IEMAG briefing

12 January 2022

Coronavirus
COVID-19
Public Health
Advice

Cases, numbers in hospital and intensive care

The average daily case count has increased five-fold since mid-December, from ≈ 4000 cases per day to ≈ 22000 cases per day. The numbers of admissions to (and new confirmations in) hospital has tripled. The number of people in ICU is currently stable, though daily admissions tro ICU have increased.

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	Apr 2020	Summer 2020	Oct 2020	Dec 2020	Jan 2021	Jun 2021	15 Dec	22 Dec	29 Dec	5 Jan	Daily count 5 Jan
Cases confirmed per day	859 18-04	8.7 25-06	1158 21-10	262 12-12	6516 10-01	308 19-06	5226	10704	19566	22478	17656
14-day incidence *per 100,000 population*	212 19-04	3.0 04-07	306 26-10	79 09-12	1531 15-01	91 20-06	1390	2342	4450	6180	
Hospital in-patients	881 17-04	9 02-08	354 01-11	198 16-12	2020 24-01	43 29-06	435	448	756	994	978
Hospital admissions per day	*85 04-04*	*<1 10-07*	*27 26-10*	*11 13-12*	*158 15-01*	*6 27-06*	*53*	*73*	*139*	*149*	173
ICU confirmed cases	155 14-04	4 04-08	47 04-11	26 27-12	219 28-01	13 27-06	105	92	89	87	94
ICU admissions per day	*14 31-03*	*<1 03-06*	*4 03-11*	*1 16-12*	*20 17-01*	*<1 02-07*	*6*	*5*	*6*	*8*	7

Data are 7-day averages (the indicated day and the preceding 6 days, rounded to the nearest whole number) with the exception of 14 day cumulative incidence, which is the total number of cases in the preceding 14 days per 100,000 population. The highest and lowest values of each indicator are given for each wave of the pandemic, along with the date on which that value was recorded, as well as the data for recent weeks. The historic incidence data may change due to denotification of cases. Case counts since 21 Dec 21 are estimates based on the number of positive tests per day.

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Cases per day

The number of cases reported each day rose very rapidly as omicron came to dominate, to approximately 22,000 cases per day, and has been relatively stable at that level for 10 days. If testing capacity were not constrained, we estimate that we would currently be detecting 30,000 – 40,000 cases per day, and the true incidence of infection, including asymptomatic and paucisymptomatic infections could be twice this incidence.

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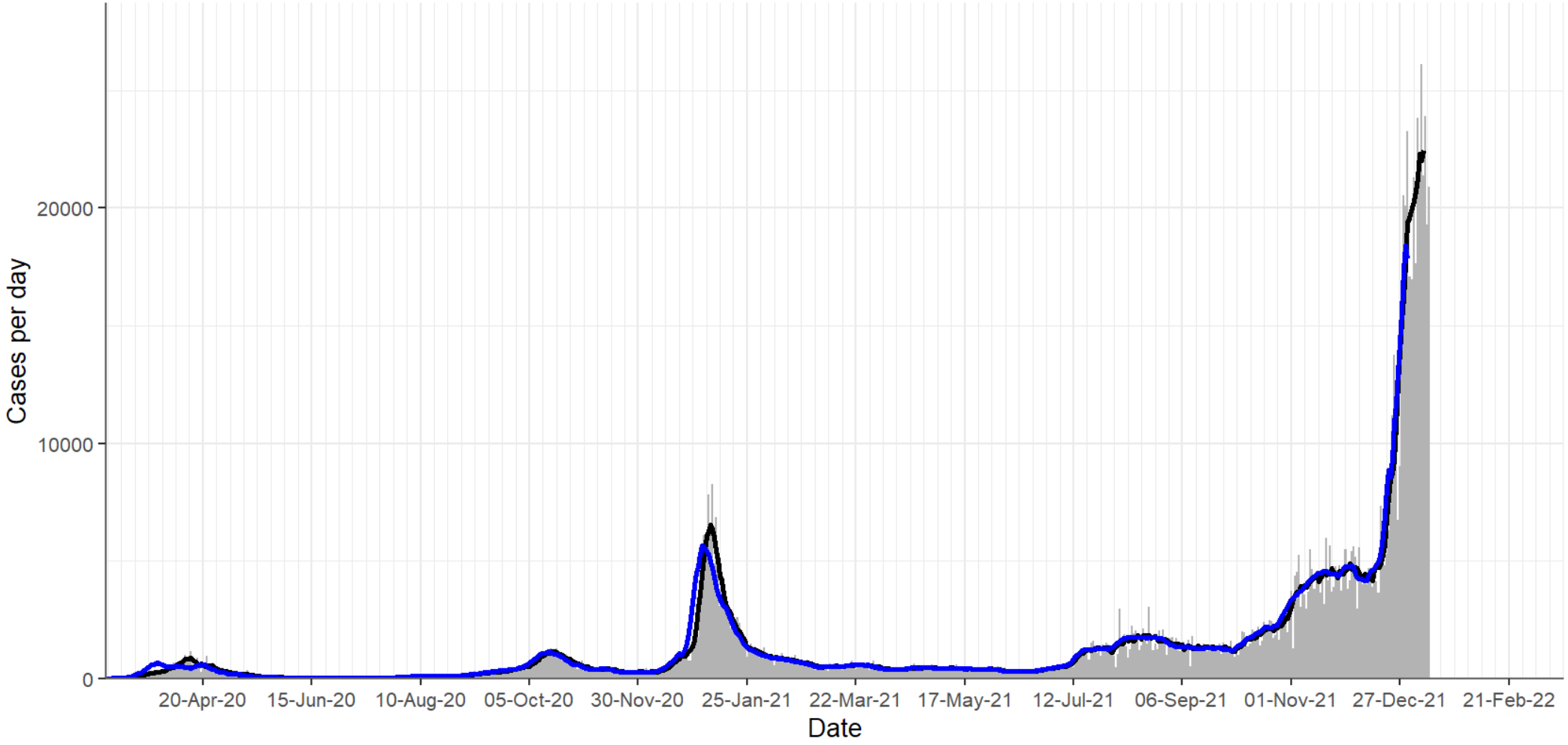

Daily cases by notification date (bars) and 7-day average case count by notification date (black line) and specimen collection date (blue line)
Data from CIDR to 21 Dec 21, then provisional data from HSE contact management programme.

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Cumulative incidence

7-day and 14-day cumulative incidence per 100,000 population. Given the 7-day cumulative incidence of 3,304 per 100,000 (3.3%), allowing for constraints on testing and undetected infections, the likely population prevalence of active SARS-CoV-2 infection is 6.5%-10.8%; between 1 in 10 and 1 in 20 of the population are likely to be infected.

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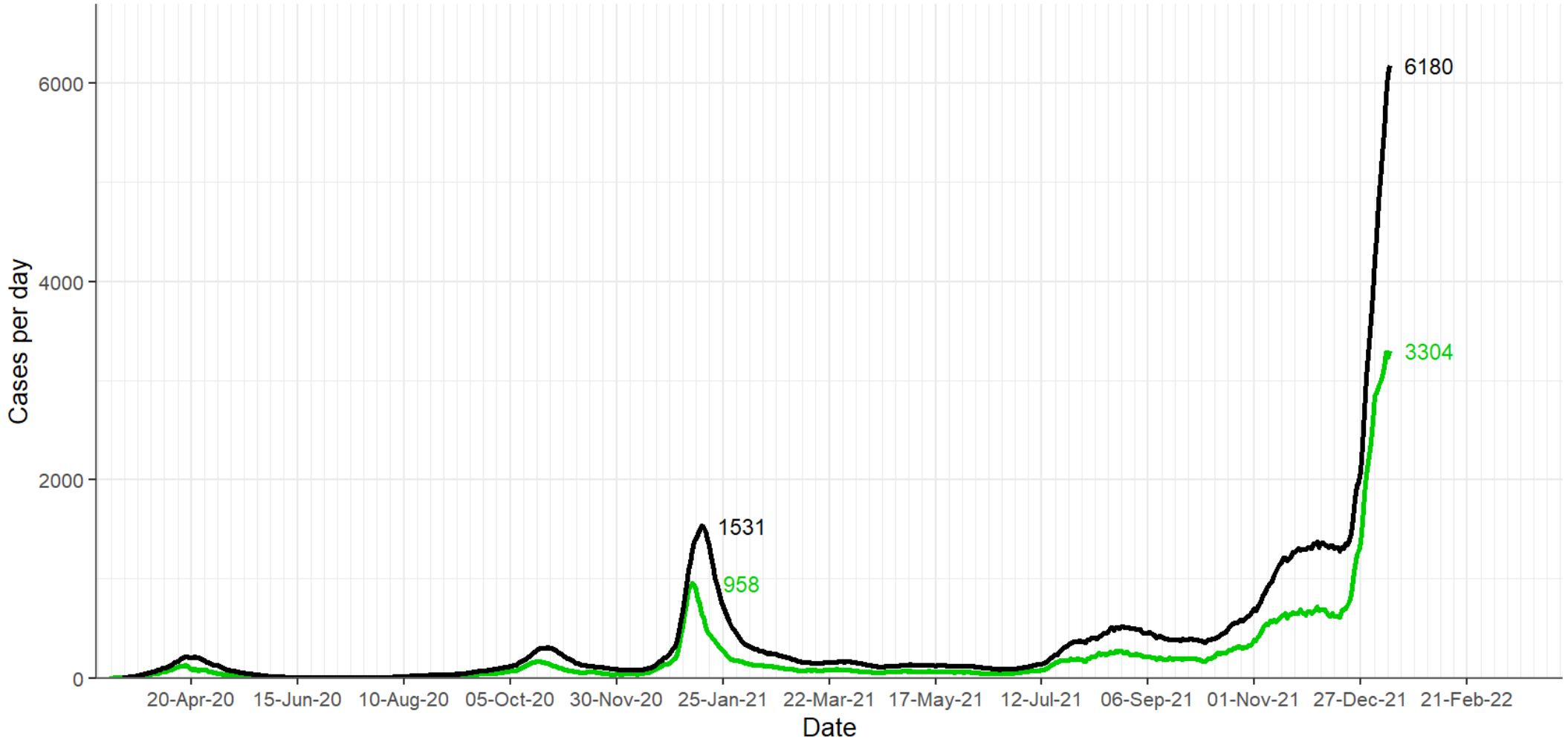

7-day (green) and 14-day (black) cumulative incidence per 100,000 population.
Data from CIDR to 21 Dec 21, then provisional data from HSE contact management programme CSO 2016 population.

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Estimated proportion omicron

The proportion of cases that are omicron variant, based on the sample prevalence of S-gene target negative on the TaqPath assay. Omicron accounted for approximately 50% of infections by 17 December 2021, and 90% by 25 December 2021. 96% of current infections are S-gene target negative, and hence presumed omicron.

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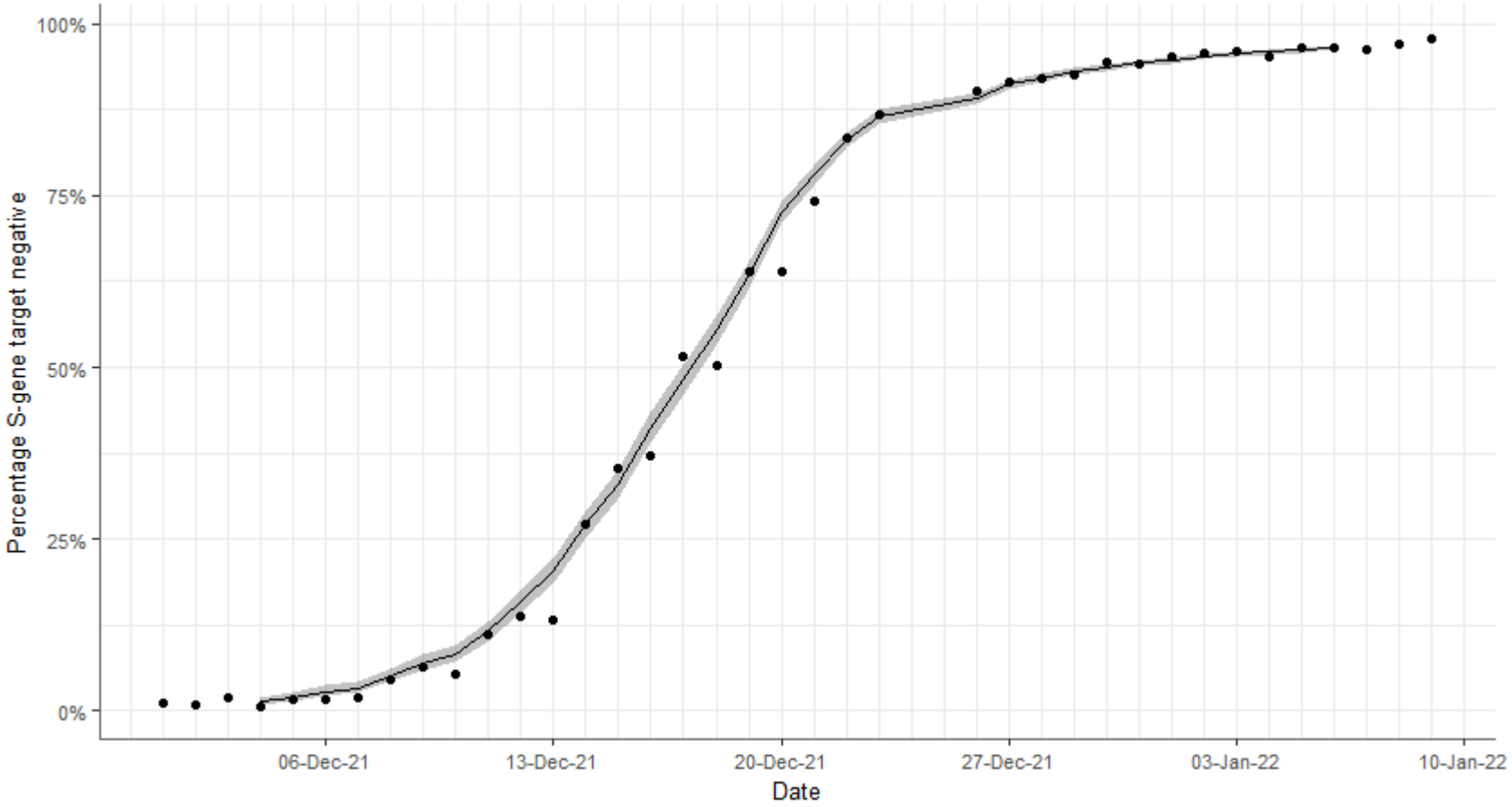

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Age-specific incidence (excl. LTRF and hospital outbreaks)

There is a delay in transferring data to CIDR and validating that data, so information on the age breakdown of cases is delayed. Incidence is high across all age groups, and while lower and rising more slowly in older age groups, incidence in all age groups is higher than at any time in the pandemic.

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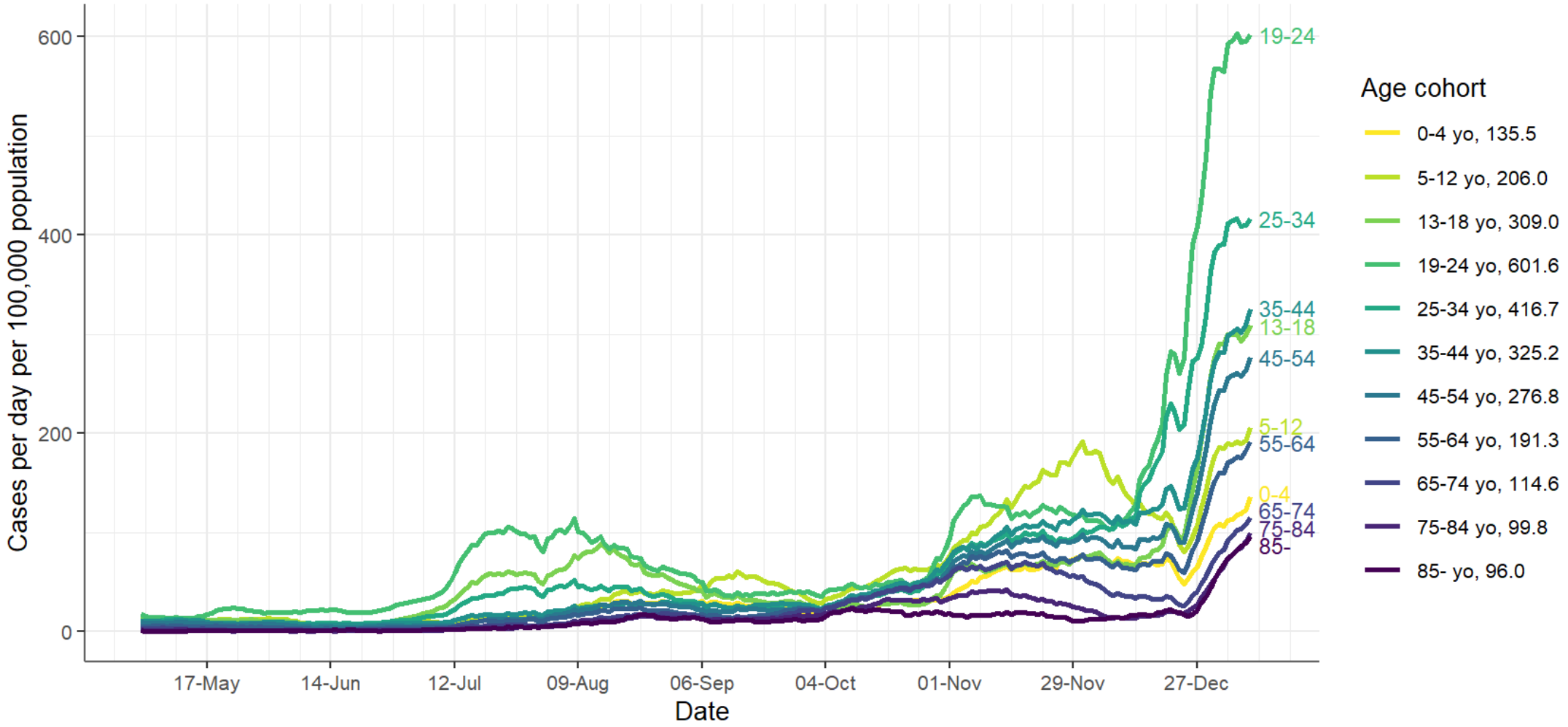

Age-specific incidence (cases per day per 100,000 population). 7-day moving average.
Cases associated with outbreaks in long-term residential facilities (LTRF) and outbreaks in hospitals excluded.
CIDR data to midnight Tue 11 Jan 2022. Cases dated by date notified to HPSC (event creation date). CSO 2016 population.

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Tests and test positivity

Demand for PCR testing exceeds supply. The positivity rate in public health laboratories (60%) may be elevated due to prior antigen testing selecting out infected people who then present for PCR. The positivity rate in hospital laboratories (17.5%) very high, but may be starting to decrease.

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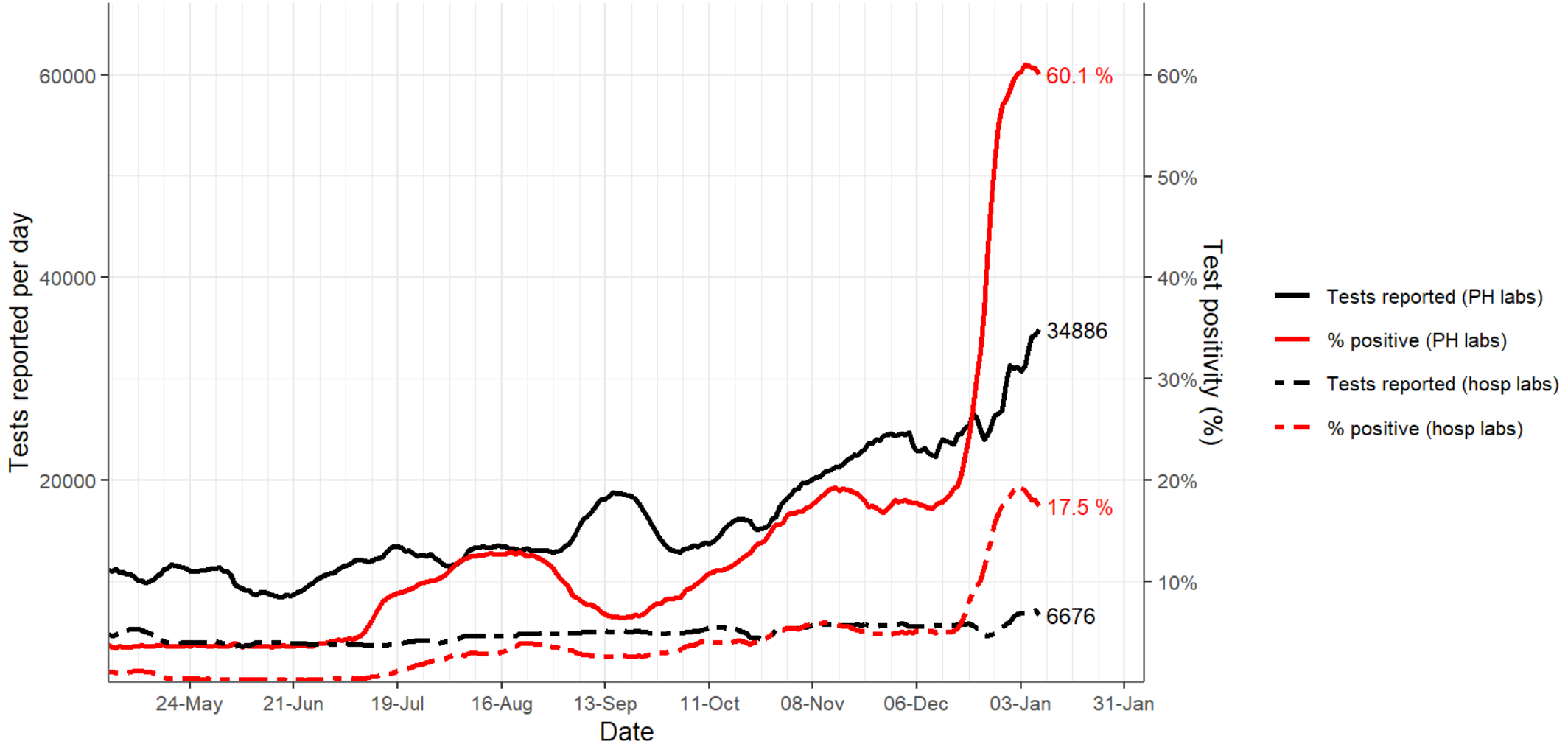

Total tests reported per day (black) and % of tests reported positive (red) for tests conducted in public health laboratories (NVRL and Cherry Orchard, solid lines) and tests conducted in hospital laboratories (dotted lines). 7-day moving averages.

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Test positivity by age

Test positivity very high across all age groups, and continues to increase in those aged 65 years and older.

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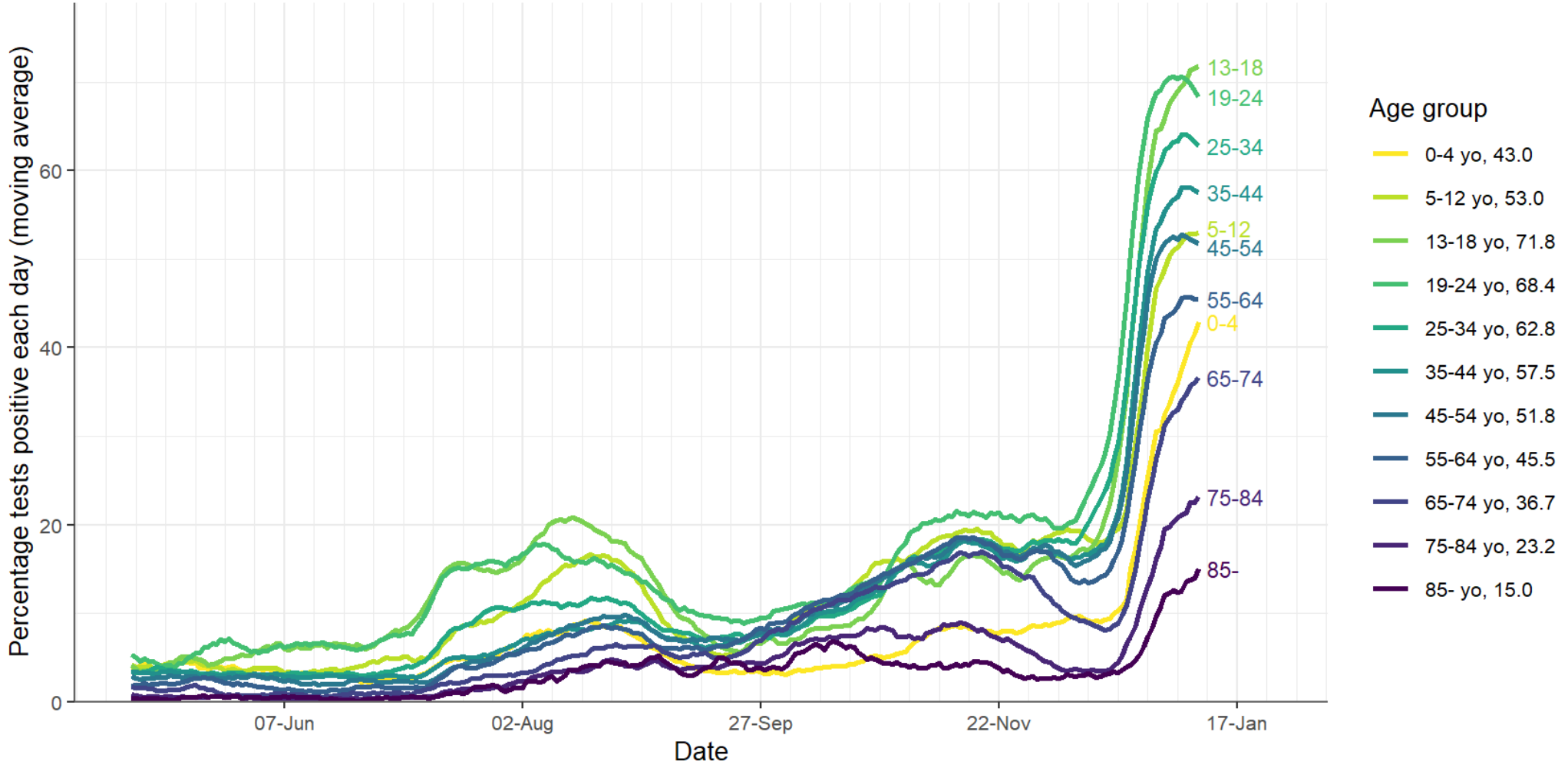

Percentage of tests each day reported as positive (7-day moving average) by age group. Laboratory testing data to Tue 11 Jan 2022.

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Confirmed cases in acute hospitals

The number of people in hospital with confirmed SARS-CoV-2 infection. The number of people in hospital has increased to **1055** from a low of 390 on 23 December 2021. The average number of admissions and newly confirmed cases in hospital per day has also increased to **149 per day**.

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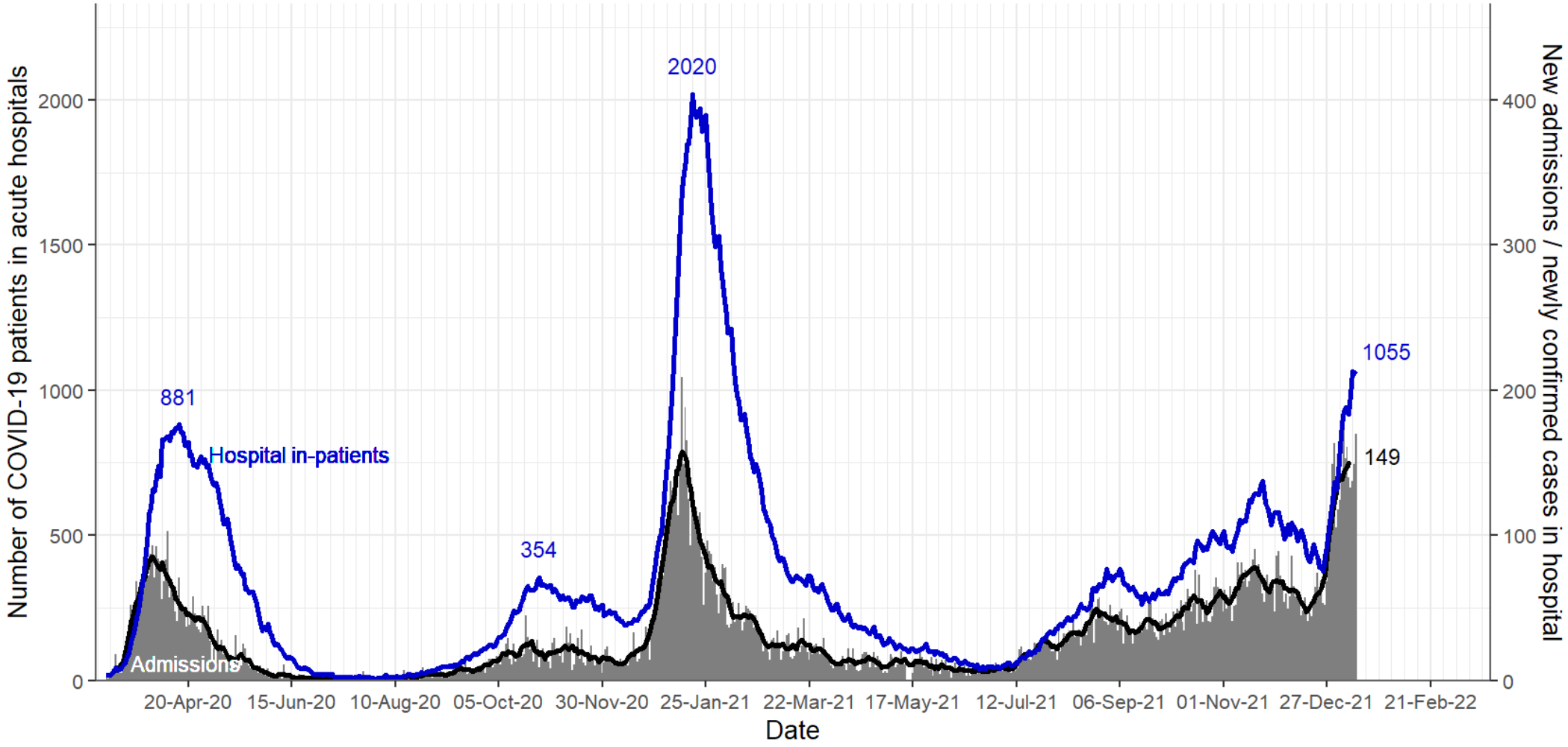

Number of in-patients with COVID-19 (blue line) and number of newly admitted or newly confirmed cases per day (columns, with 7-day moving average, black line, secondary y-axis) on HSE acute hospital sites. HSE PMIU-SDU data to Wed 12 Jan 2022.

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Confirmed cases in intensive care

The number of people in ICU with confirmed SARS-CoV-2 infection and the number requiring mechanical ventilation are currently stable. **92** people in ICU, **55** mechanically ventilated, average **8** admissions per day, which is an increase. There are **123** people requiring advanced respiratory support for COVID-19 outside ICU

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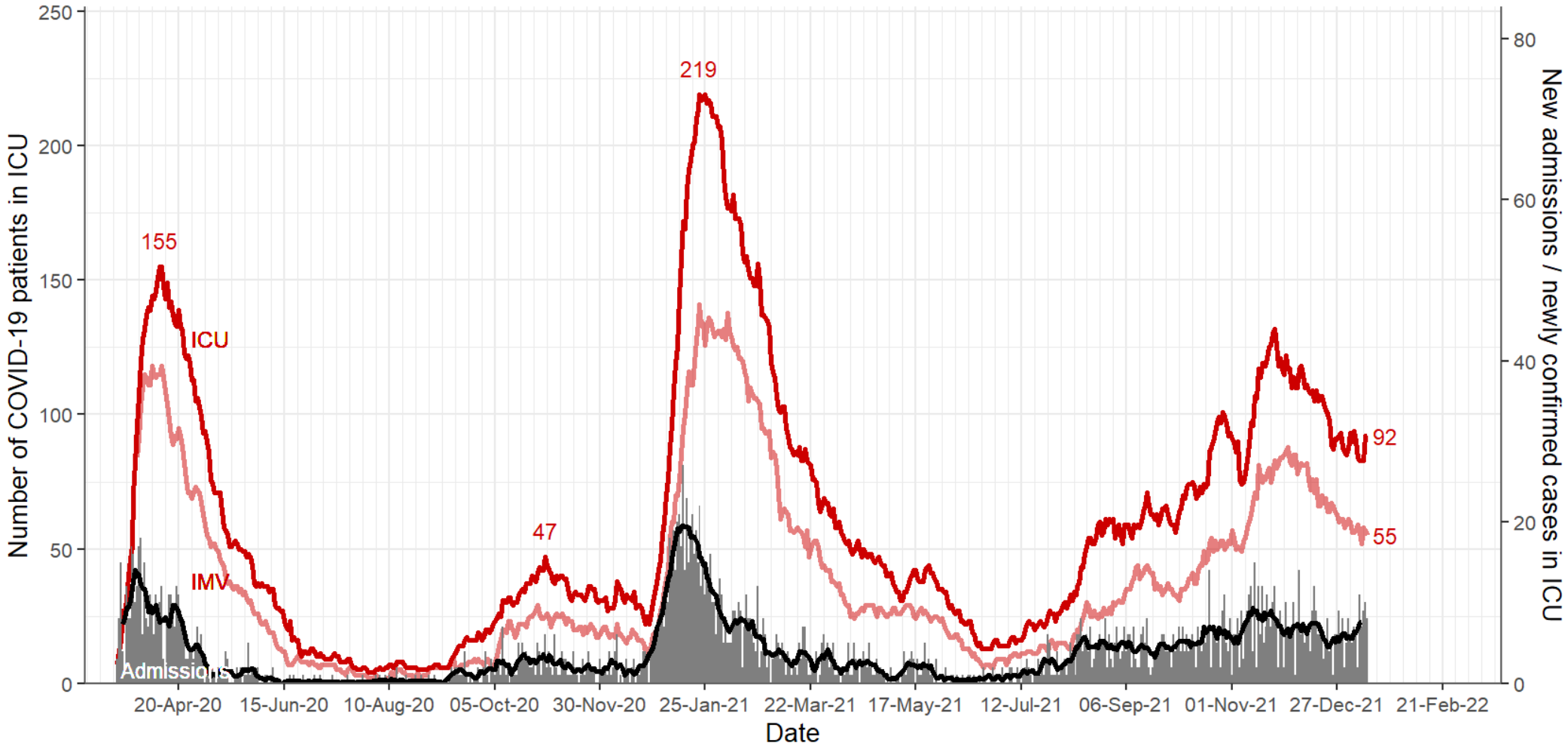

Number of in-patients with COVID-19 in ICU (solid red line) number requiring mechanical ventilation (IMV, pale red line), and number of new admissions per day (columns, with 7-day moving average, black line, secondary y-axis). NOCA ICU-BIS data to Wed 12 Jan 2022.

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Deaths

Deaths per day appear stable; notification of deaths is delayed over the holiday period.

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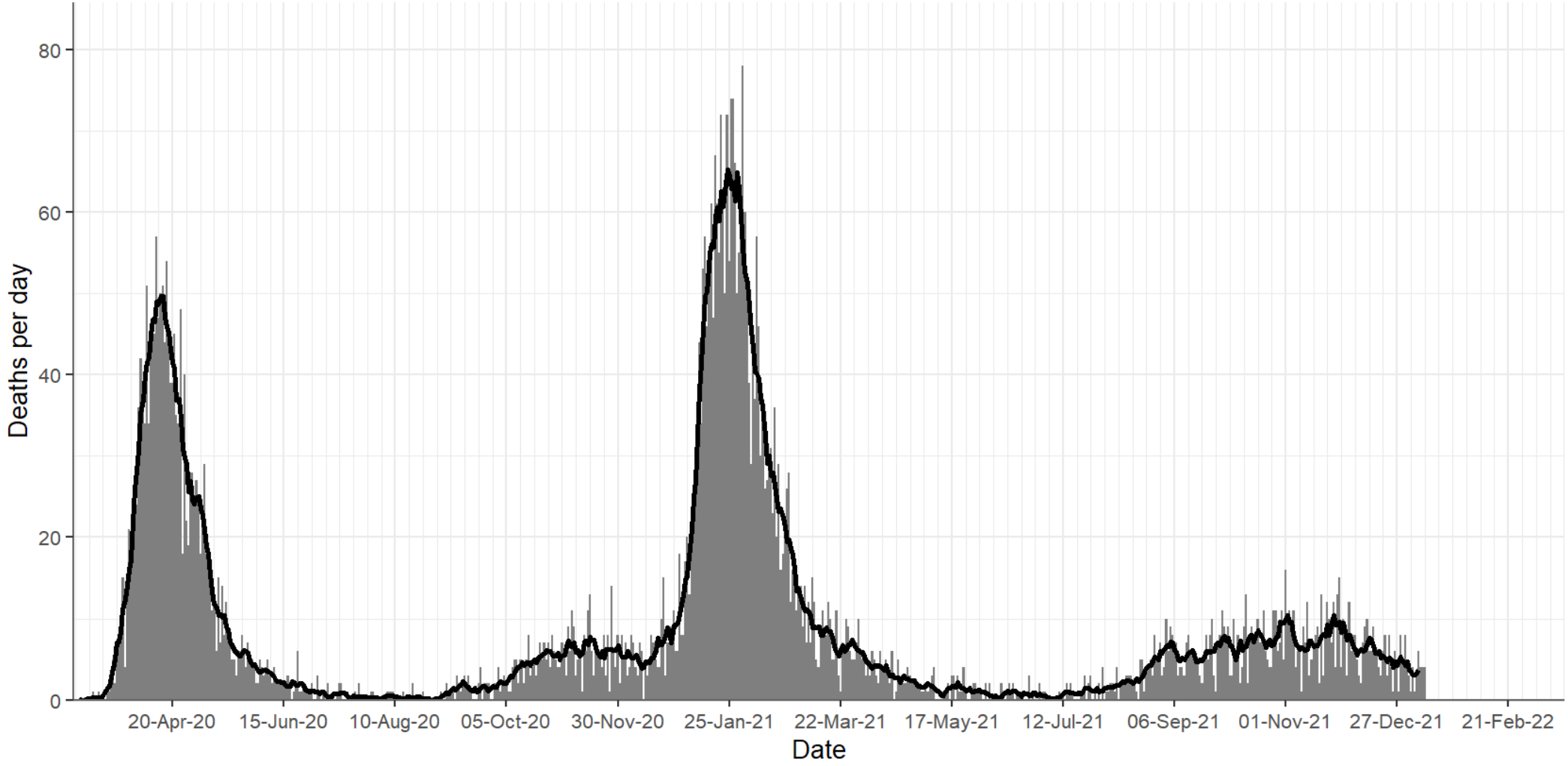

Deaths each day (bars) by date of death, with 7-day moving average (line). CIDR data to midnight Tue 11 Jan 2022.

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Model scenarios – symptomatic infection

The case numbers since the model was run (black points) are tracking the more pessimistic scenarios in terms of numbers of cases, and with constraints on the testing system actual cases and infection numbers are higher.

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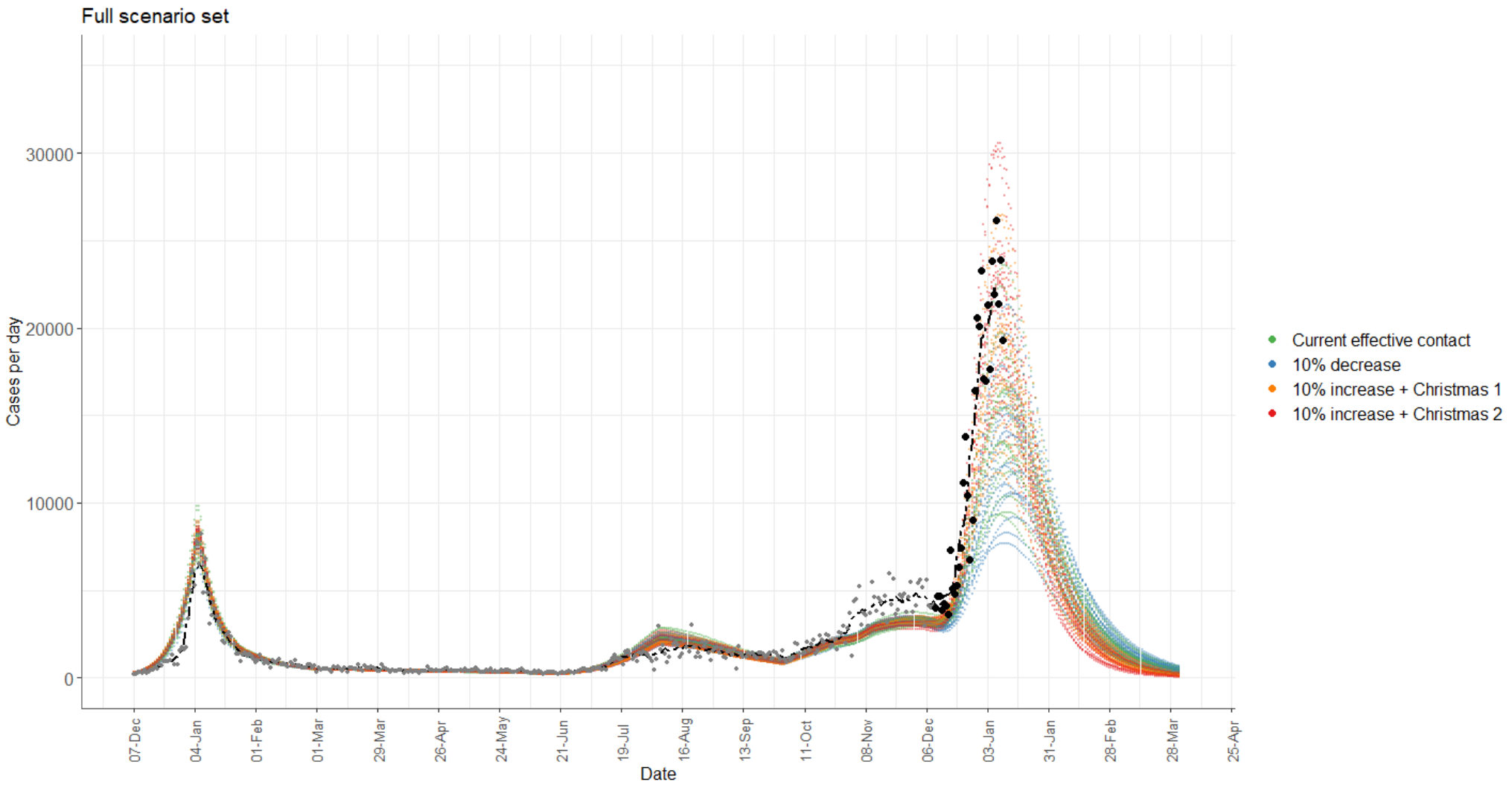

Age-cohorted SEIR model scenarios for case numbers with different levels of effective social contact, transmission advantage and immune escape for omicron. It is assumed that the primary course of an adenoviral vector vaccine has zero effectiveness against infection with omicron, the effectiveness of a primary course of mRNA vaccines is reduced 35%, and booster mRNA vaccine restores effectiveness to 70-90%.

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Model scenarios – general hospital care

Note that this is the number of people in hospital *excluding* those in intensive care. The actual number of people in hospital since the model was run is tracking the central scenarios.

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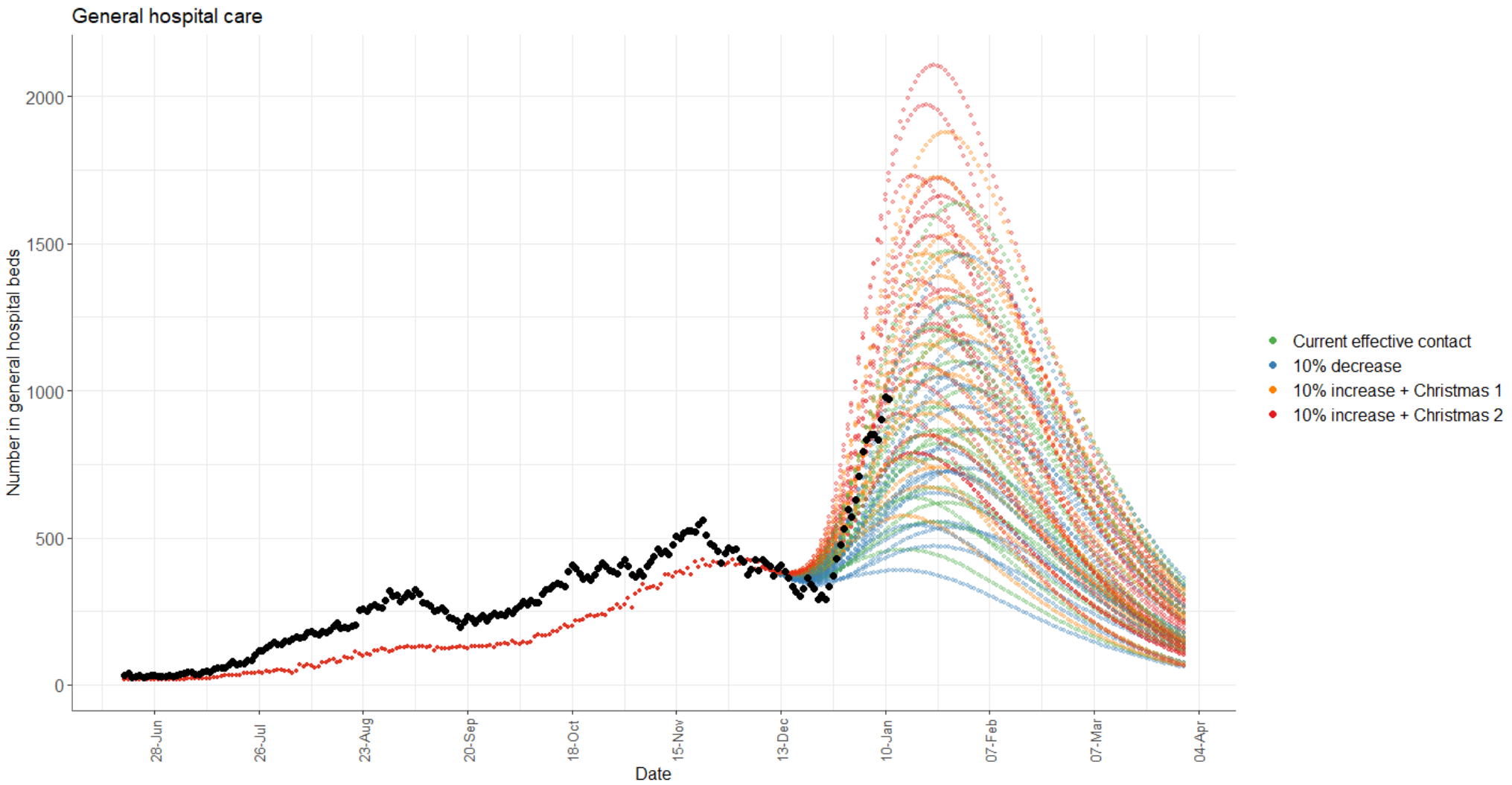

ESRI CHUP model demand for general hospital care based on case numbers from the age-cohorted SEIR model. It is assumed that the primary course of an adenoviral vector vaccine has zero effectiveness against infection with omicron, the effectiveness of a primary course of mRNA vaccines is reduced 35%, and booster mRNA vaccine restores effectiveness to 70-90%.

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Model scenarios – critical care

The actual number of people requiring critical care in ICU is currently tracking better than the optimisitic scenarios.

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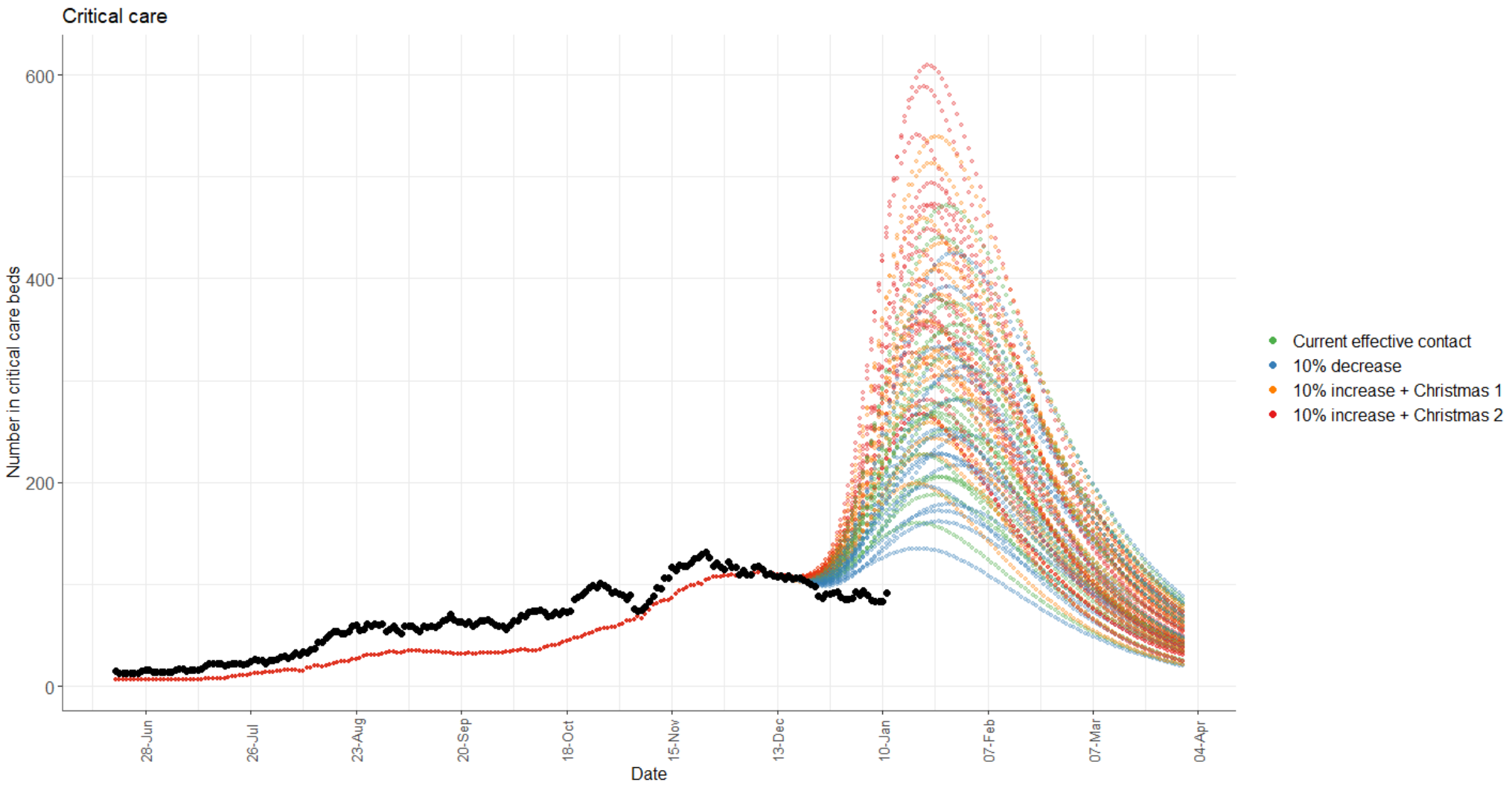

ESRI CHUP model demand for critical care based on case numbers from the age-cohorted SEIR model. It is assumed that the primary course of an adenoviral vector vaccine has zero effectiveness against infection with omicron, the effectiveness of a primary course of mRNA vaccines is reduced 35%, and booster mRNA vaccine restores effectiveness to 70-90%.

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Situation analysis 12 January 2022

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- Incidence has increased very rapidly to unprecedented levels
  - 7-day average case count 22,478
  - 7- and 14-day incidence 3,304 and 6,180 per 100,000 respectively
  - 1055 in hospital, 92 in ICU, 55 ventilated
  - Test positivity 60% in public health laboratories
- Prevalence of detected infection ≈ 3%, prevalence of infection likely to be 6-11%
- Incidence increased first in younger adults, and is now increasing in older age groups.
- Growth rate in cases and hospitalisations has stabilised and may be starting to fall
- The increase in incidence and hospitalisation has not (yet) translated into critical care admissions or increased mortality
  - Vaccination protecting against very severe disease
  - Age profile of cases
  - Lower intrinsic virulence