IEMAG briefing

8 April 2021

Coronavirus
COVID-19
Public Health
Advice

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. The number of deaths per day is decreasing.

Coronavirus **COVID-19** Public Health Advice

	Apr 2020	Summer 2020	Oct 2020	Dec 2020	Jan 2021	10 Mar	17 Mar	24 Mar	31 Mar	7 Apr	Daily count 8 Apr
Cases confirmed per day	859 18-04	8.7 25-06	1158 21-10	262 12-12	6520 10-01	487	520	564	533	499	400
14-day incidence *per 100,000 population*	212 19-04	3.0 04-07	306 26-10	79 09-12	1532 15-01	163	148	159	161	152	147
Hospital in-patients	862 17-04	9 02-08	333 01-11	198 16-12	1949 24-01	415	351	345	313	254	226
Hospital admissions per day	*85* *04-04*	*<1* *10-07*	*27* *26-10*	*11* *13-12*	*158* *15-01*	*24*	*23*	*24*	*22*	*13*	*11*
ICU confirmed cases	150 14-04	4 04-08	43 04-11	26 27-12	217 28-01	100	86	81	68	50	55
ICU admissions per day	*14* *31-03*	*<1* *03-06*	*4* *03-11*	*1* *16-12*	*20* *17-01*	*4*	*3*	*3*	*3*	*2*	*2*
Deaths confirmed per day	46 22-04	<1 30-07	7 01-12	4 17-12	57 03-02	20	10	9	9	6	7

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.

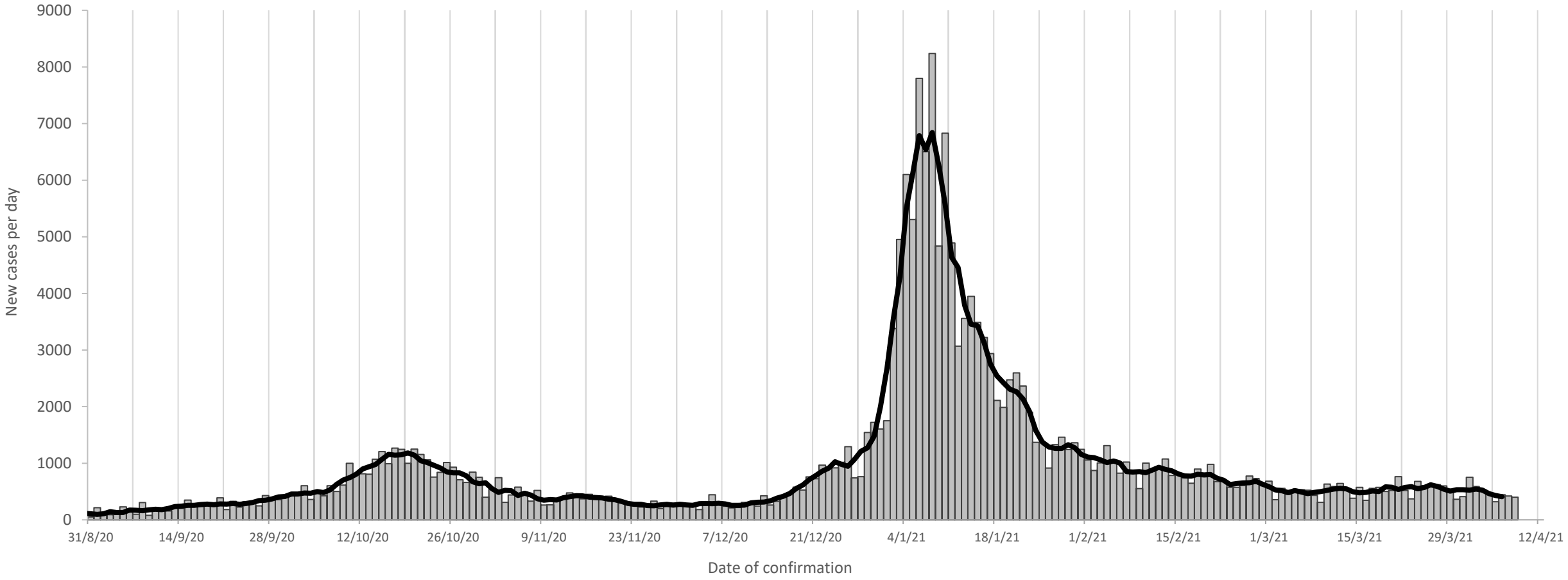
Rialtas na hÉireann
Government of Ireland

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 **408**

Coronavirus **COVID-19** Public Health Advice

Cases per week																														
	912	1303	1947	2059	3031	4457	7398	7073	4838	3424	2583	2580	1798	2028	1964	3368	6597	15722	45616	25115	14807	8921	7144	6028	5526	4549	3629	3536	3842	3984	3622



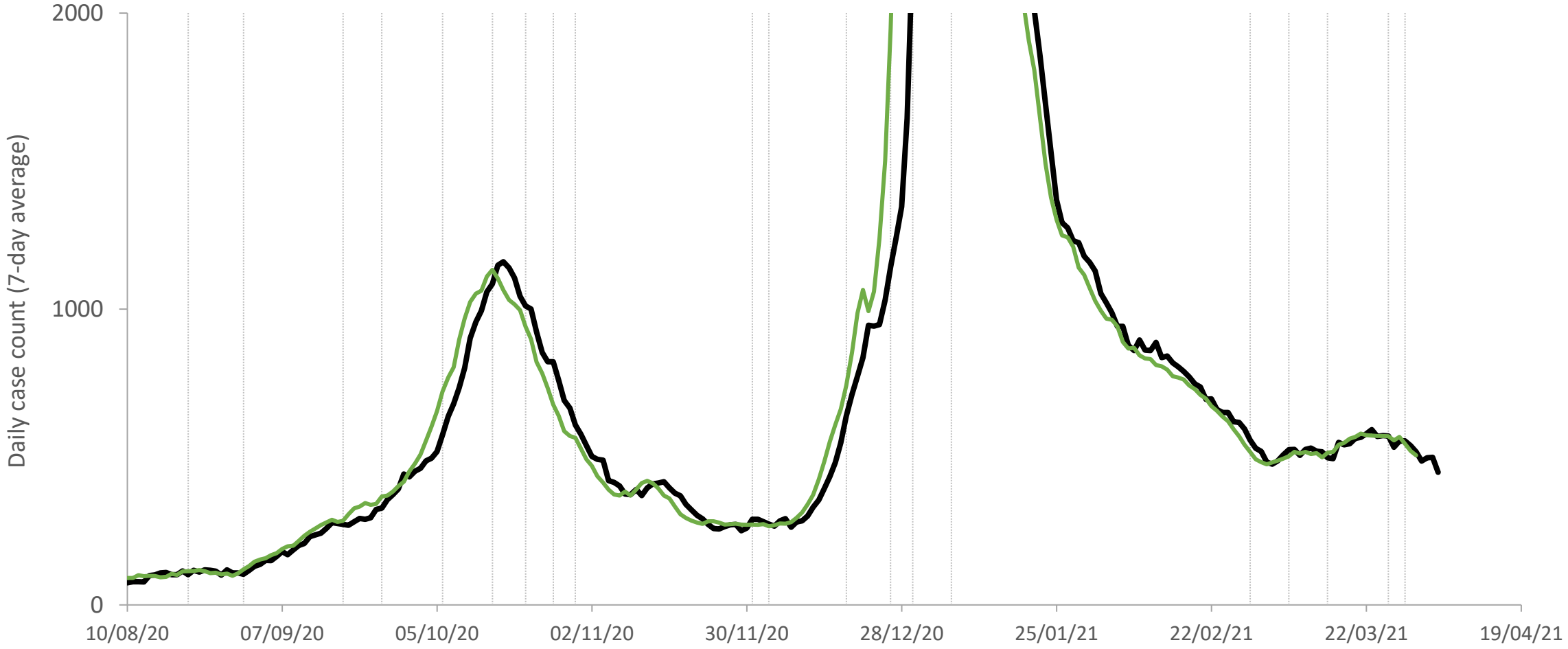
Daily count (bars) 5-day average (line) and weekly counts of the number of laboratory confirmed new cases by date on which they were confirmed by HPSC. Case counts may change due to denotification of cases. Weekly case counts are by notification (event) date and standard epidemiological week.

Rialtas na hÉireann
Government of Ireland

Daily incidence

Daily incidence remains high: currently twice what it was in early December, and approximately 50 times what it was in late June 2020. Incidence is plateaued or decreasing at approximately 400-500 cases per day. There is considerable uncertainty in current estimates, due to the possible impact of Easter on referrals for testing.

Coronavirus
COVID-19
Public Health
Advice



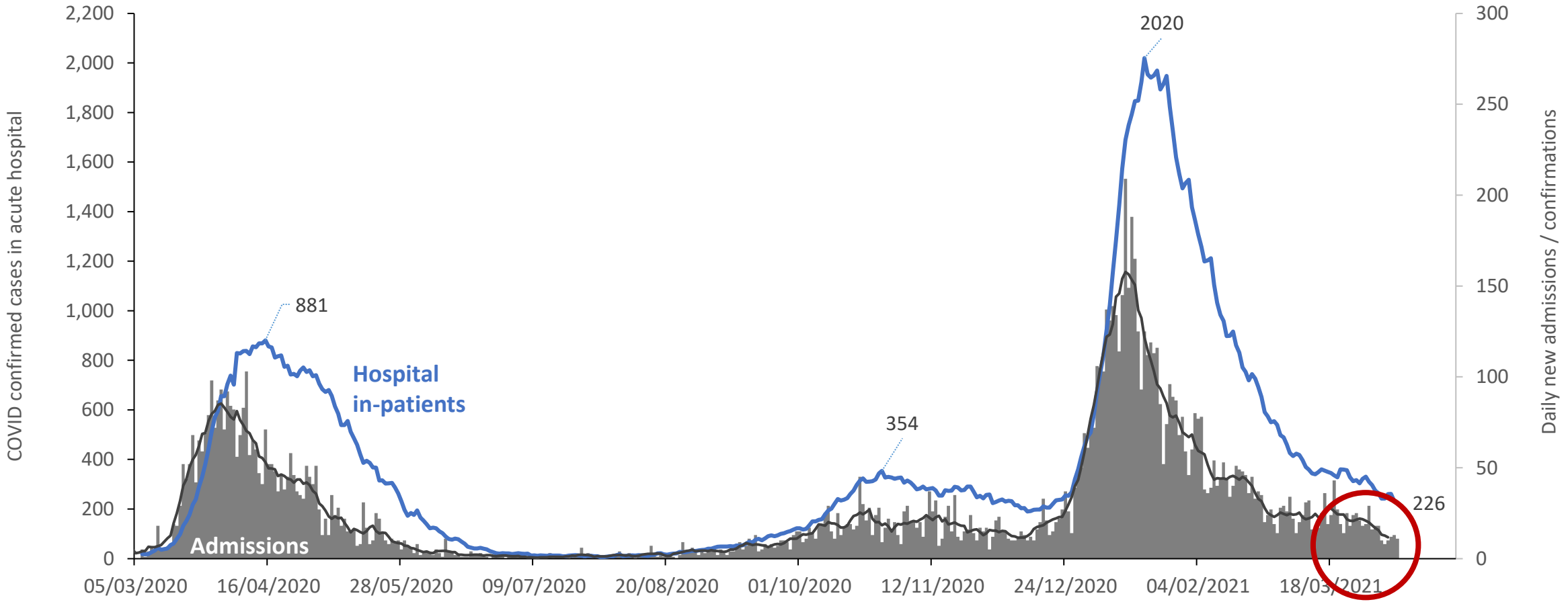
Daily cases by notification (event) date (black, the date the case was entered on the CIDR database) and specimen collection date (green). The vertical dashed lines indicate the dates of escalation and de-escalation of public health restrictions. Data are 7-day moving averages.

Rialtas na hÉireann
Government of Ireland

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. The number of admissions and newly confirmed cases in hospital per day is was plateaued at 20-25 per day throughout March 2021, but may now be decreasing, noting that holiday periods such as Easter may be associated with a transient decrease in hospital admissions

Coronavirus **COVID-19** Public Health Advice



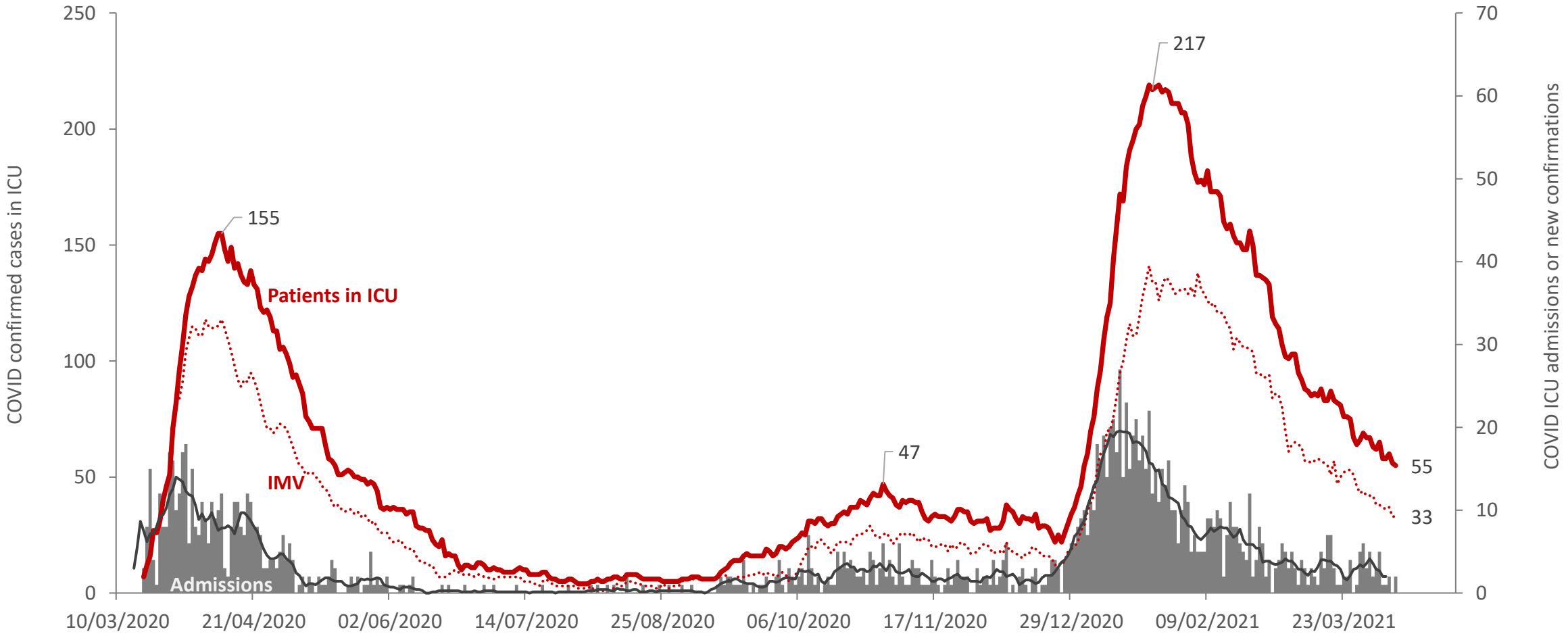
Hospital in-patients: Daily count of number of COVID-19 confirmed cases in acute hospitals. Admissions: New COVID-19 confirmed admissions and new laboratory confirmations of suspected cases in preceding 24 hours (7-day moving average also shown). Data from HSE PMIU-SDU, 8am census.

Rialtas na hÉireann
Government of Ireland

Confirmed cases in intensive care

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

Coronavirus
COVID-19
Public Health
Advice



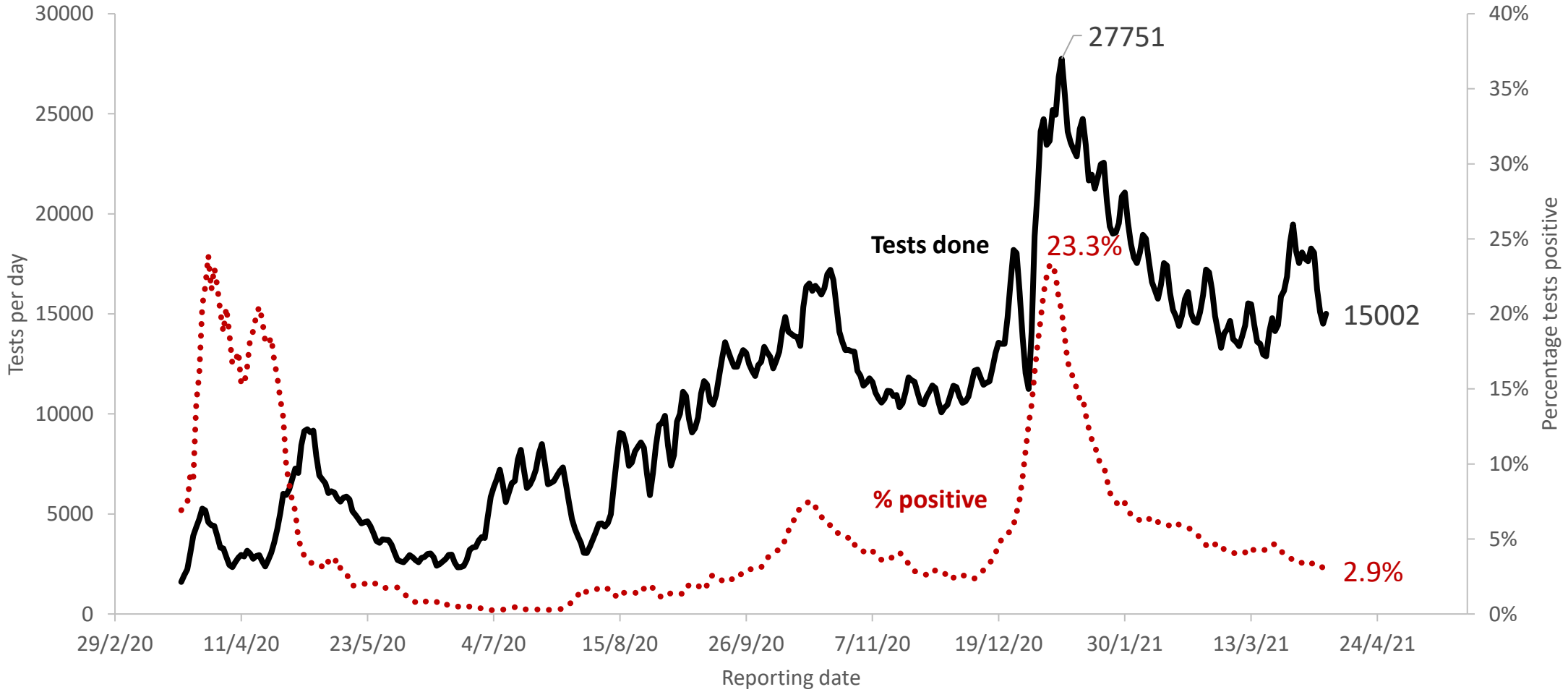
Patients in ICU: Daily count of number of COVID-19 confirmed cases in ICU. IMV: Daily count of number of COVID-19 patients requiring invasive mechanical ventilation. Admissions: daily new COVID-19 confirmed admissions to ICU and new laboratory confirmations of suspected cases in ICU (7-day average also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

Rialtas na hÉireann
Government of Ireland

Testing and test positive rate

Positivity rate has fallen significantly since the January peak: overall positivity rate peaked at 23% on 7 January. Postivity was plateaued at ≈ 4% through early March; a marked increase in demand for testing, especially in children, was sufficient to depress overall positivity rate to closer to 3%.

Coronavirus
COVID-19
Public Health
Advice



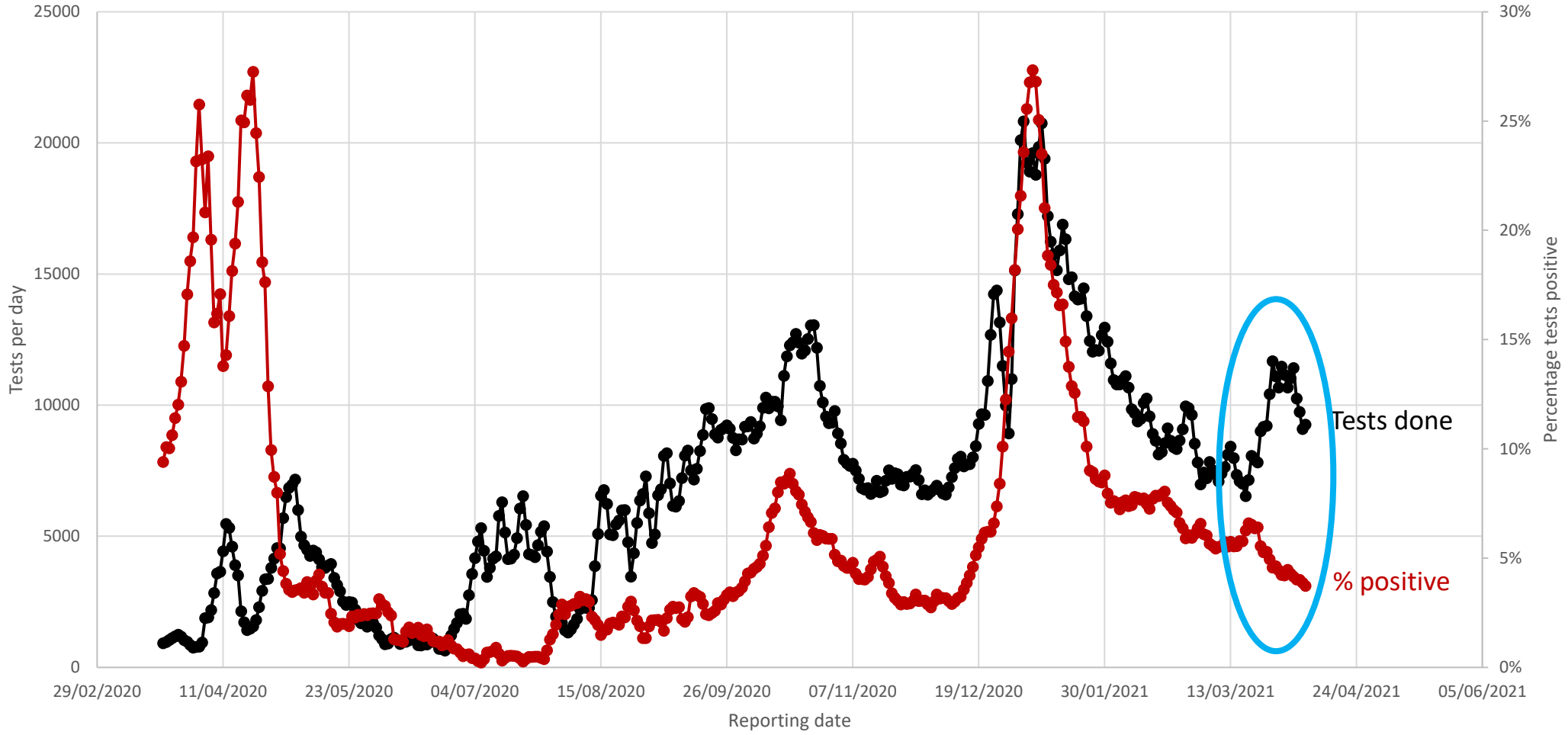
Data 5-day rolling averages, tests outsourced to German laboratory in April backdated using specimen collection date. The aggregate positivity rate should be interpreted with caution, as it includes community referrals, close contacts, mass and serial testing, and hospital testing, and changes in numbers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

Rialtas na hÉireann
Government of Ireland

Daily test positivity: public health laboratories

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

Coronavirus
COVID-19
Public Health
Advice



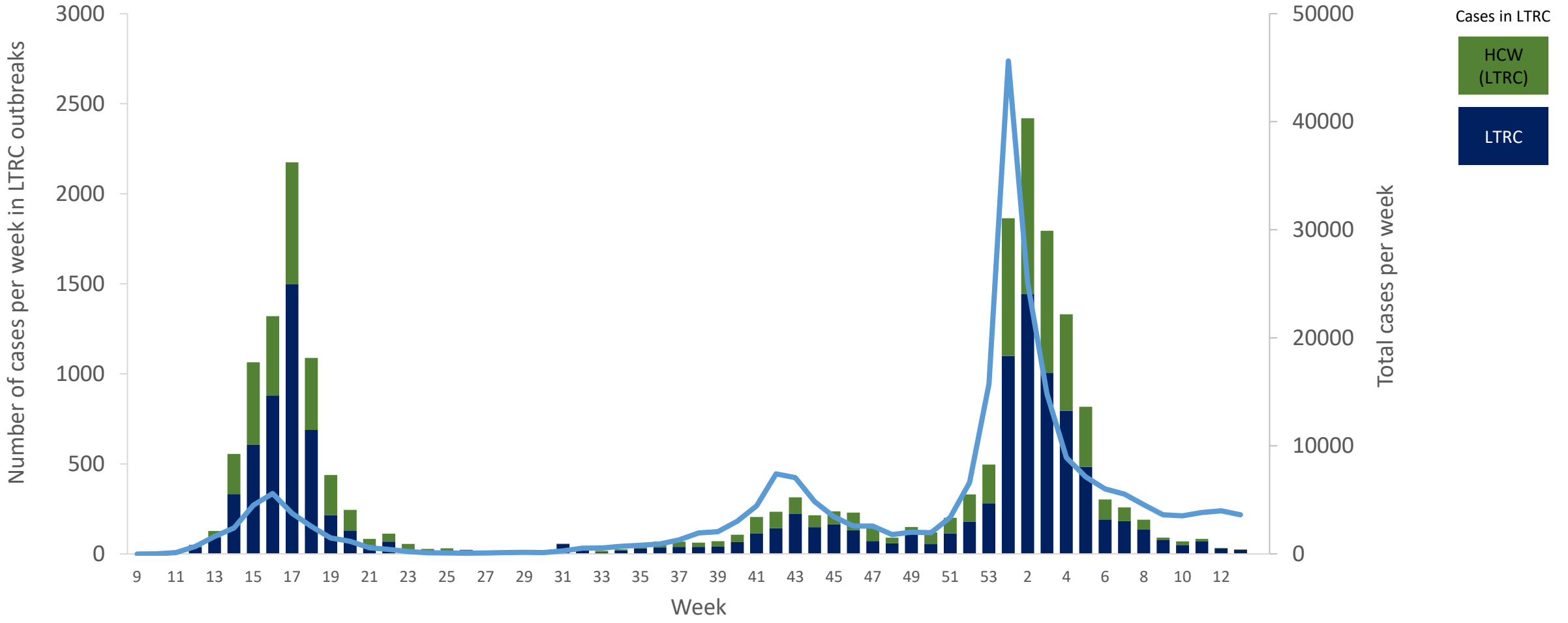
Daily tests done (black) and percentage of tests reported positive (red) per day from NVRL and associated laboratories, plus Cherry Orchard

Rialtas na hÉireann
Government of Ireland

Cases in long-term residential settings

The number of cases linked to outbreaks in LTRC, following the unprecedented levels of infection in the community in January 2021, was 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 relative level of infection in LTRC is significantly less than in April-May 2020. Cases in LTRC have decreased rapidly, and moreso than would be expected given the level of disease in the wider community

Coronavirus **COVID-19** Public Health Advice



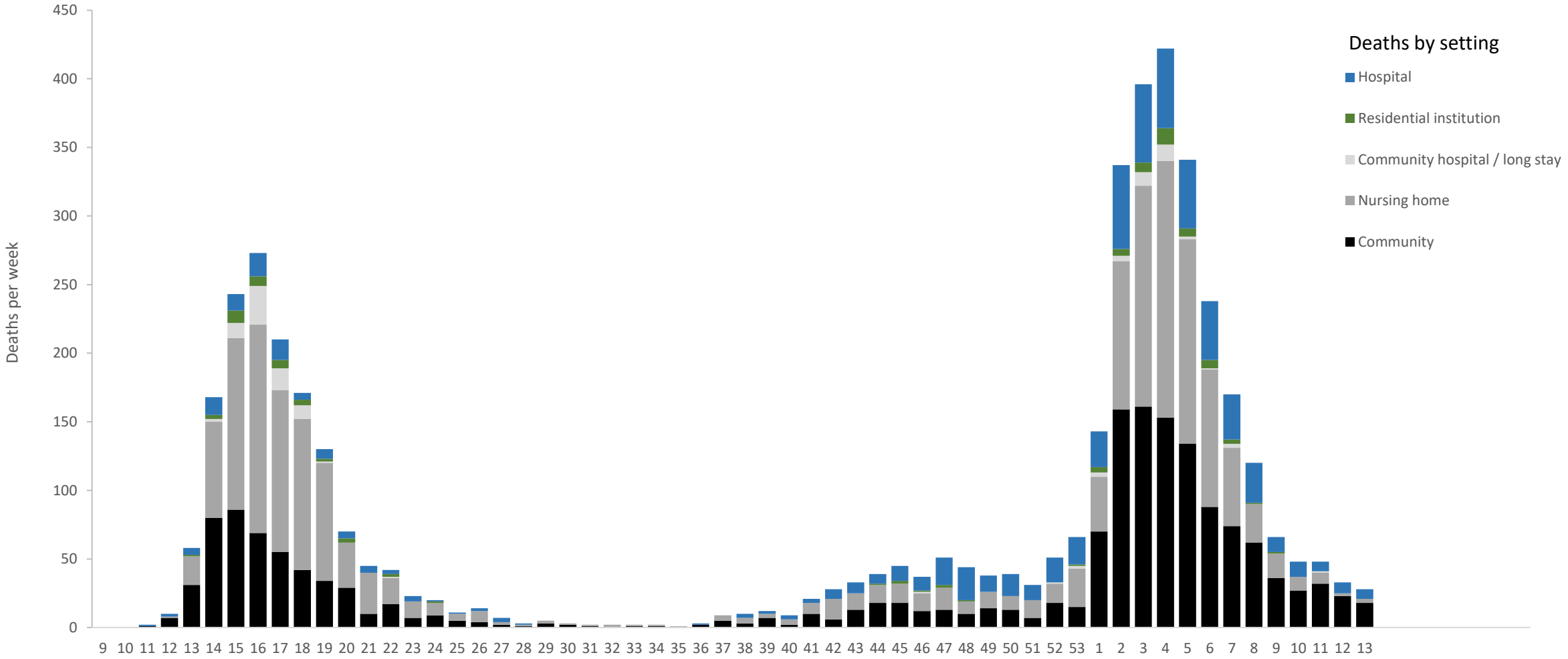
Number of cases per week linked to outbreaks in long-term residential care (bars) compared to the total number of cases per week (dotted line, referred to the secondary y-axis). LTRC: cases amongst residents in outbreaks in long-term residential settings.
HCW (LTRC): Cases in healthcare workers associated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

Rialtas na hÉireann
Government of Ireland

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.

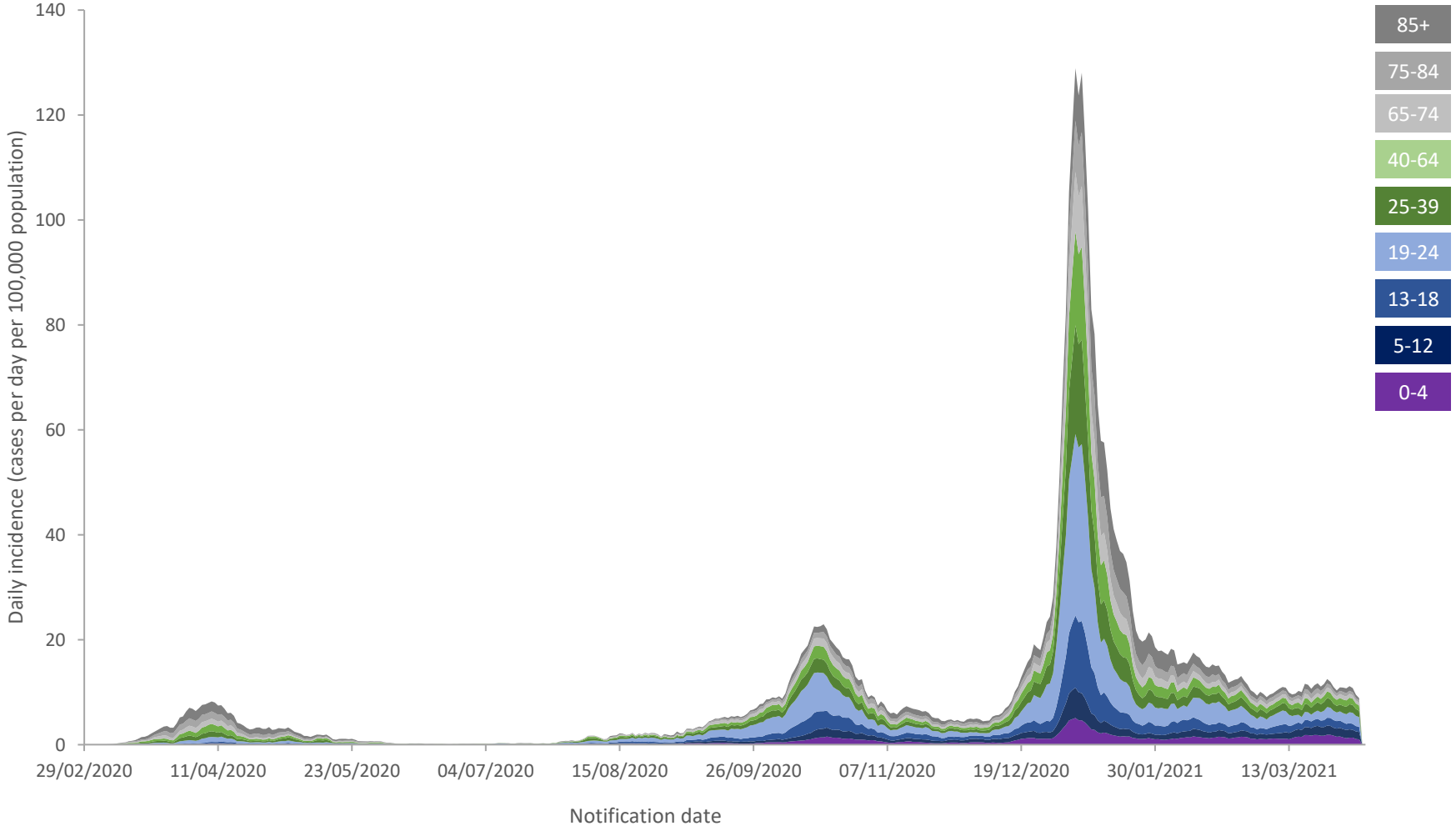
Coronavirus
COVID-19
Public Health
Advice



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.

Rialtas na hÉireann
Government of Ireland

Incidence across different age groups (excluding HCW and LTRC)



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	27.7	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	29.3	47.4	47.7	72.8	119.9
16	3.0	5.3	10.8	19.3	20.8	32.1	29.5	50.9	79.9
17	3.3	4.2	7.8	21.7	23.6	26.7	21.4	56.5	97.7
18	4.5	6.4	9.4	20.2	26.0	21.0	18.7	37.7	53.3
19	2.1	2.7	4.6	13.3	15.2	14.3	10.4	19.3	37.0
20	3.6	1.6	5.1	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	6.8	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	1.1	1.0	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	1.5	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	16.4	10.5	4.6	2.5	3.0
33	6.0	10.0	12.1	27.2	19.5	12.1	8.6	2.5	7.4
34	7.2	7.5	17.5	37.4	16.5	11.4	5.9	5.1	4.4
35	6.3	9.7	13.5	37.1	18.4	11.1	4.8	9.2	5.9
36	13.0	13.1	17.2	47.7	21.6	13.3	11.0	11.7	14.8
37	17.2	17.9	30.1	63.4	28.7	24.4	22.2	8.7	10.4
38	21.7	26.2	43.9	90.6	44.0	34.9	33.2	19.8	19.2
39	12.1	22.6	42.8	146.7	49.9	41.8	32.9	31.0	20.7
40	29.6	28.8	63.2	167.6	68.0	57.8	34.5	26.0	20.7
41	42.8	46.8	132.9	316.7	115.3	89.7	61.6	51.9	60.7
42	78.1	90.6	198.3	434.2	154.4	142.9	90.5	67.2	71.1
43	81.7	93.9	174.7	302.2	123.4	121.7	85.4	82.4	84.4
44	55.8	67.6	95.8	155.8	75.5	77.5	55.2	55.5	59.2
45	34.7	39.7	58.1	83.9	57.7	45.9	42.8	44.3	47.4
46	41.9	37.2	65.4	89.7	45.3	44.7	32.4	42.7	71.1
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	29.0	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	81.0	54.6	55.0	51.8
52	77.5	76.9	120.0	326.1	176.0	134.7	95.8	94.7	119.9
53	218.1	236.7	514.0	1401.8	760.7	636.1	423.6	350.1	361.2
1	183.7	208.7	569.2	1329.4	790.4	720.9	497.4	446.3	558.1
2	130.6	126.5	303.0	582.4	414.6	419.4	301.5	410.2	577.3
3	93.5	81.5	168.5	327.3	253.6	244.0	170.0	251.9	413.0
4	74.2	60.9	128.4	228.9	154.6	146.7	119.4	161.3	267.9
5	78.1	72.9	126.8	207.7	126.6	122.9	85.4	117.0	213.2
6	92.0	85.5	126.5	225.8	118.4	102.4	68.3	90.1	124.3
7	87.5	76.7	96.3	253.0	106.6	88.4	59.7	78.4	114.0
8	87.8	69.8	89.3	186.0	94.6	76.7	43.4	53.4	85.9
9	66.7	57.0	65.1	125.3	75.6	58.3	44.7	45.8	40.0
10	68.2	68.0	90.4	145.8	79.2	58.8	39.1	40.7	41.4
11	107.7	90.9	78.9	87.0	85.7	62.2	46.0	55.0	59.2
12	107.1	102.1	85.3	104.2	92.8	69.6	41.2	42.2	45.9
13	70.0	86.6	65.1	115.6	82.3	67.9	39.9	36.1	42.9

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 notification date. A number of cases in those aged 65 and older will be linked in the coming days to outbreaks in LTRC.

Rialtas na hÉireann
Government of Ireland

Incidence across different age groups (excluding HCW and LTRC)

Incidence in children has stabilised.

Coronavirus **COVID-19** Public Health Advice

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	29.0	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	81.0	54.6	55.0	51.8
52	77.5	76.9	120.0	326.1	176.0	134.7	95.8	94.7	119.9
53	218.1	236.7	514.0	1401.8	760.7	636.1	423.6	350.1	361.2
1	183.7	208.7	569.2	1329.4	790.4	720.9	497.4	446.3	558.1
2	130.6	126.5	303.0	582.4	414.6	419.4	301.5	410.2	577.3
3	93.5	81.5	168.5	327.3	253.6	244.0	170.0	251.9	413.0
4	74.2	60.9	128.4	228.9	154.6	146.7	119.4	161.3	267.9
5	78.1	72.9	126.8	207.7	126.6	122.9	85.4	117.0	213.2
6	92.0	85.5	126.5	225.8	118.4	102.4	68.3	90.1	124.3
7	87.5	76.7	96.3	253.0	106.6	88.4	59.7	78.4	114.0
8	87.8	69.8	89.3	186.0	94.6	76.7	43.4	53.4	85.9
9	66.7	57.0	65.1	125.3	75.6	58.3	44.7	45.8	40.0
10	68.2	68.0	90.4	145.8	79.2	58.8	39.1	40.7	41.4
11	107.7	90.9	78.9	87.0	85.7	62.2	46.0	55.0	59.2
12	107.1	102.1	85.3	104.2	92.8	69.6	41.2	42.2	45.9
13	70.0	86.6	65.1	115.6	82.3	67.9	39.9	36.1	42.9

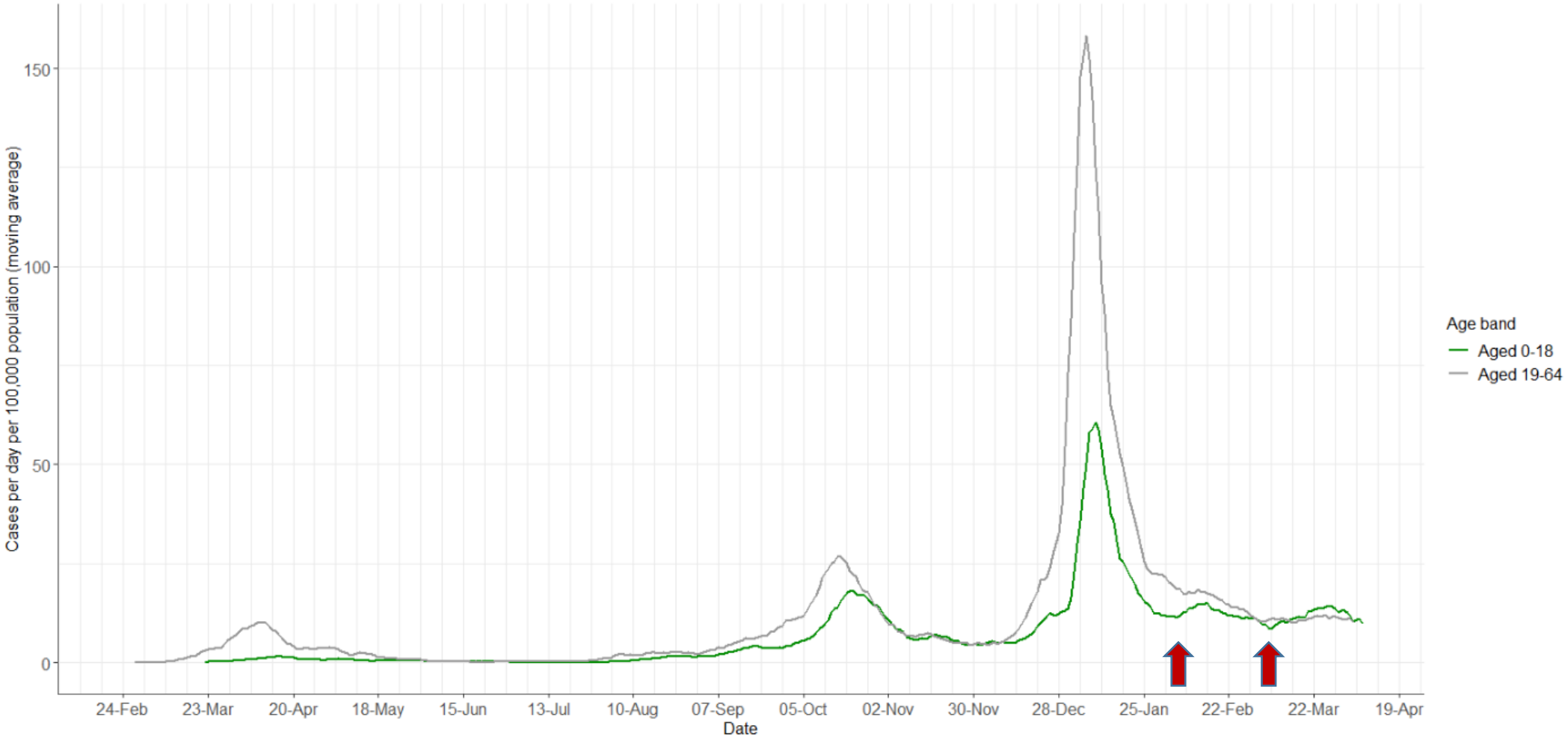
Heat map shows age-specific incidence (cases per week per 100,000 population). Healthcare workers and cases associated with outbreaks in long-term residential care are excluded, so that the analysis reflects the pattern of cases in the community. Cases dated by specimen collection date.

Rialtas na hÉireann
Government of Ireland

Age-specific incidence in children and adolescents

Incidence is stable in adults aged 19-64 years. During a surge, incidence in those aged 0-18 years is generally lower than the population average during a wave, but converges on the population average towards the end of the wave. There have been two recent increases in incidence in those aged 18 and under (arrows) in early February 2021 and early March 2021

Coronavirus
COVID-19
Public Health
Advice

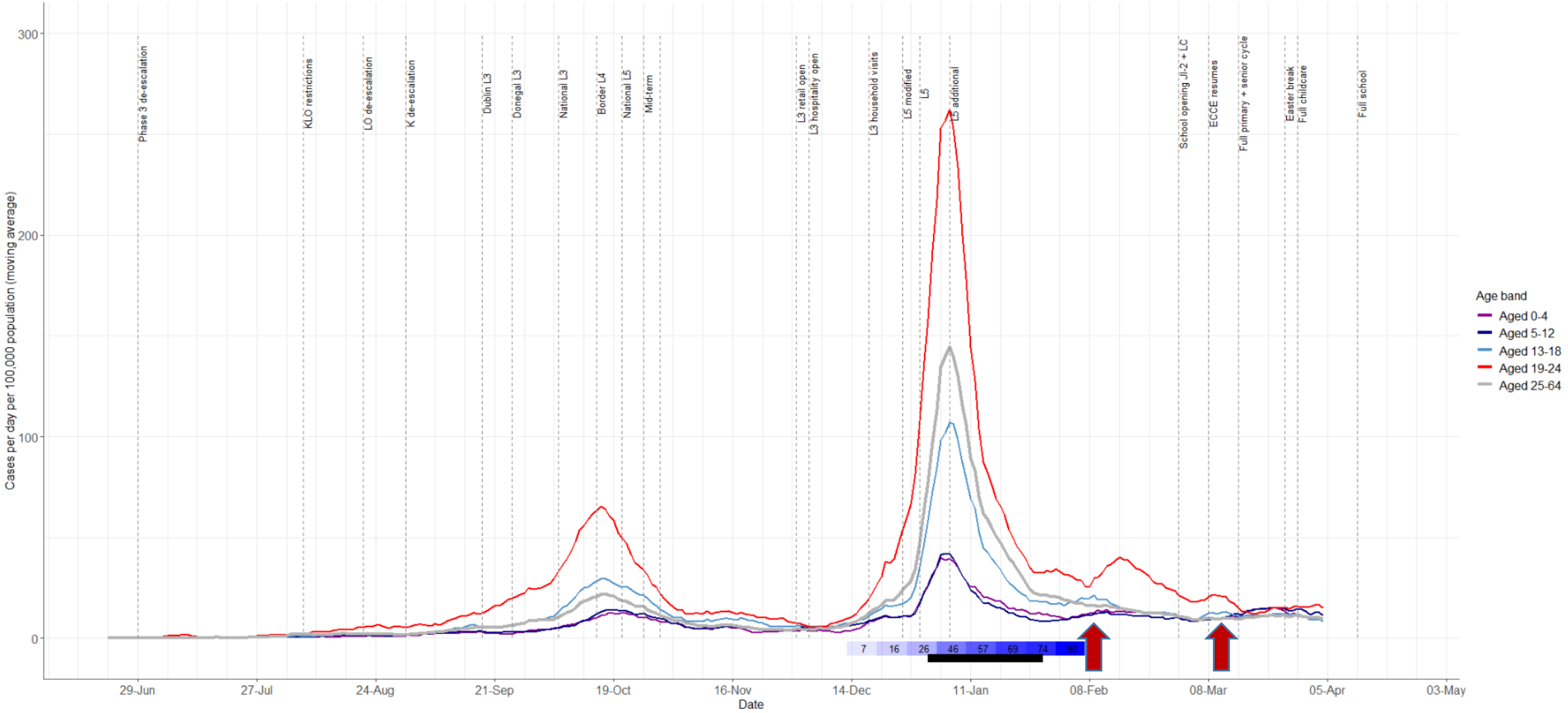


Rialtas na hÉireann
Government of Ireland

Age-specific incidence in younger age groups

There were few cases detected in young people in the first wave, most likely due to constrained testing and early and strict stay-at-home order. The pattern in later waves was for incidence to rise first in those aged 19-24 years, later and simultaneously in the wider working age population and those aged 13-18 years, and later again in those aged 0-12 years. Incidence is generally lower than the population average in those aged 0-12 years during a wave, but converges on the population average towards the end of the wave.

Coronavirus
COVID-19
Public Health
Advice



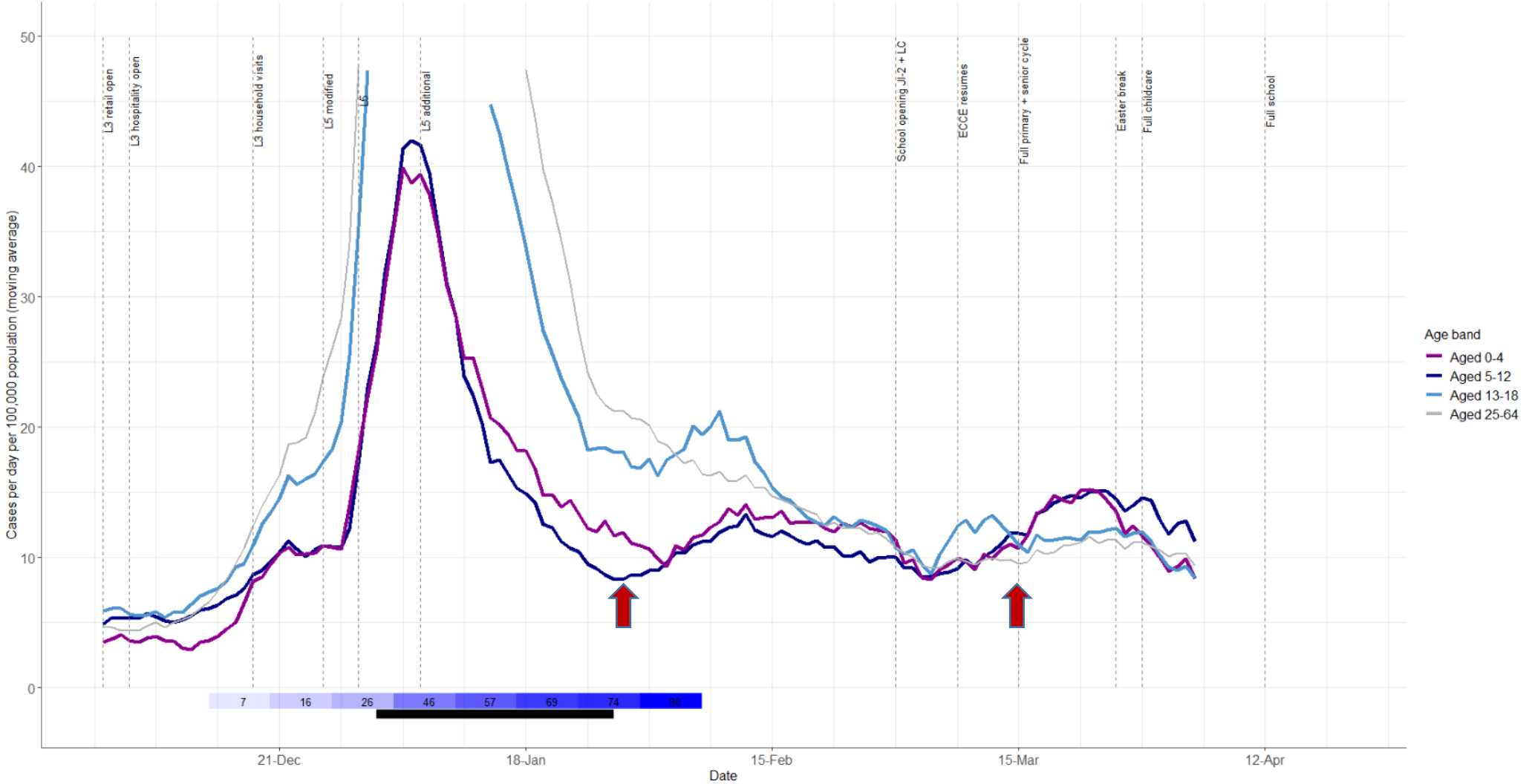
7-day moving average of age specific incidence (cases per day per 100,000 population) for those aged under 25, compared with the population aged 25-64 years. Cases dated by notification date. Healthcare workers and cases associated with outbreaks in long-term residential care are excluded, so that the 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.

Rialtas na hÉireann
Government of Ireland

Age-specific incidence in younger age groups

The increases in incidence in children (red arrows) in early February 2021 and mid-March 2021. The first is associated with the resumption of testing of asymptomatic close contacts. The second of these began 10-14 days after the resumption of in-person education for junior infants to 2nd class, and is due to increased referral for testing It is noteworthy that 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 decreasing

Coronavirus **COVID-19** Public Health Advice



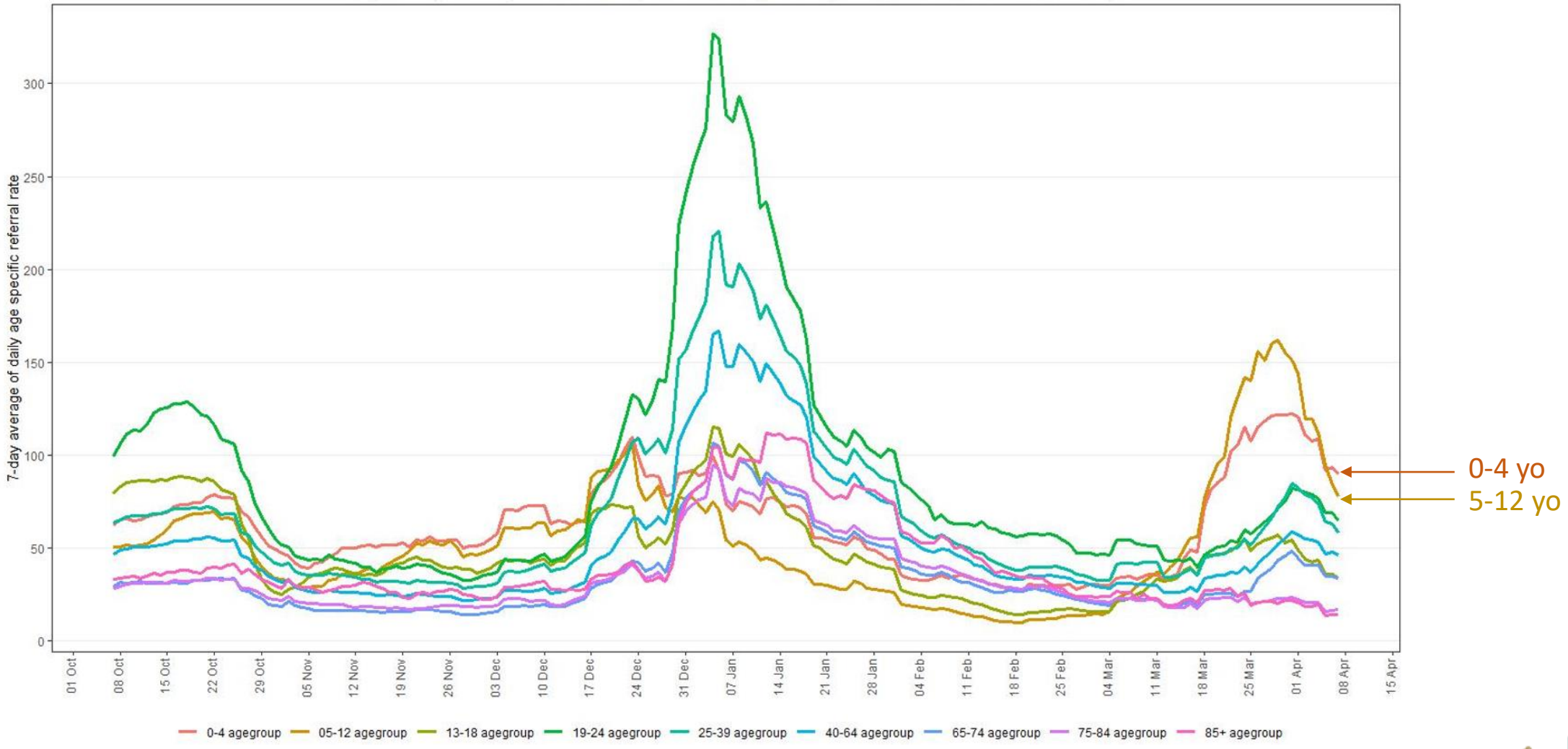
7-day moving average of age specific incidence (cases per day per 100,000 population) for those aged under 25, compared with the population aged 25-64 years. Cases dated by notification date. Healthcare workers and cases associated with outbreaks in long-term residential care are excluded, so that the 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.

Rialtas na hÉireann
Government of Ireland

Increased referral of children for testing in March 2021

There has been 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.

Coronavirus
COVID-19
Public Health
Advice



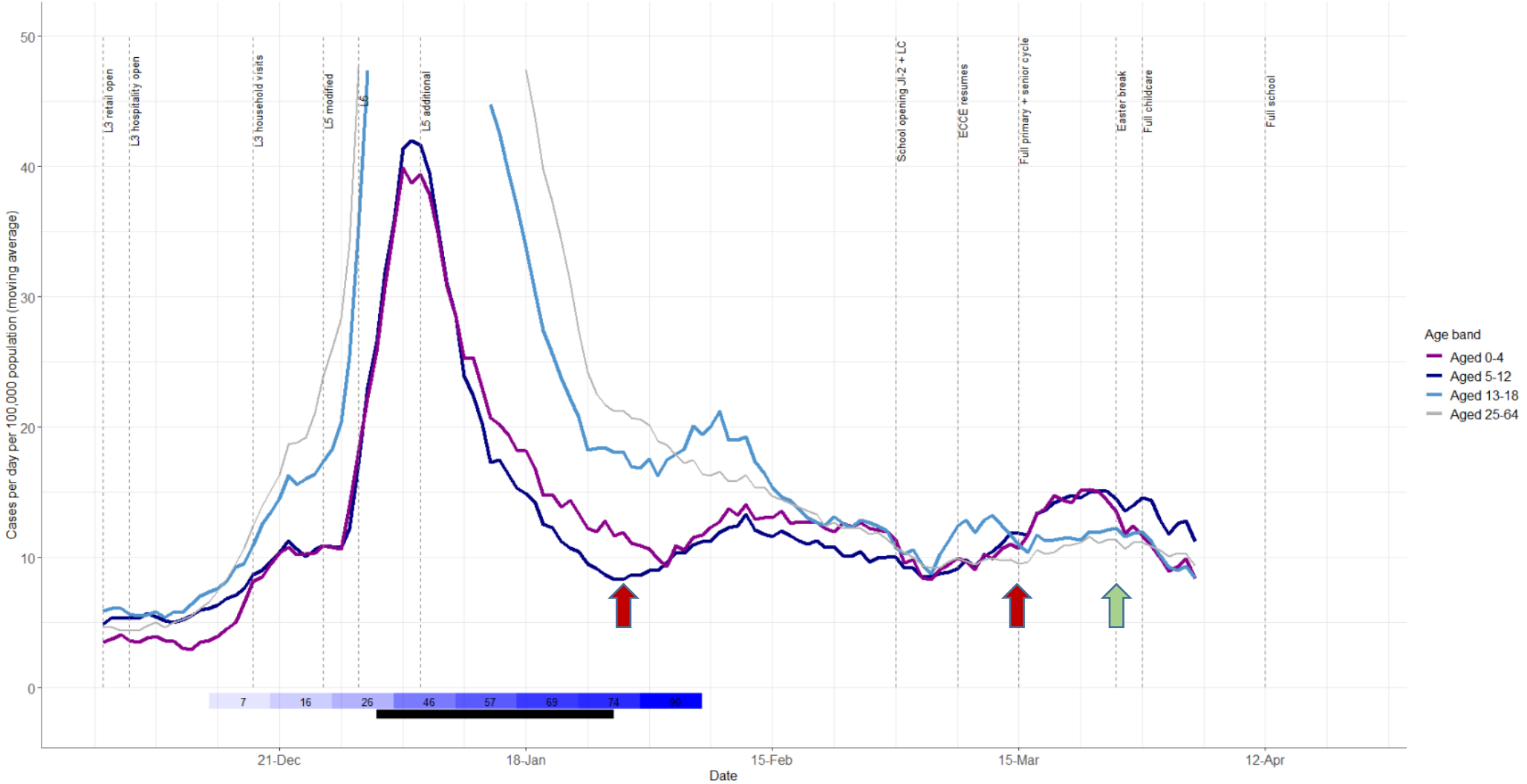
Age-specific referral for community testing (GP referrals excluding close contacts of known confirmed cases per day per 100,000 population within each age cohortpopulation from CSO 2016 census data).

Rialtas na hÉireann
Government of Ireland

Age-specific incidence in younger age groups

The increases in incidence in children (red arrows) in early February 2021 and mid-March 2021. The first is associated with the resumption of testing of asymptomatic close contacts. The second of these began 10-14 days after the resumption of in-person education for junior infants to 2nd class, and is due to increased referral for testing It is noteworthy that 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 decreasing

Coronavirus **COVID-19** Public Health Advice



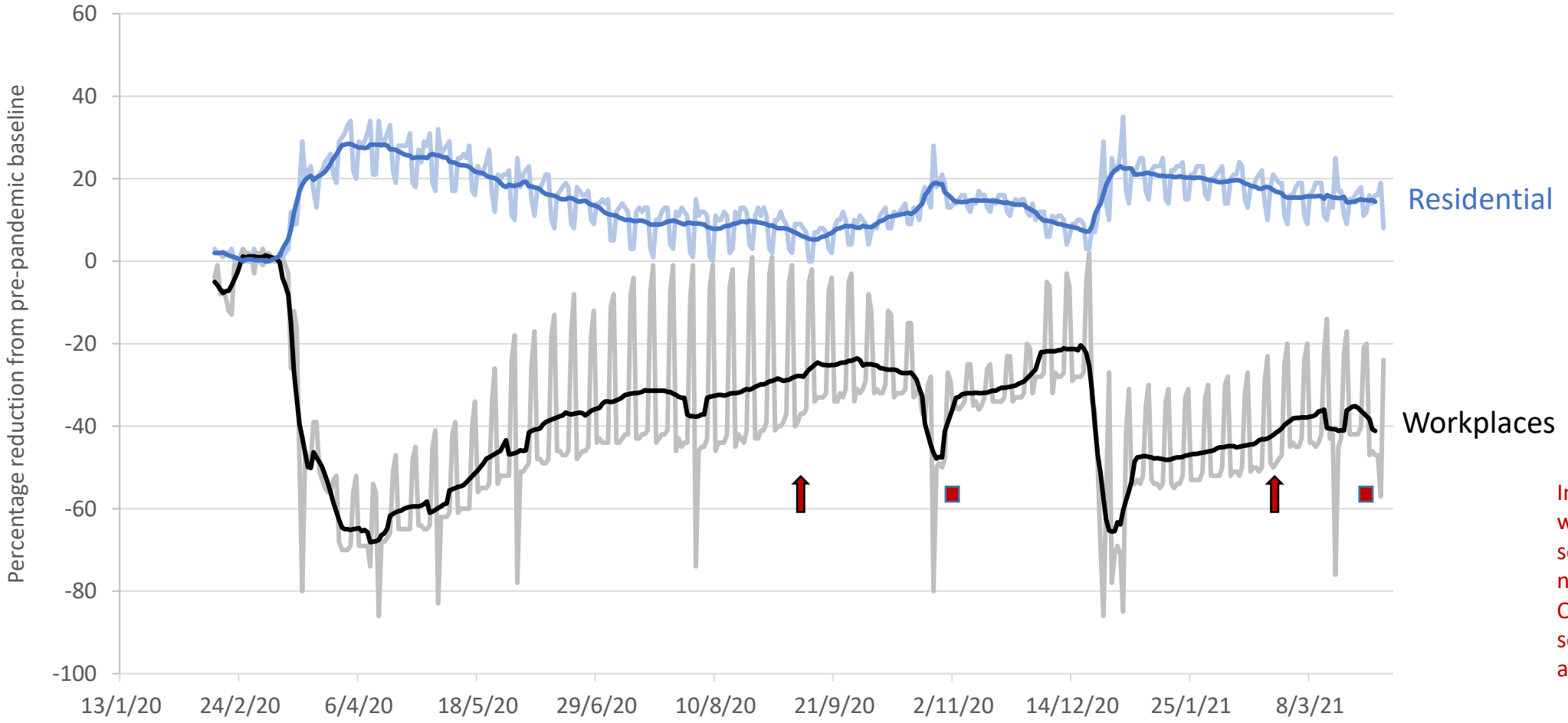
7-day moving average of age specific incidence (cases per day per 100,000 population) for those aged under 25, compared with the population aged 25-64 years. Cases dated by notification date. Healthcare workers and cases associated with outbreaks in long-term residential care are excluded, so that the 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.

Rialtas na hÉireann
Government of Ireland

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.

Coronavirus **COVID-19** Public Health Advice



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)

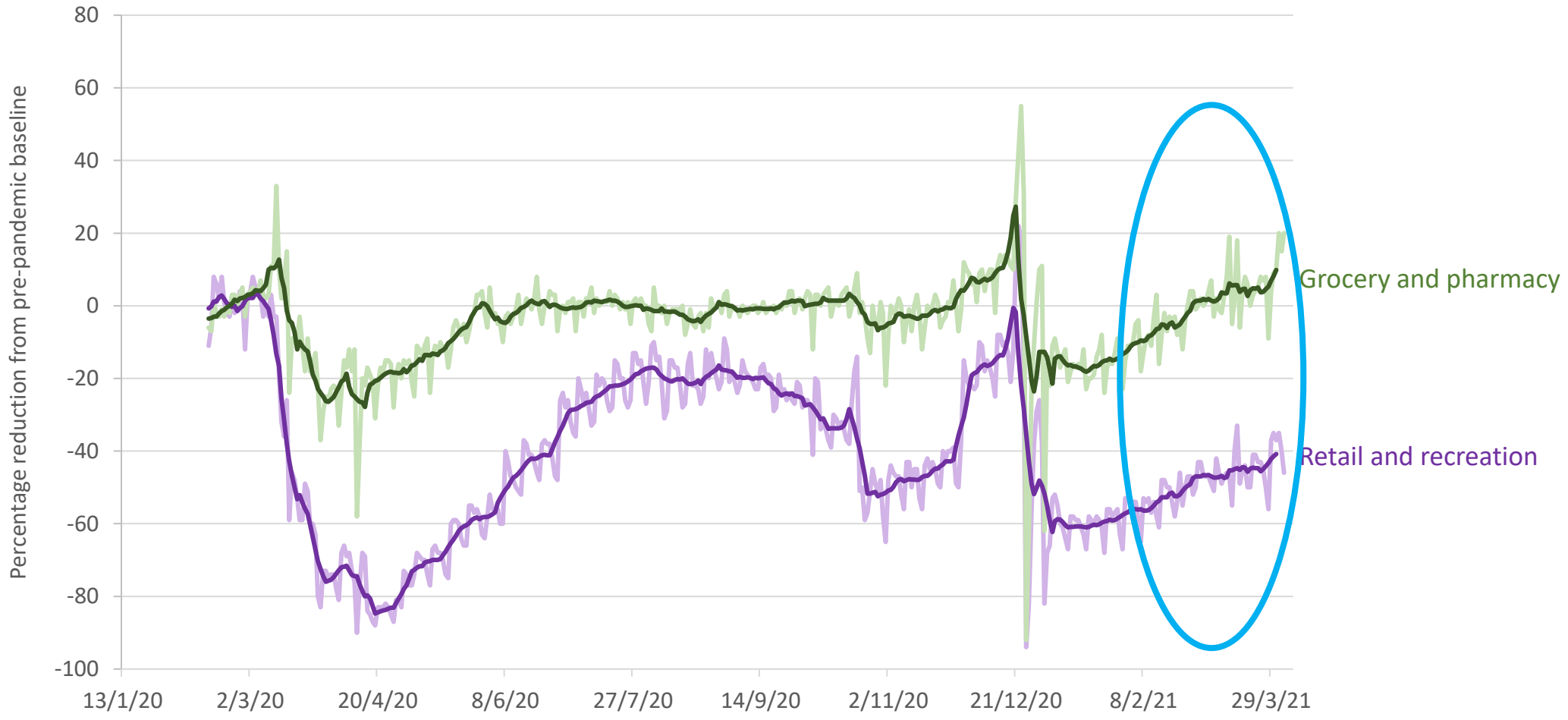
These data show time spent in residential areas and attendance at workplaces for those who enable location sharing on their Google account; each day of the week is compared with the average for that day of the week over January and February 2020. The attendance at workplaces compared to pre-pandemic 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.

Rialtas na hÉireann
Government of Ireland

Google community mobility

The level of utilization of grocery, pharmacy and retail is increasing, with particular patterns in holiday periods.

Coronavirus
COVID-19
Public Health
Advice



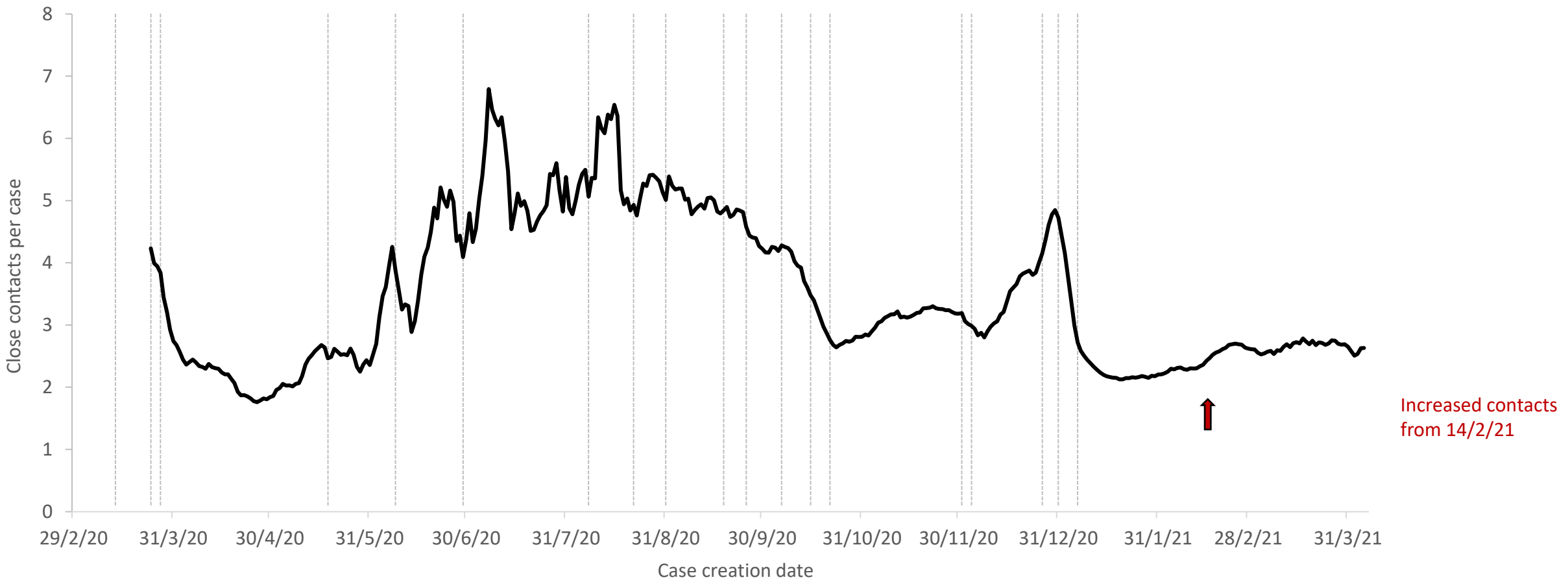
These data show numbers of people in grocery stores and pharmacies, and retail and indoor recreation settings, for those who enable location sharing on their Google account; each day of the week is compared with the average for that day of the week over January and February 2020. Daily data and 7-day moving averages.

Rialtas na hÉireann
Government of Ireland

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

Coronavirus
COVID-19
Public Health
Advice



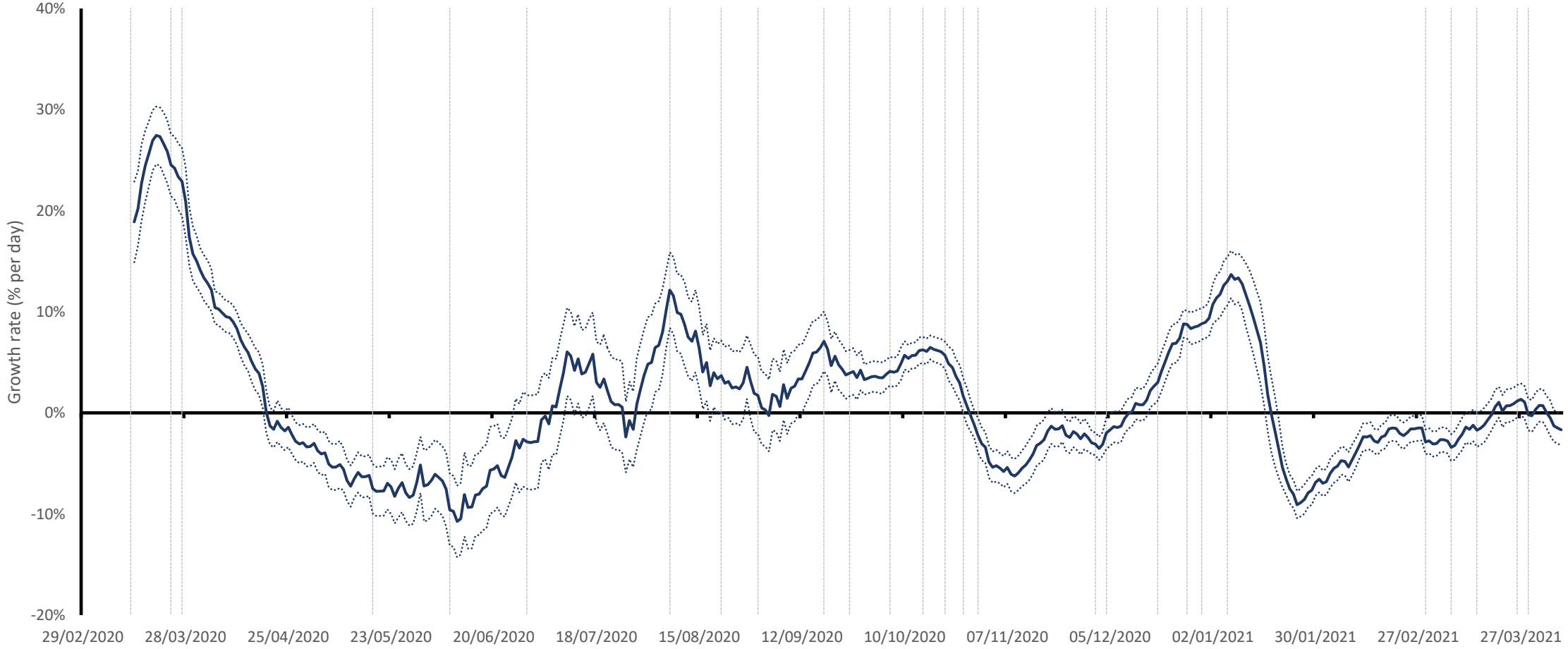
The average number of close contacts per confirmed case. Data from COVID-19 Care Tracker (CCT). Cases dated by case creation date. Cases (but not contacts) aged 18 and younger are excluded. Data are 7-day trailing averages except for the months of June – August where a 21-day trailing average is used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

Rialtas na hÉireann
Government of Ireland

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 0% to -2% per day, but this may be influenced by lower case counts over the Easter period.

Coronavirus
COVID-19
Public Health
Advice



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

Rialtas na hÉireann
Government of Ireland

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

Coronavirus
COVID-19
Public Health
Advice

Week	Cases	Week-on week change
2021 - 1	45,616	
2	25,115	-45 %
3	14,807	-41 %
4	8,921	-40 %
5	7,144	-20 %
6	6,028	-16 %
7	5,526	-8 %
8	4,549	-18 %
9	3,629	-20%
10	3,536	-3%
11	3,842	+9%
12	3,984	+4%
13	3,622	-9%

Rialtas na hÉireann
Government of Ireland

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 – 1.1

Coronavirus
COVID-19
Public Health
Advice

Method	Estimate	95% confidence interval
SEIR model-inferred	0.80	1.53 – 1.09
Bayesian model	0.70	0.33– 1.17
Time-dependent R	0.89	0.81 – 0.96
GAM estimate 30 Mar 2021	1.05	0.87 – 1.23
GAM estimate 6 Apr 2021	1.13	0.88 – 1.538

Estimates generated 7 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.

Rialtas na hÉireann
Government of Ireland

Situation analysis 8 April 2021

Coronavirus
COVID-19
Public Health
Advice

- Incidence is stable or decreasing, but remains high and there is significant uncertainty
- Cases (5-day average) 408 cases per day; 14-day incidence 147 per 100,000
  - Reproduction number (R) is uncertain and estimated at 0.7 – 1.1, rate of decline 0 to -2% per day
  - Easter holiday influences pattern of referral and testing and other indicators
- Return to in-person education associated with
  - Moderate and transient increases in incidence, mostly explained by changes in testing
  - Increases in mobility and attendance at workplaces
  - Public health investigation confirming schools remain low-risk environments
- Implications
  - stay home if symptomatic, seek a test, adults keep contacts low, continue to work from home
  - Anticipate transient increase in referrals and detection of disease in school-going children when schools reopen fully
- Level of close contact is constant
  - The efforts of the majority of the population are achieving a 75-85% suppression of viral transmission
  - Concern that level of mobility continues to increase
- While there is strong evidence of protective effect of vaccination in those vaccinated, the population is not protected, so the situation remains volatile and high risk