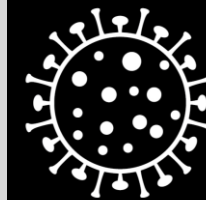


IEMAG briefing

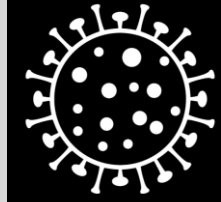
4 February 2021



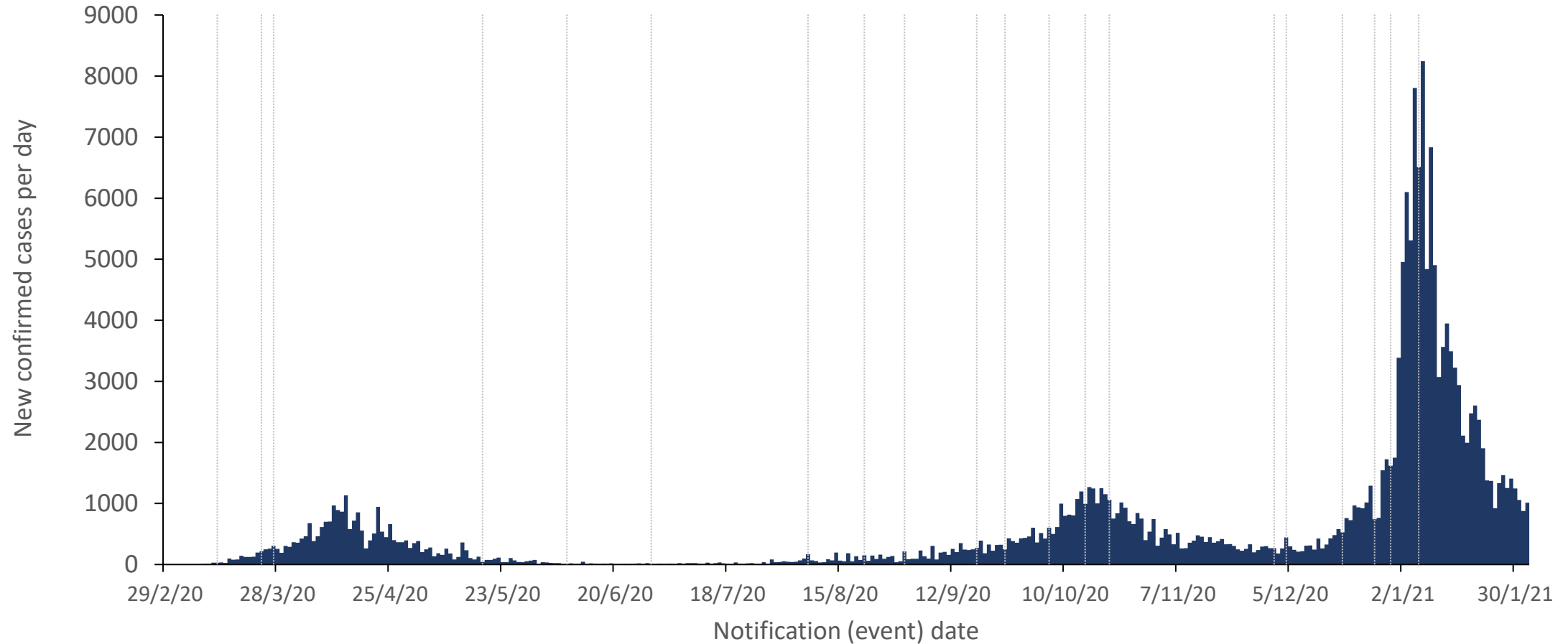
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Confirmed cases each day

Daily case count since the beginning of the epidemic



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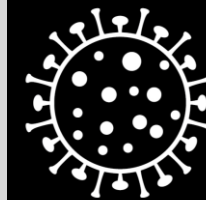
Daily count of the number of laboratory confirmed new cases by date on which they were notified to HPSC. Tests outsourced to German laboratory in April backdated, using the specimen collection date, to the date they would have been confirmed if tested in a timely manner. The vertical dashed lines indicate 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 has plateaued and 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	Daily count 4 Feb
Cases confirmed per day	859 <small>18-04</small>	8.7 <small>25-06</small>	1158 <small>21-10</small>	262 <small>12-12</small>	6520 <small>10-01</small>	5436	2891	1699	1188	1318
14-day incidence <i>per 100,000 population</i>	212 <small>19-04</small>	3.0 <small>04-07</small>	306 <small>26-10</small>	79 <small>09-12</small>	1532 <small>15-01</small>	1449	1223	674	424	397
Hospital in-patients	862 <small>17-04</small>	9 <small>02-08</small>	333 <small>01-11</small>	198 <small>16-12</small>	1949 <small>24-01</small>	1414	1901	1889	1499	1308
<i>Hospital admissions per day</i>	85 <small>04-04</small>	<1 <small>10-07</small>	27 <small>26-10</small>	11 <small>13-12</small>	158 <small>15-01</small>	146	132	89	68	77
ICU confirmed cases	150 <small>14-04</small>	4 <small>04-08</small>	43 <small>04-11</small>	26 <small>27-12</small>	217 <small>28-01</small>	133	194	217	209	188
<i>ICU admissions per day</i>	14 <small>31-03</small>	<1 <small>03-06</small>	4 <small>03-11</small>	1 <small>16-12</small>	20 <small>17-01</small>	20	19	15	11	5
Deaths confirmed per day	46 <small>22-04</small>	<1 <small>30-07</small>	7 <small>01-12</small>	4 <small>17-12</small>	57 <small>03-02</small>	23	44	50	57	75

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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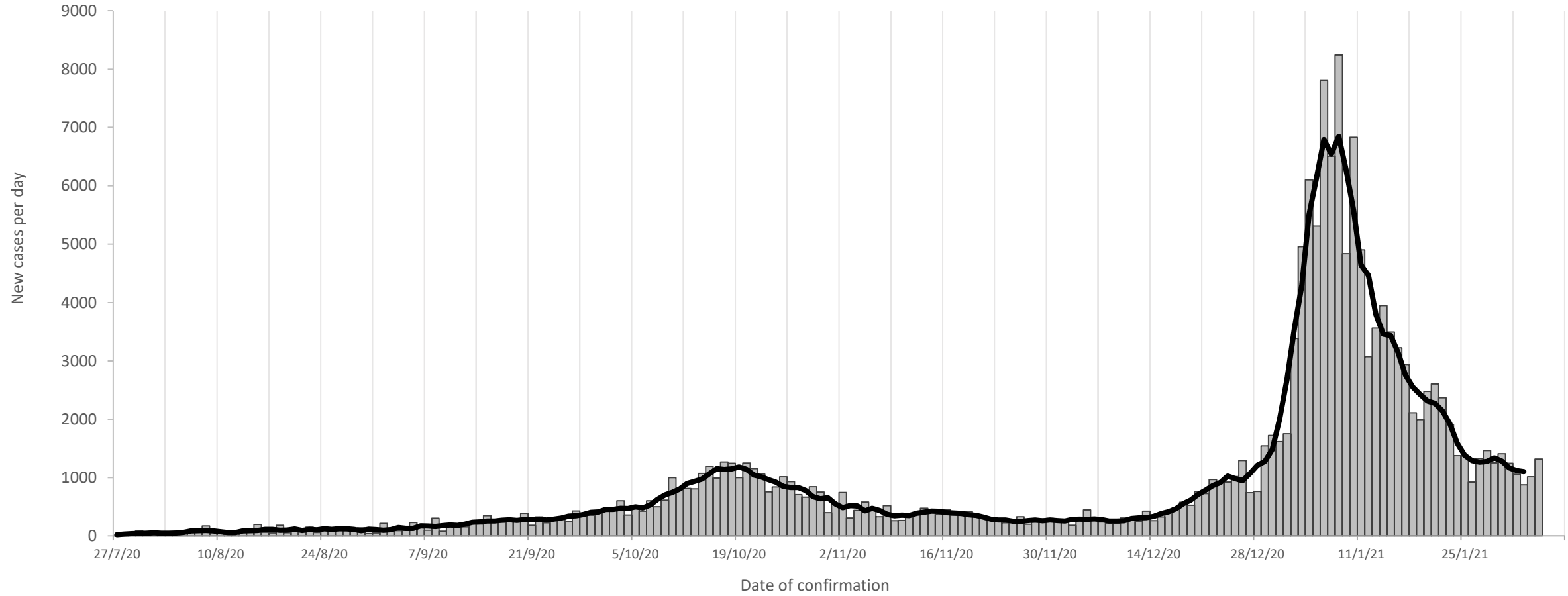
Confirmed cases each day

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 **1102**



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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	6605	15743	45637	25149	14841	8994
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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.

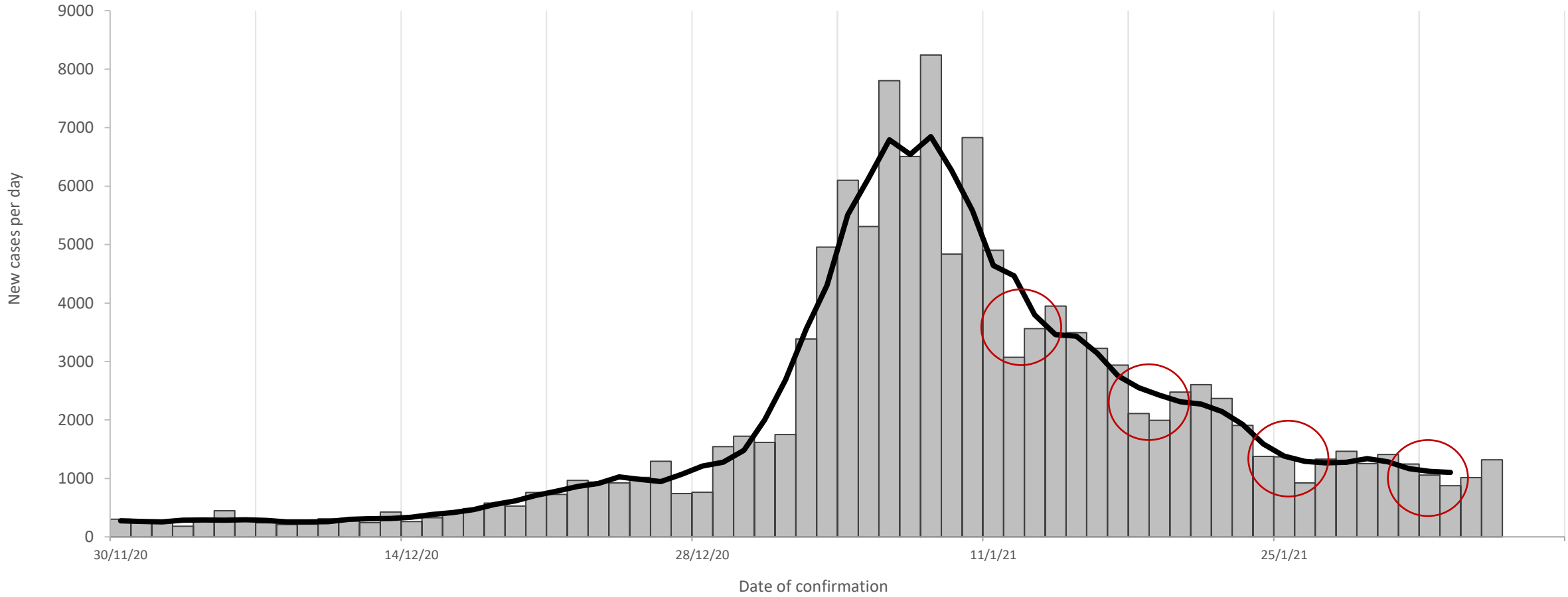
Confirmed cases each day

Strong week-end effects, with lower numbers of people being tested on the weekend, is inflating mid-week case counts so that case numbers appear to plateau during the week



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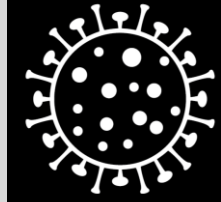
Cases per week: 2028, 1964, 3369, 6605, 15743, 45637, 25149, 14841, 8994



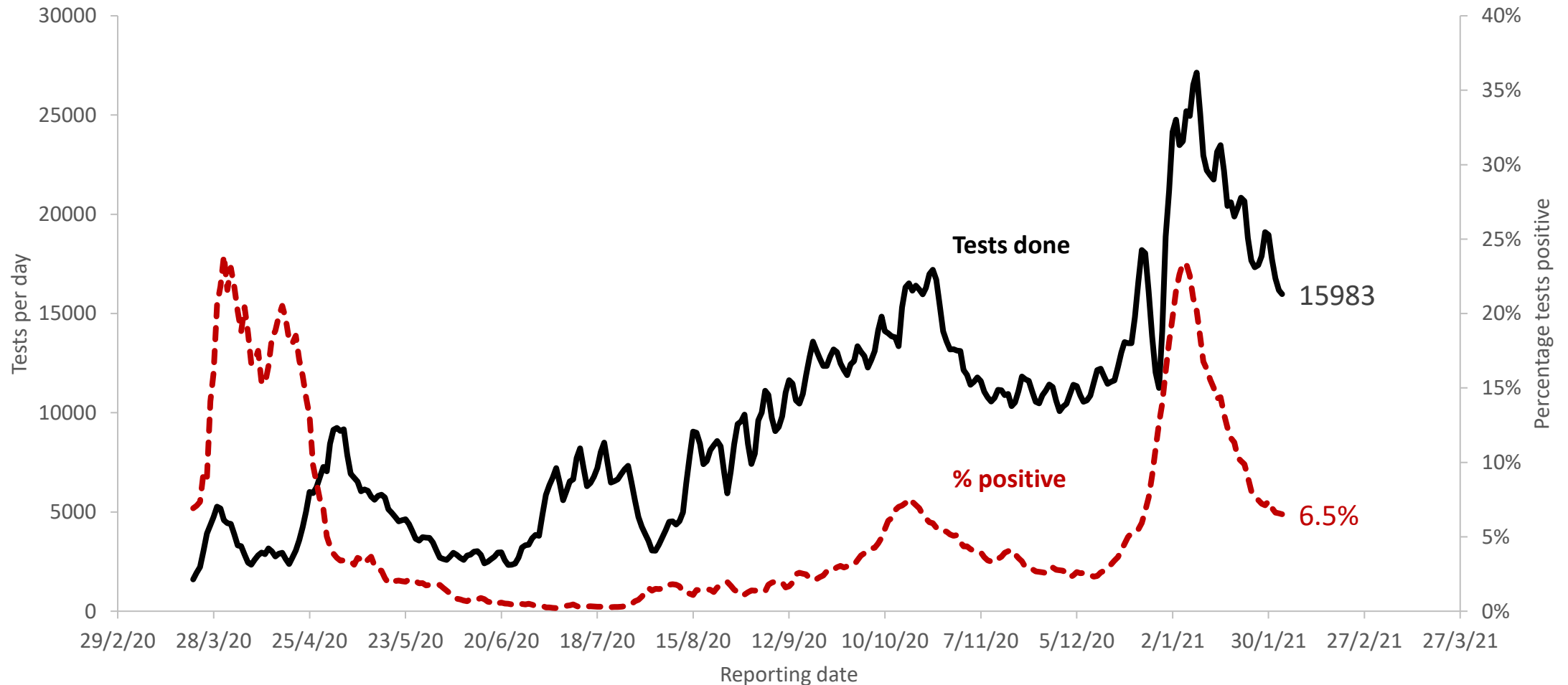
Daily count (bars) 5-day average (line) and weekly counts of the number of laboratory confirmed new cases by date on which they were confirmed by HPSC. Case counts may change due to denotification of cases. Weekly case counts are by notification (event date) and standard epidemiological week.

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 6.5% (5-day average)



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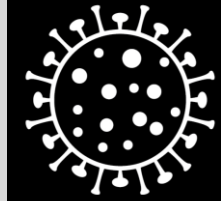
Data 5-day rolling averages, tests outsourced to German laboratory in April backdated using specimen collection date. The aggregate positivity rate should be interpreted with caution, as it includes community referrals, close contacts, mass and serial testing, and hospital testing, and changes in numbers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



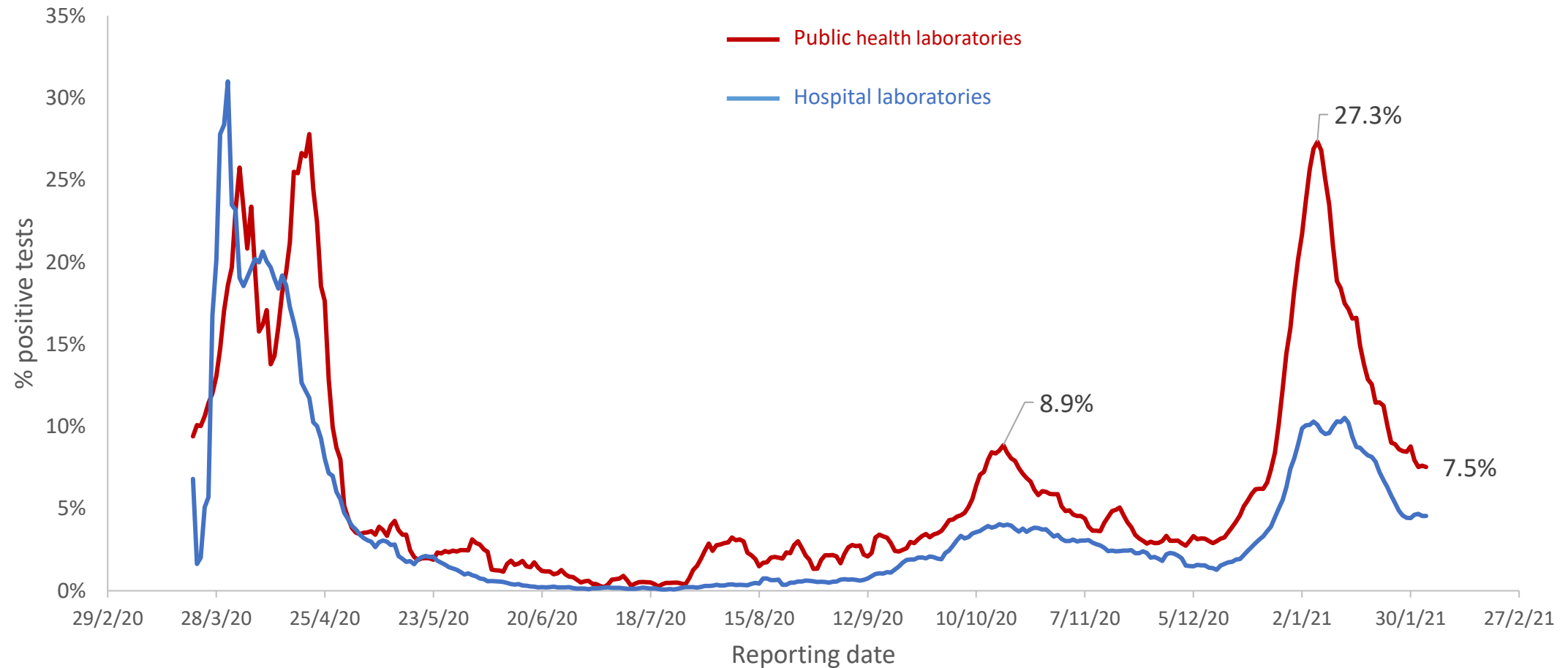
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Test positivity: public health laboratories

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 to 7.5% now.



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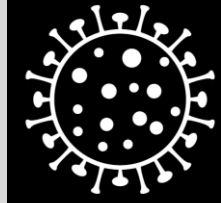
Data 5-day rolling averages of percentage of tests reported positive per day. Public health laboratories are NVRL and associated laboratories, plus Cherry Orchard
Backlog tests outsourced to German laboratory in April are not backdated and are assigned to date reported



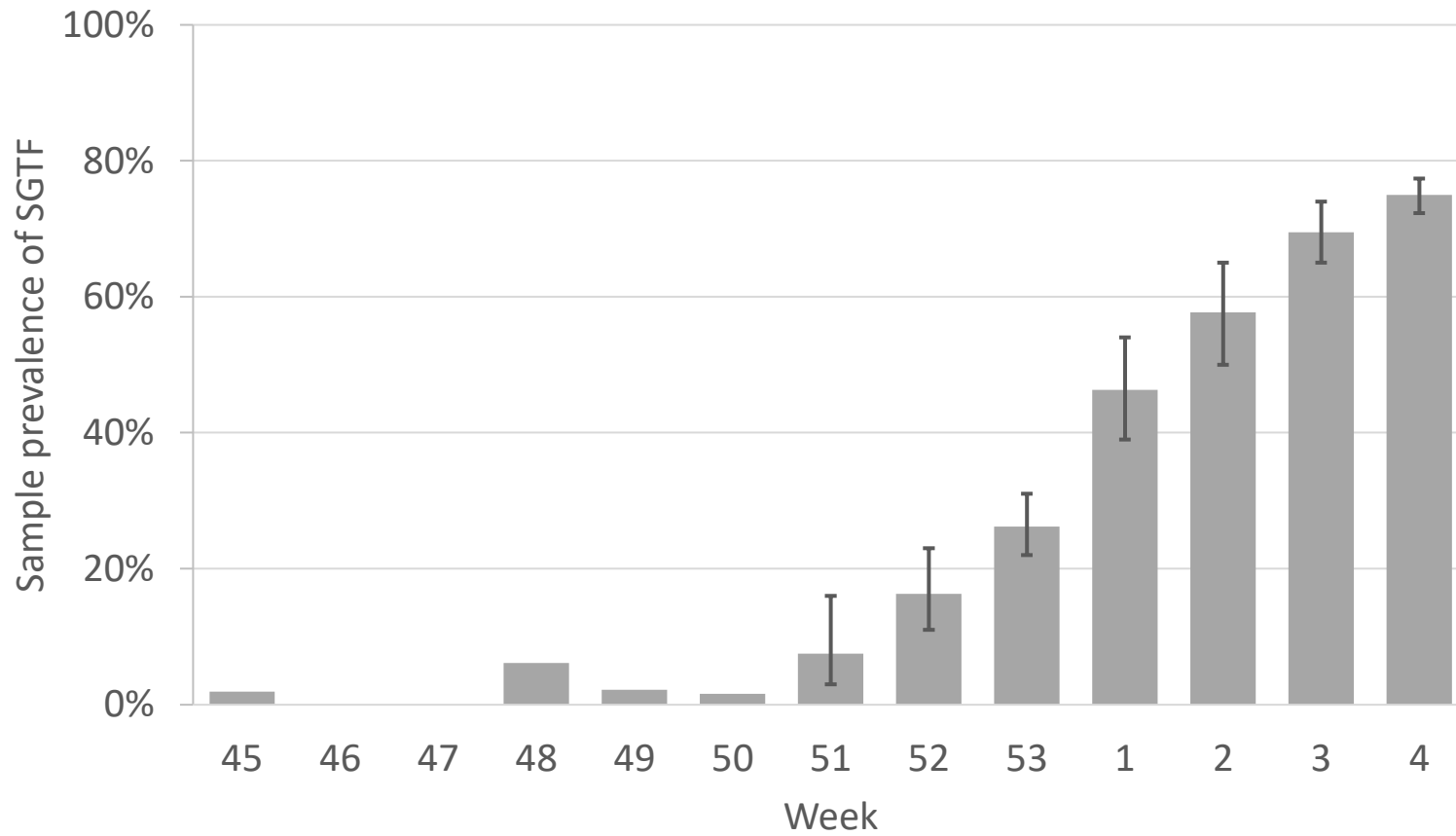
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New (B.1.1.7) variant – S gene target failure

S gene target failure (SGTF) is a marker for the new B.1.1.7 variant. The data are compatible with this variant being introduced, with a number of separate introductions in November and December, and spreading rapidly in late December, at which point it is likely to have begun to contribute to increased transmission. The current suppression may have slowed the path to dominance of the variant.



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WEEK	Number of SGTF variants	Sample size	Sample prevalence
45	1	52	2%
46	0	35	0%
47	0	32	0%
48	3	49	6%
49	1	46	2%
50	2	128	2%
51	6	80	8%
52	29	178	16%
53	111	424	26%
1	87	188	46%
2	90	156	58%
3	330	475	69%
4	833	1111	75%

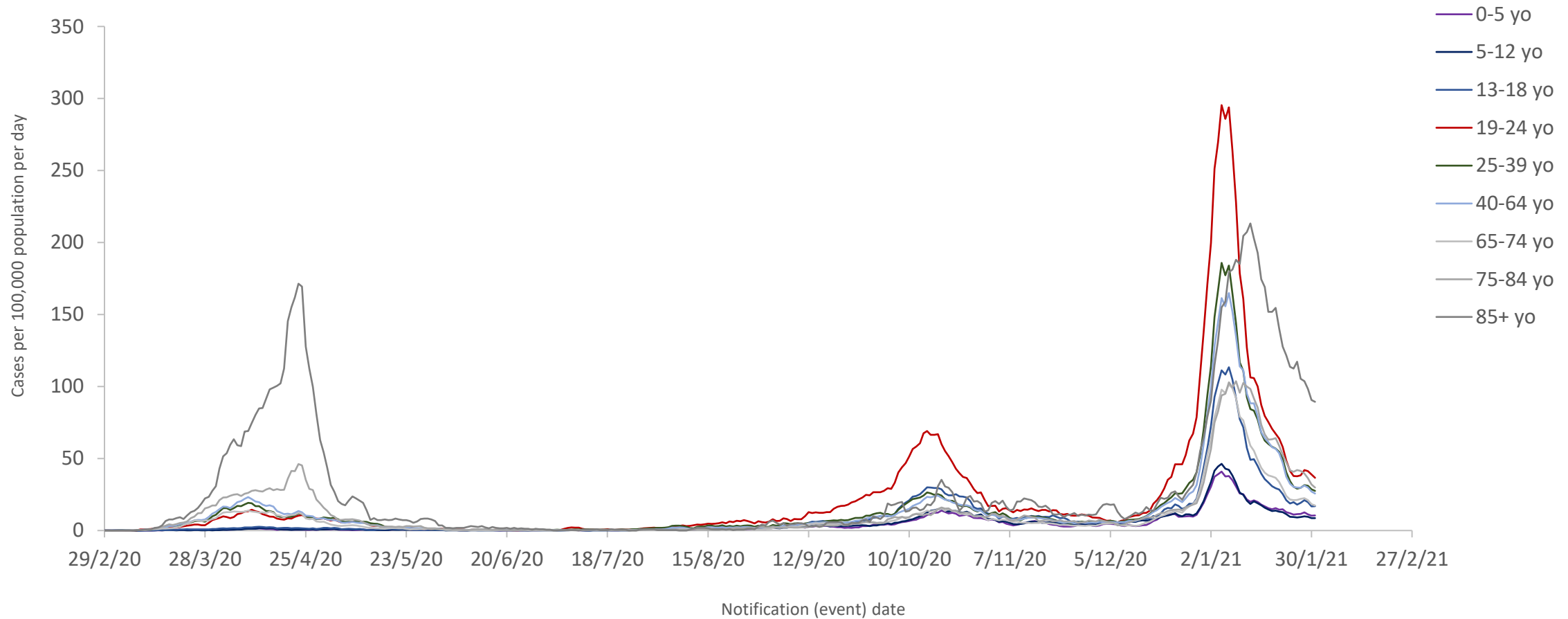
Data from National Virus Reference Laboratory UCD



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Incidence by age group (incl. HCW and LTRC)

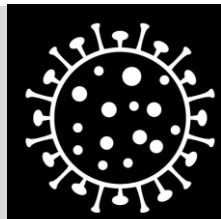
The incidence per 100,000 population is shown for different age cohorts. Incidence rose rapidly across all age groups in December 2020, most markedly in those aged 19-24, and least in those aged 12 and under. Incidence in those aged 65 and older was higher than in the October 2020 surge. Incidence is now decreasing across all age groups but more slowly in those aged 85 and older so that this is now the highest incidence group.



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.

Incidence across different age groups (excluding HCW and LTRC)

Incidence has decreased significantly in younger adults, but remains very high, and is decreasing slowly, in those aged 85 and older, even when cases associated with outbreaks in long-term residential care are excluded



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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	33.9	29.7	22.2	36.1	40.0
49	28.4	37.0	37.7	40.5	33.2	30.0	25.4	29.5	42.9
50	21.4	39.7	44.1	57.4	40.0	35.1	22.5	31.0	23.7
51	51.9	58.5	74.5	128.0	88.3	81.9	54.9	55.0	51.8
52	77.2	76.9	120.0	326.4	178.0	136.6	96.7	97.7	121.4
53	217.2	235.7	510.2	1403.3	762.6	640.7	425.2	349.6	395.2
1	182.8	208.9	569.2	1335.7	795.8	729.6	503.3	450.9	581.7
2	130.9	127.0	304.4	587.5	424.2	429.8	307.6	430.5	626.2
3	93.8	80.9	168.7	337.9	267.5	257.2	178.0	271.8	498.9
4	73.9	62.1	127.8	238.5	162.2	156.8	125.0	177.6	341.9

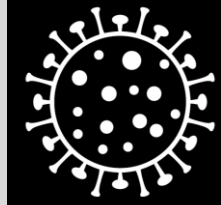
Heat map shows age-specific incidence (cases per week per 100,000 population). Healthcare workers and cases associated with outbreaks in long-term residential care are excluded, so that the analysis reflects the pattern of cases in the community. Cases dated by specimen collection date.



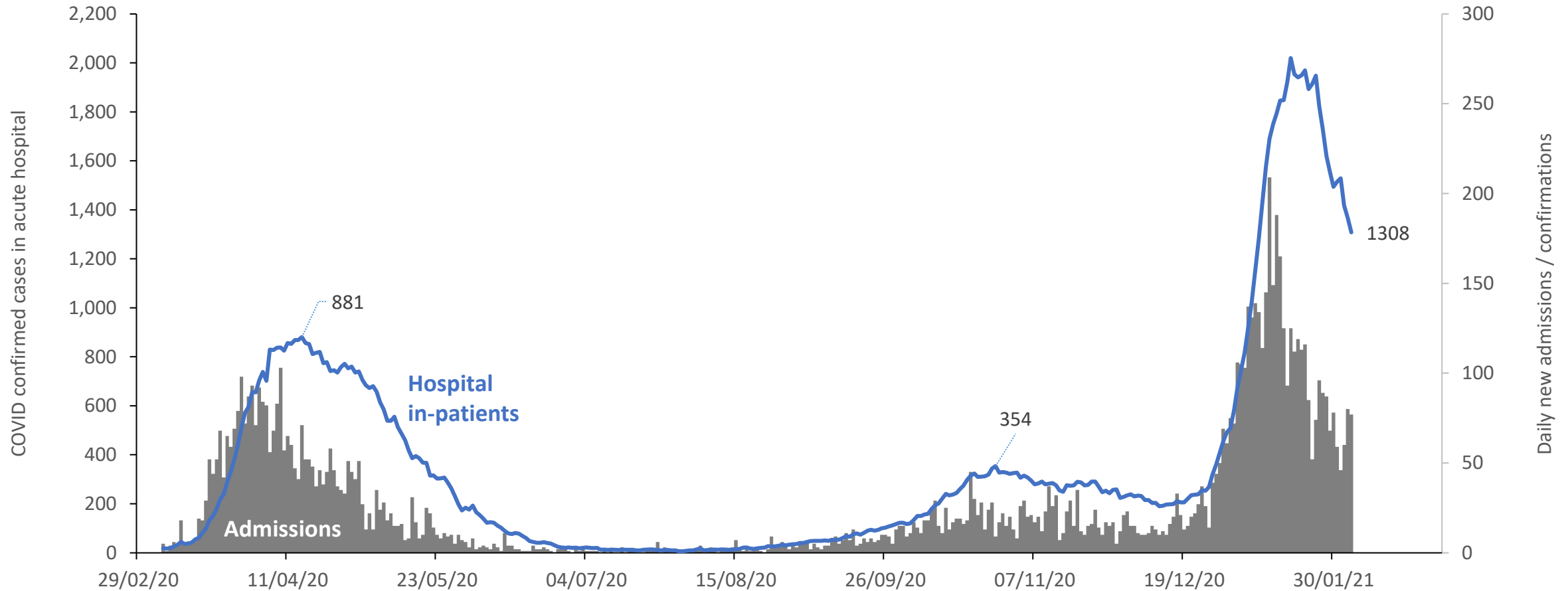
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Confirmed cases in acute hospitals

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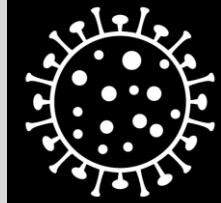
Hospital in-patients: Daily count of number of COVID-19 confirmed cases in acute hospitals. Daily admissions: New COVID-19 confirmed admissions and new laboratory confirmations of suspected cases in preceding 24 hours. Data from HSE PMIU-SDU, 8am census.



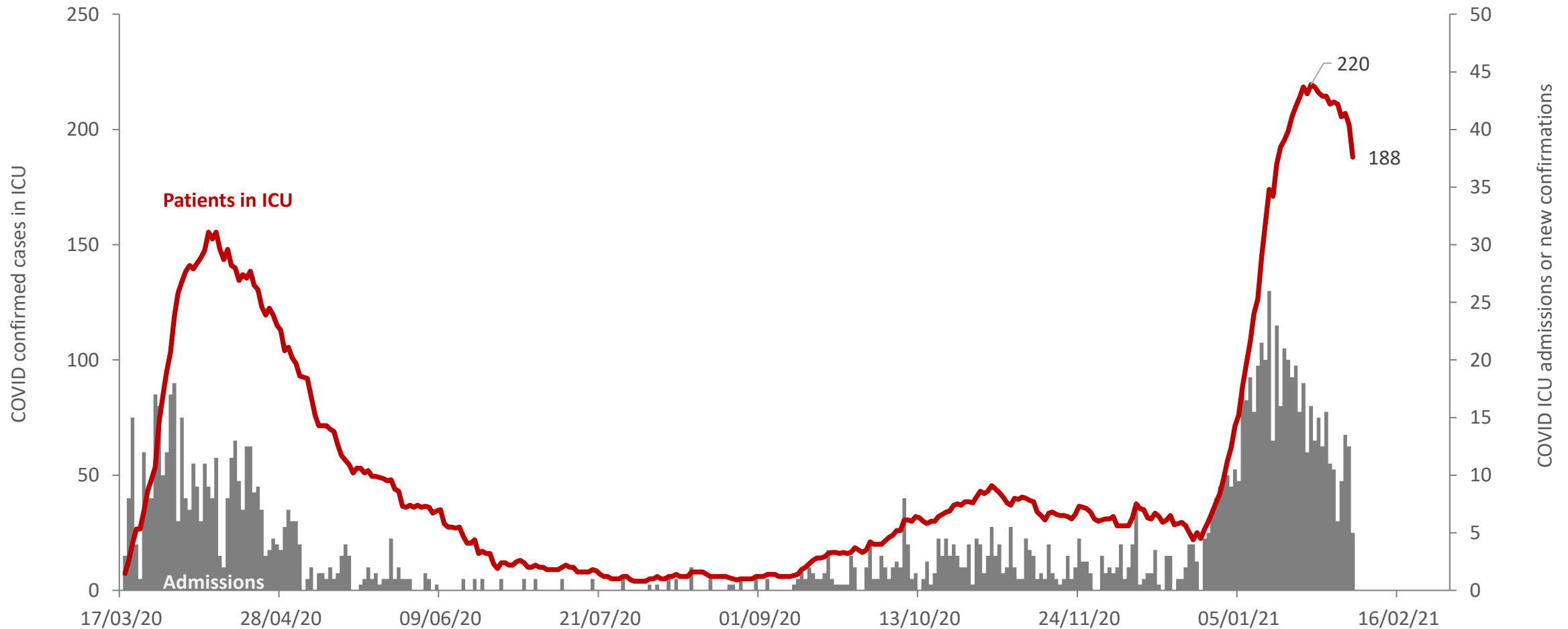
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Confirmed cases in intensive care

The number of people in ICU with confirmed SARS-CoV-2 infection remains very high but is now starting to decrease; the number of new admissions per day has been decreasing steadily over the last two weeks



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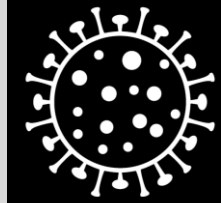


Patients in ICU: Daily count of number of COVID-19 confirmed cases in ICU. Daily admissions: new COVID-19 confirmed admissions to ICU and new laboratory confirmations of suspected cases in ICU. Average of morning and evening census from NOCA

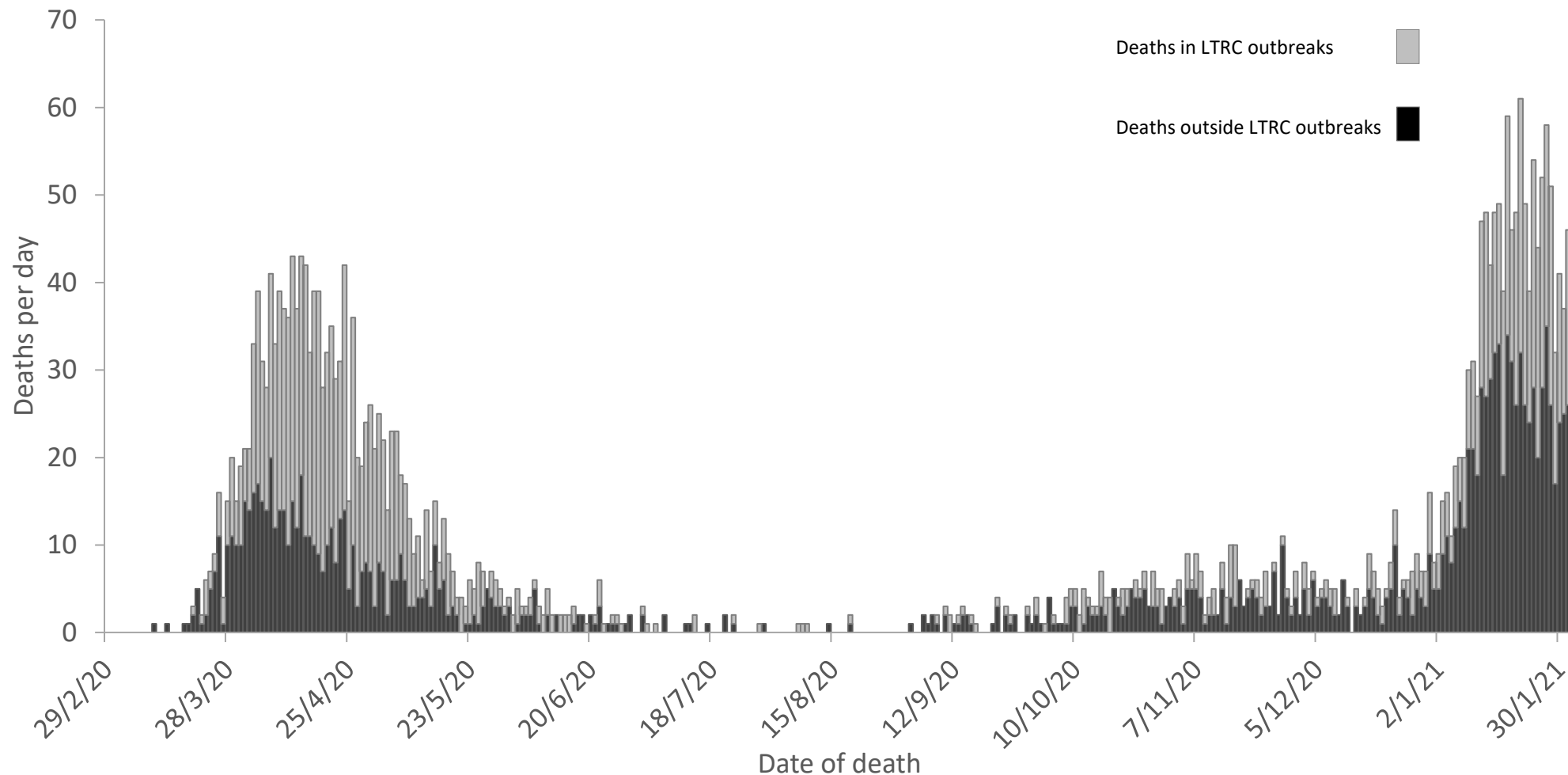


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Deaths per day



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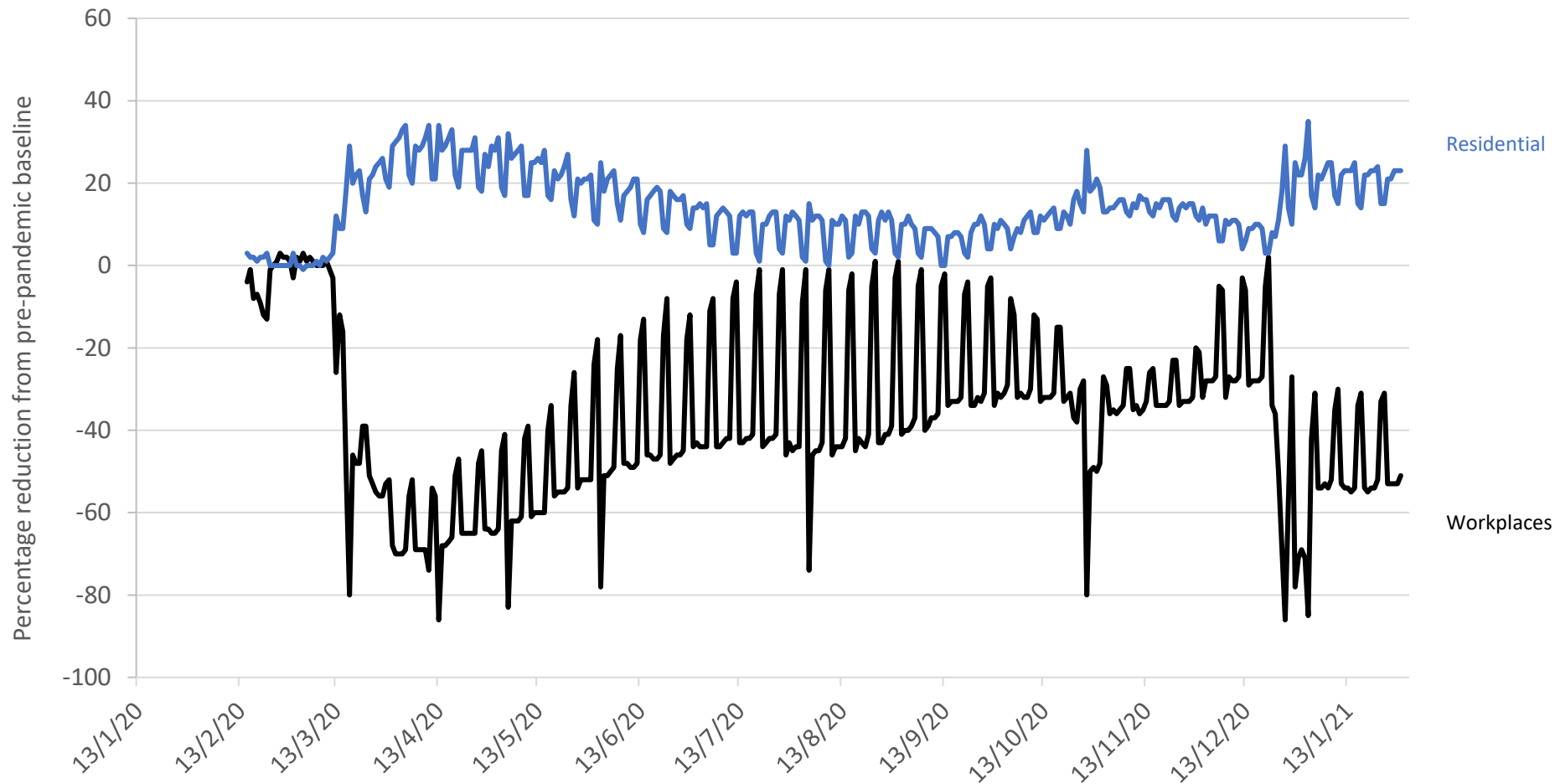
Deaths per day, separated into those associated with outbreaks in long-term residential care and those not associated with such outbreaks. Deaths with laboratory confirmed SARS-CoV-2 only



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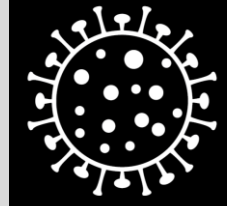
Google community mobility

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)

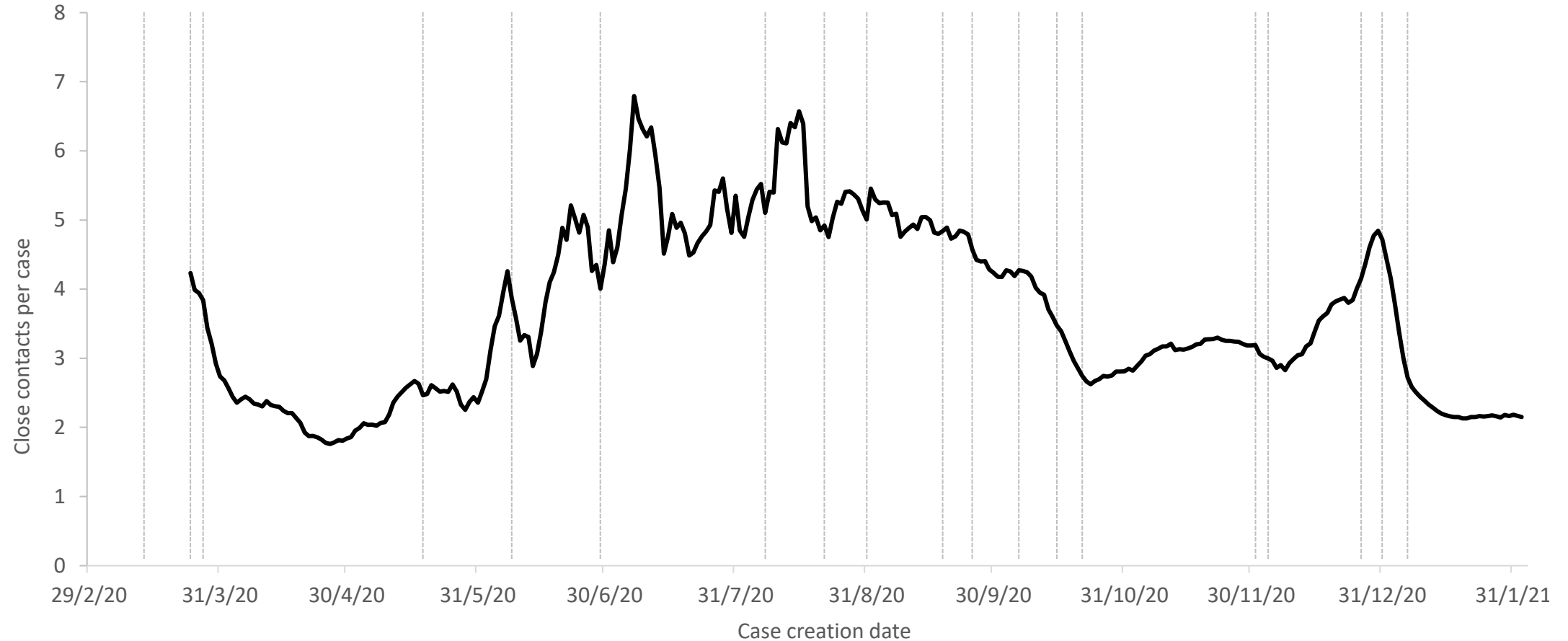


Close contacts of adult confirmed cases

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 (2.2 contacts)



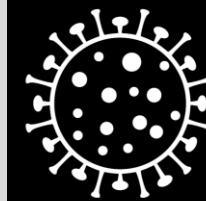
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The average number of close contacts per confirmed case. Data from COVID-19 Care Tracker (CCT). Cases dated by case creation date. Cases (but not contacts) aged 18 and younger are excluded. Data are 7-day trailing averages except for the months of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

Estimates of effective reproduction number (R)

Reproduction number is below 1.0, estimated at 0.5 – 0.8



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Method	Estimate	95% confidence interval
SEIR model-inferred	0.36	0.15 – 0.61
Bayesian model	0.57	0.23 – 1.02
Time-dependent R	0.59	0.52 – 0.66
GAM estimate 26 Jan 2021	0.74	0.61 – 0.86
GAM estimate 2 Feb 2021	0.55	0.41 – 0.68

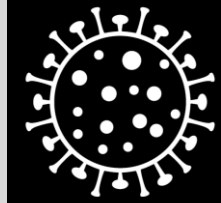
Estimates generated 3 February 2021, refer to IEMAG technical notes for methodology. Estimates are unreliable when case numbers are low or variable. SEIR-inferred estimate is slow to respond to changes in R. The time-dependent R estimate lags behind other estimates. These R estimates relate to viral 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.



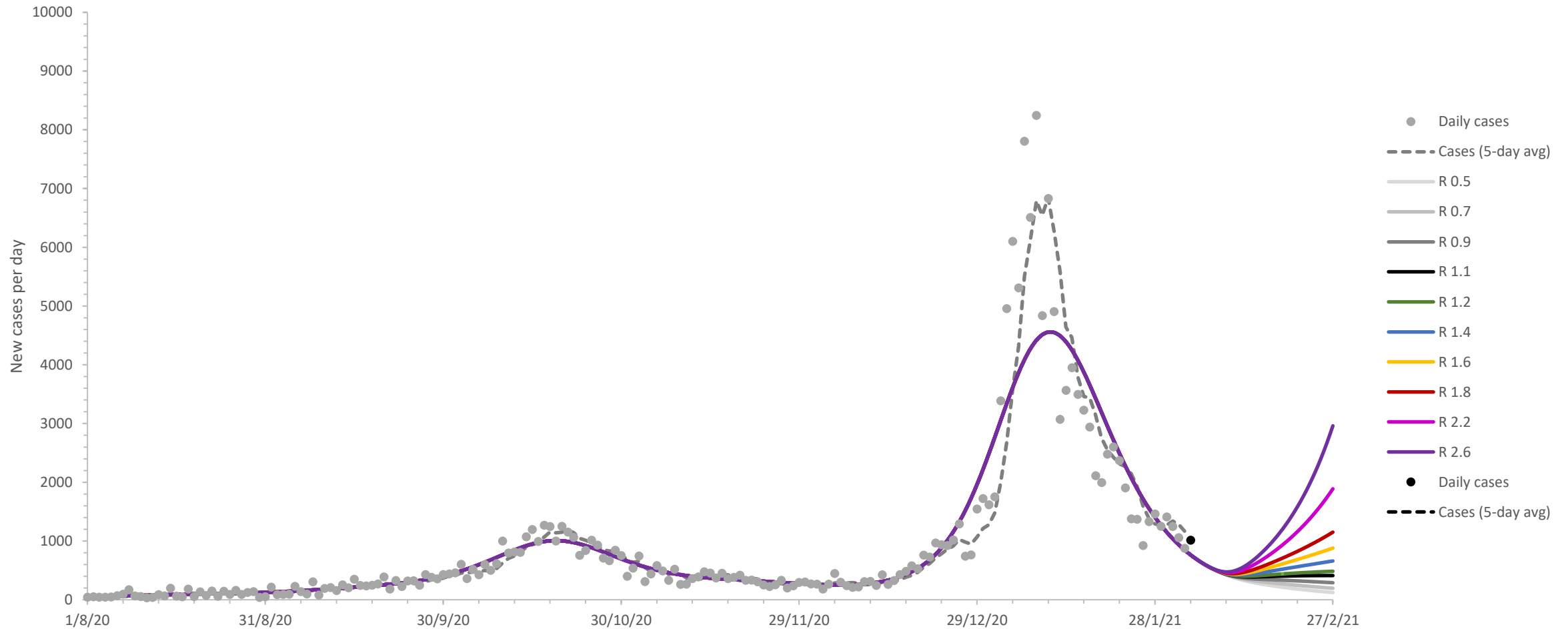
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What do our models tell us?

Model calibrated to case data until **3 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



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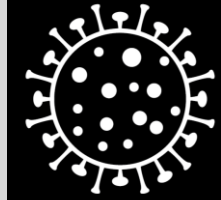


Model projections of the number of new cases per day. The model is calibrated with daily case counts to 3 February 2021 (grey); R varies between 0.5 and 2.6 thereafter. Case counts from 27 January onwards are shown in black. This is a scenario model only. It is not a forecast, nor does it imply or anticipate any future policy decision.



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Situation analysis 4 February 2021



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- **Incidence** is falling but **remains high** with some concern incidence may be plateauing
- Cases (5-day average) **1102 cases per day**; 14-day incidence **397 per 100,000**
 - High incidence in those **aged 85 and older**
- Sustained suppression of transmission
 - Rate of decline continues at -6 to -9%, halving time 8-12 days, **R estimated at 0.5 – 0.8**
- **Indicators of mobility and contact remain low**
- **Numbers in hospital decreasing, numbers in ICU starting to decrease**
 - New admissions decreasing
 - 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
 - equivalent to mid-May 2020 if we allow for under-ascertainment at that time
- **Testing of close contacts** will increase case numbers in the coming days
- We are maintaining an extraordinary effort but still we have a long way to go
 - **we need to prevent a plateau and maintain full suppression for several weeks, driving case numbers down**