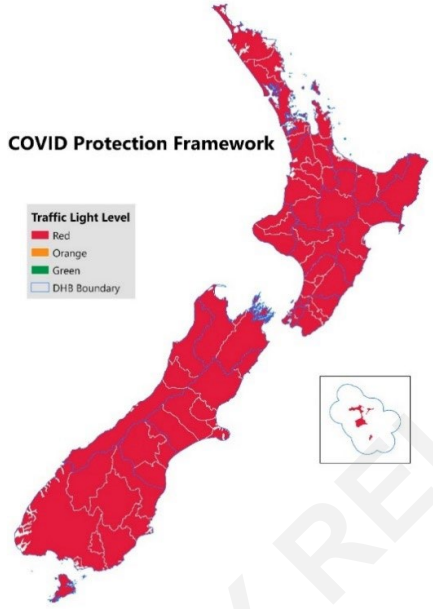
COVID-19

Trends and Insights Report

Updated 15 February 2022

Current State of Aotearoa



Snapshot of the past 7 days

- Overall, **2,139 new community cases** were reported in the week from 6 February to 12 February 2022. This is higher than when last reported (1,667 cases in week from 3 February to 9 February 2022) and 1,000 of these cases were reported in the last two days (11 to 12 February).
- **Counties Manukau DHB continues to report the highest number** of community cases, reporting 914 cases in the week, making up 43% of cases nationally.
- **Pacific Peoples are now the most represented ethnicity** in community cases (665 cases), closely followed by people of **Asian** ethnicity (663 cases).
- From late January, increases in cases generally have coincided with increases across all age groups with the **13-25** and **26-45 age groups most represented** in cases. These groups also were the most affected by the increase in cases from 9 February onwards.
- There is a potential correlation between increases in cases in 12–25-year-olds and the return of intermediate and high schools that occurred between 31 January and 08 February 2022.
- The outbreak continues to have an **unequitable impact with 74% of cases** in the reporting period being from **areas with the highest housing deprivation**.
- **Test positivity** remains highest in the **Northern Region** with **Counties Manukau** being the DHB with the highest positivity ranging from 2.25-4.6% in the last week. Test positivity in **Bay of Plenty**, **Lakes** and **Waikato** DHBs in the Midlands Region and **Hutt Valley** DHB in the Central Region is also increasing.

- Testing rates and test positivity have been increasing together in the Auckland Metro DHBs from 8 February to 12 February 2022. This indicates that **diagnosed case numbers are not an accurate reflection of prevalence**. Counties Manukau has seen the highest increase from 5.6 tests per 1000 to 9.6 per 1000 with an increase in test positivity from 2.5% to 4.6%. Auckland DHB from 3.7 per 1000 to 6.7 per 1000 with an increase in test positivity from 1.3% to 3.0%. Waitemata from 2.9 per 1000 to 5.3 per 1000 with an increase in test positivity from 1.0% to 1.7%.
- "Nowcasting" finds that effective reproduction number **R_{eff} continues to be relatively stable**. R_{eff} is now **1.4 both nationally and** in the Auckland region. The doubling times are still substantially longer than observed internationally -- at 7.4 days nationally, and 6 days in the Auckland region. The cases in the Auckland regions continue to drive the dynamics of the pandemic wave nationally.

Contents

Exposure Events and Clusters of Interest

- Due to lack of available capacity for DHBs/PHUs to report on clusters or exposure events, there will be no further updates.

Recent cases

Table 1 to Table 4 show new cases reported in the week to 12 February 2022 by DHB, age, sex and ethnicity. **Cases have significantly increased in the week to 12 February** with 2,139 cases being reported and **over 1,000 of these cases have been reported in the past two days** (13 - 14 February).

- Most cases reported in this period continue to be primarily in Counties Manukau, Waikato, Auckland, and Waitemata DHBs (Table 1).
- Cases of Asian ethnicity now represent 30% of recent cases. Cases of Pacific ethnicity have increased in recent days and represent 31% of recent cases. (Table 2).
- Cases remain evenly distributed between sexes (Table 3).
- Cases continue to be highest in age groups 10-19, 20-29, and 30-39, but are greatest in the 20-29 and 30-39 age group. Cases in the 20-29 age group have increased by 129 in the three days since the last report. (Table 4).

Table 1: Community cases by DHB from 06 February to 12 February 2022

DHB	Community cases reported since 06 February
Northland	81
Waitemata	272
Auckland	472
Counties Manukau	1317
Bay of Plenty	93
Waikato	338
Tairawhiti	8
Lakes	54
Taranaki	11
Hawke's Bay	20
Whanganui	6
MidCentral	14
Hutt Valley	39
Capital and Coast	32
Wairarapa	2
Nelson Marlborough	5
Canterbury	3
South Canterbury	2
Southern	32
Total	2801

Source: NCTS/EpiSurv 2359hrs 12 February 2022

Table 2: Community cases by ethnicity from 06 February to 12 February 2022

Ethnicity	New community cases since 06 February
Maori	303
Pacific Peoples	1154
Asian	820
European or Other	515
Unknown	9
Total	2801

Source: NCTS/EpiSurv 2359hrs 12 February 2022

Table 3: Community cases by sex from 06 February to 12 February 2022

Sex	New community cases since 06 February
Female	1432
Male	1363
Unknown	6
Total	2801

Source: NCTS/EpiSurv 2359hrs 12 February 2022

Table 4: Community cases by age from 06 February to 12 February 2022

Age	New community cases since 06 February
0-9	348
10-19	466
20-29	670
30-39	512
40-49	355
50-59	272
60-69	110
70+	68
Total	2801

Source: NCTS/EpiSurv 2359hrs 12 February 2022

Epidemic Curves

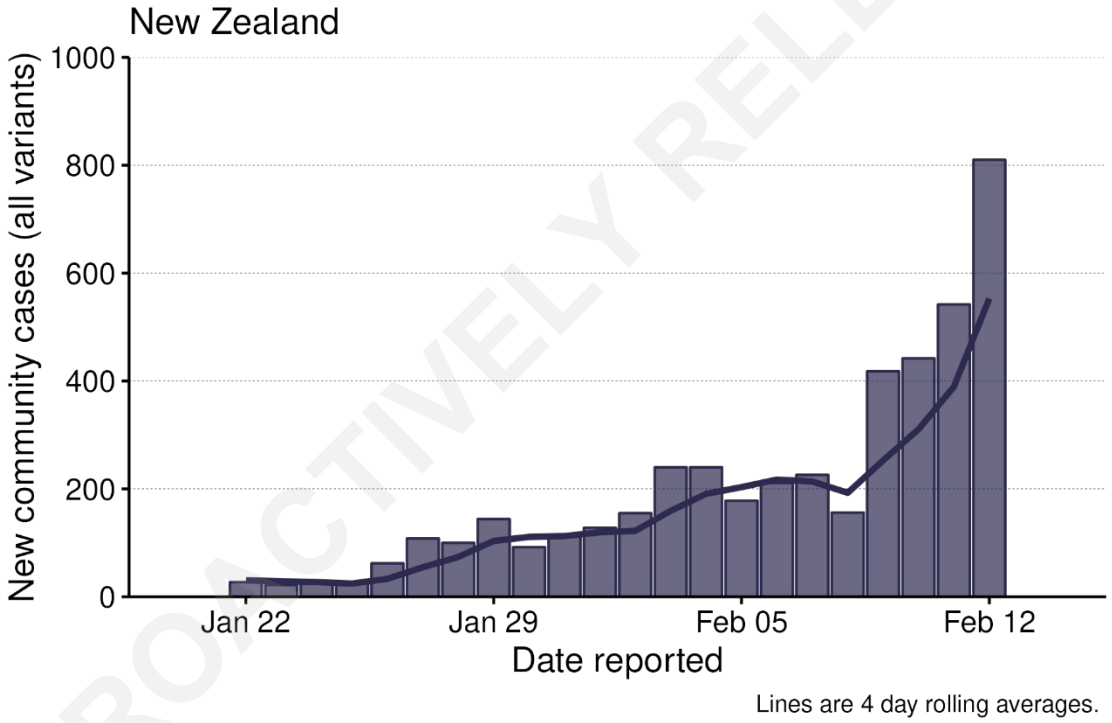
Figure 1 and Figure 2 below show the number of new cases reported in the three weeks from 22 January 2022 to 12 February 2022 nationally and by DHB.

Nationally, New Zealand has had a steady increase in cases from late January to early February. Cases remained relatively stable from this point until **9 February 2022,** which saw an increase to what was then the **highest number of community cases since the pandemic began**. This **rose again on 10 February** before **rising significantly on 11 February** (Figure 1).

This sudden rise in cases is most apparent at a **regional** level in **Auckland Metro**, **Counties Manukau** and the **Northern Region,** which all experienced a similar pattern from 9 February onwards (Figure 2). **Midlands Region** also had a similar rise in case numbers over recent days but at a smaller scale and with fewer overall cases in comparison.

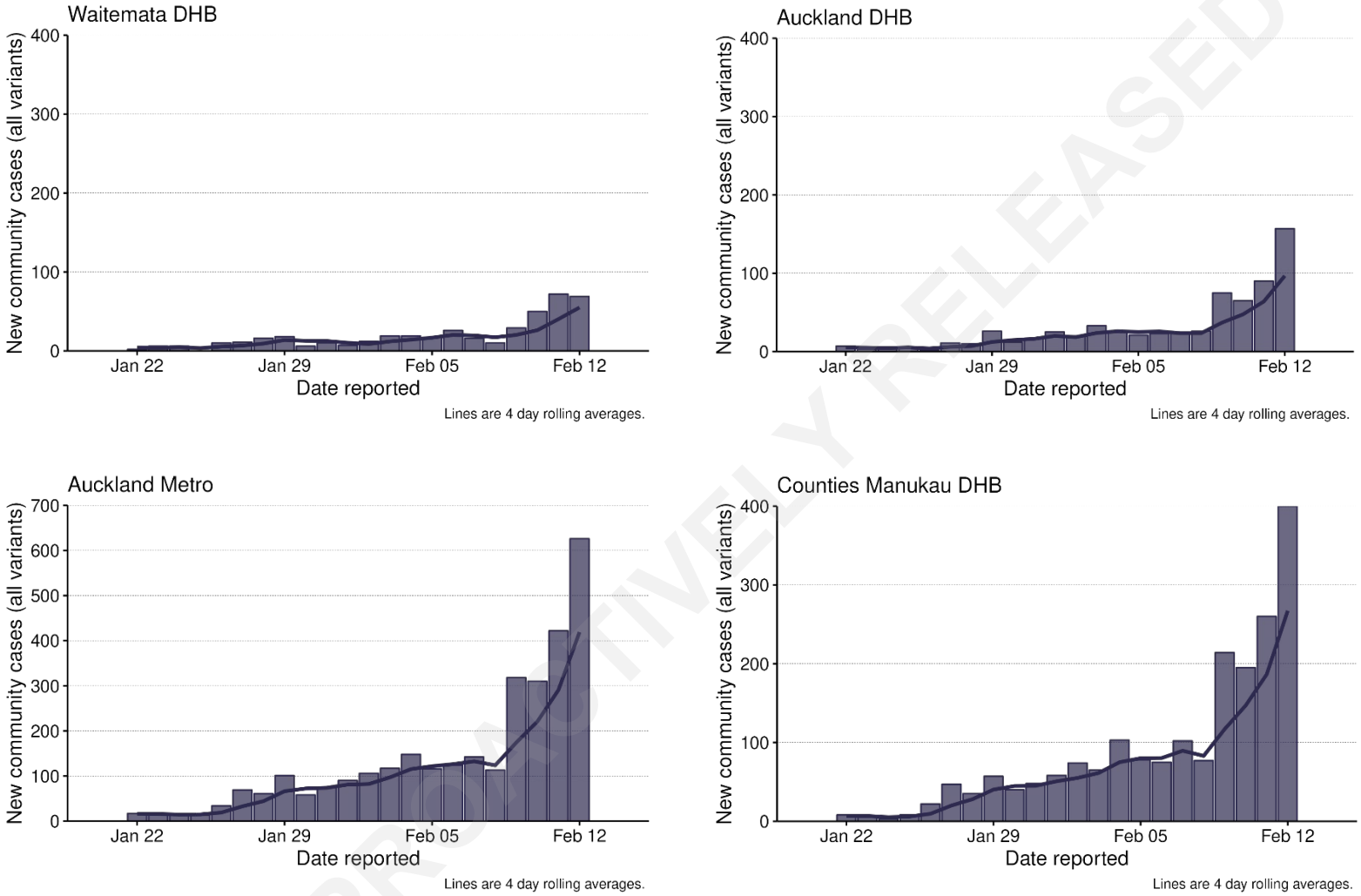
Waitemata, **Auckland** and **Waikato** DHBs have experienced lower cases overall throughout this period but have still seen increases in the last three days.

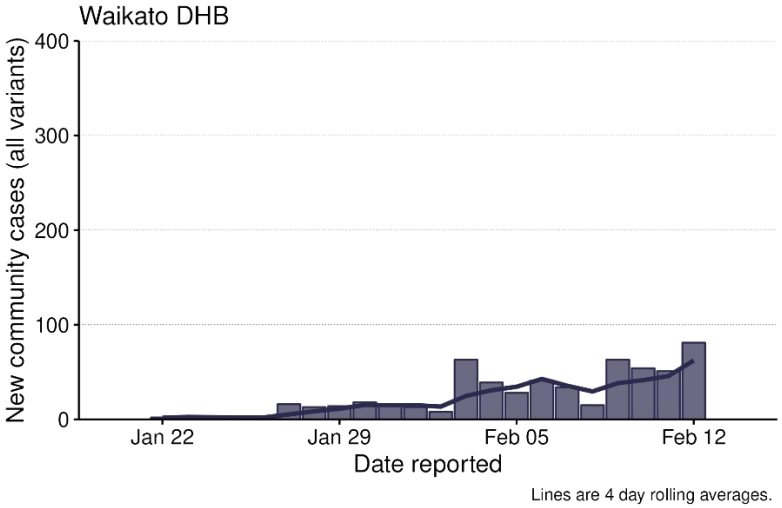
Figure 1: Daily community cases nationally from 22 January to 12 February 2022

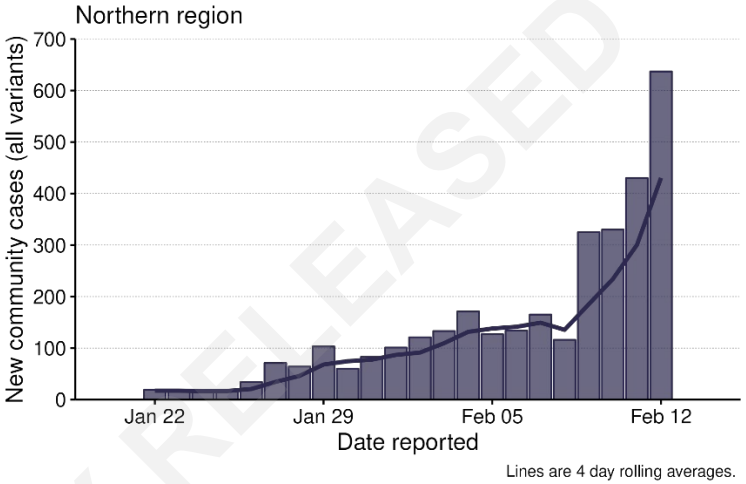


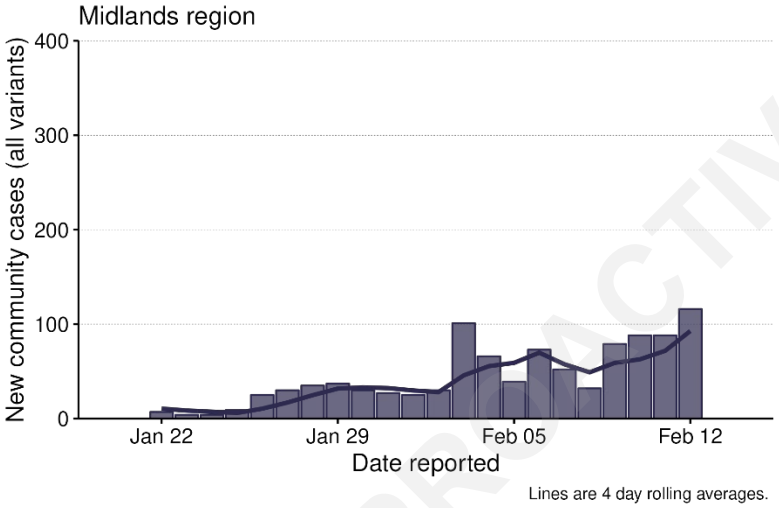
Source: NCTS/EpiSurv as at 2359hrs 12 February 2022

Figure 2: Daily community cases by DHB from 22 January to 12 February 2022









Source: NCTS/EpiSurv as at 2359hrs 12 February 2022

Cases by Ethnicity

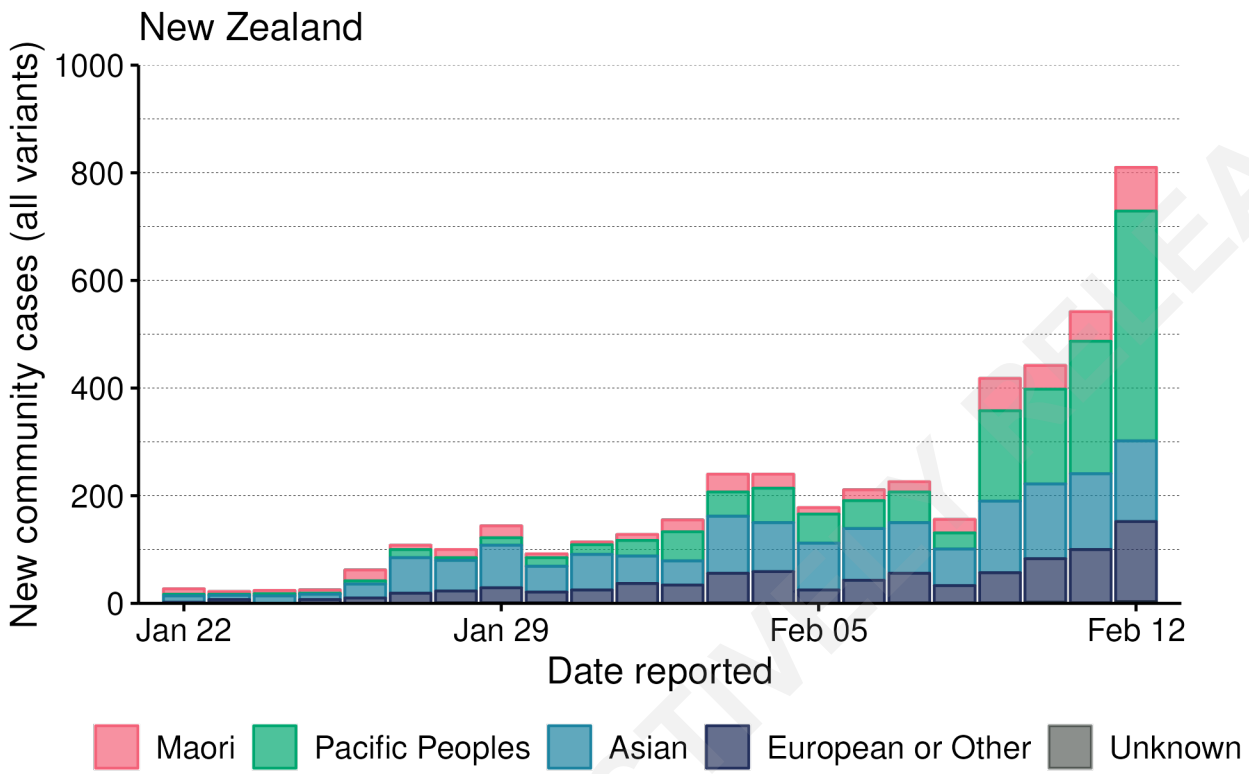
The Figure 3-Figure 5 on pages 11-13 show the ethnicity of new cases reported in the three weeks from 22 January 2022 to 12 February 2022, as a four-day rolling average.

Ethnicity of cases was relatively evenly distributed prior to a substantial shift on 27 January (Figure 3), with cases of **Asian** ethnicity increasing substantially, consistent with the outbreak initially affecting Indian communities. Cases have risen rapidly from 9 February 2022 onwards and, during this period, there has been an increase in cases among **Pacific Peoples who are now the largest ethnic proportion of cases**. Cases in Asians increased during this time as well and are only slightly below those in Pacific Peoples (Figure 3).

Māori and **European or Other have experienced slight increases** during the 9 February to 12 February period but cases remain much lower than those in Asian and Pacific Peoples (Figure 4).

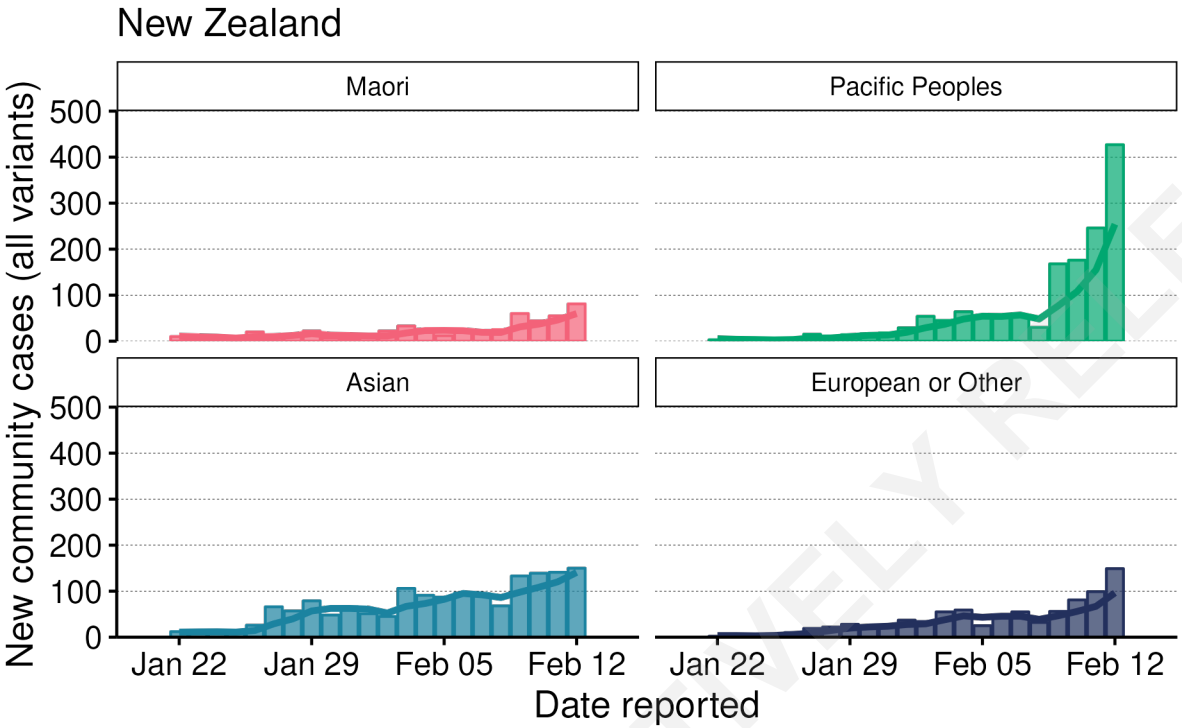
The increase in cases in Pacific Peoples is most apparent in **Auckland** and **Counties Manukau**. High case numbers for those of **Asian** ethnicity are noted in these same regions but on a lower scale compared to Pacific Peoples. A high number of cases for those of **Asian** ethnicity are also noted in the **Bay of Plenty** and **Midlands Region**. In the Lakes region, although there are a relatively lower number of cases, most are Māori (Figure 5).

Figure 3: Daily community cases across New Zealand, by ethnicity from 22 January to 12 February 2022



Source: NCTS/EpiSurv 2359hrs 12 February 2022

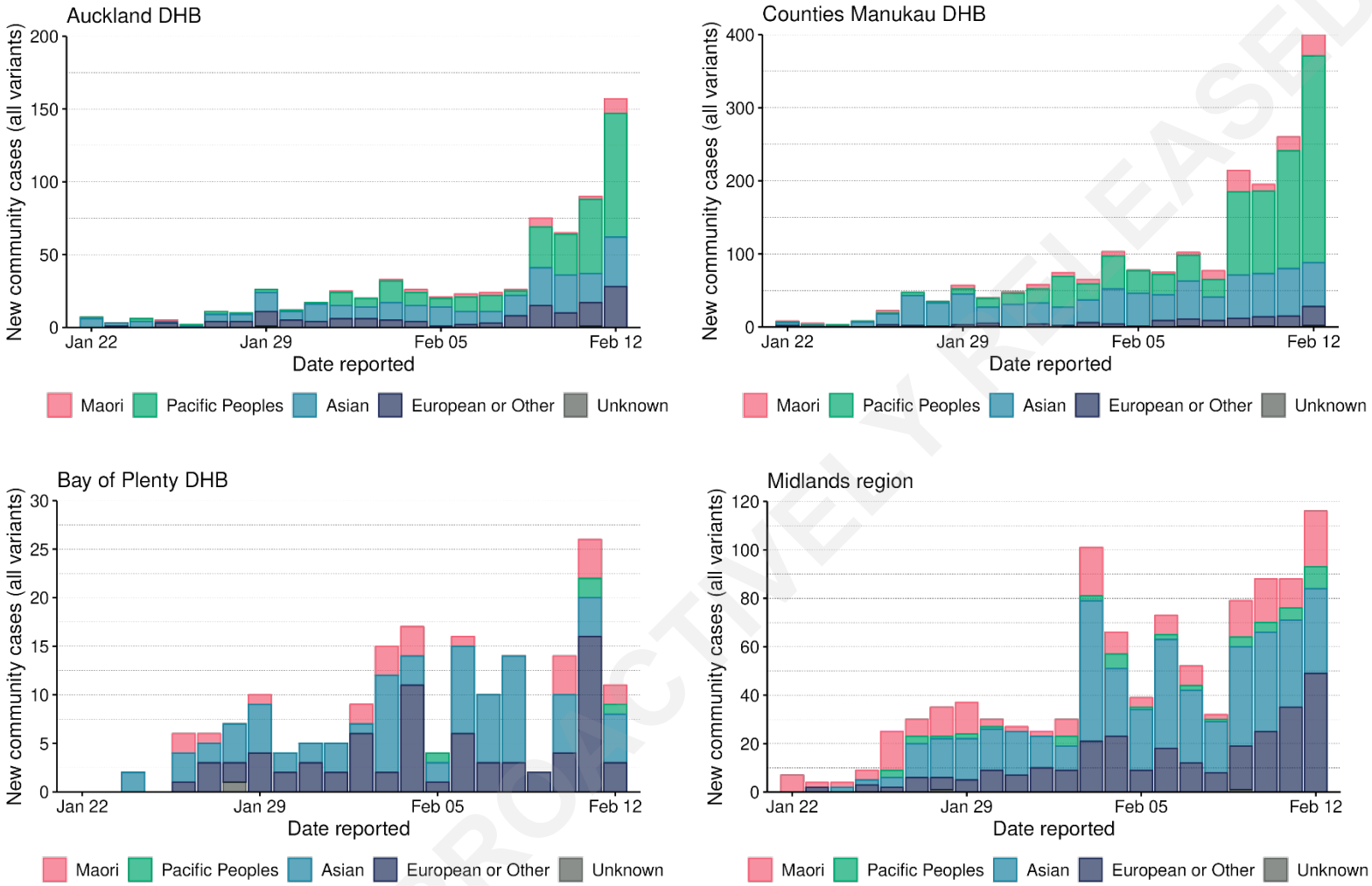
Figure 4: Daily and rolling 4 day of average community cases across New Zealand, by ethnicity from 22 January to 12 February 2022

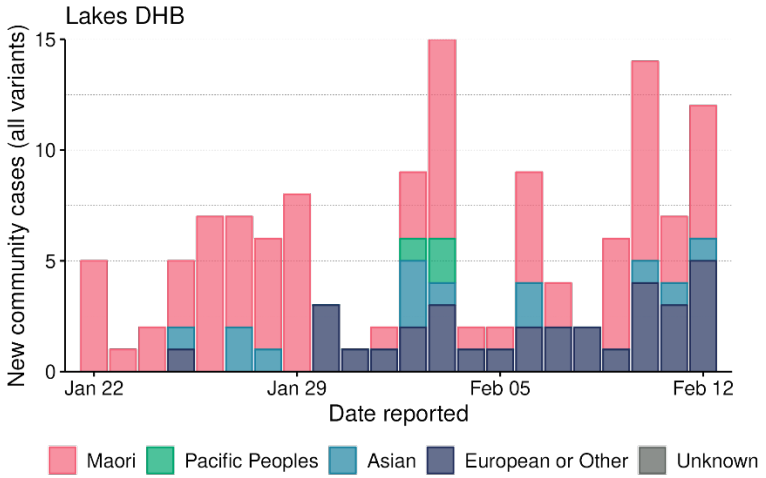


Lines are 4 day rolling averages. 14 cases with unknown ethnicity have been excluded.

Source: NCTS/EpiSurv 2359hrs 12 February 2022

Figure 5: Daily cases by ethnicity and DHB from 22 January to 12 February 2022





Source: NCTS/EpiSurv 2359hrs 12 February 2022

Cases by Age

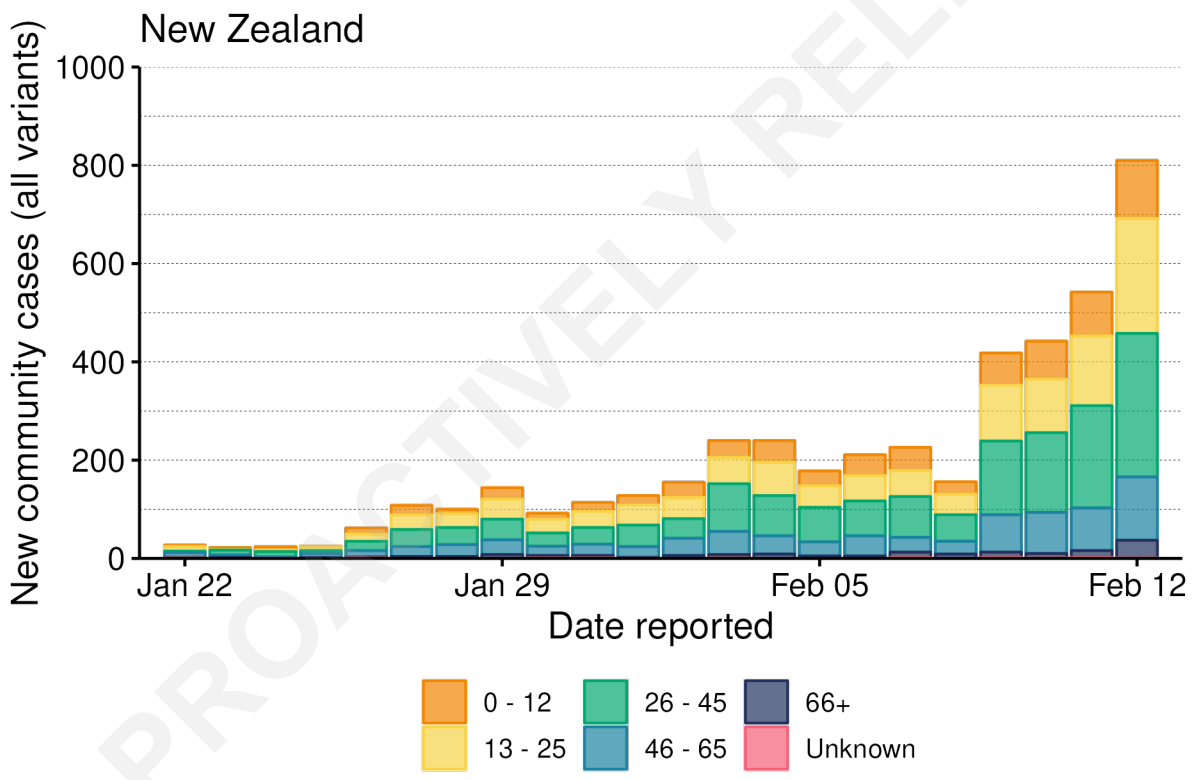
Figure 6 shows new cases by age group from 22 January to 12 February 2022, as a four-day rolling average.

From January 26, all age groups experienced marked increases. The two groups **most affected are 13-25 year olds and 26-45 year olds**, consistent with what has been observed since August 2021 (the beginning of the Delta outbreak). These two age brackets were still the most affected after the recent increase in overall cases from 9 February 2022 onwards. **Smaller increases were observed for 0-12 and 46-65** age groups.

As noted in Cases by Ethnicity Pacific Peoples and Asians are the most represented in community cases (Figure 7). Cases in **Pacific Peoples** are most apparent in the **20-29** age group. Cases in **Asians** are most apparent in the **20-29** and **30-39** age group.

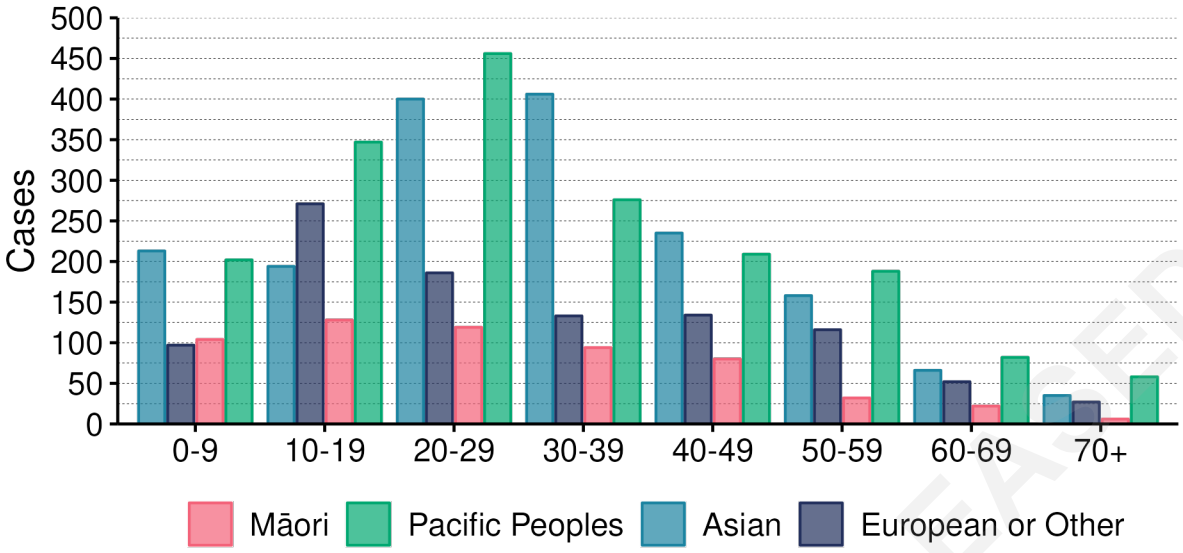
Cases in **Māori** are relatively similar across all age groups while for **European or Other**, cases are highest in the **10-19** age group.

Figure 6: Four-day rolling average of COVID-19 community case numbers by age for 22 January to 12 February 2022



Source: NCTS/EpiSurv 2359hrs 12 February 2022

Figure 7: COVID-19 community case numbers by prioritised ethnic group and age group, 22 January to 12 February 2022



Source: NCTS/EpiSurv 2359hrs 12 February 2022

Cases by socio-economic indicators

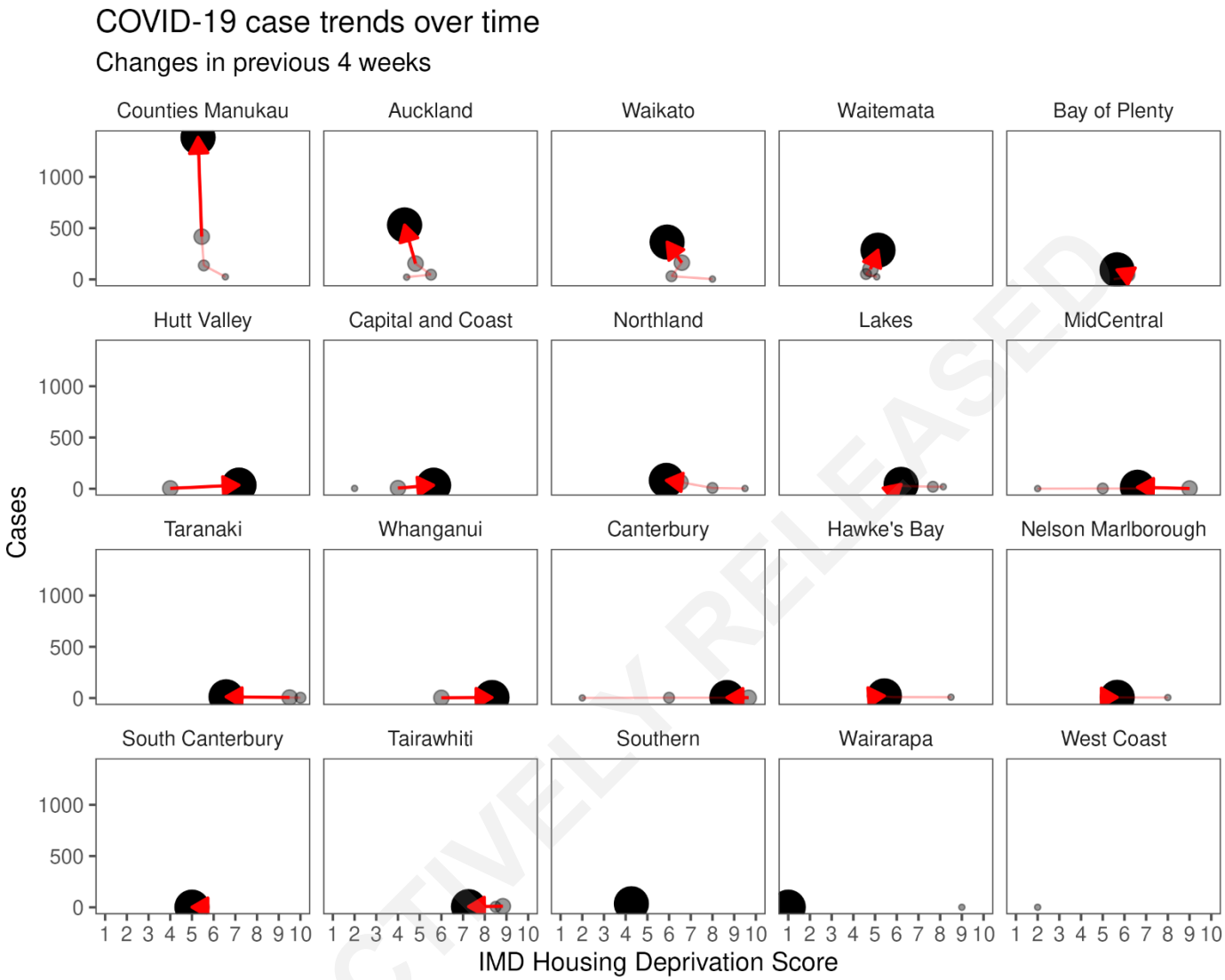
Figure 8 shows cases by housing deprivation using the **Index of Multiple Deprivation (IMD) Score[1], with lower scores indicating lower deprivation**. These factors are key structural determinants of COVID-19 risk.

Housing is a key determinant of COVID-19 risk and transmission and housing deprivation is a proxy for structural determinants of health (such as income, employment, material deprivation, and ethnicity). **Arrow direction shows the shift from the previous week compared to the past four weeks**, with each circle indicating cases reported per week and increasing circle size showing progressively recent weeks.

Cases in **Counties Manukau** have had the largest increase in case numbers this week, with a continued **slight shift in cases to communities with lower deprivation scores**. Cases in Auckland have had a slight shift to communities with lower deprivation scores. **Waikato** and **Northland** are **trending towards lower deprivation** also, though with lower case numbers than Counties Manukau but these are starting to increase. Deprivation of cases in Bay of Plenty and Waitemata DHBs have stayed relatively stable. For other DHBs where there have been very few cases reported in recent weeks, determining a trend in case deprivation is difficult.

[1] The Index of Multiple Deprivation is a set of indices following a methodology developed in the United Kingdom. It measures relative disadvantage in New Zealand neighbourhoods based on employment, income, crime, housing, health, education and access to services. For more information, please refer to *The 2018 New Zealand Index of Multiple Deprivation (IMD18): Indicators for social and health research in New Zealand* (Brief-report-IMD18.pdf (auckland.ac.nz).

Figure 8: COVID-19 case trends by DHBs weighted by housing deprivation score for the four weeks to 12 February 2022



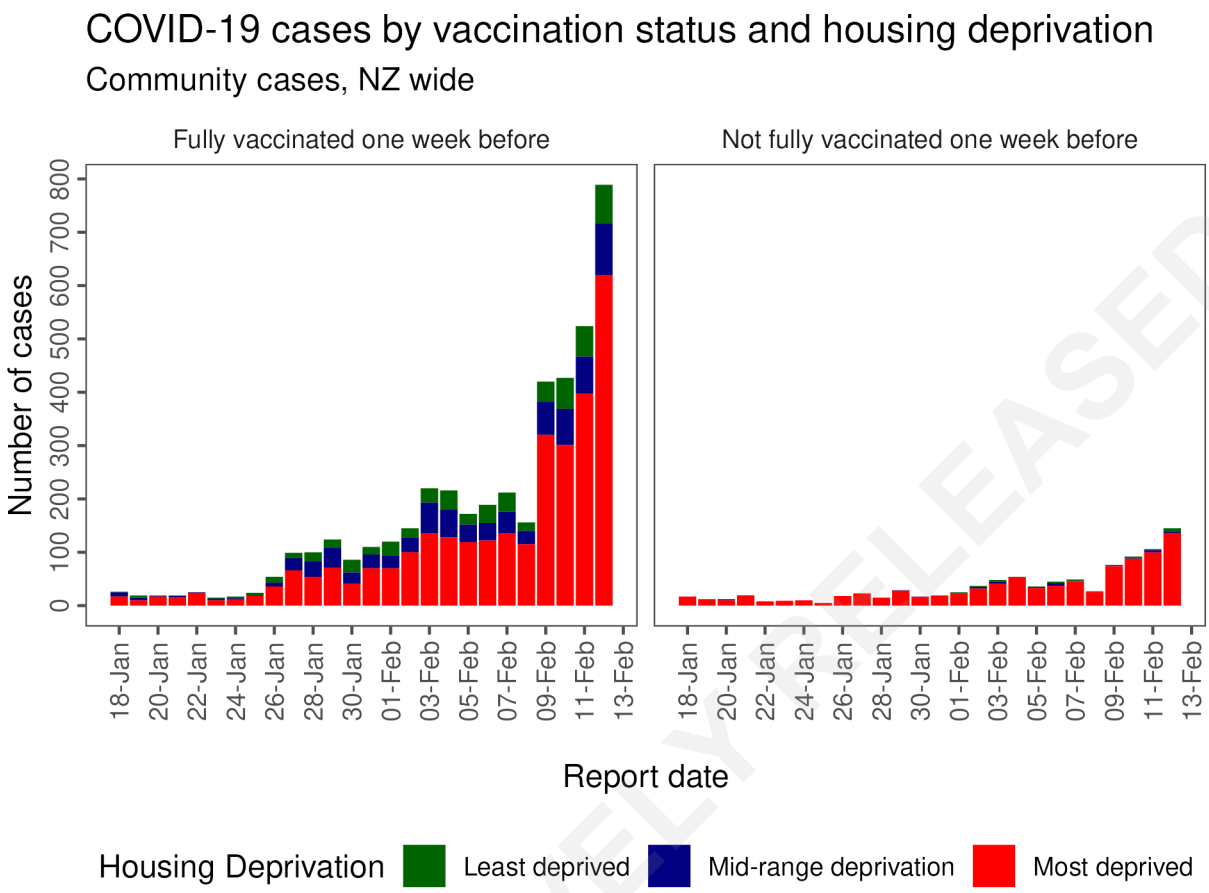
Source: NCTS/EpiSurv 2359hrs 12 February 2022 and IMD18 Database

Error! Not a valid bookmark self-reference. shows cases by **housing deprivation** from 19 January 2022 to 12 February 2022 among those **fully vaccinated** and **not fully vaccinated one week prior.** Rising cases affects all deprivation groups but is **still most apparent in the most deprived**.

Across this period, those most deprived make up the highest proportion of cases with a large increase in this demographic on 11 February, but **the proportion of cases in the mid-deprived and least deprived groups has increased since 01 February**.

Those **not fully vaccinated** have experienced increases in cases but on a smaller scale. This is not unexpected: 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 9: COVID-19 cases from 22 January 2022 to 12 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 12 February 2022, IMD18 Database

Community Testing

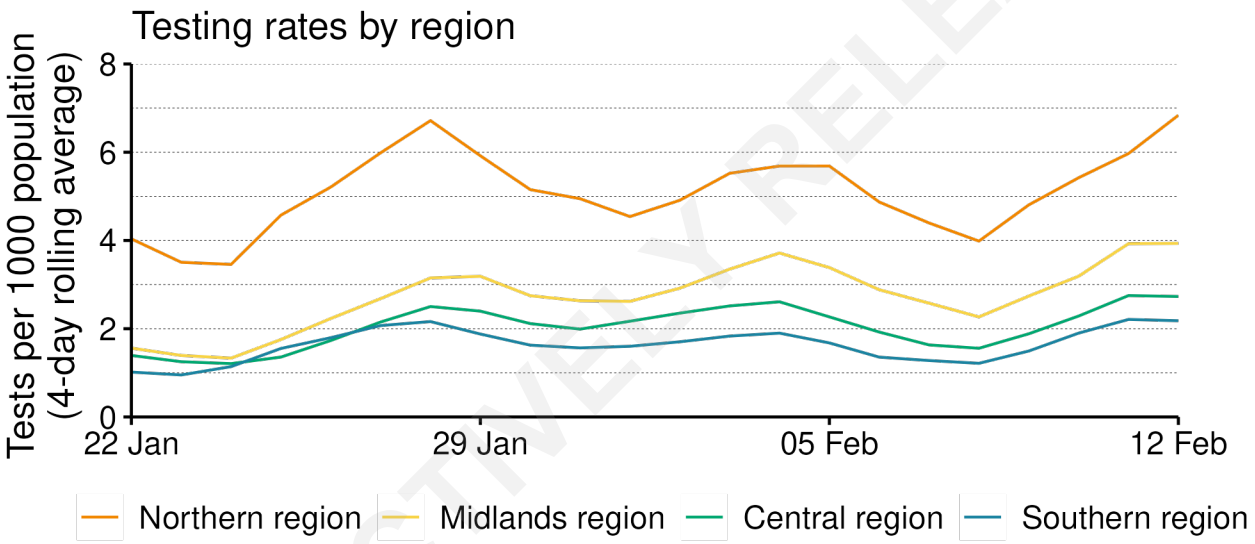
The figures in this section show the rates of community testing from 22 January 2022 to 12 February 2022.

The **Auckland, Waikato** and **Northland** DHBs (**Northern Region**) continue to have the **highest number of tests per 1,000 population** (Figure 10) with testing rates fluctuating between 3.5-7 tests per 1000 population since 22 January 2022. **Counties Manukau** have the highest test rate in the Northern Region (Figure 11). Testing rates across the rest of the country are lower, sitting between 1.5-3 tests per 1000 in the same timeframe. A drop in testing nationwide can be seen leading into and throughout Waitangi weekend before recovering (Figure 10).

In the **Midlands Region**, test positivity from early February onwards for **Bay of Plenty**, **Lakes** and **Waikato** is notably higher than that of Tairawhiti and Taranaki. From 5 February, test positivity for **Hutt Valley** DHB in the **Central Region** has been steadily increasing. **Hawkes Bay** DHB experienced a peak at 2% before steadily declining (Figure 11).

Test positivity for the **Southern Region** remains low but may be increasing for **South Canterbury** and **Southern** DHBs, which may be more conclusive when next reported on (18 February 2022).

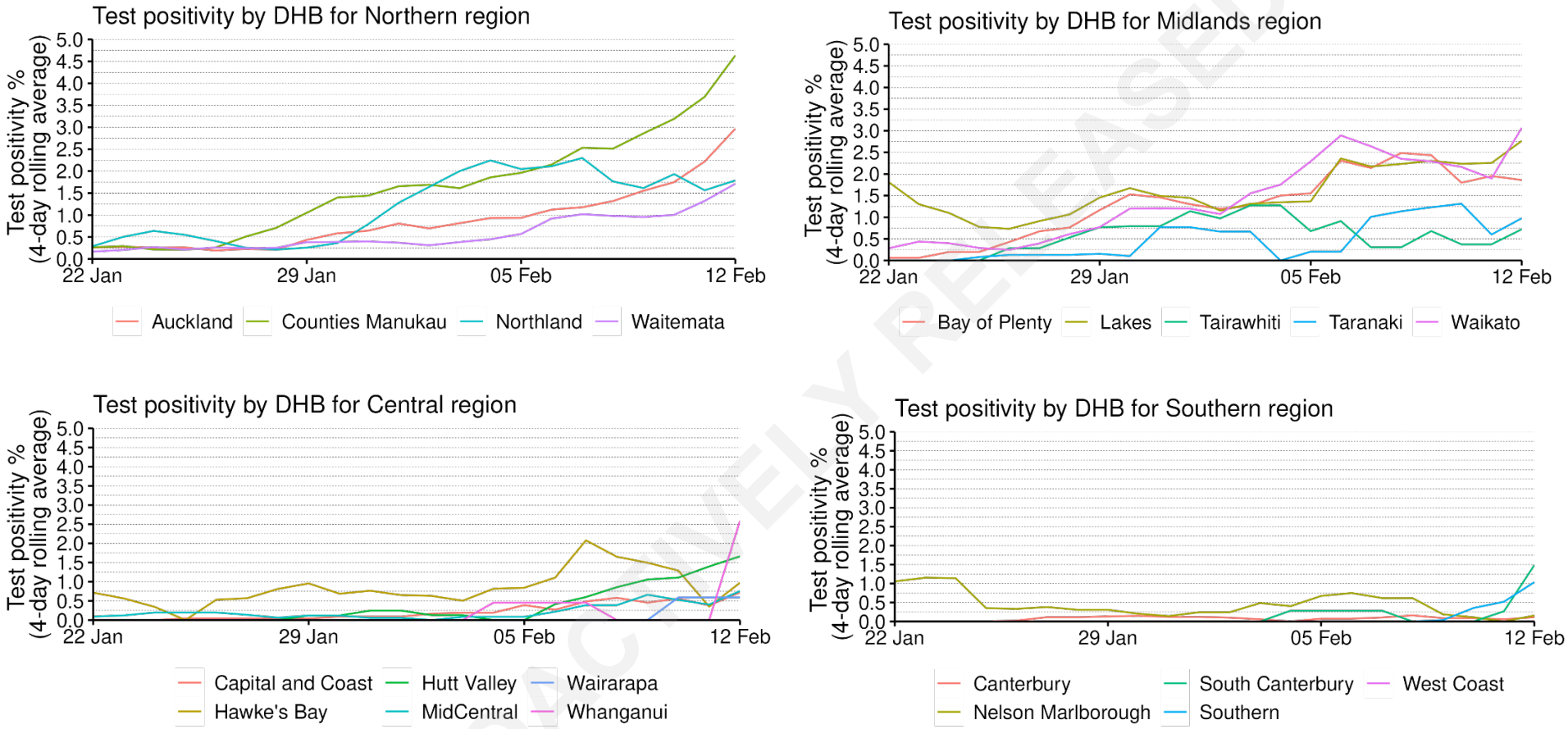
Figure 10: Testing rate by region[2] (four day rolling average) by region and DHB, 22 January to 12 February 2022



Source: Éclair testing database 12 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 11: Test positivity (four day rolling average) by region and DHB, 22 January to 12 February 2022



Source: Éclair testing database 09 February 2022, EpiSurv 12 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 generate updated scenarios in coming weeks.**

Figure 12 shows actual cases between 01 January 2022 and 13 February 2022 by report date (grey), compared to the projections modelled by Te Pūnaha Matatini's COVID-19 Modelling Aotearoa group. The projection scenarios used are 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, so do not align directly with actual cases. Scenarios were considered for different seeding dates and booster uptake rates. The scenarios used here have a seeding date of 1 February 2022 and an assumed booster uptake of 90% among the eligible population.

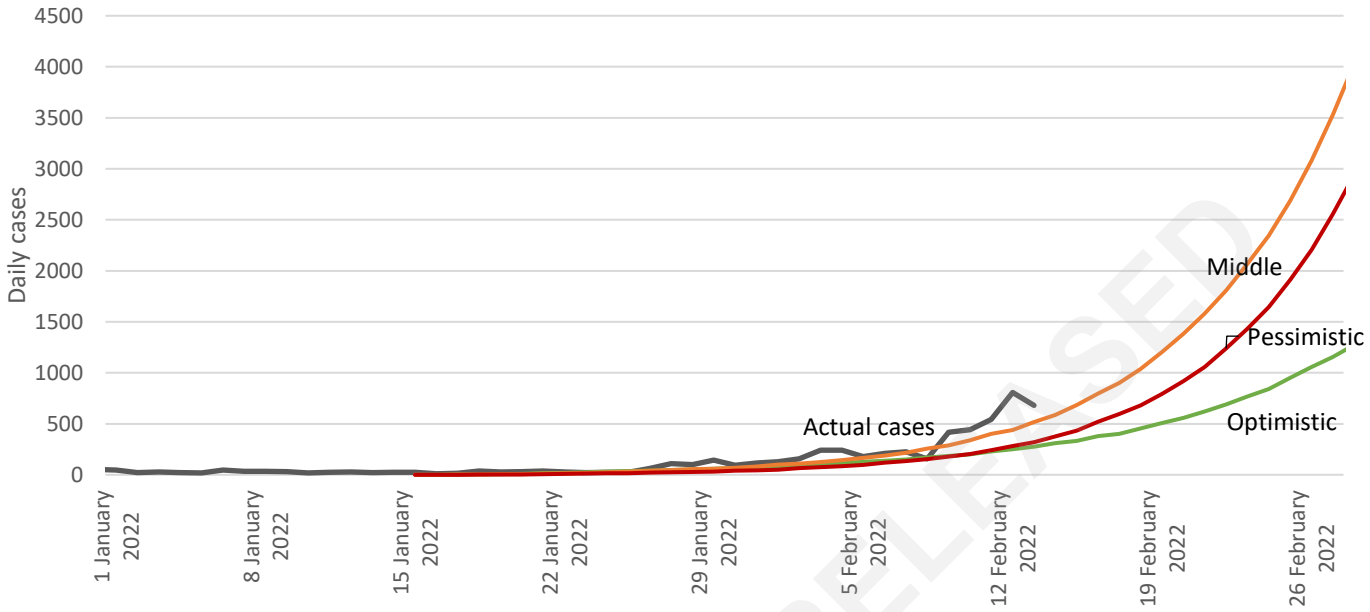
Figure 12 shows these **model's scenarios, moved in time to match an outbreak that started on 15 January**. However, fitting these projections to actual cases is very sensitive to the choice of start date and therefore, it is hard to tell whether actual cases are ahead or behind what the model predicts. We expect the 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 is 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 12: Actual daily cases from 1 January 2022 to 13 February 2022 and potential future scenarios of daily cases from 15 January to 27 February 2022



Effective reproduction rate

The **current estimated effective R (R_{eff}) nationally is 1.4** [95% Credible Interval 0.9-2.0] for cases to 11 February, after adjusting for data lags. This indicates that infections are likely increasing nationally. The R_{eff} is not trending up or down, but remaining stable for now.

The **estimated doubling time** is around **7.4 days** [95% Credible Interval 2.7 – 17].

The R_{eff} for the Auckland region is 1.4 [95% Credible Interval 0.9-2.3], and the doubling time is now 6.0 days [95%CI 2.1 – 12.5].

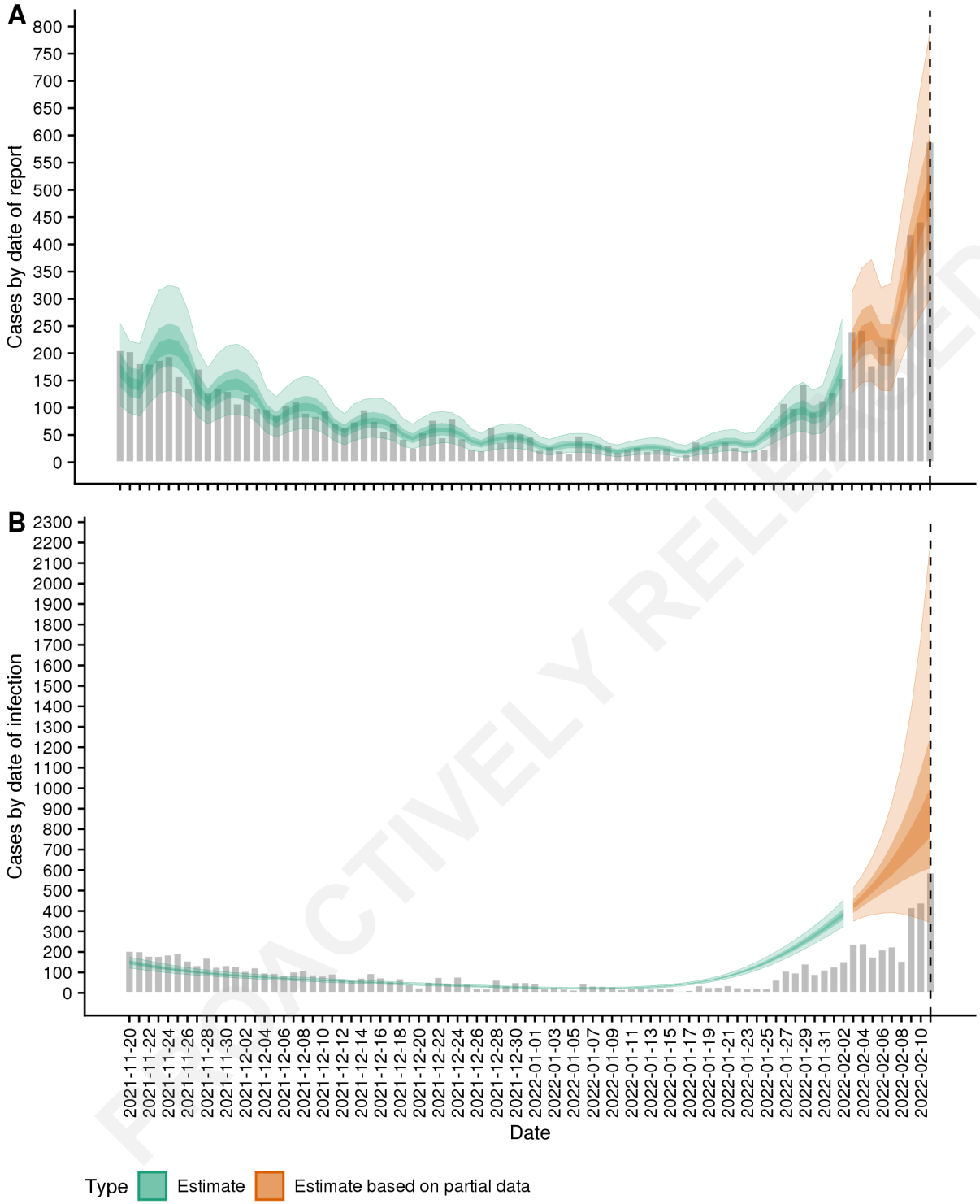
Nowcasts of cases and infections

Estimates of the current number of cases by infection date are given for New Zealand in Figure 13, and for the DHBs in the Auckland region in Figure 14. The model uses the estimated R_{eff} and recent data on the lag between infection and reporting to estimate that there were already 880 infections per day by 11 February, when only 493 cases per day had been reported.

The smoothed estimates in green are based on complete data; estimates in orange allow for reporting delays in recent cases. The EpiNow package's estimates are shown with credible intervals of 20%, then 50%, and 90%.[3].

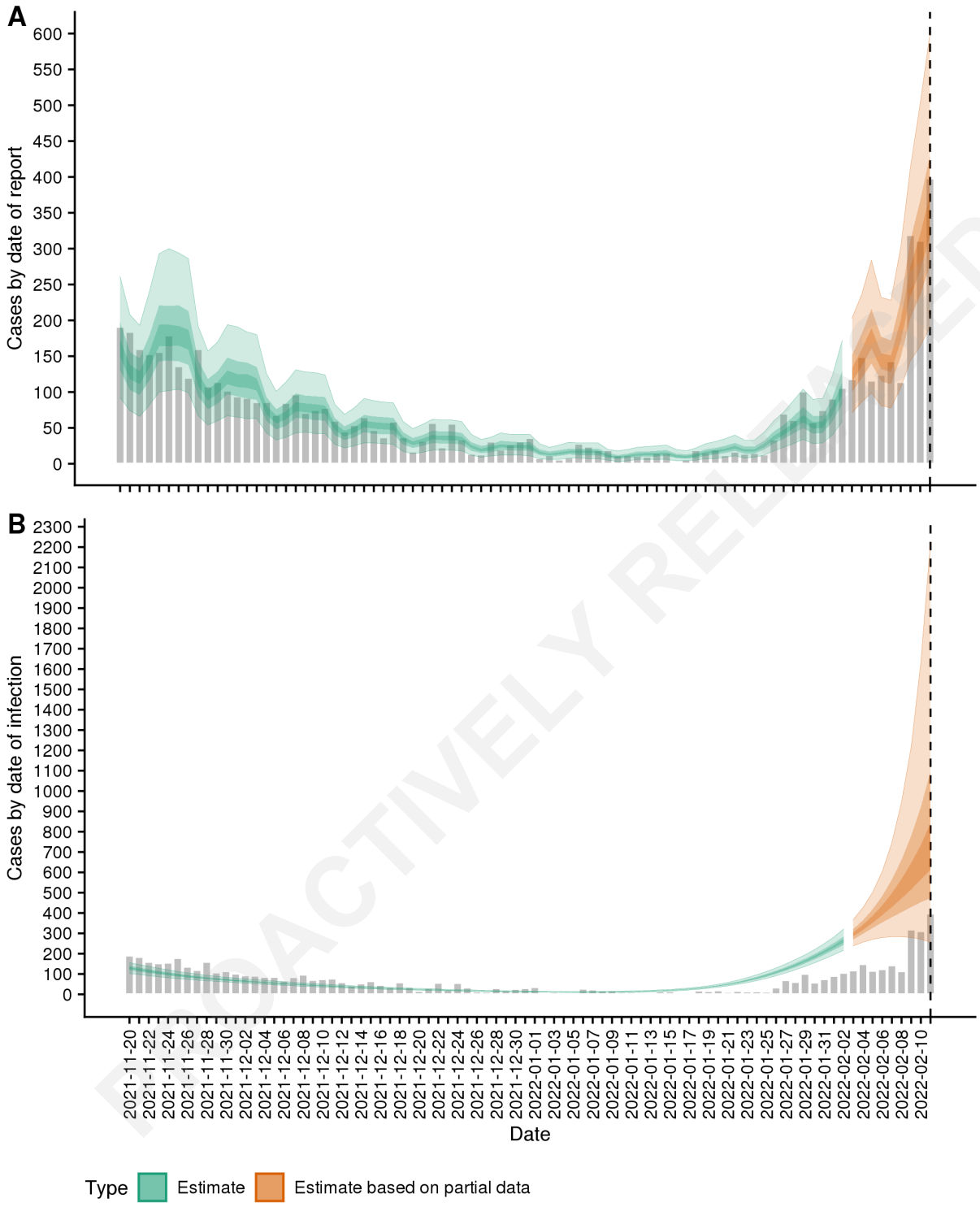
[3] The EpiNow package 'now-casts' cases to measure current and past transmission nationally by calculating and then extrapolating the effective reproduction number, R_{eff}. Note that the model does not consider several factors that may impact transmission, such as rapid changes in public health measures, population behaviour, mobility, or school holidays. This model requires sustained daily cases before it can make predictions. There have been too few recent cases to estimate reasonable forecasts by region.

Figure 13: Community case numbers by date of report and date of infection for New Zealand



Source: Te Pūnaha Matatini, 13 February 2022. EpiNow2 projections based on Ministry of Health case data to 11 February 2022.

Figure 14: Community case numbers, by date of report and date of infection for Auckland Public Health region DHBs



Source: Te Pūnaha Matatini, 13 February 2022. EpiNow2 projections based on Ministry of Health case data to 11 February 2022.