

COVID-19 Monitor

COVID-19 cases, variants, vaccines, hospitalisations and deaths

28 October 2021

Table 1: NSW key indicators as at 24 October 2021*

Key indicators	Date: 24 Oct (change from previous week: 17 Oct)
Average daily COVID-19 locally acquired cases, week to 24 Oct (previous week)	310 (-50)
Growth factor for locally acquired cases	0.98
Average daily COVID-19 deaths, week to 24 Oct (previous week)	3 (-1)
COVID-19 patients under the care of NSW Health, as at 24 Oct (previous week)	3,114 (-1,850)
COVID-19 patients in hospital, as at 24 Oct (previous week)	473 (-132)
Percentage who were unvaccinated	66.1%
Percentage who were fully vaccinated	15.2%
COVID-19 patients in intensive care units (ICUs), as at 24 Oct (previous week)	115 (-16)
Percentage who were unvaccinated	76.7%
Percentage who were fully vaccinated	7.8%
Percentage of total ICU beds with COVID-19 patients (previous week)	22.2% (-2.7%)
Rates per million	
Average daily COVID-19 locally acquired cases, week to 24 Oct (previous week)	36.8 (-6)
COVID-19 under the care of NSW Health, as at 24 Oct	370.1
COVID-19 patients in hospital, as at 24 Oct	56.2
Hospital rate among unvaccinated / fully vaccinated 16+ population	464.0 / 15.6
COVID-19 patients in ICU, as at 24 Oct	13.7
ICU rate among unvaccinated / fully vaccinated 16+ population	137.2 / 1.8
COVID-19 vaccination, as at 24 Oct	
Percentage of eligible population (aged 16+) fully vaccinated	84.1%
Percentage of total population fully vaccinated	69.7%

*Please see [NSW Key indicators: notes and sources](#) at the end of this document.

International reflections

- The United Kingdom opened up on 19 July 2021 and [52,000 new cases](#) and 115 deaths were recorded on 21 October 2021.¹ The [number of COVID-19 patients being admitted to hospital is approaching 1000 per day](#) and experts argue that this should trigger the ‘plan B for England’, including mandatory vaccine certification, face masks in certain settings and working from home if possible.²
- A [sub-variant of Delta, AY.4.2](#), has been identified in the United Kingdom, the United States, Denmark, Canada and Israel, with evidence of increased transmissibility.³ With borders reopening shortly, the subvariant will likely spread to Australia.
- Hospital admissions for [COVID-19 in children](#), aged 5-11 years, have been increasing in the United States.⁴ The [Food and Drug Administration](#) reported data suggesting the Pfizer vaccine is highly effective at preventing symptomatic infections in young children. If approved, children may be vaccinated from early November.⁵ [Health Canada](#) is also reviewing approval of the vaccine.⁶
- Recently in Canada there were [heightened COVID-19 cases and ICU admissions in Saskatchewan](#) after easing restrictions from 1 July 2021.⁷ However, the [active COVID-19 case count in Saskatchewan dropped below 3,000](#) on 24 October 2021 for the first time in over a month. Hospitalisation numbers have also started decreasing, partly due to some patient transfers to Ontario.⁸
- Singapore reported [3,174 new cases of COVID-19](#) on the 25 October 2021, despite 84% of its population being vaccinated against COVID-19.⁹ Even as cases are rising, those requiring [intensive care](#) and [COVID-19 deaths](#) have remained low.^{10, 11} The [Singapore Ministry of Health](#) scaled back social interactions from 27 September through 24 October 2021, so as to slow down community transmissions. This was extended to 21 November 2021.¹²
- Denmark and Portugal continue to have [low hospitalisations and ICU admissions](#) with no restrictions and [high vaccination coverage](#).^{13, 14}

Table 2: Summary of public health, healthcare and vaccination measures (select countries, Canadian provinces and NSW) as at 25 October 2021*

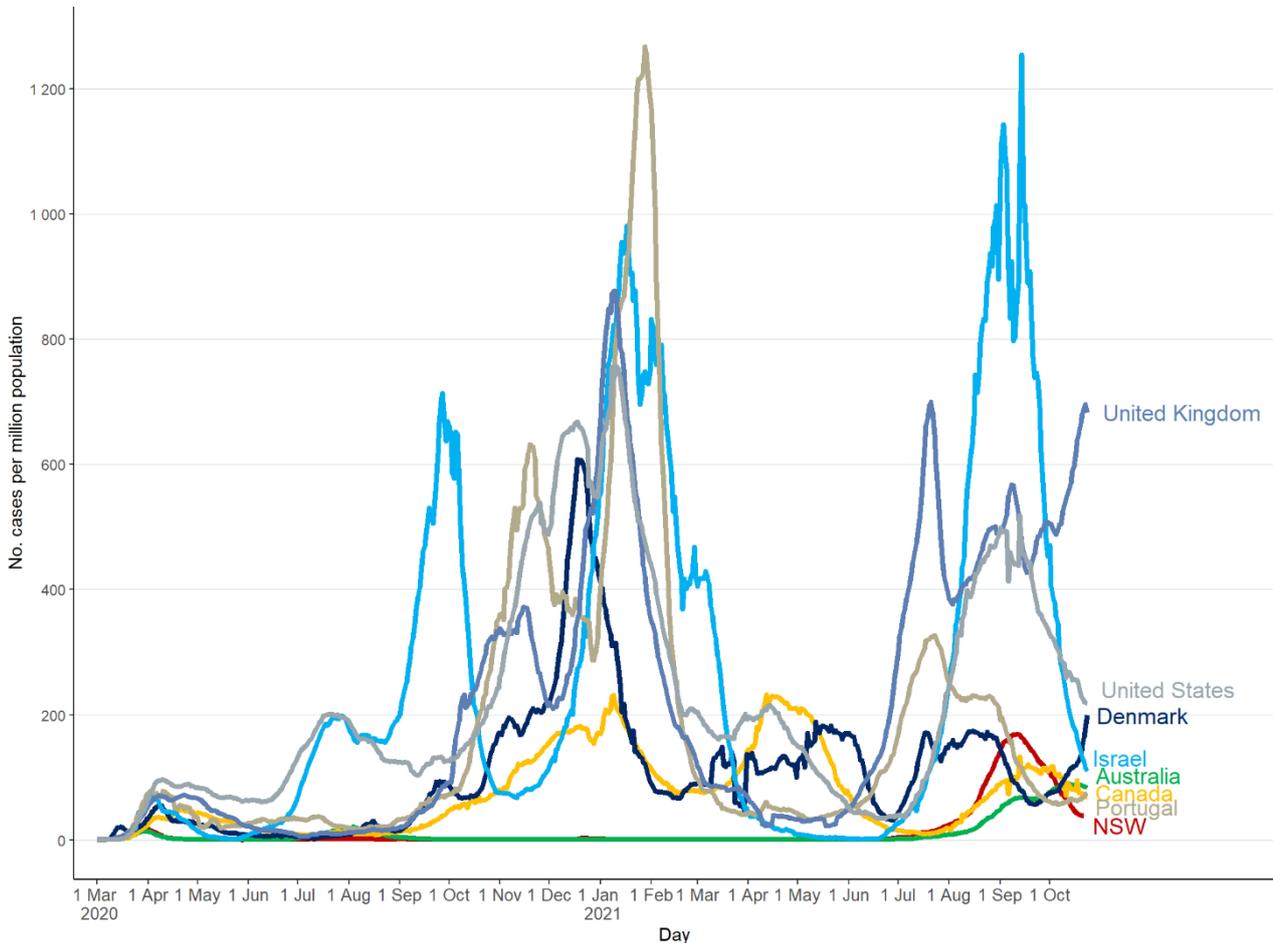
	7-day average confirmed cases	7-day average confirmed cases (per million)	7-day average deaths (per million)	% Total population fully vaccinated	COVID-19 patients in hospital	COVID-19 patients in hospital (per million)	COVID-19 patients in ICU	COVID-19 patients in ICU (per million)
NSW	310	36.8	0.4	69.7%	473	56.2	115	13.7
Australia	2,102	81.5	0.5	61.0%	1317	51.1	278	10.8
Belgium	5,596	481.0	1.3	73.4%	856	73.6	209	18.0
Canada	2,258	59.3	0.8	73.7%	2,036	53.5	645	16.9
Ontario	379	25.6	0.3	73.8%	163	11.0	138	9.3
Quebec	422	49.0	0.5	75.5%	259	30.1	69	8.0
Denmark	1,254	215.7	0.3	75.8%	120	20.6	15	2.6
Israel	897	102.1	0.8	65.1%	420	47.8	160	18.2
Japan	301	2.4	0.1	70.4%	3,691	29.3	197	1.6
Portugal	765	75.2	0.5	86.8%	295	29.0	61	6.0
Singapore	3,584	607.8	2.2	79.6%	1,779	301.7	64	10.9
United Kingdom	44,779	656.5	2.0	66.8%	8,239	120.8	889	13.0
United States	70,893	212.9	4.7	56.7%	45,498	136.7	14,624	43.9

*Please see [Summary of public health: notes and sources](#) at the end of this document.

COVID-19 confirmed cases

Figure 1 shows the daily rate per million population (rolling seven-day average) of confirmed COVID-19 cases in NSW, Australia, United Kingdom, United States, Canada, Israel, Portugal and Denmark, from March 2020 to October 2021.

Figure 1: Daily rates of COVID-19 cases (select countries and NSW), March 2020 – October 2021



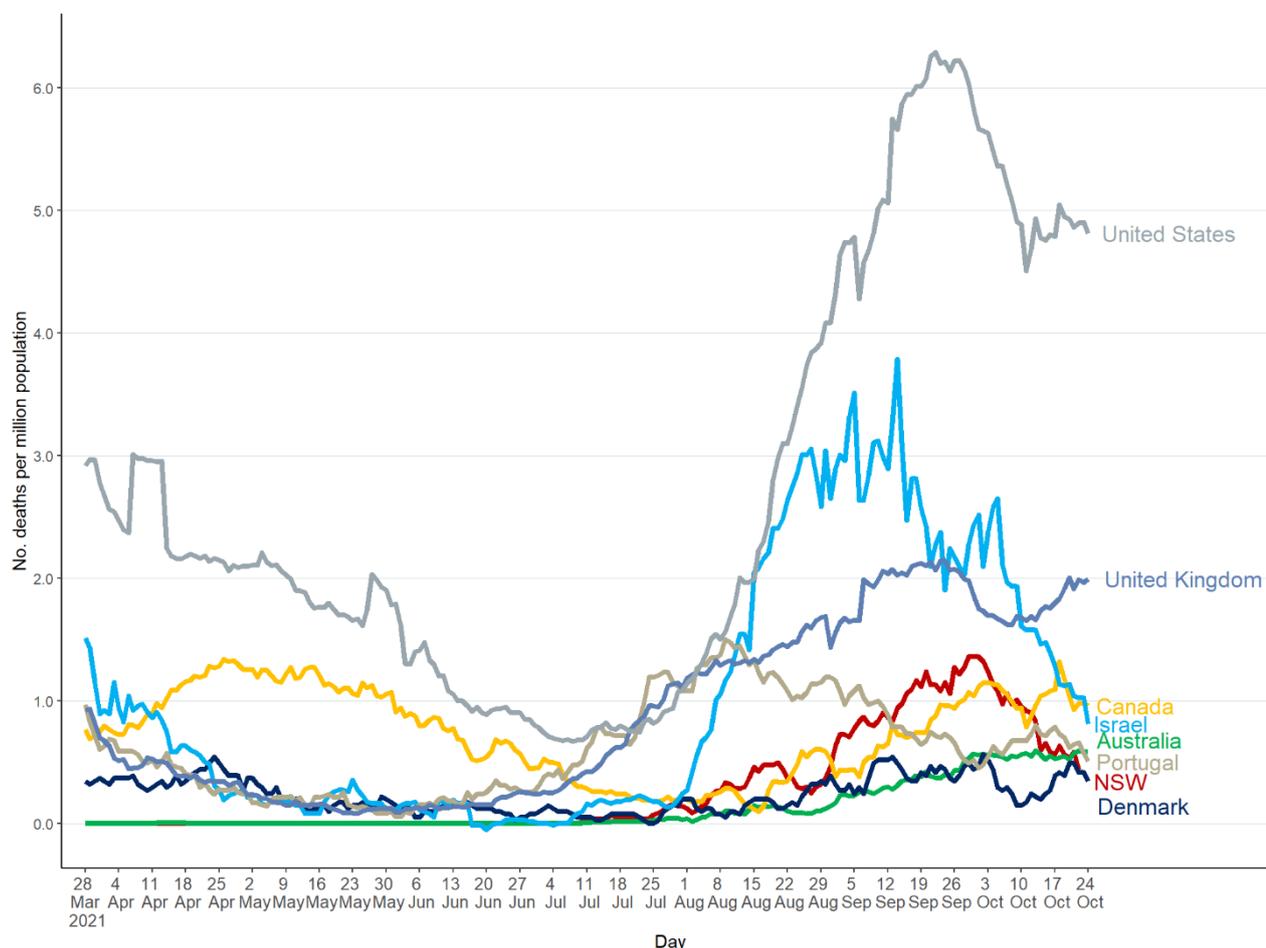
Note: Limited testing and delayed reporting likely result in underestimation of the actual number of confirmed cases.

Source: Data for the selected countries sourced from [Our World in Data](#).¹⁵ Data for NSW sourced from NSW Health via Notifiable Conditions Information Management System.¹⁶ Both accessed 26 October 2021.

COVID-19 mortality rates

Figure 2 shows the daily (rolling seven-day average) mortality rate per million population in NSW, Australia, United Kingdom, United States, Canada, Israel, Portugal and Denmark, from April to October 2021.

Figure 2: Daily mortality rates (select countries and NSW), April – October 2021



Note: Limited testing and challenges in the attribution of the cause of death means that the number of confirmed deaths may not be an accurate count of the true number of deaths from COVID-19.

Source: Data for the selected countries sourced from [Our World in Data](#).¹⁵ Data for NSW sourced from NSW Health via the Notifiable Conditions Information Management System.¹⁶ Both accessed 26 October 2021.

COVID-19 cases, testing, variants, vaccines, hospitalisations and deaths*

The following graphs (figures 3-8) show COVID-19 cases and vaccination rates; hospitalisation and death rates; and the variant distribution for NSW, Australia, United Kingdom, United States, Canada and Israel.

Series a: COVID-19 cases and vaccinations

The graphs in series 'a' show COVID-19 cases and vaccination rates specific to NSW and each of these countries, from March 2020 to October 2021. They include:

- the daily rate per million population (rolling seven-day average) of confirmed COVID-19 cases
- the cumulative number of people who have received at least one vaccine dose (per 100 population)
- the cumulative number of people fully vaccinated (per 100 population).

These graphs should be interpreted with caution as there are other factors that may influence the number of cases in addition to vaccination rates, including the level of social restrictions.

The cumulative number of people vaccinated per hundred population (at least one dose or fully vaccinated) is based on the full population (all ages) for all locations and countries, including NSW, to enable accurate comparability. The number of people fully vaccinated in Australia is only available from late May 2021 onwards.

Note, there is variation in both 'x' axis and 'y' axis scales and some gaps in time series across these graphs due to missing data.

Series b: COVID-19 hospitalisation and death rates

The graphs in series 'b' show COVID-19 hospitalisation and death rates for NSW and each of these countries. Specifically, they show the daily number of hospitalised patients (per million population) and the daily number of new deaths (rolling seven-day average and per million population), from March 2020 to October 2021.

Note, there is variation in both 'x' axis and 'y' axis scales and some gaps in time series across these graphs due to missing data.

Series c: COVID-19 variant distribution

The graphs in series 'c' show the COVID-19 variant distribution for each of these countries. Specifically, they show COVID-19 variant distribution for cases sequenced, and the percentage of total COVID-19 cases sequenced, from April 2021 to October 2021.

For most countries, weekly counts are shown; however, only monthly counts were available for Canada. No variant information is available for NSW.

Note, there is variation in both 'x' axis and 'y' axis scales and some gaps in time series across these graphs due to missing data.

*Please see further [COVID-19 cases: notes and sources](#) at the end of this document.

NSW

Figure 3a: COVID-19 cases and vaccinations, NSW, March 2020 – October 2021

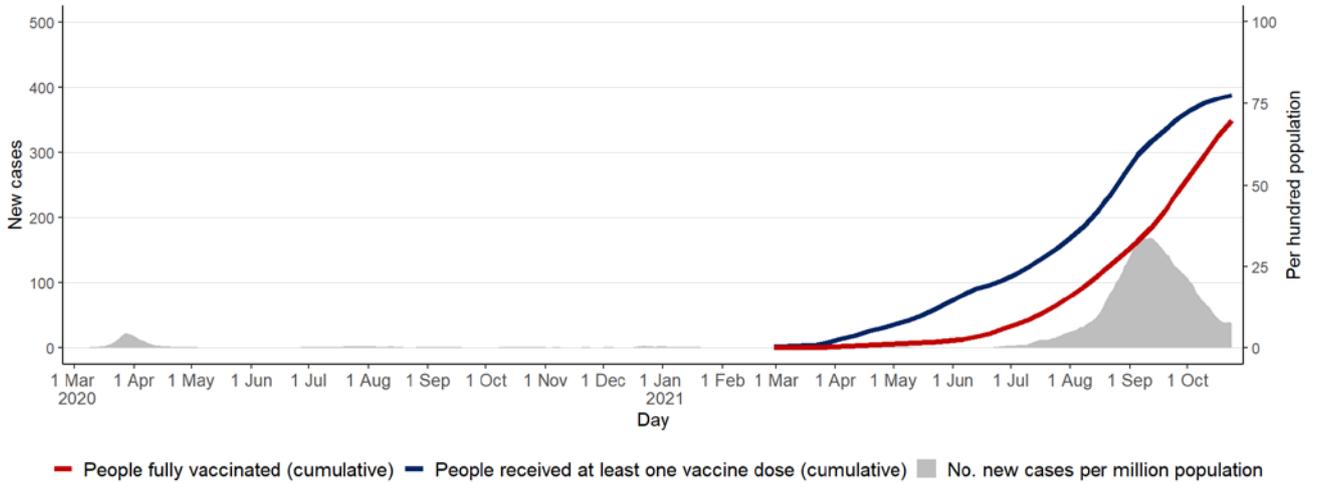
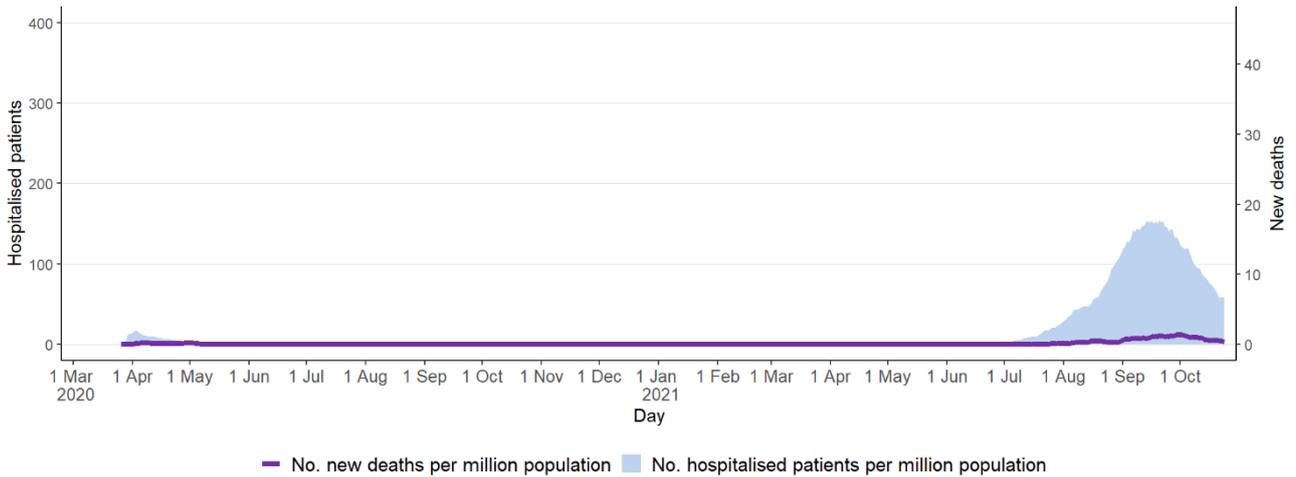


Figure 3b: COVID-19 hospitalisation and mortality rates, NSW, March 2020 – October 2021



Australia

Figure 4a: COVID-19 cases and vaccinations, Australia, March 2020 – October 2021

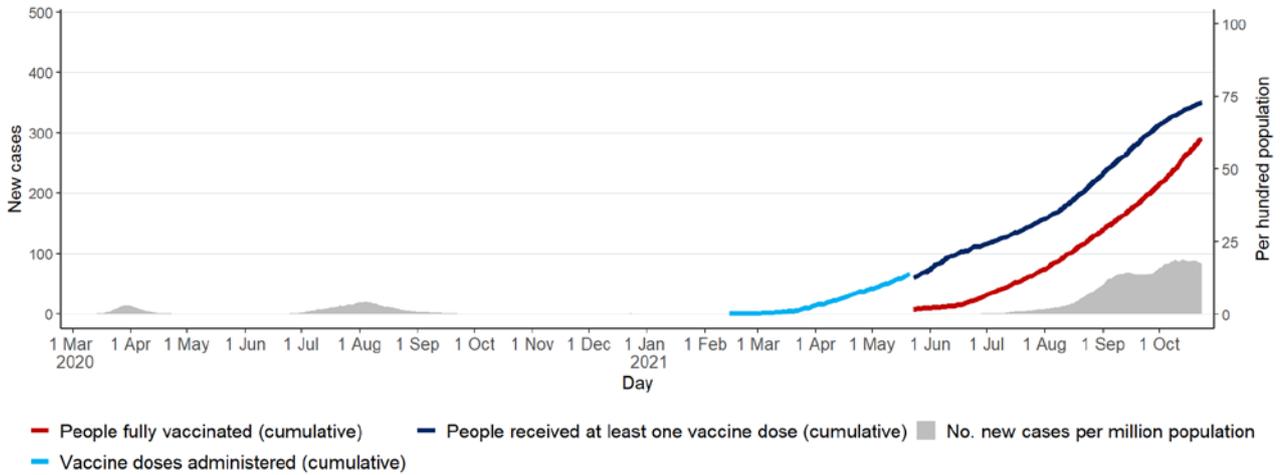


Figure 4b: COVID-19 hospitalisation and mortality rates, Australia, March 2020 – October 2021

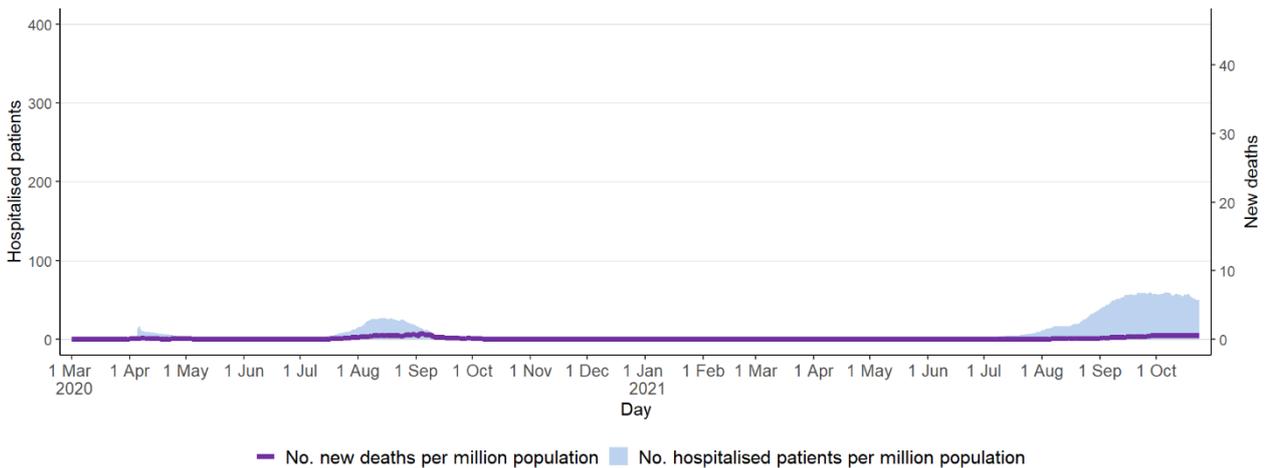
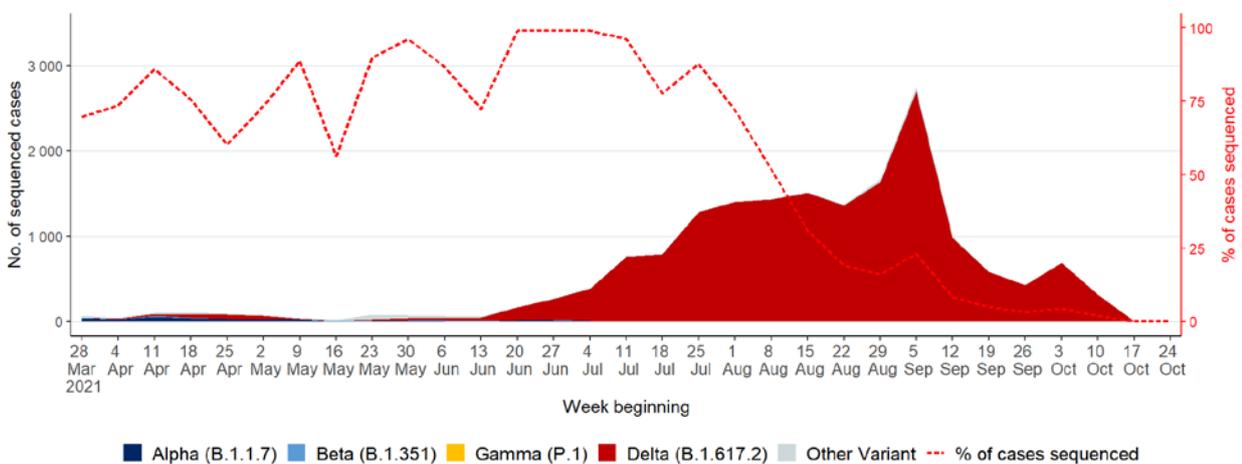


Figure 4c: COVID-19 variant distribution for sample of cases that have been sequenced, Australia, April – October 2021



United Kingdom

Figure 5a: COVID-19 cases and vaccinations, United Kingdom, March 2020 – October 2021

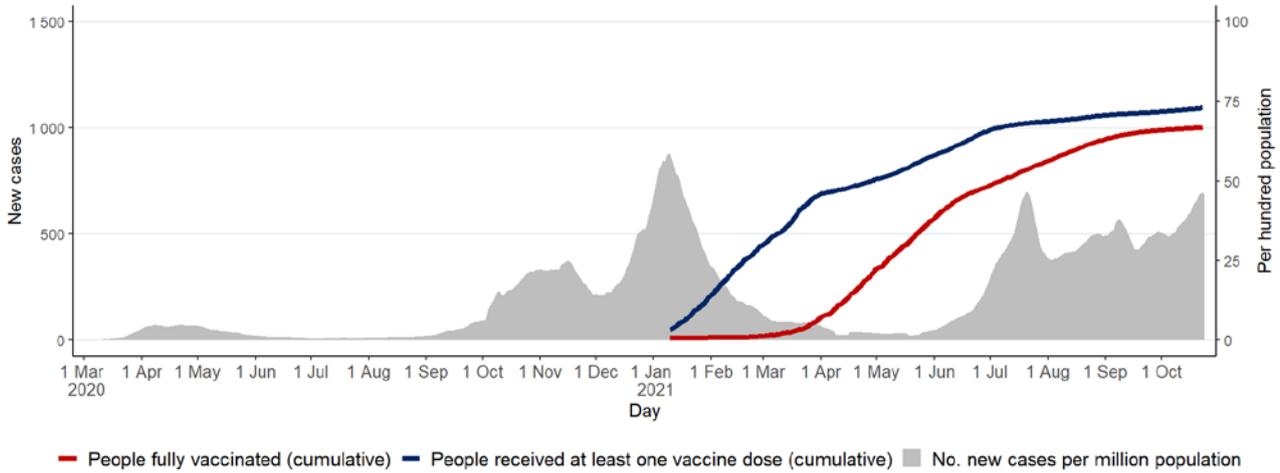


Figure 5b: COVID-19 hospitalisation and mortality rates, United Kingdom, March 2020 – October 2021

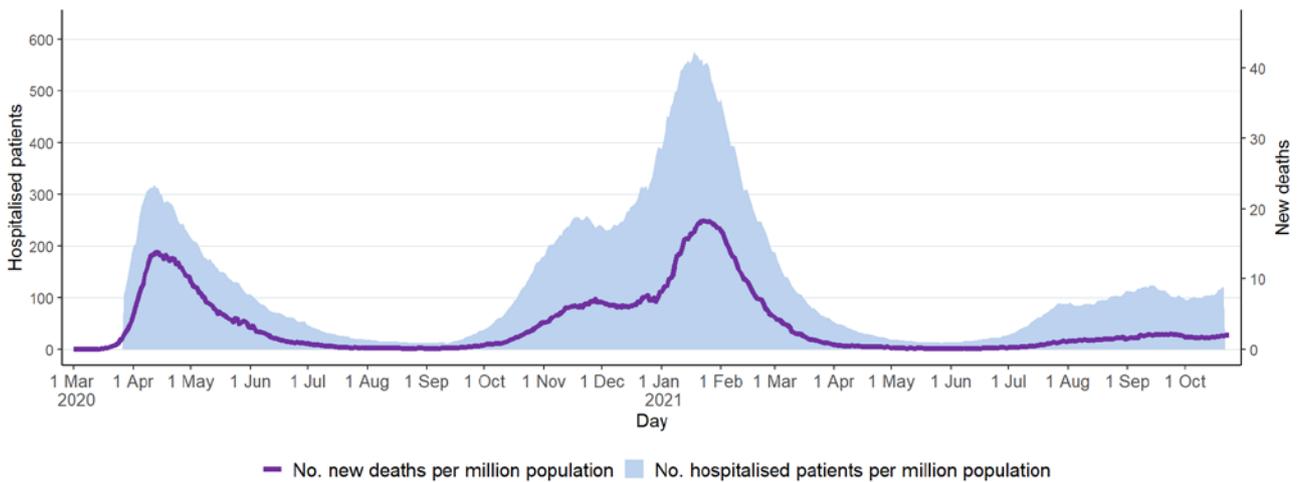
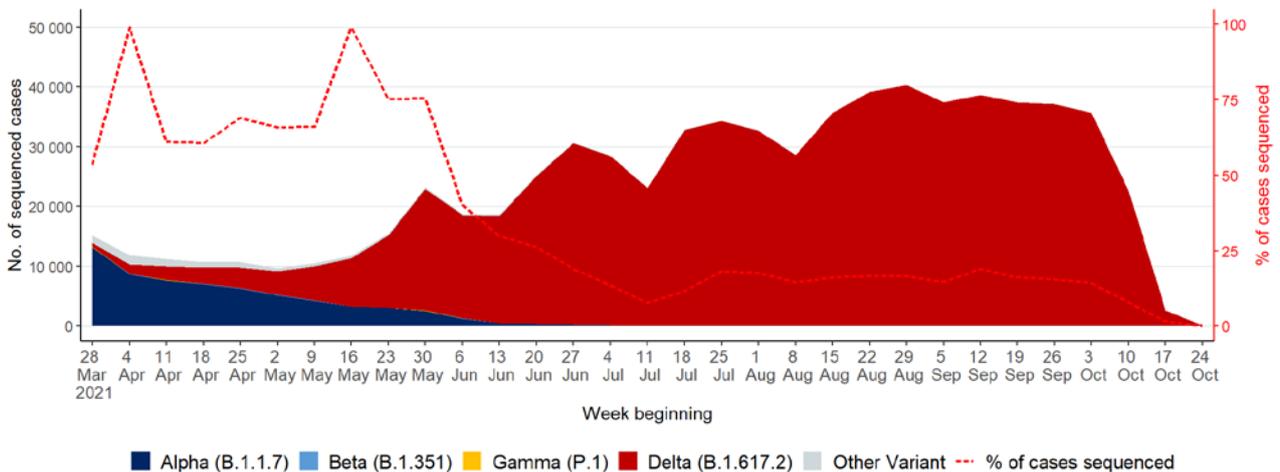


Figure 5c: COVID-19 variant distribution for sample of cases that have been sequenced, United Kingdom, April – October 2021



United States

Figure 6a: COVID-19 cases and vaccinations, United States, March 2020 – October 2021

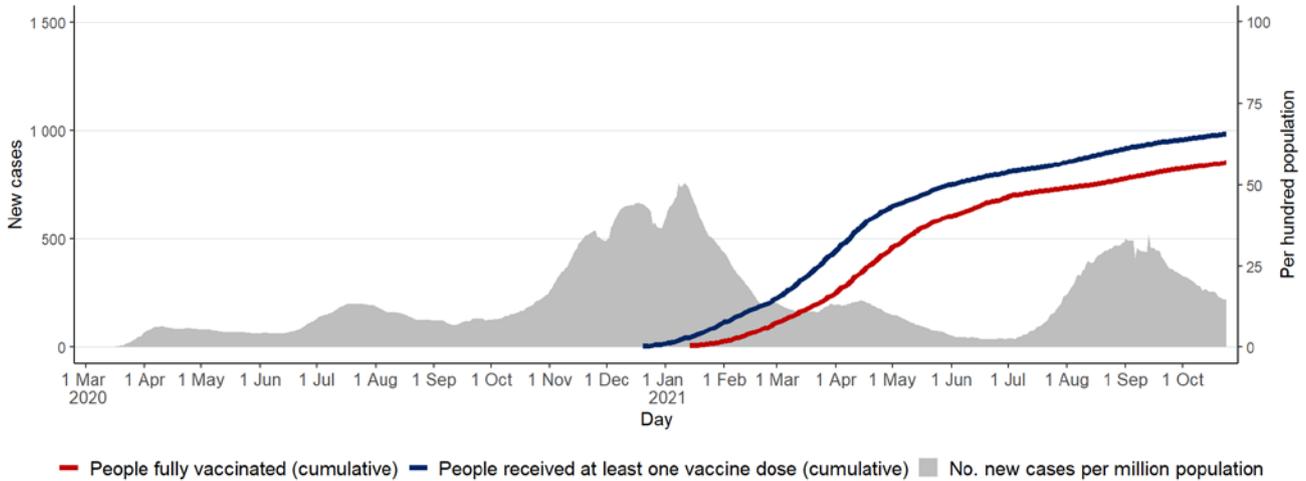


Figure 6b: COVID-19 hospitalisation and mortality rates, United States, March 2020 – October 2021

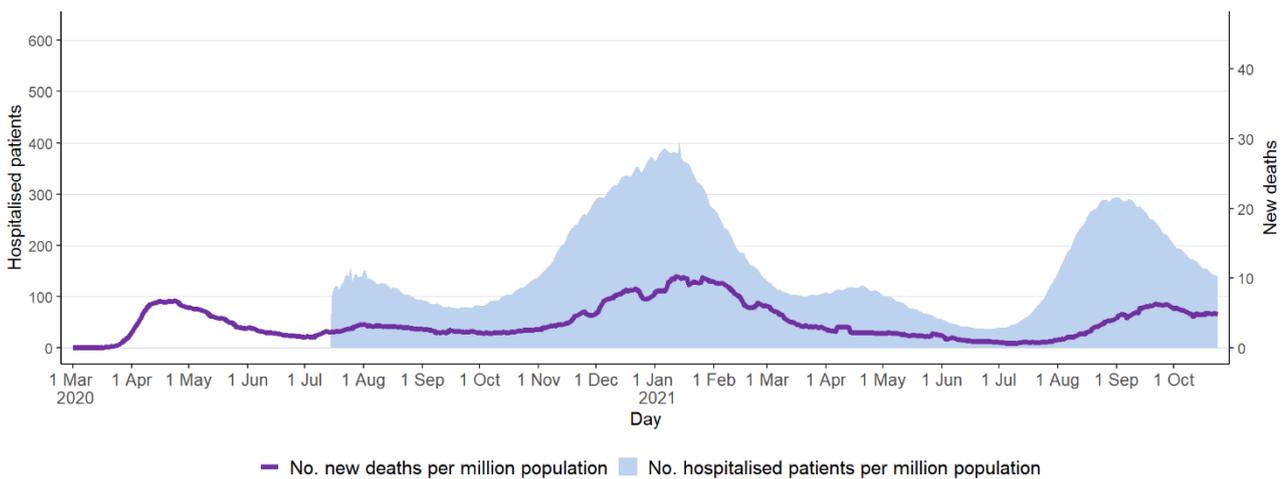
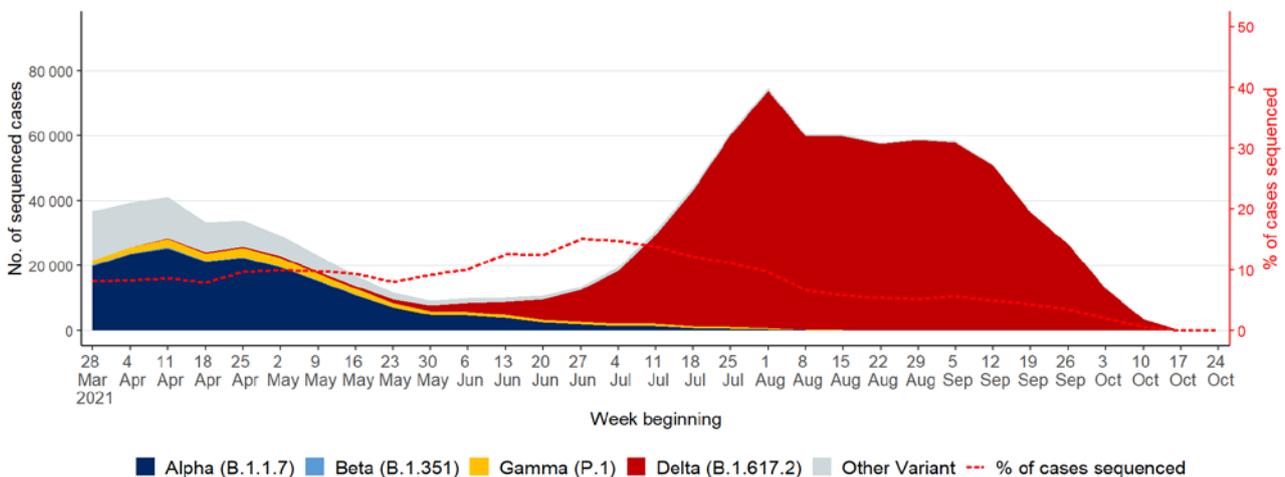


Figure 6c: COVID-19 variant distribution for a sample of cases that have been sequenced, United States, April – October 2021



Canada

Figure 7a: COVID-19 cases and vaccinations, Canada, March 2020 – October 2021

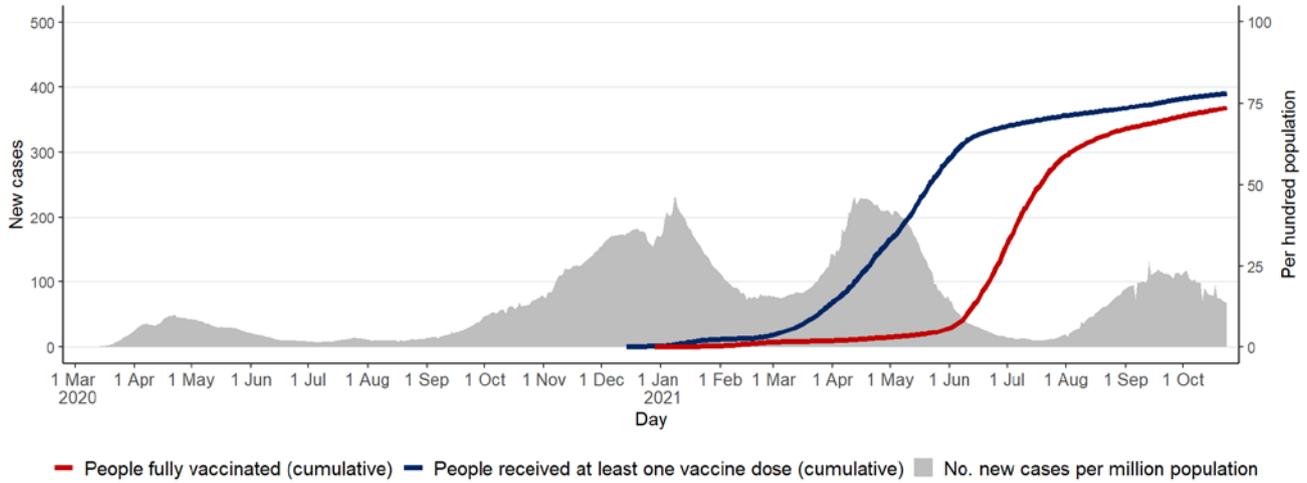


Figure 7b: COVID-19 hospitalisation and mortality rates, Canada, March 2020 – October 2021

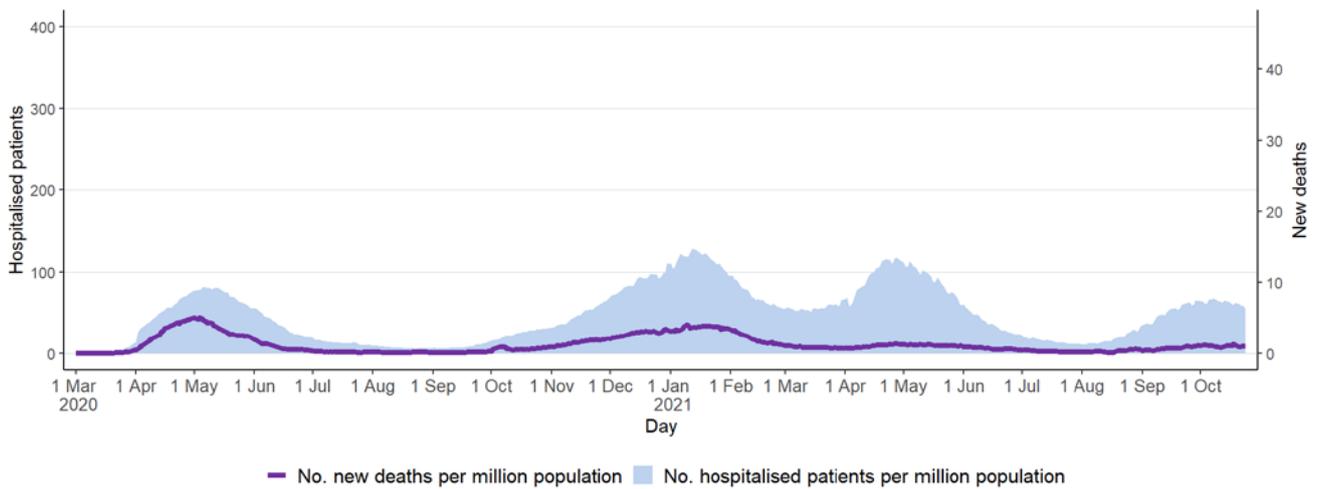
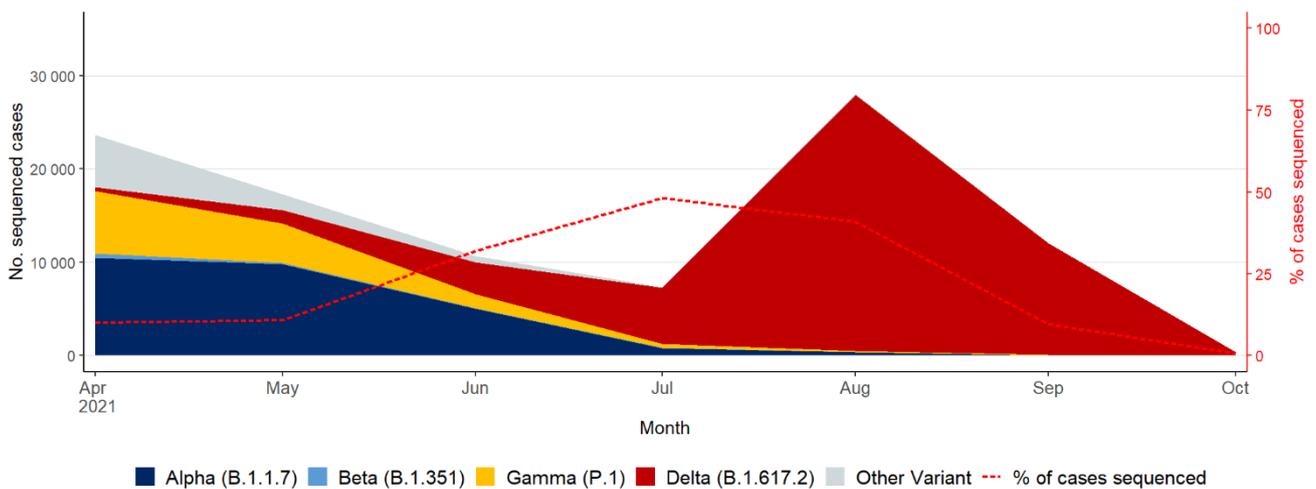


Figure 7c: COVID-19 variant distribution for a sample of cases that have been sequenced, Canada, April – October 2021



Israel

Figure 8a: COVID-19 cases and vaccinations, Israel, March 2020 – October 2021

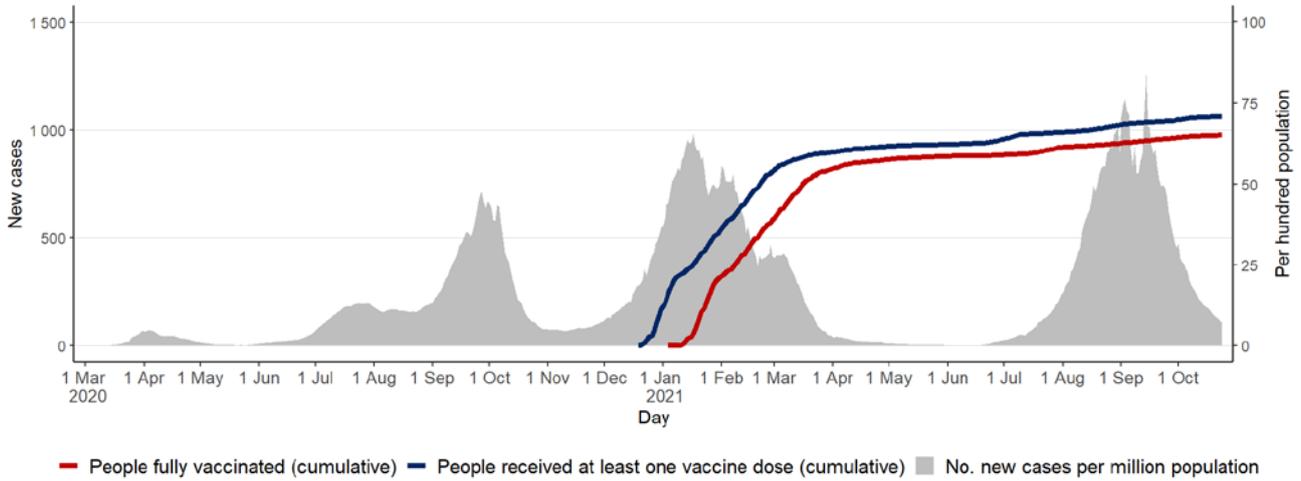


Figure 8b: COVID-19 hospitalisation and mortality rates, Israel, March 2020 – October 2021

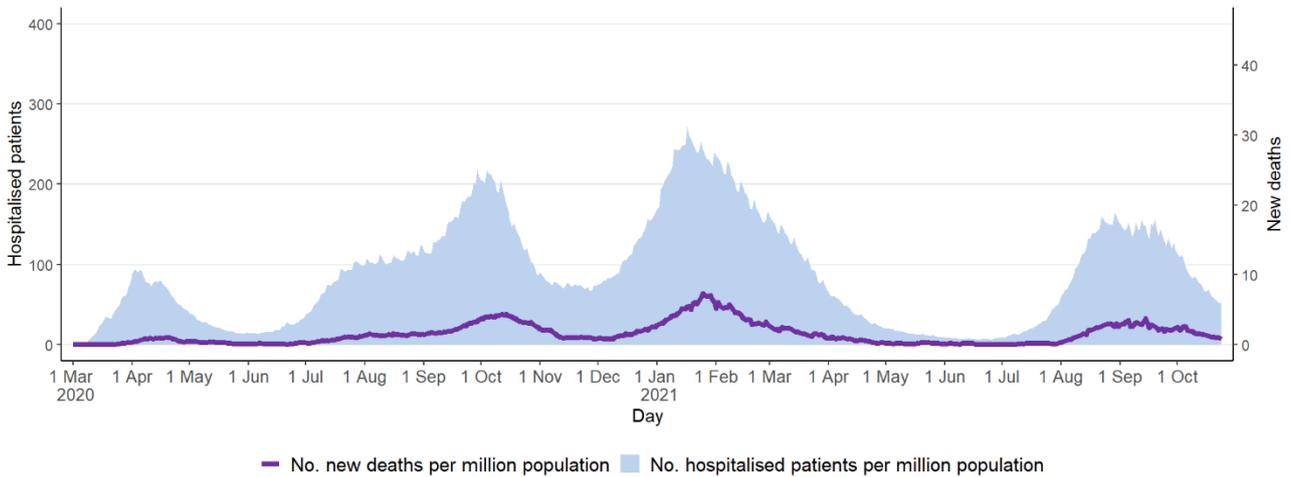
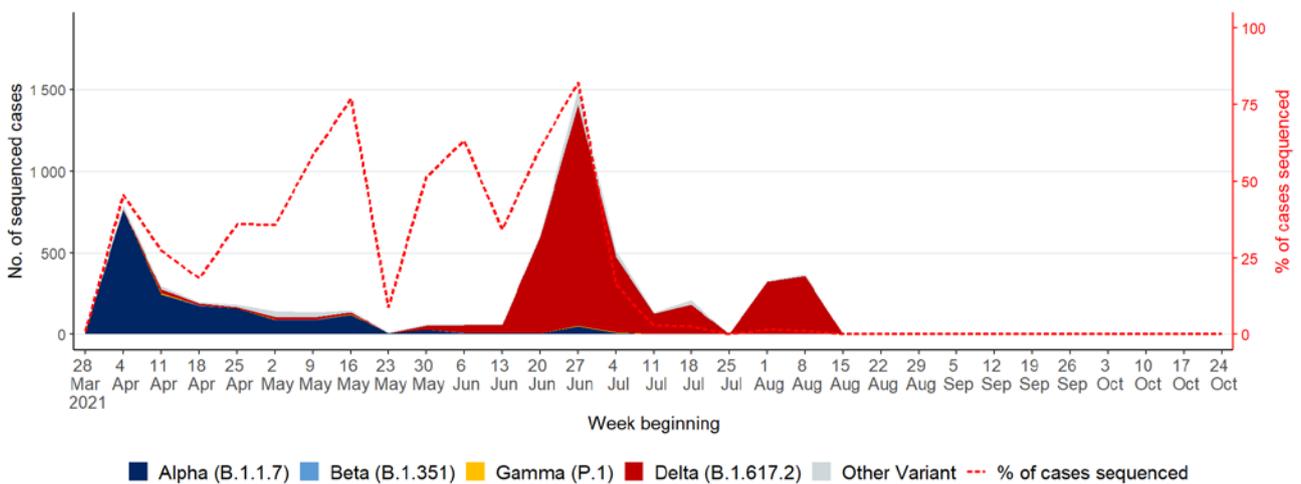


Figure 8c: COVID-19 variant distribution for a sample of cases that have been sequenced, Israel, April – October 2021



NSW key indicators

Notes

- Data is presented for all indicators as at 24 October 2021 (previous week, 17 October 2021), data accessed on 26 October 2021.
- Average daily locally acquired cases and average daily deaths are based on the seven days to 24 October 2021 (previous week, seven days to 17 October 2021).
- For any given day, the growth factor for locally acquired cases is a ratio of cases notified in the seven days ending that day, to the cases notified in the seven days ending the day before.
- COVID-19 patients under the care of NSW Health include patients on the ward, ICUs, hospital in the home, out of hospital care and community clinics. Patients in hospital include cases on the ward and in ICUs.
- Estimated per million population rates calculated using population estimates at 30 June 2021, based on the Australian Bureau of Statistics estimated resident population and population projections based on data from the NSW Department of Planning, Industry and Environment.¹⁷ Elsewhere in this document (in the figures), 2019 population figures are used in line with international data available.
- Estimates for the full population and 16+ population figures used in calculating per million population rates for vaccination are drawn from NSW Health via the Australian Government Department of Health Australian Immunisation Register.¹⁸
- The rate of hospitalisation and ICU admission (per million) among the unvaccinated population is calculated as the number of unvaccinated COVID-19 cases in hospital against the estimated total number of the unvaccinated population. The rate of hospitalisation and ICU admission (per million) among the vaccinated population is calculated as the number of COVID-19 cases in hospital who have received at least two doses of vaccination, against the estimated total number of the fully vaccinated population. Rolling seven-day average was applied. Rates were age-standardised to NSW 2021 population estimates.

Sources

- New cases for NSW sourced from NSW Health via Notifiable Conditions Information Management System.¹⁶
- Vaccination data sourced from NSW Health via the Australian Government Department of Health Australian Immunisation Register.¹⁸
- Hospital capacity, admissions and proportion of vaccinated cases data is sourced from NSW Health via the Patient Flow Portal and is taken from a 7pm snapshot, 24 October 2021.¹⁹

Summary of public health, healthcare and vaccination measures (select countries and NSW)

Notes

- For the selected countries and Canadian provinces, data is presented for 25 October 2021, accessed on 26 October 2021. For some measures, data were not available for 25 October 2021, in which case the latest available data is shown. For NSW, data is presented for 24 October 2021, accessed on 26 October 2021.

- Average daily confirmed cases and average daily deaths are based on a seven-day average.
- Proportions for the fully vaccinated are based on the full population. Population figures to calculate proportion covered for NSW are drawn from NSW Health via the Australian Government Department of Health Australian Immunisation Register.¹⁸
- For NSW, estimated per million population rates for all indicators other than vaccination are calculated using population estimates at 30 June 2021 based on the Australian Bureau of Statistics estimated resident population and population projections based on data from the NSW Department of Planning, Industry and Environment.¹⁷ Elsewhere in this document (in the figures), 2019 population figures are used in line with international data available.
- Patients in hospital include both cases on the ward and in ICUs. For Japan, patients in hospital numbers also include those receiving care at a dedicated facility or receiving treatment at home. Therefore, numbers are not directly comparable to other locations. For Ontario and Quebec, patients in hospital may be lower than patients in ICU, as the in-hospital numbers only include people still testing positive for COVID-19, while patients in ICU also include those who are in ICU due to COVID-19 but have since tested negative.

Sources

- New cases for selected countries sourced on 26 October 2021 from [Our World in Data](#).¹⁵ New cases for NSW sourced from NSW Health via the Notifiable Conditions Information Management System.¹⁶ New cases for Ontario and Quebec sourced from [COVID-19 Tracker Canada](#).²⁰
- COVID-19 deaths for selected countries sourced on 26 October 2021 from [Our World in Data](#).¹⁵ COVID-19 deaths for NSW sourced from NSW Health via the Notifiable Conditions Information Management System.¹⁶ COVID-19 deaths for Ontario and Quebec sourced from [COVID-19 Tracker Canada](#).²⁰
- Vaccination data for selected countries sourced on 26 October 2021 from [Our World in Data](#).¹⁵ Vaccination data for NSW sourced from NSW Health via the Australian Government Department of Health Australian Immunisation Register.¹⁸ Vaccination data for Ontario and Quebec sourced from [COVID-19 Tracker Canada](#).²⁰
- Data on the number of COVID-19 patients in hospital and ICUs were sourced on 26 October 2021 from:
 - [Our World in Data](#) for all countries (aside from Australia, Japan, and Singapore) ¹⁵
 - [COVID LIVE](#) for Australia, which verifies data against Australian state and territory government health departments²¹
 - [Singapore Ministry of Health](#) for Singapore²²
 - [Japan Ministry of Health](#) for Japan²³
 - NSW Health via the Patient Flow Portal for NSW, taken from a 7pm snapshot, 24 October 2021¹⁹
 - [COVID-19 Tracker Canada](#) for Ontario and Quebec.²⁰

COVID-19 cases, variants, vaccines, hospitalisations and deaths

Notes

- With regards to the figures on COVID-19 variants, all severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) sequences were downloaded from the [GISAID EpiCOV™ Database](#). PANGO lineage (variant) classification for each individual sequence was provided by GISAID.²⁴
- Dates displayed are based on the sample collection date. Sequences with collection dates specifying the year only were excluded, while collection dates specifying the year and month were assigned to the 15th of that month.
- Sequences with lengths $\leq 20,000$ base pairs were removed from the analysis; as were non-human hosts.
- Only a non-random sample of cases are sequenced. For many countries, the proportion of cases sequenced is very low. As a result, this report does not indicate the true prevalence of the variants but rather a best estimate currently available.
- All data used to generate these graphs is subject to the GISAID [terms and conditions](#).²⁵

Sources

- Data on variants enabled by [GISAID](#). Accessed 26 October 2021.²⁴
- Data on total number of cases and vaccinations for the selected countries are sourced from [Our World in Data](#); accessed 26 October 2021.¹⁵
- Data on total number of cases for NSW are sourced from NSW Health via the Notifiable Conditions Information Management System.¹⁶ Data on vaccinations for NSW are sourced from NSW Health via the Australian Government Department of Health Australian Immunisation Register.¹⁸ All accessed 26 October 2021.
- Data on the number of hospitalisations and new deaths for the United Kingdom, the United States, Canada and Israel were sourced from [Our World in Data](#).^{15, 21} Data on the number of hospitalisations and new deaths for Australia were sourced from [COVID LIVE](#), which verifies data against Australian state and territory government health departments.^{29, 33} Data on the number of hospitalisations for NSW are sourced from NSW Health via the Patient Flow Portal.¹⁹ Data on the number of deaths for NSW are sourced from NSW Health via the Notifiable Conditions Information Management System.¹⁶ All accessed 26 October 2021.

Method

The NSW Health Critical Intelligence Unit maintains living evidence tables on [COVID-19 vaccines](#) and [SARS-CoV-2 variants](#).^{26, 27} To inform this brief, a review of the daily evidence digest and Google searches were undertaken on 27 October 2021.

Countries were chosen based on contemporary relevance with regards to the variables of interest in the NSW and Australian context (cases, tests, variants, vaccines and patient outcomes).

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