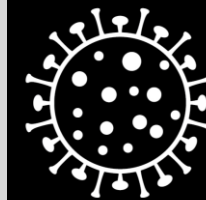


IEMAG briefing

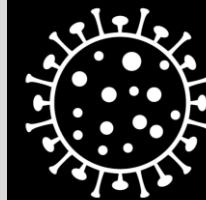
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Cases, numbers in hospital and intensive care

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



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	Apr 2020	Summer 2020	Oct 2020	Dec 2020	Jan 2021	20 Jan	27 Jan	3 Feb	10 Feb	17 Feb	Daily count 17 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>	2891	1699	1188	943	816	901
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>	1223	674	424	312	261	253
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>	1901	1889	1499	1188	907	771
<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>	132	89	68	52	45	48
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>	194	217	209	179	163	151
<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>	19	15	11	6	8	8
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>	44	50	57	41	35	47

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.



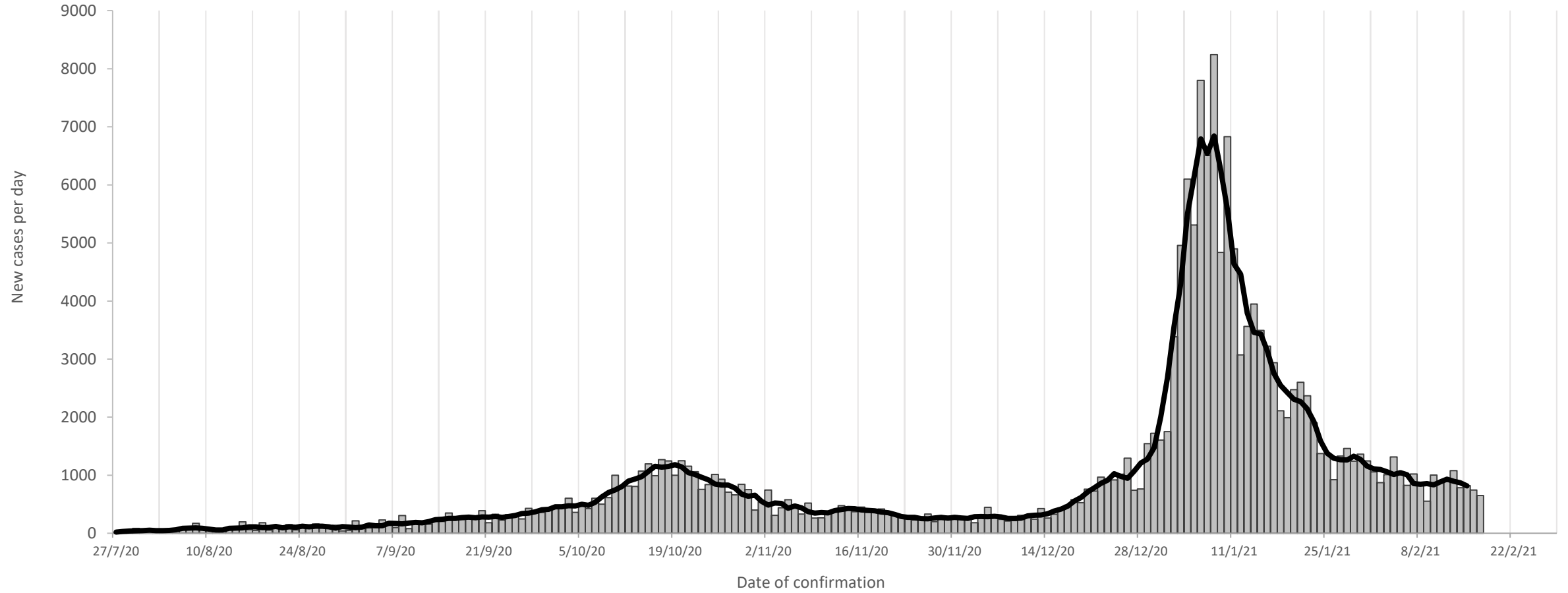
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Confirmed cases each day

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 **780**



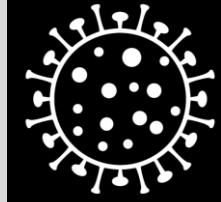
Cases per week	284	540	546	711	796	912	1303	1947	2059	3031	4457	7398	7073	4838	3424	2583	2580	1798	2028	1964	3369	6602	15729	45635	25143	14833	8938	7156	6041
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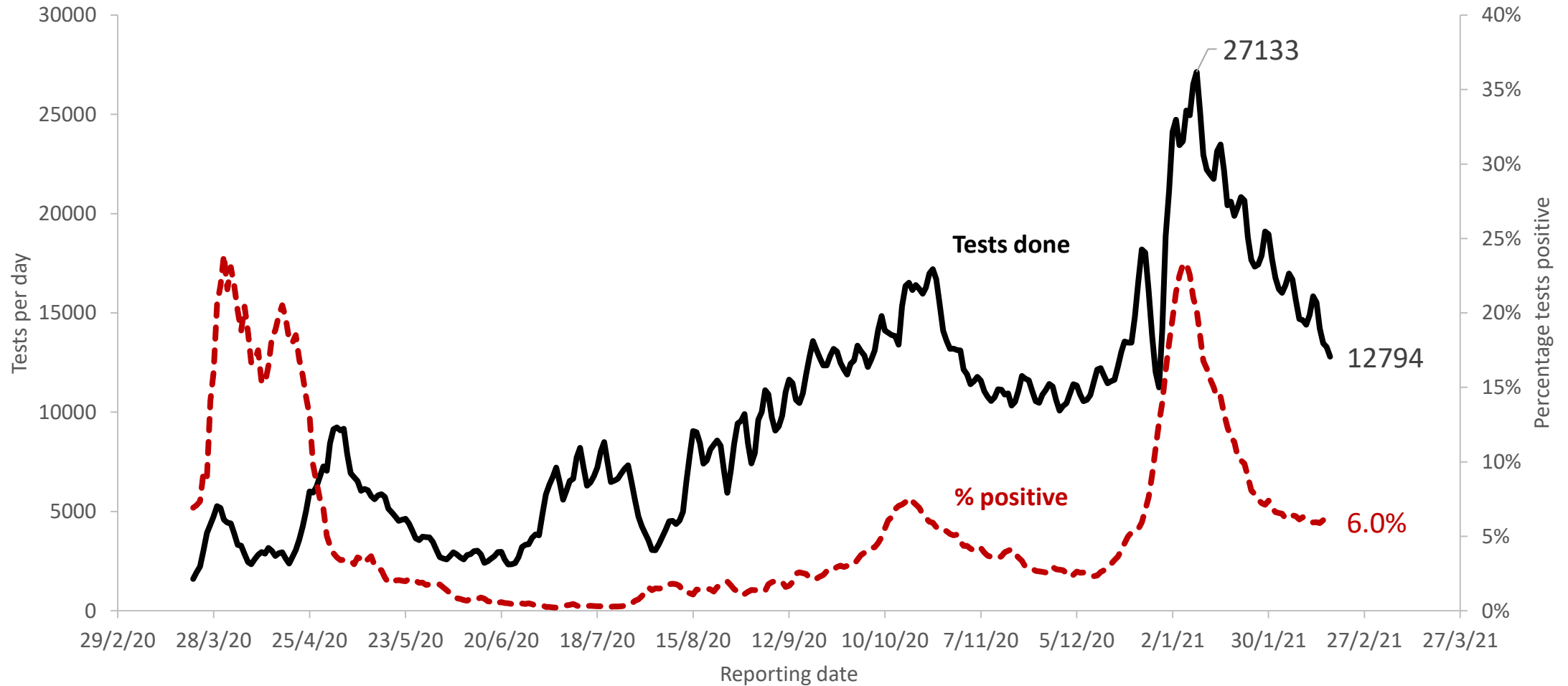
Daily count (bars) 5-day average (line) and weekly counts of the number of laboratory confirmed new cases by date on which they were confirmed by HPSC. Case counts may change due to denotification of cases. Weekly case counts are by notification (event) date and standard epidemiological week.

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 near 6%



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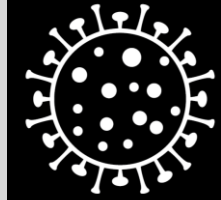
Data 5-day rolling averages, tests outsourced to German laboratory in April backdated using specimen collection date. The aggregate positivity rate should be interpreted with caution, as it includes community referrals, close contacts, mass and serial testing, and hospital testing, and changes in numbers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



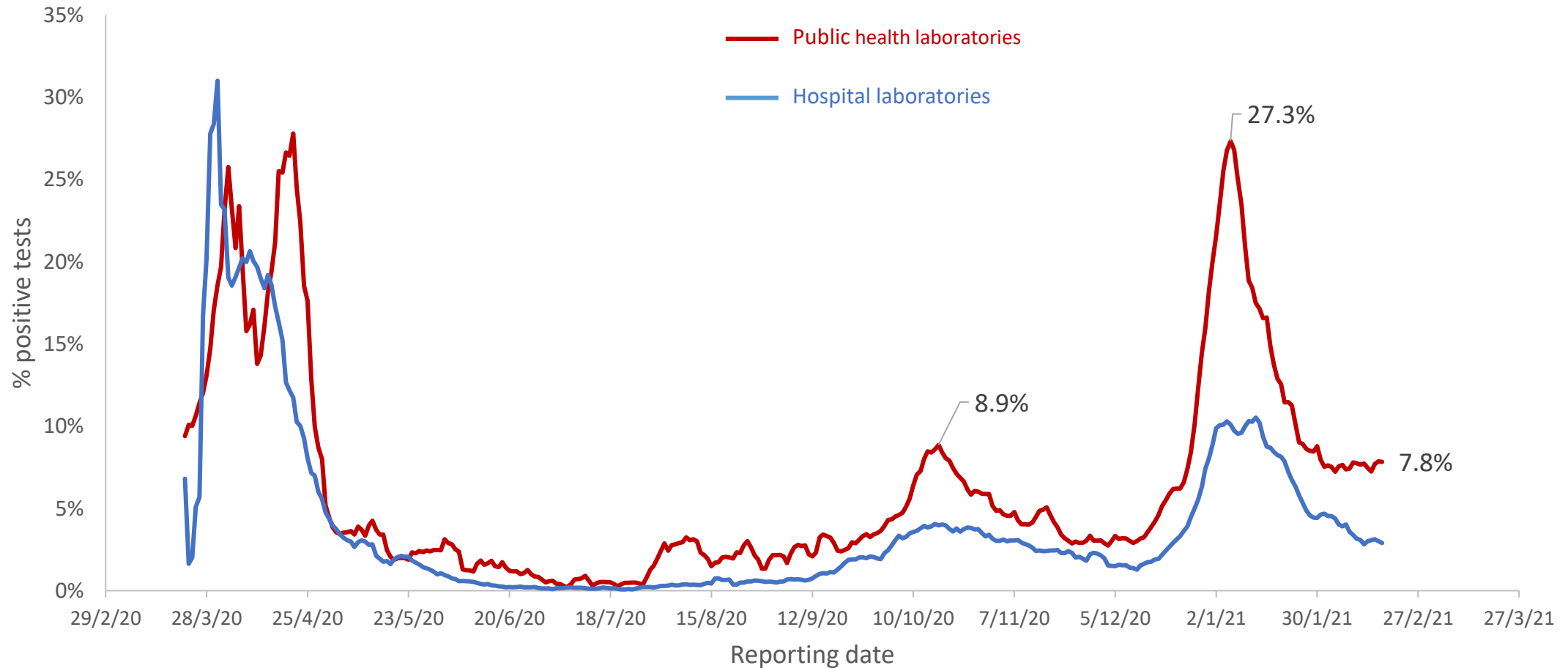
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Test positivity: public health laboratories

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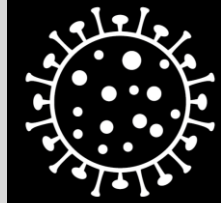
Data 5-day rolling averages of percentage of tests reported positive per day. Public health laboratories are NVRL and associated laboratories, plus Cherry Orchard
Backlog tests outsourced to German laboratory in April are not backdated and are assigned to date reported



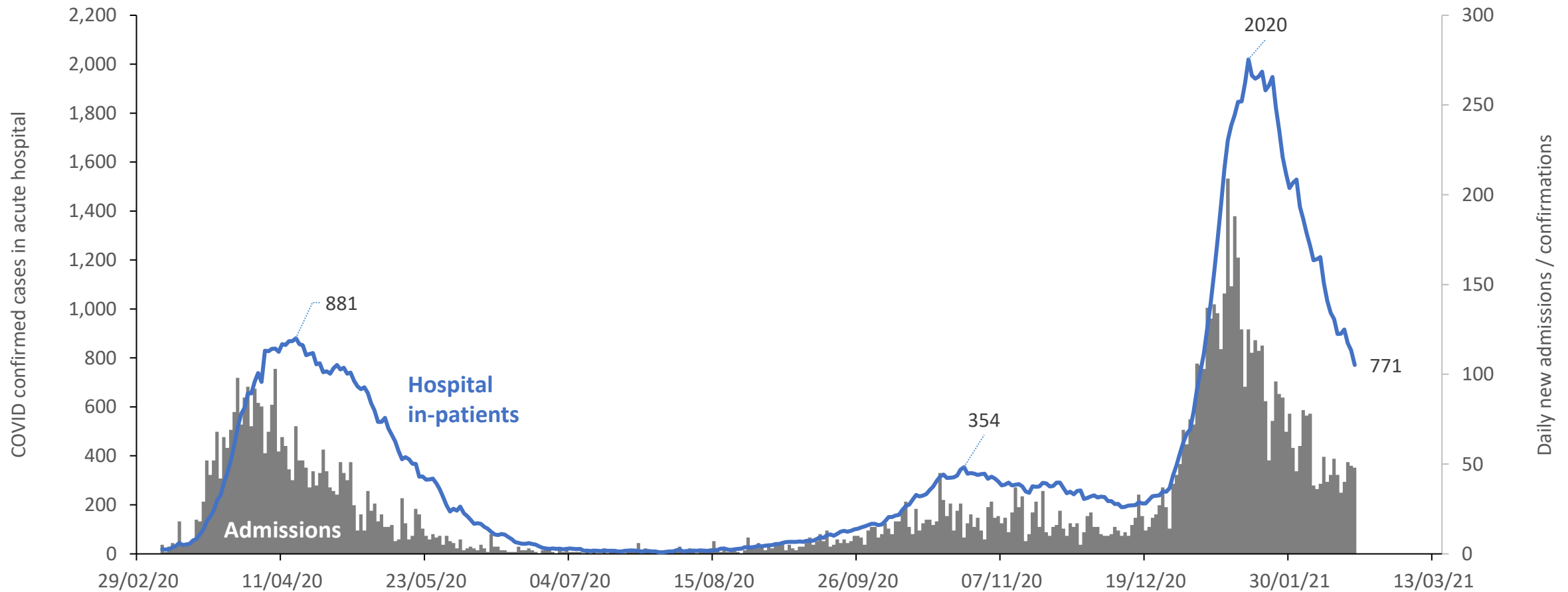
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Confirmed cases in acute hospitals

The number of people in hospital with confirmed SARS-CoV-2 infection. The number of people in hospital continues to fall, but the number of admissions and newly confirmed cases in hospital per day has plateaued at 40-50 per day



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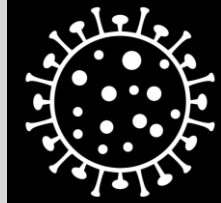
Hospital in-patients: Daily count of number of COVID-19 confirmed cases in acute hospitals. Daily admissions: New COVID-19 confirmed admissions and new laboratory confirmations of suspected cases in preceding 24 hours. Data from HSE PMIU-SDU, 8am census.



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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 decreasing slowly.



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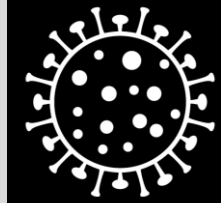


Patients in ICU: Daily count of number of COVID-19 confirmed cases in ICU. Daily admissions: new COVID-19 confirmed admissions to ICU and new laboratory confirmations of suspected cases in ICU. Average of morning and evening census from NOCA

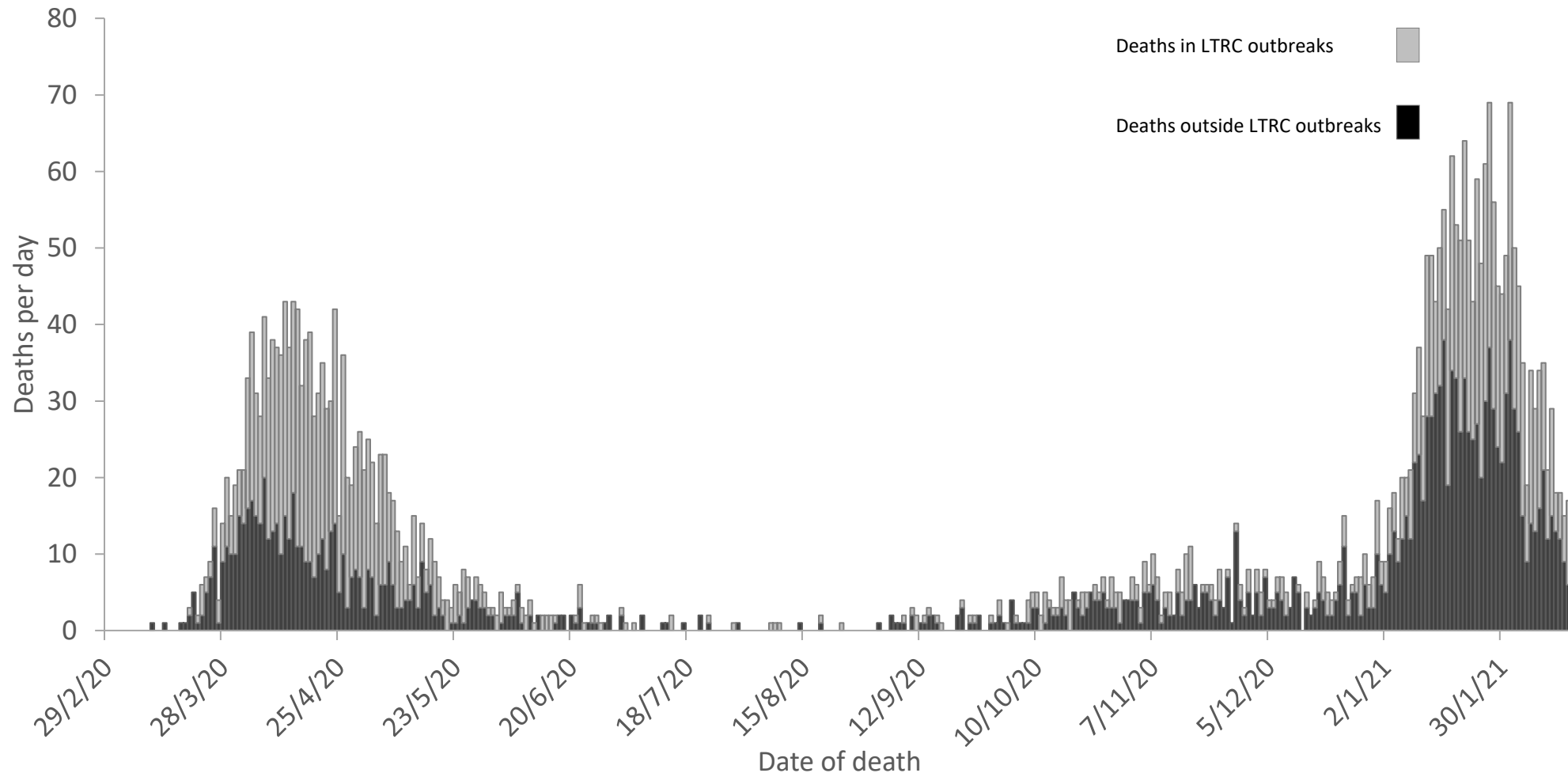


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Deaths per day



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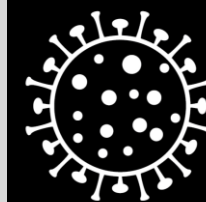
Deaths per day, separated into those associated with outbreaks in long-term residential care and those not associated with such outbreaks. Deaths with laboratory confirmed SARS-CoV-2 only



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Incidence across different age groups (excluding HCW and LTRC)

Incidence has decreased across most adult age groups, especially older adults. The incidence in those aged 18 and under has stabilised or increased with increased detection of asymptomatic infections in close contacts, and incidence in those aged 19-24 may have started to increase



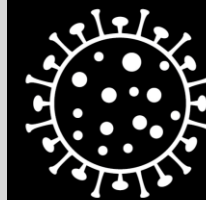
Week	Age band								
	0-4	5-12	13-18	19-24	25-39	40-64	65-74	75-84	85+
48	23.2	31.3	45.5	66.7	33.9	29.6	22.2	36.1	40.0
49	28.4	37.0	37.7	40.5	33.2	30.1	25.4	29.5	42.9
50	21.4	39.9	44.1	57.4	39.9	35.1	22.5	31.0	22.2
51	51.9	58.5	74.5	128.3	88.1	81.1	54.3	55.5	50.3
52	77.5	76.9	120.0	326.1	176.5	135.4	96.1	94.7	122.9
53	217.8	236.7	514.0	1404.6	763.3	638.2	426.0	349.6	389.3
1	183.7	208.9	569.7	1332.4	794.1	724.5	500.9	448.8	568.4
2	130.9	126.8	301.9	582.4	418.8	423.3	302.8	411.2	580.3
3	93.8	80.9	169.5	330.3	257.6	246.4	170.5	253.4	429.3
4	73.3	60.7	127.3	231.9	154.7	147.9	121.3	163.9	284.2
5	77.5	72.9	127.0	210.4	129.9	125.6	86.2	121.1	235.4
6	92.0	85.1	124.9	223.4	119.5	103.4	69.6	93.6	133.2

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.

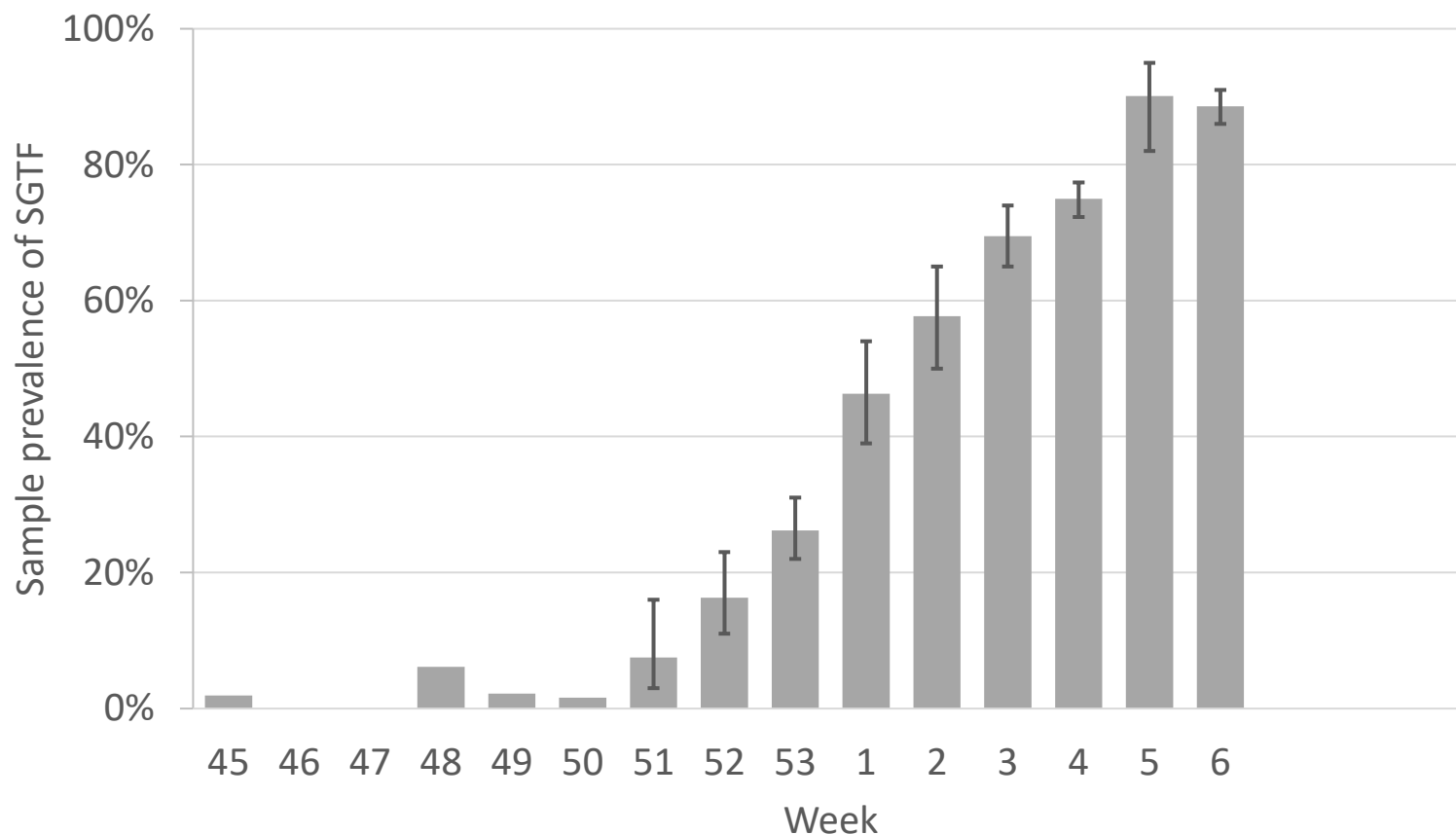


New (B.1.1.7) variant – S gene target failure

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. It is now established as the dominant variant



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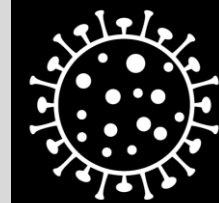


WEEK	Number of SGTF variants	Sample size	Sample prevalence
45	1	52	2%
46	0	35	0%
47	0	32	0%
48	3	49	6%
49	1	46	2%
50	2	128	2%
51	6	80	8%
52	29	178	16%
53	111	424	26%
1	87	188	46%
2	90	156	58%
3	330	475	69%
4	833	1111	75%
5	82	91	90%
6	762	860	89%

Data from National Virus Reference Laboratory UCD

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, while it remains very low it is increasing slowly (from 2.1 to 2.4)



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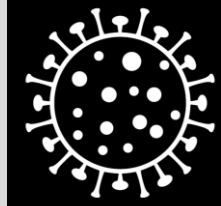
The average number of close contacts per confirmed case. Data from COVID-19 Care Tracker (CCT). Cases dated by case creation date. Cases (but not contacts) aged 18 and younger are excluded. Data are 7-day trailing averages except for the months of June – August where a 21-day trailing average is used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



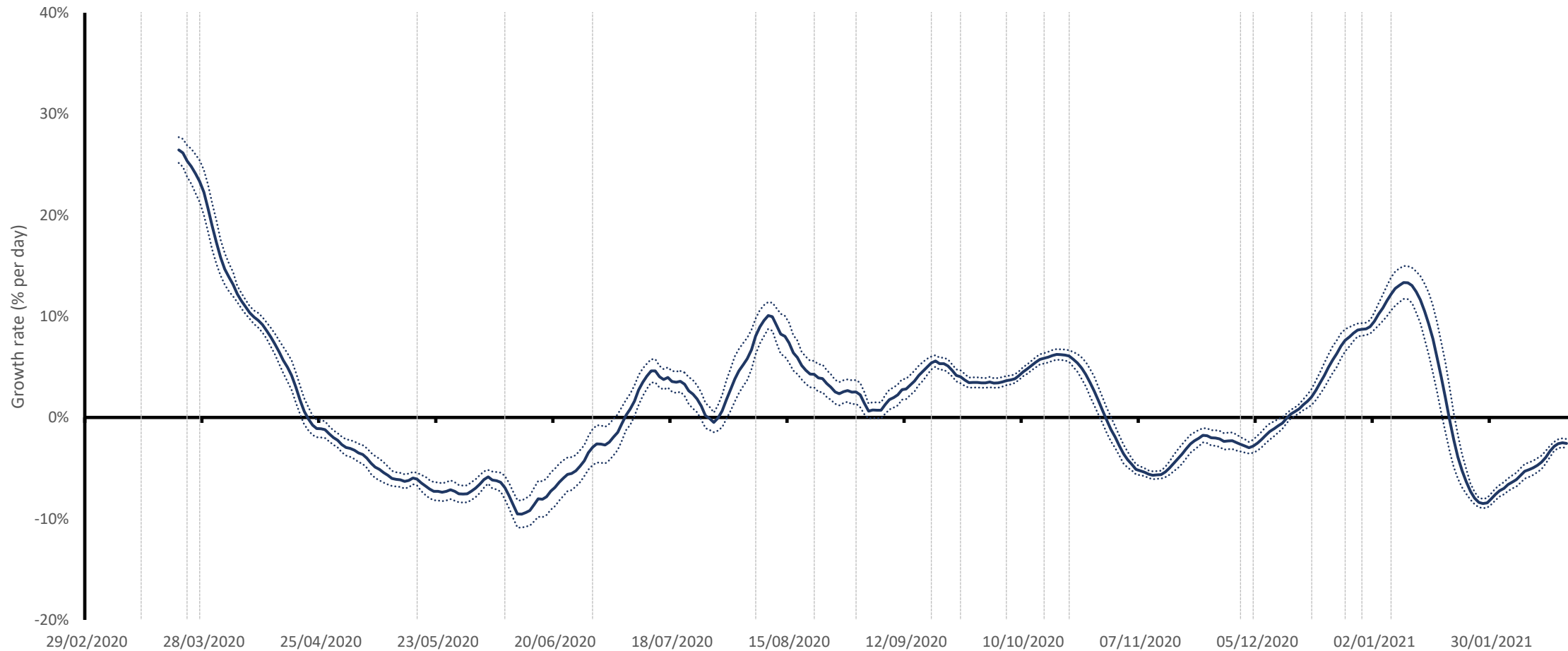
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Growth rate for case numbers

Growth rate peaked at 13% per day over the 21-day period up to 10 January 2021. While case numbers decreased very rapidly in January (-6 to -10% per day) case numbers are now decreasing more slowly at -2% to -4% per day



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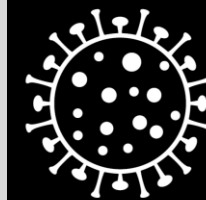
Growth rate calculated as the average growth rate over a 21-day trailing window, with 95% credible interval; cases dated by notification (event) date.



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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 0.65 – 0.85



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Method	Estimate	95% confidence interval
SEIR model-inferred	1.30	0.98 – 1.79
Bayesian model	0.78	0.46 – 1.37
Time-dependent R	0.79	0.73 – 0.84
GAM estimate 9 Feb 2021	0.77	0.63 – 0.90
GAM estimate 16 Feb 2021	0.66	0.51 – 0.82

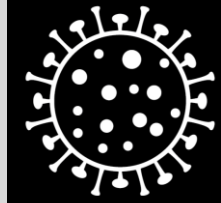
Estimates generated 17 February 2021, refer to IEMAG technical notes for methodology. Estimates are unreliable when case numbers are low or variable. SEIR-inferred estimate is slow to respond to changes in R. The time-dependent R estimate lags behind other estimates. These R estimates relate to viral 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.



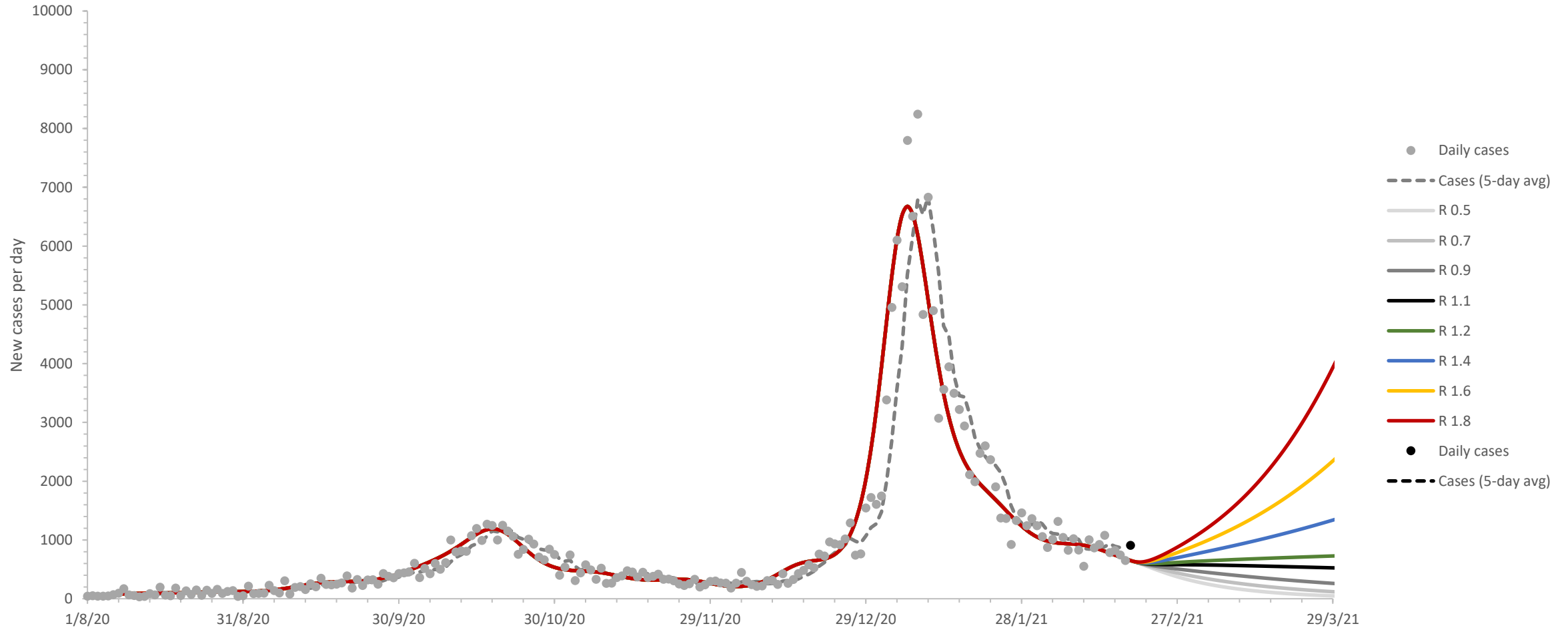
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What do our models tell us?

Model calibrated to case data until *17 February 2021*, R varies over a wide range thereafter but it is assumed R has begun to change over the last 10 days; we would expect case numbers to track model estimates for R between 0.5 and 0.9, with potentially 350-500 cases per day by the end of February 2021



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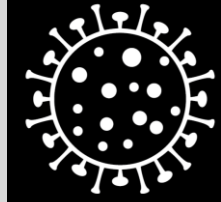


Model projections of the number of new cases per day. The model is calibrated with daily case counts to 17 February 2021 (grey); R varies between 0.5 and 2.6 thereafter. Case counts from 18 January onwards are shown in black. This is a scenario model only. It is not a forecast, nor does it imply or anticipate any future policy decision.



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Situation analysis 17 February 2021



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- Incidence continues to fall but the rate of decline has slowed
- Cases (5-day average) **816 cases per day**; 14-day incidence **253 per 100,000**
 - Incidence in those **older adults** is **decreasing**
 - Testing of close contacts increasing the number of asymptomatic cases with apparent increase in incidence in those aged 18 and younger
 - Incidence in **young adults** aged 19-24 may be **starting to increase**
- Case numbers, test positivity and hospital admissions appear to be **plateauing**
- B.1.1.7 variant accounts for 90% of cases with increased transmissibility -attack rates at 33% in household settings
- Public Health response remains constrained
- We are maintaining suppression of transmission but it is precarious
 - Rate of decline now at -2 to -4%, halving time 18-35 days, **R estimated at 0.65 – 0.85**
- Indicators of **mobility and contact** remain low but are **drifting upwards**
- **Numbers in hospital decreasing, numbers in ICU starting to decrease**
 - Healthcare-acquired infections and cases in LTRC decreasing
 - Admissions to hospital may have plateaued
- **High mortality** but may be stabilizing
- A **fundamental concern** that while we continue to suppress transmission disease levels remain very high and the rate of decline in cases is slow