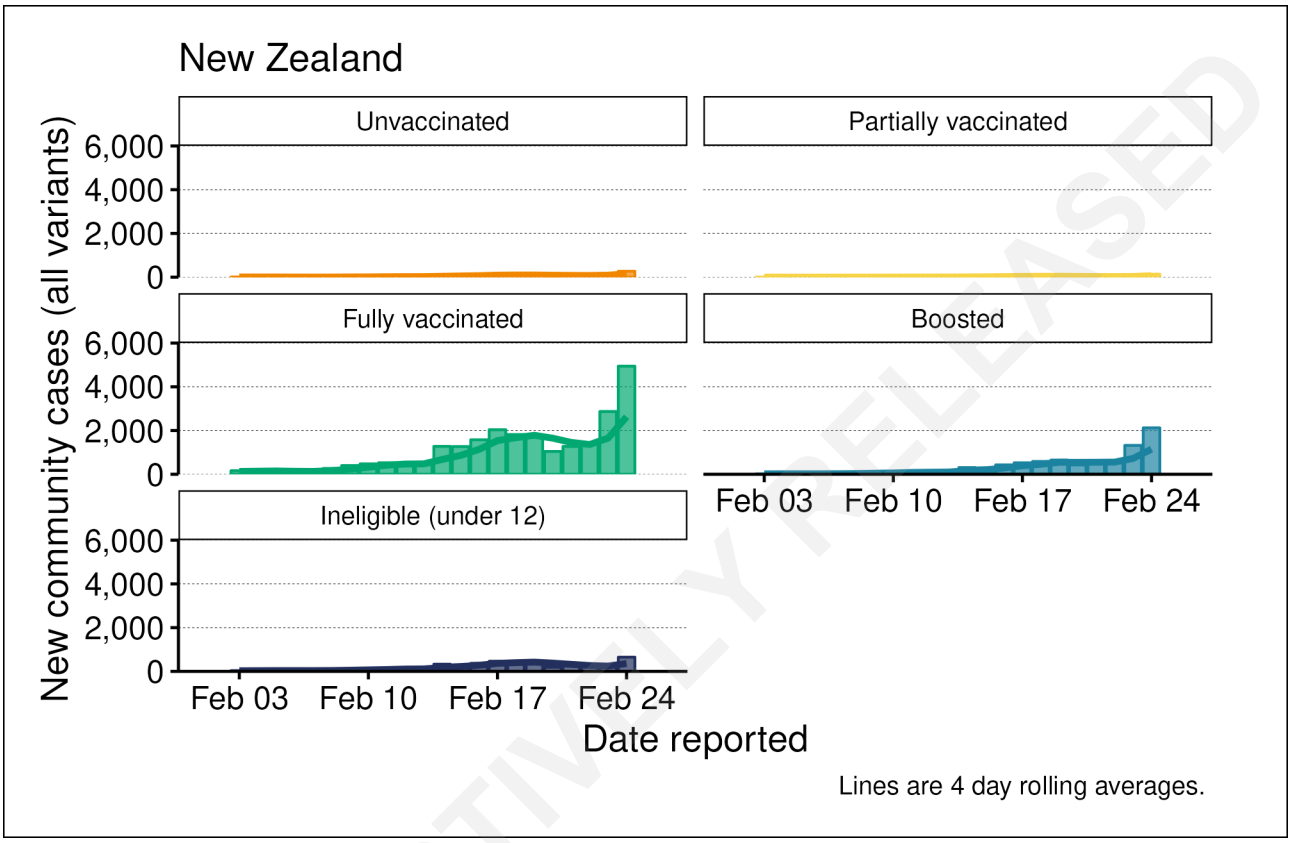


Source: EpiSurv/NCTS/ 2359hrs 24 February 2022

Cases by vaccination status

Cases by vaccination status are shown in Figure 11. As cases have steadily risen from late January onwards, the fully-vaccinated are the most represented in case numbers. This is expected due to the high level of vaccination across New Zealand, with over 95% of people aged 12+ now having at least two vaccination doses. Cases are rising in children under 12, classified as ineligible for COVID-19 vaccination.

Figure 11: COVID-19 community cases between 3 February 2022 to 24 February 2022 by vaccination status



Source: EpiSurv/NCTS/CVIP 2359hrs 24 February 2022

In the graph above, “unvaccinated” refers to people who have had no doses prior to becoming a case. “Fully vaccinated” are people who received their second dose at least 7 days before being reported as a case.

Community Testing

The figures in this section show the rates of community testing from 3 February 2022 to 24 February 2022.

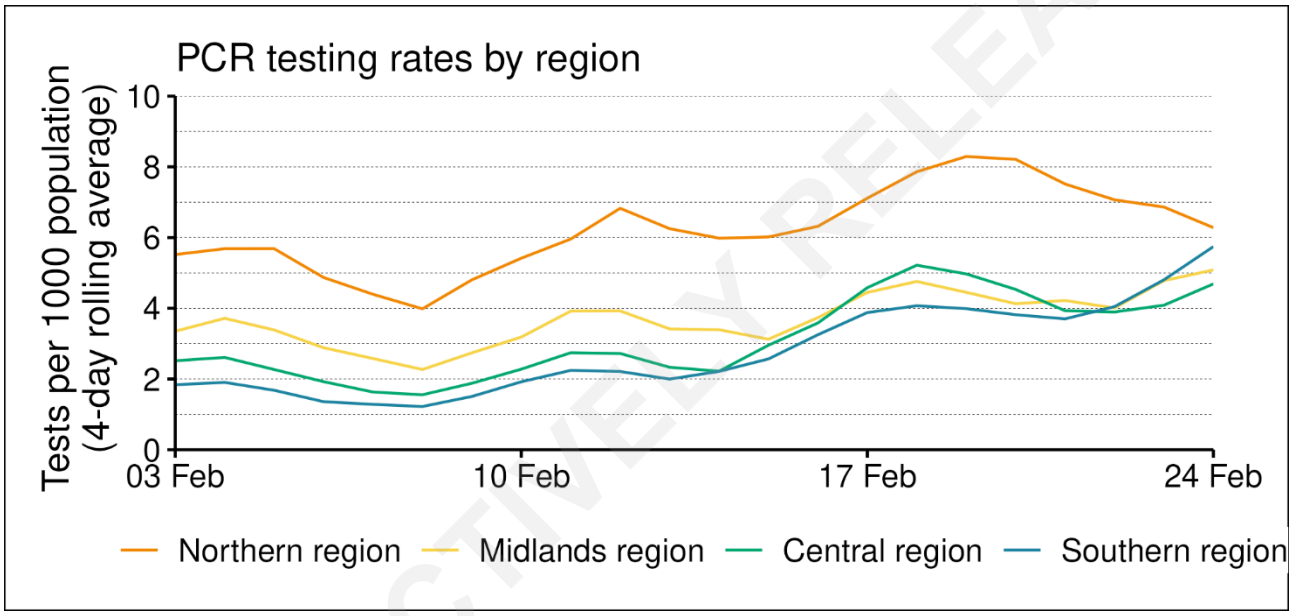
Tests per 1,000 population are between 7 to 4 in all regions. Testing rates remain highest in the Northern Region DHBs but show a decline in the previous week (Figure 12). Testing rates are increasing in Midlands, Central and Southern regions

Test positivity increased since 11 February with **8 DHBs now above the WHO target of 5%**. Counties-Manukau has decreased considerably from 14% to 5%. Bay of Plenty and Southern DHBs are now the highest at 13% (Figure 13).

On 22 February, Southern reached a peak of 25%.

Both Northland and Nelson Marlborough appeared to be increasing when last reported at 5% and 7% respectively but have now either plateaued (Northland) or decreased (Nelson Marlborough) sitting at 8% and 6% now.

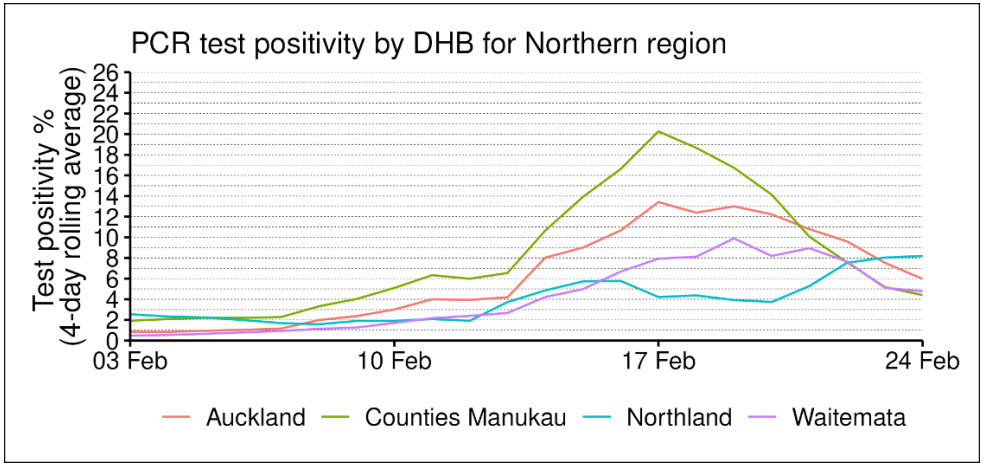
Figure 12: Testing rate by region[2] (four day rolling average) by region and DHB from 3 February to 24 February 2022

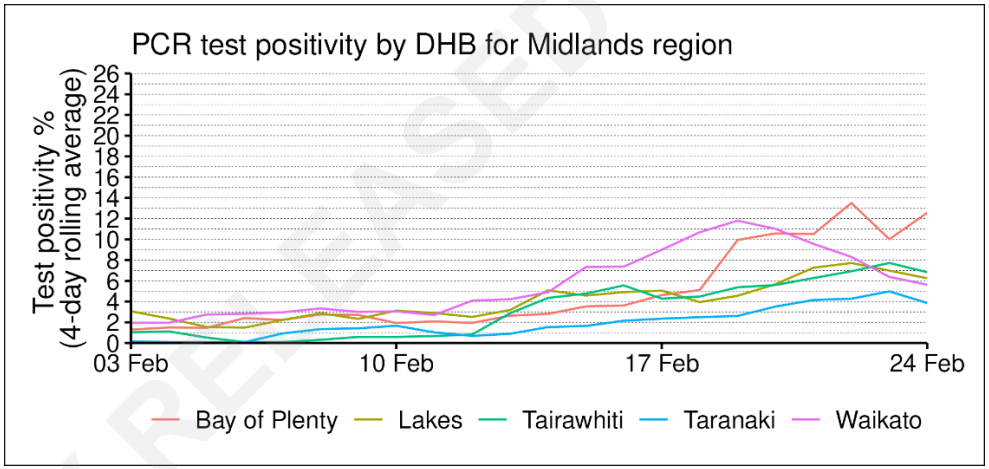


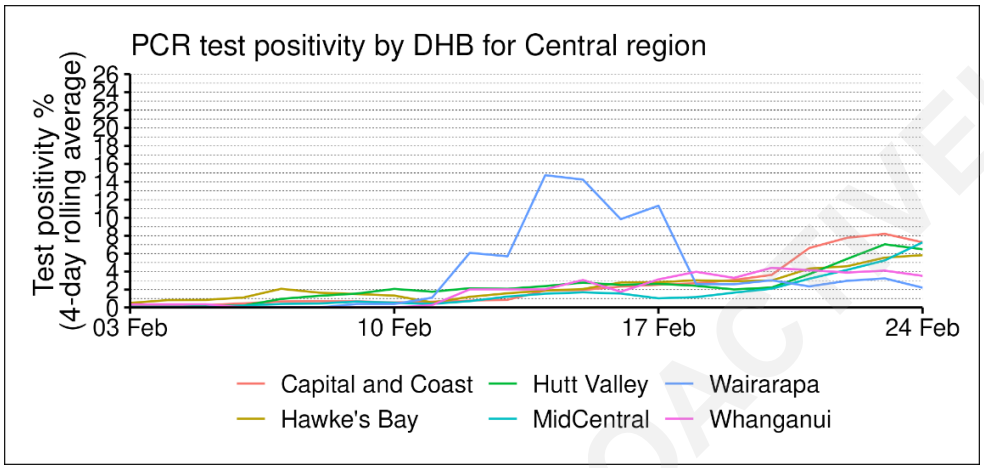
Source: Éclair testing database 24 February 2022; Excludes tests in returnees and border workers.

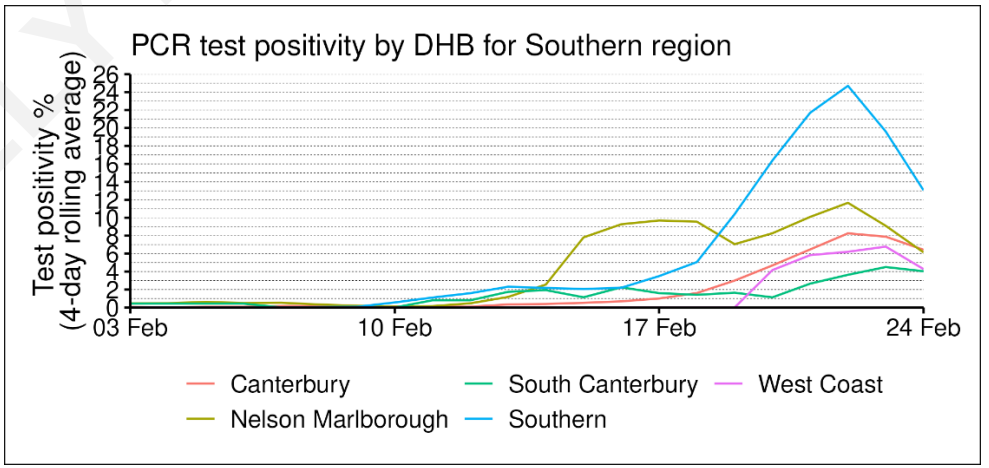
[2] **Northern Region**: Auckland, Counties Manukau, Northland & Waitemata DHBs. **Midlands Region**: Bay of Plenty, Lakes, Tarawhiti, Taranaki & Waikato DHBs. **Central Region**: Capital and Coast, Hutt Valley, Wairarapa, Hawke's Bay, Midcentral & Whanganui DHBs. **Southern Region**: Canterbury, Southern Canterbury, West Coast, Nelson Marlborough & Southern DHBs.

Figure 13: Test positivity (four day rolling average) by region and DHB from 3 February to 24 February 2022









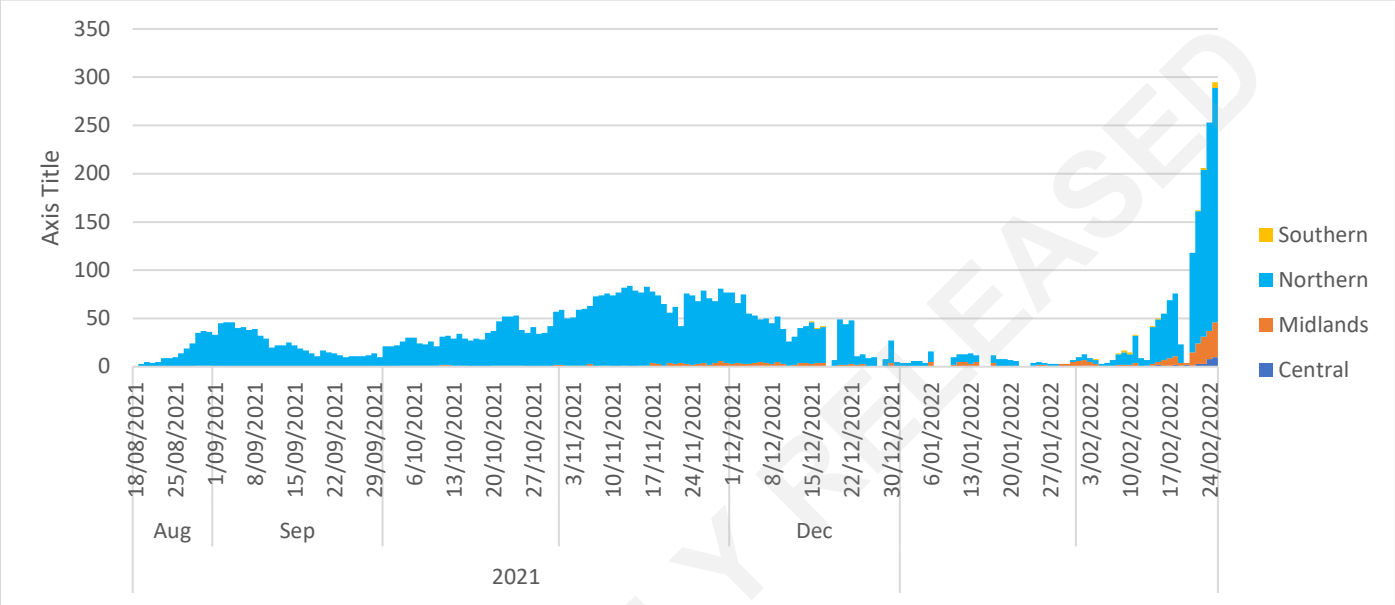
Source: Éclair/EpiSurv 24 February 2022

Hospitalisation

The number of COVID-19 positive cases in hospital is based on reports that DHBs file on most days to the Ministry of Health.

The number of hospitalised people confirmed as being COVID-19 positive was only 3 at the end of January 2022. By 25 February, **there were 303 confirmed COVID-19 positive cases** in hospital (Figure 14).

Figure 14: COVID-19 cases in hospital, by region and day



Source: DHB daily reports to MoH, 26 February 2022. Hospitalisation data are reported manually by DHBs. Data may be incomplete on some days. DHBs are grouped by region.

Variants of Concern

Most hospitalised cases are Omicron

The majority of hospitalised cases who have been sequenced are Omicron but there are a number of unsequenced hospitalised cases. As community cases increase, sequencing resources will be managed on a priority basis and directed towards gathering genomic data on the most serious cases.

Table 5: Hospitalised cases reported from 1 January to 24 February 2022

DHB	Delta	Omicron BA.1-like	Omicron BA.2	To be received	Total
Auckland	0	5	2	6	**13**
Bay of Plenty	2	0	2	33	**37**
Canterbury	1	0	0	0	**1**
Capital and Coast	1	1	1	3	**6**
Counties Manukau	1	4	2	20	**27**
Hawke's Bay	2	0	0	1	**3**
Hutt Valley	0	0	0	1	**1**
Lakes	1	0	0	19	**20**
Southern	0	1	0	0	**1**
Tairāwhiti	0	0	0	1	**1**
Waikato	1	1	1	13	**16**
Waitemata	3	6	4	2	**15**
West Coast	0	0	0	1	**1**
Total	**12**	**18**	**12**	**100**	**142**

Note: This includes cases reported as hospitalised in EpiSurv and may include cases hospitalised for reasons other than their COVID-19 infection.

Source: ESR Whole Genomic Sequencing data, 24 February 2022. EpiSurv and Microreact 12pm 24 February 2022

Few community WGS are Delta variant

555 community cases were identified as Omicron in the past fortnight.

While most community cases sequenced in the two weeks to 24 February 2022 have been Omicron cases, there are still Delta cases being detected in several regions.

Table 6: Variants of Concern, Community Cases

DHB	Delta	Omicron	Total
Northland	0	1	1
Waitemata	3	80	83
Auckland	8	39	47
Counties Manukau	4	98	102
Waikato	0	29	29
Lakes	1	4	5
Bay of Plenty	0	21	21
Tairawhiti	0	1	1
Taranaki	0	23	23
Hawke's Bay	0	3	3
Whanganui	0	0	0
MidCentral	0	2	2
Wairarapa	0	26	26
Hutt Valley	0	27	27
Capital and Coast	2	33	35
Nelson Marlborough	0	18	18
West Coast	0	0	0
Canterbury	0	59	59
South Canterbury	0	7	7
Southern	1	84	85
Total	**19**	**555**	**574**

Source: ESR Whole Genomic Sequencing data, 24 February 2022. EpiSurv and Microreact 12pm 24 February 2022

Sequencing data may be two or more weeks after infection date. These cases are not a representative sample of all COVID-19 cases in the community.

Short-term projections

Scenario modelling versus actual cases

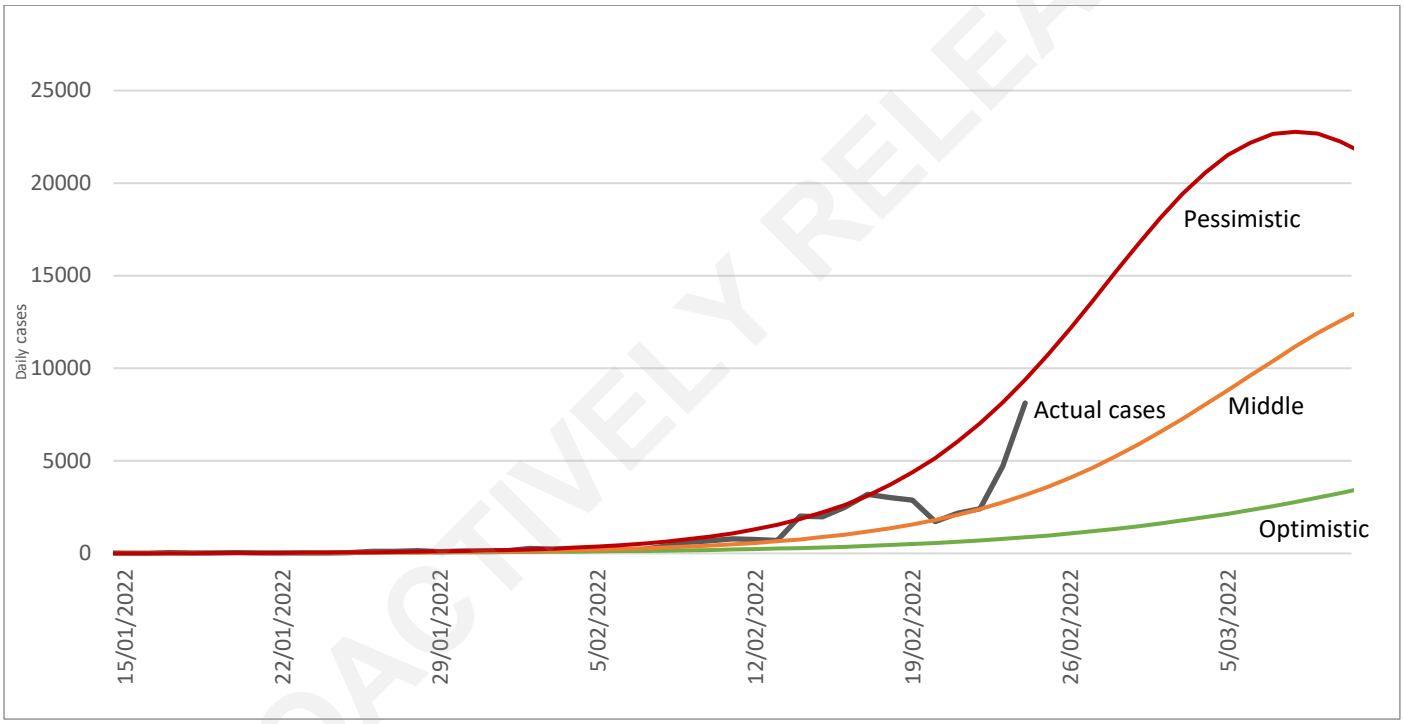
Predicted scenarios were updated by Te Pūnaha Matatini on 22 February.

As before, the scenarios are based on international transmission rates and the peak cases seen in **South Australia** ("Low"), **London** ("medium") and **New York** ("high"). Compared to previous reports, these scenarios now:

- Align the start date of outbreak with NZ surveillance data
- Adjust the "contact matrix" to match recent actual distributions of cases by age
- Predict fewer hospitalisations, because of the younger age distribution than previously expected

The outbreak is tracking above the "medium" scenario at a national level (Figure 15) and is consistent with peak hospital bed occupation being reached in the second half of March.

Figure 15: COVID-19 Modelling Aotearoa predictions compared to actual cases



Source: COVID-19 Modelling Aotearoa group (Te Pūnaha Matatini), 22 February 2022; Actual cases MoH to 24 February 2022.

Effective reproduction rate

The following sections were produced using the EpiNow package on 24 February using data to 21 February.[3]

- The median estimate of **effective R (R_{eff}) nationally is 1.9** [90% Credible Interval 1.3-2.7] for cases to 21 February, after adjusting for data lags.
- The median **estimate of doubling time** is around **3.0 days** [90% Credible Interval 1.7 – 8.2 days].
- The R_{eff} for the Auckland region is 1.8 [90% Credible Interval 1.2, 2.5], and the doubling time is 3.6 days [90% Credible Interval: 1.9 – 13.6].

Forecasts of cases and infections

Forecasting assumes that the Effective R will be constant over the next week at its most recent value, and that testing lags are constant. **The forecasts in this report should be interpreted as extrapolation of PCR tests only.**

Estimates of the number of new confirmed cases by their date of infection are in Figure 16.

Assuming that the current level of transmission stays constant:

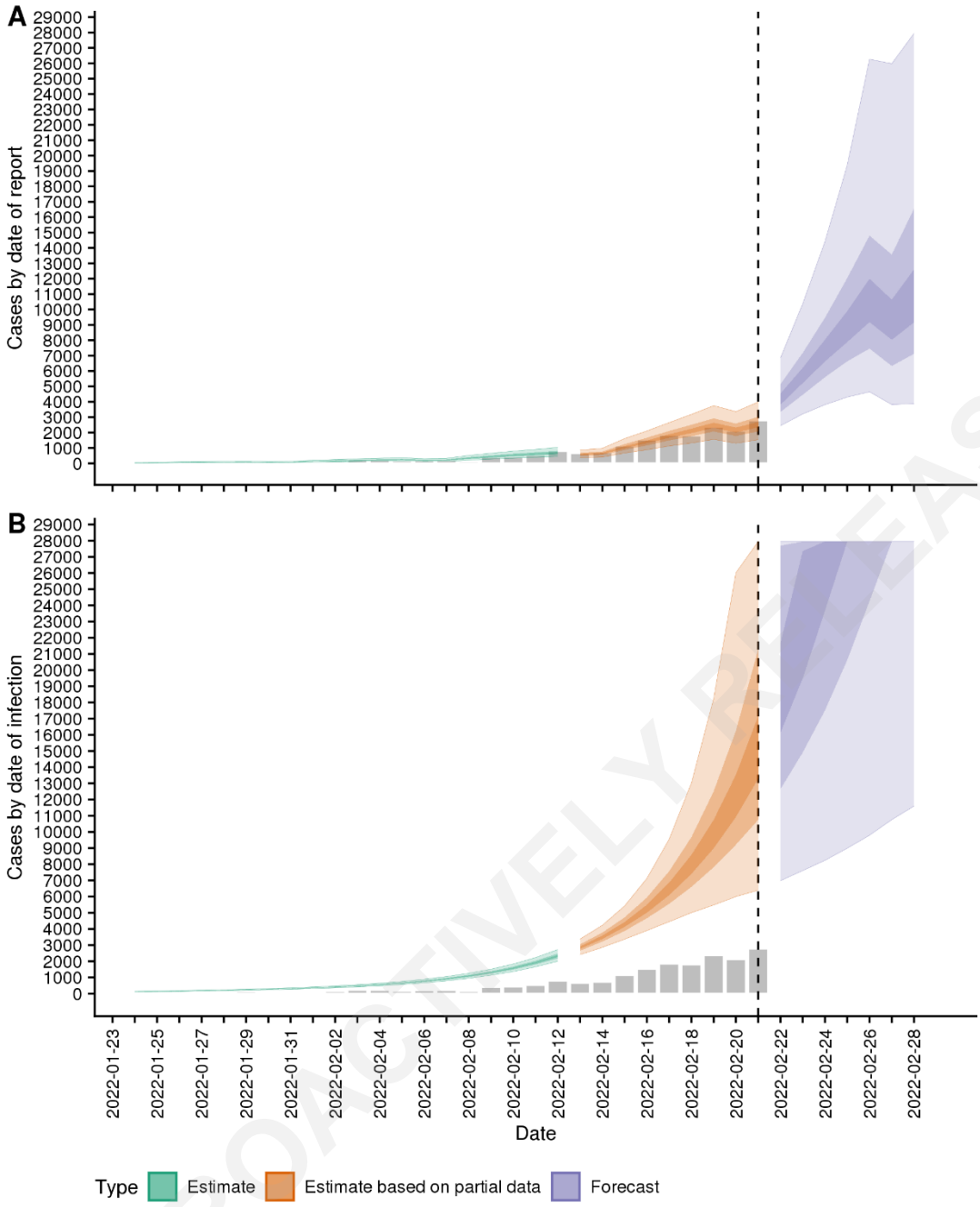
- The model's median estimate is that **national reported positive tests could rise to 10,834 cases per day by 28 February** (50% credible interval: 7,122 to 16,553). Reported positive tests in the Auckland region could rise to 5,671 cases per day by 28 February (50% CI: 3,655 – 8,703). The credible intervals for the projected cases would be even wider if the possibility of continuing trend increases in Effective R were included.
- The model estimated that 2,524 cases per day would be reported by 21 February, whereas 2,846 actual cases were reported – which suggests that the short-term predictions are robust.
- The model estimated that **there were already 15,046 infections per day by 21 February nationally** (50% CI: 10,751 – 21,286)[4].

Projections for other regions will be possible when case numbers there have risen further.

[3] The EpiNow package 'now-casts' and forecasts cases to measure current, past and future transmission nationally by calculating and then extrapolating the effective reproduction number, R_{eff}. The model does not consider several factors that may impact transmission, such as rapid changes in public health measures, population behaviour, mobility, or school holidays. This model requires sustained daily cases before it can make predictions. It only counts cases that become confirmed at some stage.

[4] "Infections" are defined as cases that will be reported in the next few days; asymptomatic cases are not included.

Figure 16: Community case numbers by date of report and date of infection for New Zealand



Source: Te Pūnaha Matatini, 23 February 2022. EpiNow2 projections based on Ministry of Health case data to 21 February 2022.

The smoothed estimates in green are based on complete data; estimates in orange allow for reporting delays in recent cases. Future estimates are in purple. All of the EpiNow package's estimates are shown with credible intervals of 20%, then 50%, and 90%.