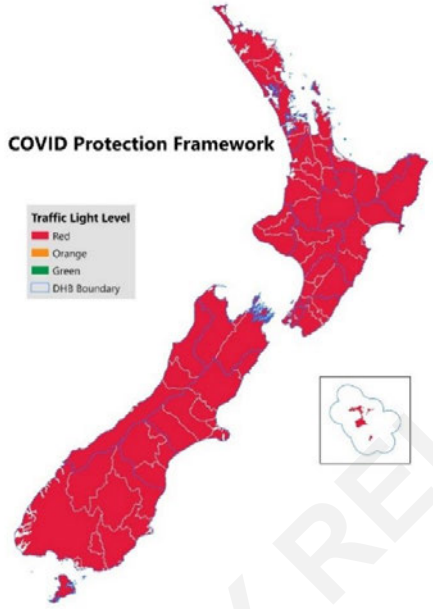
COVID-19

Trends and Insights Report

Updated 18 February 2022

Current State of Aotearoa



Snapshot of the past 7 days

- There was approximately a **two-fold increase in the number of new community cases** in the week from 9 to 15 February 2022 (4,789 compared with 2,139 in the week from 6 to 12 February 2022). 40% (1,901) of the cases this week were reported in the last two days (14 and 15 February).
- **47% of cases nationally** were reported in **Counties Manukau** DHB. They reported 2,247 cases in the week of which 855 cases were reported in the last two days.
- Pacific Peoples continue to have the highest case burden (2,248 cases), **followed by those of Asian ethnicity** (1001 cases).
- **64% of cases in the past week** are in the younger population **between the ages 13 and 45**.
- increases in cases coincide with the recent return to schools (between 31 January and 08 February 2022); it is unknown whether this has contributed to the accelerated transmission.
- The outbreak continues to have an inequitable impact; one of which is on those who are most deprived, **with the majority of cases in the reporting period were from areas with the highest housing deprivation.**
- **Test positivity has been increasing rapidly in the Northern Region DHBs** from 8 February 2022.
    - Testing in **Counties Manukau** rose from 6.6 per 1000 to 7.6 per 1000 but was outpaced by an increase in case numbers from 1317 to 2246. This has resulted in an **increase in test positivity from a four-day average of 2.9% the week prior to 8% week to 15 February.** This may be indicative of an increasing proportion of infections not being detected.
    - **Auckland DHB** increased from 4.6 tests per 1000 to 6 per 1000 with an **increase in test positivity from 1.6% to 5%.** Waitemata has the lowest test positivity in the northern region at 3%.

- Test positivity rates in Bay of Plenty, Lakes and Waikato DHBs in the Midlands Region and Hutt Valley DHB in the Central Region are also increasing**. In Midcentral region DHBs, Waikato has the highest test positivity rate at 5% and climbing**, followed by **Tarawhiti at 4%.**
- "Nowcasting" finds that effective reproduction number **R_{eff} has risen, to 1.9** both nationally and in the Auckland region (95% Credible Interval: 1.3-3.4 for NZ). The **modelled doubling times have reduced sharply, to 3.0 days** (95%CI 1.2 – 8.5 for NZ).
- The EpiNow model suggests that if the levels of transmission estimated for 14 February stay constant, cases could rise to around **2,800 cases per day by Sunday 21 February**. However, the 50% credible interval for the estimate is very wide**, ranging from 1,707 to 5,739 cases**. Cases in the **Auckland Region could rise to ~2000 cases per day by 21 February** (50% CI: 1,211- 3,642).
- **Hospitalisations are not currently analysed in Trends & Insights; however, an analysis is being worked on that will focus on hospitalisations in the Northern Region.**

Contents

Exposure Events and Clusters of Concern

17-18 February 2022

Northland

- Superspreader event detected at a gym.
- Carehome outbreak.
- Multiple schools reporting outbreaks.

Auckland

- Significant increase in cases at the Auckland University of Technology (AUT) linked to a session held before the academic year.
- Number of cases linked to stevedores in the Port of Auckland, no impact on services.
- Number of cases across three Auckland prisons. Public Health reports this is under control and being managed.
- Worker at a hospice tested positive, multiple exposure events.

Waikato

- Multiple School outbreaks.
- Exposure events in ARC facilities.

Tarawhiti

- Cluster at a meat factory and a church.
- Two employees at an ARC facility tested positive.

Taranaki

- 60-70 attendees around the country attended a 50th birthday party that had a positive case.
- Outbreak occurring amongst s 9(2)(a) in Marton.

Capital & Coast/Hutt Valley

- Outbreak at Hutt Valley High School.
- First positive case amongst Wellington Hospital Staff. s 9(2)(a) Potential impact to critical healthcare services.

Nelson Marlborough

- Outbreak in two fisheries factories in Nelson Marlborough DHB s 9(2)(a) Thirty percent of staff are reported as cases at s 9(2)(a) s 9(2)(a)
- Is experiencing outbreaks.
- Church cluster emerging.

Canterbury

- Two cases detected at Canterbury University.
- Staff member of ARC facility tested positive.
- Multiple Schools experiencing outbreaks and related exposure events.

Southern

- Outbreak in rest home.
- Three parties identified as exposure events. Two on Castle Street and one on Hyde Street.

Recent cases

Table 1 to Table 4 show new cases reported in the week to 15 February 2022 by DHB, age, sex and ethnicity.

Cases have continued to significantly increase in the week to 15 February with 4,789 cases being reported; **over 1,900 of these cases were reported in the past two days** (14 - 15 February).

- The majority of cases continue to be in Waitemata, Counties Manukau, Auckland and Waikato, DHBs (Table 1).
- The proportion of cases in Pacific has increased substantially to 47% (an increase from 31% since last report). (Table 2).
- Cases remain evenly distributed between sexes (Table 3).
- Cases continue to be highest 20-29 year olds (24% of cases in the past week), with 10-19, and 30-39 year also having high case burdens. (Table 4). Cases in the 70+ age group have increased from 68 to 103 (+51%) since the last report (Table 4) and this appears to be due to incursion of the outbreak into multiple ARC facilities across the country in the past week.
- Cases continue to be highest 20-29 year olds (24% of cases in the past week), with 10-19, and 30-39 year also having high case burdens. (Table 4).

Table 1: Community cases by DHB from 09 February to 15 February 2022

DHB	Community cases reported since 09 February
Northland	128
Waitemata	486
Auckland	839
Counties Manukau	2246
Bay of Plenty	111
Waikato	477
Tairawhiti	29
Lakes	62
Taranaki	20
Hawke's Bay	32
Whanganui	9
MidCentral	25
Hutt Valley	70
Capital and Coast	65
Wairarapa	20
Nelson Marlborough	28
Canterbury	19
South Canterbury	5
Southern	118
Total	4789

Source: NCTS/EpiSurv 2359hrs 15 February 2022

Table 2: Community cases by ethnicity from 09 February to 15 February 2022

Ethnicity	New community cases since 09 February
Maori	555
Pacific Peoples	2248
Asian	1001
European or Other	961
Unknown	24
Total	4789

Source: NCTS/EpiSurv 2359hrs 15 February 2022

Table 3: Community cases by sex from 09 February to 15 February 2022

Sex	New community cases since 09 February
Female	2424
Male	2351
Unknown	14
Total	4789

Source: NCTS/EpiSurv 2359hrs 15 February 2022

Table 4: Community cases by age from 09 February to 15 February 2022

Age	New community cases since 09 February
0-9	588
10-19	863
20-29	1154
30-39	899
40-49	582
50-59	412
60-69	188
70+	103
Total	4789

Source: NCTS/EpiSurv 2359hrs 15 February 2022

Epidemic Curves

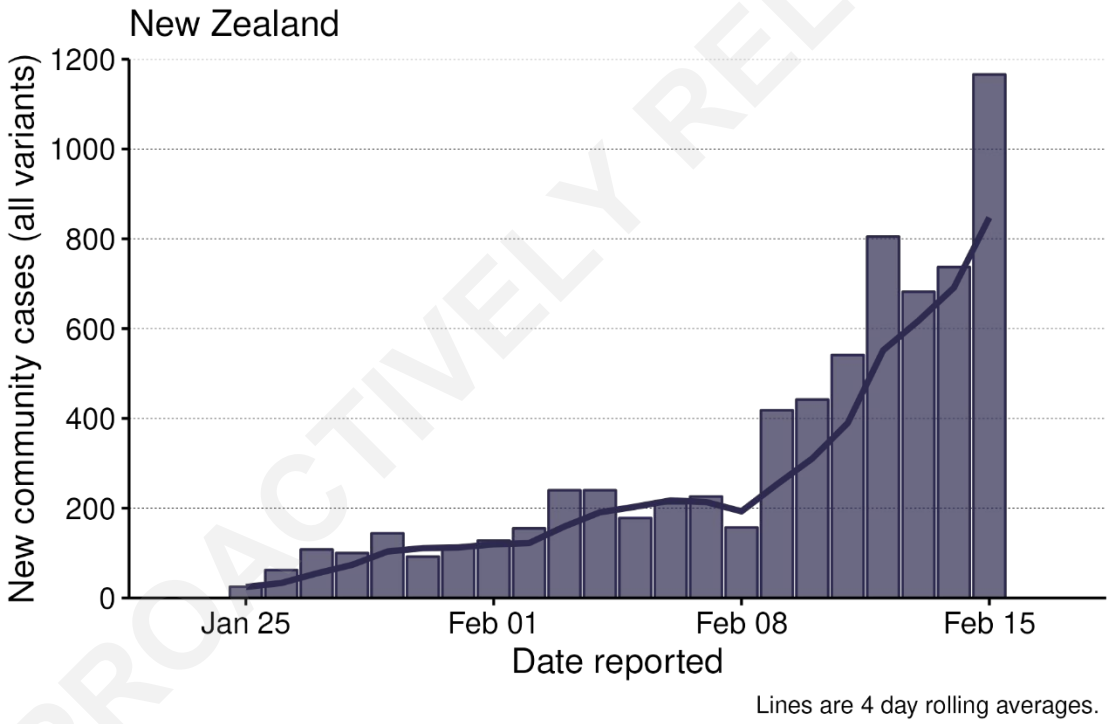
Figure 1 and Figure 2 below show the number of new cases reported in the three weeks from 25 January 2022 to 15 February 2022 nationally and by DHB respectively.

Nationally, there has been a rapid rise in cases numbers in the recent week. **The rise has followed a relatively linear trajectory with an approximate increase in 400 cases every 4 days** (Figure 1).

This sudden **rise in cases was largely driven by Counties Manukau** and to a lesser extent **Auckland** in the **Northern Region** (Figure 2). The rise occurred concurrently in all the Northern Region DHBs. The **Midlands Region** also experienced an elevation in case numbers over this period, primarily in the **Waikato** and **Bay of Plenty** but not the dramatic rise in case numbers compared to the Northern Region.

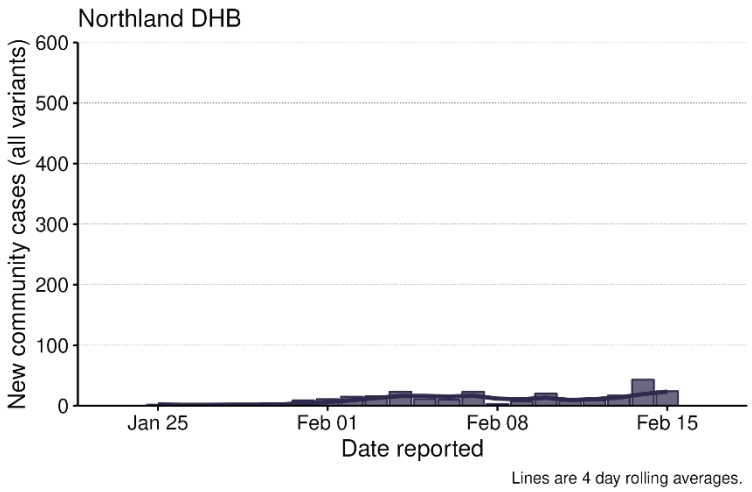
We are observing the early indications of growth phase of the epidemic in the Central and Southern Regions. The increases occurring in the Southern region were predominantly in the Southern DHB. Case numbers in these regions have remained relatively low compared with the Northern and Midlands Regions.

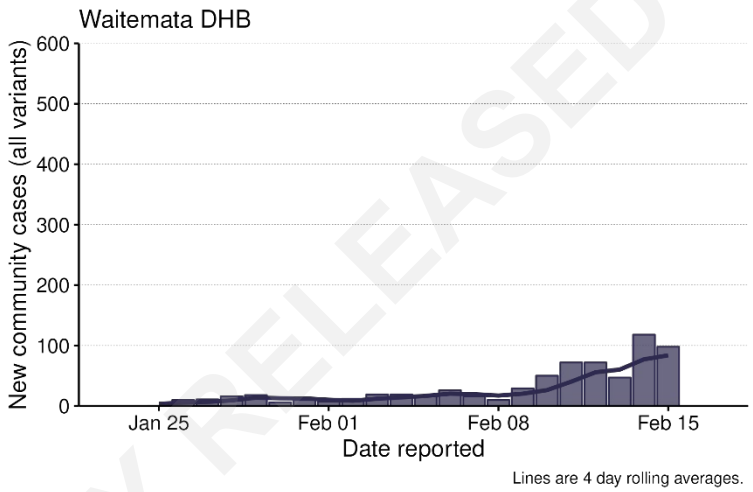
Figure 1: Daily community cases nationally from 25 January to 15 February 2022

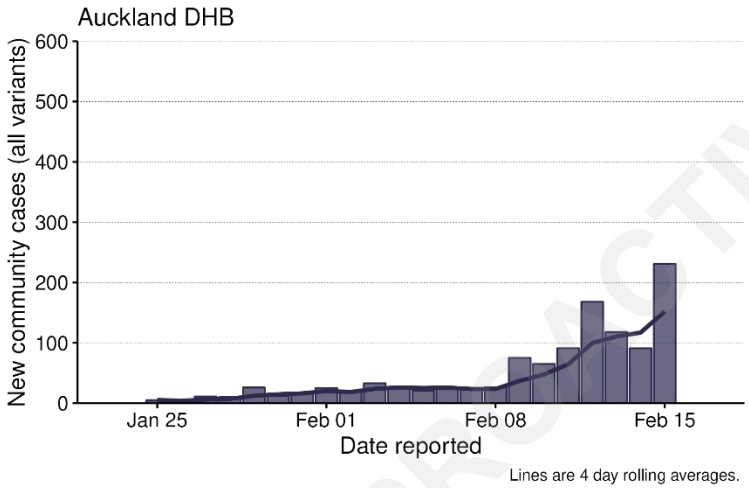


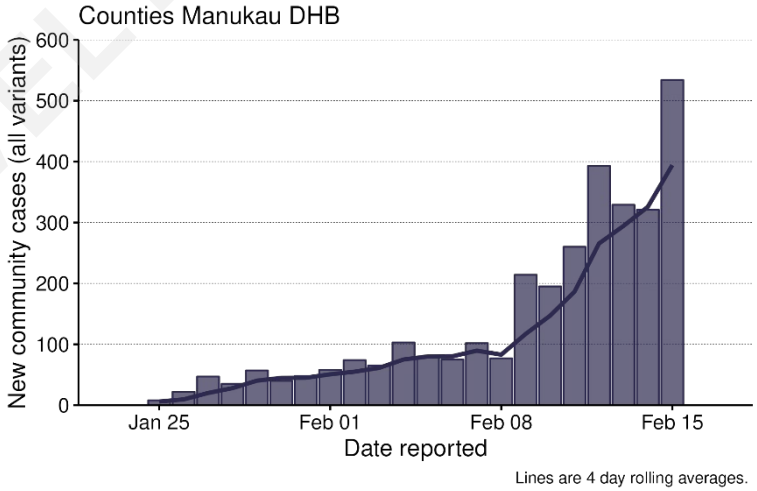
Source: NCTS/EpiSurv as at 2359hrs 15 February 2022

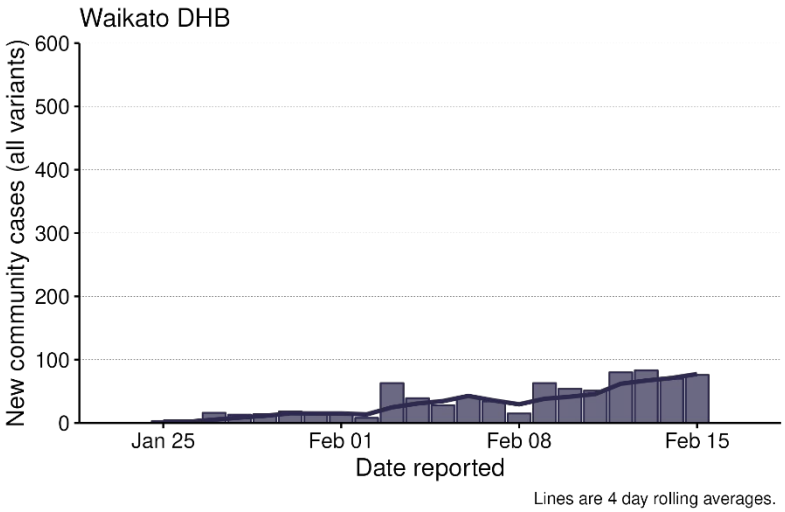
Figure 2: Daily community cases by DHB from 25 January to 15 February 2022

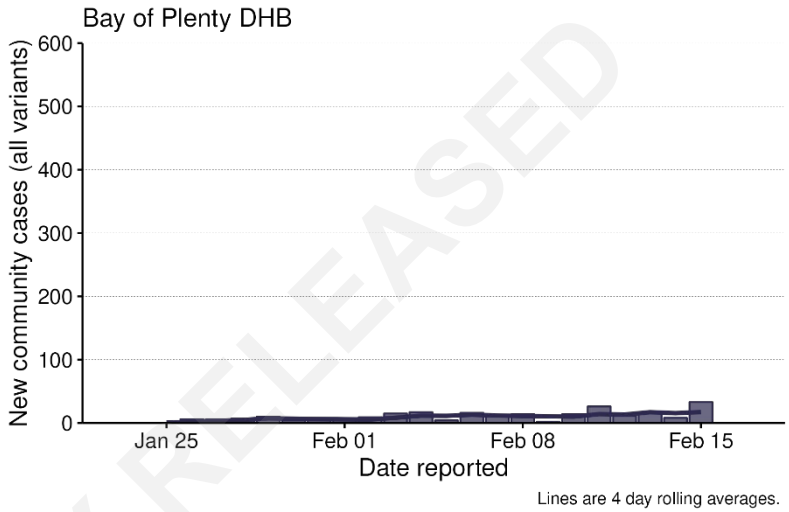


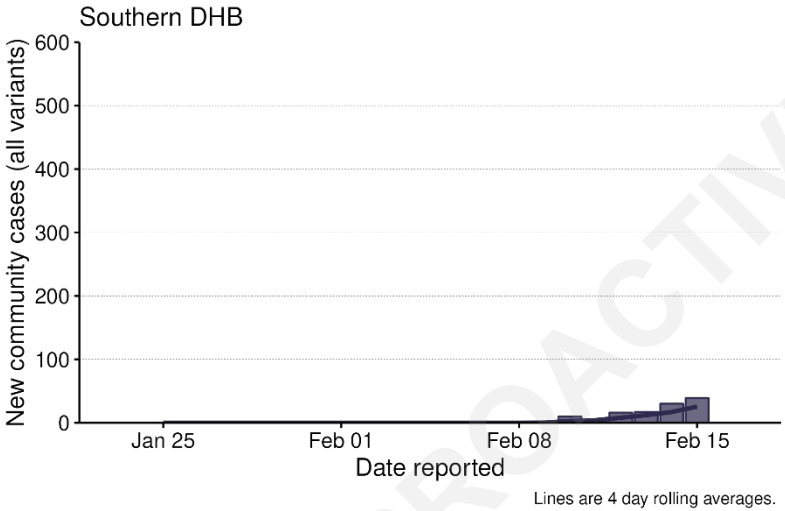


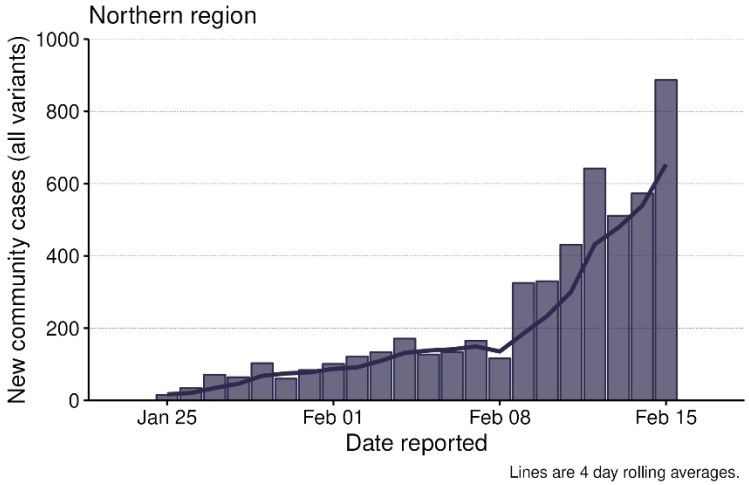


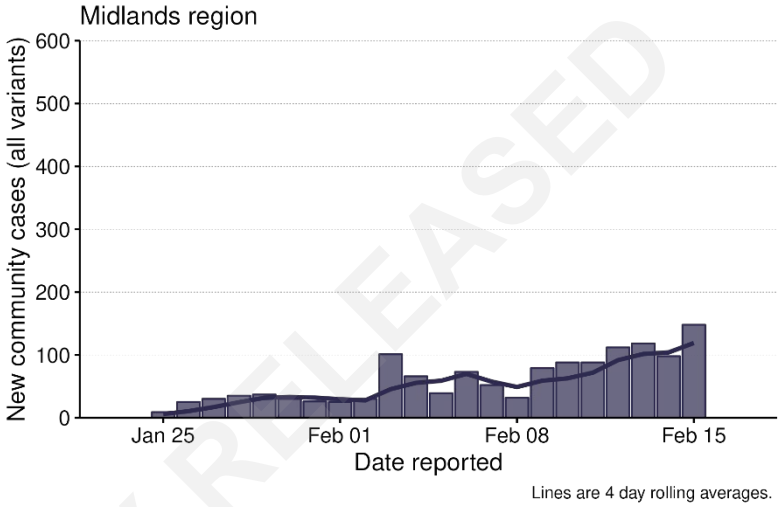


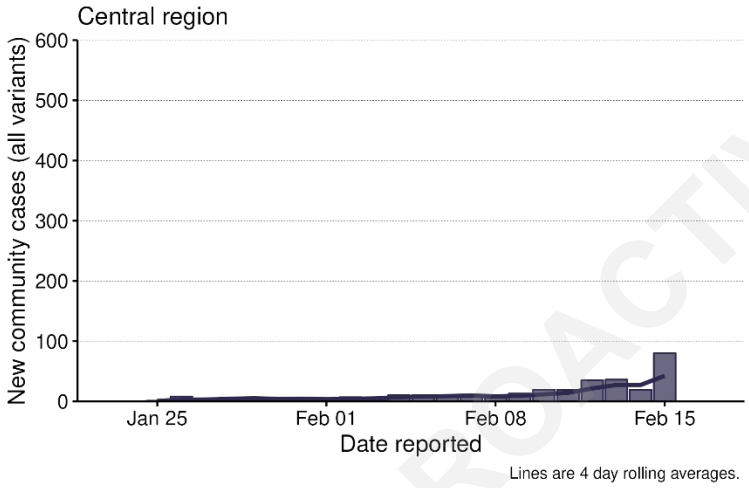


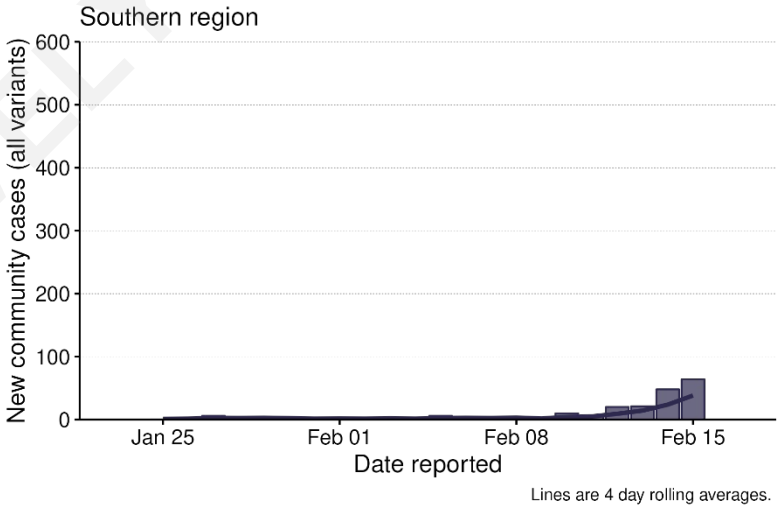












Source: NCTS/EpiSurv as at 2359hrs 15 February 2022

Cases by Ethnicity

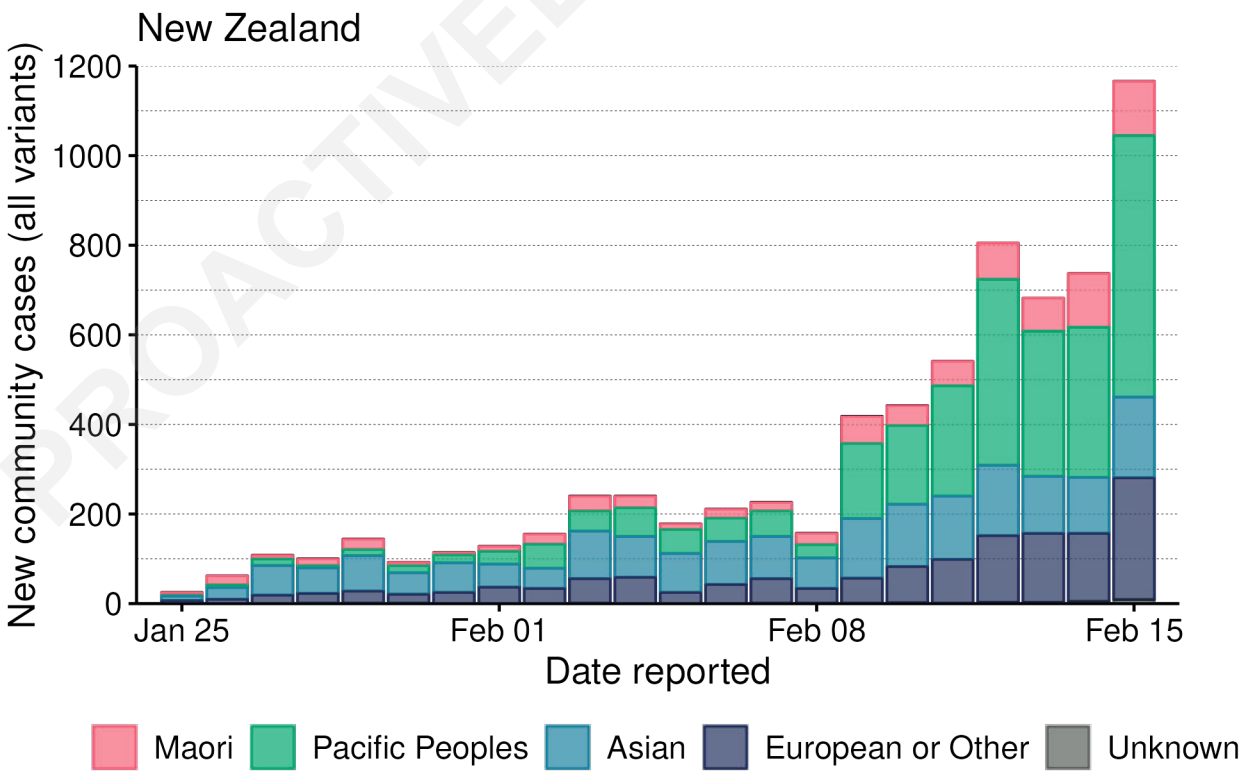
Figure 3 to Figure 5 on pages 12-14 show the ethnicity of new cases reported in the three weeks from 25 January 2022 to 15 February 2022, as a four-day rolling average.

Ethnicity of cases were relatively evenly distributed prior to a substantial shift **from 27 January** (Figure 3), with **cases of Asian ethnicity increasing substantially**, consistent with the outbreak initially affecting Indian communities which stemmed from a large wedding held in Auckland on 15 January 2022. Cases have risen rapidly from 9 February 2022 onwards and, during this period, there has been an **increase in cases among Pacific Peoples who continue to be the largest ethnic proportion of cases making up 58% of cases in the Auckland Metro region**. This is likely linked to multiple outbreaks occurring within the Pacific community such as the East Mangere Church cluster, which seeded cases in the Counties Manukau region from 28 January 2022. The proportion of new cases in **Asians** have stopped rising since 9 February and remain consistent day to day (Figure 3).

Cases amongst Māori and **European or Other are increasing at a slower pace** but cases remain much lower than those in Asian and Pacific Peoples (Figure 4).

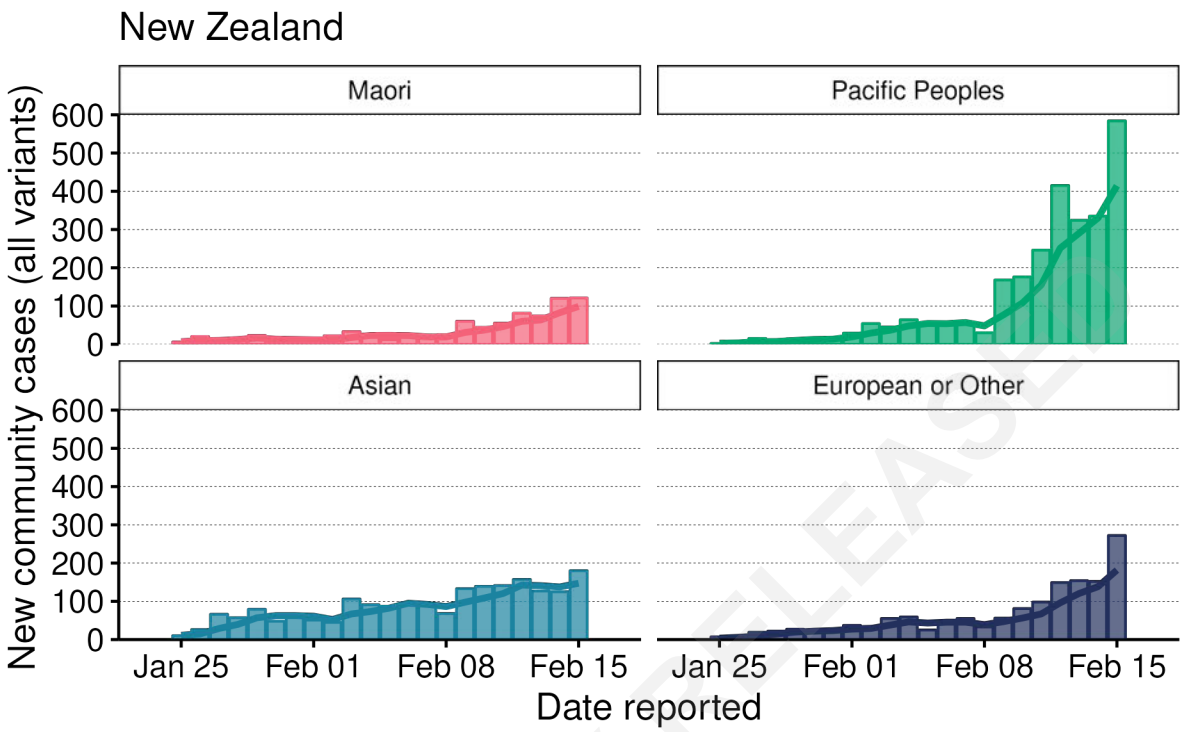
The increase in cases in Pacific Peoples was most apparent in **Auckland** and **Counties Manukau** and to a lesser extent, **Waitemata** (Figure 5). Cases in the **Waikato** region in the past week, had **a higher proportion of Asian** cases (44% of 477 cases) than any other region other than Nelson Marlborough which has lower case numbers (28 cases total). In the past week, **Northland** region cases appear to be a predominantly **European or Other** (54%) followed by **Māori** (37%). Cases in **Southern** are largely of **European or Other** ethnicity (70%) and show signs of an upward trend.

Figure 3: Daily community cases across New Zealand, by ethnicity from 25 January to 15 February 2022



Source: NCTS/EpiSurv 2359hrs 15 February 2022

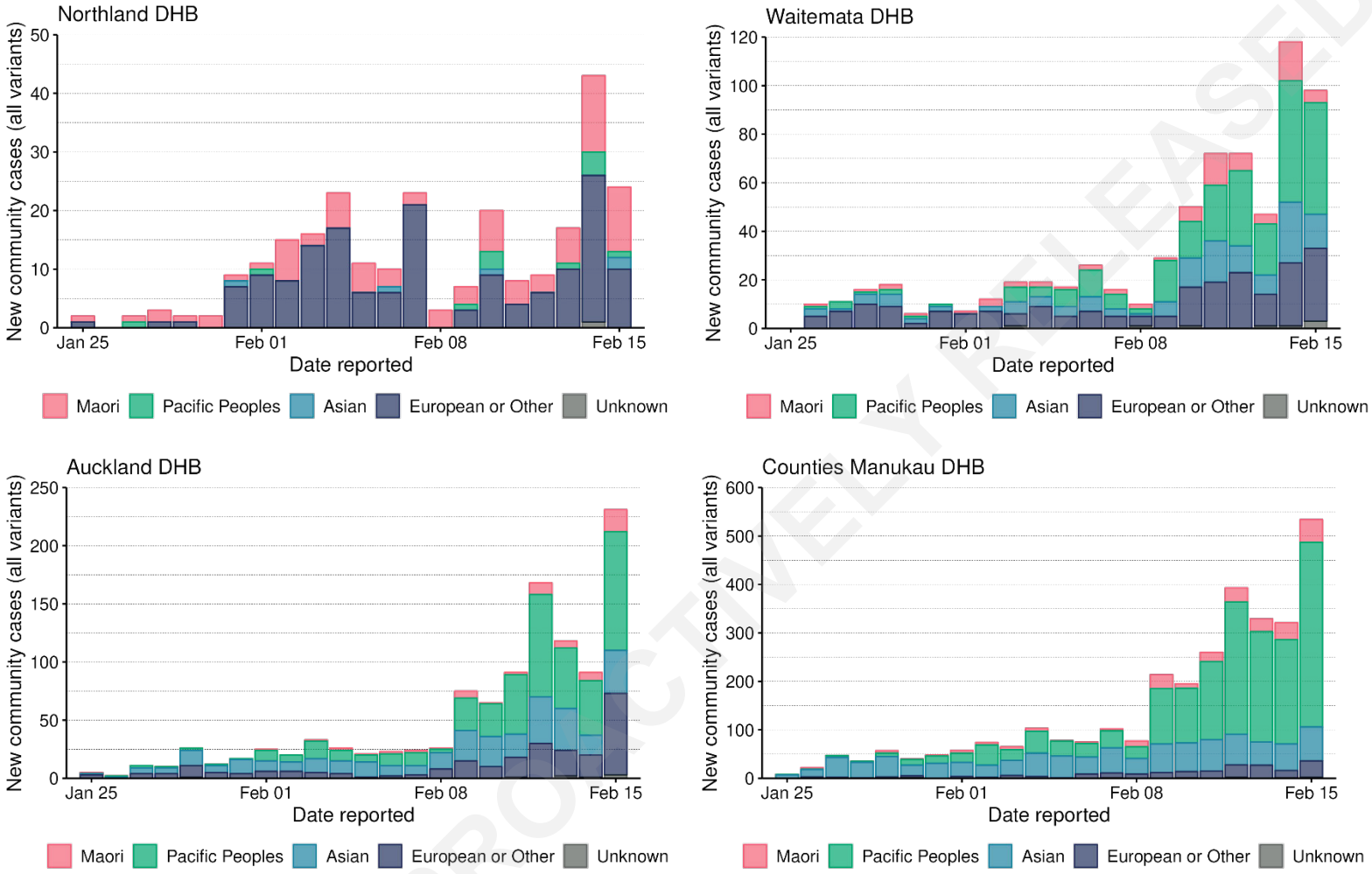
Figure 4: Daily and rolling 4 day of average community cases across New Zealand, by ethnicity from 25 January to 15 February 2022

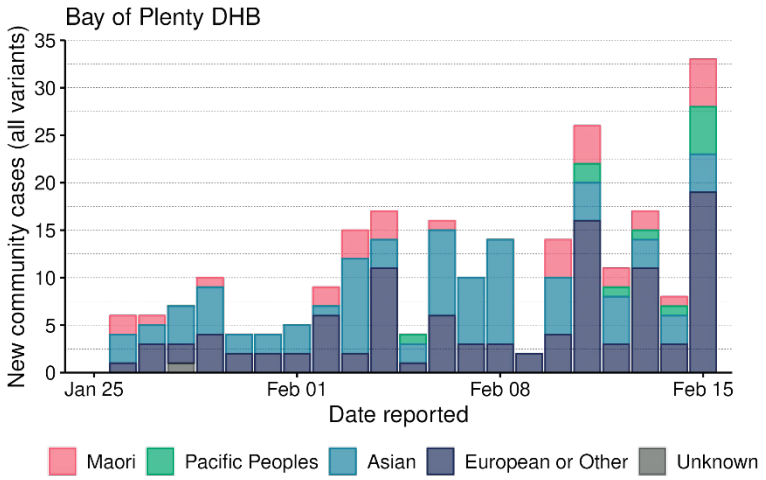


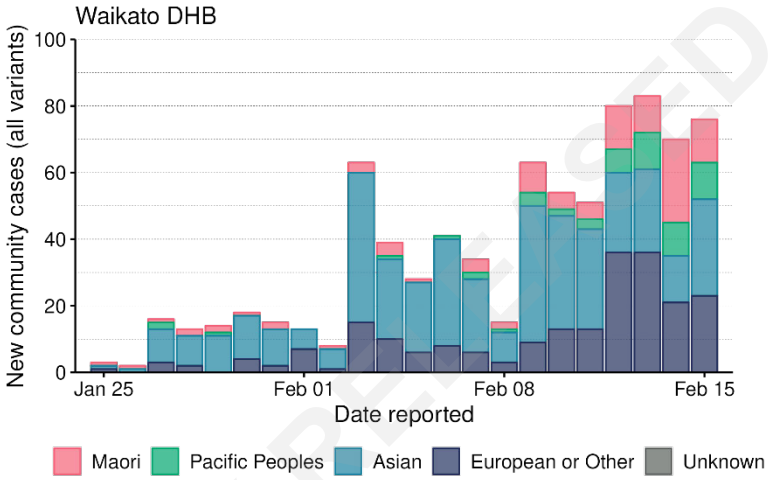
Lines are 4 day rolling averages. 30 cases with unknown ethnicity have been excluded.

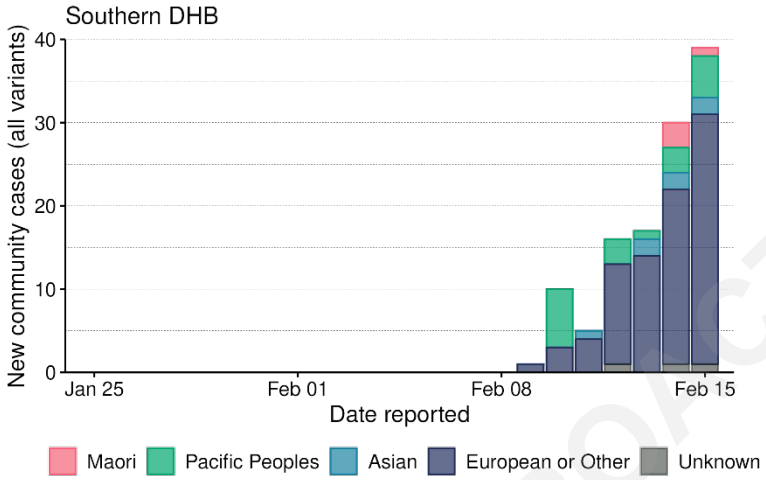
Source: NCTS/EpiSurv 2359hrs 15 February 2022

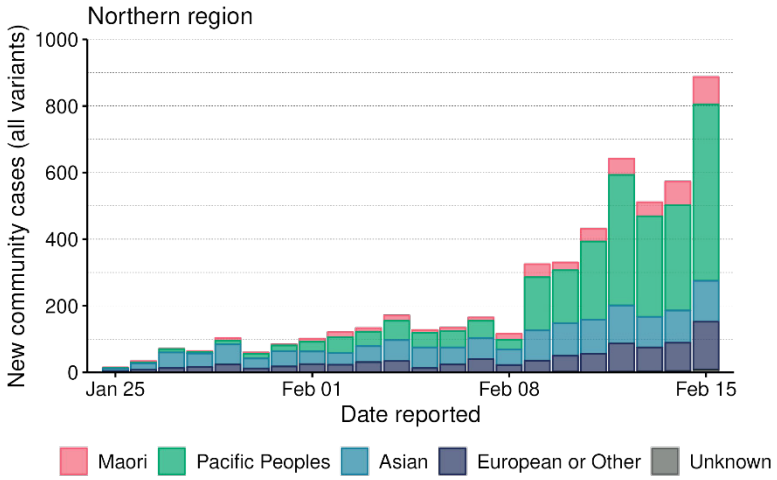
Figure 5: Daily cases by ethnicity and DHB from 25 January to 15 February 2022

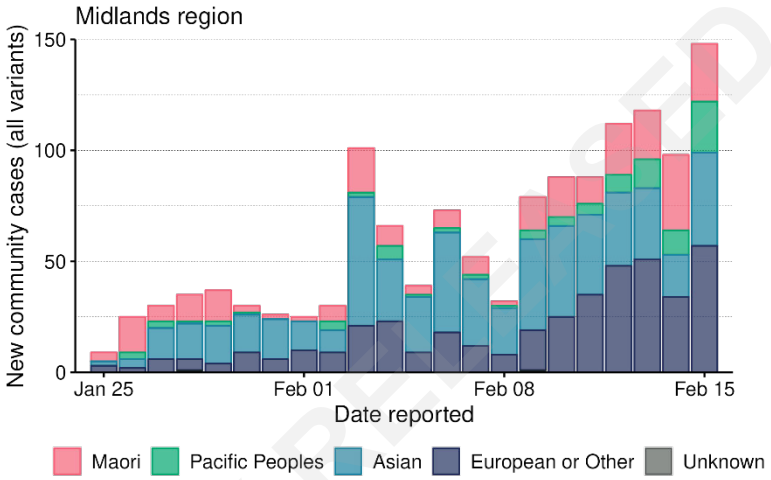


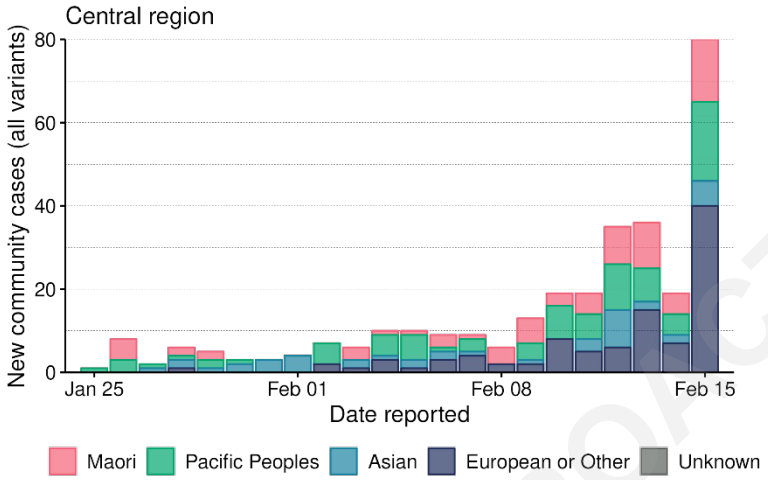


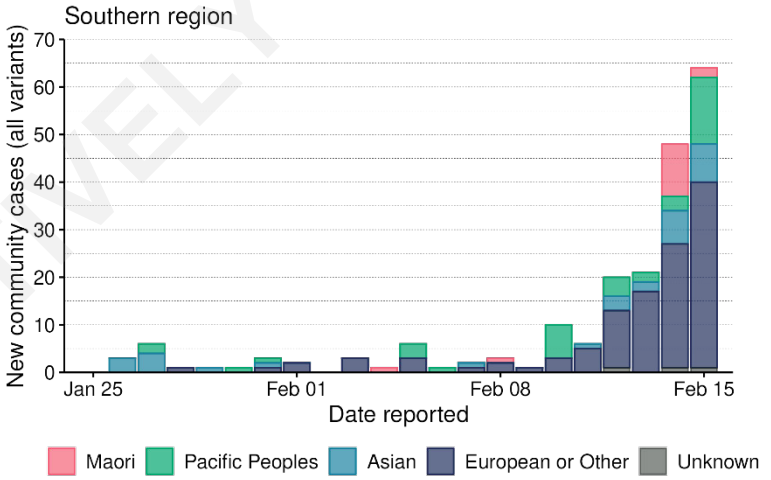












Source: NCTS/EpiSurv 2359hrs 15 February 2022

Cases by Age

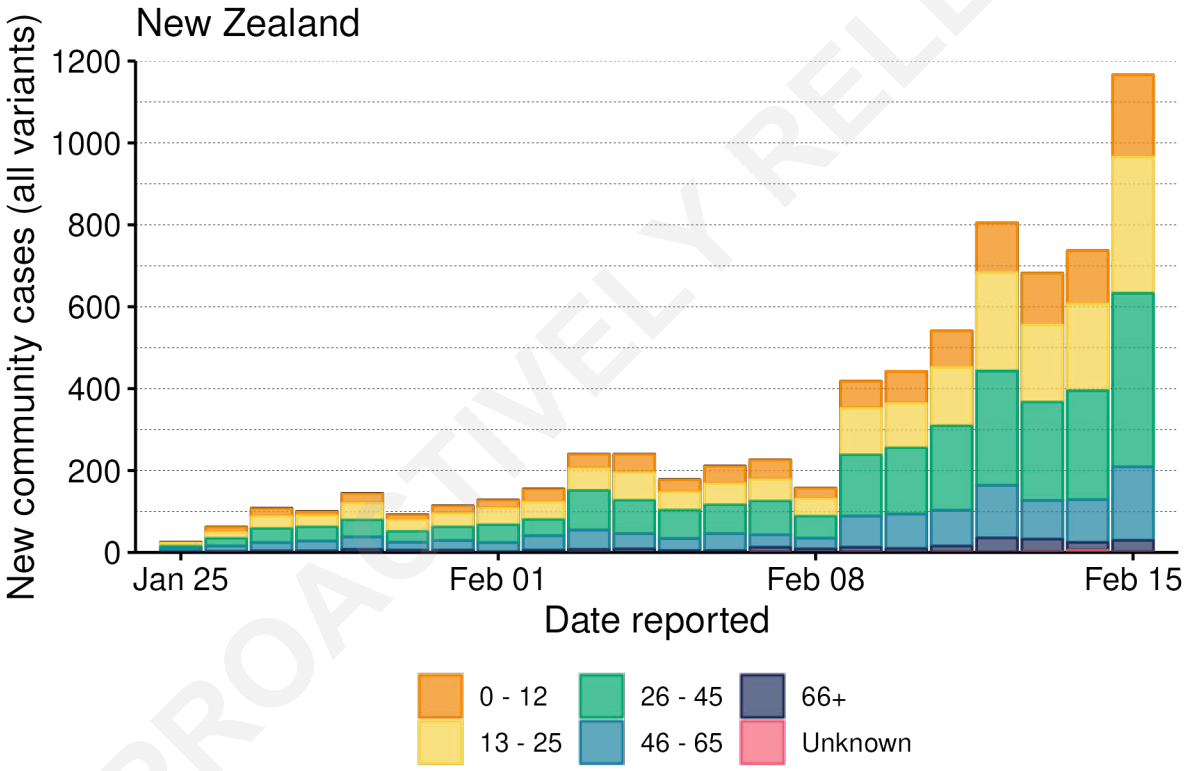
Figure 6 shows new cases by age group from 25 January to 15 February 2022, as a four-day rolling average.

From January 26, all age groups experienced marked increases. The two groups **most represented in the cases are 13-25 year olds (28%) and 26-45 year olds (36%) in the past week**. These two age brackets were still the most affected after the recent increase in overall cases from 9 February 2022 onwards.

As shown in Figure 7, cases in the week prior in **Pacific Peoples,** were most apparent in the **10-19 (21%)** and **20-29 (24%)** age group. Cases in **Asians** during this time frame were most apparent in the **20-29 (21%)** and **30-39 (26%)** age group.

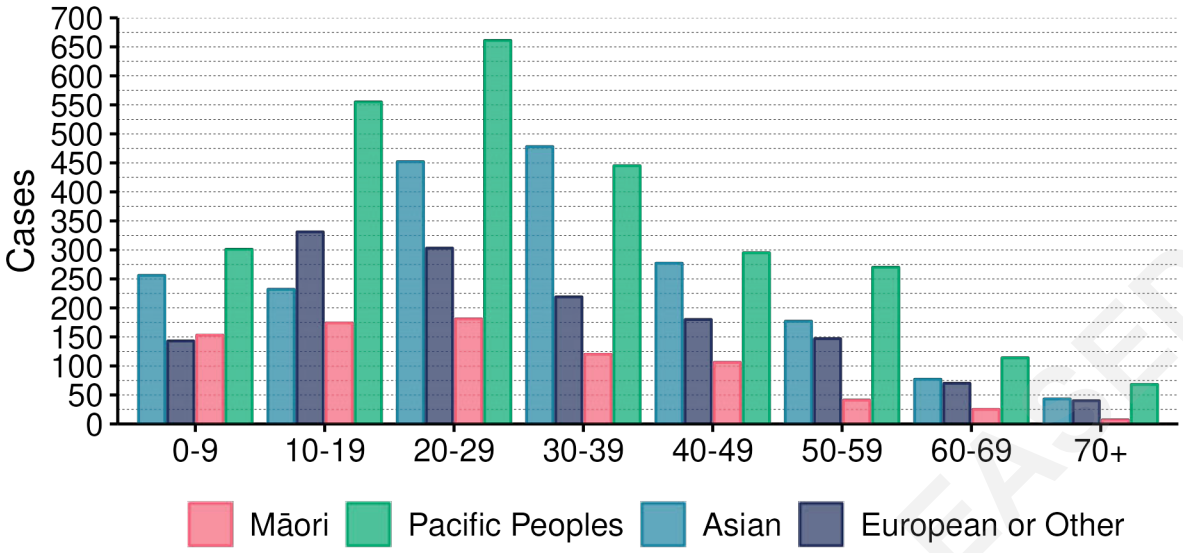
Also, cases in **Māori have been relatively similar across 0-9, 10-19, 20-29 age groups** (ranging from 19% to 22%) while for **European or Other, cases are highest in the 10-19 (24%)** age group (Figure 7).

Figure 6: Four-day rolling average of COVID-19 community case numbers by age for 25 January to 15 February 2022



Source: NCTS/EpiSurv 2359hrs 15 February 2022

Figure 7: COVID-19 community case numbers by prioritised ethnic group and age group, 25 January to 15 February 2022



Source: NCTS/EpiSurv 2359hrs 15 February 2022

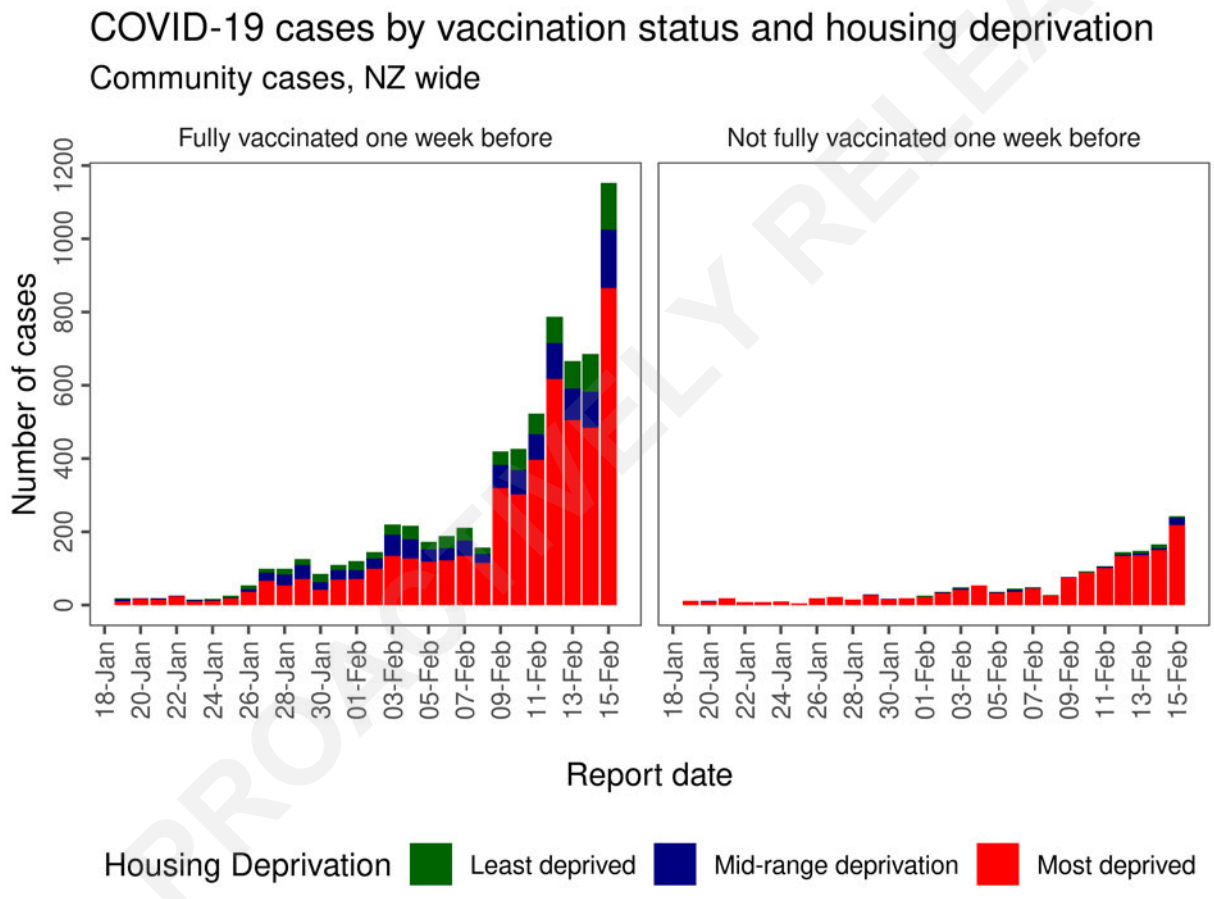
Cases by socio-economic indicators

Figure 8 shows cases by **housing deprivation** from 19 January 2022 to 15 February 2022 among those **fully vaccinated** and **not fully vaccinated one week prior. Cases are rising in all** deprivation groups, but this is **clearly seen in the most deprived group**.

Across this period, those most deprived make up the highest proportion of cases. **The proportion of cases in the mid-deprived and least deprived groups has increased since 01 February but has stabilised as of 15 February.**

Those **not fully vaccinated** have experienced increases in cases but on a smaller scale. This is not unexpected as due to the high level of vaccination across New Zealand, **cases are more likely to be fully vaccinated with over 95% of people aged 12+ being fully vaccinated**.

Figure 8: COVID-19 cases from 25 January 2022 to 15 February 2022 comparing cases by housing deprivation for those fully vaccinated or not fully vaccinated one week prior to being a case



Source: EpiSurv and COVID-19 Immunisation Register 2359hrs 15 February 2022, IMD18 Database

Community Testing

The figures in this section show the rates of community testing from 25 January 2022 to 15 February 2022.

The **Auckland, Waikato** and **Northland** DHBs (**Northern Region**) continue to have the **highest number of tests per 1,000 population** (Figure 9) with testing rates fluctuating between 4-7 tests per 1000 population since 08 February 2022. Testing rates across the rest of the country are lower, sitting between 1-4 tests per 1000 in the same timeframe.

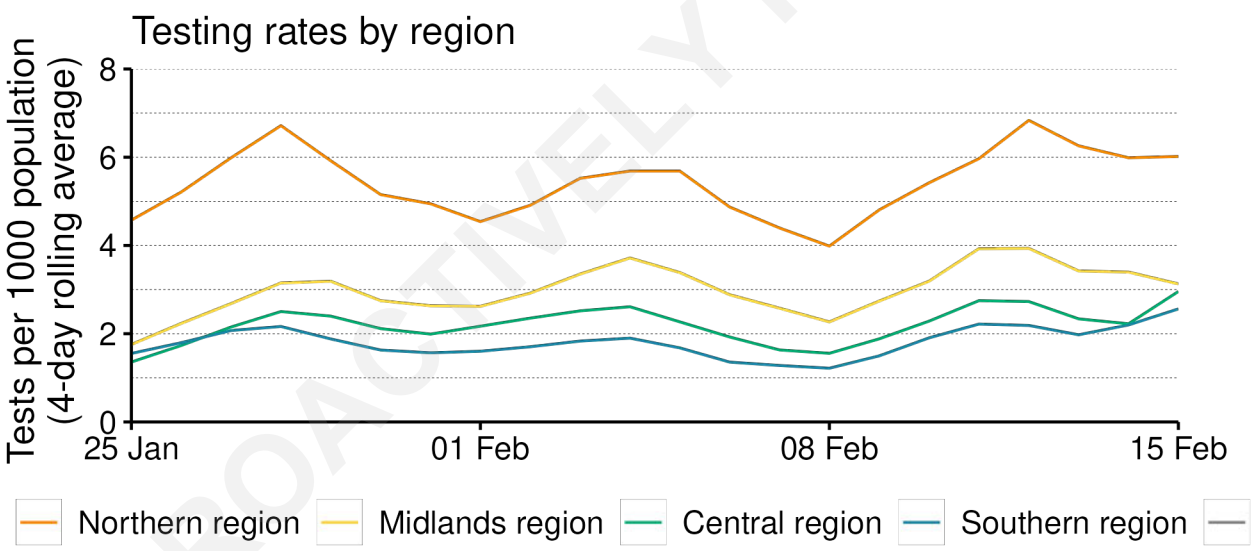
Test positivity in the Northern region on 15 February, ranged from 3.0% in Waitemata to 11.9% in Counties Manukau. This is reflective of cases in the Northern Region being primarily focused in the Counties Manakau DHB.

In the **Midlands Region**, test positivity from early February onwards for **Bay of Plenty**, **Lakes** and **Waikato** was notably higher than that of Tairawhiti and Taranaki. From 11 February, test positivity had increased in all Midland DHBs except **Taranaki** (1.2% to 1.0% a week prior), with the biggest jump seen in **Tarawhiti** DHB **rising from a four-day rolling average of 0.7% to 4.0% a week prior.**

From 5 February, test positivity for **Hutt Valley** DHB in the **Central Region** had been steadily increasing but appears to have plateaued at around ~2%. After a steep drop off in testing, testing positivity in **Whanganui** had risen to ~2.5%. **All other DHBs in this region were sitting around 1-1.5% test positivity.** (Figure 10).

Overall test positivity for the **Southern Region remained low**, varying between from **~0.25% for Canterbury to ~2.0% for Southern.** However, **test positivity has rapidly increased in the Nelson Marlborough** region and this is likely linked to outbreaks in multiple schools and two fishery processing plants.

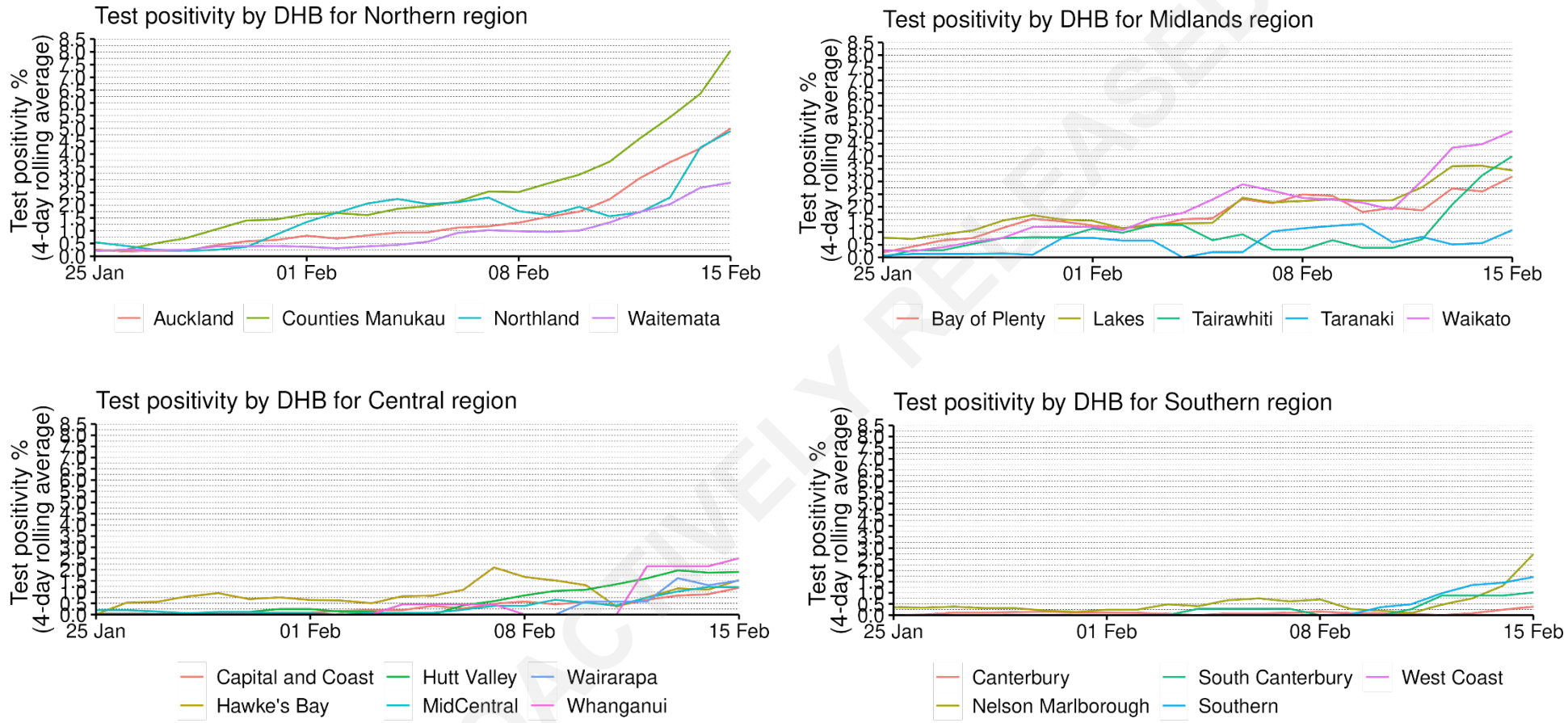
Figure 9: Testing rate by region[1] (four day rolling average) by region and DHB, 25 January to 15 February 2022



Source: Éclair testing database 15 February 2022; Excludes tests in returnees and border workers.

[1] **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 10: Test positivity (four day rolling average) by region and DHB, 25 January to 15 February 2022



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

Short-term projections

Scenario modelling versus actual cases

***Summary*: It is too early in the pandemic wave to know if cases are tracking closer to the optimistic or pessimistic scenarios; cases may appear to be increasing faster than projected but due to the limitations outlined below there is considerable uncertainty in the projections. Work is ongoing to update scenarios in the coming weeks.**

Figure 11 shows actual cases between 01 January 2022 and 15 February 2022 by date the case was reported (grey), compared to a fortnight's projections modelled by Te Pūnaha Matatini's COVID-19 Modelling Aotearoa group. The projection scenarios used were the model's optimistic (green), medium (orange) and pessimistic (red) scenarios last updated on 2 February 2022.

The **model scenarios were produced before the current Omicron outbreak was detected.** The scenarios used here had a **seeding date of 1 February 2022 and an assumed booster uptake of 90%** among the eligible population. **Hence, the model does not align directly with actual cases**

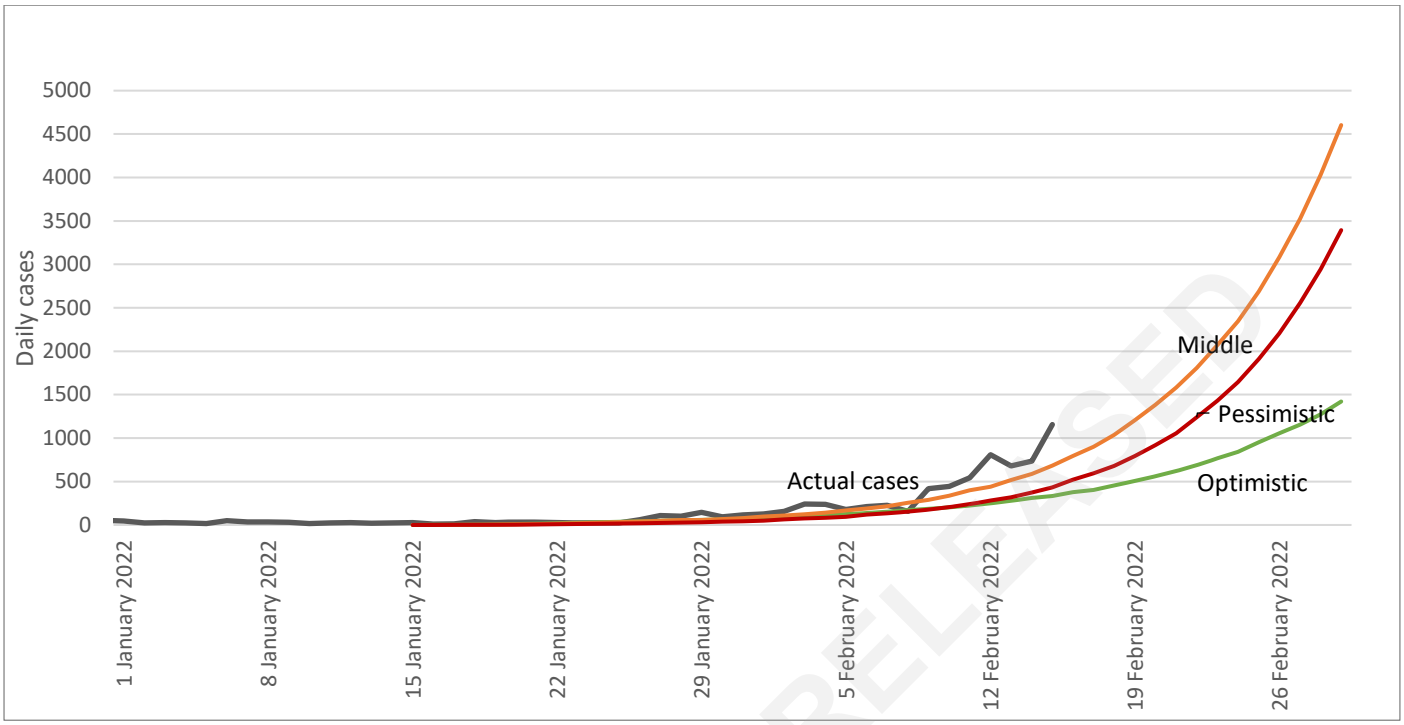
Figure 11 shows these **model's scenarios, moved in time to match an outbreak that started on 15 January**. However, fitting these projections to actual cases is very sensitive to the choice of start date and therefore, it is hard to tell whether actual cases are ahead or behind what the model predicts. We expect the COVID Modelling Aotearoa group to release updated scenarios fitted to actual cases during the week ending 25 February.

This model also generally **does not capture the start of a pandemic wave** well and instead, this kind of scenario modelling is **designed to capture the overall shape of the pandemic wave curve.**

The "pessimistic" scenario assumes a relatively high $R_{eff,}$ but a longer generation time (the time between a person getting infected and passing it on). The "optimistic" and "middle" scenarios assume lower values for R_{eff} but shorter generation times. In general, a higher growth of cases was correlated with higher reproductive numbers and shorter generation times. These scenarios were produced to match international case growth rates early in an outbreak, but with **cases peaking at a level similar to South Australia ("optimistic"), London ("middle") and New York ("pessimistic")**. This differs from modelling of the Delta outbreak, which was based on observed case growth and assumptions about vaccination uptake.

Of note, **the 'pessimistic' scenario actually estimates that *fewer* cases will be observed early on in the pandemic wave.** This is because during the period projected below, the shorter generation time of the middle scenario means its rate of case growth is more rapid initially. After a few weeks, the pessimistic scenario overtakes the 'middle' scenario due to its higher R_{eff}.

Figure 11: Actual daily cases from 1 January 2022 to 15 February 2022 and potential future scenarios of daily cases from 15 January to 01 March 2022



Effective reproduction rate

The median estimate of **effective R (R_{eff}) nationally has risen to 1.9** [95% Credible Interval 1.3-3.6] for cases to 14 February, after adjusting for data lags.

The median **estimate of doubling time** has fallen sharply, to around **3.0 days** [95% Credible Interval 1.2 – 8.5 days].

The R_{eff} for the Auckland region is 1.9 [95% Credible Interval 1.3-3.4], and the doubling time has fallen to 3.0 days [95% Credible Intervall 1.3 – 8.4].

Nowcasts of cases and infections

Estimates of the number of new confirmed cases by their date infection are given for New Zealand in Figure 12, and for the DHBs in the Auckland region in Figure 13. The model uses the estimated R_{eff} and recent data on the lag between infection and subsequent reporting to estimate that **there were already 3,810 infections per day by 14 February** (50% CI: 2,517 – 6,468), when only 662 cases per day had been reported.[2]

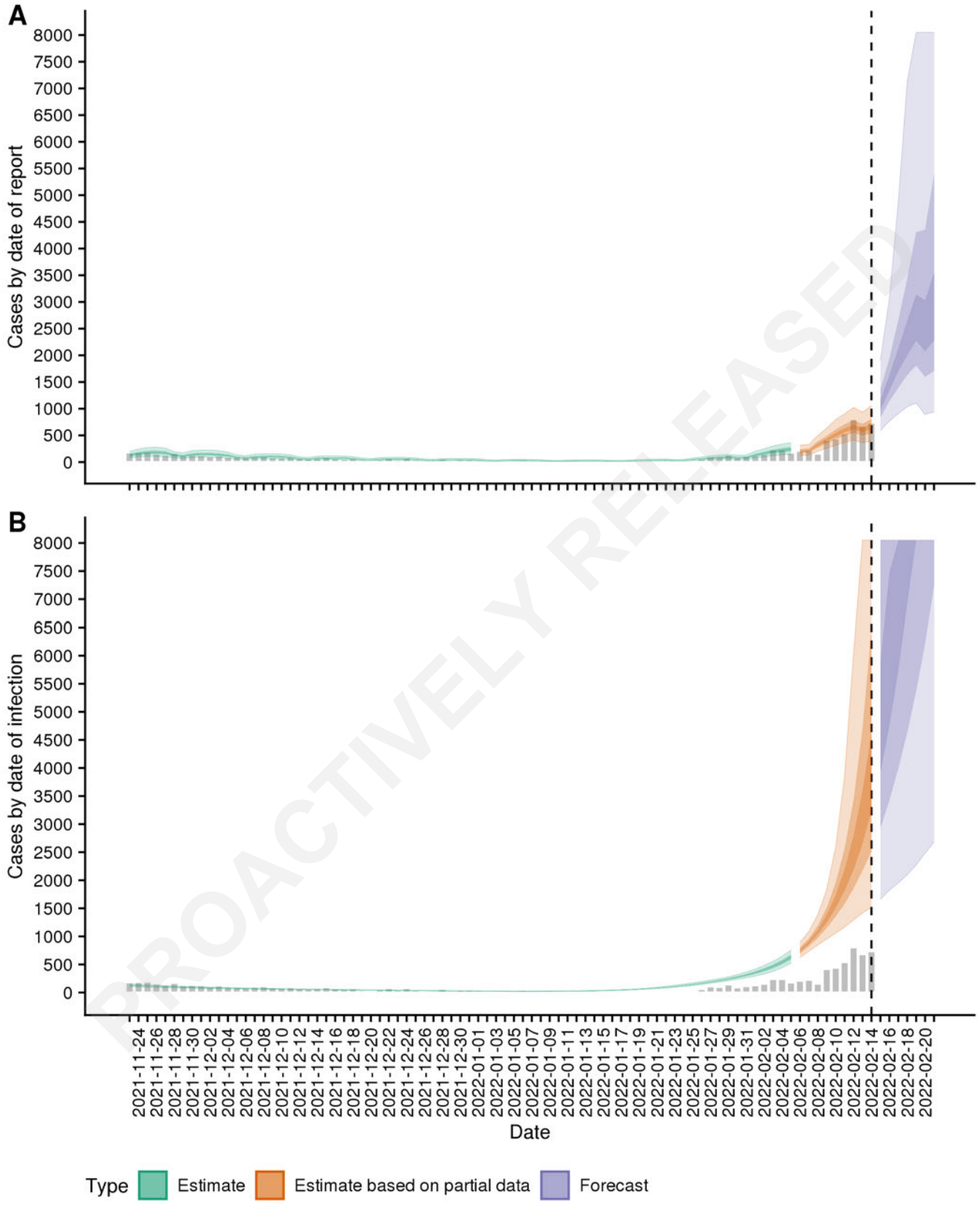
Assuming that the current level of transmission stays constant, the model's median estimate is that **national reported cases could rise to 2,791 cases per day by 21 February** (50% credible interval: 1,707 to 5,379). Reported cases in the Auckland region could rise to 2,031 cases per day by 21 February (50% CI: 1,211 – 3,642).

Projections for other regions will be possible when case numbers there have risen further. [3].

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

[3] The EpiNow package 'now-casts' cases to measure current and past transmission nationally by calculating and then extrapolating the effective reproduction number, R_{eff}. Note that 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.

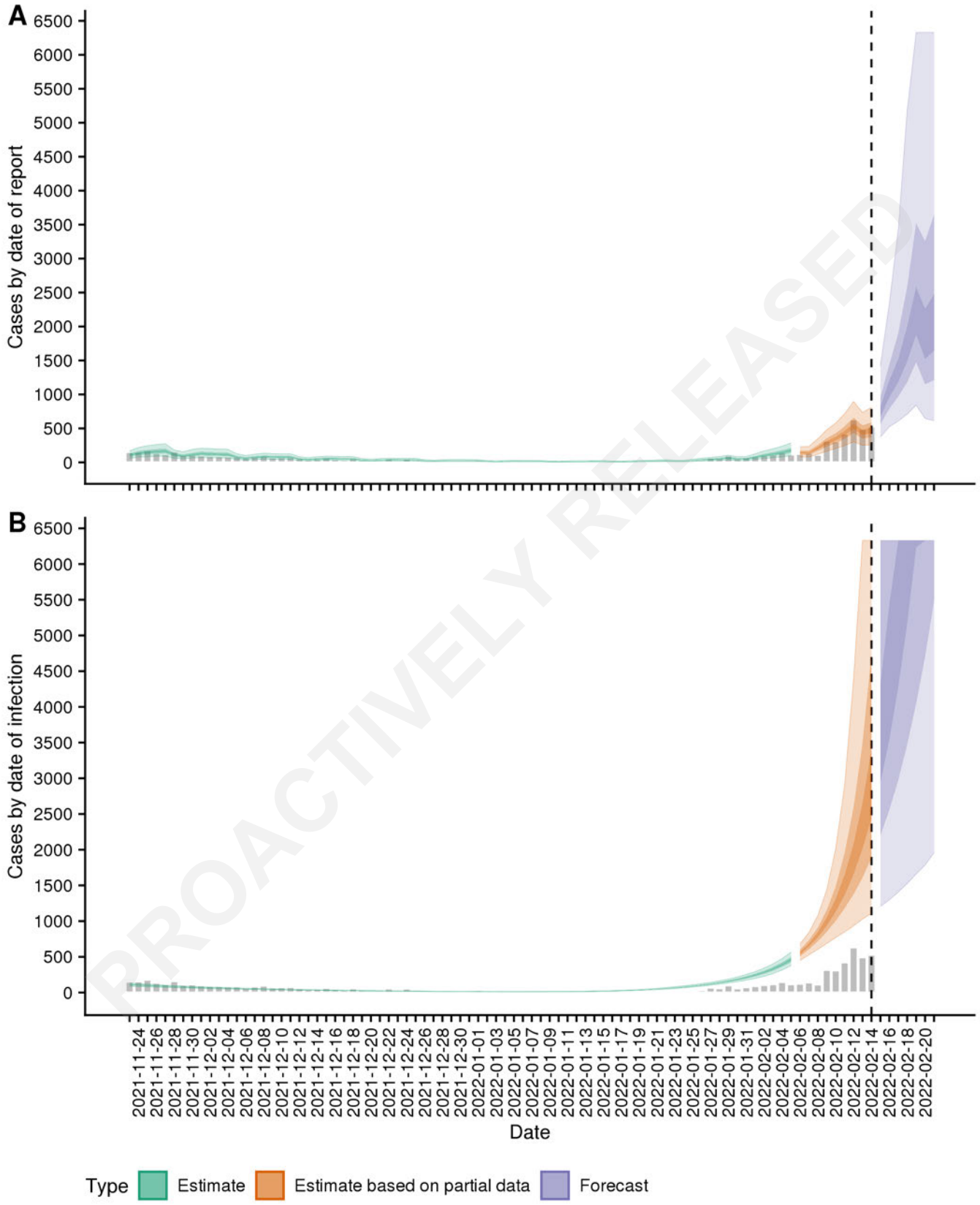
Figure 12: Community case numbers by date of report and date of infection for New Zealand



Source: Te Pūnaha Matatini, 17 February 2022. EpiNow2 projections based on Ministry of Health case data to 14 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 13: Community case numbers, by date of report and date of infection for Auckland Public Health region DHBs



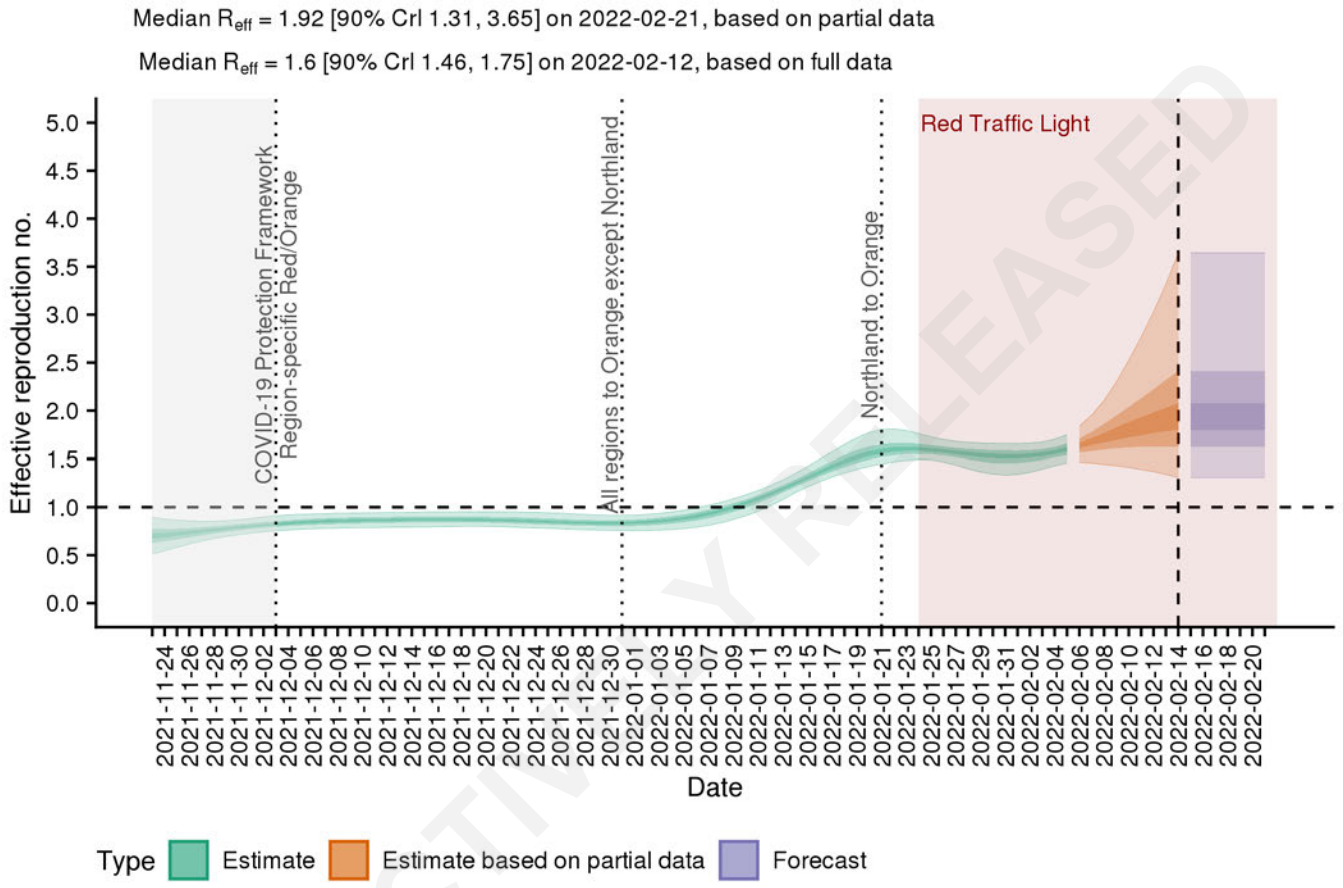
Source: Te Pūnaha Matatini, 17 February 2022. EpiNow2 projections based on Ministry of Health case data to 14 February 2022.

Projections of cases

This *Trends & Insights* report is the first to include a projection of case numbers based on the EpiNow estimates.

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 increases or decreases in Effective R were included.

Figure 14: Effective R, all of New Zealand; actual and estimated



Source: Te Pūnaha Matatini, 17 February 2022. EpiNow2 projections based on Ministry of Health case data to 14 February 2022.