IEMAG briefing

22 April 2021

Coronavirus COVID-19 Public Health Advice

Cases, numbers in hospital and intensive care

Daily case numbers and the numbers of people in hospital and ICU continue to decrease slowly. Notably, admissions to hospital have averaged 13 per day for 3 weeks, an decrease on preceding weeks.

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	Apr 2020	Summer 2020	Oct 2020	Dec 2020	Jan 2021	24 Mar	31 Mar	7 Apr	14 Apr	21 Apr	Daily count 22 Apr
Cases confirmed per day	859 18-04	8.7 25-06	1158 21-10	262 12-12	6520 10-01	564	533	499	400	372	617
14-day incidence *per 100,000 population*	212 19-04	3.0 04-07	306 26-10	79 09-12	1532 15-01	159	161	152	132	113	118
Hospital in-patients	862 17-04	9 02-08	333 01-11	198 16-12	1949 24-01	345	313	254	212	183	179
Hospital admissions per day	*85* *04-04*	*<1* *10-07*	*27* *26-10*	*11* *13-12*	*158* *15-01*	*24*	*22*	*13*	*13*	*13*	*19*
ICU confirmed cases	150 14-04	4 04-08	43 04-11	26 27-12	217 28-01	81	68	50	51	50	48
ICU admissions per day	*14* *31-03*	*<1* *03-06*	*4* *03-11*	*1* *16-12*	*20* *17-01*	*3*	*3*	*2*	*2*	*2*	*5*
Deaths confirmed per day	46 22-04	<1 30-07	7 01-12	4 17-12	57 03-02	9	9	6	12	7	10

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 **415**

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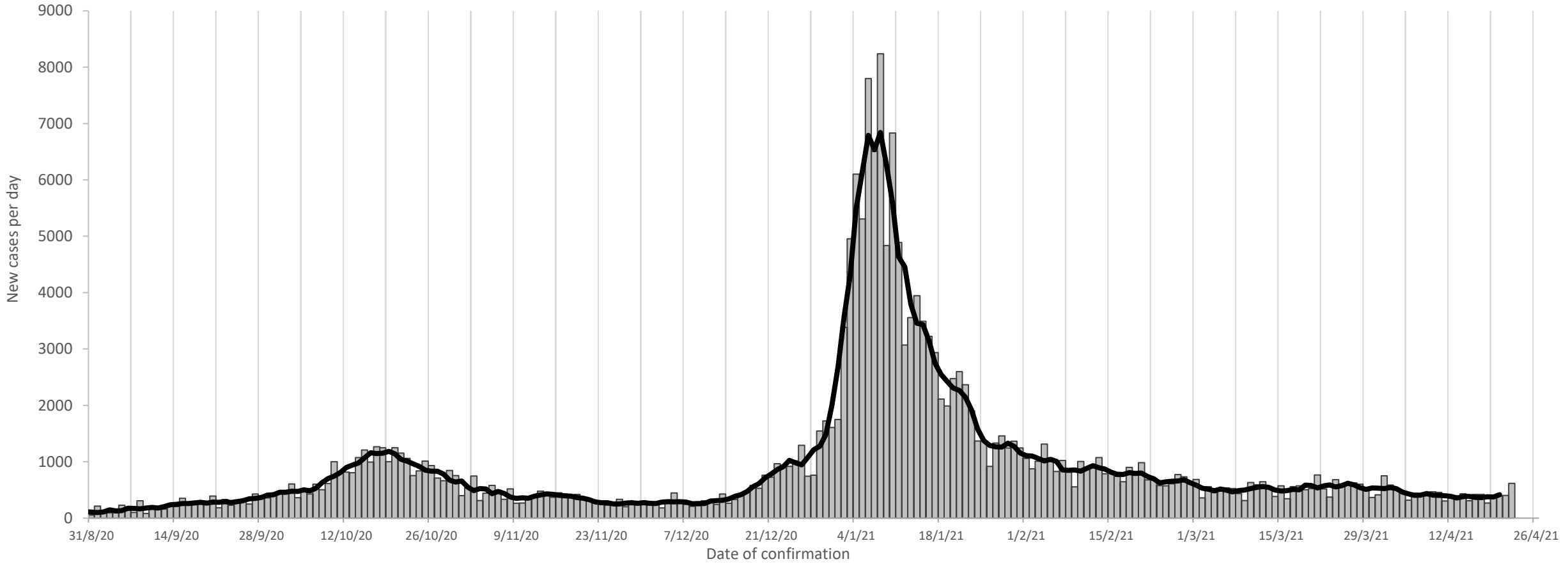
Cases per week	912	1303	1947	2059	3031	4457	7398	7073	4838	3424	2583	2580	1798	2028	1964	3368	6597	15722	45616	25113	14806	8921	7143	6027	5525	4547	3629	3535	3838	3982	3615	2798	2592



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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Daily incidence

Daily incidence remains high: approximately 40% higher than in early December, and approximately 40 times what it was in late June 2020. Incidence appears to be stable at approximately 350-400 cases per day.

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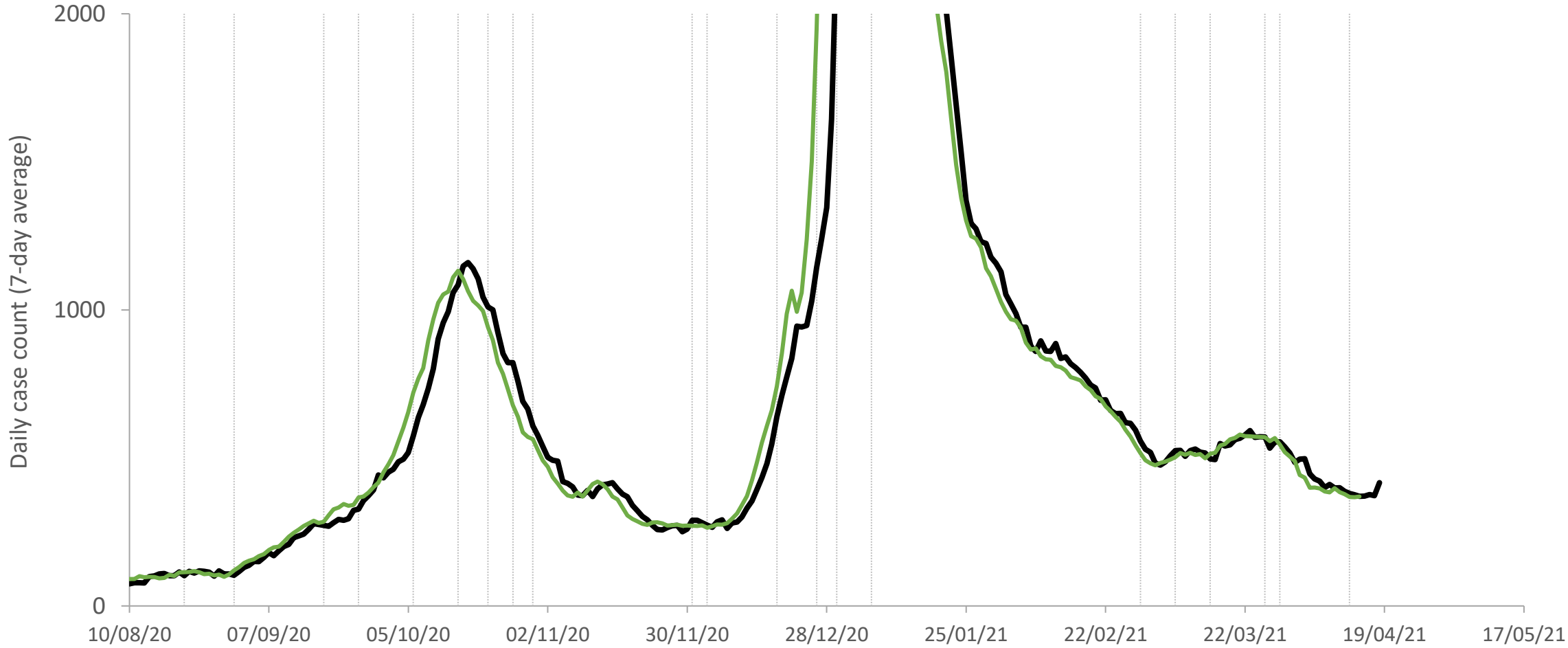

Daily cases by notification (event) date (black, the date the case was entered on the CIDR database) and specimen collection date (green). The vertical dashed lines indicate the dates of escalation and de-escalation of public health restrictions. Data are 7-day moving averages.

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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 is decreasing slowly and is now below 200 for the first time since mid-December. The number of admissions and newly confirmed cases in hospital per day was plateaued at 20-25 per day throughout March 2021, but is now lower at 10-15 per day. The number of admissions has been higher for the last two days

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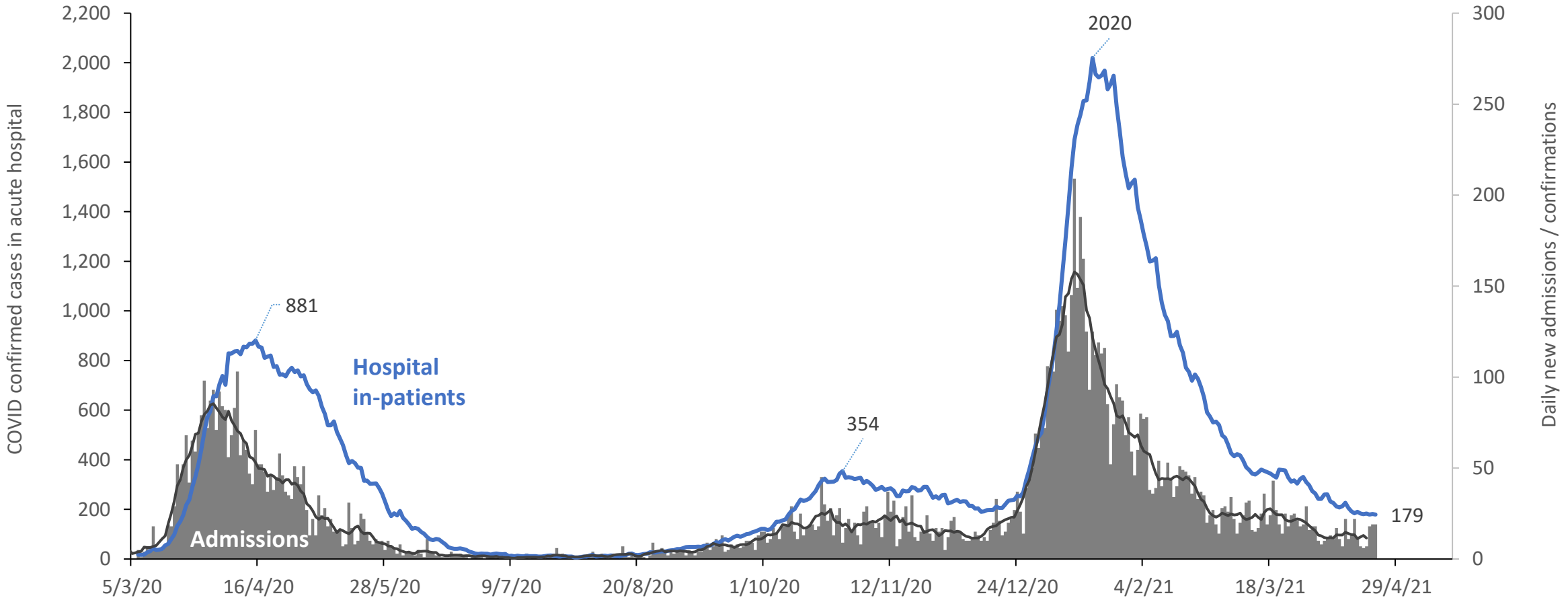

Hospital in-patients: Daily count of number of COVID-19 confirmed cases in acute hospitals. Admissions: New COVID-19 confirmed admissions and new laboratory confirmations of suspected cases in preceding 24 hours (7-day moving average also shown). Data from HSE PMIU-SDU, 8am census.

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Confirmed cases in intensive care

The number of people in ICU with confirmed SARS-CoV-2 infection is static.

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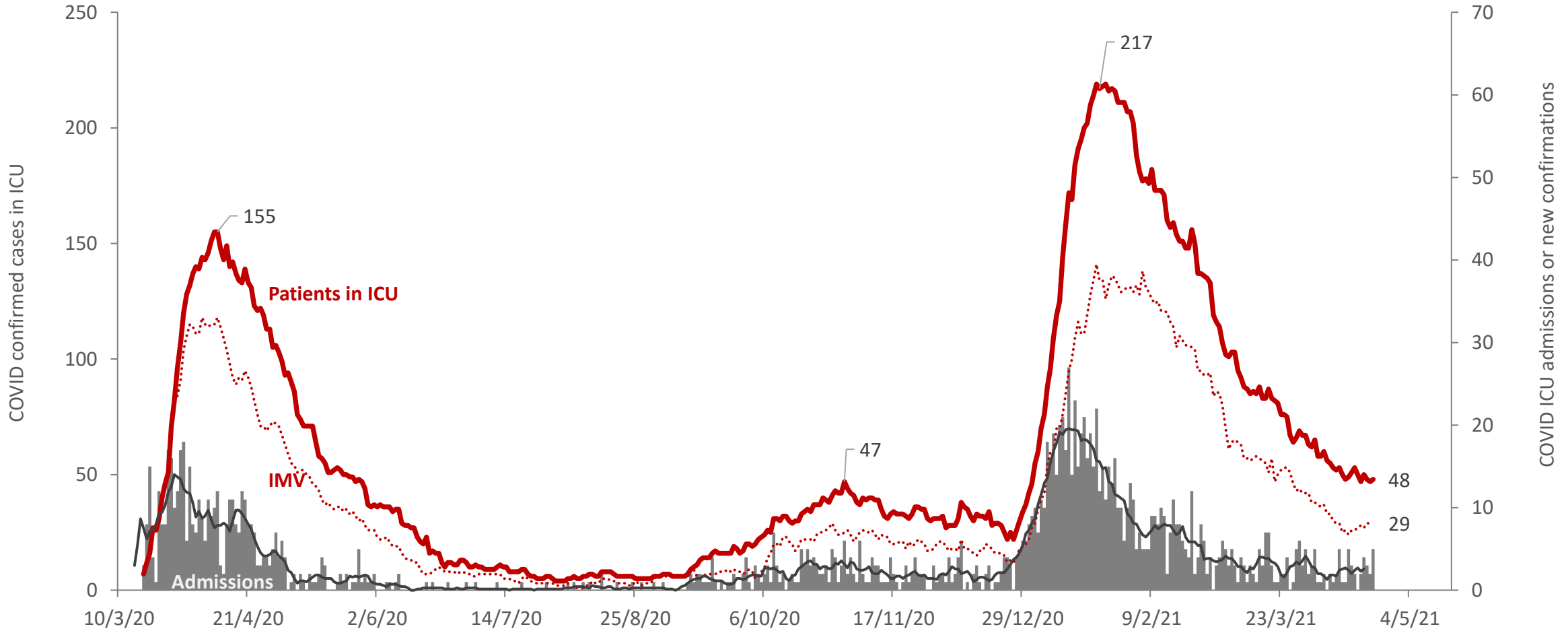

Patients in ICU: Daily count of number of COVID-19 confirmed cases in ICU. IMV: Daily count of number of COVID-19 patients requiring invasive mechanical ventilation. Admissions: daily new COVID-19 confirmed admissions to ICU and new laboratory confirmations of suspected cases in ICU (7-day average also shown). Data from morning census from NOCA

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Deaths by setting

The number of deaths per week is static or decreasing slowly. Deaths associated with outbreaks in LTRC have decreased earlier and more rapidly than in the wider community, due to the protective effect of vaccination.

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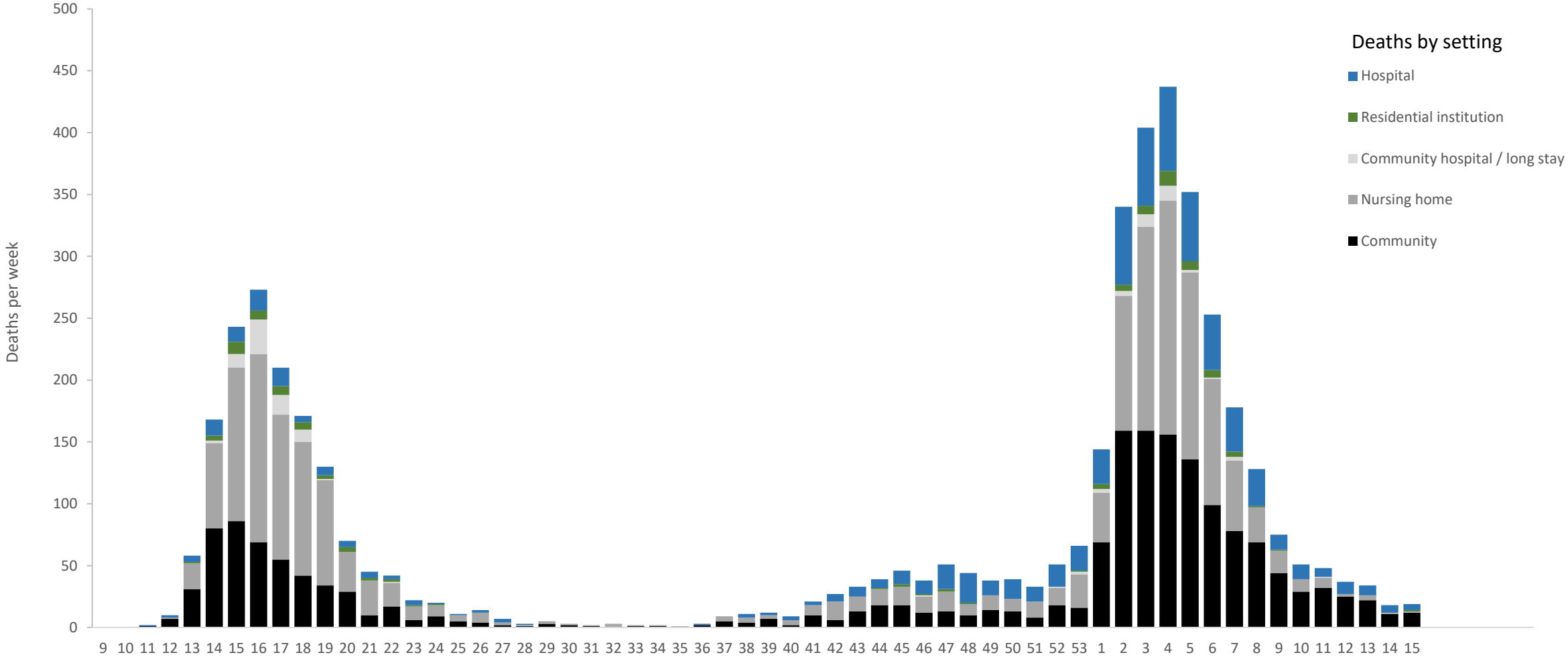

Deaths per week by week of death and the setting in which the death occurred. Deaths with laboratory confirmed SARS-CoV-2 only. Deaths in hospital outbreaks refers to deaths within a cluster of linked cases where the infectionhas been transmitted in the hospital setting, other deaths in hospitals are recorded as 'community' as the infection occurred in the community.

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Testing and test positive rate

Positivity rate has fallen significantly since the January peak: overall positivity rate peaked at 23% on 7 January and is now less than 3%. There is an increase in testing from the latter half of March 2021, with walk-in test centres and increased referral of children.

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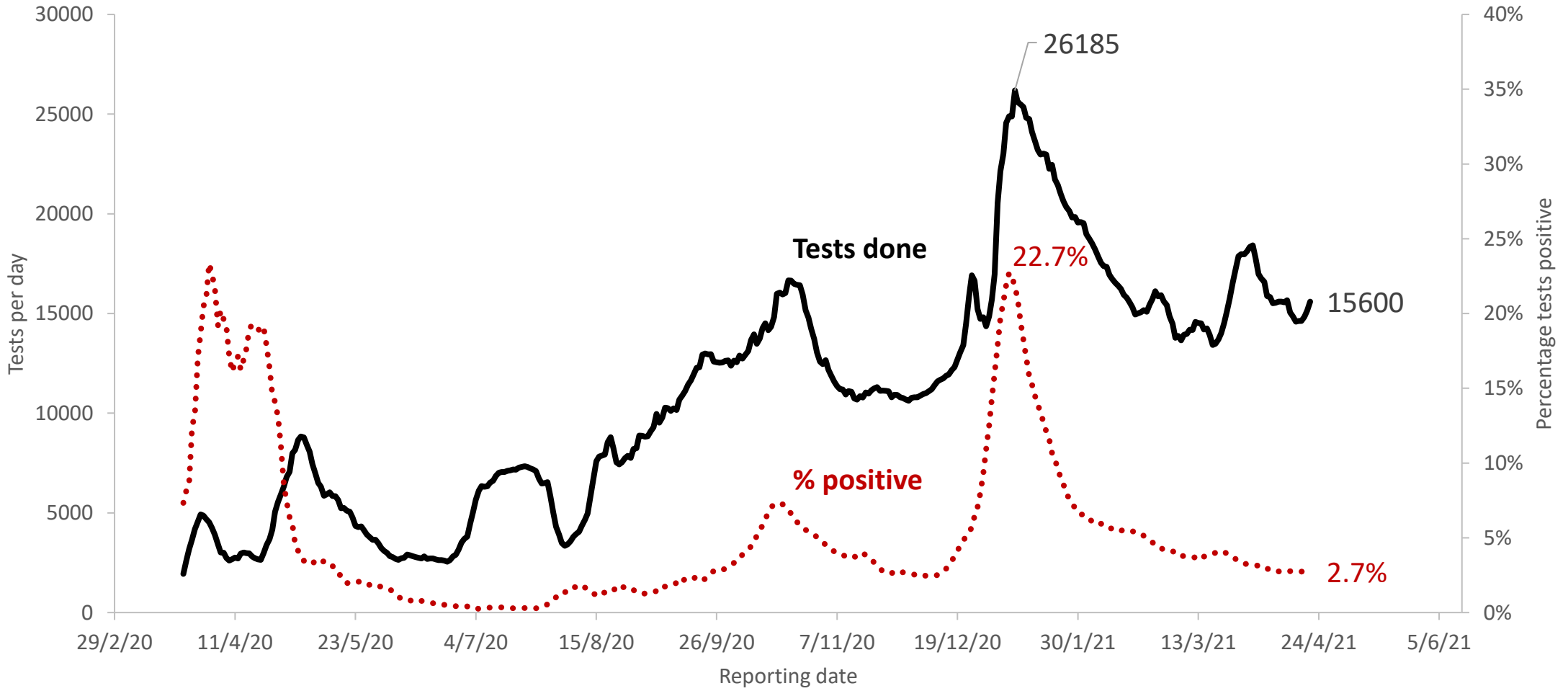

Data 7-day rolling averages, tests outsourced to German laboratory in April backdated using specimen collection date. The aggregate positivity rate should be interpreted with caution, as it includes community referrals, close contacts, mass and serial testing, and hospital testing, and changes in numbers of tests done in these different settings will alter the overall positivity rate.

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Daily test positivity: public health laboratories

The significant increase in testing in the latter hald of March 2021 was associated with a sharp decrease in positivity, but the low positivity rate has been sustained as the demand for testing reduced in early April; the demand for testing has increased again in recent days.

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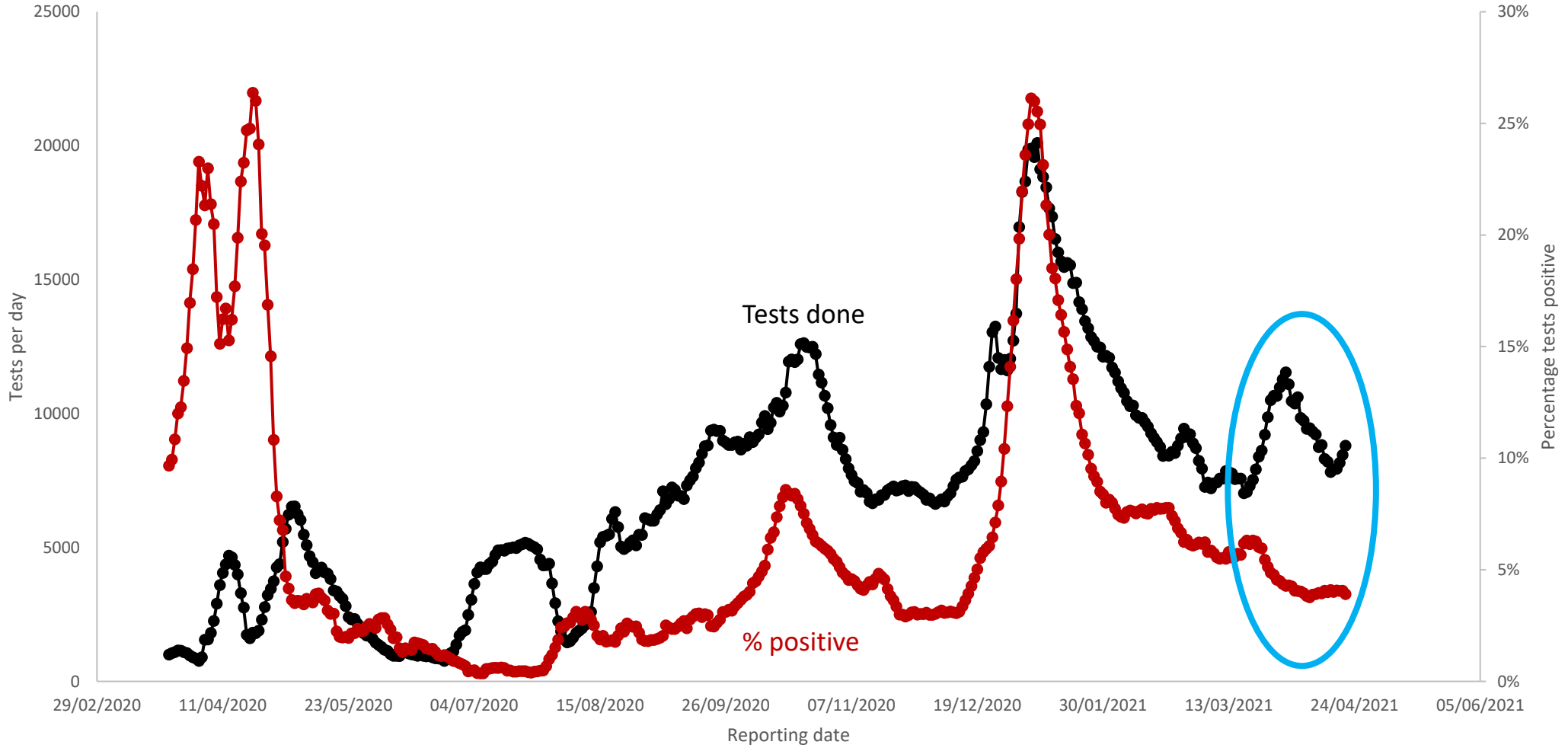

Daily tests done (black) and percentage of tests reported positive (red) per day from NVRL and associated laboratories, plus Cherry Orchard

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Incidence across different age groups (excluding HCW and LTRC)

Incidence is stable or decreasing across all age groups. The decrease in incidence is those aged 75 and older is likley due, at least in part, to the protective effect of vaccination

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Week	Age band								
	0-4	5-12	13-18	19-24	25-39	40-64	65-74	75-84	85+
47	22.0	34.1	59.7	79.1	34.6	33.0	28.9	39.7	62.2
48	23.2	31.3	45.5	66.7	33.8	29.6	22.2	36.1	40.0
49	28.4	36.8	37.7	40.5	33.2	30.1	25.4	28.5	41.4
50	21.4	39.9	44.1	57.4	39.5	35.0	22.5	31.0	22.2
51	51.9	58.5	74.5	128.3	88.0	80.9	54.3	55.0	51.8
52	77.5	76.9	120.0	326.1	175.6	134.5	95.8	94.7	119.9
53	218.1	236.6	513.7	1401.5	760.9	636.0	423.6	350.1	361.2
1	183.7	208.9	568.9	1328.8	789.9	720.6	497.4	446.8	558.1
2	130.6	126.7	302.2	580.9	414.6	419.7	301.5	410.2	575.8
3	93.5	81.3	169.3	328.5	253.7	243.3	169.7	251.4	413.0
4	74.2	60.9	128.4	228.0	154.9	146.2	119.4	161.8	267.9
5	78.1	72.9	126.8	208.6	126.3	123.2	85.7	116.0	210.2
6	92.0	85.7	125.9	225.8	118.5	101.3	68.3	90.1	124.3
7	87.5	76.4	96.3	253.6	106.4	88.4	59.7	78.4	109.5
8	87.5	70.7	89.6	186.0	94.8	77.4	43.6	52.4	85.9
9	67.0	57.0	65.1	125.0	75.4	57.6	44.7	44.8	40.0
10	68.5	68.0	89.9	144.9	79.0	58.6	39.1	39.7	40.0
11	107.7	90.8	78.3	87.3	85.6	62.0	46.0	55.0	56.3
12	106.8	102.2	85.3	104.2	93.0	69.5	41.2	42.2	44.4
13	70.0	86.4	65.1	115.0	80.6	66.7	39.1	35.1	40.0
14	49.8	65.2	57.9	92.7	66.3	48.7	24.1	22.9	20.7
15	50.1	55.8	64.9	74.9	61.7	50.2	25.4	15.8	14.8

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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Age-specific incidence (excl. HCW and LTRC)

The incidence per 100,000 population is shown for different age cohorts, excluding healthcare workers and cases associated with outbreaks in long-term residential care. The uptick in cases in recent days is greatest in those aged 13-18 years, but can also be seen in the 19-24, 25-39, 40-64 and 65-74 year old groups

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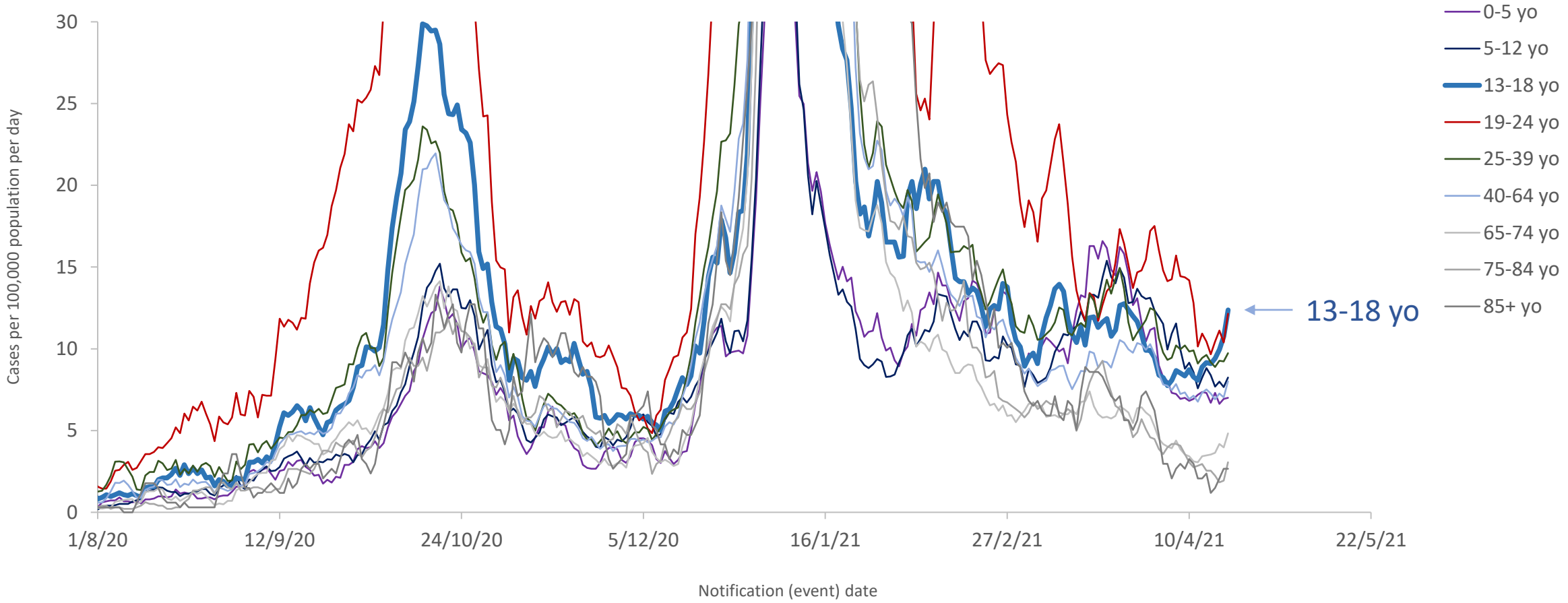

Age-specific incidence (cases per day per 100,000 population within each age cohort, population from CSO 2016 census data). Healthcare workers and cases associated with outbreaks in long-term residential care are excluded, so that the analysis reflects the pattern of cases in the community. Cases dated by notification (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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Age-specific incidence in younger age groups

Incidence in children (red arrows) increased in early February 2021 and mid-March 2021. The first is associated with the resumption of testing of asymptomatic close contacts. The second is seen 10-14 days after the resumption of in-person education for junior infants to 2nd class, and is due to increased referral for testing . The return to in-person education for 3rd to 6th class was not associated with a similar increase in incidence. Incidence in children is currently stable, with a recent increase in cases in 13-18 year olds.

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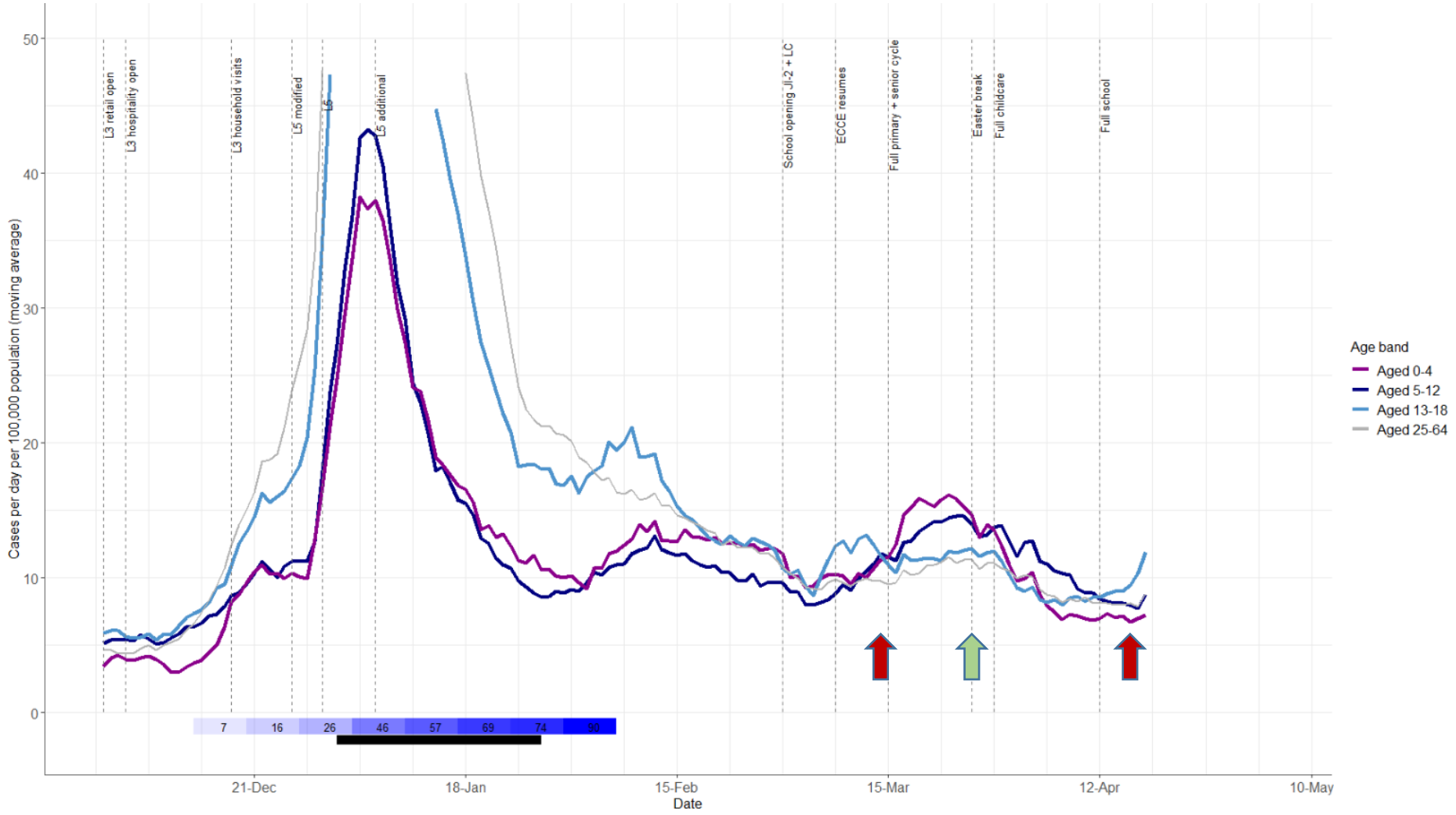

7-day moving average of age specific incidence (cases per day per 100,000 population) for those aged under 18, compared with the population aged 25-64 years. Cases dated by notification date. Healthcare workers and cases associated with outbreaks in long-term residential care are excluded, so that the analysis reflects the pattern of cases in the community. Graduated blue scale shows increasing prevalence of B.1.1.7 variant as measured by sample prevalence of SGTF. Solid black line shows period for which testing of asymptomatic close contacts of confirmed cases was suspended.

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Increased referral of adolescents for testing

When primary schools reopened in March 2021 there was a five to ten-fold increase in referrals for testing amongst those aged under 13 years through March 2021, an indication of the level of vigilance in families, general practice, schools and public health. We are now seeing an increase in referrals amongst those aged 5-18 years following full school reopening.

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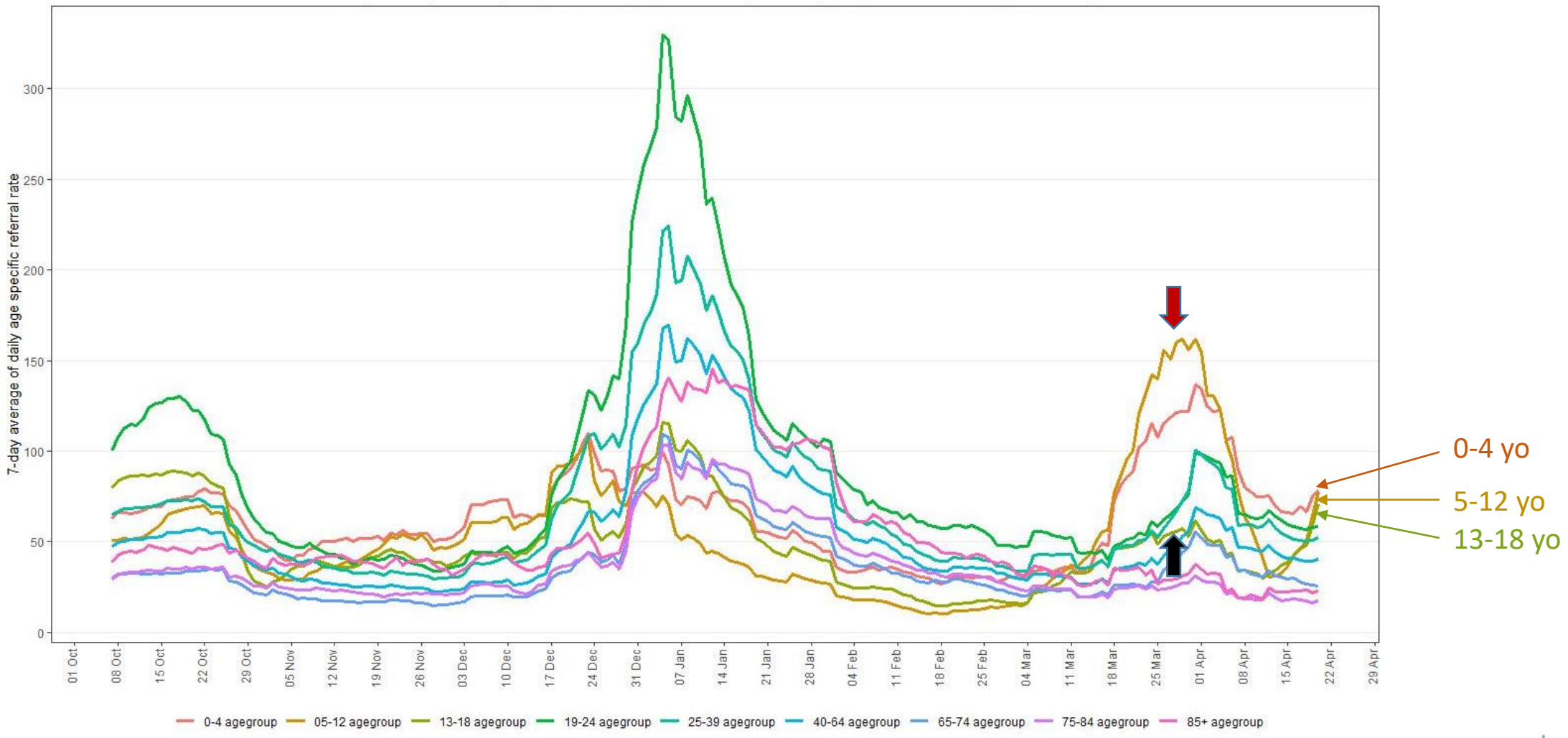

Age-specific referral for community testing (GP referrals excluding close contacts of known confirmed cases per day per 100,000 population within each age cohortpopulation from CSO 2016 census data).

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Google community mobility

The number of people staying at home remains high, and attendance at workplaces relatively low, though neither match the levels seen in April-May 2020. Attendance at workplaces increases when schools are open, and decreases when schools are closed.

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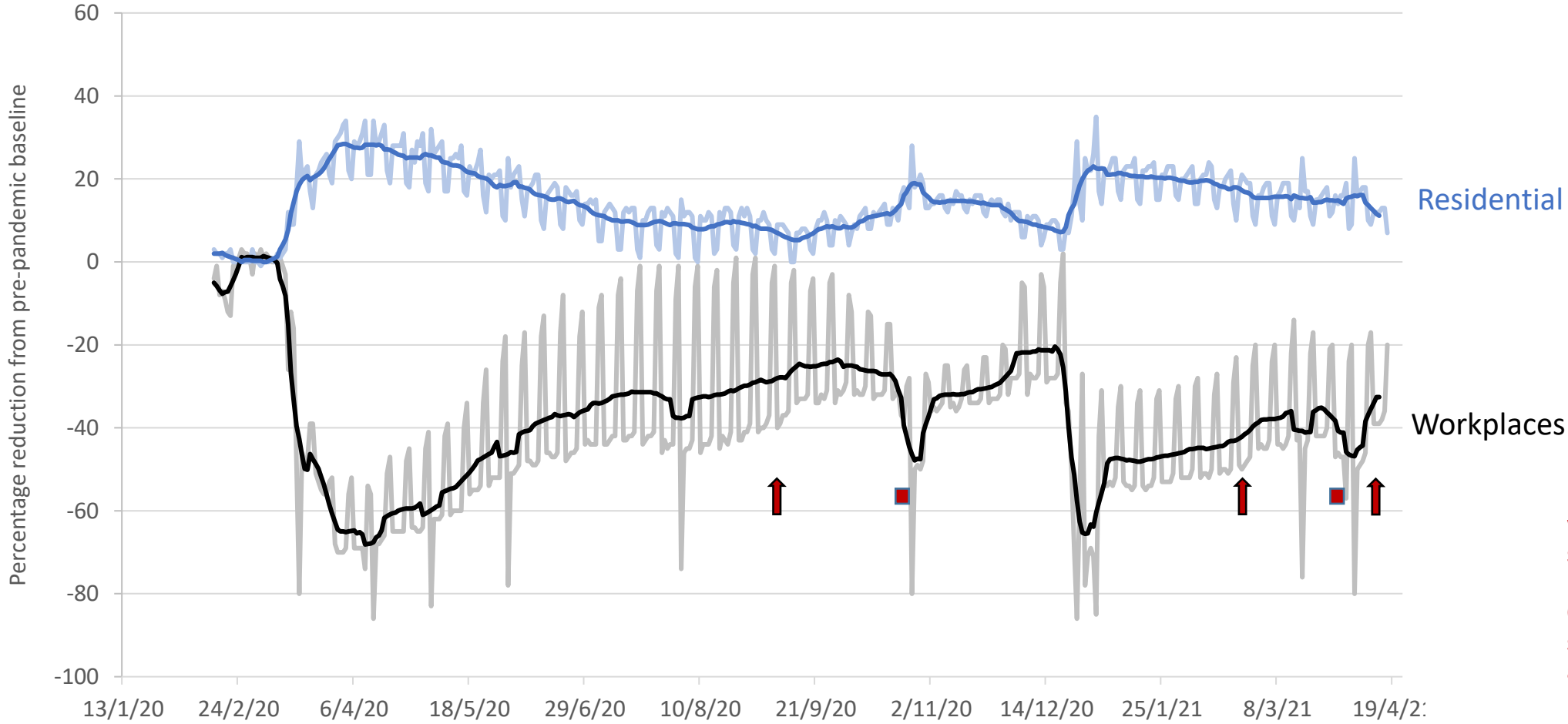

Increased attendance at workplaces coincident with school opening (arrows) note also and impact of October 2020 and April 2021 school breaks on workplace attendance (squares)

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. The attendance at workplaces compared to pre-pandemic baseline *increases* on weekends (people working on weekends less likely to be able to work from home, and decreases to very low levels on bank holidays. Daily data and 7-day moving averages.

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Vaccination and people aged 80 and older

The age-specific incidence in those aged 65 and older has fallen in recent weeks. This is largely a social phenomenon, with people in this age group having fewer close contacts. However, in the older age groups, especially those aged 80 and above, the number of cases has fallen more rapidly than in the wider population.

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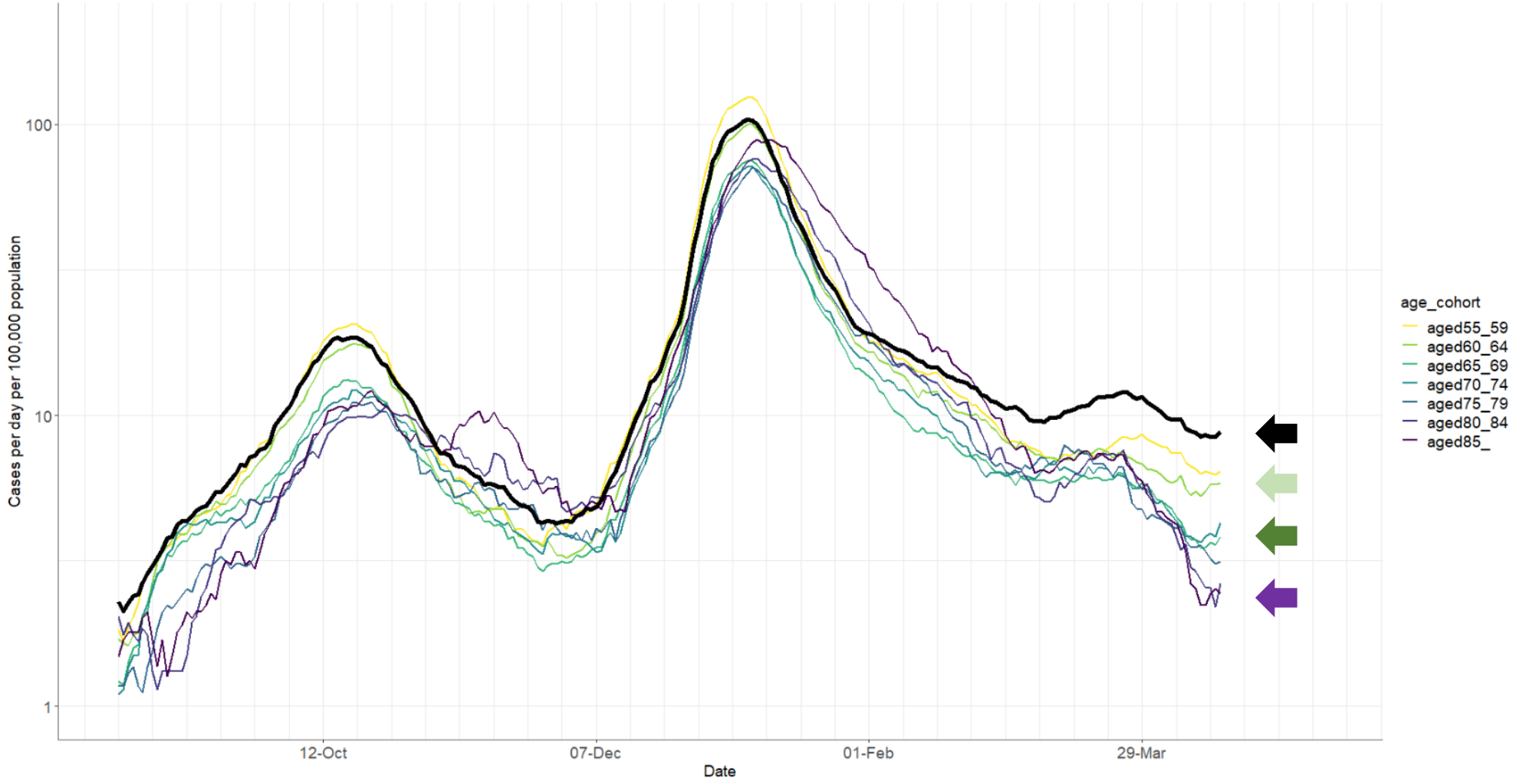

Age-specific incidence (new cases per day per 100,000 population, logarithmic scale) in those aged 55 and older, compared to a reference cohort (black, those aged 30-54 years). 21-day moving average.

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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 public health measures during October were 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 fell to 2.1 in January. It has increased to ≈ 2.6 in the latter half of February 2021, and remains stable at that level

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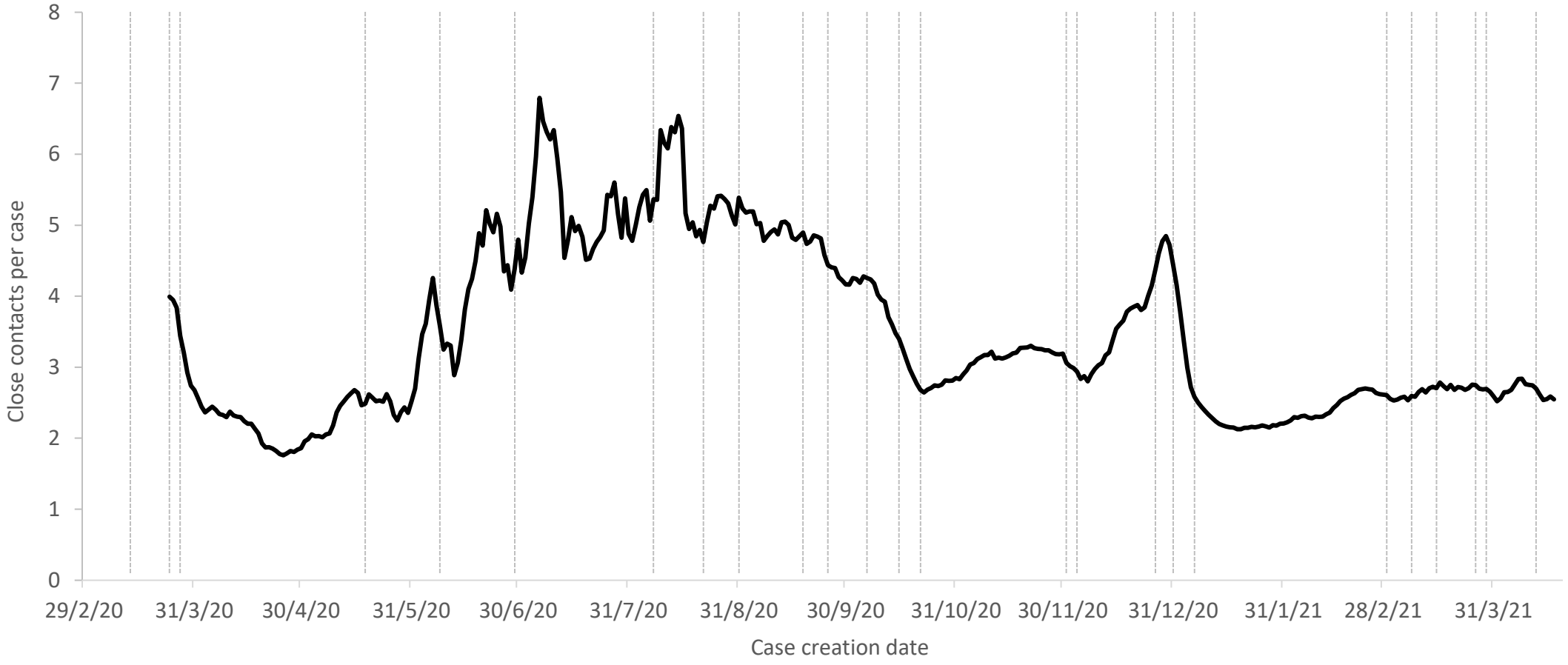

The average number of close contacts per confirmed case. Data from COVID-19 Care Tracker (CCT). Cases dated by case creation date. Cases (but not contacts) aged 18 and younger are excluded. Data are 7-day trailing averages except for the months of June – August where a 21-day trailing average is used 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) the rate of decline slowed to -2 to -4% per day from mid-February, and from mid-March case numbers were static or growing slowly (growth rate 0% to +2% per day). The growth/decline rate is currently estimated at 0% to -2% per day.

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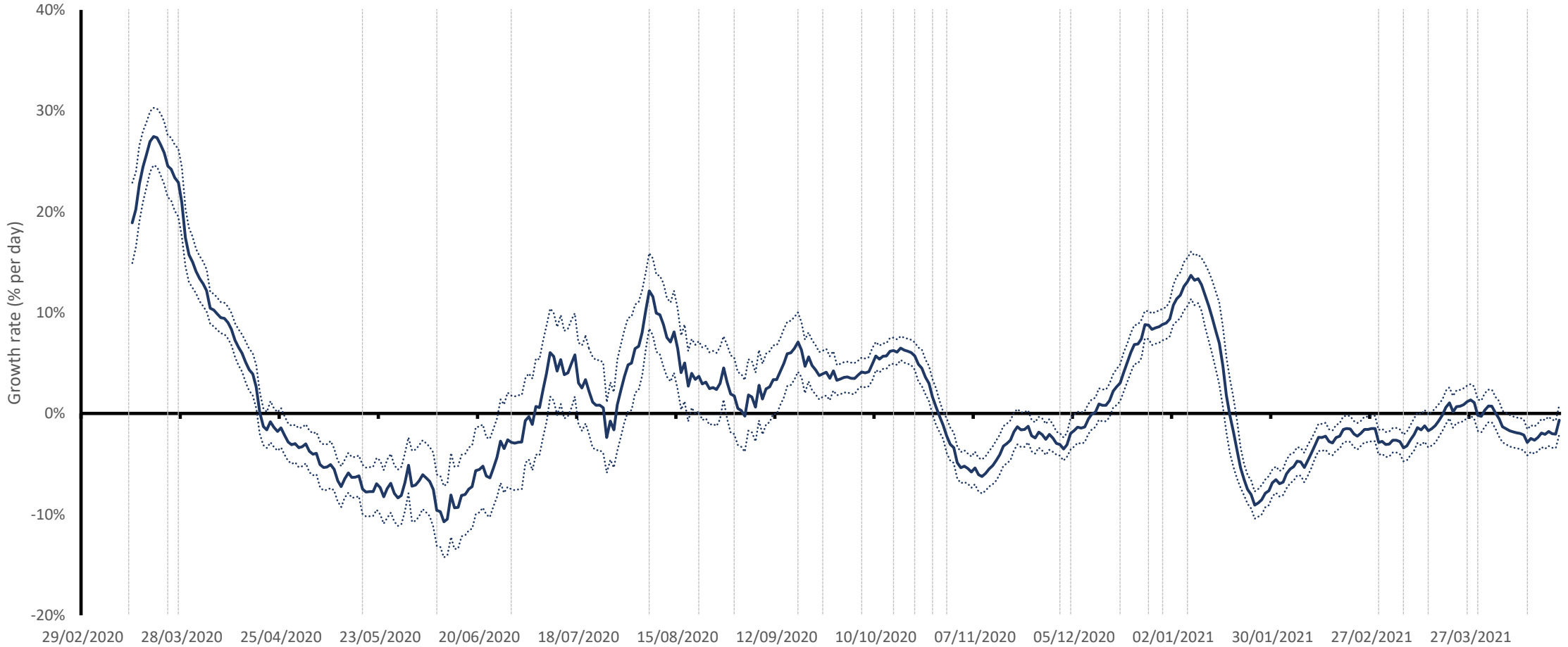

Growth rate calculated as the average growth rate over a 21-day trailing window,with 95% confidence interval; cases dated by notification (event) date.

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Estimates of effective reproduction number (R)

Reproduction number is close to or just below 1.0 with high levels of uncertainty in its estimation;
it is currently estimated at 0.9 – 1.1

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Method	Estimate	95% confidence interval
SEIR model-inferred	0.89	0.66 – 1.16
Bayesian model	1.11	0.63– 1.61
Time-dependent R	0.91	0.82 – 1.00
GAM estimate 13 Apr 2021	0.94	0.86 – 1.01
GAM estimate 20 Apr 2021	0.97	0.83 – 1.10

Estimates generated 21 April 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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Situation analysis 21 April 2021

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- All indicators of disease stable or declining slowly up to 21 April 2021
  - any impact of 12 April changes should become apparent in the coming weeks
- Incidence is stable, with significant variability and uncertainty, and may increase in coming week
  - Cases (5-day average) 415 cases per day; 14-day incidence 118 per 100,000
  - Test positivity low
  - Reproduction number (R) is close to 1.0, estimated at 0.9 – 1.1, rate of decline 0 to -2% per day
- Anticipate at least a transient increase in case numbers in the coming weeks
  - We need to keep close contacts low, and minimize the risk of transmission during any close contact
- Significant impact of vaccination in those who have been vaccinated
- A broadly positive outlook, but we remain vulnerable in the coming weeks as the wider population is not yet protected by vaccination: the situation remains volatile and any increase in close contact represents a high risk