COVID-19

Trends and Insights Report

Updated 13 April 2022

Purpose of report

This report focuses on a broad national and regional overview with key insights based on the quantitative trends in the New Zealand COVID-19 epidemic including the trends and scale of infection and diagnosis as well as morbidity and mortality. In interpreting and using these data readers need to be aware of surveillance data limitations; if unfamiliar with these data it is strongly advised to review the sources, methods and limitations in the accompanying **Appendix** document.

Key insights from past 7 days

- **Nationally the weekly rate was 14.2 per 1000** population for the week ending 04 April down 30% from 18.5 per 1000 in the previous week
- EpiNow modelling based on data to 08 April **predicts nationally, case numbers may continue to decrease in the coming week** (median R_{eff}= 0.7), but the estimates have **high levels of uncertainty. Southern PHU had the highest R_{eff} of 1.0. However, West Coast is the only DHB that has had an increase in case rate.**
- **For the week ending 10 April**, the estimates suggest that **2.5% (722/28,821) of healthcare workers** and **2.0% (406/20,537) of border workers tested positive.** While these are not representative samples of New Zealanders, **border workers' risk is very similar to the general community risk** (but more reflective of the Auckland population).
- **Border worker comparisons with Auckland** case rates **suggest substantial under ascertainment of cases (2.0% [20 per 1000] versus 7.3 per 1000**, respectively).
- A total of **31.4% of health care and 25.9% of border workers have had a COVID-19 diagnosis in 2022 as of 03 April 2022.**
- However, **wastewater trends continue to suggest that viral concentrations in all regions, including Northern Region and Auckland Metro, have varied little in the past few weeks;** while wastewater trends lag infection rates, these data suggest the possibility that the decrease in cases may be at least in part due to a decrease in testing and/or reporting.
- **Case rates continue to decline in all regions across the motu**, with the largest decreases seen in the Te Manawa Taki and Central regions. **Case rates for the week ending 10 April were 8.4 per 1000 in the Northern region, 14.7 per 1000 in Te Manawa Taki, 17.6 per 1000 in Central and 20.9 per 1000 in Southern.**
- **West Coast DHB is the only DHB that had an increase in case rates in the past week compared with the previous week (14.6 to 18.0). Whanganui is the DHB with the highest case rate at 25 per 1000.**
- **Nationally, Māori continue to have the highest case rates at 17.3 per 1000**, followed by European or Other (14.7 per 1000), Asian (10.9 per 1000) and Pacific Peoples, with the lowest rate (10.0 per 1000).
- **Pacific Peoples have the highest case rate in Southern region (29.9 per 1000) followed by Māori (26.9 per 1000).**
- Outside of the Northern region, European or Other have the lowest rates apart from the Central region, where Asians have the lowest case rate**.**

- Rates continued to **decrease over the past week to 10 April in those aged under 70 years**, the **highest rates of 16-19 per 1000 were seen in the age ranges up to 49 years**, with those aged 50-59 at 10.9 per 1000 and 60-69 at 10.2 per 1000. Rates in those aged 70 or more have decreases slightly at 5.5 per 1000, from 6.2 per 1000 the week prior.
- **Hospitalised cases have continued to decrease from 654 on 06 April to 551 on 13 April. All regions are continuing to see a drop in hospitalised case rates after reaching a peak in late March/early April.** In the Auckland Metro DHBs, Māori and Pacific peoples continue to be substantially disproportionately affected in terms of both the risk of cases being hospitalised and the population rate; for all ethnicities the likelihood of hospitalisation rises with age. The average age of those currently hospitalised in the Northern region remains the same as the week prior at 58 years old.
- Overall, **531 people have died with or after COVID-19 infection as of 13 April 2022**. Of these, **497 have died within 28 days of being reported as a case**. The **7-day rolling average of deaths is 13, a drop from the week prior of 18.**

Contents

Figures

Infections Trends

Summary of evidence for infection and case ascertainment trends

Currently, the national border workforce case rates in the past week (2.0% [20 per 1000]) when compared with Auckland metro (7.3 per 1000) and national (14.2 per 1000) case rates in the general population, suggest that there may be under-ascertainment of community cases. The downward trend for border workers, health care workers and Northern region inpatients are all consistent with the general case trends, which are driving observed declines nationally.

Case ascertainment rates nationally were in decline but the wastewater results indicate a stagnant level. **This may suggest an ongoing level of new infections sustaining the wastewater viral RNA levels**. Although we expect wastewater to follow a similar trend to the underlying prevalence, the same level of decrease may lag infection and recovery; while cases shed more viral RNA during the infectious period, cases may shed to a lesser extent in the few weeks following infection.

The overall and regional case ascertainment has started to deviated from the modelled 'high' scenario, and is not declining as quickly as predicted. Projections based on the effective reproduction rate, while having high uncertainty, suggest continuing decreases in all regions in the coming week.

Approximation of underlying infection incidence

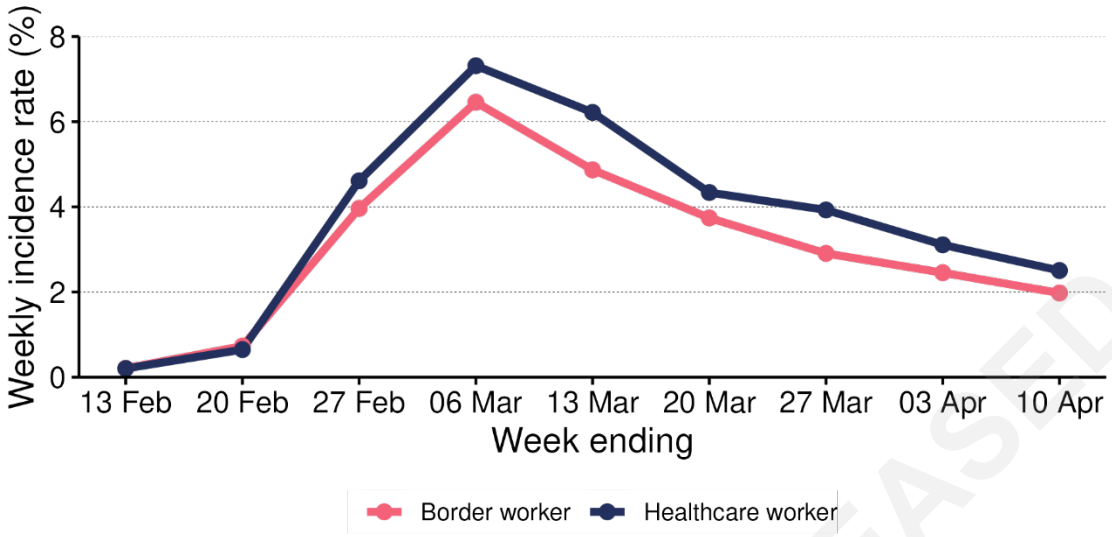
Underlying infection incidence has been gauged using a weekly case rate for routinely asymptomatically tested border workers, and for healthcare workers, where there was evidence of regular testing.[1]

For the week ending 10 April, estimates suggest that **2.5% (722/28,821) of healthcare workers** and **2.0% (406/20,537) of border workers have tested positive** for the first time ever (see Figure 1). These weekly infection incidence rates have been steadily decreasing from highs of 7.6% for health care and 6.5% for border workers in the week ending 06 March. A total of 31.4% of healthcare and 25.9% of border workers have had a COVID-19 diagnosis in the year to 03 April 2022; the vast majority were reported in the past 6 weeks (30.4% and 24.6%, respectively).

While these workforces are not a representative sample of New Zealanders, **the border workers are now likely to have a sfimilar risk to the general population (but more indicative of Auckland)** as their risk of infection from the community is likely to be much higher than the risk faced in their workplace. Also, as these data are national estimates, this masks differing trends by region.

[1] The population has been identified based on ever having a surveillance code related to the respective workforce and having at least 2 tests (at least one of which was negative) in 2022. A sensitivity check was run using at least 3 tests, while this numbers reduced, the incidence estimates remained very similar.

Figure 1: ***National weekly infection incidence rate (%) of COVID-19 for health care and border workers, for the weeks ending 13 Feb to 10 April 2022***

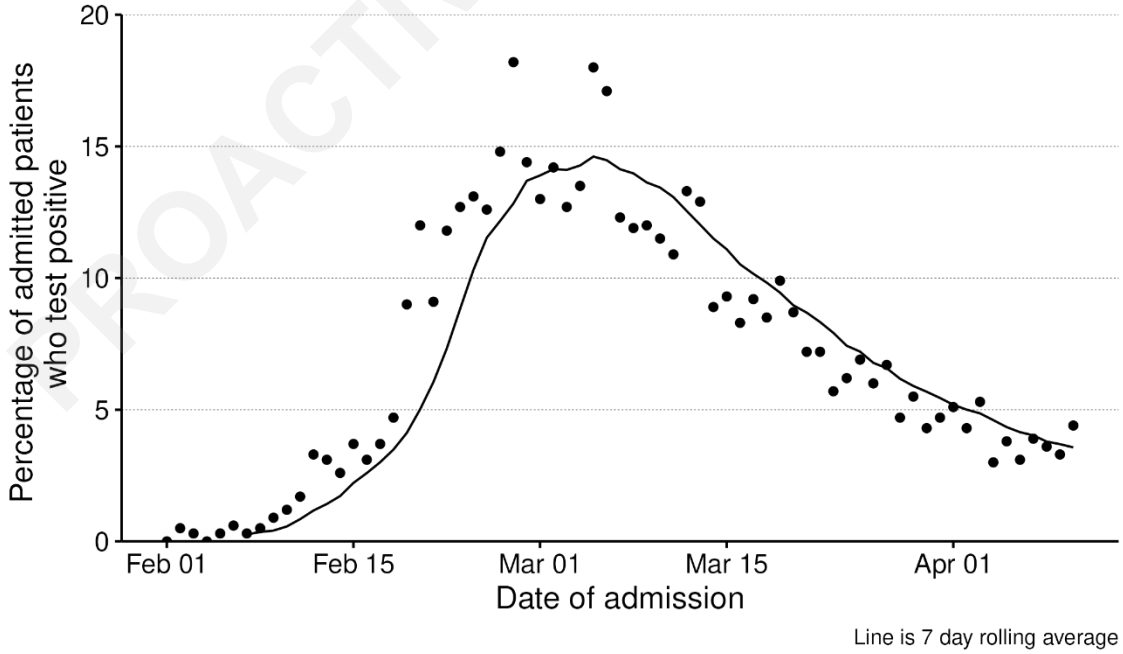


Source: Éclair/Episurv, 2359hrs 10 April 2022

Test positivity trends in Northern region hospital admissions

The Northern region inpatient positivity rates are shown in Figure 2. Since **peaking at ~15% in early March**, the Northern region hospital admissions **positivity has continued to decrease but is slowing,** from 5.3% (388/7982) in the week ending 03 April to **4.4% (269/7538)** in the week ending 10 April.

Figure 2: ***Percent of tests positive among Northern region hospital admissions, 01 February to 10 April***



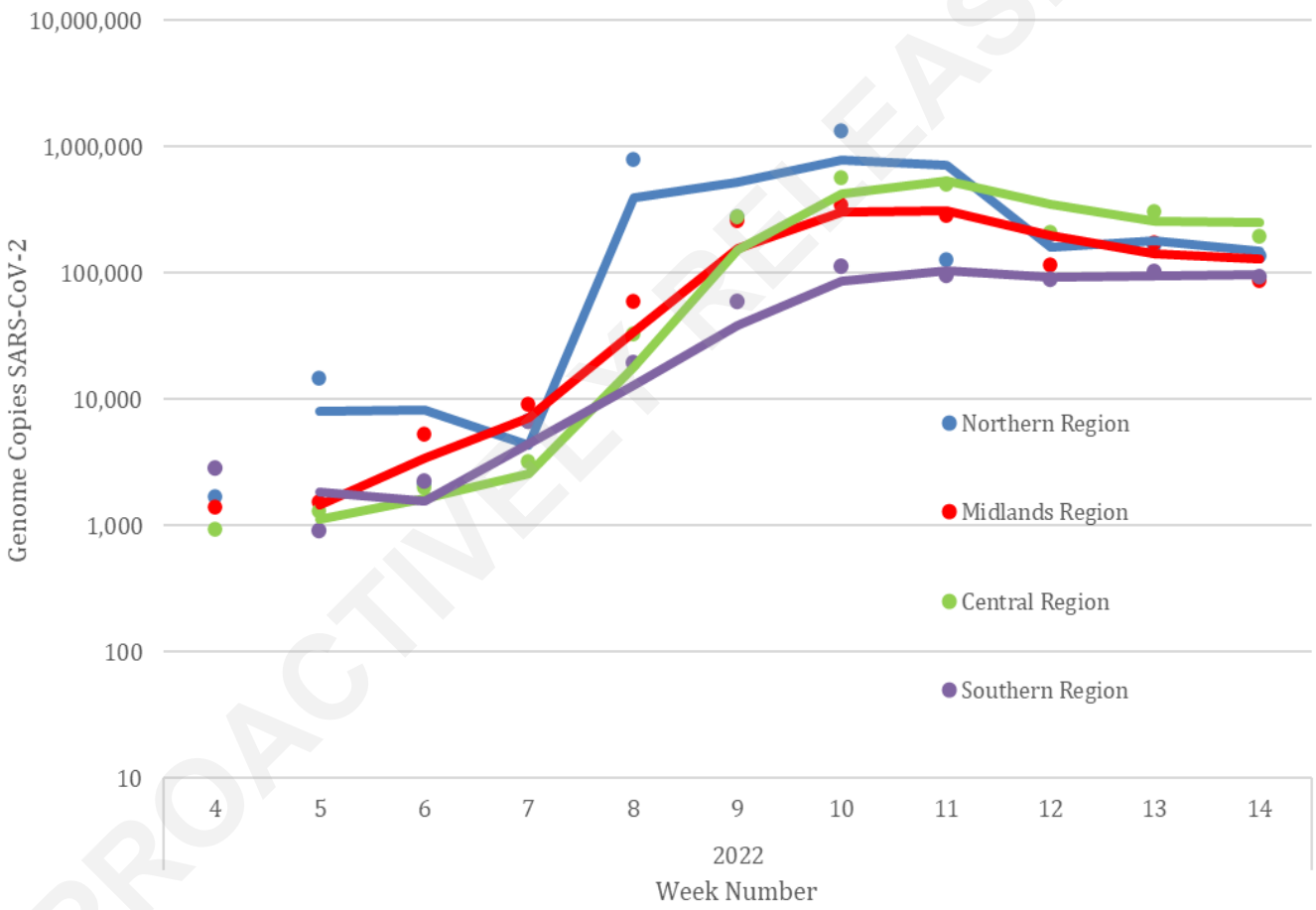
Source: Northern Regions hospitalisation data 07 April 2022 and NCTS/EpiSurv as at 2359hrs 10 April 2022

Wastewater quantification

Figure 3 provides an overview of wastewater results by region. It is not appropriate to compare SARS-CoV-2 absolute levels by region, this figure can only be used to assess the trends *within* each region.

The SARS-CoV-2 levels in wastewater **in all regions have plateaued** despite **an initial drop in levels** detected in the Northern Region in late February. However, the trends in each catchment area are **not necessarily consistent within each region**; within region trends are available in ESR's weekly wastewater report in the **Appendix**.

Figure 3: ***Trends in SARS-CoV-2 genome quantification from wastewater by region, 16 January – 10 April 2022***



Source: ESR SARS-CoV-2 in Wastewater update for week ending 10 April 2022, 13 April 2022

Trends in diagnosed cases

Overall, **the weekly case rate was 14.2 per 1000** population for the week ending 10 April. This was a **decrease of 30% from the previous week,** which was 18.5 per 1000. Case rates in all DHBs are stable or declining apart from the West Coast.

Figure 4 shows, that **the Te Manawa Taki (14.7 per 1000), Central (17.6 per 1000) and Southern (20.9 per 1000) regions had case rates around twice that of Northern region (8.4 per 1000)** in the week ending 10 April. In early March, the outbreak was still concentrated in the Northern region but as the outbreak spread across the country, rates in Te Manawa Taki and Central regions overtook the Northern region on 11 March and followed by the Southern region on 17 March. **Case rates are continuing to decline for all regions**.

DHB specific graphs for each region are shown in Figure 5.

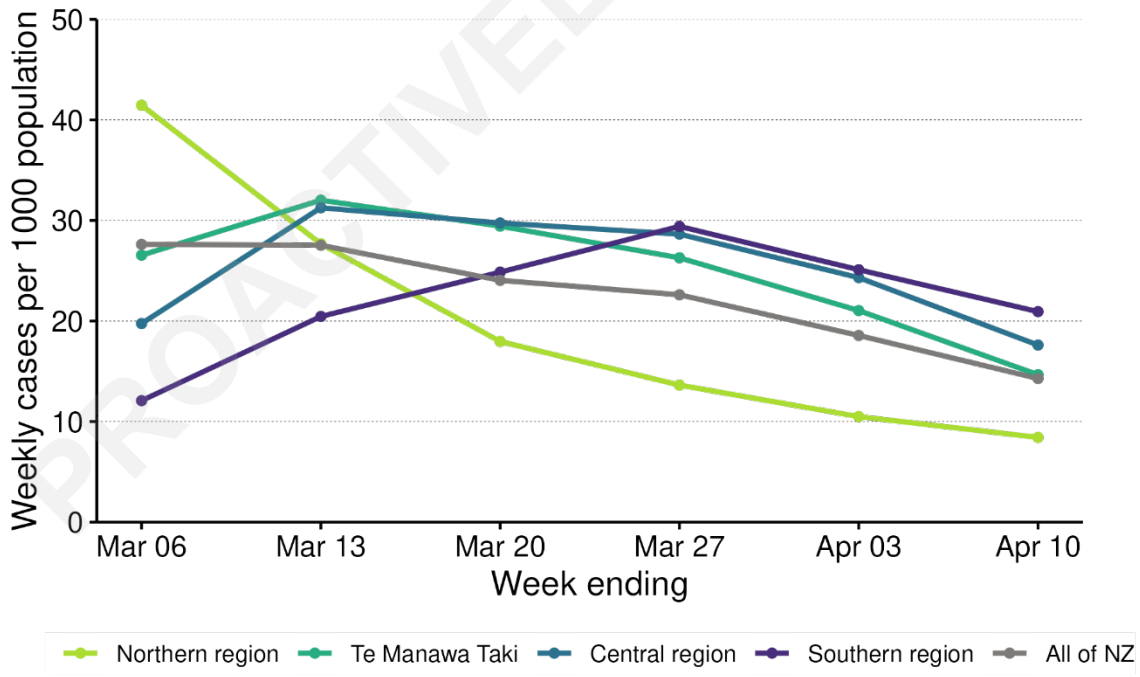
In the Northern region, weekly cases rates were highest **for Northland DHB (18.2 per 1000),** just over double that of the **Auckland Metro DHBs (7.3 per 1000).**

In Te Manawa Taki, weekly case rates were highest in **Taranaki (20.2 per 1000)**.

The highest weekly case rates in the Central region were in **Whanganui (25.0 per 1000)**.

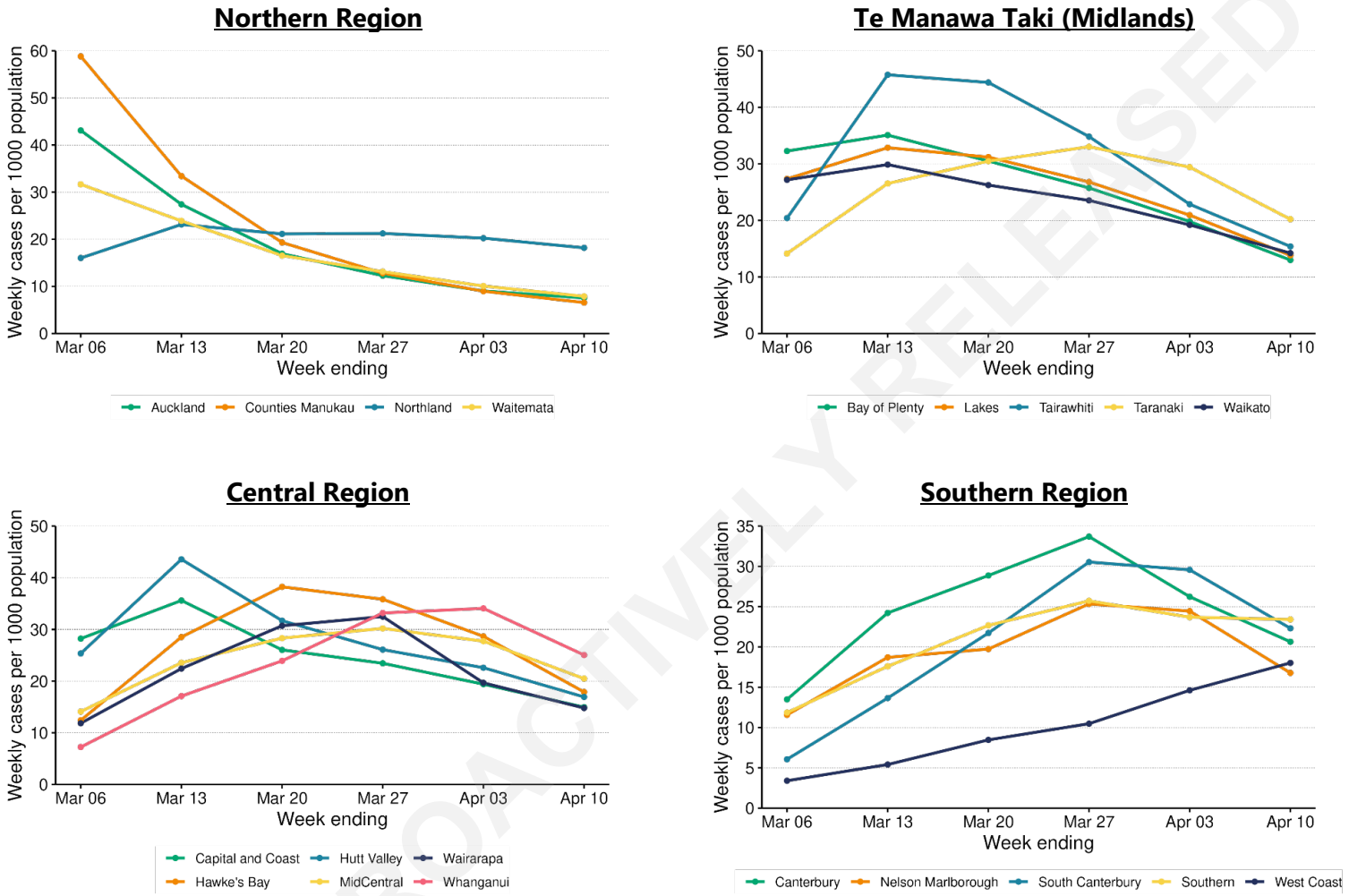
In the Southern region, the highest case rates were in **Southern DHB (23.4 per 1000)**. **The West Coast case rate increased** from the week prior (14.6 per 1000) **to 18.0 per 1000 in the past week.**

Figure 4: ***Regional weekly COVID-19 case rates (per 1000), for the weeks ending 06 March to 10 April 2022***



Source: NCTS/EpiSurv as at 2359hrs 10 April 2022

Figure 5: ***DHB specific weekly COVID-19 case rates (per 1000) by region, for the weeks ending 06 March to 10 April 2022***



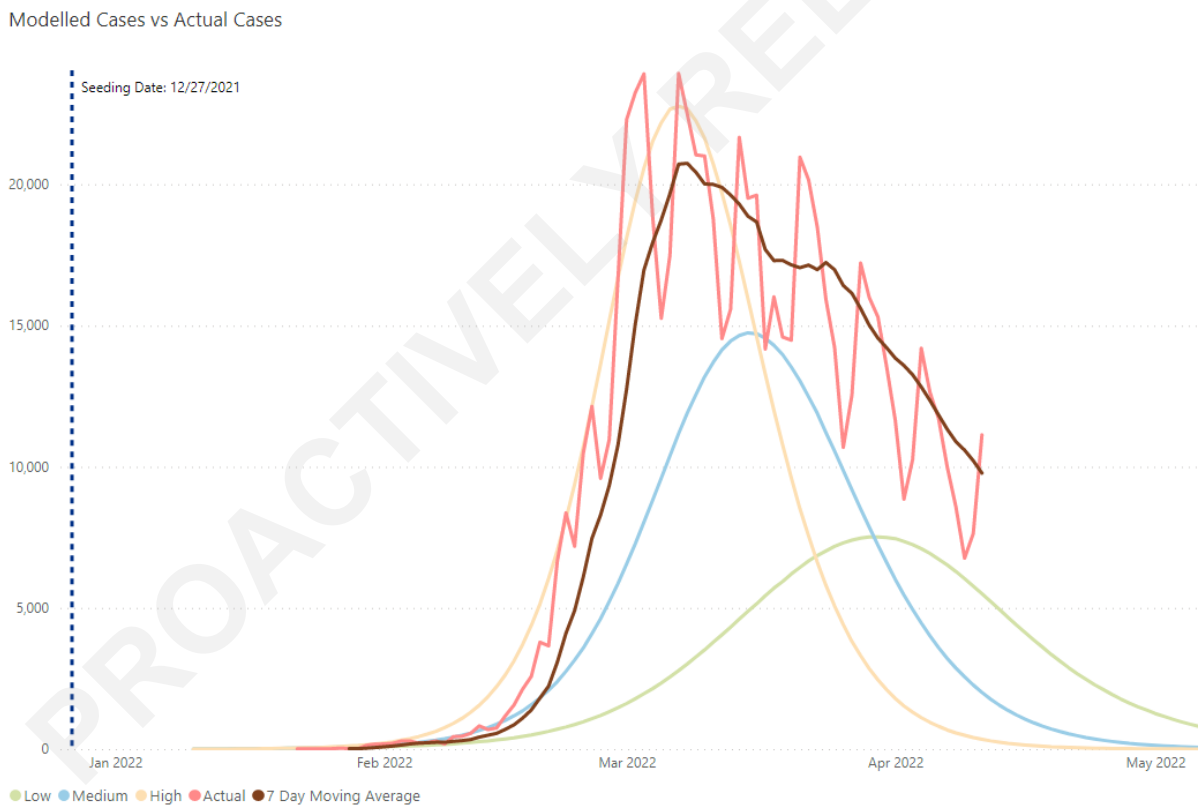
Source: NCTS/EpiSurv as at 2359hrs 10 April 2022

Modelling of cases comparison to case data

The number of diagnosed cases is now tracking above all modelled scenarios nationally (Figure 6). The number of diagnosed cases in the Auckland Region previously tracked the high scenario (except for having a higher peak) but now have deviated from the 'High' modelled scenario with a slower decline in cases (Auckland metro DHBs and Northland) (Figure 7). While the Te Manawa Taki and Central Regions reported cases reached the 'High' scenario peak levels in early March, this timing was closer to the 'Medium' scenario. Since then a slower decrease/higher number of daily cases have been reported than predicted post peak (Figure 7). Cases in the Southern region have roughly tracked to the 'High' scenario, though are also later than predicted in the 'High' scenario, indicating that the seeding date of the outbreak in this region may have been later, correlating with the return of tertiary students to Dunedin.

The scenarios for each DHB were last updated on 27 February 2022.

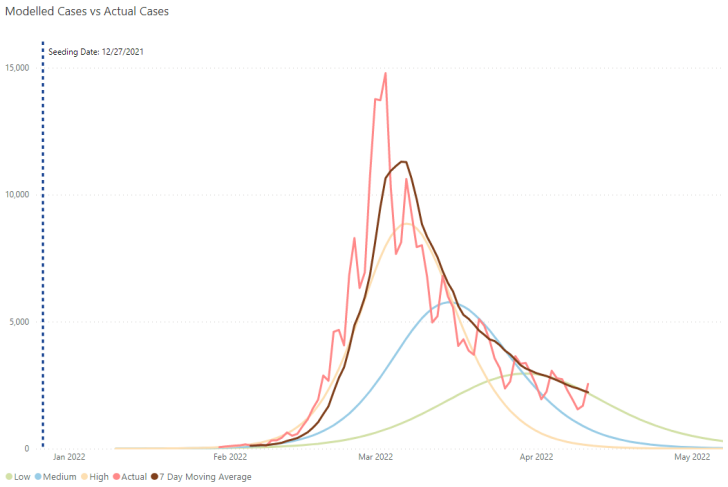
Figure 6: *COVID Modelling Aotearoa scenarios compared with reported cases nationally*



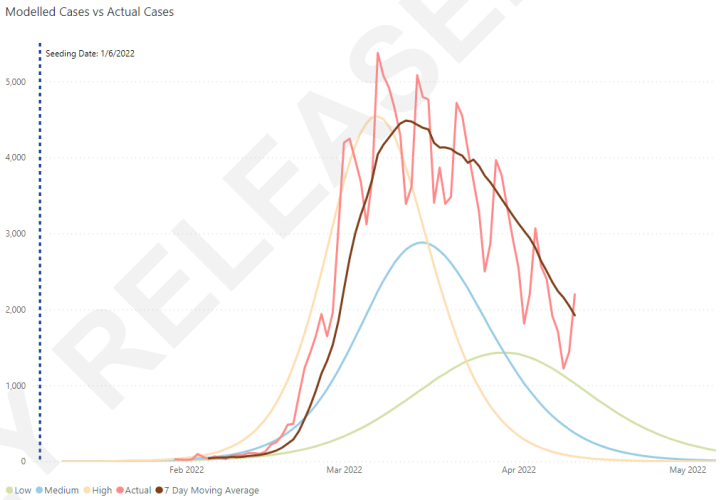
Sources: TAS, based on COVID-19 Modelling Aotearoa Branching Process Model 27 February 2022, and Ministry of Health reported case data 12 April 2022

Figure 7: *COVID Modelling Aotearoa scenarios compared with reported cases by region*

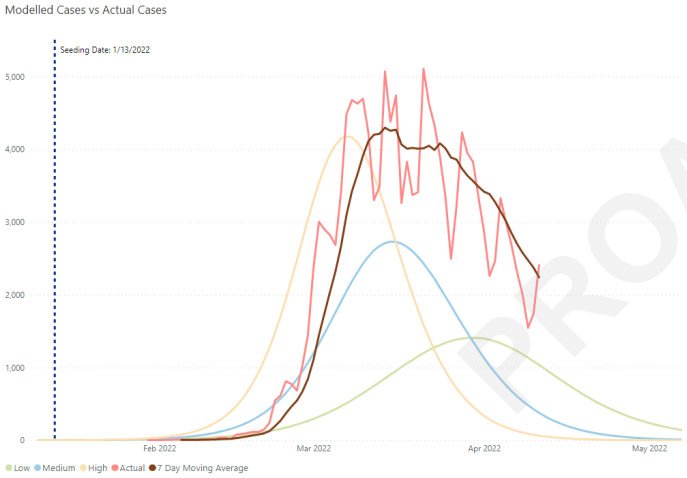
Northern Region



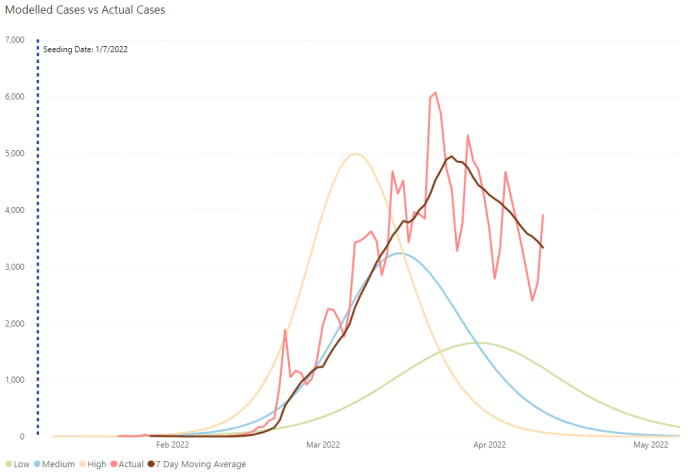
Te Manawa Taki (Midlands)



Central Region



Southern Region



Sources: TAS, based on COVID-19 Modelling Aotearoa Branching Process Model 27 February 2022, and Ministry of Health reported case data 12 April 2022

Effective reproduction rate, and forecasts of cases and infections

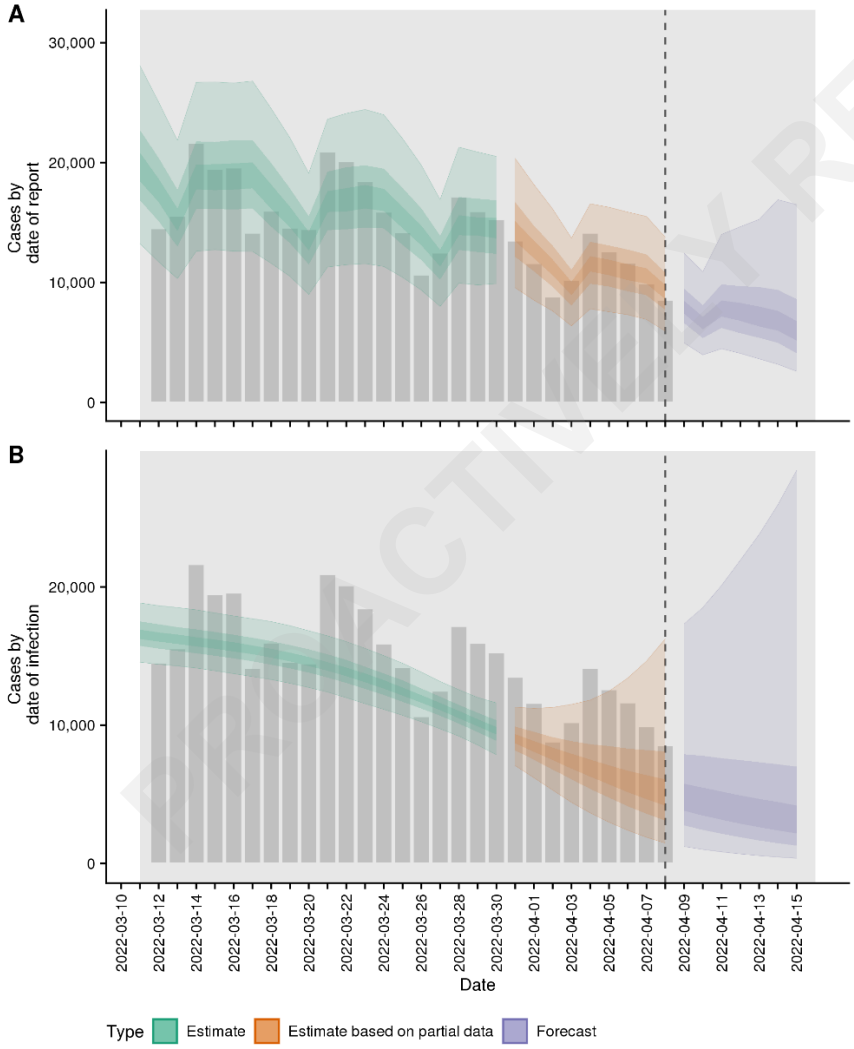
These estimates used the *EpiNow2* package on 12 April using data to 08 April.[2] Regional estimates for R_{eff} are shown in the accompanying **appendix document**. The median estimate of **effective R (R_{eff}) nationally is 0.7** (90% Credible Interval [CI]: 0.4-1.3) for cases to 08 April, after adjusting for data lags. The relatively wide confidence intervals indicate there is high uncertainty for this estimate.

For the Southern region, the model is **estimating a median R_{eff} of 1.0; and is the only region at 1 or above.**

Forecasting assumes that the Effective R will be constant over the next week at its most recent value, and that testing lags are constant. Estimates, based on these assumptions, of the number of new confirmed cases nationally by their date of infection are in Figure 8.

The model's median estimate is that national reported cases could be 5,870 cases per day by 15 April (50% credible interval: 4,111–8,612). However, the credible intervals for the projected cases would be even wider if the possibility of continuing trend changes in Effective R were included.

Figure 8: *Projected national cases by (A) date of report and (B) date of infection*



Source: EpiNow 12 April 2022

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

Demographic trends in case rates

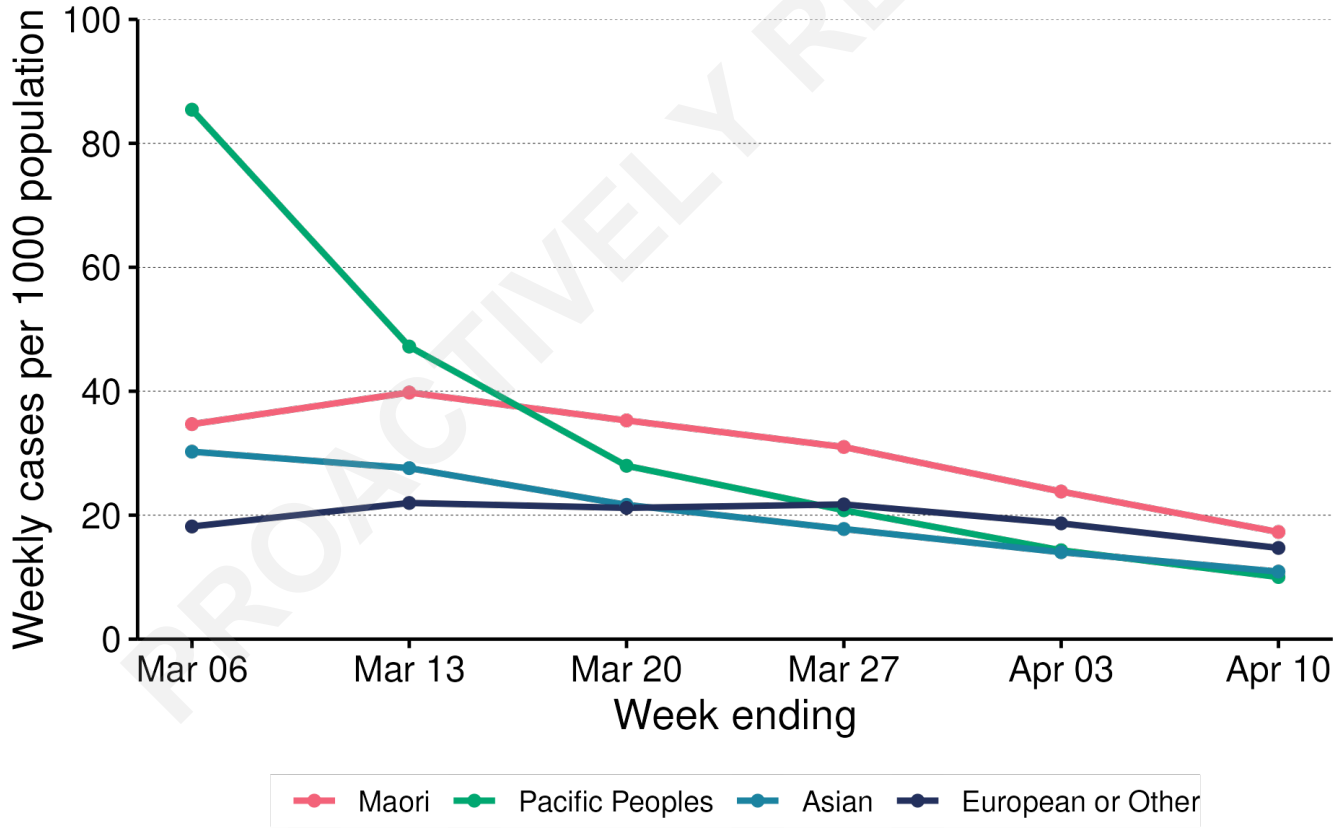
Ethnicity trends over time and by region

Figure 9 shows national and regional case rates by ethnicity. In the past week nationally, Māori have the highest weekly case rates at 17.3 per 1000 population, followed by European or Other (14.7 per 1000), Asian (10.9 per 1000) and Pacific peoples (10.0 per 1000) with similar case rates; rates in all ethnicities are continuing to decline.

In all regions Pacific peoples had the highest rate in early March, peaking above 58 per 1000 in all regions (See Figure 10). Whereas the *highest* observed rate for any region in Māori was 45.3 per 1000, in Asian 34.7 per 1000, and in European or Other 27.1 per 1000.

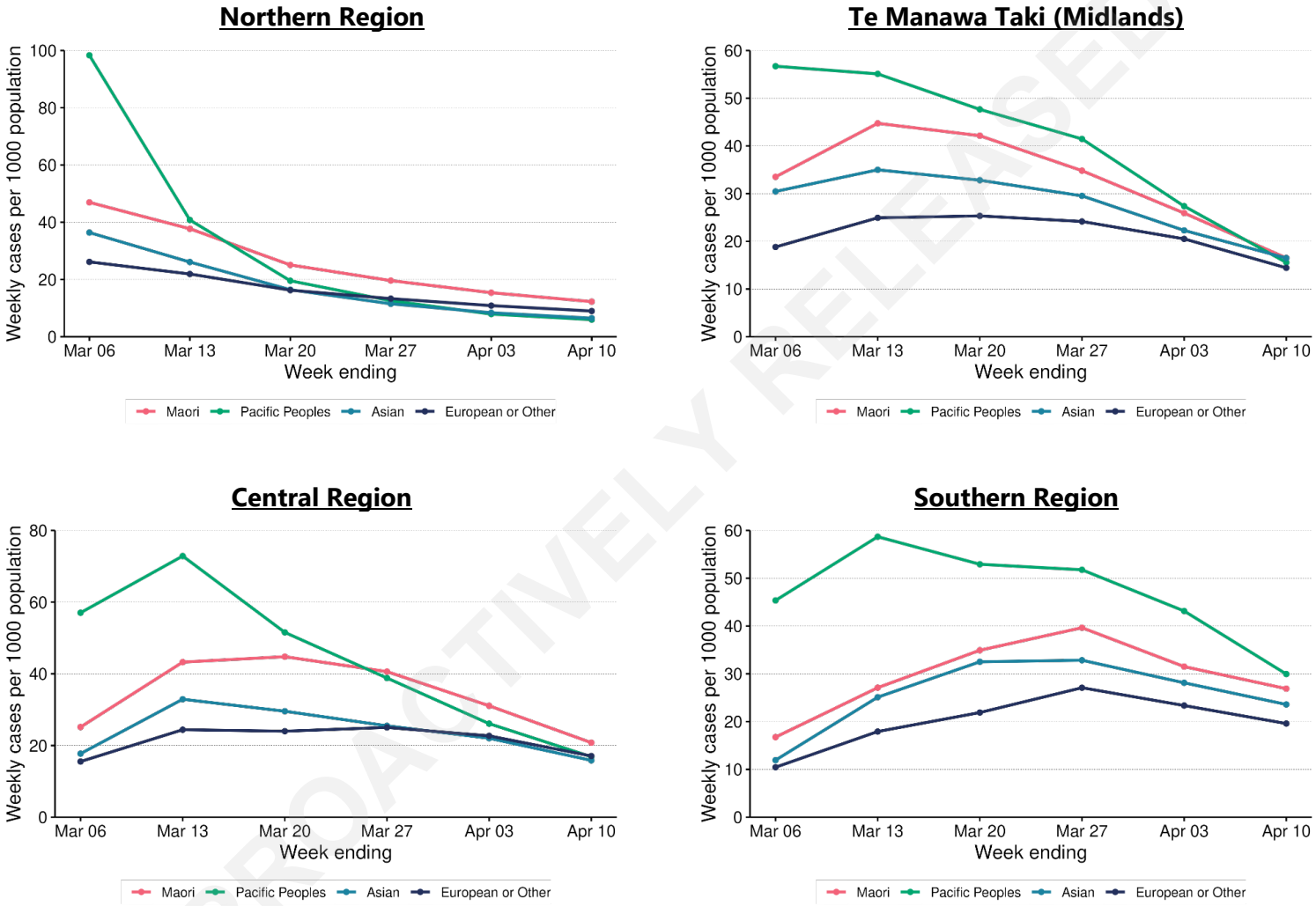
Pacific rates have converged and become more comparable to other ethnic rates in all regions except Southern Region, where they remain the most over-represented ethnicity. For all ethnicities in all regions, the rates have declined in the week to 10 April.

Figure 9: ***Ethnicity specific weekly COVID-19 case rates (per 1000) for New Zealand, for the weeks ending 06 March to 10 April 2022***



Source: NCTS/EpiSurv as at 2359hrs 10 April 2022

Figure 10: ***Ethnicity specific weekly COVID-19 case rates (per 1000) by region, for the weeks ending 06 March to 10 April 2022***



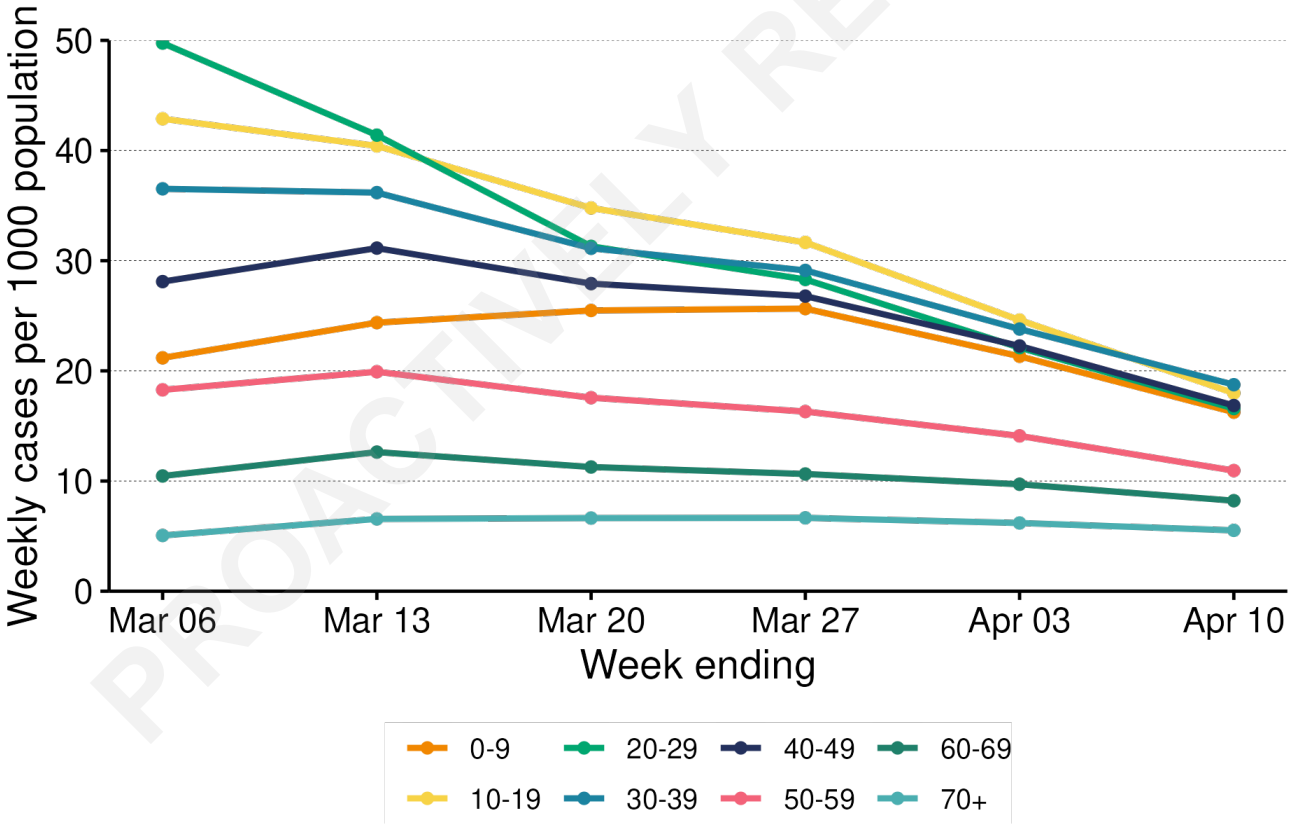
Source: NCTS/EpiSurv as at 2359hrs 10 April 2022

Age trends over time and by region

Figure 11 shows community cases by age nationally and by region in Figure 12. Case rates in all age groups continue to decrease. Nationally, **case rates are similar for 0-9, 10-19, 20-29, 30-39 and 40-49 age groups (16.2, 18.0, 16.6, 18.7 and 16.9 per 1000 respectively)** in the past week. Comparison of weekly case rates from the last week of March show the 10-19, 20-29, 30-39 and 40-49 age groups were at least 2 times more likely to be a case compared with the 60-69 age group (8.2 per 1000) and at least 3 times more likely to be a case compared to those aged 70+ (5.5 per 1000). Those aged 70 years and over continue to have the lowest weekly case rates at 5.5 per 1000 in the week ending 10 April. Rates in all age groups have declined in the past week. Case rates among those aged 70 years and over have remained relatively steady in the past 2 weeks.

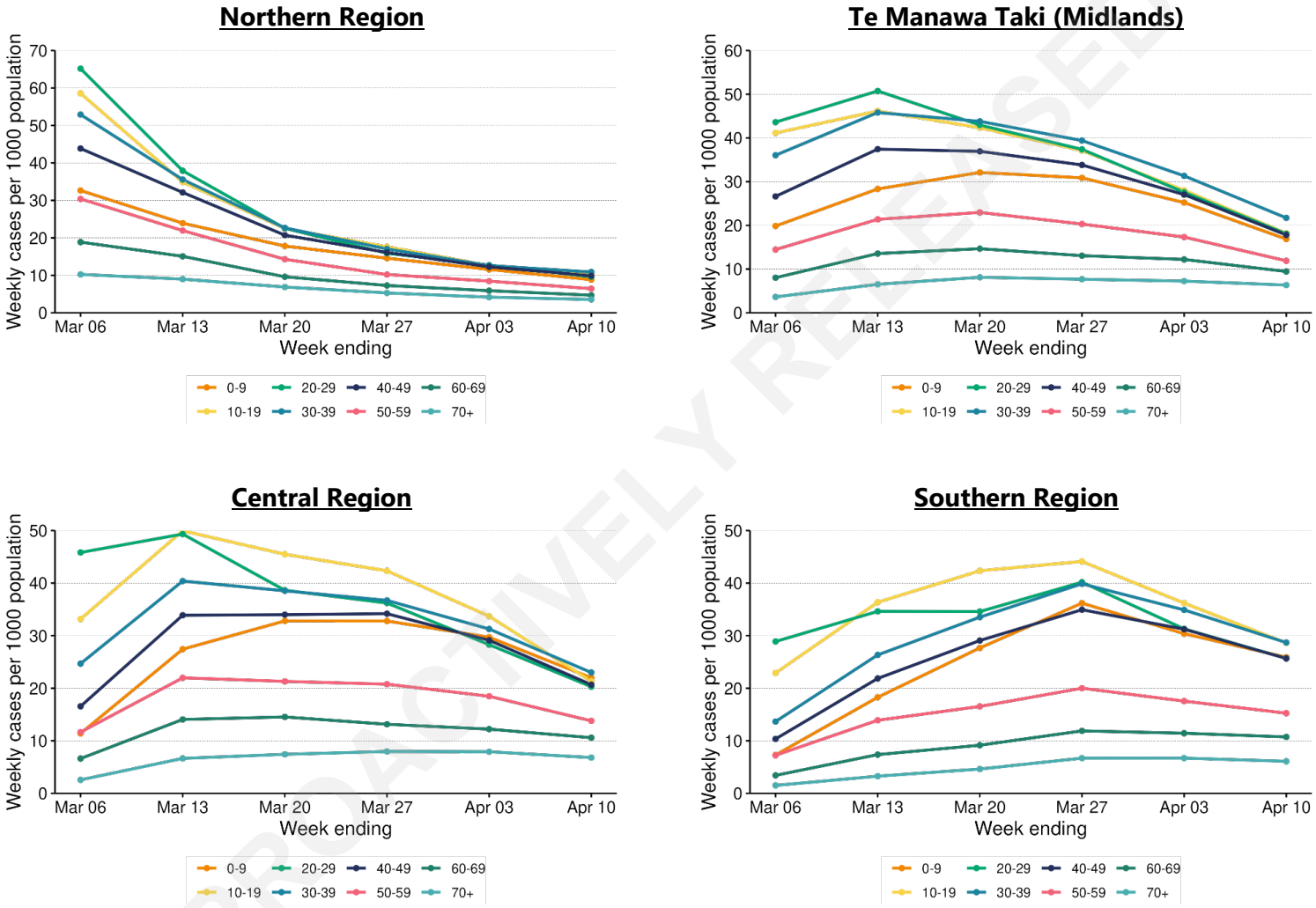
Patterns of age group risk were similar for all regions though the magnitude of the differences varied, in particular for Central and Southern there was a substantially greater difference in risk between those aged 0-49 years and those aged over 50 years, between 27 March to April 10 (see Figure 12). **Declining trends in case rates were seen across all age groups under 60 in all regions**; those 60 years and over were stable and had only very shallow declines in some regions.

Figure 11: ***Age specific weekly COVID-19 case rates (per 1000) for New Zealand, for the weeks ending 06 March to 10 April 2022***



Source: NCTS/EpiSurv as at 2359hrs 10 April 2022

Figure 12: ***Age specific weekly COVID-19 case rates (per 1000) by region, for the weeks ending 06 March to 10 April 2022***



Source: NCTS/EpiSurv as at 2359hrs 10 April 2022

Housing Deprivation trends over time, by ethnicity and by region

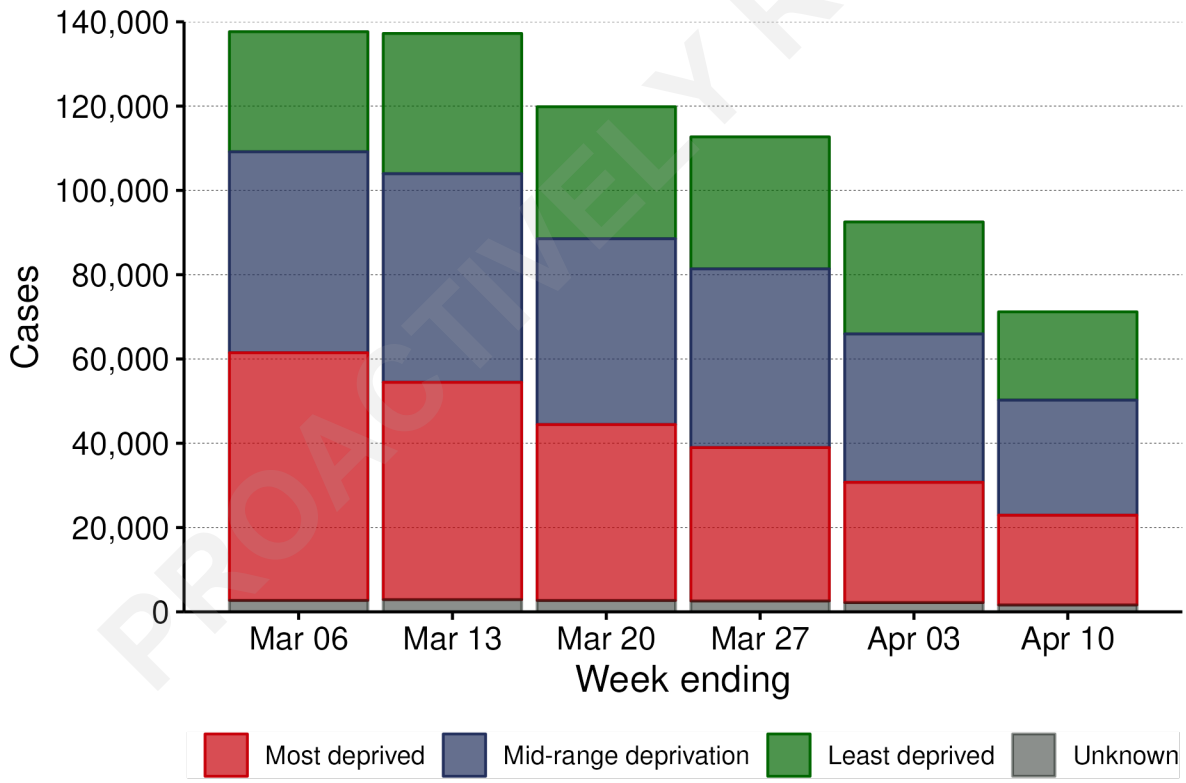
Figure 13 shows case *numbers* based on the Index of Multiple Deprivation 2018 housing deprivation scores. Housing is a key determinant of COVID-19 both in terms of risk and protection. Areas of high deprivation are ones where there is a higher number of renters, overcrowding and lack of amenities. These factors impact the ability to sustain self-isolation for cases and their household members.

Overall, in the past week the **proportion of cases was highest in the areas of mid-range deprivation (38%),** followed by areas most deprived (30%) and areas least deprived (29%).

For **the most deprived areas, cases in Māori made up 32%** despite only making up 15% of the total population. The proportion of cases in the most deprived areas for Pacific Peoples was 9%, for Asian 11% and for European and Other 47%. Whereas 79% of cases **in areas of least deprivation** were European and Other compared with 10% being Asian, **9% Māori** and 2% Pacific.

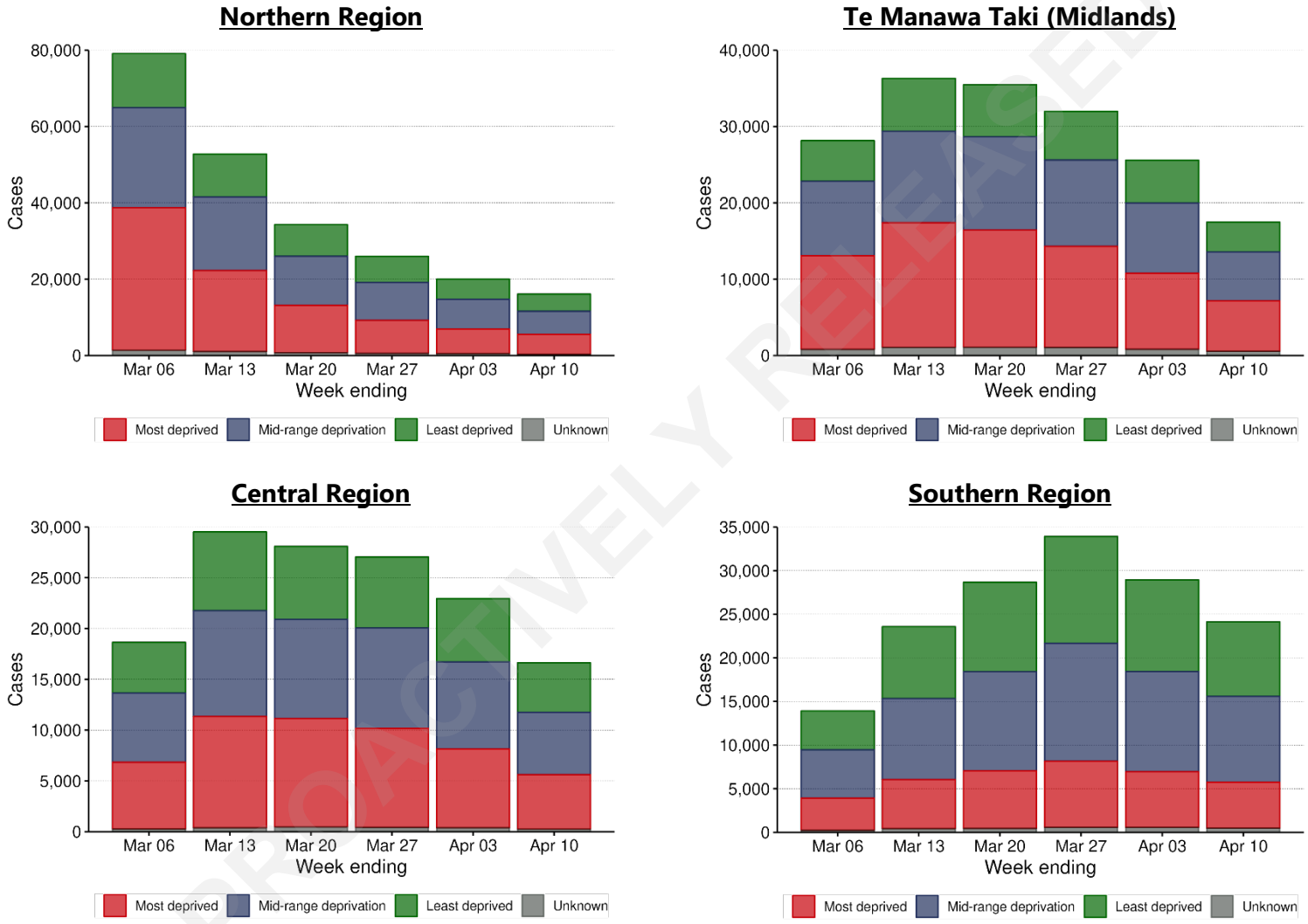
In Te Manawa Taki and Central regions, just over a third of cases were in the mid- and most deprived categories, respectively, and around a quarter in the least deprived (see **Figure 14**). Conversely, in Southern region, there were more cases from the least deprived areas than the most deprived areas. In the Northern region, case rates were quite similar for all levels of deprivation.

Figure 13: ***Deprivation specific weekly COVID-19 case numbers for New Zealand, for the weeks ending 06 March to 10 April 2022***



Source: NCTS/EpiSurv as at 2359hrs 03 April 2022

Figure 14: ***Deprivation specific weekly COVID-19 case numbers by region, for the weeks ending 06 March to 10 April 2022***



Source: NCTS/EpiSurv as at 2359hrs 10 April 2022

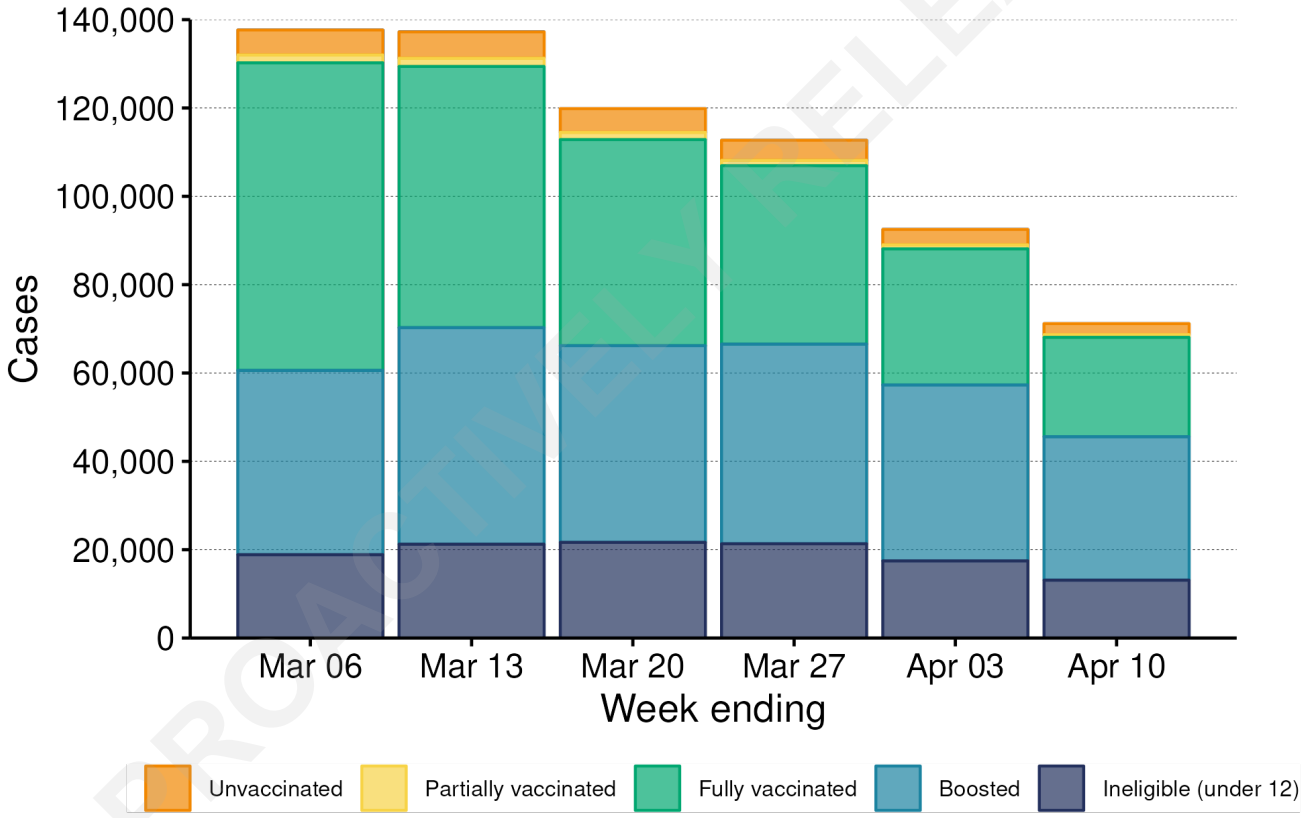
Vaccination trends over time

Figure 15 shows community case *numbers* by vaccination status nationally. The proportion of boosted cases rose from 43.1% to 45.6% of all cases in the week ending 10 April. A corresponding decrease in the proportion reported as fully vaccinated also occurred (from 33.3% to 31.6% of all cases).

The proportion of cases amongst those who are categorised as ineligible due to being under 12 years old[3] is 18.4%, relatively unchanged from the previous week (18.9%). The proportion of cases reported as partially vaccinated or unvaccinated, remains consistent at around 1% and 4%, respectively.

Weekly case rates for those who are boosted have dropped slightly in the past week from 15.4 to 12.5 per 1000, and fully vaccinated case rates have decreased in the past week from 22.2 to 16.4 per 1000. We have observed only a small effect of boosting *for reported cases*; however, these rates do not take into account key factors such as age.

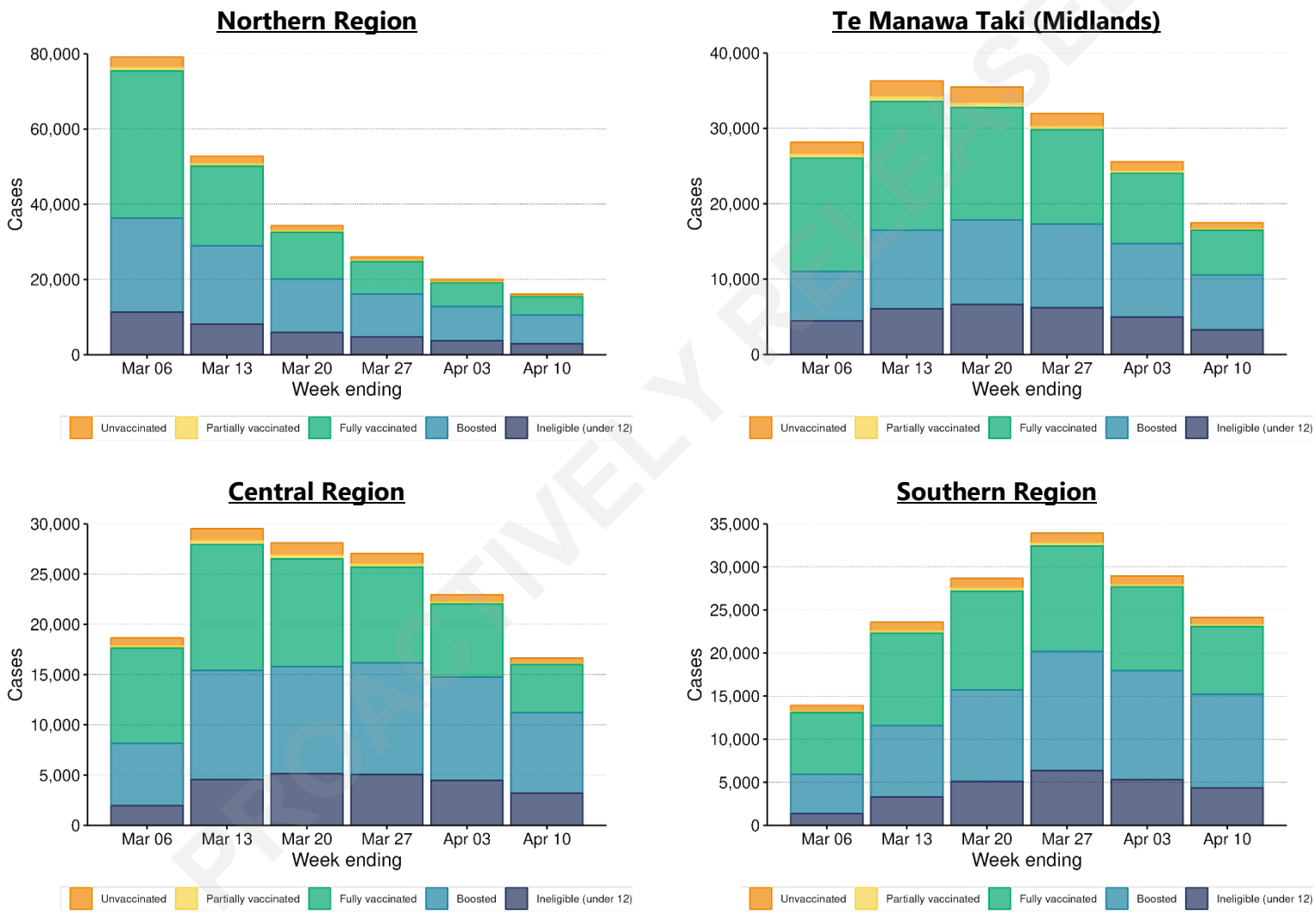
Figure 15: ***Vaccination specific weekly COVID-19 case numbers for New Zealand, for the weeks ending 06 March to 10 April 2022***



Source: NCTS/EpiSurv as at 2359hrs 10 April 2022

[3] Cases deemed Ineligible (under 12) are currently all cases that fall under the age of 12. Future modifications to vaccination categories are being developed and this will include under 12s.

Figure 16: ***Vaccination specific weekly COVID-19 case numbers by region, for the weeks ending 06 March to 10 April 2022***



Source: NCTS/EpiSurv as at 2359hrs 10 April 2022

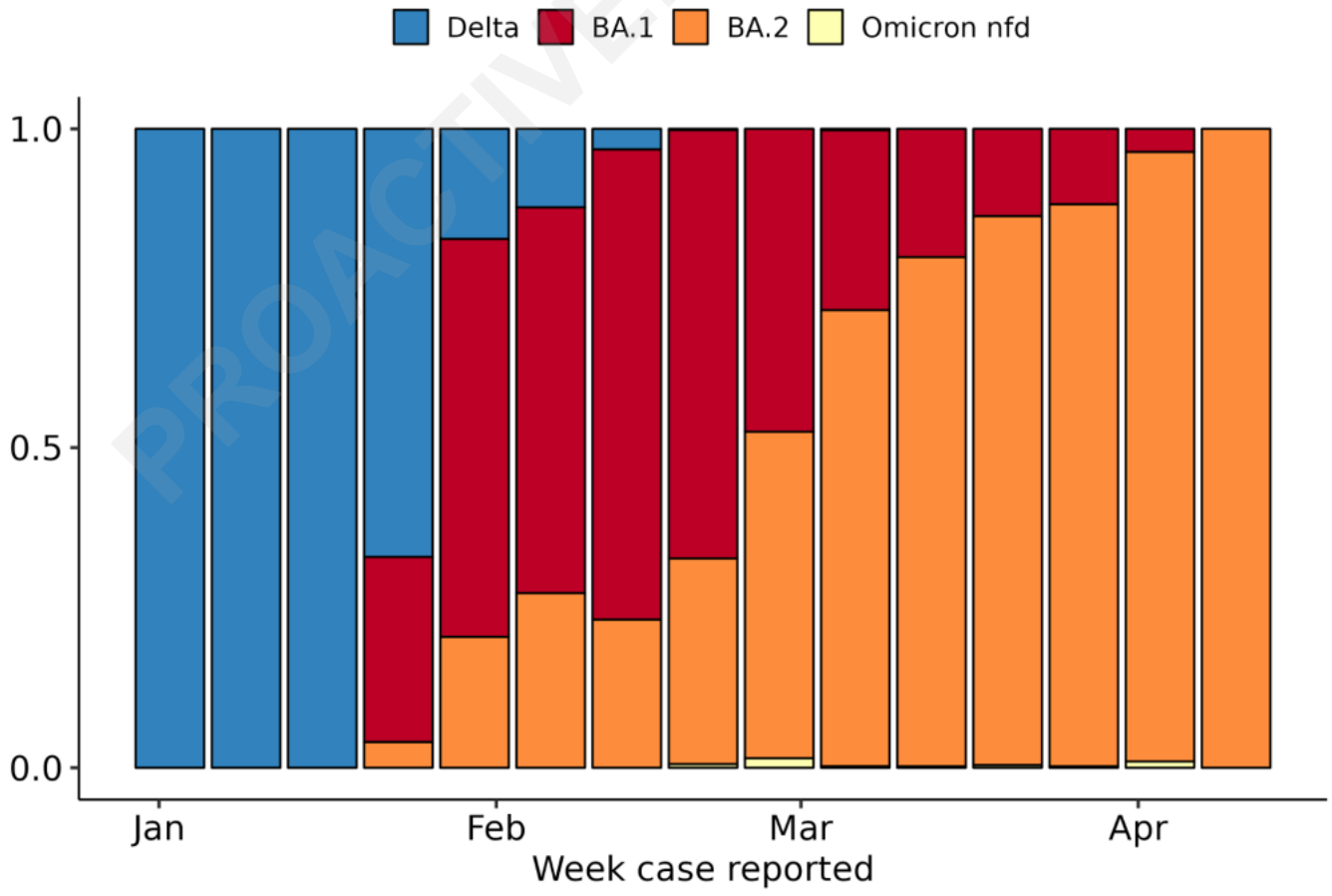
PCR and RAT testing trends

Since New Zealand entered Phase 3 of the Omicron response, most testing is by rapid antigen tests (RATs) rather than PCR tests. RATs are self-administered and therefore require the individual to self-report their results, which may result in under-reporting. In addition, RATs are more likely than PCR tests to return a false-positive or a false-negative result, especially if used during early periods of infection. On the other hand, increased availability of RATs may mean that more people have tested than would have otherwise, had PCR tests continued to the main surveillance method. Testing rates and test positivity are shown for PCR testing only in the **Appendix**. Test positivity for RATs would require data on the total number of RATs used, especially negative results. As PCR testing is only used to monitor priority populations and confirm positive RATs in specific situations, these rate and positivity data are not representative of the current testing state of New Zealand.

WGS of Community cases

As per Figure 17, Omicron is the dominant variant in New Zealand, outcompeting Delta, the previous dominant variant, which made up a ~70% of all sequenced cases in the start of January 2022 to less than 10% of sequenced case by the end of January 2022. Among Omicron cases, BA.1 was the dominant subvariant (~ 60%) in the start of February 2022 but has since been outcompeted by BA.2, which made up over 97% of sequenced cases sequenced in the past week to 13 April. This matches international phylodynamic trends as BA.2 has enhanced transmission advantage compared to the BA.1 subvariant. Please see the caveats in the notes section of the **Appendix.**

Figure 17: ***Frequency of Variant of Concerns amongst community cases in New*** **Zealand**



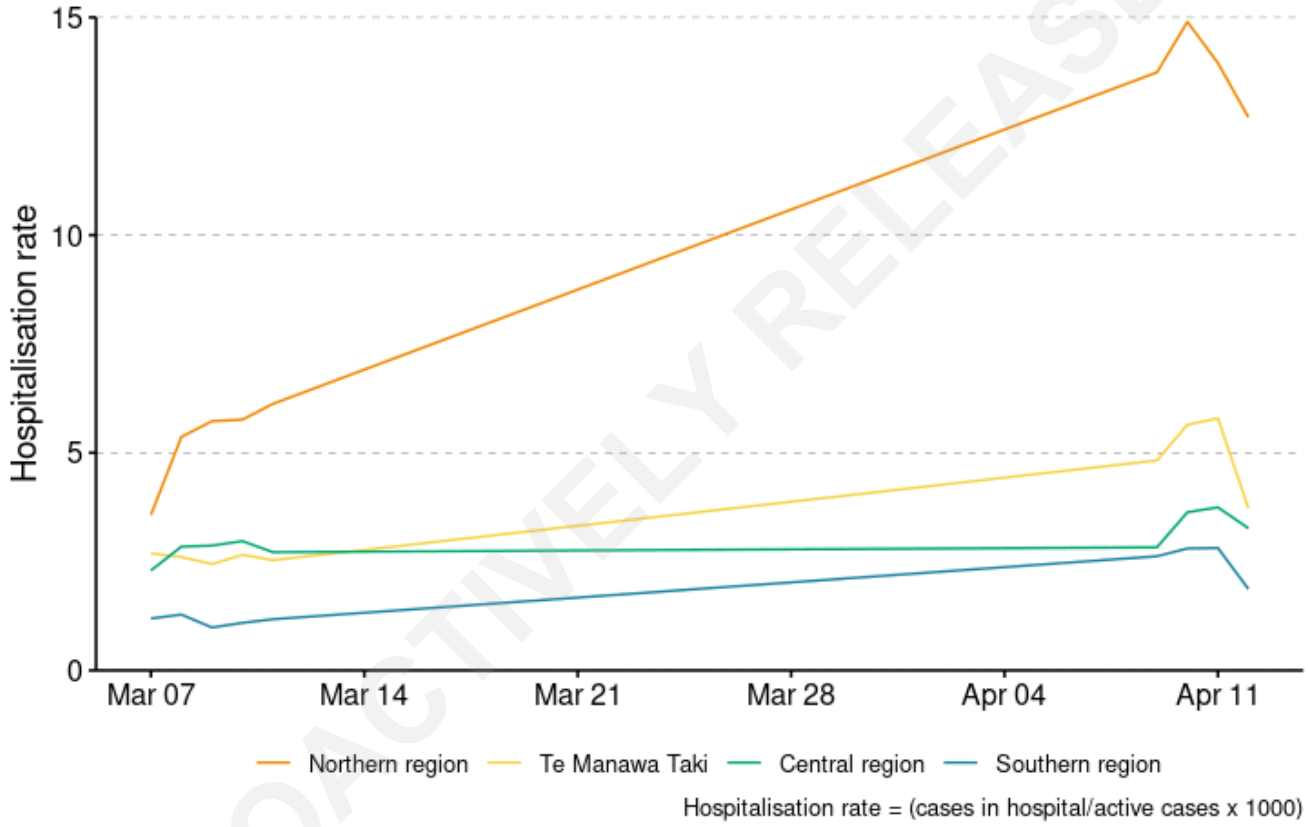
Source: ESR COVID-19 Genomics Insights Report #2, EpiSurv/Microreact 1200hrs 13 April 2022

Morbidity and Mortality

Hospitalisations

Hospitalisations in the Northern region rose sharply from the second week of March, reaching a peak of just under 15 cases hospitalised per 1000 cases (Figure 18). However, this rate might be beginning to decline both in the Northern regions and across the motu. Hospitalisations in the Te Manawa Taki region have been rising slowly since the second week of March and appear to have peaked at around 5 cases hospitalised per 1000 cases. Hospitalisation rates in the Central and Southern regions have remained steady at around 1 to 3 cases hospitalised per 1000 cases.

Figure 18: ***Rate of active hospitalisations by region***

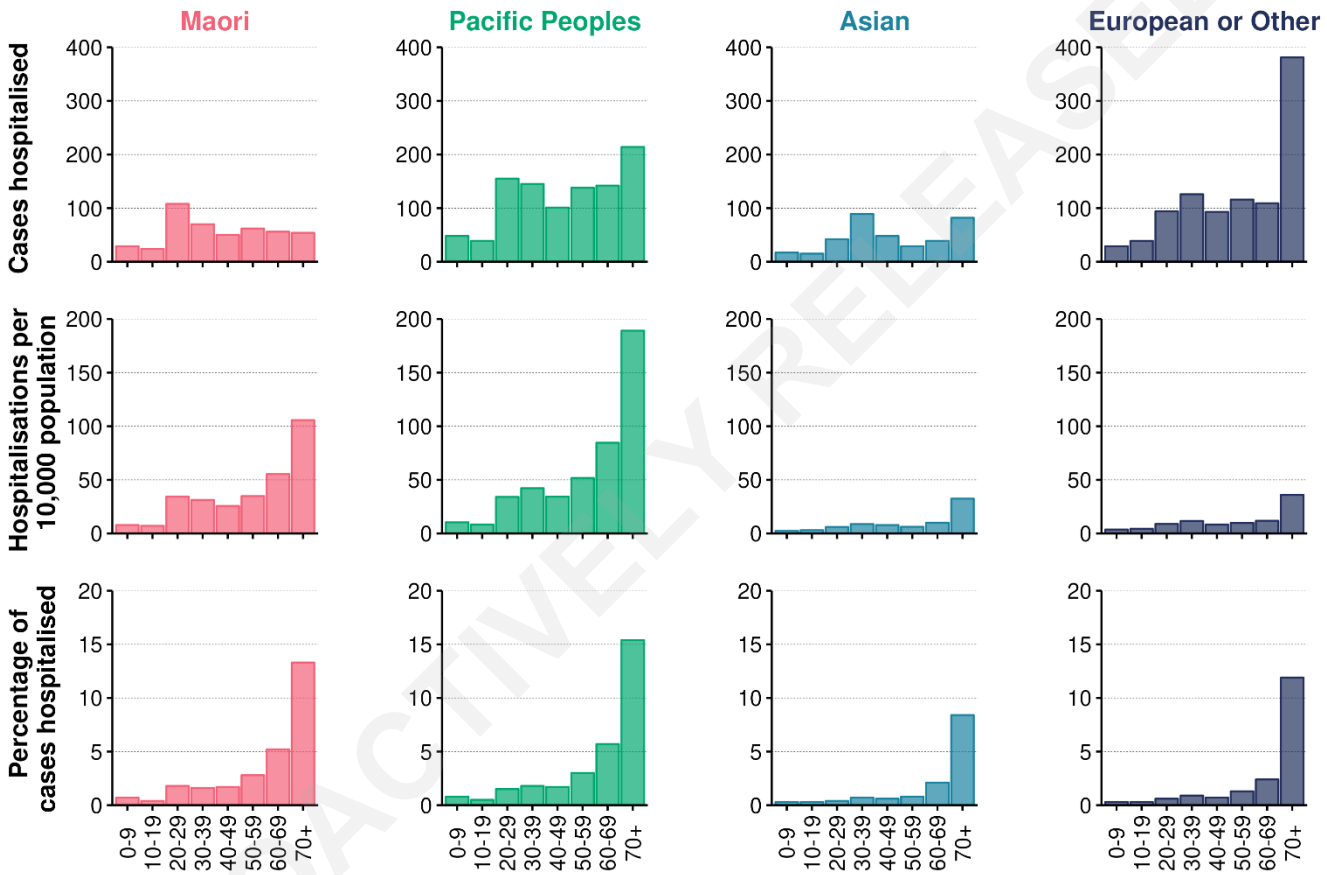


Source: Northern Regions hospitalisation data 13 April 2022 and NCTS/EpiSurv as at 2359hrs 12 April 2022

Hospitalisation rates by age and ethnicity in the Auckland Metro DHBs

Figure 19 shows hospitalisations, hospitalisation rate and percentage of cases hospitalised by age and ethnicity. In the Auckland Metro region, those aged 70+ of European or Other ethnicity make the largest proportion of hospitalised cases; however, relative to their population, they are the second-least likely to be hospitalised. People aged 70+ of Pacific peoples ethnicity were the most likely to be hospitalised as a case, followed by those aged 70+ of Māori ethnicity.

Figure 19: ***COVID-19 hospitalisations for Auckland, Counties Manukau and Waitemata by age and ethnicity: cases hospitalised, cases hospitalised per 10,000 population, and percentage of all cases hospitalised***



Source: Northern Regions hospitalisation data from 28 February 2022 to 10 April 2022 and NCTS/EpiSurv as at 2359hrs 09 April 2022

WGS of hospitalised cases

The majority of hospitalised COVID-19 cases sequenced since 1 January 2022 have been Omicron cases (98%), with the most recent hospitalised case found to be infected with the Delta variant reported on 02 March 2022 (Figure 20). Of the total 1,756 hospitalised cases sequenced to date, approximately 77% were found to be the BA.2 sub-variant with a further 21% found to be the BA.1 sub-variant of Omicron; the remaining 2% were Delta. This suggests hospitalisations are being driven by Omicron and not Delta currently. This high BA.2 prevalence is not unexpected as it is the dominant sub-variant circulating in the community.

Figure 20: ***WGS of hospitalised cases reported from 01 January 2022 to 11 April 2022***

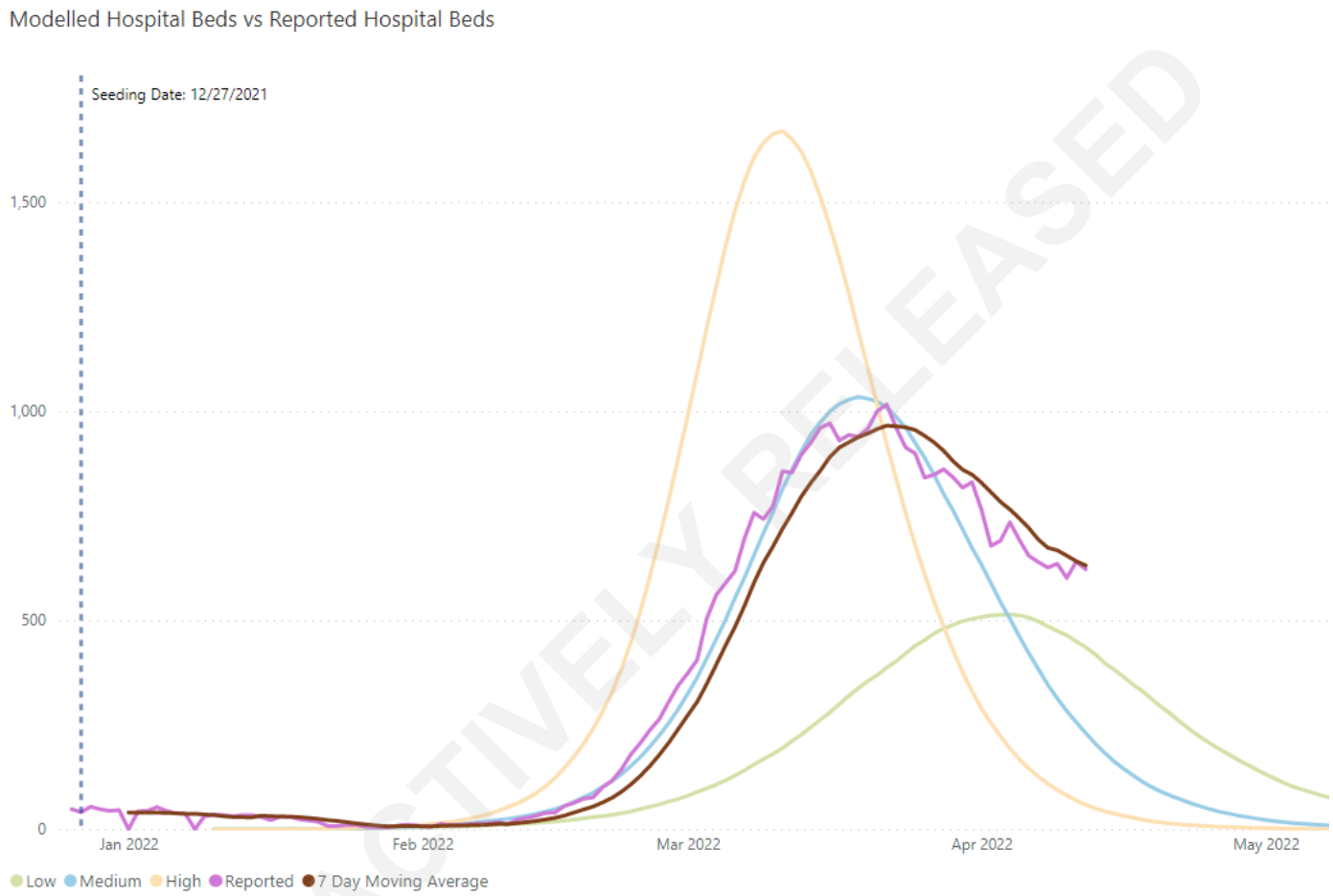
	Hospitalised cases						
DHB	**Delta**	**Omicron (BA.1-like)**	**Omicron (BA.2-like)**	**Omicron (Unassigned)**	**Failed WGS**	**To be received**	**Total**
Northland	3	3	6	0	0	16	**28**
Waitemata	8	78	248	2	19	256	**611**
Auckland	4	52	57	0	5	359	**477**
Counties Manukau	6	138	177	5	17	477	**820**
Waikato	1	4	13	0	2	430	**450**
Lakes	1	13	22	0	1	33	**70**
Bay of Plenty	3	22	215	1	15	102	**358**
Tairawhiti	0	0	2	0	1	28	**31**
Taranaki	1	5	51	0	2	23	**82**
Hawke's Bay	2	5	3	0	0	112	**122**
Whanganui	0	0	5	0	0	18	**23**
MidCentral	0	4	25	0	1	138	**168**
Wairarapa	0	2	16	0	5	6	**29**
Hutt Valley	0	2	5	0	2	137	**146**
Capital and Coast	1	5	31	0	1	192	**230**
Nelson Marlborough	0	0	0	0	0	2	**2**
West Coast	0	1	3	0	0	5	**9**
Canterbury	1	25	328	0	23	30	**407**
South Canterbury	0	1	1	0	0	2	**4**
Southern	0	14	141	2	28	29	**214**
Unknown	0	0	0	0	0	1	**1**
Border	0	1	1	0	1	4	**7**
Total	**31**	**375**	**1350**	**10**	**123**	**2400**	**4289**

Source: ESR COVID-19 Genomics Insights Report #2, EpiSurv/Microreact 1200hrs 11 April 2022

Hospitalisations predicted and actual

Hospitalisations initially tracked closely to the "medium" scenario with a similar peak but are not decreasing at the same rate that is in line with the "medium" scenario published on 27 February 2022 (Figure 21). This is producing a 'long-tail' of hospitalisations.

Figure 21: ***Modelled hospital occupancy compared to actual nationally***



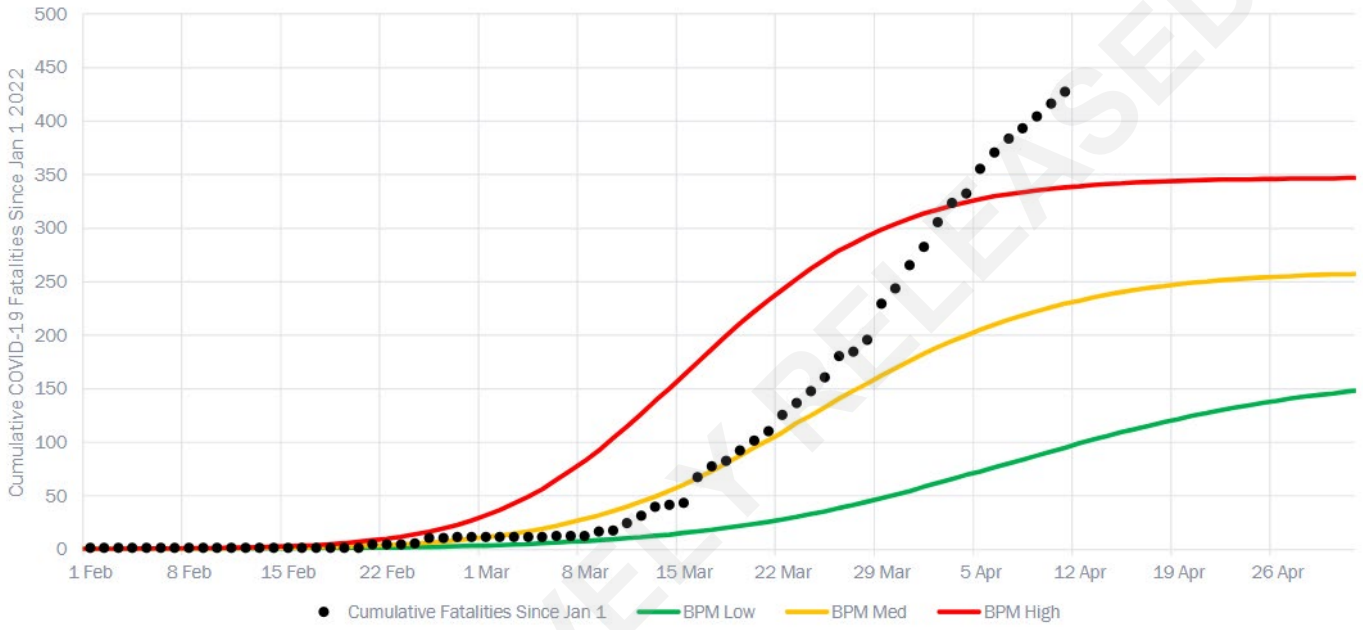
Sources: TAS, based on COVID-19 Modelling Aotearoa Branching Process Model 27 February 2022, and DHB reports to TAS of daily hospital occupancy (all COVID-19 positive people admitted as inpatients) as of 13:00 13 April 2022.

Mortality modelling

As of 13 April 2022, 531 people have died with or after COVID-19 infection. Of these, 497 have died within 28 days of being reported as a case. The 7-day rolling average of announced deaths is 13.

Cumulative mortality that was following the modelled medium scenario started to rise faster and has exceeded modelled estimates of the cumulative number of deaths in the high scenario by almost 100 deaths. (Figure 22).

Figure 22: ***Cumulative deaths compared with modelled scenarios***



Sources: COVID-19 Modelling Aotearoa Branching Process Model 27 February 2022, MoH published mortality

Public Health Response and Health System Capacity

Omicron Dashboard

The omicron dashboard providers oversight of how the health system is being impacted by the omicron outbreak. It uses data gathered from various clinical and health sector indicators. Below is the summary of indicators for the week ending 07 April 2022.

Figure 23: ***Omicron Health Sector Clinical Indicators Dashboard summary, week ending 07 April 2022***

Sector	Summary of data
General Practice	General Practice encounter rates continue to be well above normal levels. Access to General Practice is something that MoH is investigating further, with indications that potentially 30% of practices are closed to new patients. Childhood Immunisation rates have decreased nationally, with tamariki Māori the most effected.
Aged Residential Care	26% of the 656 Aged Residential Care (ARC) facilities have at least one active COVID-19 case. A pilot is underway with 2 ARC facilities to test new RAT recording processes in order to achieve accurate case numbers for ARC facilities.
Māori Health Providers	There continue to be concerns (outlined below) from Maori health providers regarding workforce constraints, unvaccinated whānau and broader effects of COVID-19. The Ministry are working collaboratively to address provider concerns where possible.
Pacific Health	The Ministry's Pacific Health team are currently in the process of administering an additional $10 million investment to support Pacific health providers respond to Omicron. This funding will enable the rapid delivery of a full spectrum of response activities, alongside uplifting the vaccination service and providing wraparound support for their communities.
Ambulance	Providers continue to experience pressure with the volume of 111 calls, managing ambulance response times and the number of callouts that don't require transport to ED.
Mental Health	Very little change from last week. Inpatient Facilities are demonstrating good integration with primary care.
Disability providers	The Ministry's focus remains on ensuring disabled people can continue to receive their essential care and support services as the Omicron variant spreads across the country.
Hospital	Hospital workforce continues to be constrained, with sick leave highest for nursing and allied health staff. Hospitals are increasing busy with North Shore and Rotorua Hospitals over 90% capacity at every census point for the last week. Audits are being commissioned to investigate the positive COVID-19 hospitalisations – initial data has been included this week.
ED	ED occupancy continues to be constrained this week, with an increase nationally in the number of times ED were over 90% occupancy. SSED % was at 78% for both admitted and non-admitted this week.
Planned Care (Hospital)	Most DHBs in March focused on treating acute, time sensitive and cancer cases as Omicron reduced the ability to deliver Planned Care to higher levels. The Ministry and Interim Health New Zealand are working with DHBs to identify where support can be provided and how the future focus needs to restore stability.
Pharmacy	No significant issues this week. Workforce pressure are expected to continue to be a concern given the influenza vaccination campaign commenced 1 April 2022 with pharmacy being one of our biggest vaccination providers.
Home and Community Support Services	A continuing decline in the number of staff and also number of trips (services delivered) has been seen this week. This data could be due to the lag in reporting or annual leave, but will continue to track over time to identify any emerging trends.
COVID care in the community	Self-assessment follow up continues to be the most frequently used follow up method. % of non-contacted population has decreased from 2.5% last week to 1.3% this week
Workforce	A nationwide funding stream has been made available to support Māori and Pacific providers caring for at-risk communities to reinforce the capacity, capability and resilience of the workforce caring for at risk communities, through the Omicron outbreak and beyond.
Rural Health	Rural hospitals have seen increased pressure this week mainly related to staffing availability.

Sources: Omicron Health Sector Clinical Indicators Dashboard, 07 April 2022

COVID-19

Trends and Insights Report

Updated 13 April 2022

Appendix Document

Contents

Data & Notes

Data Sources

Prevalence Estimates

National estimates of underlying infection incidence are based on the weekly test positivity in routinely asymptomatically tested populations, assuming therefore that their positivity rates are indicative of their underlying infection rates. The populations identified for these estimates using surveillance codes provided for testing data are border, emergency, and healthcare work forces, as well as hospital inpatients. Inpatient estimates are also produced based on a direct data feed from the Northern Region, rather than identifying inpatients in the national testing database; they are therefore more accurate than the national figures. However, this data is currently only available for the Northern Region.

Wastewater quantification

The wastewater analysis has been undertaken at the ESR Kenepuru and Christchurch Laboratories

Data limitations

Prevalence estimates based on routinely tested populations

- The groups of routine testers that have been identified (Health care, border and emergency workers, and hospital inpatients) are not a representative sample of New Zealanders, overall, they are higher risk than the general population.
- The identification of these groups at a national level is based on surveillance codes, which may not be completed accurately, particularly since the introduction of RAT testing.
- The national estimate is for people who have uploaded at least one test result in the week, so will be an over-estimate if negative test results are not being recorded for these groups.
- National level estimates will be masking differing trends be region.
- Northern region hospital inpatient data, while likely to be more accurate than the national level data, still reflect a higher-risk group, and neither the estimates nor the trend are generalisable outside of the Northern Region
- The identification of these groups is based on surveillance codes, which may not be completed accurately, particularly since the introduction of RAT testing.
- The population has been identified based on ever having a surveillance code related to the respective workforce and having at least 2 tests (at least one of which was negative) in 2022. A sensitivity check was run using at least 3 tests, while this numbers reduced, the incidence estimates remained very similar.

Wastewater quantification

- Approximately 1 million people in New Zealand are not connected to reticulated wastewater systems.
- Samples may be either grab or 24 hr composite samples. Greater variability is expected with grab samples.
- While a standard method is being used, virus recovery can vary from sample to sample.
- SARS-CoV-2 RNA concentrations should not be compared between wastewater catchments.
- Day to day variability in SARS-CoV-2 RNA concentrations especially in smaller catchment is to be expected.
- Recent changes to the way case data is collected and processed may have resulted in some uncertainties in the cases counts, and the catchments to which they are mapped. While this is being resolved, the case data presented in this report should be used as a guide only and is subject to change. ESR are continuing work to improve the algorithms for how cases are assigned to wastewater catchments, including integrating a new meshblock data feed recently made available from NCTS.

Acknowledgements

ESR – routine testing estimates and wastewater quantification. Thomas Lumley for advice on proxy indicators.

Case Demographic Tables

DHB	Community cases reported since 04 April	Rate per 1,000
Northland	3517	18.2
Waitemata	4959	7.9
Auckland	3709	7.5
Counties Manukau	3881	6.6
Bay of Plenty	3366	13.0
Waikato	6116	14.2
Tairawhiti	791	15.4
Lakes	1581	13.8
Taranaki	2486	20.2
Hawke's Bay	2632	15.1
Whanganui	1709	25.0
MidCentral	3722	20.5
Hutt Valley	2632	16.9
Capital and Coast	4714	15.0
Wairarapa	719	14.8
Nelson Marlborough	2643	16.8
West Coast	583	18.0
Canterbury	11686	20.6
South Canterbury	1366	22.3
Southern	7847	23.4
Unknown	35	1.9
Total	**71184**	**14.2**

Regions	Community cases reported since 04 April	Case Rate per 1000
Northern	16066	8.4
Te Manawa Taki	14340	14.7
Central	16618	17.6
Southern	24124	20.9
Total	**71148**	**14.2**

Ethnicity	Community cases reported since 04 April	Rate per 1,000
Māori	13255	17.3
Pacific Peoples	3684	10.0
Asian	8005	10.9
European or Other	45736	14.7
Unknown	504	-
Total	**78965**	**14.2**

Sex	Community cases reported since 04 April	Rate per 1,000
Female	38560	15.1
Male	32563	13.3
Unknown	61	33.6
Total	**71184**	**14.2**

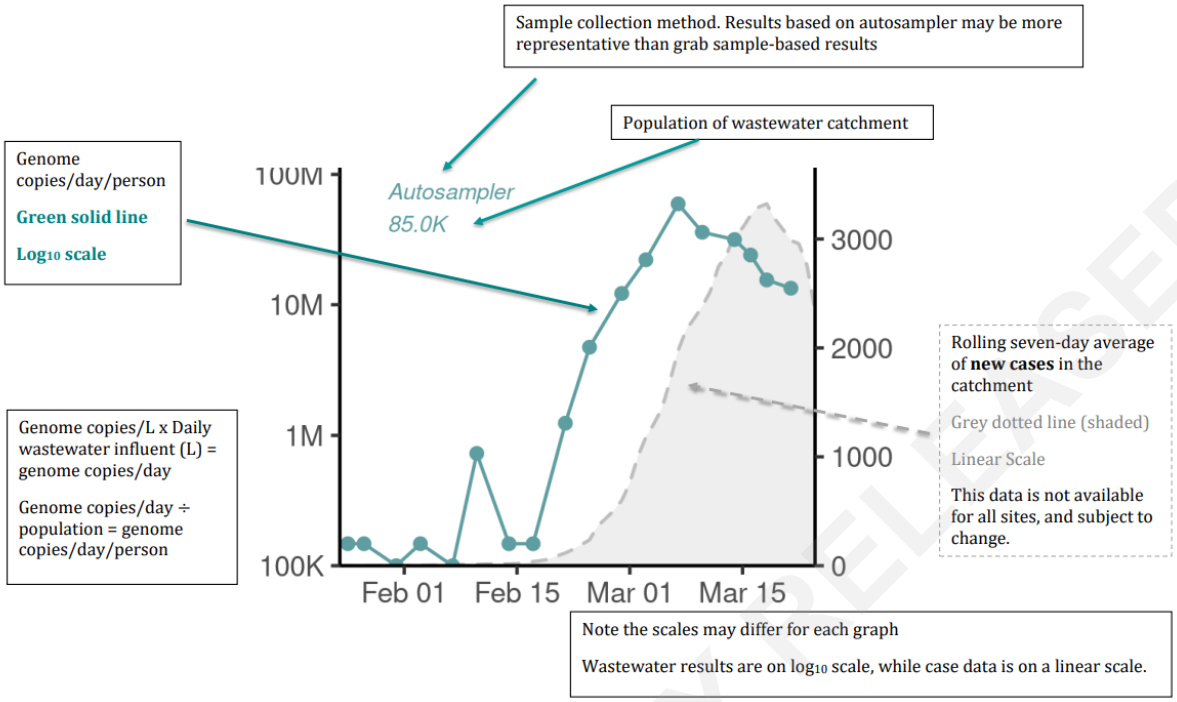
Age	Community cases reported since 04 April	Rate per 1,000
0-9	10614	16.2
10-19	11520	18.0
20-29	11173	16.6
30-39	12915	18.7
40-49	10575	16.9
50-59	7004	10.9
60-69	4393	8.2
70+	2990	5.5
Total	**71184**	**14.2**

Table 1: ***Estimated median effective R (R_{eff}) by Public Health Unit region, cases to 08 April 2022***

Public Health Unit region	R_{eff} (90% Credible Interval [CI])
Northland	0.9 (0.5-1.5)
Auckland	0.8 (0.4–1.4)
Taranaki	0.7 (0.4-1.1)
Waikato	0.8 (0.4–1.5)
Toi Te Ora	0.6 (0.3–1.2)
Tairawhiti	0.7 (0.4-1.2)
Regional Public Health (Wellington Region)	0.7 (0.4–1.2)
Mid Central	0.6 (0.4-0.9)
Hawkes Bay	0.6 (0.4–0.9)
Canterbury/ South Canterbury	0.7 (0.3–1.8)
Southern	1.0 (0.4–2.3)
Nelson Marlborough	0.6 (0.2–1.8)
West Coast	0.9 (0.4–1.5)
National	0.7 (0.4-1.3)

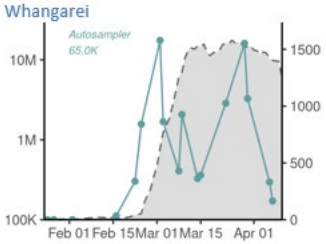
ESR Wastewater

Interpreting site graphs

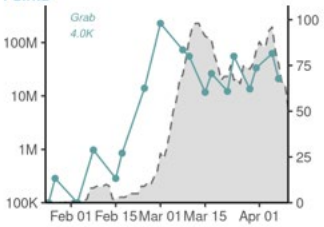


Northland

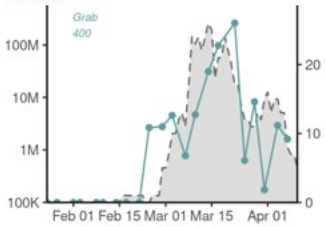
Whangarei



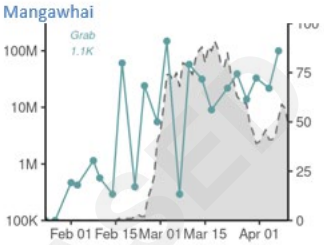
Paihia



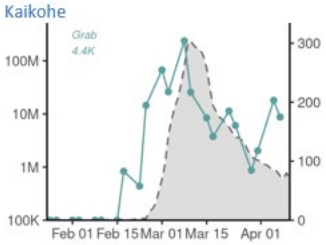
Kaiwaka



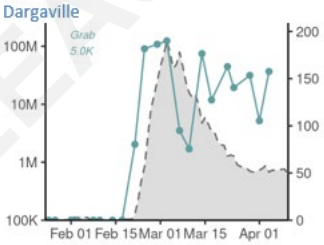
Mangawhai



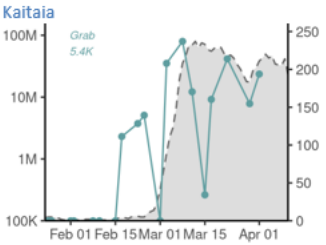
Kaikohe



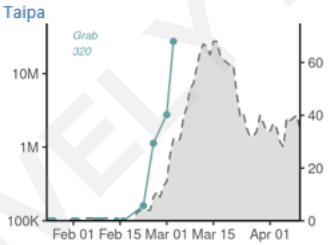
Dargaville



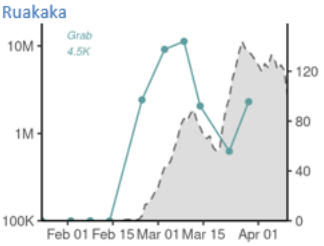
Kaitaia



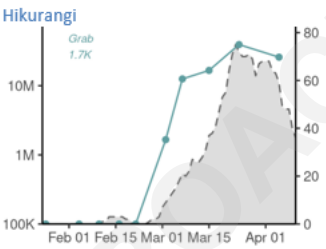
Taipa



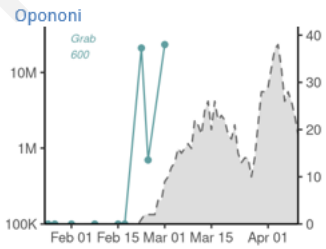
Ruakaka



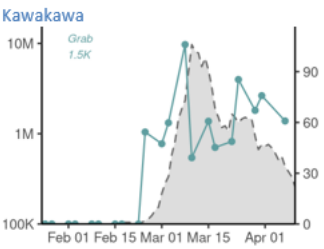
Hikurangi



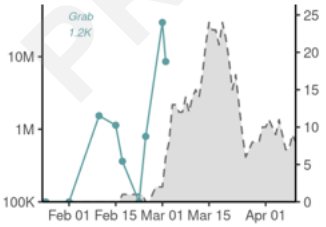
Opononi



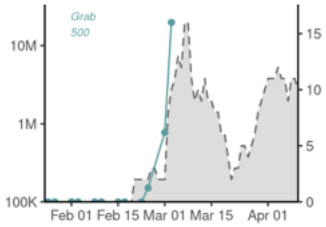
Kawakawa



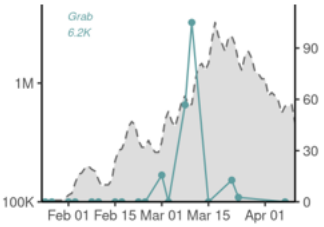
Kaeo



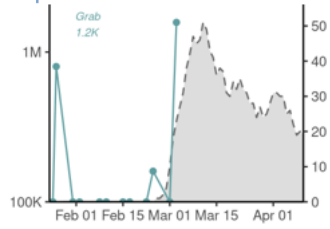
Russell



Kerikeri

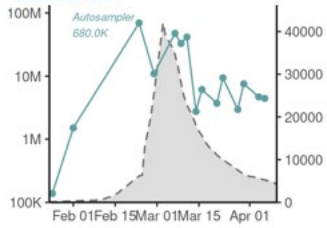


Ahipara

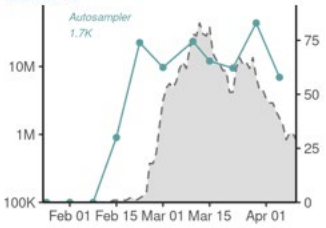


Auckland

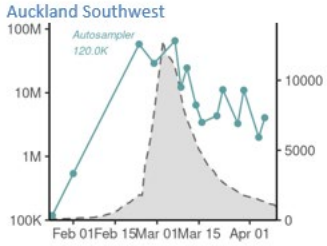
Auckland East



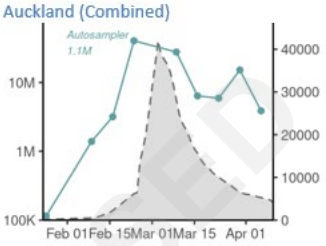
Wellsford



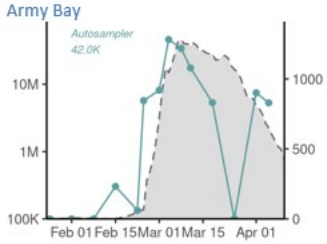
Auckland Southwest



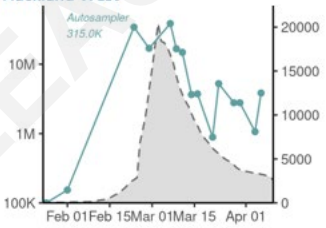
Auckland (Combined)



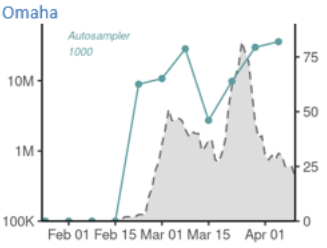
Army Bay



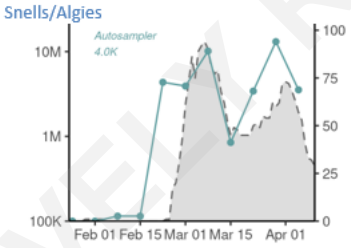
Auckland West



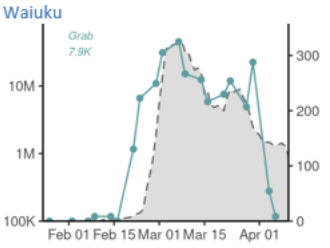
Omaha



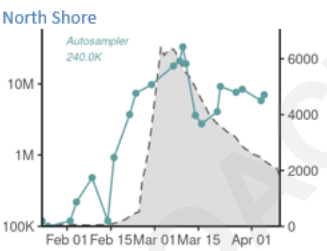
Snells/Algies



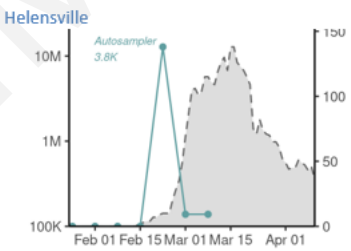
Waiuku



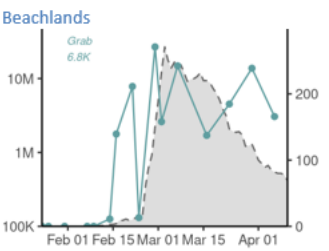
North Shore



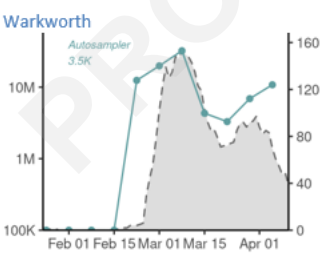
Helensville



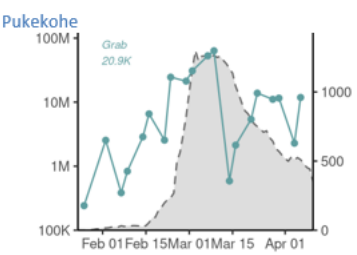
Beachlands



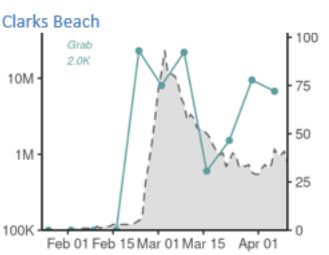
Warkworth



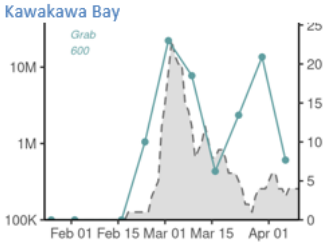
Pukekohe

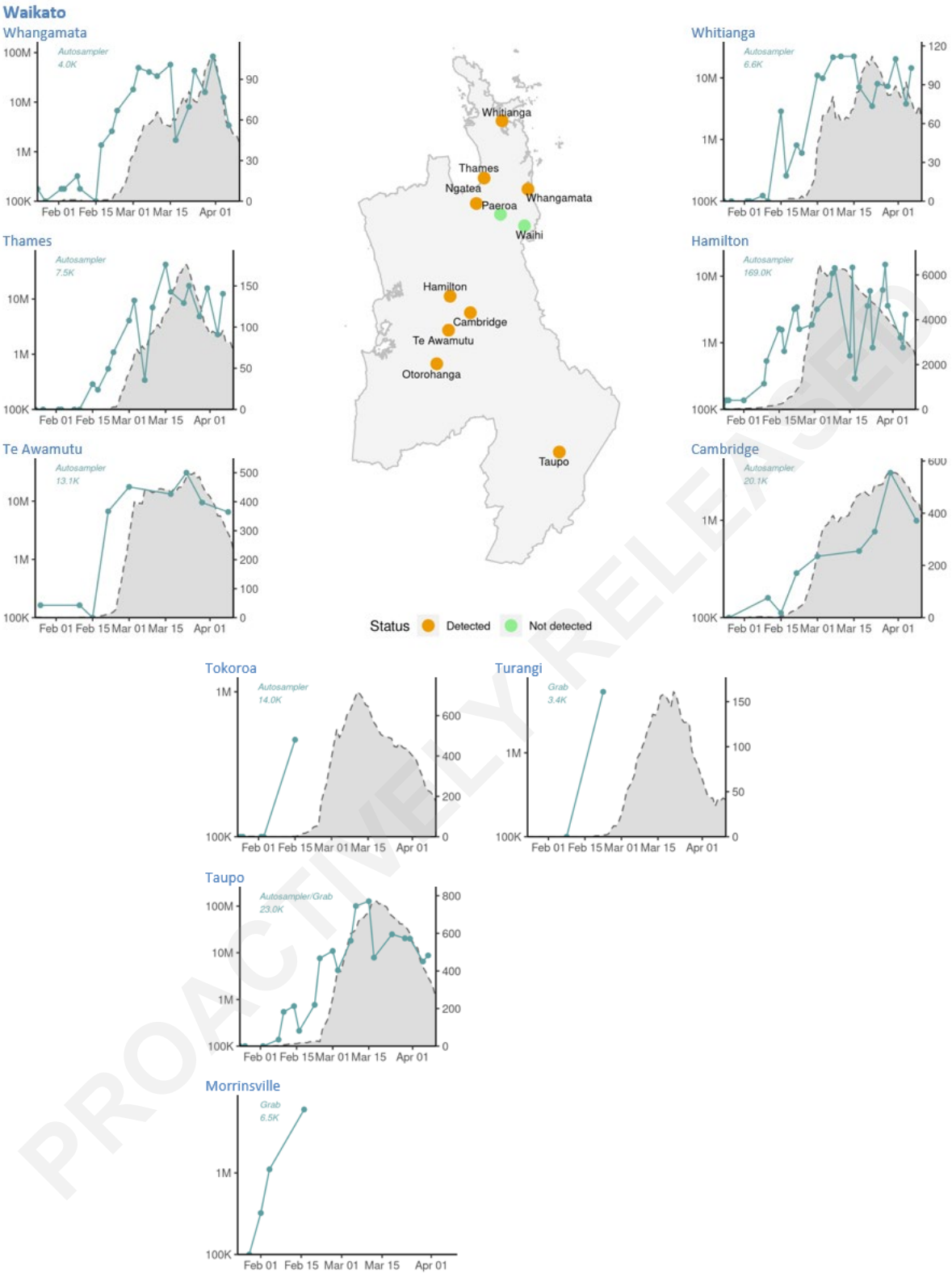


Clarks Beach

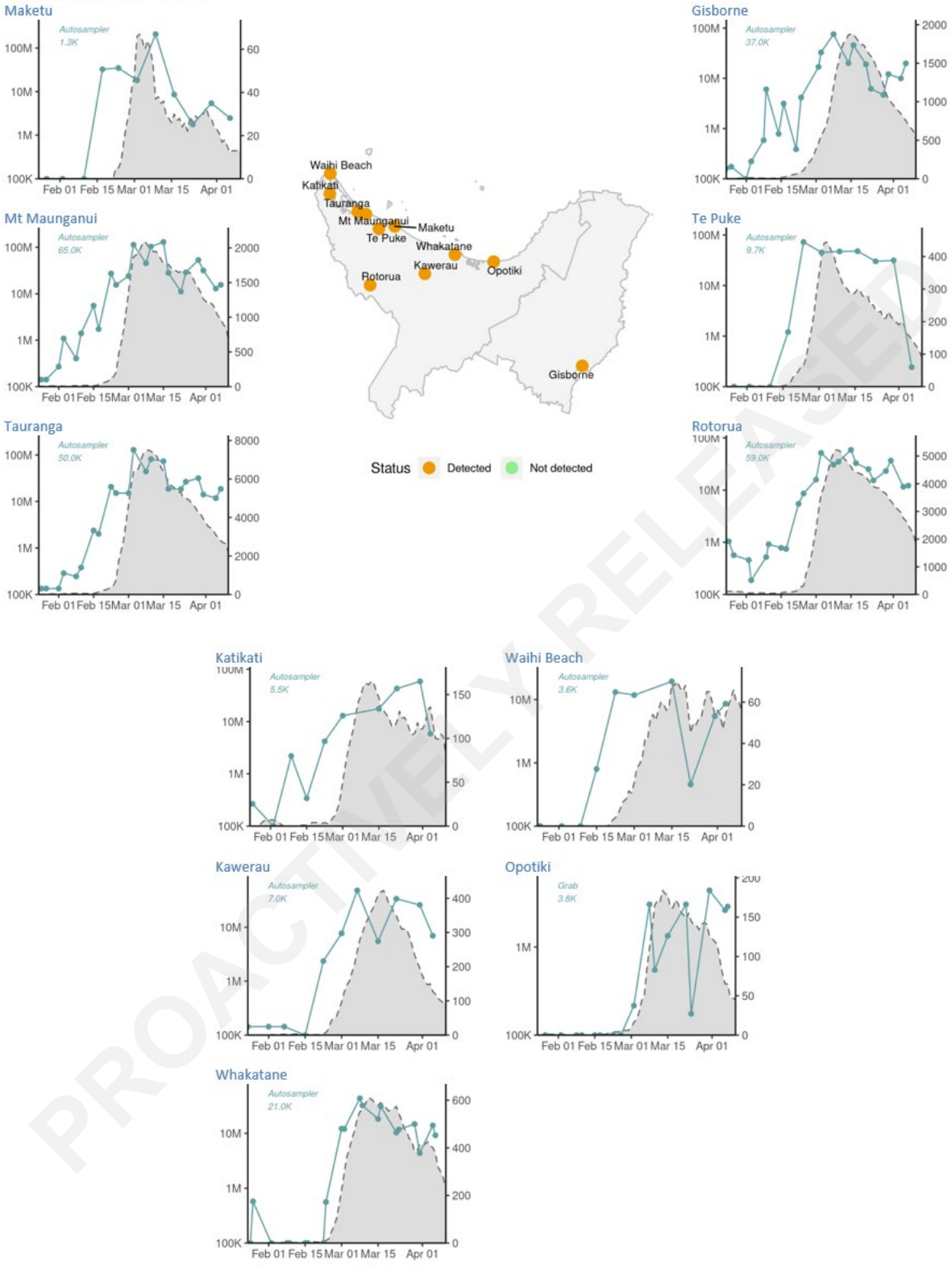


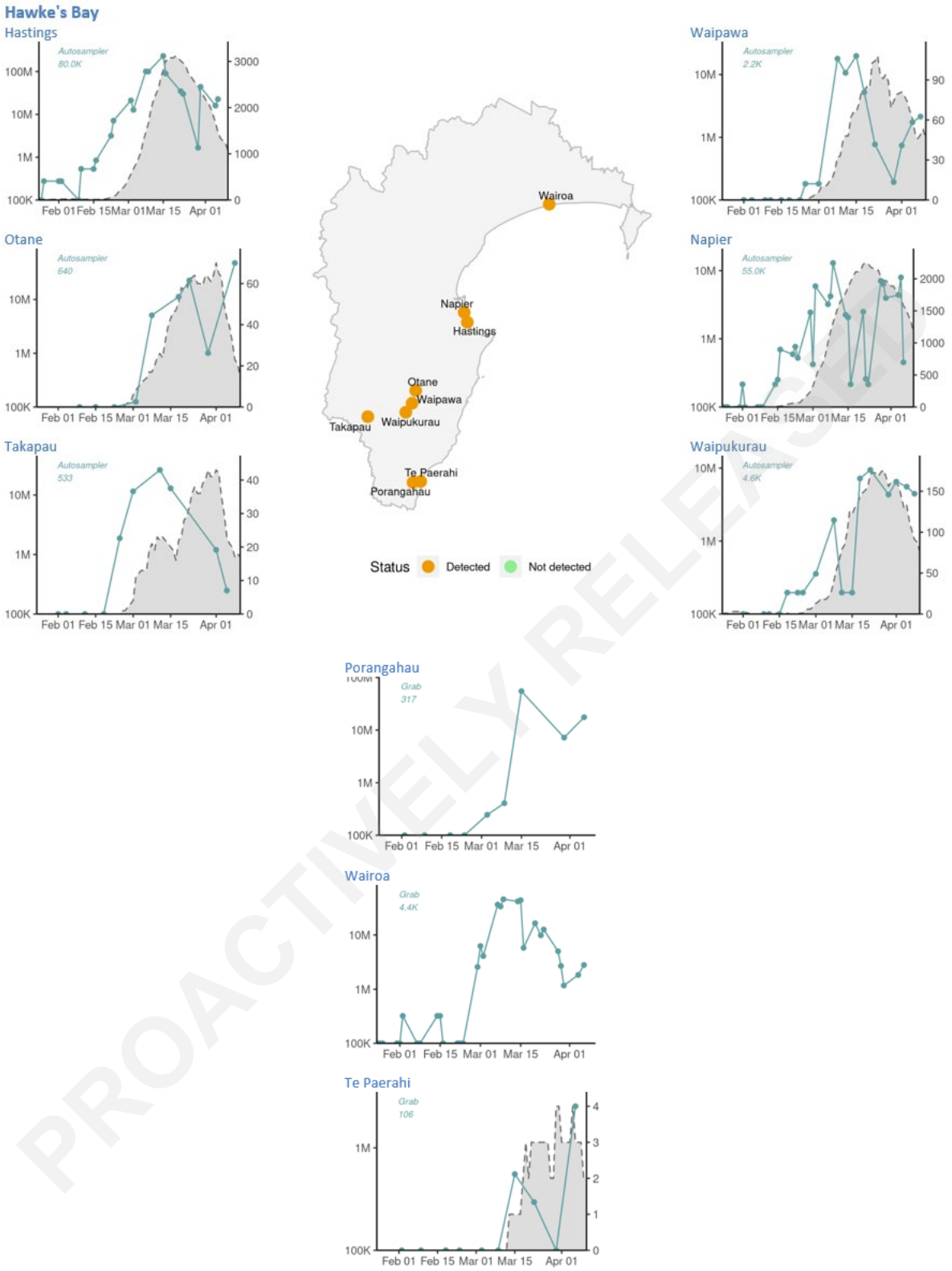
Kawakawa Bay



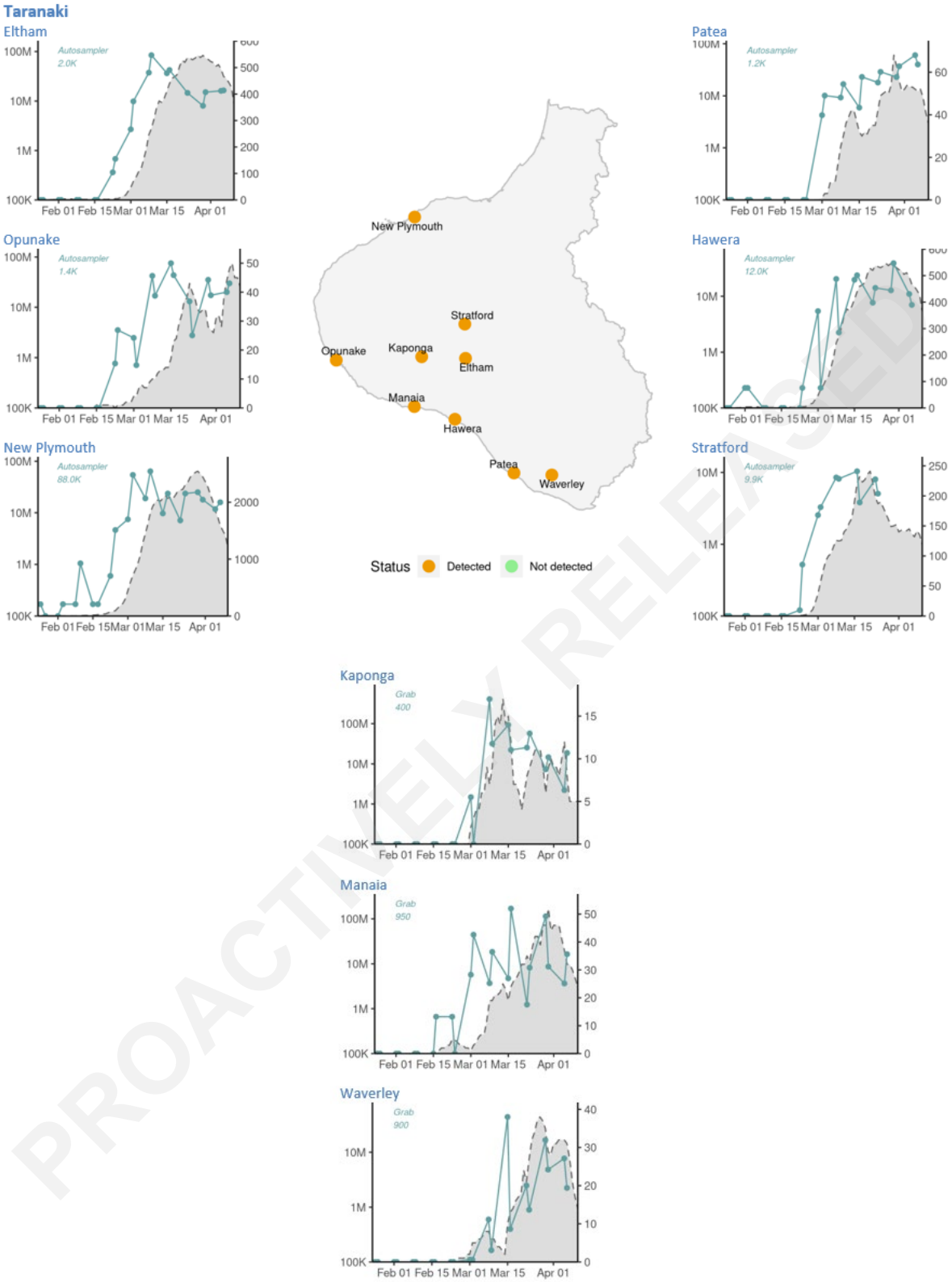


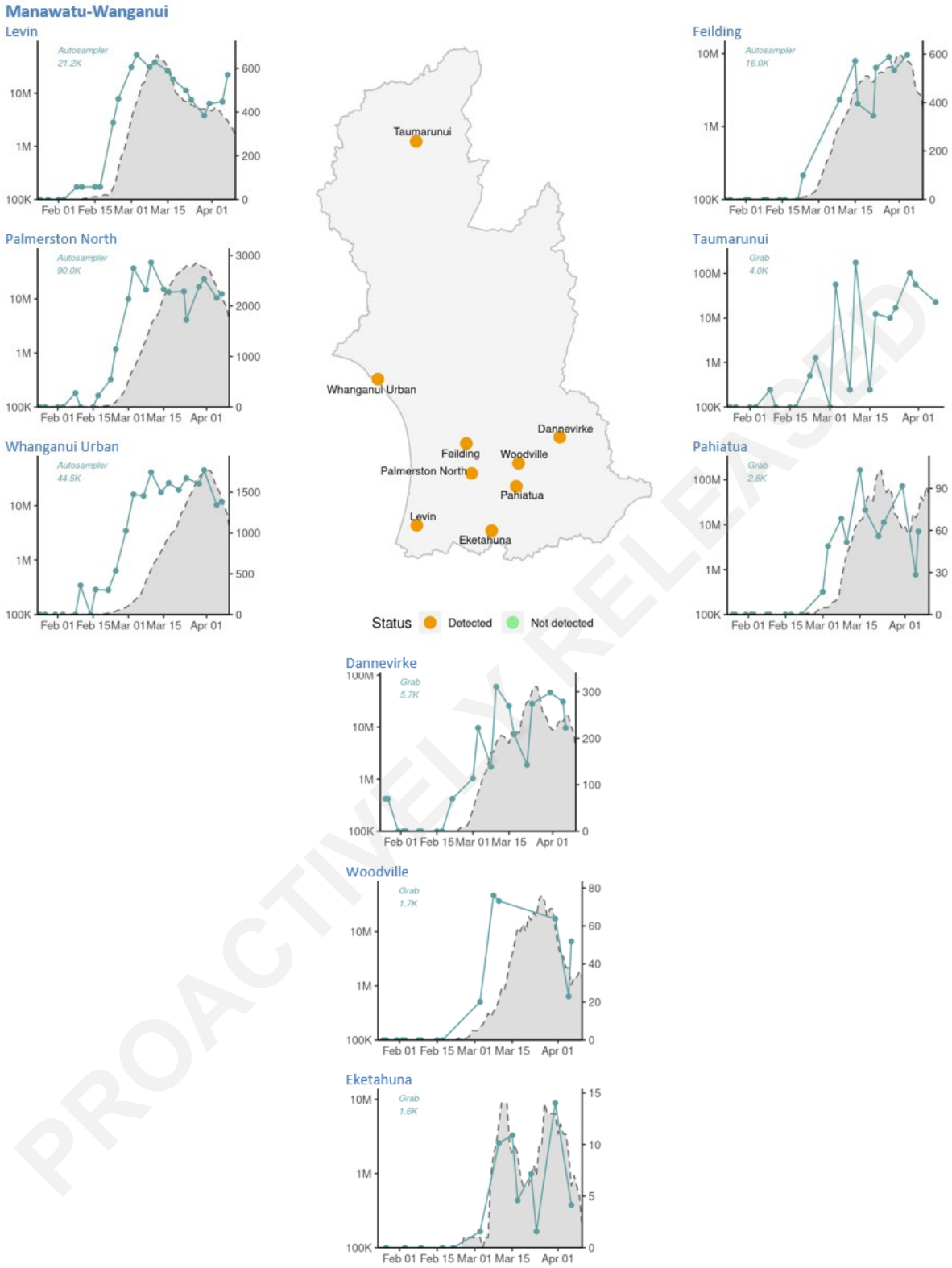
Bay of Plenty and Gisborne

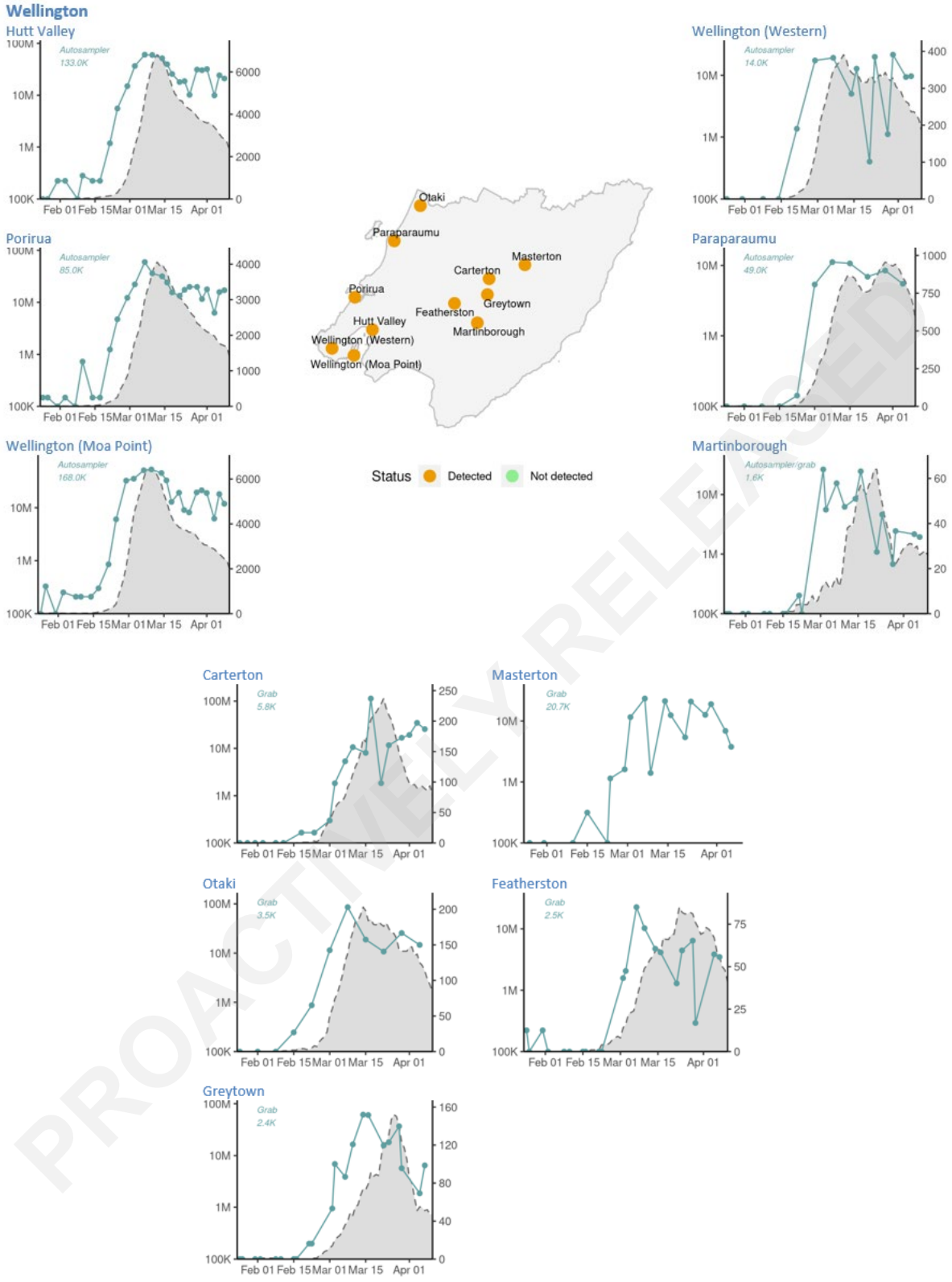




Taranaki

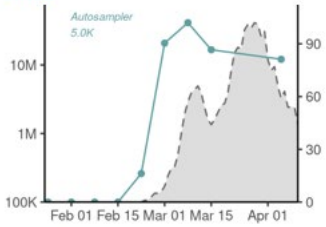




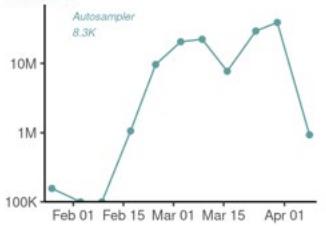


Tasman, Nelson, and Marlborough

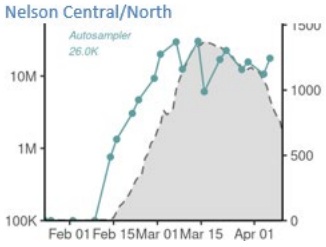
Picton



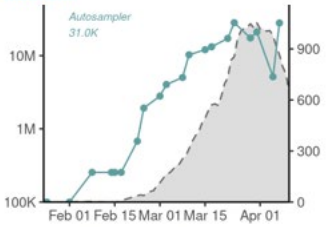
Motueka



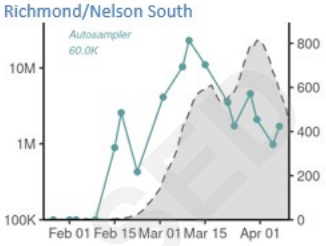
Nelson Central/North



Blenheim

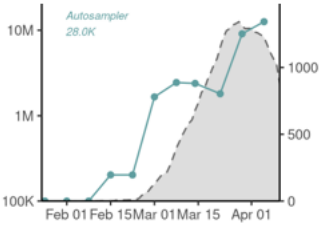


Richmond/Nelson South

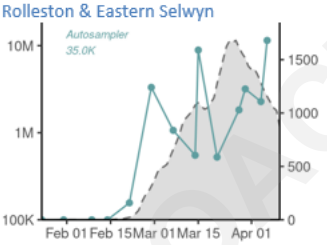


West Coast and Canterbury

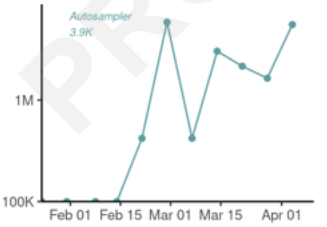
Timaru

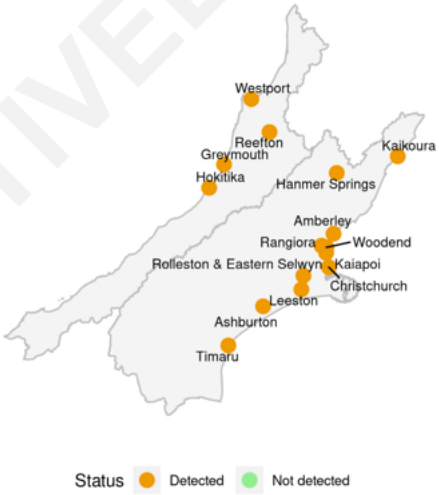


Rolleston & Eastern Selwyn

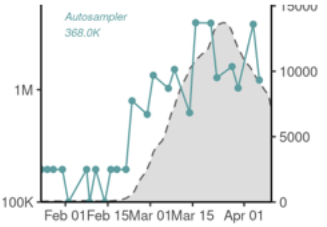


Leeston

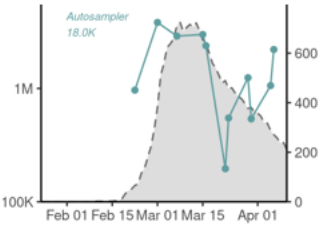




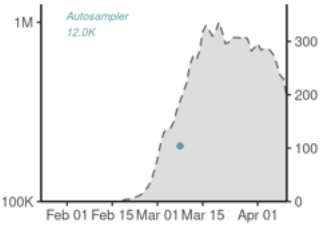
Christchurch



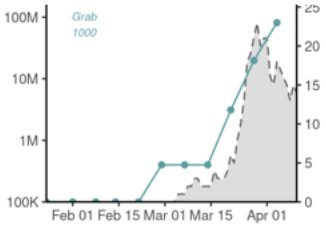
Ashburton



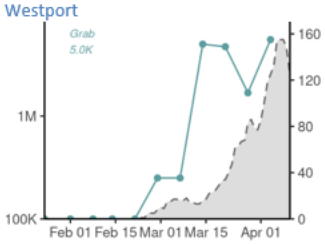
Oamaru



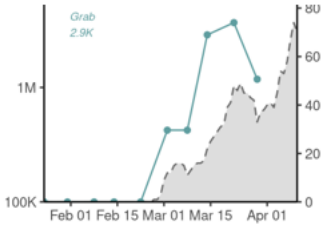
Reefton



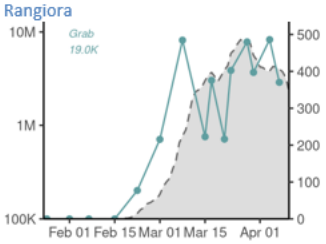
Westport



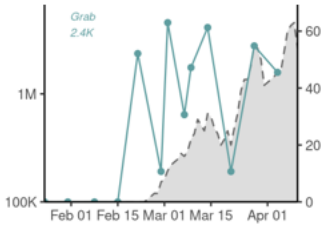
Hokitika



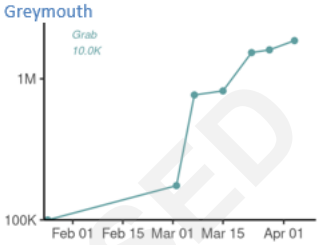
Rangiora



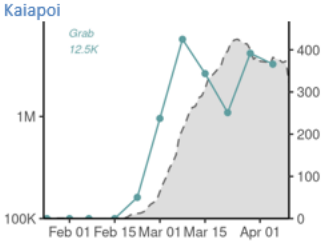
Kaikoura



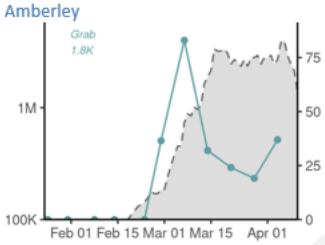
Greymouth



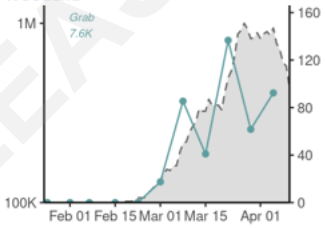
Kaiapoi



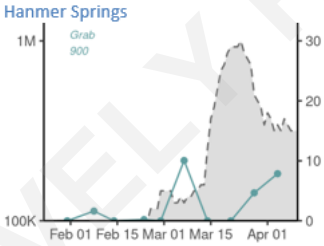
Amberley



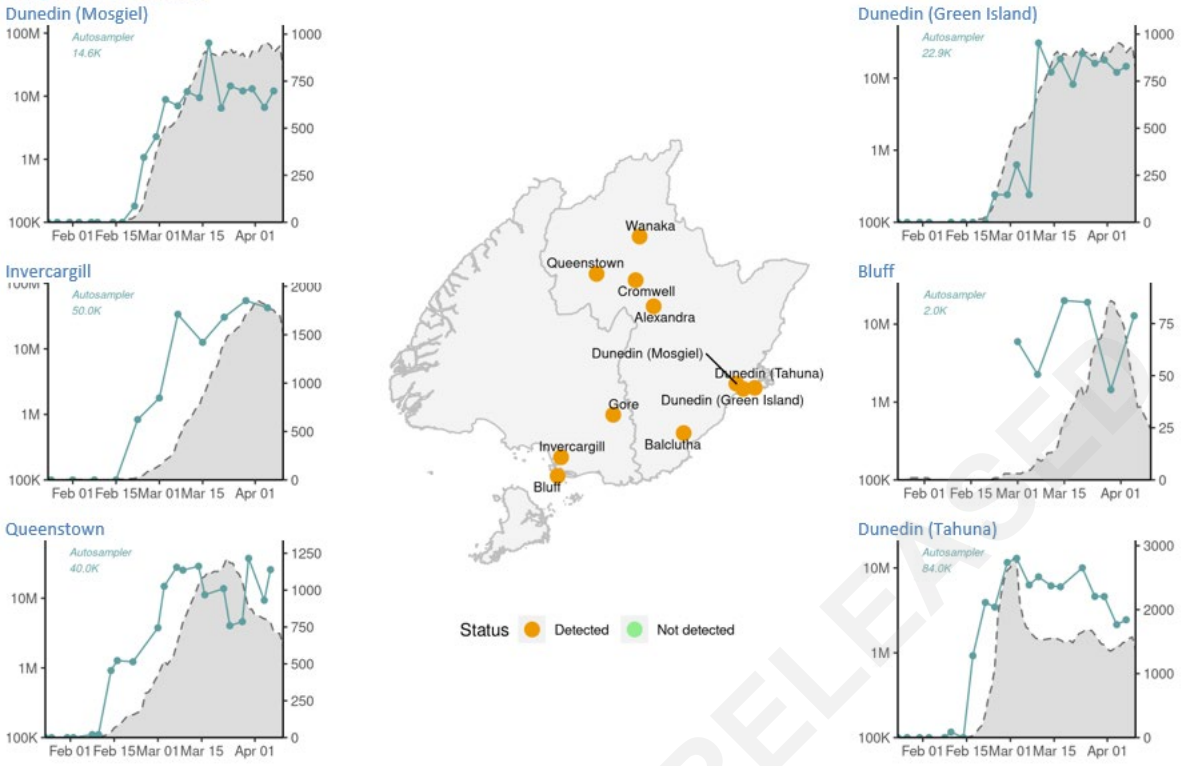
Woodend

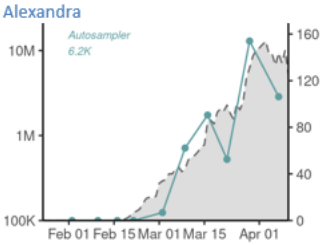


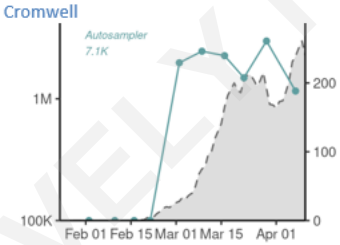
Hanmer Springs

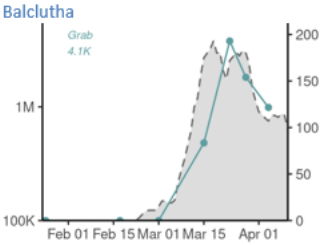


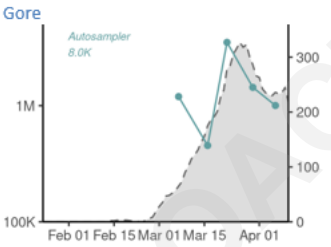
Otago and Southland

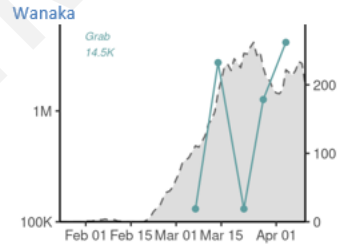






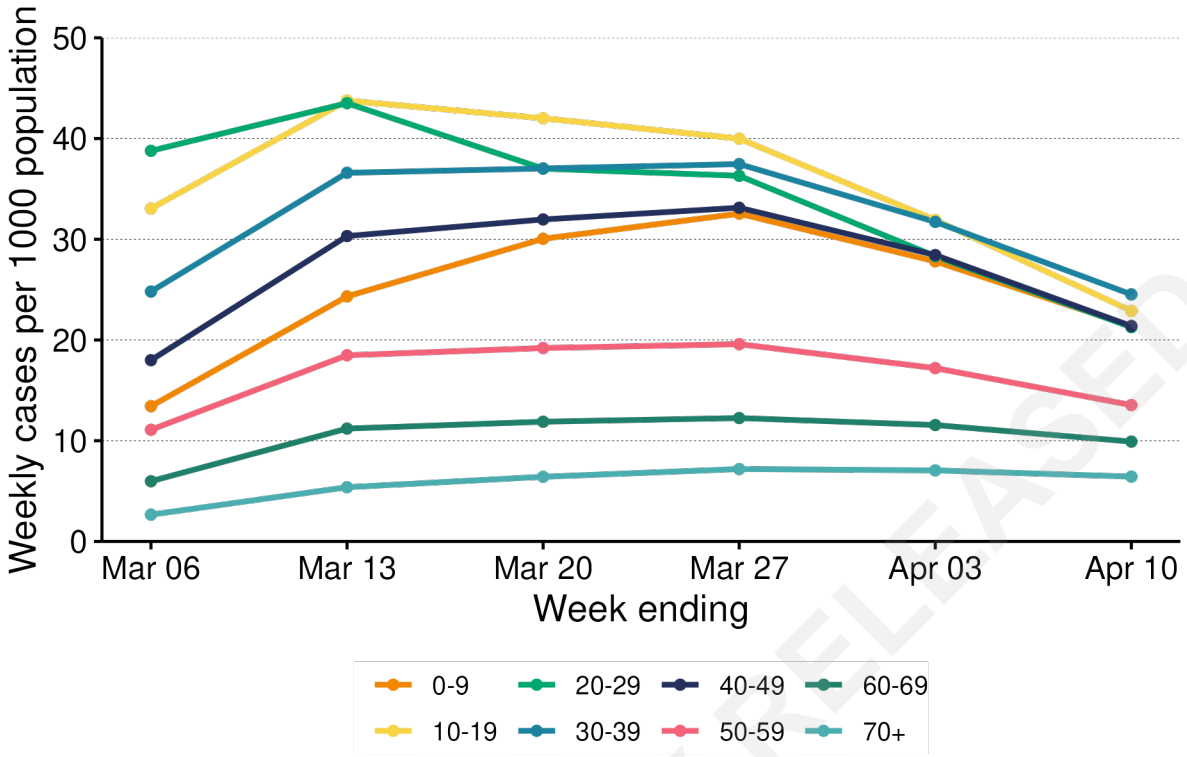




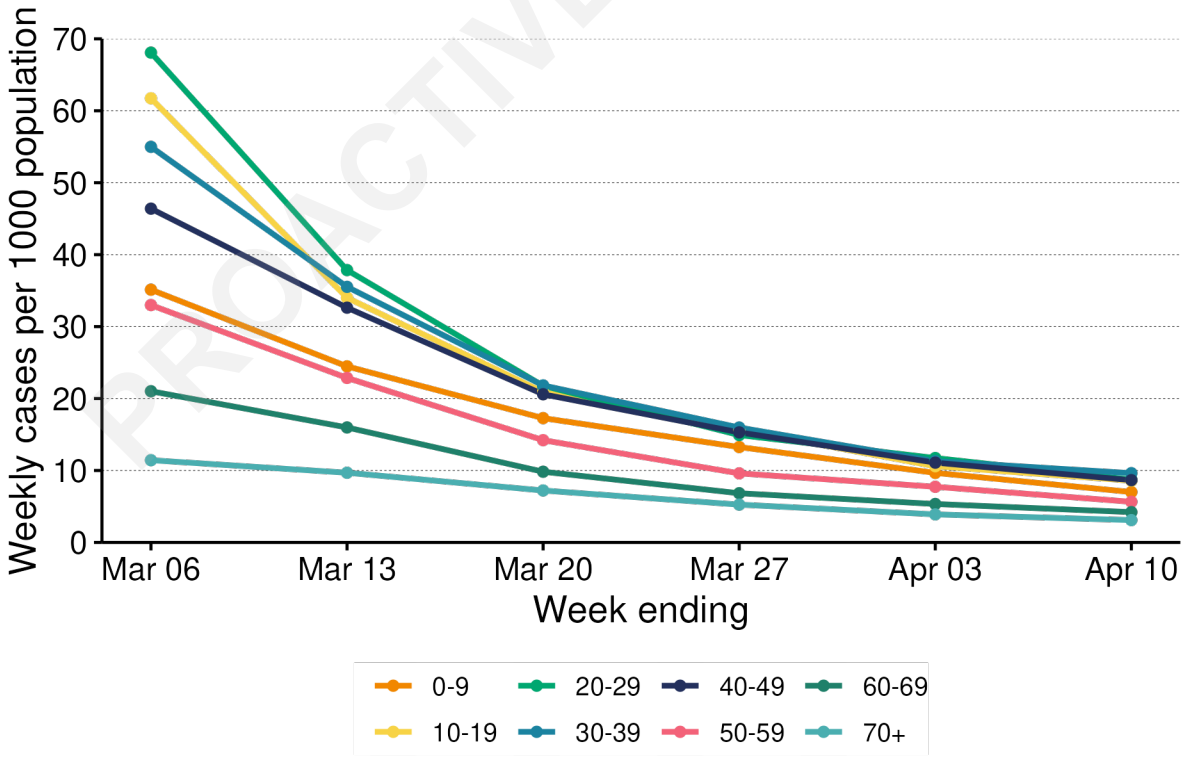


Age Graphs

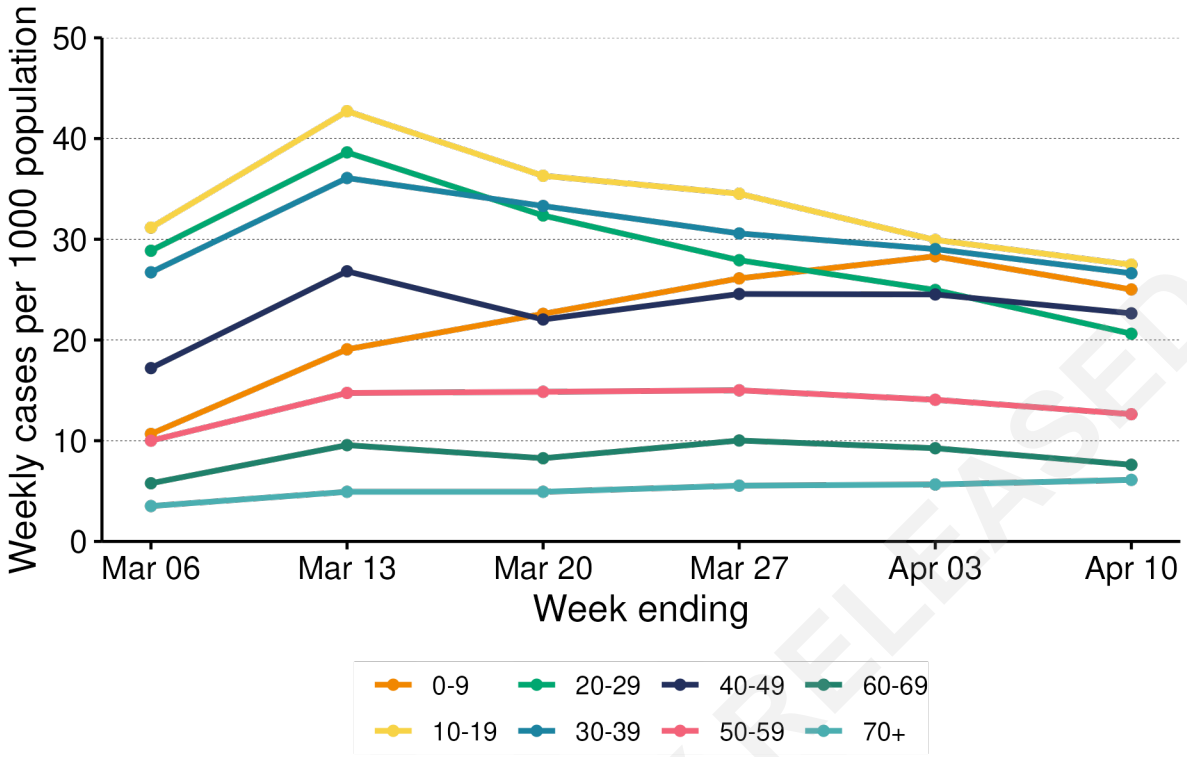
NZ Excluding Auckland Region



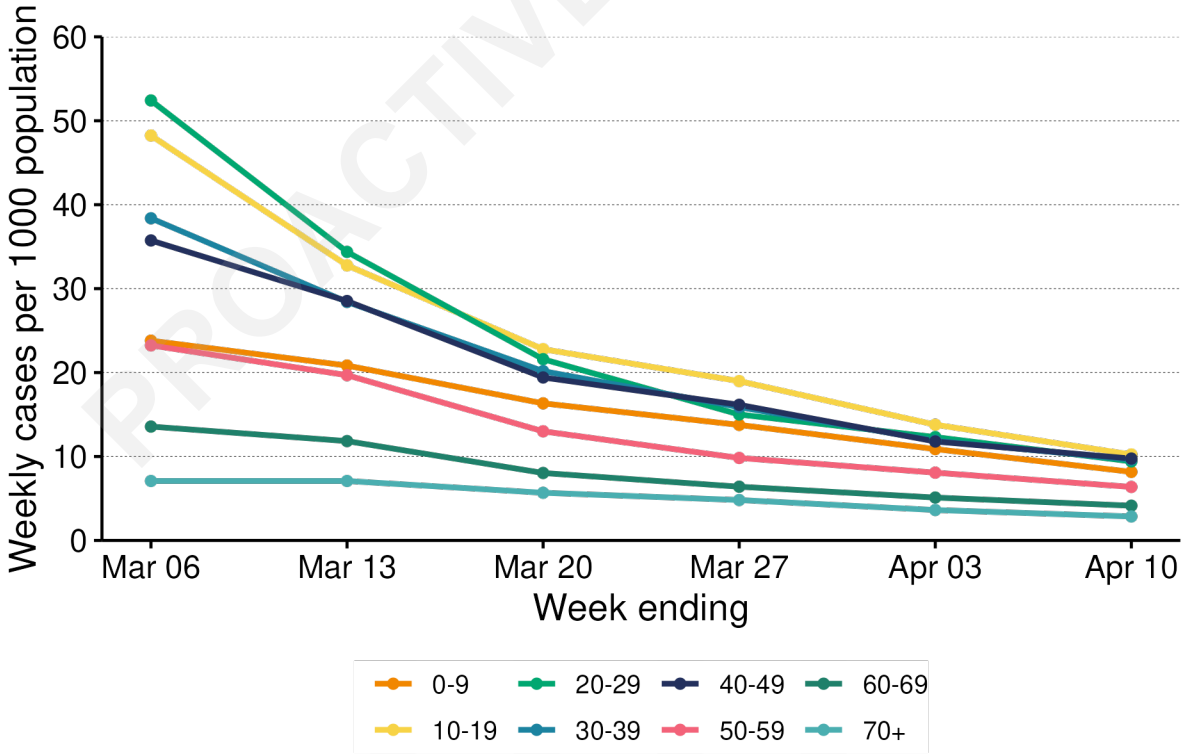
Auckland Region



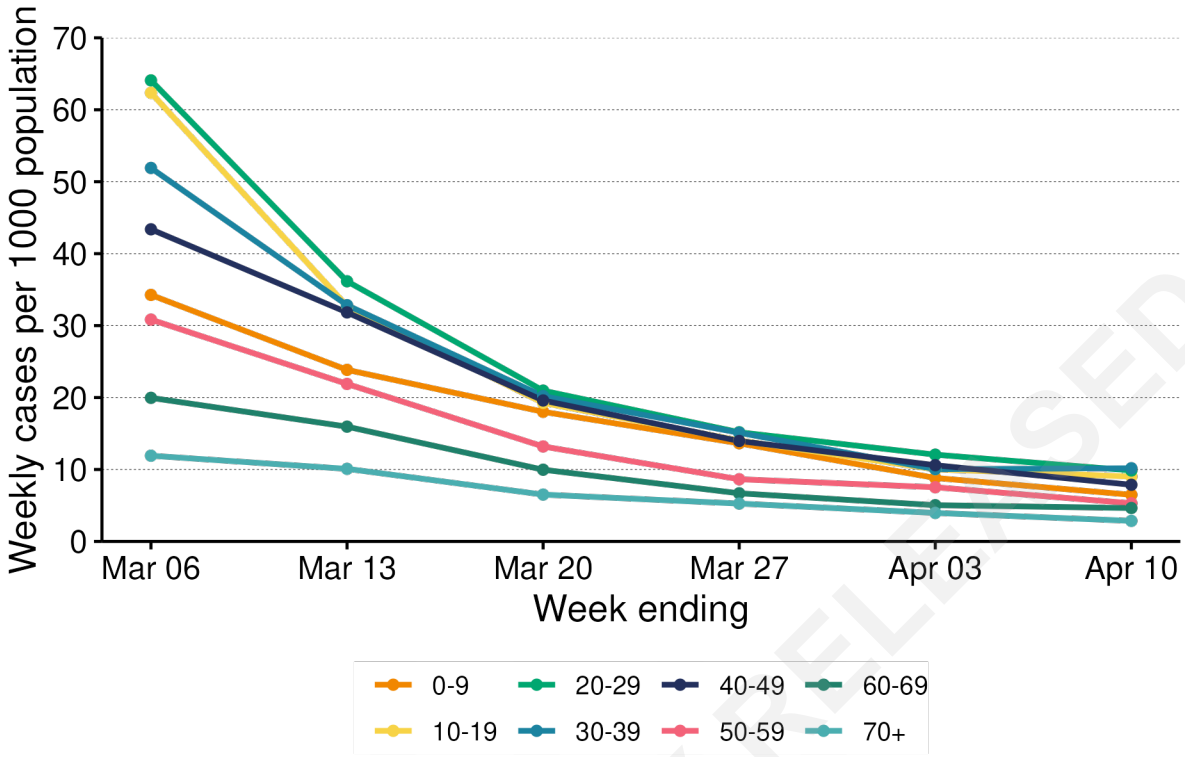
Northland DHB



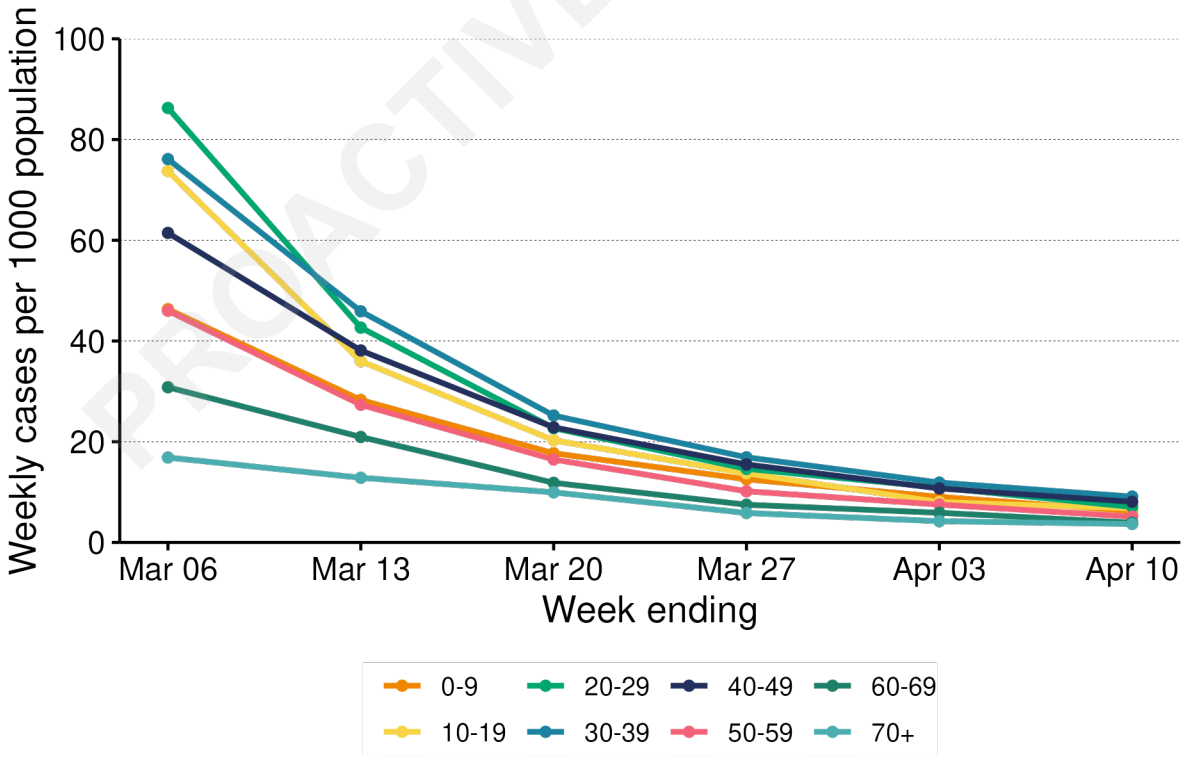
Waitemata DHB



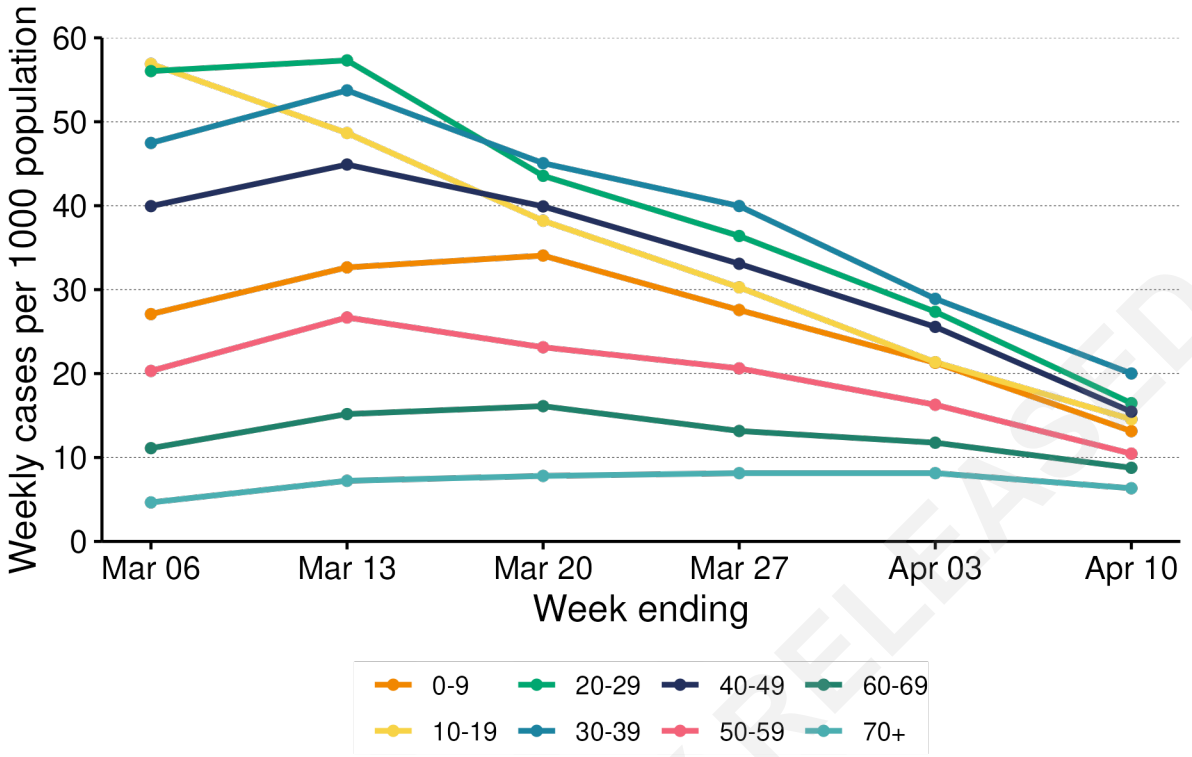
Auckland DHB



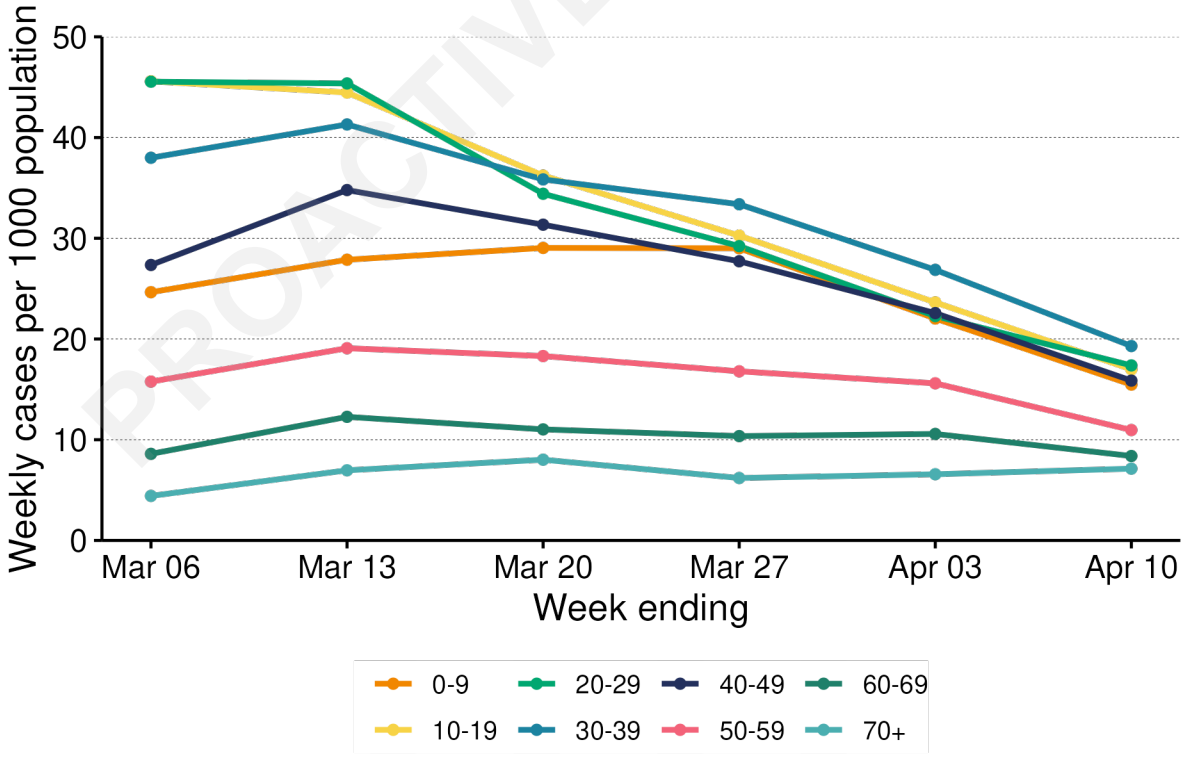
Counties Manukau DHB



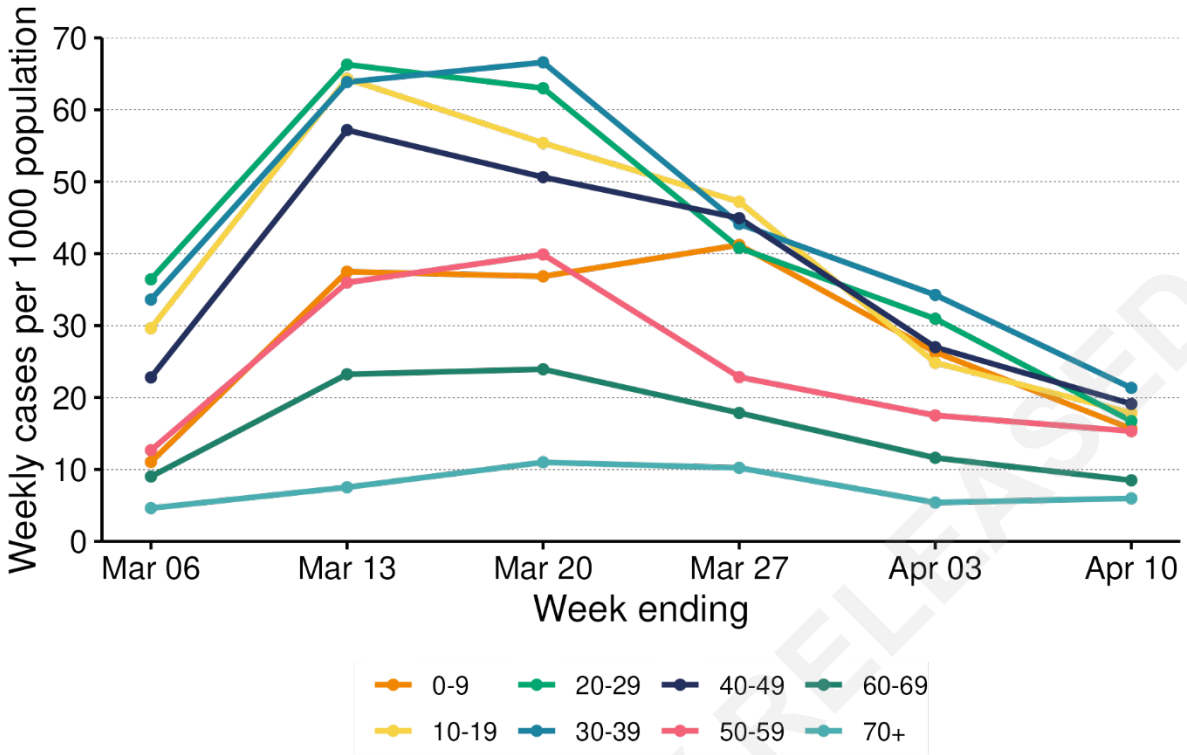
Bay of Plenty DHB



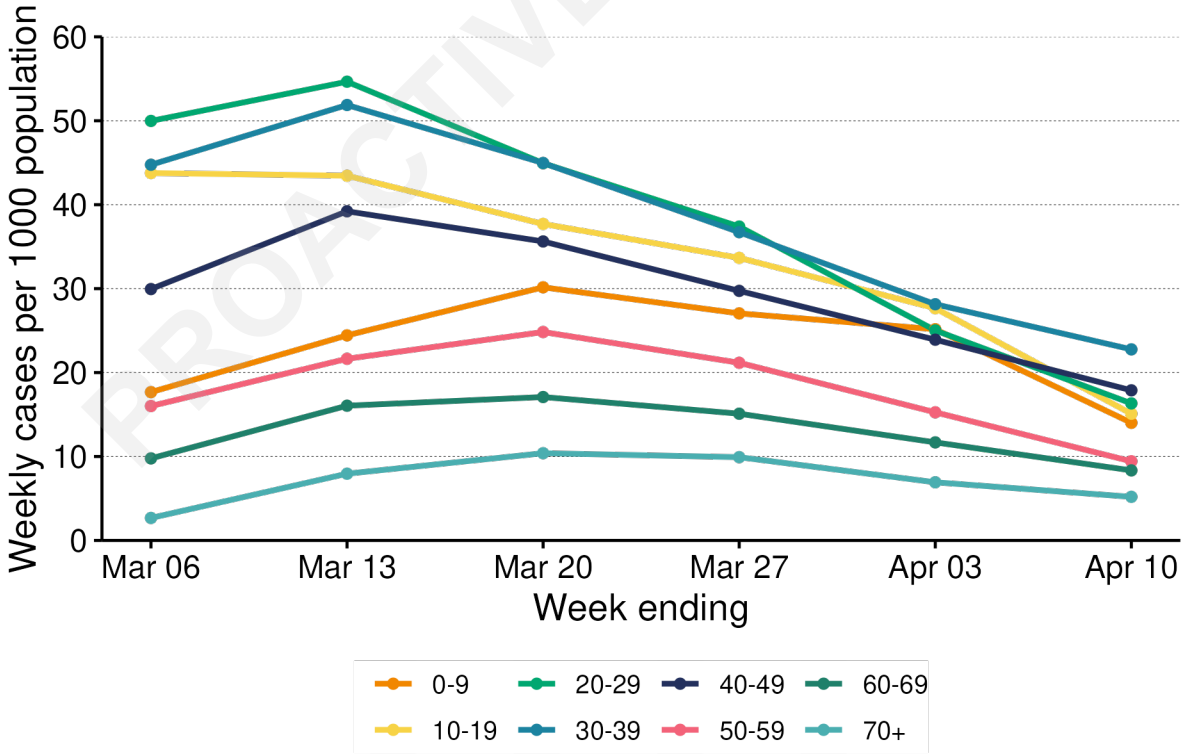
Waikato DHB



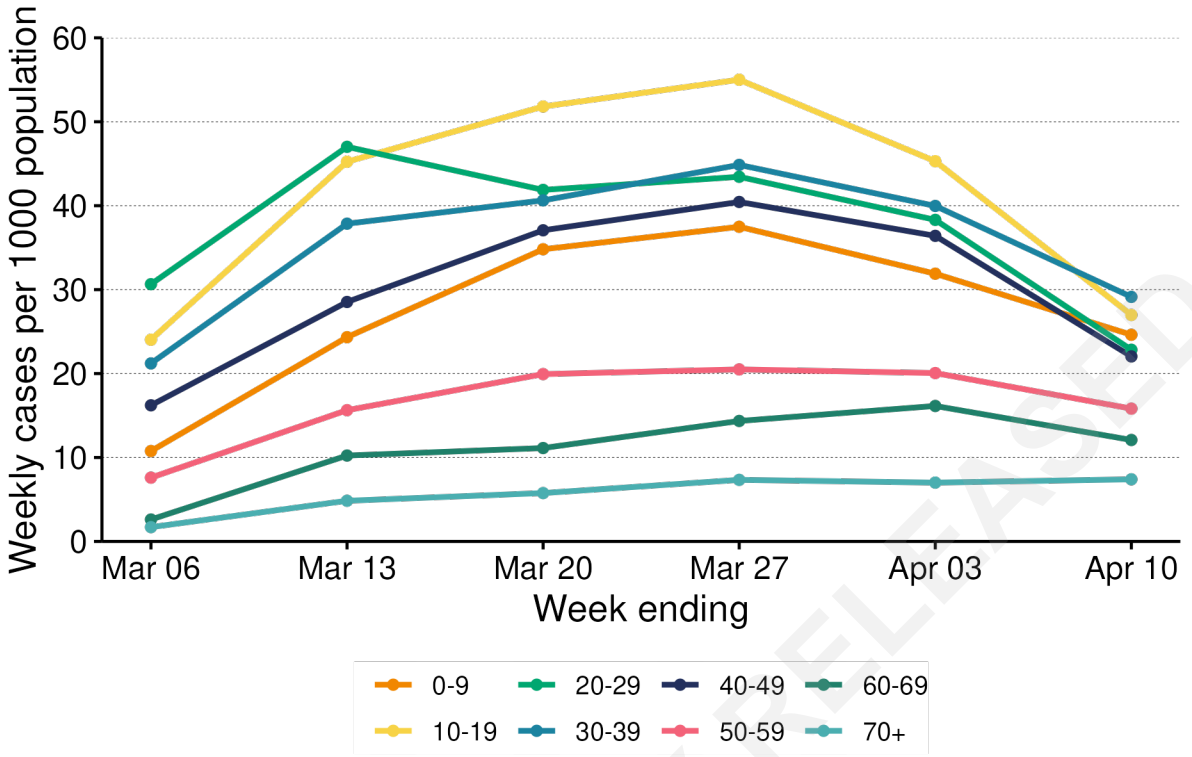
Tarawhiti DHB



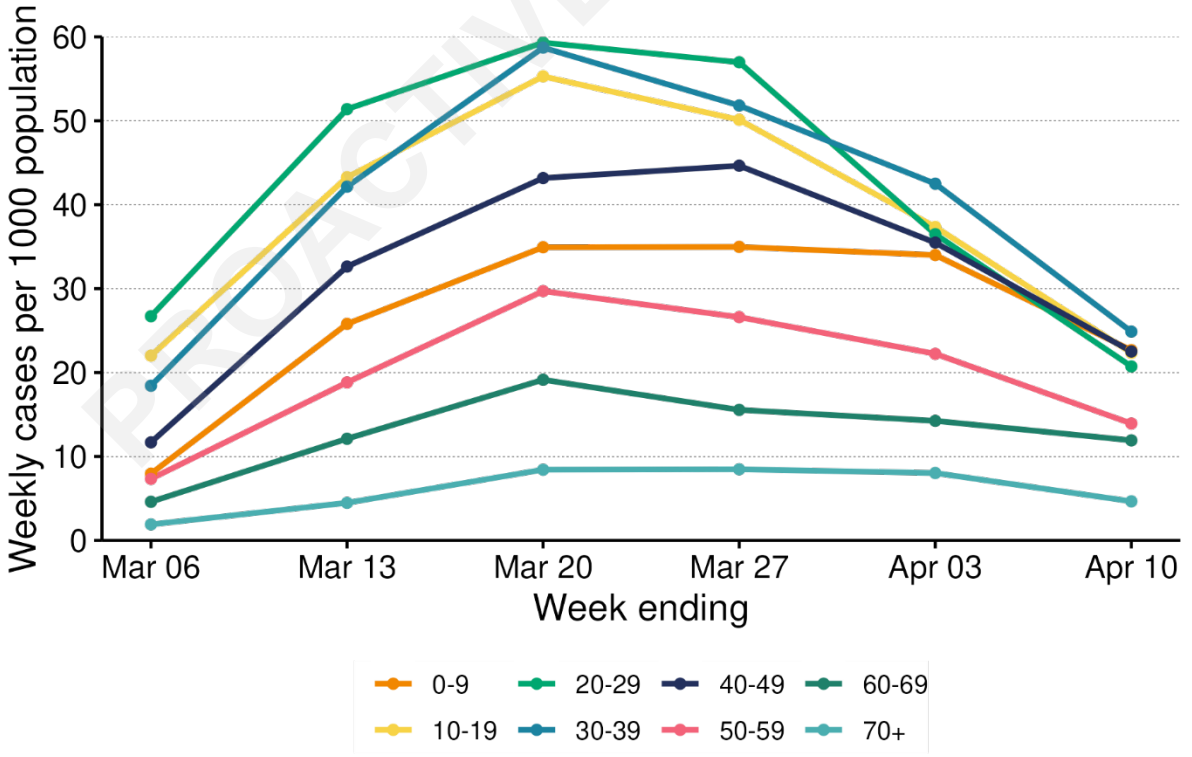
Lakes DHB



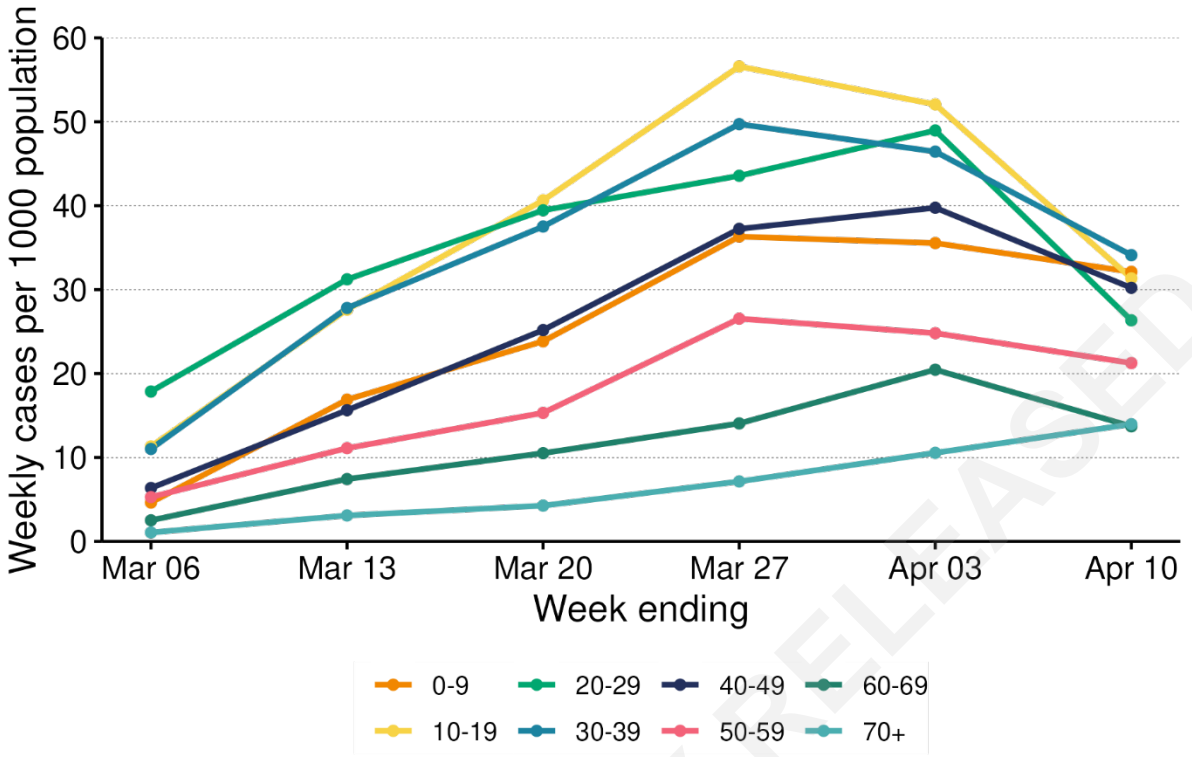
Taranaki DHB



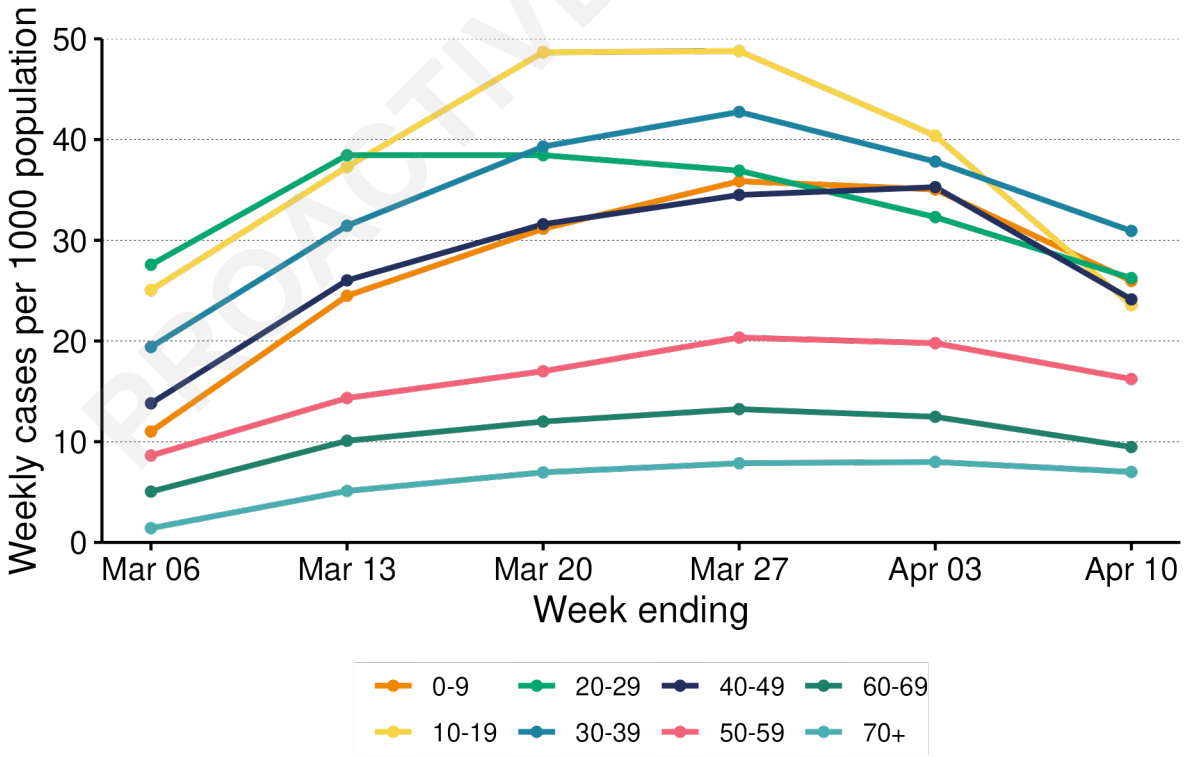
Hawke's Bay DHB



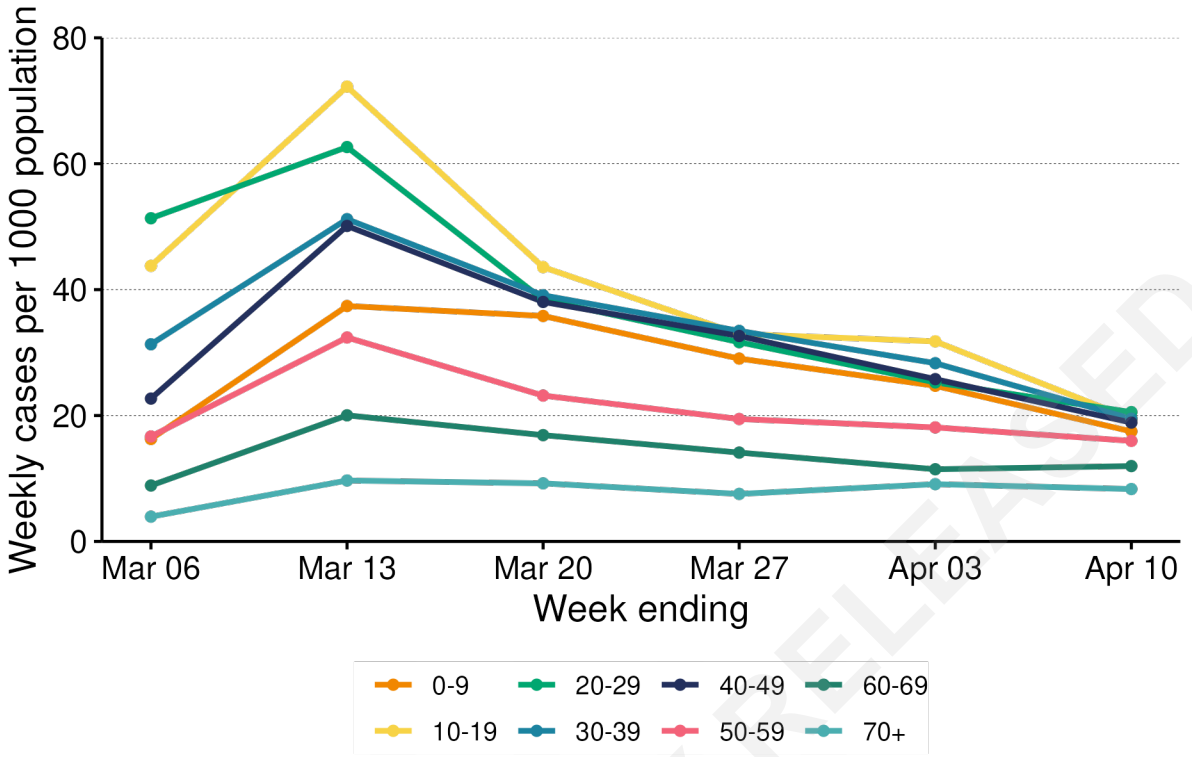
Whanganui DHB



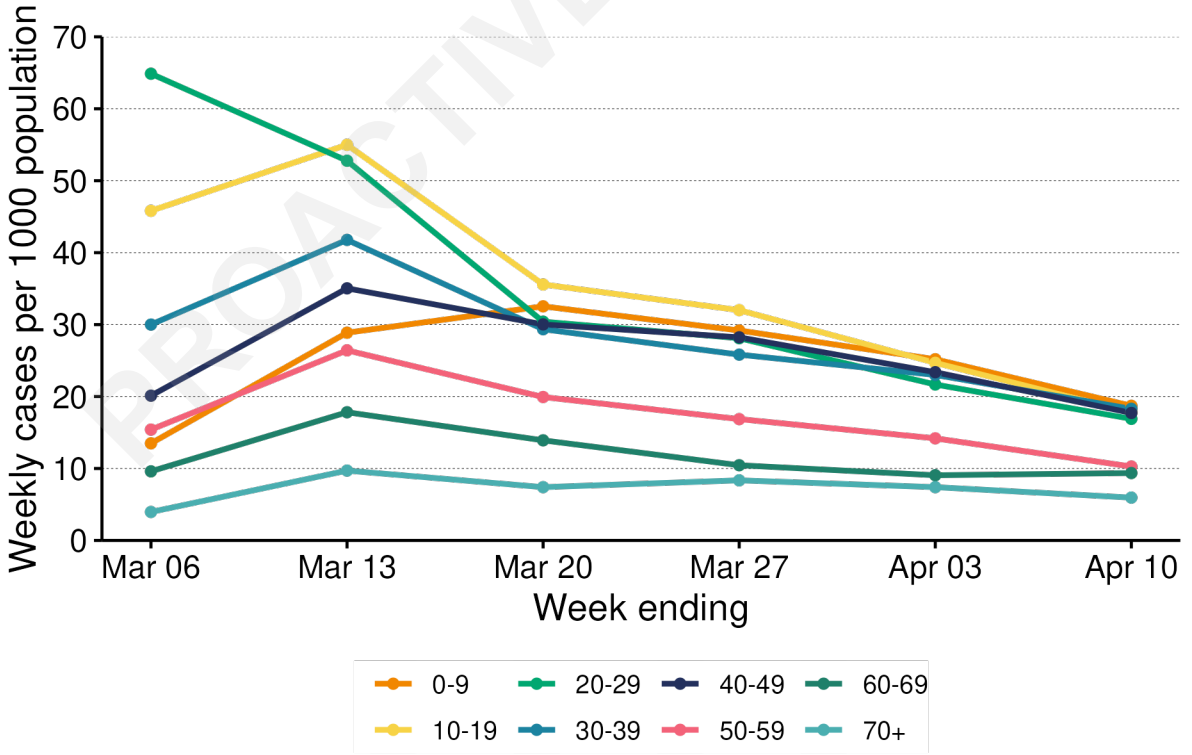
MidCentral DHB



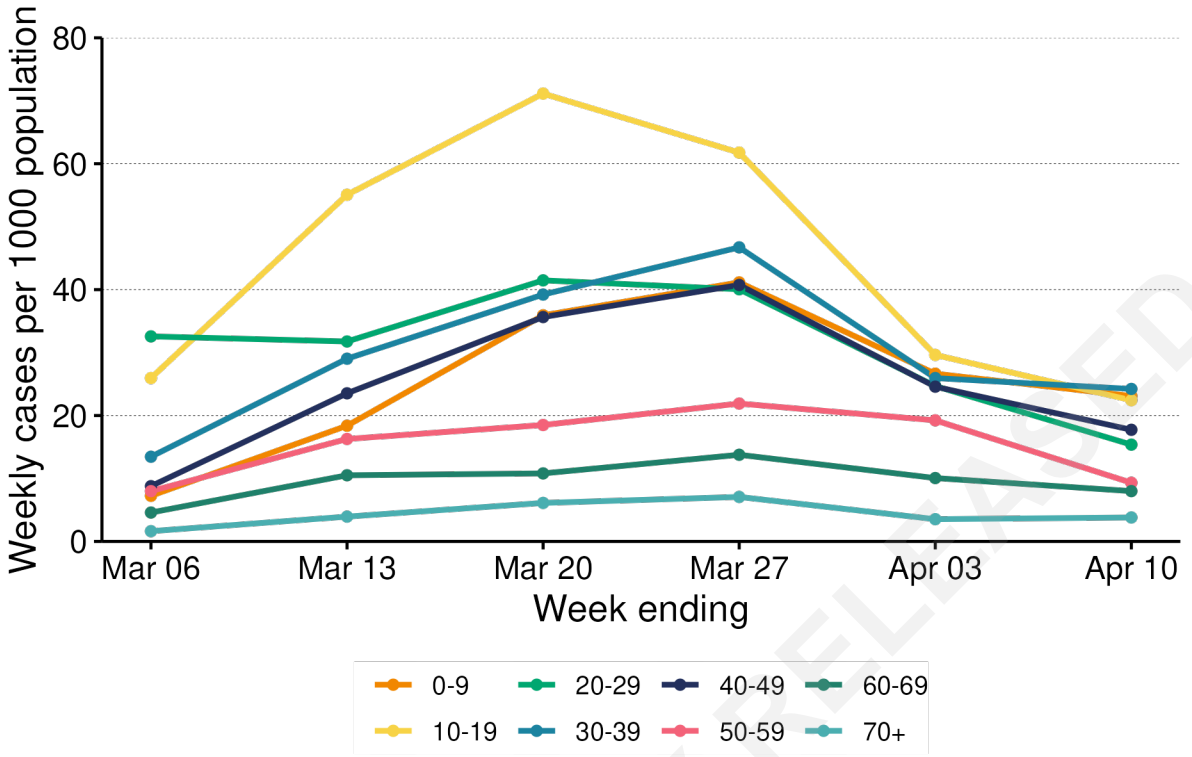
Hutt Valley DHB



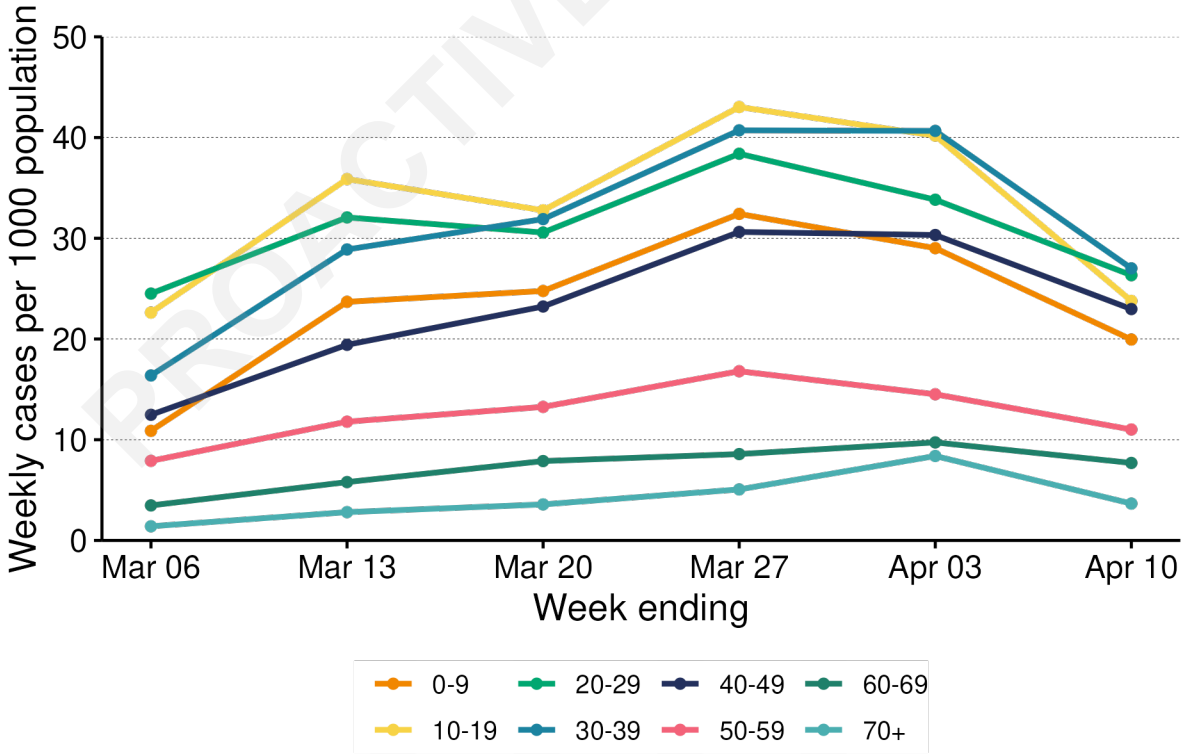
Capital and Coast DHB



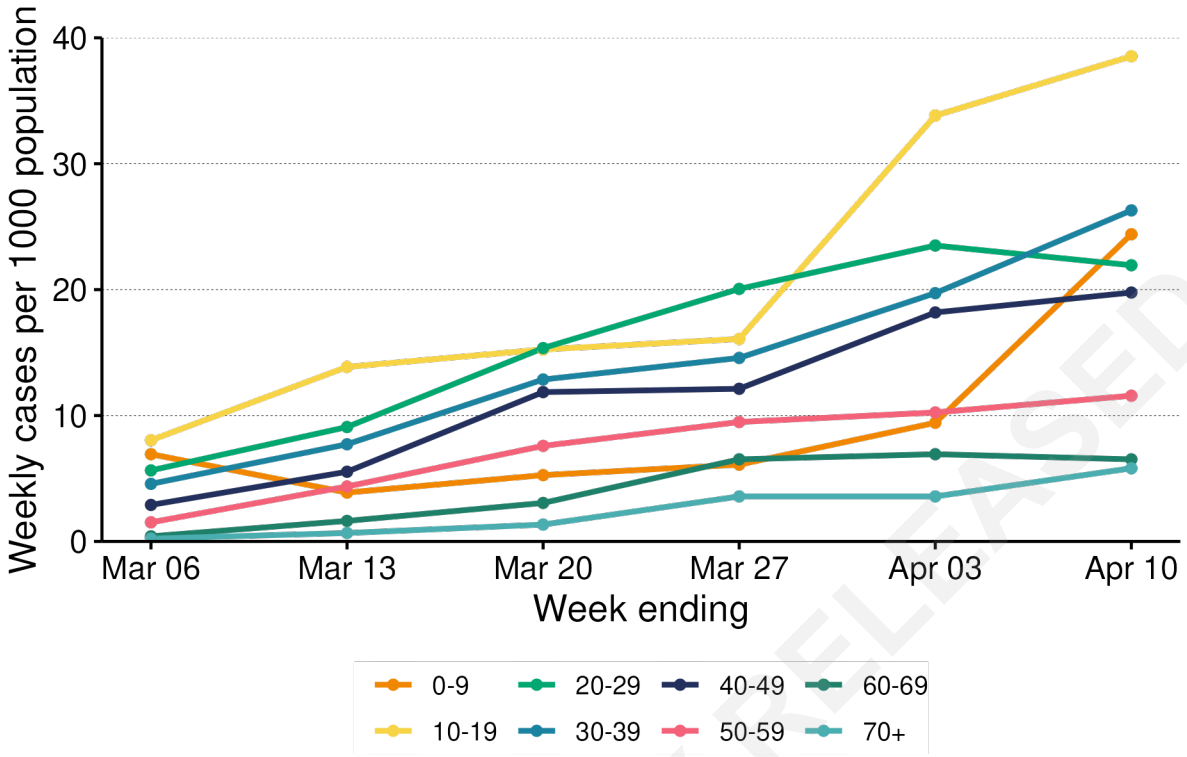
Wairarapa DHB



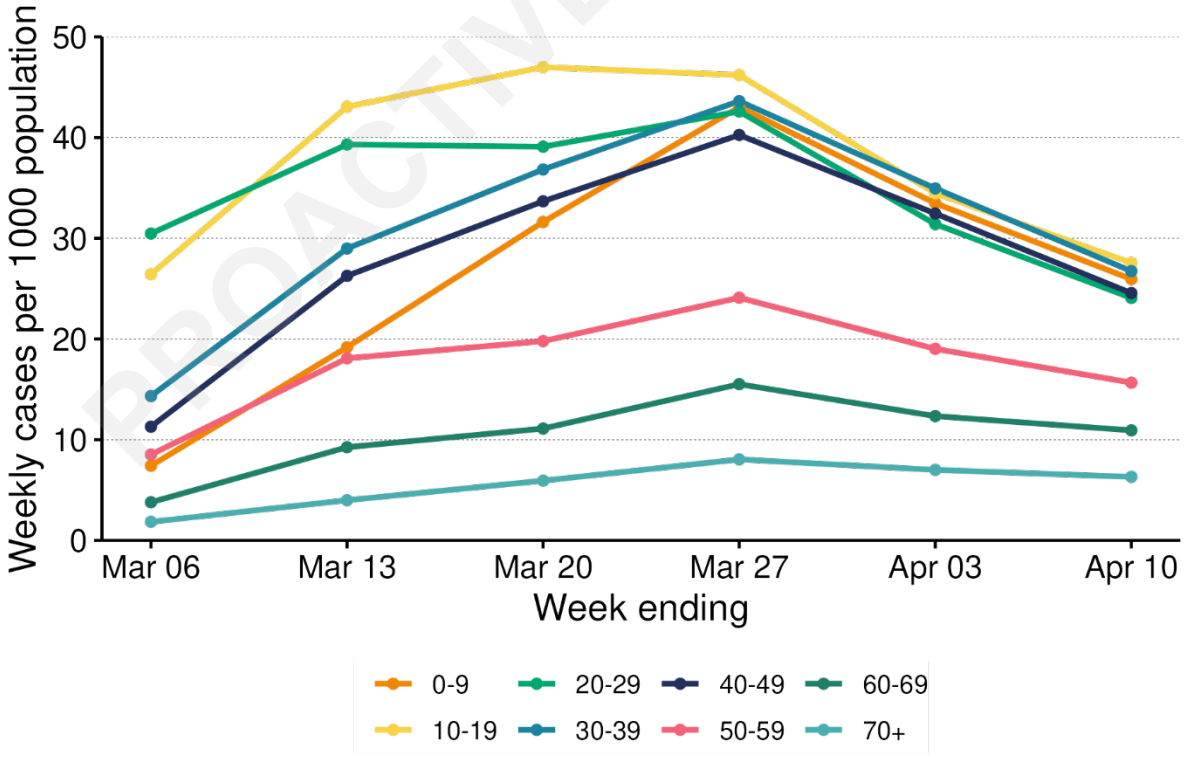
Nelson Marlborough DHB



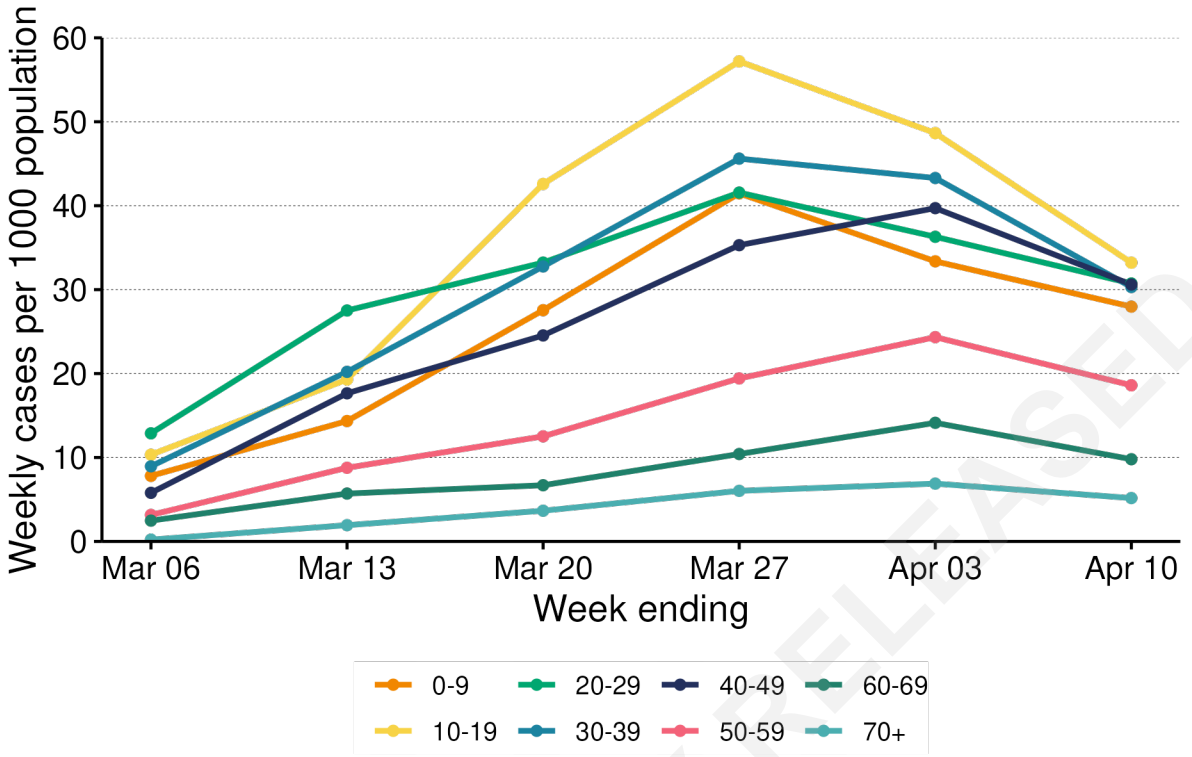
West Coast DHB



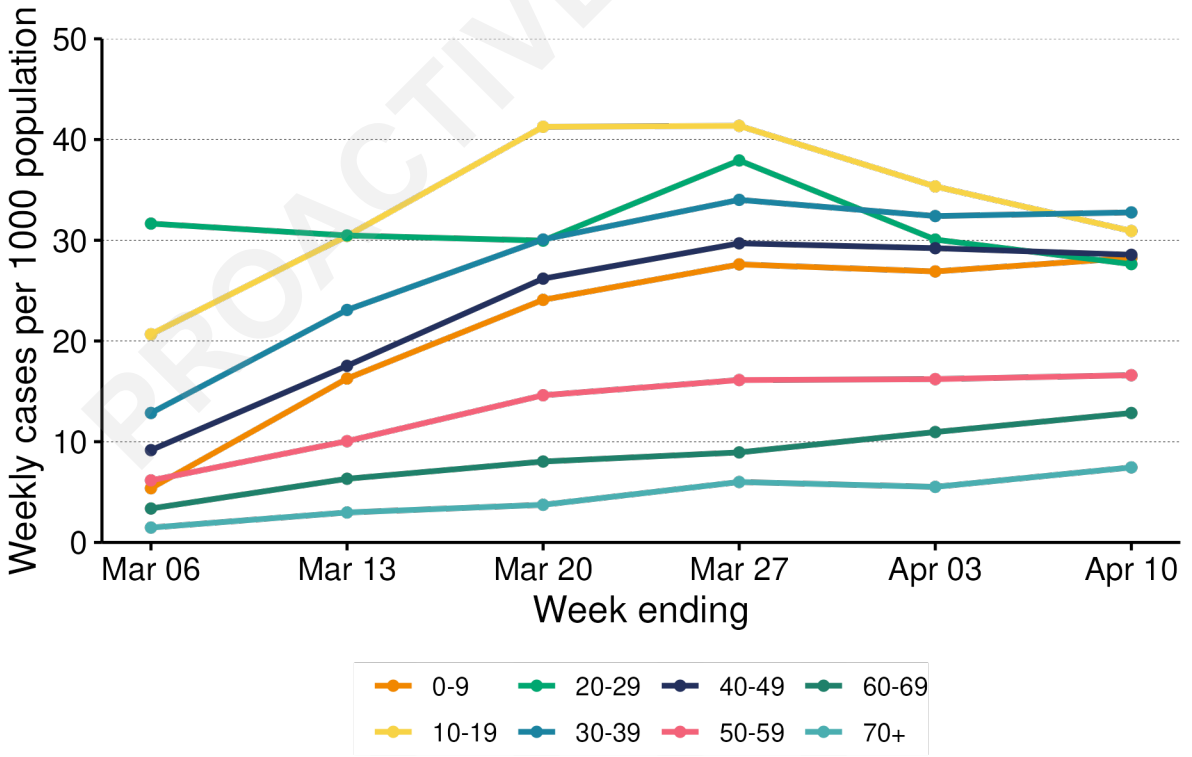
Canterbury DHB



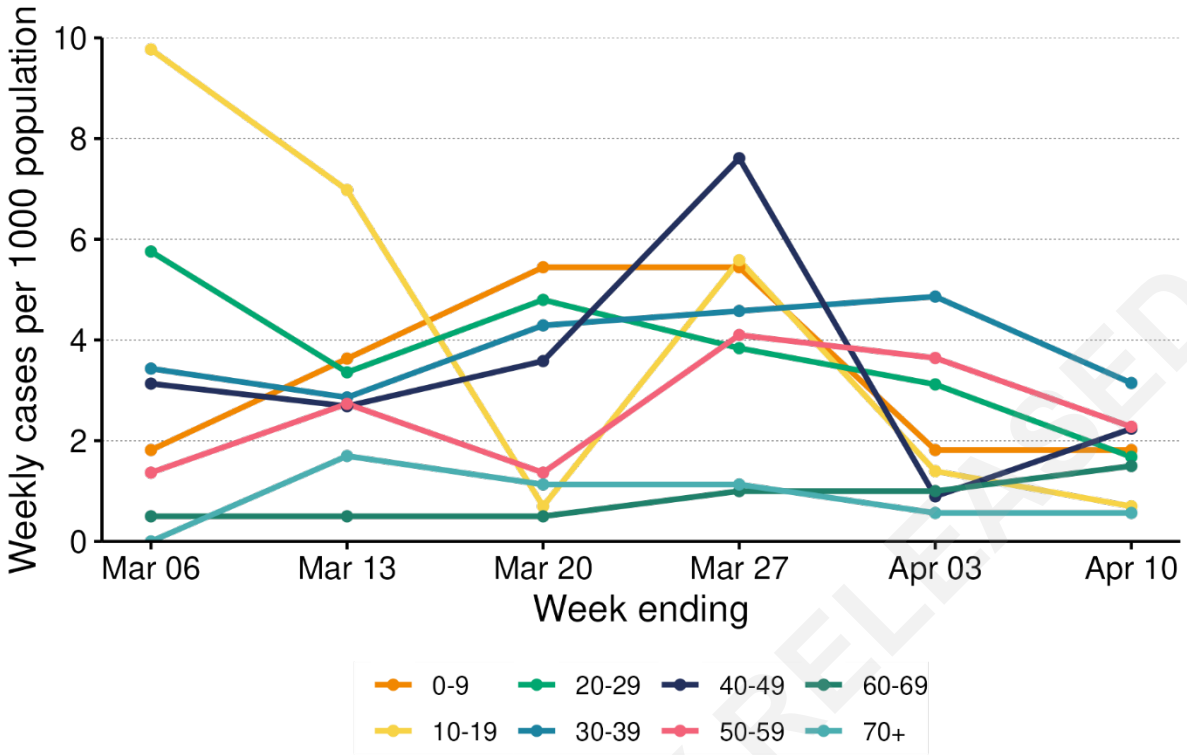
South Canterbury DHB



Southern DHB

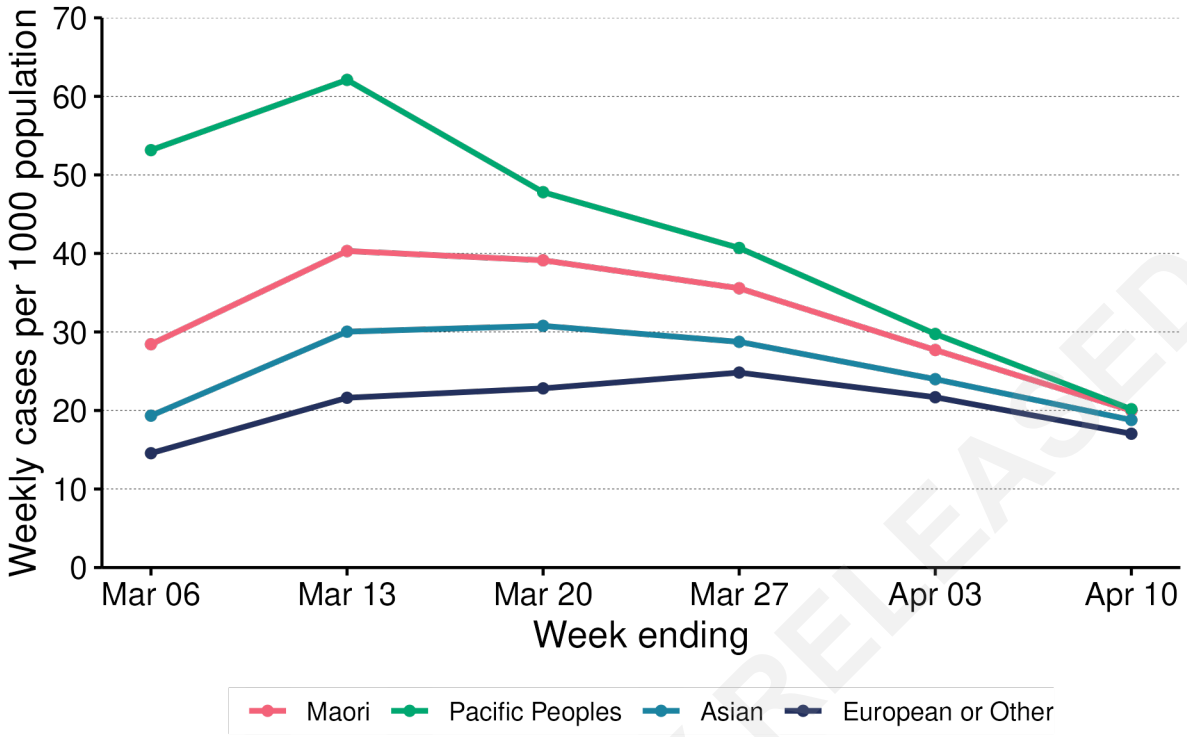


Unknown

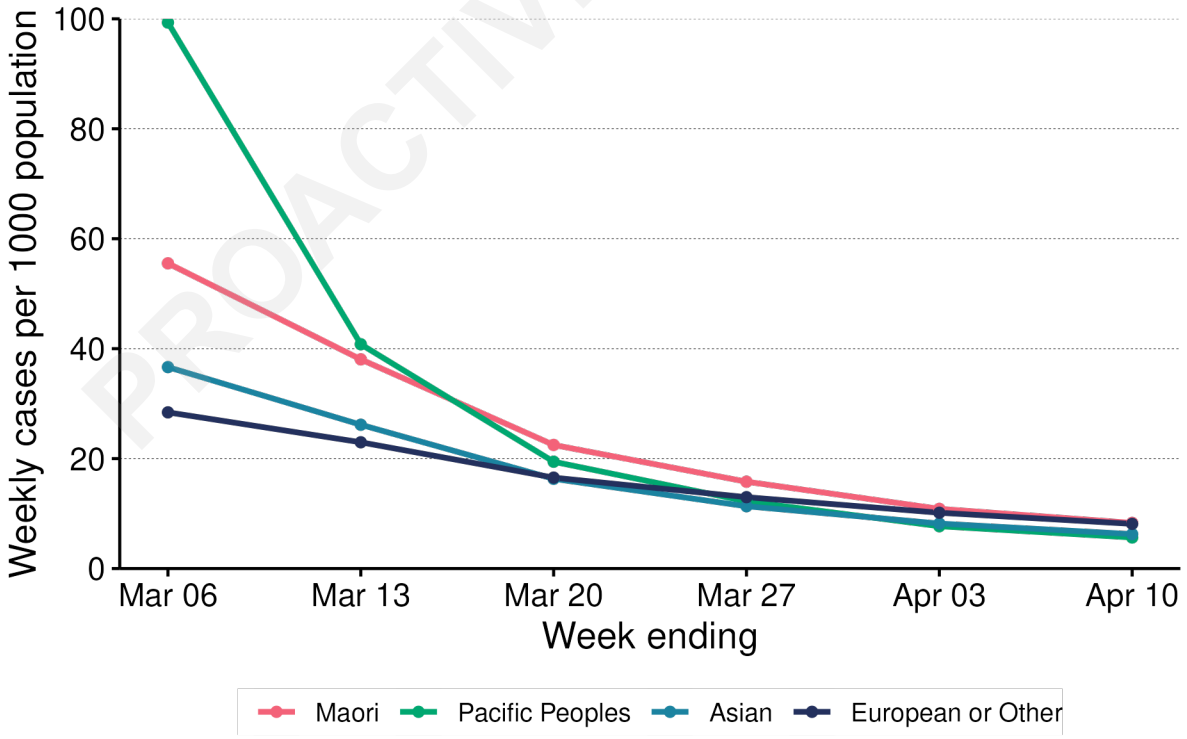


Ethnicity Graphs

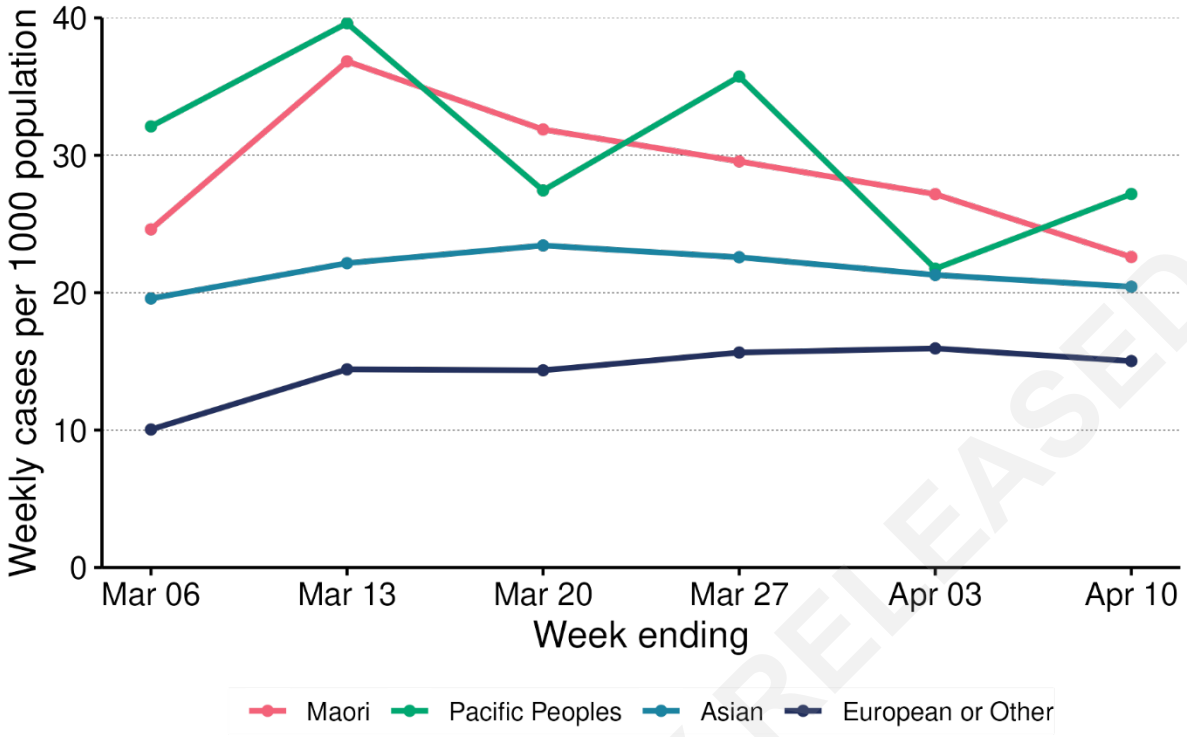
NZ Excluding Auckland Region



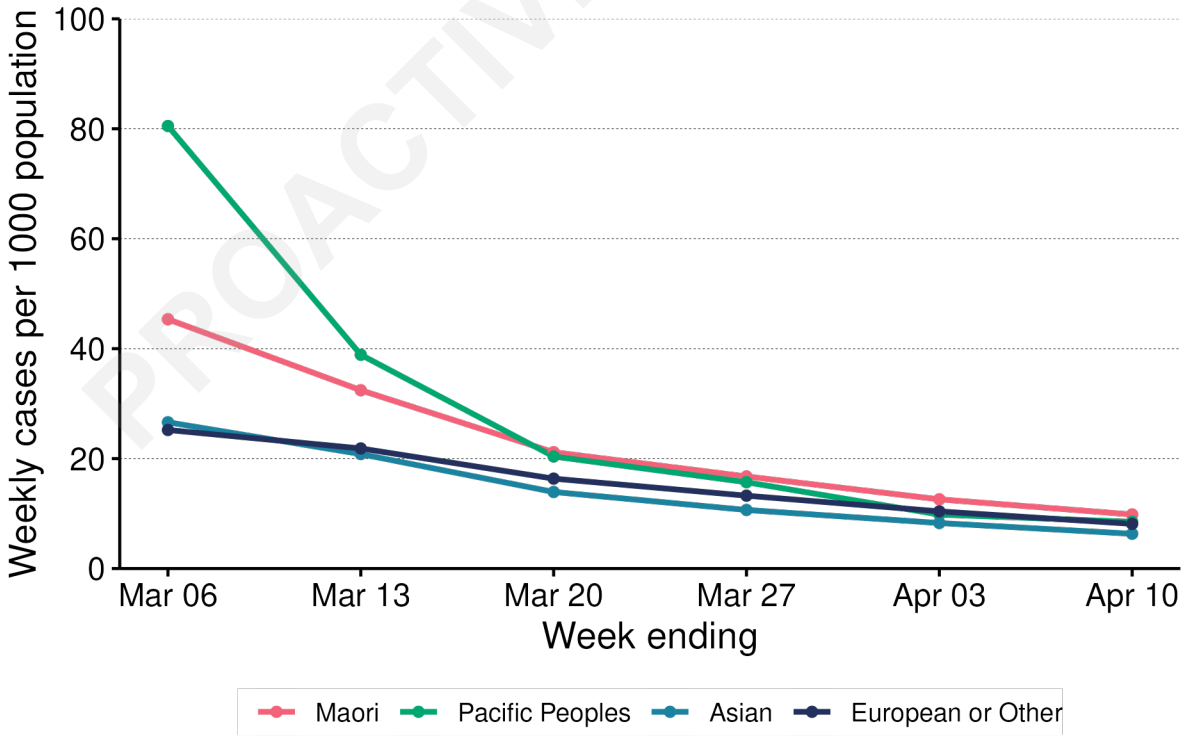
Auckland Region



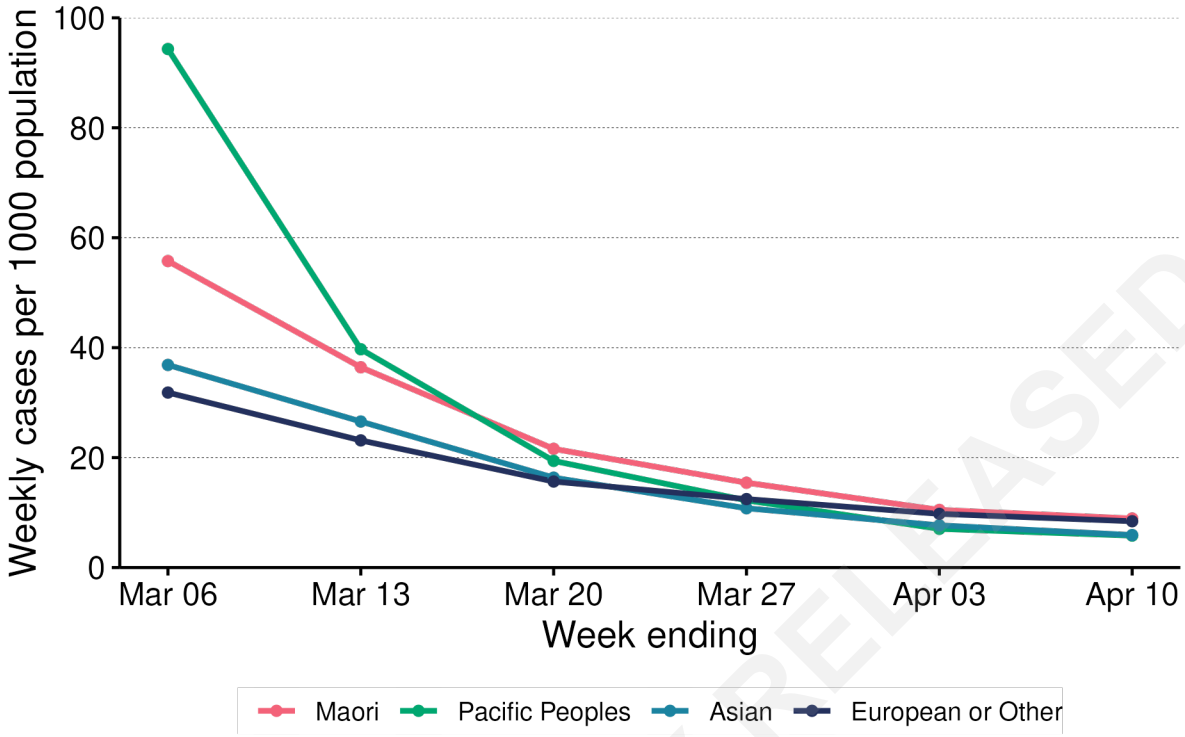
Northland DHB



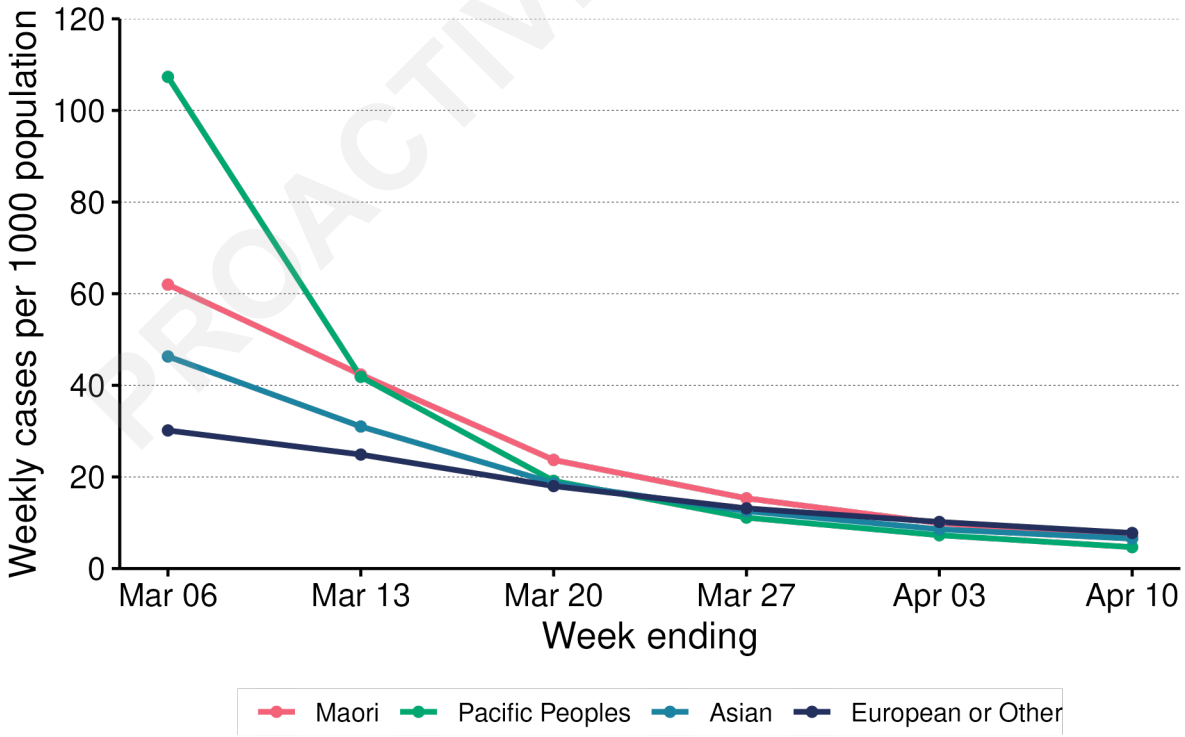
Waitemata DHB



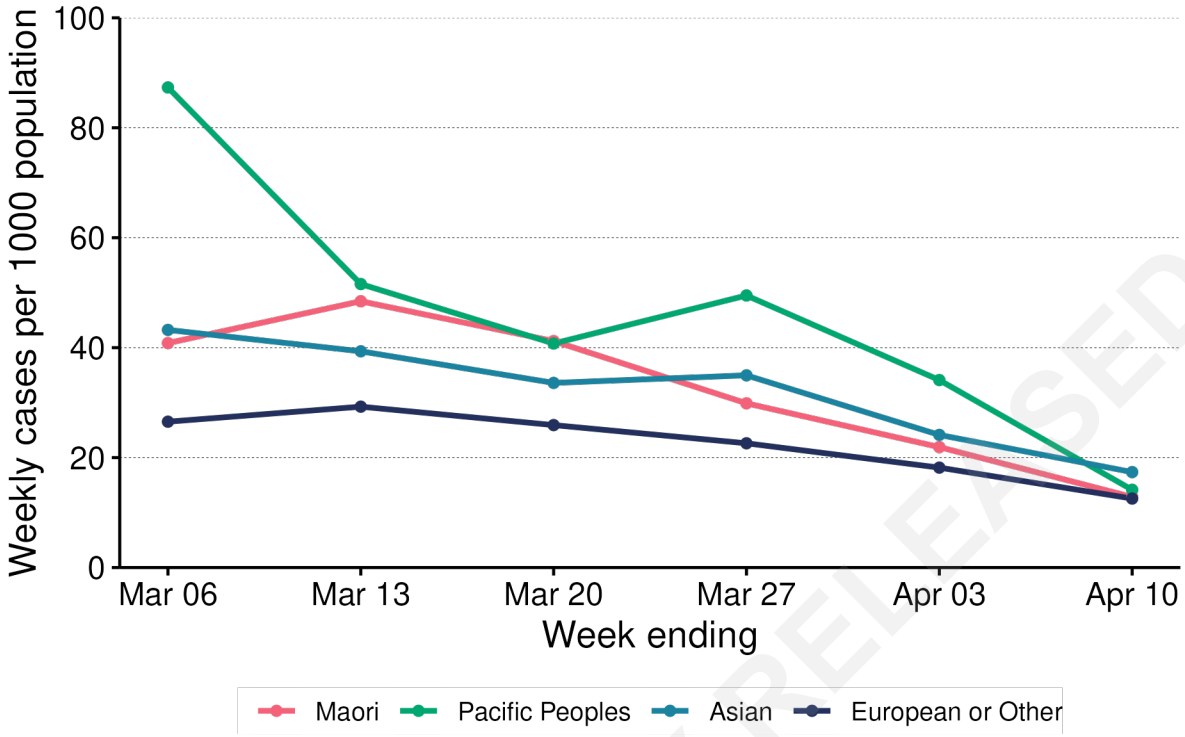
Auckland DHB



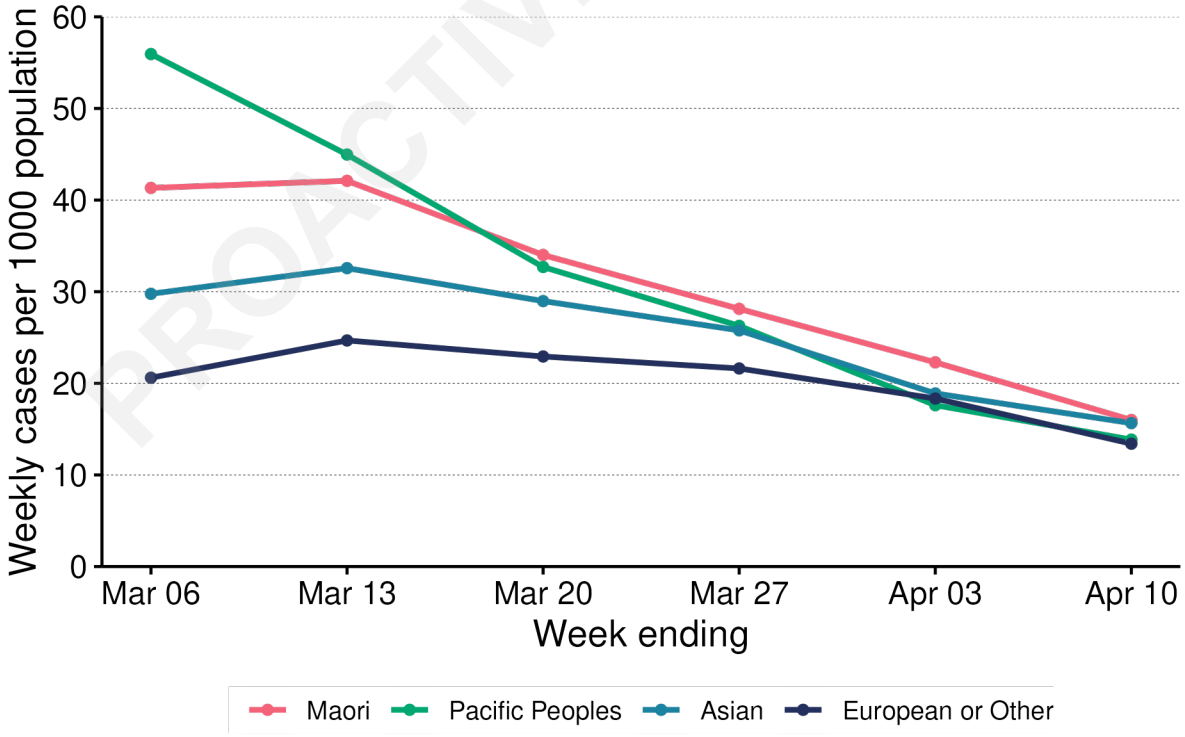
Counties Manukau DHB



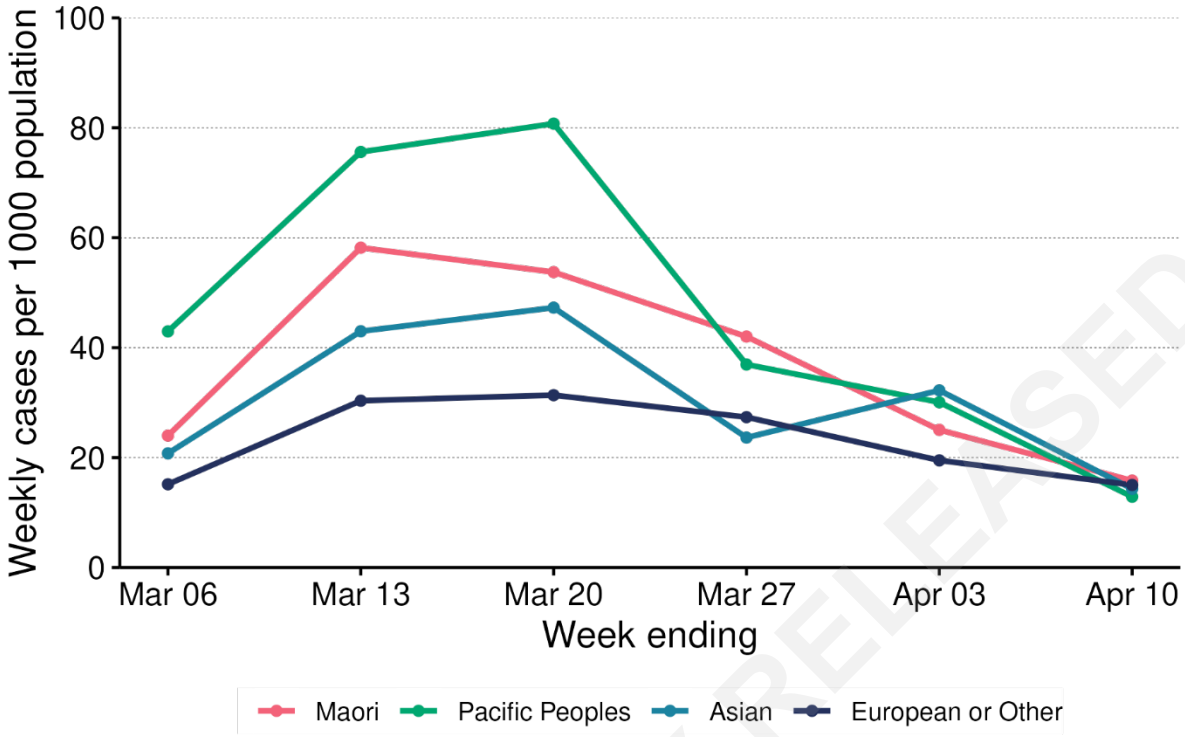
Bay of Plenty DHB



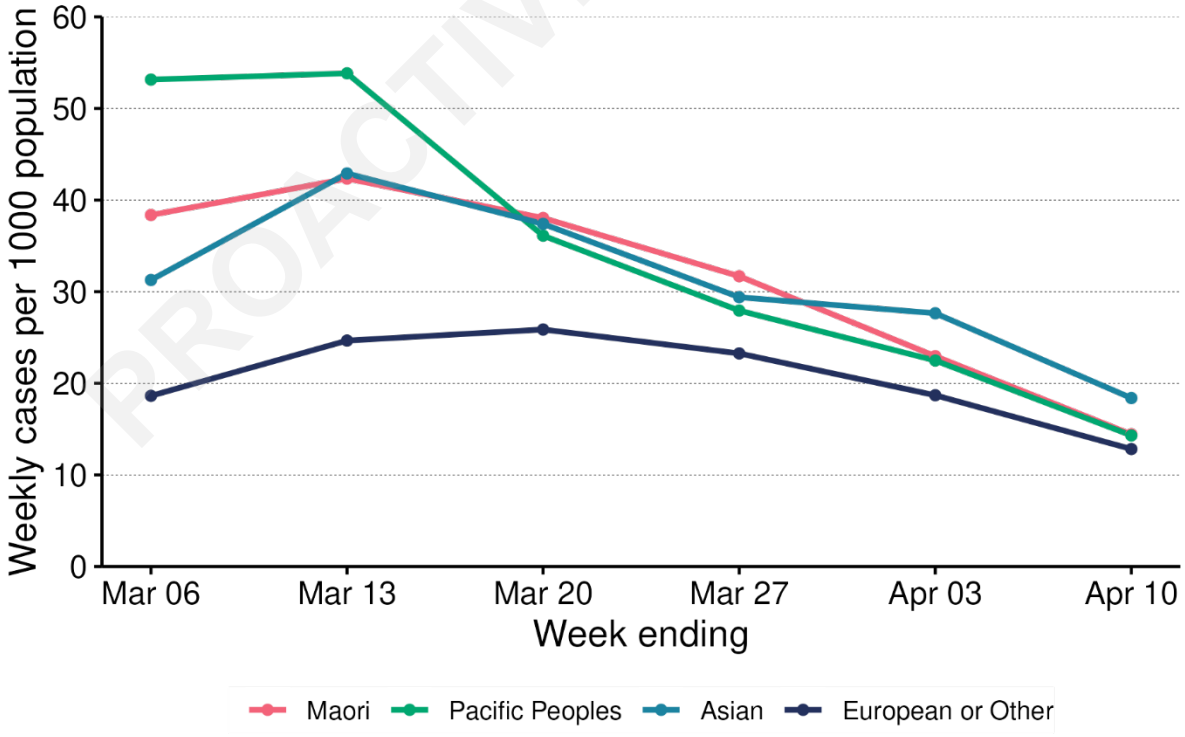
Waikato DHB



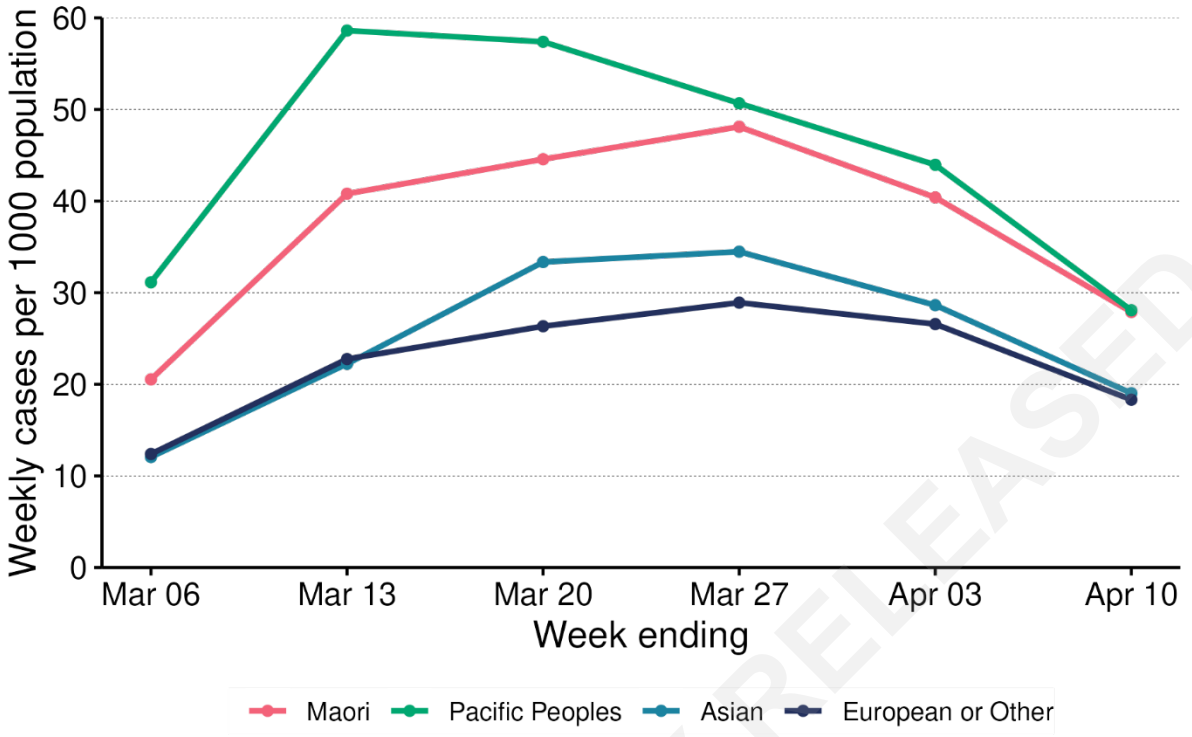
Tarawhiti DHB



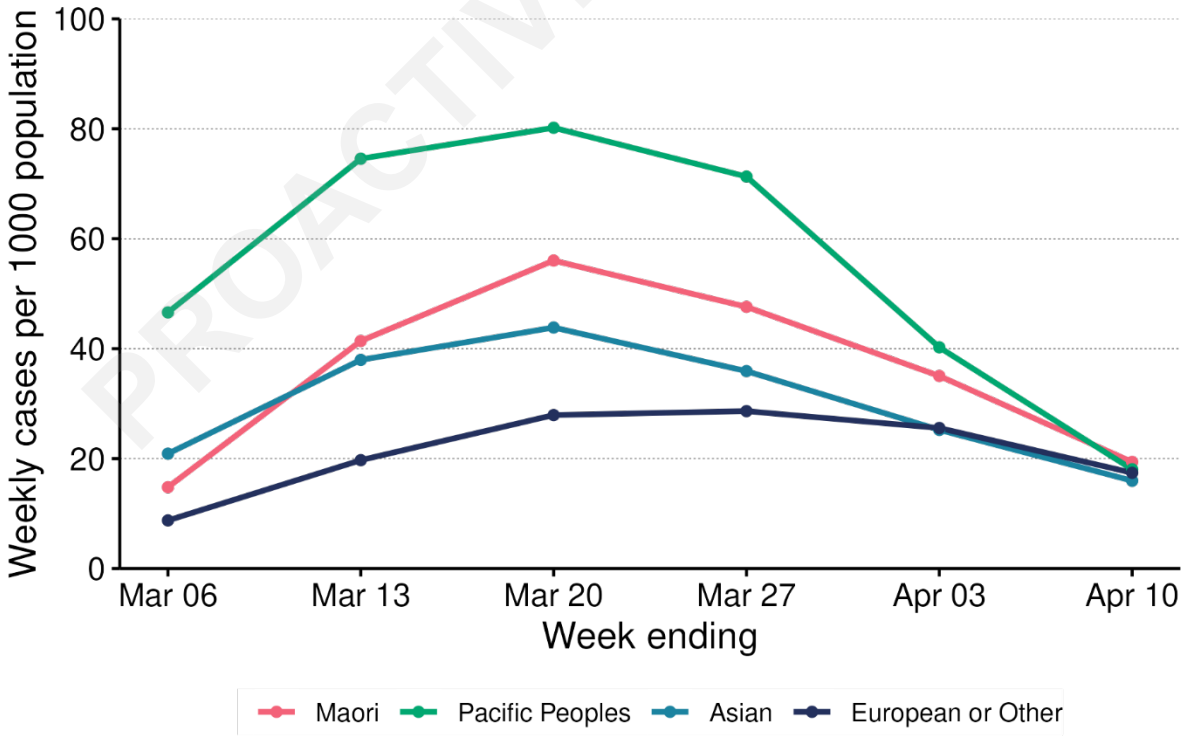
Lakes DHB



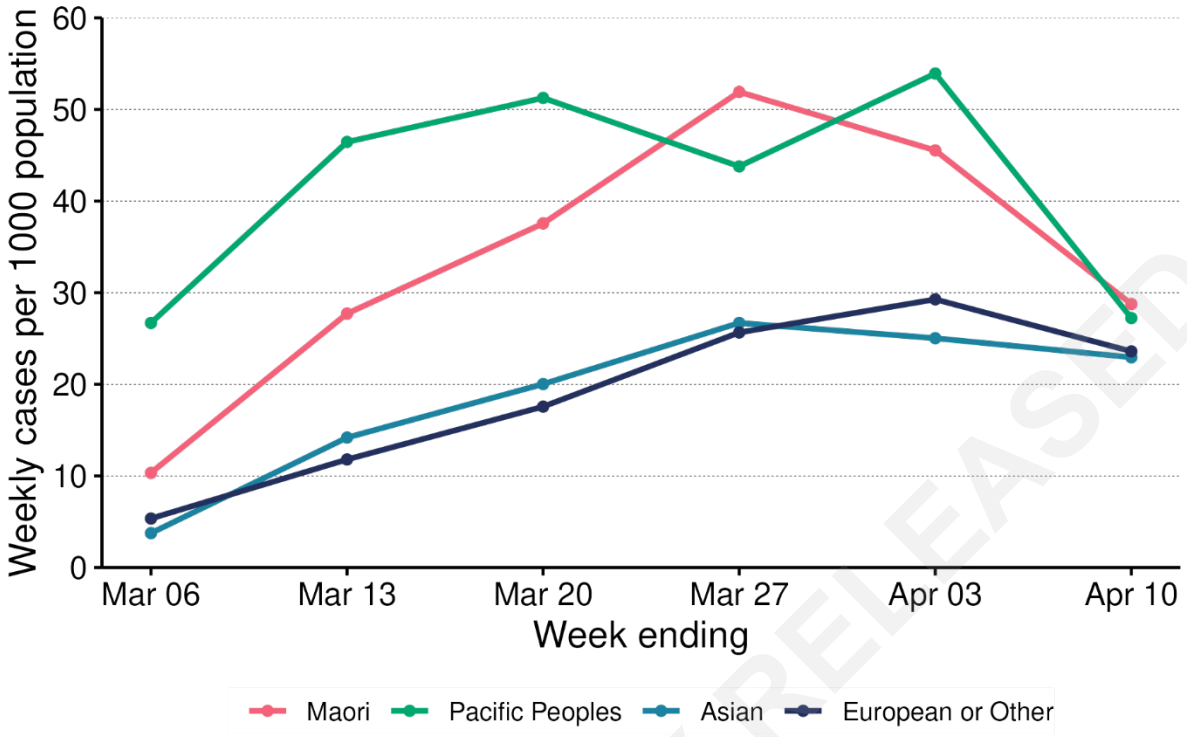
Taranaki DHB



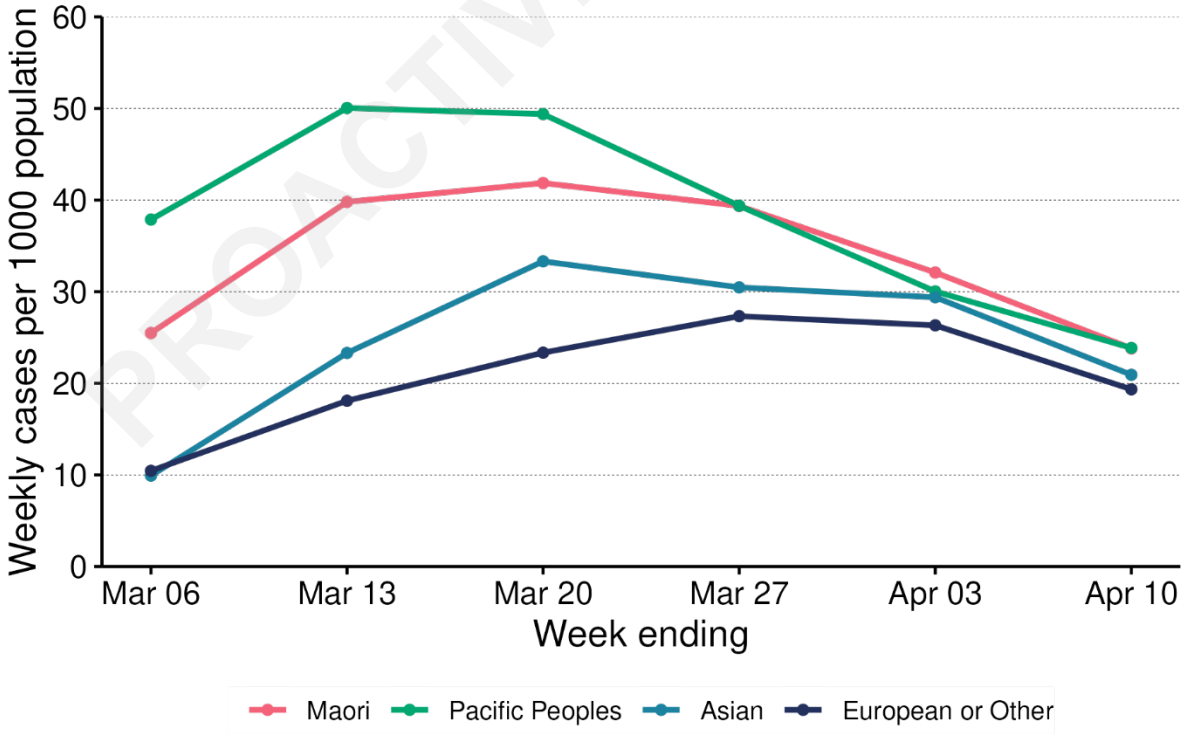
Hawke's Bay DHB



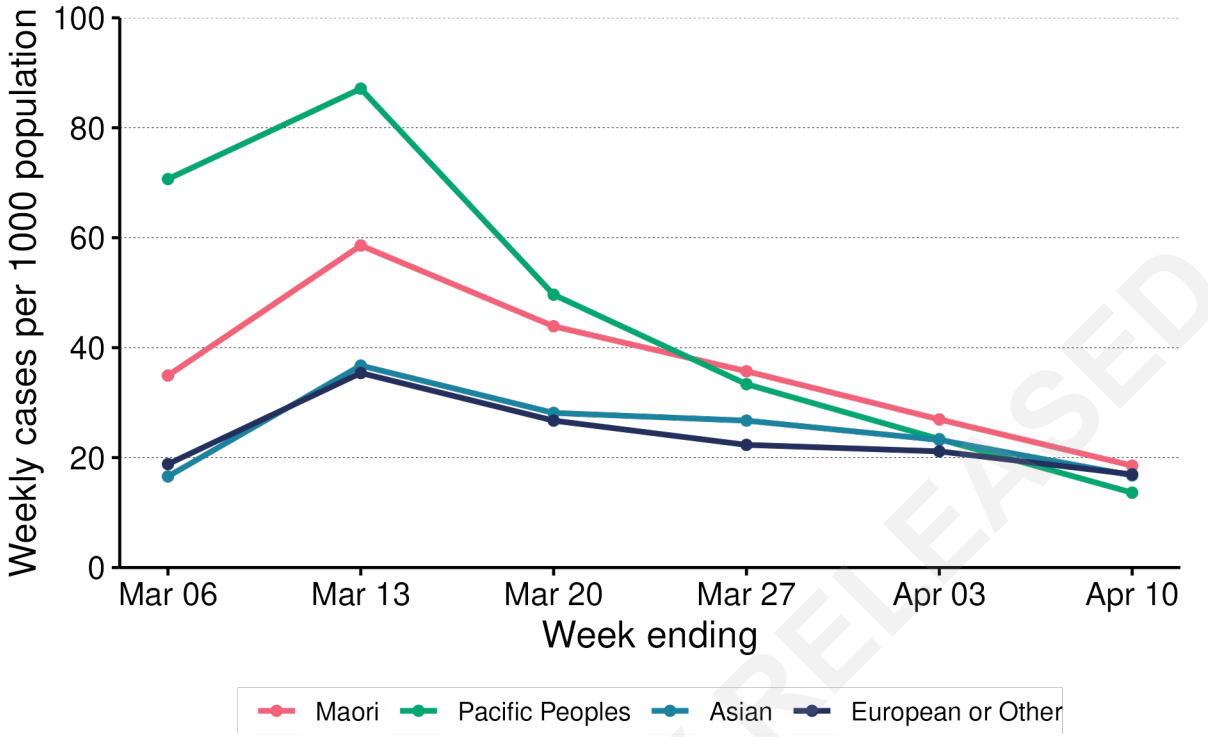
Whanganui DHB



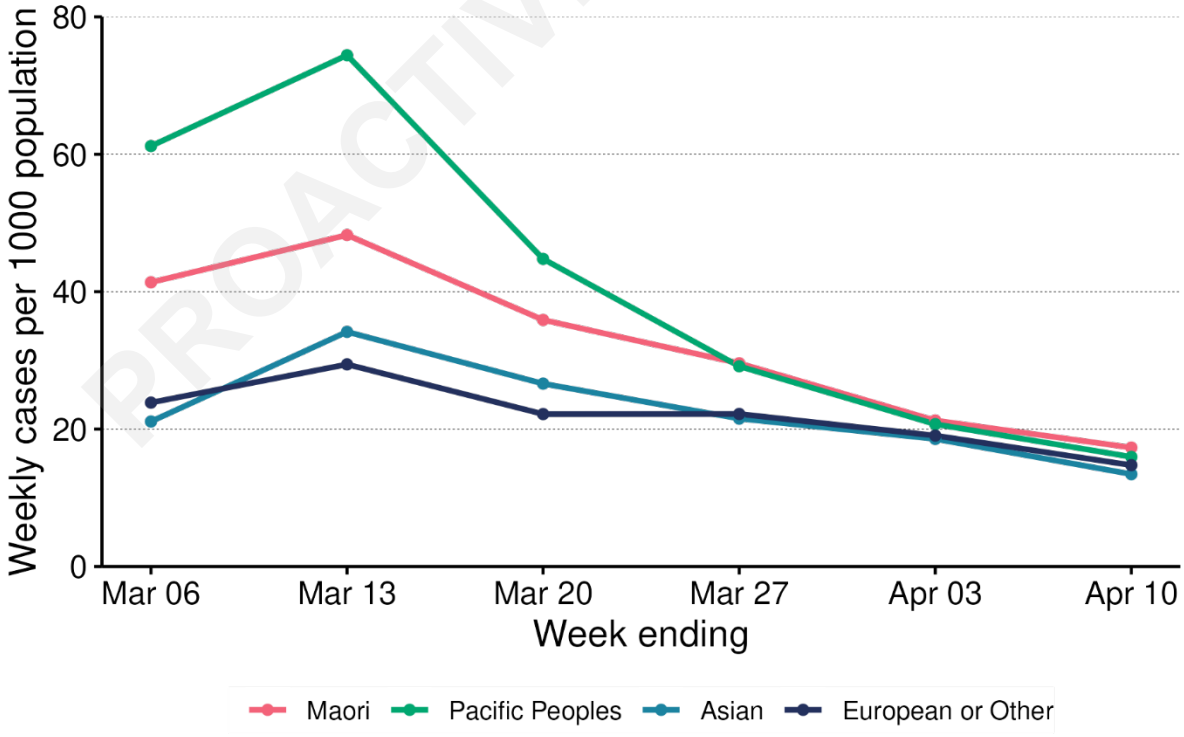
MidCentral DHB



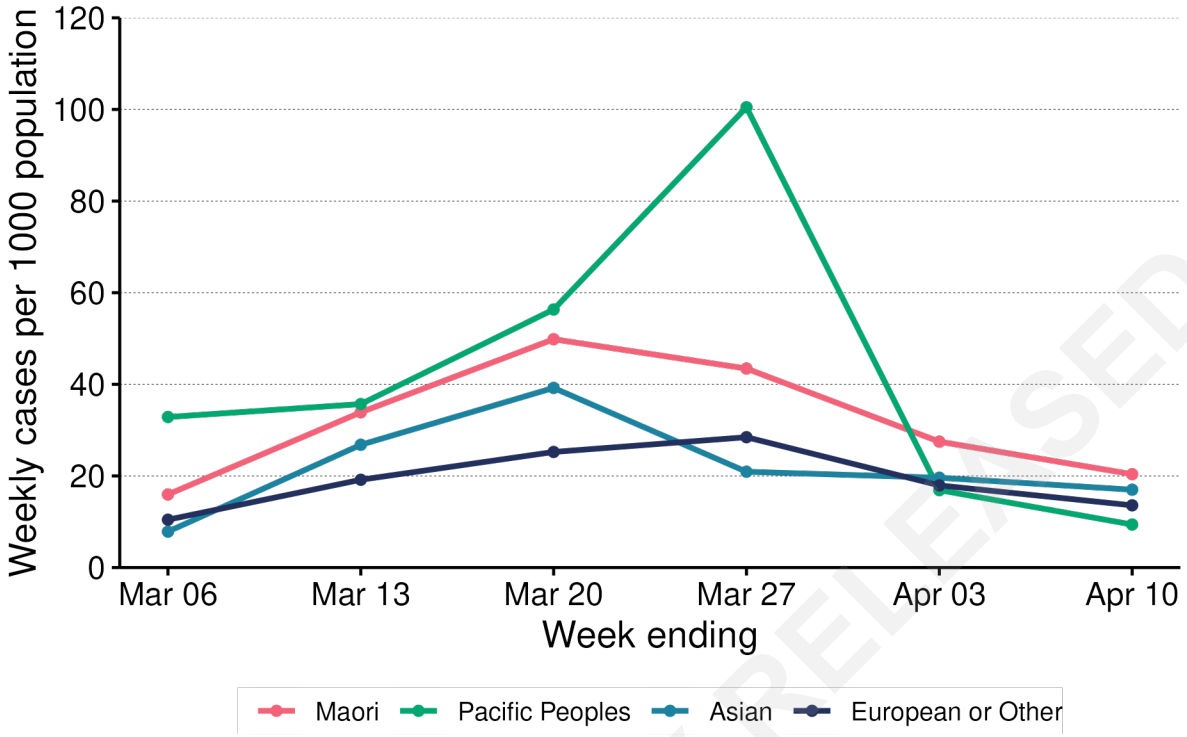
Hutt Valley DHB



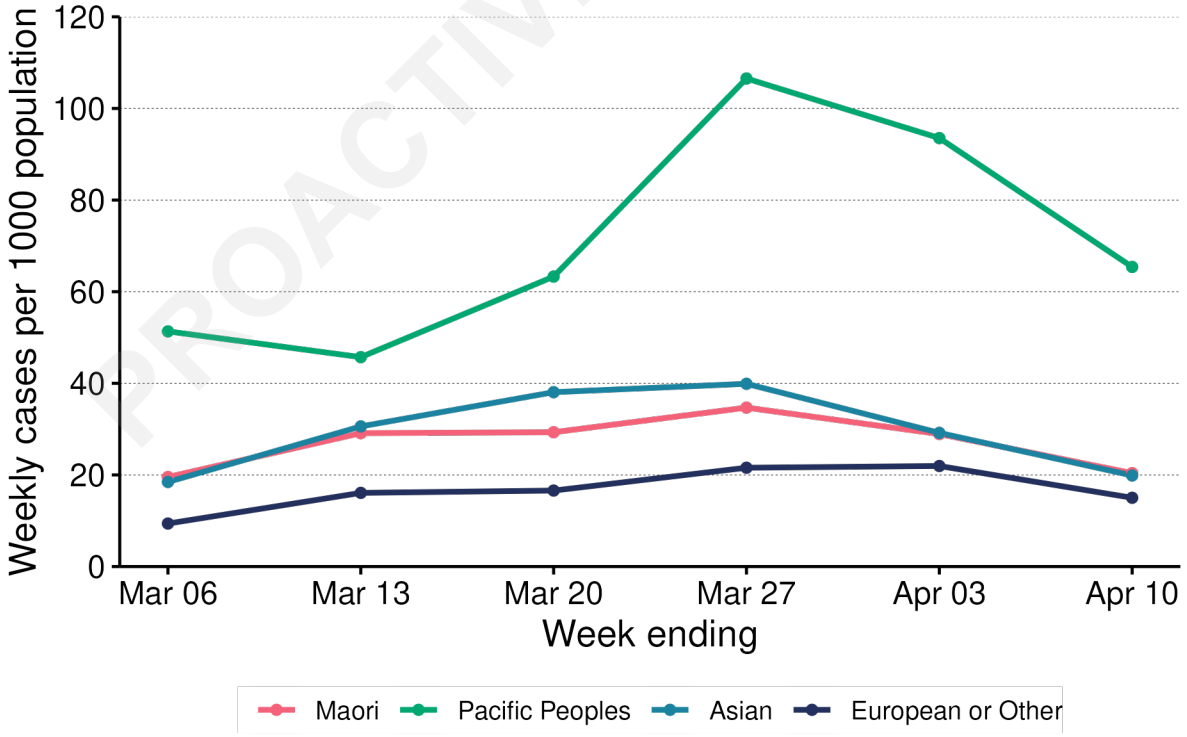
Capital and Coast DHB



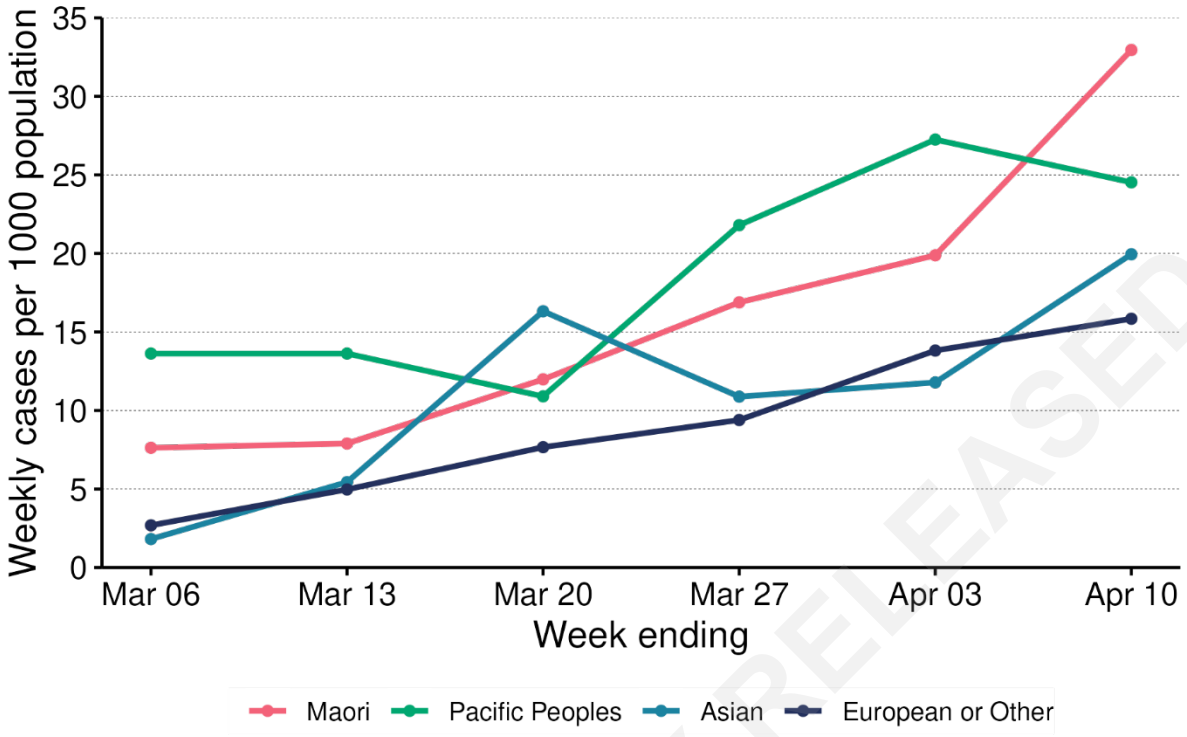
Wairarapa DHB



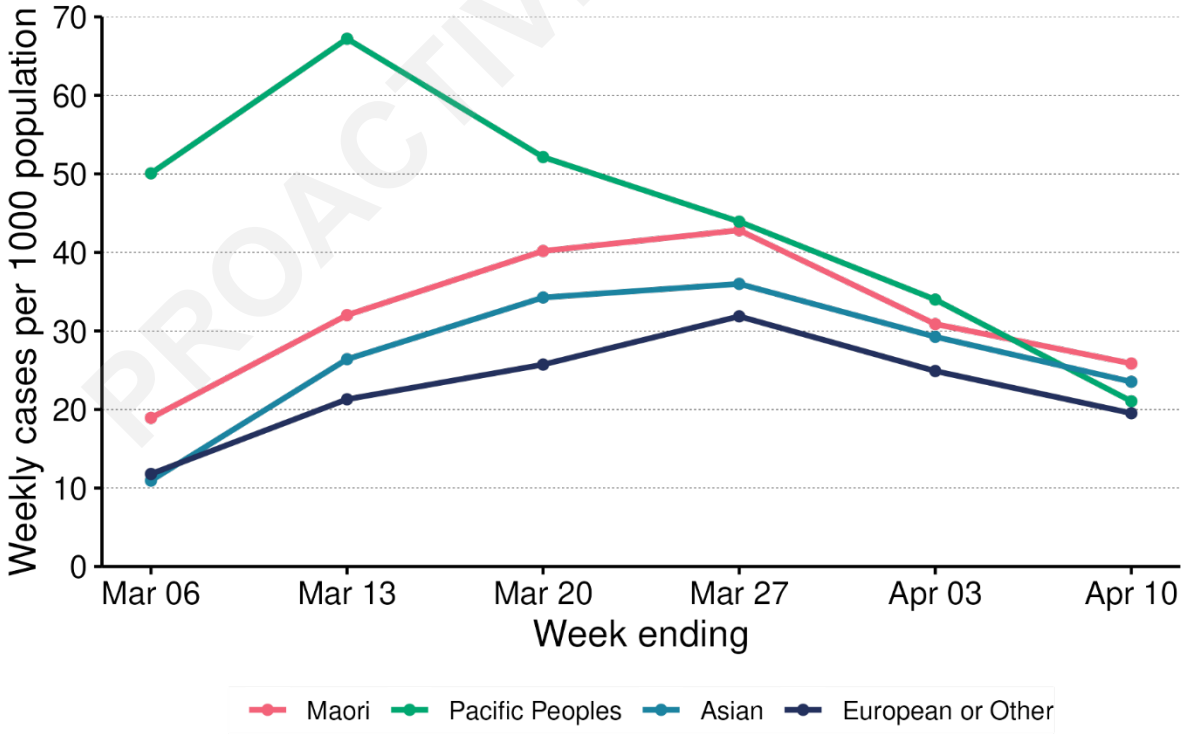
Nelson Marlborough DHB



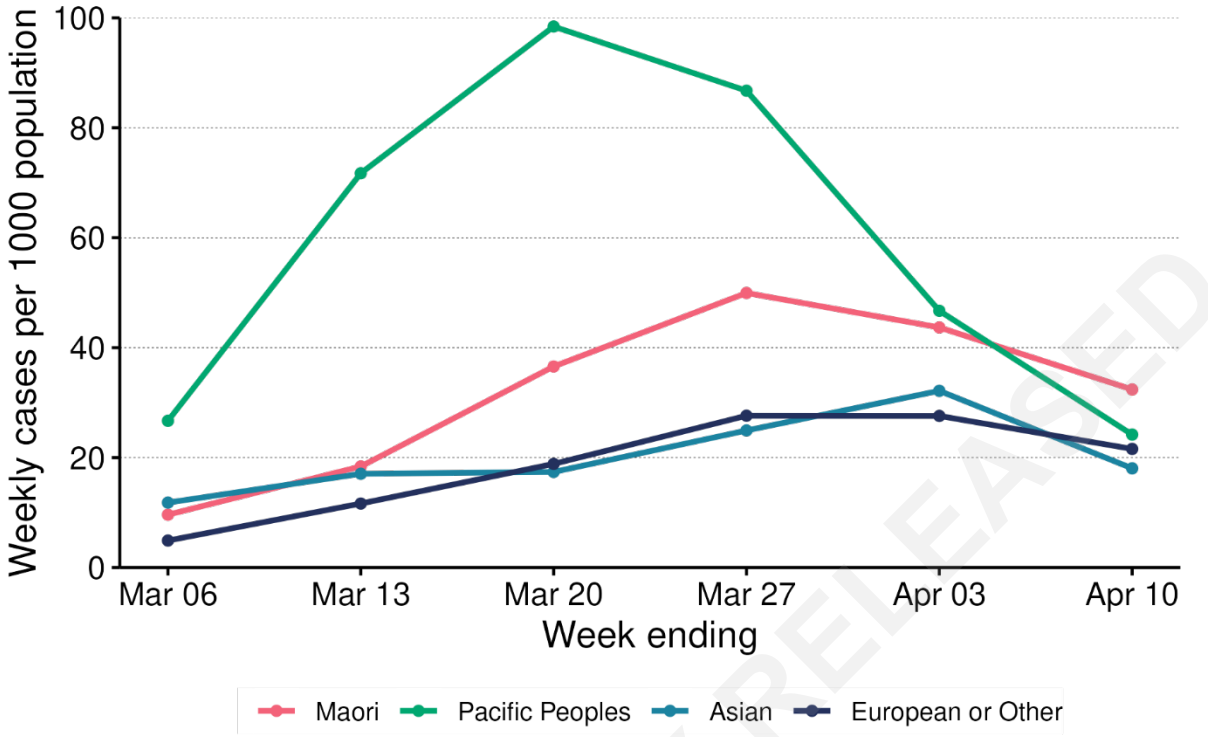
West Coast DHB



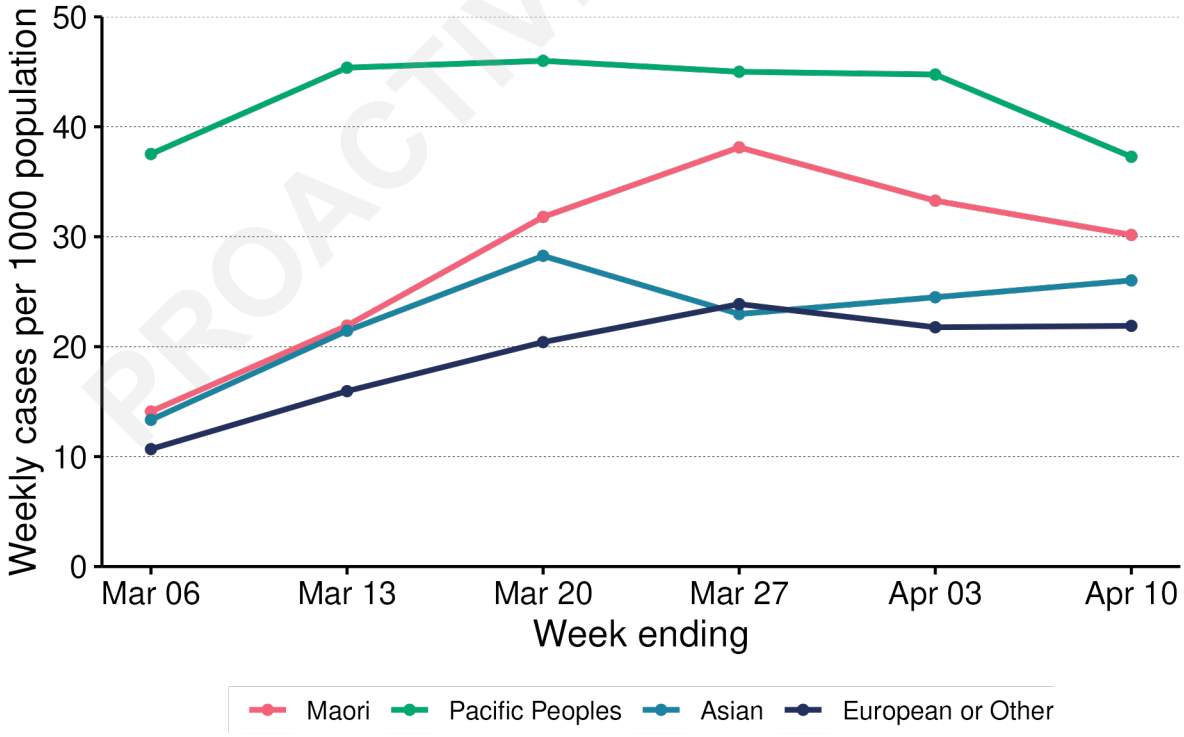
Canterbury DHB



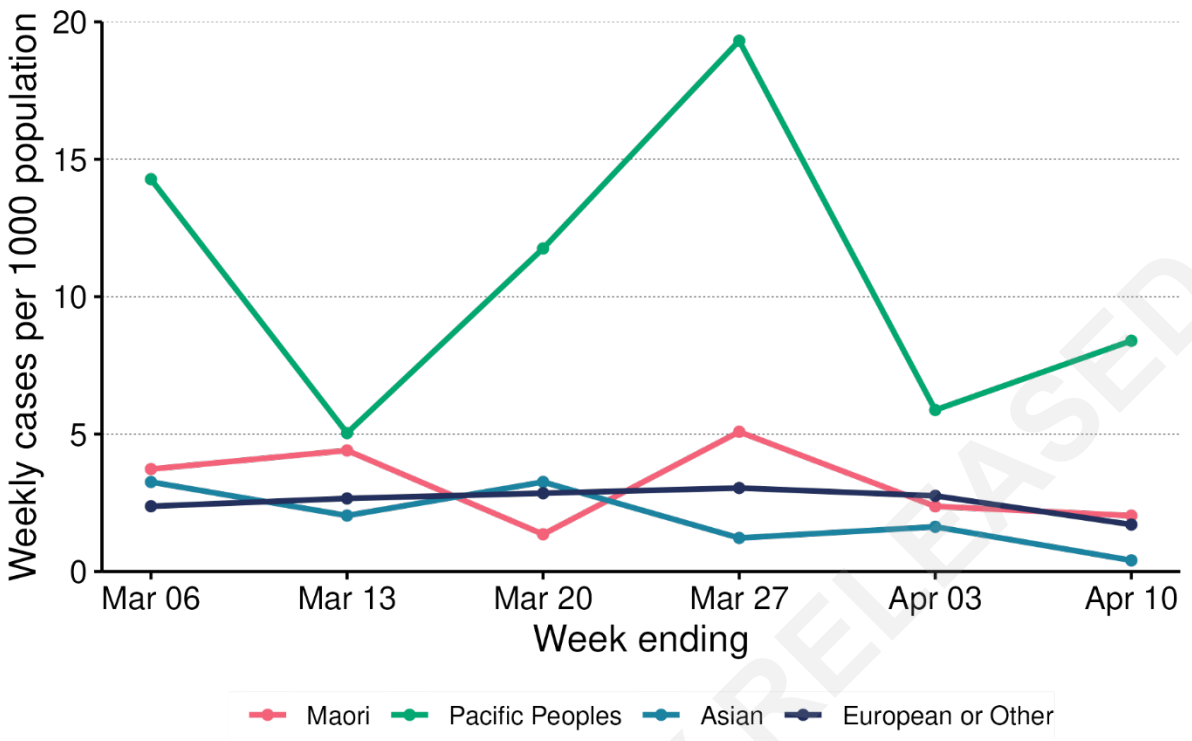
South Canterbury DHB



Southern DHB

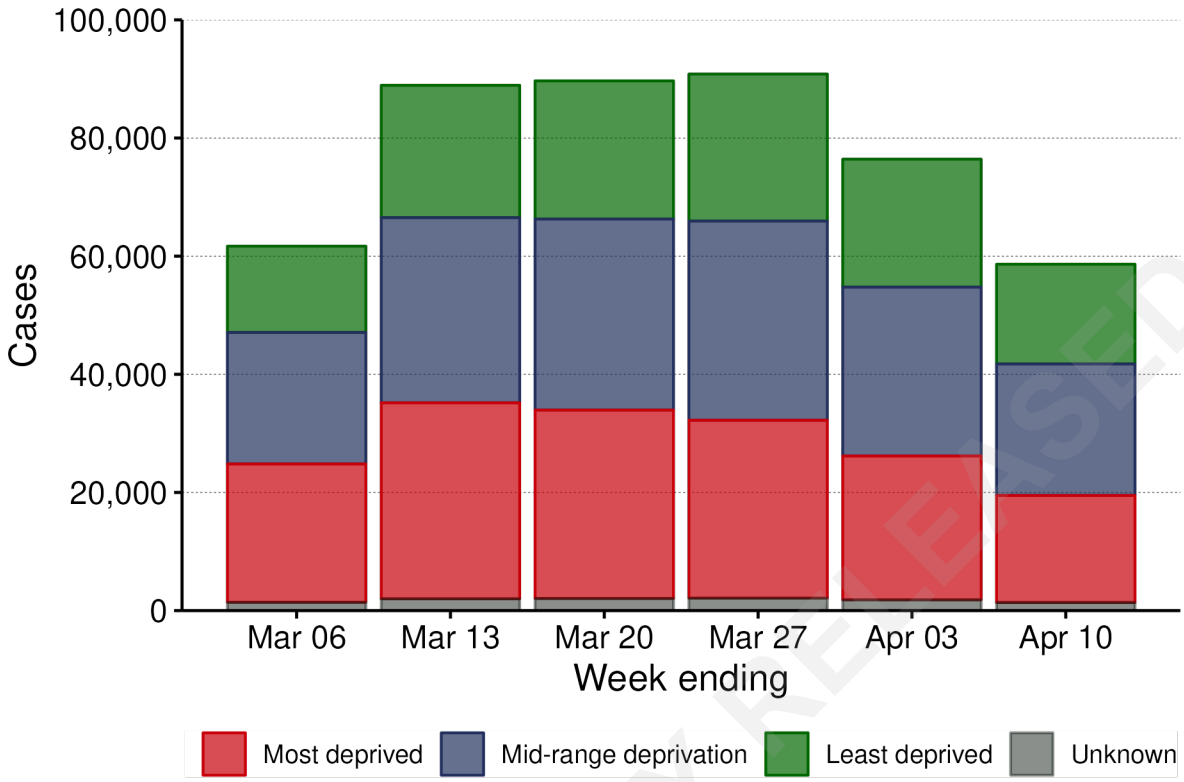


Unknown

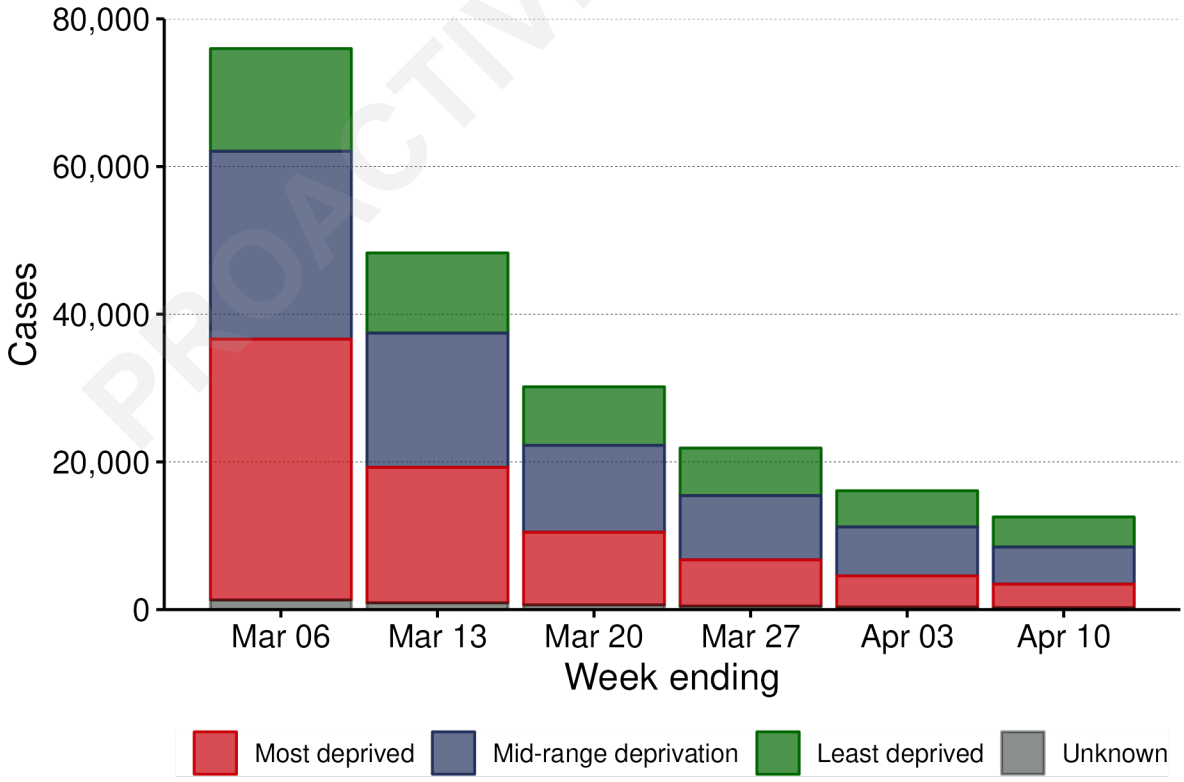


Deprivation Graphs

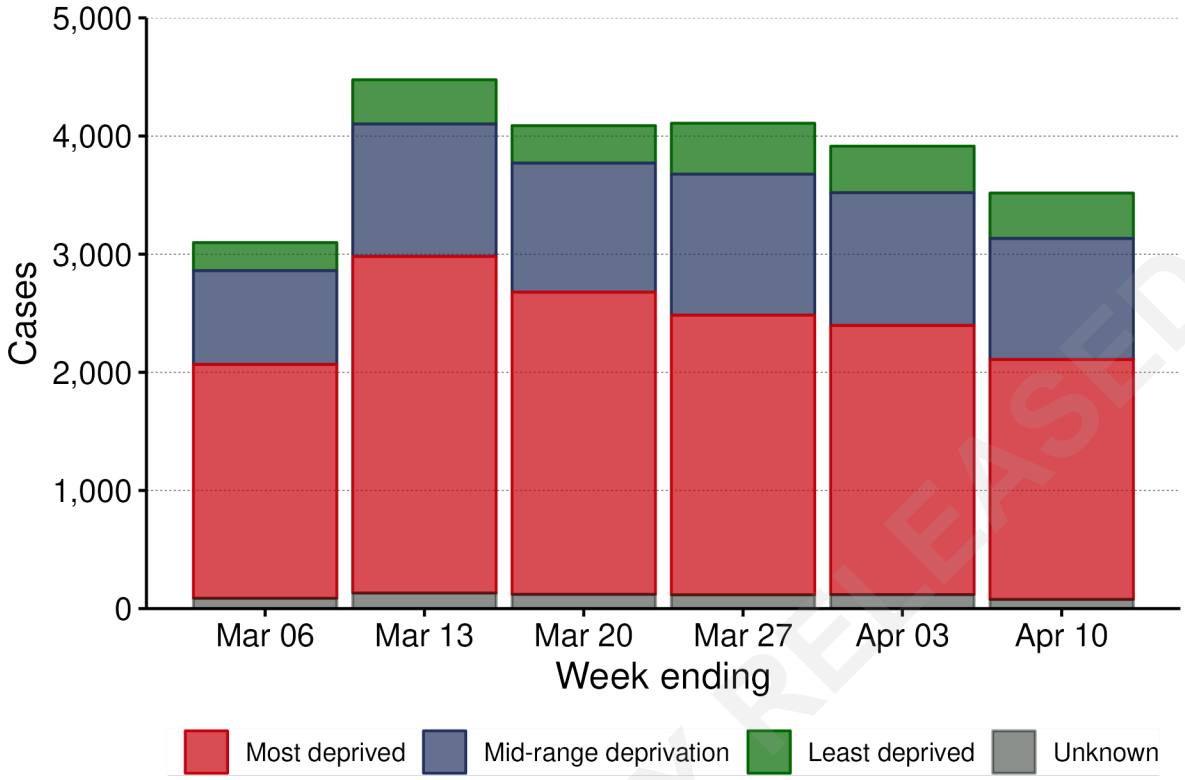
NZ Excluding Auckland Region



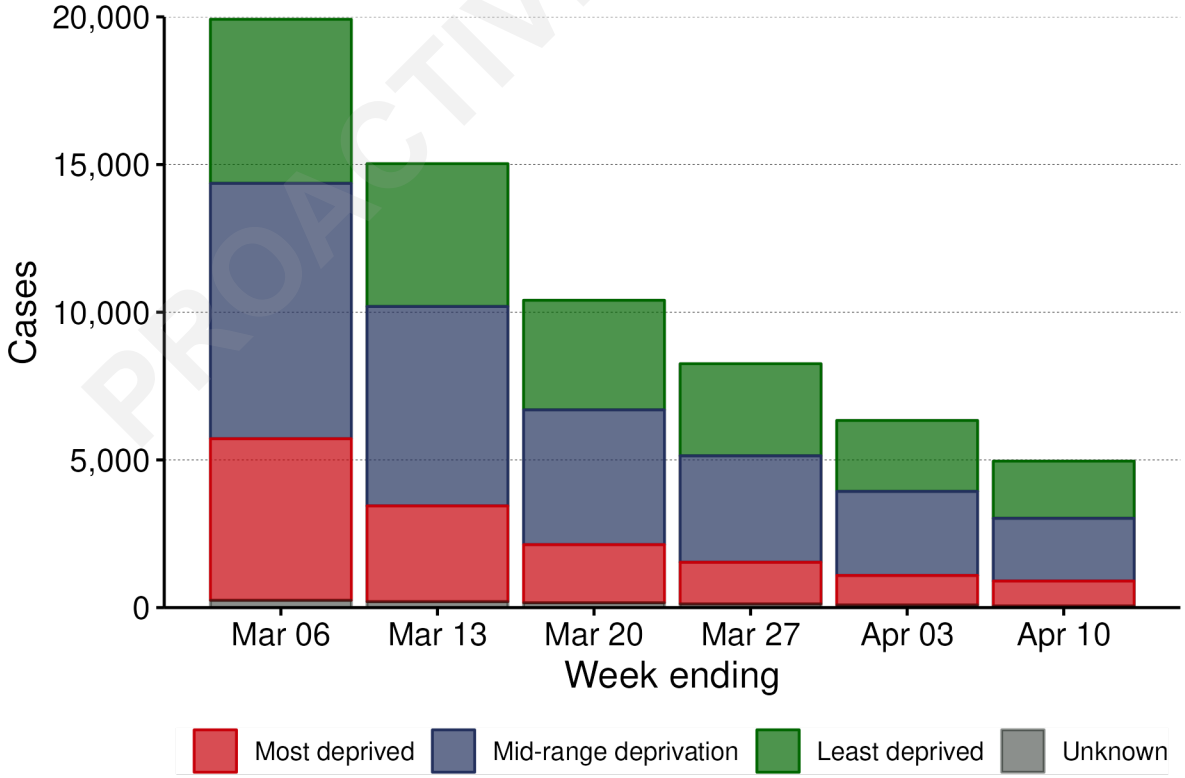
Auckland Region



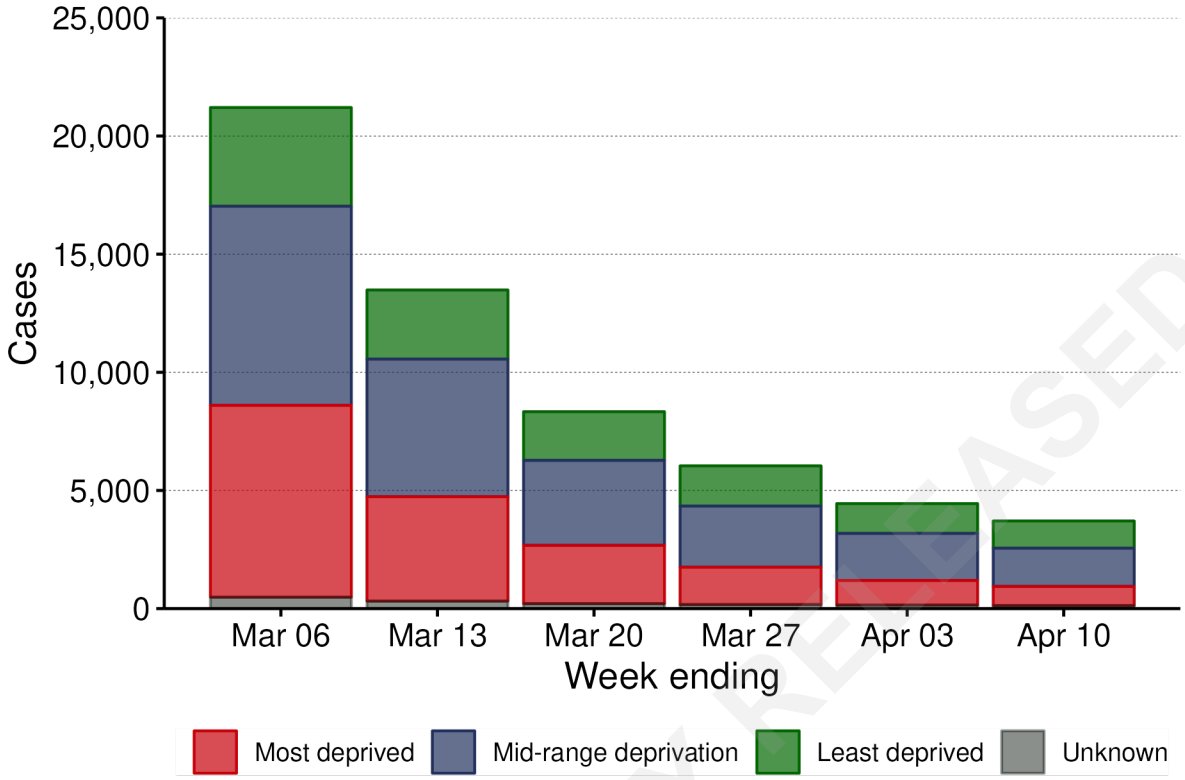
Northland DHB



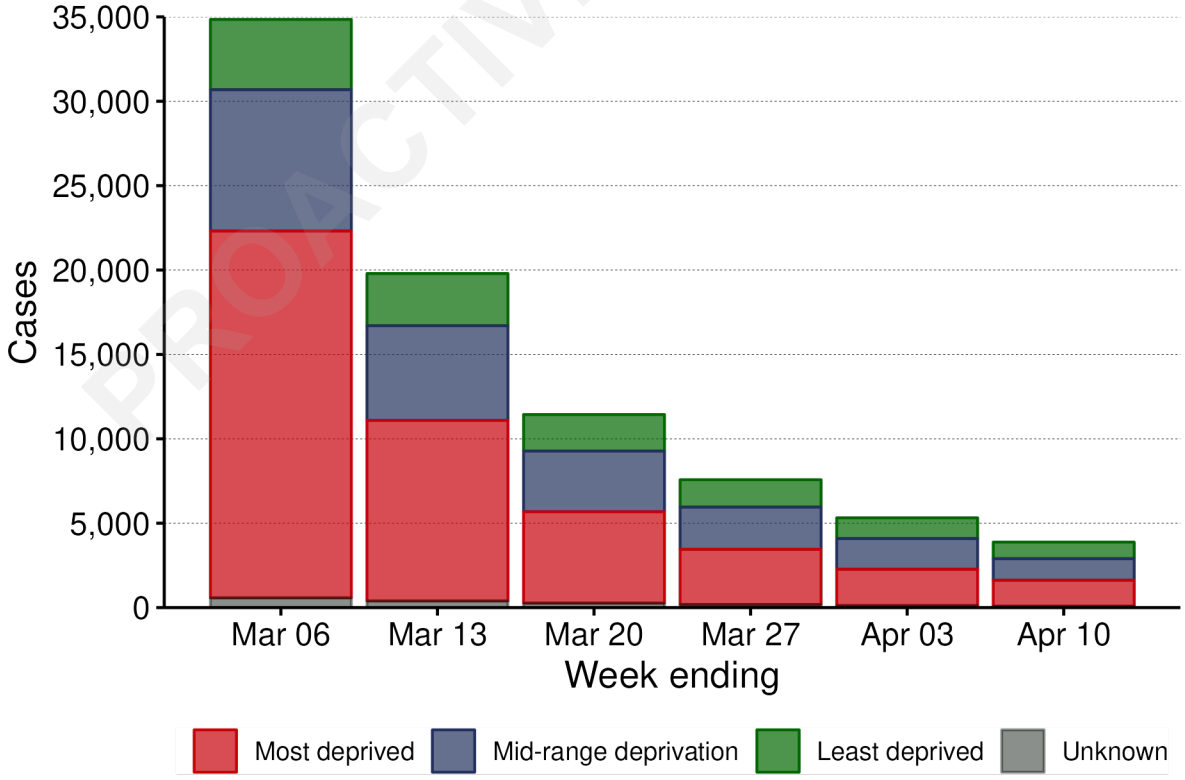
Waitemata DHB



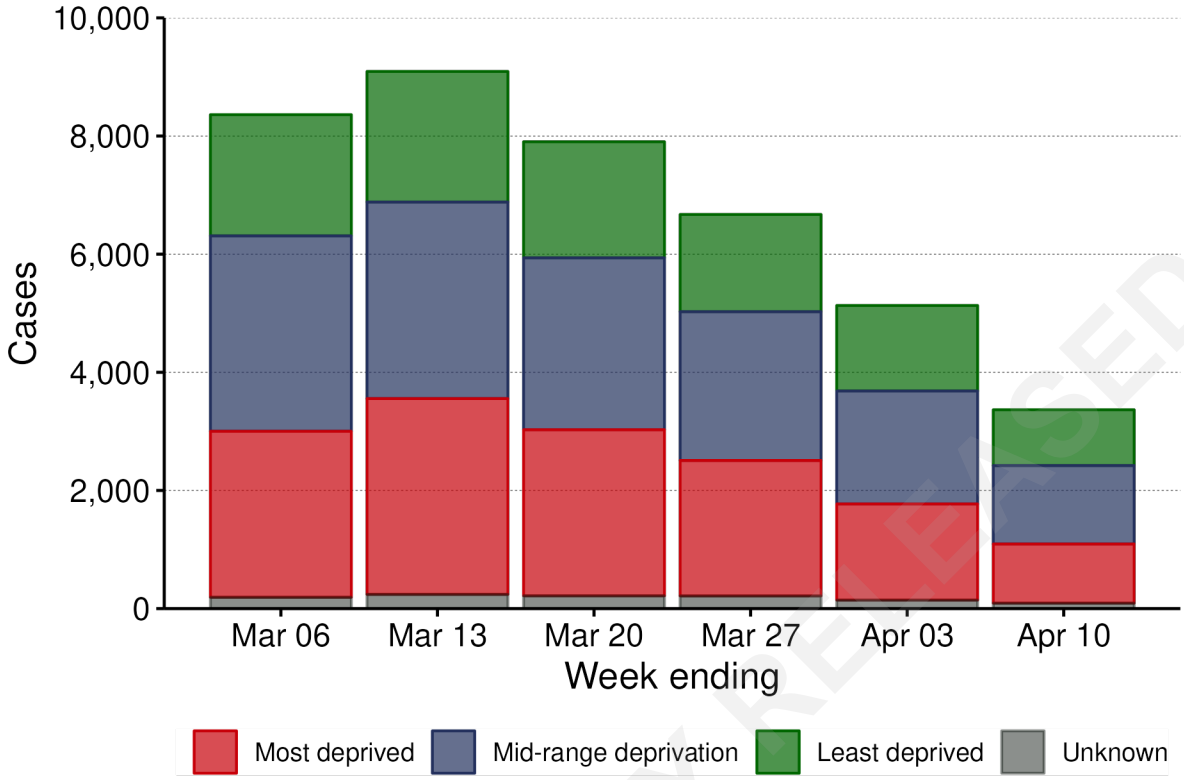
Auckland DHB



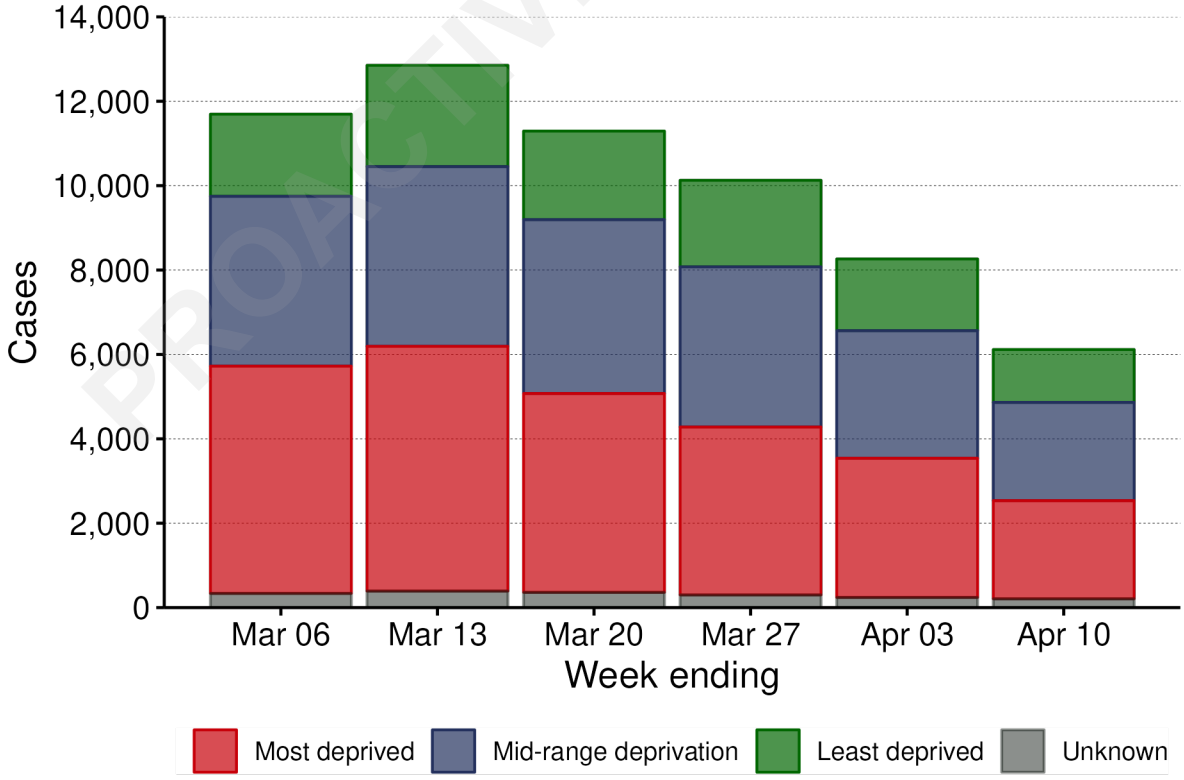
Counties Manukau DHB



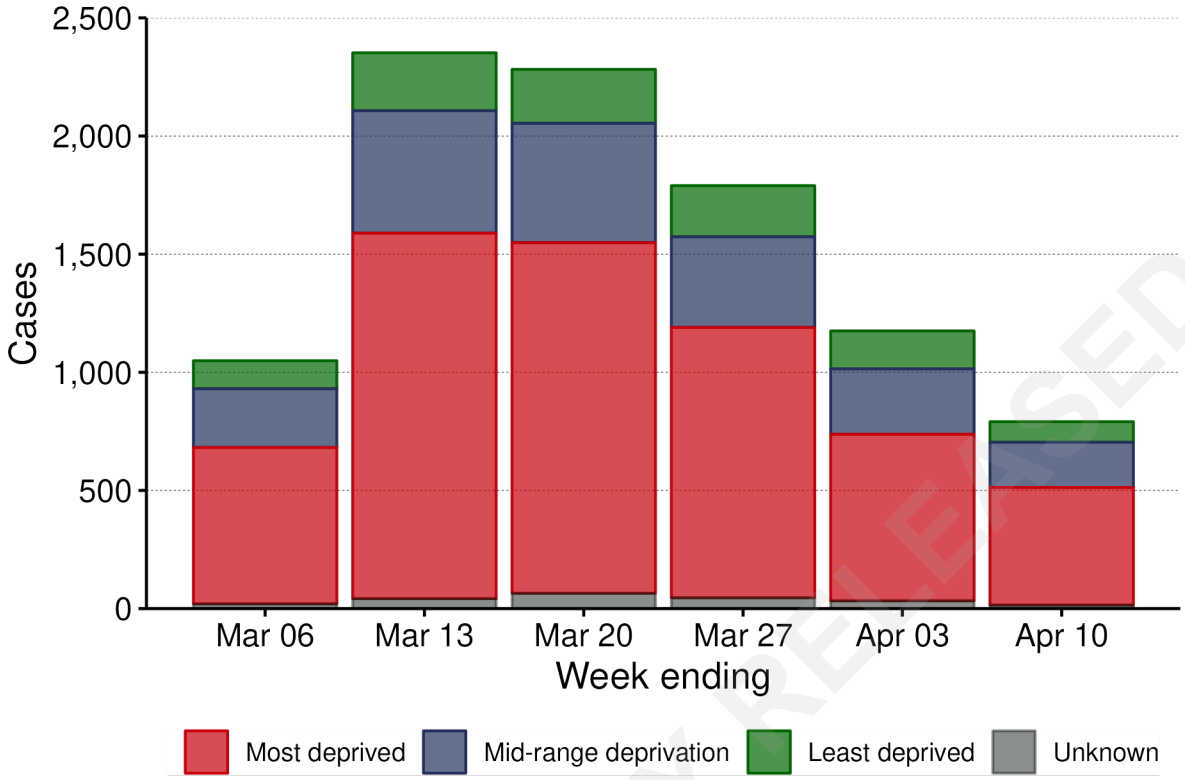
Bay of Plenty DHB



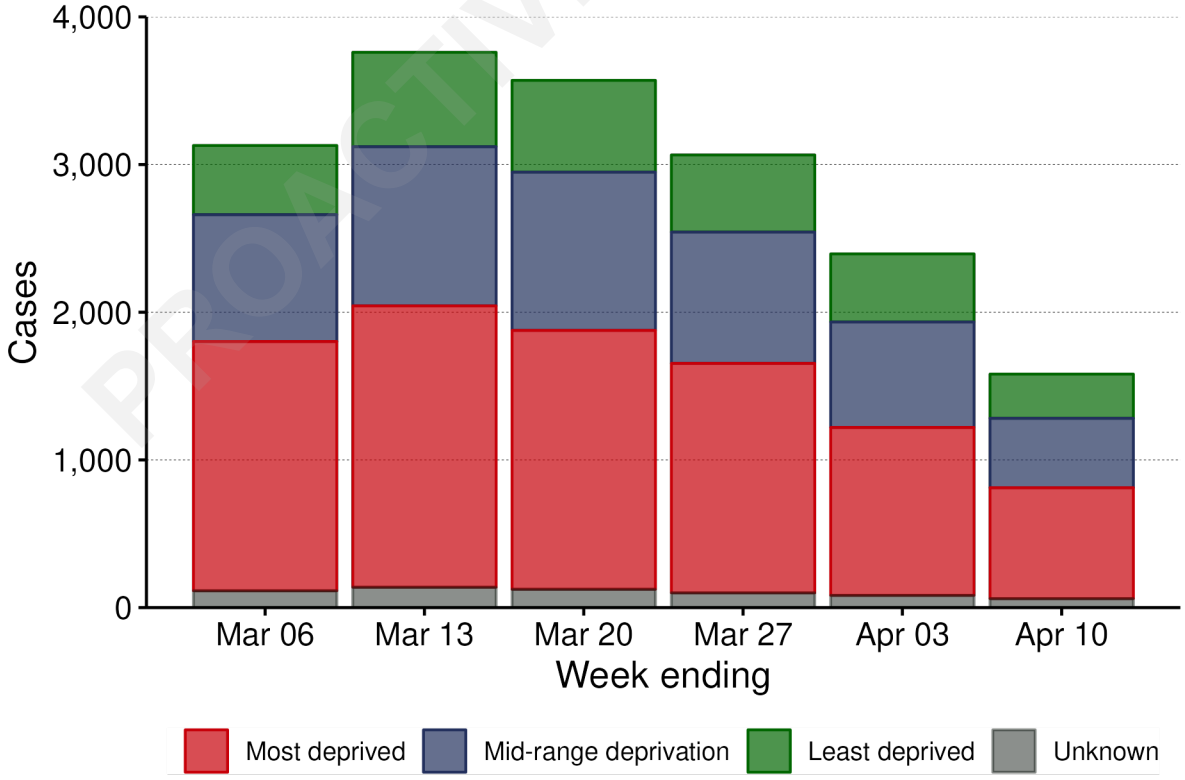
Waikato DHB



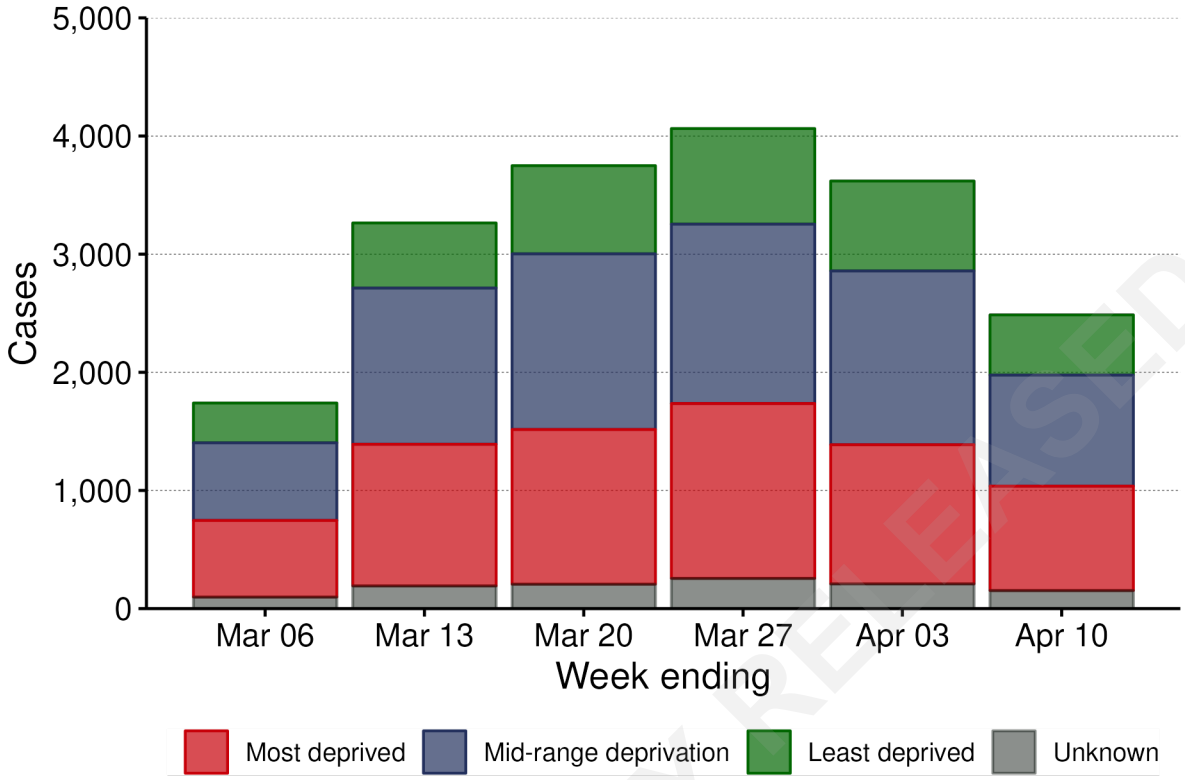
Tarawhiti DHB



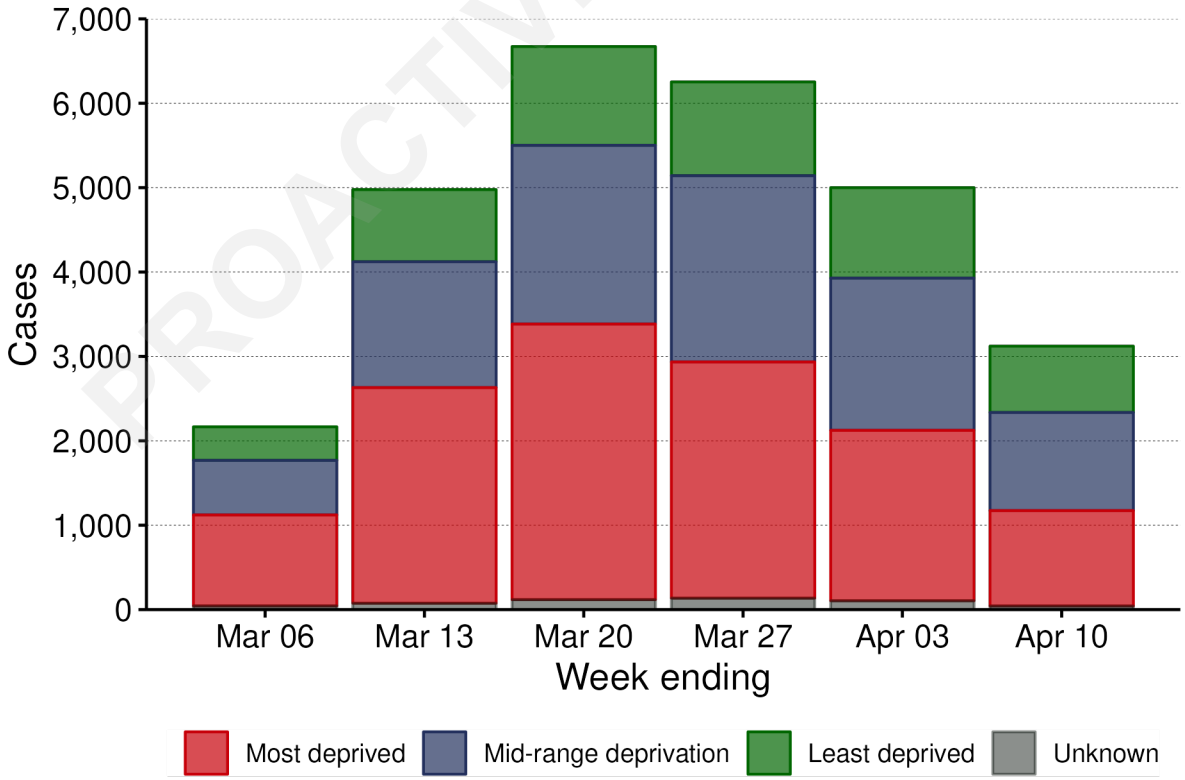
Lakes DHB



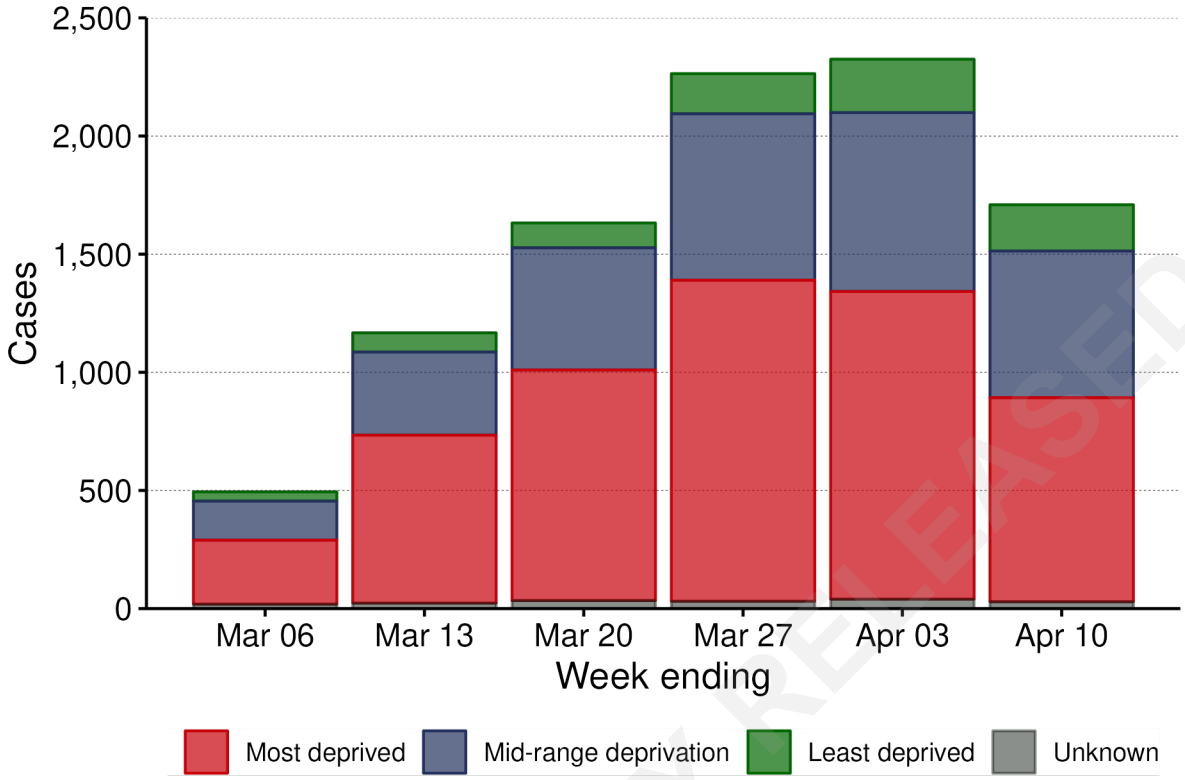
Taranaki DHB



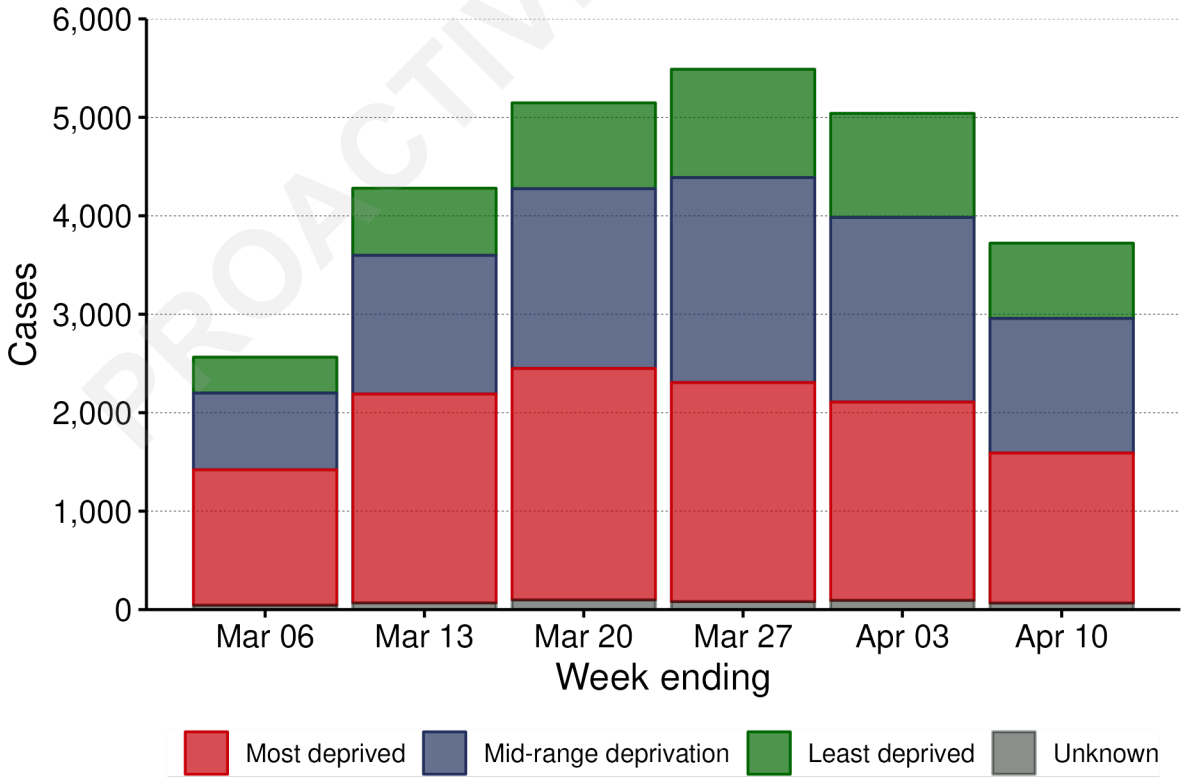
Hawke's Bay DHB



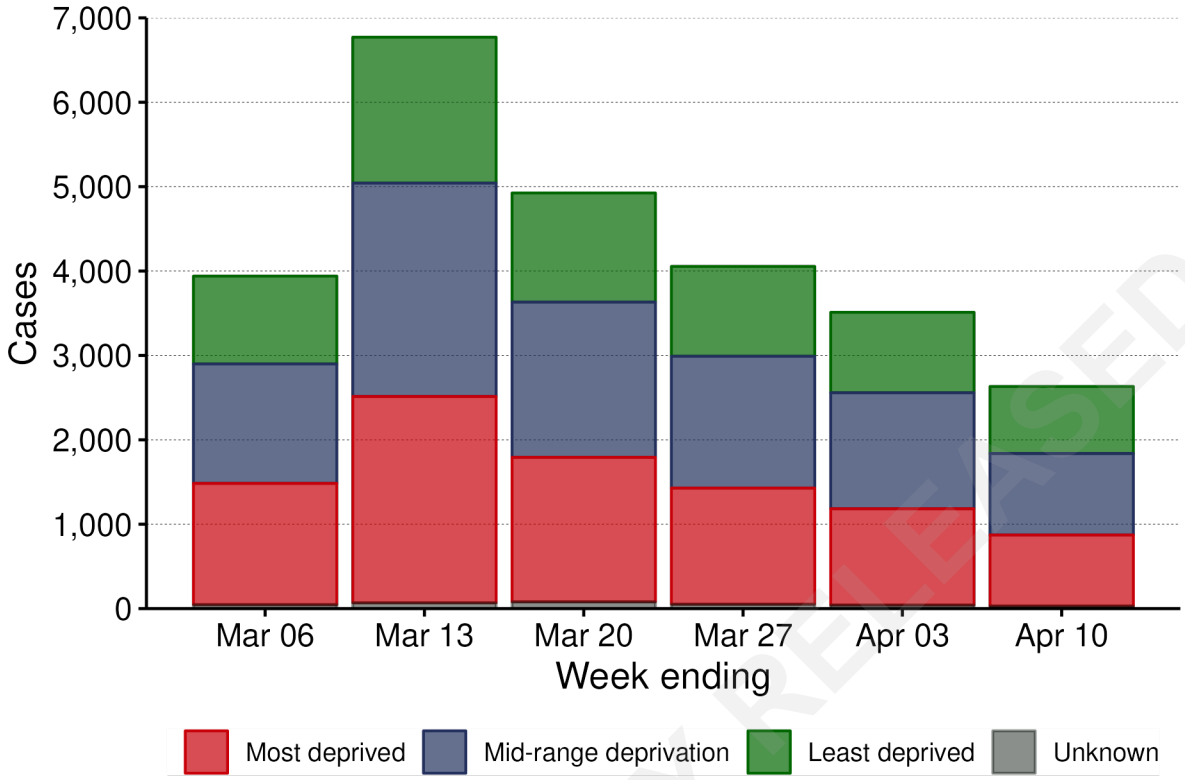
Whanganui DHB



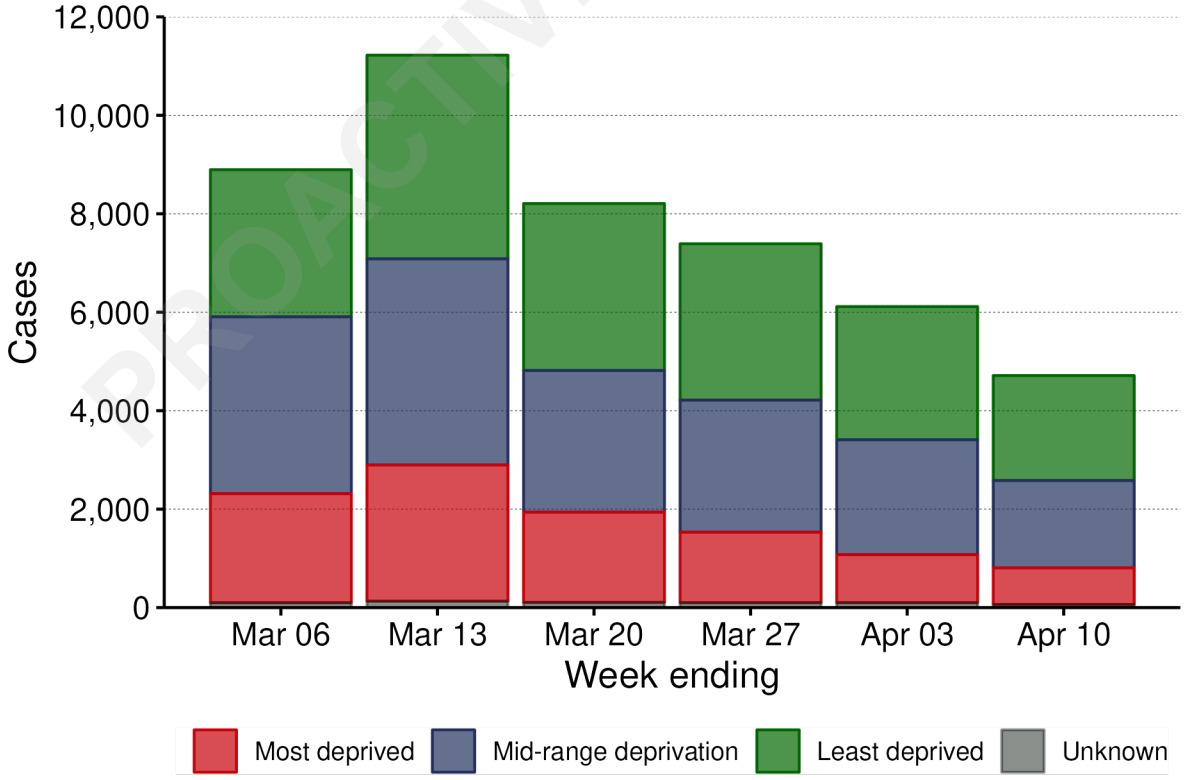
MidCentral DHB



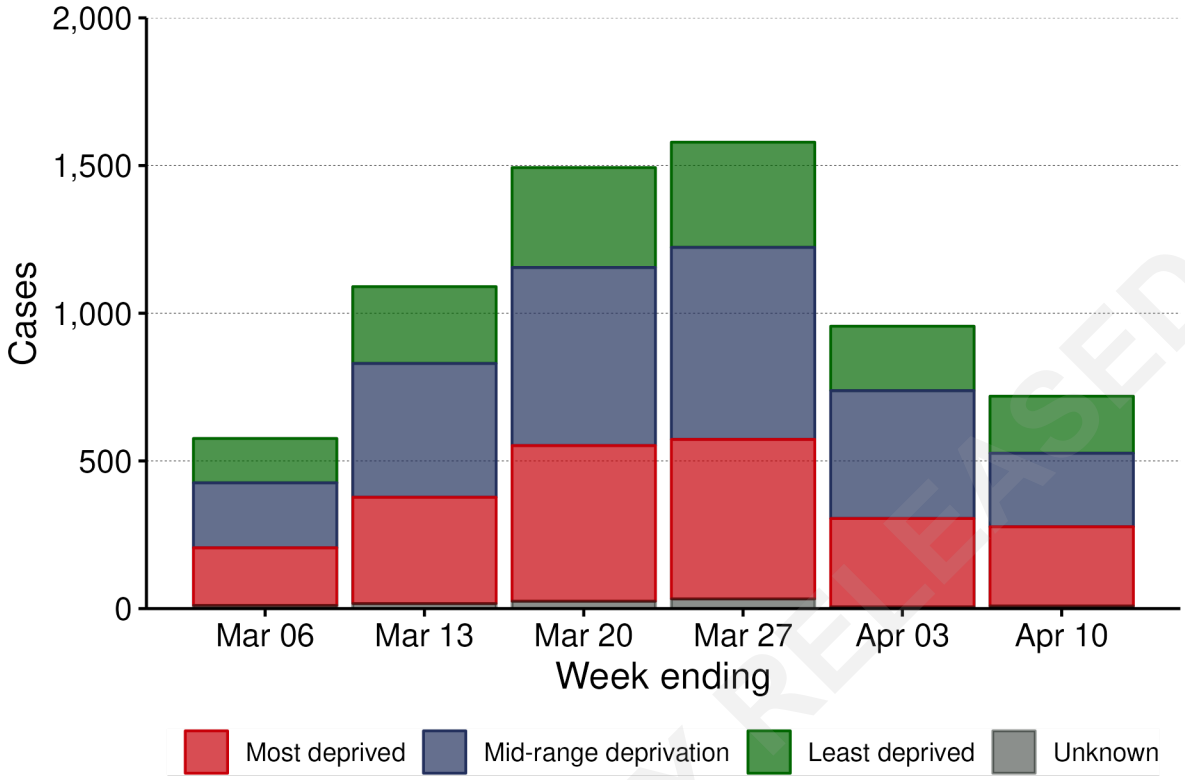
Hutt Valley DHB



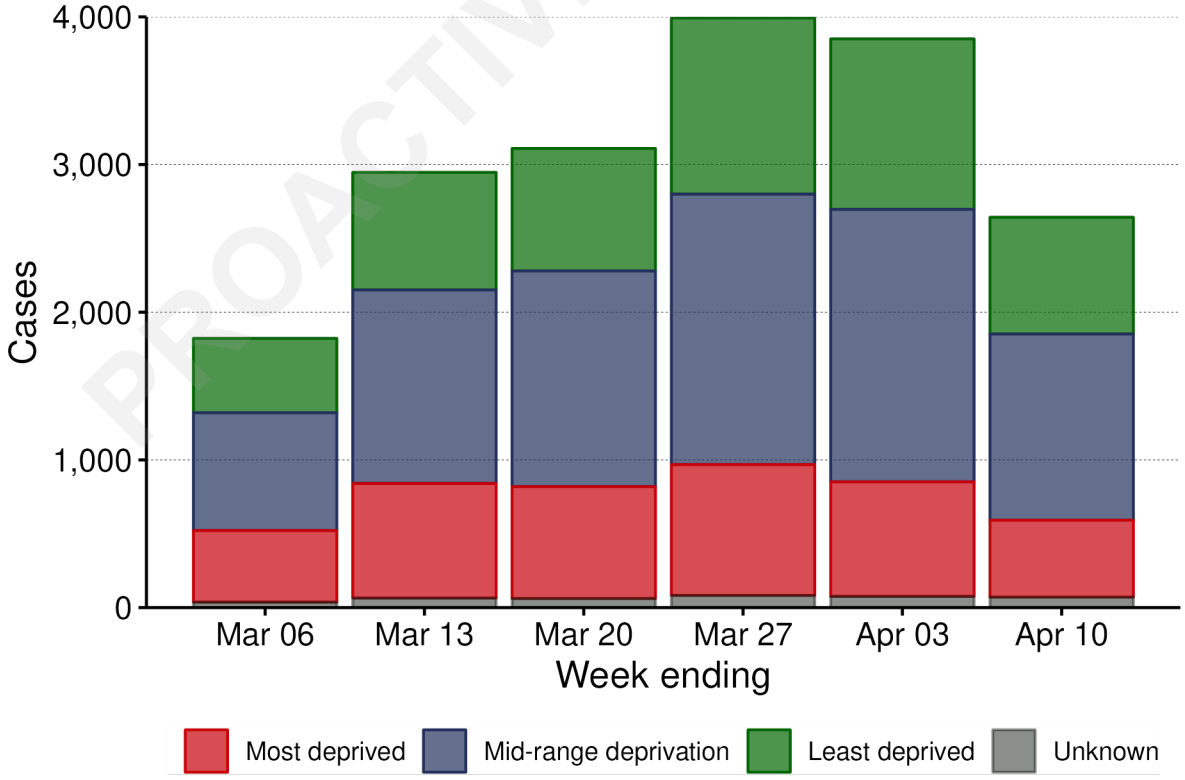
Capital and Coast DHB



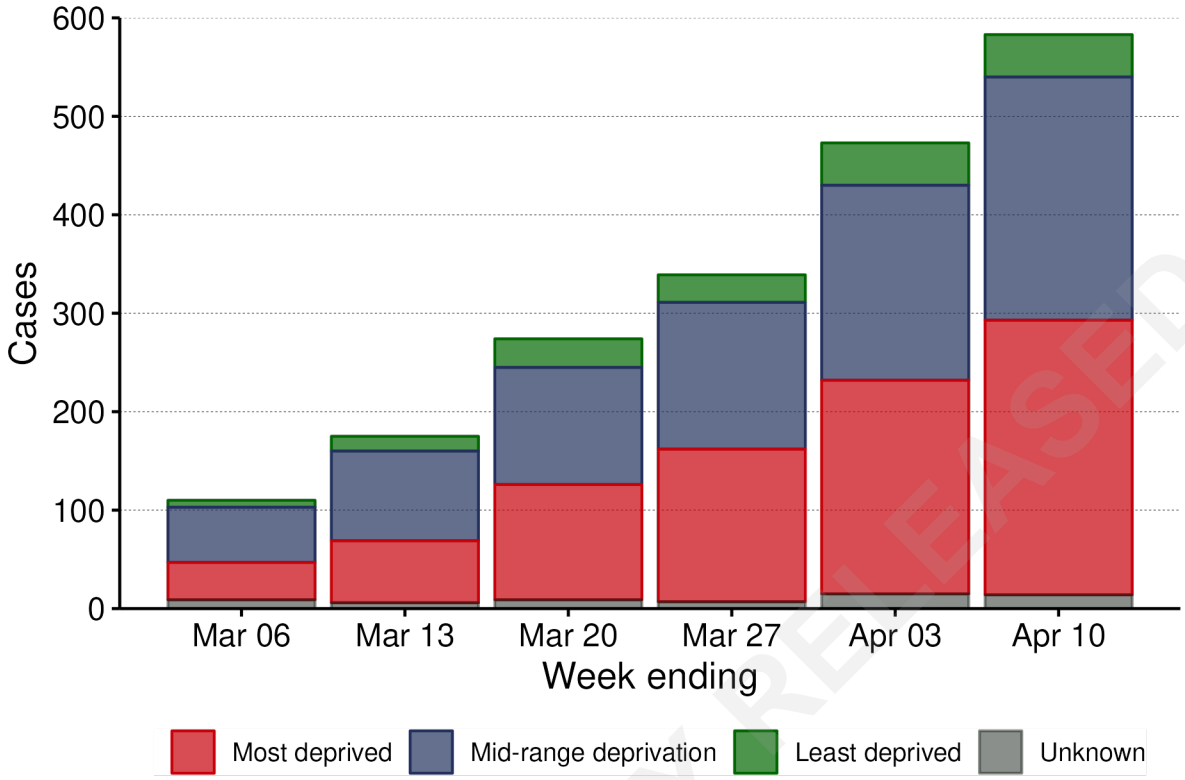
Wairarapa DHB



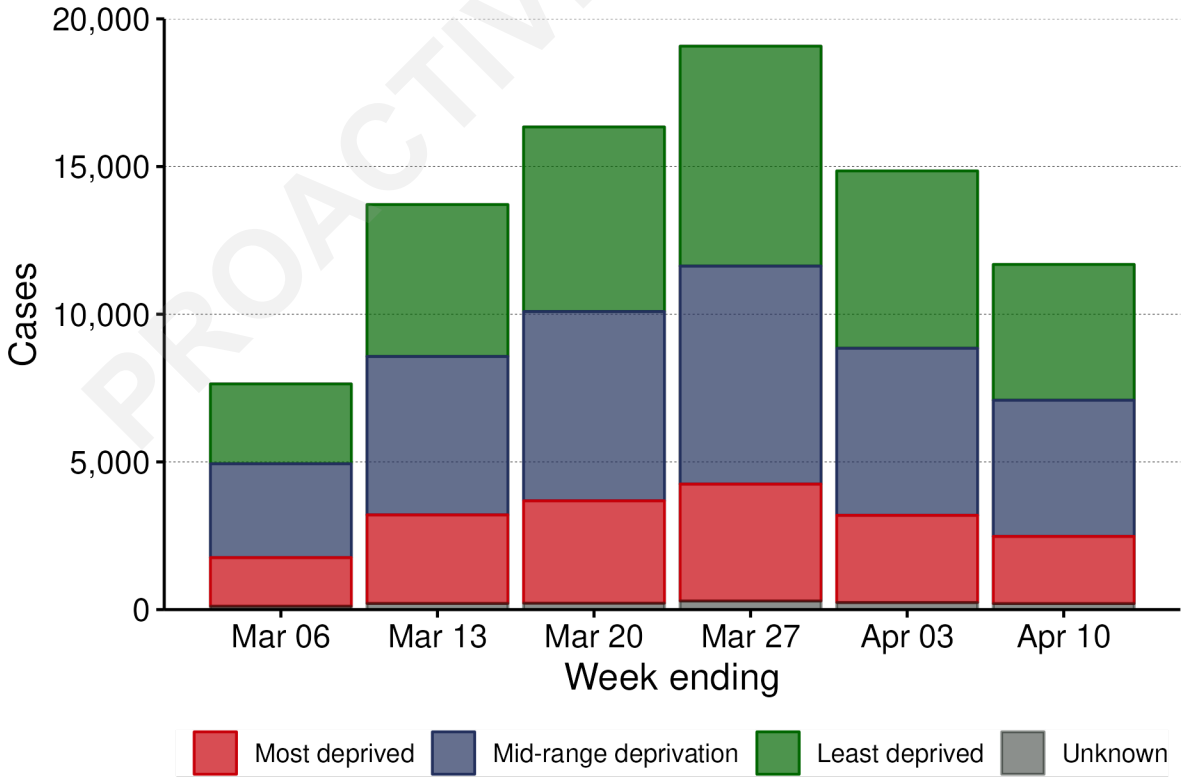
Nelson Marlborough DHB



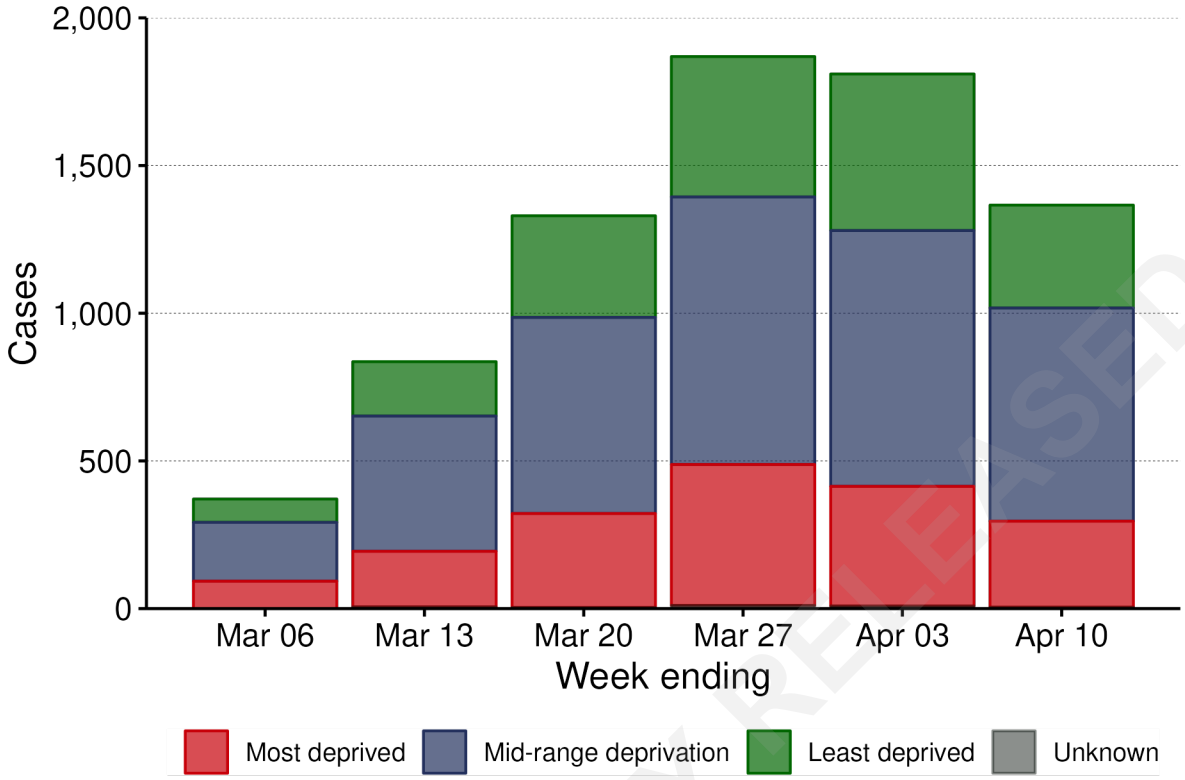
West Coast DHB



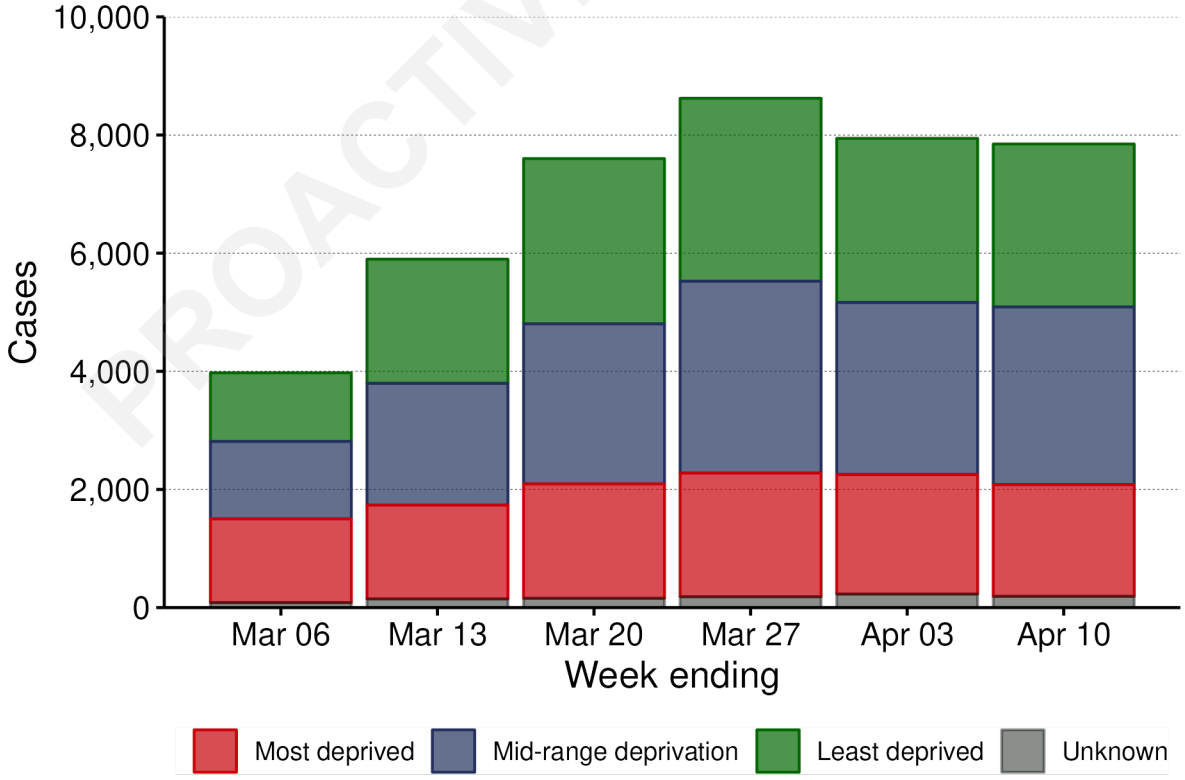
Canterbury DHB



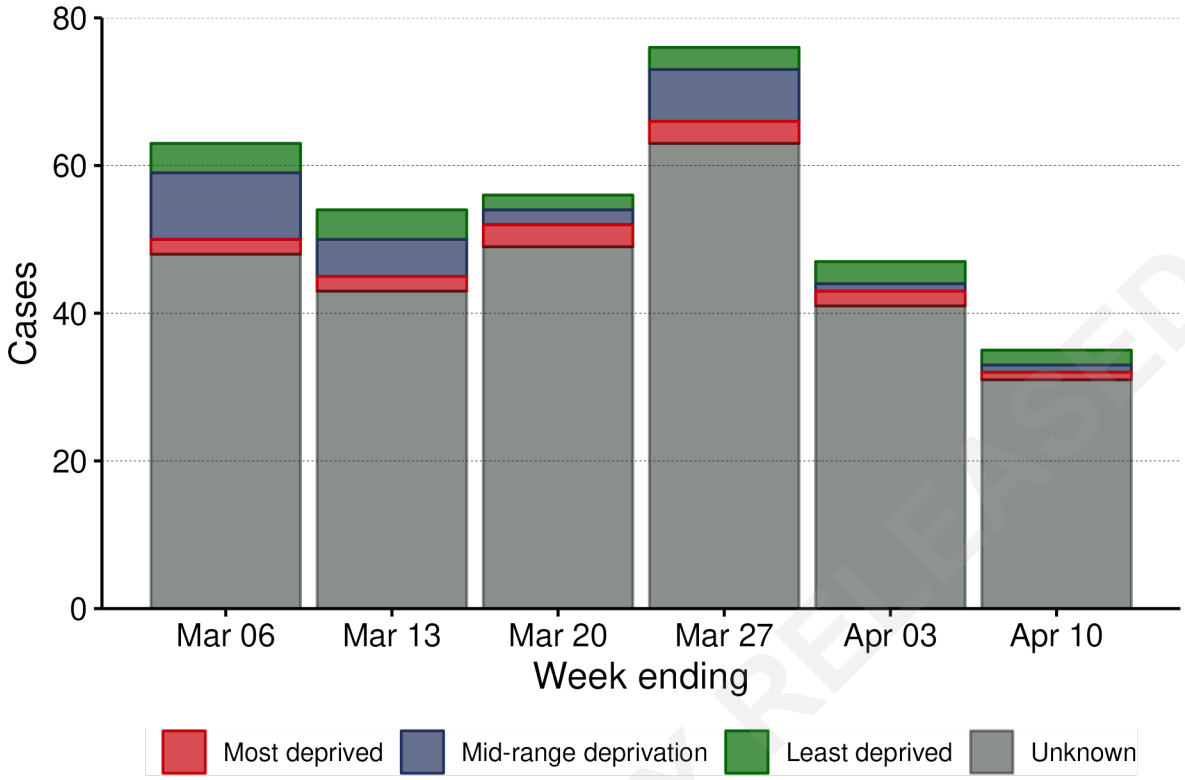
South Canterbury DHB



Southern DHB

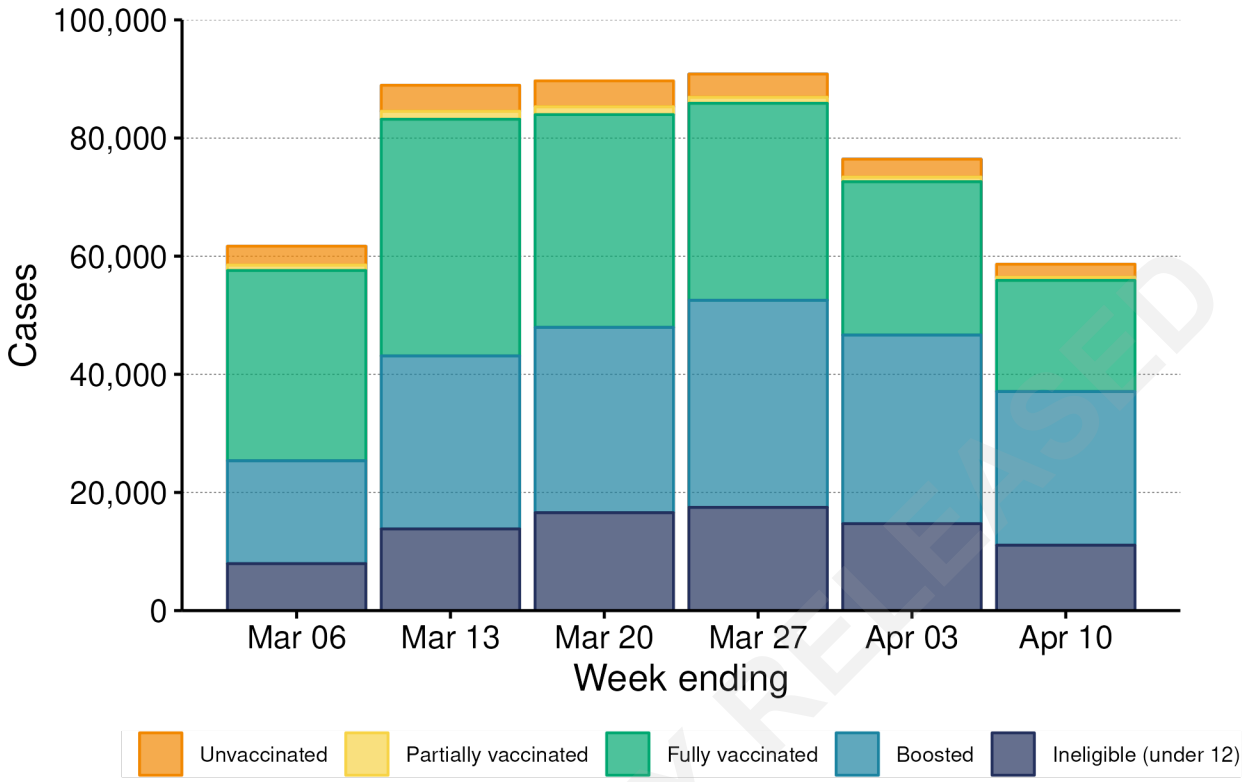


Unknown

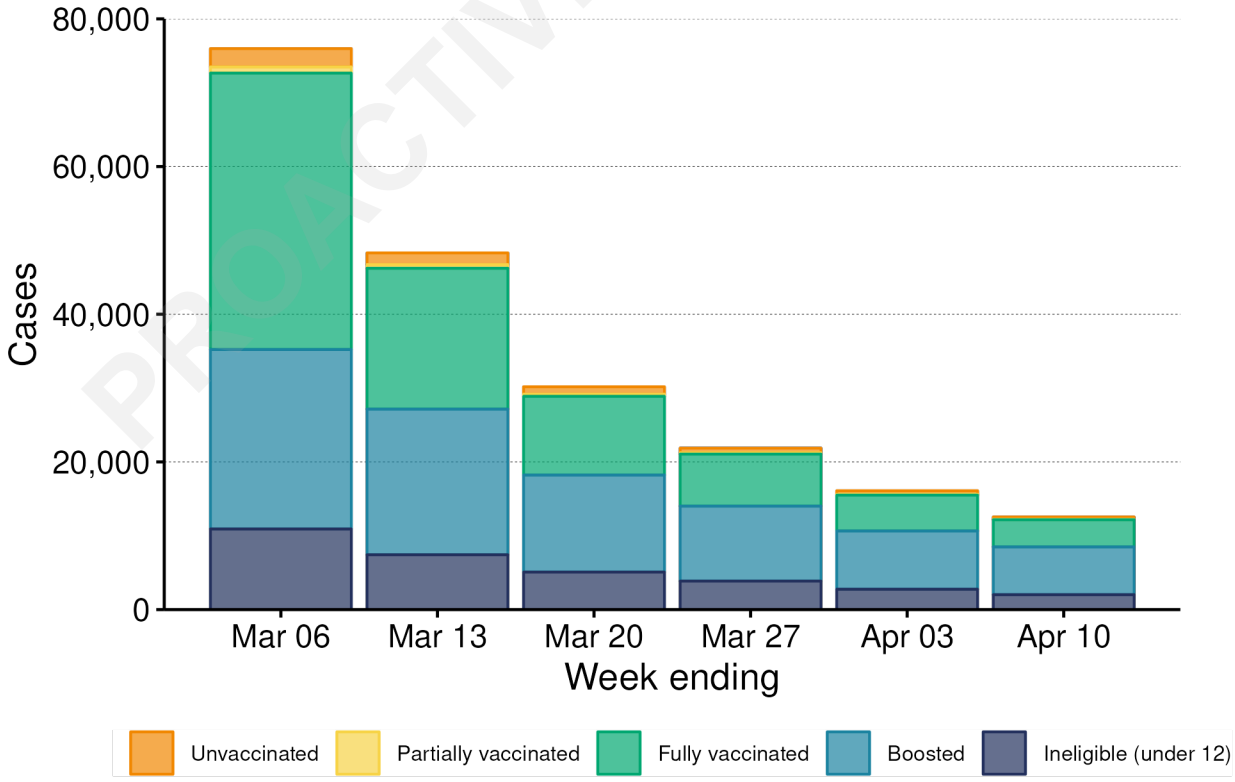


Vaccination Graphs

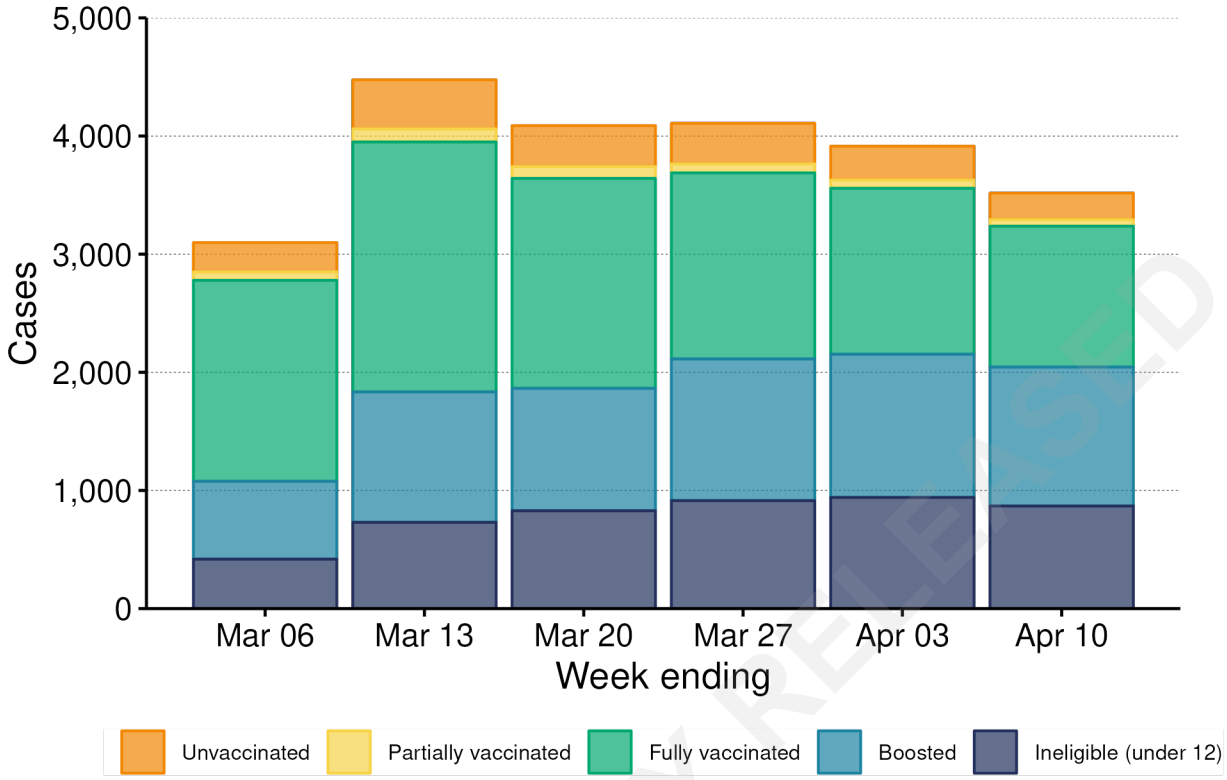
NZ Excluding Auckland Region



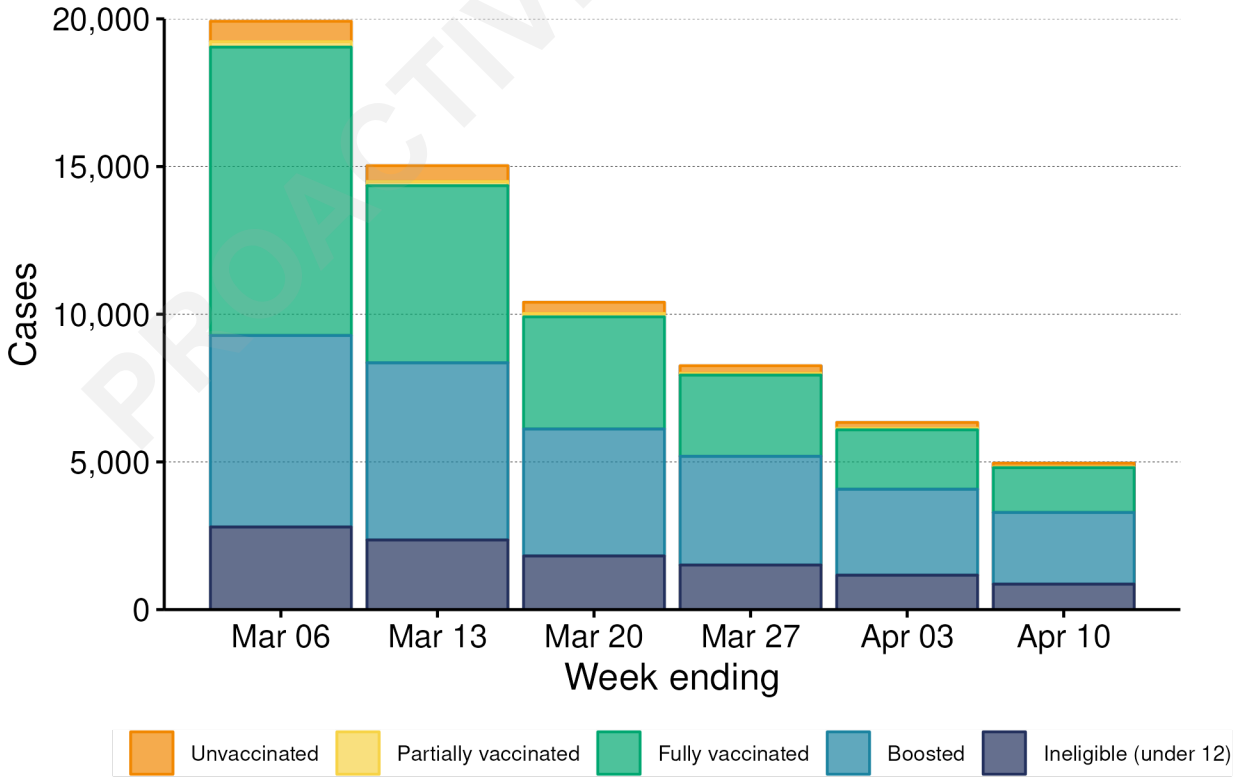
Auckland Region



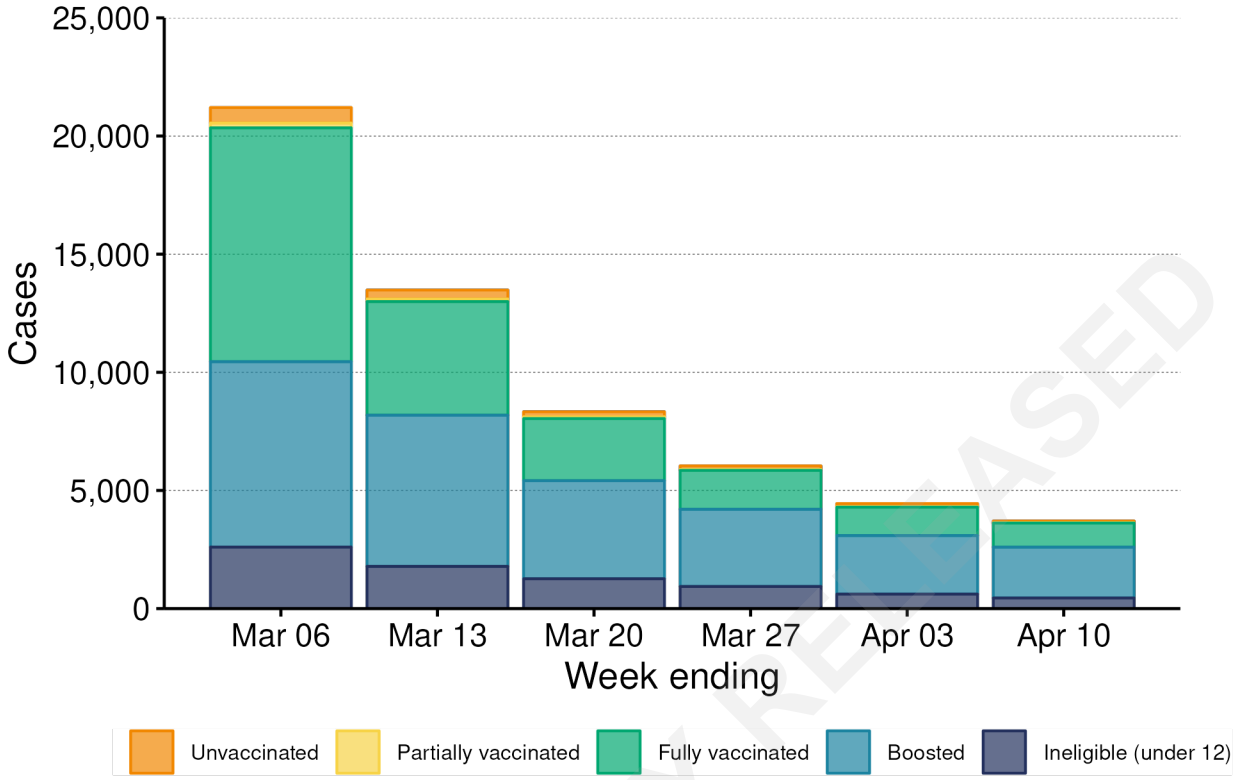
Northland DHB



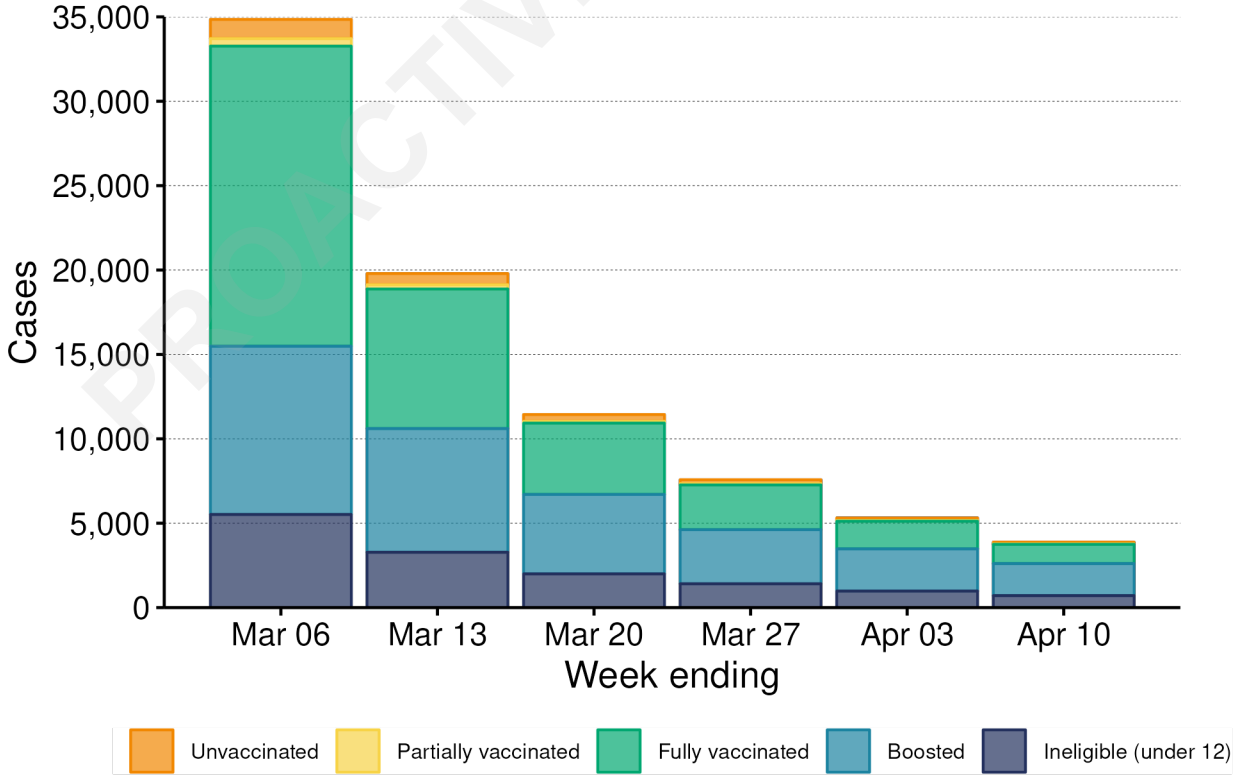
Waitemata DHB



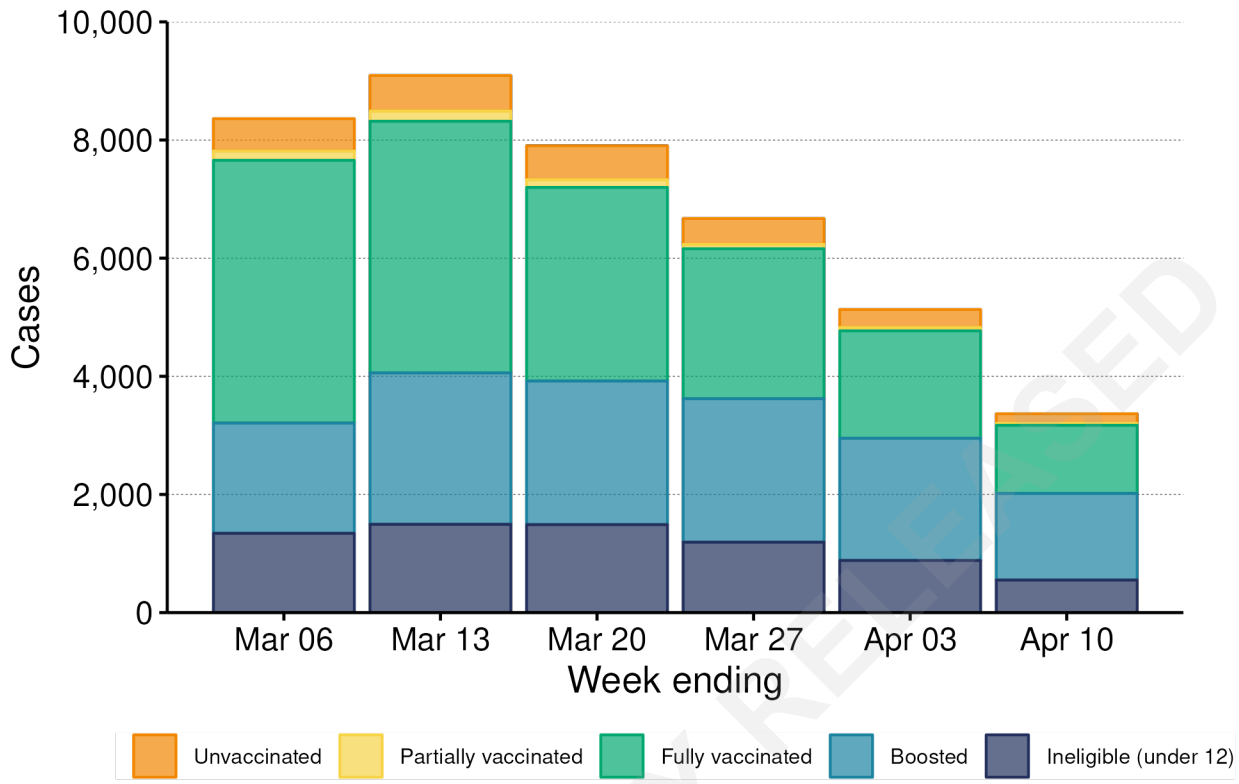
Auckland DHB



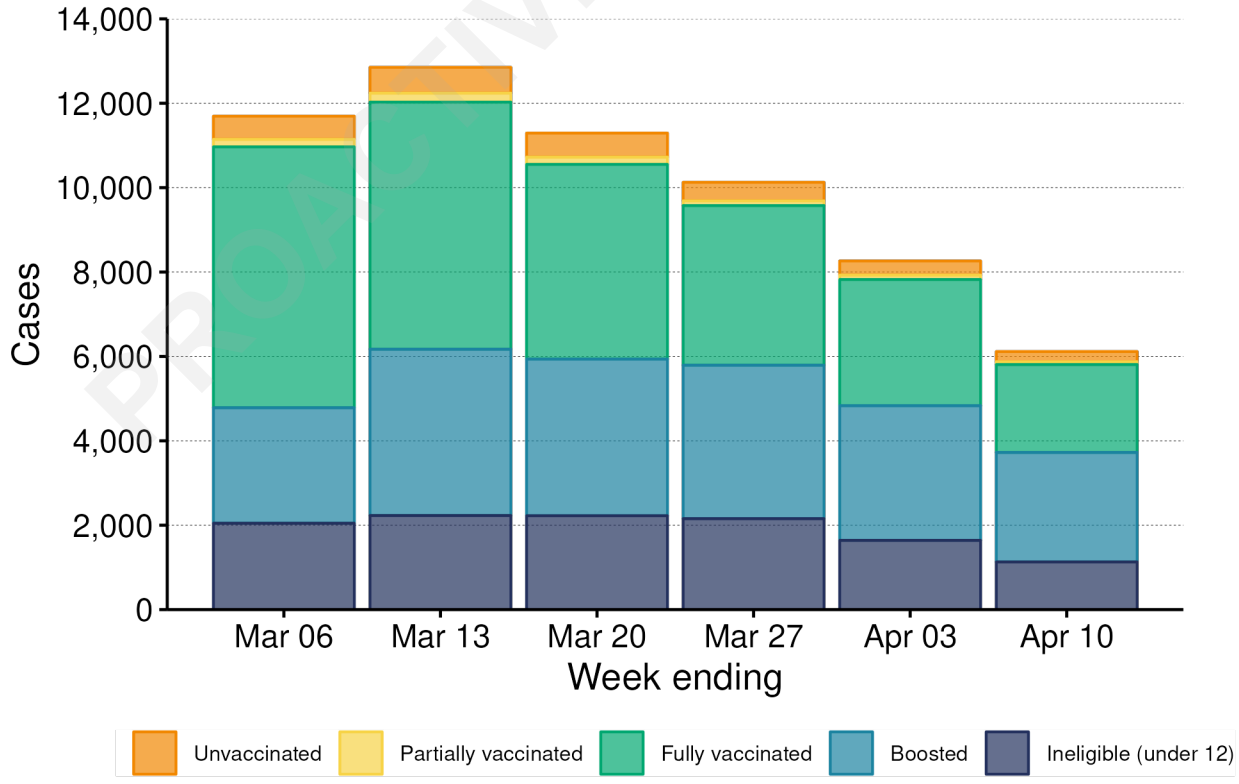
Counties Manukau DHB



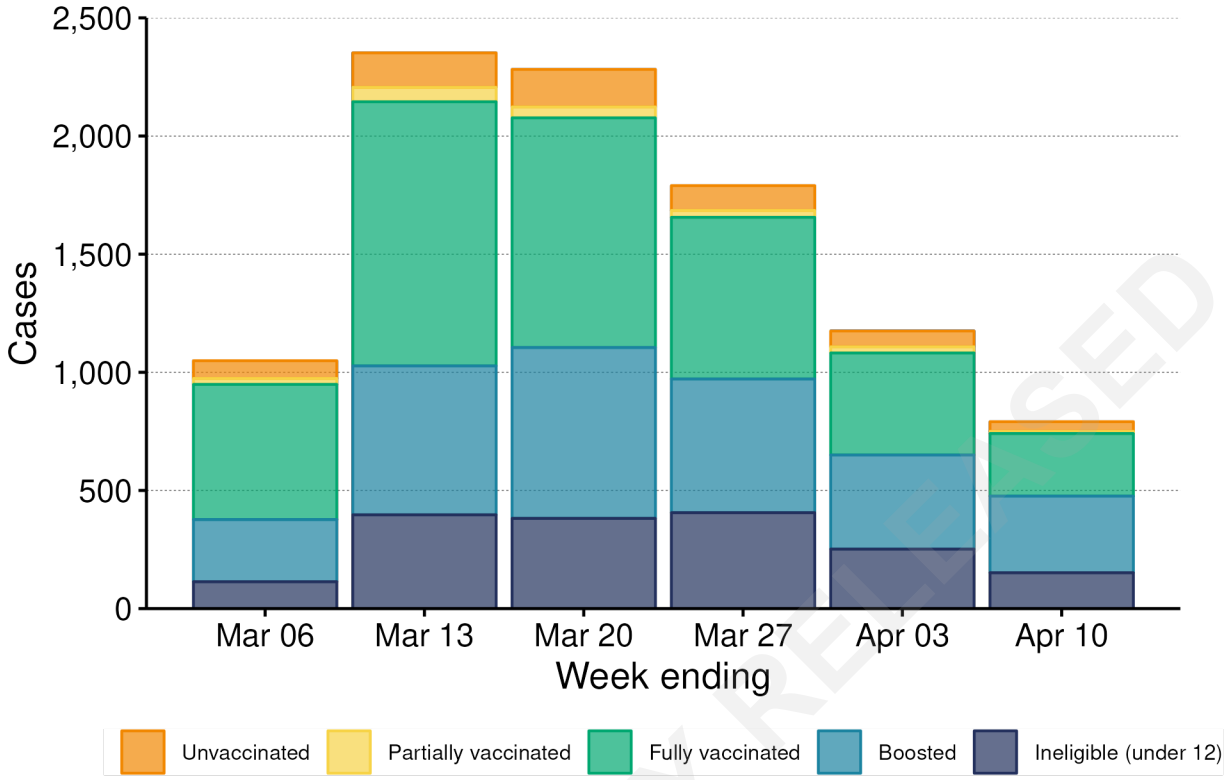
Bay of Plenty DHB



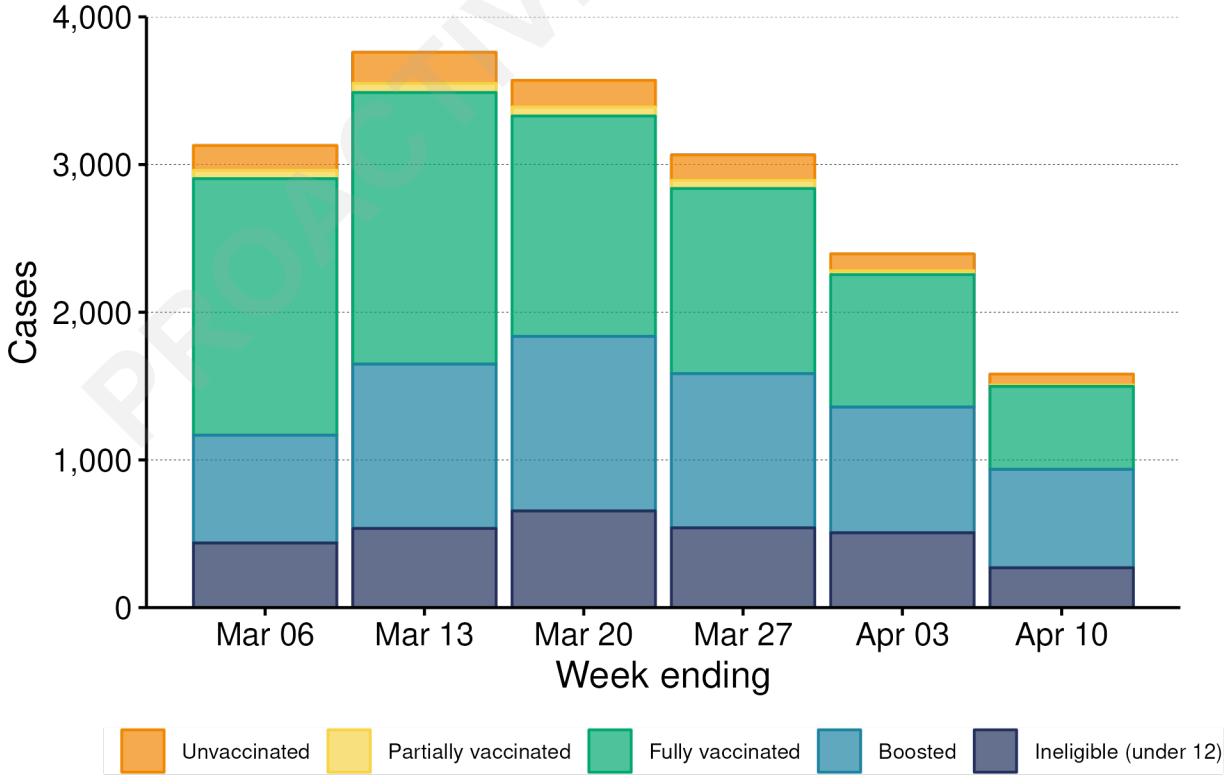
Waikato DHB



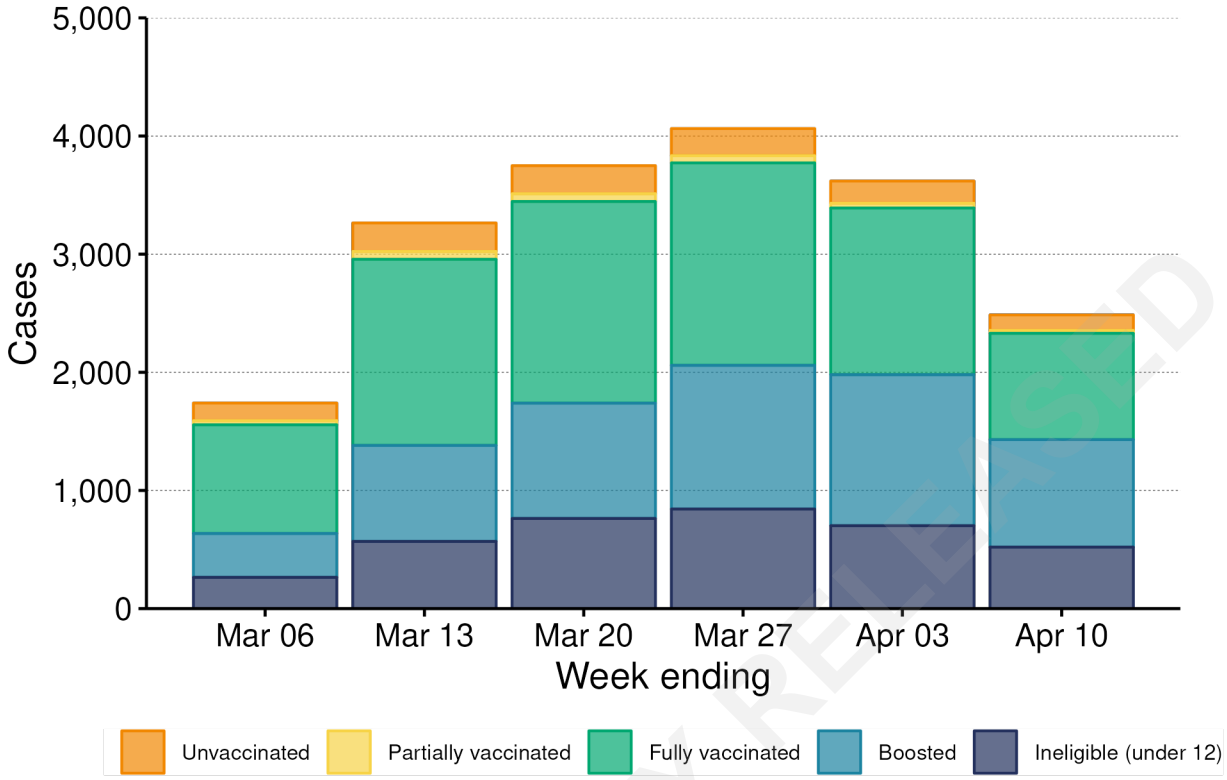
Tarawhiti DHB



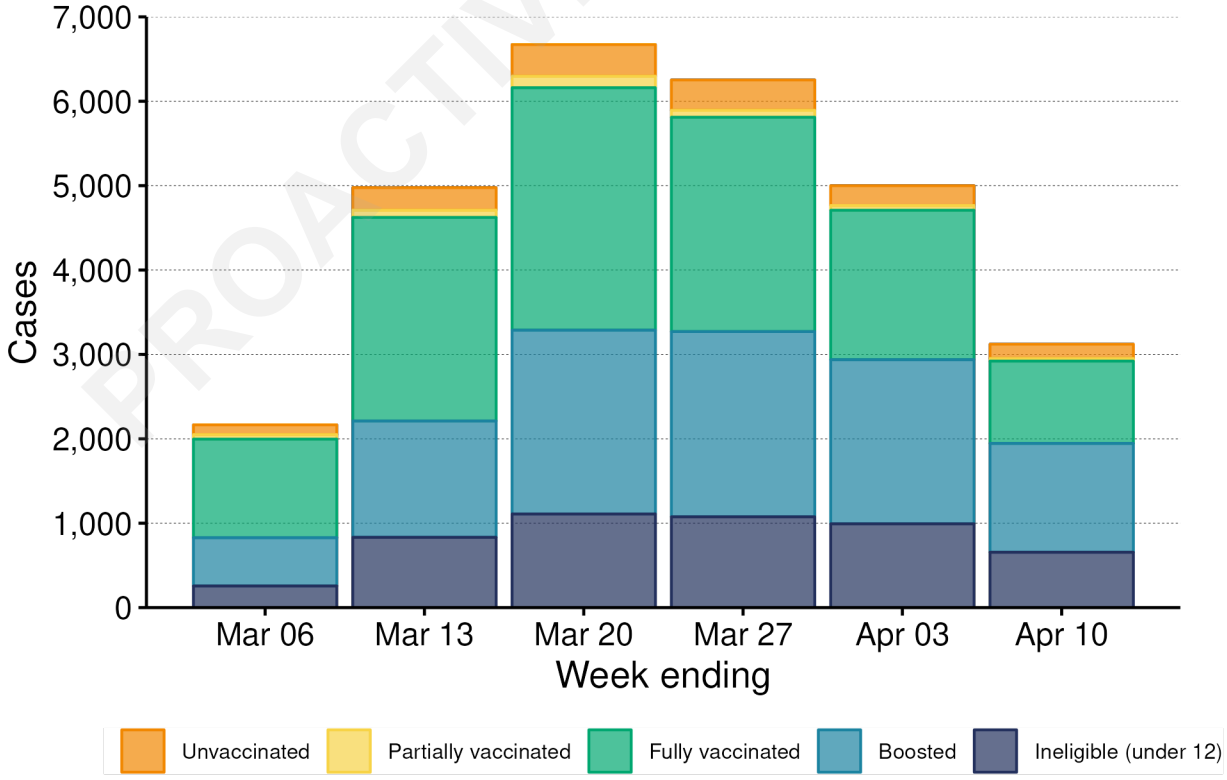
Lakes DHB



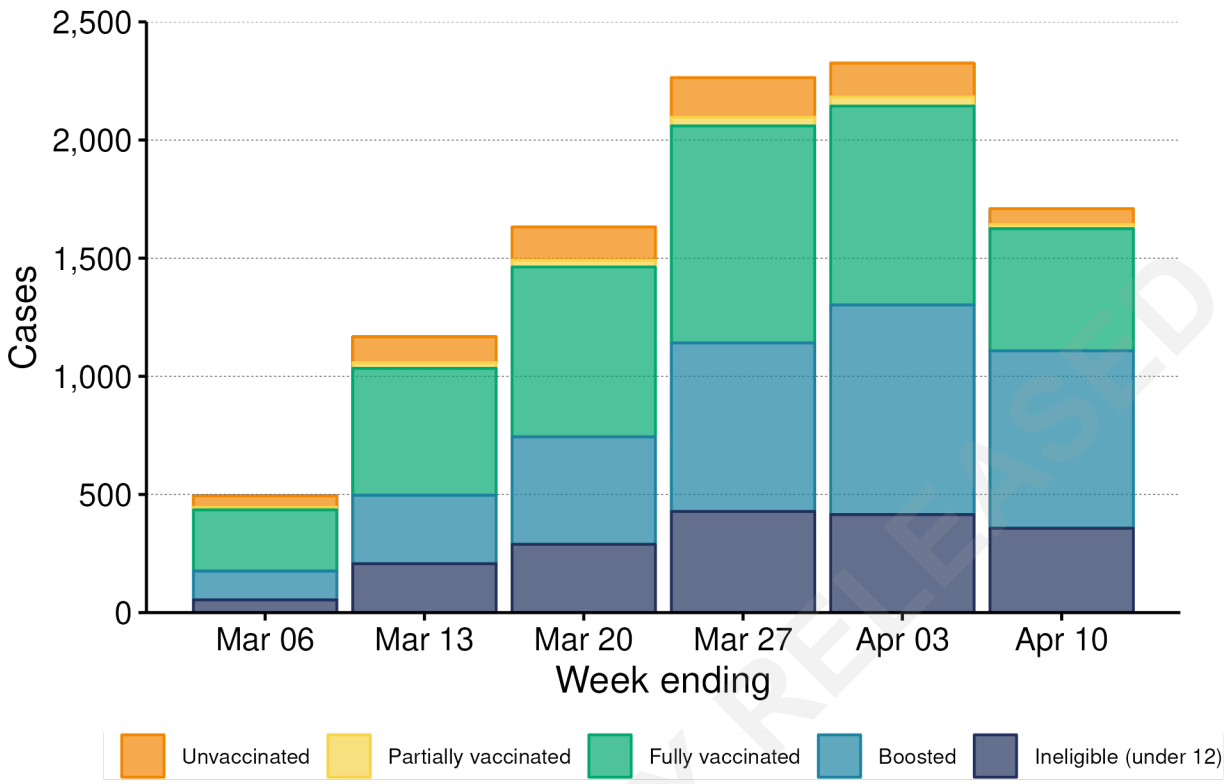
Taranaki DHB



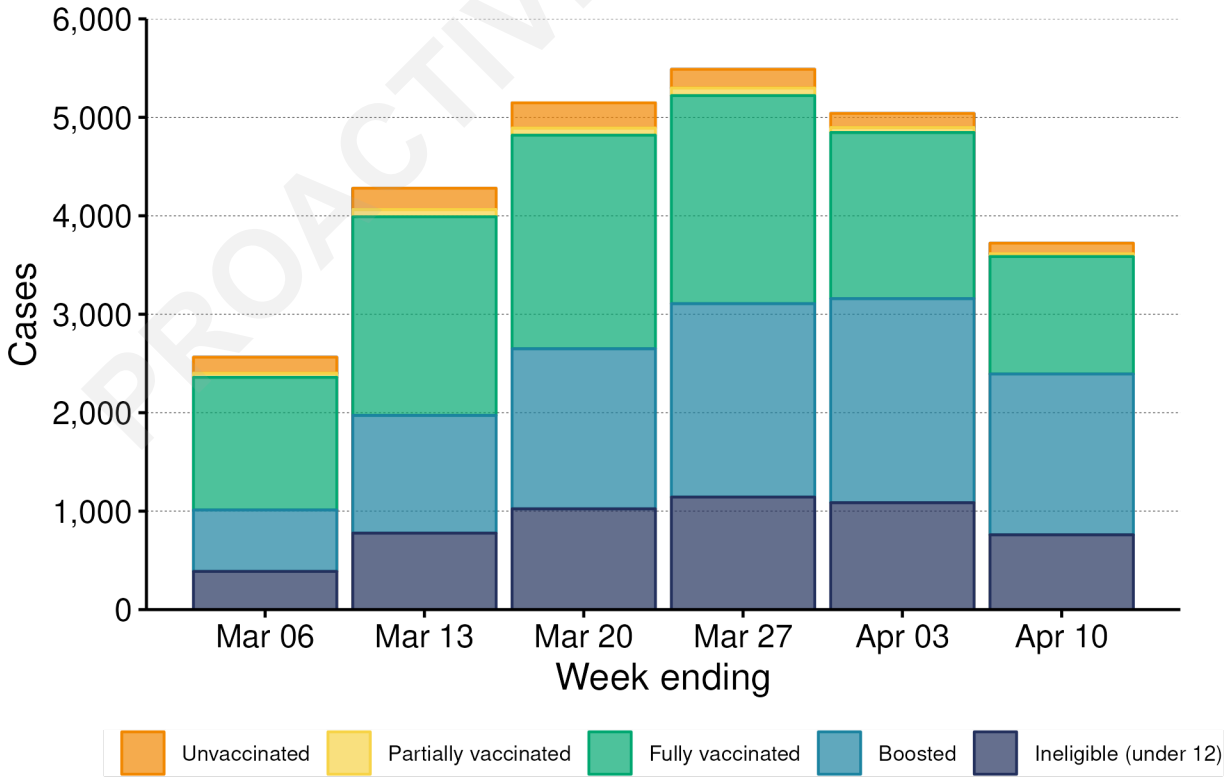
Hawke's Bay DHB



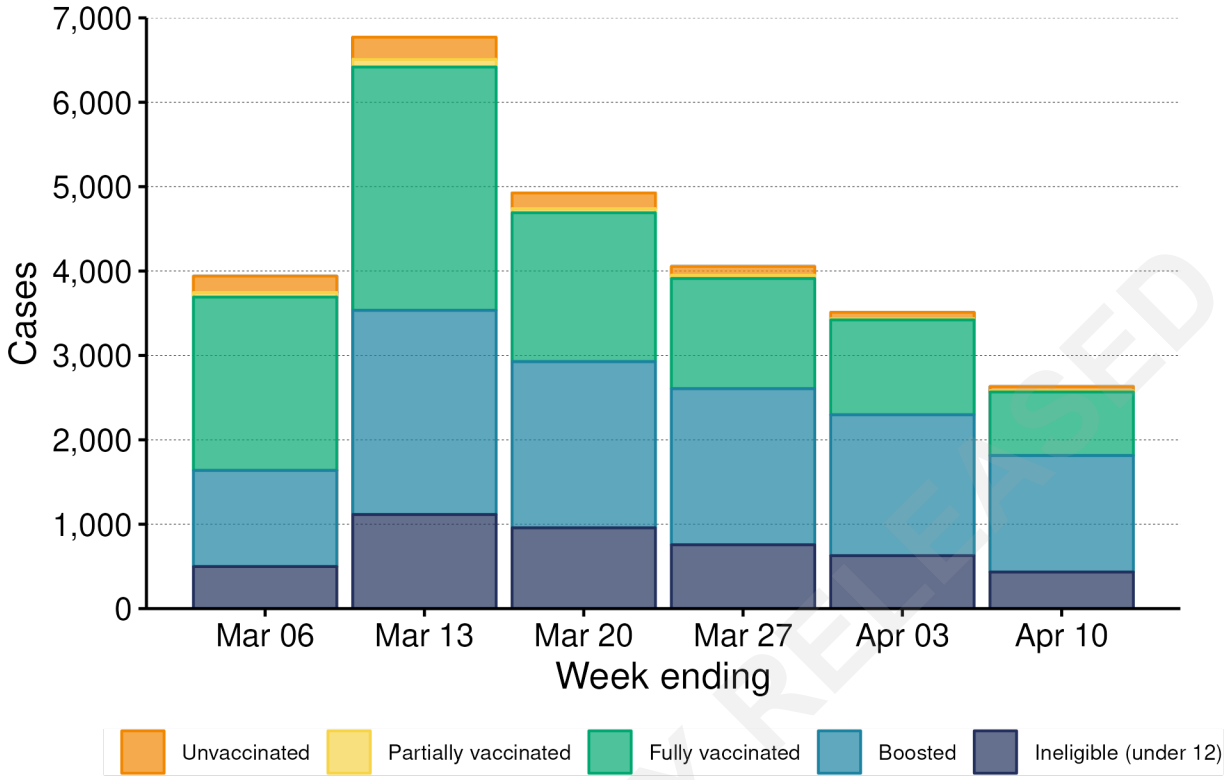
Whanganui DHB



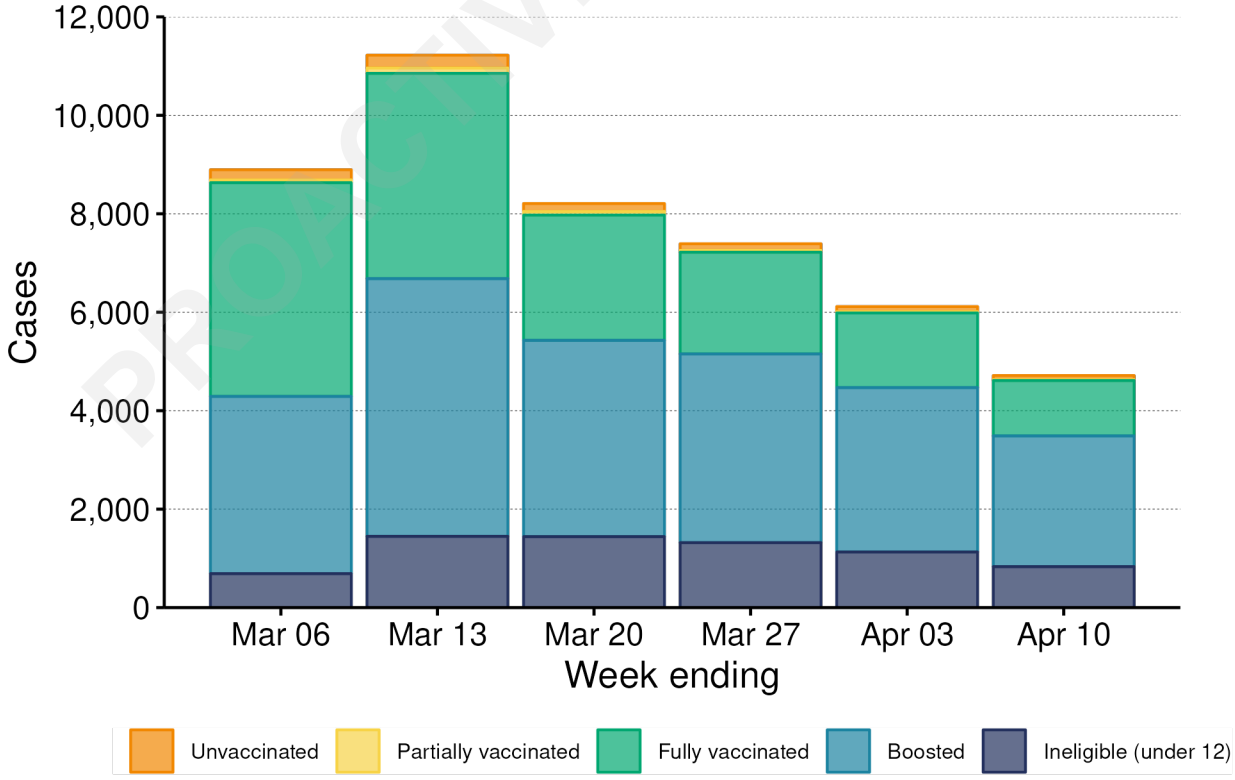
MidCentral DHB



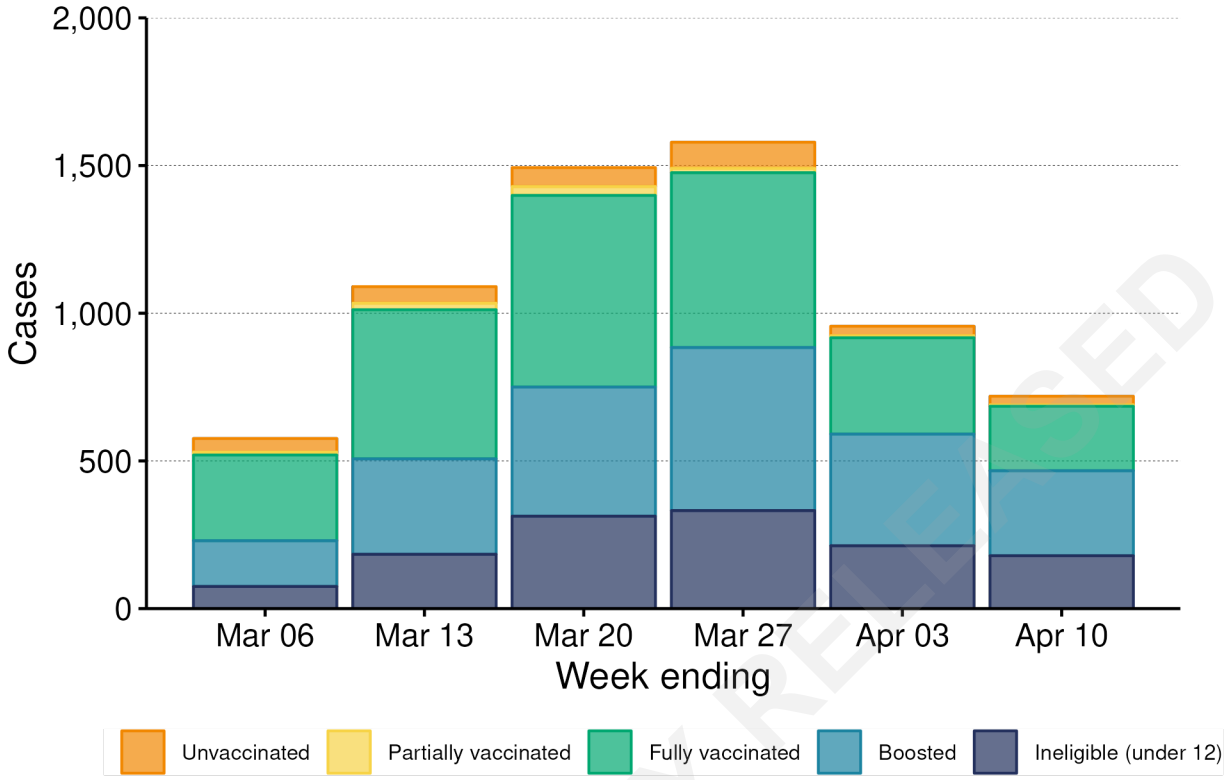
Hutt Valley DHB



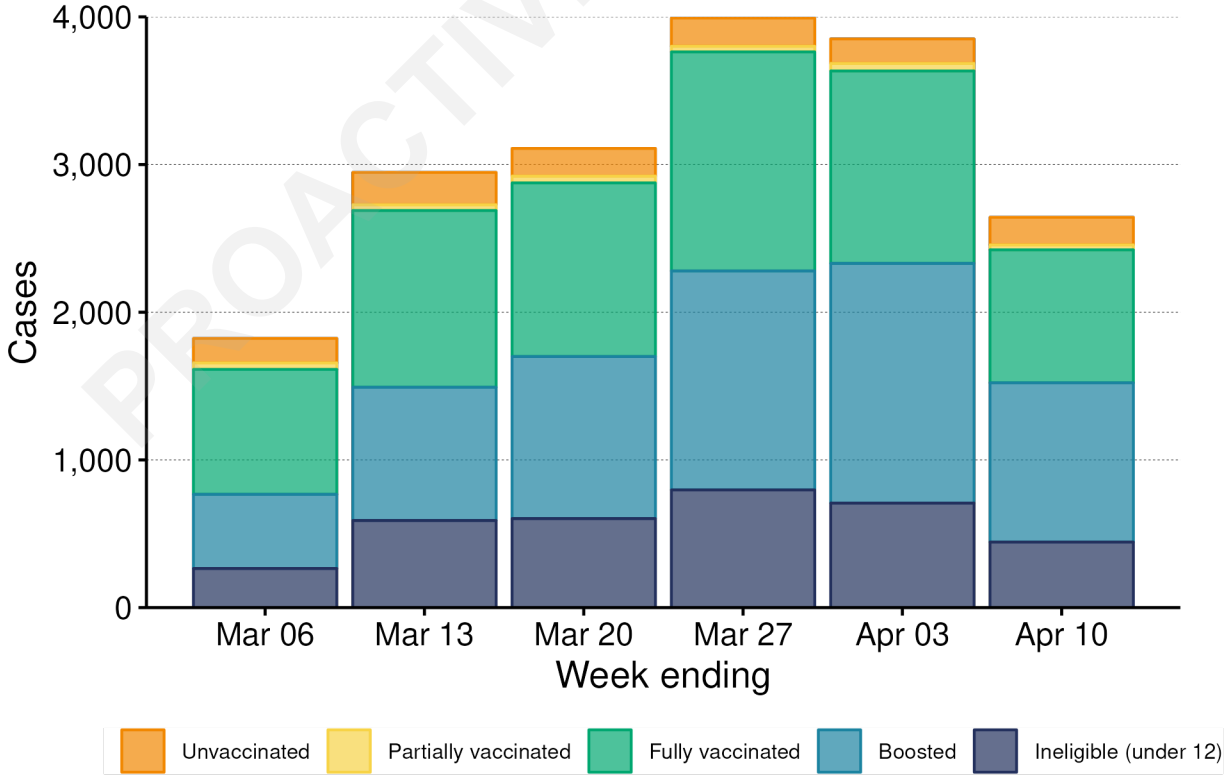
Capital and Coast DHB



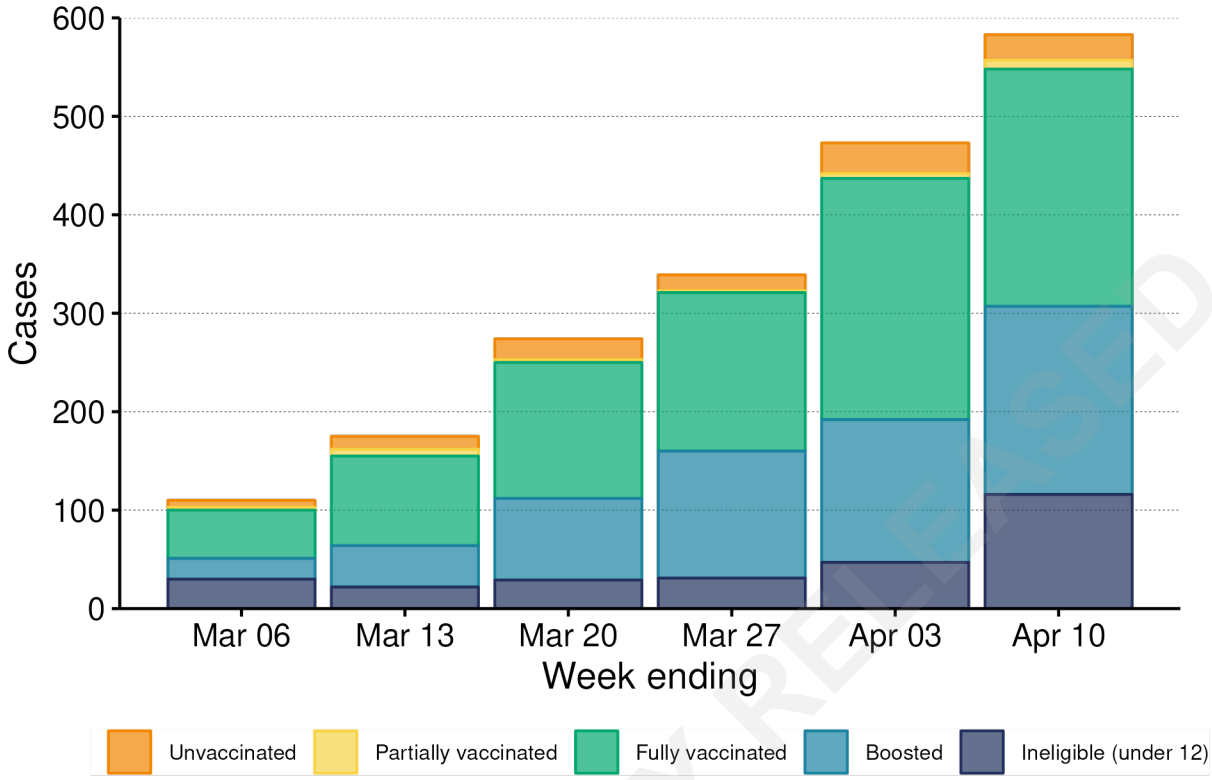
Wairarapa DHB



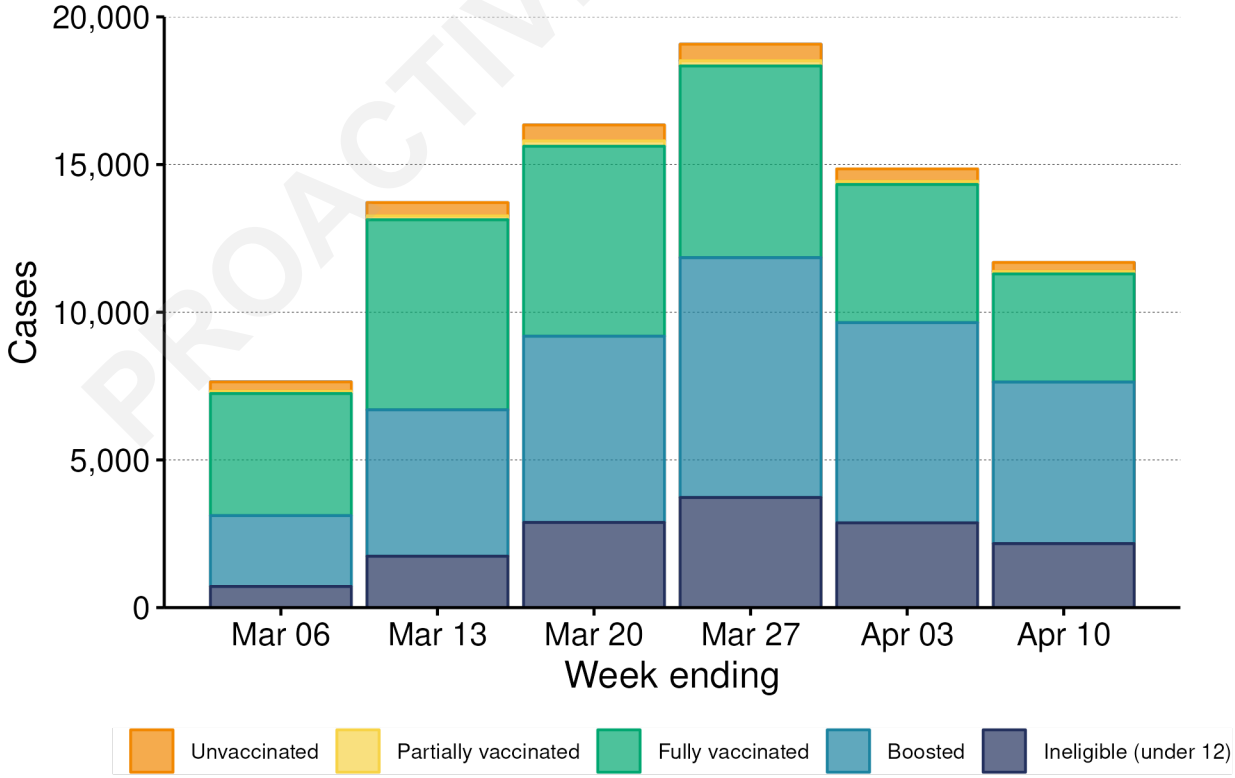
Nelson Marlborough DHB



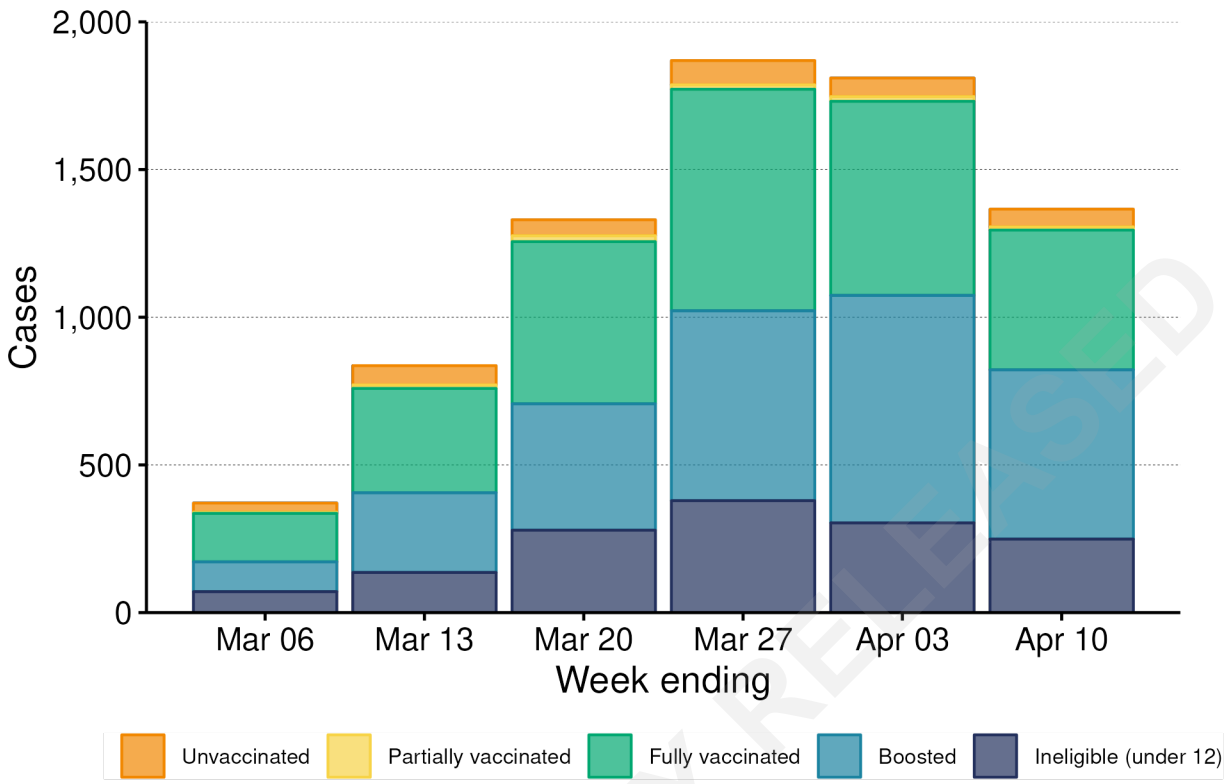
West Coast DHB



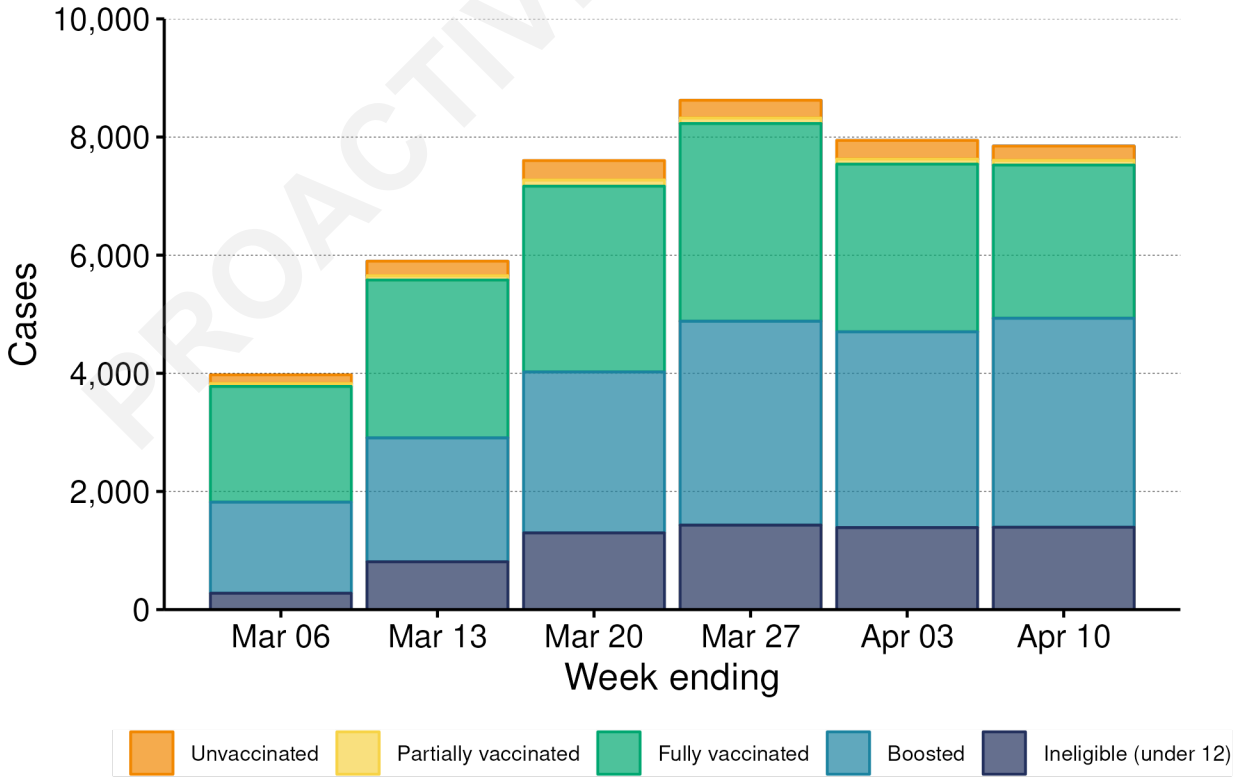
Canterbury DHB



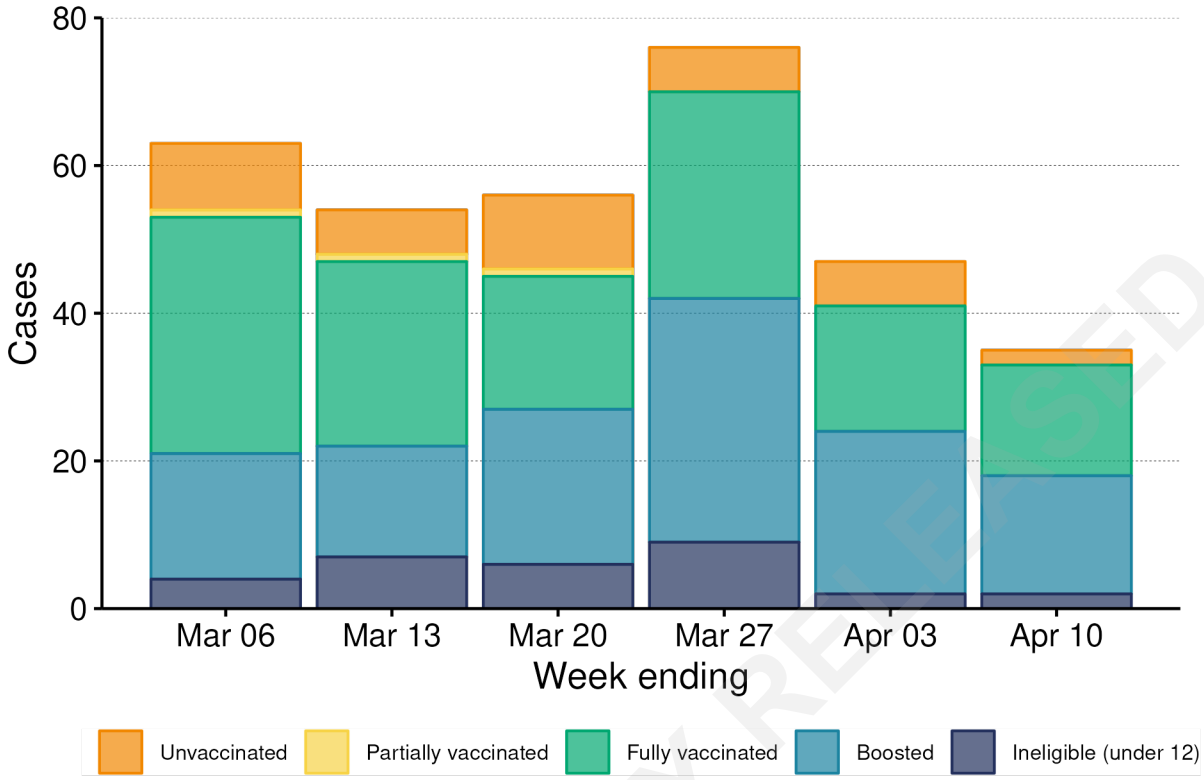
South Canterbury DHB



Southern DHB



Unknown



PCR Testing Rates