IEMAG briefing

15 April 2021

Coronavirus
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Cases per day

Daily case count since the beginning of the pandemic, by specimen collection date

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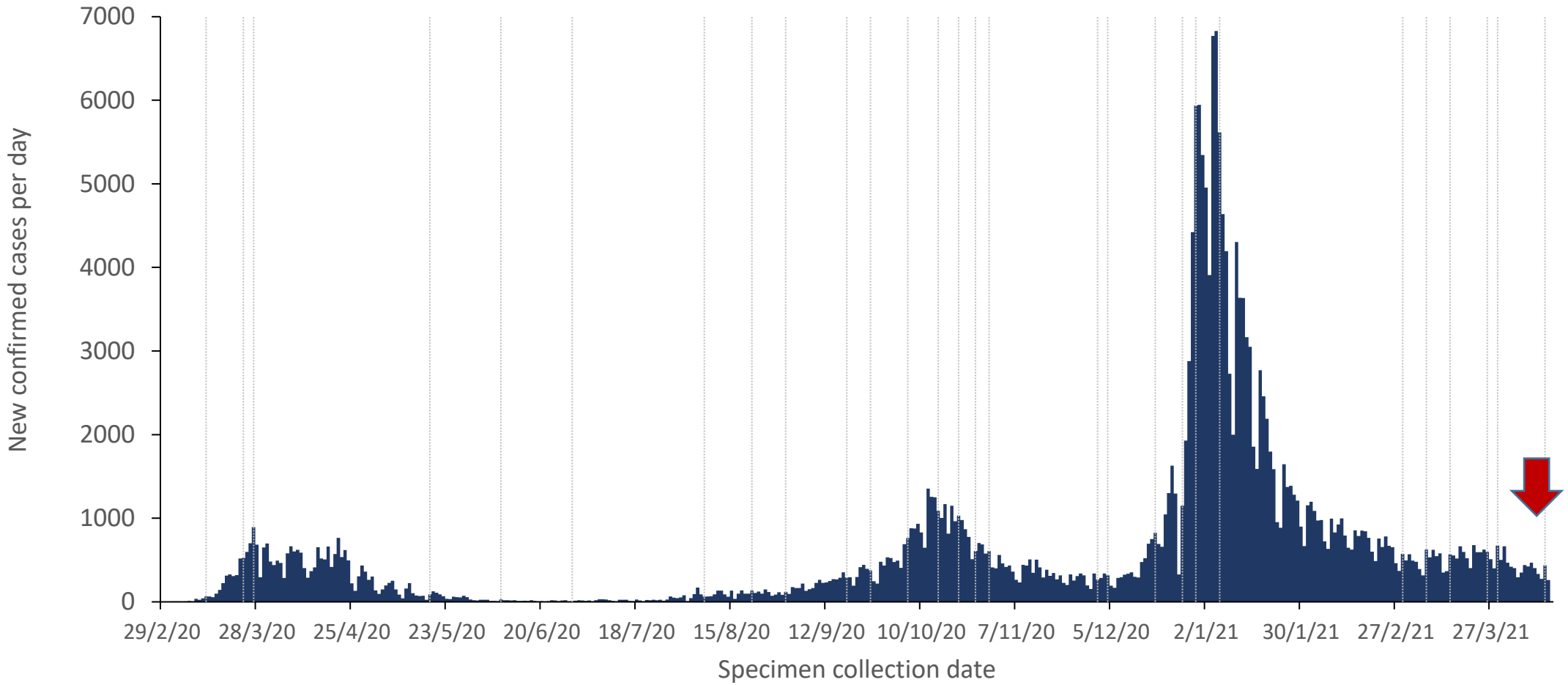

Daily count of the number of laboratory confirmed new cases by date on which the specimen was collected. The vertical dashed lines indicate the dates of escalation and de-escalation of public health restrictions

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Cases, numbers in hospital and intensive care

While daily case numbers remain high, the numbers of people in hospital and ICU continue to decrease slowly. Notably, there is a sustained reduction over the last two weeks n the average number of new admissions to hospital. The number of deaths confirmed per day is high due to late notifications.

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	Apr 2020	Summer 2020	Oct 2020	Dec 2020	Jan 2021	17 Mar	24 Mar	31 Mar	7 Apr	14 Apr	Daily count 15 Apr
Cases confirmed per day	859 18-04	8.7 25-06	1158 21-10	262 12-12	6520 10-01	520	564	533	499	400	309
14-day incidence *per 100,000 population*	212 19-04	3.0 04-07	306 26-10	79 09-12	1532 15-01	148	159	161	152	132	123
Hospital in-patients	862 17-04	9 02-08	333 01-11	198 16-12	1949 24-01	351	345	313	254	212	184
Hospital admissions per day	*85* *04-04*	*<1* *10-07*	*27* *26-10*	*11* *13-12*	*158* *15-01*	*23*	*24*	*22*	*13*	*13*	*22*
ICU confirmed cases	150 14-04	4 04-08	43 04-11	26 27-12	217 28-01	86	81	68	50	51	51
ICU admissions per day	*14* *31-03*	*<1* *03-06*	*4* *03-11*	*1* *16-12*	*20* *17-01*	*3*	*3*	*3*	*2*	*2*	*3*
Deaths confirmed per day	46 22-04	<1 30-07	7 01-12	4 17-12	57 03-02	10	9	9	6	12	8

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 **358**

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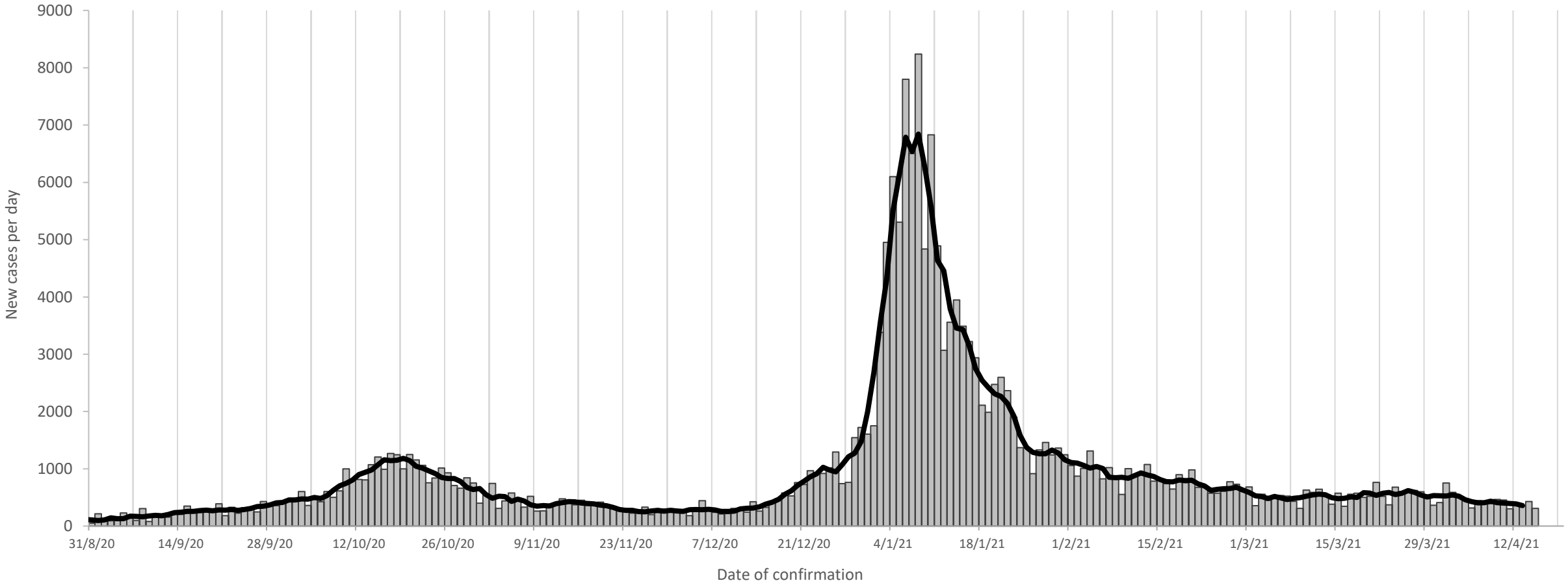
Cases per week																															
	912	1303	1947	2059	3031	4457	7398	7073	4838	3424	2583	2580	1798	2028	1964	3368	6597	15722	45616	25113	14807	8921	7143	6027	5525	4549	3629	3535	3840	3983	3618	2803



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 60% higher than in early December, and approximately 40 times what it was in late June 2020. Incidence appears to be decreasing at approximately 350-400 cases per day.

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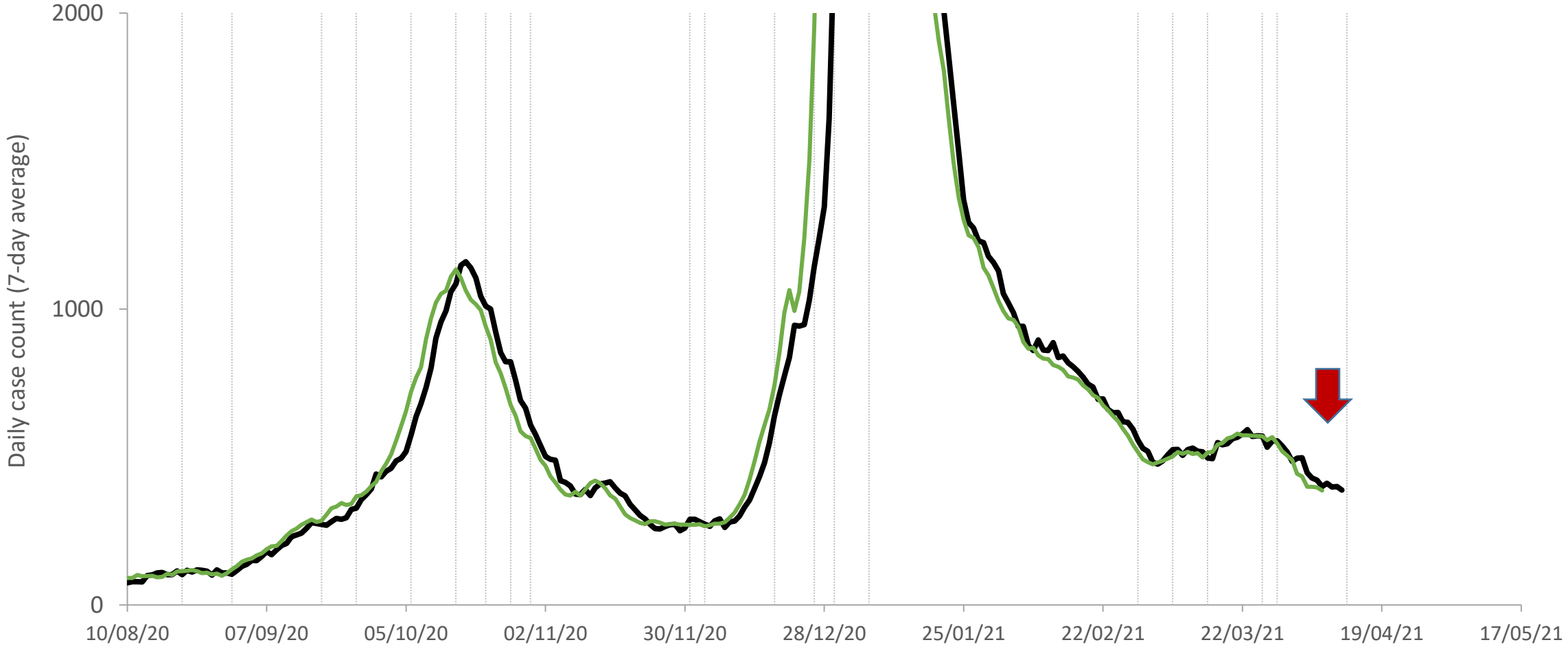

Daily cases by notification (event) date (black, the date the case was entered on the CIDR database) and specimen collection date (green). The vertical dashed lines indicate the dates of escalation and de-escalation of public health restrictions. Data are 7-day moving averages.

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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 is was plateaued at 20-25 per day throughout March 2021, but is now lower at 10-15 per day.

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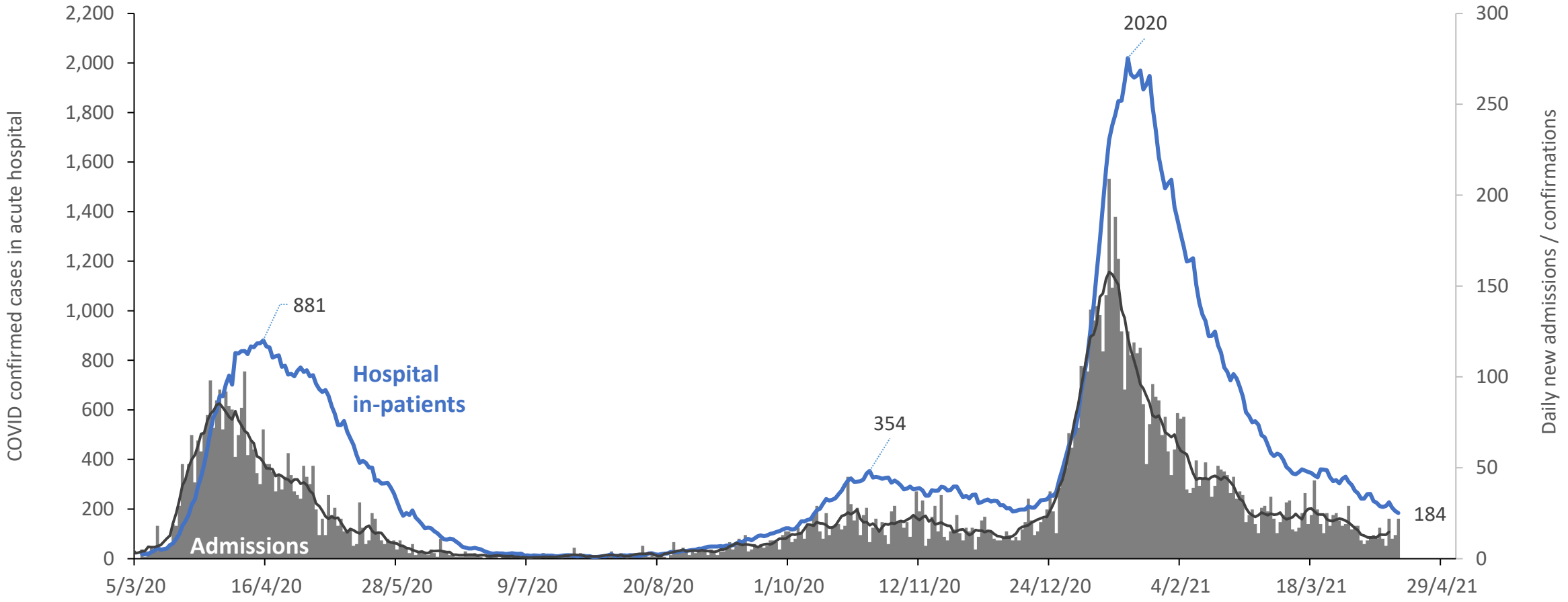

Hospital in-patients: Daily count of number of COVID-19 confirmed cases in acute hospitals. Admissions: New COVID-19 confirmed admissions and new laboratory confirmations of suspected cases in preceding 24 hours (7-day moving average also shown). Data from HSE PMIU-SDU, 8am census.

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Confirmed cases in intensive care

The number of people in ICU with confirmed SARS-CoV-2 infection continues to decrease slowly.

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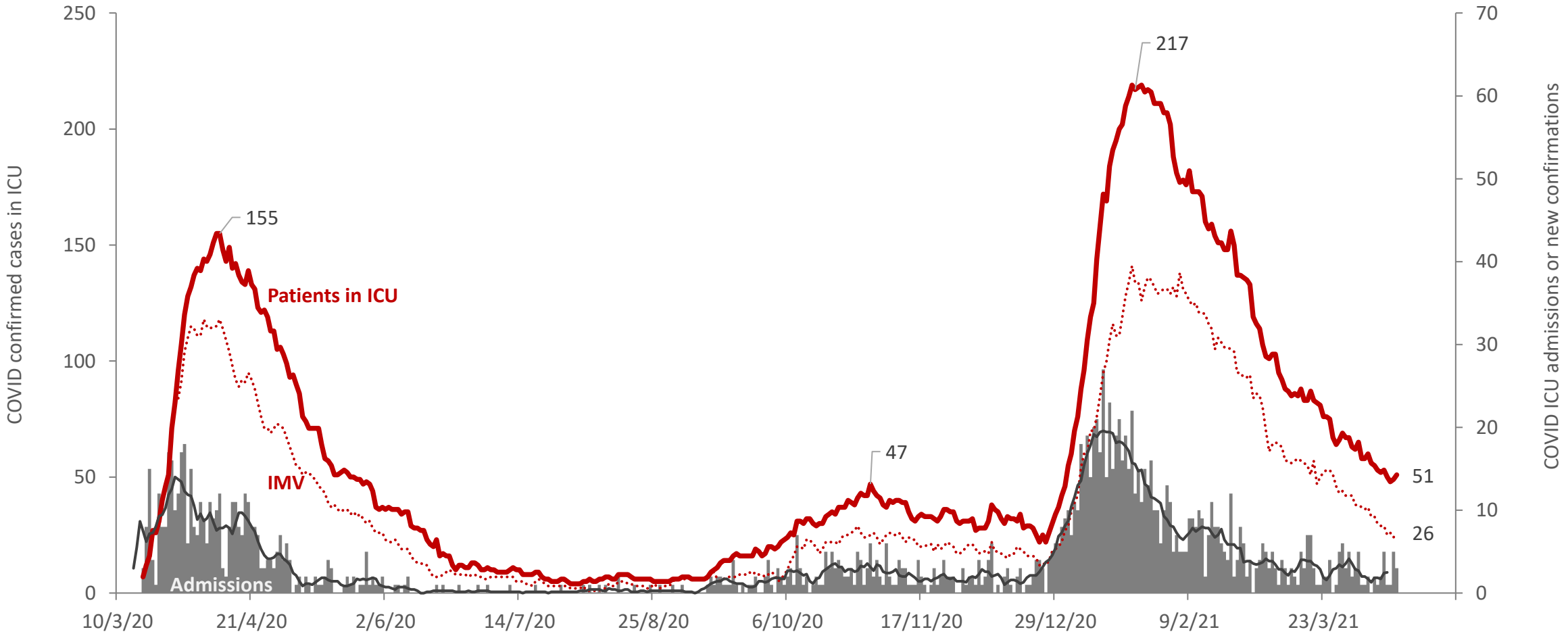

Patients in ICU: Daily count of number of COVID-19 confirmed cases in ICU. IMV: Daily count of number of COVID-19 patients requiring invasive mechanical ventilation. Admissions: daily new COVID-19 confirmed admissions to ICU and new laboratory confirmations of suspected cases in ICU (7-day average also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

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Deaths by setting

The number of deaths per week is 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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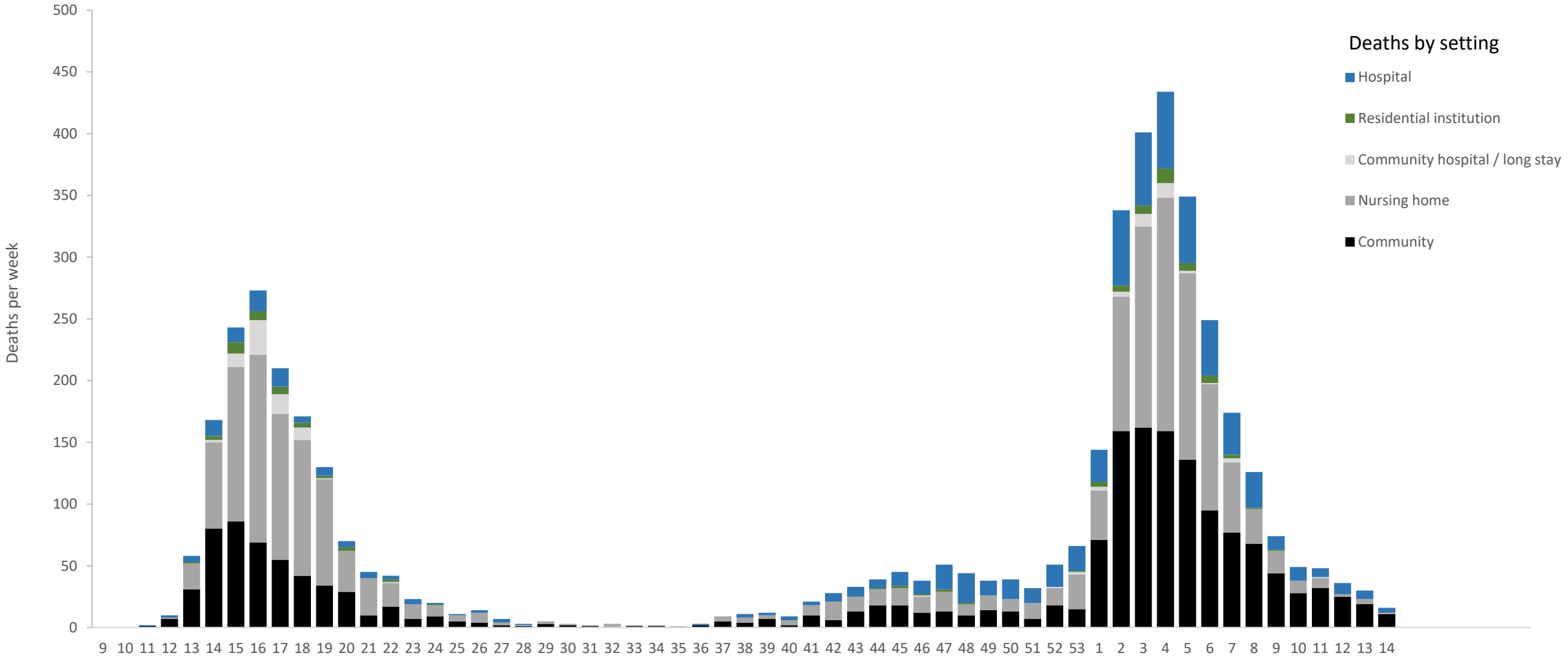

Deaths per week by week of death and the setting in which the death occurred. Deaths with laboratory confirmed SARS-CoV-2 only. Deaths in hospital outbreaks refers to deaths within a cluster of linked cases where the infectionhas been transmitted in the hospital setting, other deaths in hospitals are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

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Daily test positivity: public health laboratories

The recent significant increase in testing is associated with a sharp decrease in positivity.

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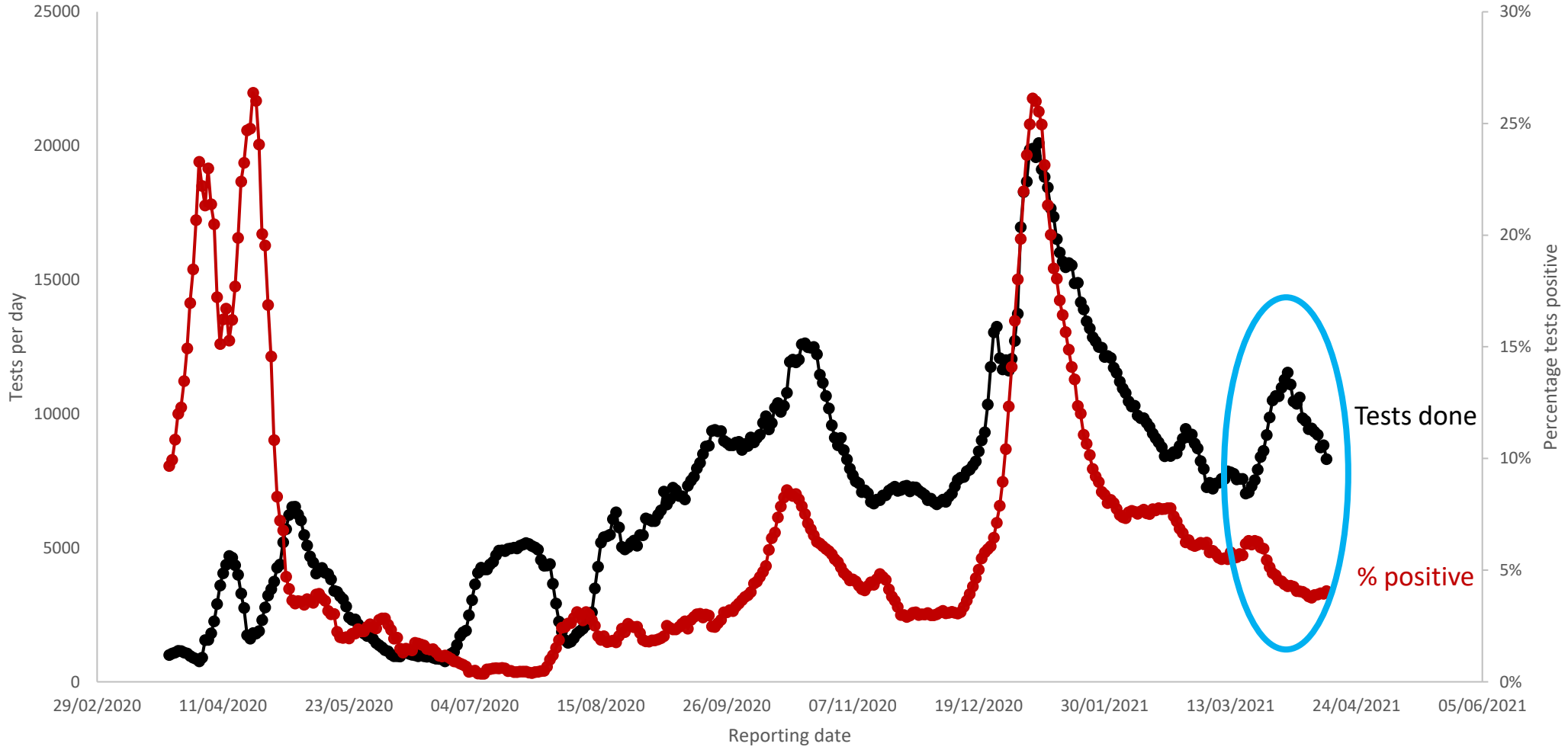

Daily tests done (black) and percentage of tests reported positive (red) per day from NVRL and associated laboratories, plus Cherry Orchard

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Incidence across different age groups (excluding HCW and LTRC)

Incidence has decreased 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	60.0	79.4	34.6	33.0	28.9	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	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	39.8	35.0	22.2	31.0	22.2
51	51.9	58.5	74.5	128.3	88.0	80.9	54.6	55.0	51.8
52	77.5	76.9	120.3	325.8	175.9	134.7	95.6	94.7	119.9
53	218.1	236.7	513.7	1401.8	760.6	636.0	423.8	350.1	361.2
1	183.7	208.9	569.2	1329.1	790.3	720.7	497.7	446.3	558.1
2	130.6	126.5	301.9	583.0	414.1	419.2	301.2	410.2	575.8
3	93.5	81.3	169.5	326.7	253.7	243.8	169.7	251.9	413.0
4	74.2	60.9	128.1	228.9	154.6	146.3	119.7	161.3	267.9
5	78.1	72.9	126.8	207.7	126.9	123.4	85.4	116.5	210.2
6	92.0	85.5	126.2	225.8	118.0	102.0	68.3	90.6	125.8
7	87.5	76.7	96.9	253.0	107.0	88.3	59.7	78.4	112.5
8	87.5	70.5	89.3	186.0	94.6	77.3	43.6	52.9	85.9
9	67.0	57.0	65.1	125.6	75.9	58.1	44.7	44.8	40.0
10	68.2	68.0	90.2	145.2	79.3	58.8	39.1	39.7	40.0
11	107.7	90.9	78.3	87.0	85.6	62.1	45.8	55.0	59.2
12	107.1	102.1	85.6	104.2	93.1	69.8	41.5	42.2	45.9
13	70.0	86.0	65.1	115.6	81.3	67.2	39.6	34.6	40.0
14	47.7	63.2	56.0	91.2	64.4	48.2	23.6	21.9	17.8

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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Vaccination and healthcare workers

Healthcare workers accounted for between 5 and 15% of all cases during the second and third waves of the pandemic, but now constitute approximately 2.5% of all cases.

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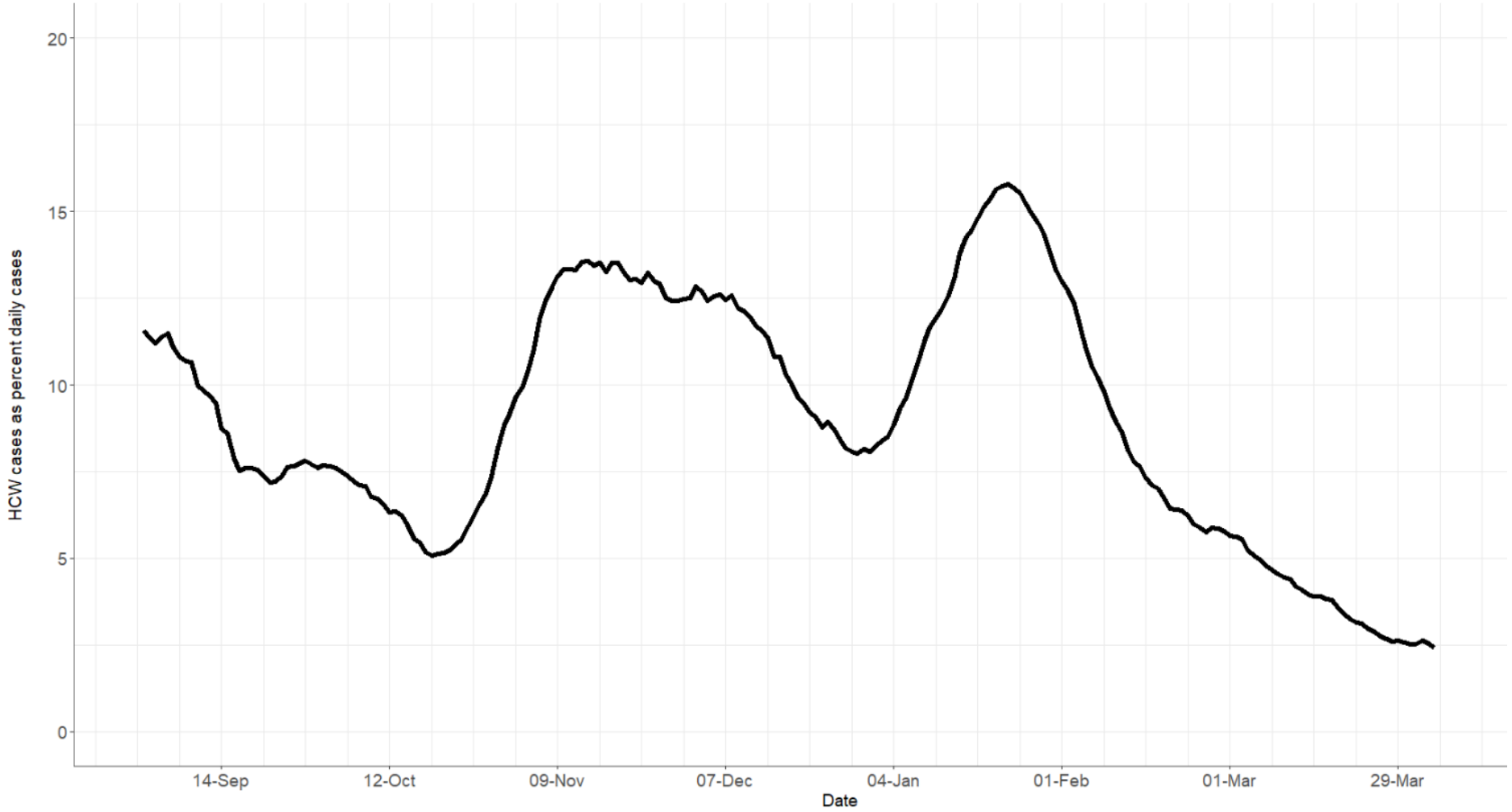

Cases identified as healthcare workers, as a percentage of all cases. 21-day moving average.

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Vaccination and healthcare workers

The proportion of cases in healthcare workers decreases as infections in the community surge, and increases after a surge, as those who become ill require care.

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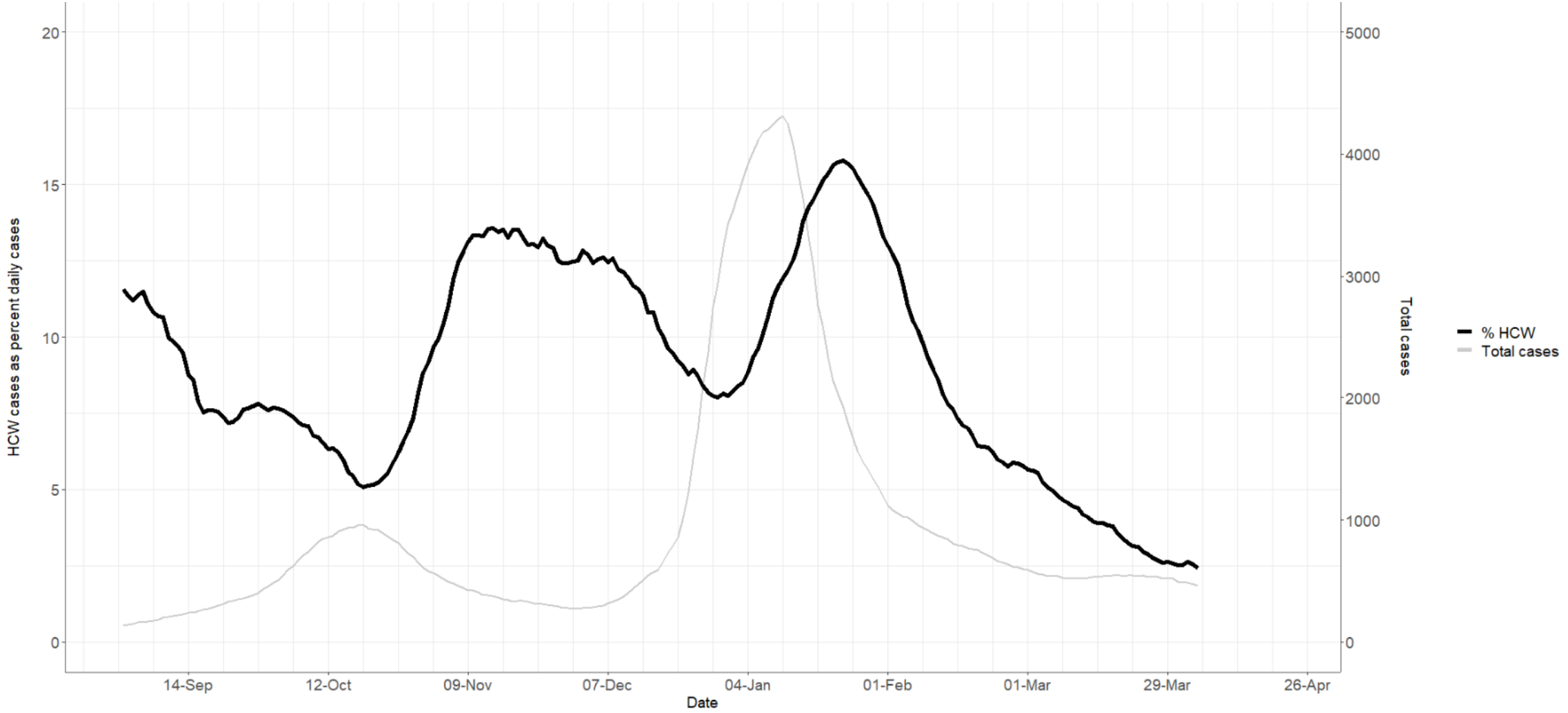

Cases identified as healthcare workers, as a percentage of all cases (black), compared to the total daily case count (grey). 21-day moving averages.

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Vaccination and healthcare workers

Throughout the pandemic, the number of cases in healthcare workers has correlated closely with the number of admissions to hospital of patients with COVID-19. However, since February 2021 this link has been broken: while there has been an 87% reduction in the number of admissions per day to hospital since the first week of January 2021, there has been a 98% reduction in the number of infections in healthcare workers

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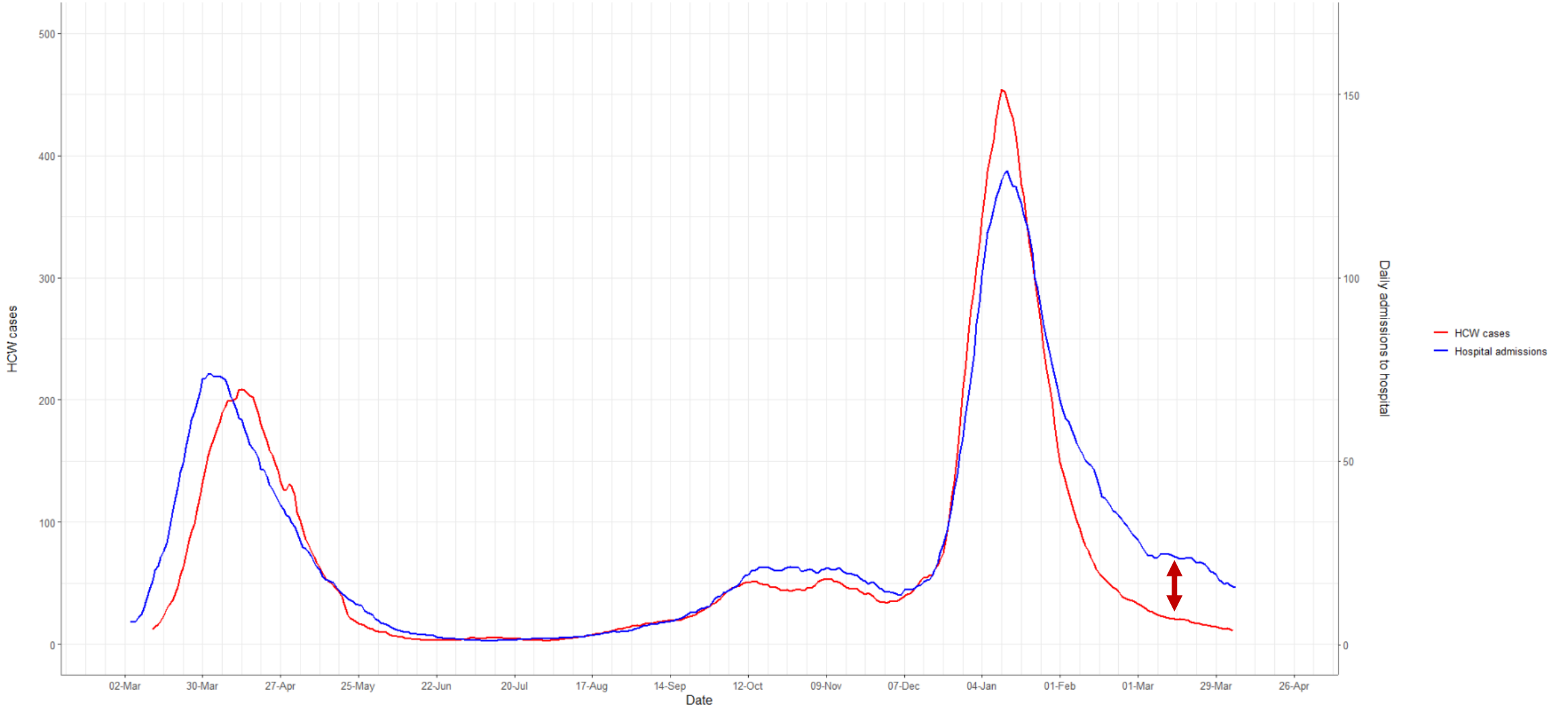

Cases per day amongst healthcare workers (red) and new admissions/ newly confirmed cases in acute hospitals (blue), 21-day moving averages.

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Vaccination and long-term residential care

Cases associated with outbreaks in long-term residential care (LTRC) constituted between 2 and 8% of cases prior to 1 March 2021, with each wave of disease in the community followed by an increase in the propotion of cases in LTRC. The proportion of all cases arising in LTRC has fallen rapidly throughout March and April, so that such cases now account for less than 0.5% of all cases

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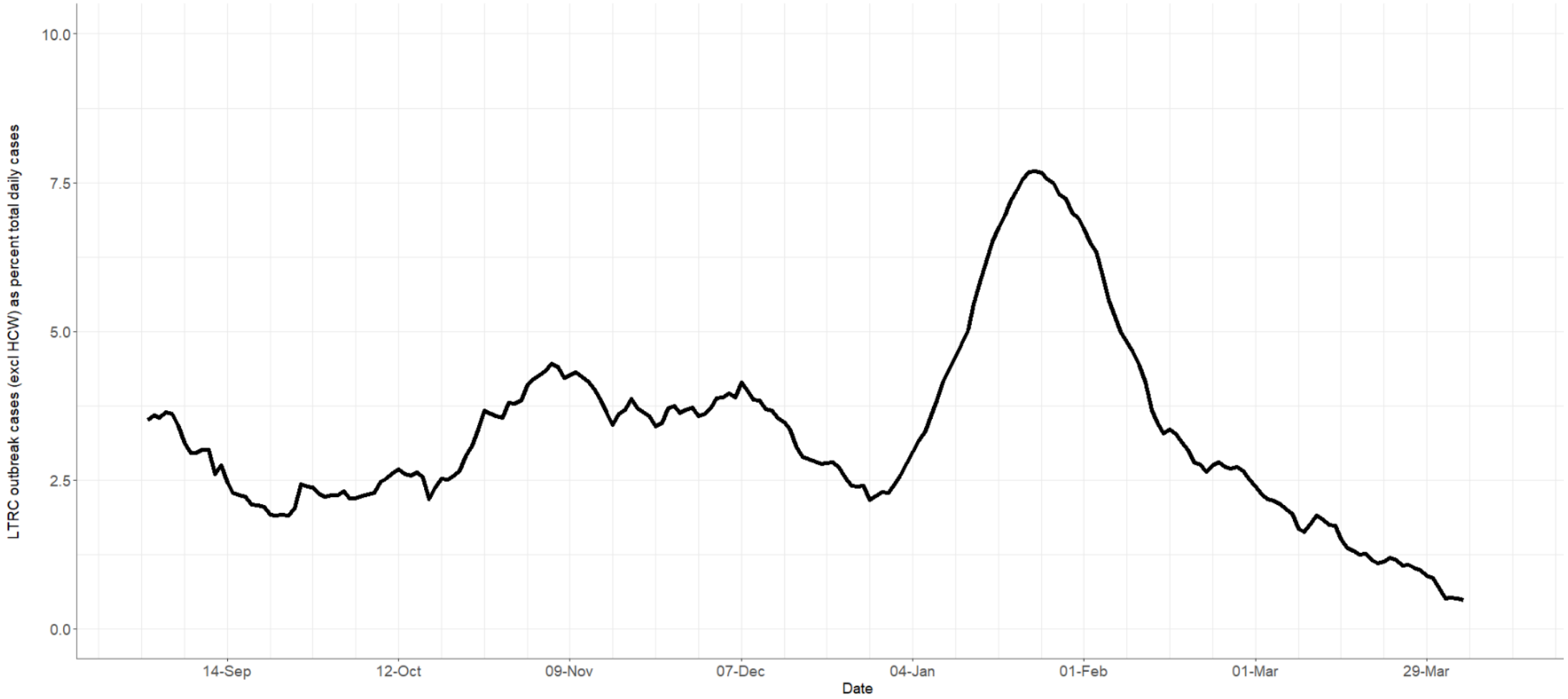

Cases associated with outbreaks in long-term residential care, excluding those cases identified as healthcare workers, as a percentage of all cases. 21-day moving average.

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Vaccination and people aged 70 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 now appear to be falling more rapidly, at a rate of -7 to -9% per day, than the wider population, where cases are falling at -2 to -4% per day

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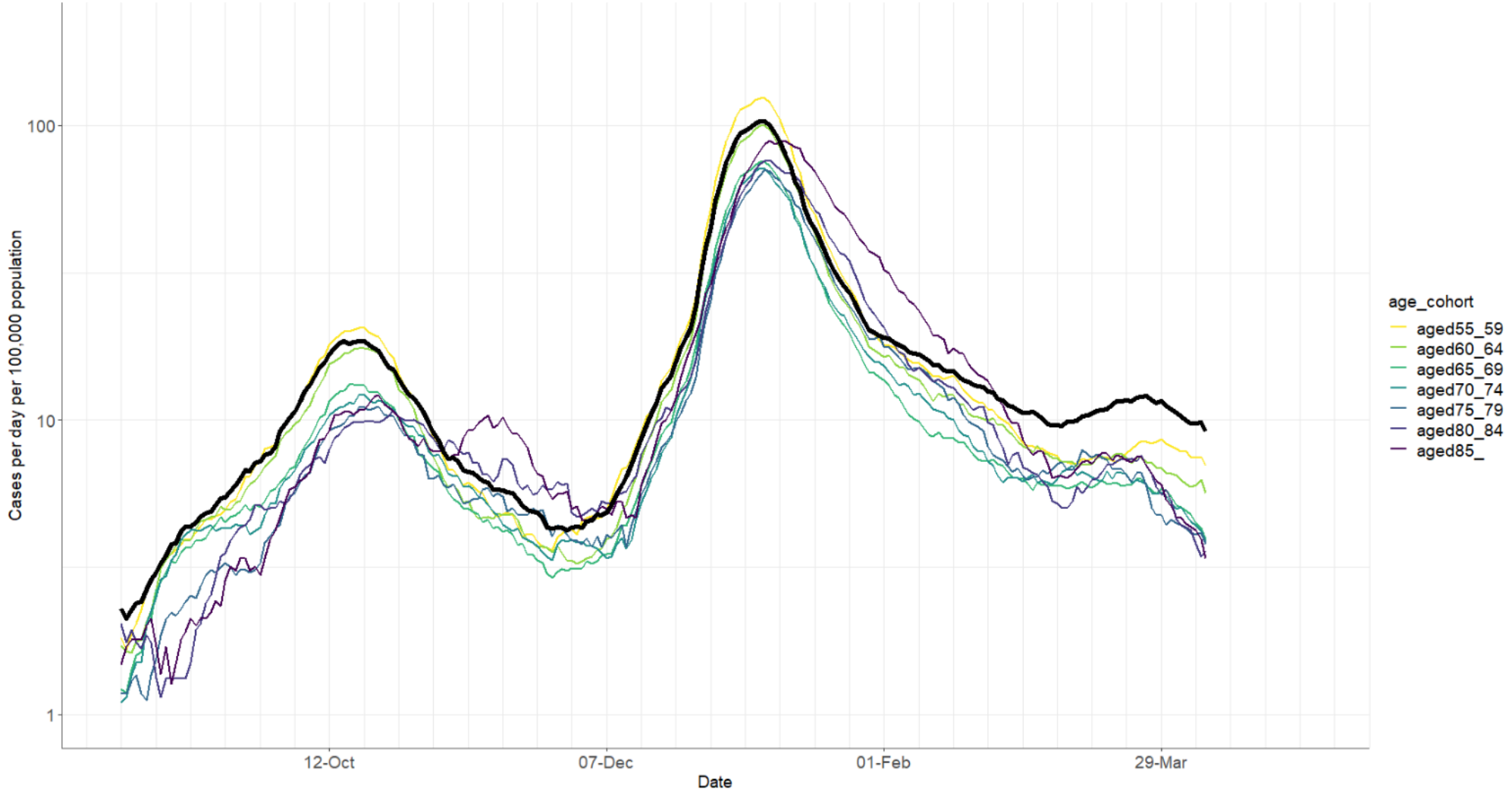

Age-specific incidence (new cases per day per 100,000 population, logarithmic scale) in those aged 55 and older, compared to a reference cohort (black, those aged 30-54 years). 21-day moving average.

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Cases in outbreaks in schools

The number of cases in school outbreaks is a small fraction of the total number of cases in children of school-going age. Note that detection of a case or declaration of an outbreak in a school does not imply that transmission has occurred in the school setting. Cases in children of school-going age stabilised 7-10 days before the school closures on 28 March

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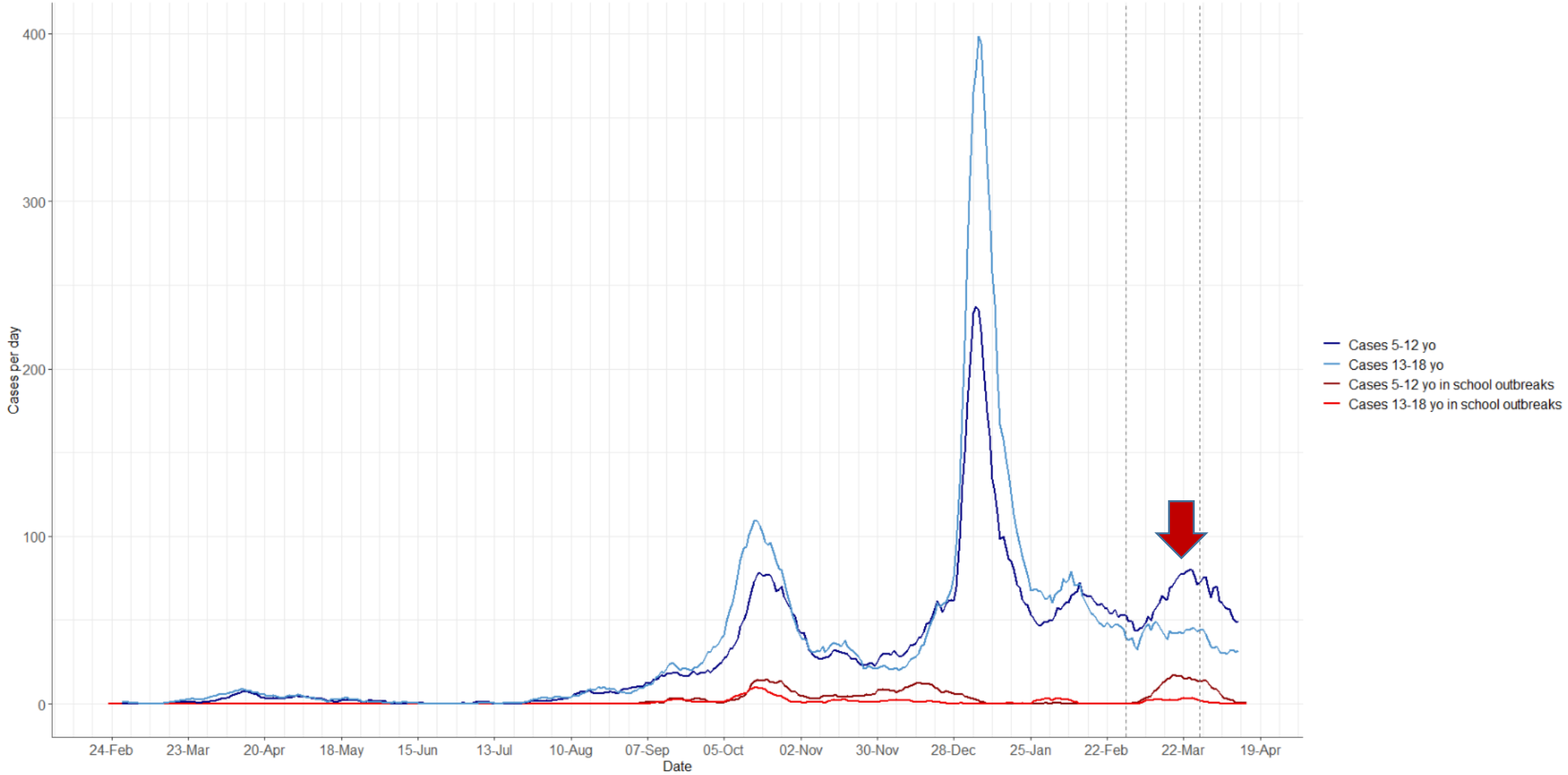

Total cases per day in those aged 5-12 years, and 13-18 years, and those cases in those age bands associated with outbreaks in schools. 7-day moving average

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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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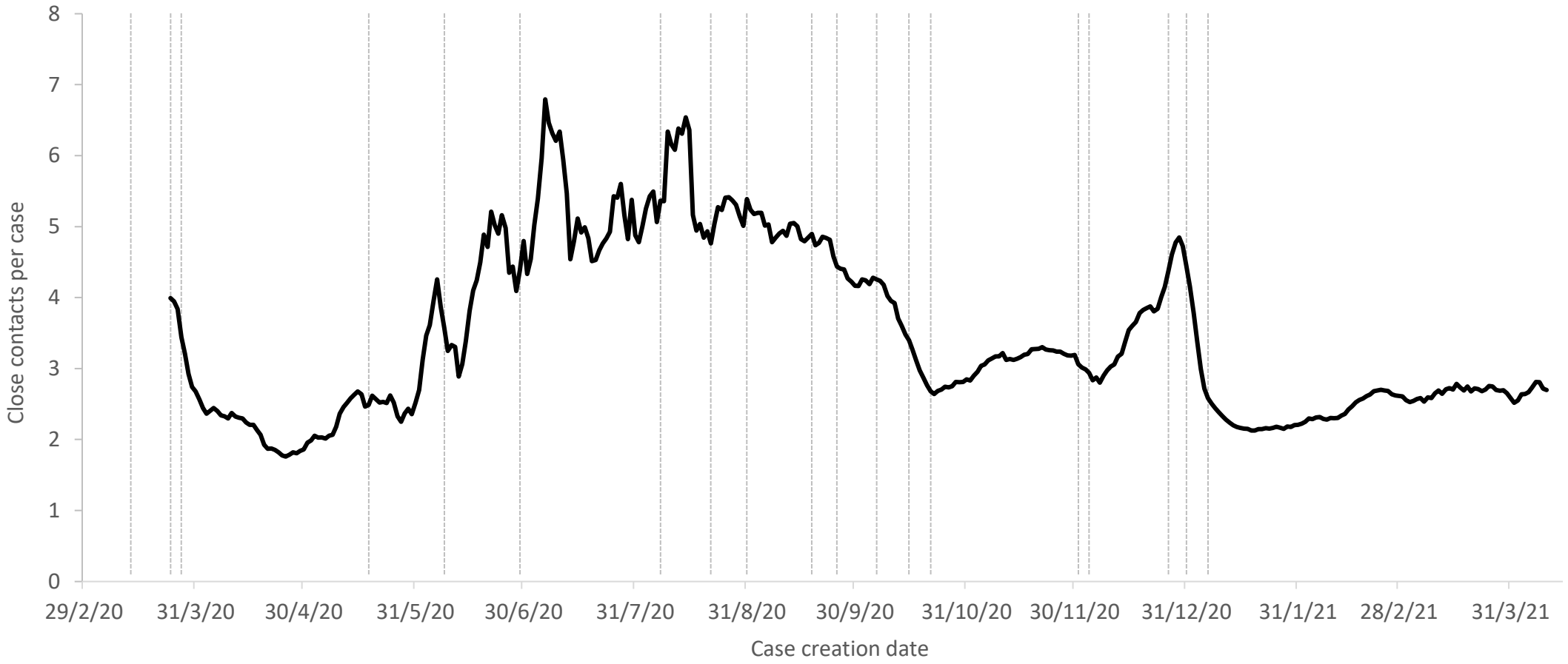

The average number of close contacts per confirmed case. Data from COVID-19 Care Tracker (CCT). Cases dated by case creation date. Cases (but not contacts) aged 18 and younger are excluded. Data are 7-day trailing averages except for the months of June – August where a 21-day trailing average is used 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 at -2% to -4% per day.

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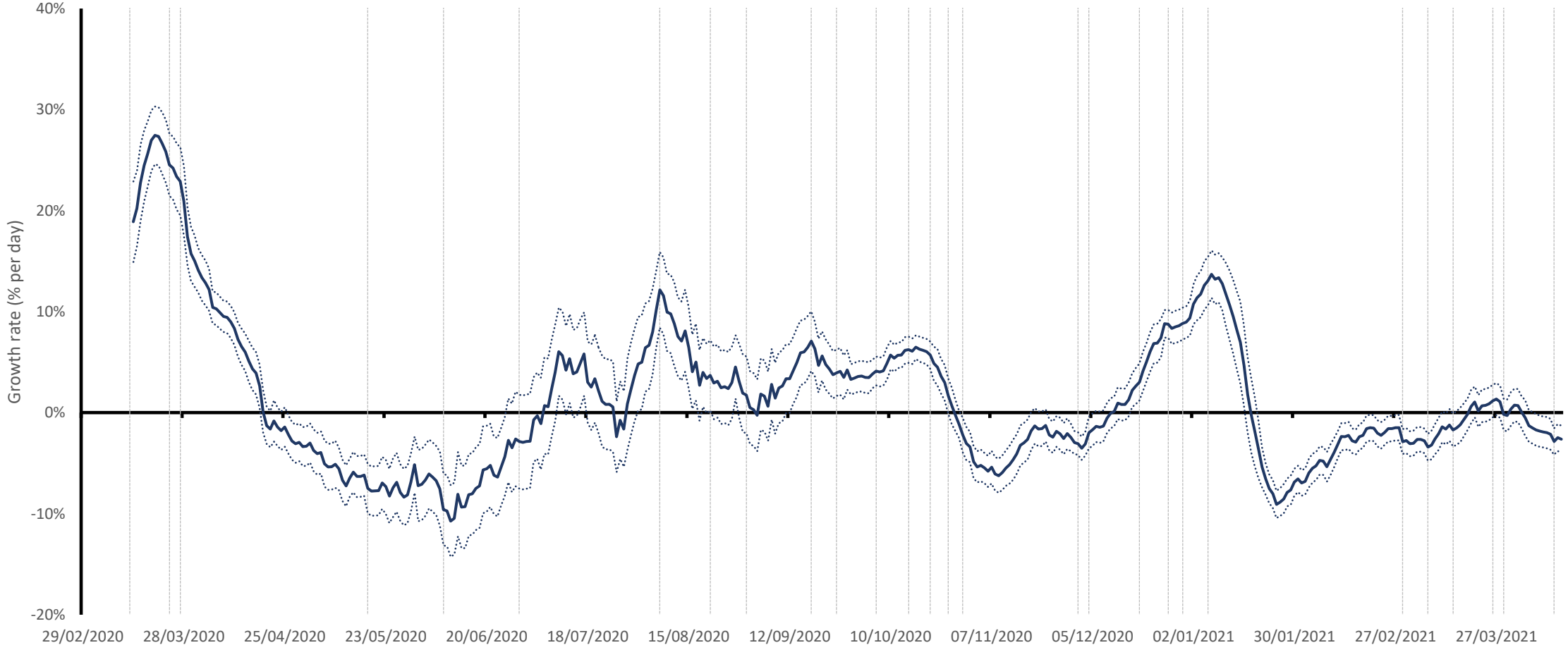

Growth rate calculated as the average growth rate over a 21-day trailing window,with 95% confidence interval; cases dated by notification (event) date.

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Week-on-week decline in cases

While case counts increased marginally in weeks 11 and 12 (by +9% and +4% respectively) the case count in week 13 was 9% less than week 12, and that in week 14 22% less than week 13

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Week	Cases	Week-on week change
2021 - 1	45,616	
2	25,113	-45 %
3	14,807	-41 %
4	8,921	-40 %
5	7,143	-20 %
6	6,027	-16 %
7	5,525	-8 %
8	4,549	-18 %
9	3,629	-20%
10	3,535	-3%
11	3,840	+9%
12	3,983	+4%
13	3,618	-9%
14	2,803	-22%

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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 0.7 – 1.0

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Method	Estimate	95% confidence interval
SEIR model-inferred	0.57	0.33 – 0.78
Bayesian model	0.79	0.45– 1.35
Time-dependent R	0.76	0.69 – 0.84
GAM estimate 6 Apr 2021	1.01	0.84 – 1.18
GAM estimate 13 Apr 2021	1.06	0.83 – 1.29

Estimates generated 14 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 15 April 2021

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- Significant improvement in all indicators of disease
- Incidence is decreasing, but remains high and there is significant variability and uncertainty
  - Cases (5-day average) 358 cases per day; 14-day incidence 123 per 100,000
  - Incidence decreasing across all age groups
  - Test positivity low, partly due to an increase in the volume of testing
  - Reproduction number (R) is likely below 1.0, estimated at 0.7 – 1.0, rate of decline -2 to -4% per day
- Numbers in hospital, critical care and dying are decreasing
- Level of close contact is constant
  - The efforts of the majority of the population are achieving a 75-85% suppression of viral transmission
- Anticipate at least a transient increase in case numbers following school reopening and associated increase in social contact and mobility
- Significant impact of vaccination in HCW and LTRC, seeing early effects in those aged 75+
- While there is strong evidence of protective effect of vaccination in those vaccinated, the population is not protected, so the situation remains volatile and any increase in close contact represents a high risk

Close contacts of adult confirmed cases

The mean number of close contacts per confirmed case. The pattern over time is different for different cohorts. Contacts are higher for young adults compared to older adults. Adults aged 65 and older appear to have increased their contacts, from a very low level, during the latter part of February and early March. The number of close contacts in adults aged 25-64 years is very stable, that in younger adults higher and more volatile.

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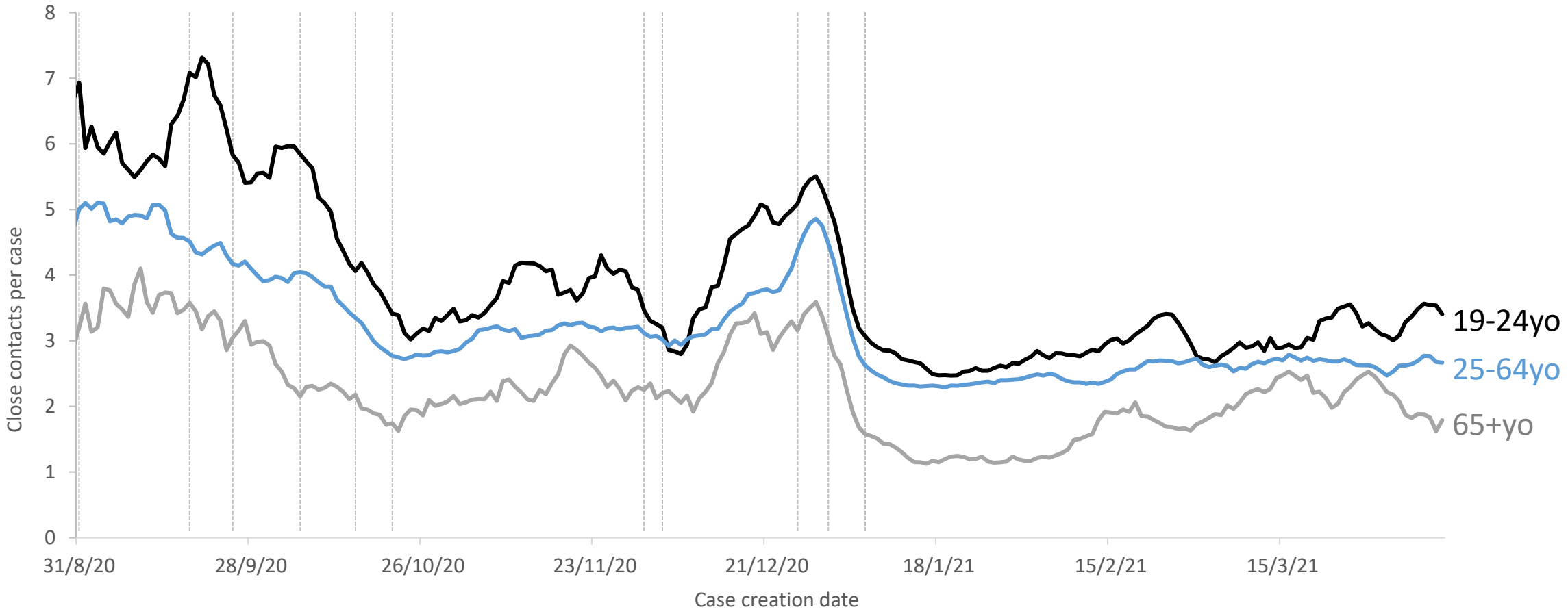

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Google community mobility

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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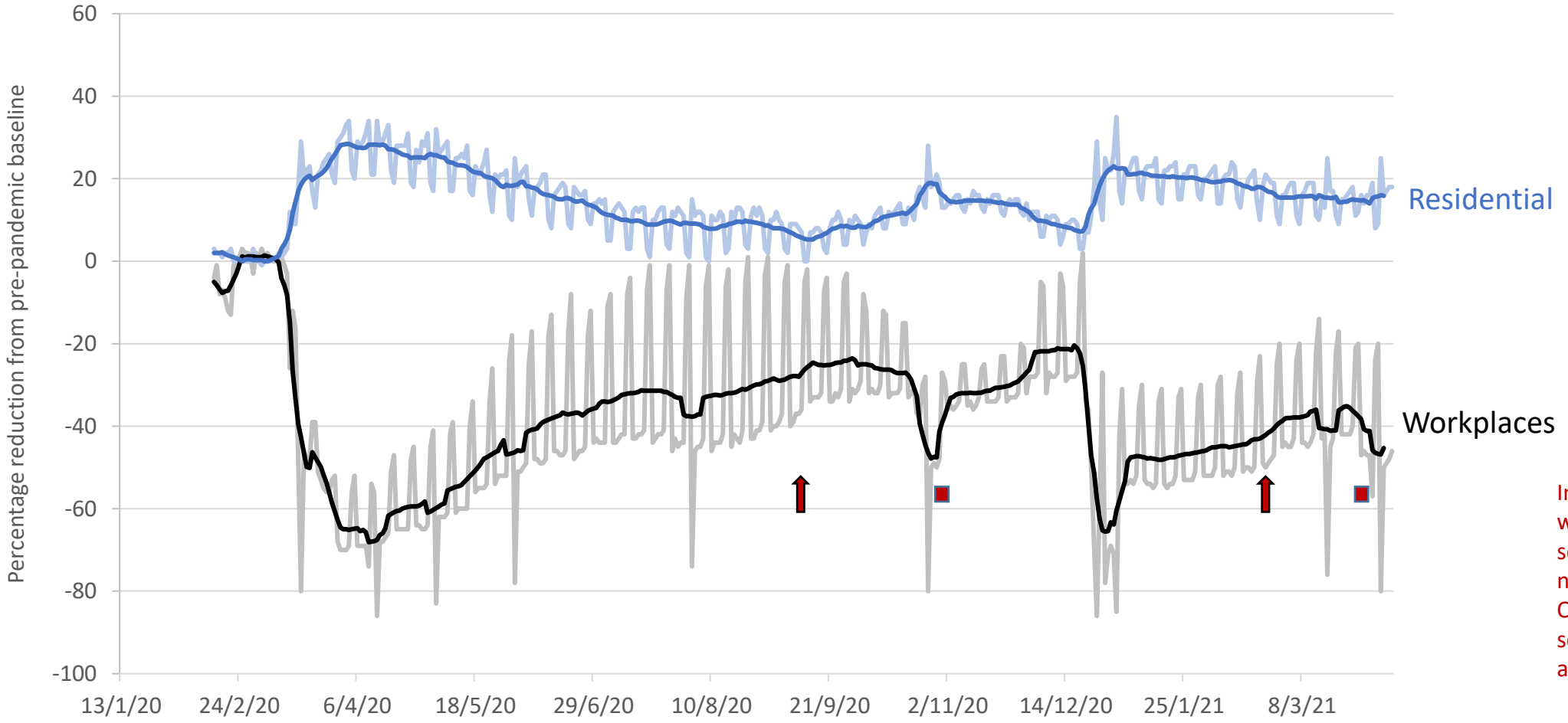

Increased attendance at workplaces coincident with school opening (arrows) note also and impact of October 2020 and April 2021 school breaks on workplace attendance (squares)

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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