

Supplementary Appendices

The Supplementary Appendix contains reduced models that include only individual characteristics variables, and individual and household structure variables, as predictors of COVID-19 infection outcomes (Supplementary Tables 1, 2) and vaccination status (Supplementary Tables 3, 4).

Supplementary Table 1: Individual predictors of COVID-19 infection outcomes

	Positive covid test (vs. negative covid test) for tests to 16 February 2022				Hospitalisation following positive test (vs. not hospitalised) for positive tests to 02 June 2022				Death following positive test (vs. no death) for positive tests to 14 February 2023			
	Odds ratio	95% CI Lower	95% CI Upper	<i>p</i>	Odds ratio	95% CI Lower	95% CI Upper	<i>p</i>	Odds ratio	95% CI Lower	95% CI Upper	<i>p</i>
Māori Ethnicity (0 no, 1 yes)	1.28	1.16	1.41	<.001	1.43	1.34	1.53	<.001	1.54	1.33	1.79	<.001
Pacific Ethnicity (0 no, 1 yes)	2.21	1.95	2.50	<.001	1.98	1.84	2.14	<.001	1.58	1.28	1.95	<.001
Sex (0 women, 1 men)	0.99	0.94	1.06	.844	0.78	0.74	0.81	<.001	1.61	1.49	1.75	<.001
Age	0.90	0.88	0.92	<.001	1.50	1.48	1.53	<.001	3.57	3.43	3.72	<.001
PHO enrolment (0 no, 1 yes)	0.75	0.63	0.90	.002	1.59	1.28	1.97	<.001	0.55	0.36	0.84	.006
Disability status (0 no, 1 yes)	0.85	0.70	1.03	.092	2.90	2.69	3.12	<.001	2.38	2.15	2.63	<.001

Note. $N(\text{test outcome}) = 1,333,944$, $N(\text{hospitalisation outcome}) = 697,614$. $N(\text{death outcome}) = 1,314,810$. * $p < .05$, ** $p < .01$, *** $p < .001$.

Supplementary Table 2: Individual and household structure predictors of COVID-19 infection outcomes

	Positive covid test (vs. negative covid test) for tests to 16 February 2022				Hospitalisation following positive test (vs. not hospitalised) for positive tests to 02 June 2022				Death following positive test (vs. no death) for positive tests to 14 February 2023			
	Odds ratio	95% CI Lower	95% CI Upper	<i>p</i>	Odds ratio	95% CI Lower	95% CI Upper	<i>p</i>	Odds ratio	95% CI Lower	95% CI Upper	<i>p</i>
Māori Ethnicity (0 no, 1 yes)	1.28	1.17	1.39	<.001	1.40	1.31	1.49	<.001	1.49	1.28	1.73	<.001
Pacific Ethnicity (0 no, 1 yes)	2.22	1.99	2.47	<.001	1.93	1.79	2.09	<.001	1.51	1.22	1.88	<.001
Sex (0 women, 1 men)	1.00	0.95	1.05	.959	0.79	0.75	0.83	<.001	1.74	1.59	1.89	<.001
Age	0.90	0.89	0.92	<.001	1.47	1.45	1.50	<.001	3.45	3.31	3.60	<.001
PHO enrolment (0 no, 1 yes)	0.75	0.64	0.89	.001	1.64	1.32	2.04	<.001	0.58	0.38	0.88	.010
Disability status (0 no, 1 yes)	0.87	0.74	1.03	.103	2.80	2.60	3.01	<.001	2.34	2.12	2.59	<.001
Child under 5 (0 no, 1 yes)	1.30	1.21	1.40	<.001	0.99	0.92	1.06	.791	1.03	0.80	1.33	.835
Extended family (0 no, 1 yes)	1.39	1.20	1.60	<.001	1.25	1.13	1.39	<.001	1.30	1.06	1.60	.011
<i>Household composition^a</i>												
Two or more families	1.24	1.08	1.42	.002	1.05	0.94	1.17	.417	1.02	0.81	1.29	.880
Multi-person	1.10	0.97	1.26	.133	1.33	1.18	1.51	<.001	1.43	1.12	1.83	.004
One person	0.83	0.73	0.95	.006	1.54	1.42	1.67	<.001	1.42	1.28	1.58	<.001

Note. $N(\text{test outcome}) = 1,333,944$, $N(\text{hospitalisation outcome}) = 697,614$. $N(\text{death outcome}) = 1,314,810$. * $p < .05$, ** $p < .01$, *** $p < .001$.

^aReference category is those in single family households.

Supplementary Table 3: Individual predictors of vaccination status as at 10 May 2023

	Fully vaccinated (vs. Partially vaccinated)				Fully vaccinated (vs. Not vaccinated)				Partially vaccinated (vs. Not vaccinated)			
	Odds ratio	95% CI Lower	95% CI Upper	<i>p</i>	Odds ratio	95% CI Lower	95% CI Upper	<i>p</i>	Odds ratio	95% CI Lower	95% CI Upper	<i>p</i>
Māori Ethnicity (0 no, 1 yes)	0.67	0.66	0.69	<.001	0.70	0.70	0.71	<.001	0.85	0.83	0.88	<.001
Pacific Ethnicity (0 no, 1 yes)	0.83	0.81	0.86	<.001	0.84	0.82	0.85	<.001	1.02	0.99	1.06	.214
Sex (0 women, 1 men)	0.92	0.91	0.94	<.001	1.20	1.19	1.21	<.001	1.06	1.04	1.08	<.001
Age	2.75	2.71	2.79	<.001	1.13	1.13	1.13	<.001	0.64	0.64	0.64	<.001
PHO enrolment (0 no, 1 yes)	0.97	0.93	1.00	.070	11.18	11.05	11.30	<.001	6.68	6.44	6.94	.057
Disability status (0 no, 1 yes)	0.71	0.68	0.74	<.001	0.69	0.68	0.70	<.001	1.05	1.00	1.10	<.001

Note. $N(\text{Fully vs. partially}) = 2,810,535$. $N(\text{Fully vs. none}) = 3,060,945$. $N(\text{Partially vs. none}) = 359,766$. * $p < .05$, ** $p < .01$, *** $p < .001$.

Supplementary Table 4: Individual and household structure predictors of vaccination status as at 10 May 2023

	Fully vaccinated (vs. Partially vaccinated)				Fully vaccinated (vs. Not vaccinated)				Partially vaccinated (vs. Not vaccinated)			
	Odds ratio	95% CI Lower	95% CI Upper	<i>p</i>	Odds ratio	95% CI Lower	95% CI Upper	<i>p</i>	Odds ratio	95% CI Lower	95% CI Upper	<i>p</i>
Māori Ethnicity	0.71	0.69	0.72	<.001	0.72	0.71	0.72	<.001	0.85	0.83	0.87	<.001
Pacific Ethnicity	0.92	0.89	0.95	<.001	0.87	0.85	0.89	<.001	1.01	0.97	1.04	.075
Sex (0 women, 1 men)	0.91	0.89	0.93	<.001	1.20	1.19	1.21	<.001	1.06	1.04	1.08	<.001
Age	2.79	2.75	2.83	<.001	1.13	1.12	1.13	<.001	0.64	0.64	0.65	<.001
PHO enrolment (0 no, 1 yes)	1.01	0.97	1.05	.798	11.60	11.47	11.74	<.001	6.60	6.36	6.86	<.001
Disability status (0 no, 1 yes)	0.70	0.67	0.74	<.001	0.69	0.68	0.70	<.001	1.05	1.00	1.10	.038
Child under 5 (0 no, 1 yes)	0.41	0.40	0.42	<.001	0.63	0.62	0.63	<.001	1.03	1.00	1.05	.026
Extended family (0 no, 1 yes)	0.91	0.87	0.95	<.001	0.81	0.79	0.83	<.001	1.12	1.07	1.17	<.001
<i>Household composition^a</i>												
Two or more families	1.11	1.06	1.16	<.001	1.17	1.14	1.20	<.001	0.96	0.92	1.01	<.093
Multi-person	1.87	1.73	2.02	<.001	1.32	1.29	1.36	<.001	0.60	0.56	0.65	<.001
One person	0.32	0.31	0.34	<.001	0.77	0.76	0.79	<.001	0.99	0.93	1.05	.748

Note. $N(\text{Fully vs. partially}) = 2,810,535$. $N(\text{Fully vs. none}) = 3,060,945$. $N(\text{Partially vs. none}) = 359,766$. * $p < .05$, ** $p < .01$, *** $p < .001$.

^aReference category is those in single family households.

