IEMAG briefing

19 November 2020

Coronavirus
COVID-19
Public Health
Advice

Cases, numbers in hospital and intensive care

Case numbers increased from late June to late October, decreased for three weeks from 21 October, but have not decreased further over the last week. Hospitalisations admissions to ICU and deaths increased a number of weeks after the rise in cases. The number of people in hospital and ICU is decreasing slowly (though the number of admissions per day is not yet decreasing). The number of deaths per day is not yet decreasing.

Coronavirus **COVID-19** Public Health Advice

	16 Apr	29 Jul	30 Sept	7 Oct	14 Oct	21 Oct	28 Oct	4 Nov	11 Nov	18 Nov
Cases confirmed per day	547	18	356	487	802	1161	857	579	404	412
14-day incidence *per 100,000 population*	157	5.6	92	124	190	287	297	211	145	120
Hospital in-patients	858	11	108	136	204	279	325	322	288	270
Hospital admissions per day	*56*	*2*	*10*	*14*	*19*	*23*	*20*	*19*	*21*	*20*
ICU confirmed cases	147	5	18	22	30	32	38	43	39	34
ICU admissions per day	*8*	*< 1*	*1*	*2*	*3*	*3*	*3*	*3*	*3*	*2*
Deaths confirmed per day	32	< 1	2	2	3	5	4	5	5	6

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. NPHET monitors 5-day moving average and 14-day cumulative incidence on a day-by-day basis, as indicators of rate of change of incidence and overall burden of infection. 7-day averages are used here to limit day-of-week effects. The historic incidence data may change due to denotification of cases.

Rialtas na hÉireann
Government of Ireland

Testing

The numbers of tests remains high, the positivity rate is now decreasing.

Coronavirus
COVID-19
Public Health
Advice

7-day average	15 Apr	28 Jul	29 Sep	6 Oct	13 Oct	20 Oct	27 Oct	3 Nov	10 Nov	17 Nov
Tests done per day	5579	6494	12624	12924	14486	16002	15161	12650	10929	11042
% tests positive	18%	0.4%	3.0%	4.0%	6.3%	7.1%	5.5%	4.6%	3.5%	3.9%

Data are 7-day averages (the indicated day and the preceding 6 days). 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.

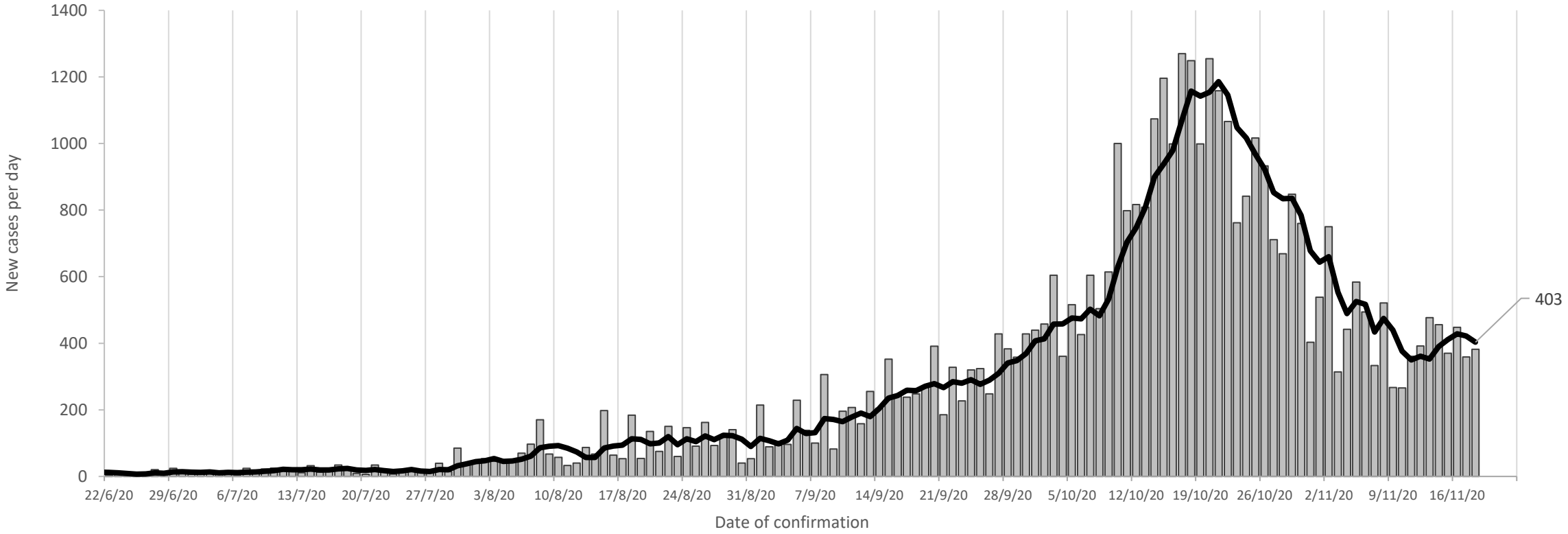
Rialtas na hÉireann
Government of Ireland

Confirmed cases each day

Daily and weekly count and 5-day rolling average – case counts have been decreasing since 21 October; the 5-day average peaked at 1186, reached a low of 350 on 11 November, and is now 403.

Coronavirus **COVID-19** Public Health Advice

Cases confirmed each week	61	93	125	140	119	284	540	546	711	796	912	1304	1948	2060	3031	4462	7414	7100	4862	3438	2589



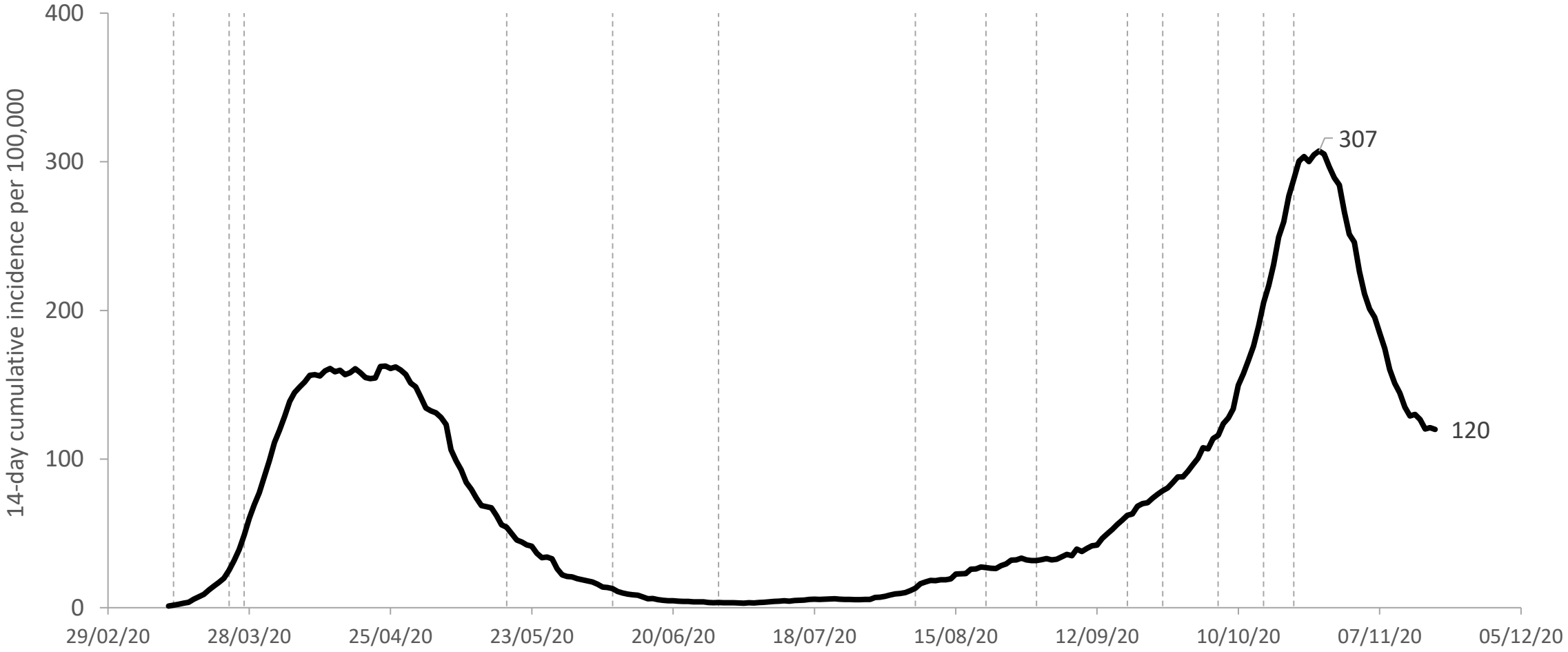
Daily count (bars) 5-day average (line) and weekly counts of the number of laboratory confirmed new cases by date on which they were confirmed by HPSC. Case counts may change due to denotification of cases.

Rialtas na hÉireann
Government of Ireland

14-day cumulative incidence

14-day cumulative incidence peaked at 170 per 100,000 in late April, declined to 3 per 100,000 in late June, peaked again on 26 October at 307 per 100,000, and is now 120 per 100,000

Coronavirus
COVID-19
Public Health
Advice



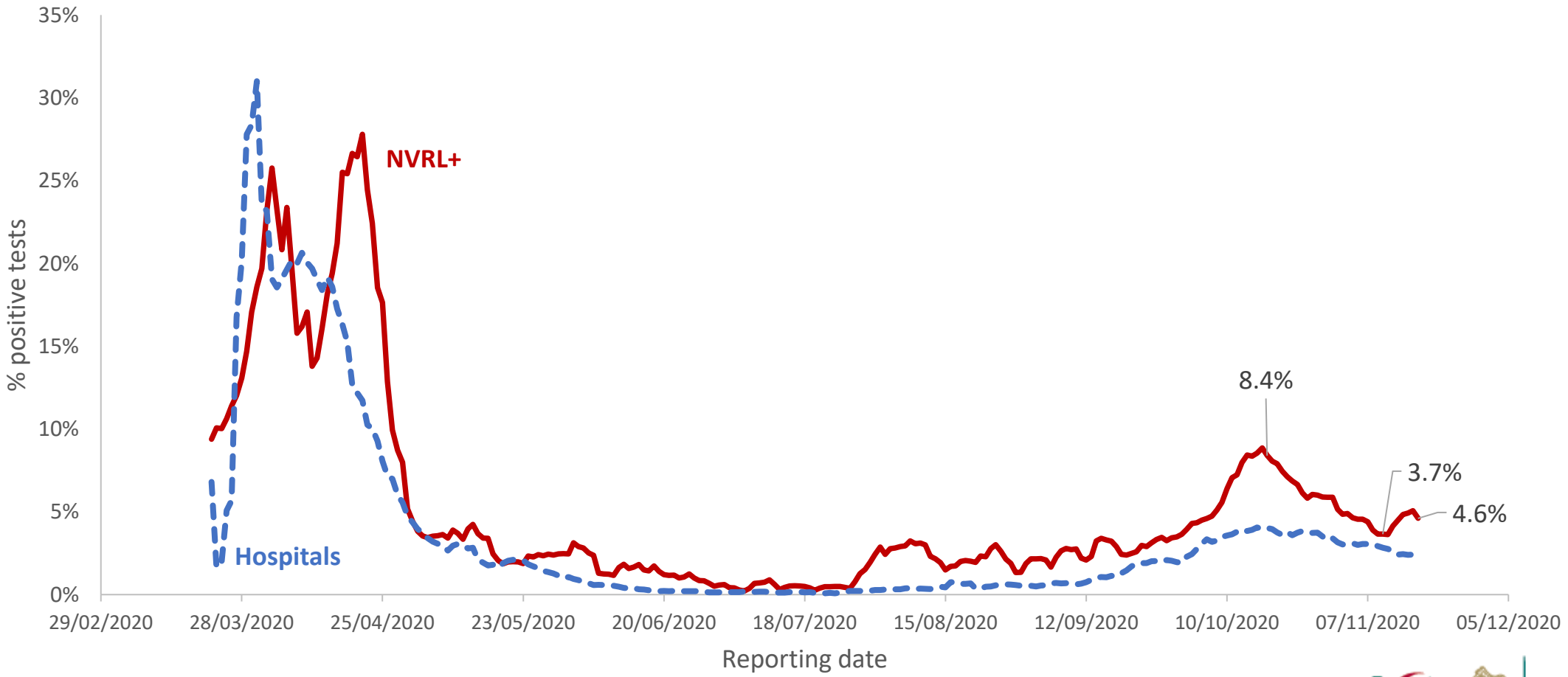
14-day cumulative incidence by date of confirmation. Tests outsourced to German laboratory in April backdated, using the specimen collection date, to the date they would have been confirmed if tested in a timely manner. The vertical dashed lines indicate the dates of escalation and de-escalation of public health restrictions

Rialtas na hÉireann
Government of Ireland

Test positive rates: public health laboratories

The positivity rate has been higher in recent weeks for tests conducted in public health laboratories (NVRL, associated laboratories and Cherry Orchard) compared with tests conducted in hospitals. Positivity rates are decreasing. Tests conducted as part of serial testing are not yet separated out in this analysis

Coronavirus
COVID-19
Public Health
Advice

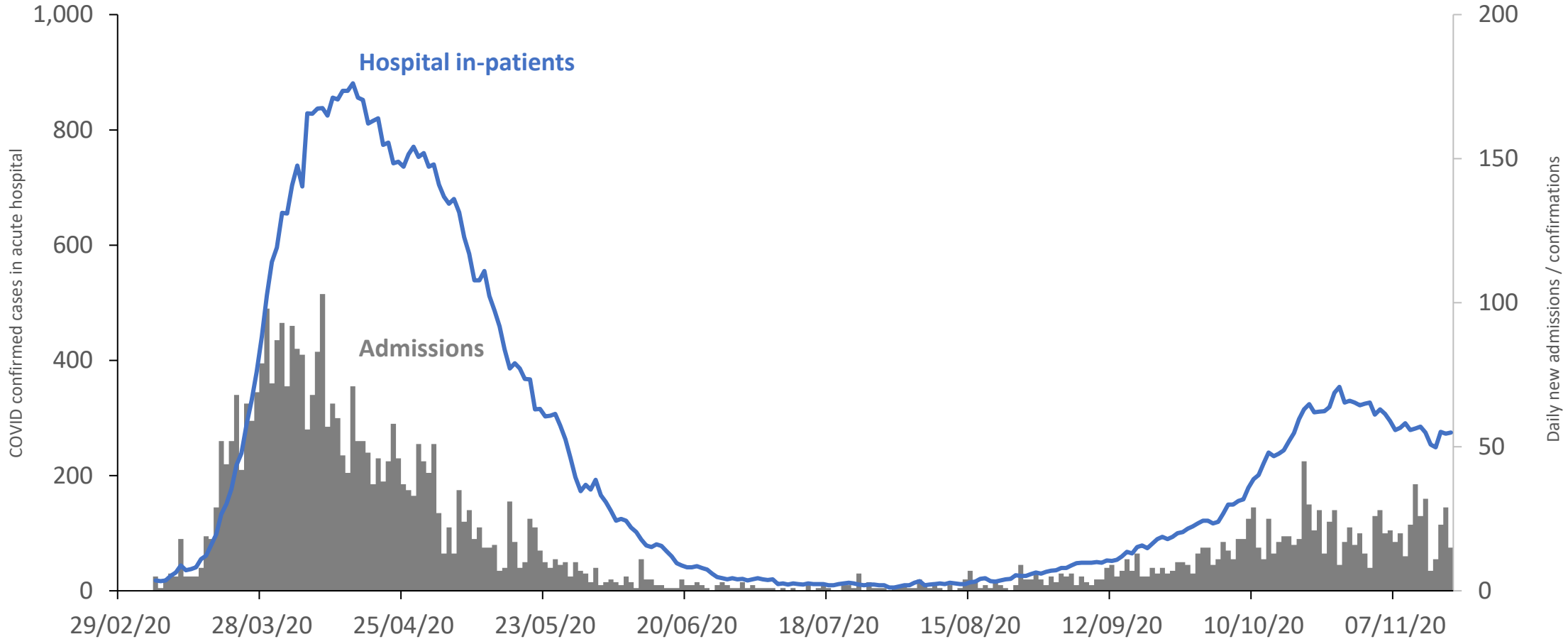


Data 5-day rolling averages of percentage of tests reported positive per day. NVRL+ is NVRL and associated laboratories, plus Cherry Orchard
Backlog tests outsourced to German laboratory in April are not backdated and are assigned to date reported

Rialtas na hÉireann
Government of Ireland

Confirmed cases in acute hospitals

Coronavirus
COVID-19
Public Health
Advice

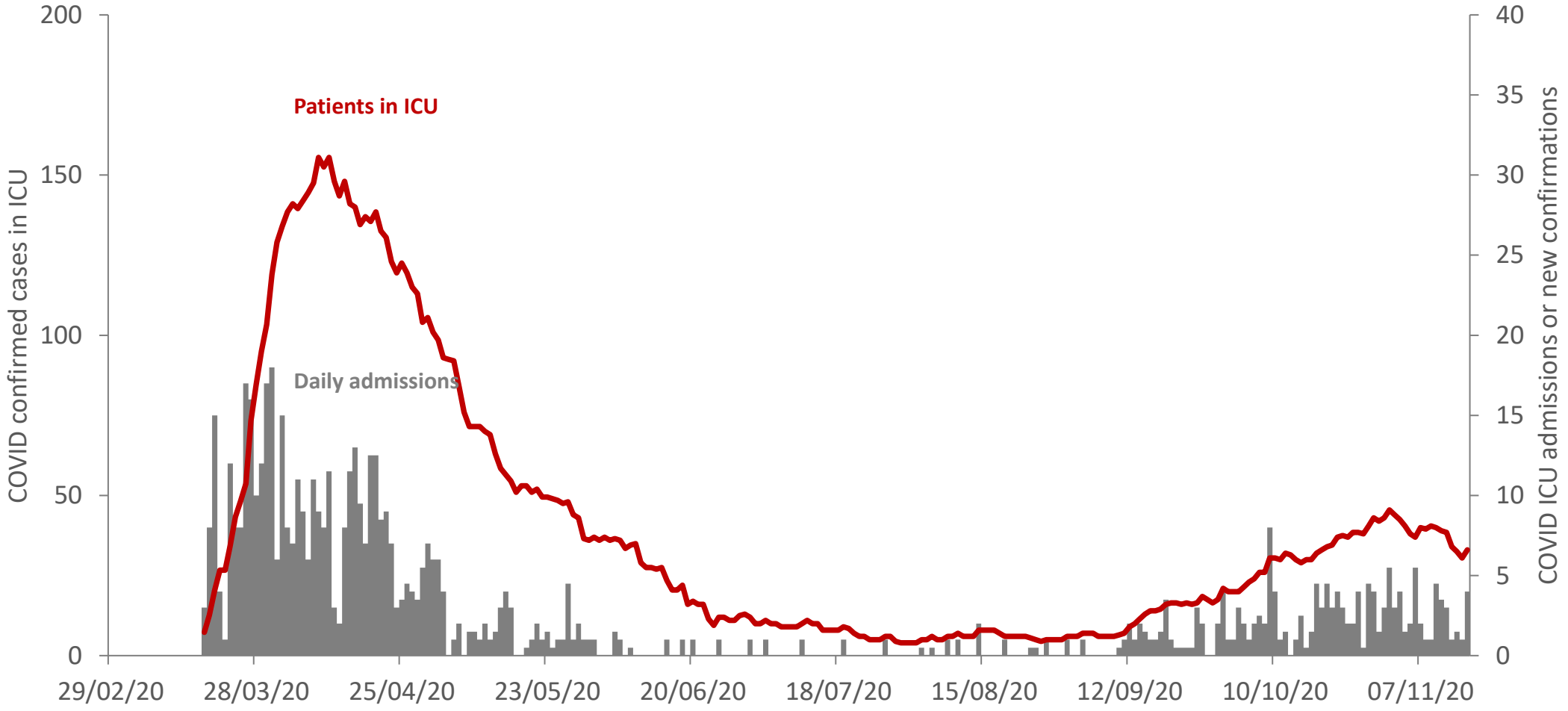


Hospital in-patients: Daily count of number of COVID-19 confirmed cases in acute hospitals. Daily admissions: New COVID-19 confirmed admissions and new laboratory confirmations of suspected cases in preceding 24 hours. Data from HSE PMIU-SDU, 8am census.

Rialtas na hÉireann
Government of Ireland

Confirmed cases in intensive care

Coronavirus
COVID-19
Public Health
Advice

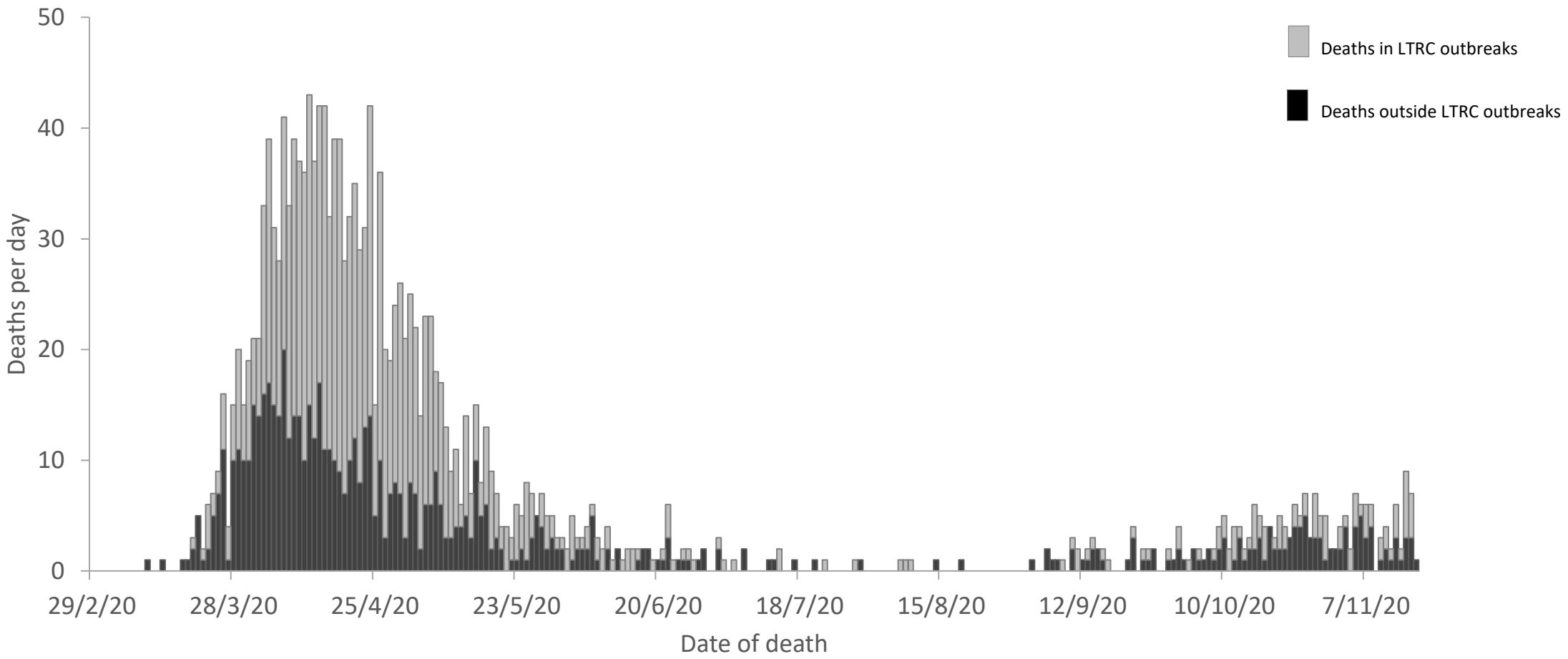


Patients in ICU: Daily count of number of COVID-19 confirmed cases in ICU. Daily admissions: new COVID-19 confirmed admissions to ICU and new laboratory confirmations of suspected cases in ICU. Average of morning and evening census from NOCA

Rialtas na hÉireann
Government of Ireland

Deaths per day

Coronavirus
COVID-19
Public Health
Advice



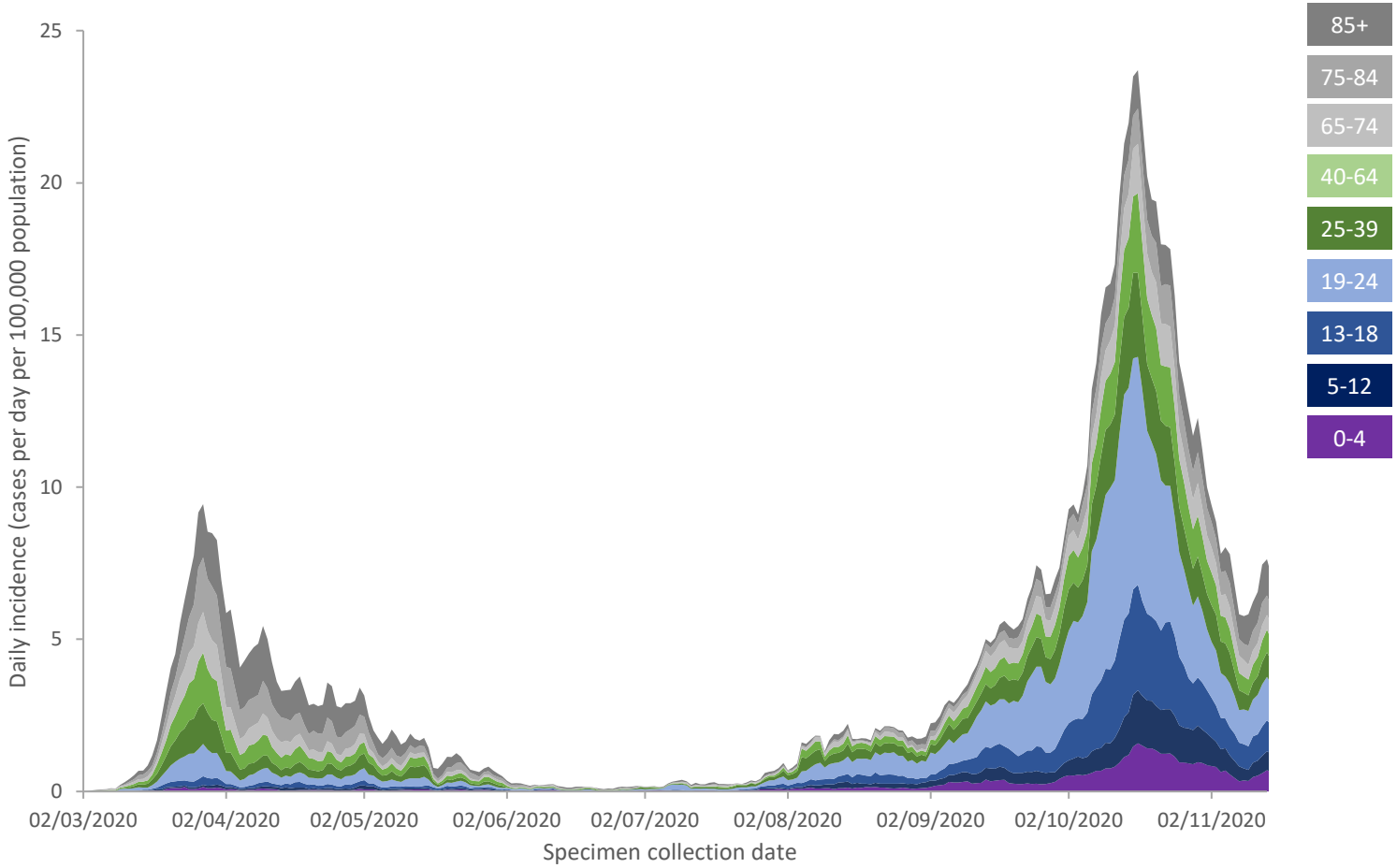
Deaths per day, separated into those associated with outbreaks in long-term residential care and those not associated with such outbreaks. Deaths with laboratory confirmed SARS-CoV-2 only

Rialtas na hÉireann
Government of Ireland

Incidence across different age groups (excluding HCW and LTRC)

When incidence started to rise again in July, cases increased first in younger age groups, especially in the 19-24 age group, with a delayed increase in incidence in older (65+) adults. There has been a very significant decrease in incidence in younger adults over the last five weeks, though this has now stalled. While incidence in the 65-84 age group has decreased from the peak, it remains high, and incidence has increased in the 85+ ager group.

Coronavirus **COVID-19** Public Health Advice



Heat map of 7-day incidence by age

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	5.9
12	4.5	2.4	7.5	23.6	27.8	31.2	25.4	24.9	28.1
13	6.9	4.2	14.5	58.0	73.4	86.5	72.6	88.5	84.4
14	4.5	4.4	6.7	28.1	40.2	50.8	51.1	92.1	109.5
15	5.7	5.6	9.1	32.0	29.2	47.7	46.9	71.8	108.1
16	3.0	5.3	10.8	18.7	20.8	31.9	28.4	50.4	69.6
17	3.3	4.2	7.8	21.1	23.7	26.6	21.2	50.4	60.7
18	4.5	6.4	9.4	20.2	26.0	21.0	18.7	37.1	44.4
19	2.1	2.7	4.8	13.3	15.3	14.5	10.4	18.8	31.1
20	3.6	1.6	4.8	12.1	16.4	11.9	6.7	9.2	10.4
21	3.3	2.7	4.6	8.5	6.3	8.2	7.5	15.3	20.7
22	2.1	2.4	2.2	4.2	5.1	6.8	4.0	4.6	4.4
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	0.8	0.5	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	10.9	2.0	1.1	1.9	1.0	3.0
29	1.2	0.4	0.8	3.0	3.3	1.9	2.4	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	8.6	4.6	2.1	2.5	1.5
32	4.5	3.8	6.7	19.9	16.7	11.0	4.8	2.5	3.0
33	6.6	10.4	12.9	28.7	20.5	12.5	8.6	2.5	5.9
34	6.6	6.9	16.7	34.7	15.3	10.5	5.6	5.1	1.5
35	6.0	9.5	13.2	36.2	18.0	10.7	4.8	8.7	5.9
36	13.3	13.7	17.8	48.6	22.8	14.0	11.0	12.2	14.8
37	17.5	17.5	29.9	64.3	28.4	24.8	22.8	8.7	7.4
38	21.4	26.2	44.1	90.3	44.4	34.9	32.9	19.8	14.8
39	12.4	22.8	42.8	148.2	50.4	42.3	33.2	31.0	17.8
40	30.2	29.0	63.2	172.1	68.6	58.7	34.3	27.0	19.2
41	43.1	46.8	135.4	319.7	116.7	91.7	62.6	52.9	53.3
42	84.5	96.2	203.5	445.3	161.4	149.6	96.1	69.2	59.2
43	76.0	88.2	168.5	292.9	116.7	116.3	81.1	82.4	69.6
44	53.4	66.0	93.4	151.6	73.4	76.0	54.6	55.5	45.9
45	34.4	40.1	58.4	84.8	59.8	47.2	43.9	44.3	42.9
46	40.7	36.5	64.3	91.2	45.9	45.6	33.2	42.7	62.2

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). 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 date of specimen collection.

Rialtas na hÉireann
Government of Ireland

Incidence across different age groups (excluding HCW and LTRC)

When incidence started to rise again in July, cases increased first in younger age groups, especially in the 19-24 age group, with a delayed increase in incidence in older (65+) adults. There has been a very significant decrease in incidence in younger adults over the last five weeks, though this has now stalled. While incidence in the 65-84 age group has decreased from the peak, it remains high, and incidence has increased in the 85+ ager group.

Coronavirus **COVID-19** Public Health Advice

Heat map of 7-day incidence by age

Week	Age band								
	0-4	5-12	13-18	19-24	25-39	40-64	65-74	75-84	85+
25	0.0	0.4	0.5	1.8	1.4	1.0	0.8	0.5	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	10.9	2.0	1.1	1.9	1.0	3.0
29	1.2	0.4	0.8	3.0	3.3	1.9	2.4	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	8.6	4.6	2.1	2.5	1.5
32	4.5	3.8	6.7	19.9	16.7	11.0	4.8	2.5	3.0
33	6.6	10.4	12.9	28.7	20.5	12.5	8.6	2.5	5.9
34	6.6	6.9	16.7	34.7	15.3	10.5	5.6	5.1	1.5
35	6.0	9.5	13.2	36.2	18.0	10.7	4.8	8.7	5.9
36	13.3	13.7	17.8	48.6	22.8	14.0	11.0	12.2	14.8
37	17.5	17.5	29.9	64.3	28.4	24.8	22.8	8.7	7.4
38	21.4	26.2	44.1	90.3	44.4	34.9	32.9	19.8	14.8
39	12.4	22.8	42.8	148.2	50.4	42.3	33.2	31.0	17.8
40	30.2	29.0	63.2	172.1	68.6	58.7	34.3	27.0	19.2
41	43.1	46.8	135.4	319.7	116.7	91.7	62.6	52.9	53.3
42	84.5	96.2	203.5	445.3	161.4	149.6	96.1	69.2	59.2
43	76.0	88.2	168.5	292.9	116.7	116.3	81.1	82.4	69.6
44	53.4	66.0	93.4	151.6	73.4	76.0	54.6	55.5	45.9
45	34.4	40.1	58.4	84.8	59.8	47.2	43.9	44.3	42.9
46	40.7	36.5	64.3	91.2	45.9	45.6	33.2	42.7	62.2

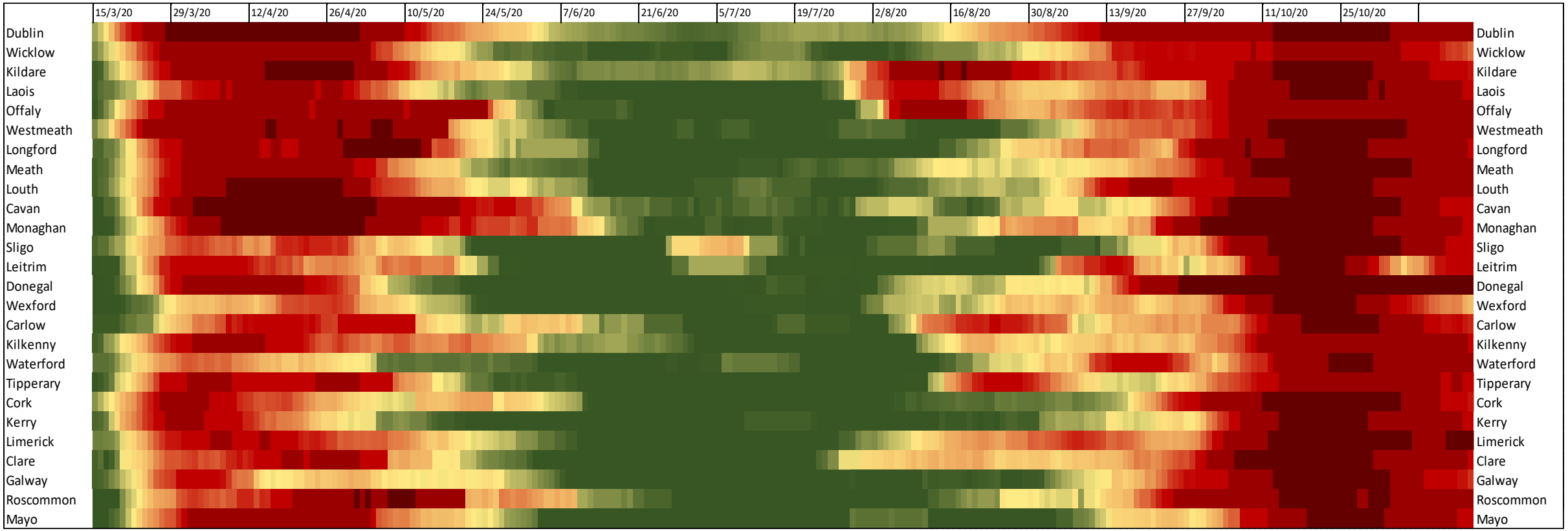
Heat map shows age-specific incidence (cases per week per 100,000 population) Healthcare workers and cases associated with outbreaks in long-term residential care are excluded, so that the analysis reflects the pattern of cases in the community. Cases dated by date of specimen collection.

Rialtas na hÉireann
Government of Ireland

14-day cumulative incidence by county

A heat map of 14-day cumulative incidence by county.

Coronavirus
COVID-19
Public Health
Advice



10	15	20	25	50	75	100	150	200	300

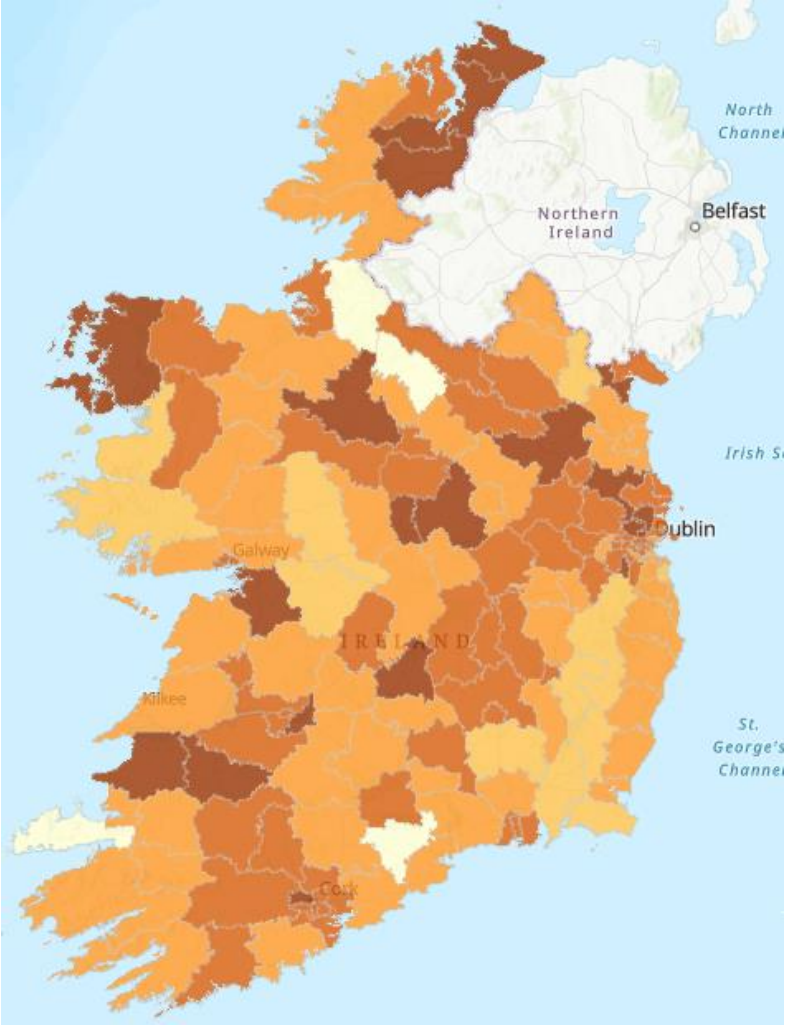
Scale: 14-day cumulative incidence per 100,000 population, cases dated by date of specimen collection.

Rialtas na hÉireann
Government of Ireland

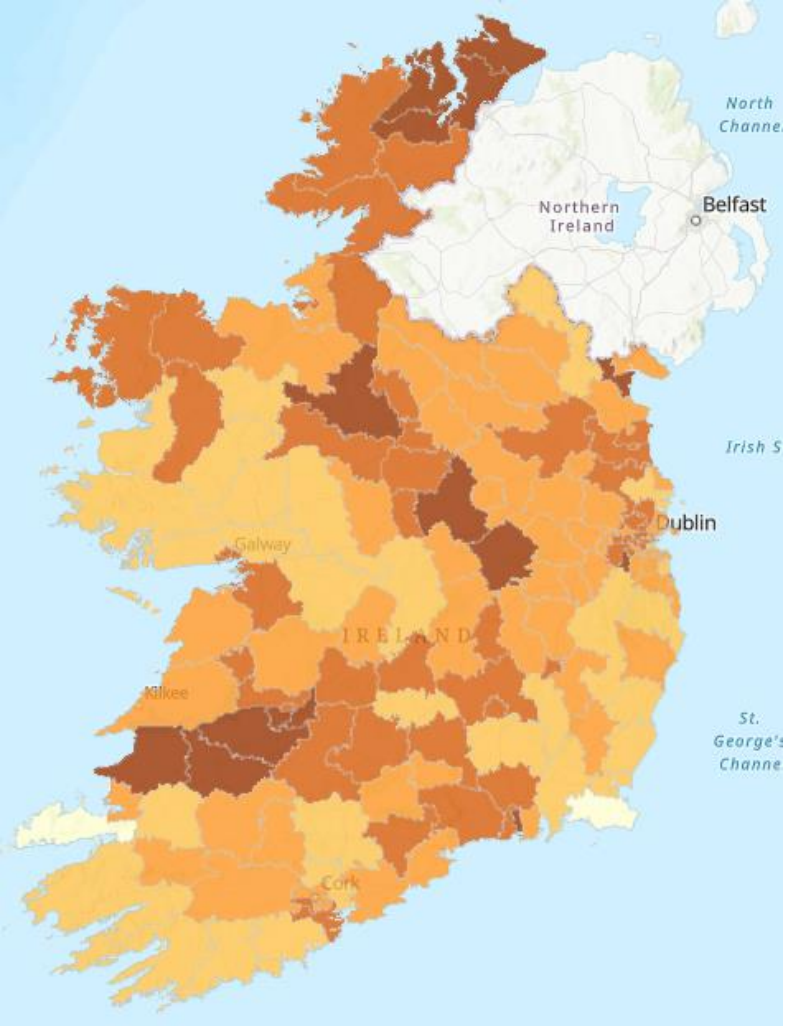
Geographical distribution

14-day incidence by local electoral area for period 27/10/2020 to 9/11/2020 (left panel) compared to the most recent period 3/11/2020 to 16/11/2020 (right panel)

Coronavirus
COVID-19
Public Health
Advice



27 Oct - 9 Nov



3 Nov - 16 Nov

14-day incidence per 100,000 population

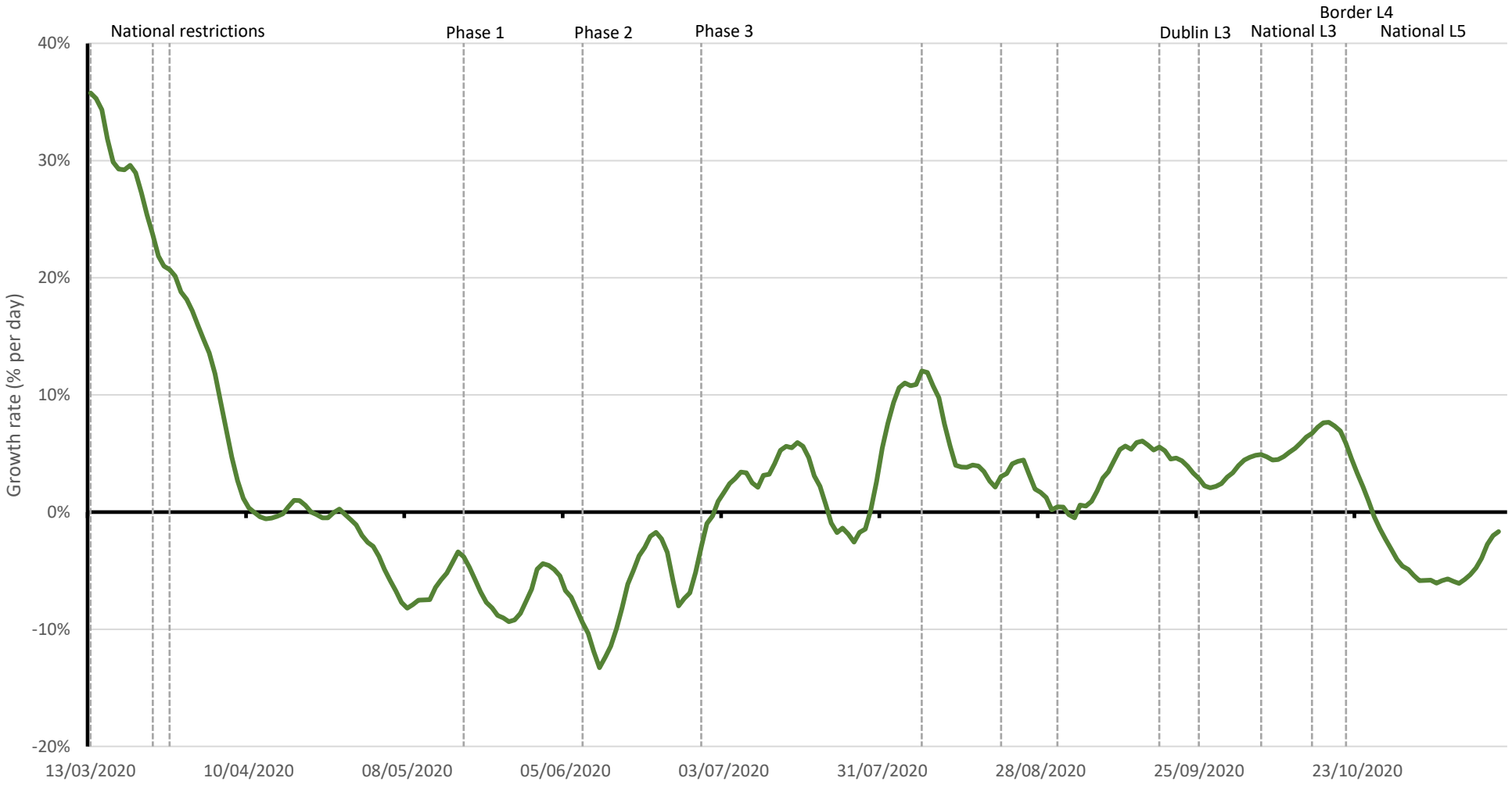
- >240
- >120-240
- >60-120
- >20-60
- 5-20
- <5

Rialtas na hÉireann
Government of Ireland

Growth rate for case numbers

When the pandemic in Ireland grew very rapidly in early March, at over 30% per day. The national restrictions introduced in late March suppressed transmission, with daily incidence decreasing at -5% to -10% per day. This was sustained until the end of June, after which case numbers started to grow, on average at 4% to 5% per day. A period of very rapid growth can be seen in early August associated with the outbreaks in Kildare-Laois-Offaly. Level 3 measures in Dublin reduced growth rate to zero for a period (data not shown). Incidence wa decreasing at -5% to -7% per day, but in the last week this has stalled, with growth rate close to zero

Coronavirus
COVID-19
Public Health
Advice



Growth rate calculated as the average growth rate over a 14-day trailing window; cases dated by notification (event) date.

Rialtas na hÉireann
Government of Ireland

Estimates of effective reproduction number (R)

Reproduction number is difficult to estimate as it is probably increasing – it is currently estimated at 0.7 to 0.9.

Coronavirus **COVID-19** Public Health Advice

Method	Estimate	95% confidence interval
SEIR model-inferred	0.57	0.36 – 0.72
Bayesian model	0.93	0.57 – 1.64
Time-dependent R	0.72	0.61 – 0.83
GAM estimate 10 Nov 2020	0.87	0.71 – 1.03
GAM estimate 17 Nov 2020	0.80	0.60 – 1.03

Estimates generated 18 November 2020, 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. 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

Close contacts

The mean number of close contacts per confirmed case. The number of contacts was very low (2 or less) during the very strict public health measures in April, 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 week immediately after the mid-term break was associated with an increase in close contacts

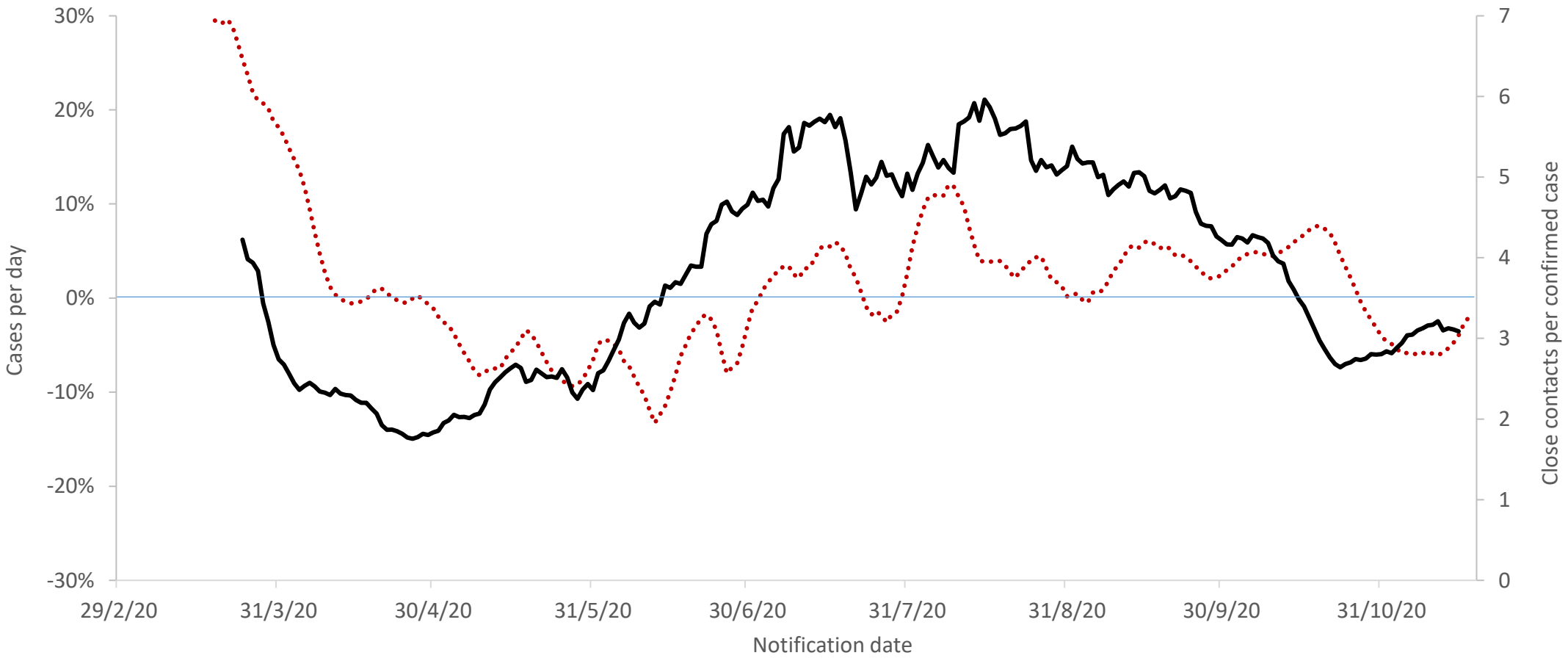
Coronavirus
COVID-19
Public Health
Advice

Rialtas na hÉireann
Government of Ireland

Close contacts and growth rate

An increase in the number of close contacts per case, which is an indicator of close social mixing, is followed 7-10 days later by an increase in the growth rate of the epidemic. The level of disease was decreasing rapidly until 11 November. The subsequent stabilisation of incidence is most likely due to the increase in social mixing from 2 November onwards.

Coronavirus
COVID-19
Public Health
Advice



Rialtas na hÉireann
Government of Ireland

Situation analysis 18 November 2020

Coronavirus COVID-19 Public Health Advice

- We have made great progress over four weeks with significant suppression of viral transmission
  - Daily average case counts down from 1200 to 400
  - 14-day incidence down from 307 per 100,000 to 120 per 100,000
- However, the rapid decline in incidence has stalled
  - growth rate close to zero
  - R estimated at 0.7 to 0.9
    - caution in interpreting R number – it's an *estimate* that *lags* changes in viral transmission
- Numbers in hospital and intensive care are decreasing very slowly
- A persistently high incidence in older persons
- A marginal increase in social contact from 2 November most likely explains the case numbers over the last week
- We can further reduce transmission and bring the number of cases and force of infection to very low levels