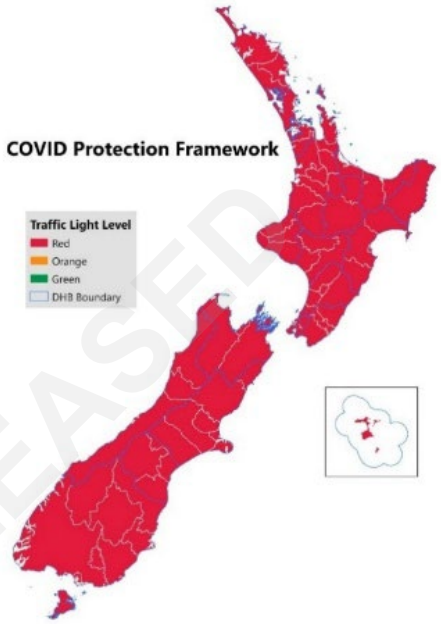
COVID-19

Trends and Insights Report

Updated 21 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 2.



Snapshot of the past 7 days

- **New community cases almost doubled** from the week 9-15 February 2022 (4,789) to the week 12-18 February 2022 (8,621).
- **Counties Manukau still has the largest proportion of cases at 42%,** a decrease from the 47% of cases it made up when last reported. **81% of cases are in four DHBs:** CMDHB, Auckland, Waitemata, and Waikato. Many other DHBs are starting to show sustained transmission.
- **Pacific Peoples remain the ethnic group most affected**, making up **46%** of cases. The proportion of cases reported as Asian (16%) **has been overtaken by European or Other** (20%). Cases in **Māori are accelerating**.
- **Two-thirds of cases are in 10-39 years old** (64%).
- **The outbreak continues to have an inequitable impact**, with the majority of cases in areas with the highest housing deprivation.
- **Most cases are fully vaccinated**, which is expected due to New Zealand's high vaccination levels.
- **Hospitalisations are rising rapidly** but are still below the levels seen in the 2021 Delta outbreak.
- **Testing rates and test positivity are highest in the Northern Region.** Five DHBs are above the WHO target of 5%. The highest test positivity is in Counties Manukau (9%); Auckland has 7% and Waitemata 5%. Test positivity for Midlands and Central Regions is slowly increasing. It remains low in Southern Region apart from **Nelson Marlborough DHB which has had a rapid increase to 6%** test positivity.
- "Nowcasting" to 18 February estimates the effective reproduction number **R_{eff} at 1.8** both nationally and in the Auckland region (95% Credible Interval: 1.3-2.7 for NZ). The **modelled doubling time is 3.5 days** (95%CI 1.8 – 13.0 for NZ).

Contents

Exposure Events and Clusters of Concern 3
Recent cases 4
Epidemic Curves 6
Cases by Ethnicity 11
Cases by Age 17
Cases by socio-economic indicators 18
Community Testing 20
Hospitalisation 22
Variants of Concern 23
Short-term projections 24
Scenario modelling versus actual cases 24
Effective reproduction rate 24
Projections of cases 25
Nowcasts of cases and infections 25

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 18 February 2022 by DHB, age, sex and ethnicity.

Cases have continued to significantly increase in the week to 18 February with 8,621 new cases reported; almost 4,000 of these cases were reported in the past two days (16 - 18 February).

- The DHBs with the most reported cases are Counties Manukau, Auckland, Waitemata and Waikato (Table 1**). Cases in these regions account for 81% of all cases** reported in the week (42%, 18 %, 11%, and 10% respectively).
- The **spread of the outbreak beyond Counties Manukau** is shown in its share of all reported cases decreasing slightly to 42% of all cases, down from 47% in the previous report (Table 1).
- **The most-reported ethnicity in recent cases is Pacific**, followed by European & Other, Asian, and then Māori. While Māori numbers are still relatively low in absolute terms, the increase in that population is accelerating (Figure 9).
- There is little difference in the number of cases by sex (Table 3).
- **Cases continue to be highest for 20–29-year-olds** (26%), with 10-19 (20%), and 30-39 (18%) age bands also having high case numbers (Table 4). Of particular note, cases in the 10-19 year age band have more than doubled, from 863 to 2,278. Cases in the 20–29-year-old age group have doubled, from 1,154 to 2,278 since the last report (Table 4).

Table 1: Community cases by DHB from 12 February to 18 February 2022

DHB	Community cases reported since 12 February
Northland	174
Waitemata	972
Auckland	1522
Counties Manukau	3646
Bay of Plenty	221
Waikato	870
Tairawhiti	53
Lakes	86
Taranaki	44
Hawke's Bay	68
Whanganui	38
MidCentral	42
Hutt Valley	127
Capital and Coast	154
Wairarapa	70
Nelson Marlborough	173
West Coast	1
Canterbury	91
South Canterbury	14
Southern	250
Unknown	5
Total	8621

Source: NCTS/EpiSurv 2359hrs 18 February 2022

Table 2: Community cases by ethnicity from 12 February to 18 February 2022

Ethnicity	New community cases since 12 February
Māori	1078
Pacific Peoples	3990
Asian	1369
European or Other	2107
Unknown	77
Total	8621

Source: NCTS/EpiSurv 2359hrs 18 February 2022

Table 3: Community cases by sex from 12 February to 18 February 2022

Sex	New community cases since 12 February
Female	4214
Male	4386
Unknown	21
Total	8621

Source: NCTS/EpiSurv 2359hrs 18 February 2022

Table 4: Community cases by age from 12 February to 18 February 2022

Age	New community cases since 12 February
0-9	992
10-19	1701
20-29	2278
30-39	1548
40-49	956
50-59	674
60-69	323
70+	149
Total	8621

Source: NCTS/EpiSurv 2359hrs 18 February 2022

Epidemic Curves

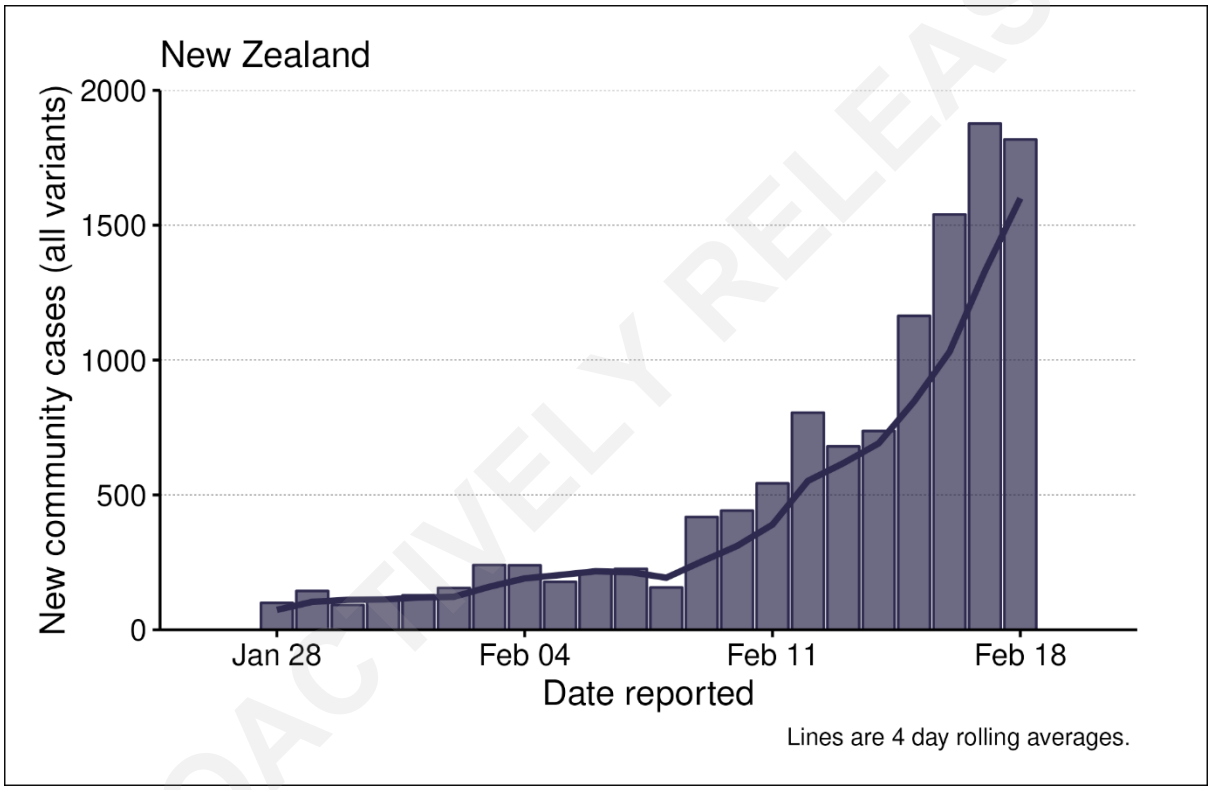
Figure 1 and Figure 2 below show the number of new cases reported in the three weeks from 28 January 2022 to 18 February 2022 nationally and by DHB respectively.

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.

The outbreak is most established in the three large DHBs in the Northern Region (excluding Northland); followed by the Midland region, especially the **Waikato DHB** (Figure 3).

After weeks of few reported cases, the Omicron outbreak appears to becoming established in Nelson Marlborough, Southern, Capital & Coast, and Hutt Valley DHBs (Figure 4).

Figure 1: Daily community cases nationally from 28 January to 18 February 2022



Source: NCTS/EpiSurv as at 2359hrs 18 February 2022

Figure 2: Daily community cases by region from 28 January to 18 February 2022 - by region

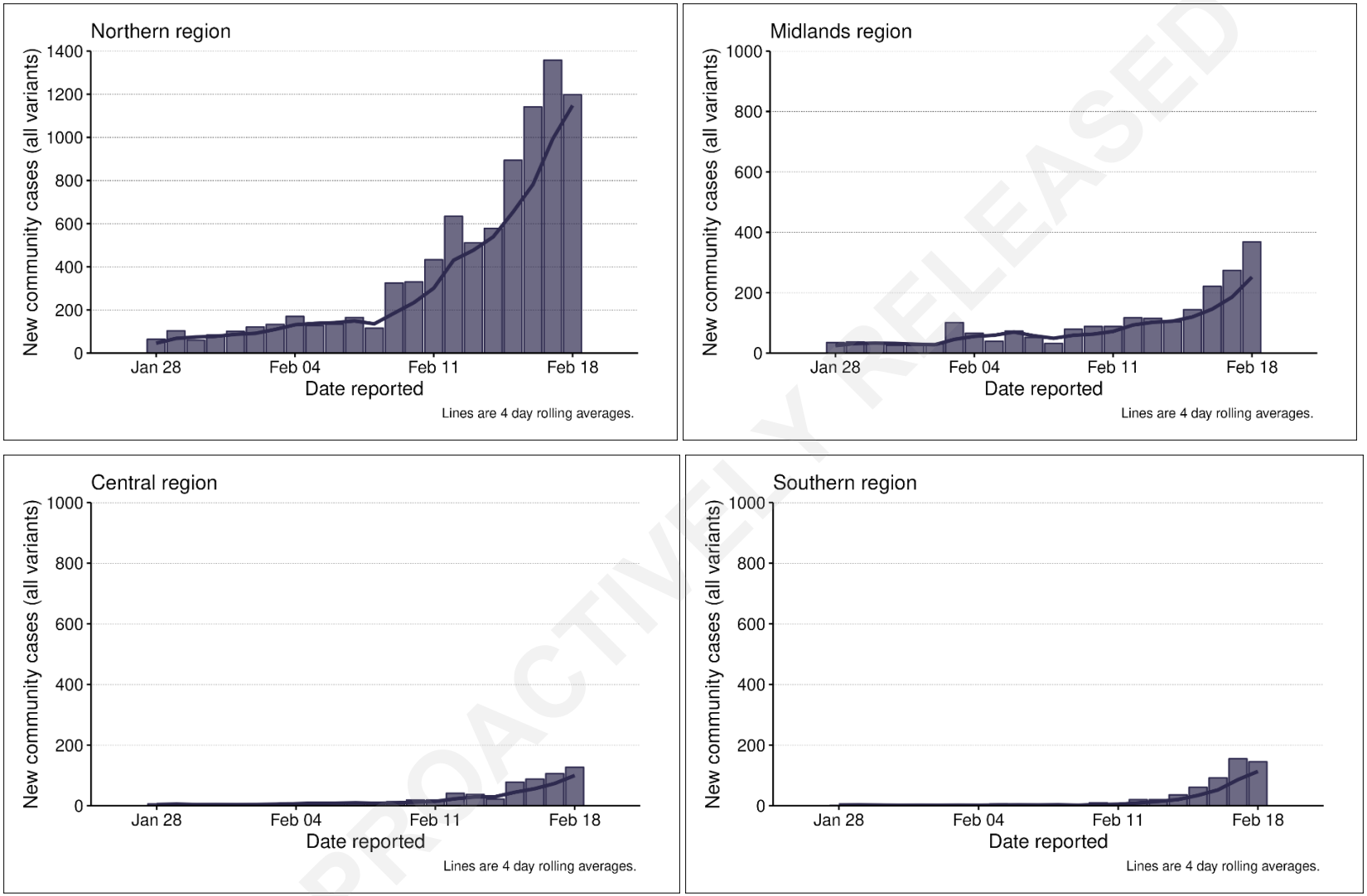


Figure 3: Daily community cases by DHB from 28 January to 18 February 2022 – Northern Region DHBs

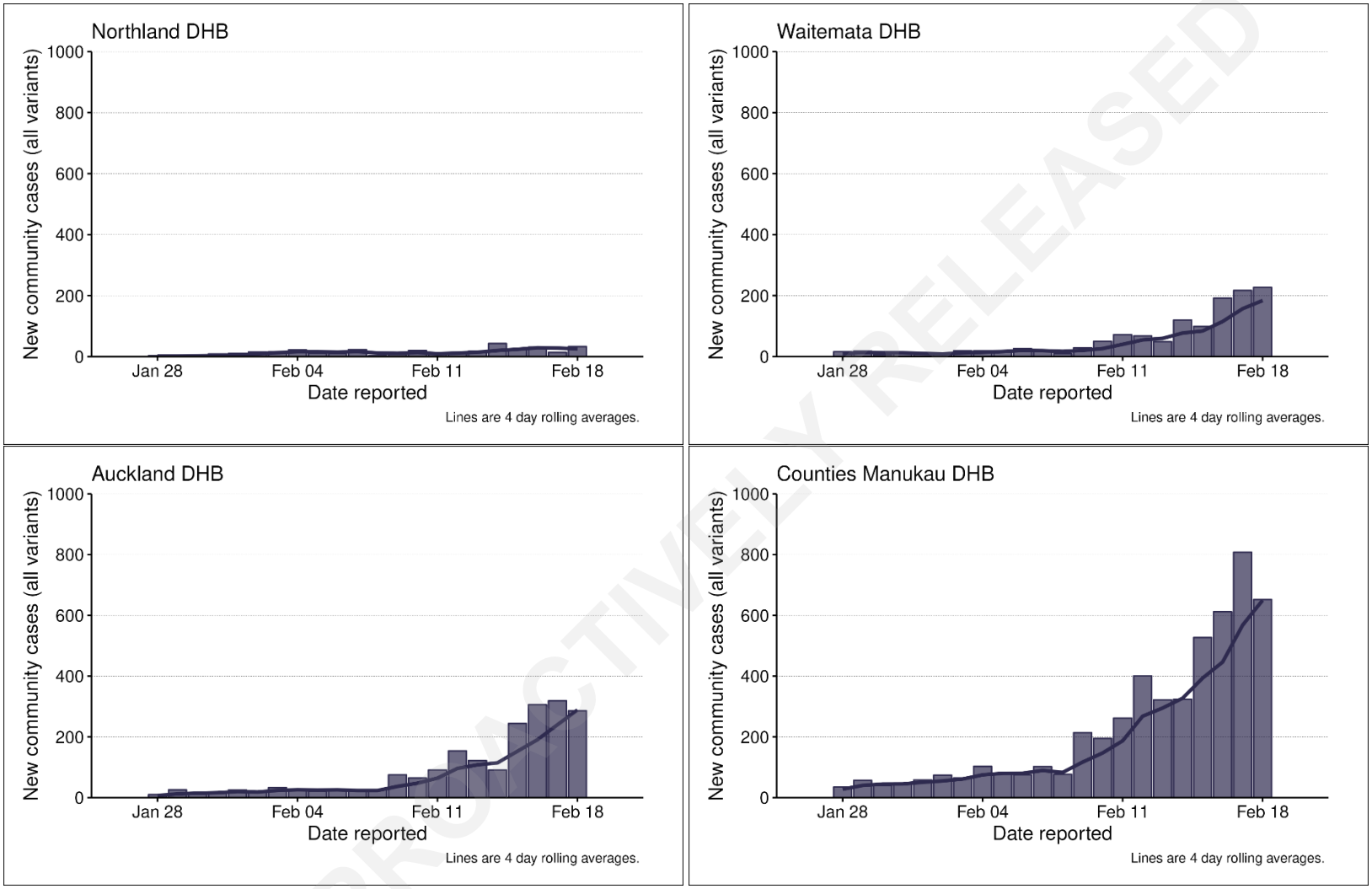
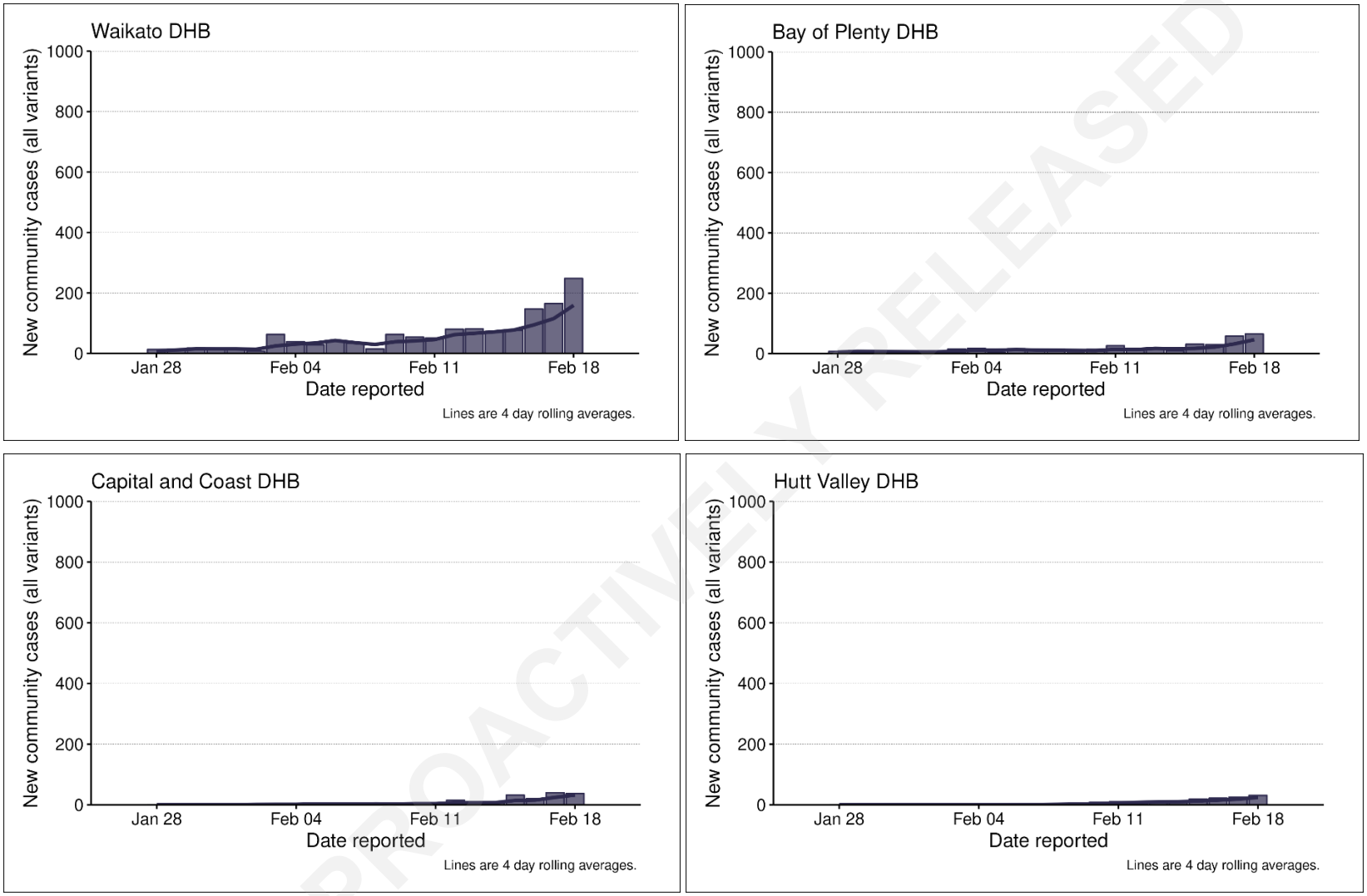
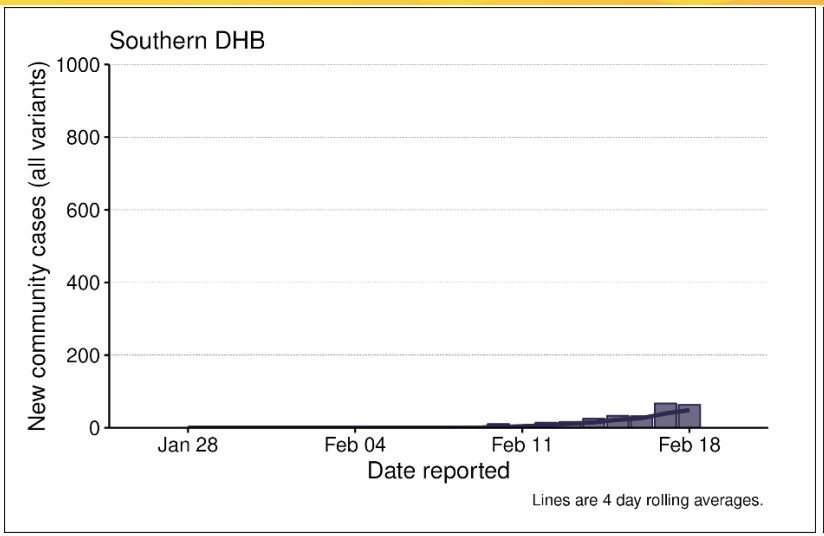
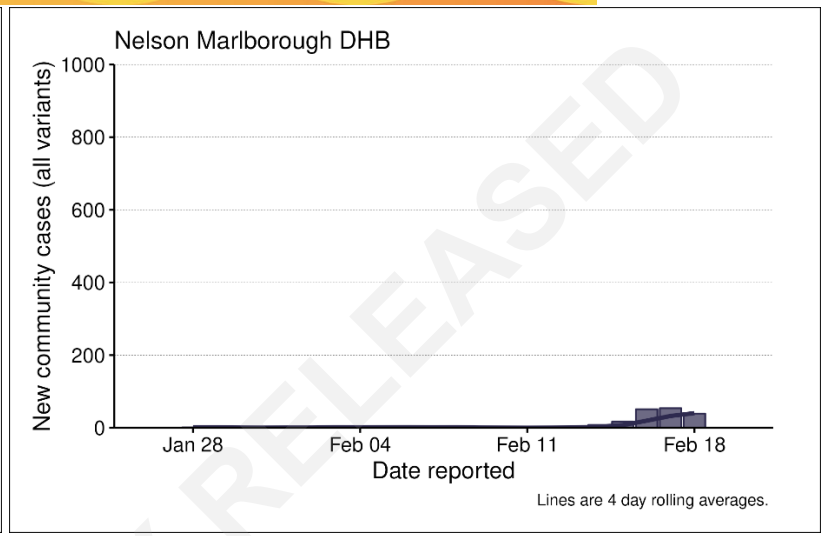


Figure 4: Daily community cases by DHB from 28 January to 18 February 2022 – selected DHBs







Source: NCTS/EpiSurv as at 2359hrs 18 February 2022

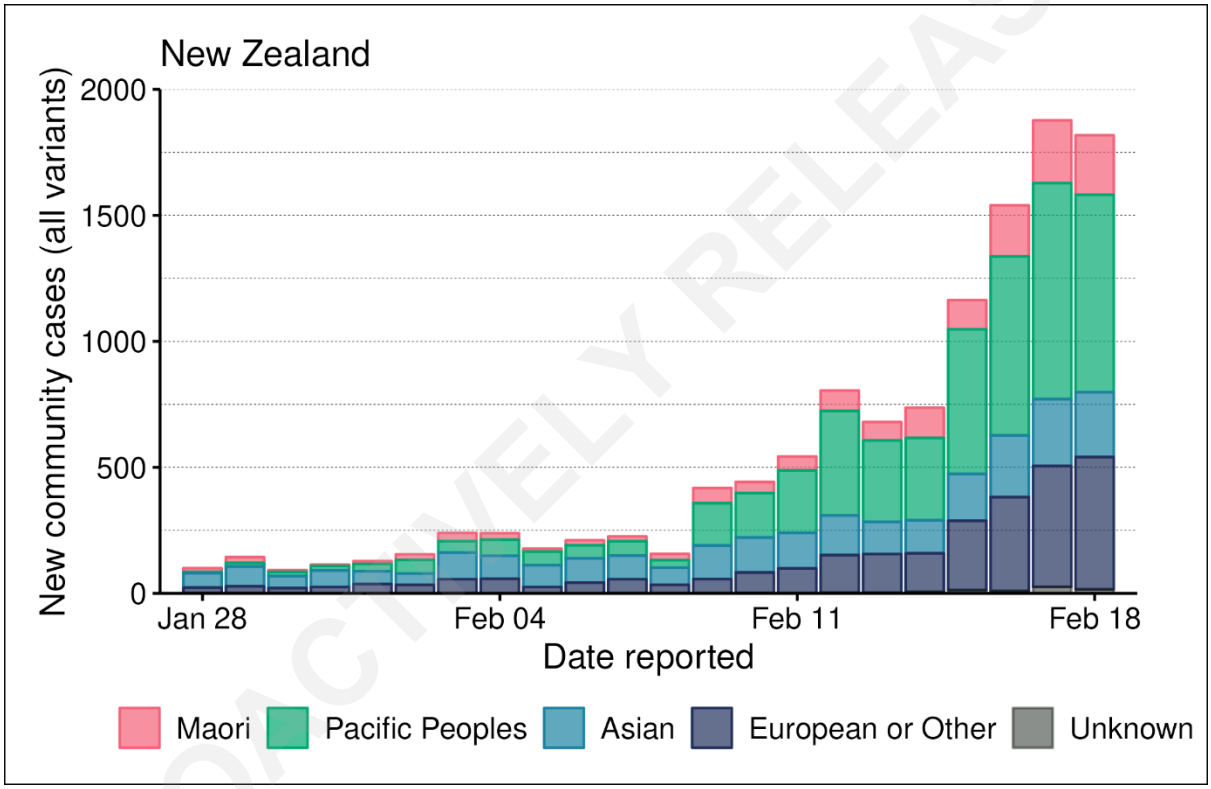
Cases by Ethnicity

Figure 5 to Figure 7 on pages 11-13 show the ethnicity of new cases reported in the three weeks from 28 January 2022 to 18 February 2022, as a four-day rolling average.

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 around 9 February, that group's case numbers have been overtaken by people of Pacific and then European or Other ethnicities.

The number of cases in Māori, while still low, is now rising rapidly as the outbreak spreads beyond Counties-Manukau into the Waikato and the Central Region DHBs.

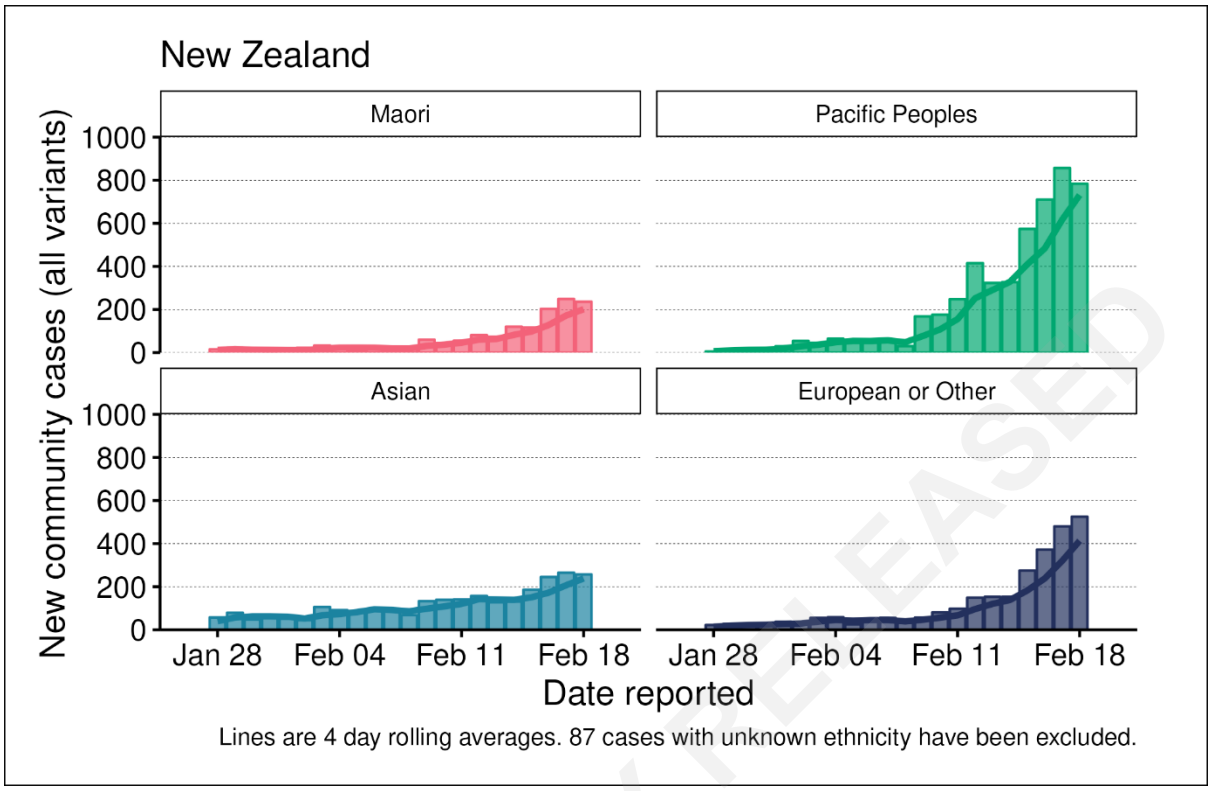
Figure 5: Daily community cases across New Zealand, by ethnicity from 28 January to 18 February 2022



Source: NCTS/EpiSurv 2359hrs 18 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 6: Daily and rolling 4 day of average community cases across New Zealand, by ethnicity from 28 January to 18 February 2022



Source: NCTS/EpiSurv 2359hrs 18 February 2022

Figure 7: Daily cases by ethnicity and DHB from 28 January to 18 February 2022 – by region

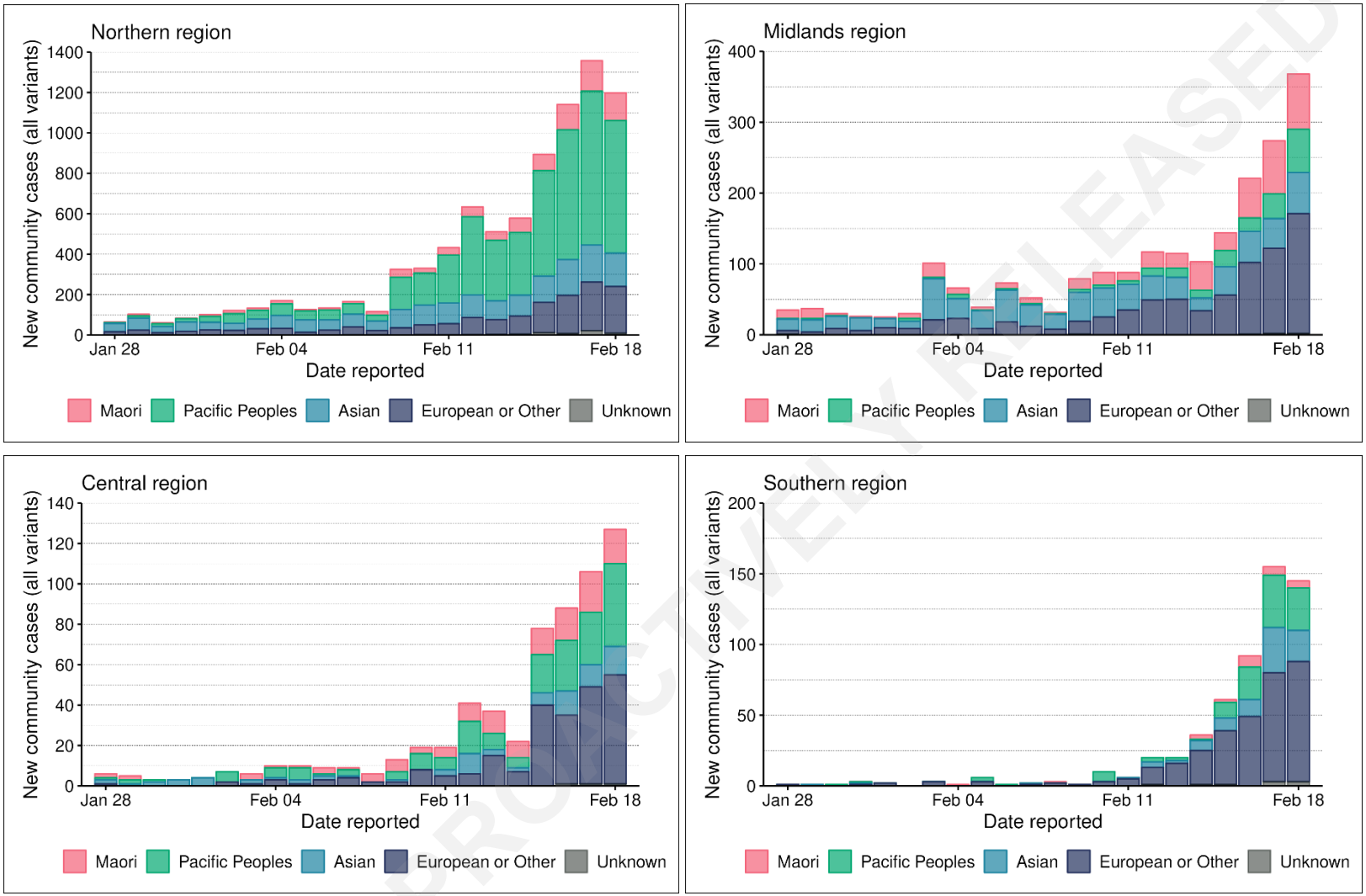
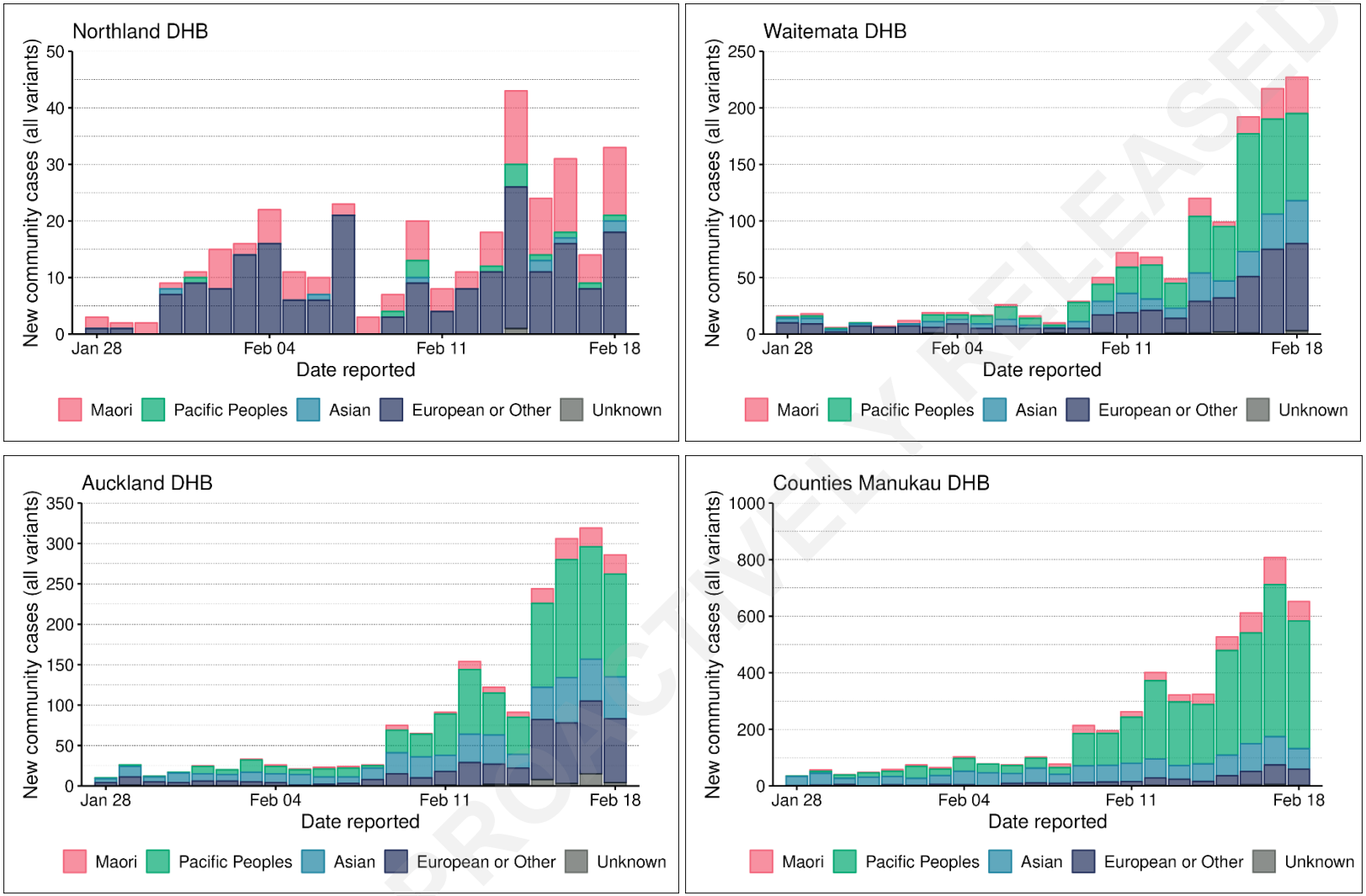
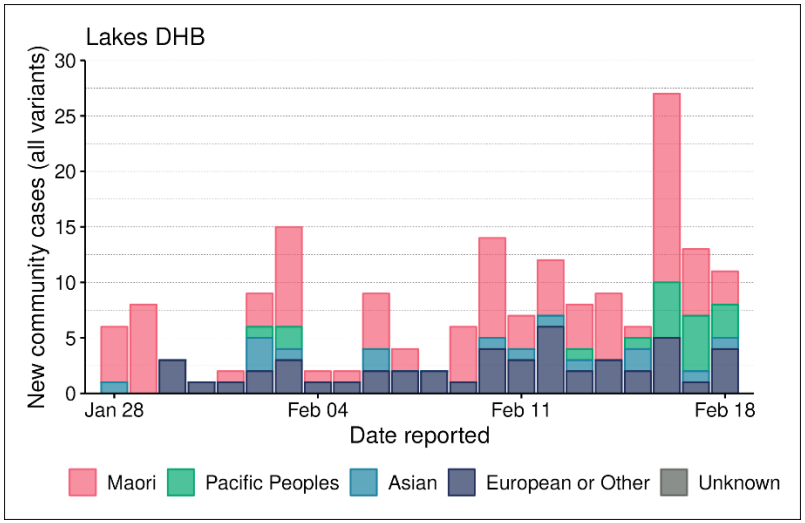
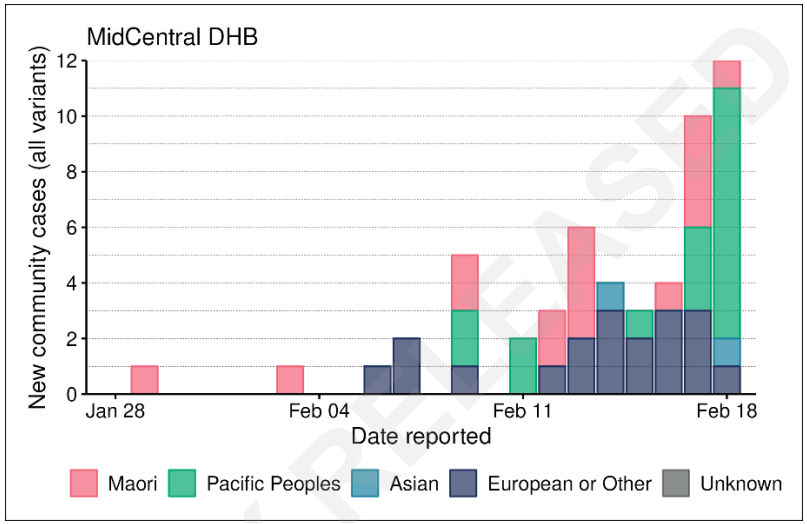
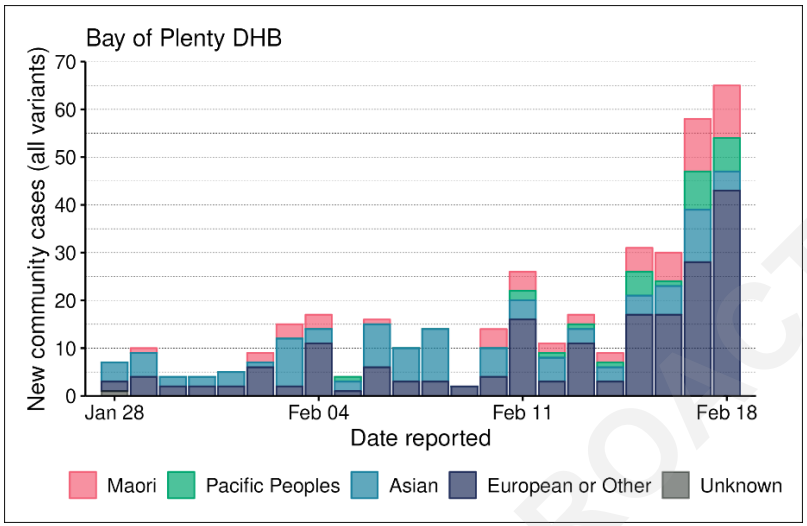


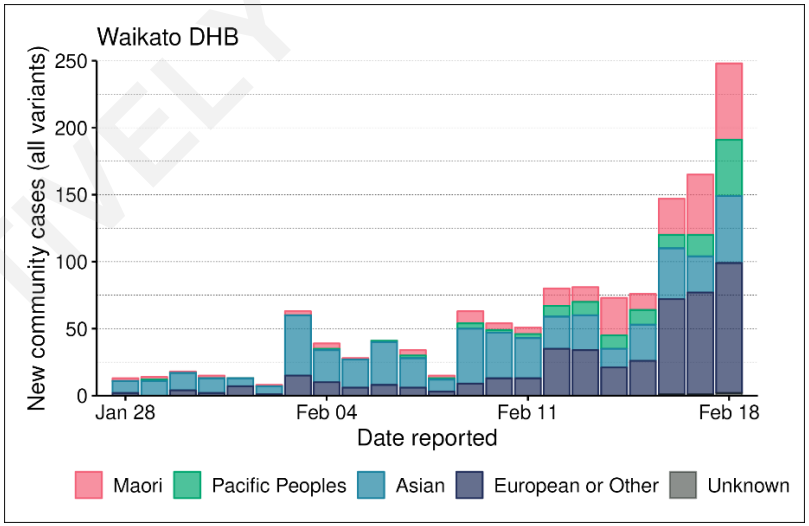
Figure 8: Daily cases by ethnicity and DHB from 28 January to 18 February 2022 – selected DHBs

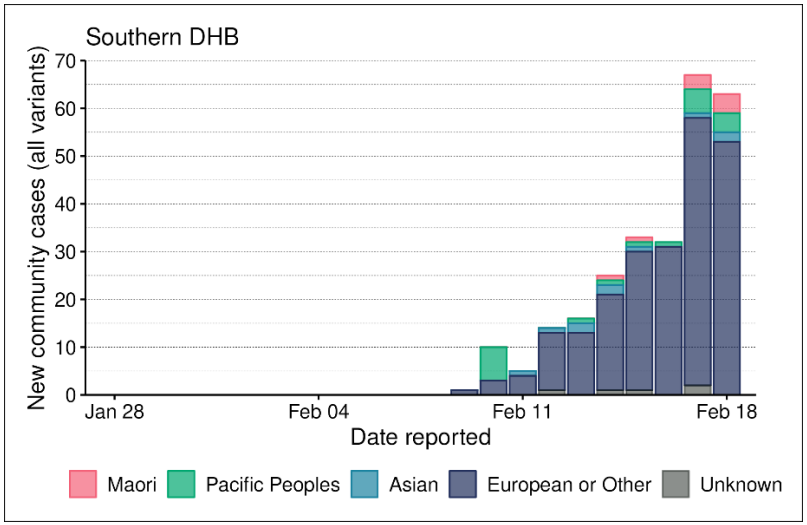












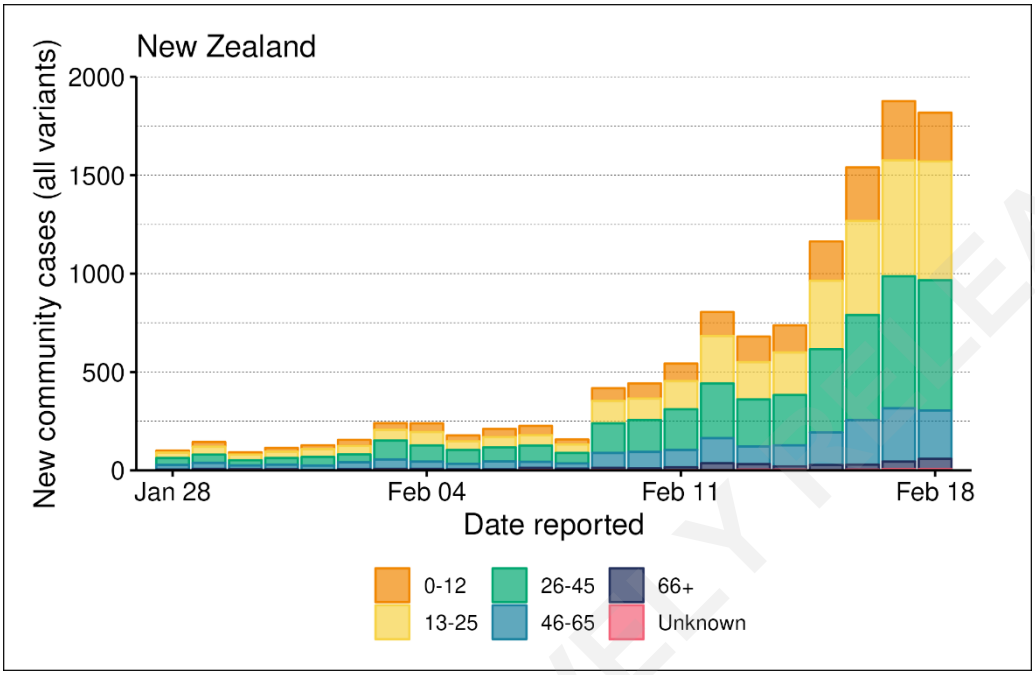
Source: NCTS/EpiSurv 2359hrs 18 February 2022

Cases by Age

Figure 9 shows new cases by age group from 28 January to 18 February 2022, as a four-day rolling average.

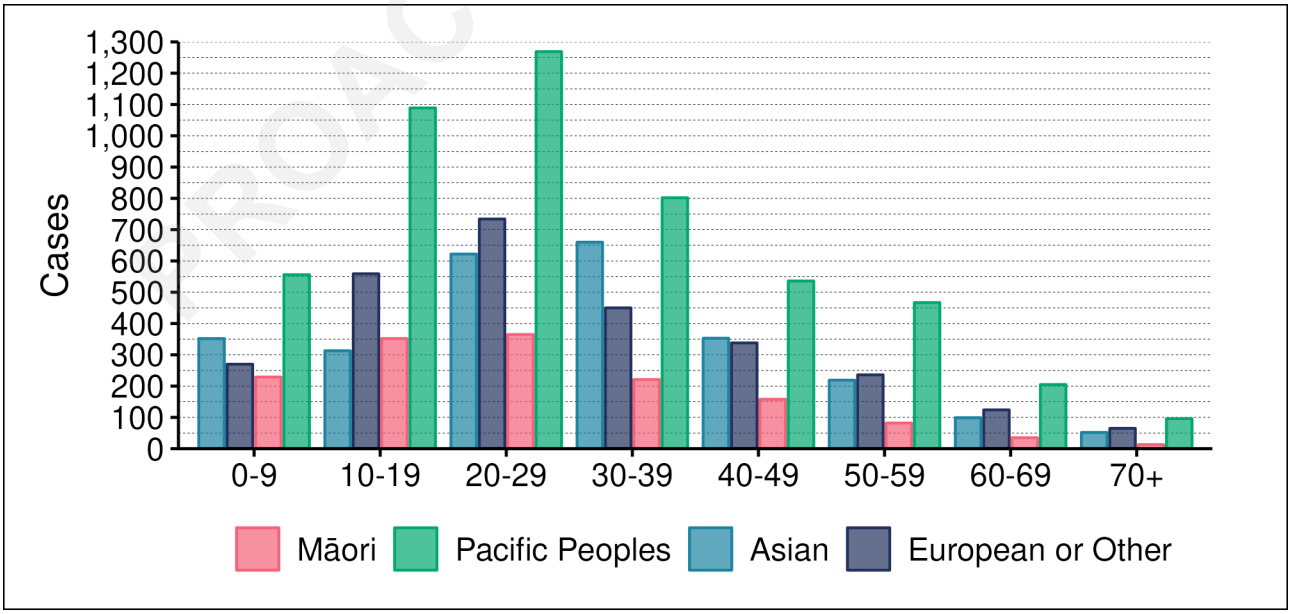
In the four days to 18 February, cases in the 13 to 45 age range increased more than in children 0-12 or in older adults 46+.

Figure 9: Four-day rolling average of COVID-19 community case numbers by age for 28 January to 18 February 2022



Source: NCTS/EpiSurv 2359hrs 18 February 2022

Figure 10: COVID-19 community case numbers by prioritised ethnic group and age group, 28 January to 18 February 2022



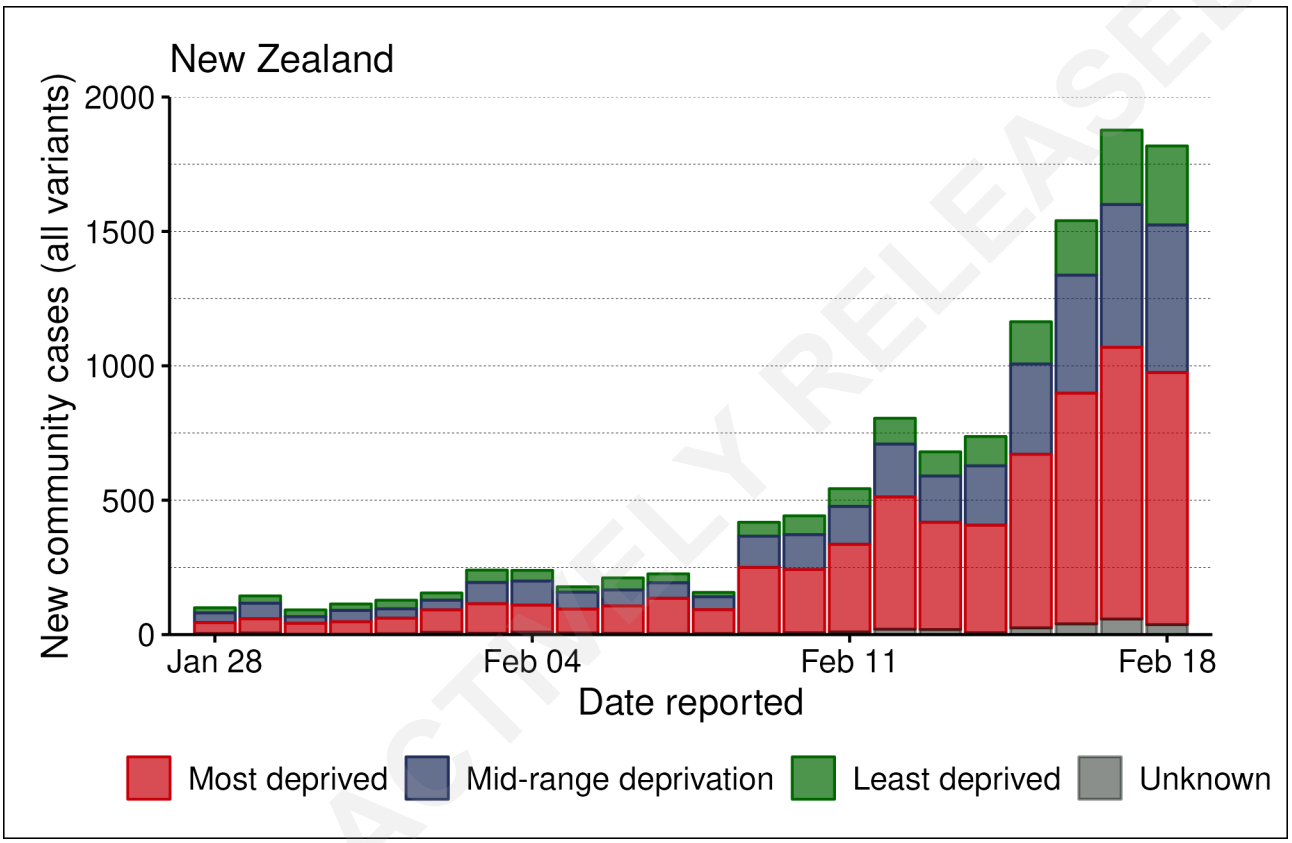
Source: NCTS/EpiSurv 2359hrs 18 February 2022

Cases by socio-economic indicators

Figure 11 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, it is spreading to people in mid-and least-deprived areas.

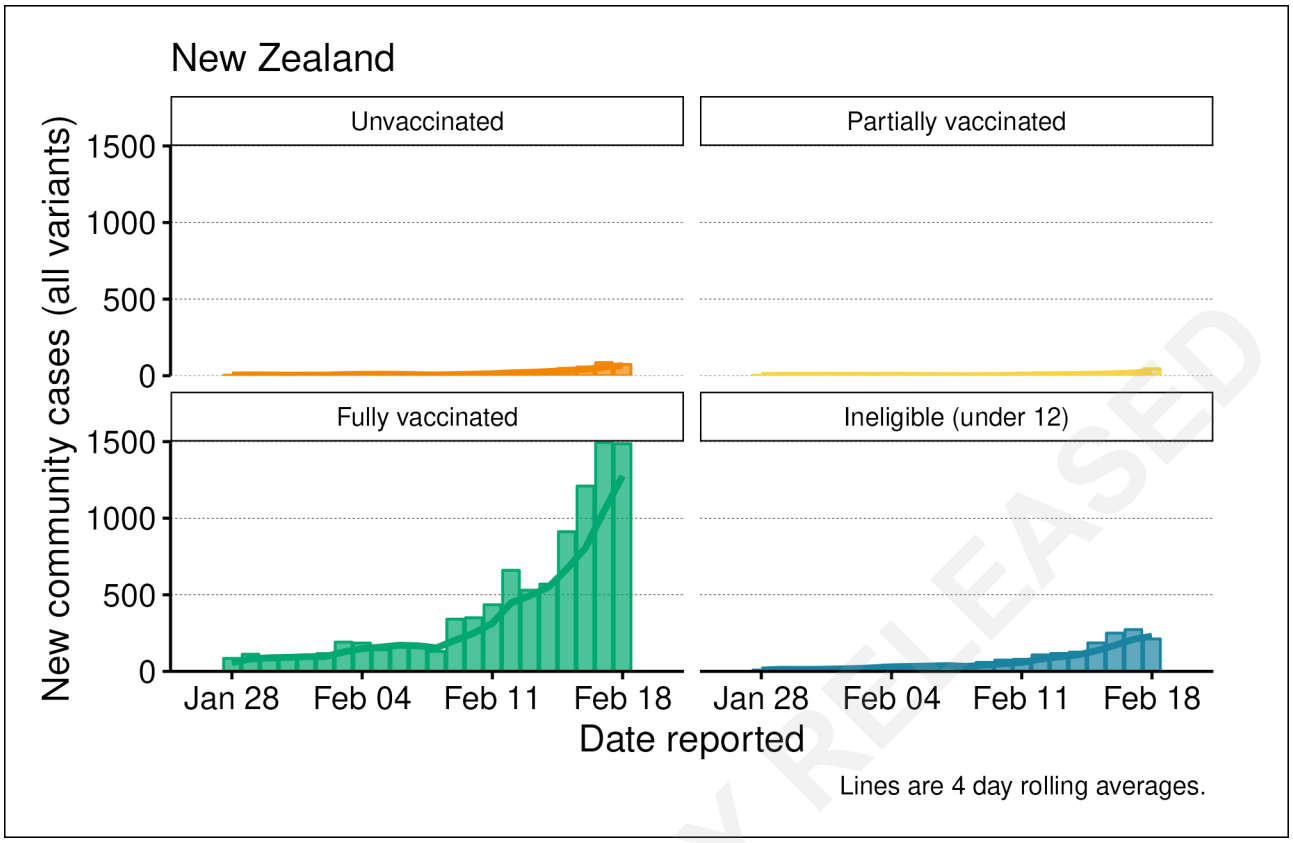
Cases by vaccination status are shown in Figure 12. As cases have steadily risen from late January onwards, the fully vaccinated are the most represented in case numbers. This is expected due to the high level of vaccination across New Zealand, with over 95% of people aged 12+ now having at least two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

Figure 11: COVID-19 community cases between 28 January 2022 and 18 February 2022, by housing deprivation level



Source:EpiSurv/NCTS/CVIP 2359hrs 18 February 2022

Figure 12: COVID-19 community cases between 28 January 2022 to 18 February 2022, by vaccination status



Source:EpiSurv/NCTS/CVIP 2359hrs 18 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 28 January 2022 to 18 February 2022.

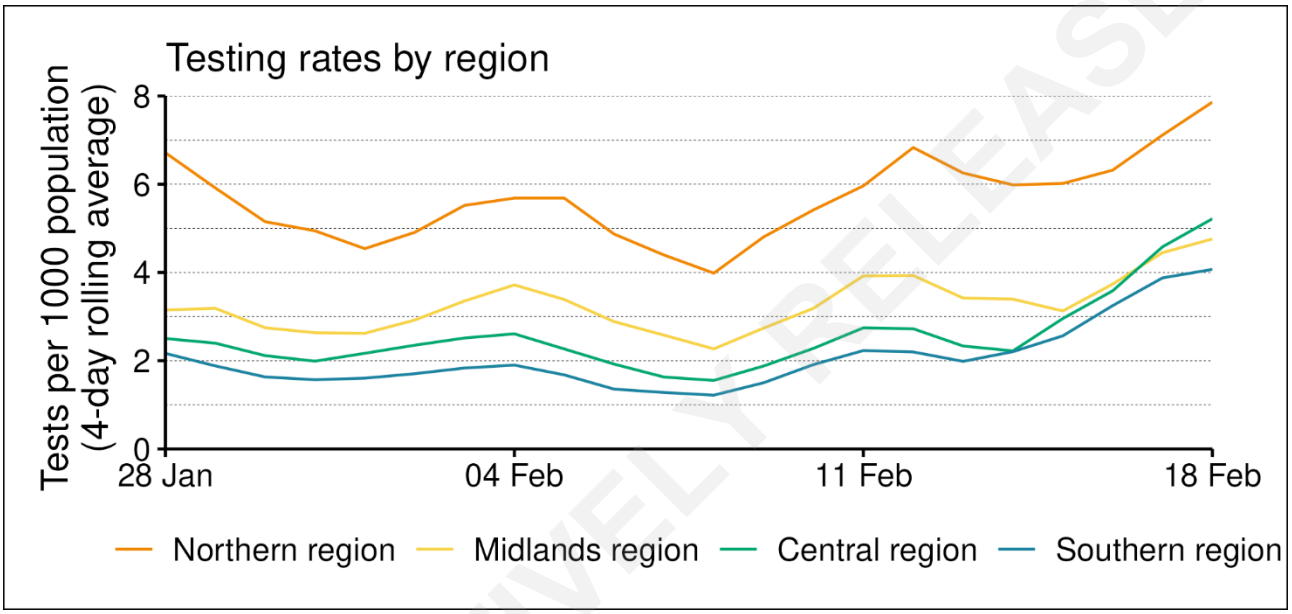
Tests per 1,000 population are increasing in all regions. They remain highest in the northern region DHBs (Figure 13).

Test positivity increased since 11 February. **Five DHBs are now above the WHO target of 5%:** Counties-Manukau has the highest test positivity rate, of 9% (Figure 14).

Positivity rose above 6% in Nelson-Marlborough.

Test positivity improved in Northland, falling below 4% in recent days.

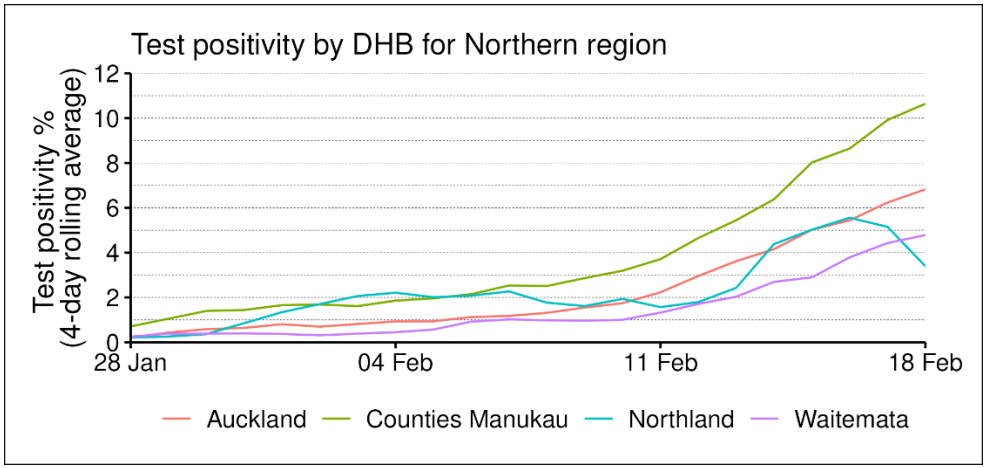
Figure 13: Testing rate by region[2] (four day rolling average) by region and DHB, 28 January to 18 February 2022

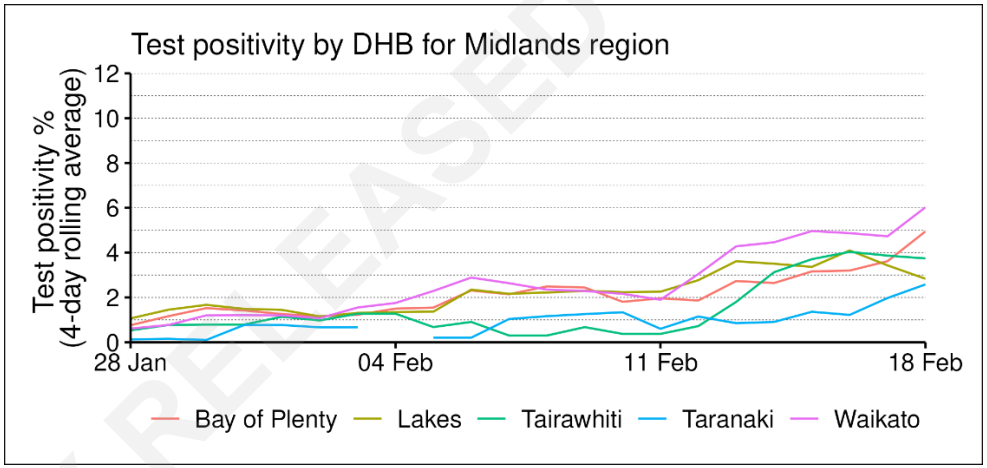


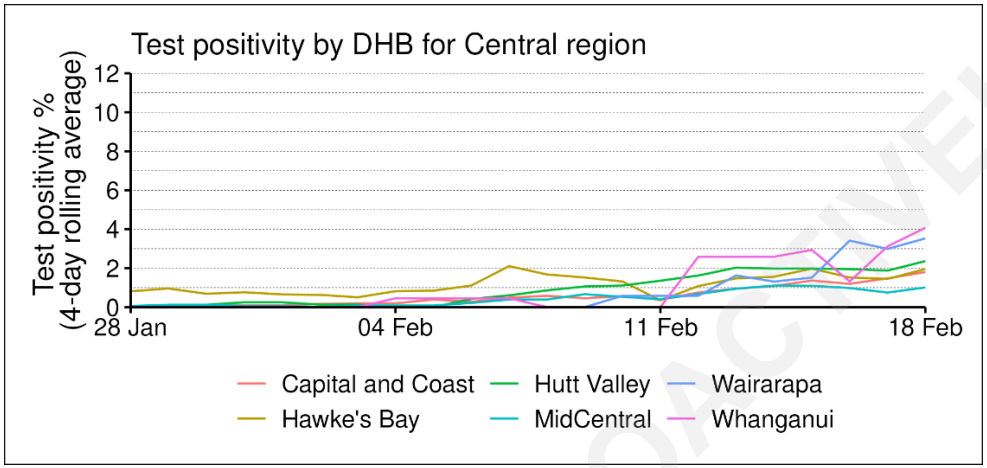
Source: Éclair testing database 18 February 2022; Excludes tests in returnees and border workers.

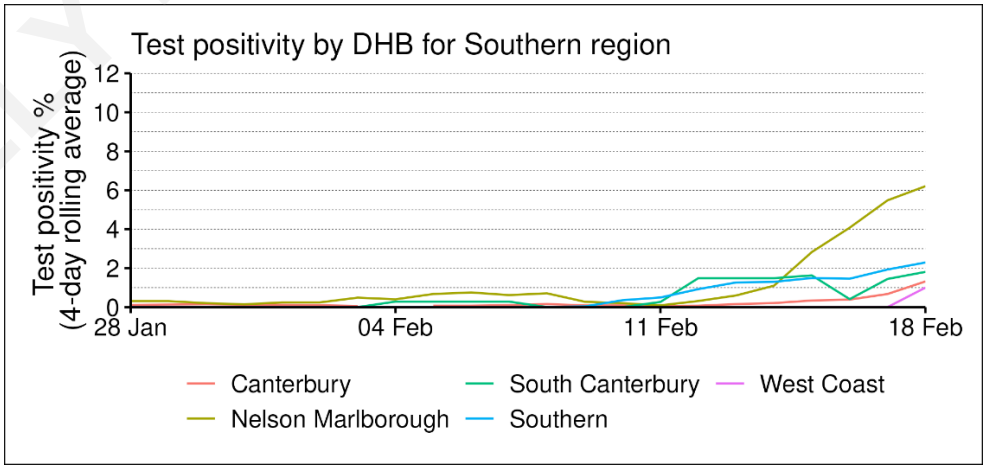
[2] **Northern Region**: Auckland, Counties Manukau, Northland & Waitemata DHBs. **Midlands Region**: Bay of Plenty, Lakes, Tarawhiti, Taranaki & Waikato DHBs. **Central Region**: Capital and Coast, Hutt Valley, Wairarapa, Hawke's Bay, Midcentral & Whanganui DHBs. **Southern Region**: Canterbury, Southern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

Figure 14: Test positivity (four day rolling average) by region and DHB, 28 January to 18 February 2022









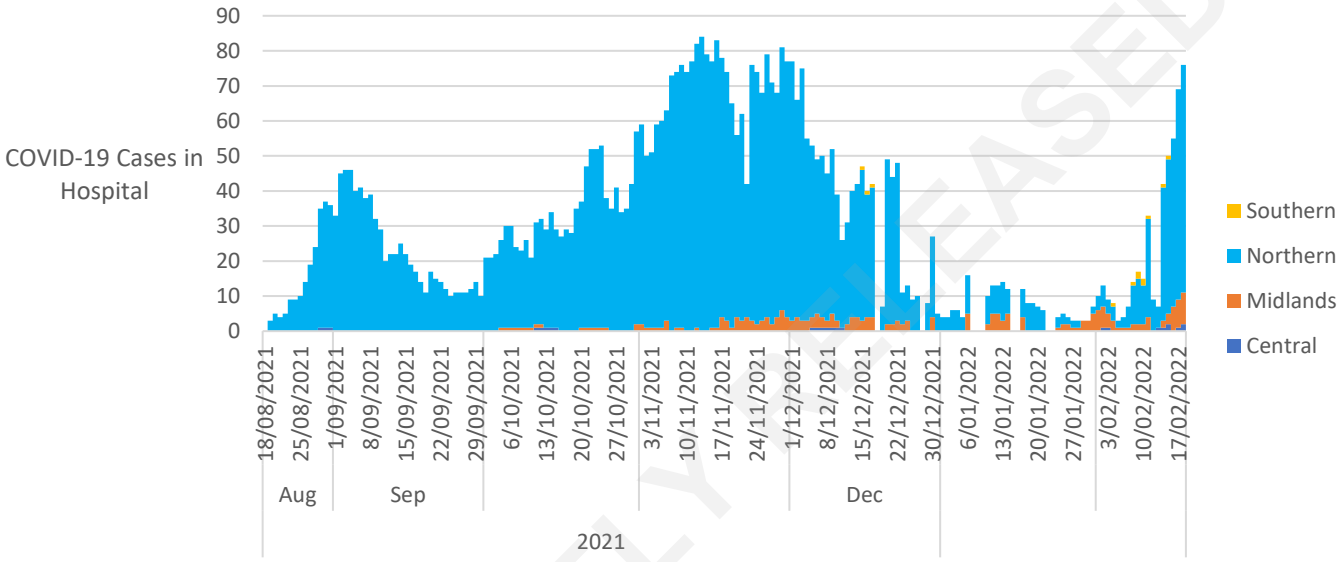
Source: Éclair testing database 15 February 2022, EpiSurv 18 February 2022

Hospitalisation

The number of COVID-19 positive cases in hospital is based on DHB daily reports to the Ministry of Health. While the data may be incomplete, they show that the number of people in hospital has risen rapidly from the 3 hospitalisations observed at the end of January 2022

By 18 February, there were over 75 confirmed COVID-19 positive cases in hospital. Both border and community cases are included.

Figure 15: COVID-19 cases in hospital, by region and day



Source: DHB daily reports to MoH, 18 February 2022. Hospitalisation data are reported manually by DHBs. Data may be incomplete on some days. DHBs are grouped by region.

Variants of Concern

No recent Delta cases identified in hospital

Whole genomic sequencing (WGS) identifies the variant of all confirmed cases that are hospitalised.

The last known Delta case to be hospitalised was in Wellington with a WGS report date of 2 February 2022. Sequences are only available for three hospitalised cases after that date; all were Omicron.

Few community sequences are Delta variant

The last known Delta case in the community was reported on 14 February. The only others in February were two reported on 11 February. 149 community cases were identified as Omicron up to 16 February.

Table 5 Variants of Concern, Community Cases

Variant	Sequences	%
Omicron	149	96%
Delta	3	2%
Fail	4	3%
Total	**156**	**100%**

Source: ESR Whole Genomic Sequencing data, 18 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.

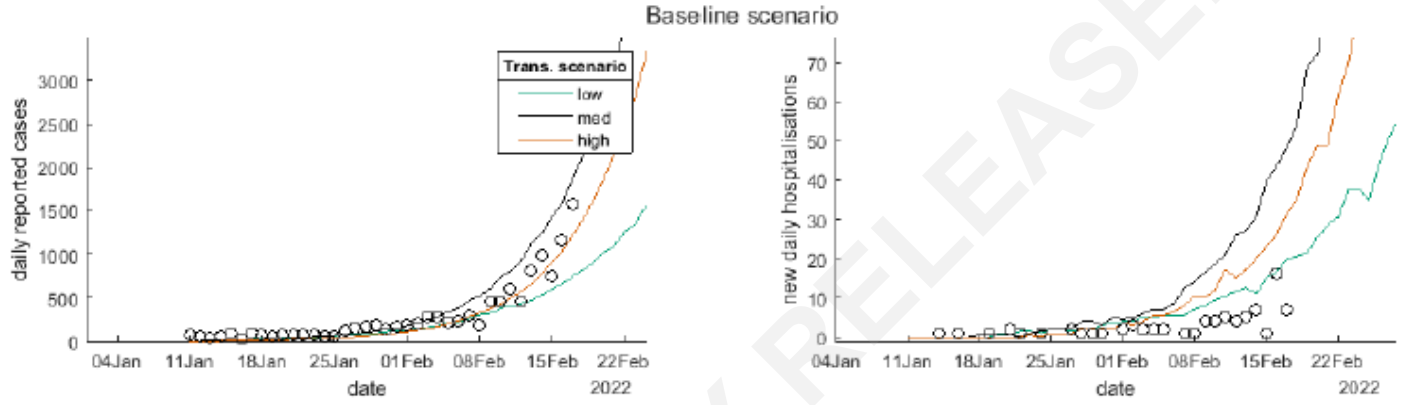
Short-term projections

Scenario modelling versus actual cases

Cases to date are tracking within the predicted range, but hospitalisations are lower than expected. The modelling scenarios will be updated this week. Recent data on cases by age will be used to estimate how people are changing their infection risk in response to the outbreak.

The COVID-19 Modelling Aotearoa group has compared previous predictions to recent cases (Figure 16). It appears that there are fewer cases than predicted in older working-age people 40+, suggesting that they are more likely than expected to reduce exposure by working from home or wearing masks.

Figure 16: COVID-19 Modelling Aotearoa predictions compared to actual cases



Source: COVID-19 Modelling Aotearoa group (Te Pūnaha Matatini), 18 February 2022

The scenarios are aligned with international case growth rates and the peak cases seen in **South Australia** ("Low"), **London** ("medium") and **New York** ("high").

Effective reproduction rate

The underlying growth in case numbers has remained constant over the last week.

The median estimate of **effective R (R_{eff}) nationally is 1.8** [95% Credible Interval 1.3-2.7] for cases to 18 February, after adjusting for data lags.

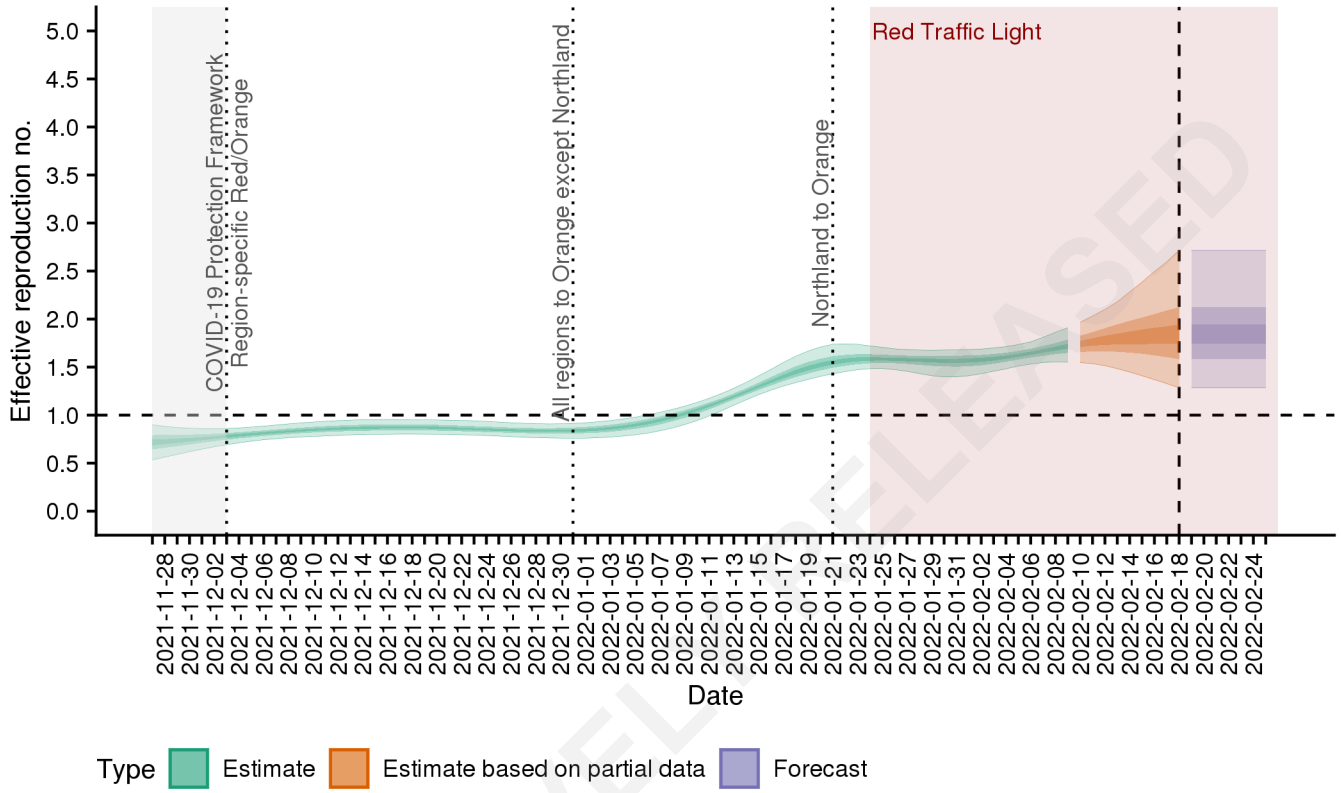
The median **estimate of doubling time** is around **3.3 days** [95% Credible Interval 1.7 – 9.3 days].

The R_{eff} for the Auckland region is 1.8 [95% Credible Interval 1.2-2.6], and the doubling time is 3.5 days [95% Credible Interval: 1.8 – 13.0].

Projections of cases

The estimates assume that Effective R will be constant over the next week at its most recent value. The credible intervals for the projected cases would be even wider if the possibility of continuing trend increases or decreases in Effective R were included.

Figure 17: Effective R, all of New Zealand; actual and estimated



Source: Te Pūnaha Matatini, 21 February 2022. EpiNow2 projections based on Ministry of Health case data to 18 February 2022.

Nowcasts of cases and infections

Estimates of the number of new confirmed cases by their date infection are given for New Zealand in Figure 18, and for the DHBs in the Auckland region in Figure 19. The model uses the estimated R_{eff} and recent data on the lag between infection and subsequent reporting to estimate that **there were already 7,433 infections per day by 18 February** (50% CI: 5,188 – 10,983), when only 2,077 cases per day had been reported.[3]

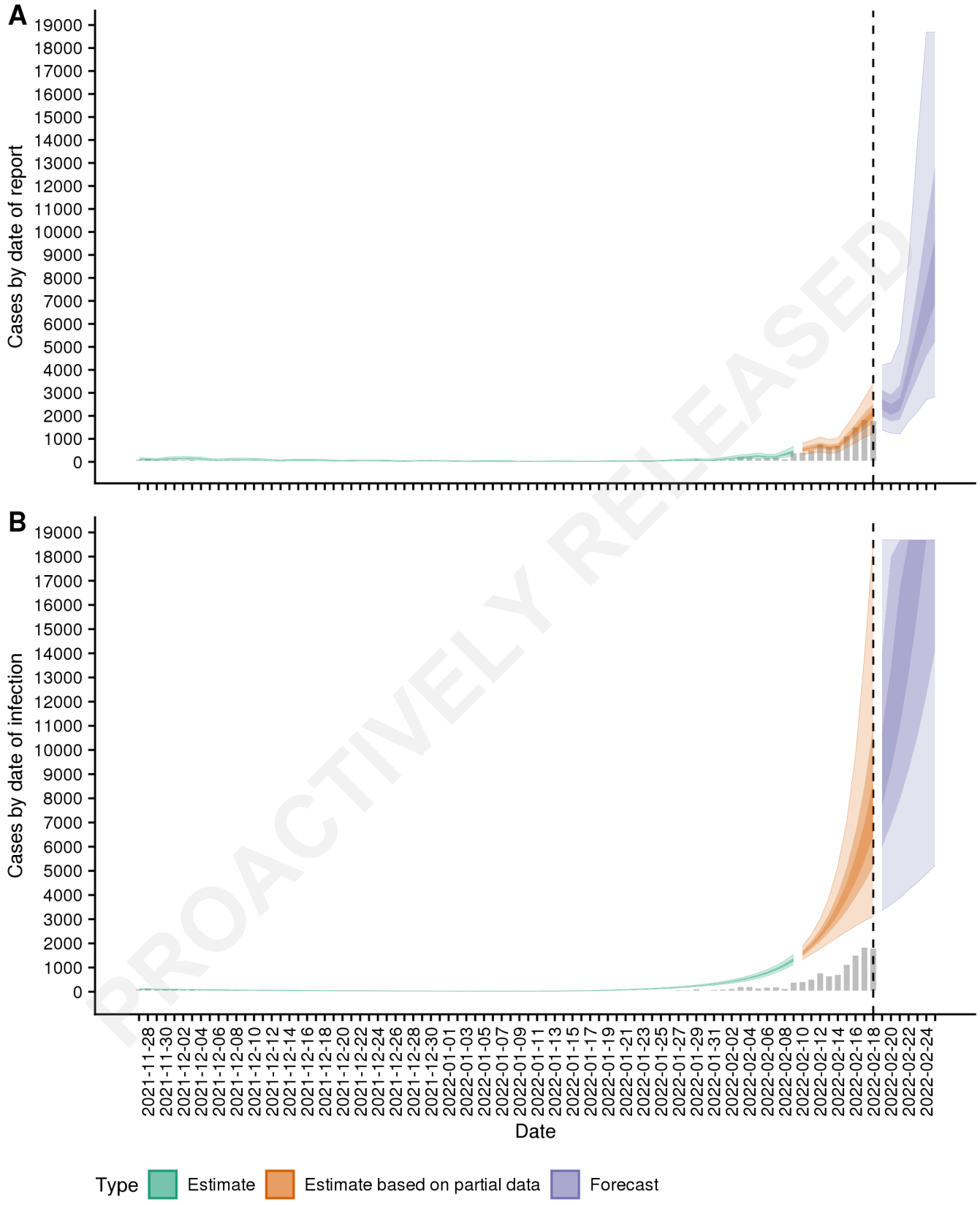
Assuming that the current level of transmission stays constant, the model's median estimate is that **national reported cases could rise to 8,143 cases per day by 25 February** (50% credible interval: 5,234 to 12,885). Reported cases in the Auckland region could rise to 5,573 cases per day by 25 February (50% CI: 3,504 – 8,990).

Projections for other regions will be possible when case numbers there have risen further. [4]

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

[4] The EpiNow package 'now-casts' cases to measure current and past 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.

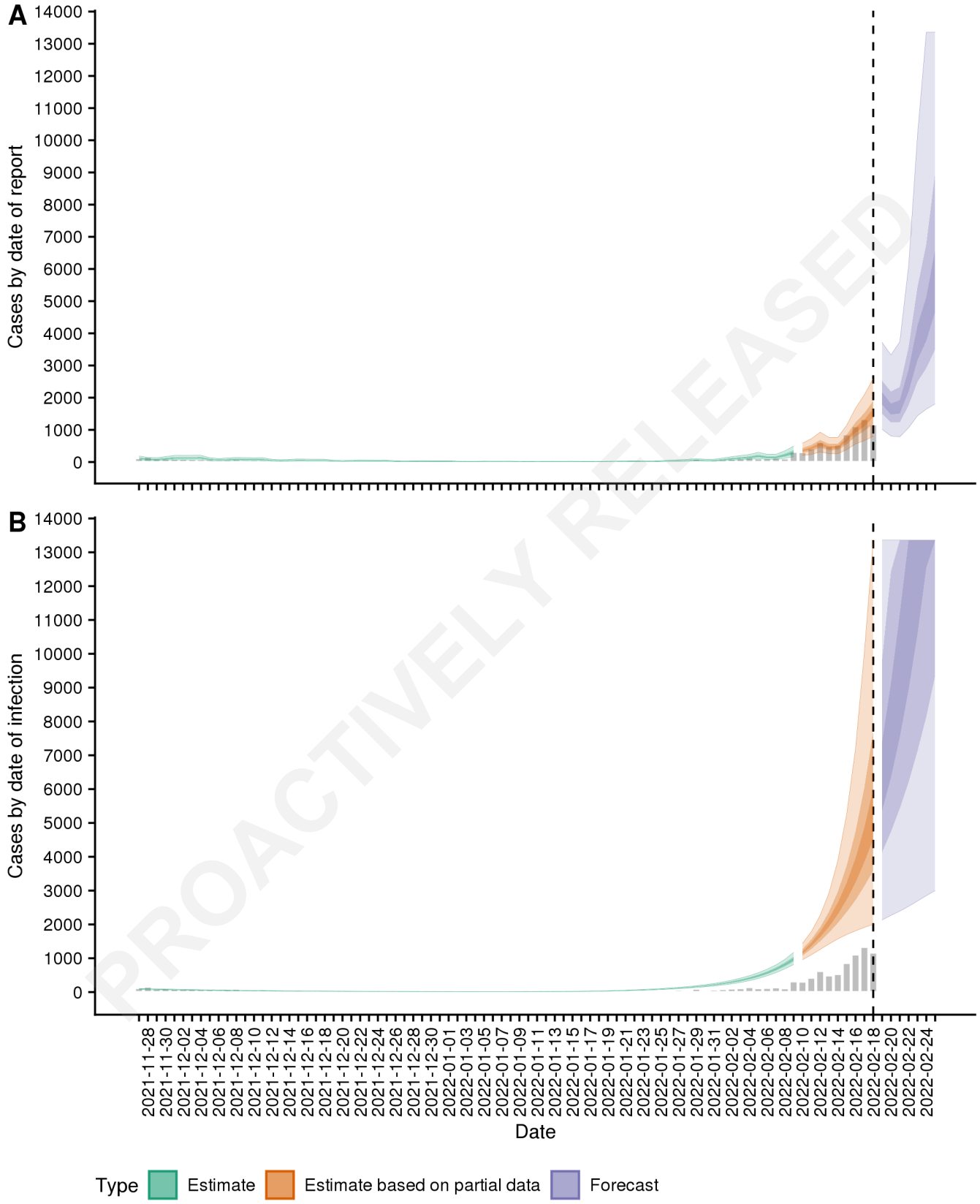
Figure 18: Community case numbers by date of report and date of infection for New Zealand



Source: Te Pūnaha Matatini, 21 February 2022. EpiNow2 projections based on Ministry of Health case data to 18 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%.

Figure 19: Community case numbers, by date of report and date of infection for Auckland Public Health region DHBs



Source: Te Pūnaha Matatini, 21 February 2022. EpiNow2 projections based on Ministry of Health case data to 18 February 2022.