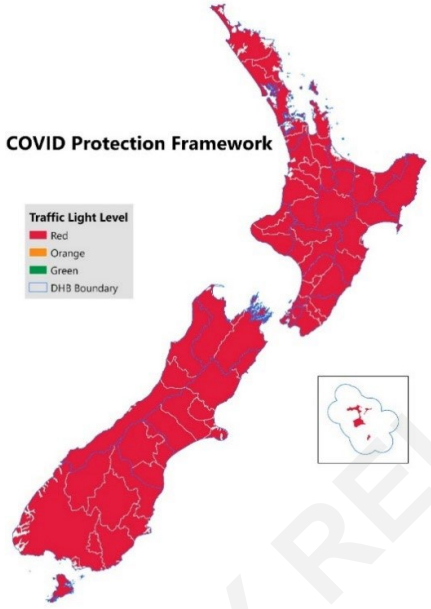
COVID-19

Trends and Insights Report

Updated 12 February 2022

Current State of Aotearoa



Snapshot of the past 7 days

- Overall, 1,667 new cases were reported in the week from 03 February to 09 February 2022, with a **sharp increase more recently**. A third of these cases were reported in the last two days (08 – 09 February).
- **Counties Manukau DHB continues to report the highest** number of community cases, reporting 714 cases in the week, increasing to 43% of cases nationally.
- People of Asian ethnicity make up 39% of total cases since 31 January, down from 43% last reported 06 February. Other ethnicities have increased as cases have increased since late January.
- Overall, **case rates have been increasing in all age groups,** with slower increases in case rates seen in 60+. The increase was **most prominent in the 13-25 and 26-45 year old age groups**, including a **large increase in the 0-9 age groups**. This is potentially correlated with the return to school and an increase in infection rates in parents and caregivers (based on the increase in cases in the 26-45 year-old age group).
- **Test positivity continues to remain low nationally in the reporting period but is increasing** especially **Northern** and **Midland** DHBs, which are currently **tracking towards 3%.** This indicates that diagnosed case numbers are likely an accurate reflection of prevalence **despite a decrease in testing over Waitangi weekend.** As test positivity rises, increases in reported case numbers is expected.
- Nationally, cases have increased significantly in the past few days, consistent with the increased growth predicted by previous forecasts. As of 07 February, **the effective reproduction rate R_{eff} is estimated to be 1.3** and the **doubling time is estimated to be 8.5 days**. This is consistent with a continued rapid increase over the next week in most areas.
- With regards to the national TPM modelling, it is **too early to know if observed cases are tracking more consistently with the 'pessimistic' or 'optimistic' scenarios.**

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 09 February 2022 by DHB, age, sex and ethnicity**. Cases have significantly increased in the past week to 09 February** with 1667 cases being reported and **just over a third of these cases** (571 cases) reported **in the past two days** (08 - 09 February).

- Most cases reported in this period continue to be primarily in Counties Manukau, Auckland, Waikato and Waitemata DHBs (Table 1).
- The rates of cases by ethnicity are converging, as would be expected as the outbreak spreads from the initial seeding events; cases of Asian ethnicity are continuing to decline and now represent only 39% 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 age group (Table 4).

Table 1: Community cases by DHB from 03 February to 09 February 2022

DHB	Community cases reported since 03 February
Northland	93
Waitemata	136
Auckland	227
Counties Manukau	714
Waikato	283
Bay of Plenty	80
Taranaki	8
Lakes	40
Tairawhiti	10
Whanganui	2
MidCentral	6
Hawke's Bay	23
Capital and Coast	19
Hutt Valley	10
Wairarapa	0
Nelson Marlborough	8
West Coast	0
Canterbury	6
South Canterbury	1
Southern	1
National	1667

Source: EpiSurv 2359hrs 09 February 2022

Table 2: Community cases by ethnicity from 03 February to 09 February 2022

Ethnicity	New community cases since 03 February
Asian	656
European or Other	305
Pacific Peoples	458
Māori	182
Unknown	66
Total	1667

Source: EpiSurv 2359hrs 09 February 2022

Table 3: Community cases by sex from 03 February to 09 February 2022

Sex	New community cases since 03 February
Female	852
Male	809
Unknown	6
Total	1667

Source: EpiSurv 2359hrs 09 February 2022

Table 4: Community cases by age from 03 February to 09 February 2022

Age	New community cases since 03 February
0-9	216
10-19	281
20-29	375
30-39	306
40-49	217
50-59	165
60-69	66
70+	39
Unknown	2
Total	1667

Source: EpiSurv 2359hrs 09 February 2022

Epidemic Curves

Figure 1 and Figure 2 below show the number of new cases reported in the three weeks from 19 January 2022 to 09 February 2022 nationally and by DHB.

Nationally, New Zealand has had a steady increase in cases from late-January to early February. Cases are continuing to rise with **February 09 reporting the highest number of cases of COVID-19 community cases since the pandemic began.** (Figure 1).

Of note, the decline in cases for **Auckland** reported in the previous Trends & Insights report has now been revised, as **cases have risen significantly, with the majority of 09 February cases being from the Auckland region.**

Surprisingly, **Northland** has not experienced a similar jump in case number and cases appear to be lower but on the rise. Test positivity (Figure 11, page 22) for **Northland** remains around 1.5% indicating this is still a relatively accurate view of the true community prevalence.

Waikato DHB has followed a similar trend to Auckland, with a brief dip before cases significantly rising on 09 February. Waikato has had low cases until late January, with slower increases than in Northland and Auckland**.** However, there was a 6-fold increase on 03 February compared to the 02 February, before potentially also plateauing.

In other DHBs the small case numbers mean trends are less reliable, but they are still described below.

Bay of Plenty had the same late January and early February peaks as other DHBs but is now appearing to trend downwards after initially rising from 02 February to 07 February. Test positivity (Figure 11, page 22) in the region is rising though so it is likely cases will increase in the future.

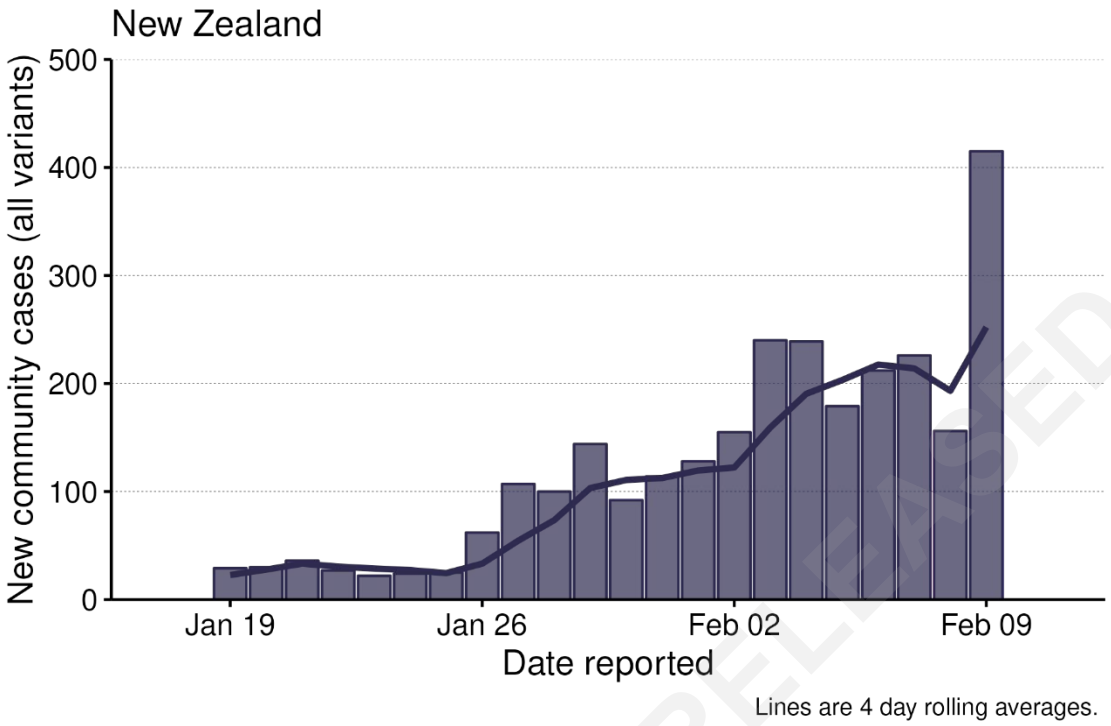
Lakes DHB has had fluctuating case numbers with three distinct peaks in mid January, late January and early February. These peaks are likely related to the Rotorua Emergency Accommodation cluster. The fluctuation is potentially attributable to confirmed backlogs in testing, with the lower case numbers aligning with days fewer tests were processed.

Hawke's Bay had a small increase in mid-January followed by period in late January with no cases at all. This was followed by two more peaks but note that Hawkes Bay's cases are comparatively lower to other DHBs (highest peaks are 8 cases).

Both **Capital and coast** and **Hutt Valley** DHB case numbers have started to rise after a relatively settled period of little to no cases during January.

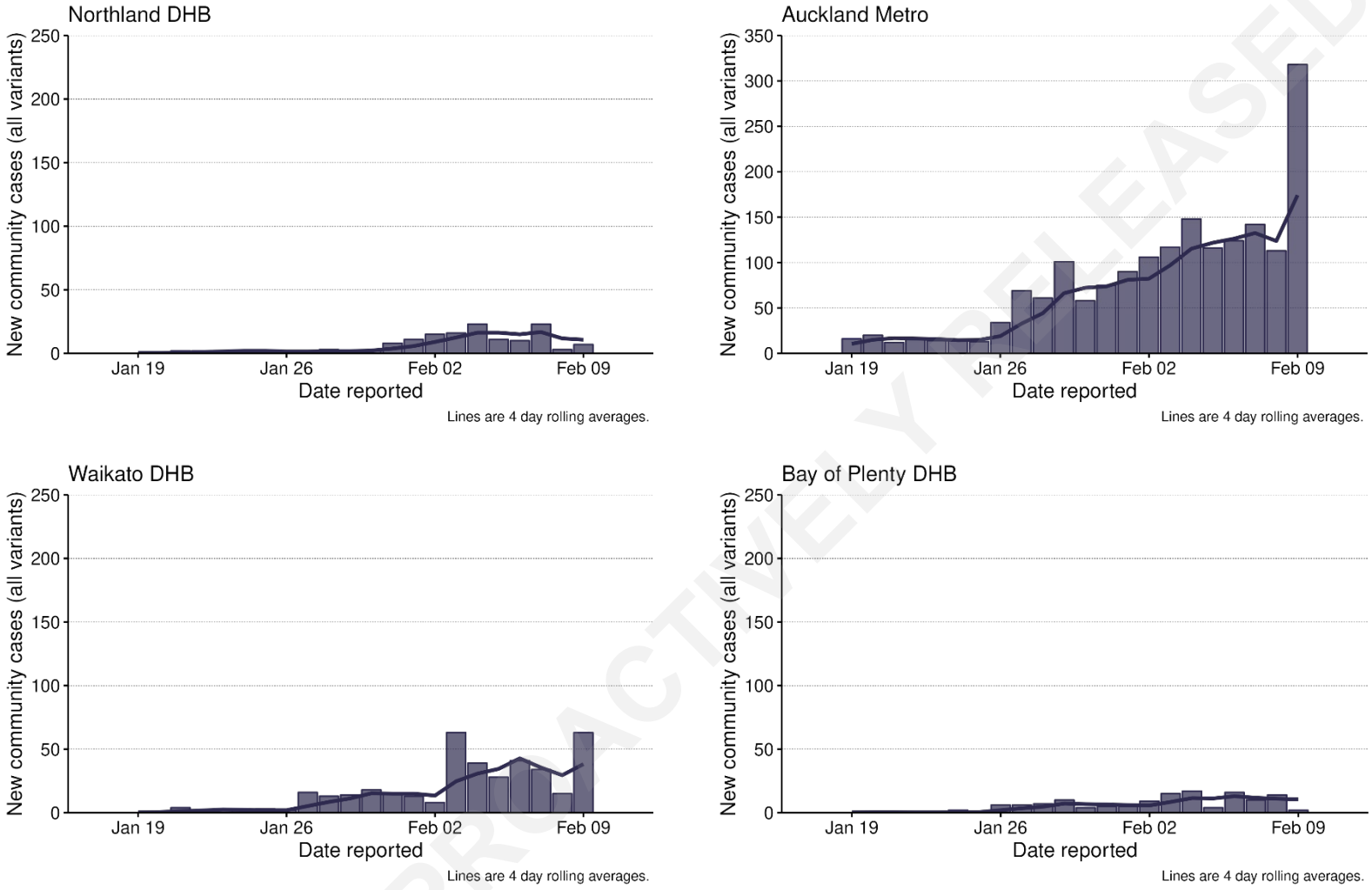
Aside from singular small peaks, **Tarawhiti, Midcentral, Nelson Marlborough** and **Canterbury** DHB cases numbers have remained low.

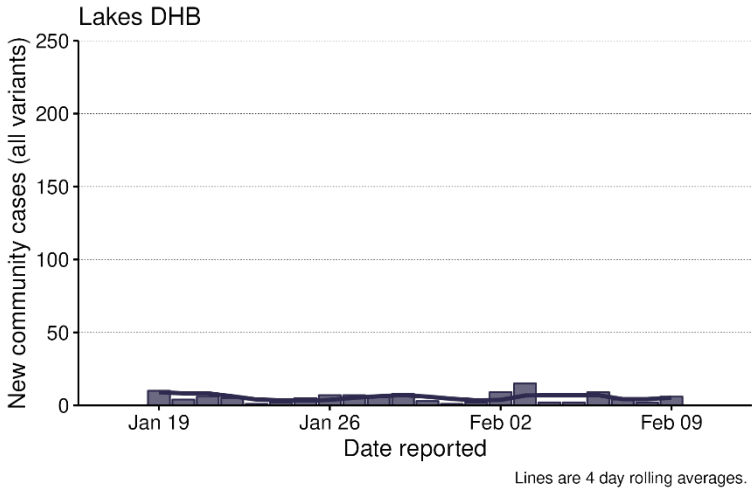
Figure 1: Daily community cases nationally from 19 January to 09 February 2022

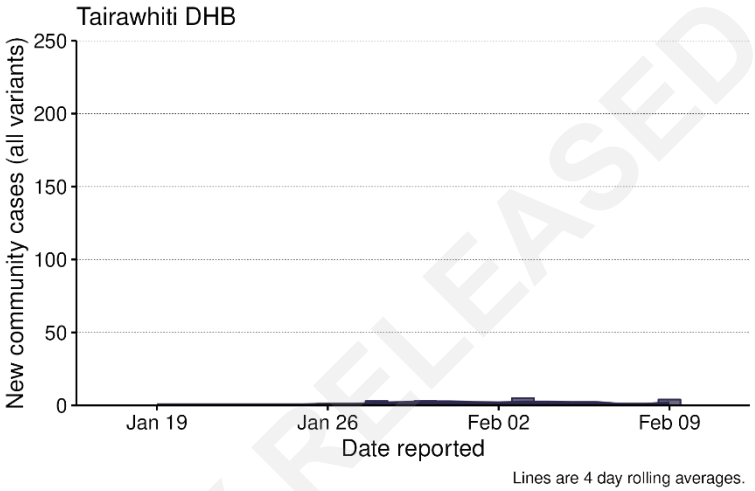


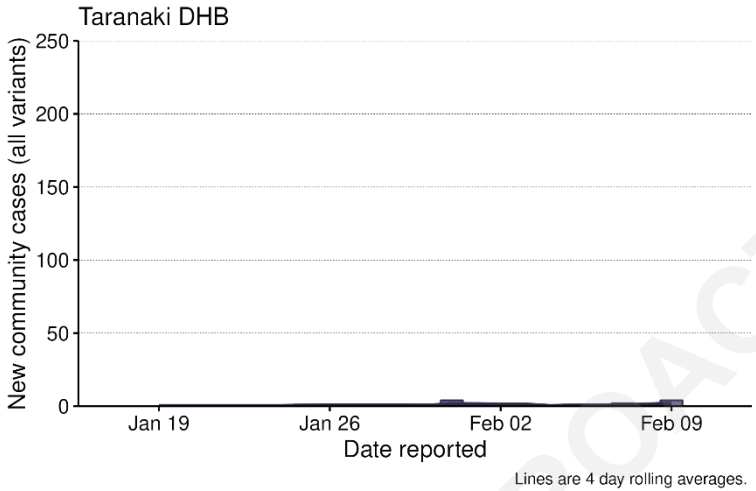
Source: EpiSurv 2359hrs 09 February 2022

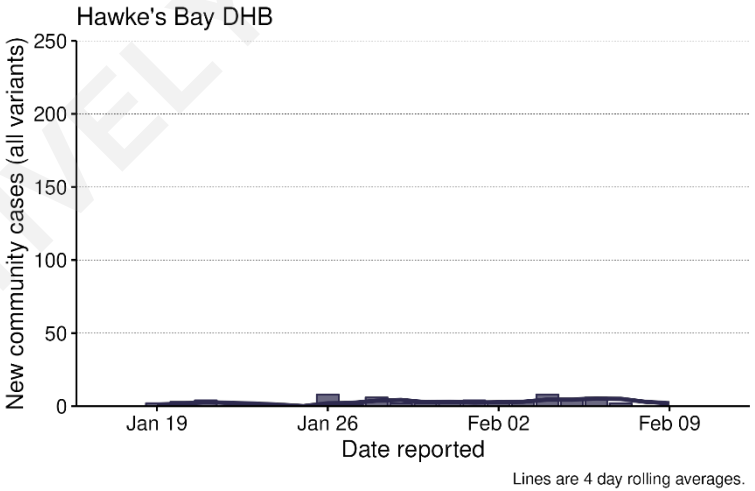
Figure 2: Daily community cases by DHB from 19 January to 09 February 2022

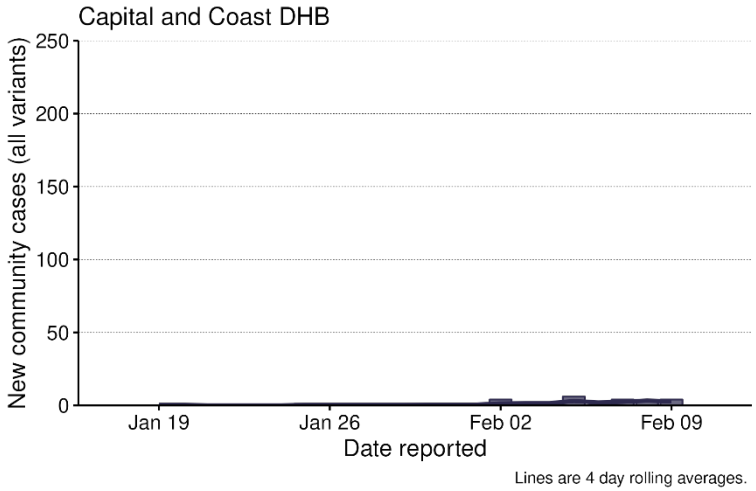


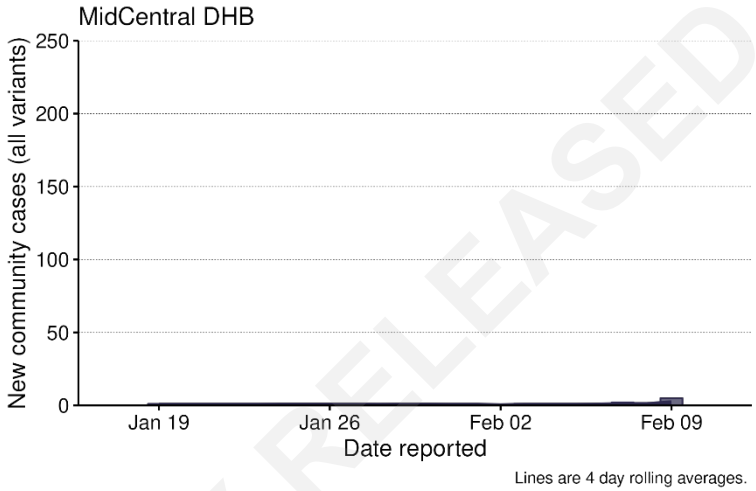


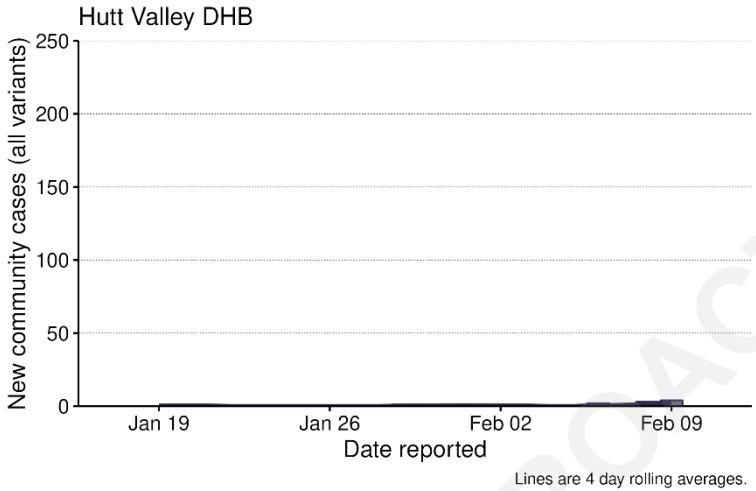


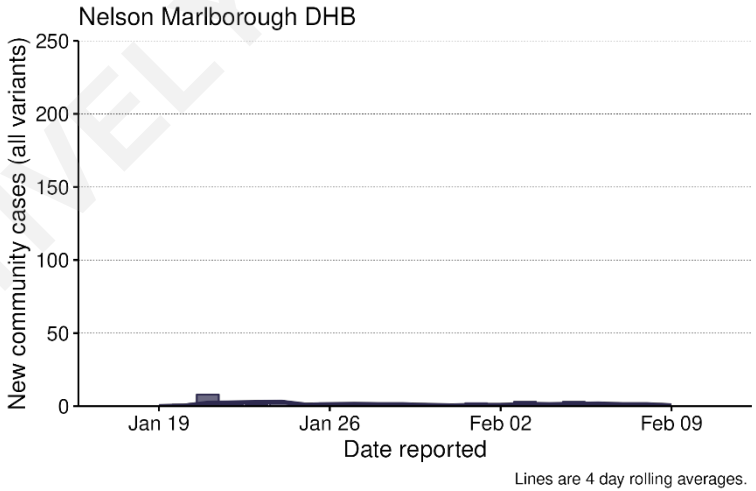


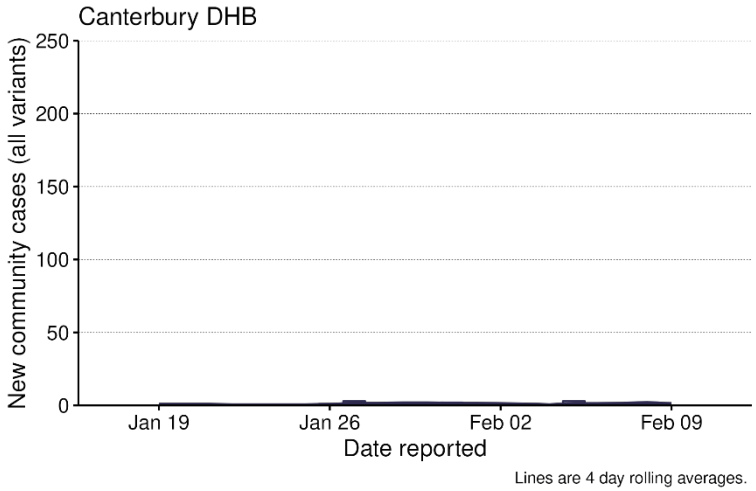












Source: EpiSurv 2359hrs 09 February 2022

Cases by Ethnicity

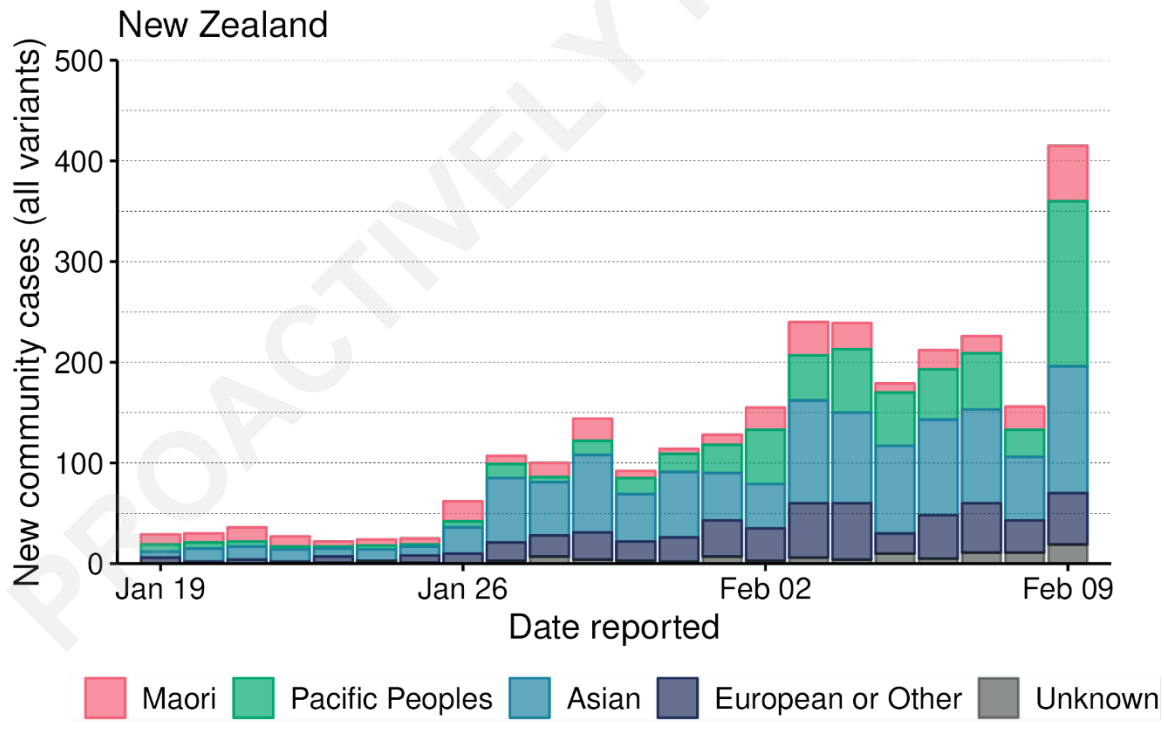
The Figure 3-Figure 5 on pages 12-14 show the ethnicity of new cases reported in the three weeks from 19 January 2022 to 09 February 2022, as a four-day rolling average.

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 in the past day, with a significant increase in cases of **Pacific Peoples** ethnicity compared to previous days.

Cases in **Maori** have risen slightly in the past day but cases in **European or Other** are stable.

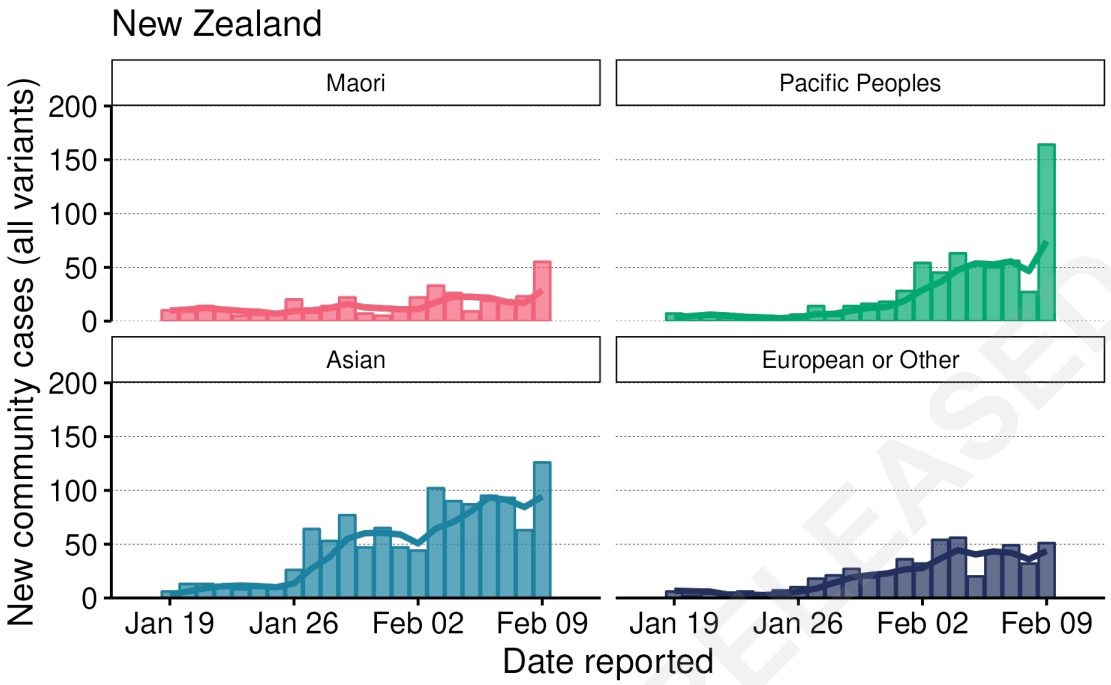
The increase in cases in the **Asian** population is most noted in **Auckland Metro, Waikato, Bay of Plenty and Nelson Marlborough** (Figure 5). The largest increases in cases in **Pacific Peoples** were seen in the **Auckland Metro** DHB. Cases in **Capital and Coast** DHB have been predominantly in **Pacific Peoples**. **Lakes DHB** is the only area to have cases be predominantly in those of **Māori** ethnicity. Cases of **Māori** ethnicity are rising in **Hutt Valley** DHB but case numbers are still low to suggest this is an emerging trend. Cases in **Northland** have been predominantly of **European or Other** ethnicity.

Figure 3: Daily community cases across New Zealand, by ethnicity from 19 January to 09 February 2022



Source: EpiSurv 2359hrs 09 February 2022

Figure 4: Daily and rolling 4 day of average community cases across New Zealand, by ethnicity from 19 January to 09 February 2022



Lines are 4 day rolling averages. 101 cases with unknown ethnicity have been excluded.

Source: EpiSurv 2359hrs 09 February 2022

Figure 5: Daily cases by ethnicity and DHB from 16 January to 06 February 2022

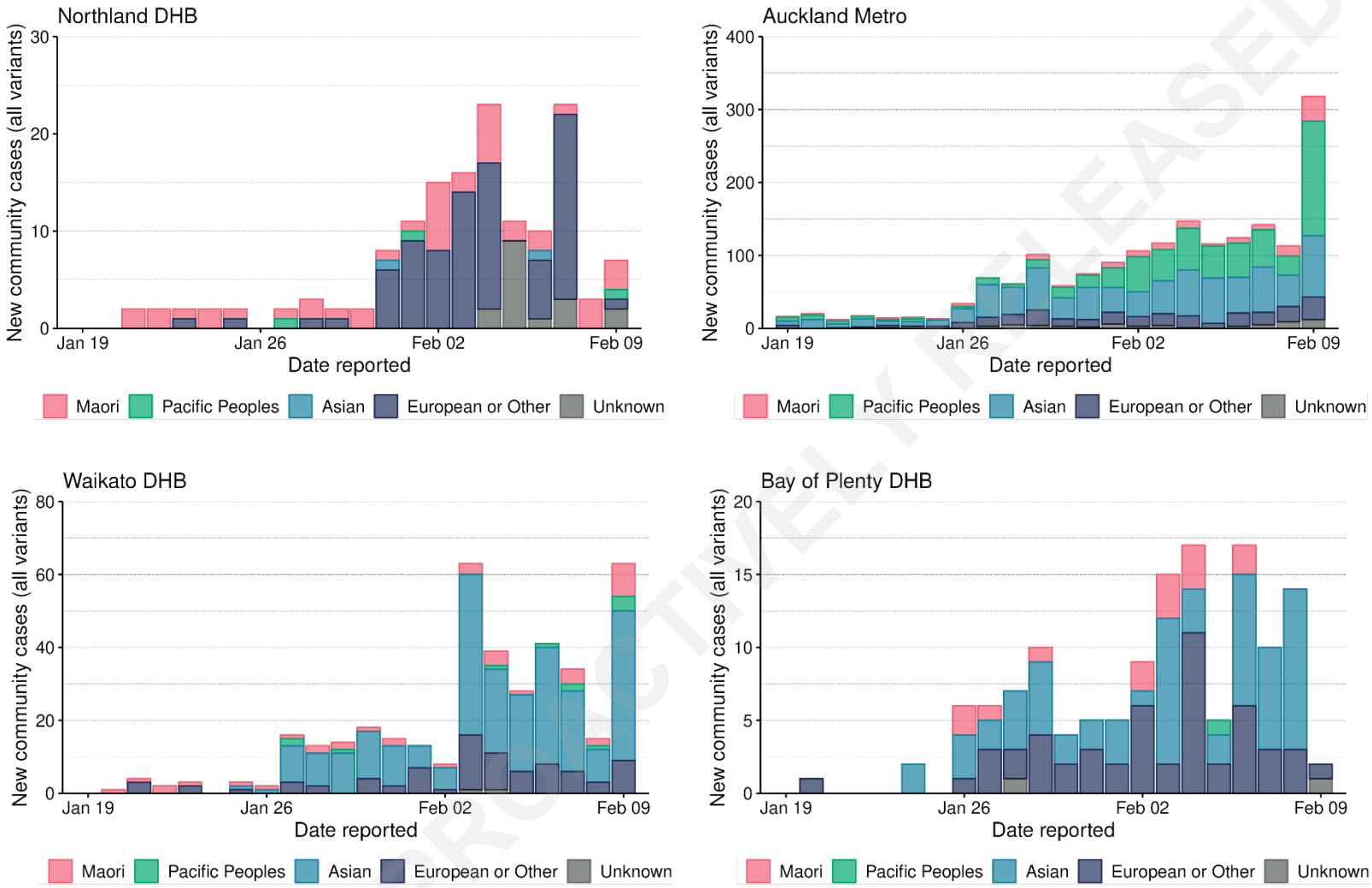
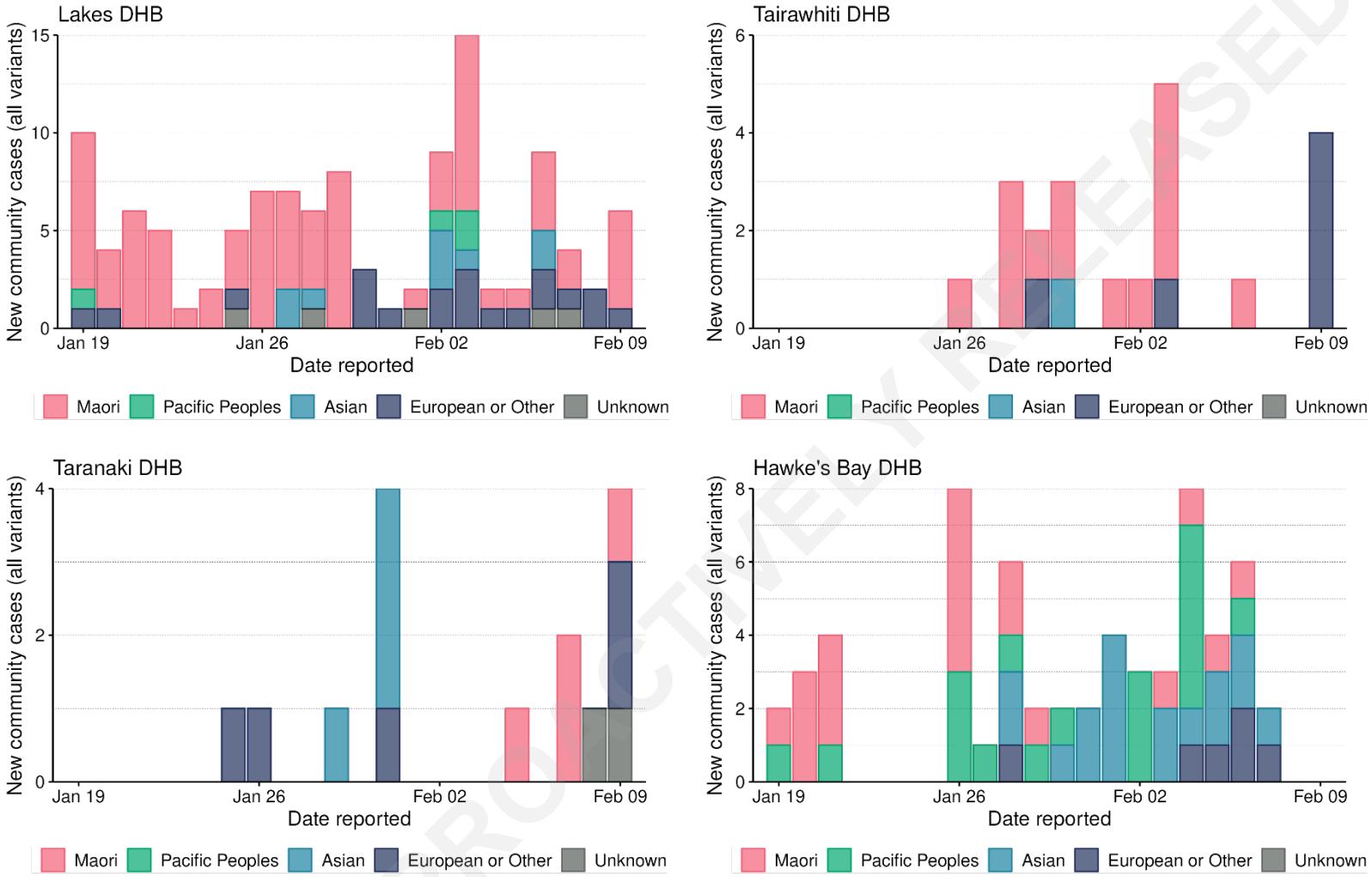
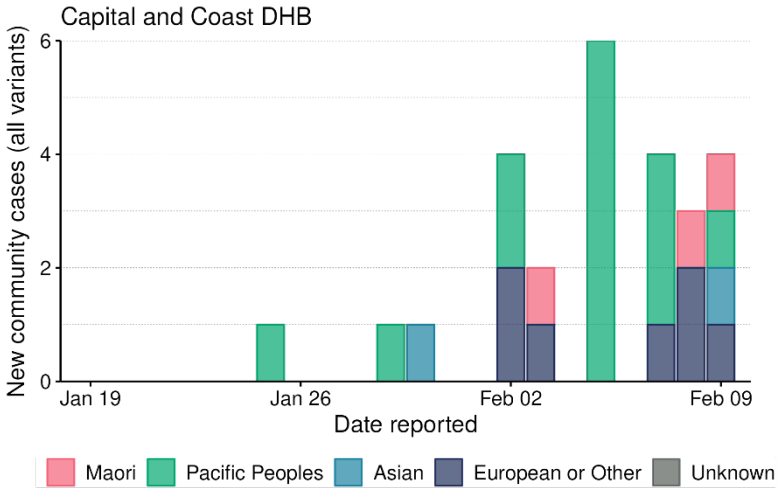
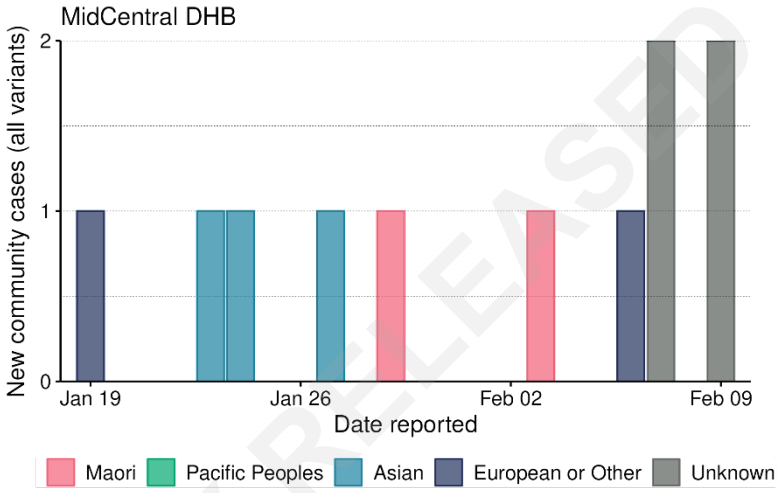
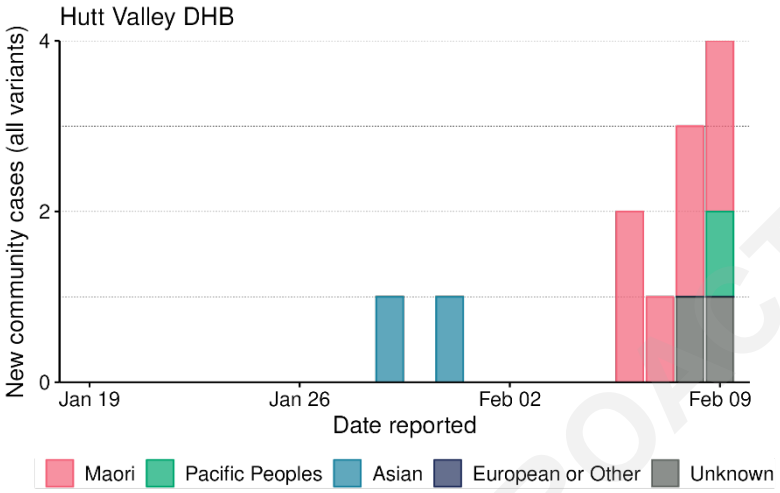


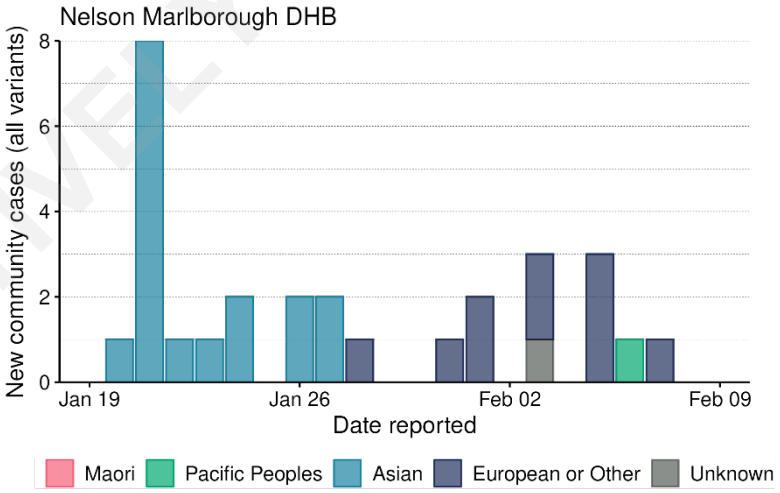
Figure 5 cont: Daily cases by ethnicity and DHB from 16 January to 06 February 2022

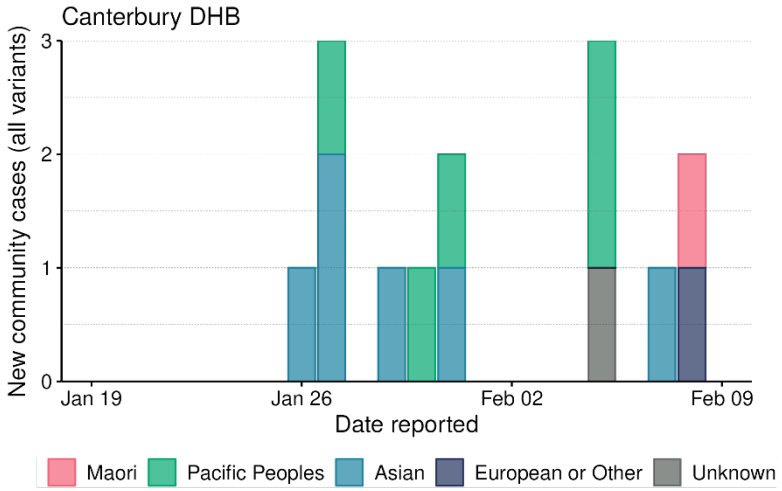












Source: EpiSurv 2359hrs 09 February 2022

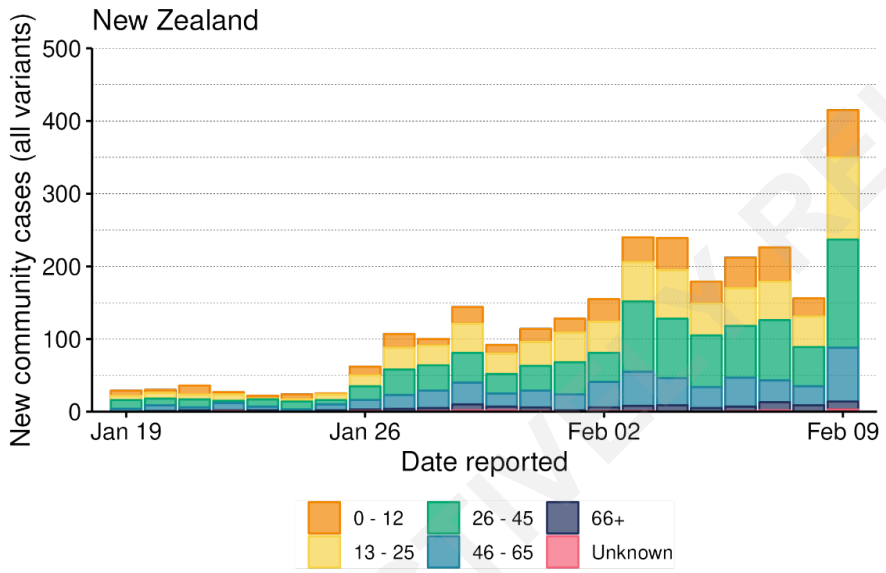
Cases by Age

Figure 6 shows new cases by age group from 19 January to 09 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).

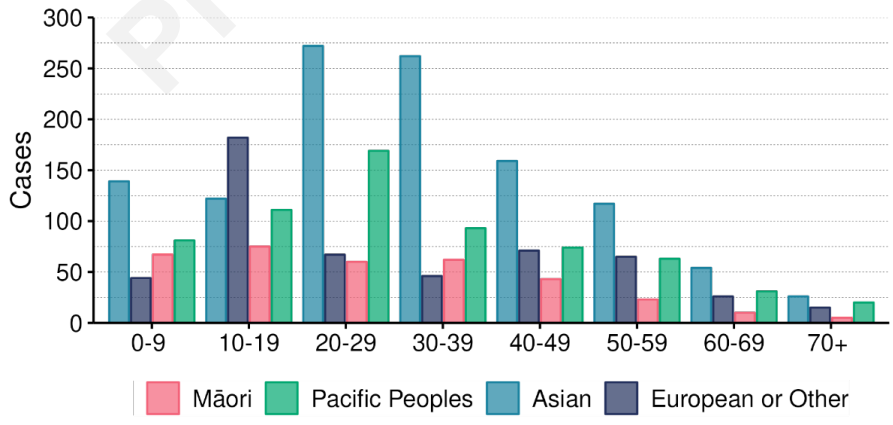
The outbreak affecting the **Asian population is most apparent in the 20-29 and 30-39 age groups** while **being less noticeable** compared to **other non-Māori ethnic groups** in the **70+ age group** (Figure 7). Cases in **Māori** are **relatively evenly distributed** across 0-9, 10-19, 20-29 and 30-39 age groups.

Figure 6: Four-day rolling average of COVID-19 community case numbers by age for 19 January to 09 February 2022



Source: EpiSurv 2359hrs 09 February 2022

Figure 7: COVID-19 community case numbers by prioritised ethnic group and age group, 19 January to 09 February 2022



Source: EpiSurv 2359hrs 09 February 2022

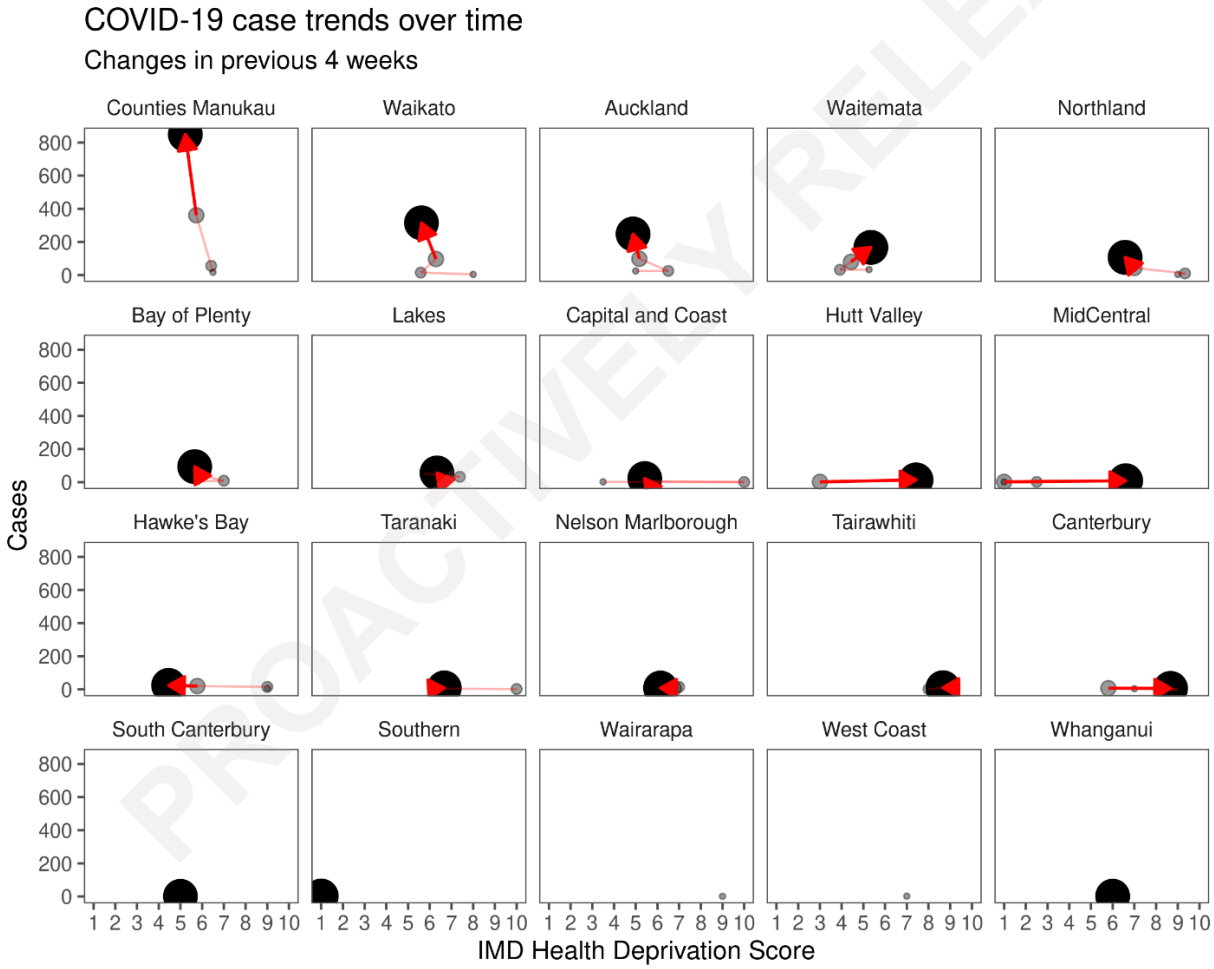
Cases by socio-economic indicators

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**. **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 Auckland, 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.

Figure 8: COVID-19 case trends by DHBs weighted by housing deprivation score for the four weeks to 10 February 2022



Source: EpiSurv 2359hrs 09 February 2022 and IMD18 Database

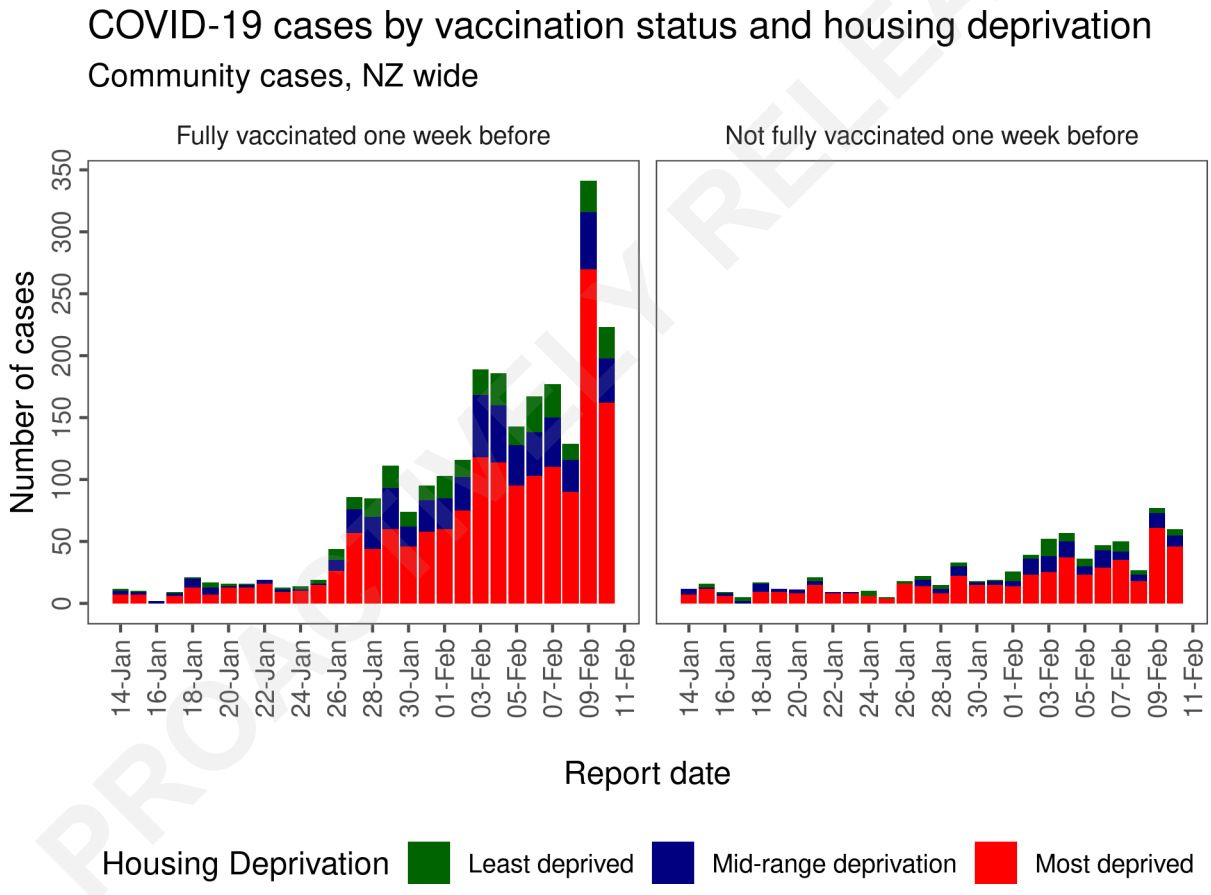
[1] The Index of Multiple Deprivation is a set of indices following a methodology developed in the United Kingdom. It measures relative disadvantage in New Zealand neighbourhoods based on employment, income, crime, housing, health, education and access to services. For more information, please refer 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).

The majority of cases continue to be in the most deprived. However, since late January there has been an increasing proportion in the mid-range and least deprived groups, especially among those who are not fully vaccinated.

Figure 9 shows cases by **housing deprivation** from 19 January 2022 to 09 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**.

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**. Across this period, those most deprived are the highest proportion of cases with a large increase in this demographic on 09 February but **the proportion of cases in the mid-deprived and least deprived groups has increased since 01 February**.

Figure 9: COVID-19 cases from 19 January 2022 to 09 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 09 February 2022, IMD18 Database

Community Testing

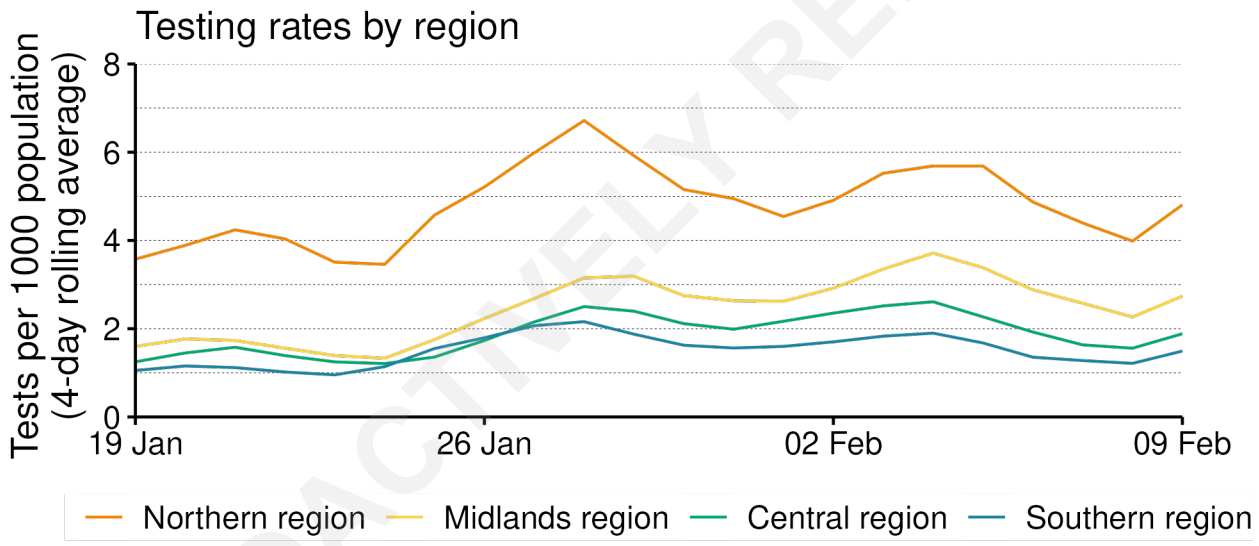
The figures in this section show the rates of community testing from 19 January 2022 to 09 February 2022.

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 4-6 tests per 1000 population in since 01 February 2022. Testing rates across the rest of the country is 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.

Test positivity remains low nationally, at ~2.5% or lower in all regions (Figure 11**). A lack of increase in test positivity** before and during Waitangi weekend despite lower rates of testing, suggests **there is not a large amount of undetected transmission/cases despite a drop in testing nationally** during this time.

Test positivity in most regions, except Southern DHBs, have been trending upwards since early February. Northern and Midlands region continue to have the highest test positivity at ~2% and >2.5%, with test positivity rates increasing. Northland and Counties Manukau continue to have the highest in the Northern region whilst Bay of Plenty, Lakes and Waikato continue to be the highest in the Midlands region. Hawke's Bay has the highest in the Central region and Hutt Valley test positivity rates are increasing to similar levels.

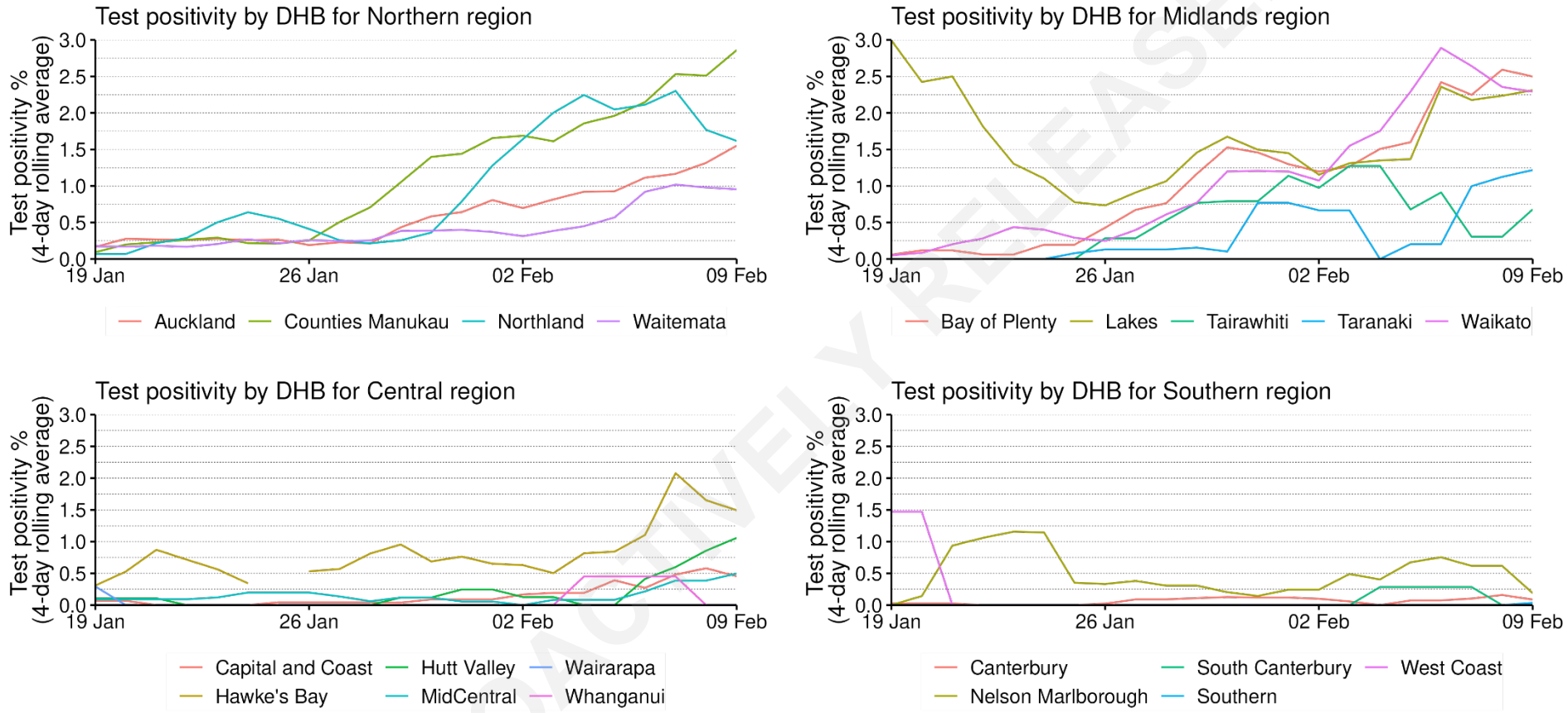
Figure 10: Testing rate by region[2] (four day rolling average) by region and DHB, 19 January to 09 February 2022



Source: Éclair testing database 09 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, 19 January to 09 February 2022



Source: Éclair testing database 09 February 2022, EpiSurv 09 February 2022

Short-term projections

Scenario modelling versus actual cases

Figure 12 shows actual cases between 01 December 2021 and 9 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.

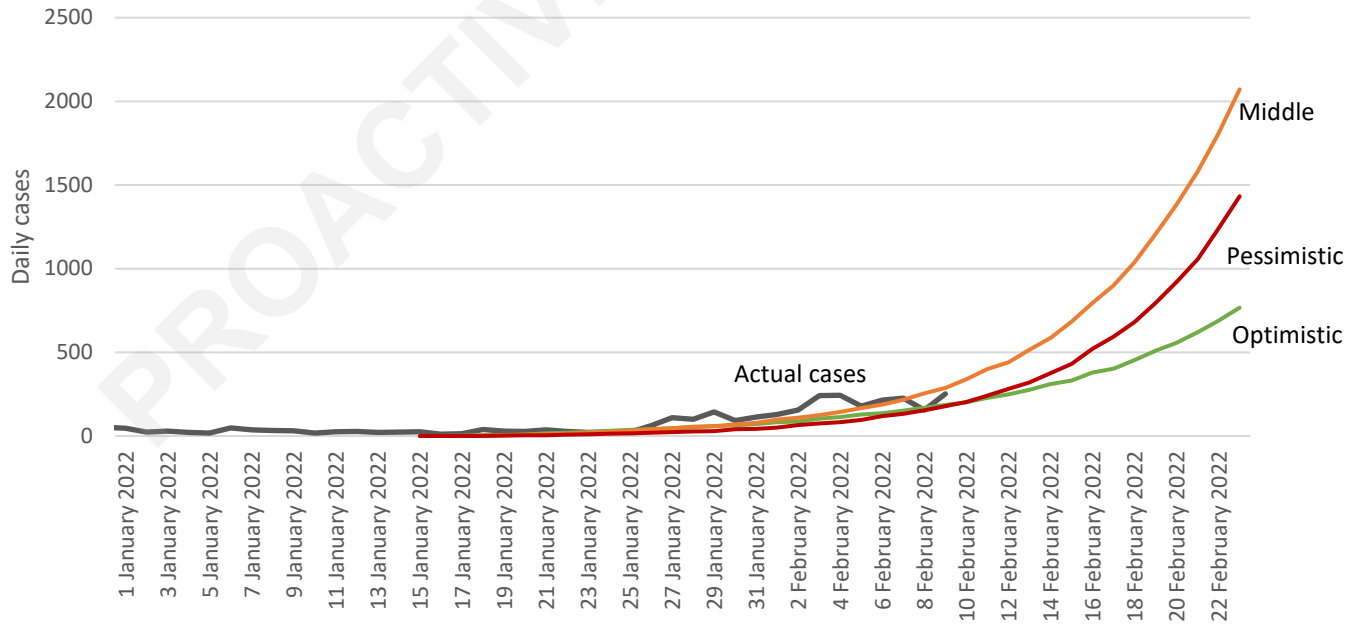
***Summary*: It is too early in the pandemic wave to know if cases are tracking closer to the optimistic or pessimistic scenarios**.

The model was last updated before the exact outbreak dates were known. Figure 12 shows the **model's scenarios, moved in time to match an outbreak that started on 15 January**, but it should be noted that the fitting of projected to actual cases is very sensitive to the choice of start date that is assumed. We expect the Modelling Aotearoa group to release updated scenarios fitted to actual cases during the week ending 18 February.

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). In general, higher growth of cases is correlated with higher reproductive numbers and shorter generation times. **The "optimistic" and "middle" scenarios assume lower values for R_{eff} but shorter generation times**. This is different to the modelling for Delta, which assumed the same generation time for all the models, but current evidence suggests that Omicron has a shorter generation time than Delta.

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 December 2021 to 9 February 2022 and potential future scenarios of daily cases from 15 January to 23 February 2022



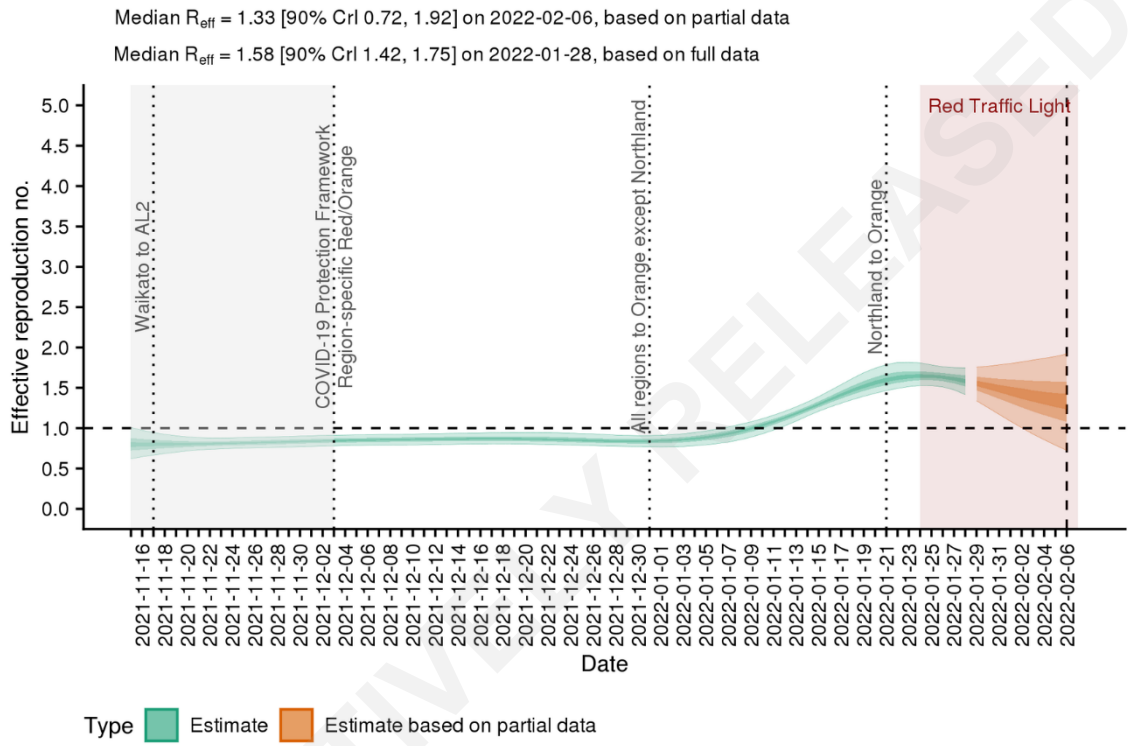
Effective reproduction rate

Figure 13 shows the **current estimated effective R, R_{eff} is approximately 1.3** [95% Credible Interval 0.7—1.9] as of 06 February, after adjusting for data lags. This indicates that infections are likely increasing nationally.

This corresponds to an estimated **doubling time of around 8.5 days** [95% Credible Interval 10.9—3.2].

Note that the results are presented with credible intervals of 20%, then 50%, and 90%. Smoothed estimates in green are based on complete data; estimates in orange allow for reporting delays in recent cases. Estimates are based on the EpiNow package[3].

Figure 13: Estimated Effective R for New Zealand

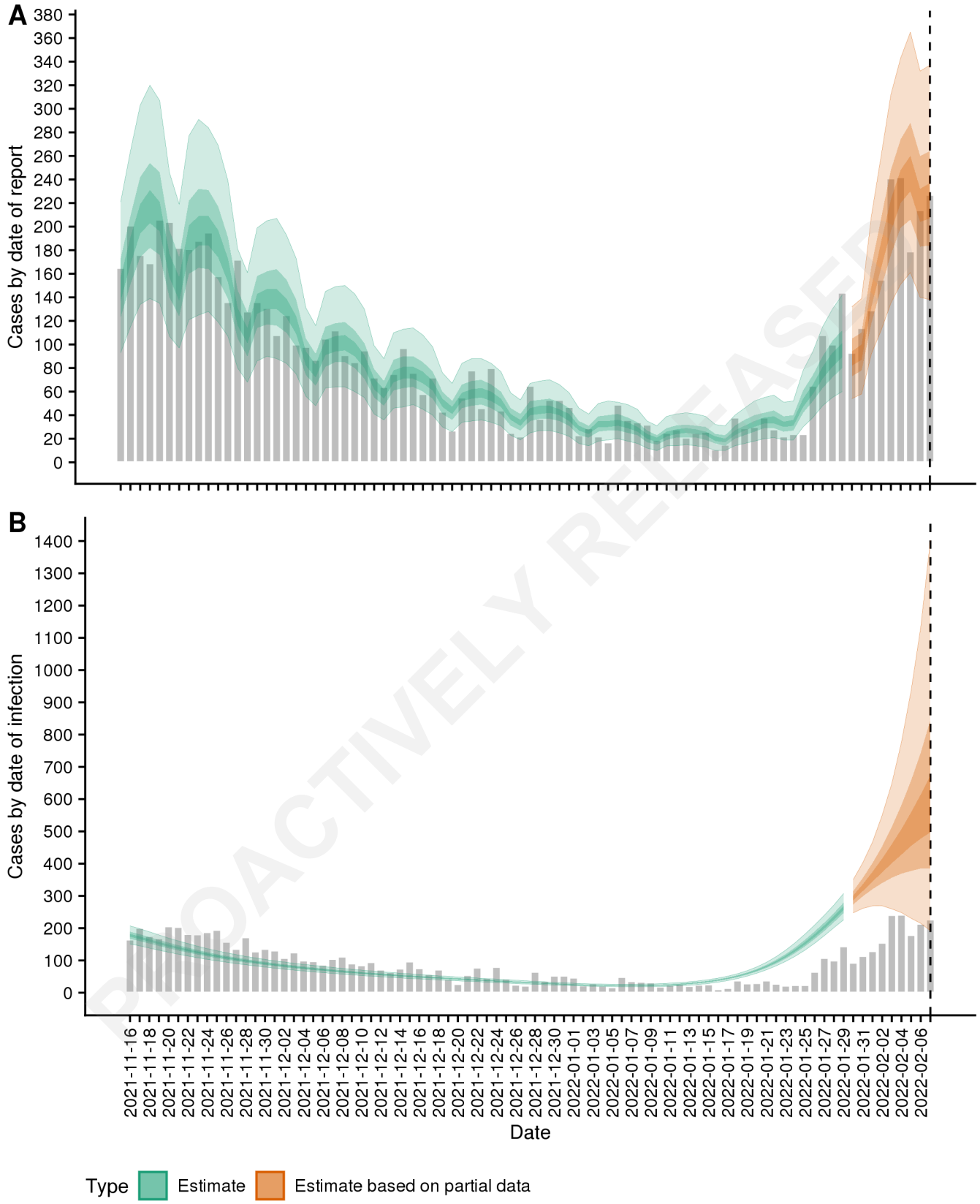


Source: Te Pūnaha Matatini, 10 February 2022. EpiNow2 projections based on Ministry of Health case data to 6 February 2022.

[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.

Figure 14: Community case numbers by date of report and date of infection for New Zealand



Source: Te Pūnaha Matatini, 10 February 2022. EpiNow2 projections based on Ministry of Health case data to 7 February 2022.

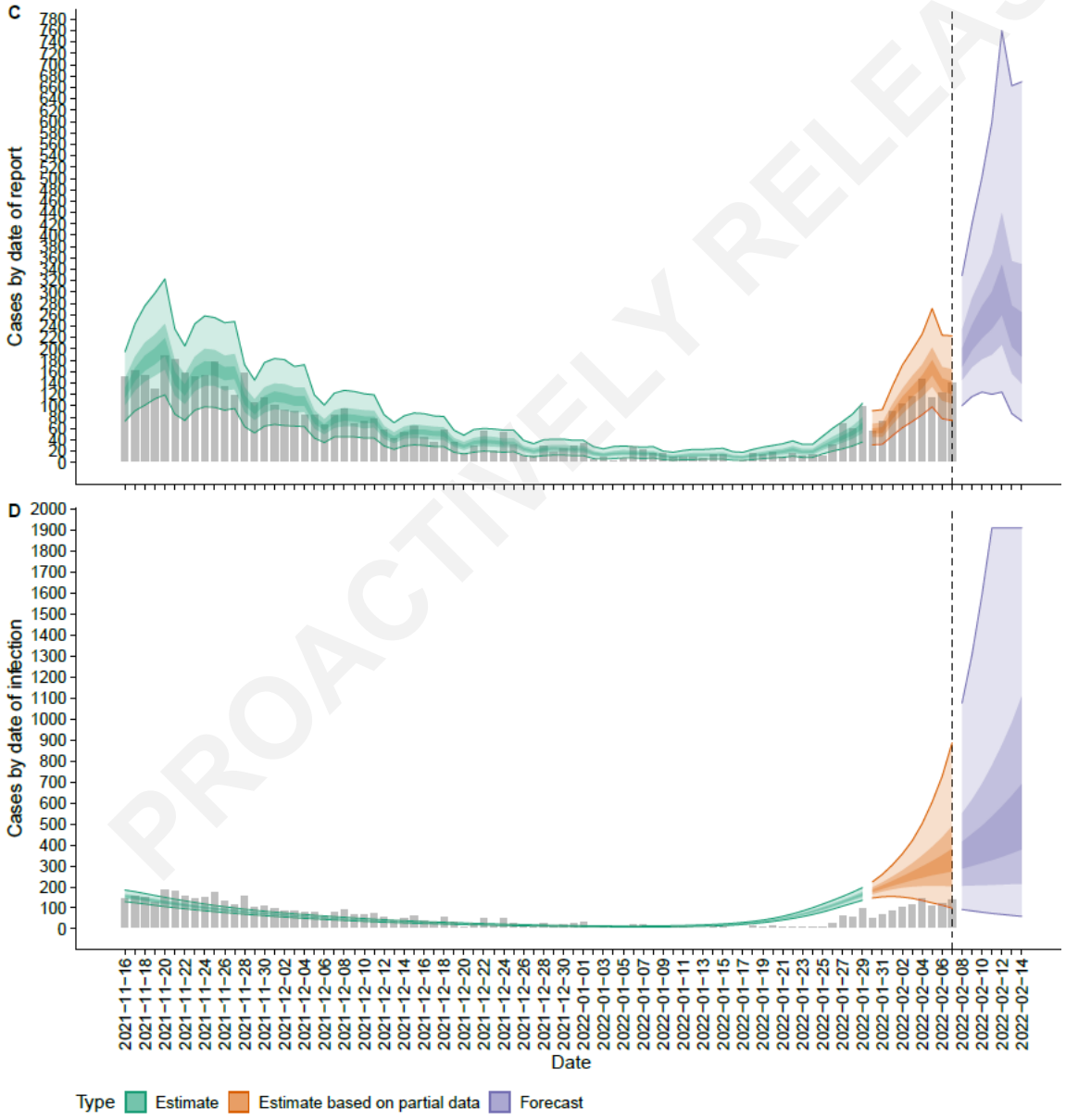
Regional 7-day forecasts

Estimates of 7-day forecasts for the combined DHBs in the Auckland Public Health Unit area are provided below (Figure 16). Other regions will be included when their case numbers increase.

As before, smoothed estimates in green are based on complete data; estimates in orange allow for reporting delays in recent cases; purple are a forecast of cases or infections 7 days out from the last reporting date.

Reported cases in the Auckland region continue to follow a 7-day cyclical reporting patten. If the data for the previous 7 days remains indicative of the rate of growth **in the next 7 days, the cases are forecast to increase to a median of ~220 cases per day on 14 February [50% Credible Interval 139—349] for the Auckland DHB** based on observed data through to the 07 February. It is important to note the wide uncertainty bands for these forecasts.

Figure 15: Actual and forecast community case numbers, by date of report and date of infection for Auckland Public Health region DHBs



Source: Te Pūnaha Matatini, 10 February 2022. EpiNow2 projections based on Ministry of Health case data to 7 February 2022.