IEMAG briefing

12 November 2020

Coronavirus COVID-19 Public Health Advice

Cases, numbers in hospital and intensive care

Case numbers increased from late June to late October, but have decreased over the last four weeks. Hospitalisations, admissions to ICU and deaths increased a number of weeks later. The number of people in hospital is decreasing (though the number of admissions per day is not yet decreasing). The number of people in ICU, admissions to ICU and deaths per day have stabilised.

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	16 Apr	29 Jul	30 Sept	7 Oct	14 Oct	21 Oct	28 Oct	4 Nov	11 Nov
Cases confirmed per day	547	18	356	487	803	1165	859	579	407
14-day incidence *per 100,000 population*	157	5.6	92	124	190	289	298	211	145
Hospital in-patients	858	11	108	136	204	279	325	322	288
Hospital admissions per day	*56*	*2*	*10*	*14*	*19*	*23*	*20*	*19*	*21*
ICU confirmed cases	147	5	18	22	30	32	38	43	39
ICU admissions per day	*8*	*< 1*	*1*	*2*	*3*	*3*	*3*	*3*	*3*
Deaths confirmed per day	32	< 1	2	2	3	5	4	5	5

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.

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Testing

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

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7-day average	15 Apr	28 Jul	29 Sept	6 Oct	13 Oct	20 Oct	27 Oct	3 Nov	11 Nov
Tests done per day	5579	6494	12624	12924	14486	16002	15161	12650	10929
% tests positive	18%	0.4%	3.0%	4.0%	6.3%	7.1%	5.5%	4.6%	3.5%

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.

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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 1205 on 21 October and is now 353.

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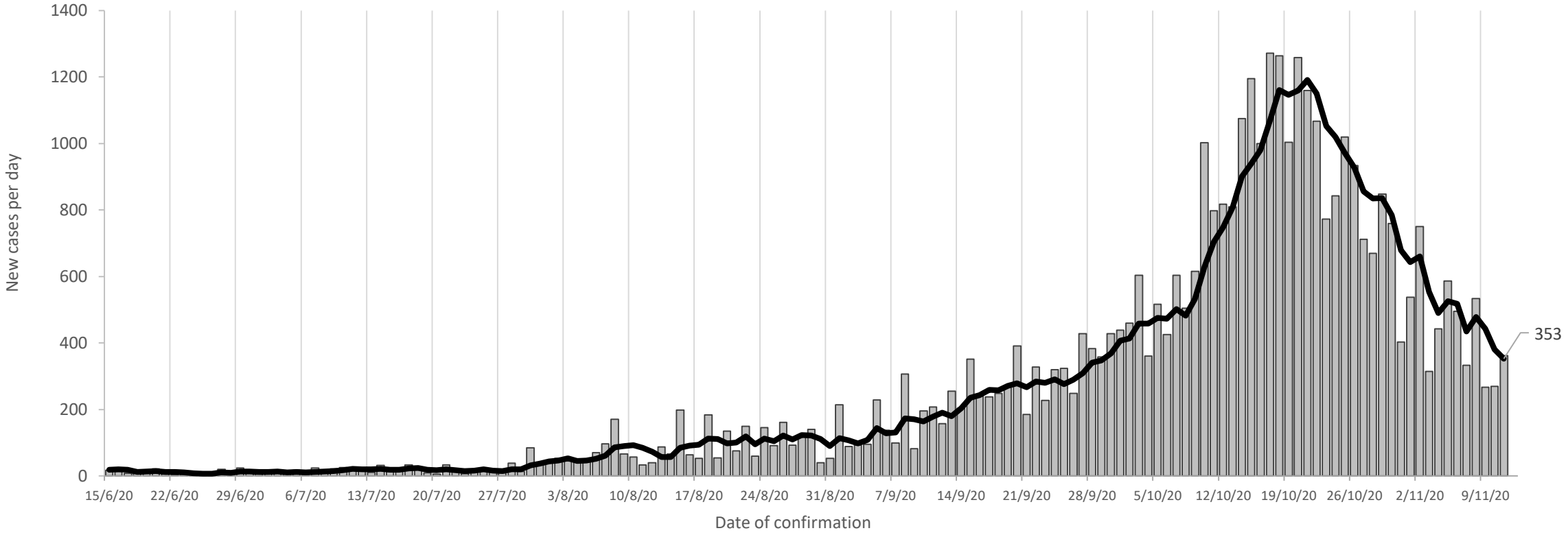
Cases confirmed each week	95	61	93	125	140	119	284	540	546	711	796	912	1304	1948	2060	3033	4465	7432	7123	4863	3456



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

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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 306 per 100,000, and is now 145 per 100,000

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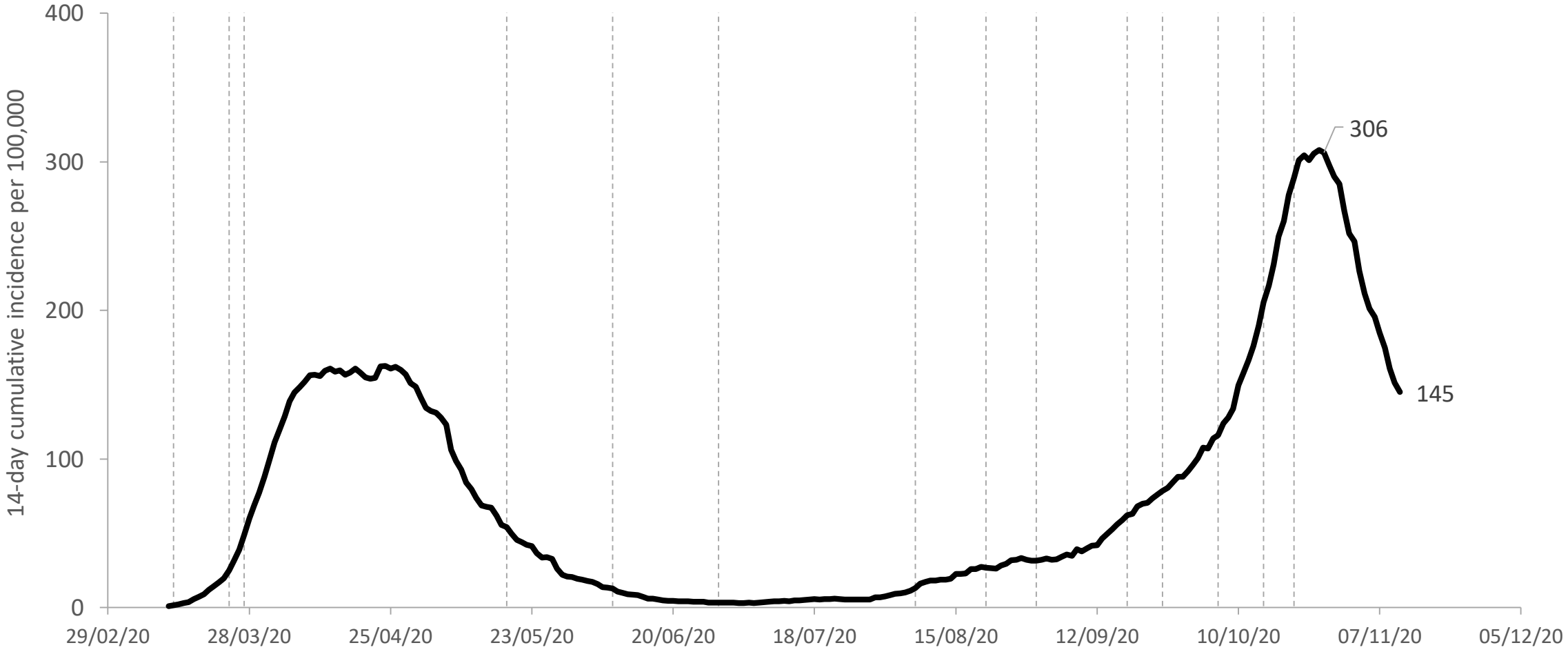

14-day cumulative incidence by date of confirmation. Tests outsourced to German laboratory in April backdated, using the specimen collection date, to the date they would have been confirmed if tested in a timely manner. The vertical dashed lines indicate the dates of escalation and de-escalation of public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

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Confirmed cases in acute hospitals

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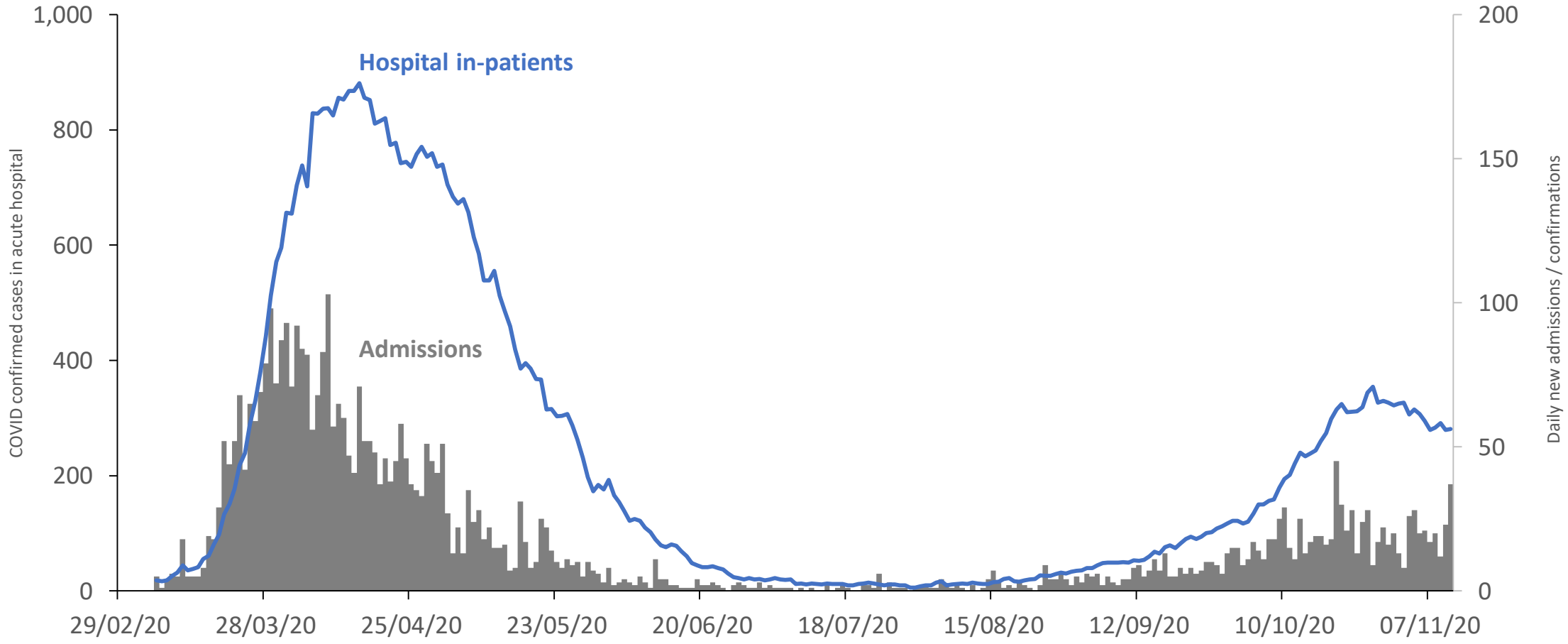

Hospital in-patients: Daily count of number of COVID-19 confirmed cases in acute hospitals. Daily admissions: New COVID-19 confirmed admissions and new laboratory confirmations of suspected cases in preceding 24 hours. Data from HSE PMIU-SDU, 8am census.

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Confirmed cases in intensive care

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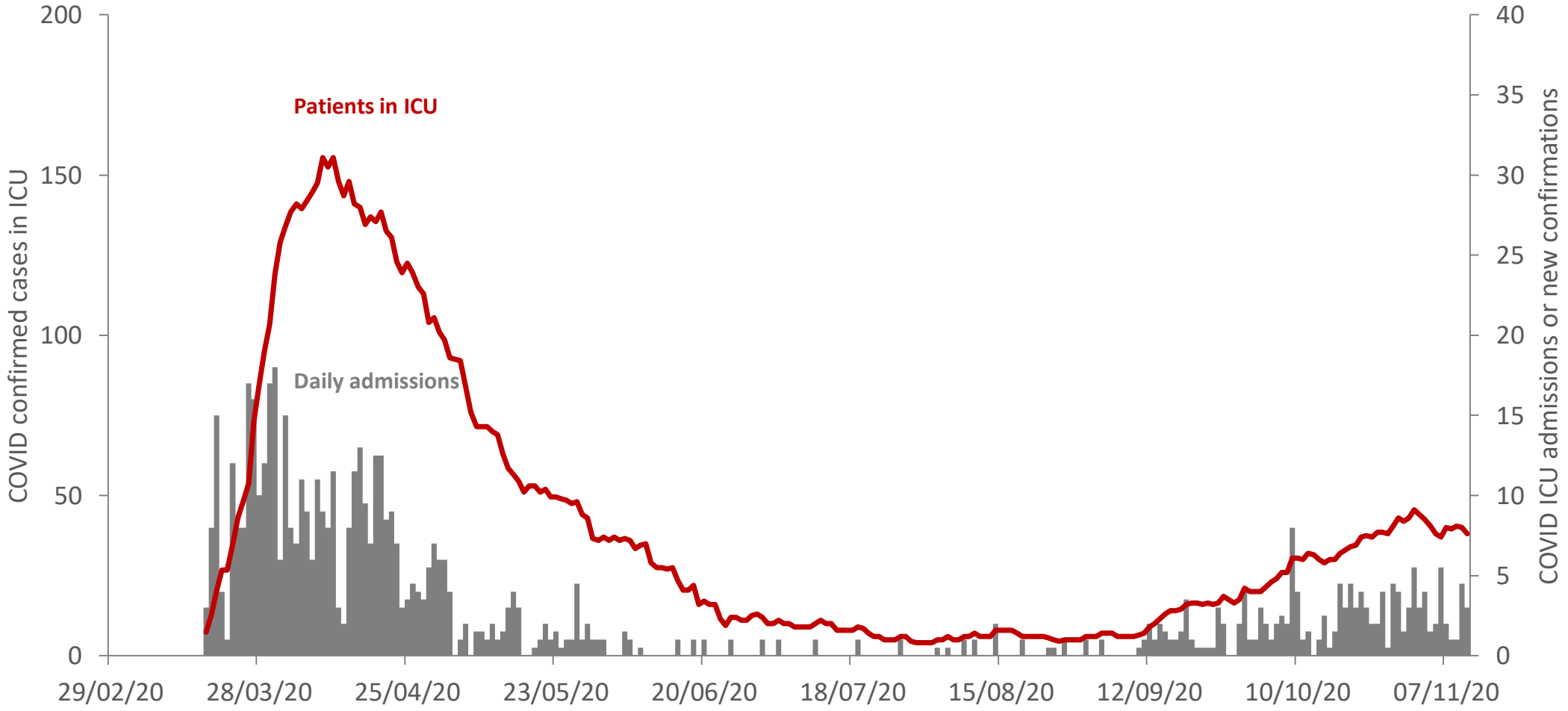

Patients in ICU: Daily count of number of COVID-19 confirmed cases in ICU. Daily admissions: new COVID-19 confirmed admissions to ICU and new laboratory confirmations of suspected cases in ICU. Average of morning and evening census from NOCA

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Deaths per day

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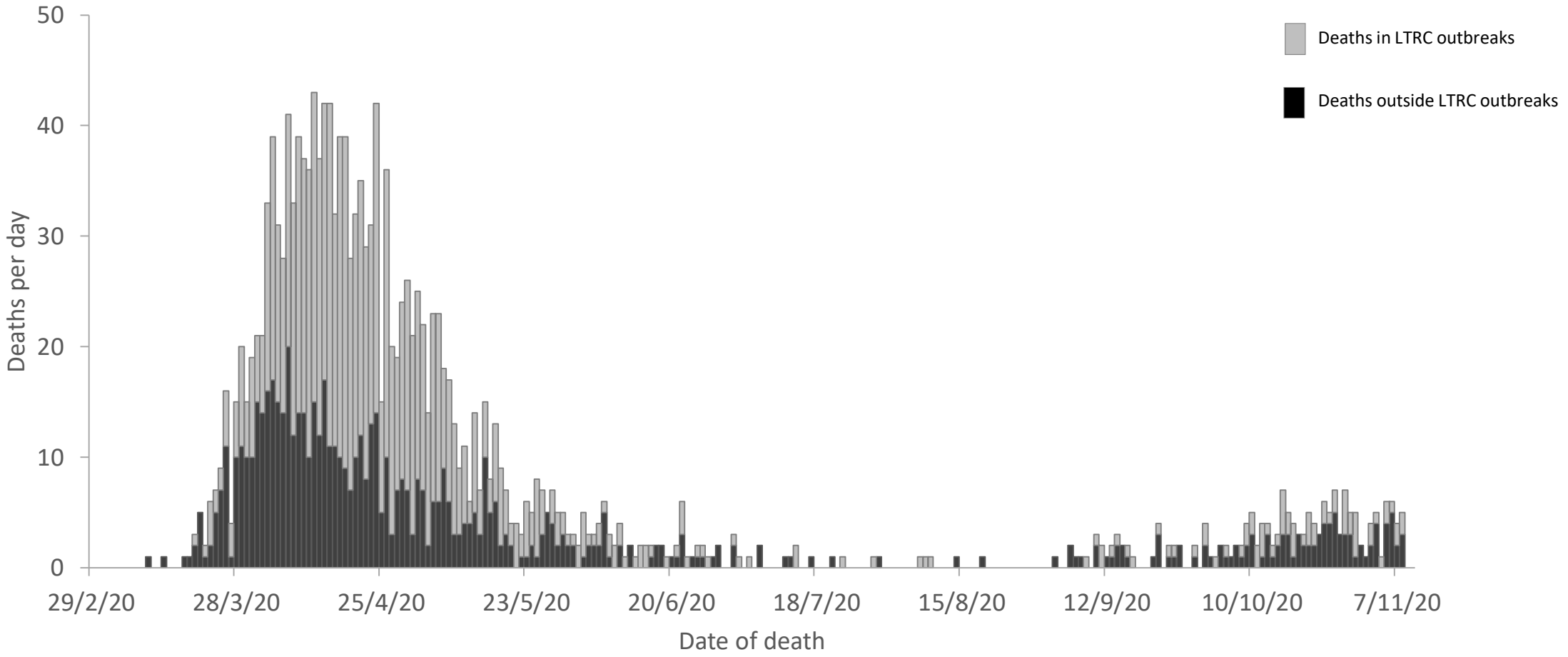

Deaths per day, separated into those associated with outbreaks in long-term residential care and those not associated with such outbreaks. Deaths with laboratory confirmed SARS-CoV-2 only

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Incidence across different age groups

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 three weeks, and while incidence has decreased in those aged 65 and older, the fact that it remains relatively high is a concern.

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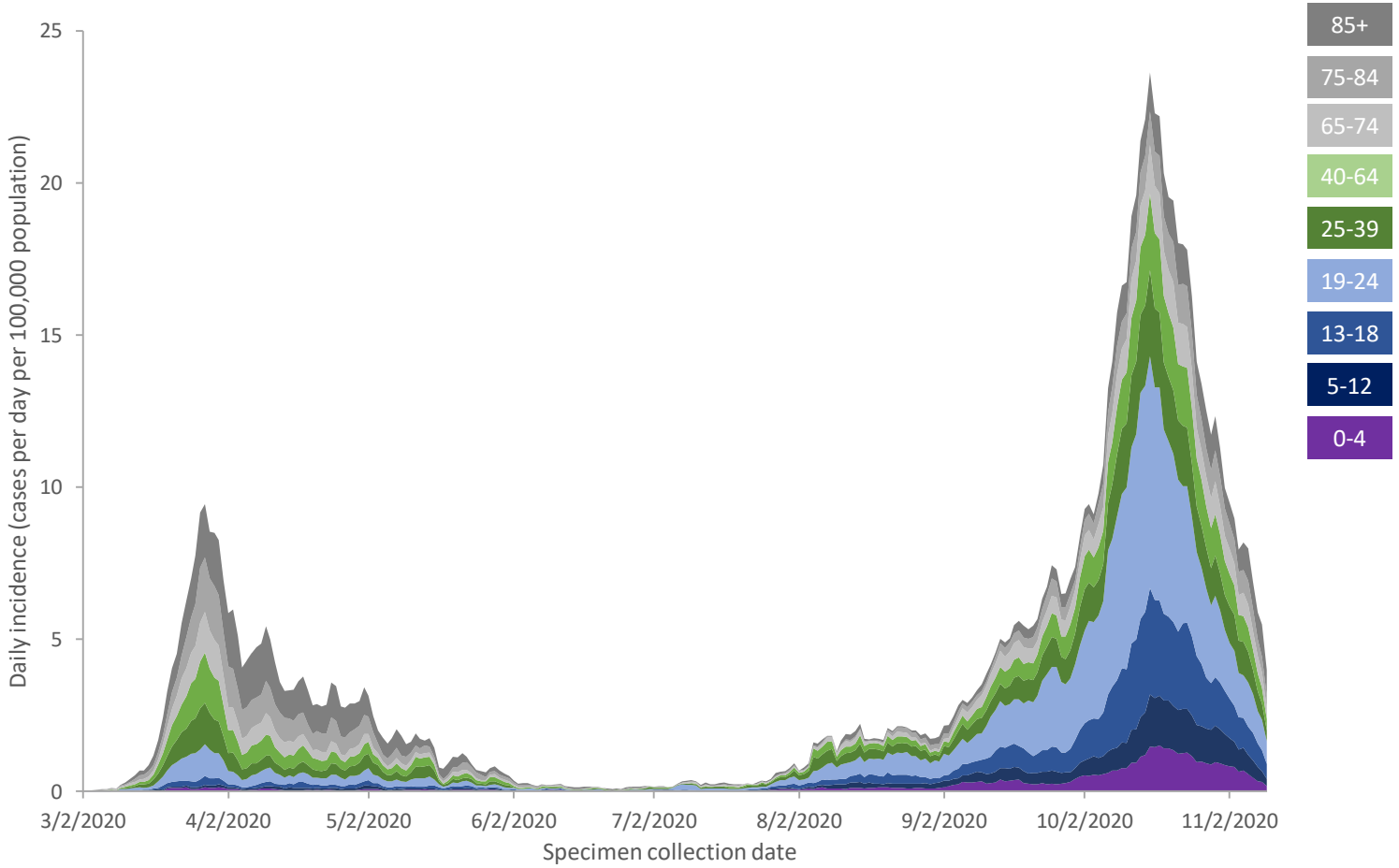

Heat map of 7-day incidence by age

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	86.6	72.6	88.5	84.4
14	4.5	4.4	6.7	28.1	40.2	50.9	51.1	92.1	109.5
15	5.7	5.6	9.1	32.0	29.3	47.7	46.9	71.8	108.1
16	3.0	5.3	10.8	18.7	20.8	32.0	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	14.6	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	6.3	9.7	13.5	37.4	18.6	11.2	4.8	9.2	5.9
36	13.0	13.5	17.5	47.7	22.2	13.5	11.0	11.7	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	90.6	44.4	34.9	32.9	19.8	14.8
39	12.4	22.8	42.8	148.2	50.6	42.3	33.2	31.0	17.8
40	30.2	29.0	63.2	172.1	68.7	58.9	34.3	27.0	19.2
41	43.4	47.0	135.4	320.6	117.2	92.1	62.9	52.9	53.3
42	84.5	96.2	205.1	446.8	162.1	150.2	97.2	69.2	59.2
43	76.9	87.7	167.1	294.7	116.7	116.9	81.1	82.9	69.6
44	53.4	66.0	93.4	151.6	73.7	76.7	54.6	55.5	45.9
45	35.0	40.3	59.5	85.7	60.5	48.0	44.4	44.3	50.3

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.

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Incidence across different age groups

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 three weeks, and while incidence has decreased in those aged 65 and older, the fact that it remains relatively high is a concern.

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Heat map of 7-day incidence by age

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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	6.3	9.7	13.5	37.4	18.6	11.2	4.8	9.2	5.9
36	13.0	13.5	17.5	47.7	22.2	13.5	11.0	11.7	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	90.6	44.4	34.9	32.9	19.8	14.8
39	12.4	22.8	42.8	148.2	50.6	42.3	33.2	31.0	17.8
40	30.2	29.0	63.2	172.1	68.7	58.9	34.3	27.0	19.2
41	43.4	47.0	135.4	320.6	117.2	92.1	62.9	52.9	53.3
42	84.5	96.2	205.1	446.8	162.1	150.2	97.2	69.2	59.2
43	76.9	87.7	167.1	294.7	116.7	116.9	81.1	82.9	69.6
44	53.4	66.0	93.4	151.6	73.7	76.7	54.6	55.5	45.9
45	35.0	40.3	59.5	85.7	60.5	48.0	44.4	44.3	50.3

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.

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14-day cumulative incidence by county

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

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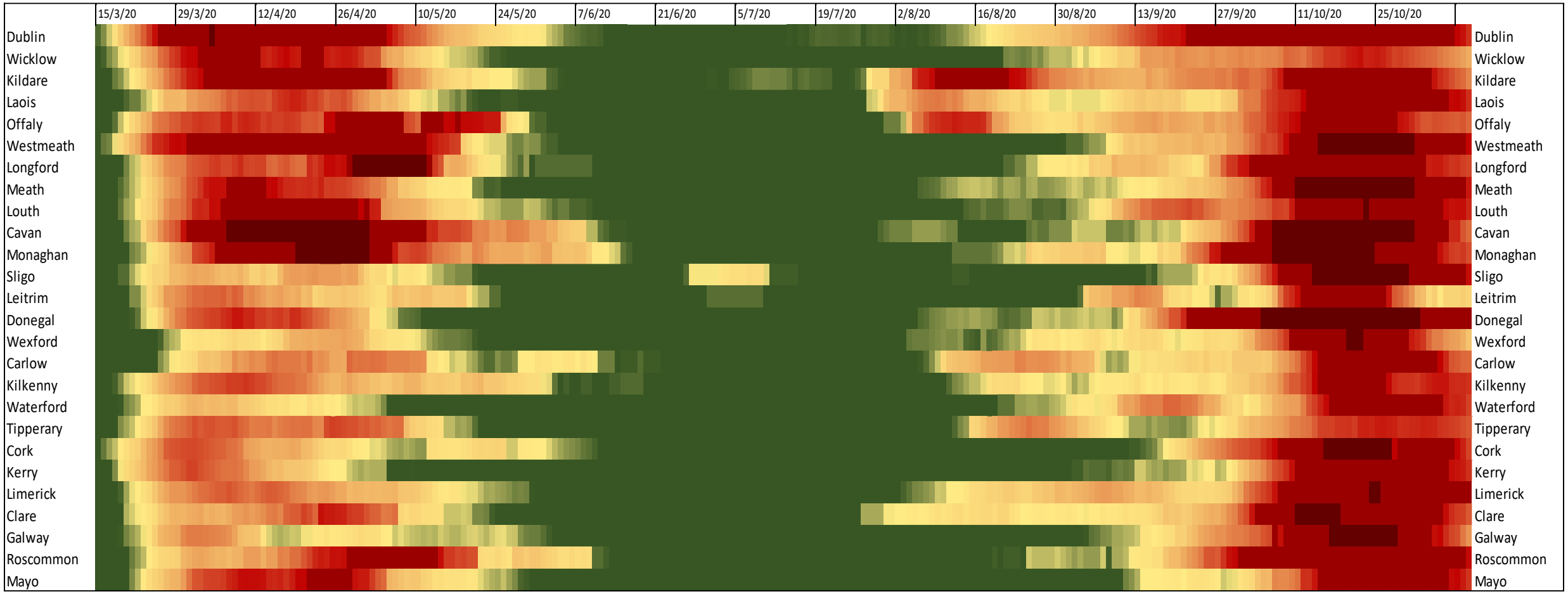

10	15	20	25	50	75	100	150	200	300

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

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Geographical distribution

14-day incidence by local electoral area (left panel) with cases by electoral district (right panel) for period 27 October 2020 to 9 November 2020

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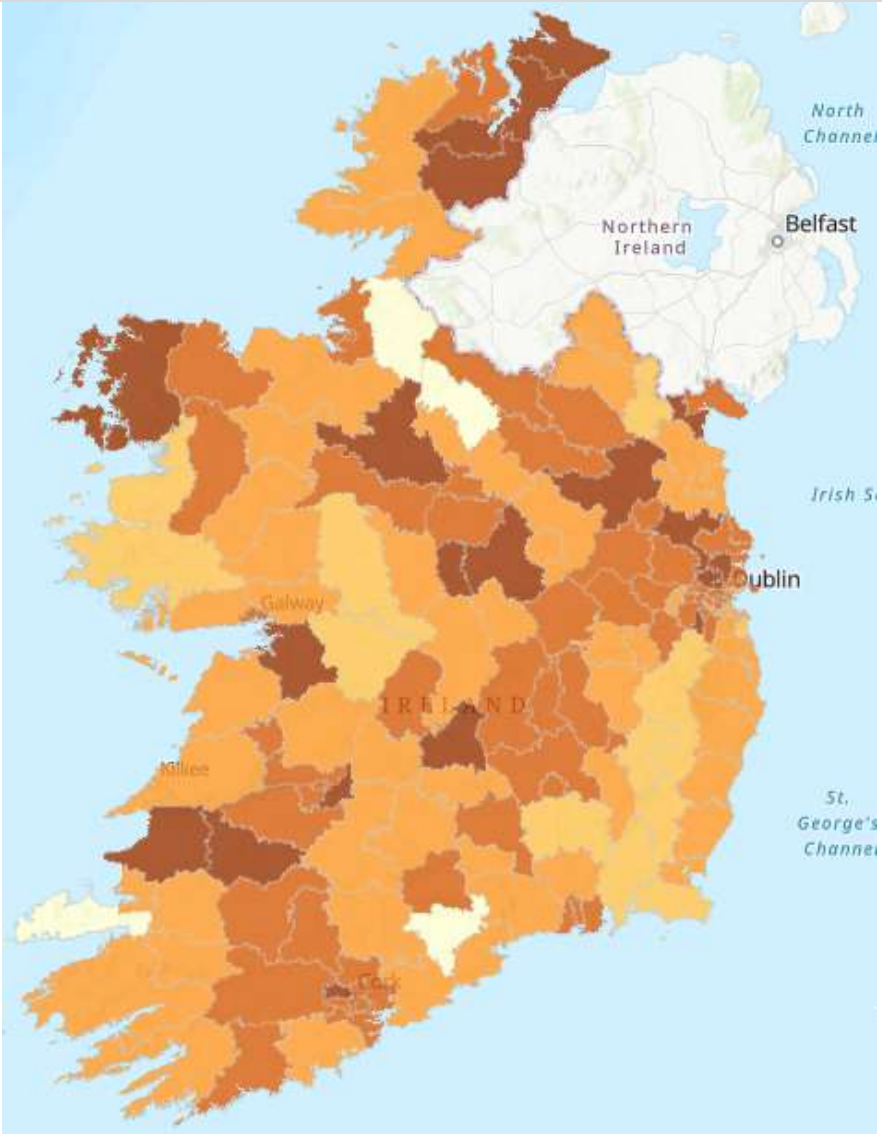

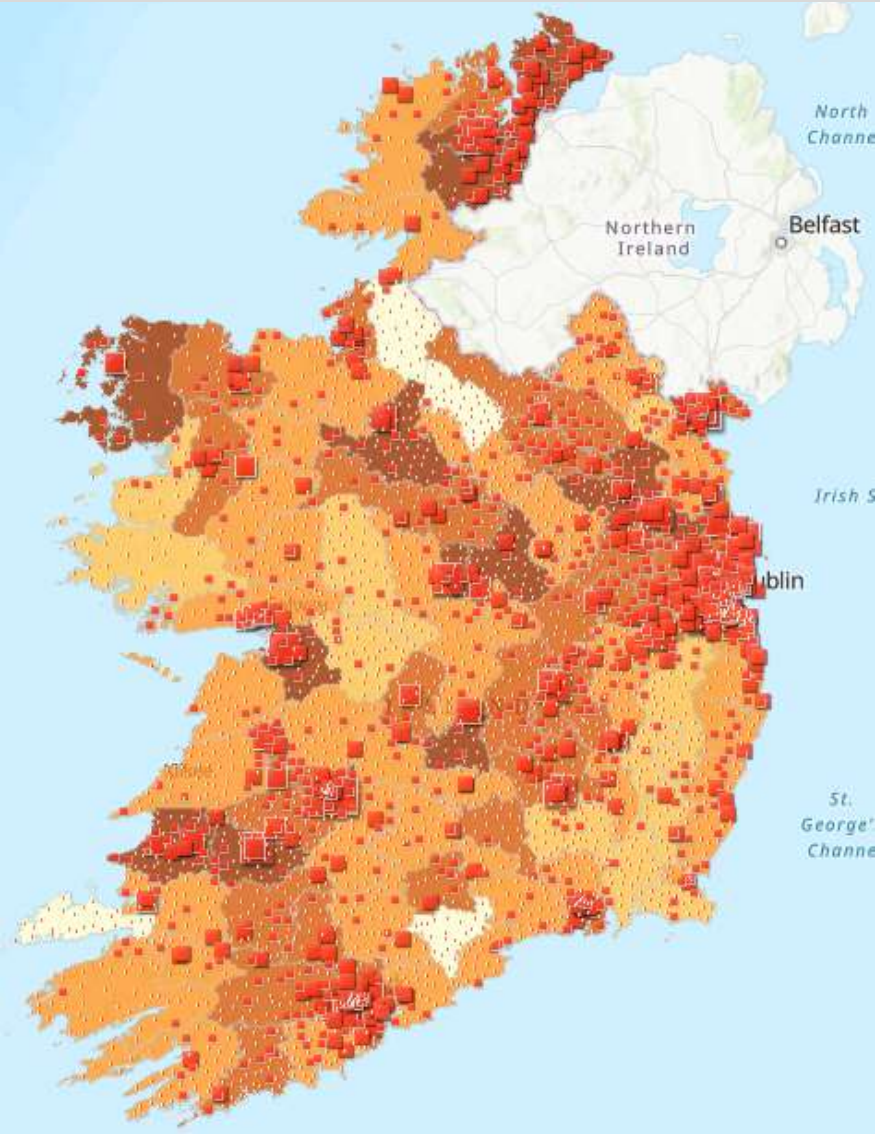

14-day incidence per 100,000 population

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

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14-day cumulative incidence

While 14-day incidence in Dublin and rest of the country are on a similar trajectory, incidence in Donegal remains persistently high.

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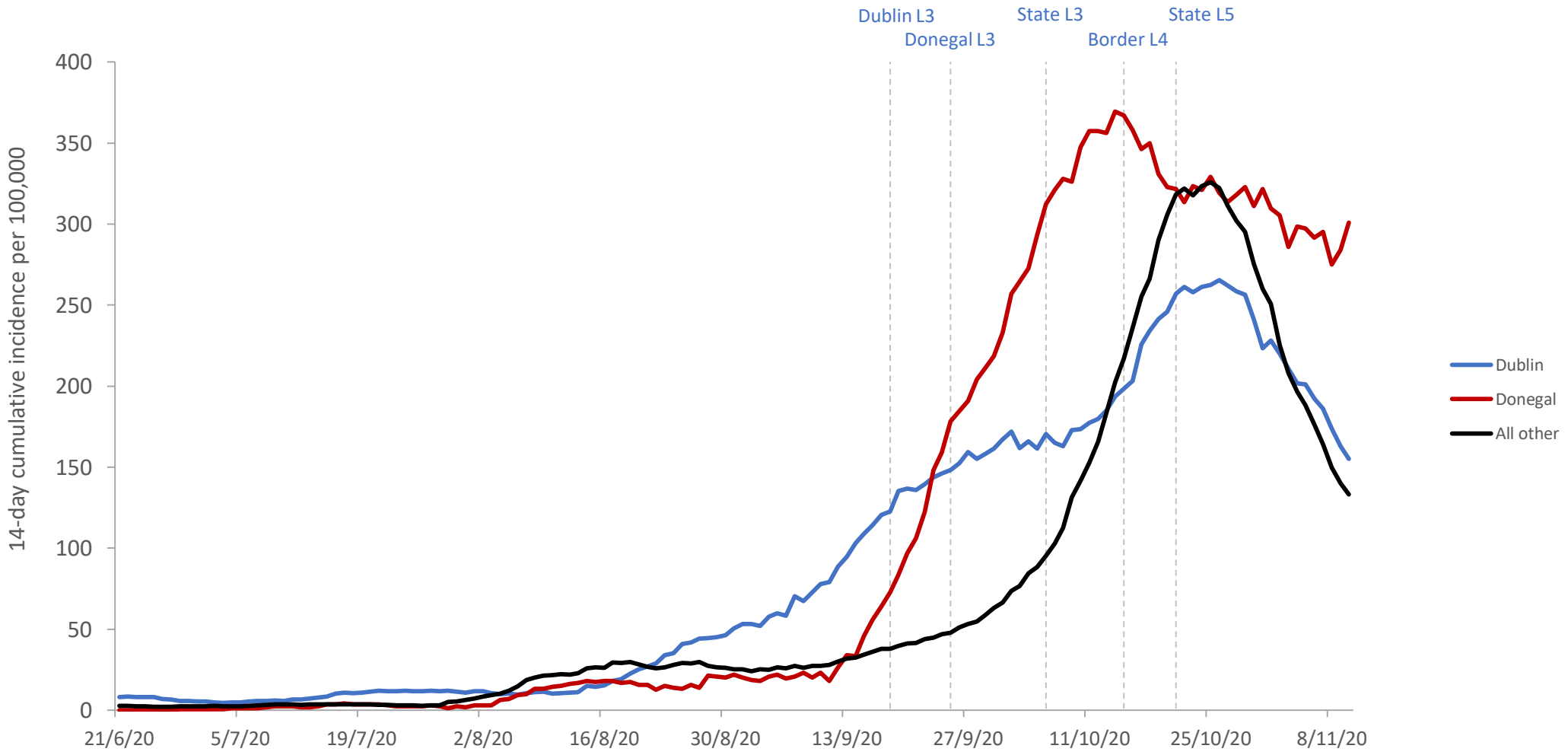

14-day cumulative incidence by date of confirmation. Tests outsourced to German laboratory in April backdated, using the specimen collection date, to the date they would have been confirmed if tested in a timely manner. The vertical dashed lines indicate the dates of escalation and de-escalation of public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

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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 is now decreasing at -5% to -7% per day, most likely due to the cumulative effects of the escalating restrictions imposed since 6 October 2020

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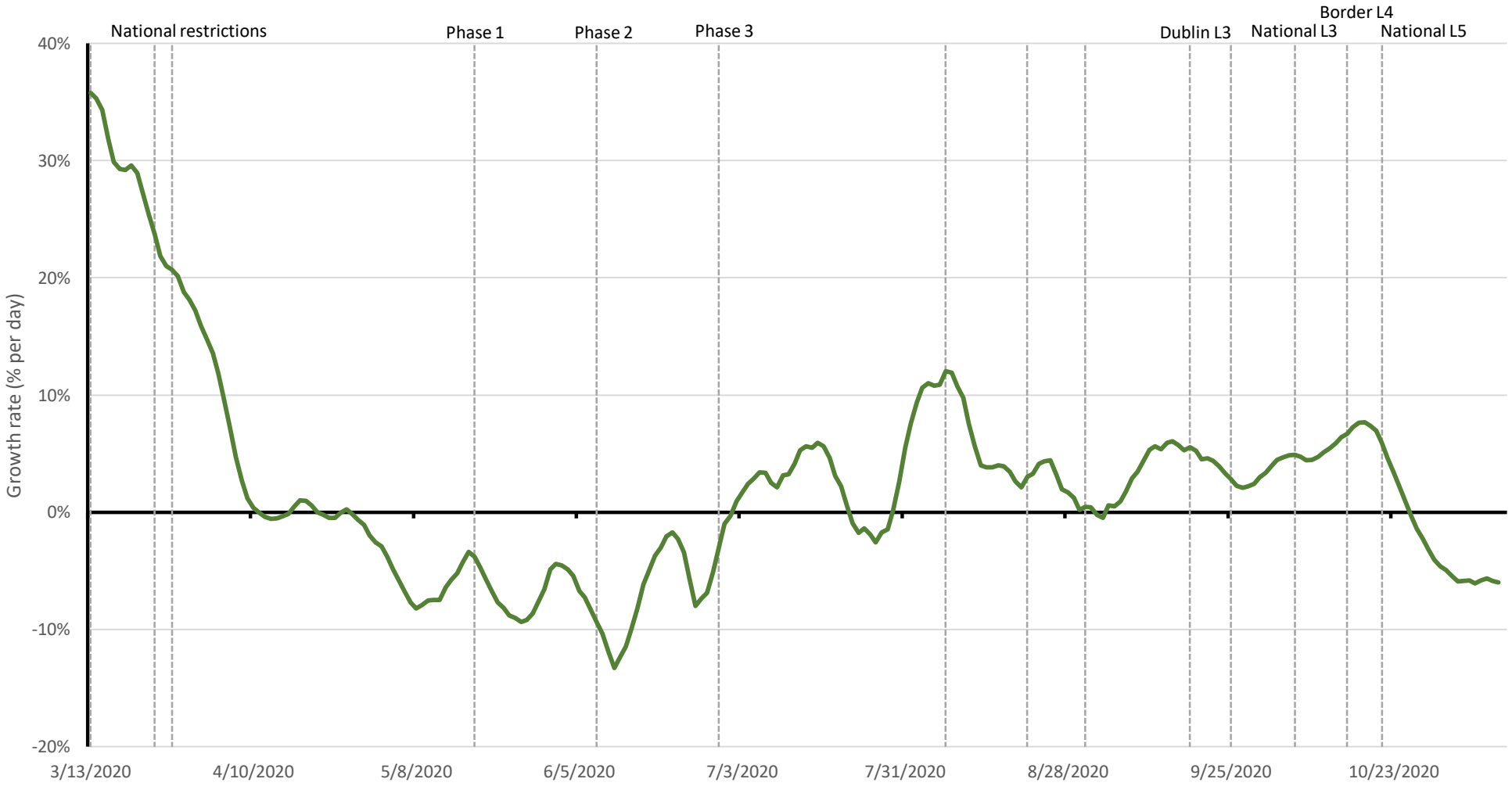

Growth rate calculated as the average growth rate over a 14-day trailing window; cases dated by notification (event) date.

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Estimates of effective reproduction (R)

Reproduction number has decreased since the last estimate, and is currently estimated at approximately 0.6.

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Method	Estimate	95% confidence interval
SEIR model-inferred	0.60	0.36 – 0.78
Bayesian model	0.60	0.27 – 1.32
Time-dependent R	0.64	0.53 – 0.75
GAM estimate 3 Nov 2020	0.77	0.62 – 0.91
GAM estimate 10 Nov 2020	0.64	0.47 – 0.81

Estimates generated 10 November 2020, refer to IEMAG technical notes for methodology. Estimates are unreliable when case numbers are low or variable. These R estimates relate to viral transmissions and infections that occurred approximately 7-14 days s 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 11 November 2020

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- Case numbers decreasing with significant suppression of viral transmission
  - Day on day reduction in case numbers
    - *negative growth: -5% to -7% per day*
  - R estimated at approximately 0.6
    - caution in interpreting R number – it's an *estimate* that *lags* changes in viral transmission
- Numbers in hospital are decreasing and numbers in intensive care have stabilised
- There has been a very significant decrease in incidence in younger adults, but a persistently high incidence in older persons
- Incidence in Dublin now decreasing at a similar rate to the rest of the country
- Incidence in Donegal remains persistently high
- Data suggests that Level 3 measures stabilize case numbers, Level 5 measures were required to suppress transmission, especially if case numbers and force of infection are high
- We remain on target for 50-100 cases per day by 1 December, but only just
  - We need to see case numbers declining at -6 to -8% per day or better
- The need remains to sustain our efforts to further reduce transmission and bring the number of cases and force of infection to very low levels