IEMAG briefing

11 February 2021

Coronavirus
COVID-19
Public Health
Advice

Confirmed cases each day

Daily case count since the beginning of the epidemic

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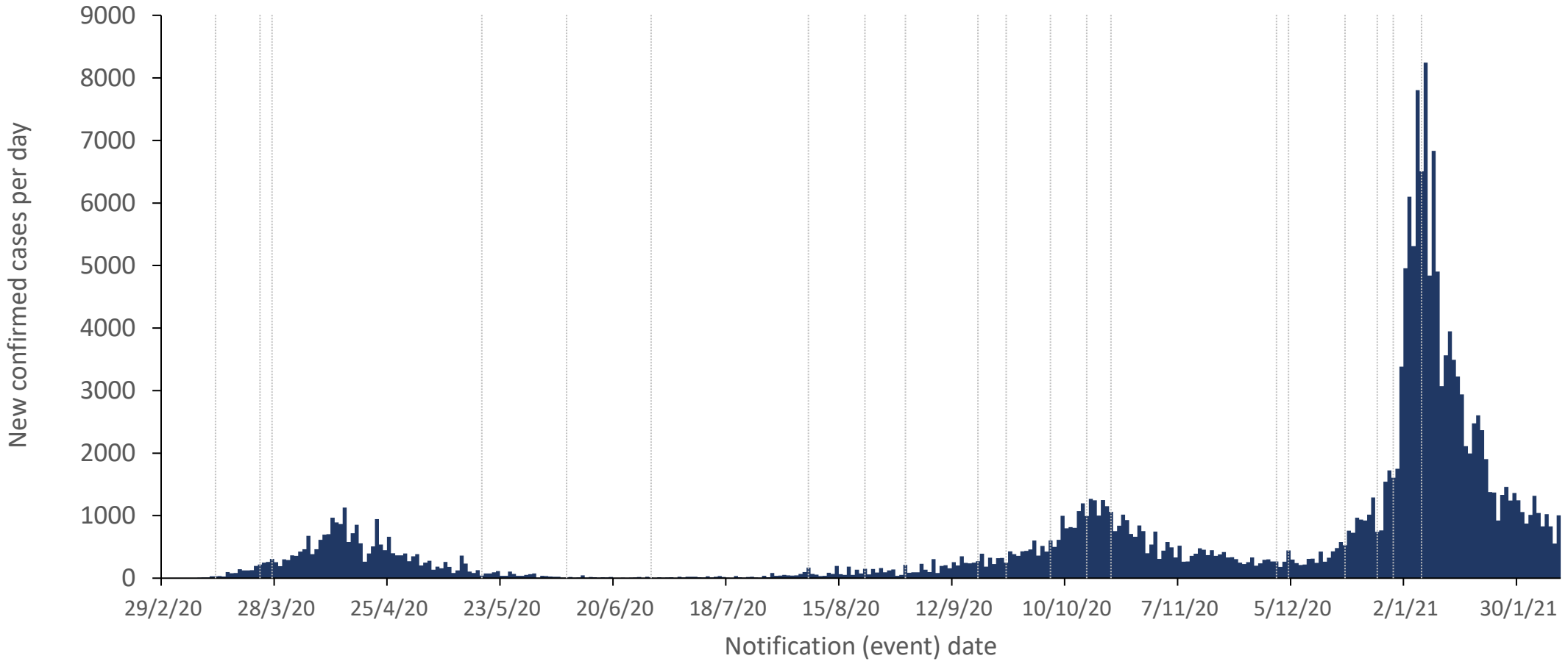

Daily count of the number of laboratory confirmed new cases by date on which they were notified to HPSC. Tests outsourced to German laboratory in April backdated, using the specimen collection date, to the date they would have been confirmed if tested in a timely manner. The vertical dashed lines indicate the dates of escalation and de-escalation of public health restrictions

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Cases, numbers in hospital and intensive care

Case numbers remain high. The number of people in hospital is decreasing, and the number in ICU is starting to fall.
The number of deaths per day remains very high.

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	Apr 2020	Summer 2020	Oct 2020	Dec 2020	Jan 2021	13 Jan	20 Jan	27 Jan	3 Feb	10 Feb	Daily count 11 Feb
Cases confirmed per day	859 18-04	8.7 25-06	1158 21-10	262 12-12	6520 10-01	5436	2891	1699	1188	943	866
14-day incidence *per 100,000 population*	212 19-04	3.0 04-07	306 26-10	79 09-12	1532 15-01	1449	1223	674	424	312	300
Hospital in-patients	862 17-04	9 02-08	333 01-11	198 16-12	1949 24-01	1414	1901	1889	1499	1188	984
Hospital admissions per day	*85* *04-04*	*<1* *10-07*	*27* *26-10*	*11* *13-12*	*158* *15-01*	*146*	*132*	*89*	*68*	*52*	*44*
ICU confirmed cases	150 14-04	4 04-08	43 04-11	26 27-12	217 28-01	133	194	217	209	179	172
ICU admissions per day	*14* *31-03*	*<1* *03-06*	*4* *03-11*	*1* *16-12*	*20* *17-01*	*20*	*19*	*15*	*11*	*6*	*8*
Deaths confirmed per day	46 22-04	<1 30-07	7 01-12	4 17-12	57 03-02	23	44	50	57	41	*52*

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.

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Confirmed cases each day

Daily and weekly count and 5-day rolling average. The 5-day average peaked at 1186 on 21 October, reached a low of 251 on 28 November, peaked again at 6847 on 8 January and is now 856

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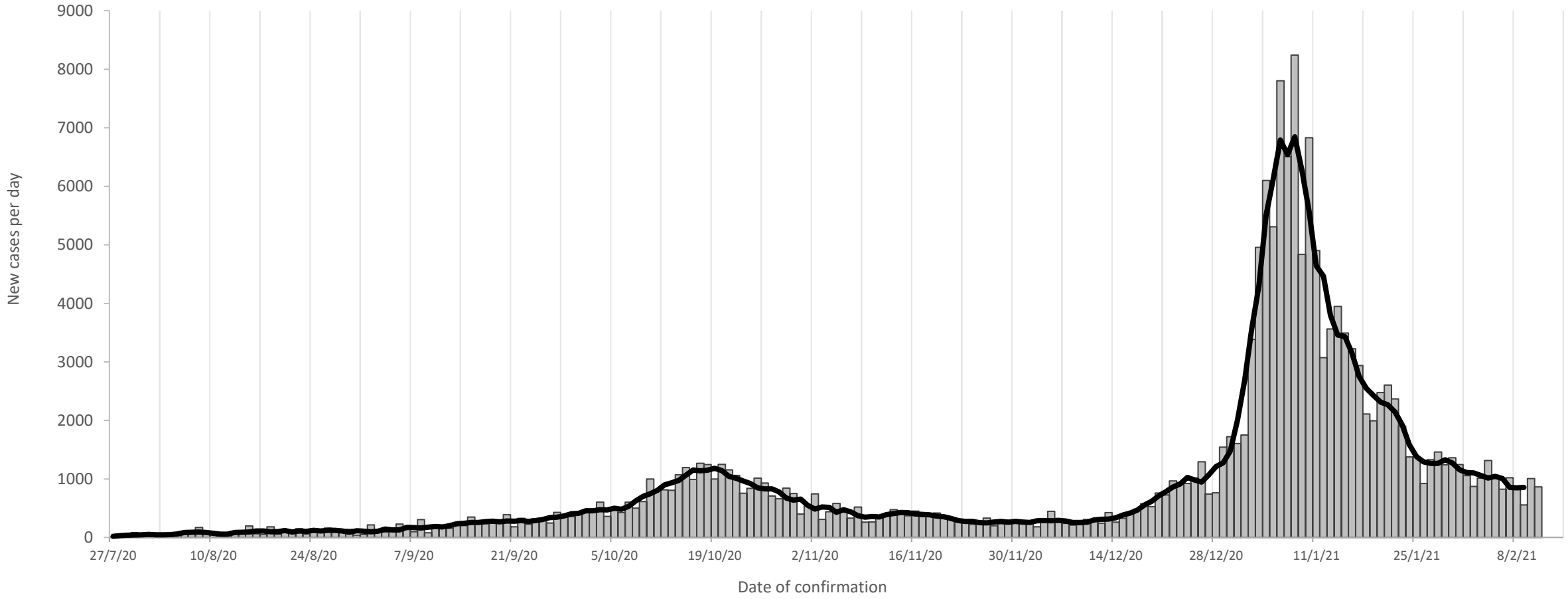
Cases per week	284	540	546	711	796	912	1303	1947	2059	3031	4457	7398	7073	4838	3424	2583	2580	1798	2028	1964	3369	6603	15730	45636	25146	14836	8939	7156



Daily count (bars) 5-day average (line) and weekly counts of the number of laboratory confirmed new cases by date on which they were confirmed by HPSC. Case counts may change due to denotification of cases. Weekly case counts are by notification (event) date and standard epidemiological week.

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Symptomatic and asymptomatic cases

The number of symptomatic cases each day continues to decrease steadily; the relative number of asymptomatic cases is increasing as the testing of asymptomatic close contacts has resumed. Asymptomtic cases have increased from ≈10% to ≈ 20% of all cases, currently ≈ 180 cases per day

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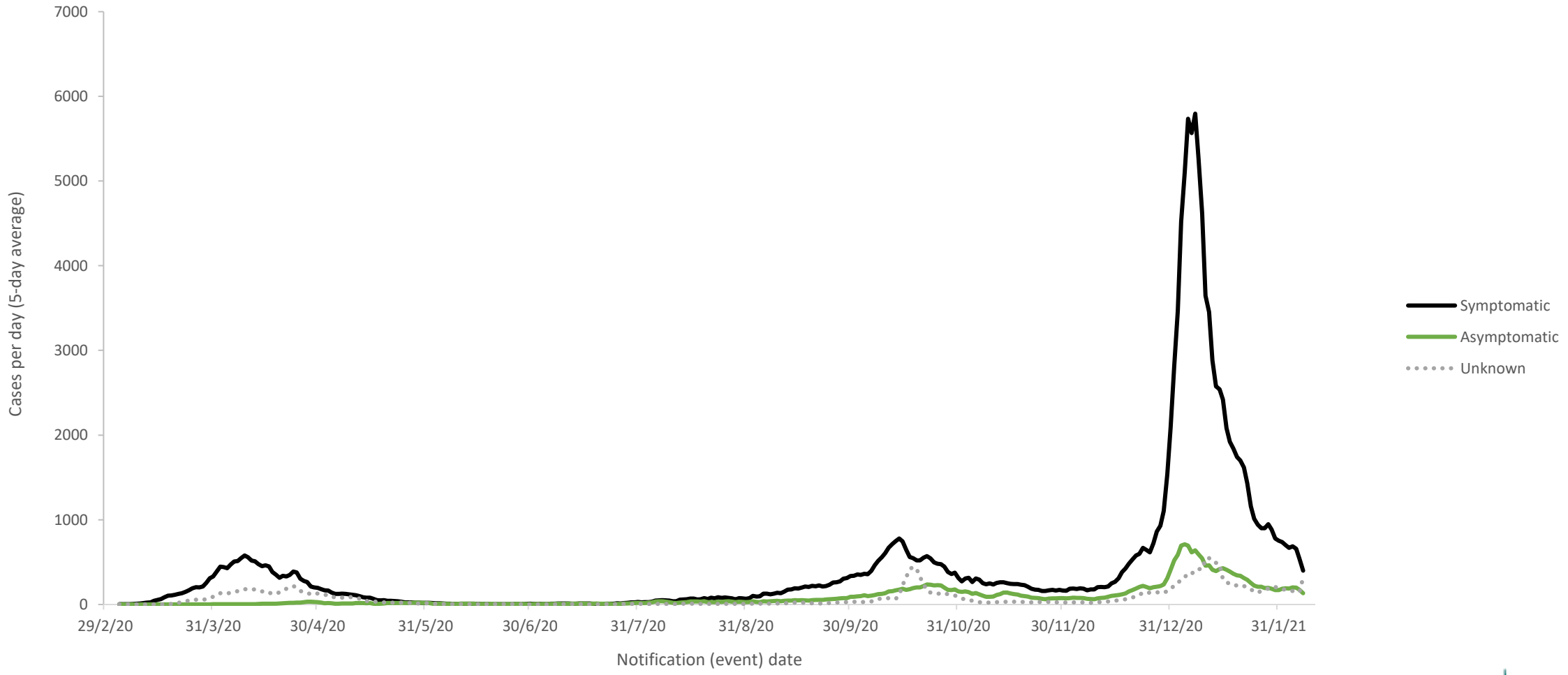

Daily case count (5-day average) separated out into those symptomatic at or prior to time of notification (black), those asymptomatic (green) and those for whom symptom status is unknown. Data for the most recent days is incomplete, as a number of cases for whom symptom status is currently unknown will be recorded as symptomatic or asymptomatic. Case counts are by notification (event) date.

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Testing and test positive rate

The demand for tests has fallen. Positivity rate has fallen significantly: overall positivity rate peaked at 23% on 7 January, and is now plateaued at 6.3% (5-day average)

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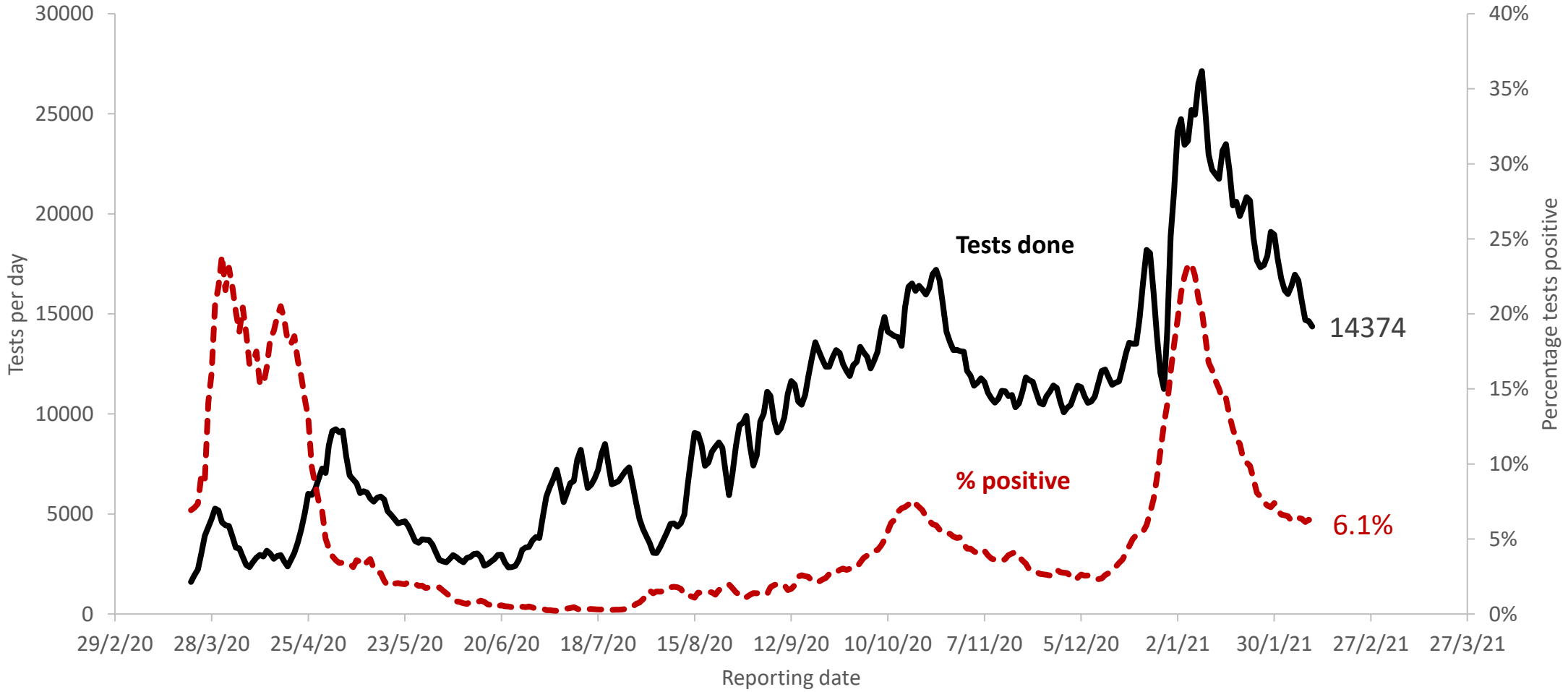

Data 5-day rolling averages, tests outsourced to German laboratory in April backdated using specimen collection date. The aggregate positivity rate should be interpreted with caution, as it includes community referrals, close contacts, mass and serial testing, and hospital testing, and changes in numbers of tests done in these different settings will alter the overall positivity rate.

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Test positivity: public health laboratories

The positivity rate is higher for tests conducted in public health laboratories (NVRL, associated laboratories and Cherry Orchard) compared with tests conducted in hospitals. Positivity rates in public health laboratories have decreased from a peak 5-day average positivity of 27.4% on 6 January and is now plateaued at 7.8%.

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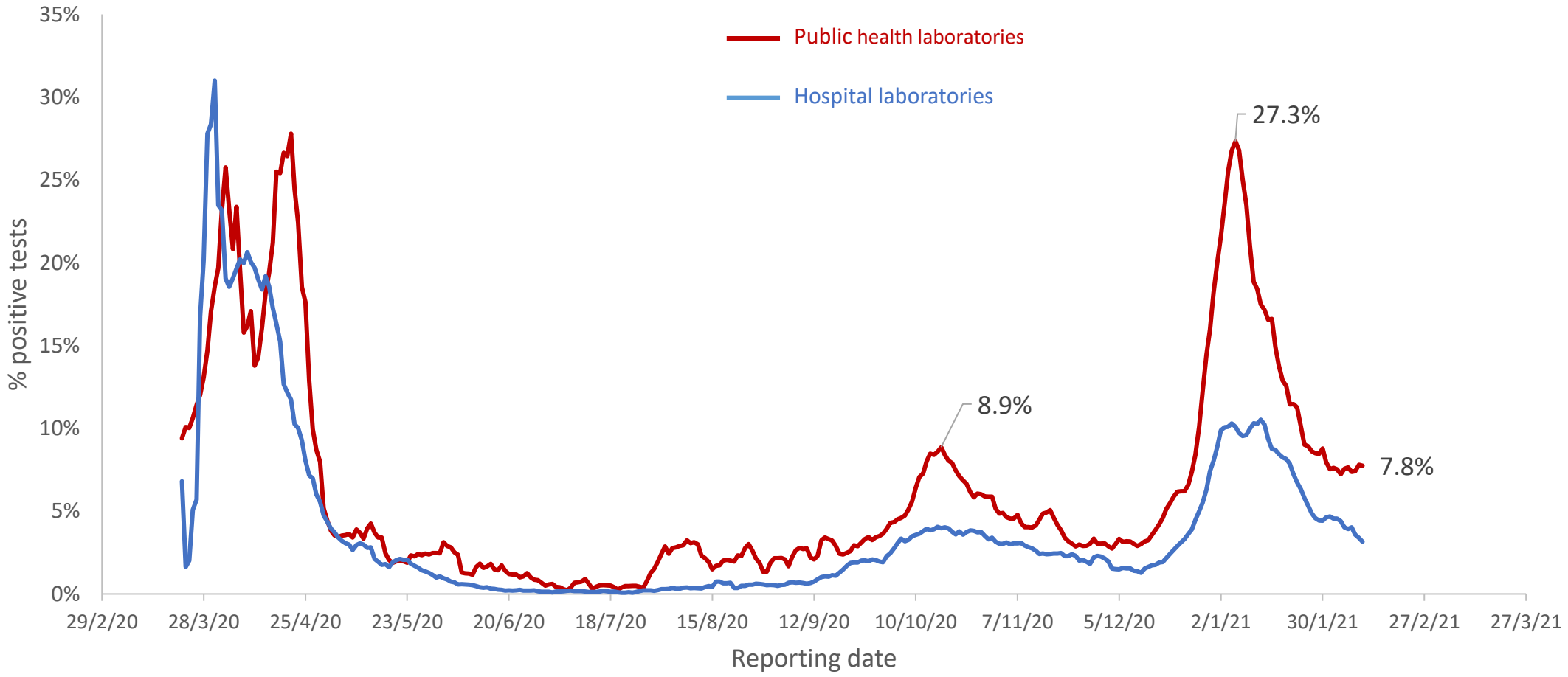

Data 5-day rolling averages of percentage of tests reported positive per day. Public health laboratories are NVRL and associated laboratories, plus Cherry Orchard
Backlog tests outsourced to German laboratory in April are not backdated and are assigned to date reported

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Confirmed cases in intensive care

The number of people in ICU with confirmed SARS-CoV-2 infection remains very high but is now decreasing slowly number of new admissions per day has decreased significantly.

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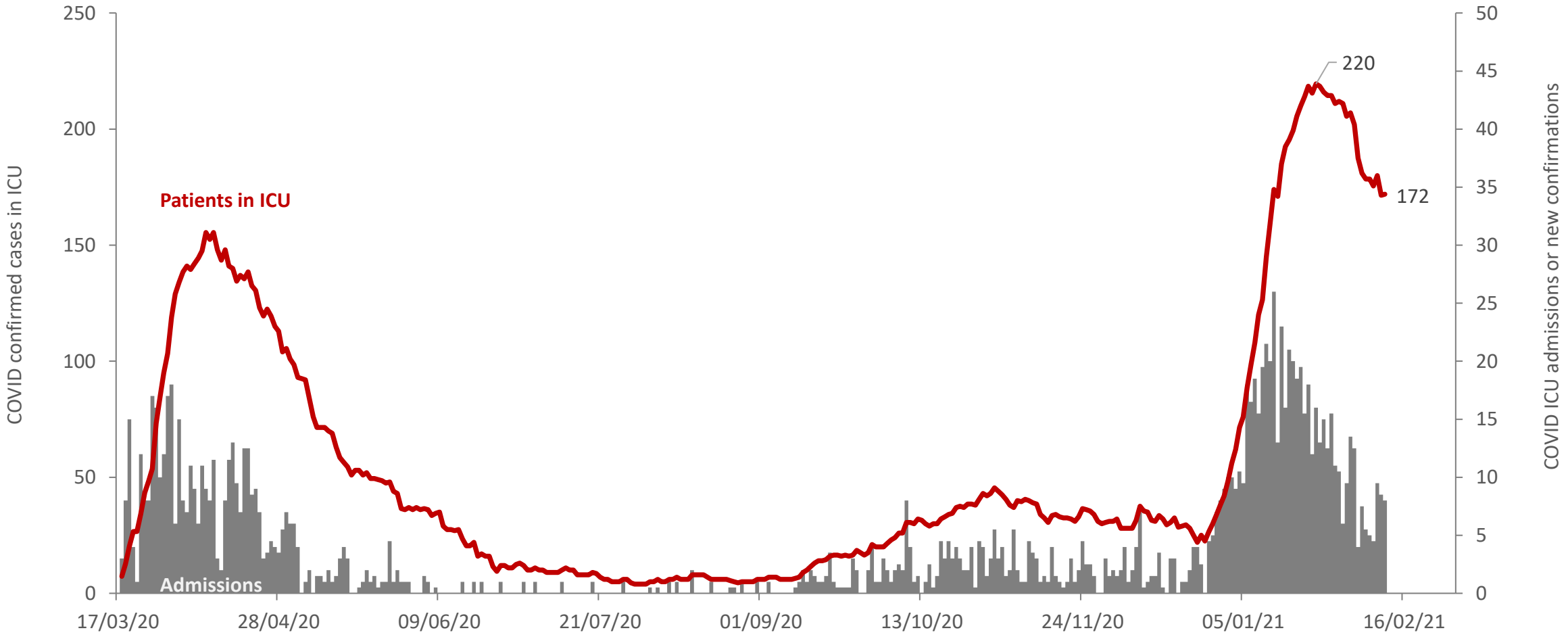

Patients in ICU: Daily count of number of COVID-19 confirmed cases in ICU. Daily admissions: new COVID-19 confirmed admissions to ICU and new laboratory confirmations of suspected cases in ICU. Average of morning and evening census from NOCA

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Confirmed cases in acute hospitals

The number of people in hospital with confirmed SARS-CoV-2 infection. The number of admissions per day has decreased significantly, and the number in hospital is falling.

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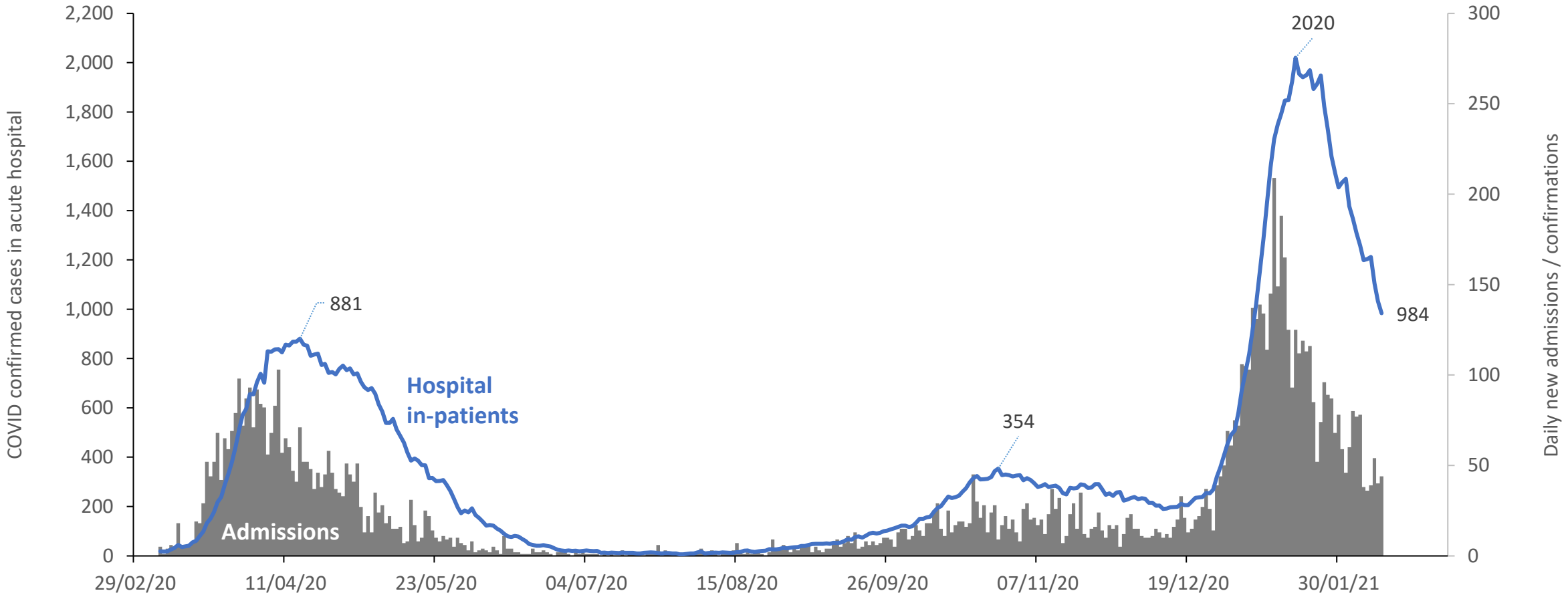

Hospital in-patients: Daily count of number of COVID-19 confirmed cases in acute hospitals. Daily admissions: New COVID-19 confirmed admissions and new laboratory confirmations of suspected cases in preceding 24 hours. Data from HSE PMIU-SDU, 8am census.

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Deaths per day

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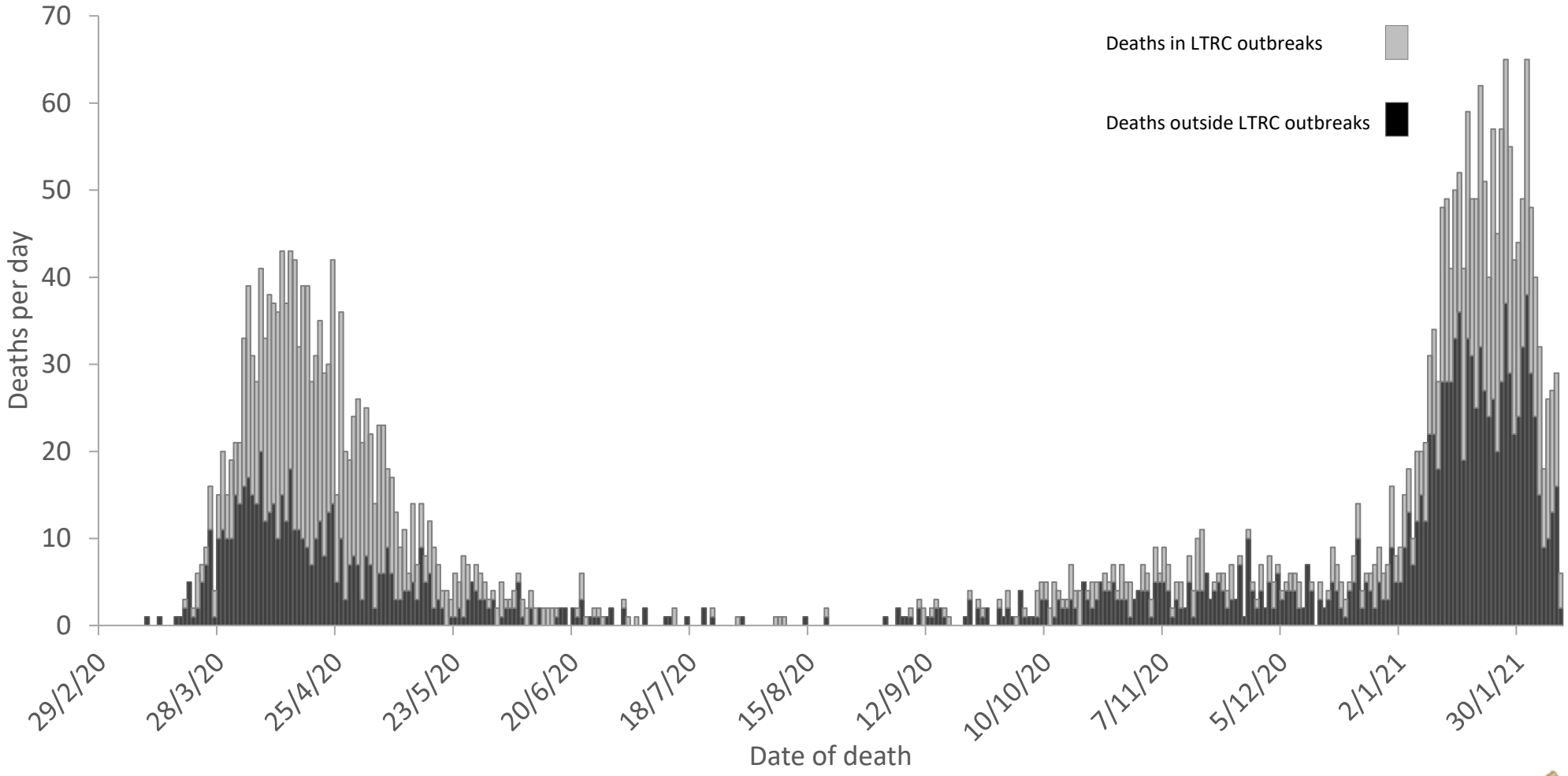

Deaths per day, separated into those associated with outbreaks in long-term residential care and those not associated with such outbreaks. Deaths with laboratory confirmed SARS-CoV-2 only

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Cases in long-term residential settings

The number of cases in LTRC was less in the second wave compared to the first; however, the number of cases linked to outbreaks in LTRC, following the unprecedented levels of infection in the community, is now very high, similar to the numbers seen in April and May 2020. Nonetheless, when compared to the total burden of disease in the community (total cases per week) the level of infection in LTRC is significantly less than in April-May 2020

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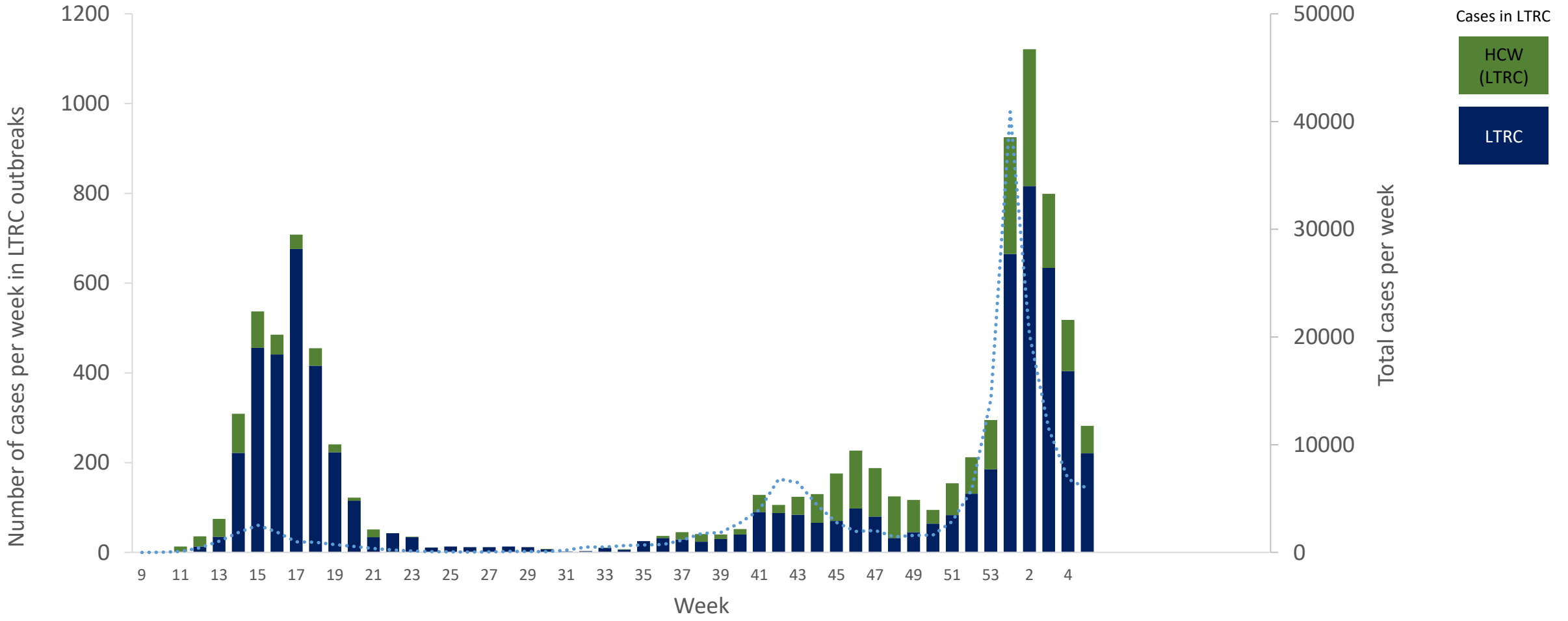

Number of cases per week linked to outbreaks in long-term residential care (bars) compared to the total number of cases per week (dotted line, referred to the secondary y-axis). LTRC: cases amongst residents in outbreaks in long-term residential settings.
HCW (LTRC): Cases in healthcare workers associated with outbreaks in LTRC.

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Infections in the healthcare setting

The number of healthcare-setting-acquired infections had decreased from the peak in October, but is now very high. Nonetheless, when compared to the total burden of disease in the community (total cases per week) the level of infection in healthcare settings is significantly less than in April-May 2020

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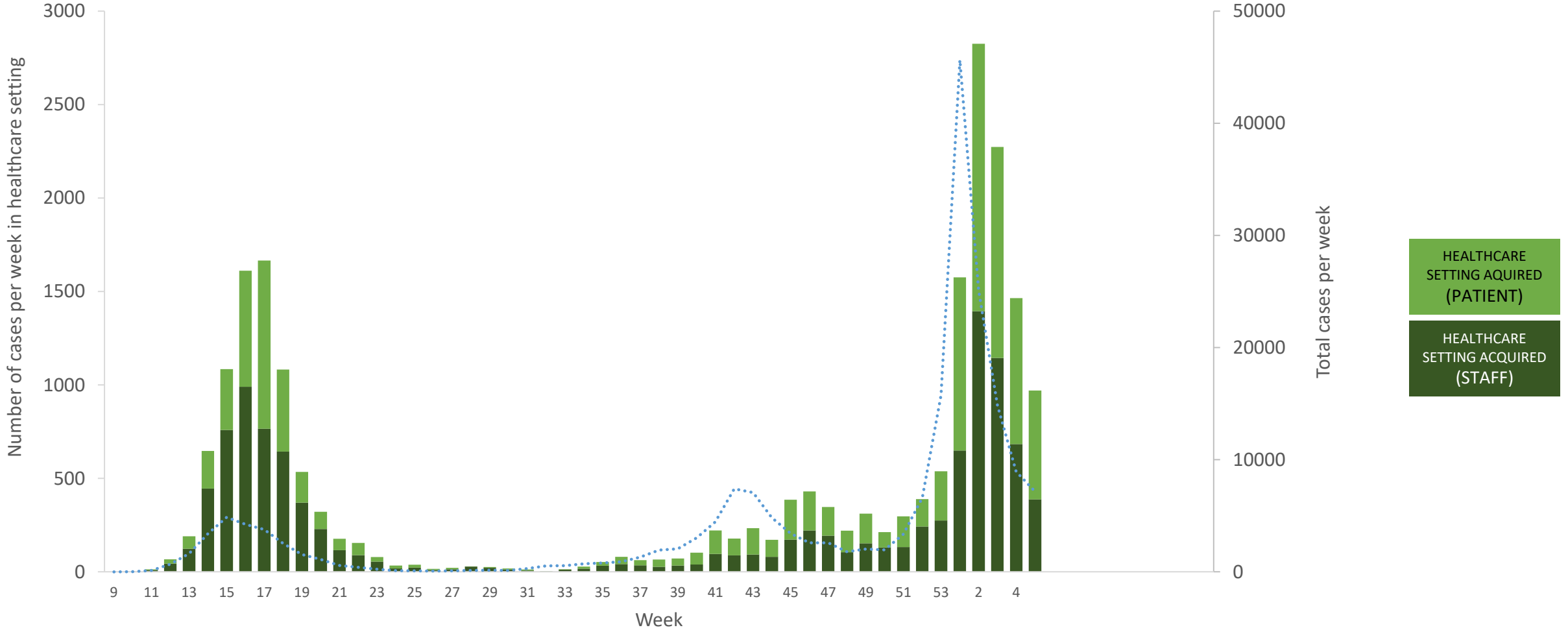

Number of cases per week recorded in CIDR as 'healthcare setting acquired' (bars) compared to the total number of cases per week (dotted line, referred to the secondary y-axis). Cases dated by event date. Tests outsourced to German laboratory in April backdated, using the specimen collection date, to the date they would have been confirmed if tested in a timely manner.

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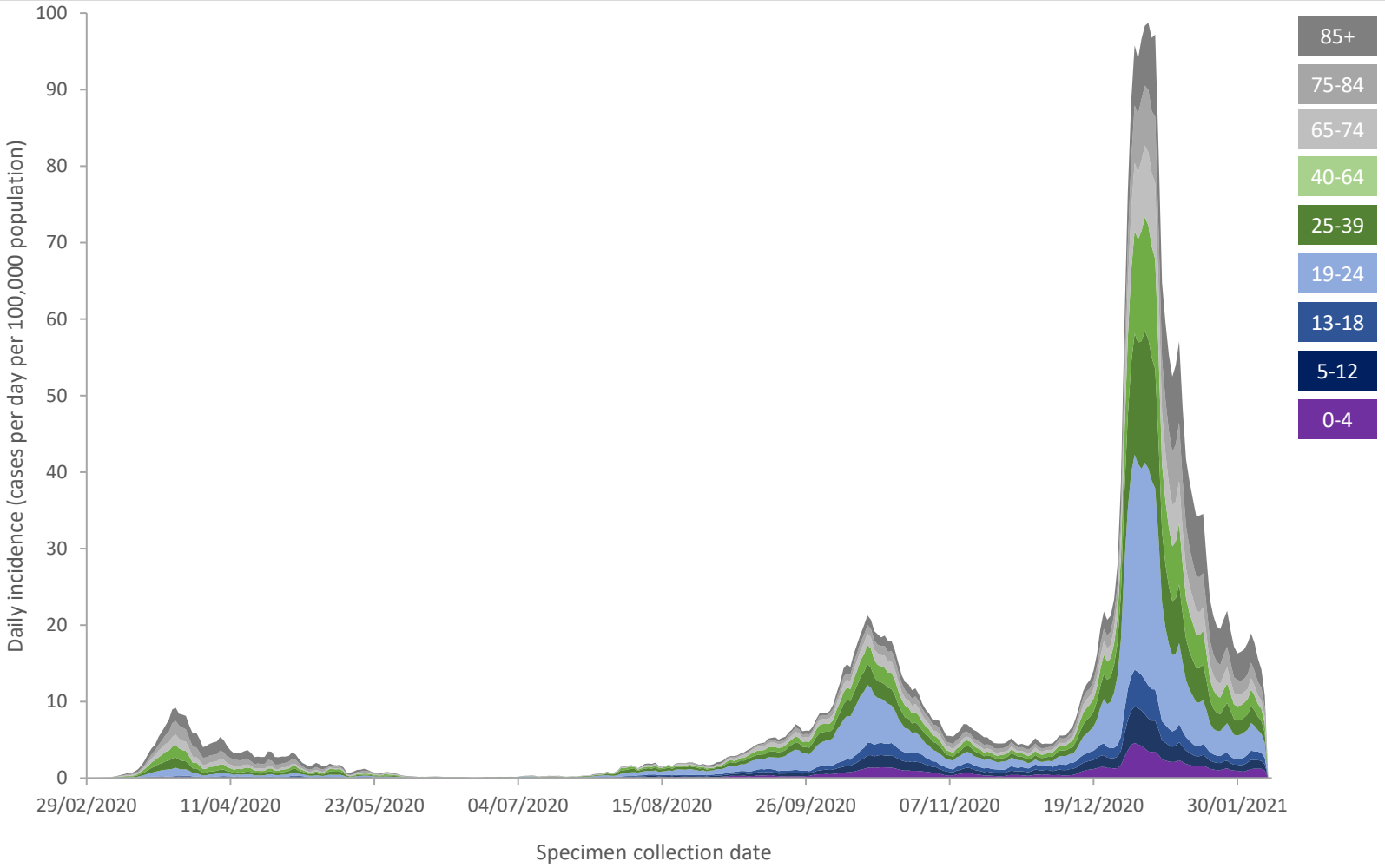
Incidence across different age groups (excluding HCW and LTRC)

The chart shows the contribution of each age group to the overall incidence – the prominent grey bands show a very significant level of infection in recent weeks in those aged 65 and older, even when cases associated with outbreaks in long-term residential care are excluded. Incidence is decreasing across all age groups except those aged 18 and younger, due to increased detection of asymptomatic infections in close contacts.



Week	Age band								
	0-4	5-12	13-18	19-24	25-39	40-64	65-74	75-84	85+
9	0.0	0.0	0.3	0.0	0.1	0.1	0.0	0.0	0.0
10	0.0	0.2	0.3	0.0	0.2	0.7	0.5	1.0	0.0
11	0.6	0.2	0.5	5.4	5.0	4.4	4.6	6.6	7.4
12	4.5	2.4	7.5	22.9	27.8	31.1	25.2	24.9	37.0
13	6.9	4.2	14.5	58.3	73.3	86.5	72.6	88.5	94.7
14	4.5	4.4	6.7	28.1	40.1	50.9	50.9	91.1	125.8
15	5.7	5.6	9.1	31.4	29.2	47.4	46.9	71.8	118.4
16	3.0	5.3	10.8	19.3	20.8	32.2	29.2	50.9	75.5
17	3.3	4.2	7.8	21.1	23.6	26.5	21.2	50.4	77.0
18	4.5	6.4	9.4	20.2	26.0	21.0	18.7	37.7	53.3
19	2.1	2.7	4.8	13.3	15.2	14.4	10.4	18.8	37.0
20	3.6	1.6	4.8	12.1	16.4	12.1	6.7	9.2	13.3
21	3.3	2.7	4.6	8.5	6.3	8.2	7.5	15.3	22.2
22	2.1	2.4	2.2	4.2	5.1	6.9	4.0	4.6	5.9
23	1.2	0.5	1.3	3.0	0.7	1.9	1.6	5.6	3.0
24	2.7	0.7	1.3	1.5	1.4	1.4	1.6	2.0	1.5
25	0.0	0.4	0.5	1.8	1.4	1.0	0.8	0.5	1.5
26	0.6	0.2	0.3	1.8	1.5	0.7	0.8	1.5	3.0
27	1.5	0.4	0.3	1.8	1.9	0.9	0.0	1.0	0.0
28	0.9	1.1	1.1	10.6	2.0	1.0	1.3	1.0	3.0
29	1.2	0.4	0.8	3.3	3.3	2.0	2.9	1.5	3.0
30	1.8	0.5	1.6	3.6	4.3	0.9	1.9	0.0	1.5
31	4.8	2.6	7.3	11.2	8.5	4.6	2.1	2.5	3.0
32	4.5	3.6	6.7	18.4	16.3	10.5	4.6	2.5	3.0
33	6.0	10.0	12.1	27.2	19.7	12.1	8.0	2.5	7.4
34	7.2	7.5	17.5	37.4	16.5	11.4	6.2	5.1	4.4
35	6.3	9.7	13.5	37.1	18.5	11.1	4.8	9.2	5.9
36	13.0	13.3	17.0	47.4	21.9	13.3	10.7	11.2	14.8
37	17.2	17.7	29.9	63.4	28.1	24.4	22.8	9.2	10.4
38	21.7	26.2	44.7	91.2	44.4	34.8	32.9	19.8	19.2
39	12.1	22.6	42.8	147.3	49.9	41.9	32.9	31.0	20.7
40	29.6	28.8	63.2	168.2	68.1	58.0	34.5	26.0	20.7
41	42.8	46.7	133.5	317.0	115.1	89.8	61.6	51.9	60.7
42	78.1	90.6	196.7	434.2	154.6	142.7	90.8	67.2	69.6
43	81.7	93.9	174.7	302.5	123.4	121.9	85.4	82.4	84.4
44	55.8	67.6	96.1	156.4	75.6	77.5	55.2	55.5	59.2
45	34.7	39.7	57.9	83.9	58.1	46.3	42.8	44.3	47.4
46	41.9	37.2	65.1	89.7	45.4	45.2	32.1	42.7	69.6
47	22.0	34.1	60.3	79.4	34.7	33.1	29.2	39.7	62.2
48	23.2	31.3	45.5	66.4	33.8	29.6	22.2	36.1	40.0
49	28.4	37.0	37.7	40.5	33.2	30.1	25.4	29.5	42.9
50	21.4	39.9	44.1	57.4	39.9	35.0	22.2	31.0	22.2
51	51.9	58.5	74.5	128.0	88.1	81.5	54.9	55.0	51.8
52	77.2	77.1	120.3	325.8	176.9	136.0	96.9	96.2	121.4
53	216.9	235.3	511.0	1399.7	760.9	637.9	424.1	349.6	389.3
1	182.8	208.7	569.2	1334.2	793.6	726.3	500.9	447.8	569.9
2	130.9	127.0	303.8	582.7	421.1	426.7	305.7	422.9	612.8
3	93.8	80.9	168.2	332.7	261.2	250.2	174.3	264.6	476.6
4	73.0	61.1	128.1	233.4	157.5	151.8	124.8	167.4	303.5
5	77.5	72.9	127.3	216.8	132.2	128.6	88.9	126.2	248.7

Chart shows 5-day rolling average of total incidence (cases per day per 100,000 population) with coloured bands showing the contribution of each age cohort to the total incidence, having adjusted for the number of people in that age cohort (CSO 2016 census data). Healthcare workers and cases associated with outbreaks in long-term residential care are excluded, so that the analysis reflects the pattern of cases in the community. Cases dated by date of specimen collection. A number of cases in those aged 65 and older will be linked in the coming days to outbreaks in LTRC.

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Incidence across different age groups (excluding HCW and LTRC)

Incidence has decreased across most adult age groups, and while it remains high in those aged 85 and older it is decreasing. The incidence in those aged 18 and under has stabilised or increased with increased detection of asymptomatic infections in close contacts.

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Week	Age band								
	0-4	5-12	13-18	19-24	25-39	40-64	65-74	75-84	85+
48	23.2	31.3	45.5	66.4	33.8	29.6	22.2	36.1	40.0
49	28.4	37.0	37.7	40.5	33.2	30.1	25.4	29.5	42.9
50	21.4	39.9	44.1	57.4	39.9	35.0	22.2	31.0	22.2
51	51.9	58.5	74.5	128.0	88.1	81.5	54.9	55.0	51.8
52	77.2	77.1	120.3	325.8	176.9	136.0	96.9	96.2	121.4
53	216.9	235.3	511.0	1399.7	760.9	637.9	424.1	349.6	389.3
1	182.8	208.7	569.2	1334.2	793.6	726.3	500.9	447.8	569.9
2	130.9	127.0	303.8	582.7	421.1	426.7	305.7	422.9	612.8
3	93.8	80.9	168.2	332.7	261.2	250.2	174.3	264.6	476.6
4	73.0	61.1	128.1	233.4	157.5	151.8	124.8	167.4	303.5
5	77.5	72.9	127.3	216.8	132.2	128.6	88.9	126.2	248.7

Heat map shows age-specific incidence (cases per week per 100,000 population). Healthcare workers and cases associated with outbreaks in long-term residential care are excluded, so that the analysis reflects the pattern of cases in the community. Cases dated by specimen collection date.

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Incidence by age group (incl. HCW and LTRC)

The incidence per 100,000 population is shown for different age cohorts. Incidence had been decreasing across all age groups, with high incidence in those aged 85 and older. Incidence in those aged 85 and older has decreased significantly inve the last two weeks and is now approaching the population Average. Incidence in children and adolescents has increased with increased detection of asymptomatic infections in close contacts.

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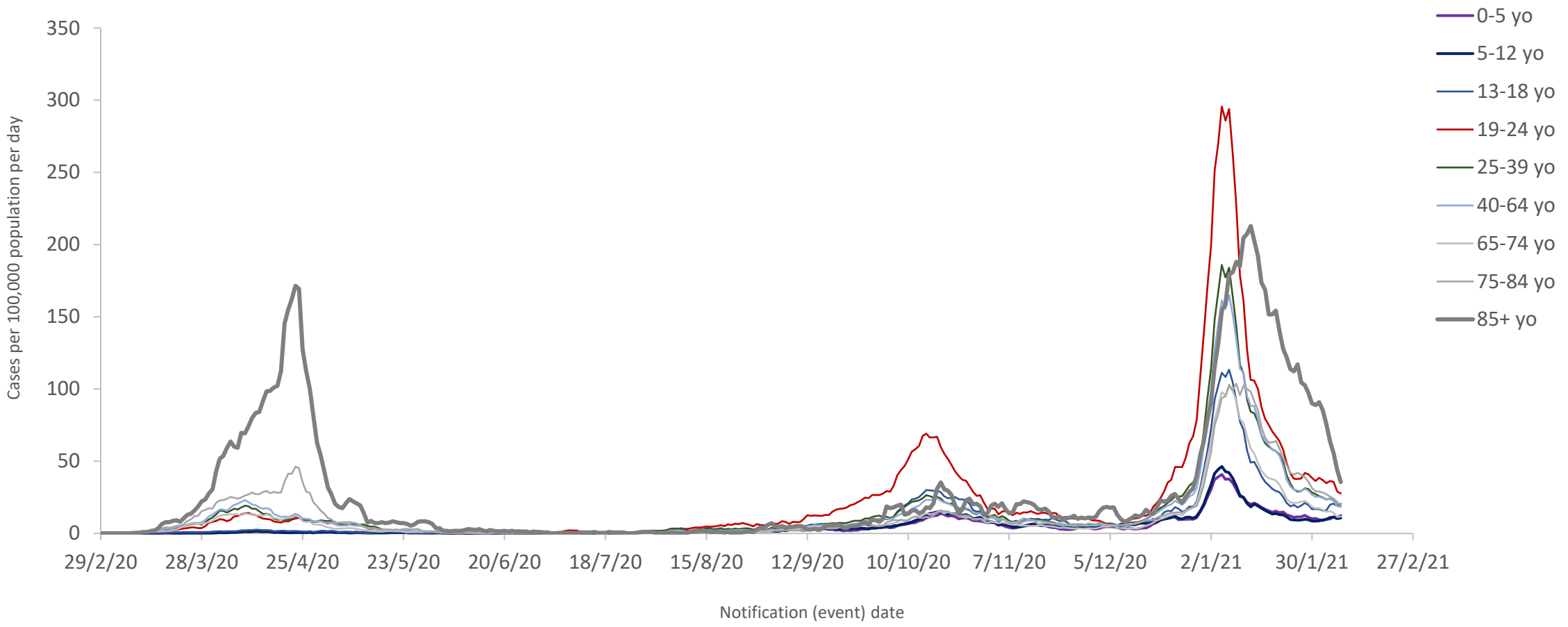

Age-specific incidence (cases per day per 100,000 population within each age cohort, population from CSO 2016 census data). Healthcare workers and cases associated with outbreaks in long-term residential care are included. Tests outsourced to German laboratory in April backdated, using the specimen collection date, to the date they would have been confirmed if tested in a timely manner.

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Close contacts of adult confirmed cases

The mean number of close contacts per confirmed case. The number of contacts was very low (2 or less) during April, but increased to 5-6 per case during the summer. The progressive escalation of public health measures during October was associated with a progressive reduction in close contacts, to below 3. The number of close contacts remained below 3.3 on average until early December, rose to almost 5 on average by 28 December, and is now at a very low level (2.3 contacts)

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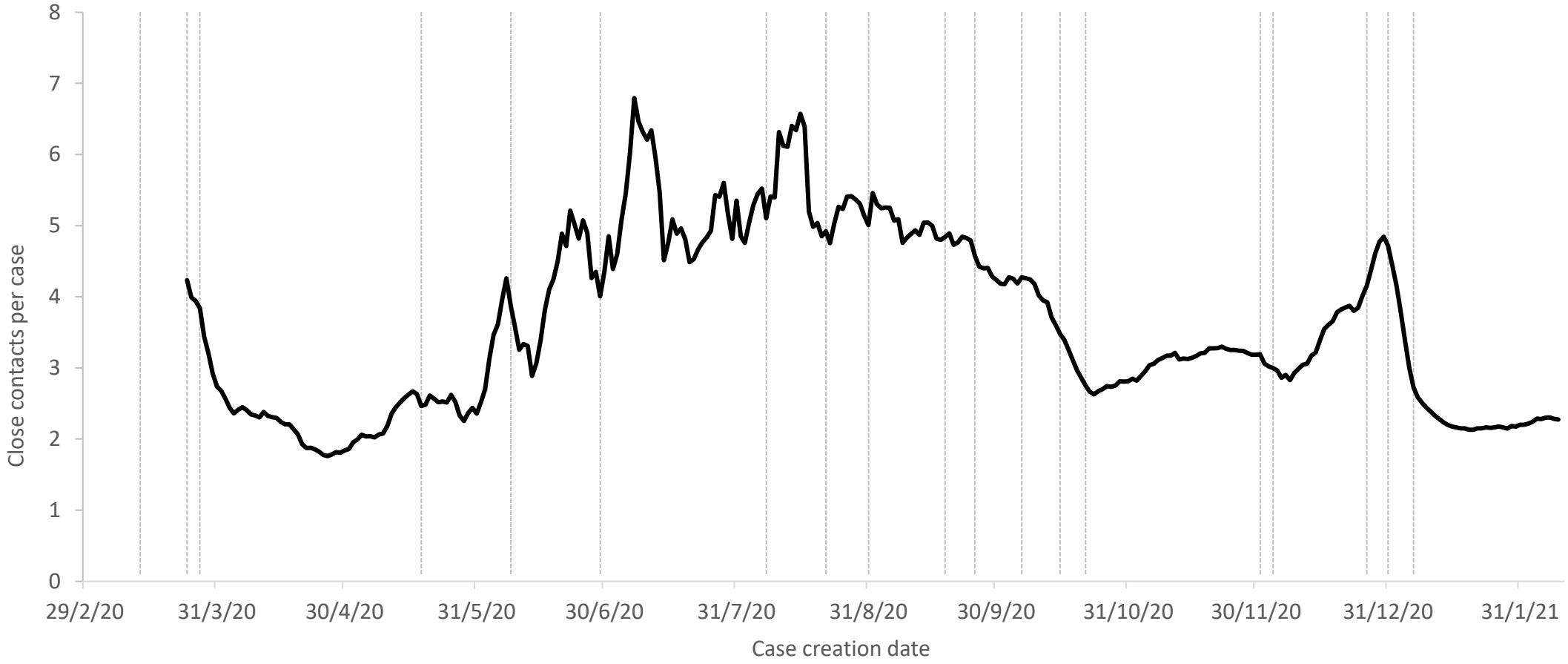

The average number of close contacts per confirmed case. Data from COVID-19 Care Tracker (CCT). Cases dated by case creation date. Cases (but not contacts) aged 18 and younger are excluded. Data are 7-day trailing averages except for the months of June – August where a 21-day trailing average is used due to very low case counts.

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Google community mobility

These data show time spent in residential areas and attendance at workplaces for those who enable location sharing on their Google account; each day of the week is compared with the average for that day of the week over January and February 2020. While attendance at workplaces is very much reduced (to ~50% of baseline) it is higher than in April (~25% of baseline)

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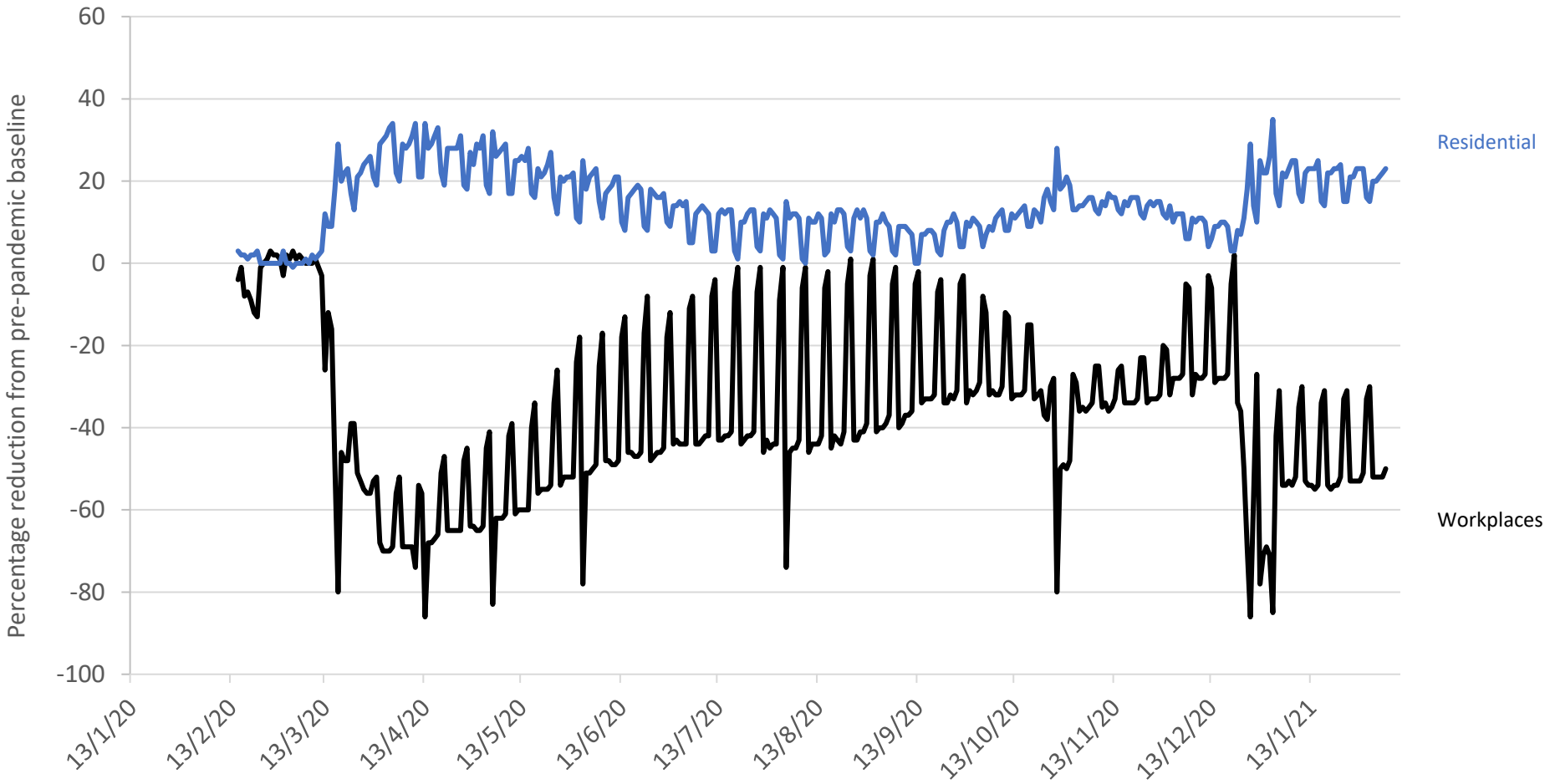

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Growth rate for case numbers

Growth rate peaked at almost 13% per day over the 21-day period up to 10 January 2021; case numbers are now decreasing at -4% to -6% per day

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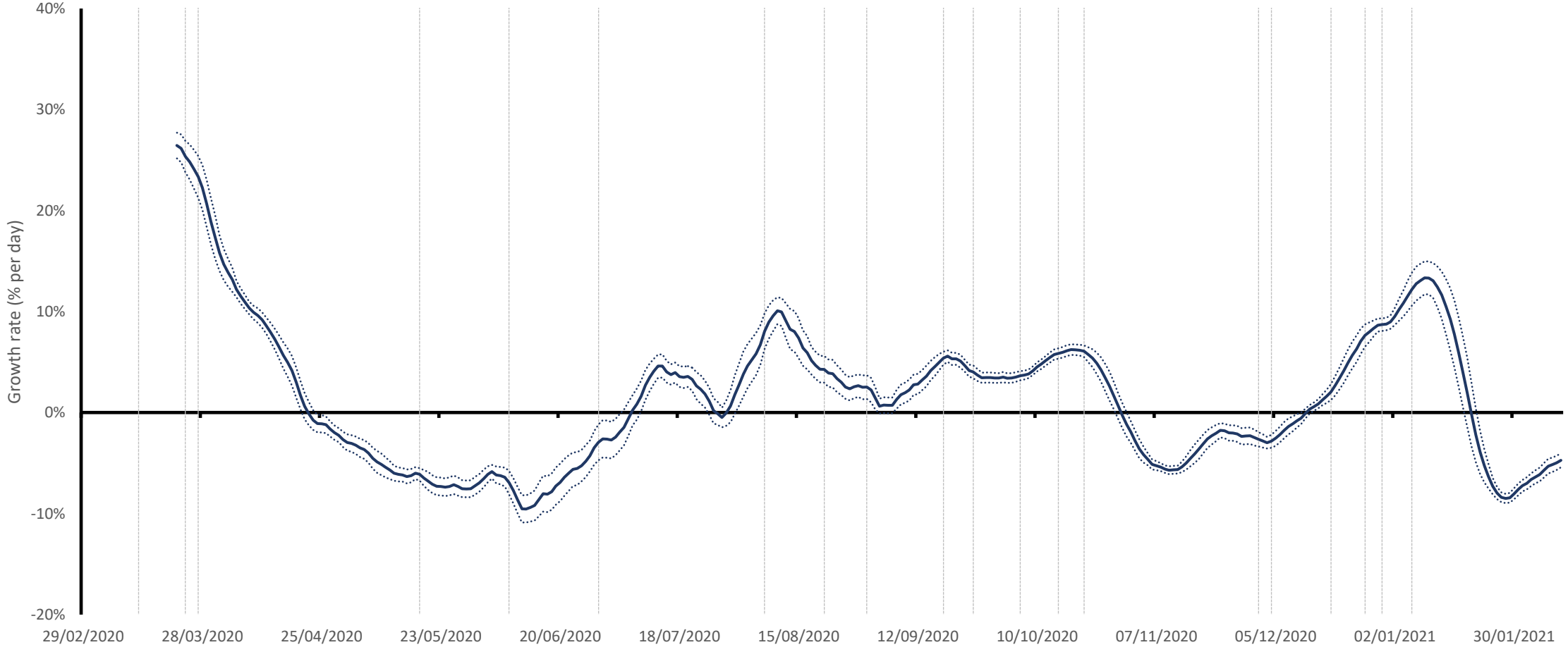

Growth rate calculated as the average growth rate over a 21-day trailing window,with 95% credible interval; cases dated by notification (event) date.

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Estimates of effective reproduction number (R)

Reproduction number is below 1.0, but may be increasing; it is currently estimated at 0.6 – 0.8

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Method	Estimate	95% confidence interval
SEIR model-inferred	0.71	0.46 – 1.01
Bayesian model	0.68	0.35 – 1.48
Time-dependent R	0.78	0.73 – 0.83
GAM estimate 2 Feb 2021	0.72	0.60 – 0.86
GAM estimate 9 Feb 2021	0.58	0.44 – 0.72

Estimates generated 10 February 2021, refer to IEMAG technical notes for methodology. Estimates are unreliable when case numbers are low or variable. SEIR-inferred estimate is slow to respond to changes in R. The time-dependent R estimate lags behind other estimates.These R estimates relate to viral transmissions and infections that occurred approximately 7-14 days ago. The estimate of R is influenced by different patterns of transmission in large outbreaks, smaller clusters, and individual transmission.

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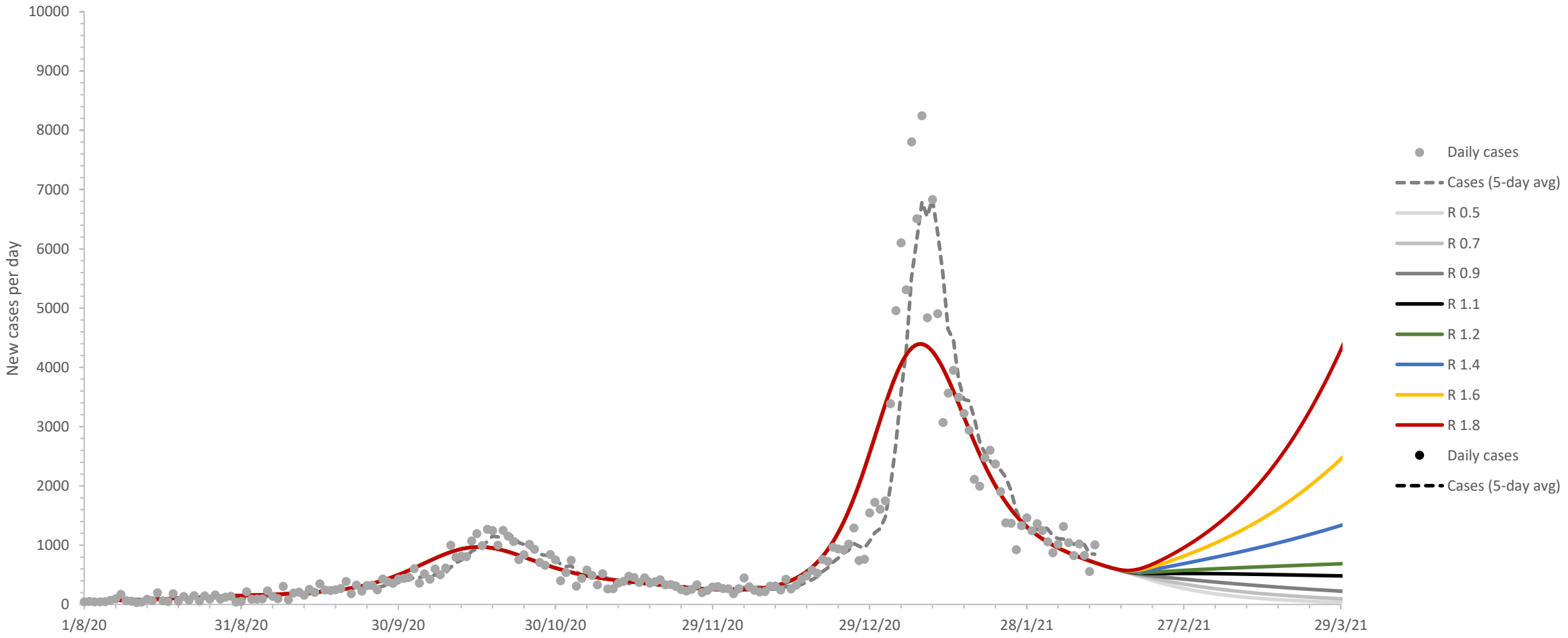
What do our models tell us?

Model calibrated to case data until ***9 February 2021,*** R varies over a wide range thereafter; we would expect case numbers to track model estimates for R between 0.5 and 0.9, with potentially 200-400 cases per day by the end of February 2021

Coronavirus
COVID-19
Public Health
Advice



Model projections of the number of new cases per day. The model is calibrated with daily case counts to 9 February 2021 (grey); R varies between 0.5 and 1.8 thereafter. Case counts from 27 January onwards are shown in black. This is a scenario model only. It is not a forecast, nor does it imply or anticipate any future policy decision.

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Model projections of numbers in general hospital beds

Model outputs for numbers of people in general hospital (non-critical care beds) with COVID-19. Model calibrated to 9 February 2021, and R then varies between 0.5 and 1.8.

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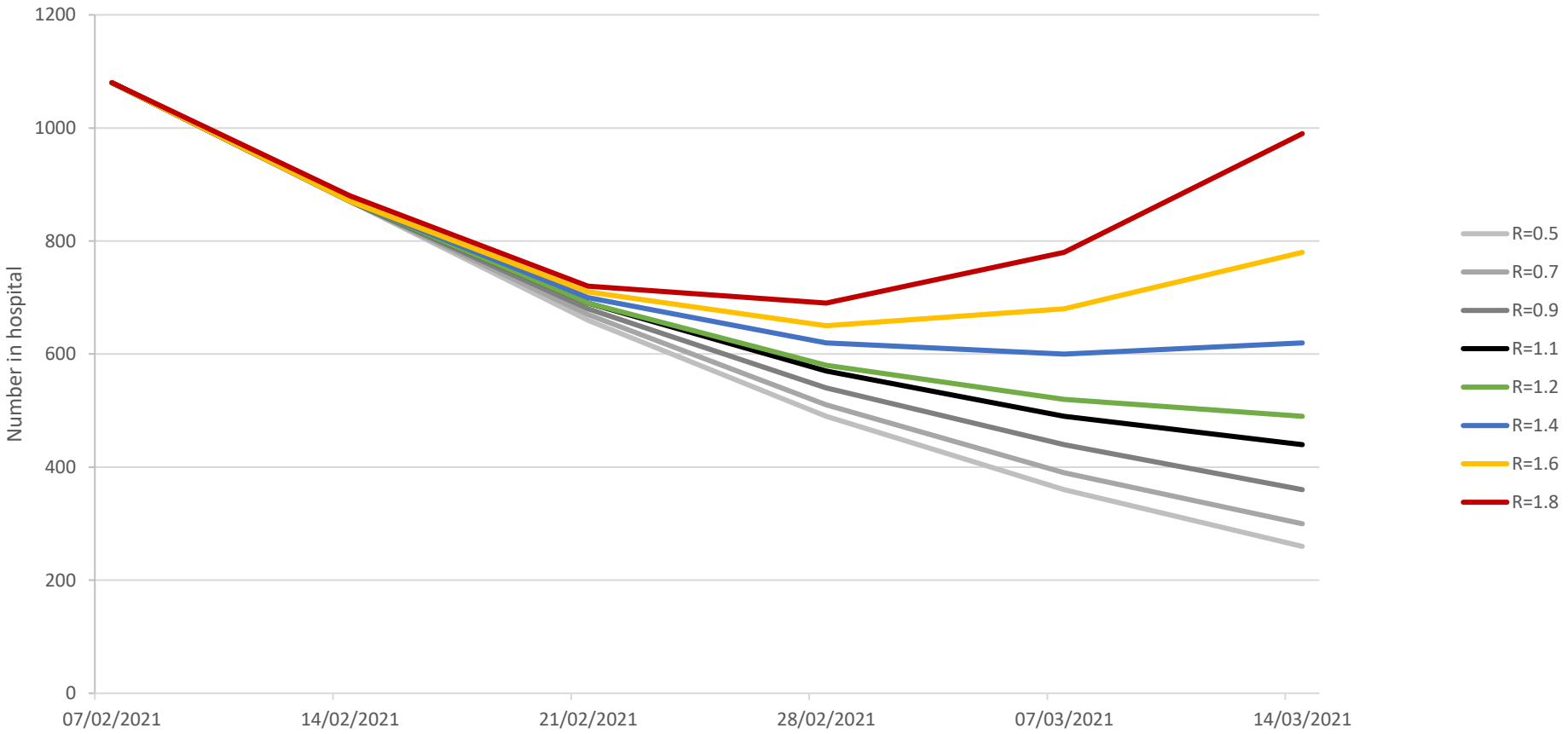

Model outputs and actual numbers in hospital with COVID-19. The model is calibrated using the CHUP model developed by ESRI; see IEMAG technical notes for details. The model is calibrated to 9 February 2021, and R varies from 0.5 to 1.8 thereafter.

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Model projections of numbers in critical care

Model outputs for numbers of people in critical care with COVID-19. Model calibrated to 9 February 2021, and R then varies between 0.5 and 1.8.

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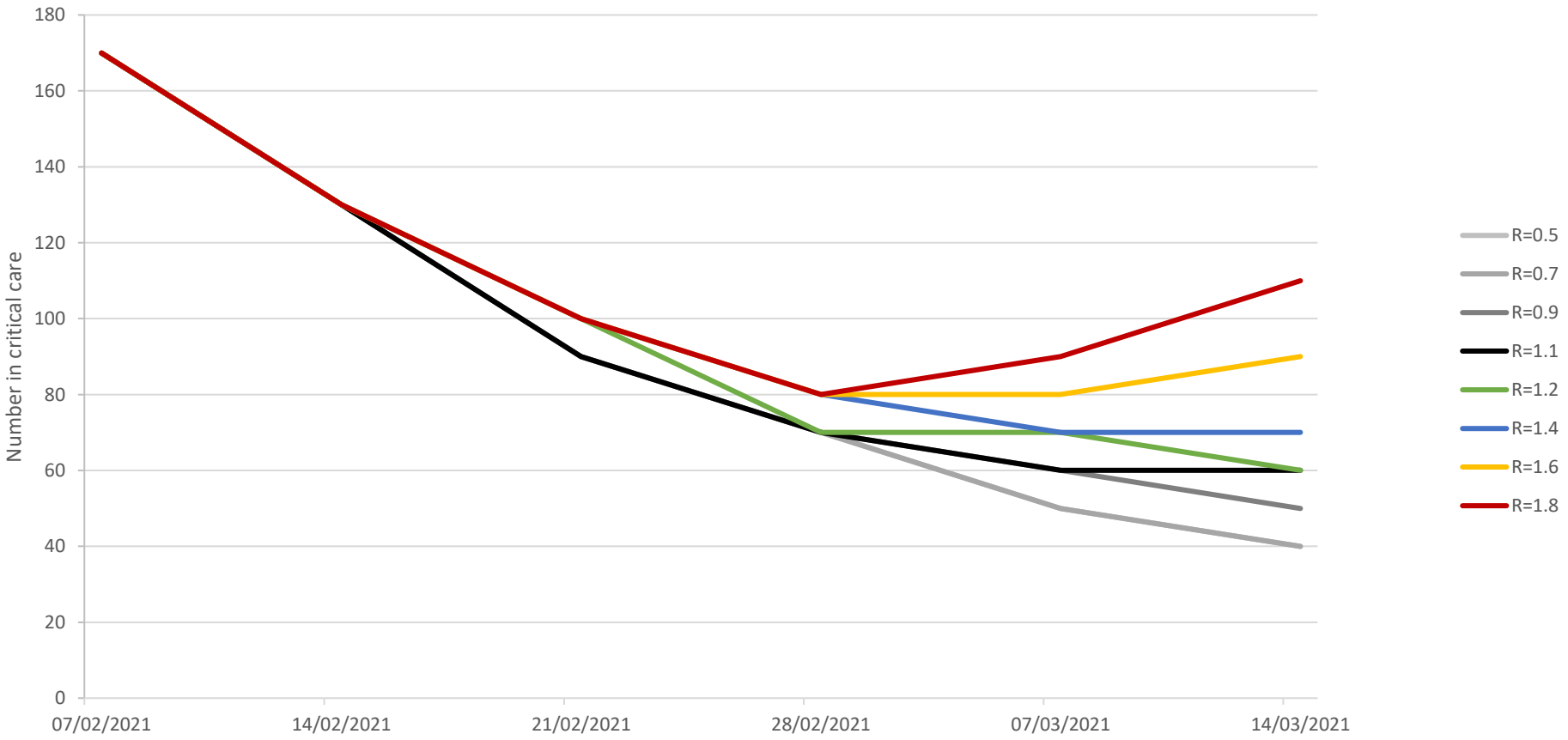

Model outputs and actual numbers in critical care with COVID-19. The model is calibrated using the CHUP model developed by ESRI; see IEMAG technical notes for details. The model is calibrated to 9 February 2021, and R varies from 0.5 to 1.8 thereafter.

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Situation analysis 11 February 2021

Coronavirus COVID-19 Public Health Advice

- Incidence continues to fall but remains high
  - 4 times higher than early December 2020, 100 times higher than July 2020
- Cases (5-day average) 856 cases per day; 14-day incidence 300 per 100,000
  - Incidence in those aged 85 and older decreasing and approaching population average
  - Testing of close contacts increasing the number of asymptomtatic cases with apparent increase in incidence in those aged 18 and younger
- Sustained suppression of transmission
  - Rate of decline continues at -3 to -7 %, halving time 10-20 days, R estimated at 0.6 – 0.8
- Indicators of mobility and contact remain low but may be drifting upwards
- Test positivity may have plateaued at a relatively high level
- Numbers in hospital decreasing, numbers in ICU starting to decrease
  - Healthcare-acquired infections and cases in LTRC decreasing
- High mortality but may be stabilizing
- Models show that if we maintain suppression of transmission, we can achieve 200-400 cases per day by end-February
- We are maintaining an extraordinary effort but still we have a long way to go