COVID-19

Trends and Insights Report

Updated 31 March 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 22.5 per 1000** population for the week ending 27 March down slightly from 24.0 per 1000 in the previous week
- EpiNow modelling **predicts nationally case numbers may continue to decrease in the coming week**, but the estimates have **little certainty**.
- **Northern region diagnosis rates and inpatient testing** provide evidence **the infection levels were decreasing**, **diagnoses** are now **tracking near the 'high' scenario predicted by modelling**, but **not declining as quickly as expected**.
- However, **wastewater suggests that viral concentrations in the Northern Region, excluding Auckland Metro, have varied little in the past few weeks;** while wastewater trends may lag infection rates by a few days, these data suggest the possibility that the decrease in cases may also be due to a decrease in testing and/or reporting.
- Wastewater and case diagnoses provide **consistent evidence that in Te Manawa Taki and Central regions infection has plateaued** and might have slightly decreased in the past week; whereas for **Southern Region the evidence is less clear but indicates that increases may have slowed.**
- **Te Manawa Taki, Central and Southern Region weekly rates (26.3, 28.6, and 27.8 per 1000) were almost double that of Northern Region (13.6 per 1000**) in the week to 27 March.
- **DHBs with case rates above 30 per 1000** are Tairawhiti, Taranaki, Hawkes Bay, Whanganui, Wairarapa, Mid Central, Nelson Marlborough, Canterbury, and South Canterbury.
- **Nationally, Māori have the highest case rates at 31.0 per 1000**, followed by European or Other (21.7 per 1000), Pacific People (20.8 per 1000) and Asian, with the lowest rate (17.8 per 1000). These rates are strongly influenced by Northern region trends; **outside on the Northern region European or Other have the lowest rates.**
- Rates have been **decreasing steadily in the age range 13-25 and 26-45 years** to 30.7 and 28.5 per 1000, respectively; **all other age groups have remained stable** and for the week ending 27 March ranging from 7.1 to 27.1 per 1000.
- **Hospitalised cases declined from 781 to 696 nationally**; in Auckland Metro DHBs Māori and Pacific are 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.
- Overall, 317 people have died with or after COVID-19 infection. Of these, 278 have died within 28 days of being reported as a case.

Contents

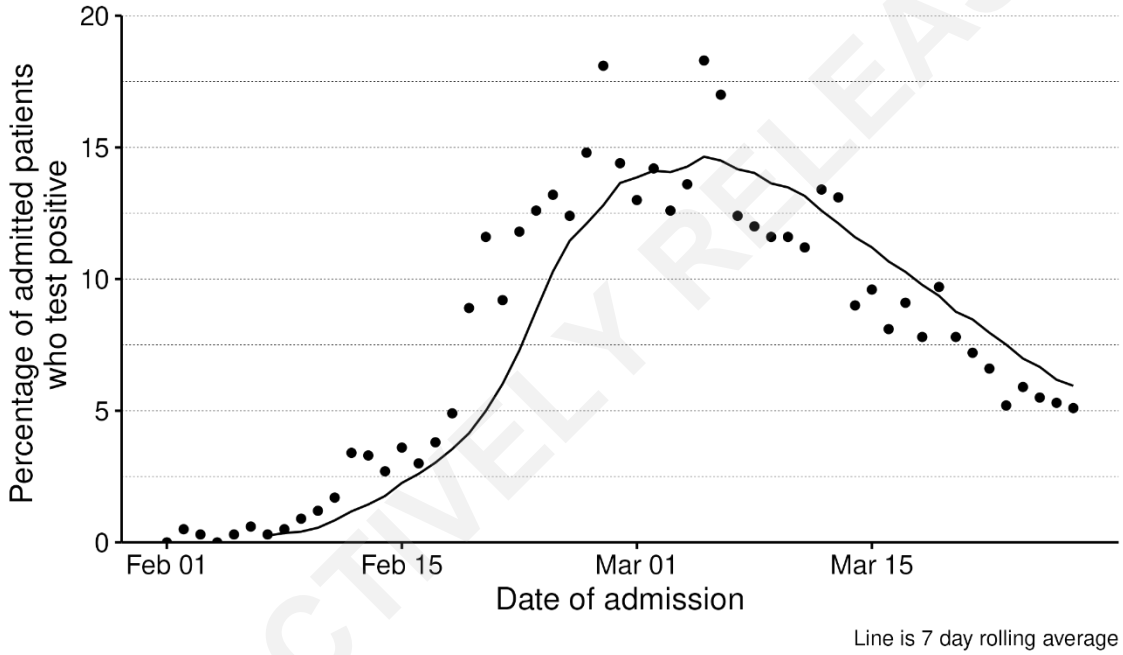
Figures

Infections Trends

Test positivity trends in Northern region inpatients

National estimates for trends in text positivity for routinely tested populations such as Border Workers is unavailable this week. However, the estimate of positivity (as a method for tracking the trend in population infection levels) has been updated for the Northern region based on testing of hospital inpatients (Figure 1). Since **peaking at ~15% in early March**, the Northern region hospital admissions **positivity has continued to decrease**: the rate was 8.9% (643/7,227) in the week ending 20 March and **5.9% (403/6,828) in the week ending 27 March**.

Figure 1: ***Percent of tests positive among Northern region hospital inpatients, 01 February to 27 March***

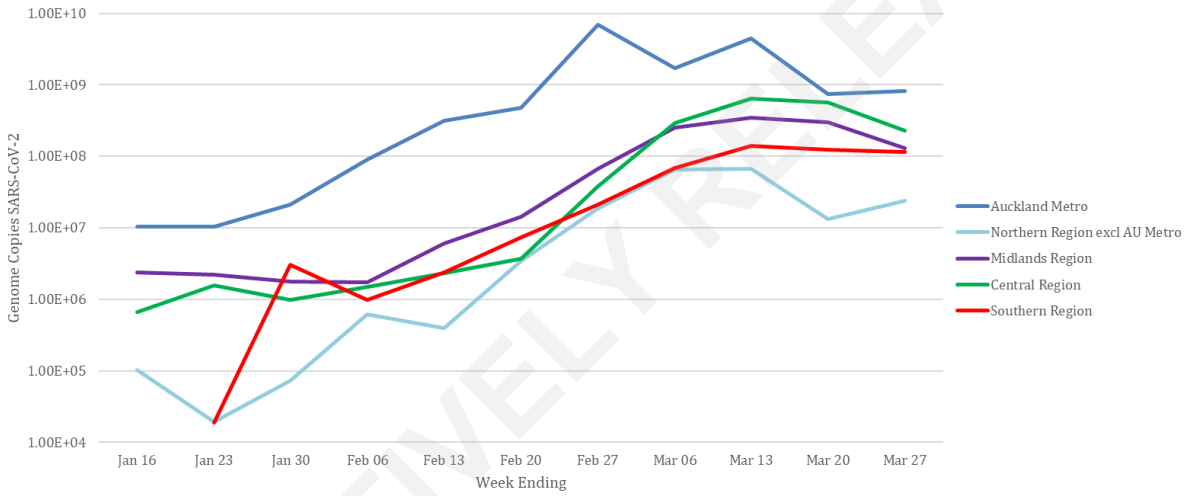


Wastewater quantification

Figure 2 provides an overview of wastewater results by region (noting that Auckland metro and the rest of Northern region are reported separately for this figure). 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 the Northern region (both Auckland metro and the rest of Northern region) have been decreasing but appear to have plateaued in the past week;** reducing levels were first detected in Auckland metro area in late February. **All other regions appear to have plateaued in early March**, with some evidence of a slight decrease in the past week for Midlands and Central regions. However, these trends are **not necessarily consistent within regions**; within region trends are available in ESR's weekly wastewater report in the **Appendix**.

Figure 2: ***Trends in SARS-CoV-2 genome quantification from wastewater by region, January 16 – 27 March 2022***



Trends in diagnosed cases

Overall, **the weekly case rate was 22.5 per 1000** population for the week ending 27 March. This was a slight decrease from the previous week which was 24.0 per 1000.

Figure 3 shows, in a reversal of what was seen earlier in the month, that **the Te Manawa Taki (2.9 per 1000), Central (3.4 per 1000) and Southern (3.3 per 1000) regions had case rates almost 2 times higher than Northern region (1.4 per 1000)** in the week ending 27 March. 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 now declining in the Northern region with relatively stable trends in all other regions.**

For Region and DHB specific graphs, please refer to the accompanying **Appendix** document.

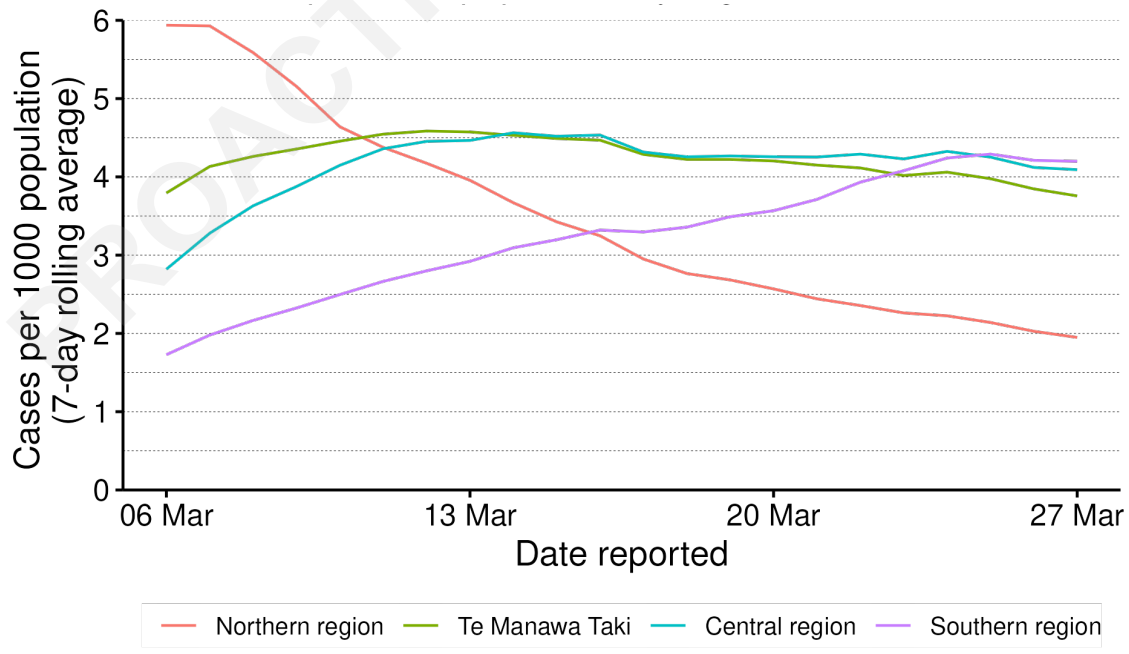
In the Northern region, weekly cases rates were highest for Northland DHB (21.3 per 1000) compared with the Auckland metro DHBs (12.8 per 1000).

In Te Manawa Taki, weekly case rates were highest for Tairawhiti and Taranaki (34.7 and 33 per 1000, respectively), with Waikato, Bay of Plenty and Lakes DHBs all having similar case rates of ~25.0 per 1000.

The highest weekly case rates in the Central region were in Hawkes Bay, Whanganui, Wairarapa and Mid Central (ranging from 36 to 30 per 1000, respectively) and lowest in Hutt Valley (26.1 per 1000) and Capital and Coast (23.4 per 1000).

In the Southern region case rates were between 25 and 34 per 1000 for all DHBs except the West Coast (10.5 per 1000); there have been increasing rates for all southern DHBs expect West Coast.

Figure 3: ***National and regional community cases and case rates using 7-day rolling average***

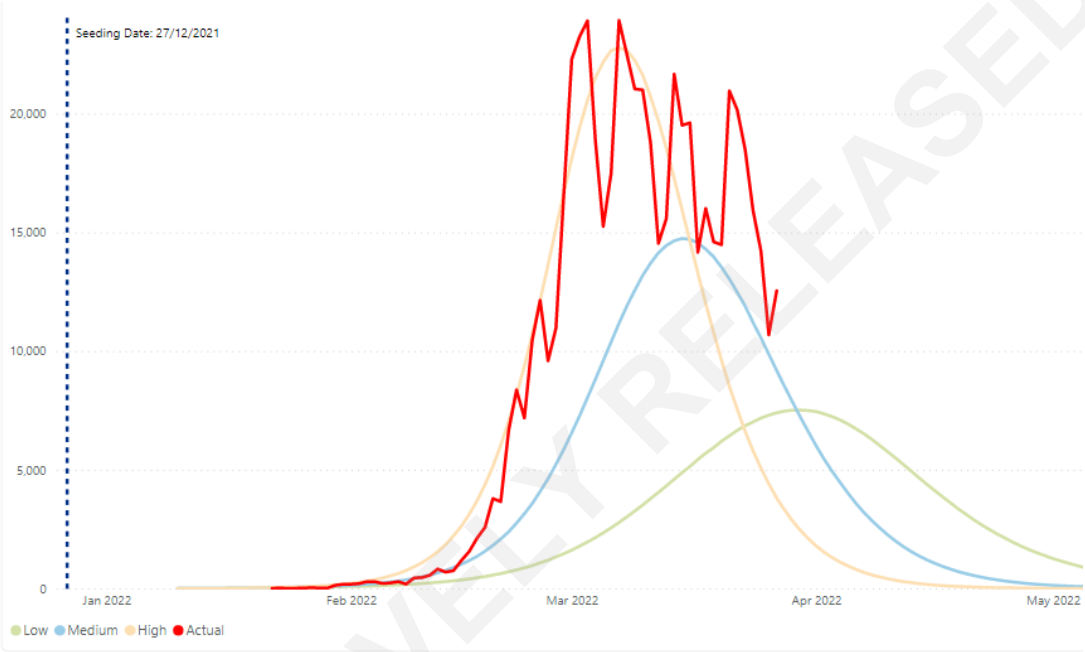


Modelling of cases comparison to case data

The number of diagnosed cases is now tracking close to the 'High' modelled scenario in the Auckland Region (Auckland metro DHBs and Northland) (Figure 5) after previously being higher than this scenario. In the Te Manawa Taki and Central Regions, reported cases reached the 'high' scenario peak levels in early March (Figure 5). Cases in the Southern region have moved from the 'medium' to the 'high' model scenario.

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

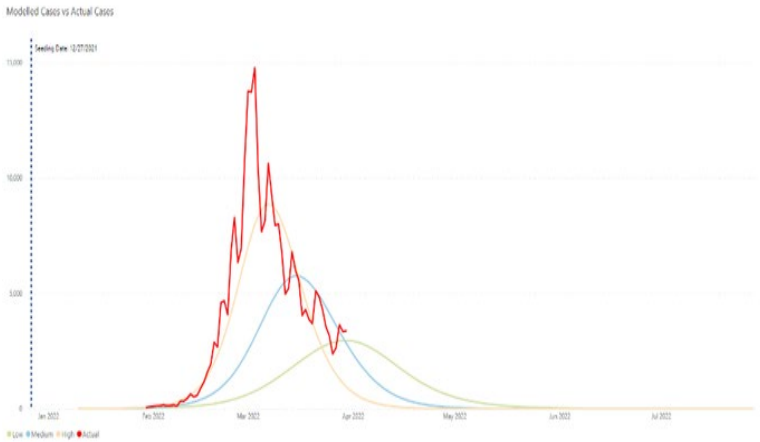
Figure 4: *COVID Modelling Aotearoa scenarios compared with reported cases - New Zealand*



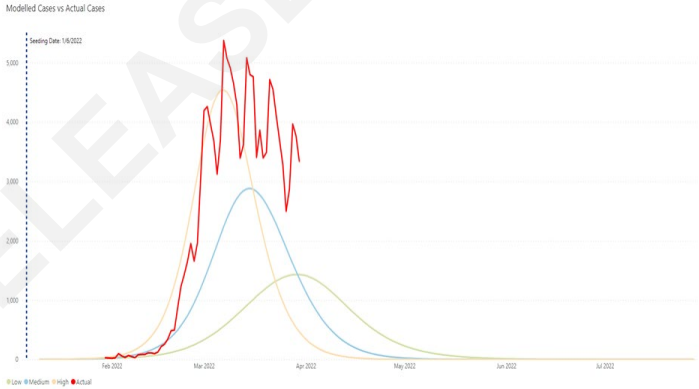
Sources: TAS, based on COVID-19 Modelling Aotearoa Branching Process Model 27 February 2022, and Ministry of Health reported case data.

Figure 5: ***COVID Modelling Aotearoa scenarios compared with reported cases - by region***

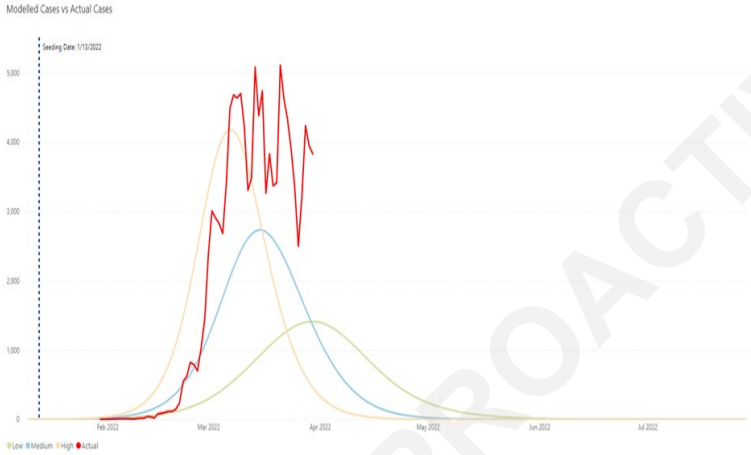
Northern Region



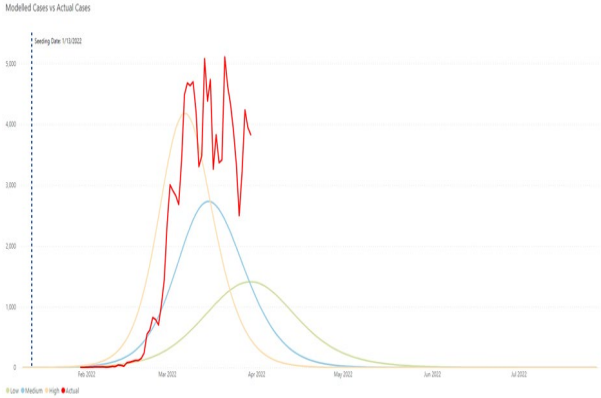
Te Manawa Taki (Midland)



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

Effective reproduction rate, and forecasts of cases and infections

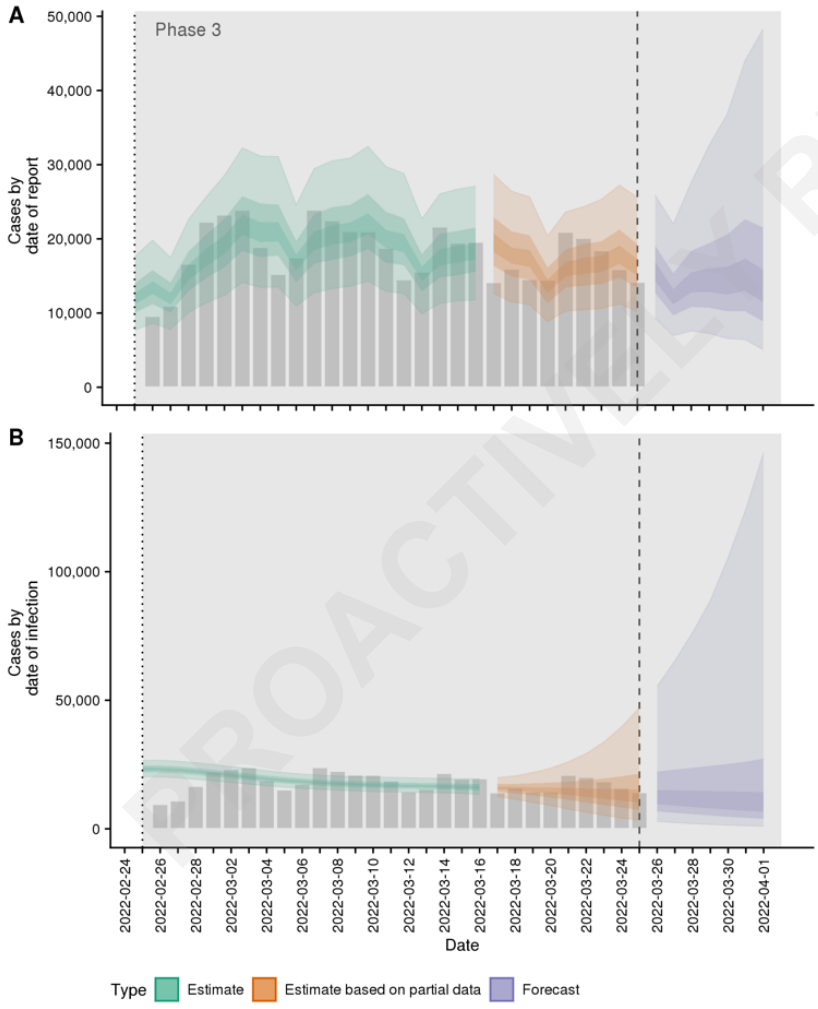
These estimates used the *EpiNow2* package on 28 March using data to 25 March.[1] Regional estimates for R_{eff} are shown in the accompanying **appendix document**. The median estimate of **effective R (R_{eff}) nationally is 0.9** (90% Credible Interval [CI]: 0.4-1.7) for cases to 25 March, after adjusting for data lags. The relatively wide confidence intervals indicate there is high uncertainty for this estimate.

For Taranaki, Greater Wellington, Mid Central, Southern and Nelson Marlborough the model is **estimating an R number of 1.0 or higher.**

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 6.

The model's median estimate is that national reported positive tests could be 13,380 cases per day by 01 April (50% CI: 8,883 –21,505). 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 6: *Projected national cases by (A) date of report and (B) date of infection*



[1] 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 7 shows national and regional case rates by ethnicity. Nationally, Māori have the highest weekly case rates at 31 per 1000 population, second are European or Other with 21.7 per 1000, followed by Pacific People with 20.8 per 1000. The Asian ethnicity have the lowest case rates at 17.8 per 1000.

In the Northern Region, the outbreak was concentrated in Pacific Peoples in the first week of March, when they were 3.9 times more likely to be a case than compared with European or Other, Māori were 1.9 times more likely to be a case compared with European or Other. As the outbreak spread outside of the Northern Region to Te Manawa Taki and Central regions, case rates in Māori increased, exceeding cases rates in Pacific Peoples on 13 March. Case rates in Pacific people are now similar to European or Other.

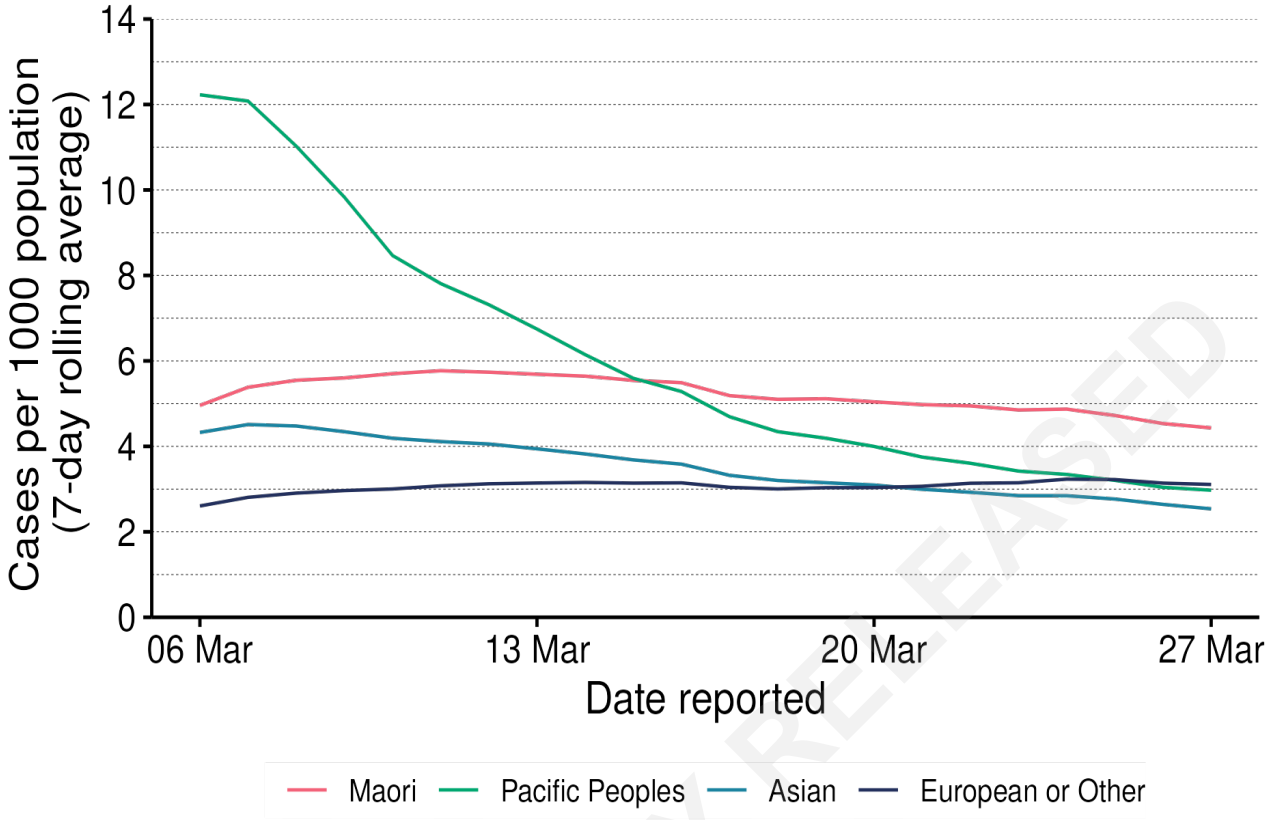
Currently trends by ethnicity differ by region (See Appendix). In the Northern region, case rates were highest amongst all ethnicities in Pacific people in the first week of March (76.4 per 1000) but have declined rapidly to 12.6 per 1000 currently, comparable to that of Asian (11.5 per 1000) and European or Other ethnicity (13.3 per 1000). Māori now have the highest weekly case rate in the Northern region with a slightly higher case rate (19.7 per 1000).

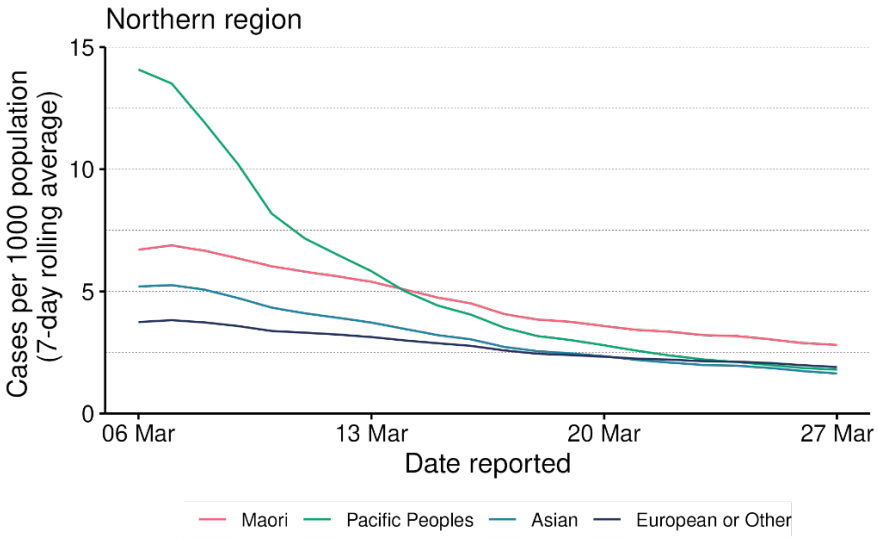
In the Te Manawa Taki region, weekly case rates continue to be highest in those of Pacific ethnicity but are declining from 56.4 per 1000 in the first week of March to 33.1 per 1000 in the past week. The next highest case rate in this region is in Māori which have had a minor decrease from 32.6 per 1000. Case rates for those of Asian and European or Other ethnicities, are comparably similar (28.8 per 1000 and 23.4 per 1000 respectively).

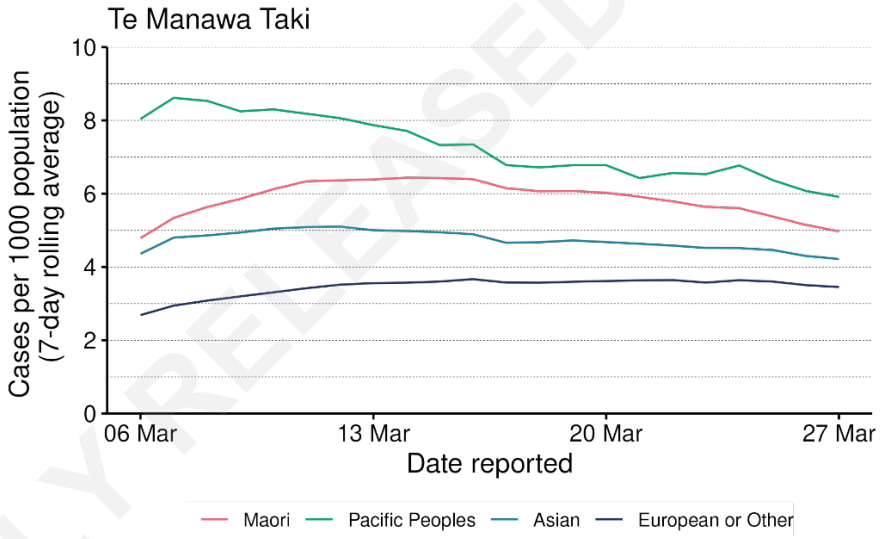
Central region follows a similar trend to the Northern region but appear to be about a week behind. Weekly case rates of Pacific Peoples peaked in the second week of March at 72.1 per 1000 and are sharply declining and now at 38.8 per 1000. Weekly cases in Māori began to rise in the first week of March and have remained stable over the fortnight at around 40-44 per 1000. Weekly case rates in the past week for Asian (25.5 per 1000) and European or Other (24.2 per 1000) are comparable.

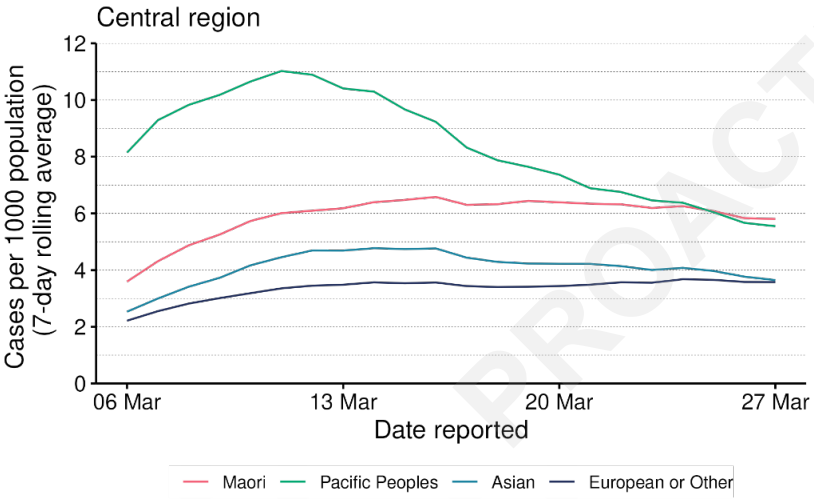
The Southern region currently has the highest weekly case rate for those of Pacific ethnicity at 51.8 per 1000. This has been relatively steady for the past fortnight, fluctuating between 60.6-50.8 per 1000. Weekly cases in those of Māori, Asian and European or Other ethnicities have been steadily increasing since the beginning of March. Māori now have the second highest case rate in the region at 39.6 per 1000, followed by those of Asian (32.8 per 1000) and European or Other (17 per 1000) ethnicity.

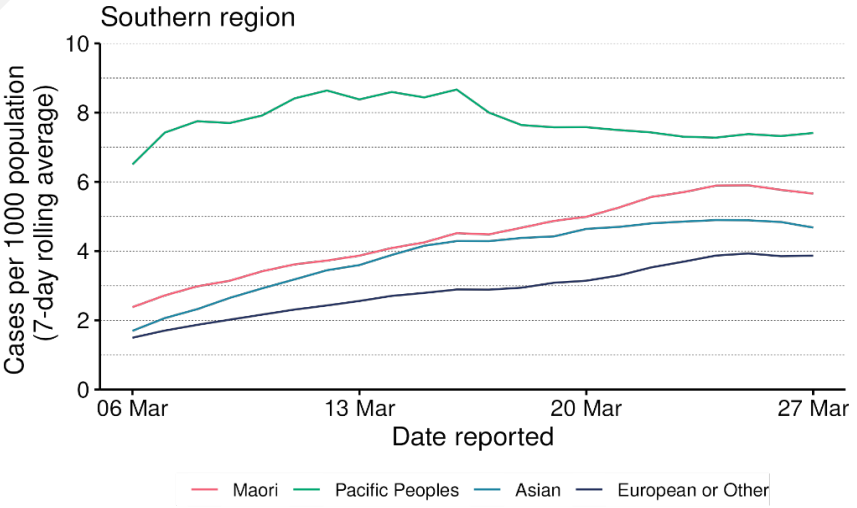
Figure 7: ***Community cases and case rates by ethnicity nationally and region by 7-day rolling average***











Age trends over time and by region

Figure 8 shows community cases by age nationally and by region. Nationally, 13-25 years olds continue to have the highest weekly case rates at 30.7 per 1000 population as at 27 March. Comparison of weekly case rates from the first week of March show the 13-25 age group (46.2 per 1000) were 8 times more likely to be a case compared with 66+ age group (9.7 per 1000). The 66+ age group continues to have the lowest weekly case rates at 10.4 per 1000 in the week ending 27 March.

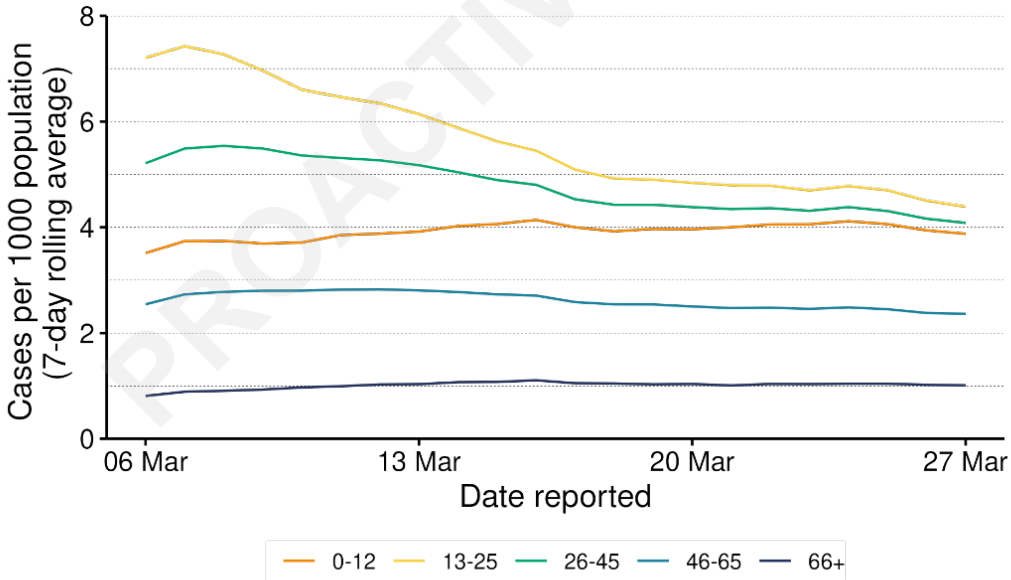
The Northern region is experiencing a drop in all age groups after peaking in all age groups around 06 March. Weekly case rates peaked at 32.7 per 1000 for those aged 0-12, 62.6 per 1000 for those aged 13-25, 47.5 per 1000 for those aged 26-45, 26.7 per 1000 for those aged 46-65 and 10.9 per 1000 for those aged 66+.

In the Te Manawa Taki region, cases peaked amongst age groups at different times in March. In the 13-25 age group, weekly case rates appear to have peaked in the second week of March at 59.5 cases per 1000 before decreasing. Cases in the 26-45 age group peaked similarly in this week at 51.9 cases per 1000 but are not decreasing as rapidly. Cases in the 66+ age group remain close to their peak in the past week at 9.3 cases per 1000.

In the Central region, weekly case rates peaked in the 13-25 age group during the second week of March reaching 112.0 per 1000 but have now decreased as at 27 March to 83.6 per 1000. Cases in 0-12 age group remain high at 66.5 per 1000 and have yet to show a substantial decrease. Of note, cases in the 66+ age group remain near their peak at 14.8 per 1000.

Case rates in the Southern region appear to have plateaued in the 0-12 and 13-25 age groups with weekly case rates beginning to decrease from their peaks on 25 March of 55.4 and 65.8 per 1000 respectively. However, weekly case rates in the 26-45, 46-65 and 66+ age groups in this region are continuing to increase with weekly case rates of 54.6, 28.2 and 9.9 cases per 1000, respectively.

Figure 8: *Community cases and case rates by age nationally by 7-day rolling average*



Housing Deprivation trends over time and by region

Figure 9 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 are impact the ability of sustain self-isolation for cases and their household members.

Overall cases rates are highest areas of mid-range deprivation at 100.6 per 1000, followed by areas of most deprived at 73.7 per 1000 and 64.5 per 1000 for the least deprived areas.

For the most deprived areas, cases in Māori are 35% and in Pacific Peoples are 17%, and in Asian it is 12%. For European/Other it is 34%. However, please note that 74% of cases in European/Other are from the areas of the least deprived areas compared with only 10% of Māori and 3% of Pacific.

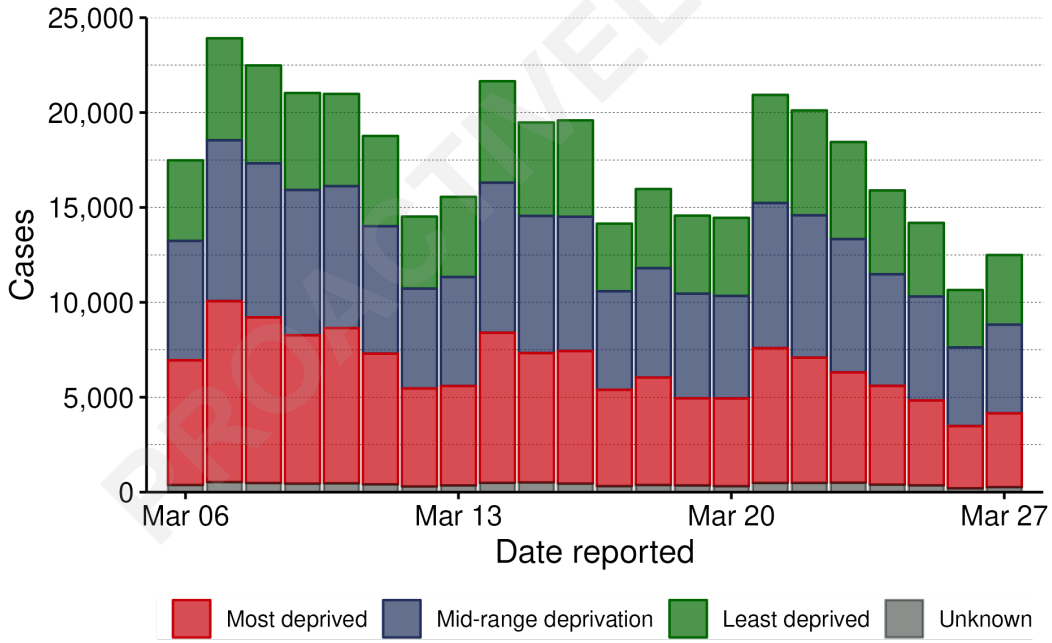
In Northern region, case rates in the most deprived areas are 61.9 per 1000 compared with least deprived areas at 47.6 per 1000.

In Te Manawa Taki, case rates in the most deprived areas are 83.6 per 1000 compared with the least deprived areas at 81.4 per 1000.

In the Central region, case rates in the most deprived areas are 85.7 per 1000 compared with the least deprived areas at 79.9 per 1000.

In the Southern region, case rates in the most deprived areas are 65.9 per 1000 compared with the least deprived areas at 68.4 per 1000.

Figure 9: *Community case rates by deprivation nationally by 7-day rolling average*



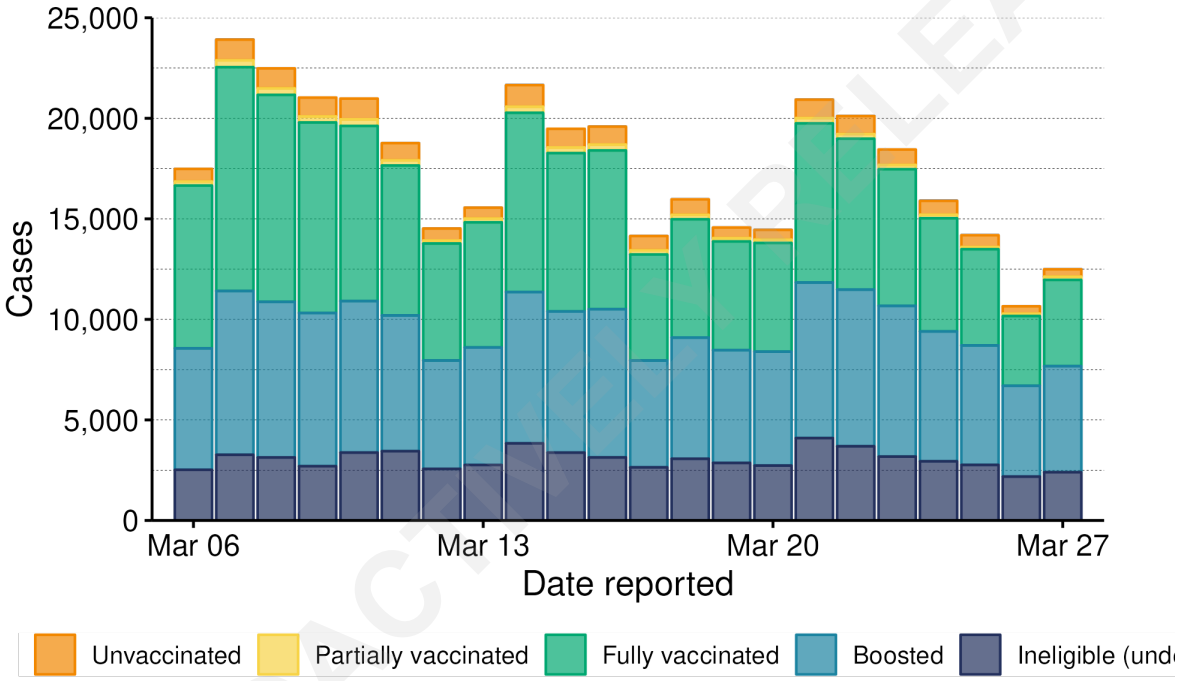
Vaccination of cases time trends

Figure 10 shows community case rates by vaccination status nationally. The vaccination status of community cases reported from 06 March has seen increases in the proportion of reported cases which are boosted (Figure), rising from 34.6% of all cases on 06 March to 42.2% of cases reported on 26 March. A corresponding decrease in the proportion of cases reported as fully vaccinated also occurred from 46.3% of cases to 34.3% of all cases in the same time frame. However, in this timeframe the boosted population has increased from 49.2% of the population to 51.5%.

Weekly case rates for boosted and fully vaccinated populations have dropped in the past week from 20 and 15.4 per 1000, respectively, to 17.6 and 10.2 per 1000.

The proportion of cases amongst those who are ineligible due to be under 12 years old have risen from 14.4% on 06 March to 19.2% on 26 March. The proportion of cases reported as partially vaccinated or unvaccinated, remains consistent at around 1% and 4%, respectively.

Figure 10: *Community case rates by vaccination status nationally by 7-day rolling* average



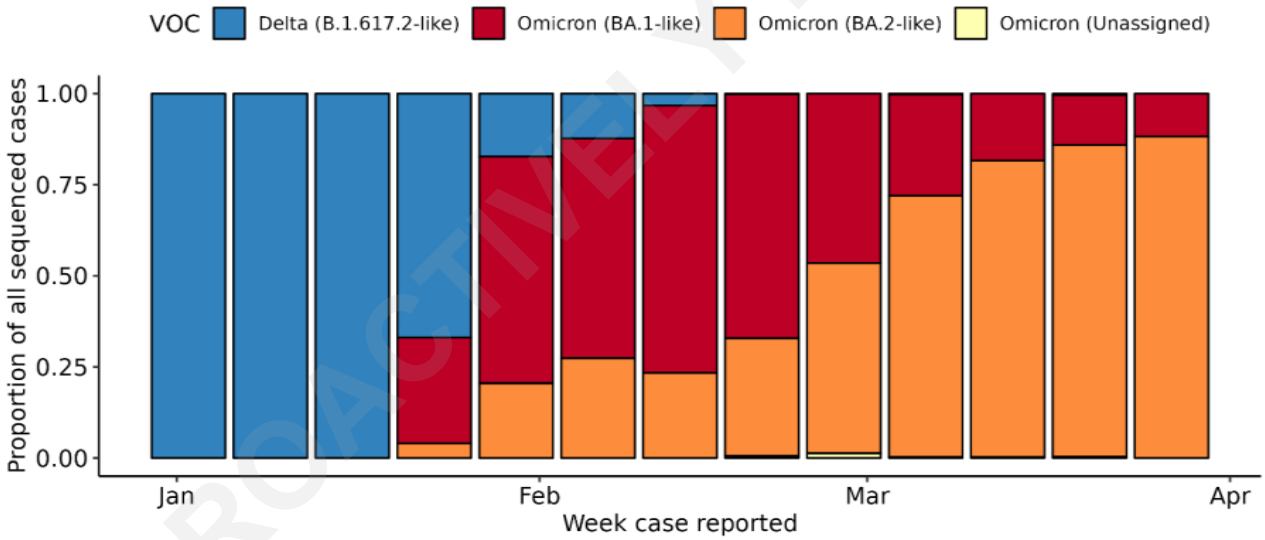
PCR and RAT testing trends

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 result, or a false-negative especially if used during early periods of infection. On the other hand, the better availability of RATs may mean that more people are tested than would have been the case 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 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 11, among Omicron cases BA.2 has become the dominant sub-variant. This has been the experience internationally due to its enhanced transmission compared to the BA.1 sub-variant. This sequencing information relates to cases that have not been identified already as either a border or hospital case depending on the ID of the samples.

Figure 11: ***Frequency of Variant of Concerns amongst community cases in New*** **Zealand**

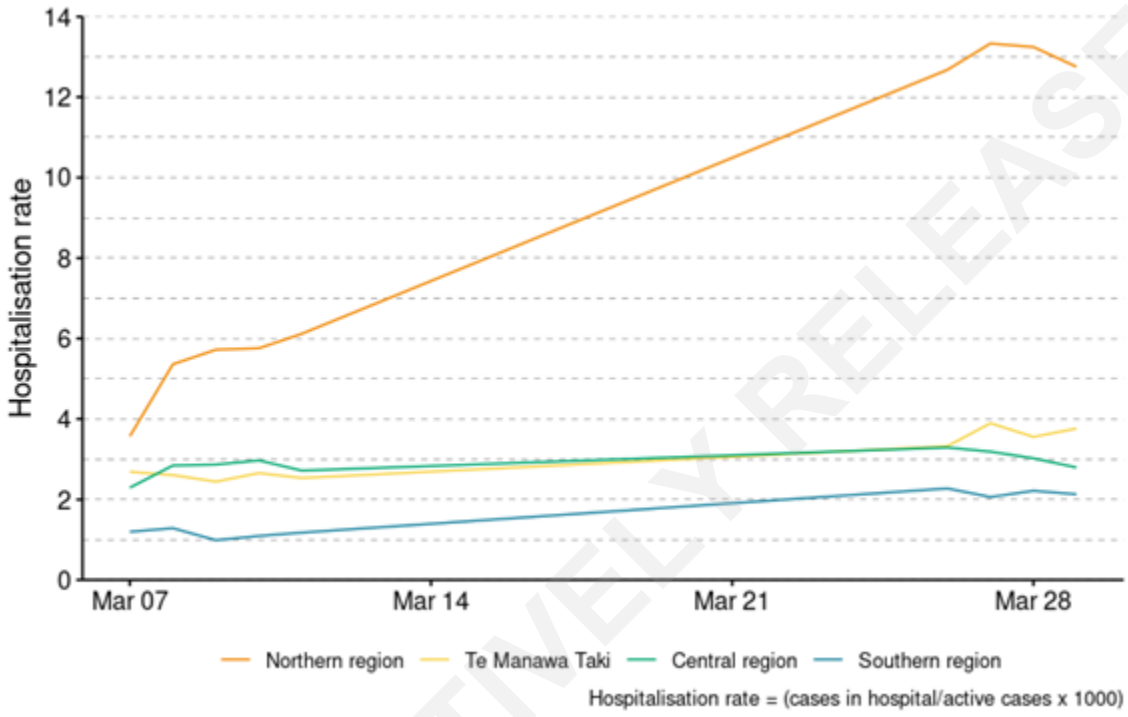


Morbidity and Mortality

Hospitalisations

Hospitalisations in the Northern region rose sharply from the second week of March, reaching a peak of just over 11 cases hospitalised per 1000 cases (Figure 12). However, this rate has declined in the past few days. Hospitalisation rates in all other regions have remained steady at around 1 to 3 cases hospitalised per 1000 cases.

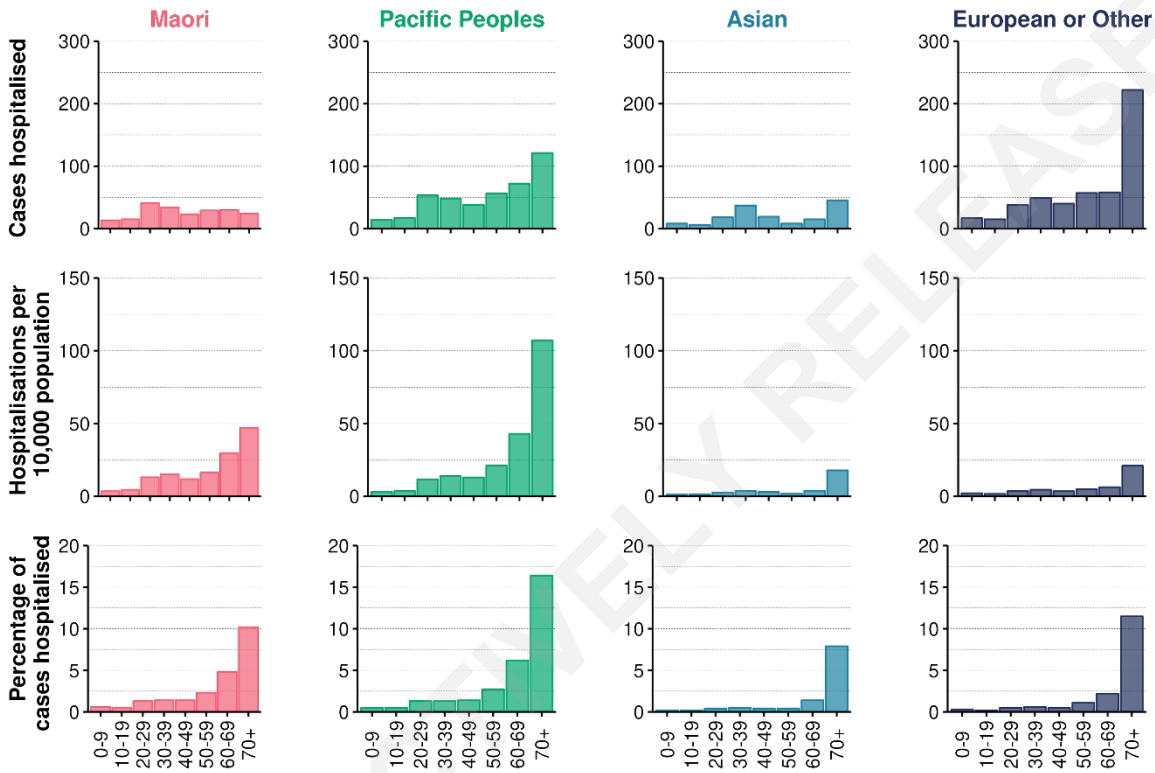
Figure 12: ***Rate of active hospitalisations by region***



Hospitalisation rates by age and ethnicity in the Auckland Metro DHBs

Figure 13 shows hospitalisations, hospitalisation rate and percentage of cases hospitalised by region, 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 13: ***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***



WGS of hospitalised cases

The majority of hospitalised COVID-19 cases sequenced since 1 January 2022 have been Omicron cases (97%), with the most recent hospitalised case found to be infected with the Delta variant reported on 02 March 2022 (Figure 14). Of the total 863 hospitalised cases sequenced to date, approximately 70% were found to be the BA.2 sub-variant with a further 28% found to be the BA.1 sub-variant, of Omicron. Less than 2% were discovered to be 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.

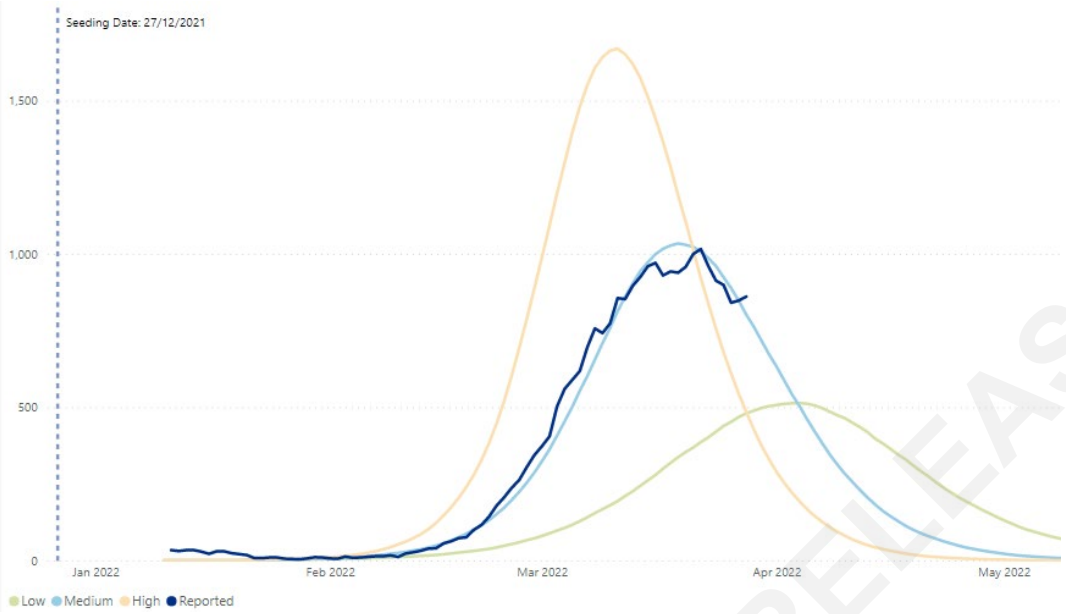
Figure 14: ***WGS of hospitalised cases reported from 01 January 2022 to 28 March 2022***

DHB	Delta	Omicron BA.1-like	Omicron BA.2	Omicron (unassigned)	Not received	Total
Auckland	1	35	42	0	166	244
Bay of Plenty	3	13	83	0	119	218
Canterbury	1	15	100	0	1	117
Capital and Coast	1	4	24	0	146	175
Counties Manukau	1	86	100	4	174	365
Hawke's Bay	2	0	0	0	38	40
Hutt Valley	0	3	3	0	51	57
Lakes	1	6	4	0	36	47
MidCentral	0	3	9	0	63	75
Nelson Marlborough	0	0	0	0	3	3
Northland	0	2	2	0	10	14
Southern	0	3	15	0	1	19
Tairawhiti	0	0	0	0	10	10
Taranaki	0	2	16	0	1	19
Unknown	0	0	0	0	3	3
Waikato	1	4	7	0	255	267
Wairarapa	0	1	8	0	2	11
Waitemata	3	63	187	2	113	368
West Coast	0	1	0	0	2	3
Whanganui	0	0	2	0	1	3
Unknown	0	0	0	0	4	4
Total	**14**	**241**	**602**	**6**	**1199**	**2062**

Hospitalisations predicted and actual

Hospitalisations continue to track closely to the "medium" scenario published 27 February 2022 (Figure 15).

Figure 15: ***Modelled hospital occupancy compared to actual***



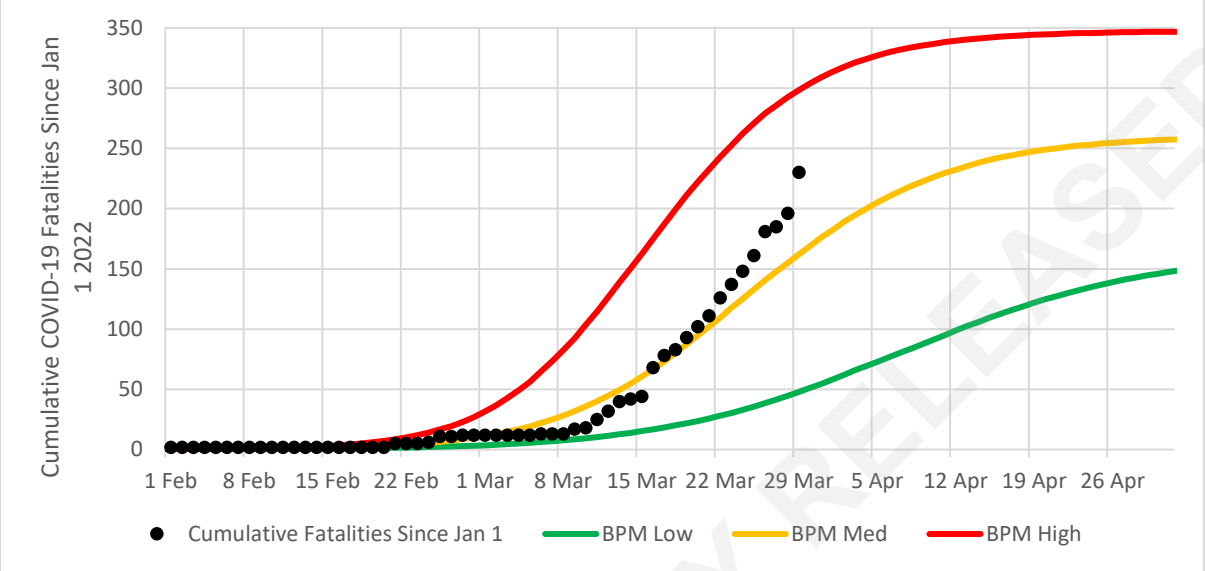
Sources: TAS, based on COVID-19 Modelling Aotearoa Branching Process Model 27 February 2022, and DHB reports to TAS of daily hospital occupancy (all COVID-19 positive people admitted as inpatients).

Mortality modelling

Overall, 317 people have died with or after COVID-19 infection. Of these, 278 have died within 28 days of being reported as a case. The 7-day rolling average of announced deaths is 15.

Mortality is now tracking above the "medium" scenario (Figure 16).

Figure 16: ***Cumulative deaths compared with modelled scenarios***



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

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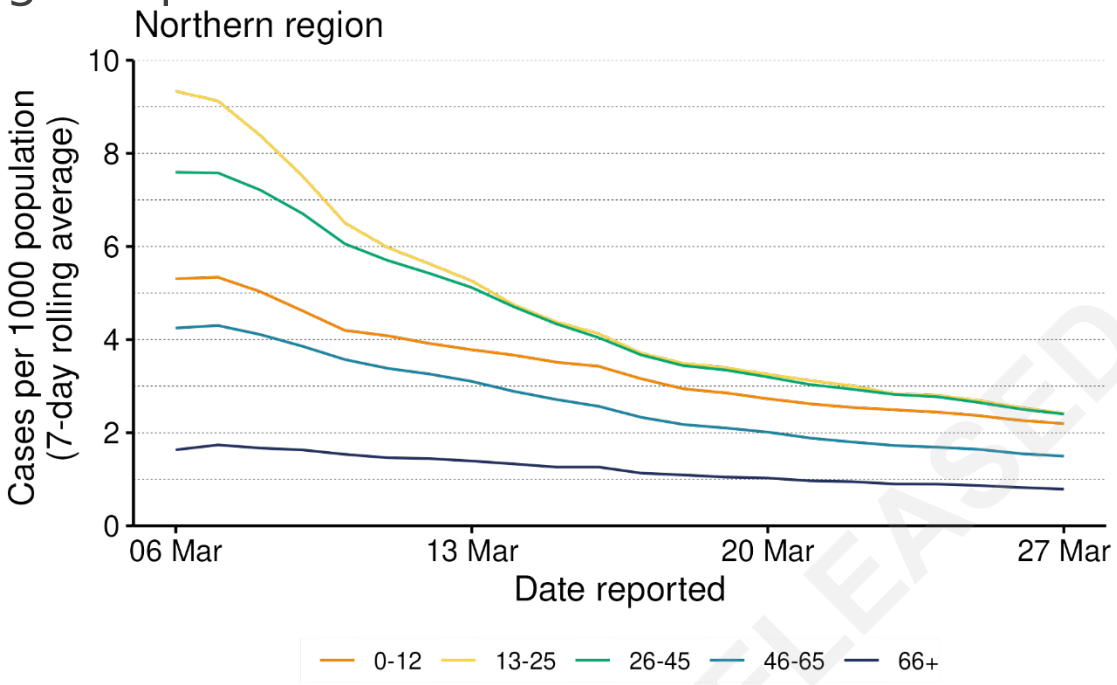
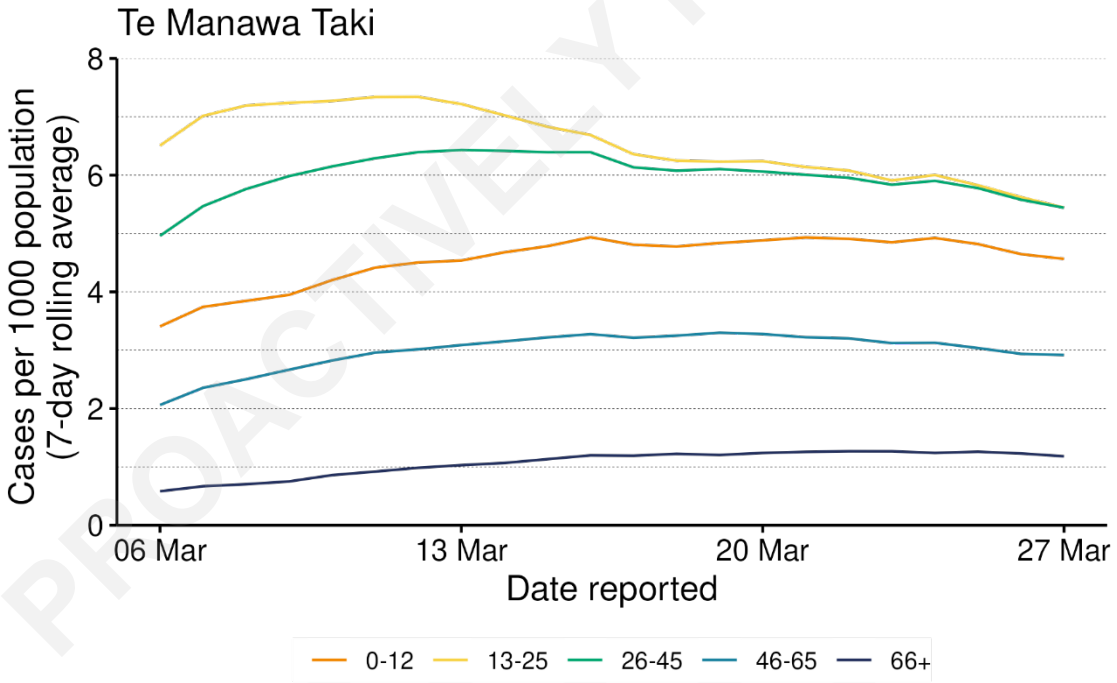
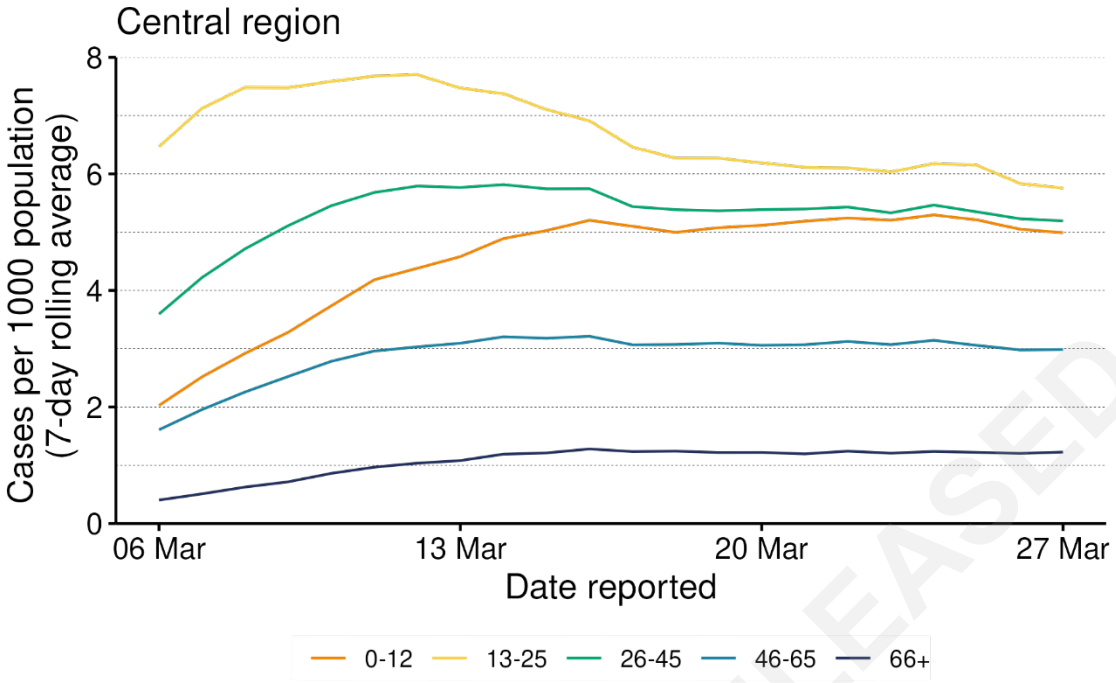
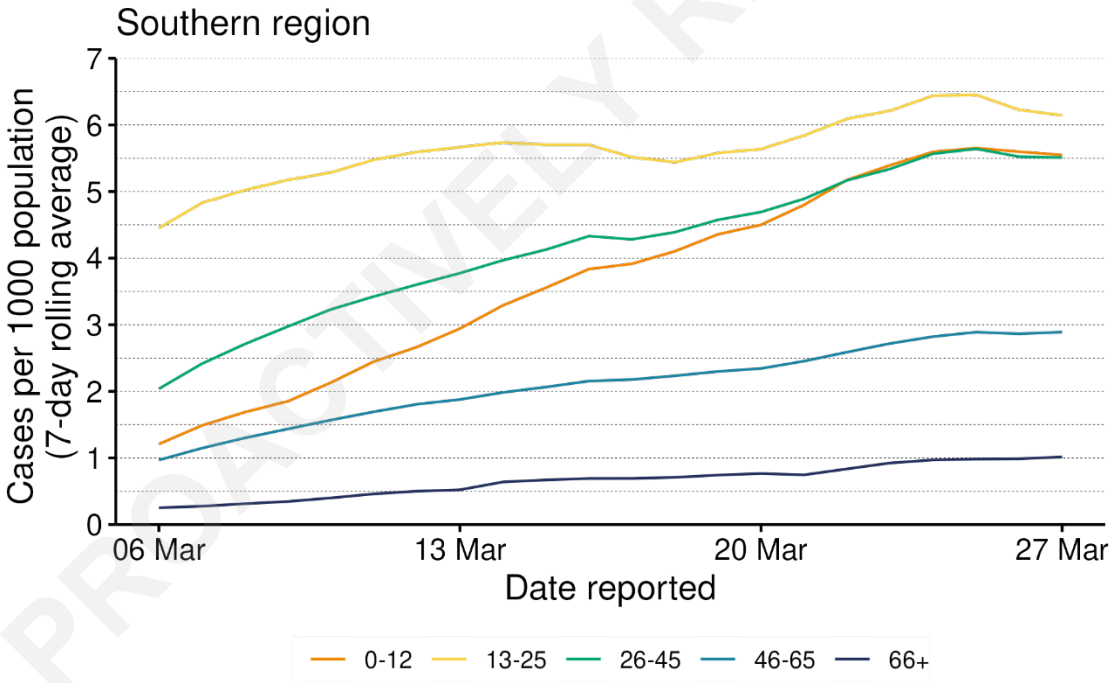
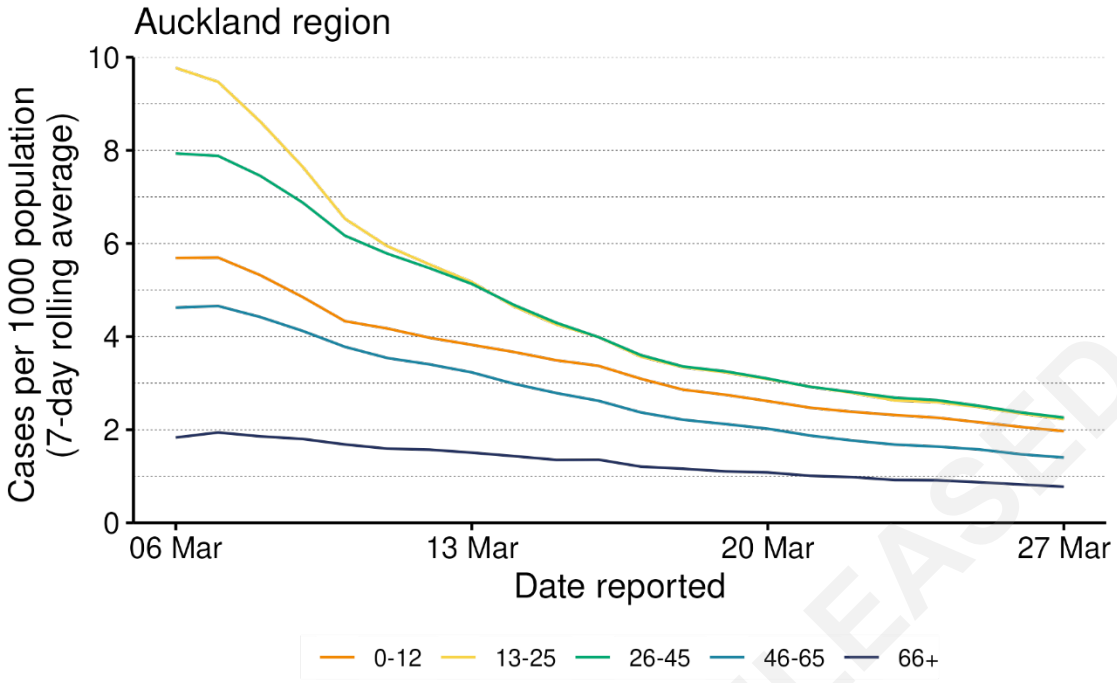
Age Graphs

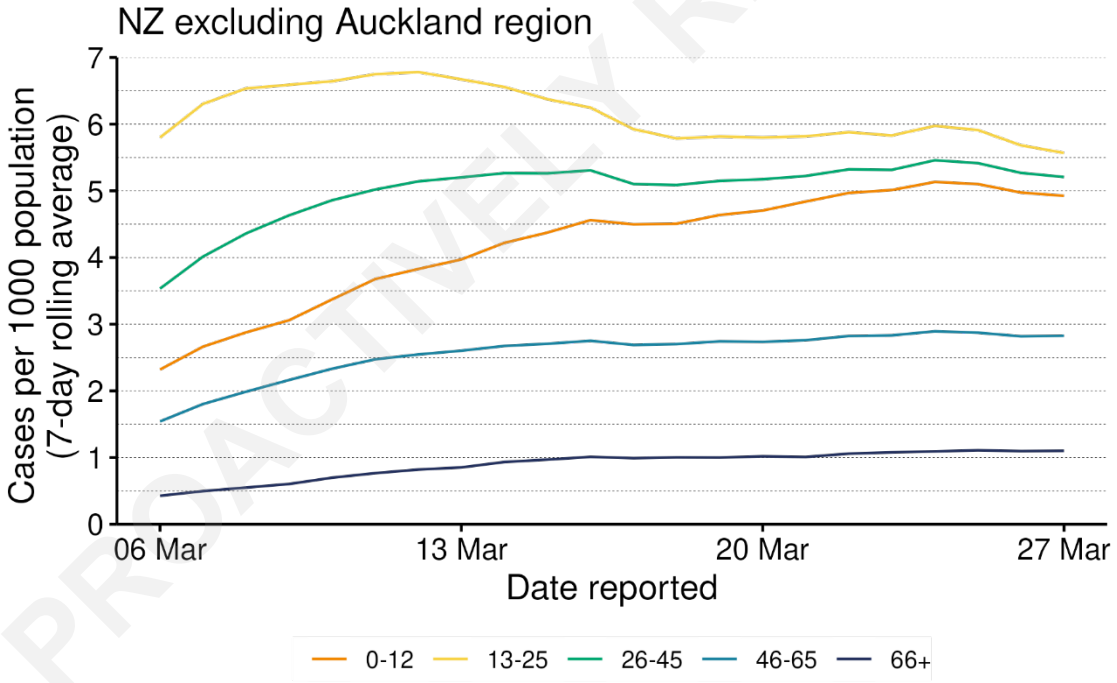


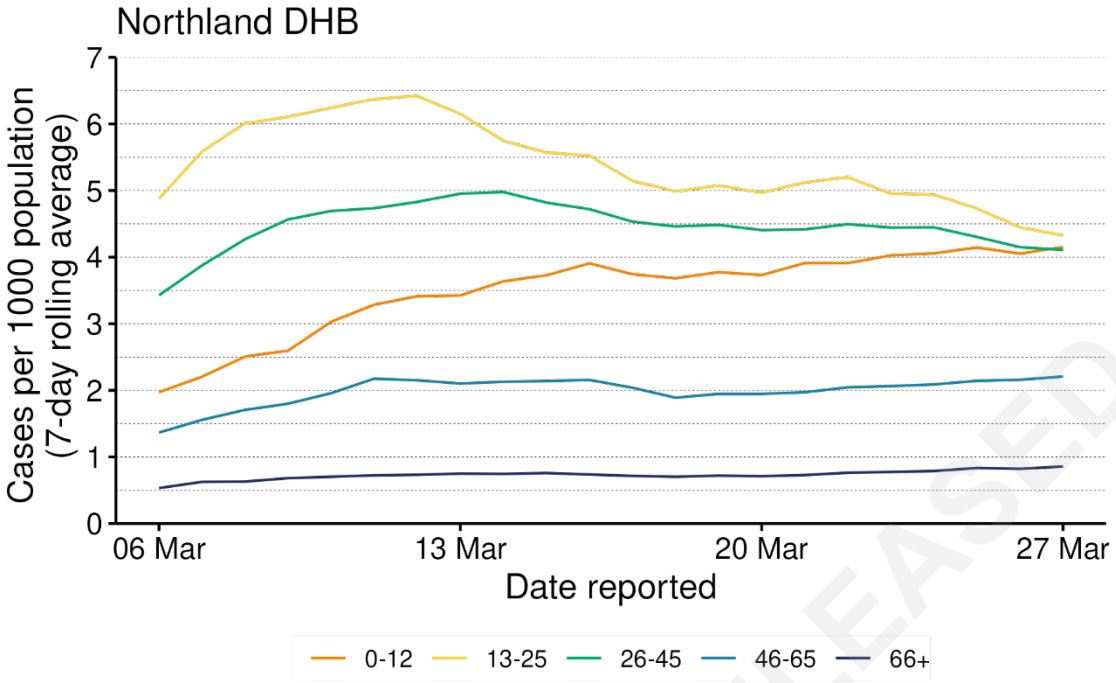


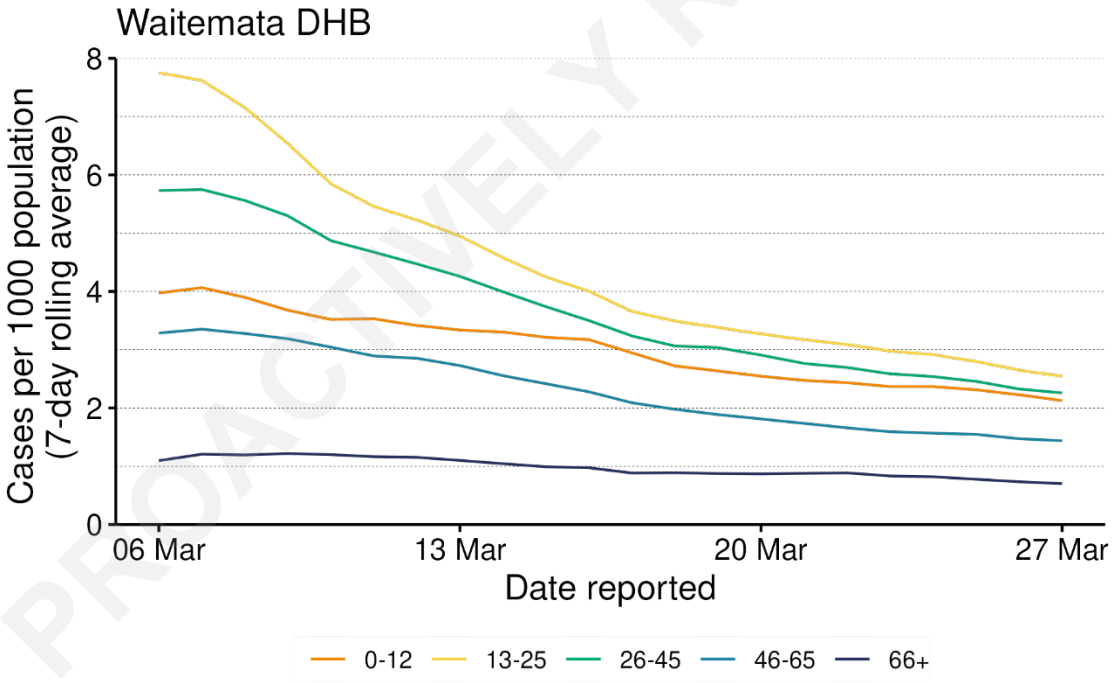


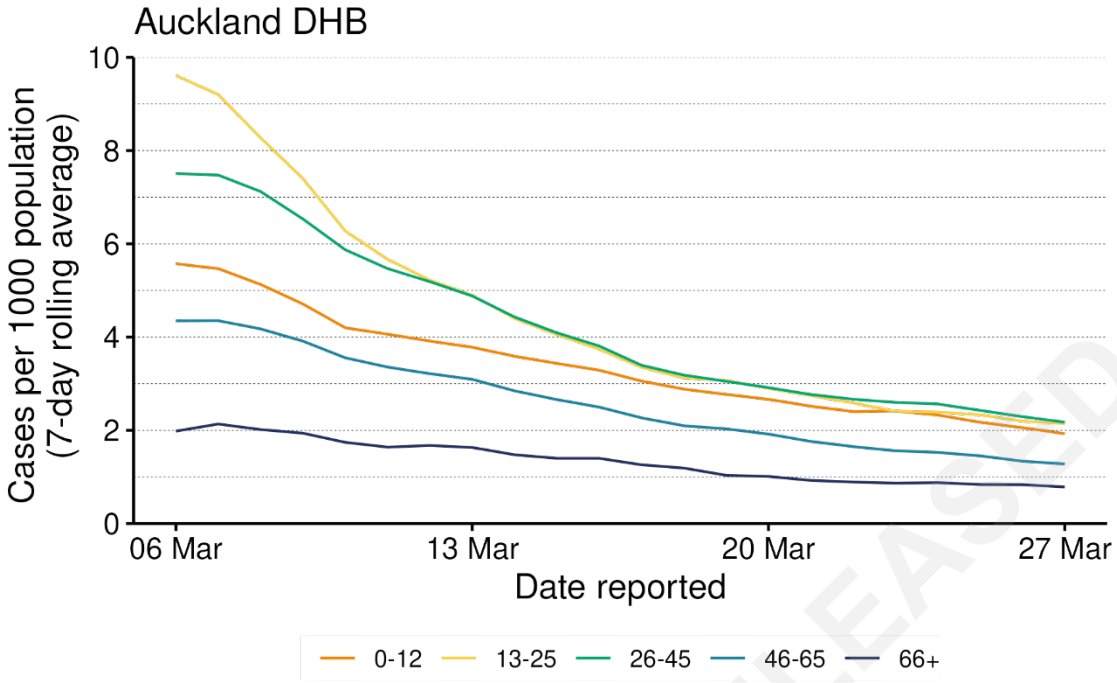


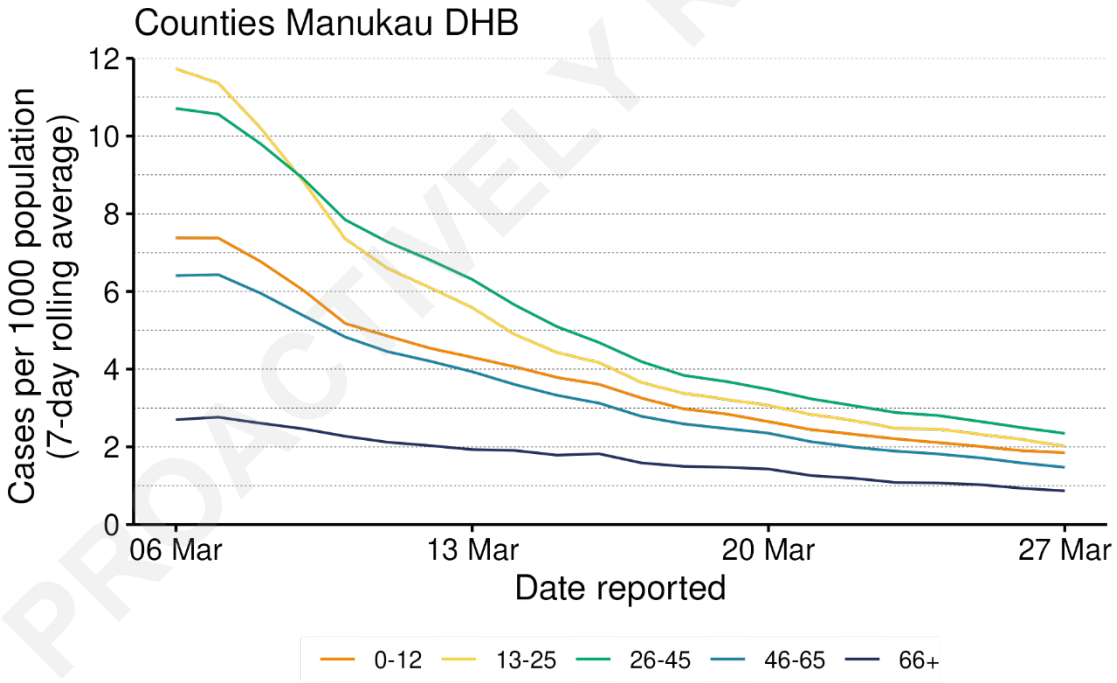


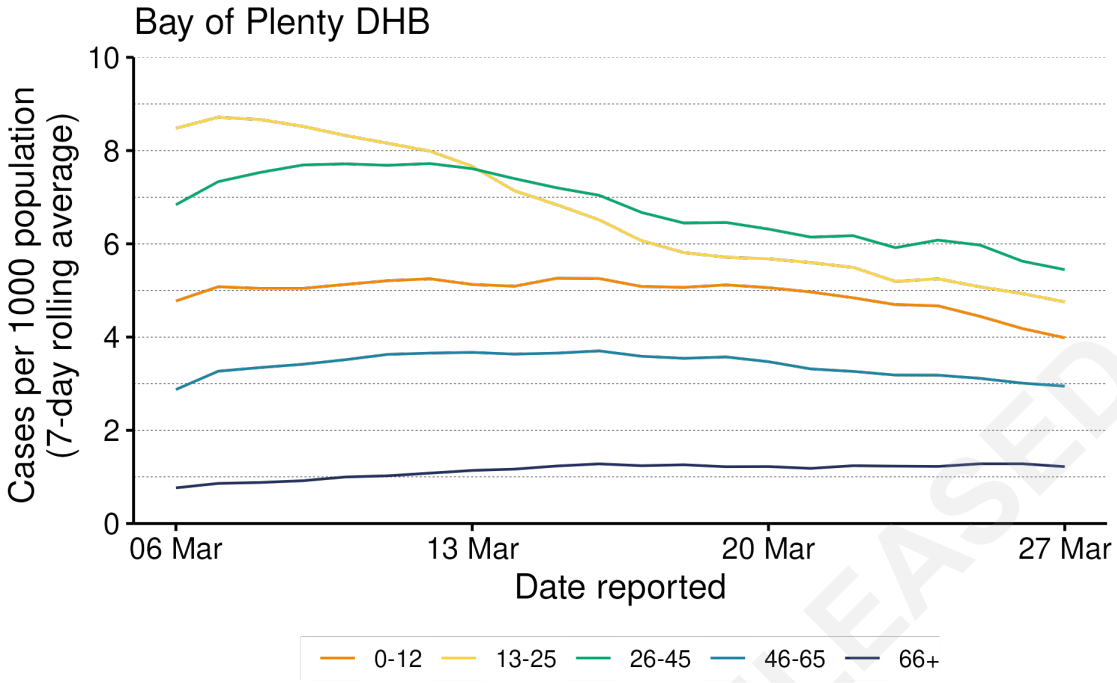


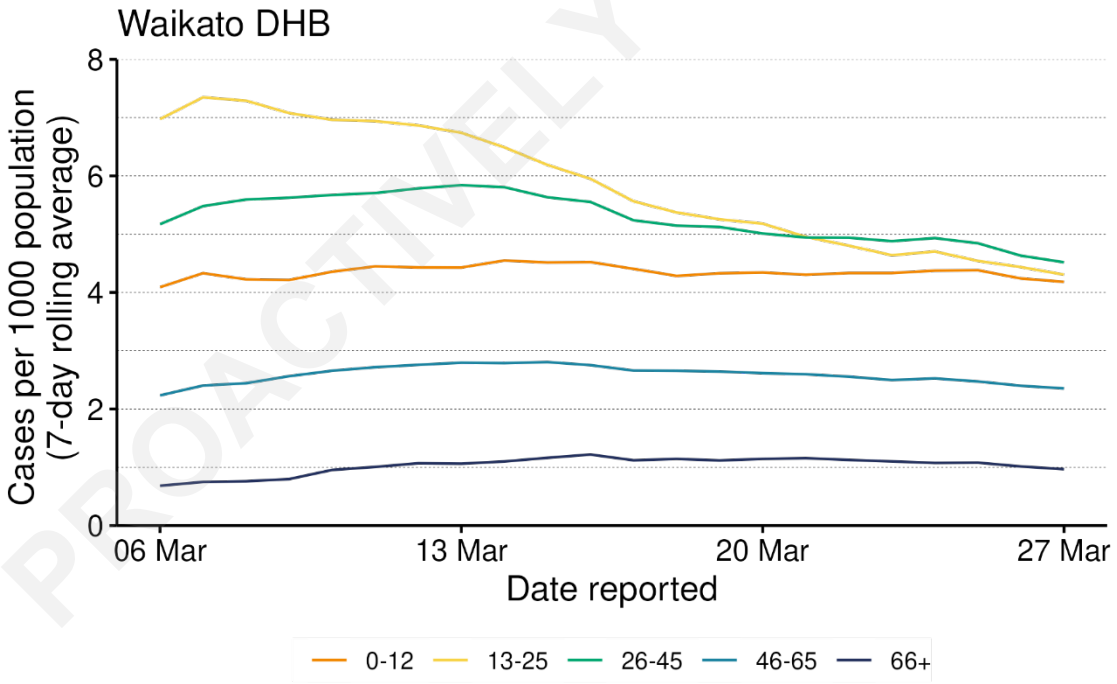


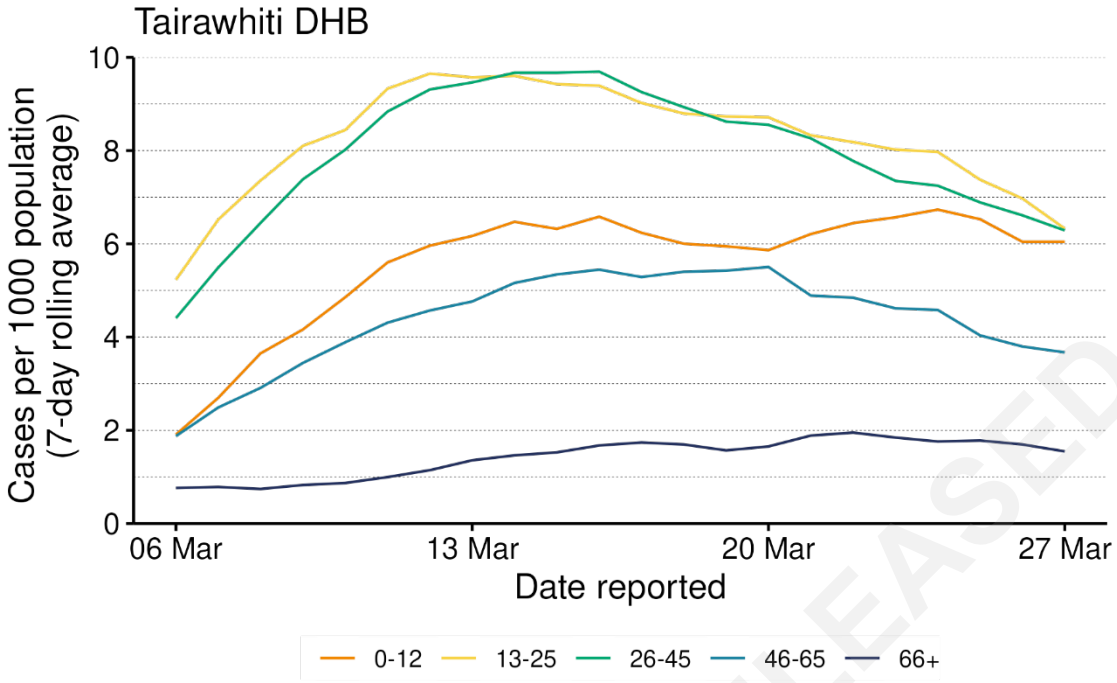


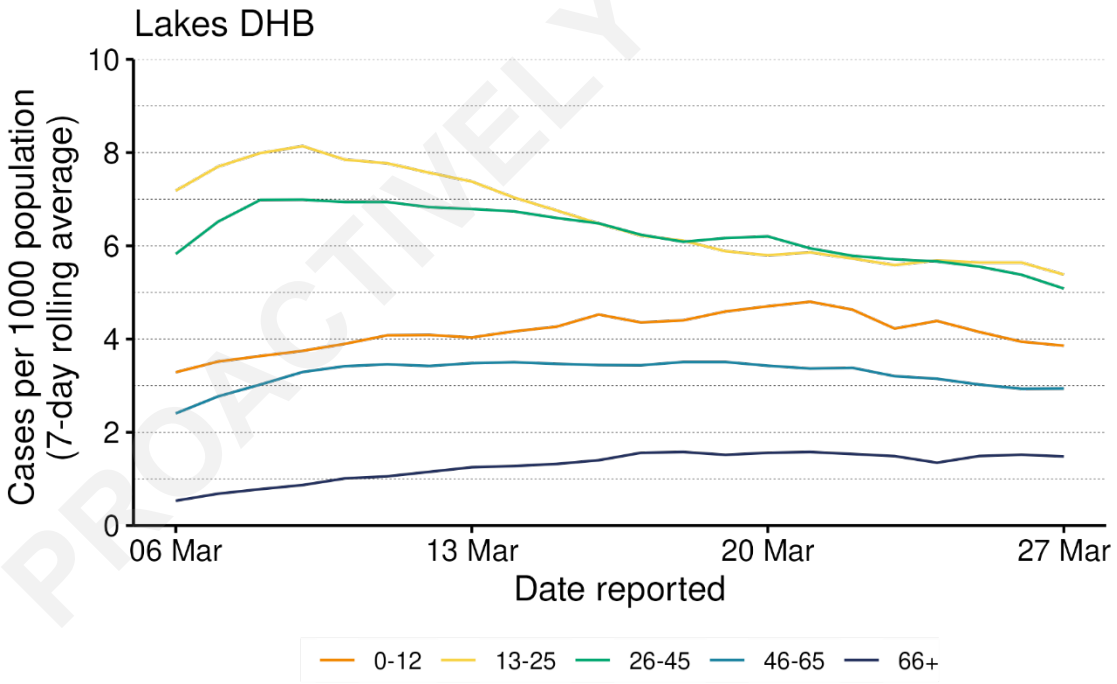


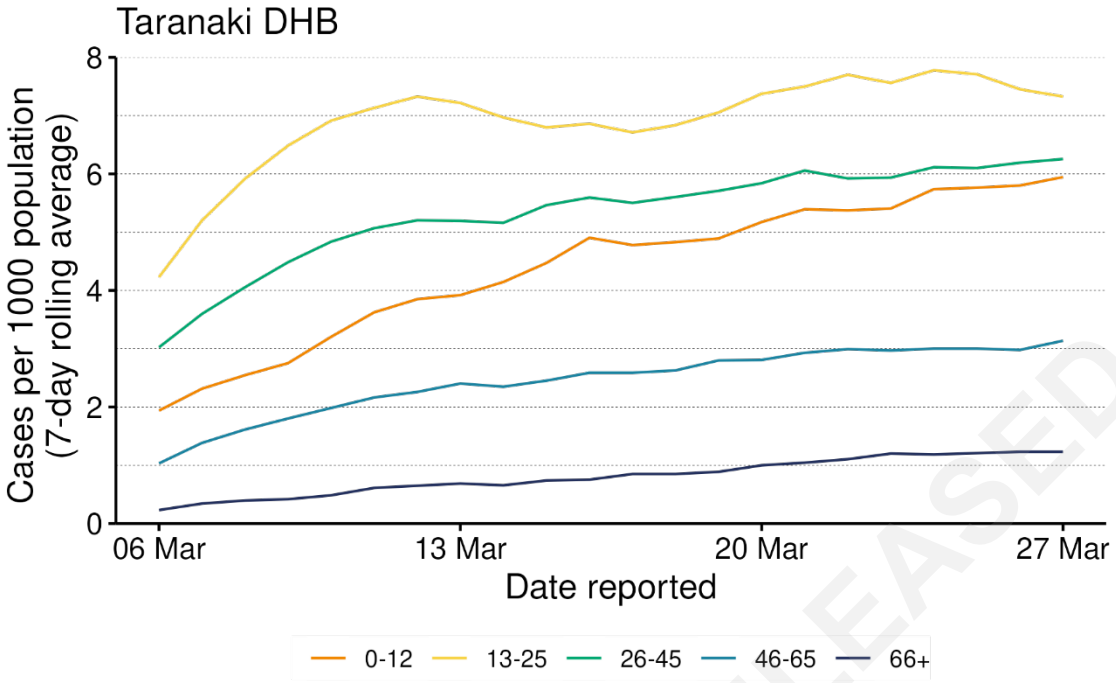


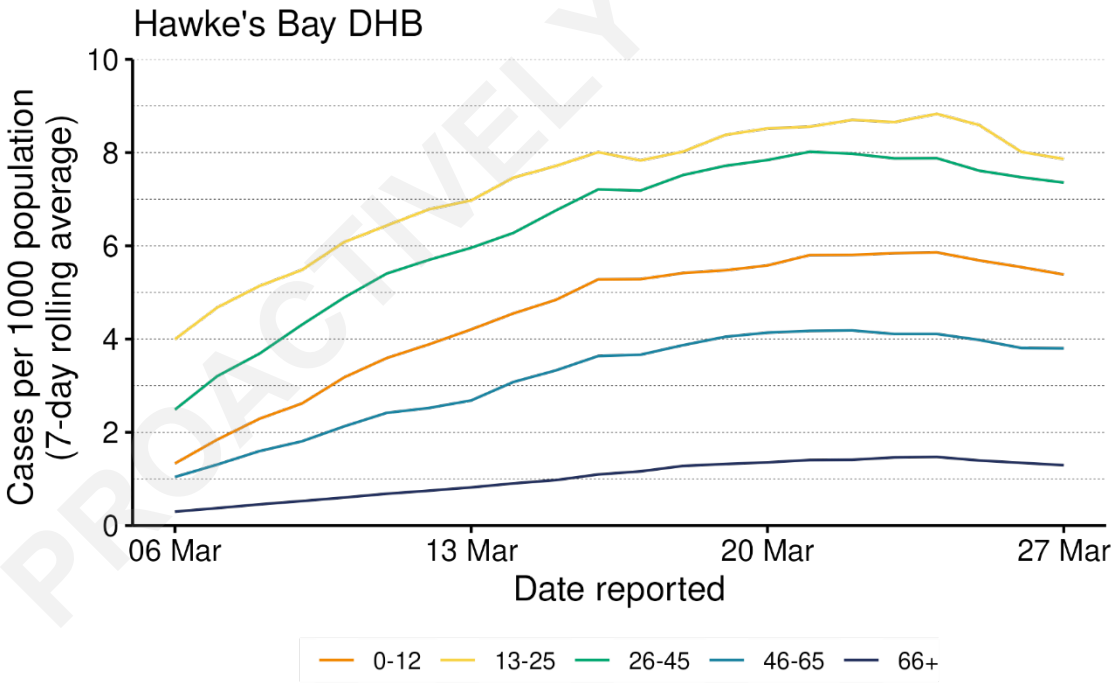


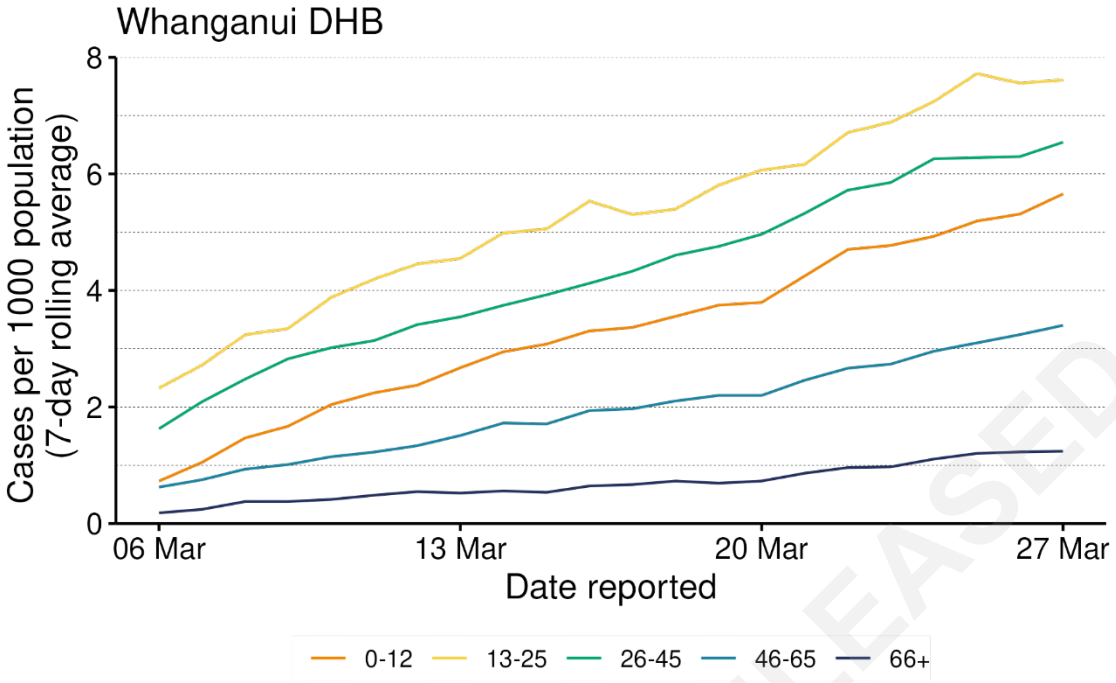


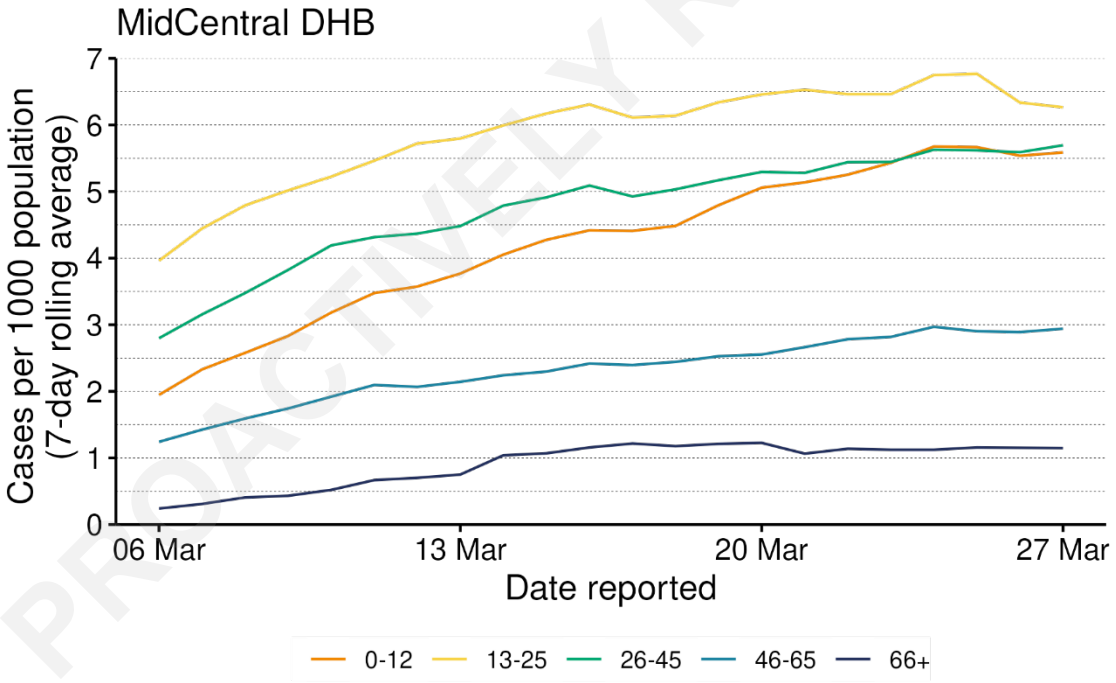


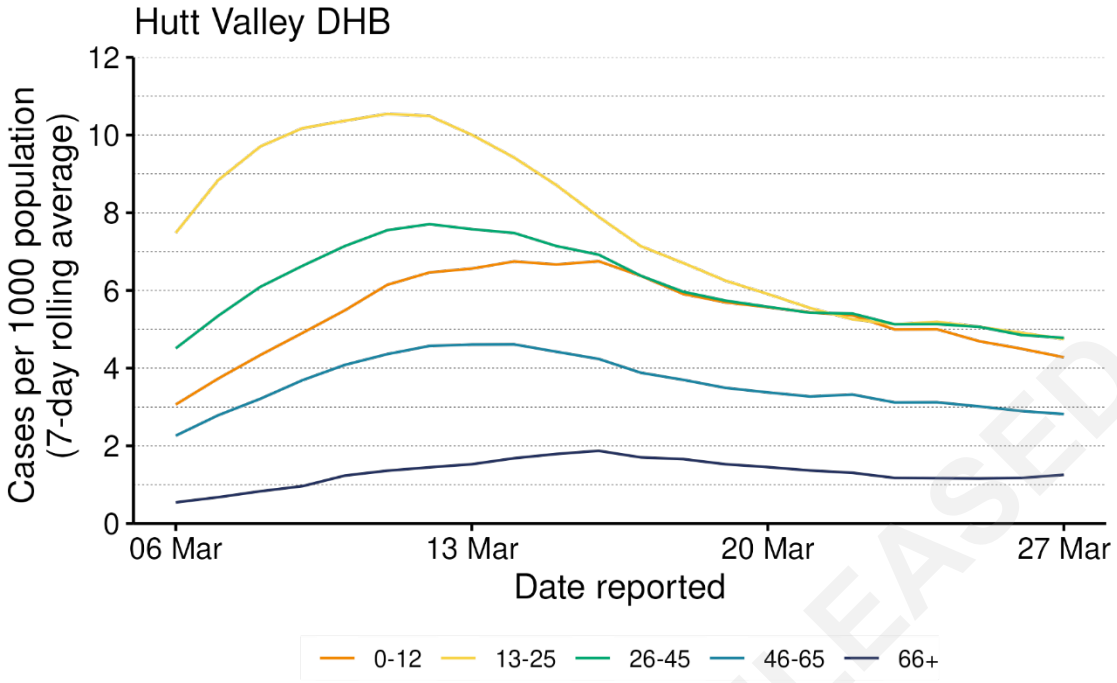


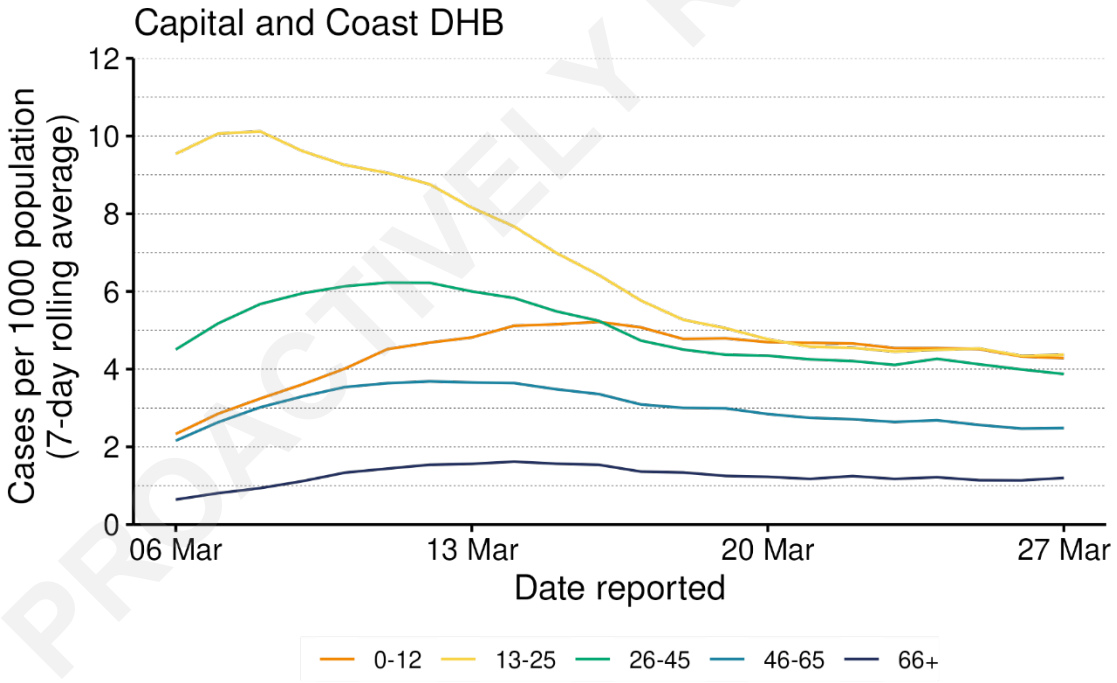


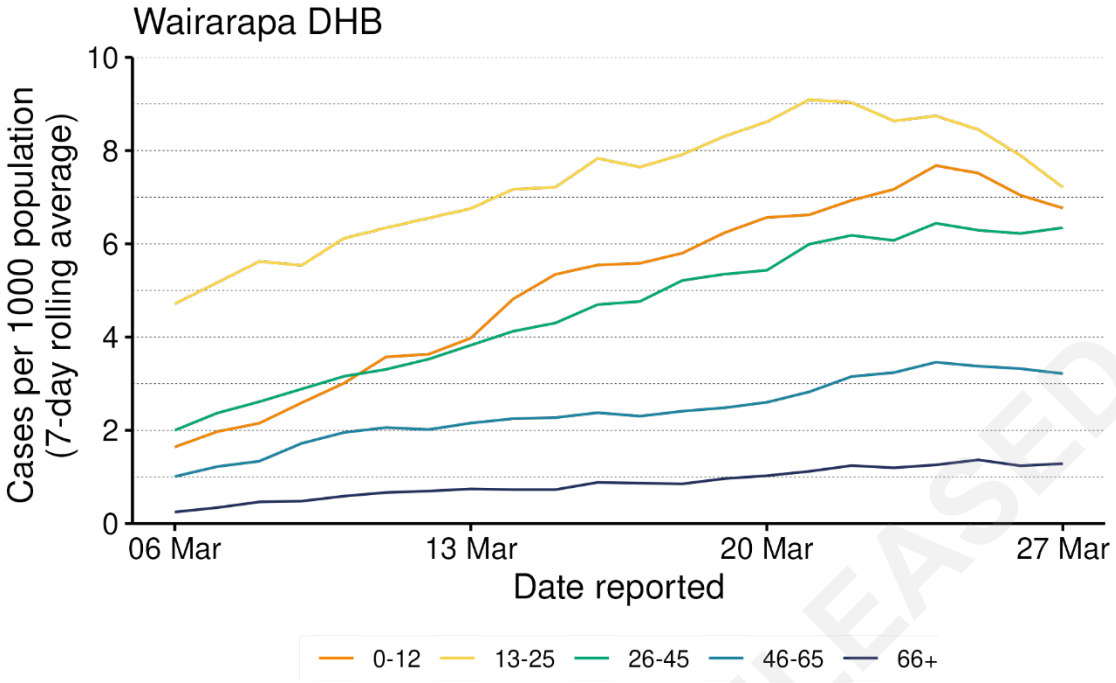


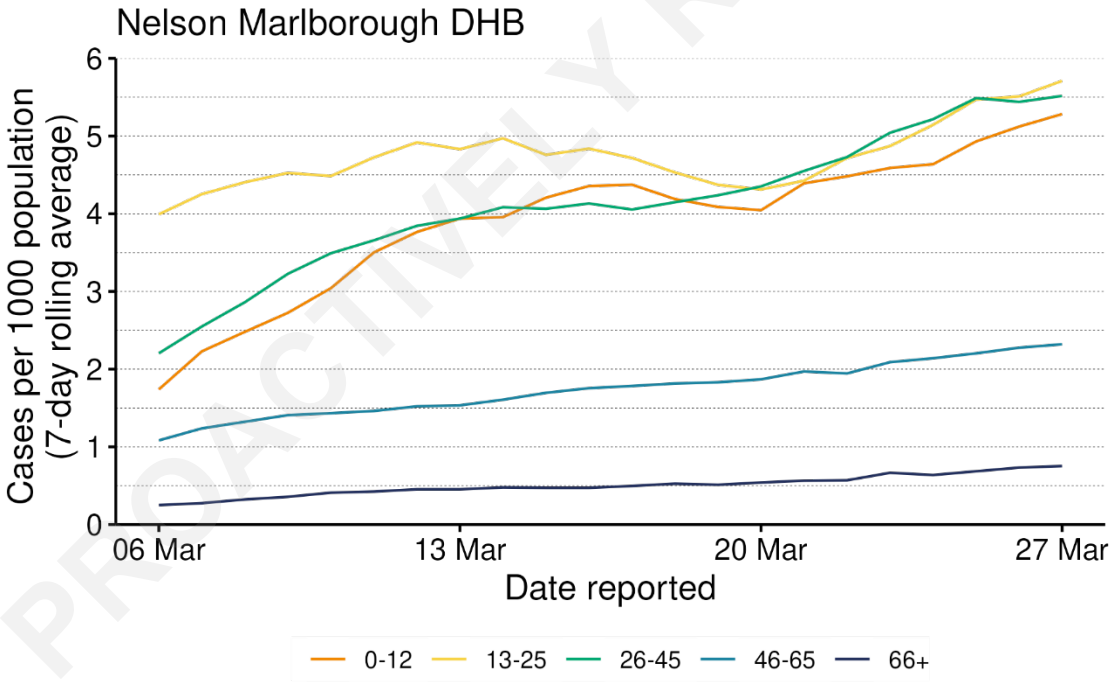


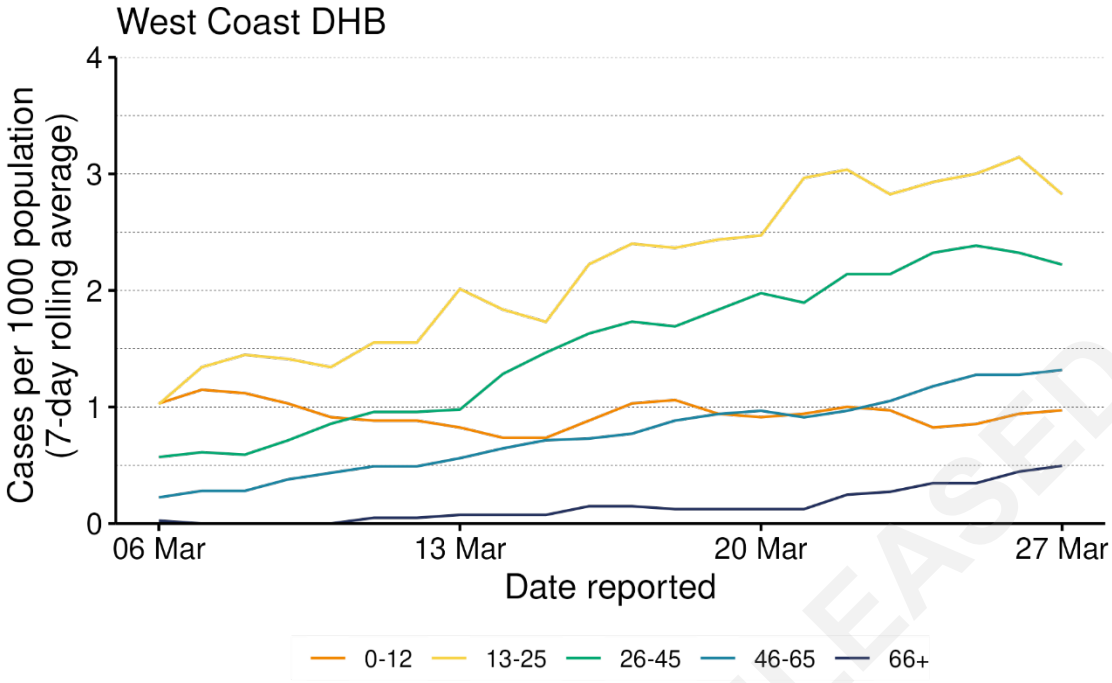


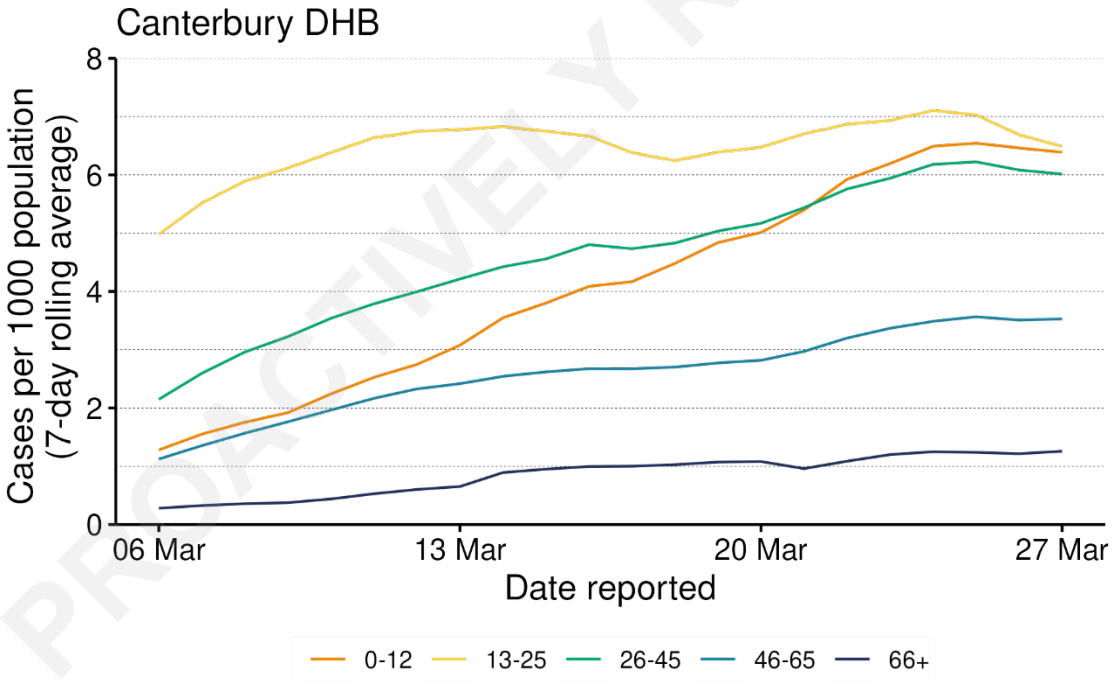


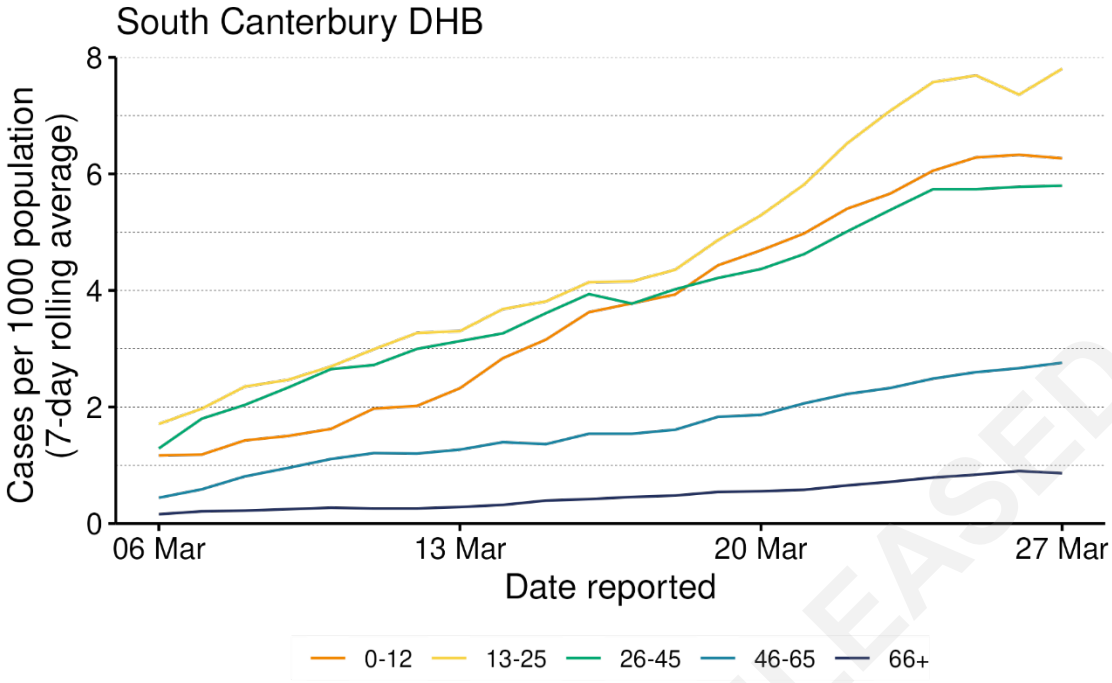


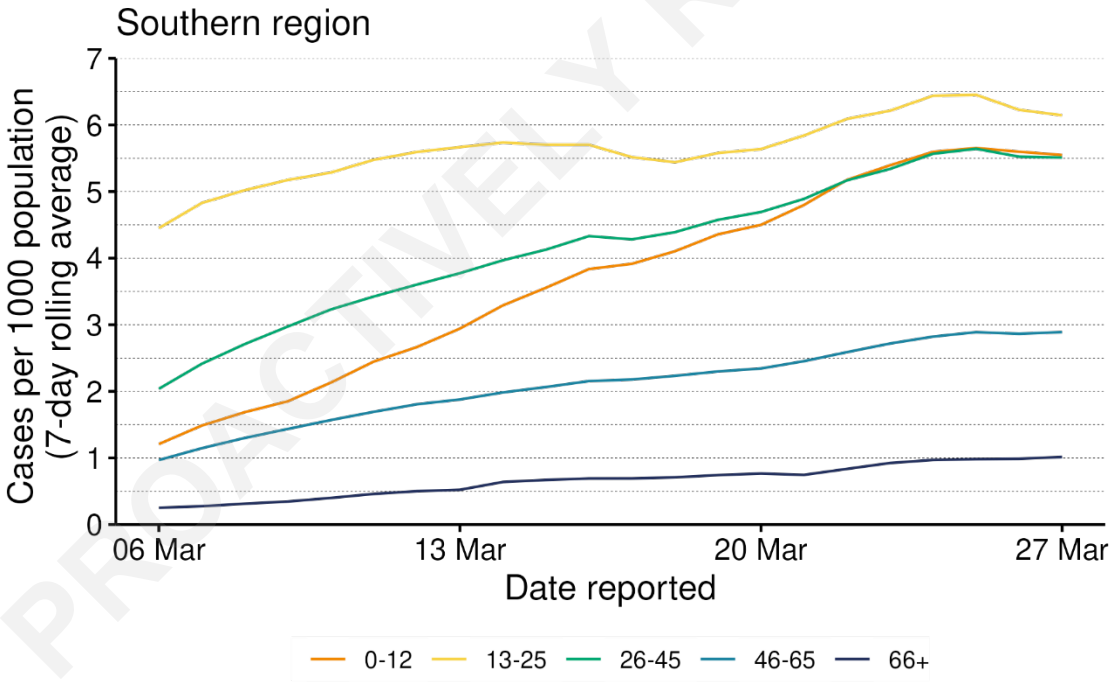


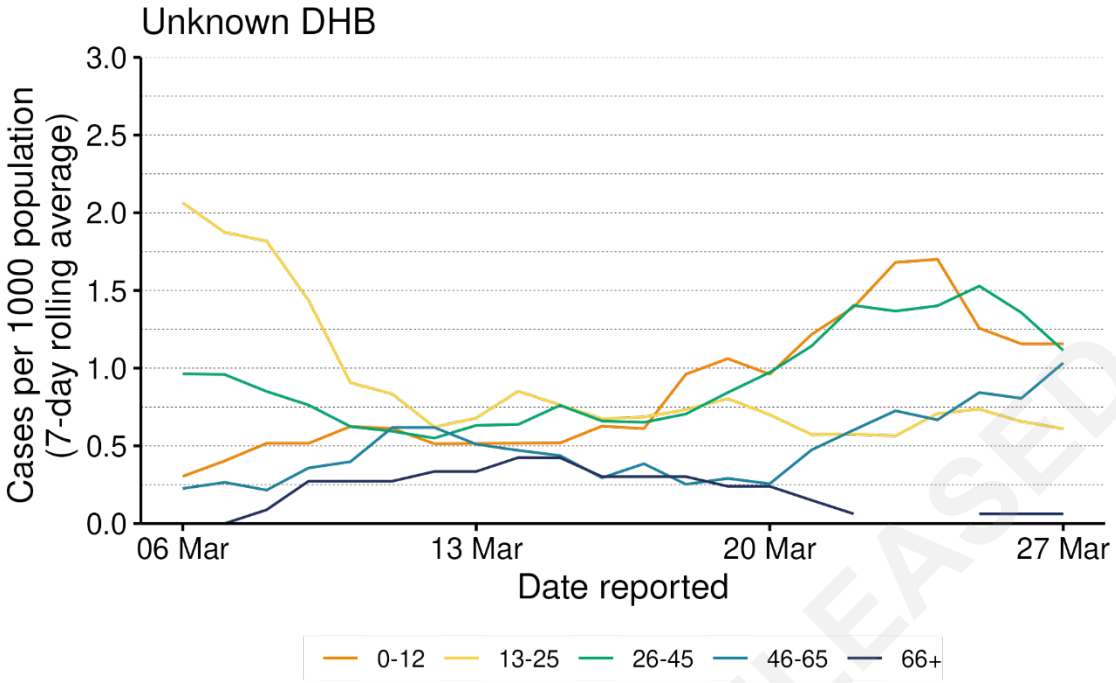




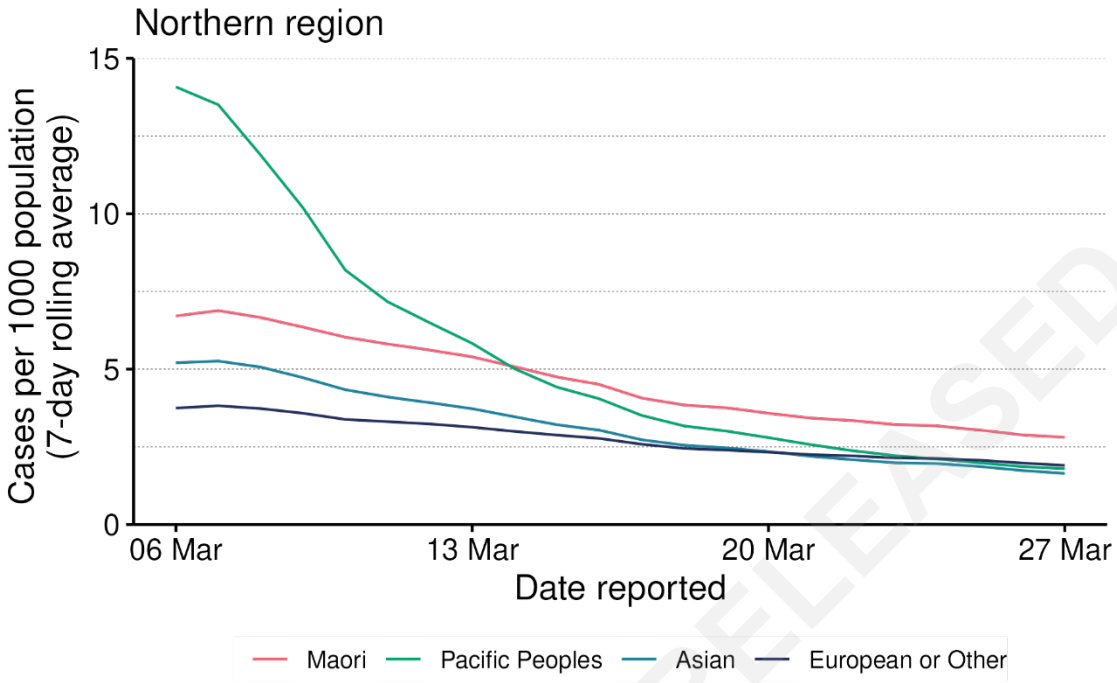


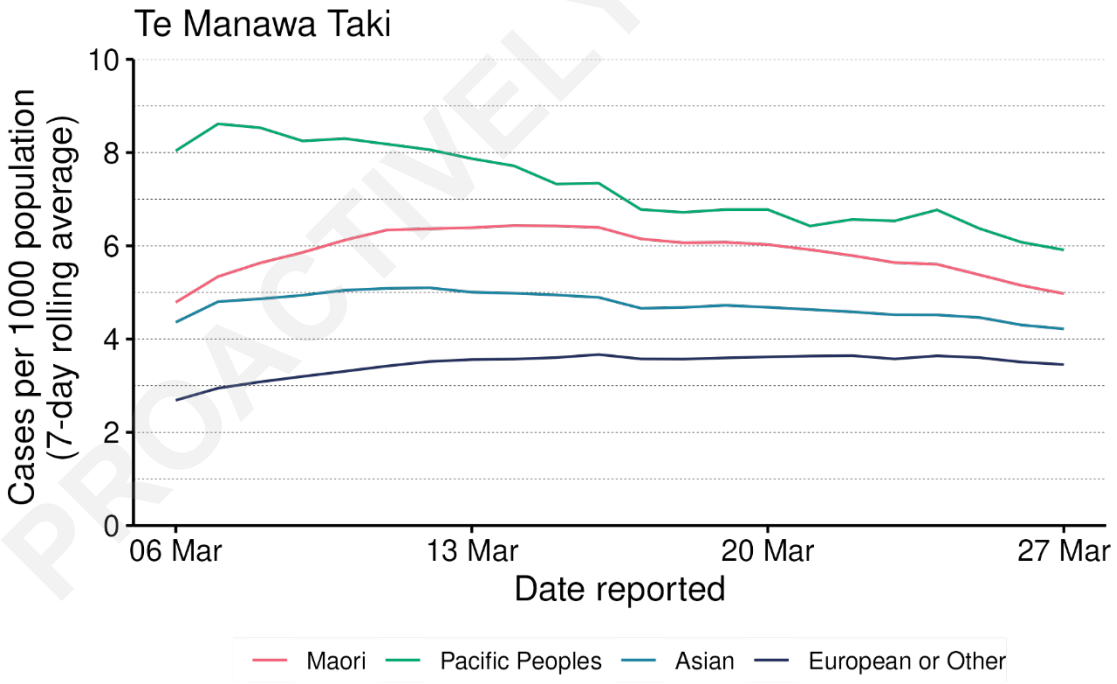


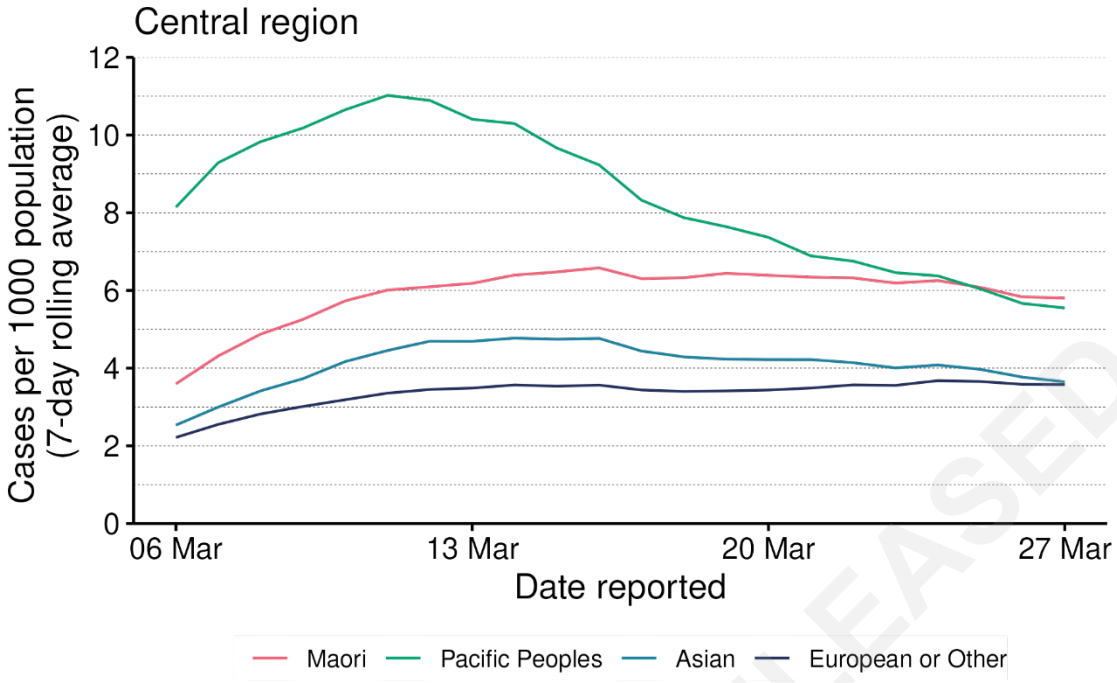


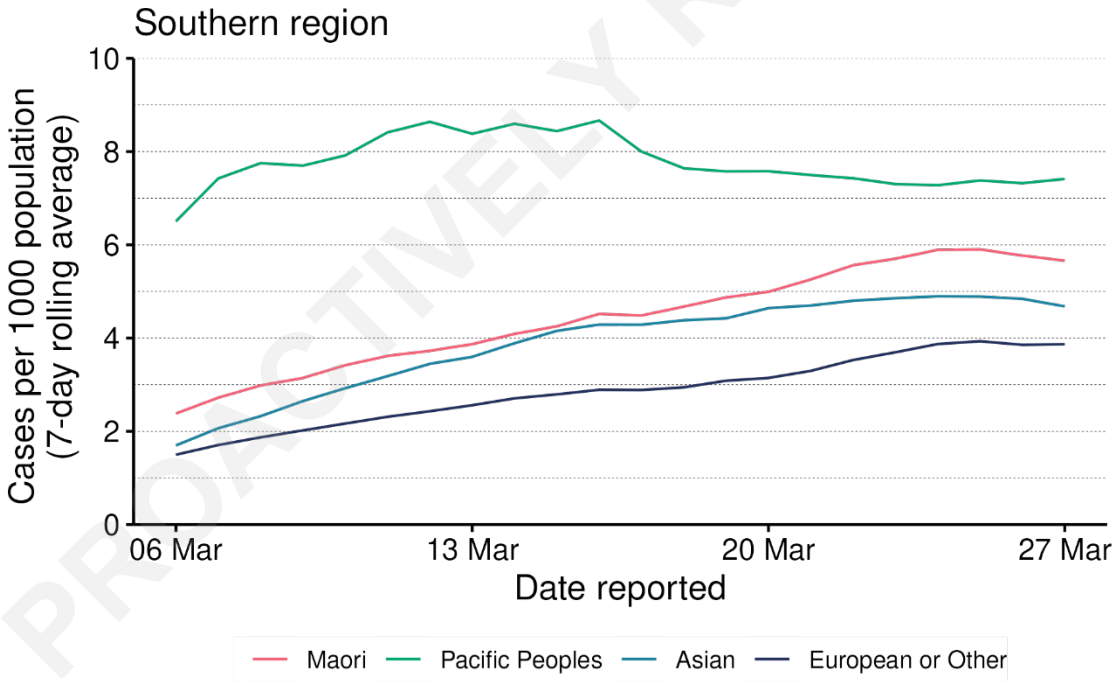


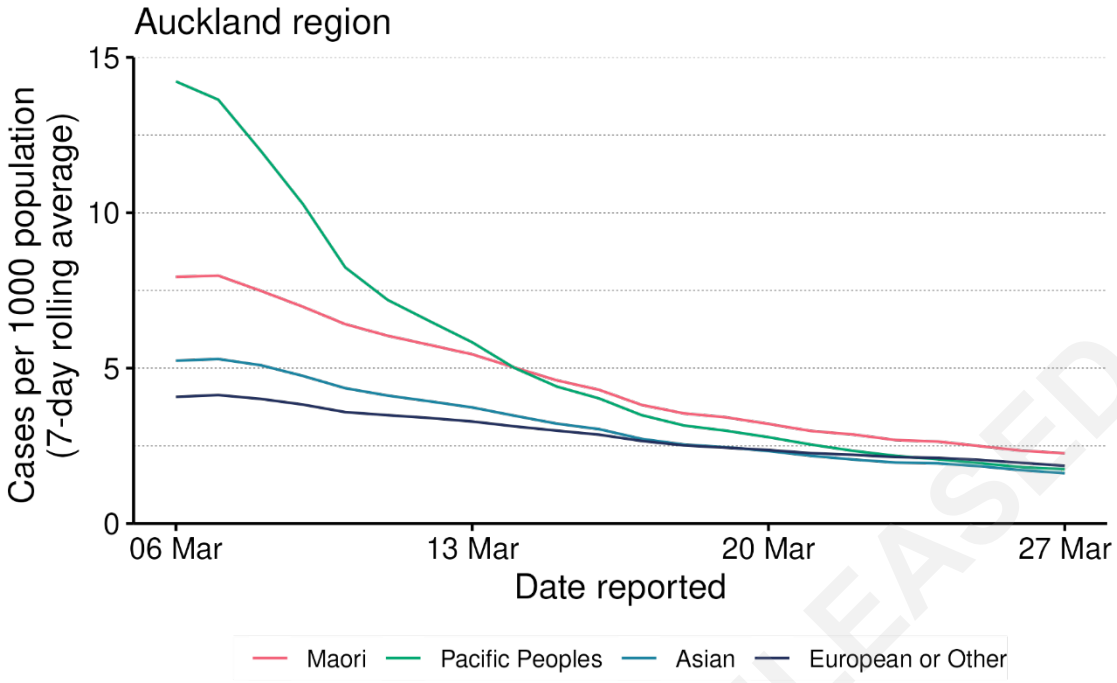
Ethnicity Graphs

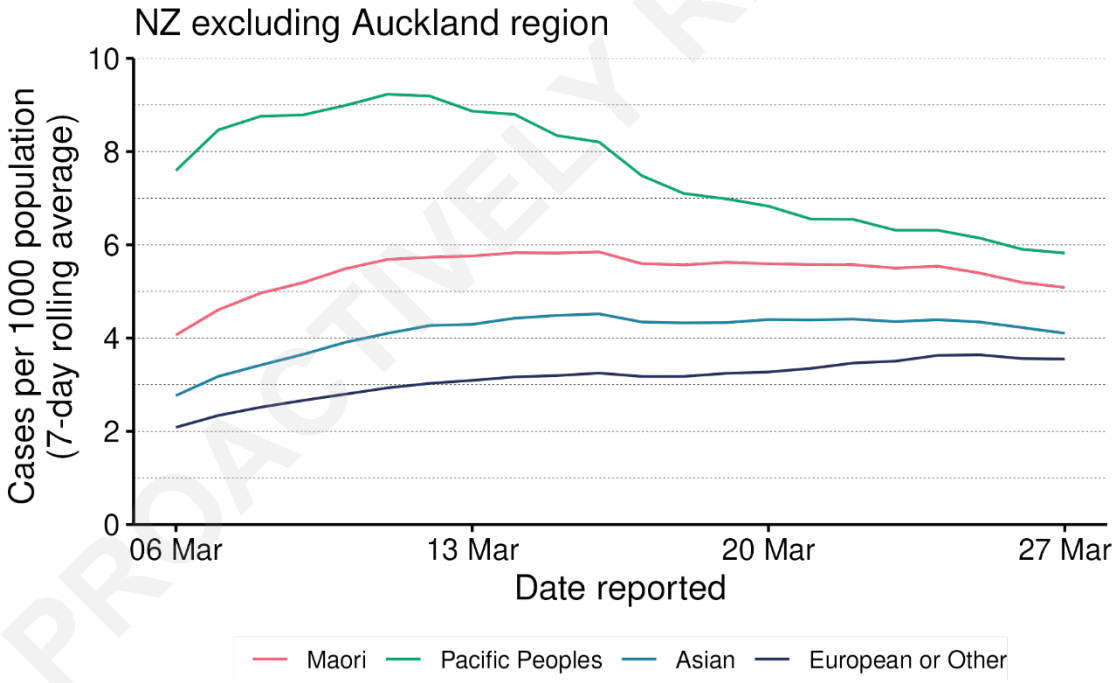


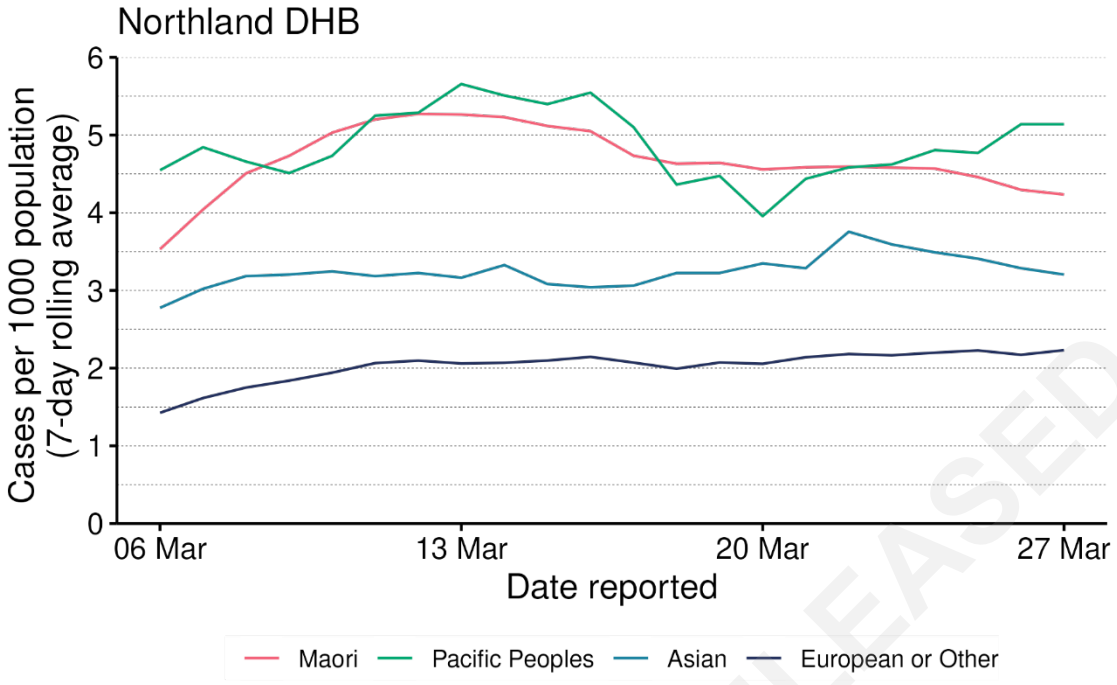


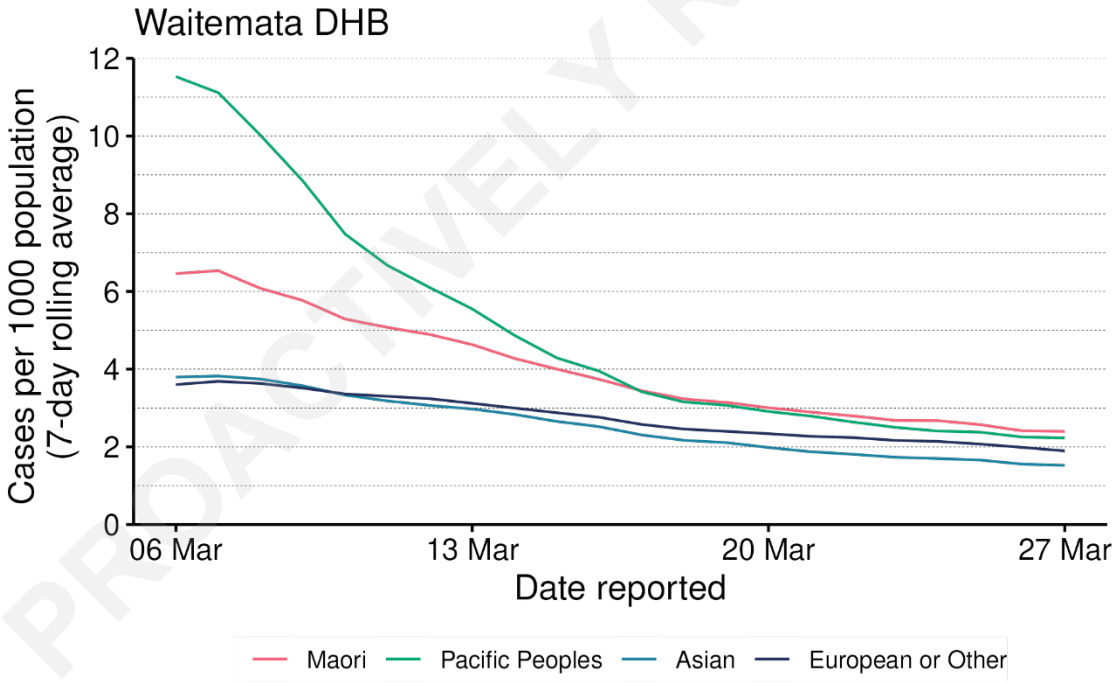


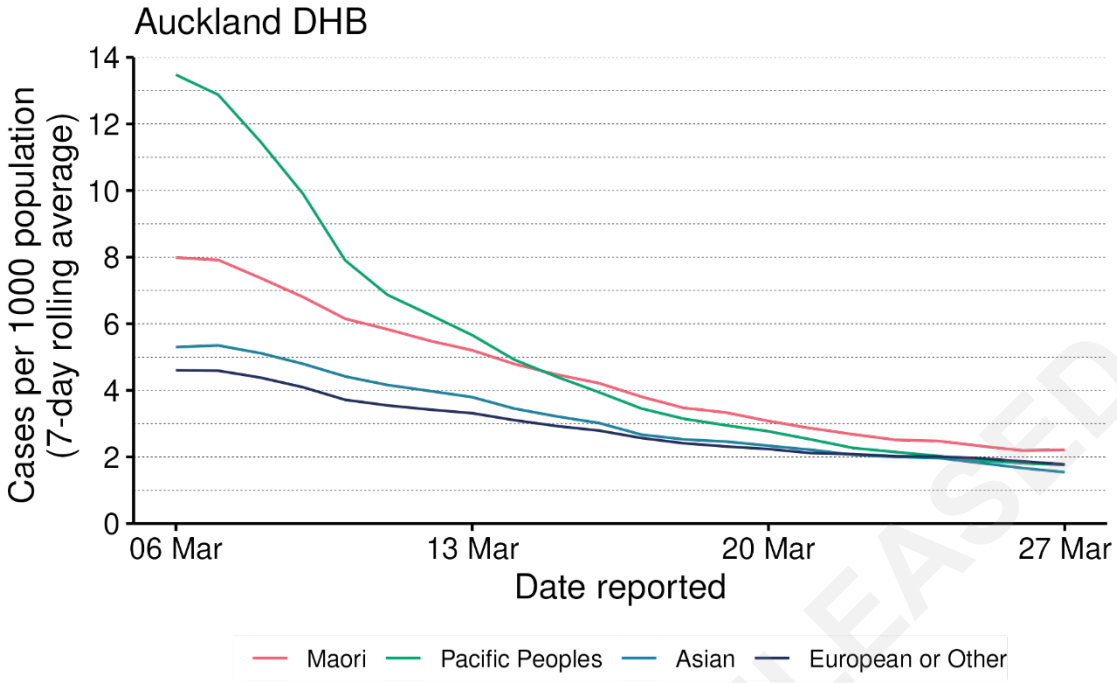


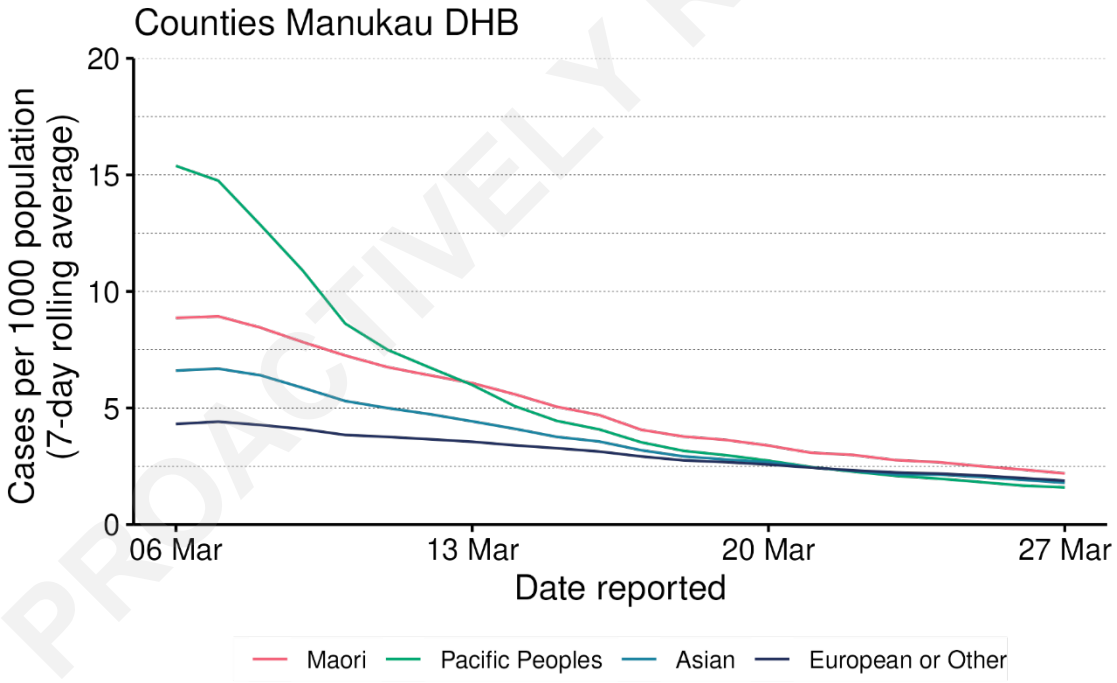


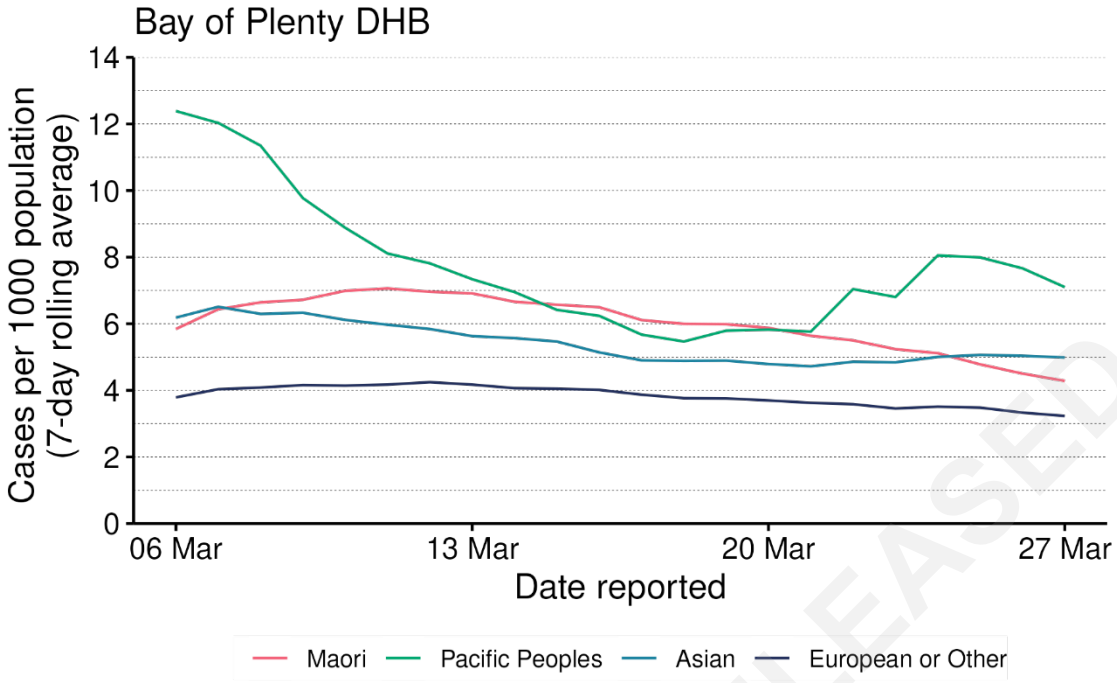


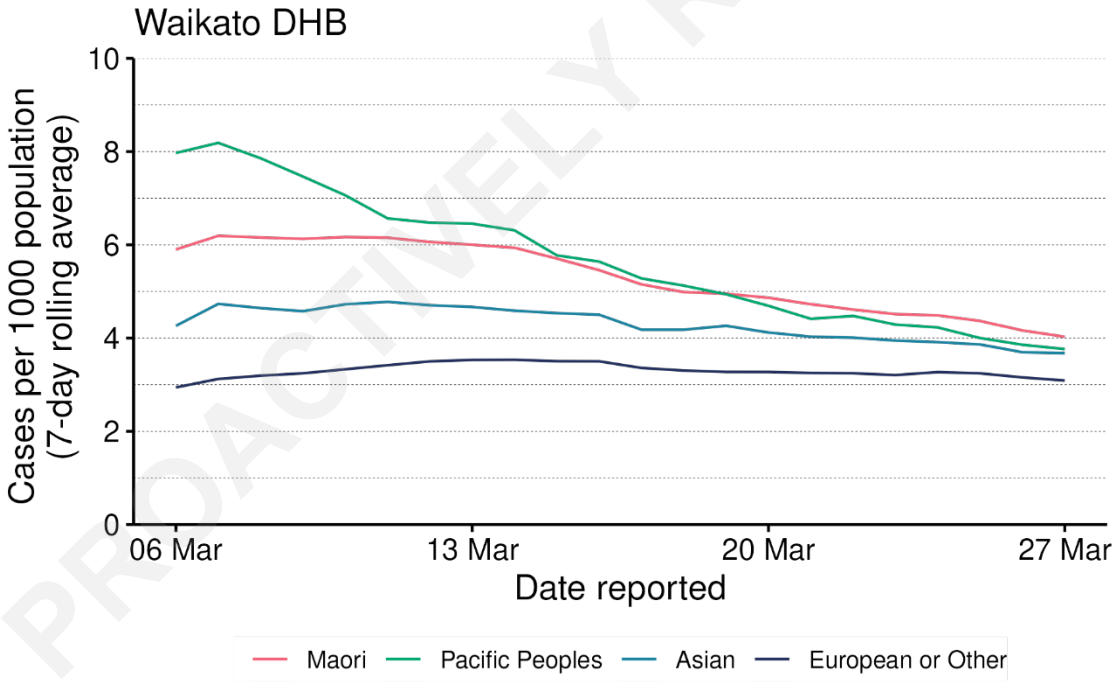


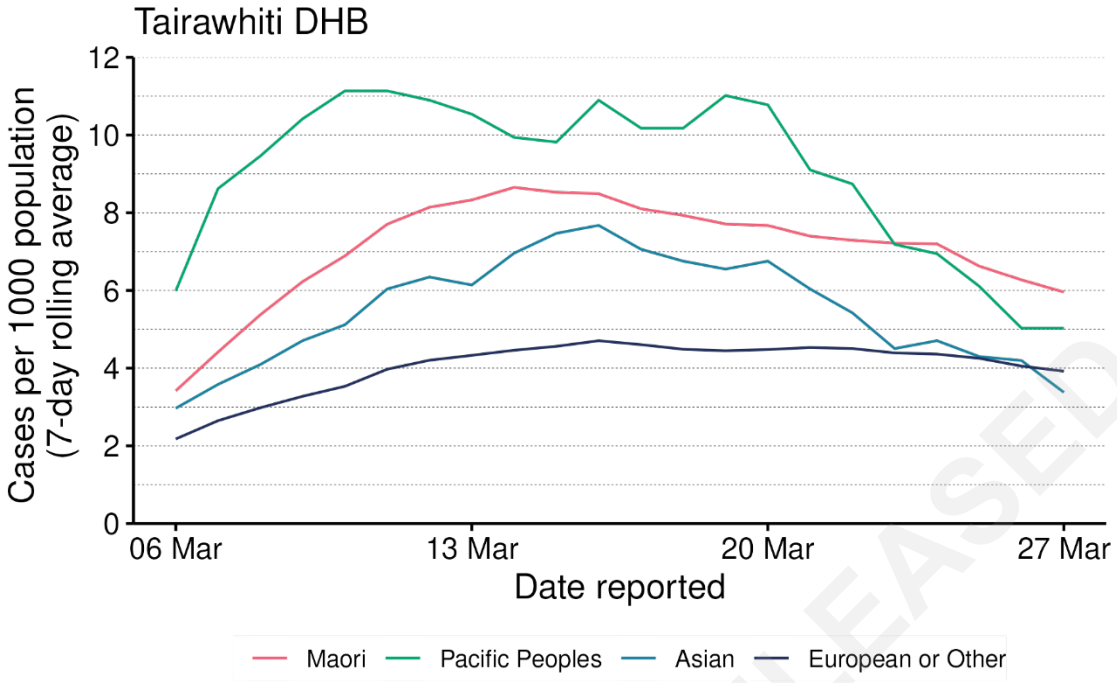


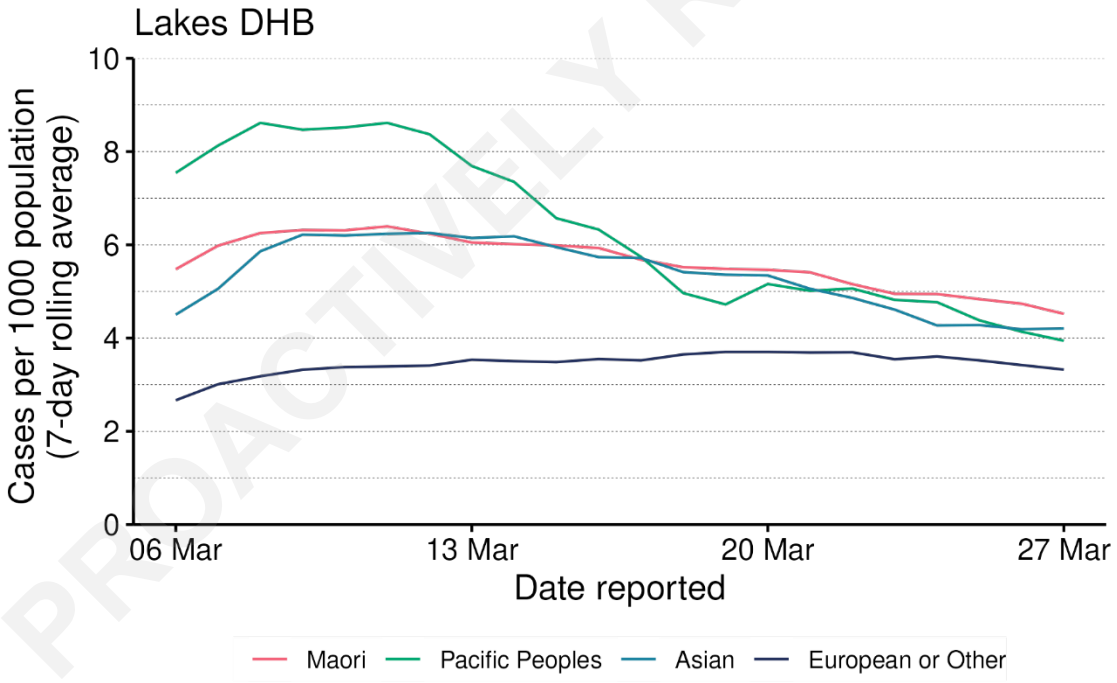


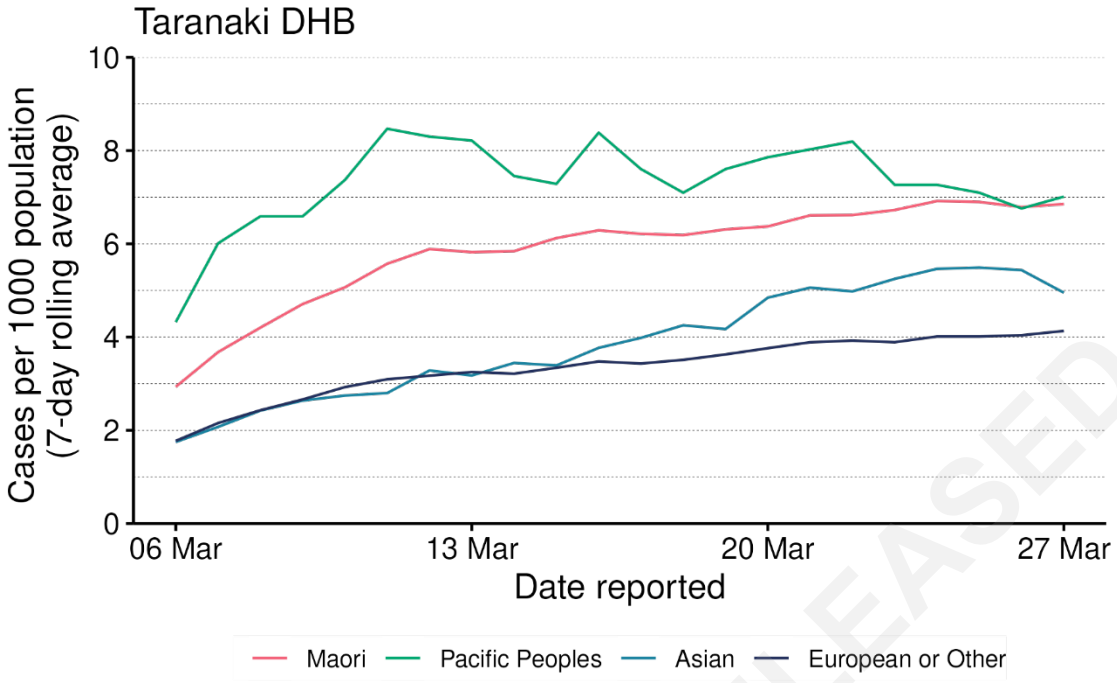


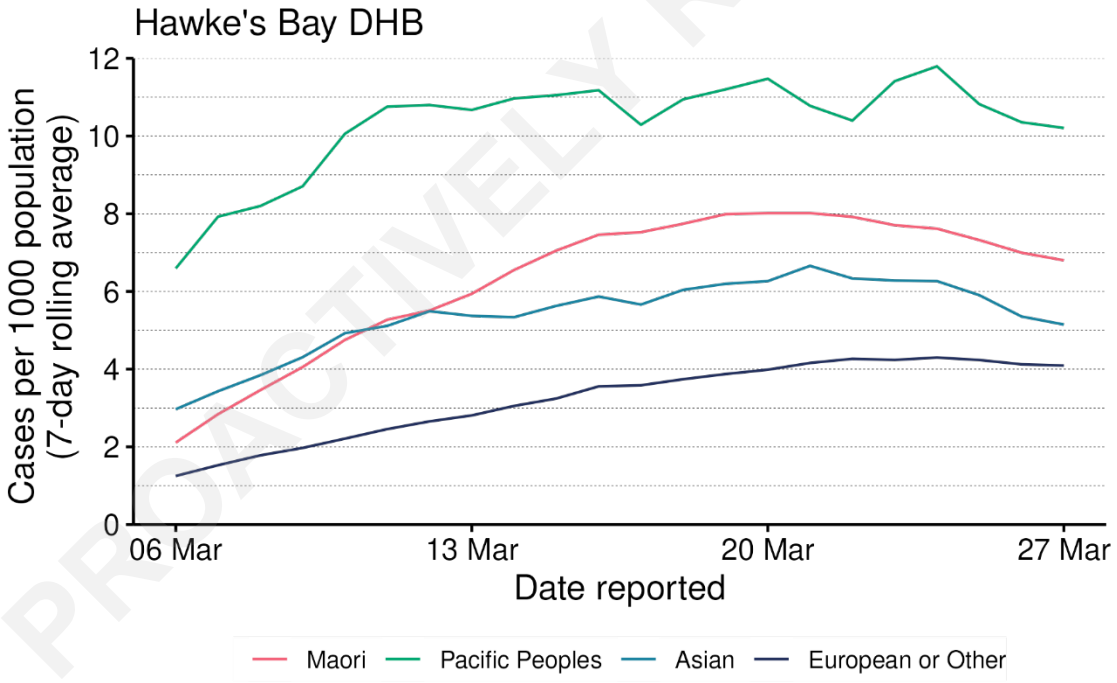


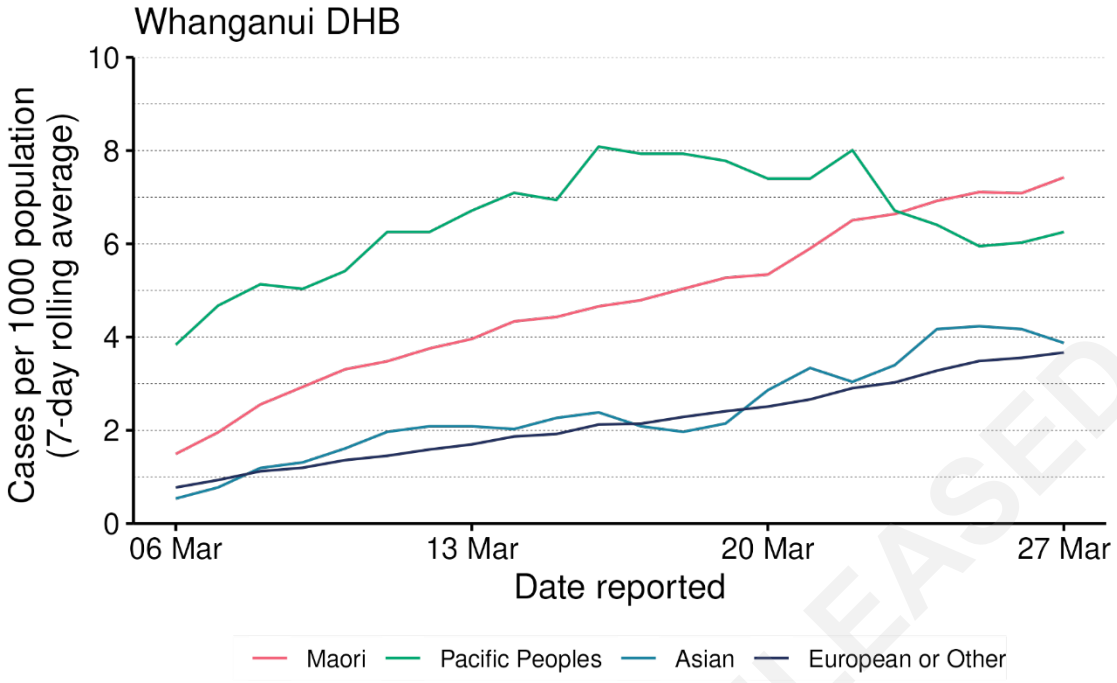


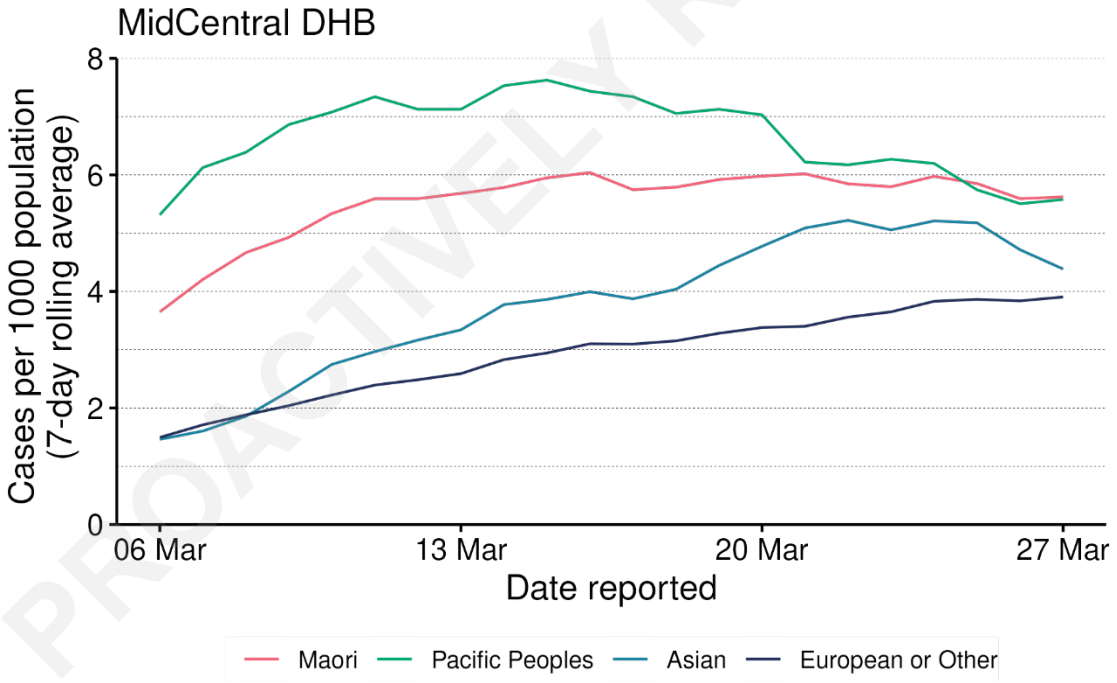


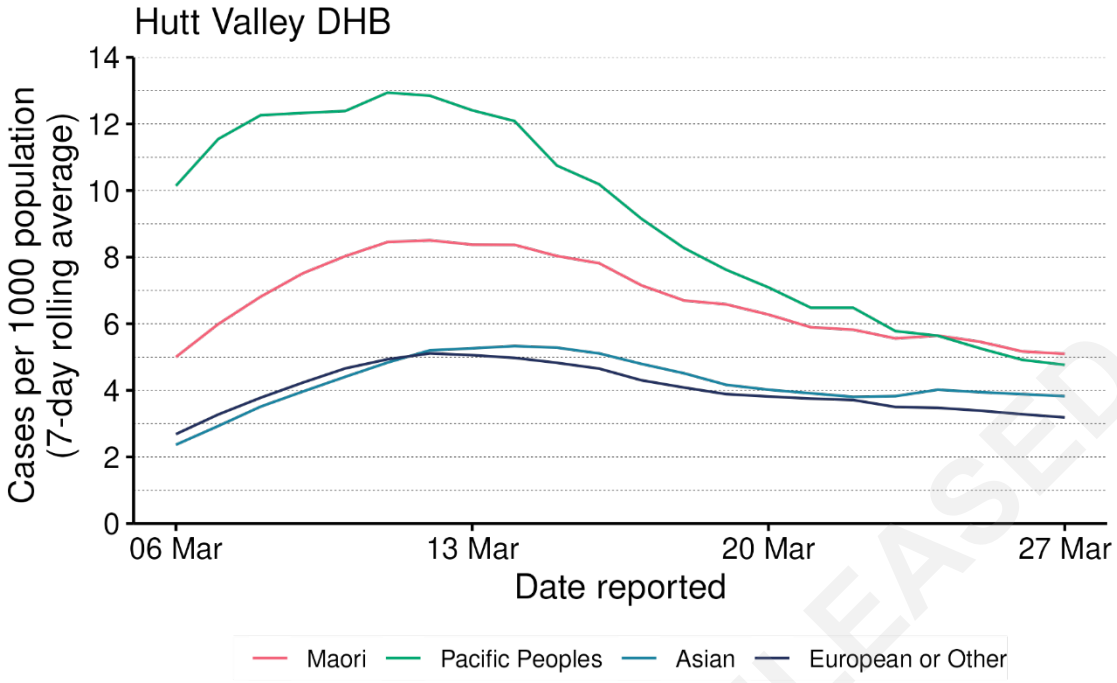


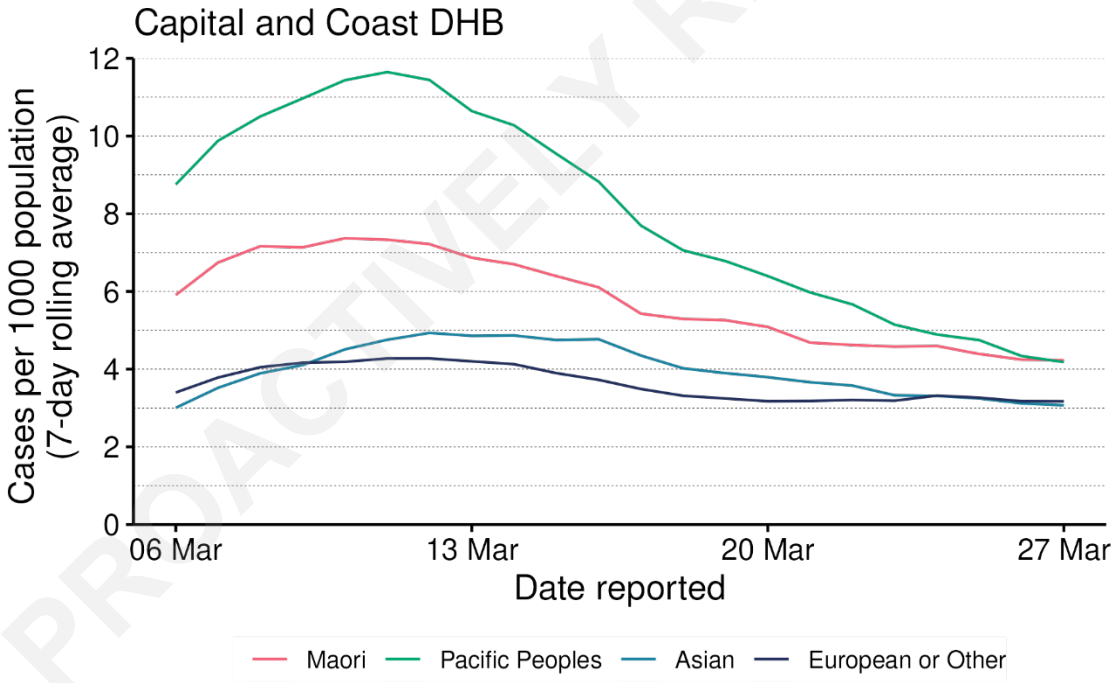


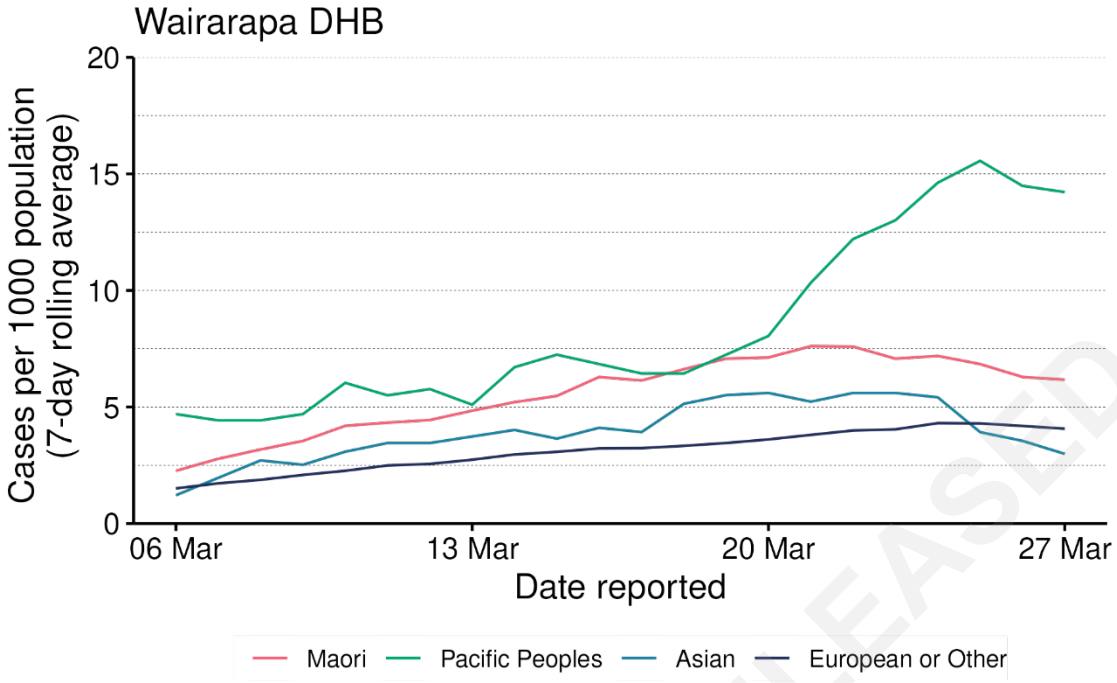


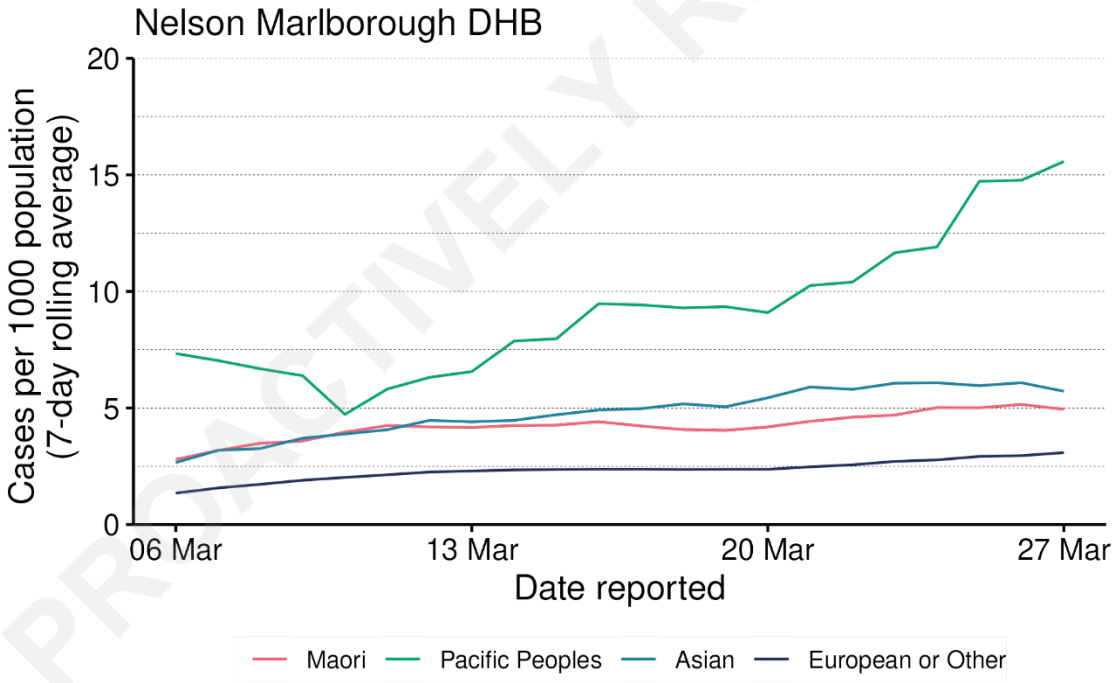


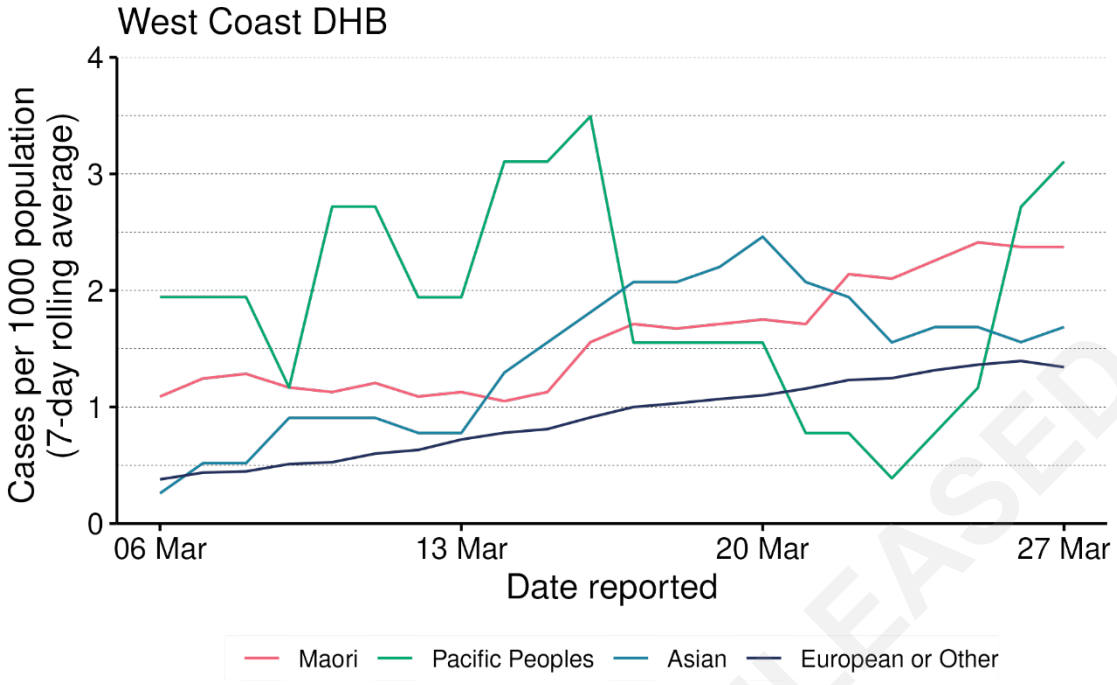


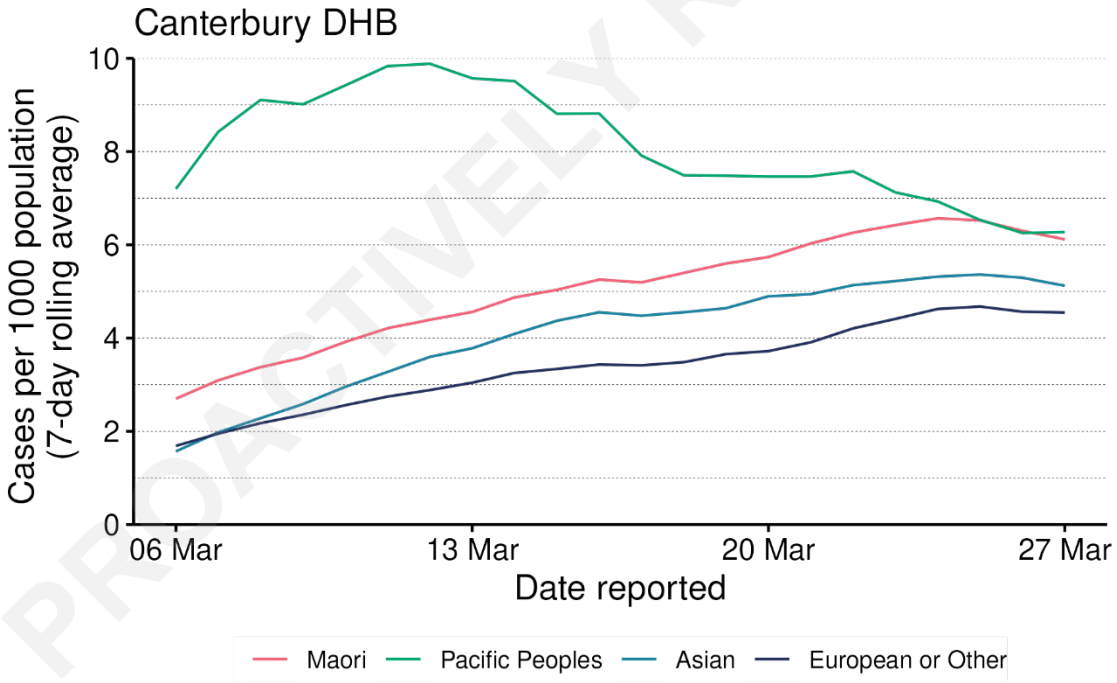


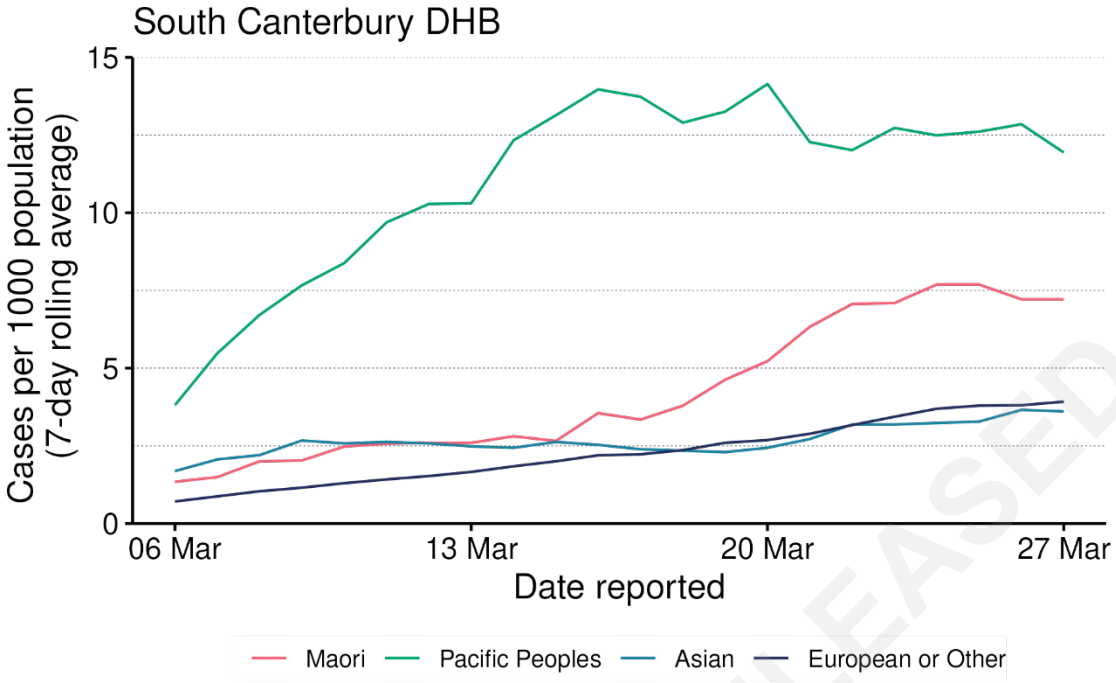


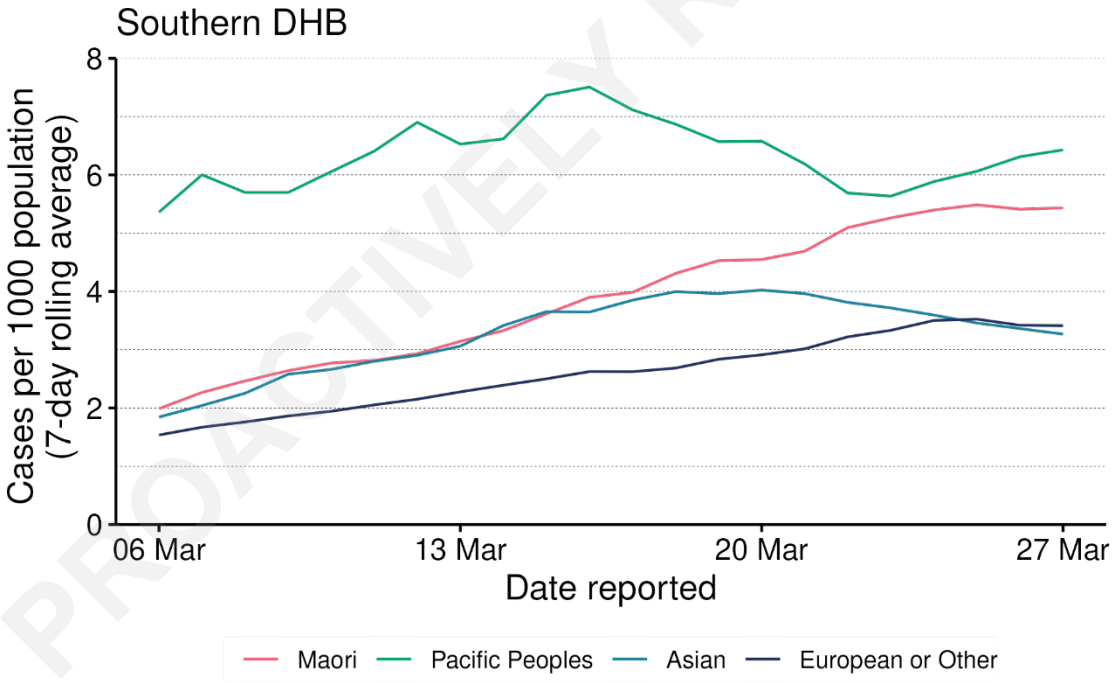


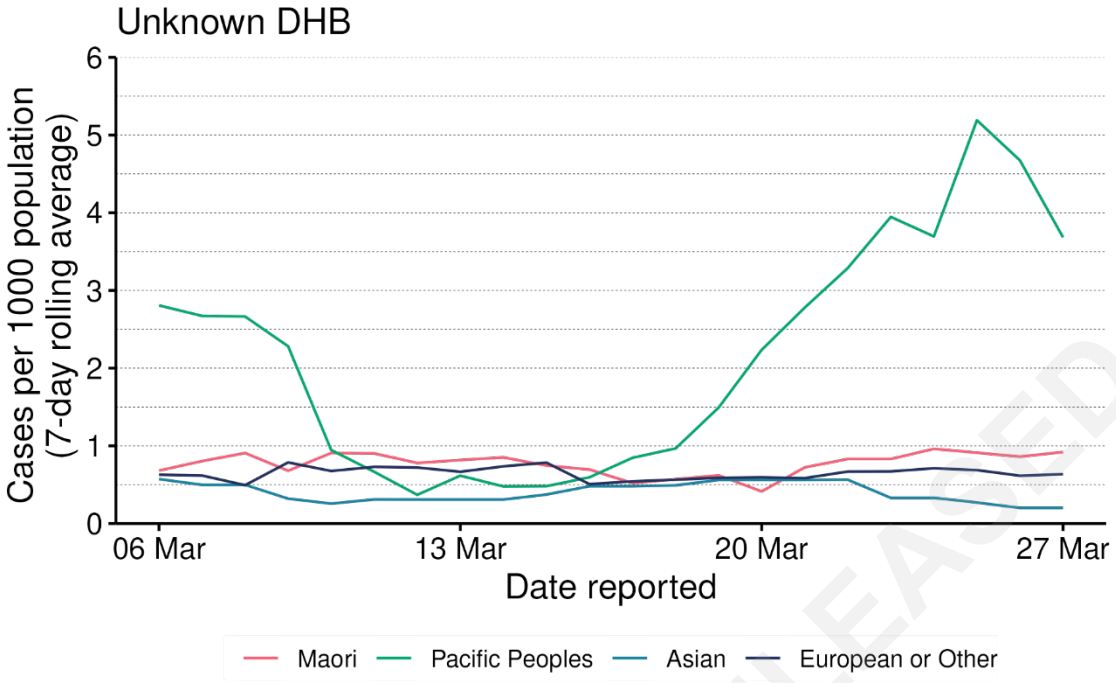












Deprivation Graphs

COVID-19

Trends and Insights Report

Updated 30 March 2022

Appendix Document

Note: Appendix 2 was an update on Appendix 1

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

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 21 March	Rate per 1,000
Northland	4112	21
Waitemata	8259	13
Auckland	6056	12
Counties Manukau	7592	13
Bay of Plenty	6677	26
Waikato	10132	24
Tairawhiti	1783	35
Lakes	3061	27
Taranaki	4063	33
Hawke's Bay	6253	36
Whanganui	2267	33
MidCentral	5490	30
Hutt Valley	4054	26
Capital and Coast	7390	23
Wairarapa	1577	32
Nelson Marlborough	4003	25
West Coast	339	10
Canterbury	19053	34
South Canterbury	1856	30
Southern	8622	26
Unknown	76	-
Total	**112715**	**23**

Ethnicity	Community cases reported since 21 March	Rate per 1,000
Māori	23763	31
Pacific Peoples	7651	21
Asian	13049	18
European or Other	67570	22
Unknown	682	-
Total	**112715**	**23**

Sex	Community cases reported since 21 March	Rate per 1,000
Female	59962	24
Male	52660	22
Unknown	93	-
Total	**112715**	**23**

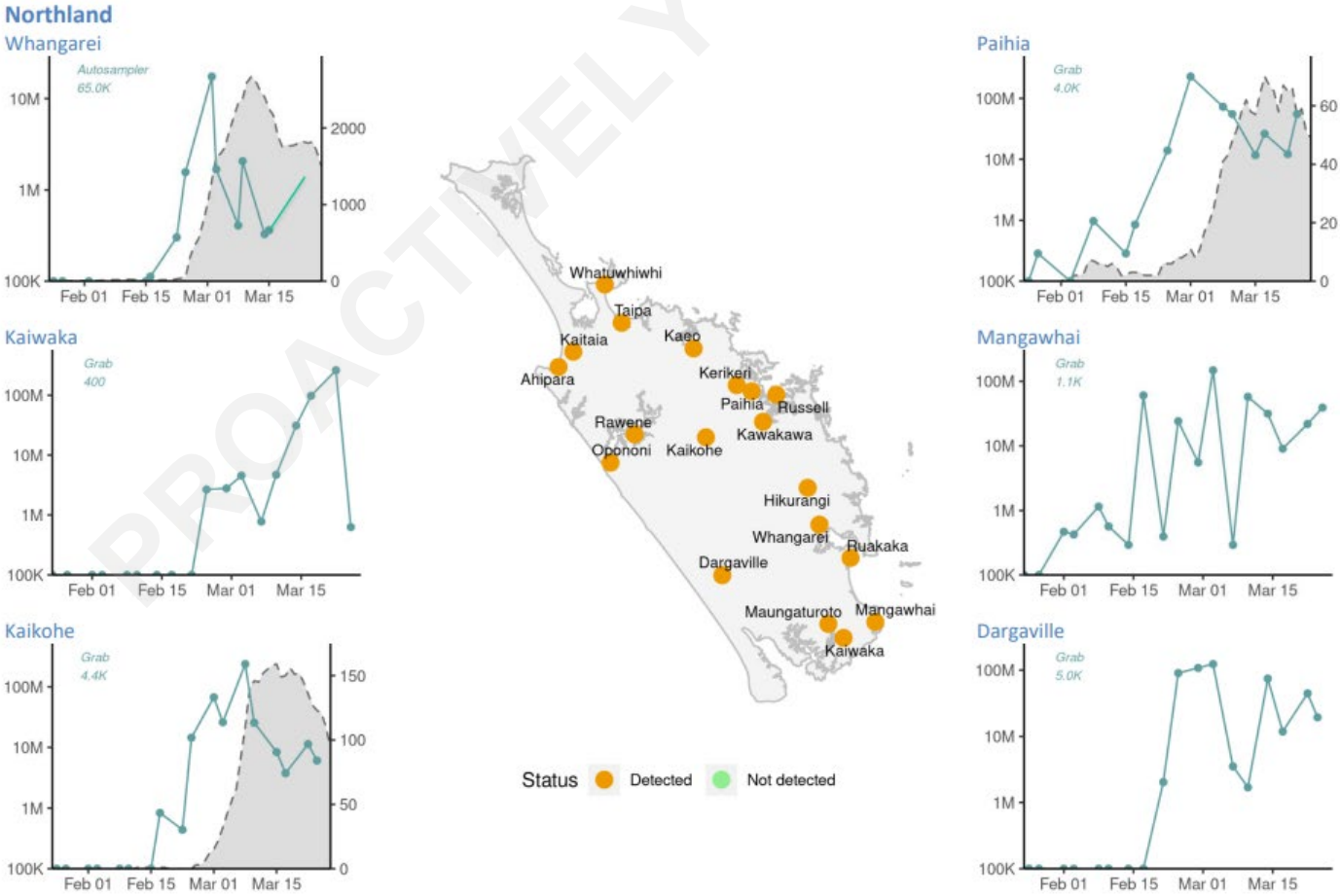
Age	Community cases reported since 21 March	Rate per 1,000
0-9	16671	26
10-19	20301	32
20-29	19073	28
30-39	20053	29
40-49	16822	27
50-59	10466	16
60-69	5710	11
70+	3691	7
Total	**112715**	**23**

EpiNow

Table 1: ***Estimated median effective R (R_{eff}) by Public Health Unit region, cases to 25 March 2022***

Public Health Unit region	R_{eff} (90% Credible Interval [CI])
Northland	0.9 (0.4-1.9)
Auckland	0.8 (0.4–1.8)
Taranaki	1.0 (0.6-1.6)
Waikato	0.8 (0.3–1.9)
Toi Te Ora	0.8 (0.3–1.6)
Tairawhiti	0.7 (0.4-1.2)
Regional Public Health (Wellington Region)	1.0 (0.6–2.0)
Mid Central	1.0 (0.6-1.5)
Hawkes Bay	0.8 (0.4–1.2)
Canterbury/ South Canterbury	0.9 (0.3–2.1)
Southern	1.0 (0.4–2.1)
Nelson Marlborough	1.2 (0.4–3.2)
National	0.9 (0.4-1.7)

ESR Wastewater



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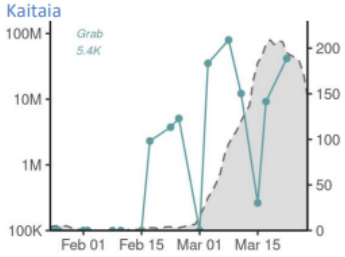

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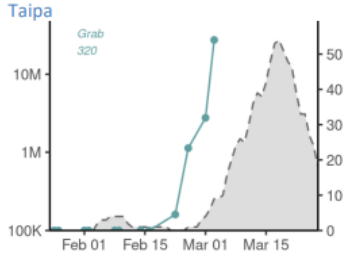

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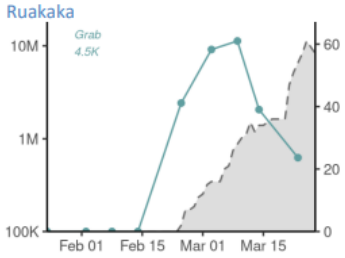

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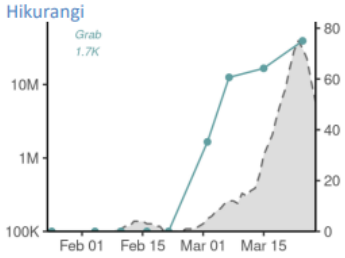

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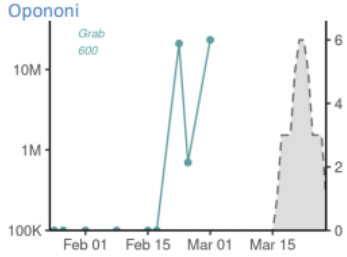

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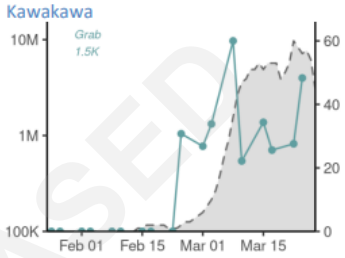

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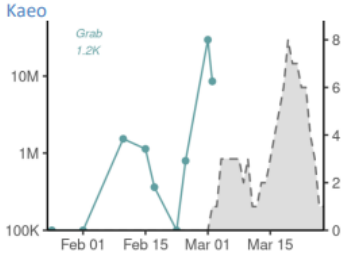
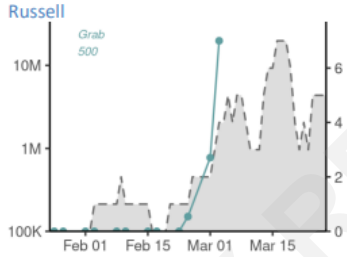


Russell



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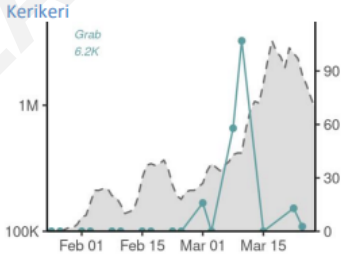

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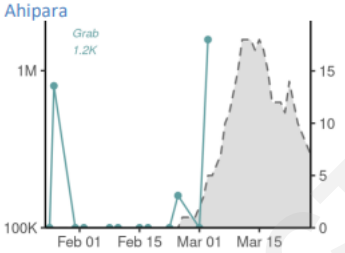

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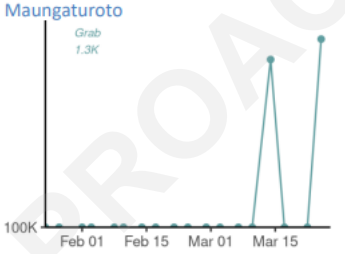

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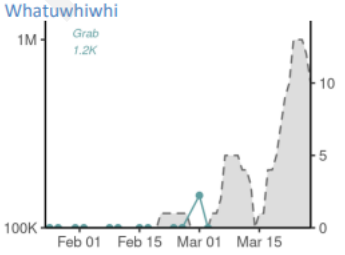
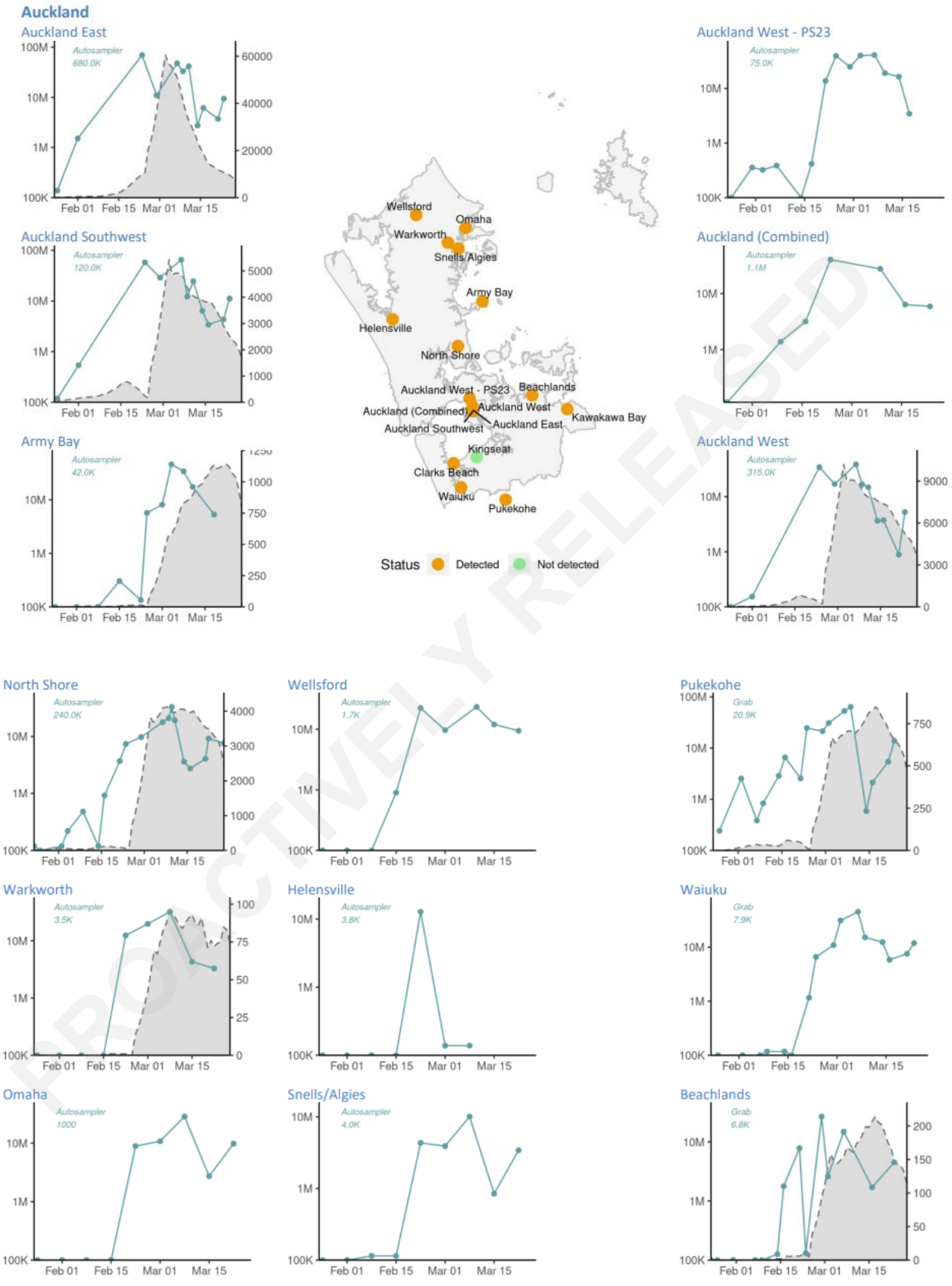
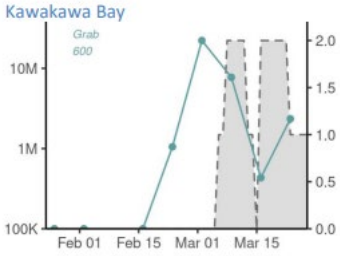




Clarks Beach

Kawakawa Bay



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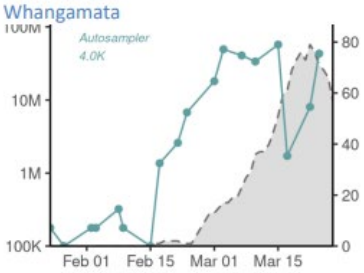
Whangamata



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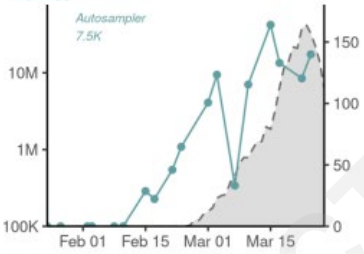

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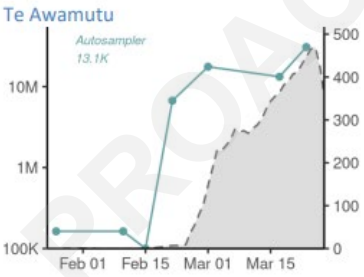

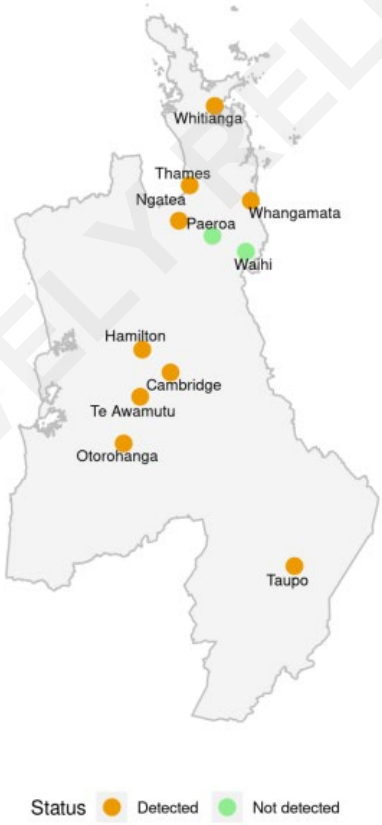

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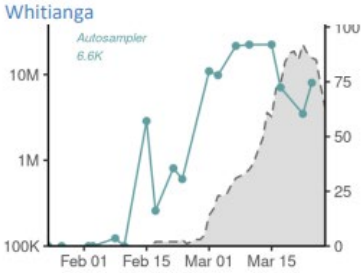

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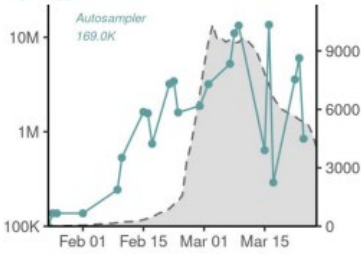

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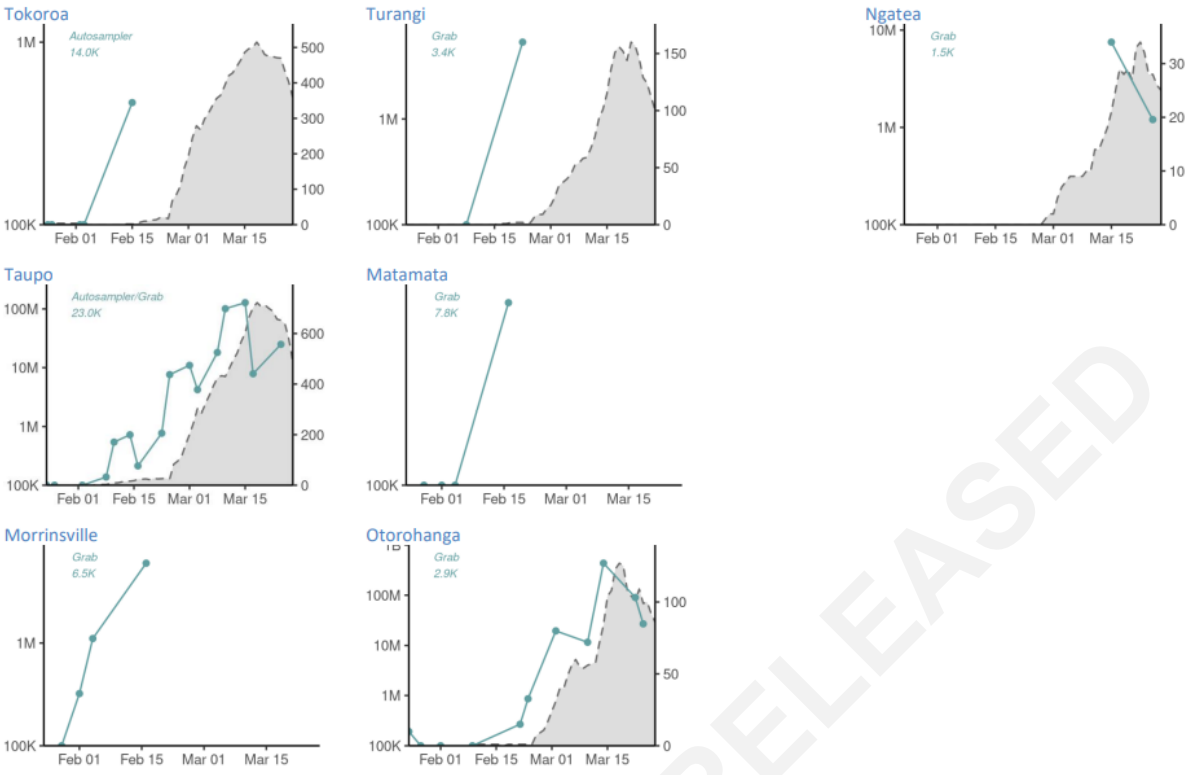

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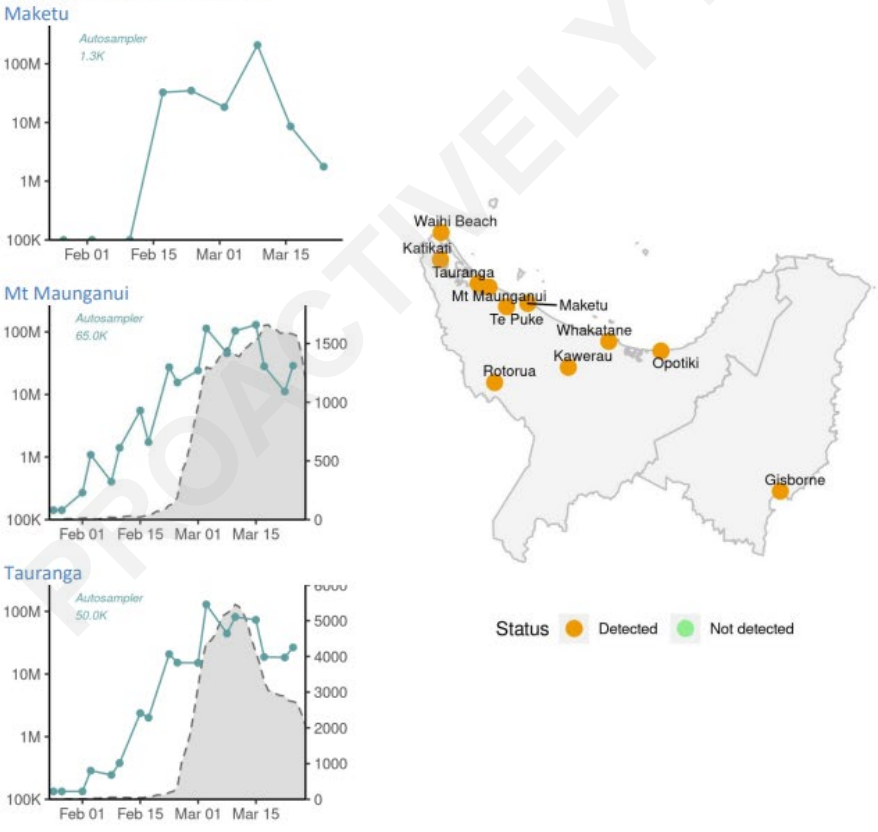

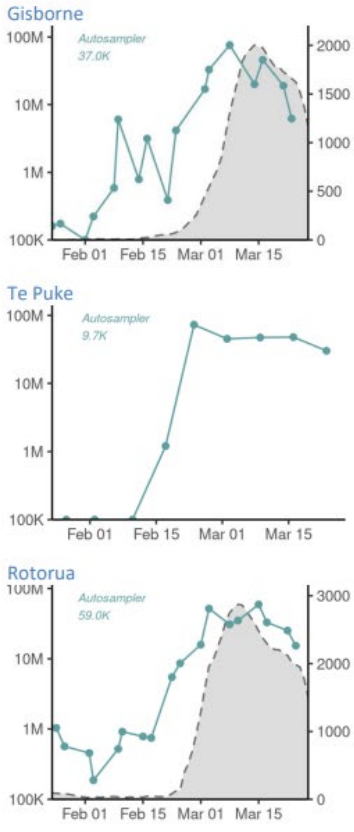

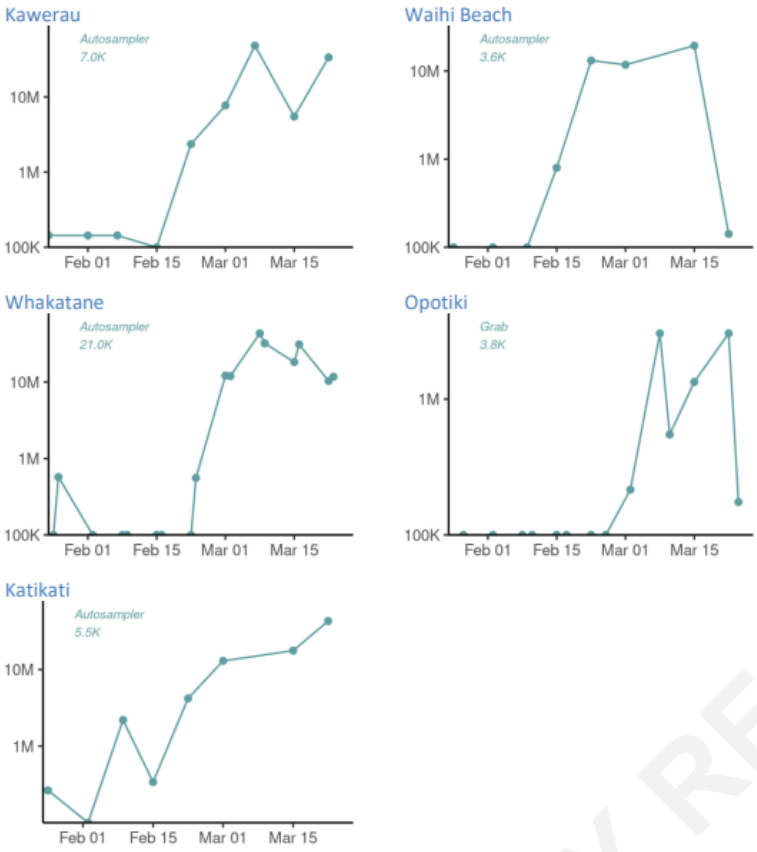

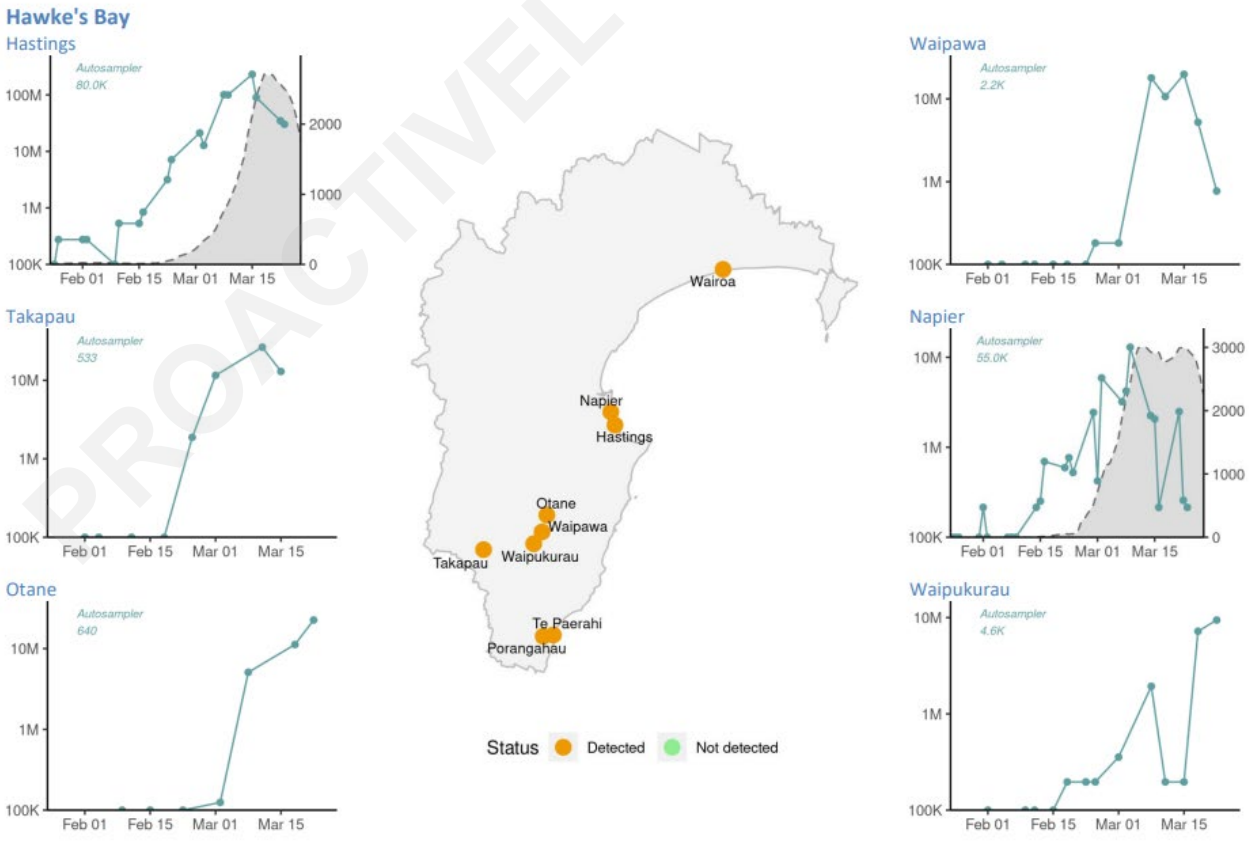

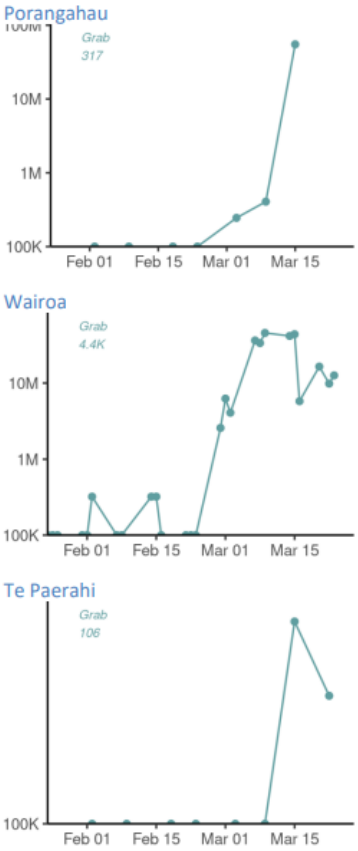

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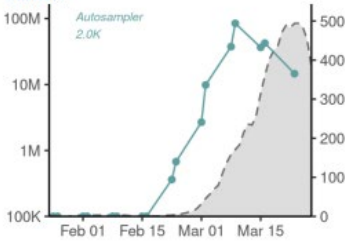
Eltham



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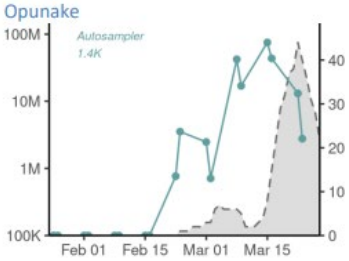

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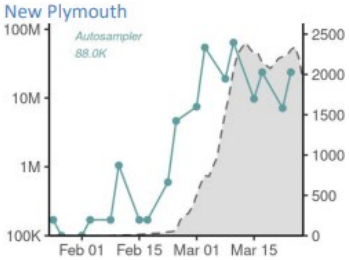

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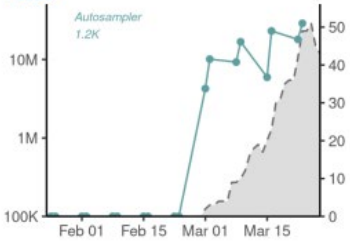

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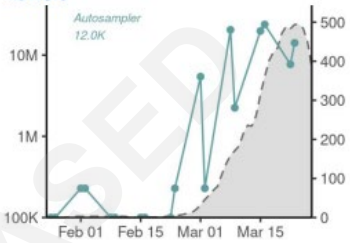
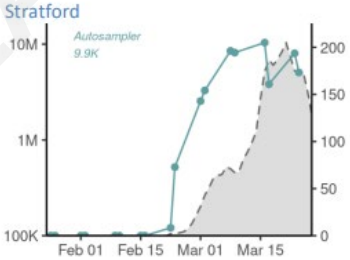


Stratford



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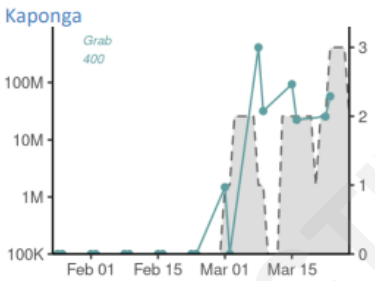

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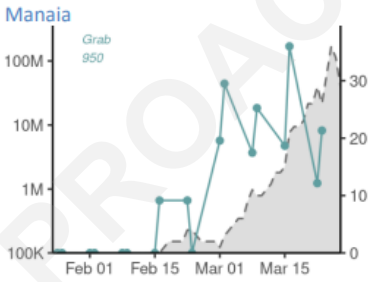

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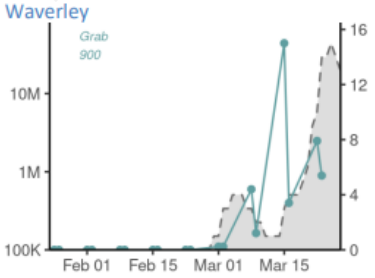

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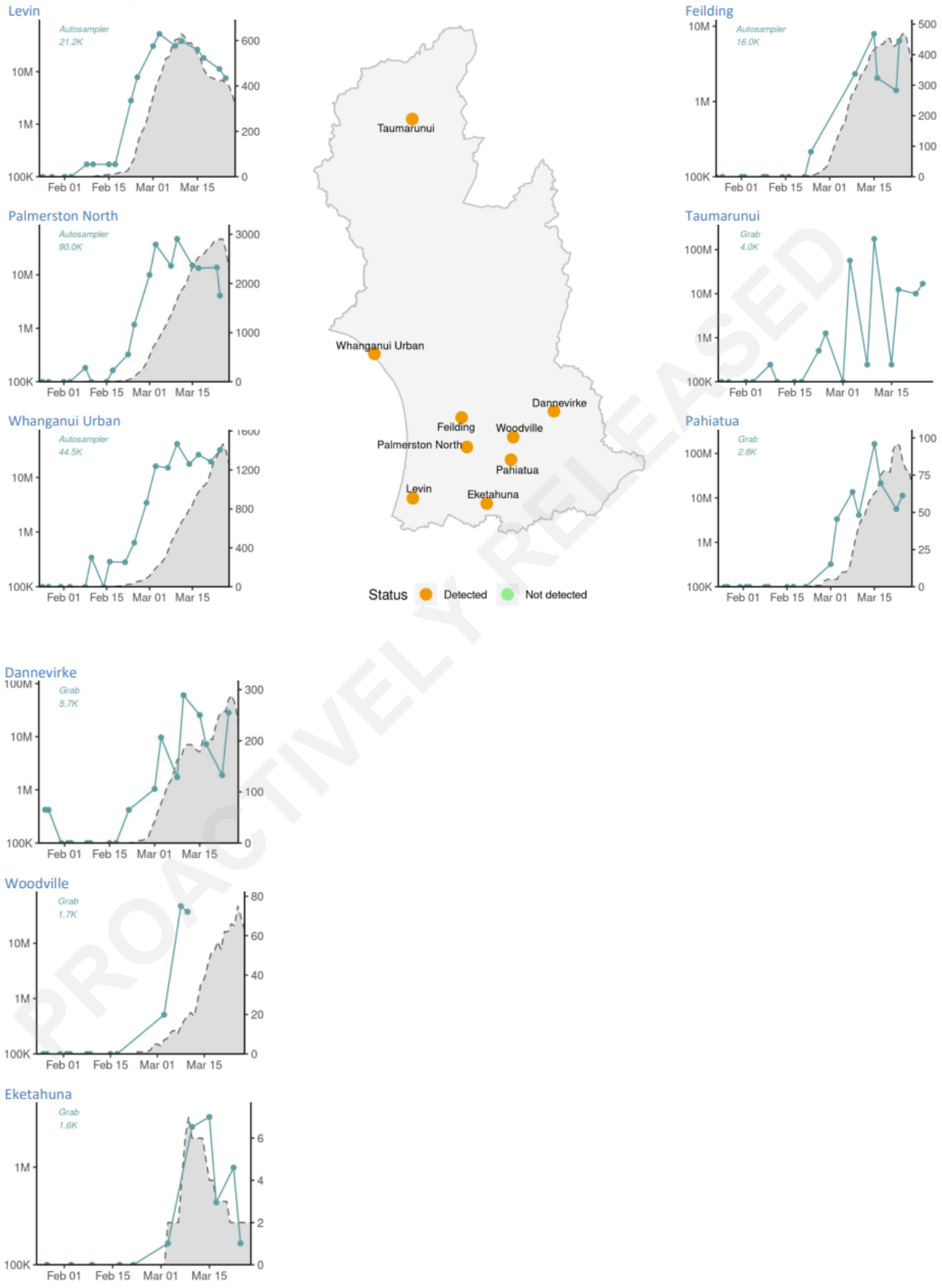
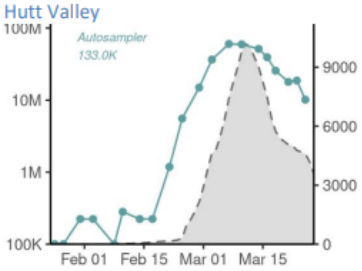


Wellington

Hutt Valley



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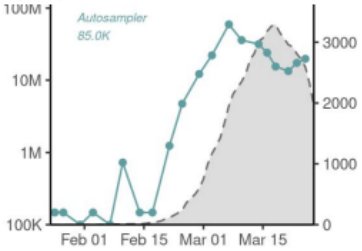

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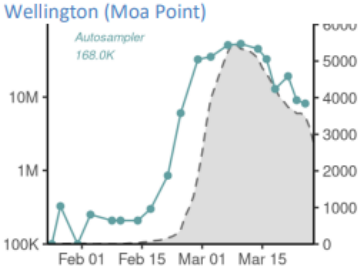
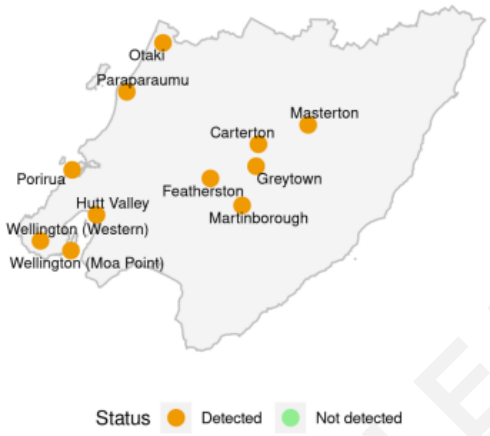
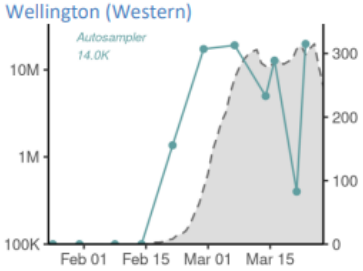




Wellington (Western)



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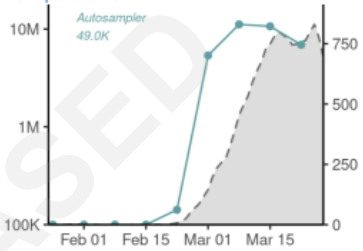
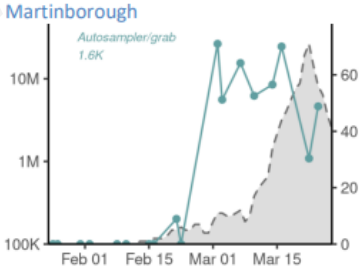
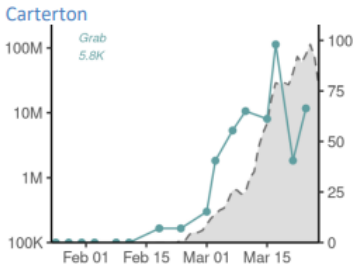
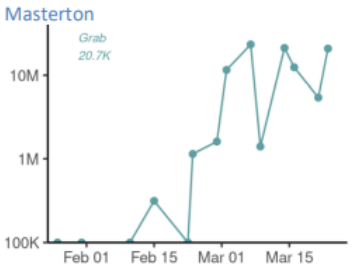
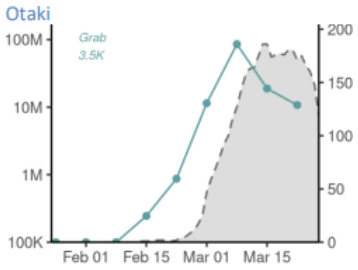


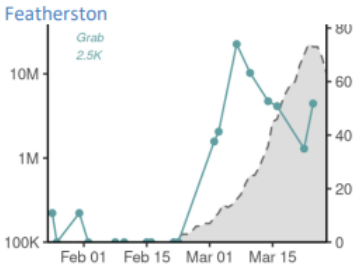
Martinborough

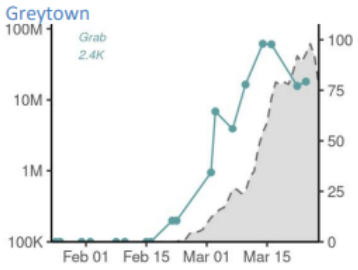




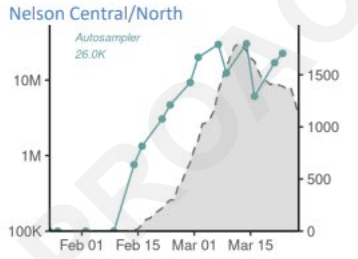


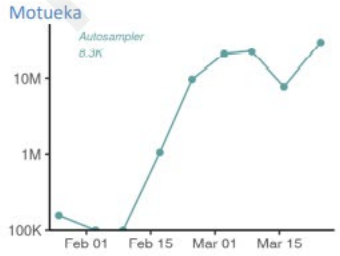


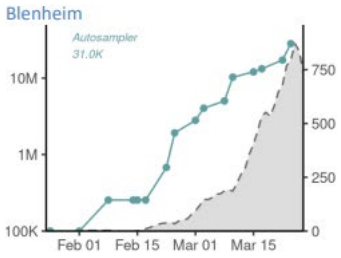


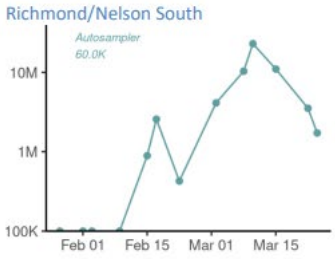


Tasman, Nelson, and Marlborough

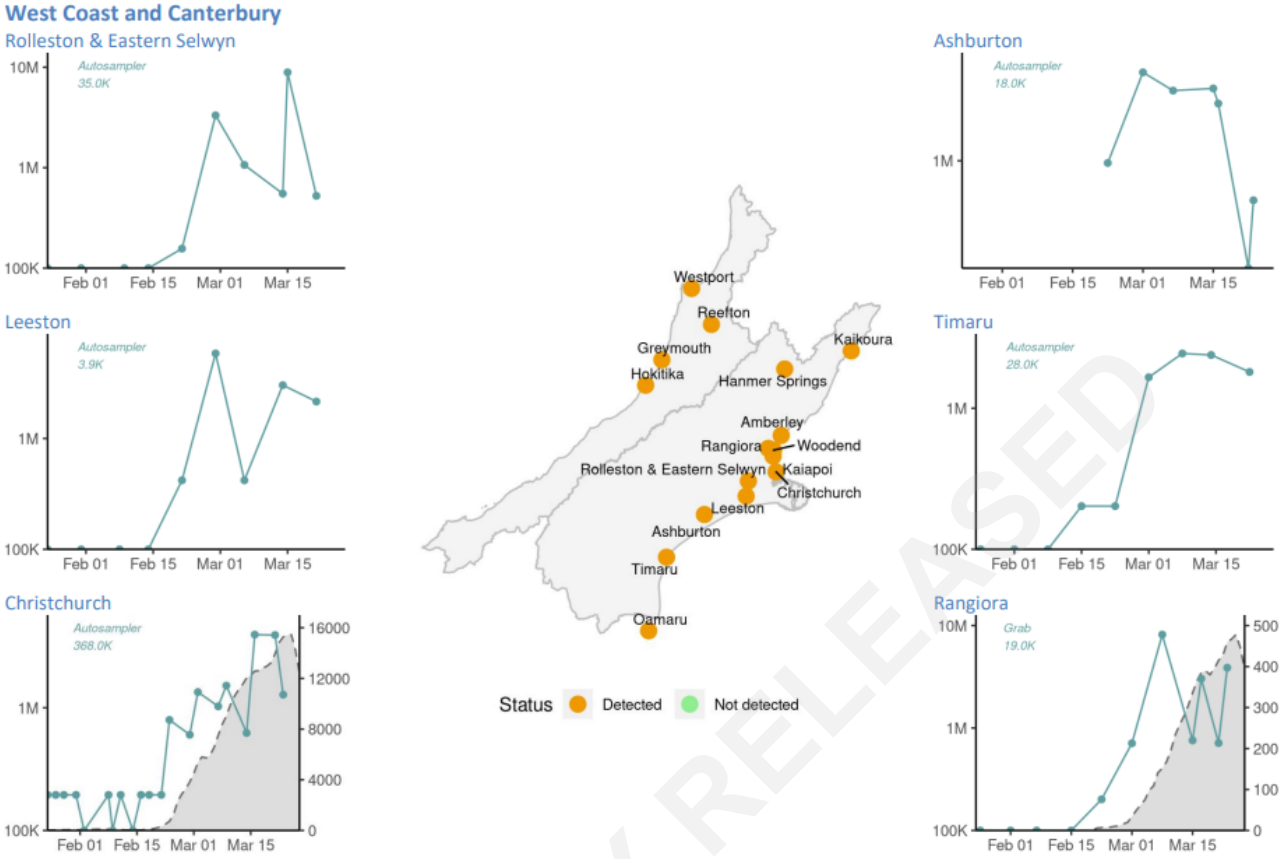


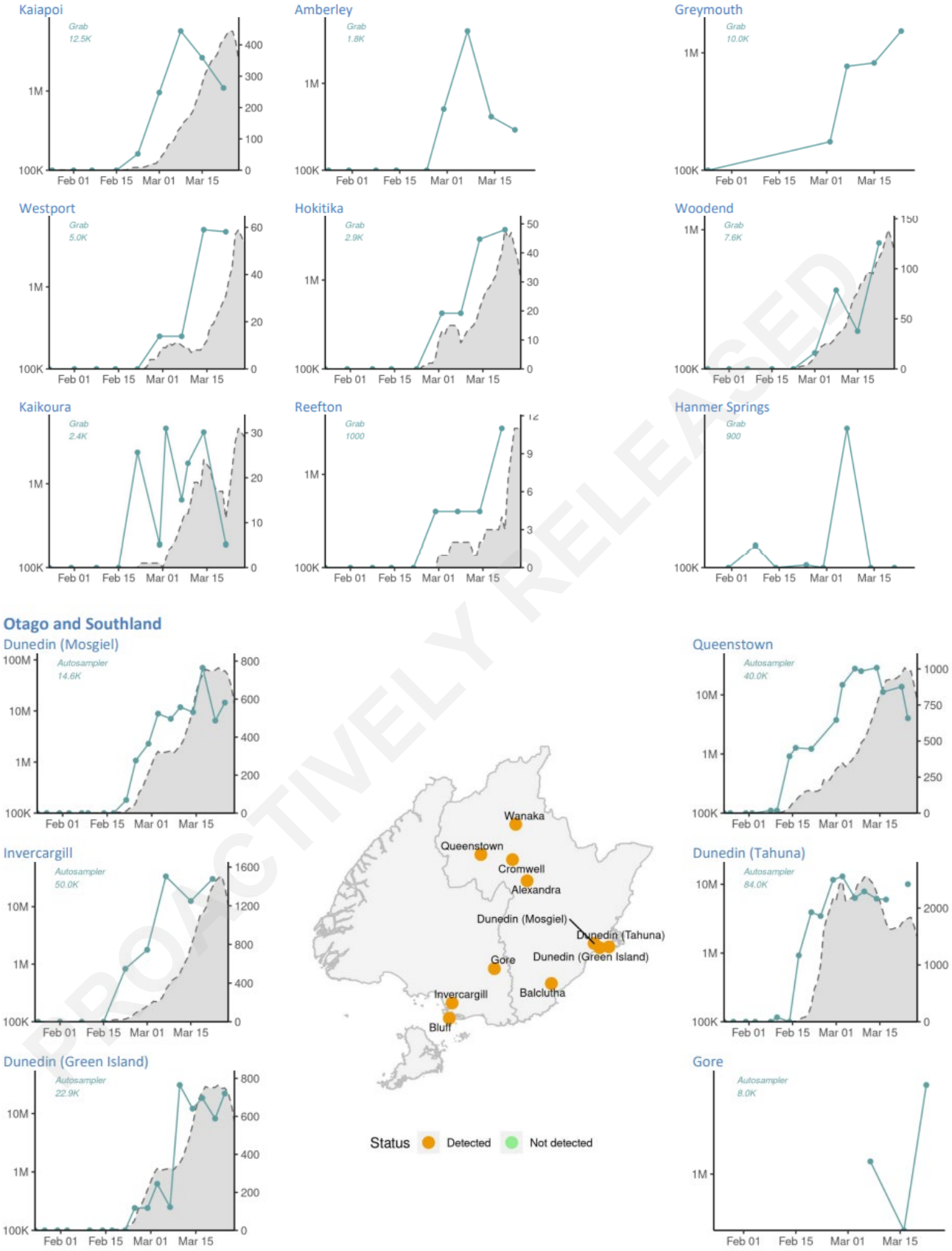


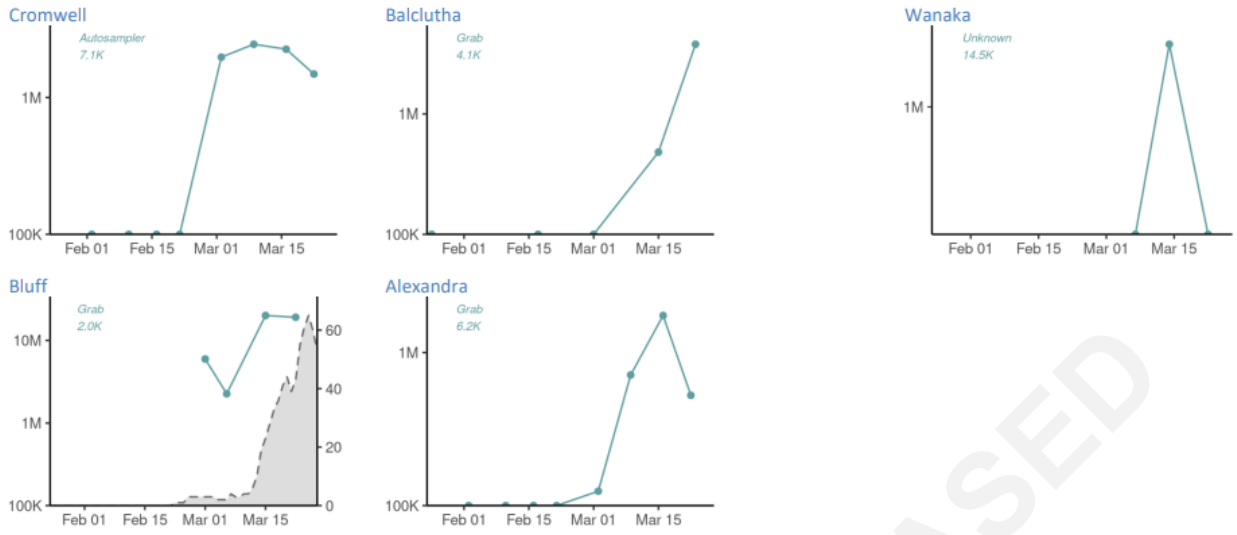




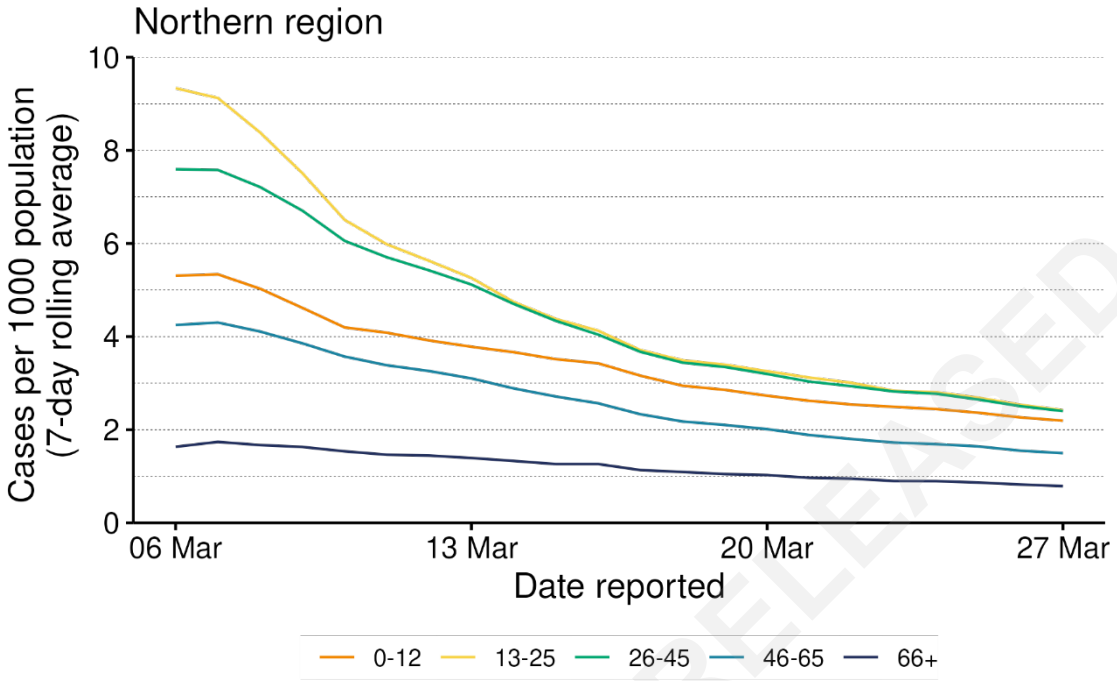
West Coast and Canterbury

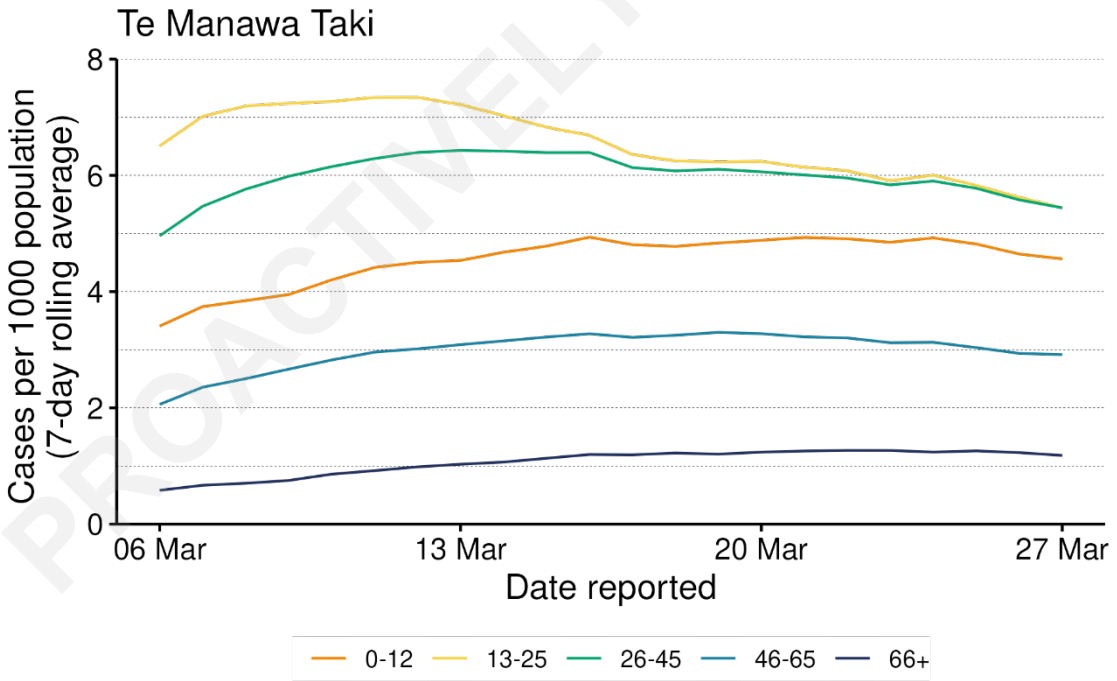


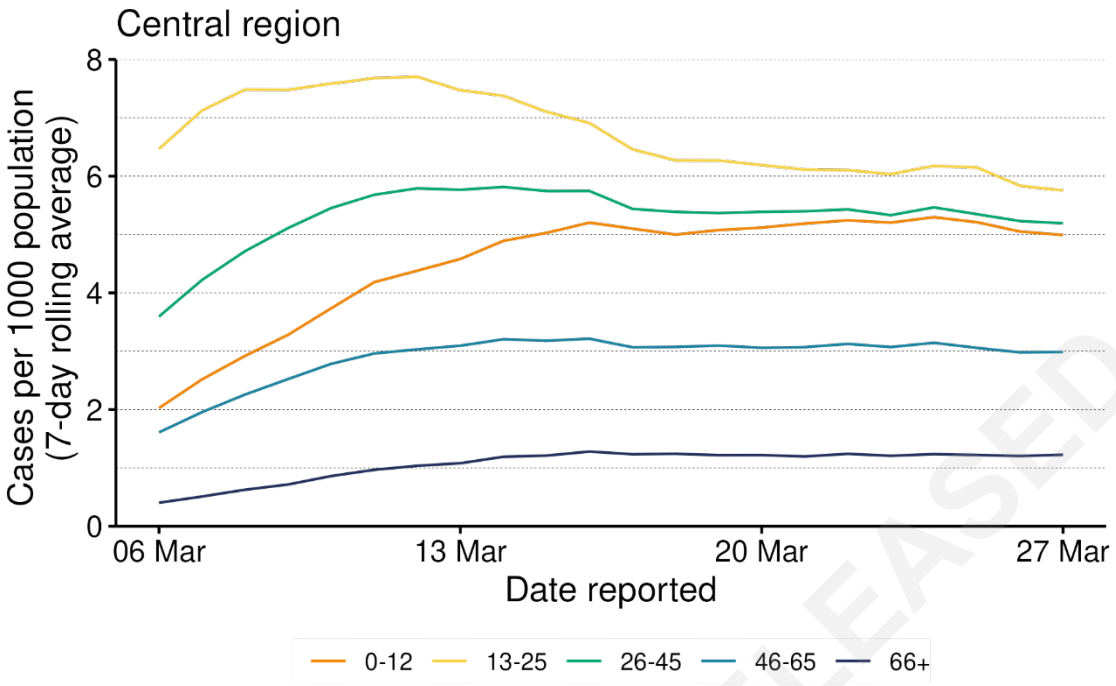


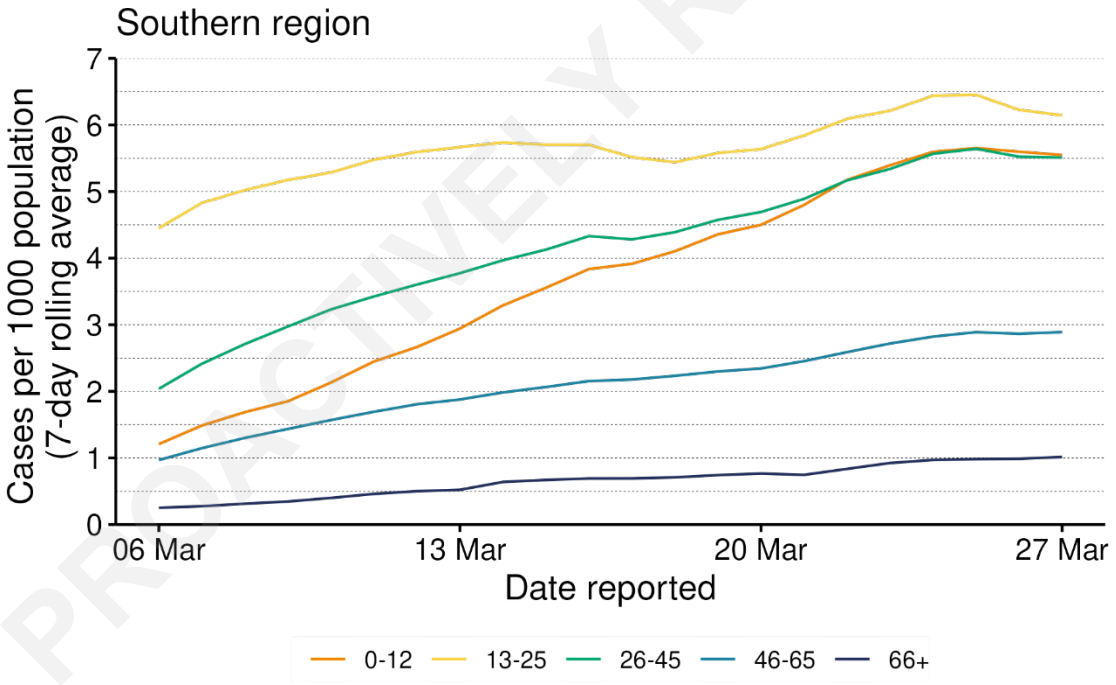


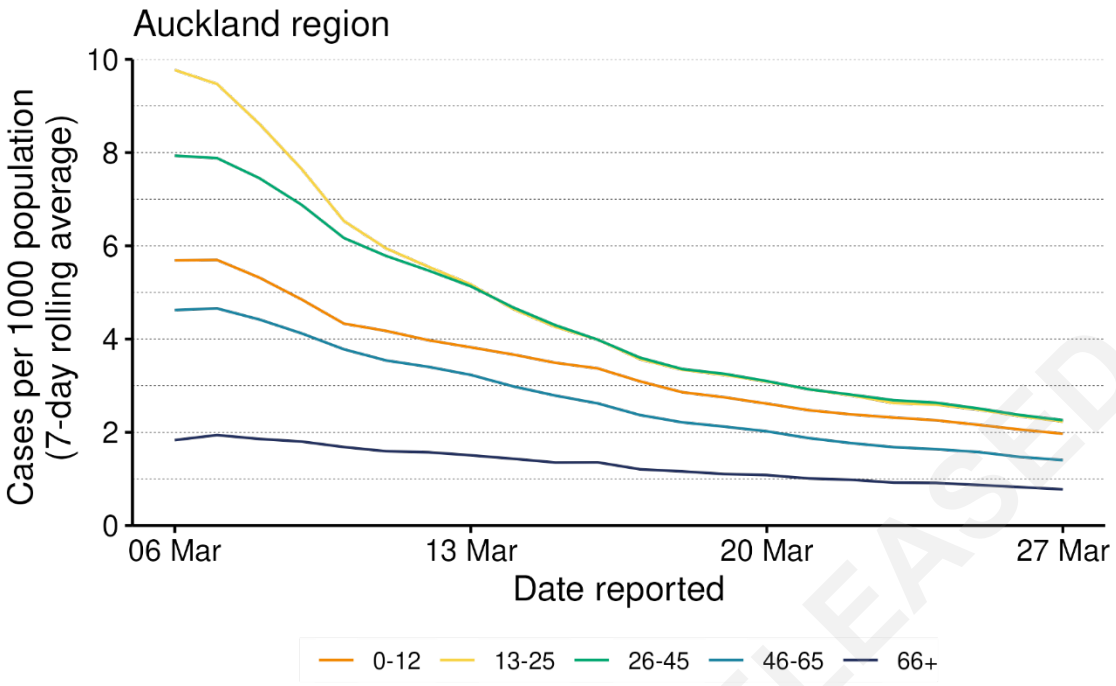
Age Graphs

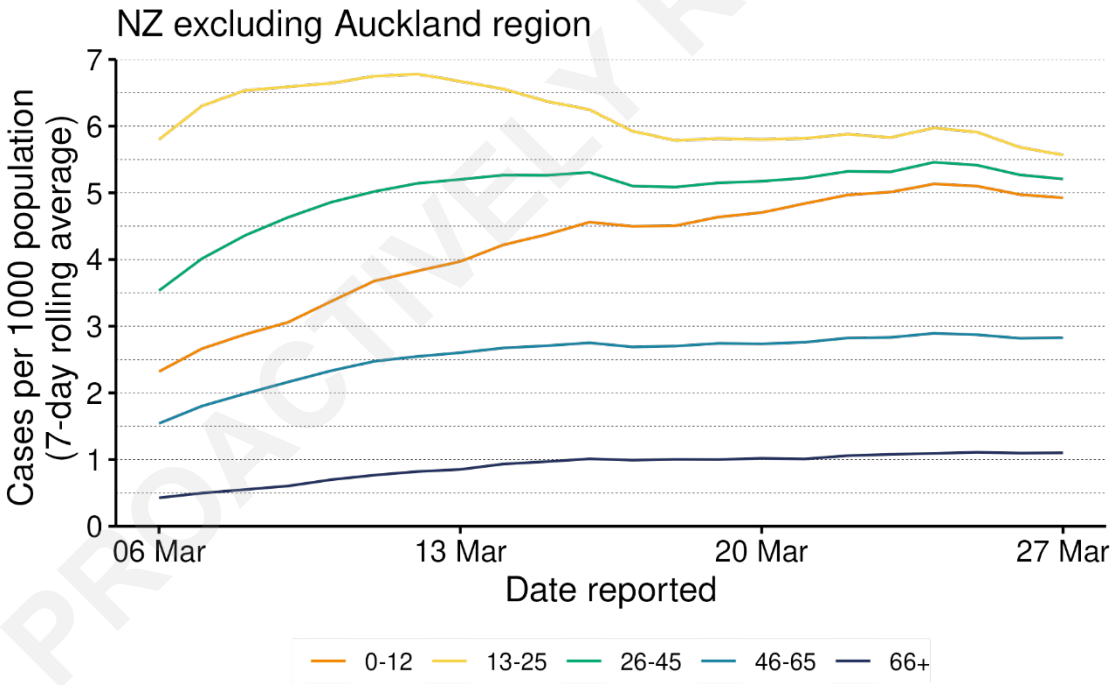


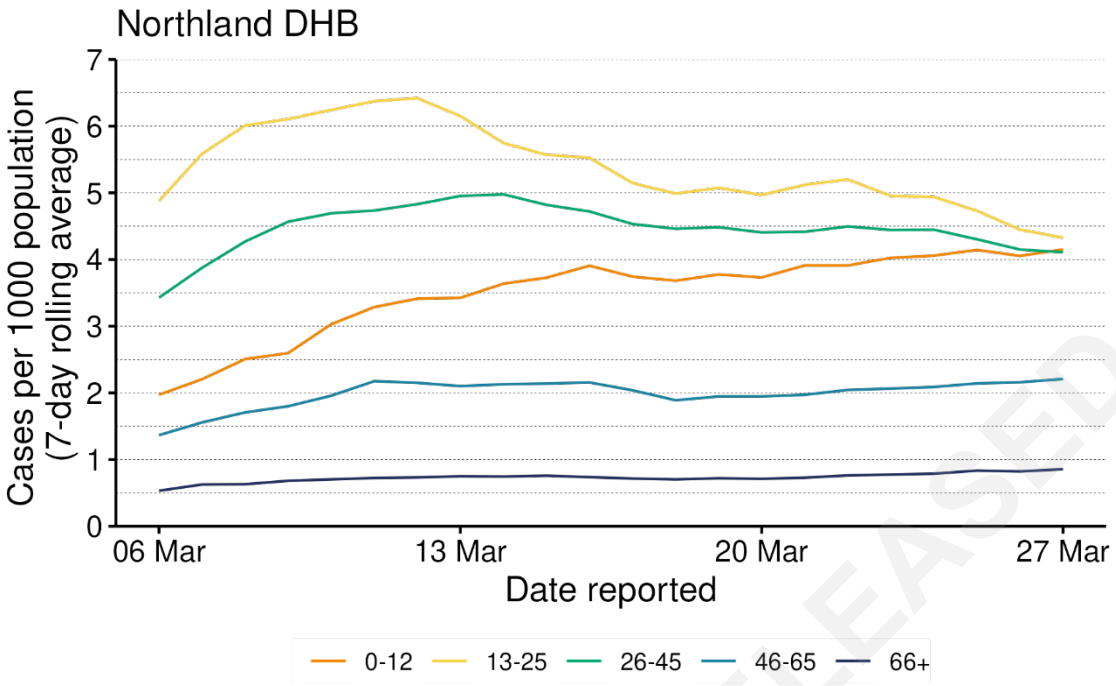


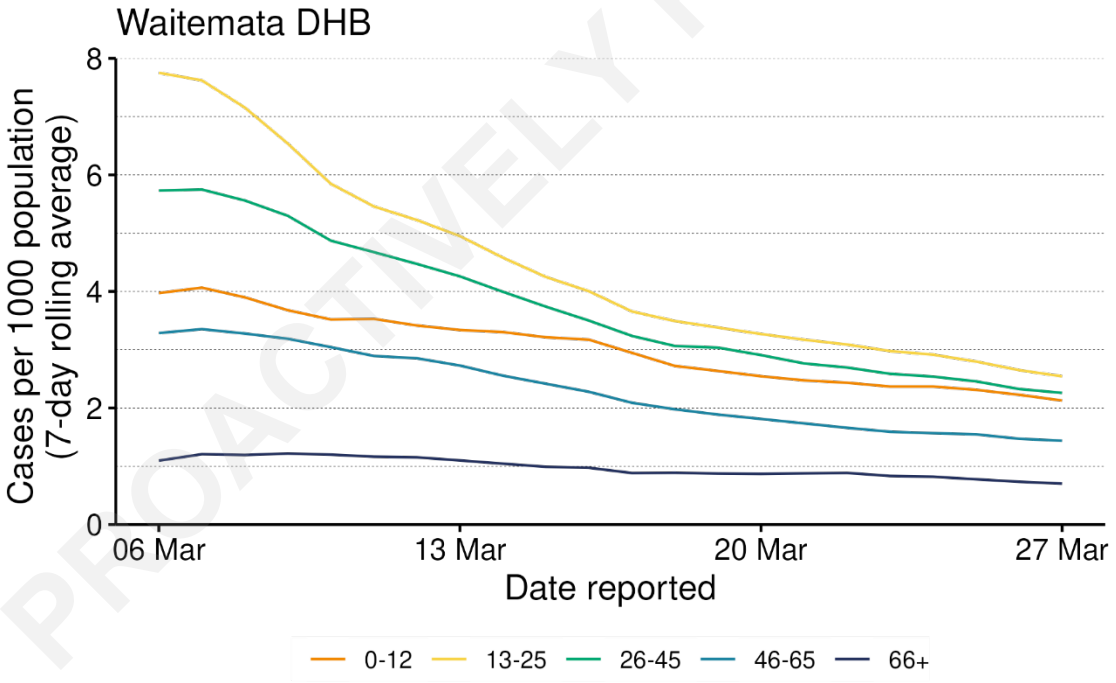


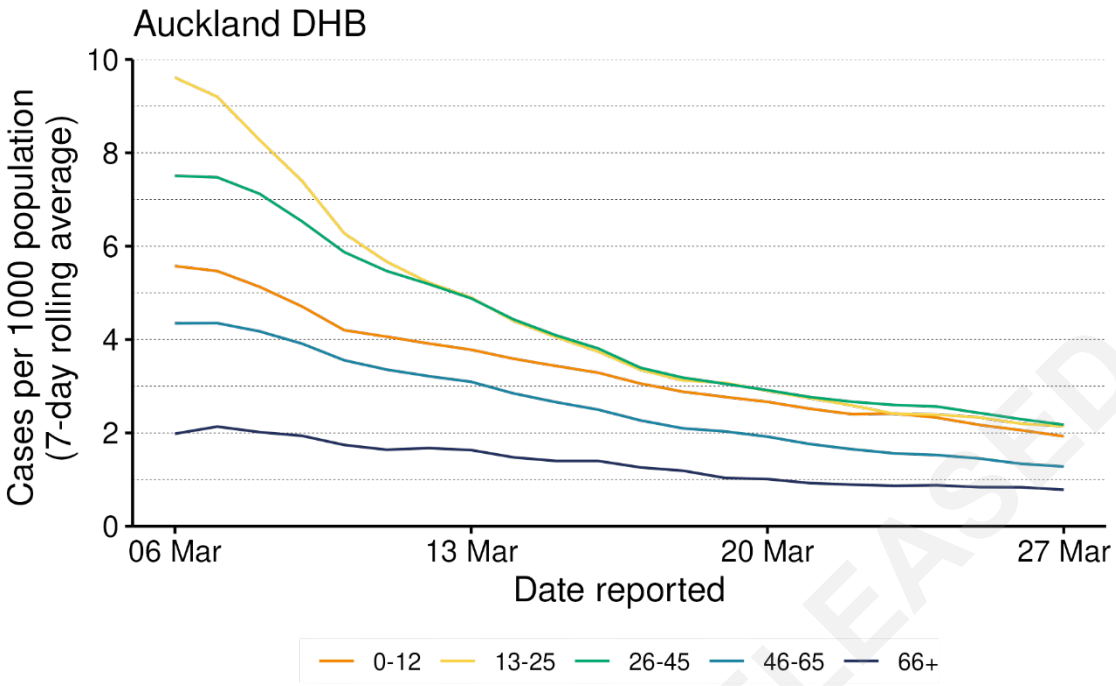


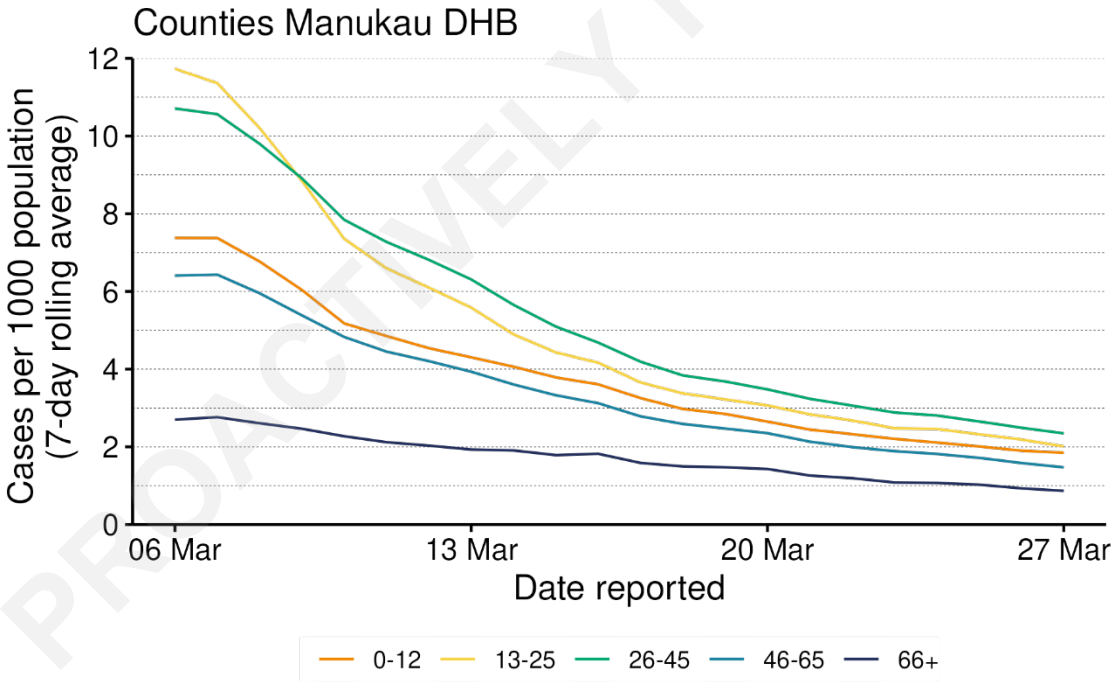


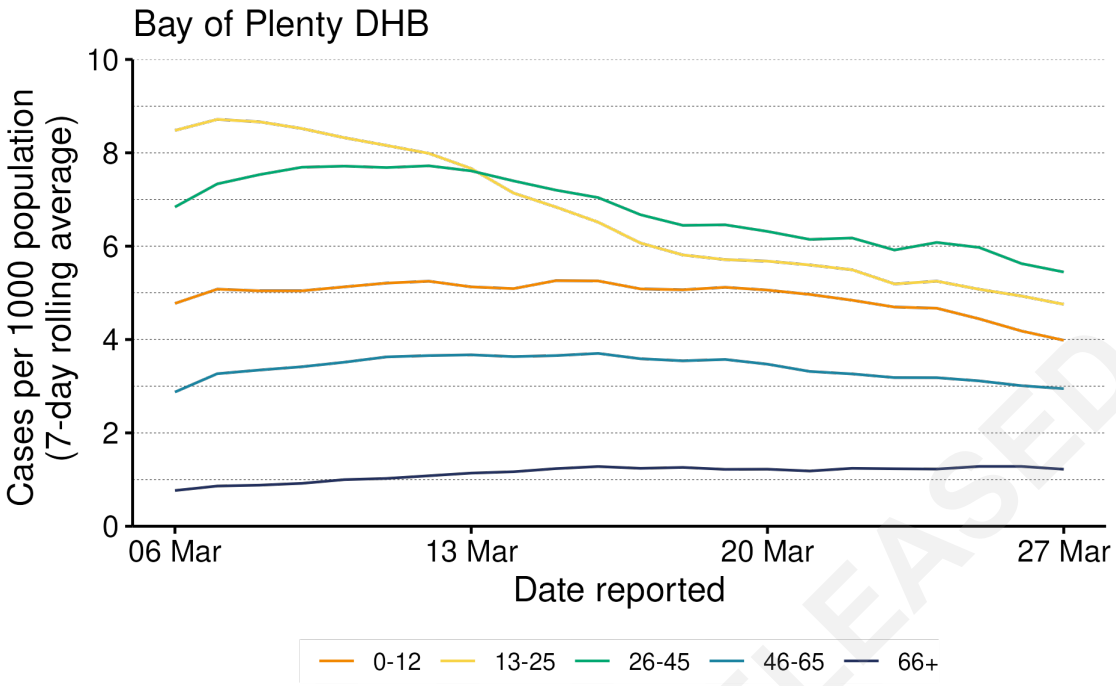


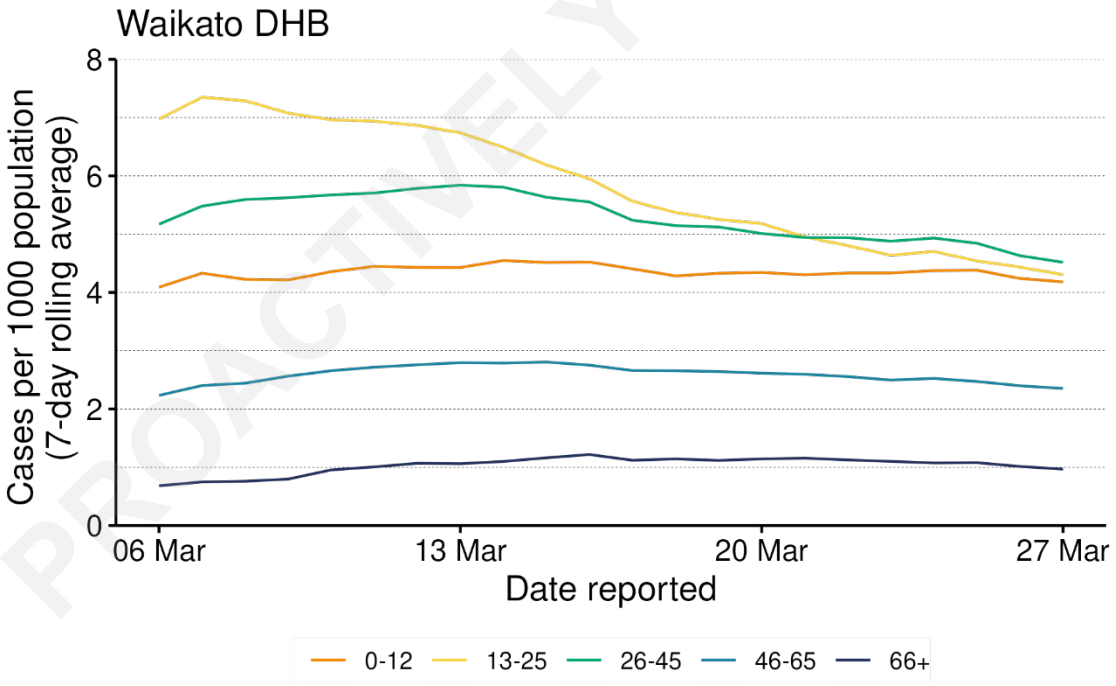


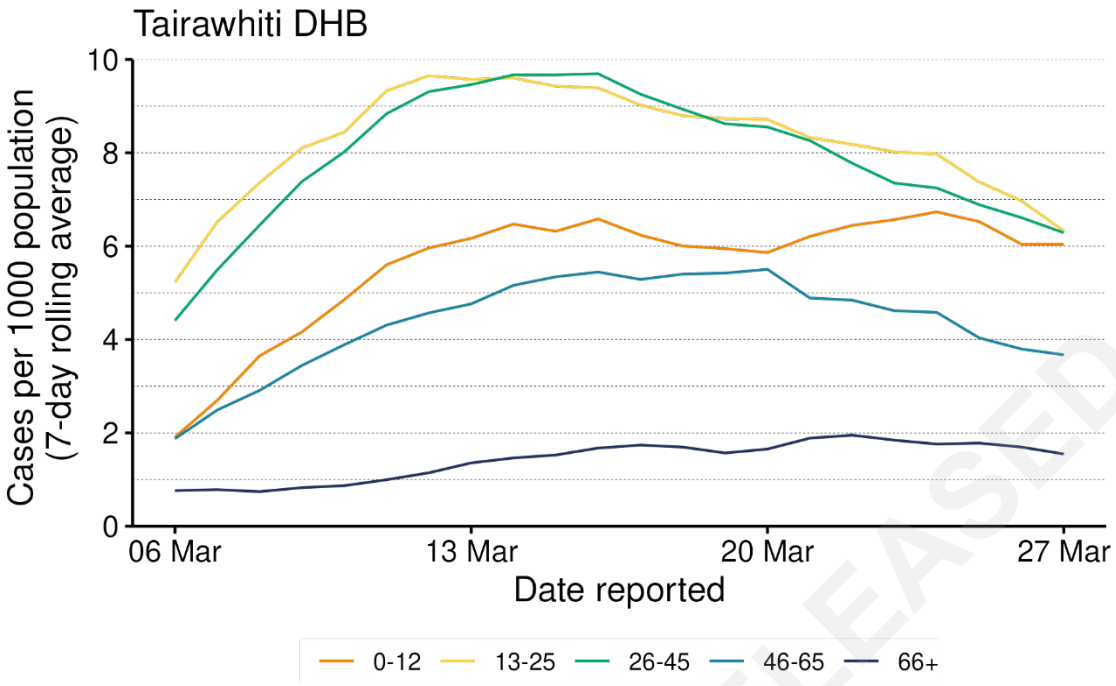


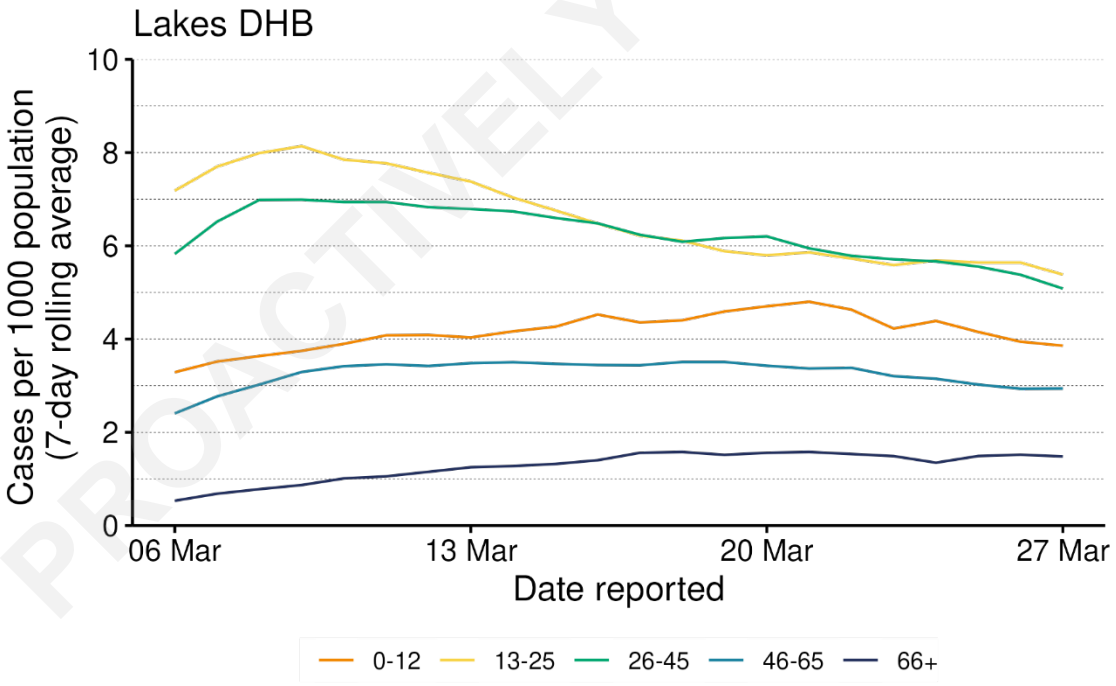


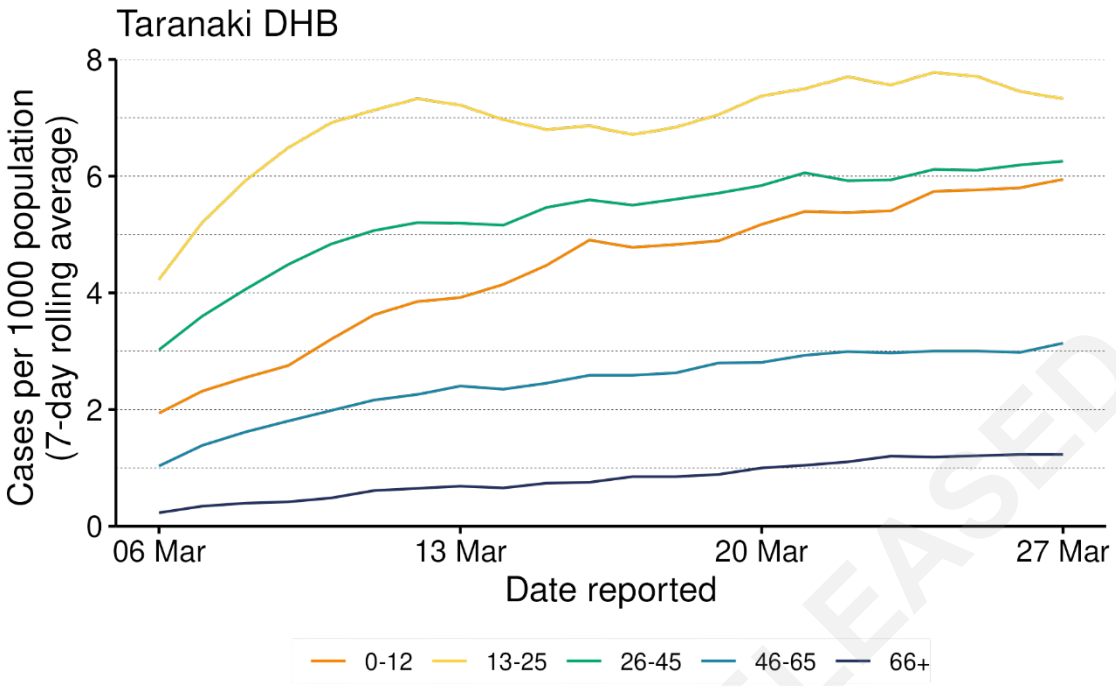


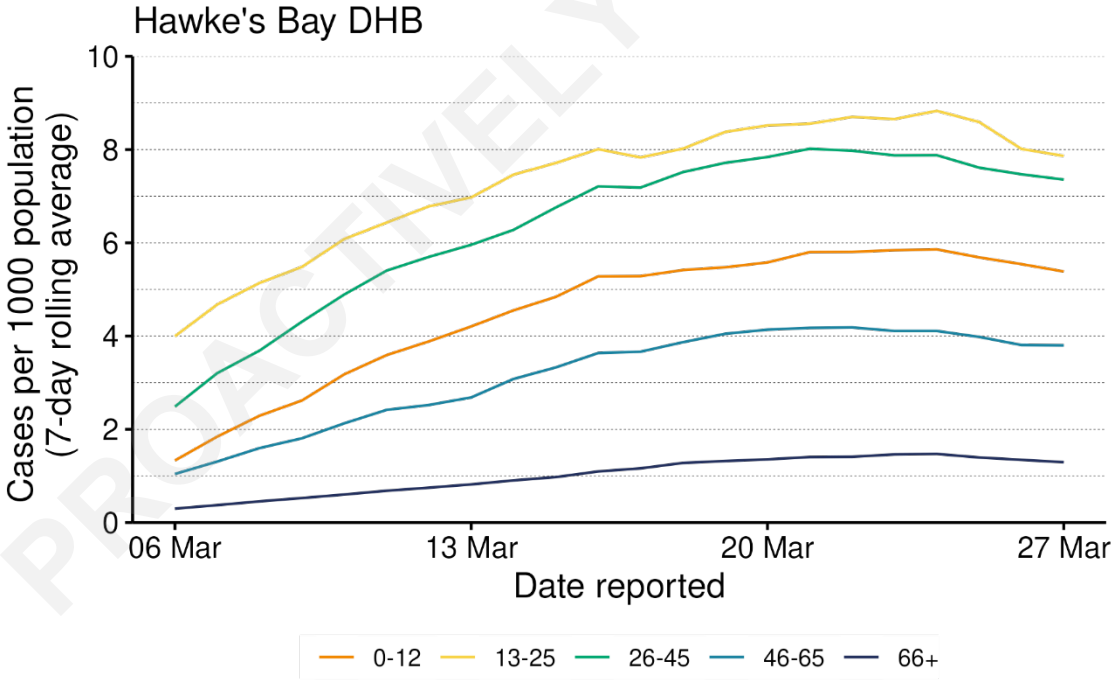


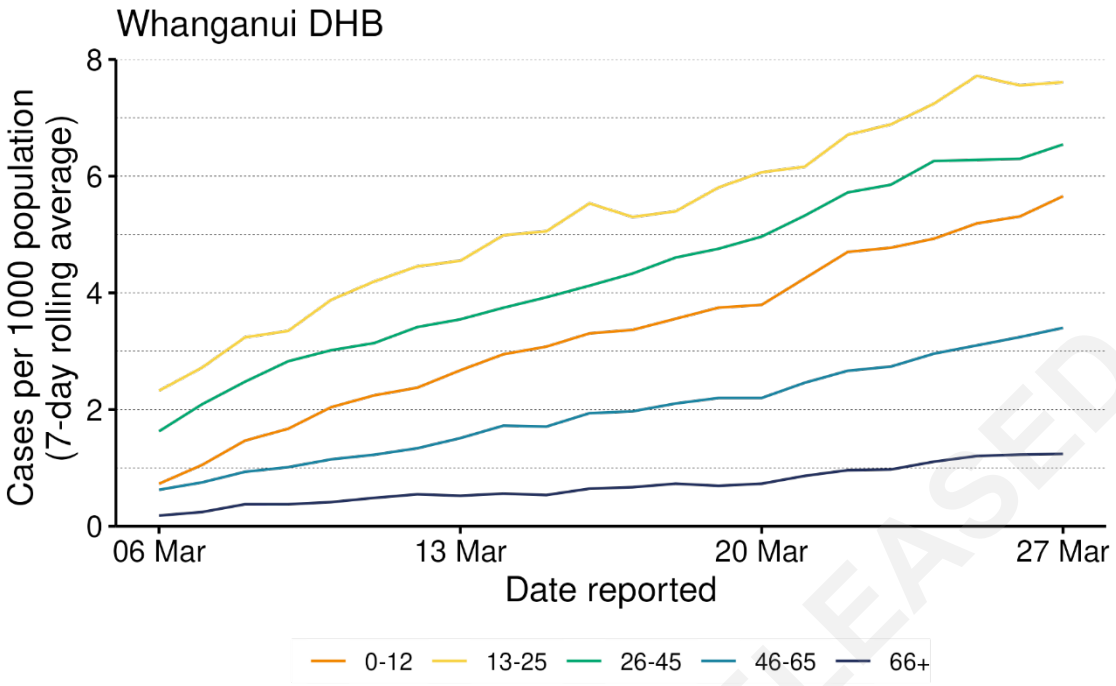


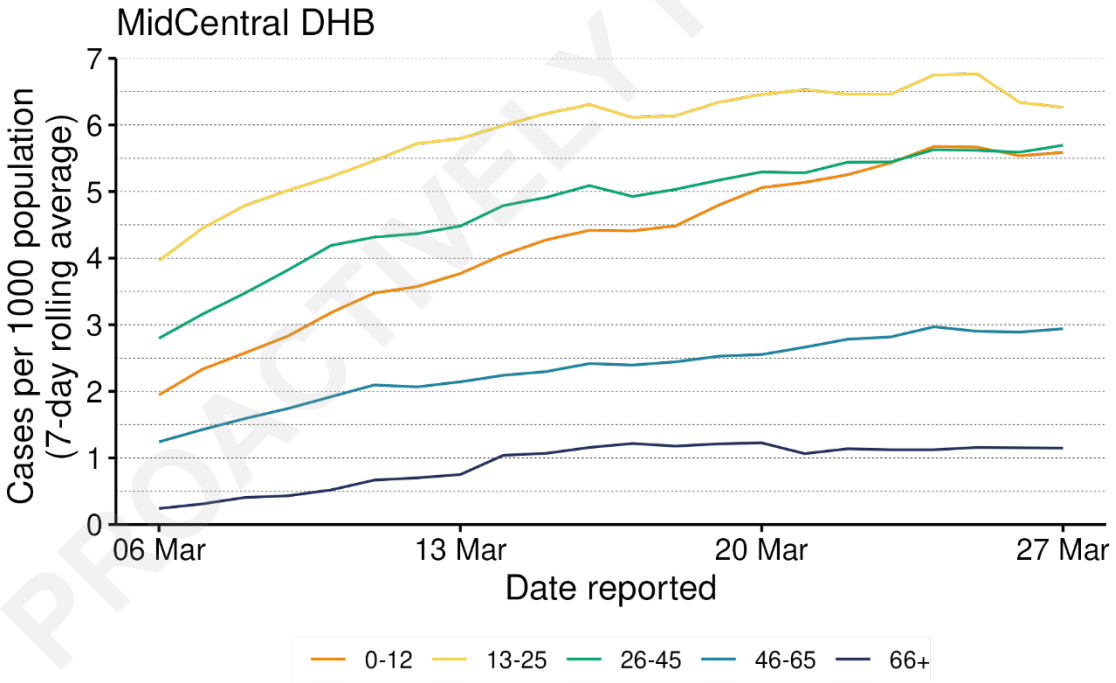


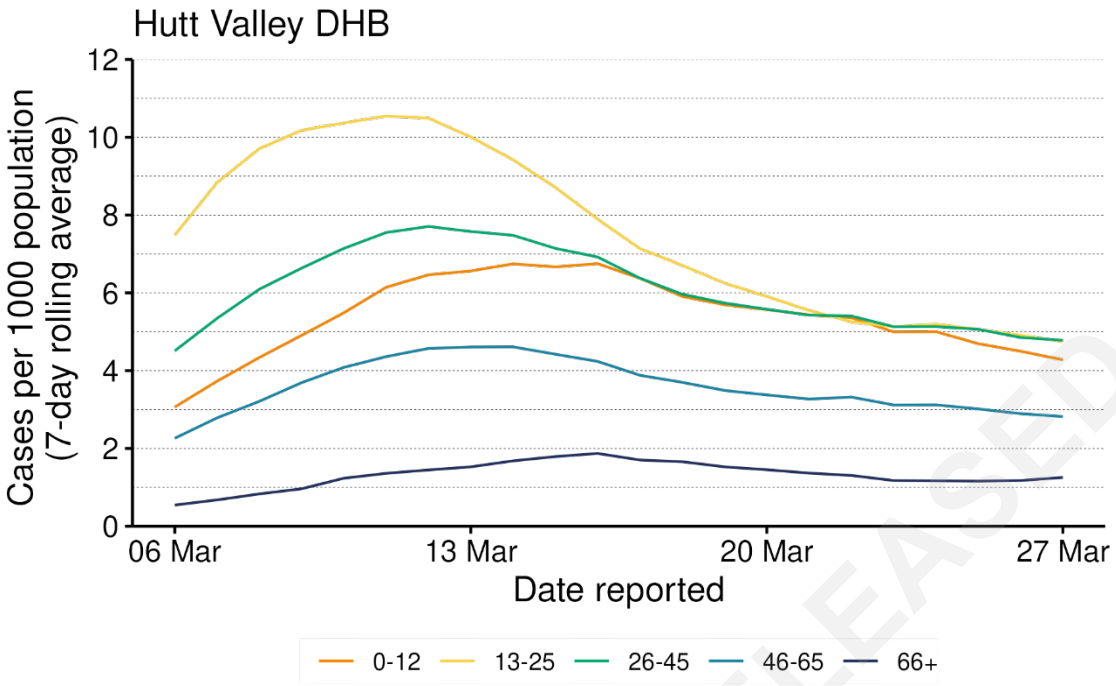


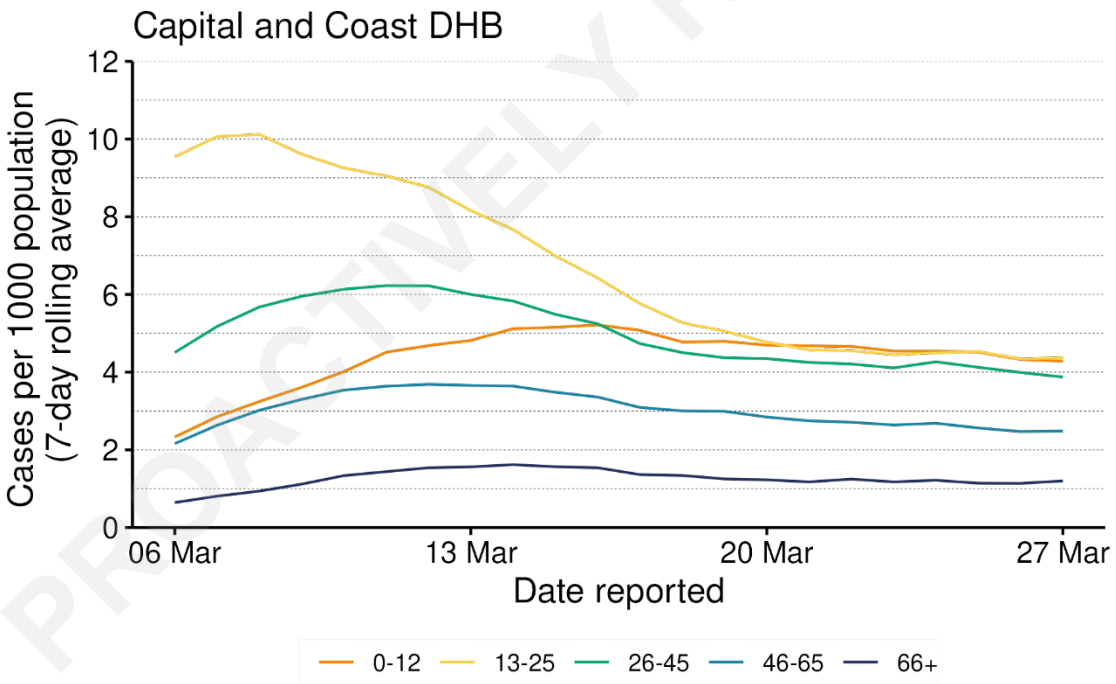


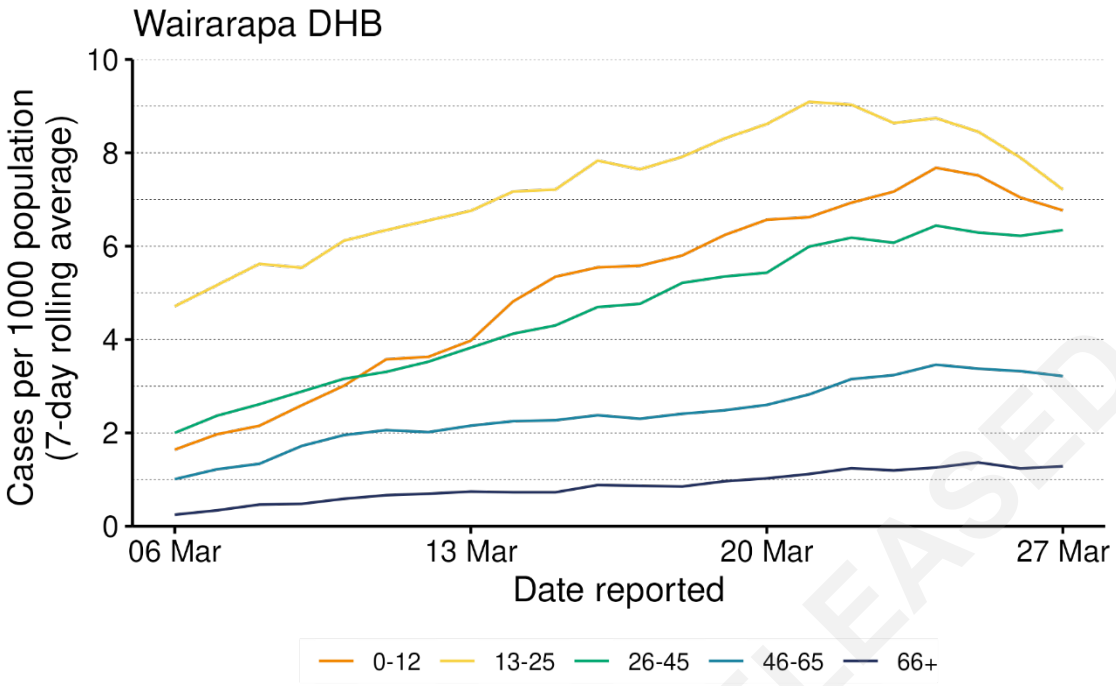


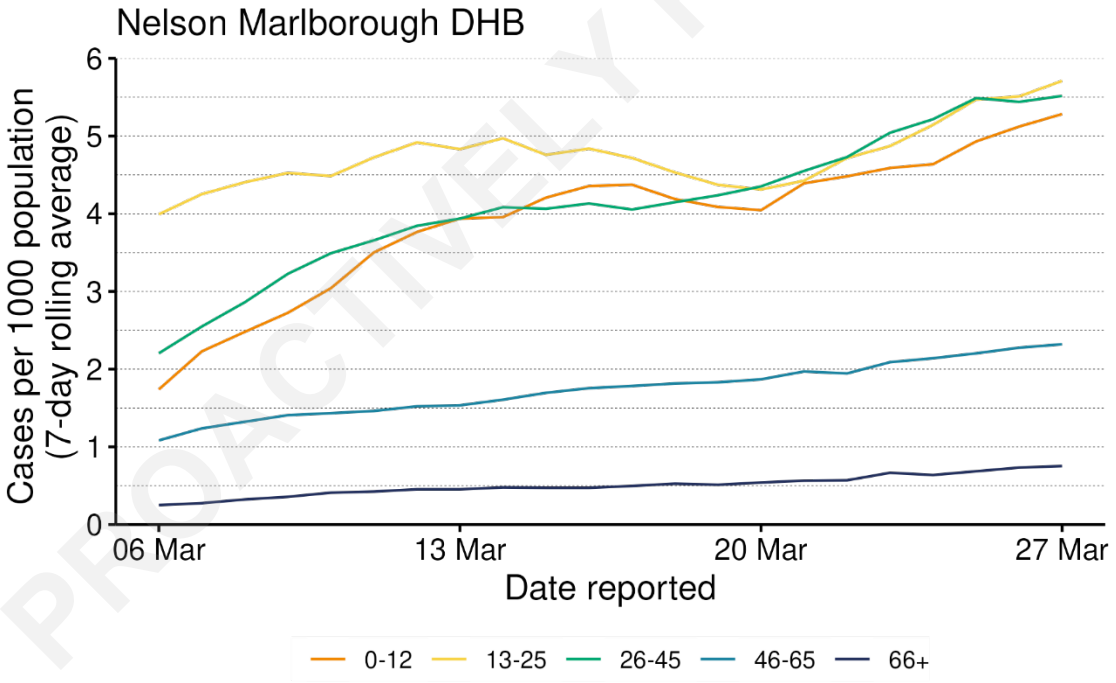


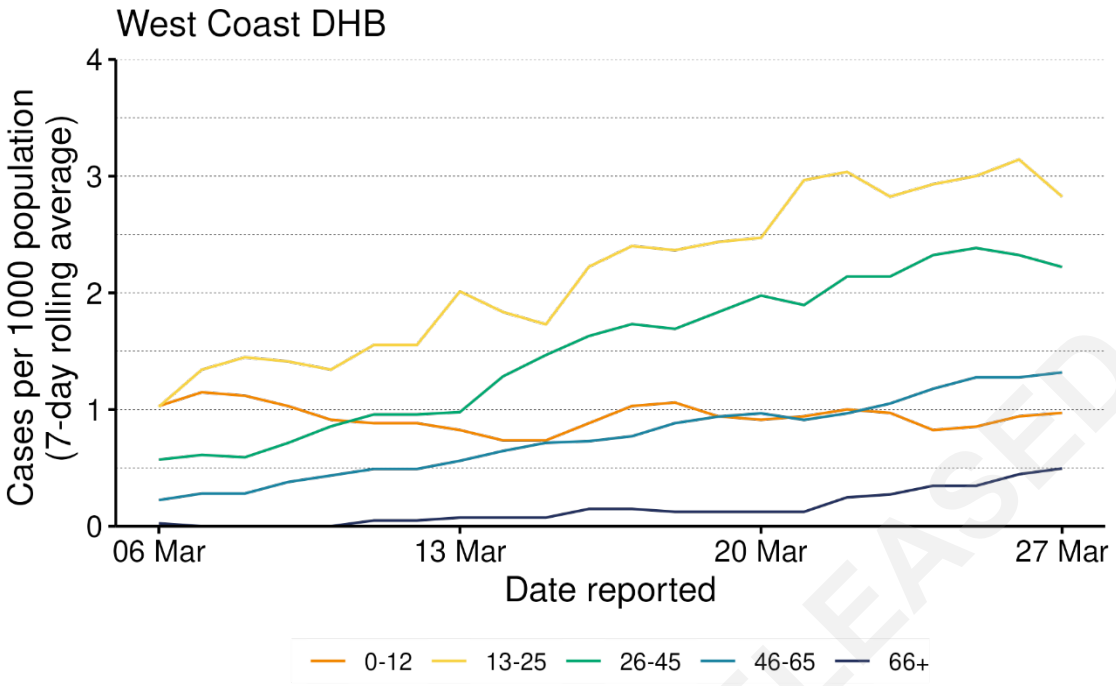


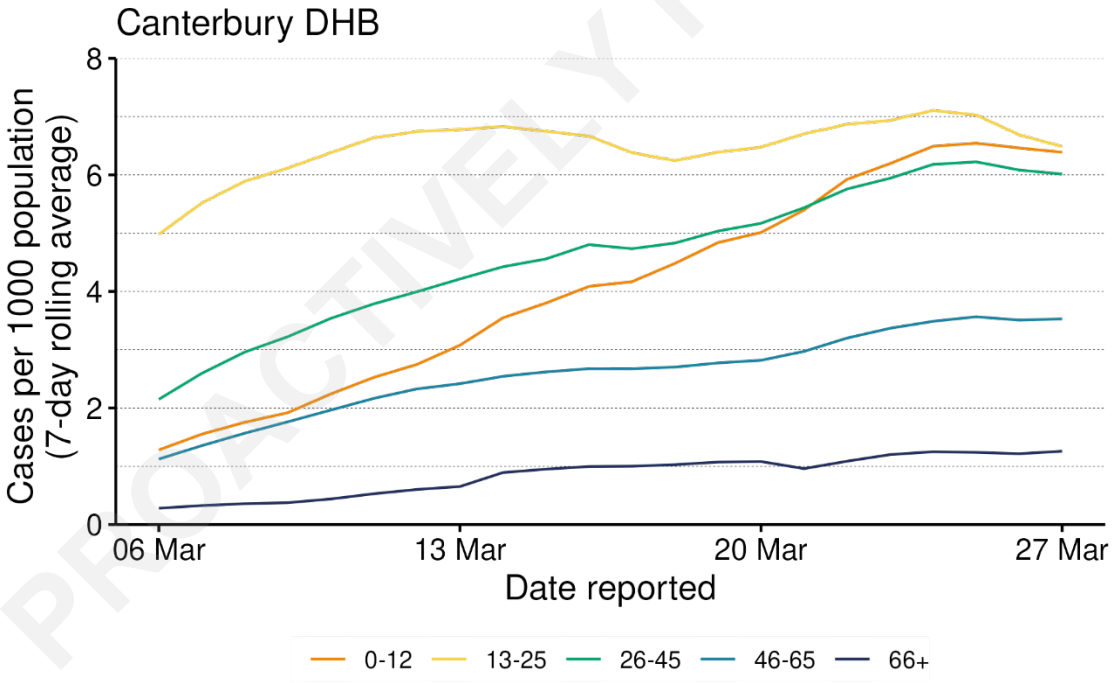


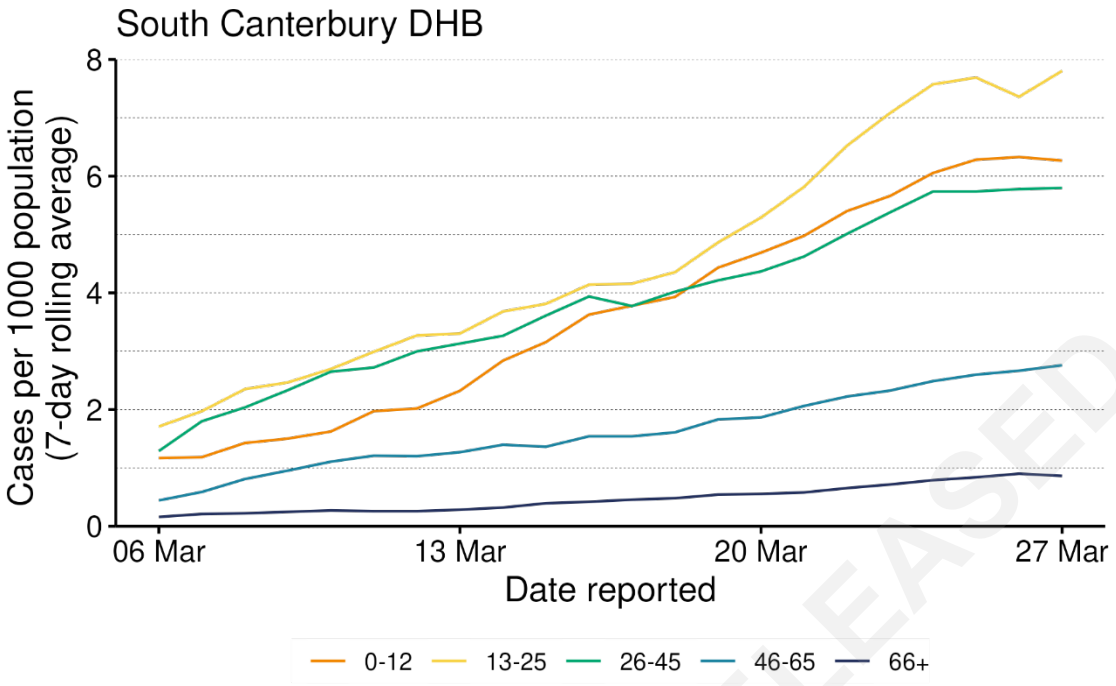


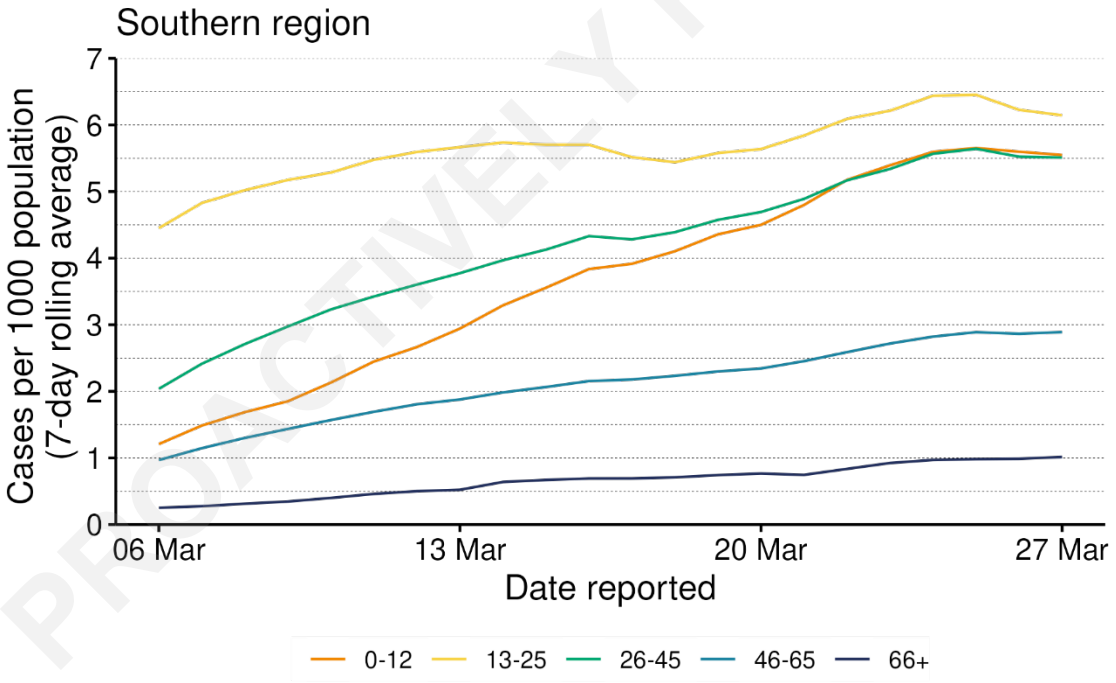


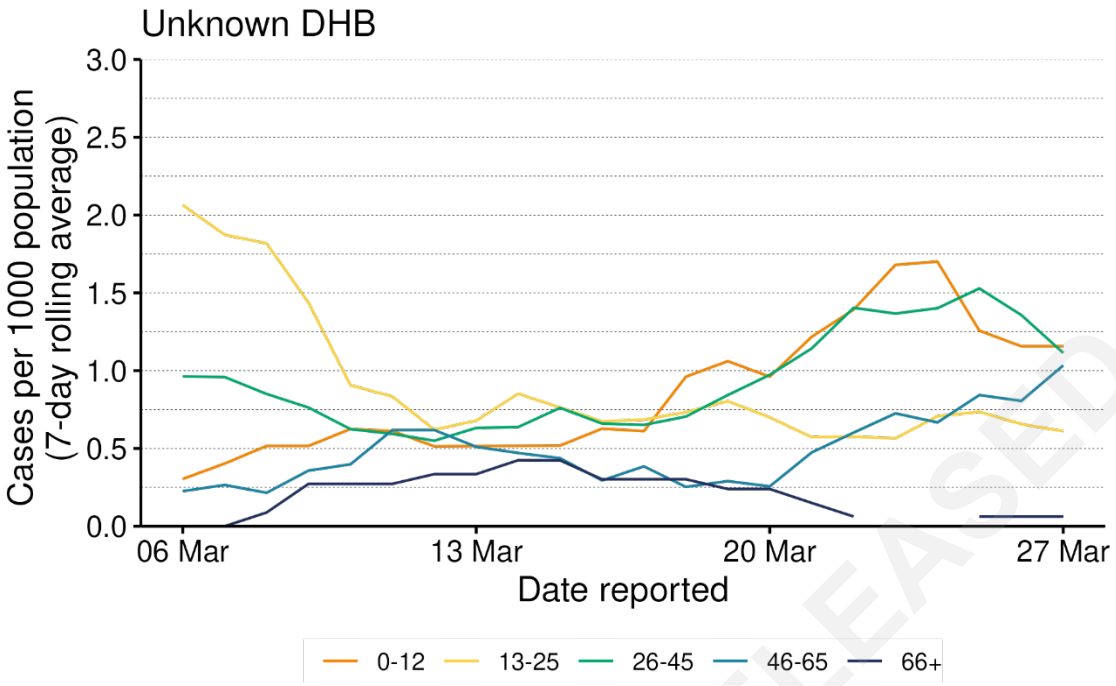




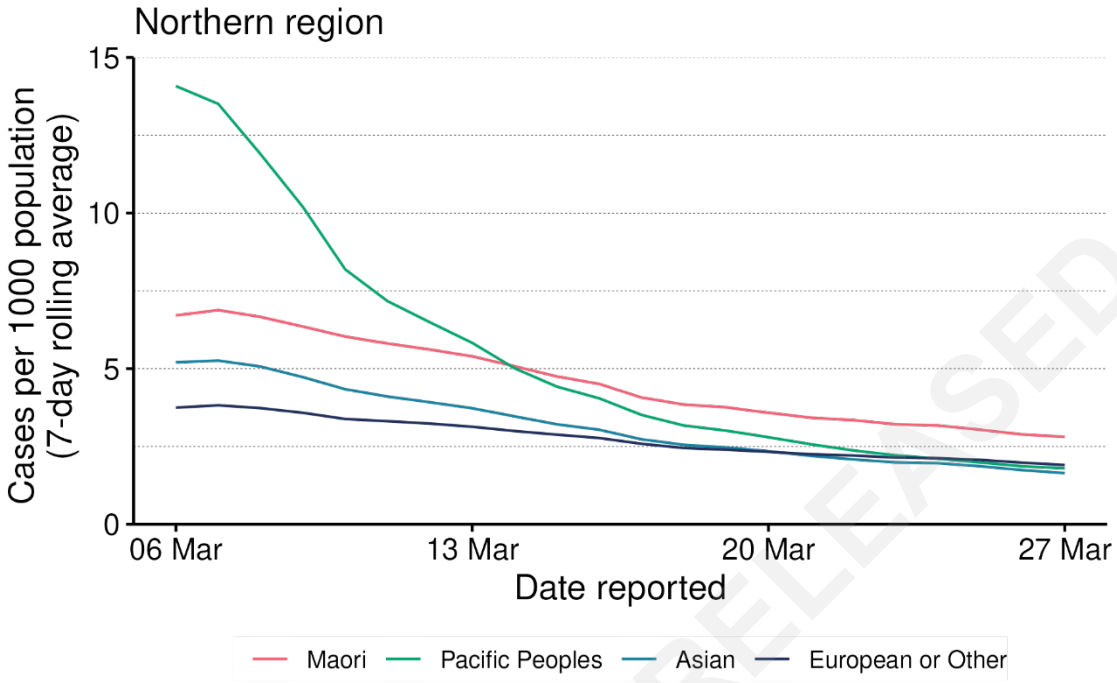


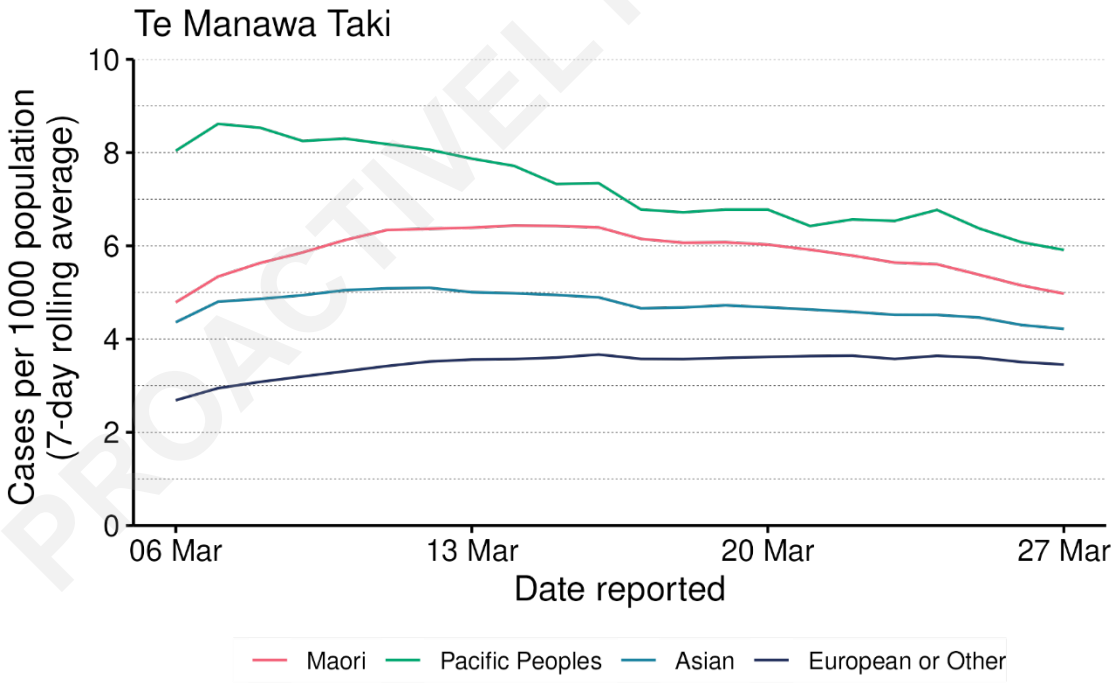


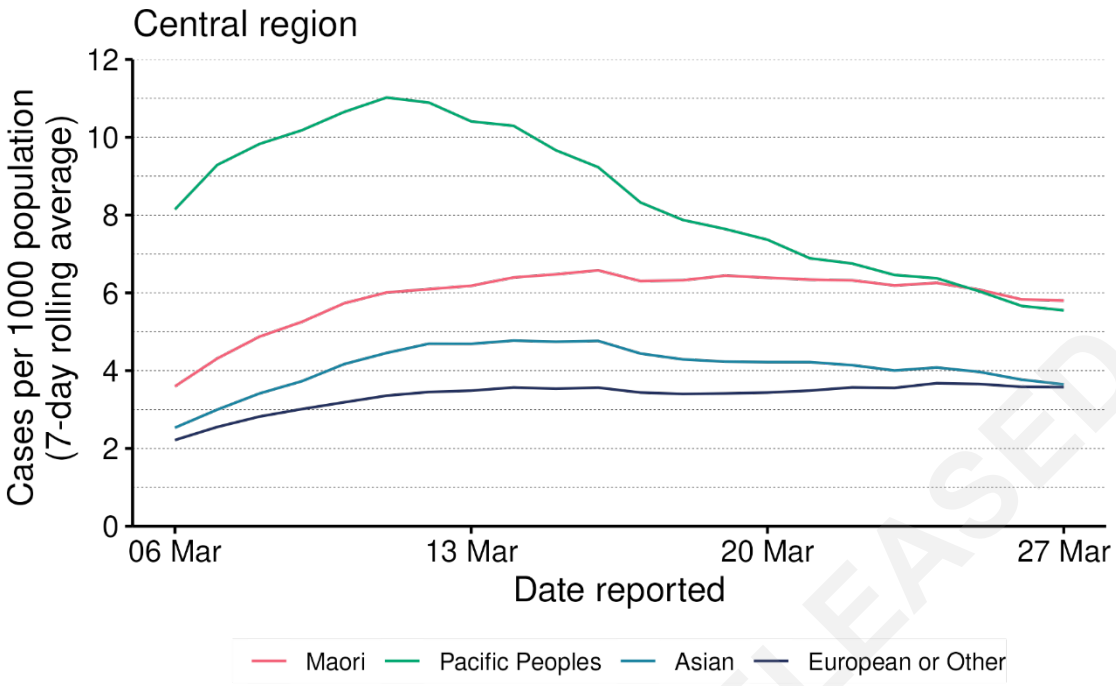


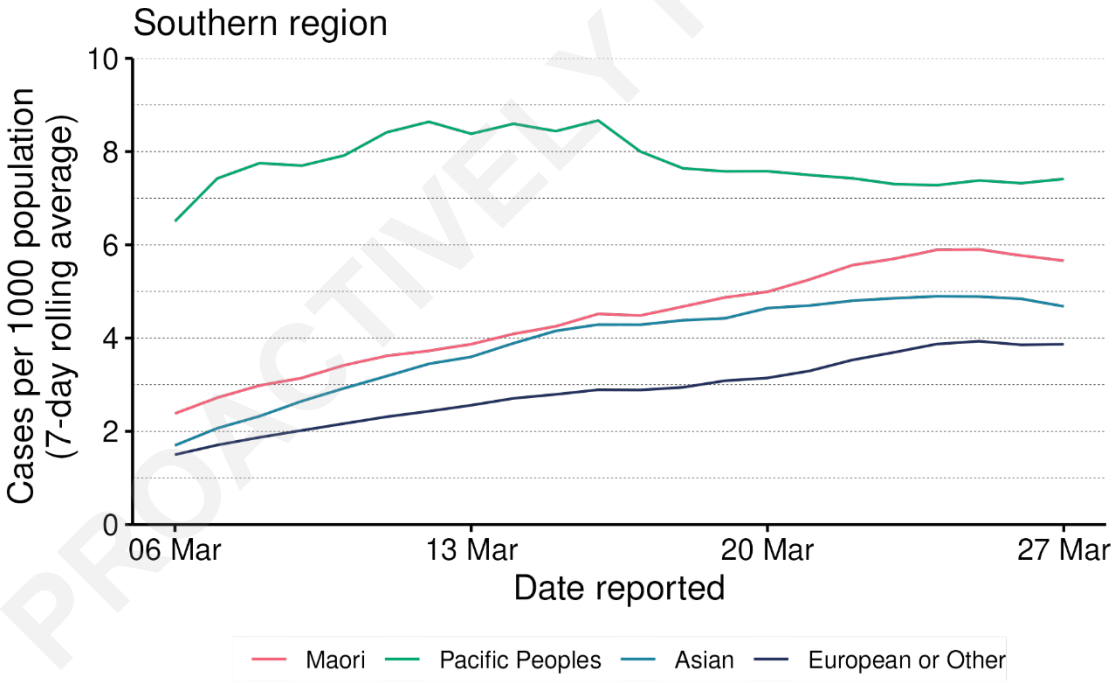


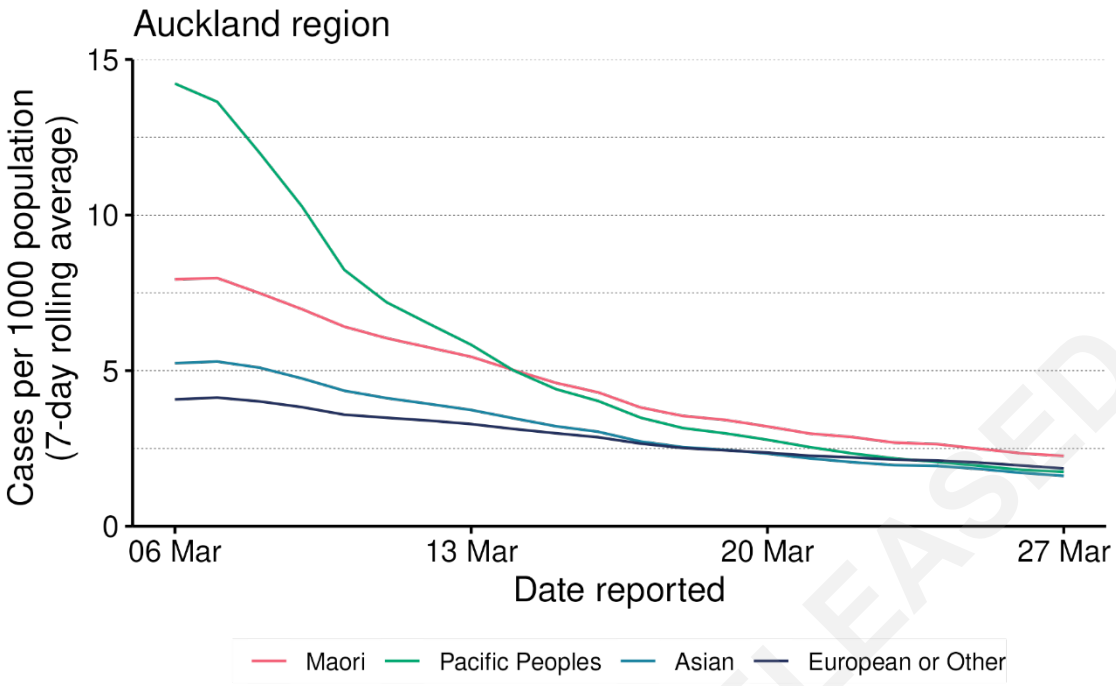
Ethnicity Graphs

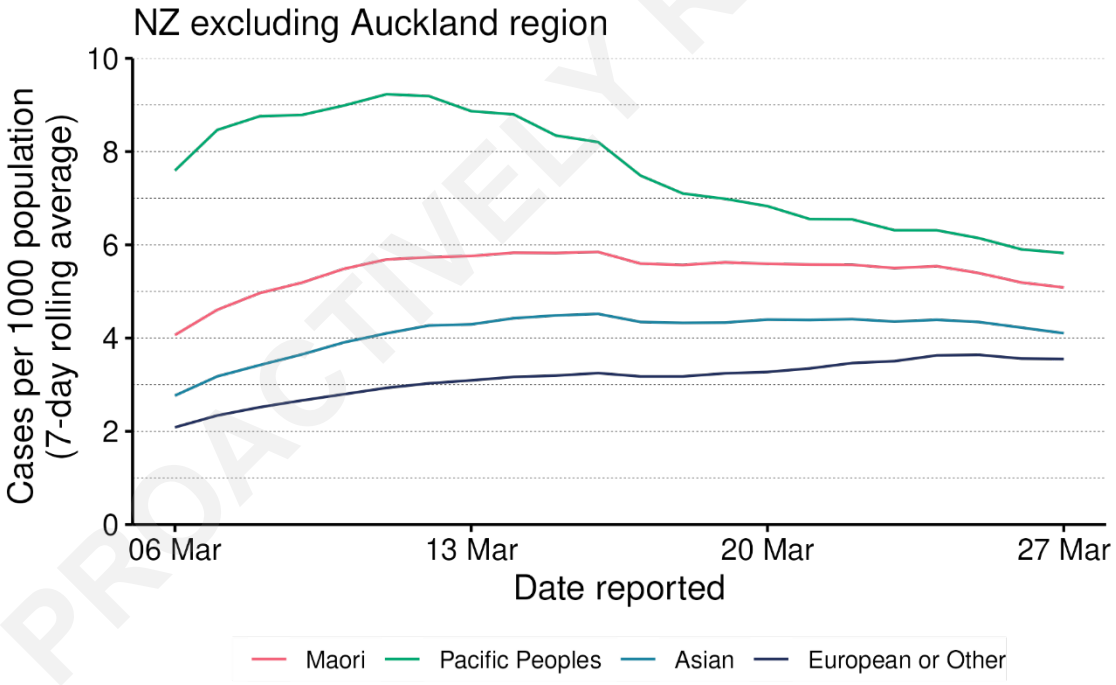


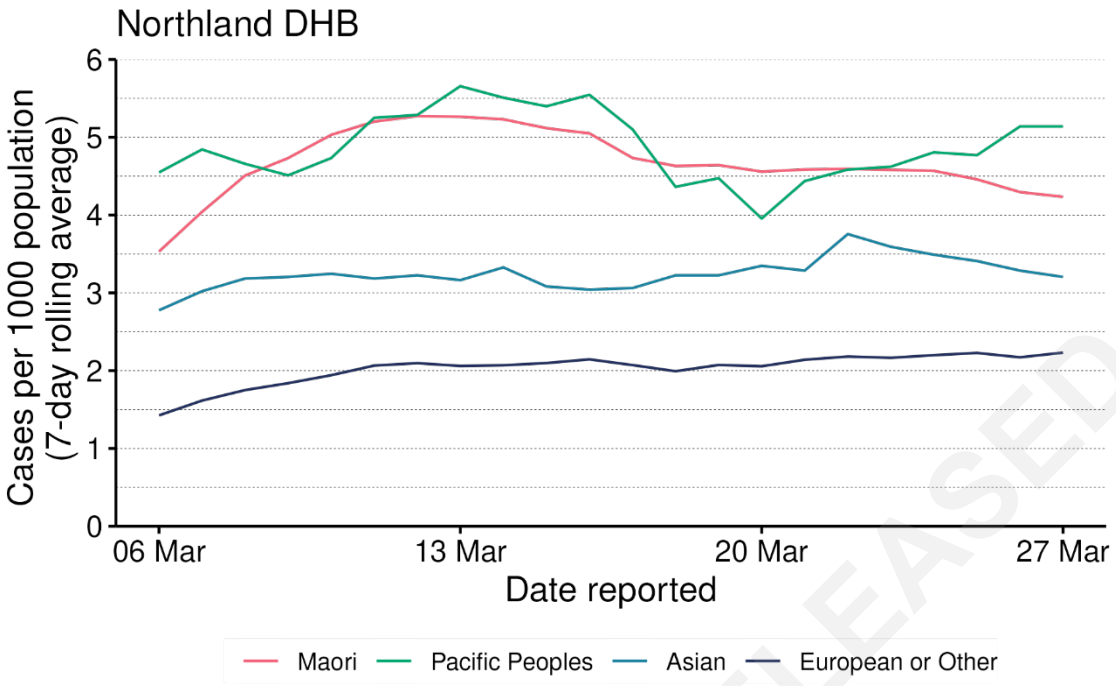


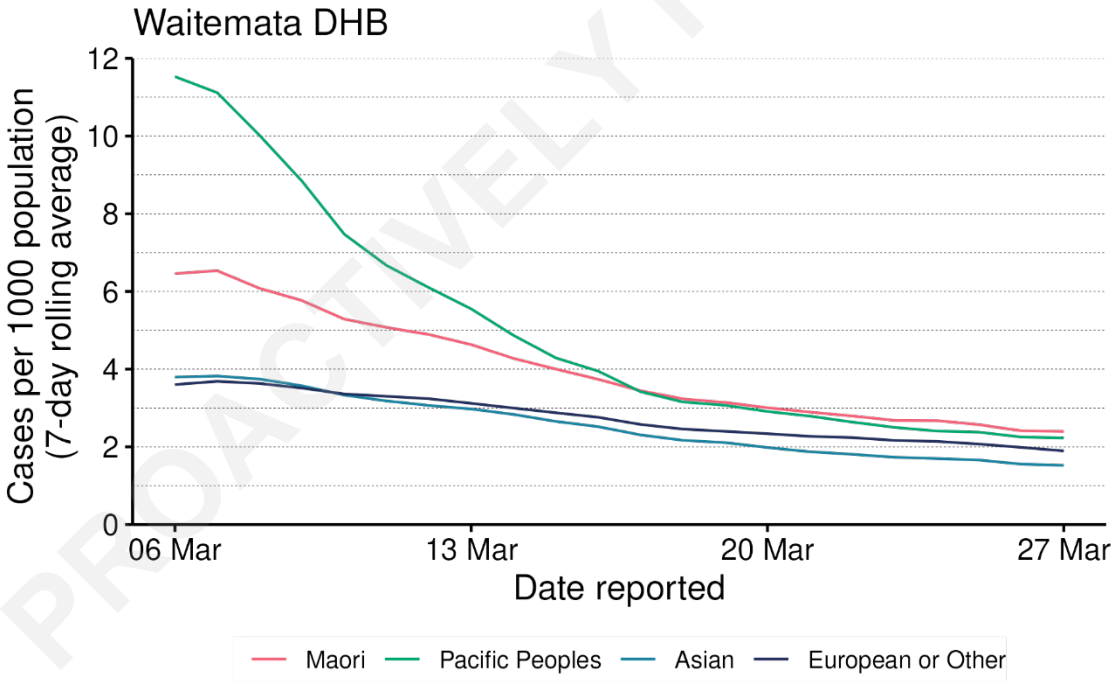


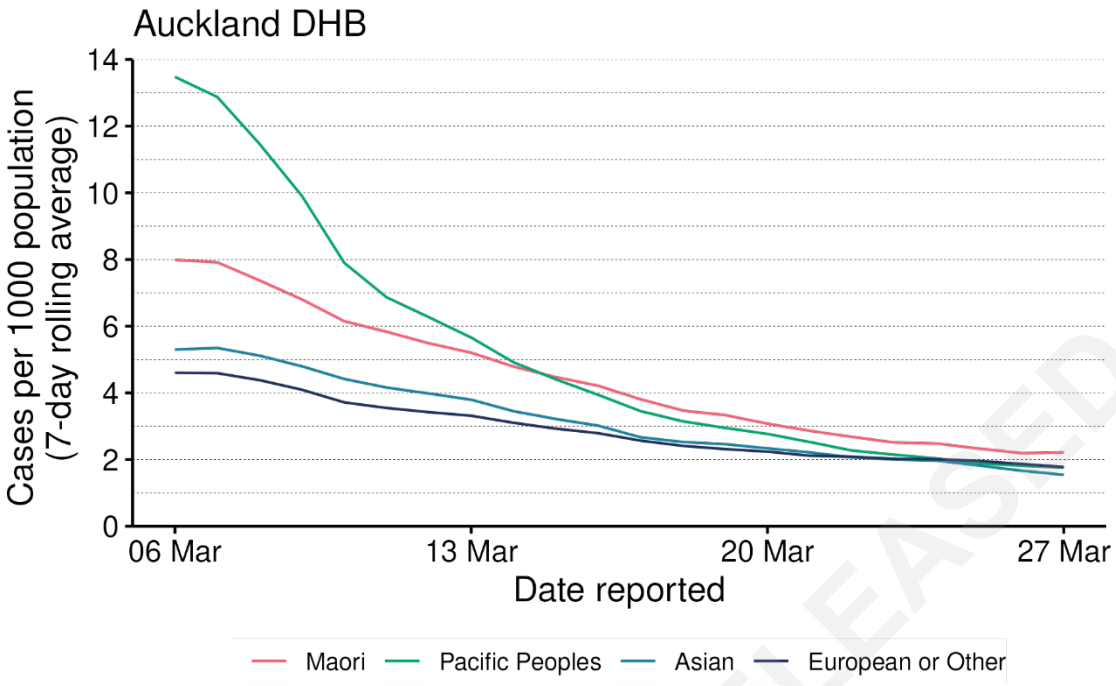


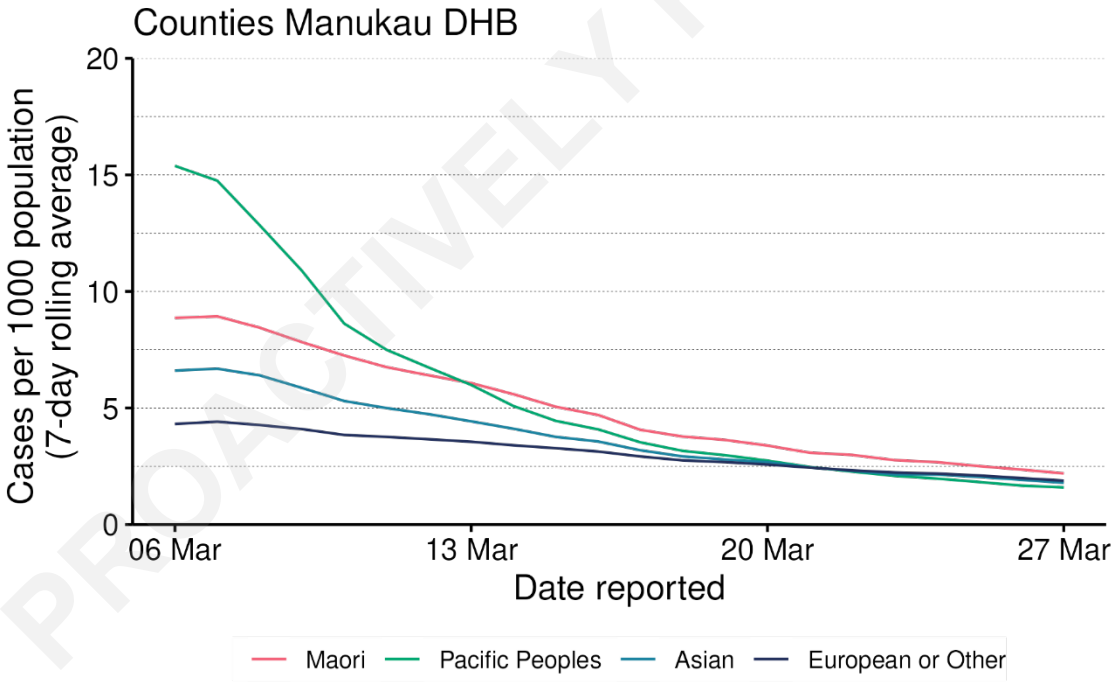


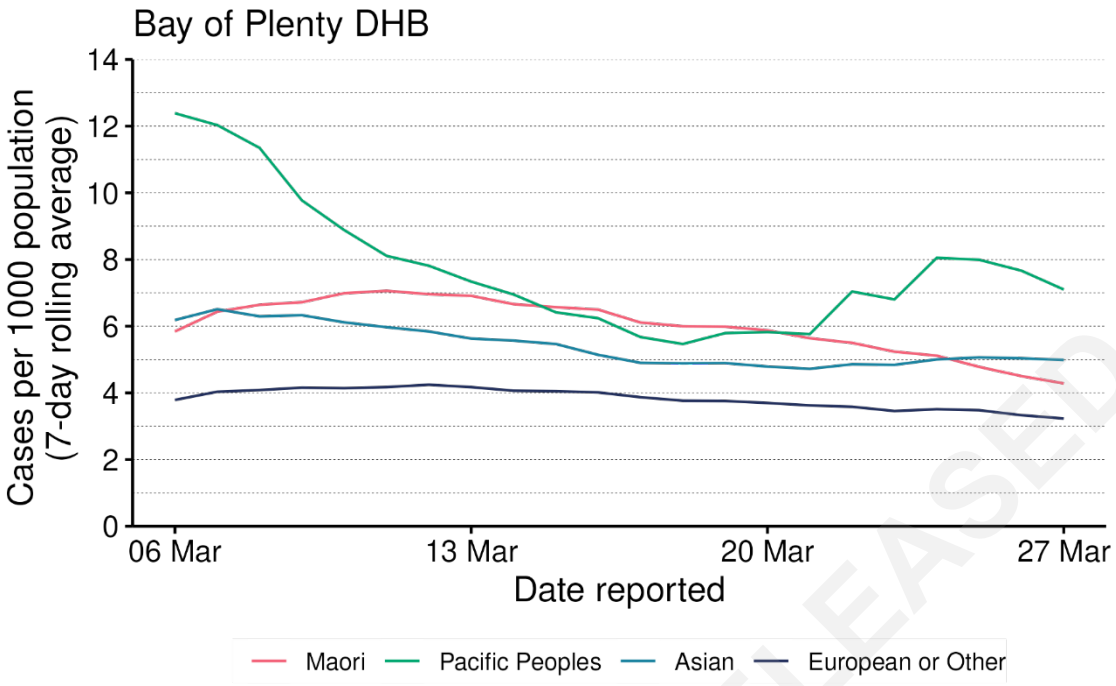


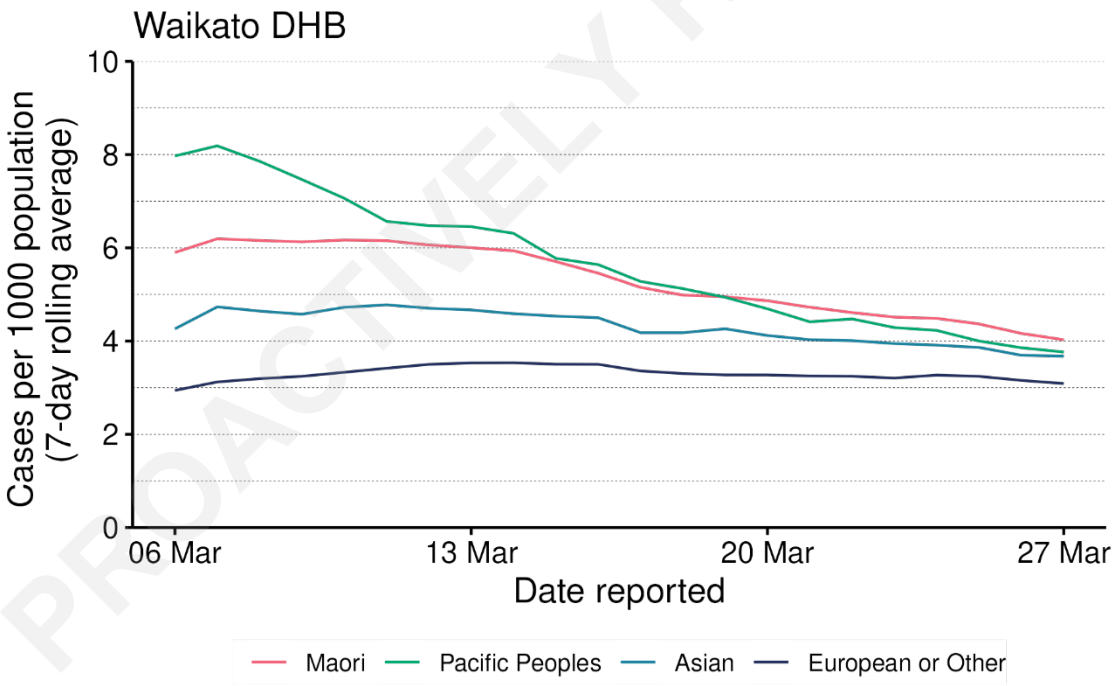


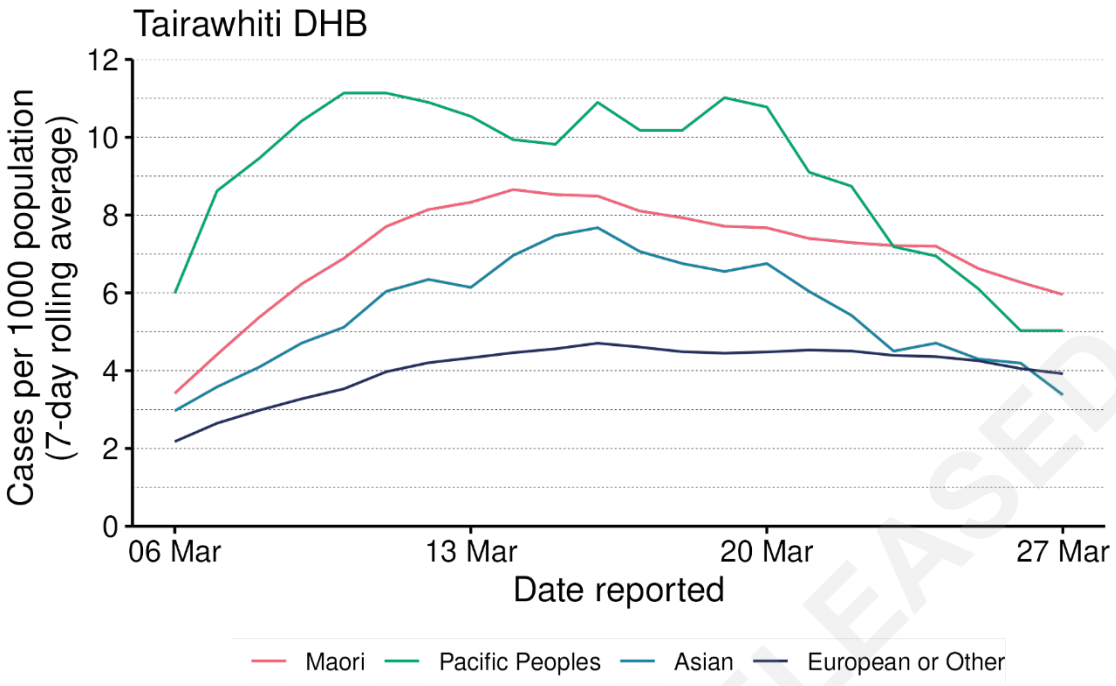


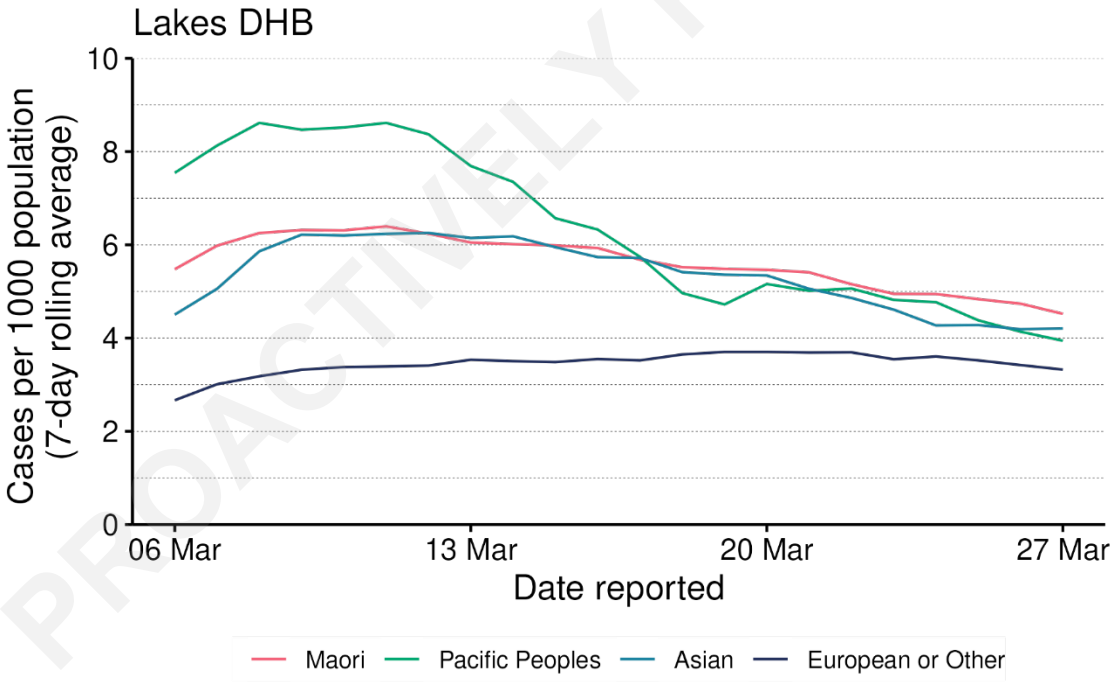


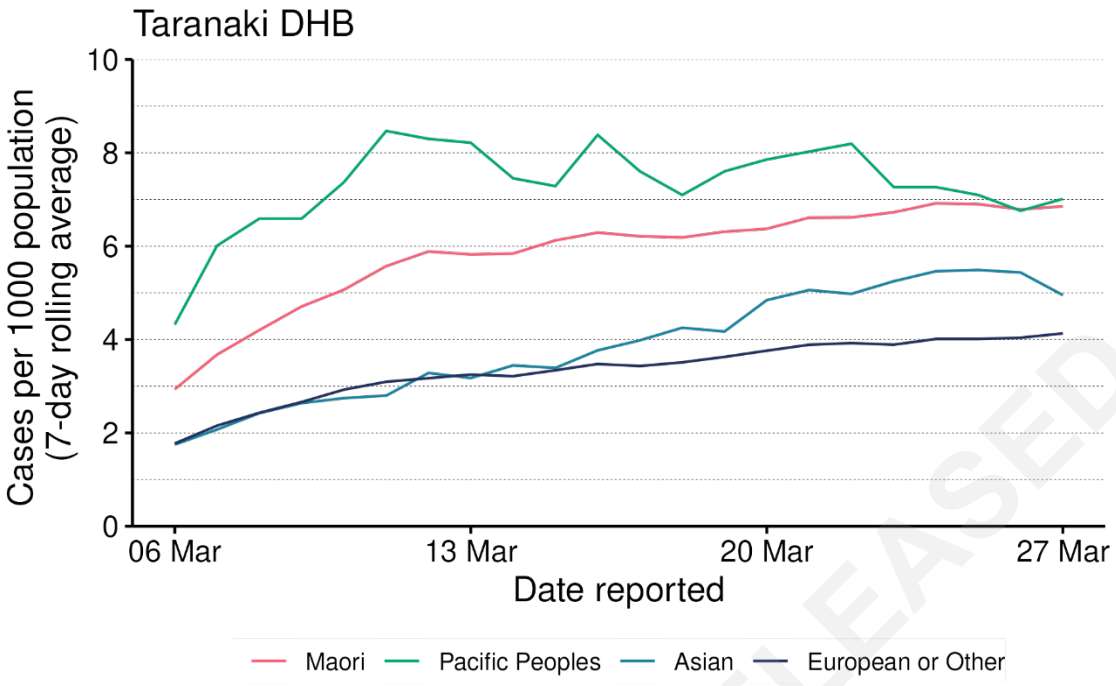


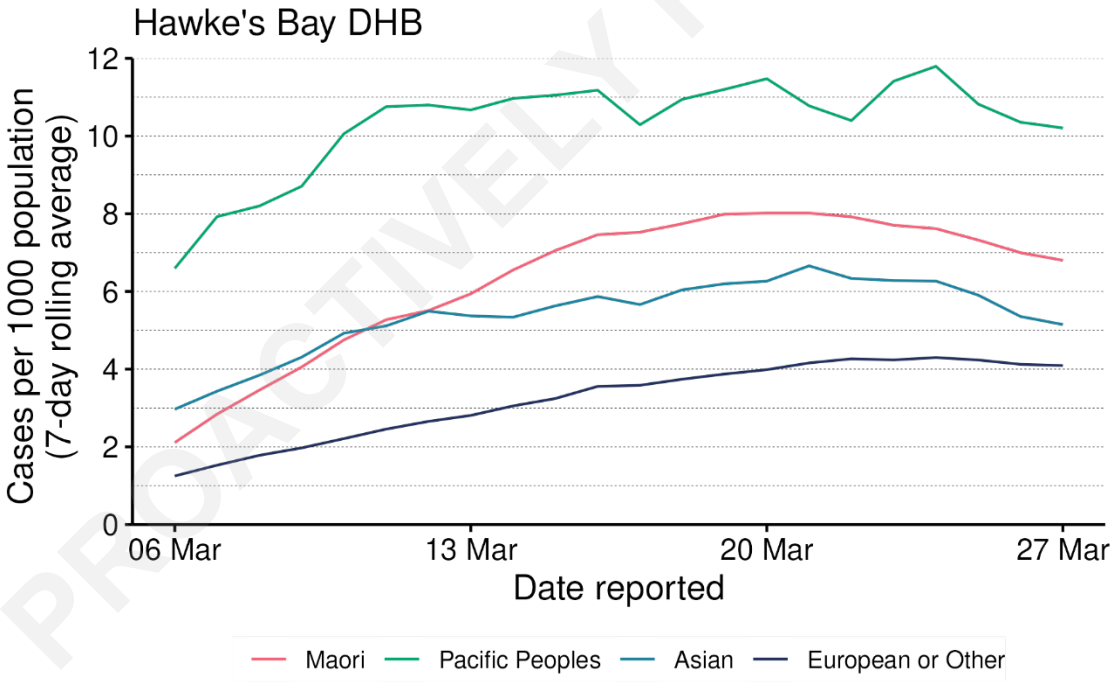


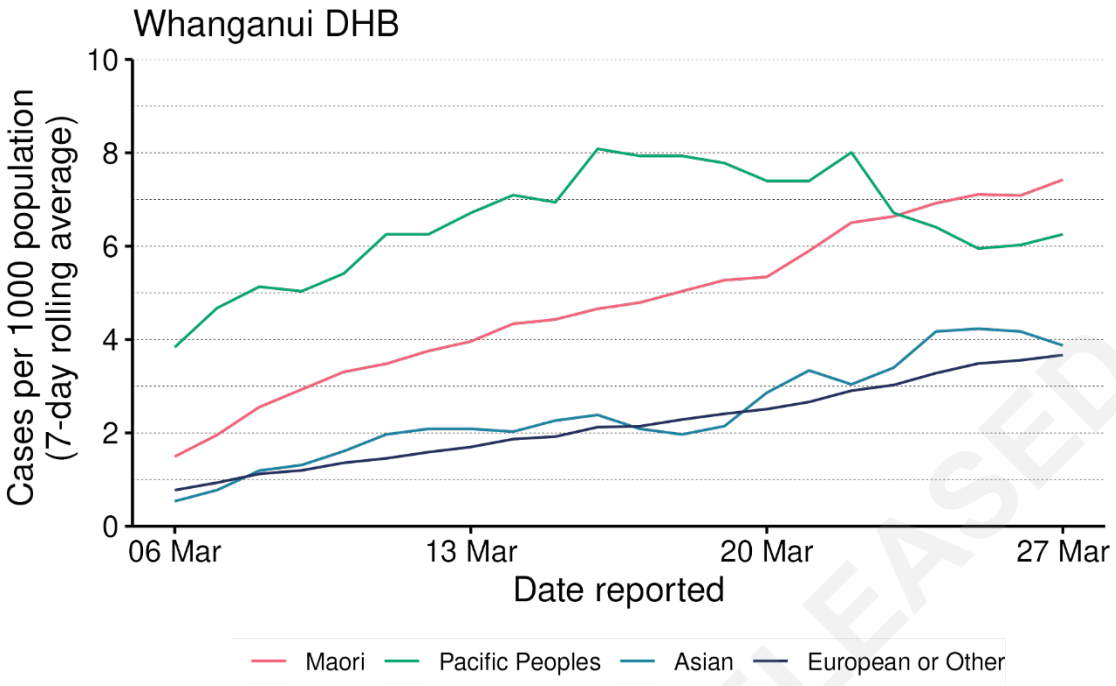


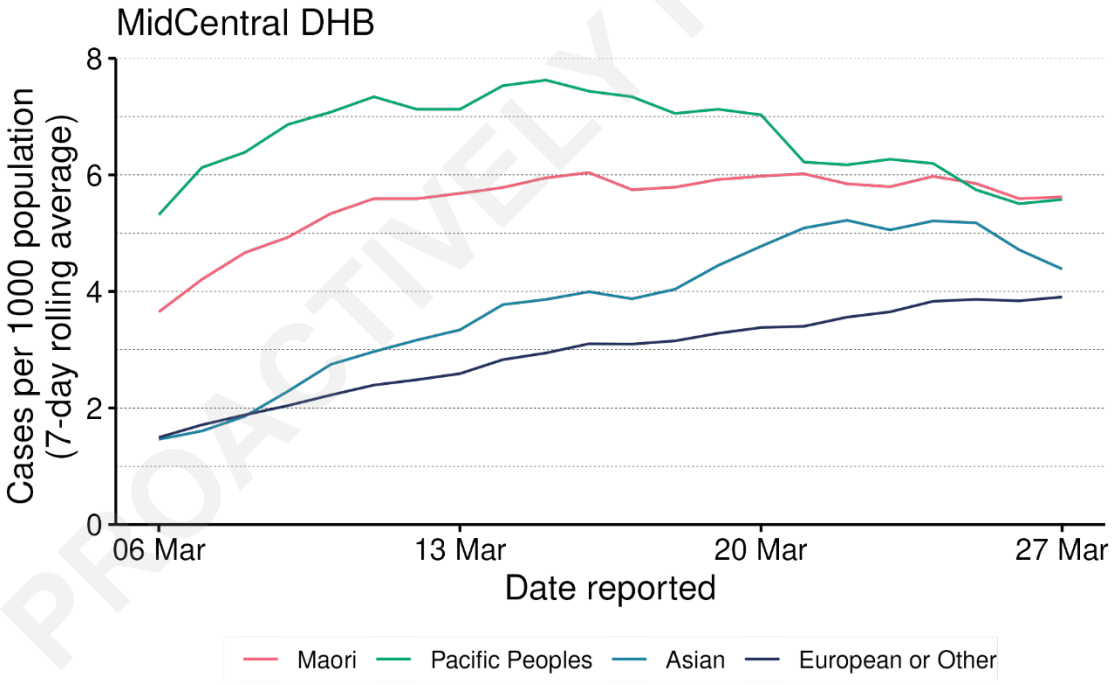


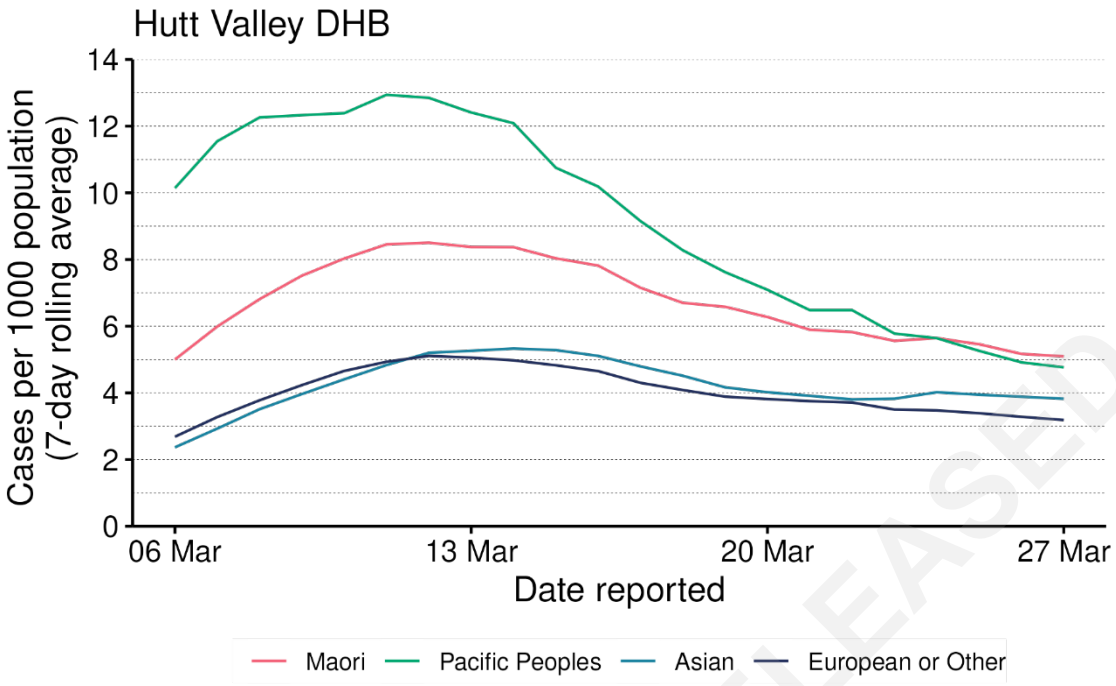


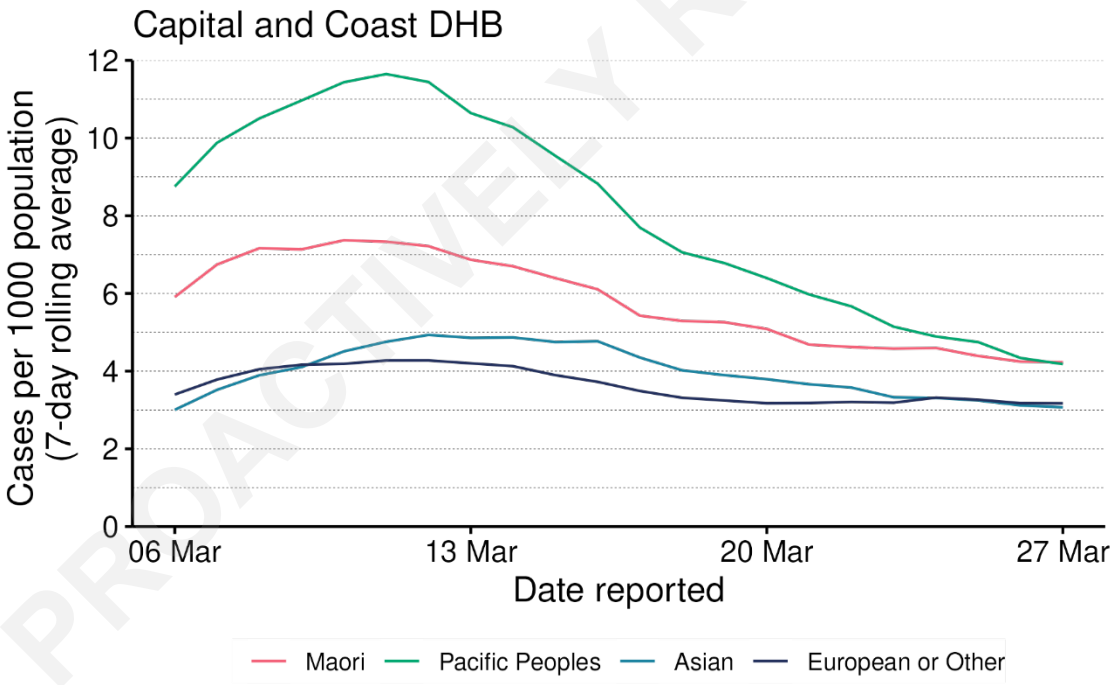


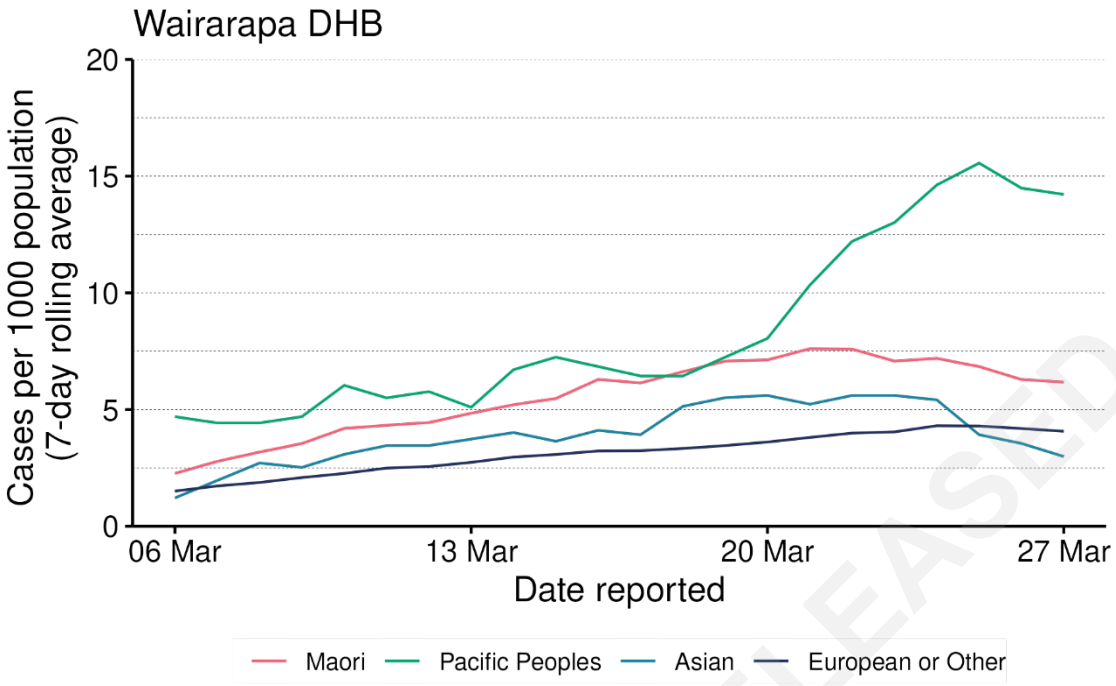


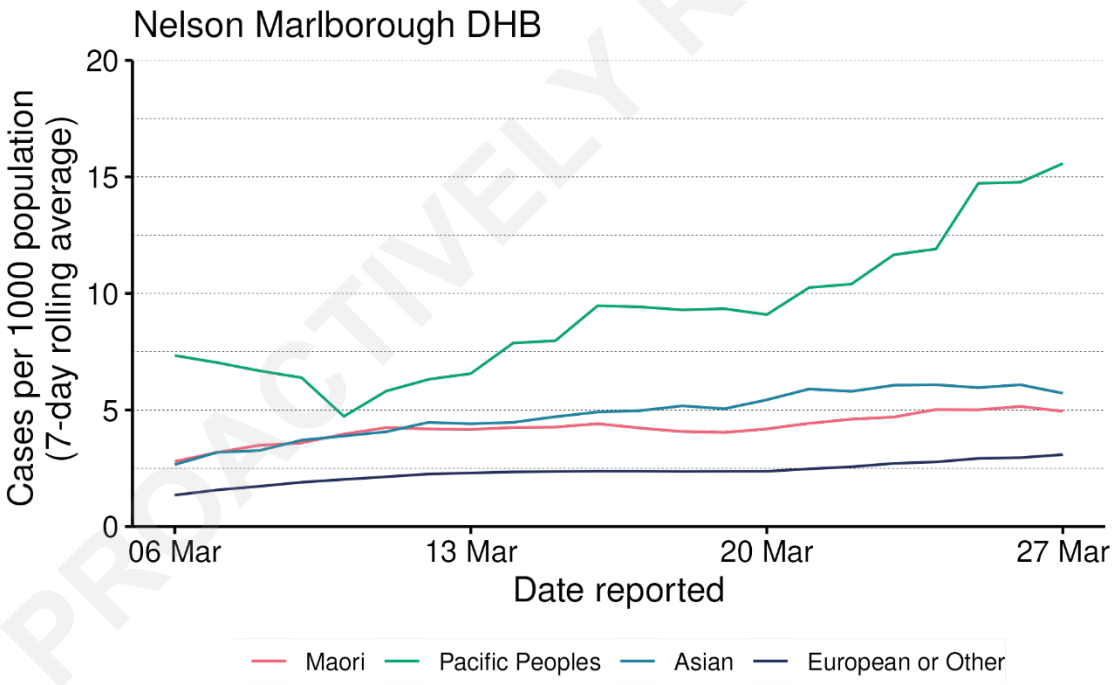


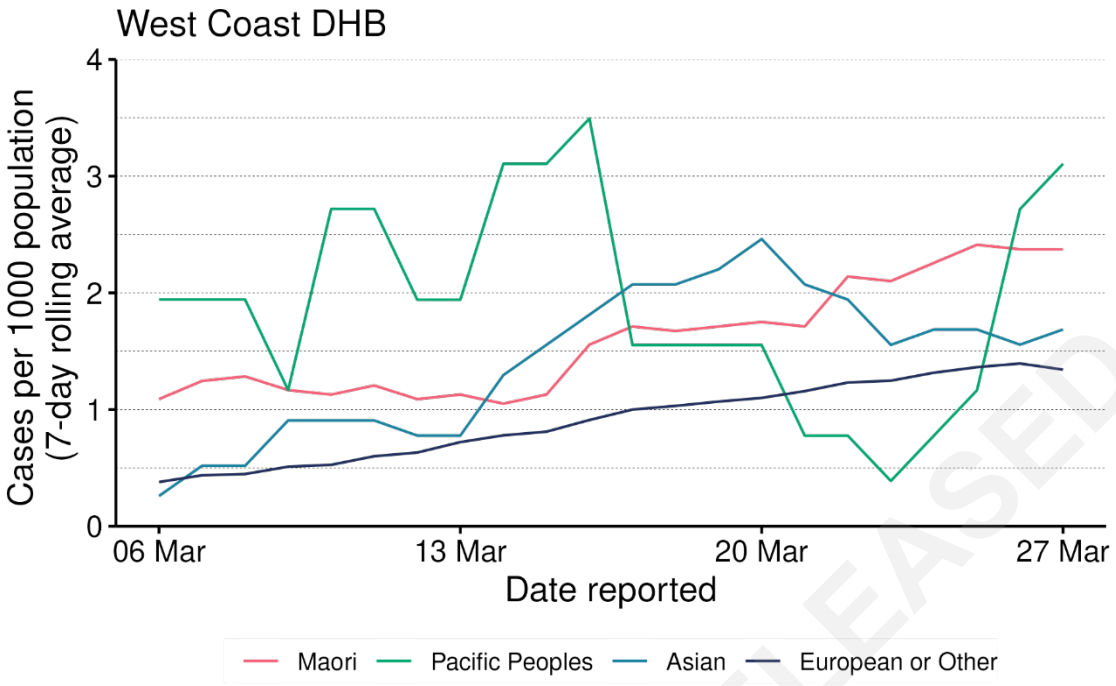


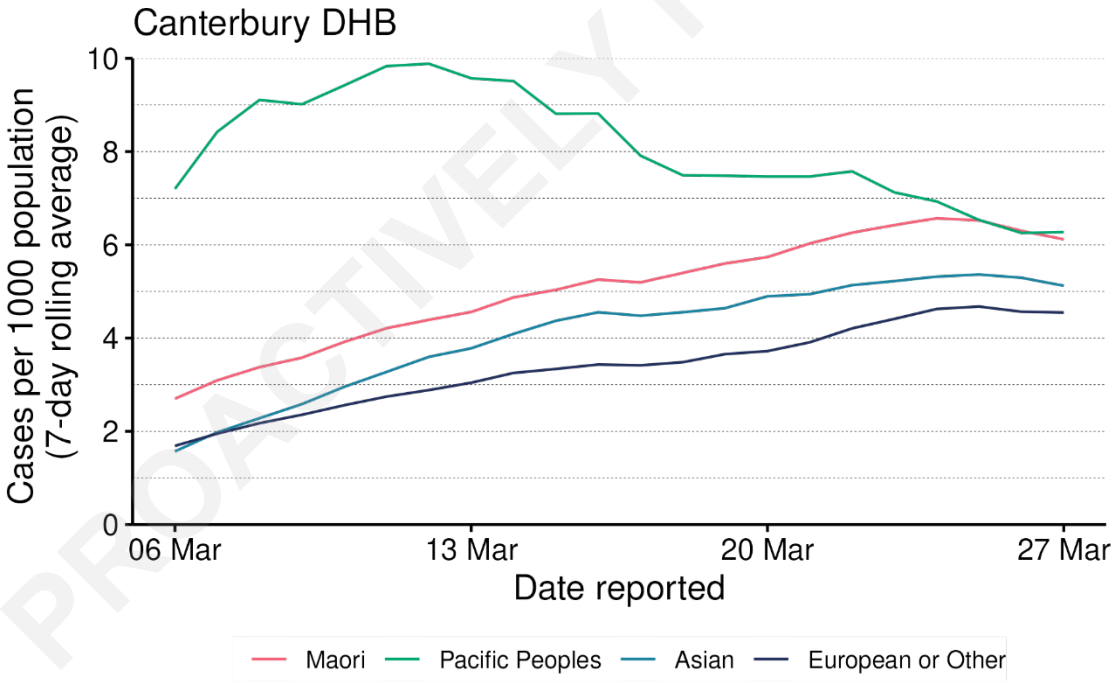


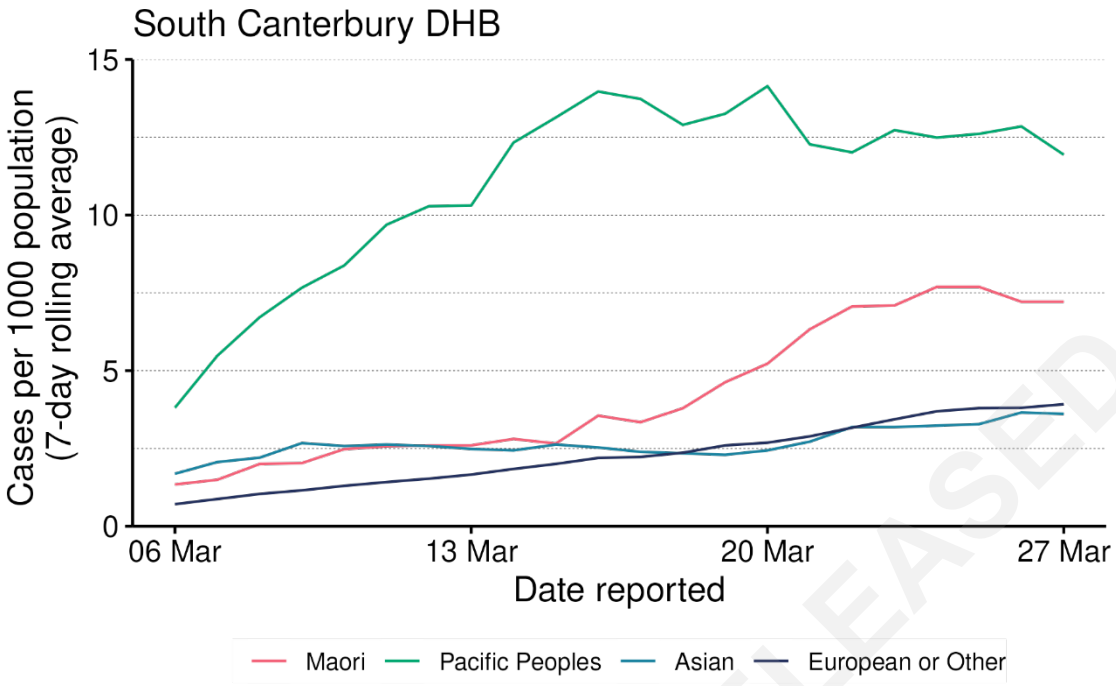


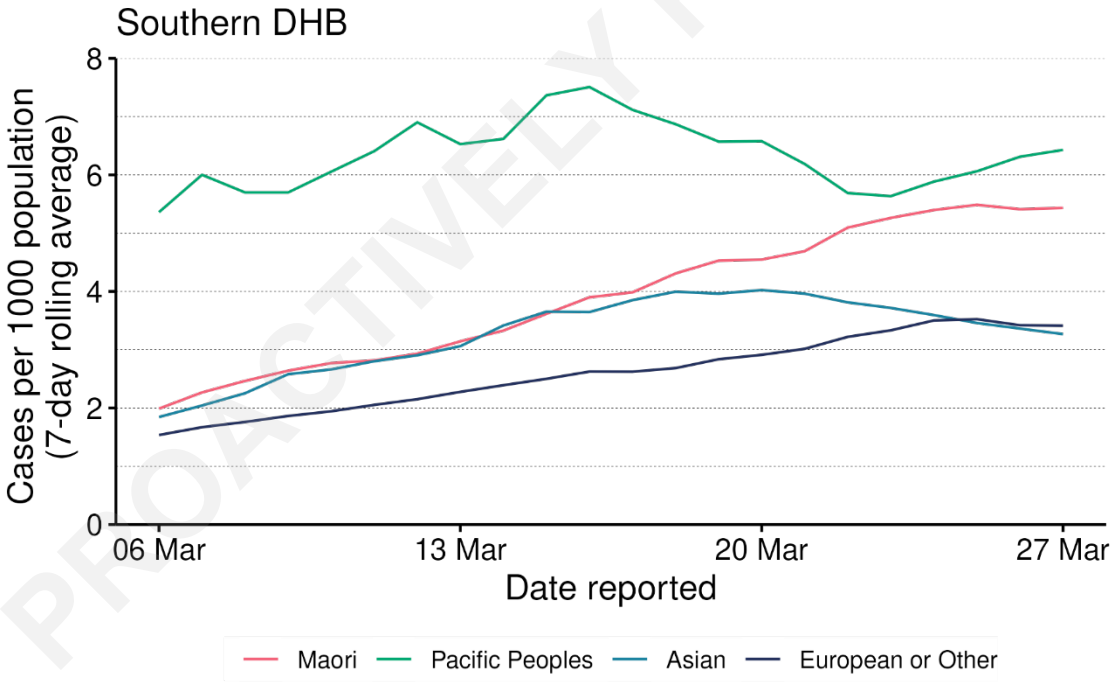


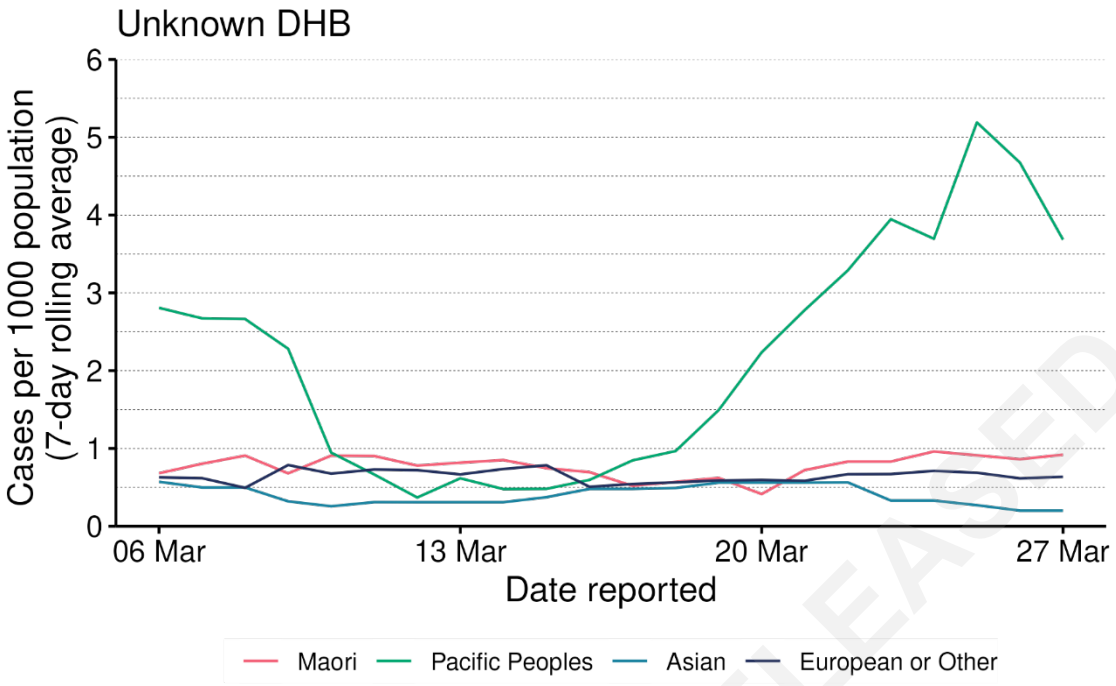




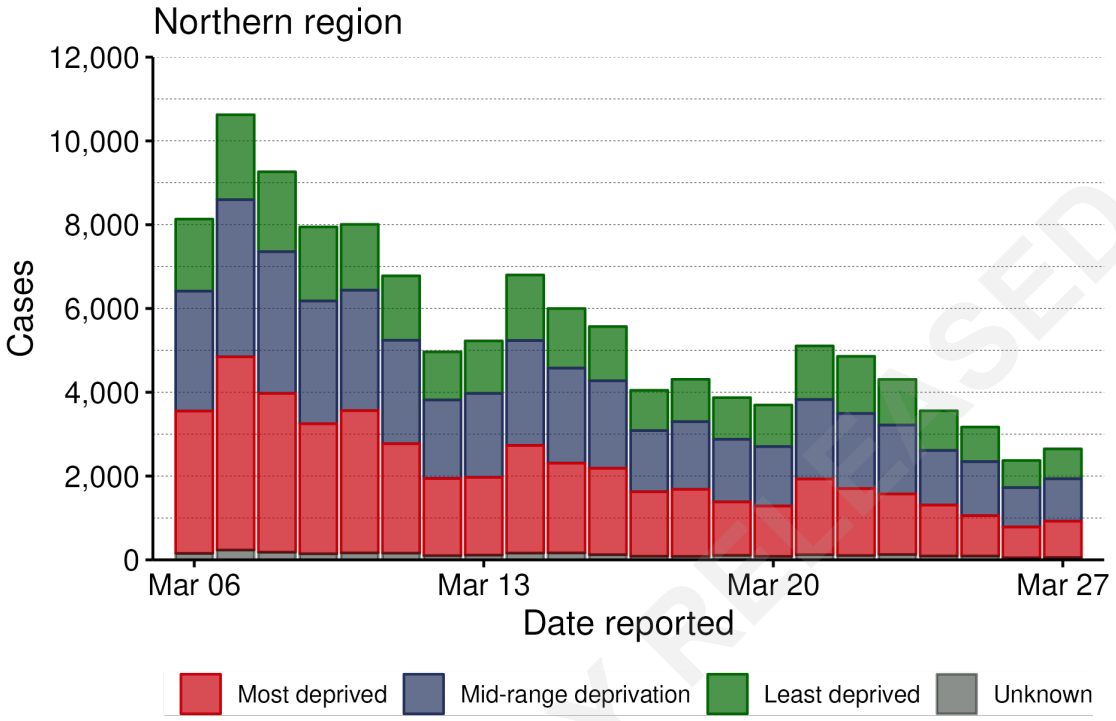


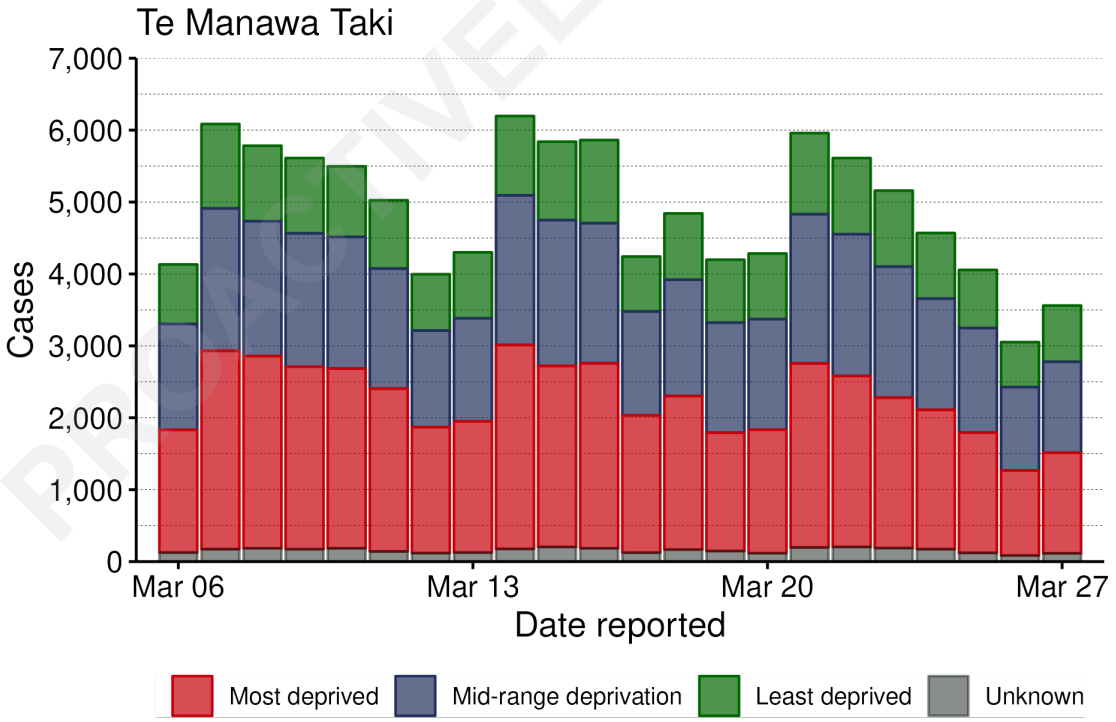


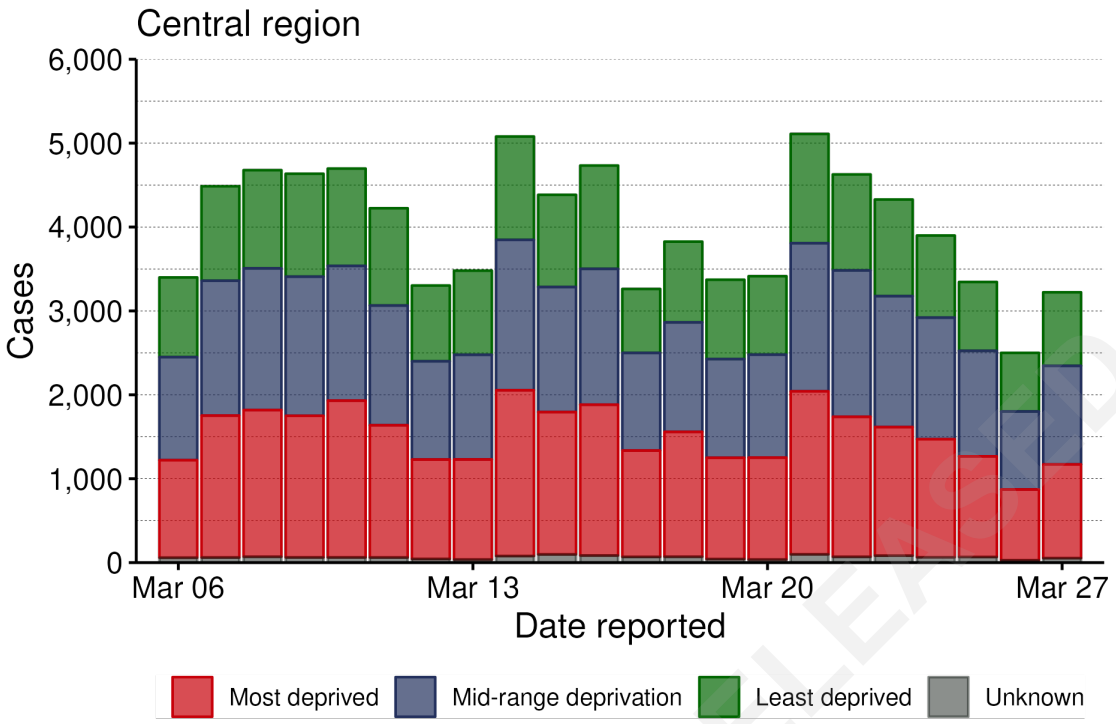


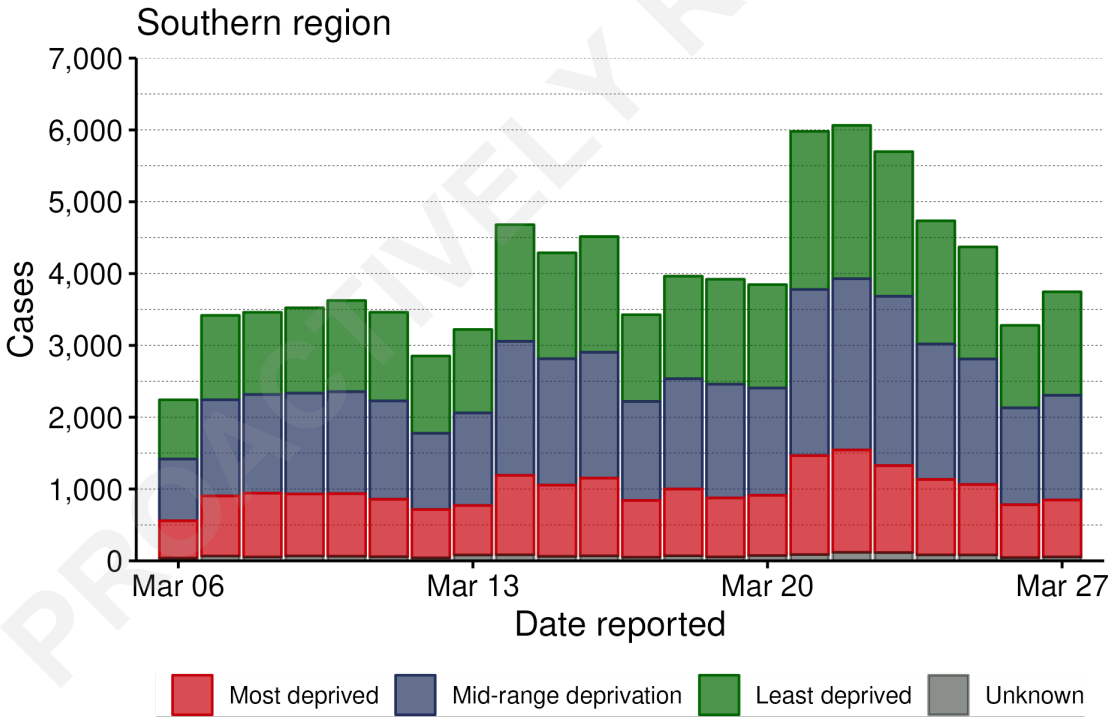


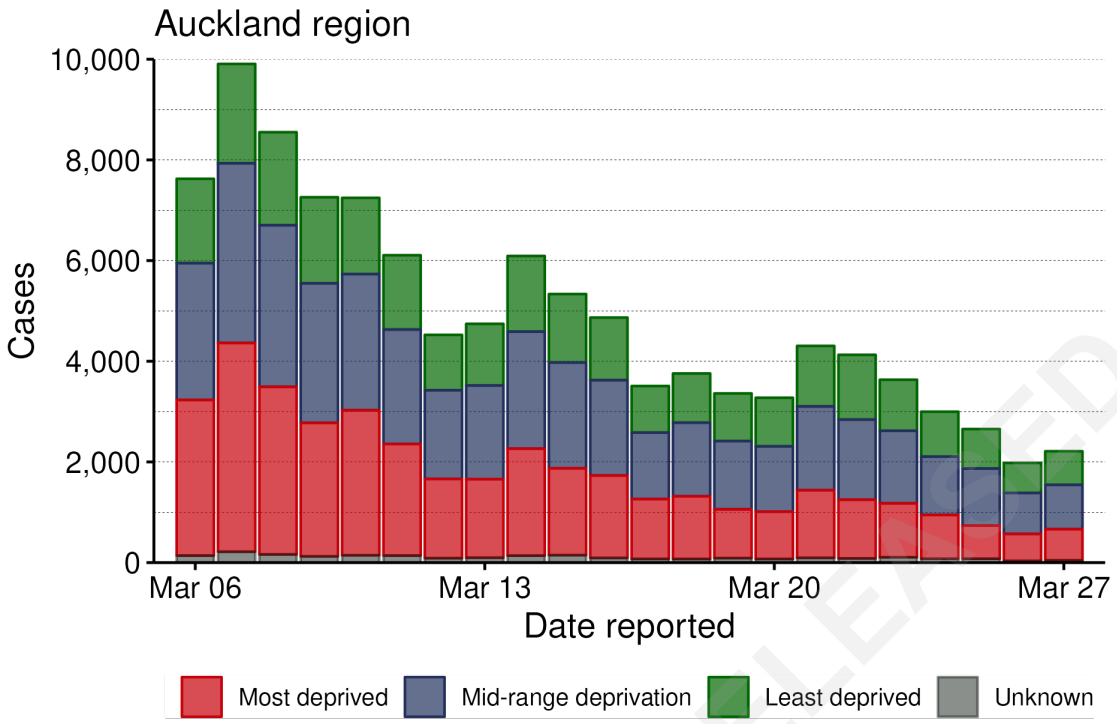
Deprivation Graphs

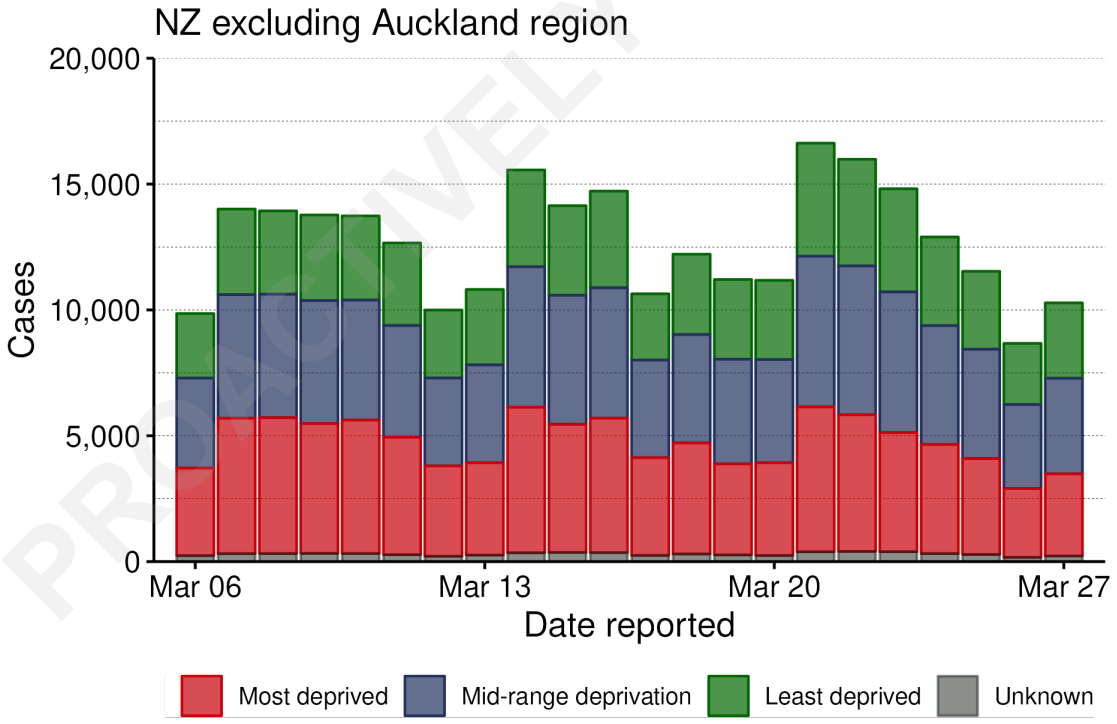


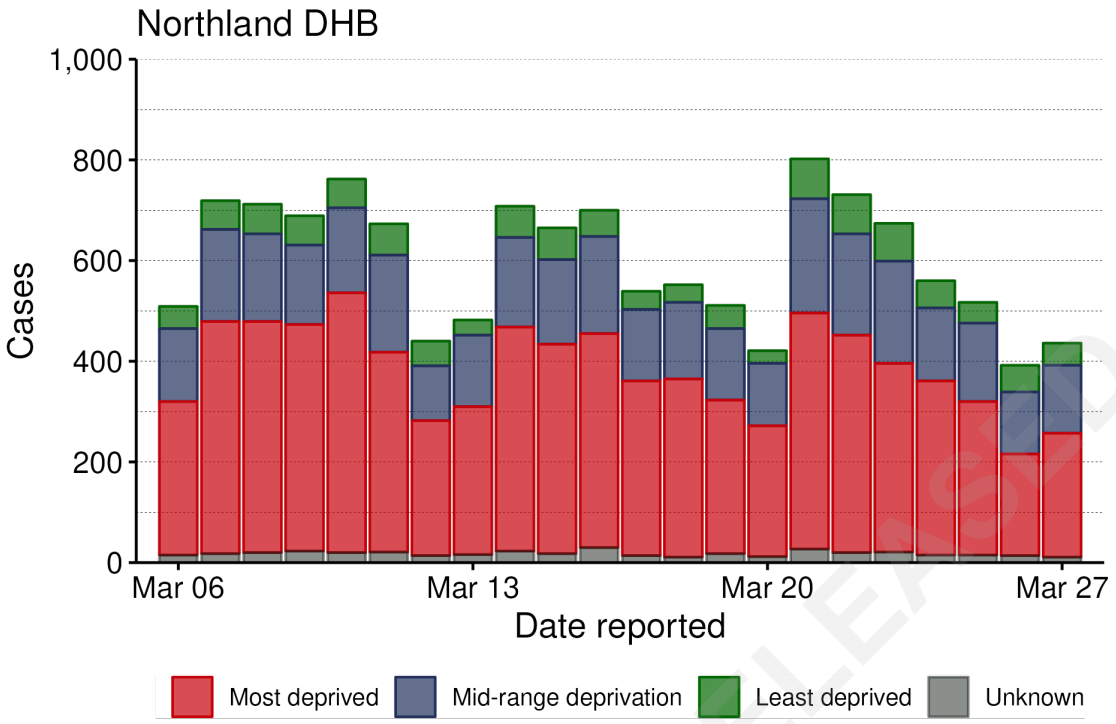


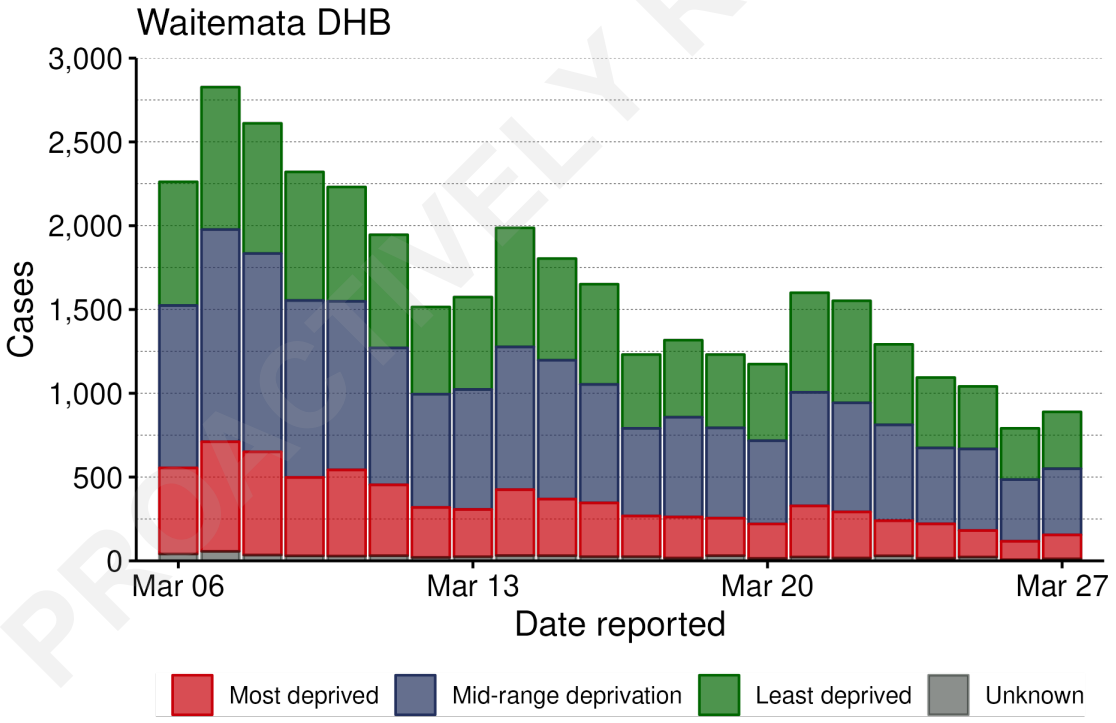


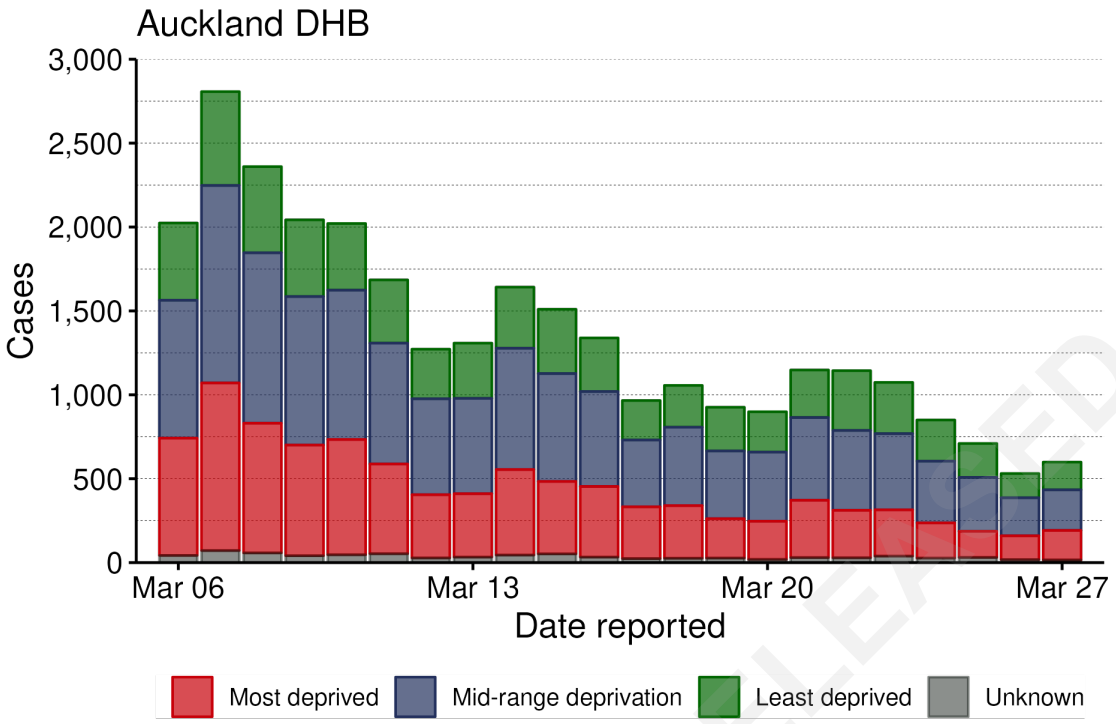


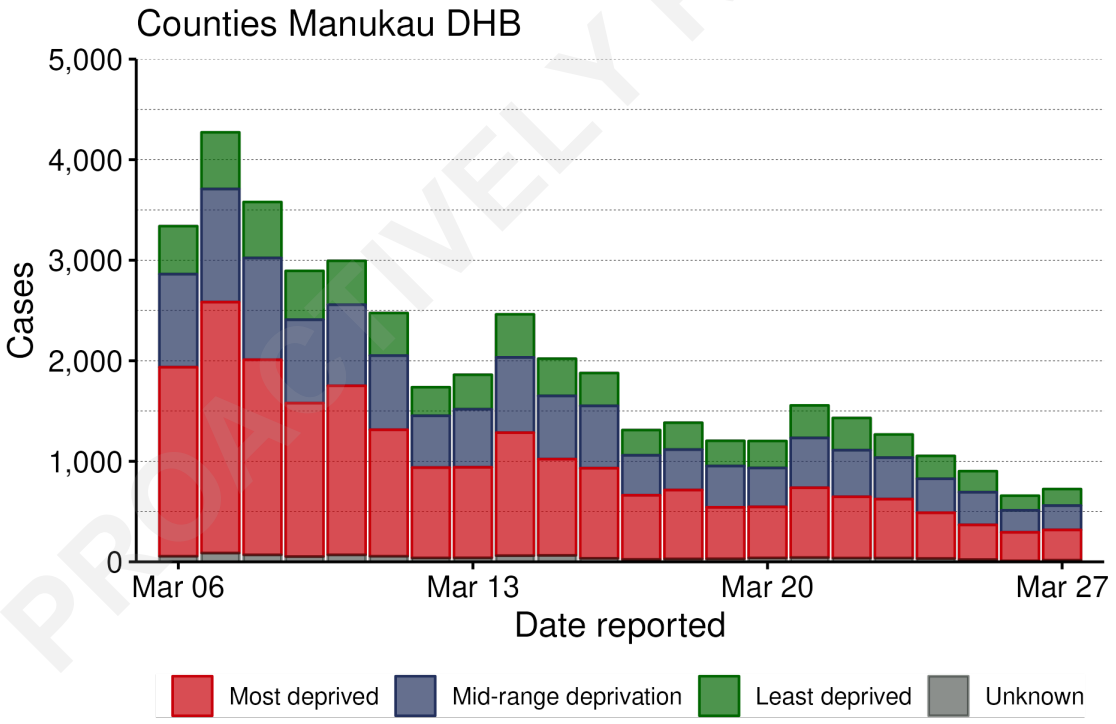


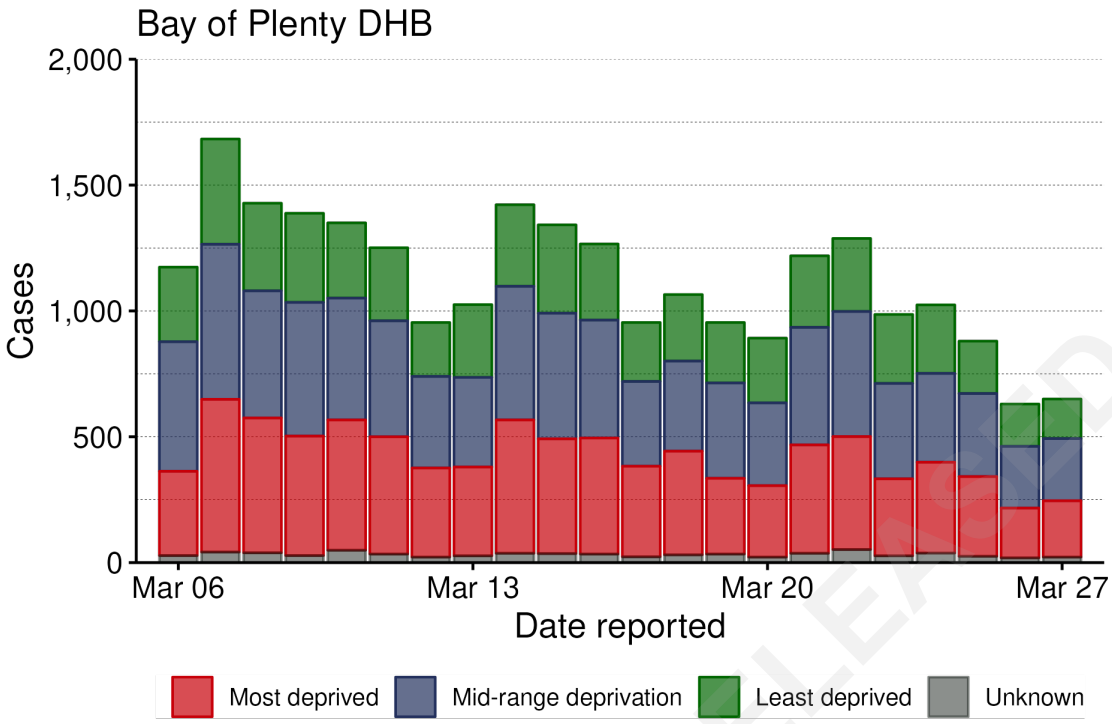


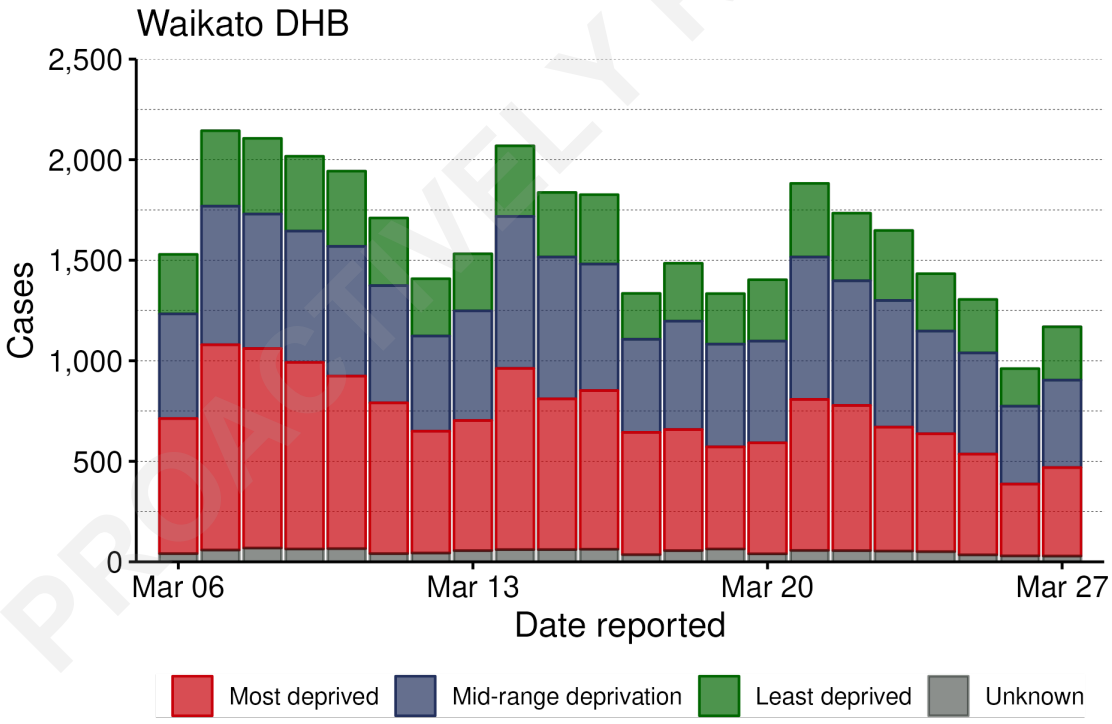


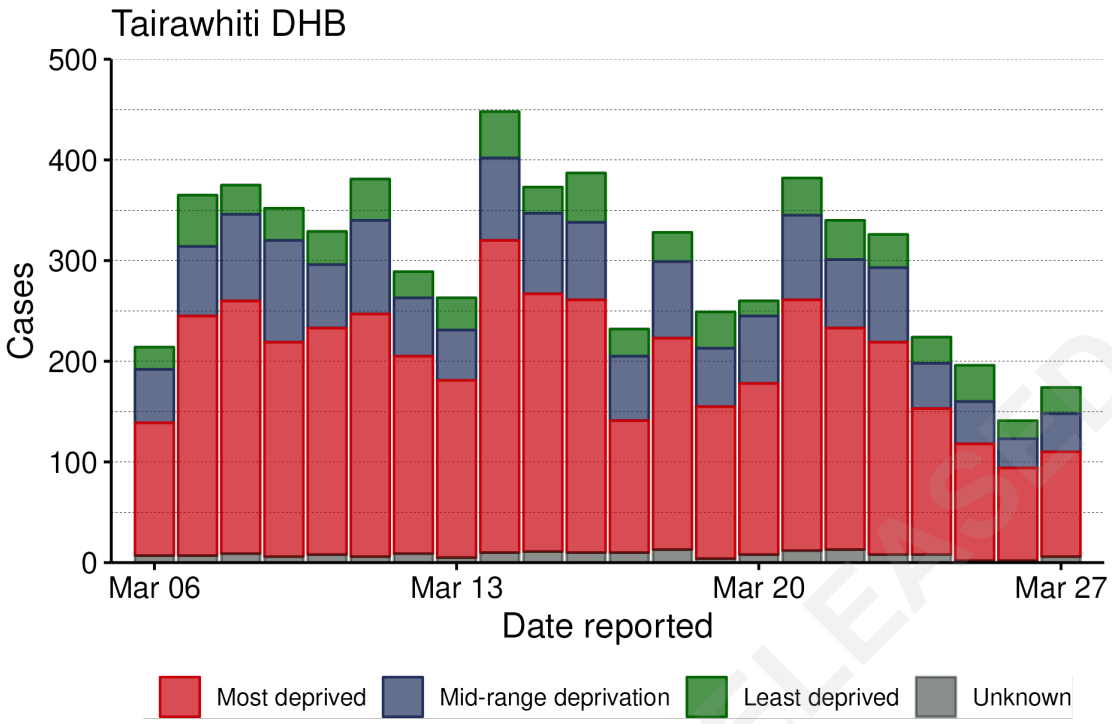


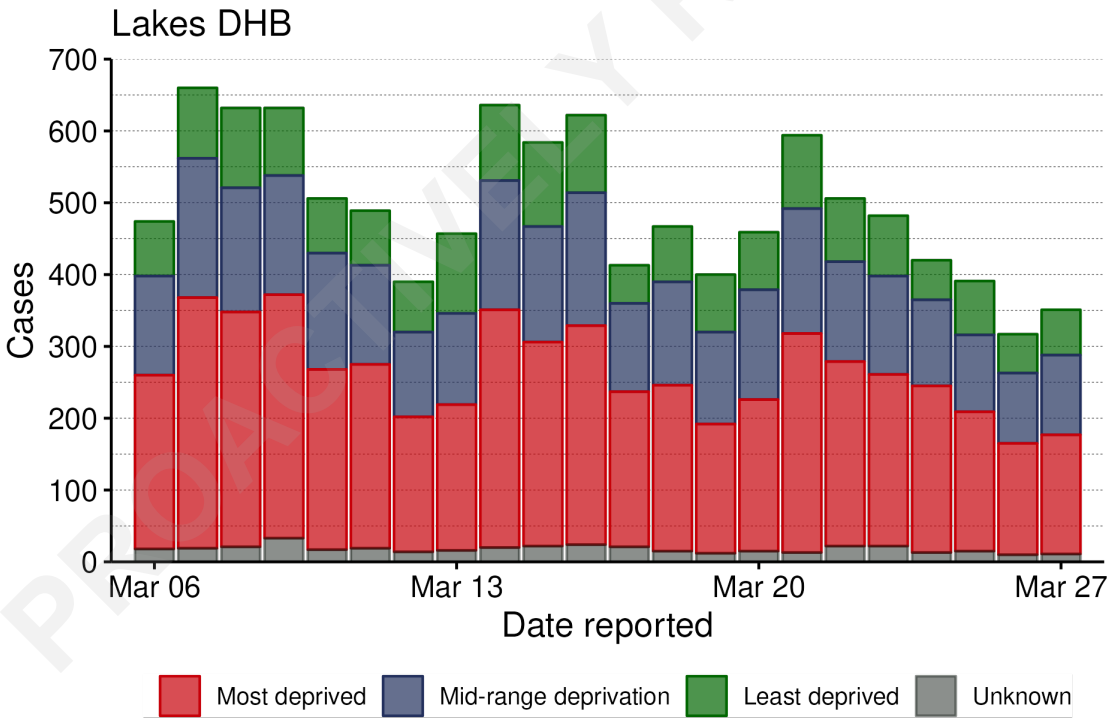


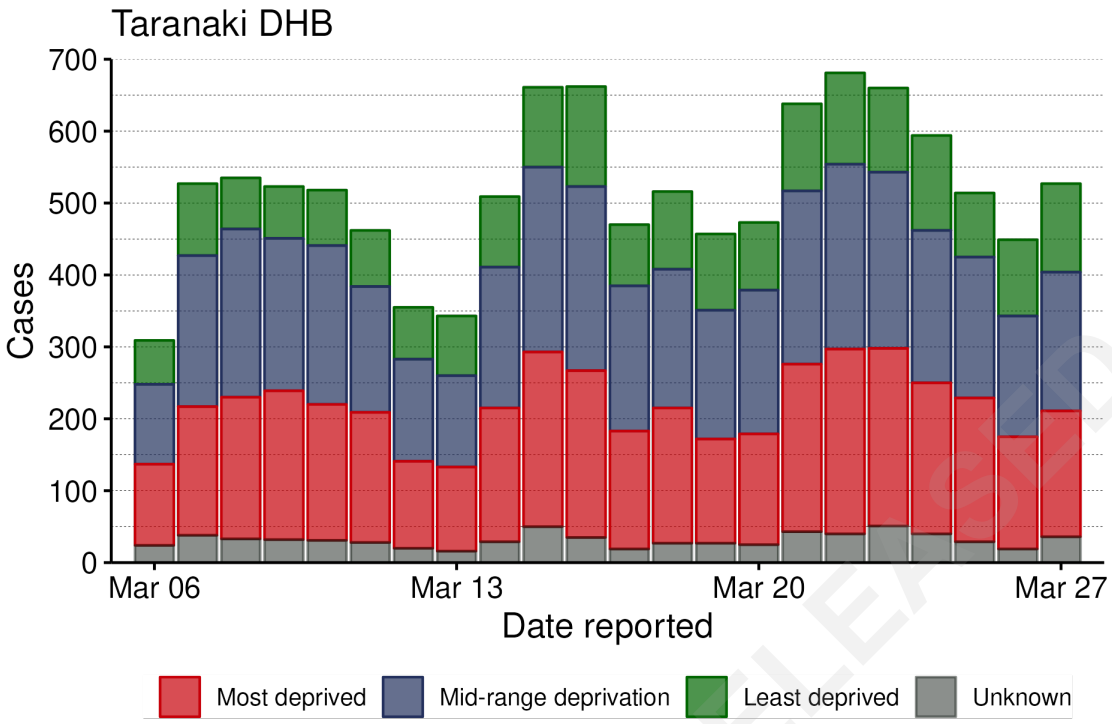


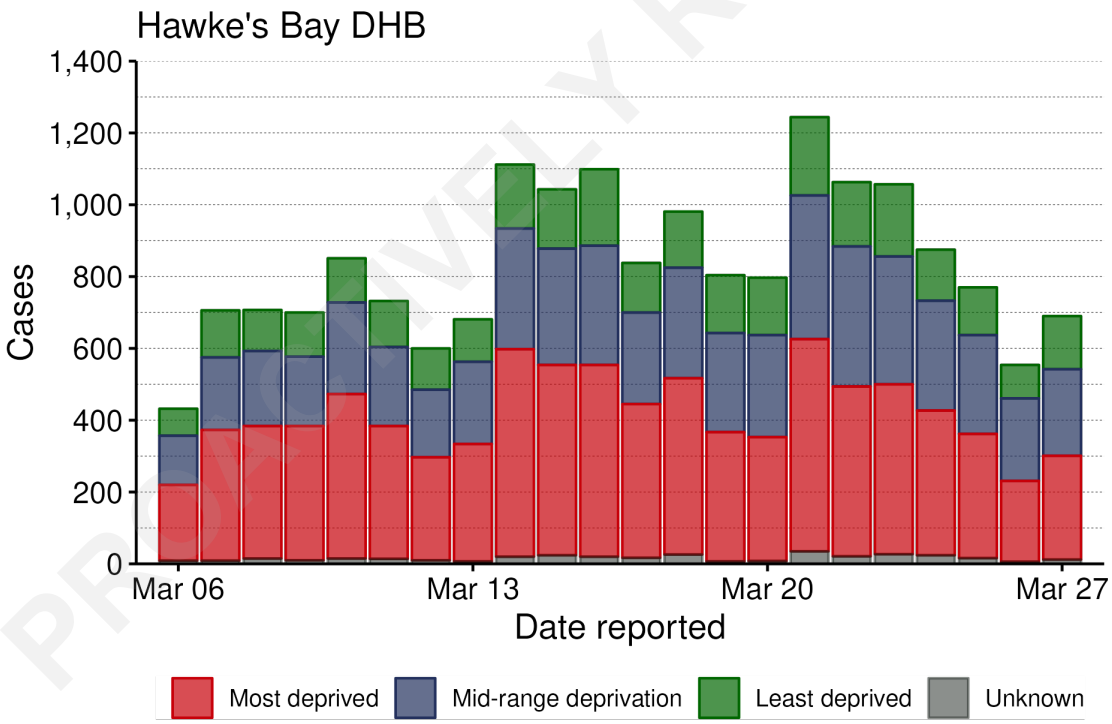


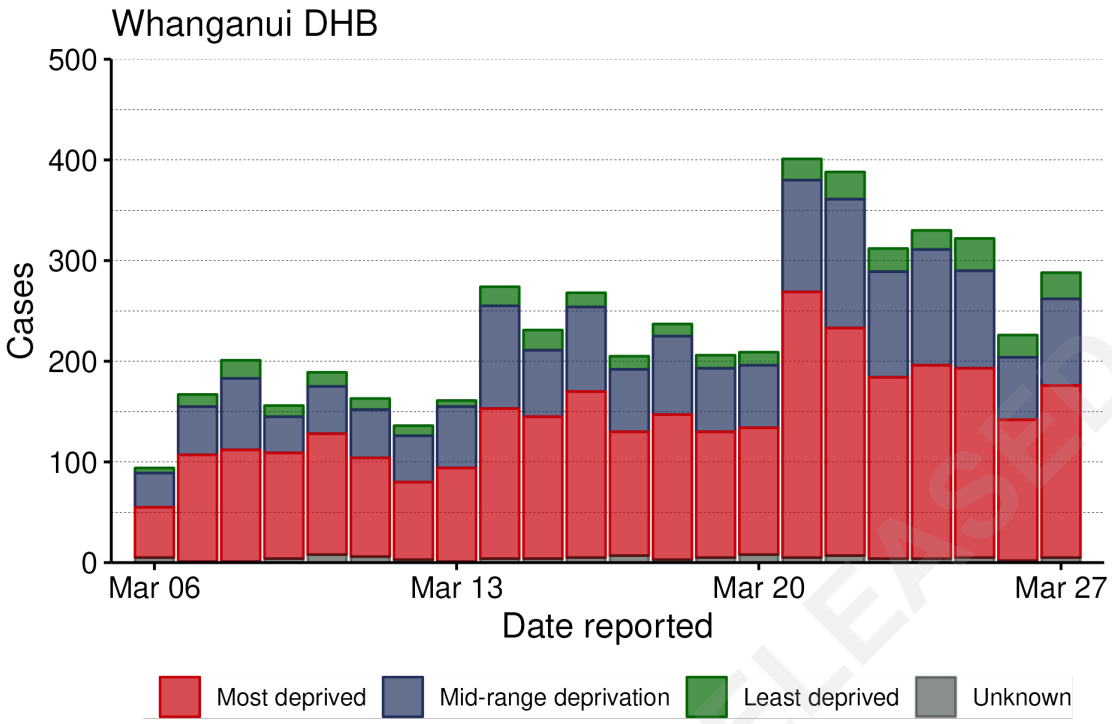


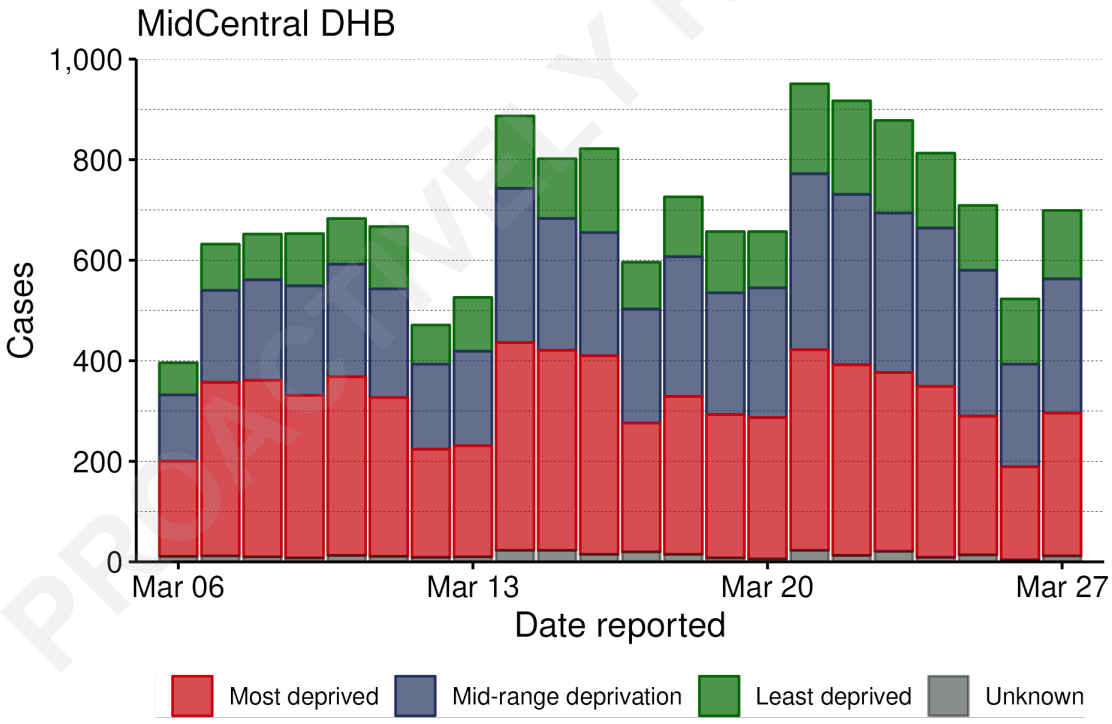


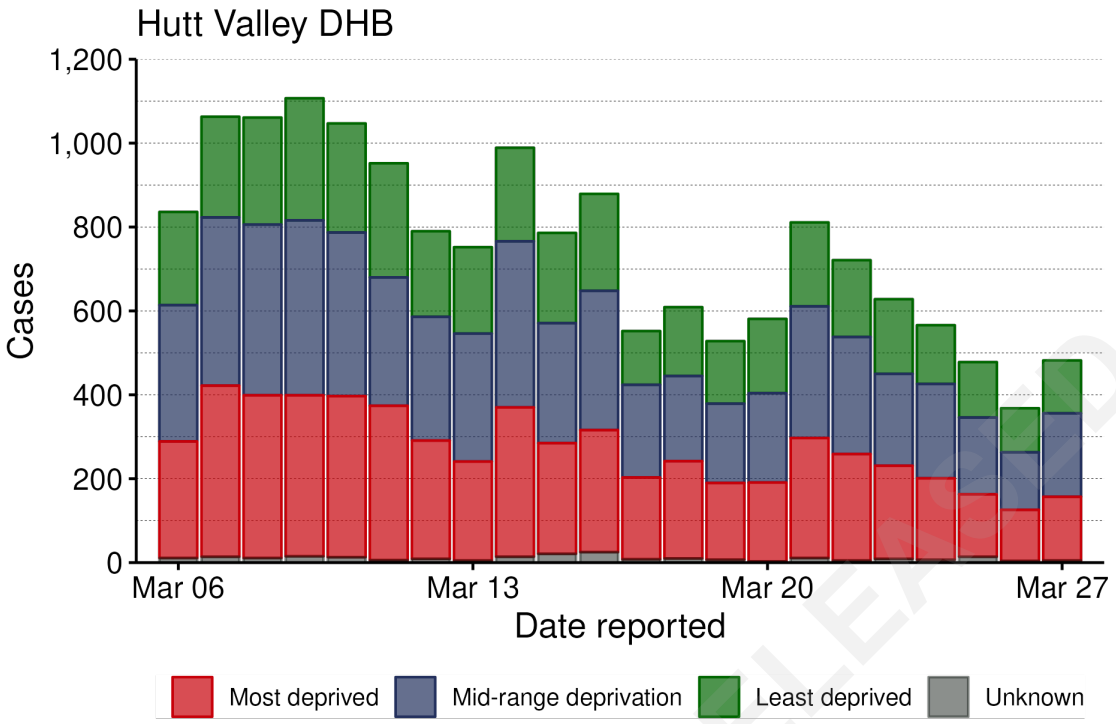


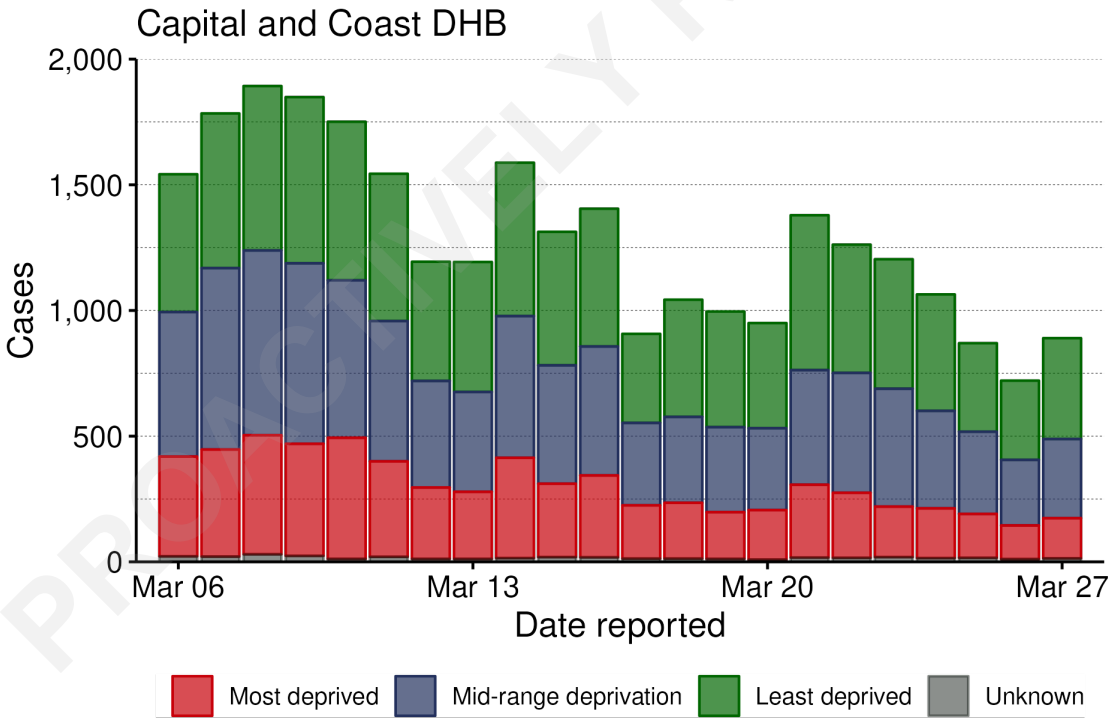


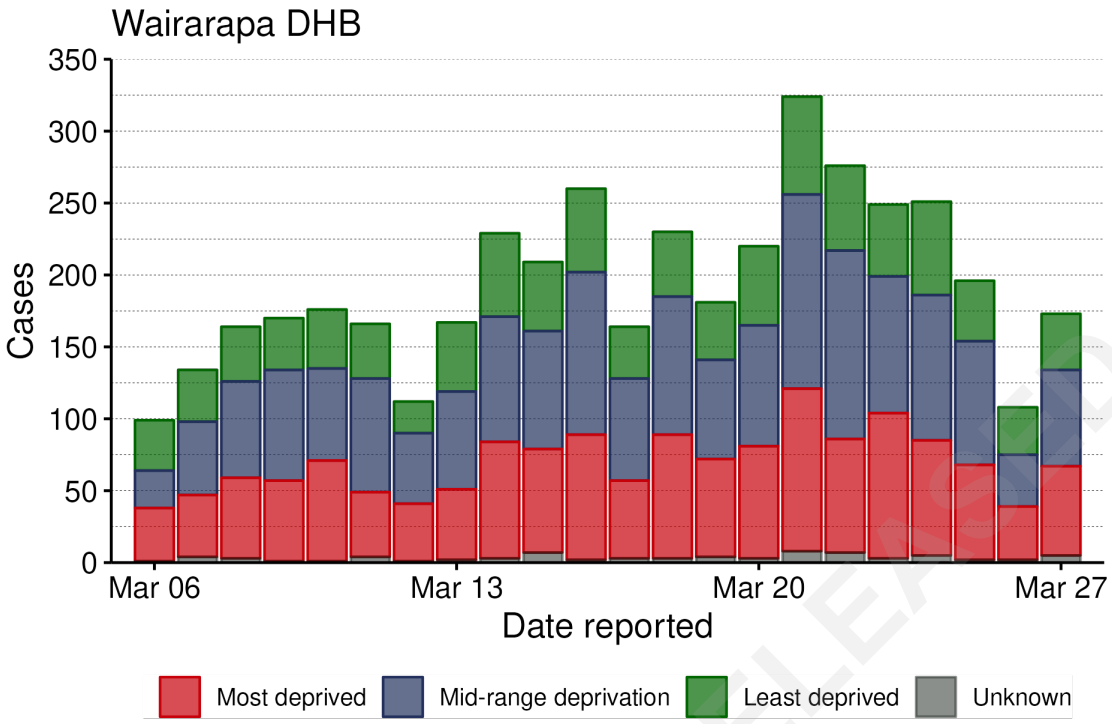


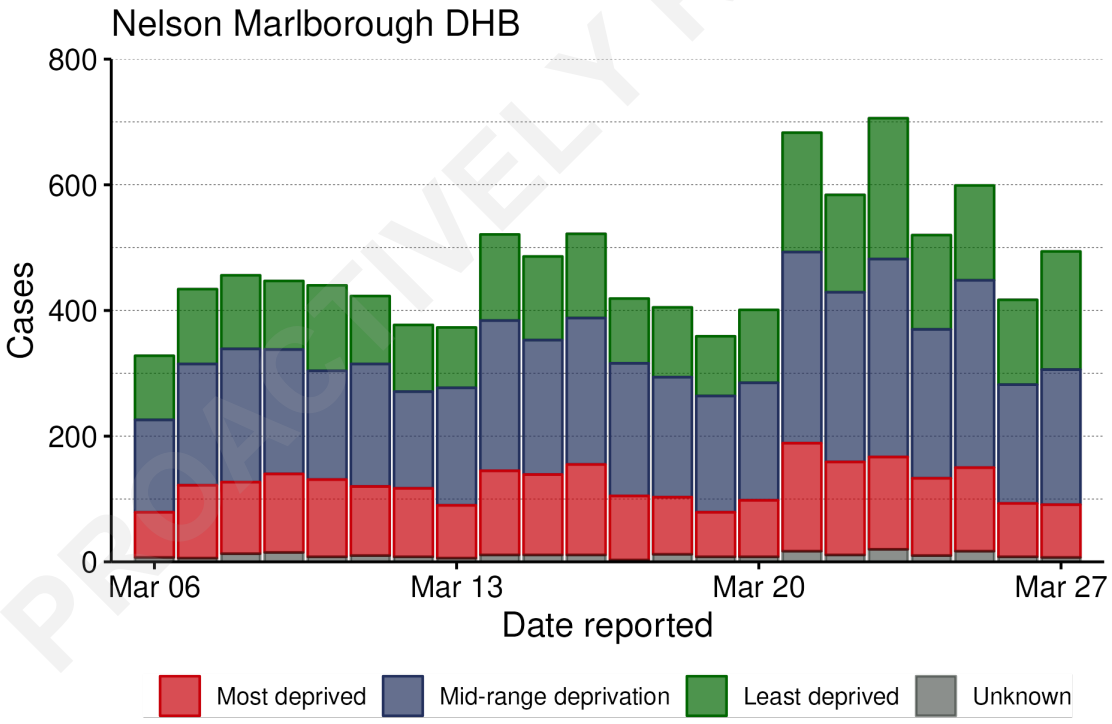


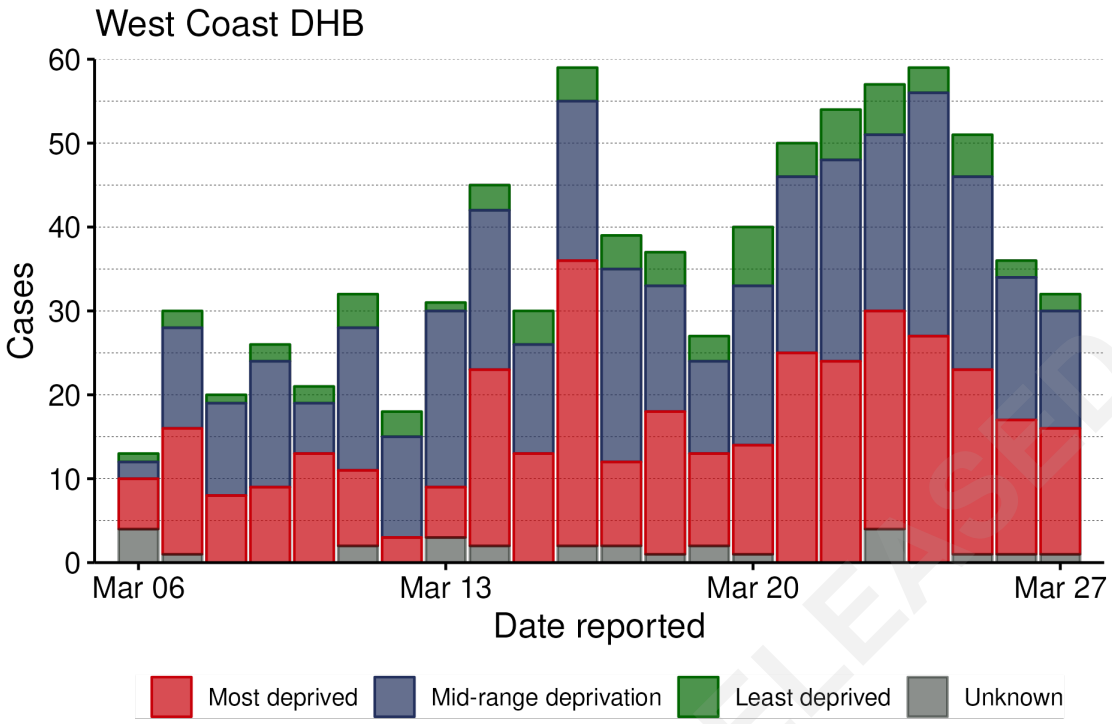


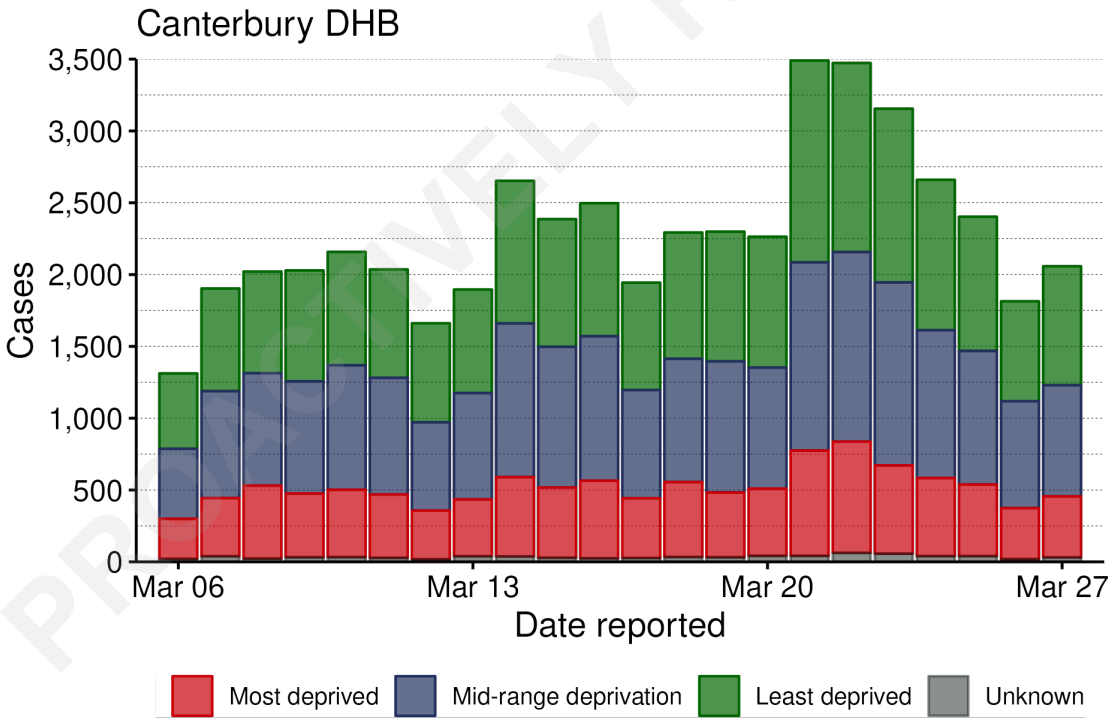


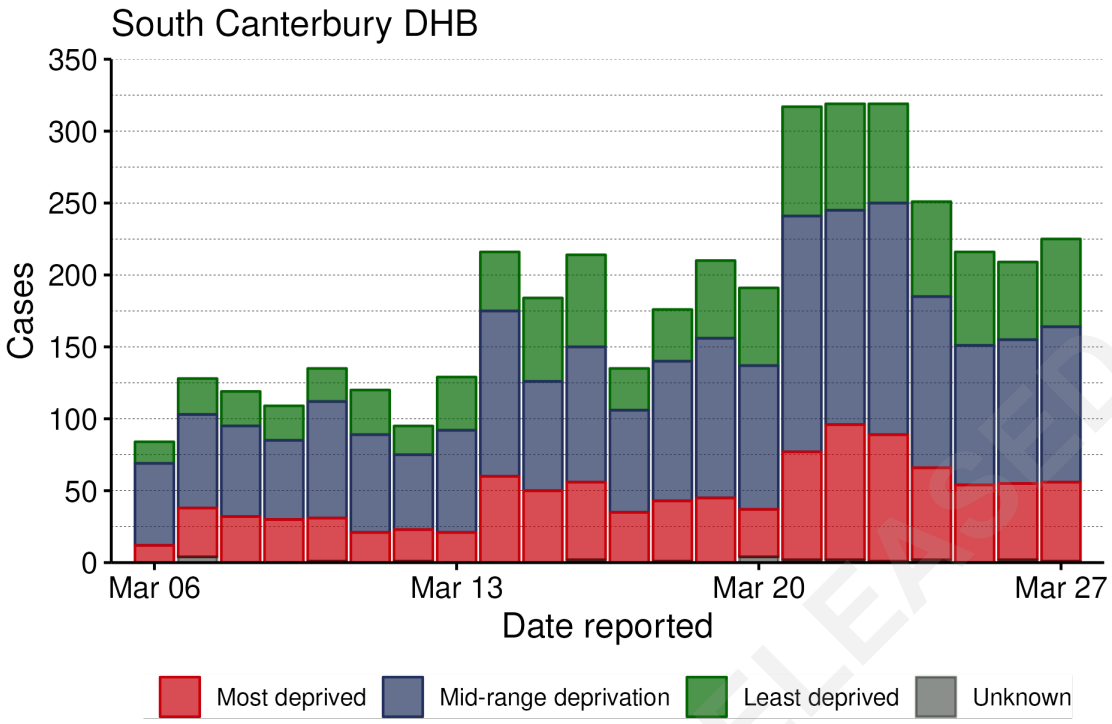


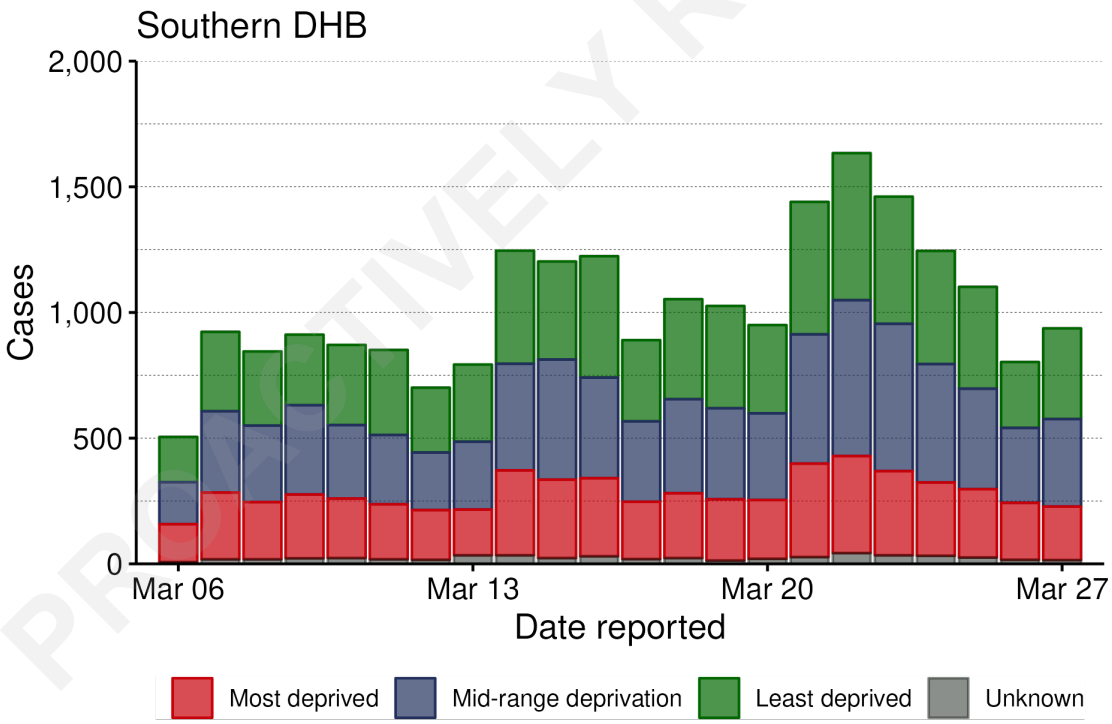


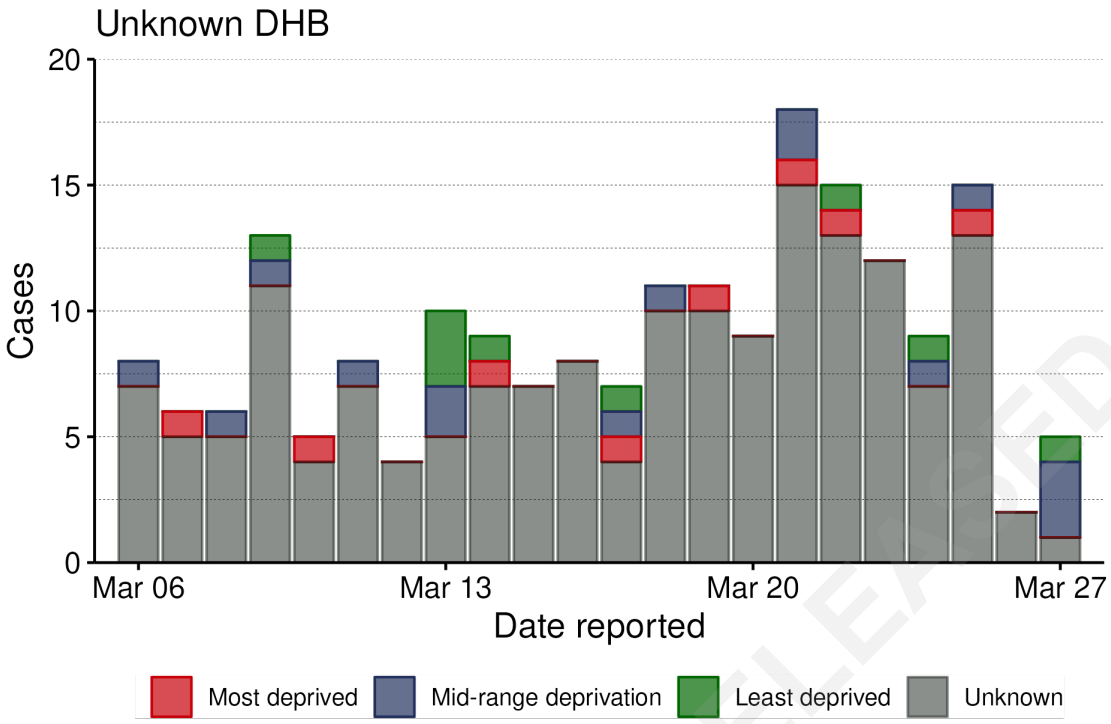












Vaccination Graphs