IEMAG briefing

1 July 2021

Coronavirus
COVID-19
Public Health
Advice

Cases, numbers in hospital and intensive care

Case counts have increased over the last week, and the numbers of people in hospital and ICU have stabilised.

Coronavirus **COVID-19** Public Health Advice

	Apr 2020	Summer 2020	Oct 2020	Dec 2020	Jan 2021	2 Jun	9 Jun	16 Jun	23 Jun	30 Jun	Daily count 1 Jul
Cases confirmed per day	859 18-04	8.7 25-06	1158 21-10	262 12-12	6520 10-01	*402*	*368*	*322*	*320*	*366*	448
14-day incidence *per 100,000 population*	212 19-04	3.0 04-07	306 26-10	79 09-12	1532 15-01	*121*	*113*	*102*	*94*	*101*	103
Hospital in-patients	862 17-04	9 02-08	333 01-11	198 16-12	1949 24-01	96	77	62	41	46	44
Hospital admissions per day	*85* *04-04*	*<1* *10-07*	*27* *26-10*	*11* *13-12*	*158* *15-01*	*9*	*9*	*7*	*6*	*6*	12
ICU confirmed cases	150 *14-04*	4 *04-08*	43 *04-11*	26 *27-12*	217 *28-01*	36	28	22	14	14	14
ICU admissions per day	*14* *31-03*	*<1* *03-06*	*4* *03-11*	*1* *16-12*	*20* *17-01*	*1*	*<1*	*<1*	*<1*	*<1*	0
Deaths confirmed per day	46 *22-04*	<1 *30-07*	7 *01-12*	4 *17-12*	57 *03-02*	-	-	-			-

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. Case data from 13 May 2021 onward are estimates based on the number of positive tests reported. Data on deaths is incomplete and not reported

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Confirmed cases each day

Daily and weekly count and 7-day rolling average. The 7-day average peaked at 1158 on 21 October, reached a low of 262 on 12 December, peaked again at 6520 on 10 January. There was a long period in April and May where cases counts were stable or decreasing, reaching a low of approximately 300 per day in the week beginning 21 June 2021; incidence appears to be increasing, and the 7-day average is now **387 up from 311** seven days ago..

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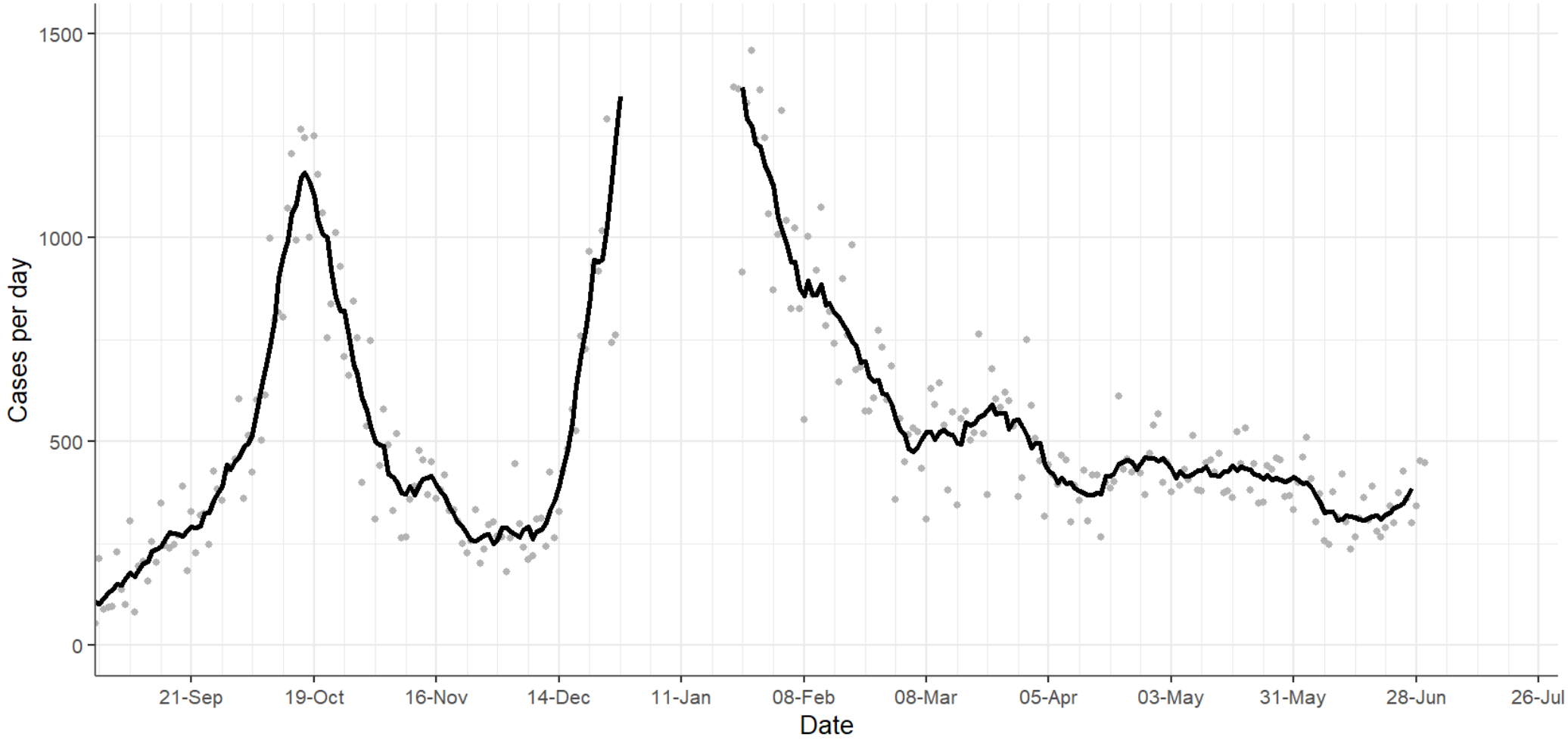

Daily count (points) and 7-day average (line) of the number of laboratory confirmed new cases by date on which they were notified HPSC. Case counts may change due to denotification of cases. Case data from 13 May 2021 onward are provisional based on the number of positive tests reported through the HSE contact management programme

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Confirmed cases each day

Daily count and 7-day rolling average in recent weeks showing apparent increase in incidence over the last 10 days.

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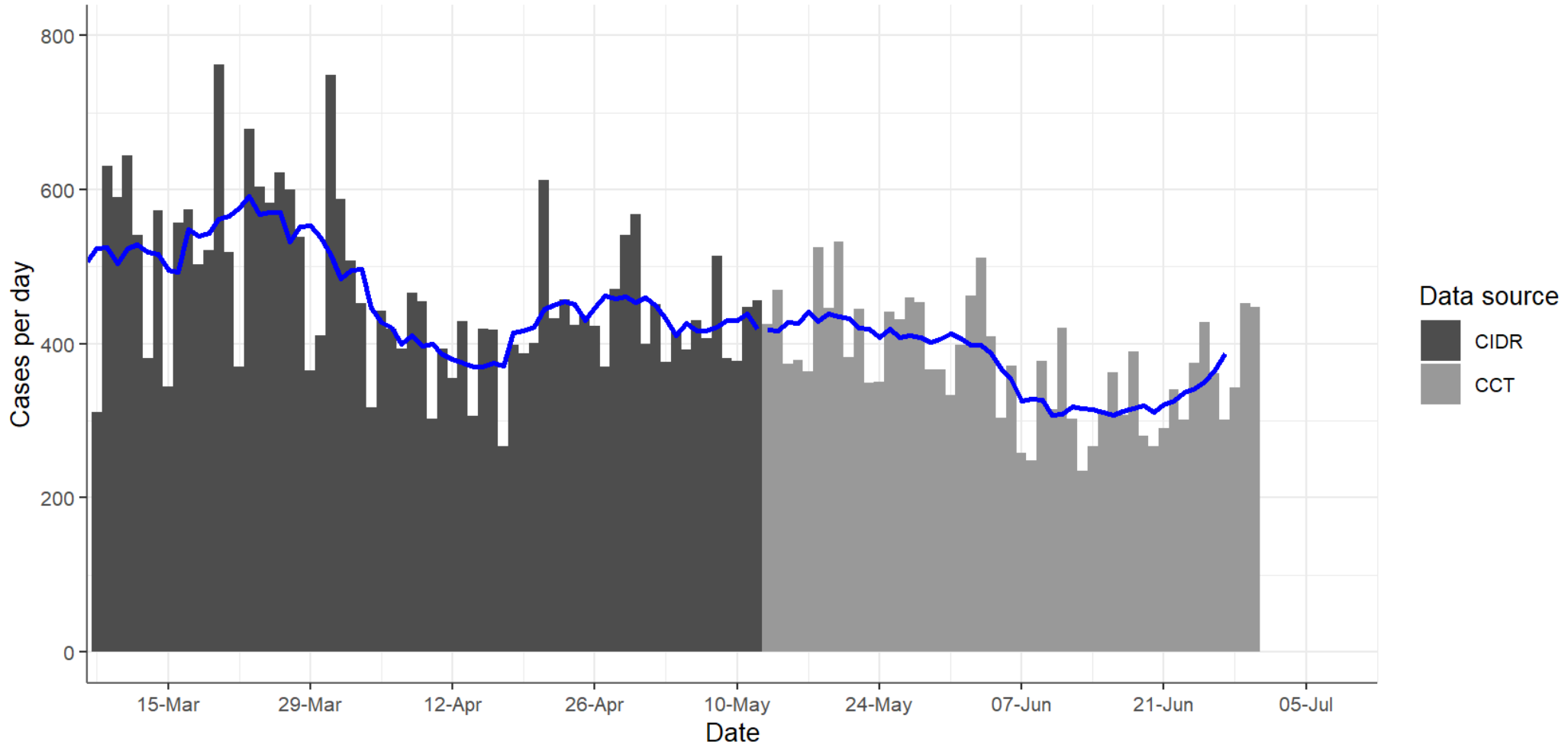

Daily count (bars) and 7-day average (line) of the number of laboratory confirmed new cases by date on which they were notified HPSC (CIDR data). Case counts may change due to denotification of cases. Case data from 13 May 2021 onward (light grey) are provisional based on the number of positive tests reported through the HSE contact management programme (CCT data).

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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 low at **44**. The number of admissions and newly confirmed cases in hospital per day is stable at 6-7 per day.

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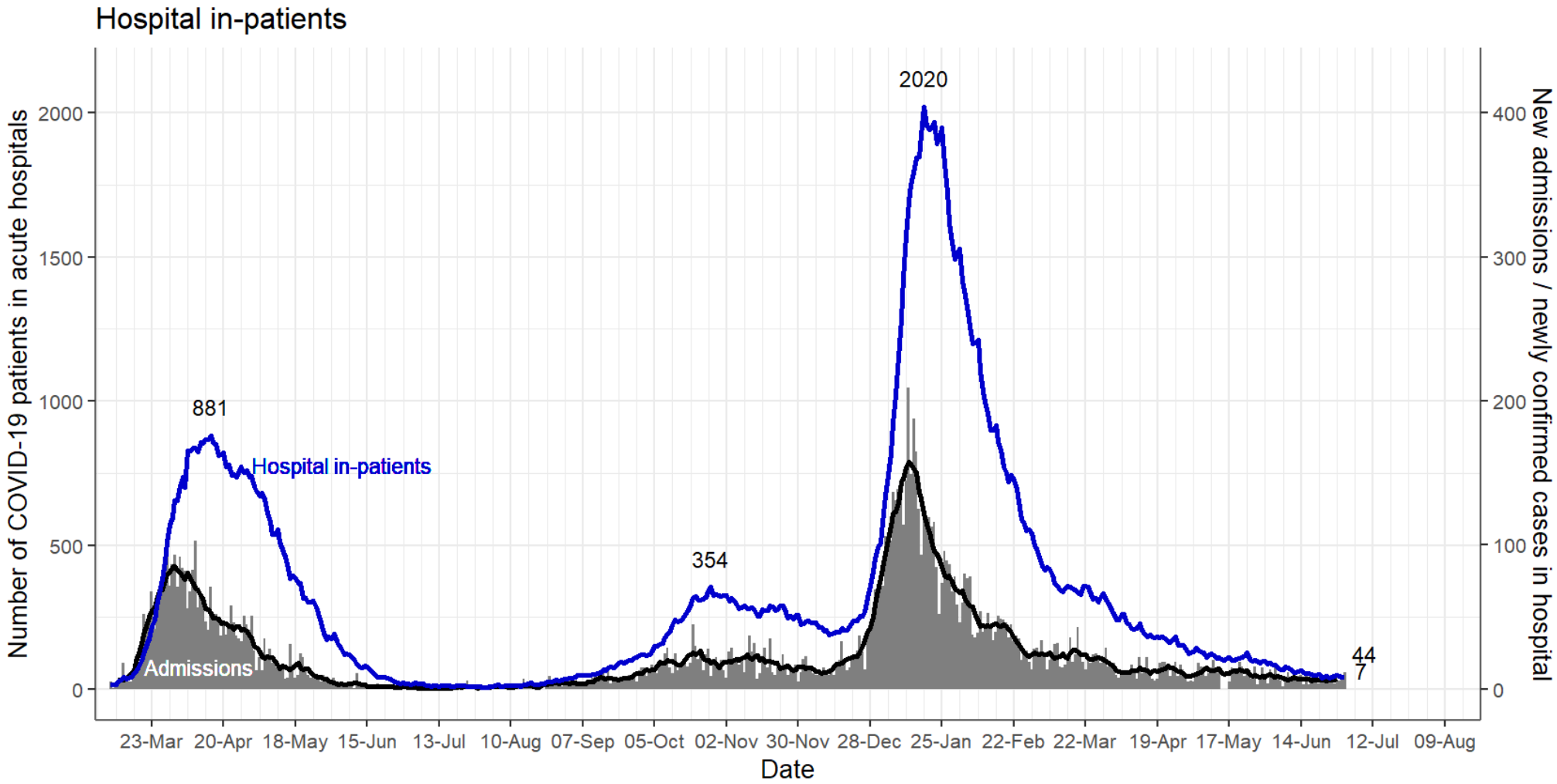

HSE PMIU-SDU data to Thu 01 Jul 2021. Number of in-patients with COVID-19 (blue line) and number of newly admitted or newly confirmed cases per day (columns, with 7-day moving average, black line, secondary y-axis) on HSE acute hospital sites

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Confirmed cases in acute hospitals

The number of people in hospital with confirmed SARS-CoV-2 infection. While the number of people in hospital is low at **44**, this, and the number of new admissions and confirnations per day will be monitored carefully over the coming weeks.

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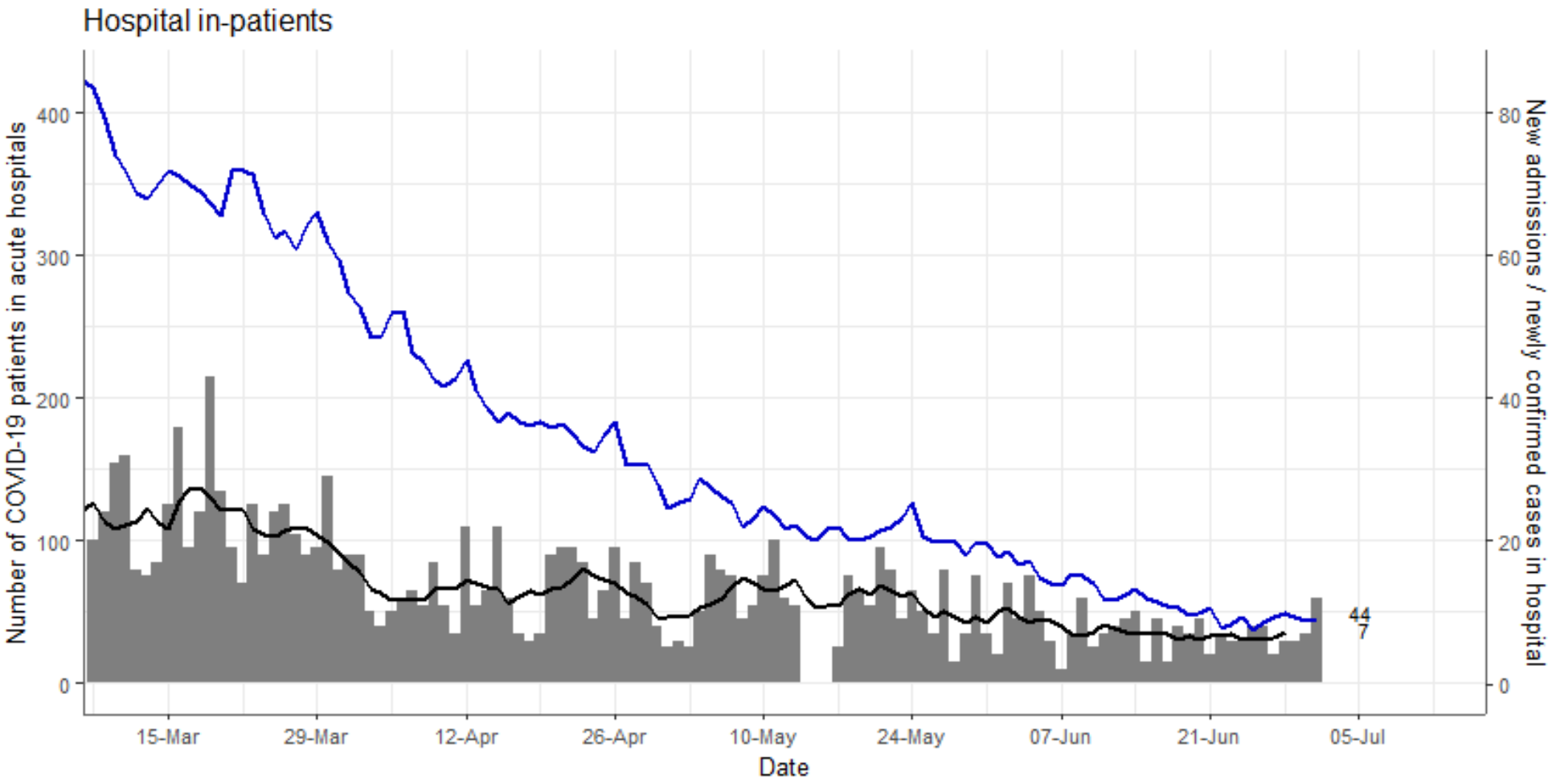

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Confirmed cases in intensive care

The number of people in ICU with confirmed SARS-CoV-2 infection and the number requiring mechanical ventilation is low. The number of new admissions per day is low, on average 2 admissions every 5 days.

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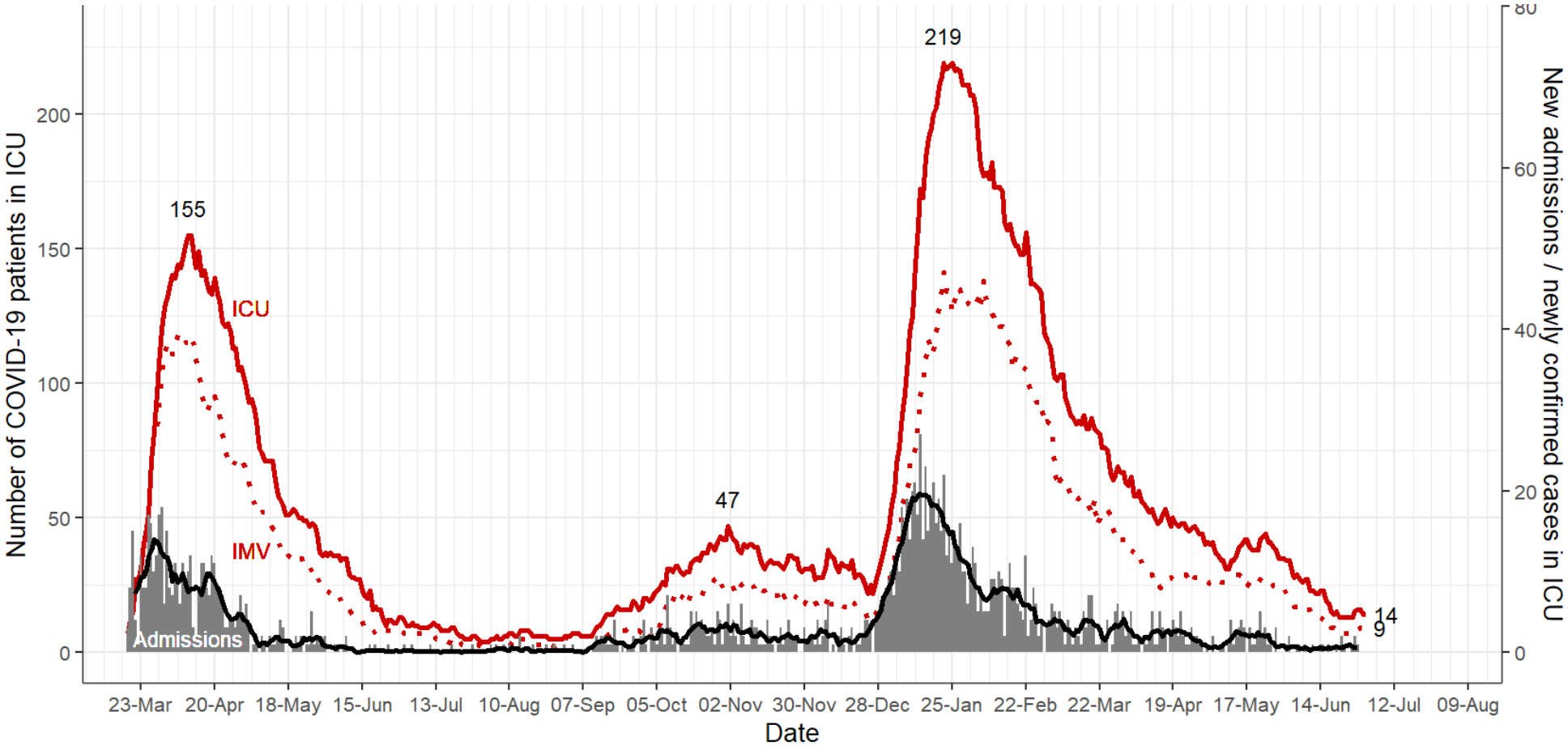

NOCA ICU-BIS data to Thu 01 Jul 2021. Number of patients with COVID-19 in ICU (red solid line) and number requiring mechanical ventilation (IMV, red dotted line) and number of new admissions per day (columns, with 7-day moving average, black line, secondary y-axis).

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Age-specific incidence

The incidence in those aged 65 years and older remains low. However, incidence appears to be rising across almost all other age groups, including vaccinated and partially vaccinated age groups. Incidence in those aged 19-24 years remains very high, three times that those aged 25-34 years.

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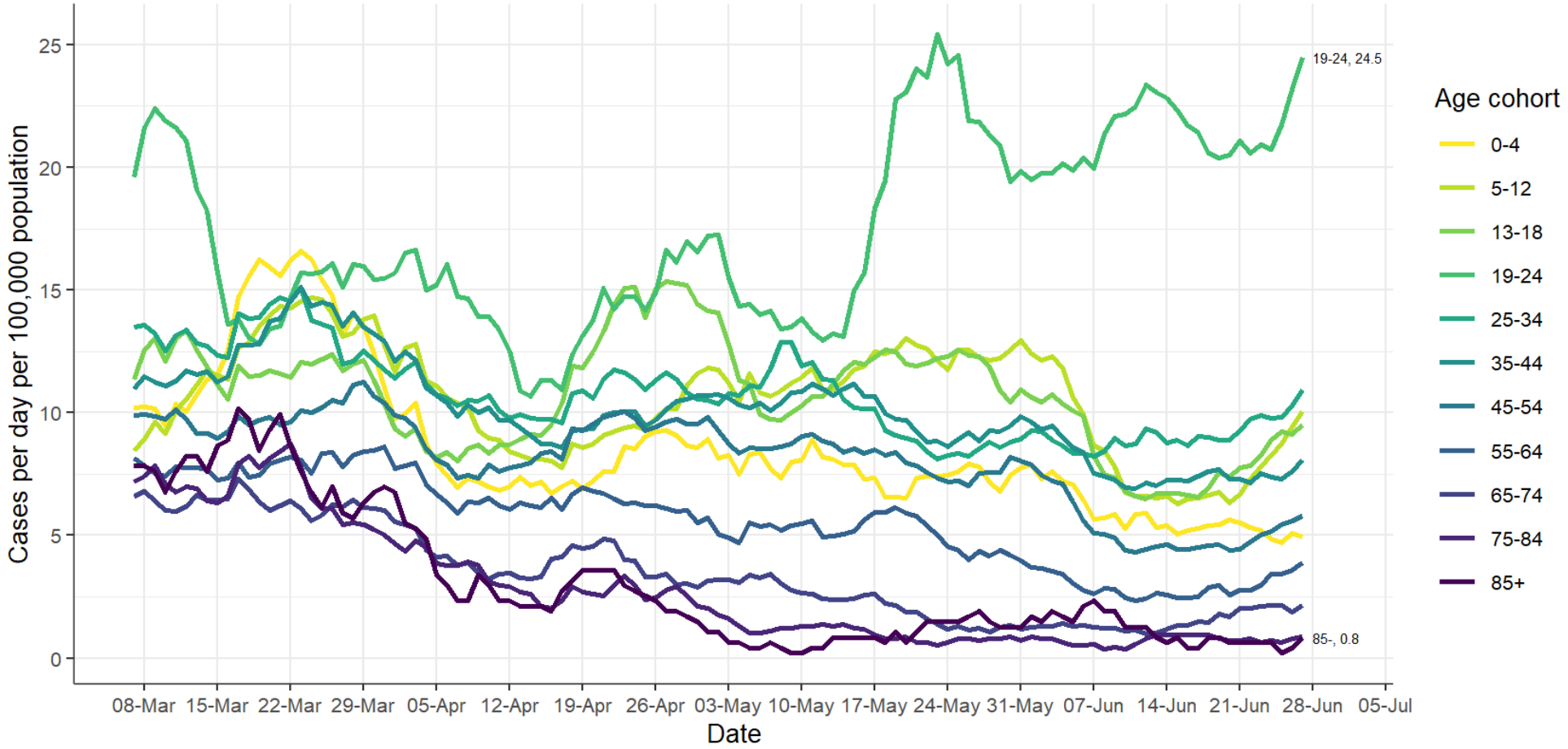

Age-specific incidence (cases per day per 100,000 population). 7-day moving average.
CIDR data to midnight Wed 12 May 2021 and CCT data to Wed 30 Jun 2021. Cases dated by event creation / case creation date

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Incidence across different age groups

The incidence in those aged 65 years and older remains low. However, incidence appears to be rising across almost all other age groups, including vaccinated and partially vaccinated age groups. Incidence in those aged 19-24 years remains very high, three times that those aged 25-34 years.

Week	Age band										
	0-4	5-12	13-18	19-24	25-34	35-44	45-54	55-64	65-74	75-84	85+
48	23.2	29.7	40.9	72.2	39.0	37.1	39.6	30.5	24.1	44.8	74.0
49	28.7	38.1	43.1	60.7	48.8	40.3	44.1	35.8	30.3	45.8	114.0
50	24.7	36.5	40.9	55.3	50.3	41.6	49.0	37.3	24.9	33.6	68.1
51	35.3	51.4	65.1	112.0	88.0	75.8	75.2	75.3	44.2	62.1	100.7
52	72.4	74.9	110.9	286.2	190.0	139.8	145.8	141.1	88.9	102.8	182.1
53	117.9	125.4	249.7	806.4	478.5	316.2	355.1	352.7	231.3	201.0	367.1
1	266.4	299.8	759.7	1964.3	1374.1	991.6	1104.6	1139.4	670.7	669.2	1117.6
2	152.6	146.0	376.2	828.5	652.1	557.1	660.5	635.8	425.4	652.9	1407.7
3	97.1	91.5	197.0	458.6	398.5	345.6	387.4	349.1	233.7	402.5	968.1
4	84.2	63.8	135.1	271.1	221.0	200.2	218.8	192.2	146.7	274.8	746.1
5	64.9	68.2	124.3	246.7	171.5	161.7	173.0	149.1	106.6	179.1	506.3
6	98.3	85.3	135.1	230.4	152.3	123.8	127.6	110.0	77.6	121.6	217.6
7	91.7	79.5	103.1	281.7	131.8	115.8	104.0	95.1	68.8	106.9	196.9
8	86.0	68.7	87.5	198.4	112.8	95.3	99.2	76.8	48.2	76.8	152.5
9	70.9	62.7	74.3	145.2	96.0	73.1	70.8	69.6	46.3	48.9	69.6
10	66.4	64.2	84.8	153.4	87.7	77.8	68.2	51.9	42.0	49.9	47.4
11	103.2	88.6	83.4	96.6	98.3	89.3	69.0	55.6	51.1	55.5	71.1
12	113.7	102.8	84.0	109.6	96.3	100.6	70.0	52.9	39.1	45.8	47.4
13	77.2	89.3	72.4	108.4	82.2	90.4	72.8	60.3	42.0	35.1	48.8
14	48.6	72.7	56.2	103.3	72.0	69.1	51.3	41.5	26.5	26.5	16.3
15	49.2	56.7	63.8	74.6	68.5	63.6	55.7	43.6	22.8	18.3	14.8
16	53.4	63.6	93.1	105.7	79.6	69.2	68.8	47.2	34.0	17.8	25.2
17	63.6	71.1	106.8	112.9	79.5	73.4	68.0	41.9	20.9	20.4	13.3
18	58.2	81.1	78.3	100.8	77.8	71.5	60.1	38.5	23.8	7.1	3.0
19	57.3	76.5	74.8	90.6	79.6	76.7	61.8	34.6	16.9	9.7	3.0
20	45.9	87.8	87.5	159.4	63.7	68.2	58.6	43.0	15.0	5.6	7.4
21	55.5	87.8	86.4	153.4	57.5	64.3	49.2	28.1	8.0	5.6	11.8
22	51.0	84.9	72.9	138.3	64.6	65.2	52.2	25.5	9.1	5.6	10.4
23	41.0	54.7	51.4	154.6	62.6	50.7	34.3	19.6	8.6	3.1	13.3
24	36.5	45.4	46.6	151.9	60.7	50.5	31.0	17.3	9.4	6.6	3.0
25	36.5	54.7	57.9	146.4	69.3	52.6	35.1	20.6	14.7	4.6	4.4

Cases per week per 100,000 population

5
10
20
30
40
50
60
70
80
90
100
200
500

Week	Age band										
	0-4	5-12	13-18	19-24	25-34	35-44	45-54	55-64	65-74	75-84	85+
10	0.0	0.2	0.5	0.0	0.2	0.9	0.5	0.4	0.0	0.0	0.0
11	0.0	0.2	0.3	4.5	2.4	2.7	3.8	5.5	3.7	2.5	4.4
12	1.5	1.5	2.7	13.0	22.3	18.3	20.8	16.5	10.4	23.9	44.4
13	3.0	1.1	5.4	26.6	42.8	40.0	48.9	47.5	41.8	73.8	96.2
14	2.7	0.9	2.7	32.0	54.9	57.4	70.0	65.2	61.3	137.9	309.4
15	6.9	4.6	11.8	80.6	124.4	113.1	142.5	139.1	86.7	154.2	383.4
16	10.3	12.6	22.3	103.9	136.2	130.3	178.3	148.5	102.5	223.9	740.1
17	3.9	3.8	11.0	61.0	74.6	69.9	90.6	71.7	74.7	280.4	1055.4
18	4.5	5.1	11.0	60.4	64.5	55.2	64.5	53.6	40.2	131.8	481.1
19	3.3	5.5	7.5	34.7	43.1	40.0	38.5	35.0	23.6	55.0	137.7
20	3.3	2.0	2.4	33.5	44.6	34.8	30.8	23.6	13.9	28.0	87.3
21	4.2	3.3	8.3	14.8	14.9	15.7	13.4	11.0	9.4	17.8	50.3
22	2.4	2.2	3.2	7.9	9.6	9.5	12.0	9.6	7.0	17.8	50.3
23	2.1	2.0	1.6	8.5	4.7	4.6	7.3	5.1	4.0	7.1	20.7
24	1.8	0.4	1.9	2.7	2.9	2.3	2.9	1.4	1.6	4.6	14.8
25	0.9	0.5	0.3	3.0	2.4	2.3	2.7	1.6	1.3	2.5	14.8
26	0.3	0.2	0.5	1.8	2.1	1.7	1.1	1.4	0.5	1.5	7.4
27	1.5	0.5	0.5	2.4	3.5	2.1	2.4	1.6	0.5	4.1	4.4
28	1.2	1.1	1.1	10.6	4.4	3.2	1.6	1.2	1.3	1.0	1.5
29	1.2	0.2	0.5	5.4	5.8	2.7	3.4	2.4	3.7	2.5	4.4
30	1.5	0.4	1.1	4.2	4.5	2.9	3.5	1.8	1.6	1.0	3.0
31	5.4	4.2	5.9	10.3	10.6	5.8	6.4	2.9	2.7	2.5	4.4
32	6.0	4.0	8.6	16.6	23.5	15.1	13.1	8.1	4.0	2.0	1.5
33	5.4	7.8	9.4	26.6	16.2	12.1	13.1	8.4	7.5	3.1	8.9
34	8.1	8.2	15.9	35.9	24.1	15.5	14.4	12.4	5.6	4.6	4.4
35	6.3	8.9	17.2	43.8	23.7	16.9	18.0	12.2	7.5	12.7	7.4
36	10.3	12.4	14.8	48.0	25.5	19.0	17.9	14.9	11.8	14.8	35.5
37	18.1	18.4	23.7	58.9	38.5	26.8	25.1	24.2	20.1	14.2	32.6
38	20.5	23.3	47.1	94.8	46.3	38.2	45.5	37.3	34.5	24.4	28.1
39	13.9	23.3	37.7	127.1	60.4	38.7	42.3	35.8	28.6	29.5	37.0
40	24.4	23.7	57.9	178.4	83.4	63.1	67.6	62.9	38.3	36.1	51.8
41	36.5	41.7	107.4	275.1	115.0	80.1	93.8	85.9	56.0	63.1	121.4
42	66.4	77.6	191.3	448.7	193.8	138.0	153.0	141.9	89.2	79.4	122.9
43	86.9	97.9	178.4	364.7	158.5	127.7	149.0	151.5	95.8	97.7	176.2
44	62.1	76.7	124.9	200.2	105.5	91.0	112.8	96.1	71.5	77.4	137.7
45	45.2	48.3	73.5	112.9	90.2	73.0	77.5	60.9	51.7	72.3	130.3
46	31.1	35.7	58.9	94.8	61.1	52.5	57.8	47.7	38.8	59.5	130.3
47	34.7	39.2	72.1	98.7	60.4	55.4	56.5	40.9	32.9	45.3	100.7
48	23.2	29.7	40.9	72.2	39.0	37.1	39.6	30.5	24.1	44.8	74.0
49	28.7	38.1	43.1	60.7	48.8	40.3	44.1	35.8	30.3	45.8	114.0
50	24.7	36.5	40.9	55.3	50.3	41.6	49.0	37.3	24.9	33.6	68.1
51	35.3	51.4	65.1	112.0	88.0	75.8	75.2	75.3	44.2	62.1	100.7
52	72.4	74.9	110.9	286.2	190.0	139.8	145.8	141.1	88.9	102.8	182.1
53	117.9	125.4	249.7	806.4	478.5	316.2	355.1	352.7	231.3	201.0	367.1
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2	152.6	146.0	376.2	828.5	652.1	557.1	660.5	635.8	425.4	652.9	1407.7
3	97.1	91.5	197.0	458.6	398.5	345.6	387.4	349.1	233.7	402.5	968.1
4	84.2	63.8	135.1	271.1	221.0	200.2	218.8	192.2	146.7	274.8	746.1
5	64.9	68.2	124.3	246.7	171.5	161.7	173.0	149.1	106.6	179.1	506.3
6	98.3	85.3	135.1	230.4	152.3	123.8	127.6	110.0	77.6	121.6	217.6
7	91.7	79.5	103.1	281.7	131.8	115.8	104.0	95.1	68.8	106.9	196.9
8	86.0	68.7	87.5	198.4	112.8	95.3	99.2	76.8	48.2	76.8	152.5
9	70.9	62.7	74.3	145.2	96.0	73.1	70.8	69.6	46.3	48.9	69.6
10	66.4	64.2	84.8	153.4	87.7	77.8	68.2	51.9	42.0	49.9	47.4
11	103.2	88.6	83.4	96.6	98.3	89.3	69.0	55.6	51.1	55.5	71.1
12	113.7	102.8	84.0	109.6	96.3	100.6	70.0	52.9	39.1	45.8	47.4
13	77.2	89.3	72.4	108.4	82.2	90.4	72.8	60.3	42.0	35.1	48.8
14	48.6	72.7	56.2	103.3	72.0	69.1	51.3	41.5	26.5	26.5	16.3
15	49.2	56.7	63.8	74.6	68.5	63.6	55.7	43.6	22.8	18.3	14.8
16	53.4	63.6	93.1	105.7	79.6	69.2	68.8	47.2	34.0	17.8	25.2
17	63.6	71.1	106.8	112.9	79.5	73.4	68.0	41.9	20.9	20.4	13.3
18	58.2	81.1	78.3	100.8	77.8	71.5	60.1	38.5	23.8	7.1	3.0
19	57.3	76.5	74.8	90.6	79.6	76.7	61.8	34.6	16.9	9.7	3.0
20	45.9	87.8	87.5	159.4	63.7	68.2	58.6	43.0	15.0	5.6	7.4
21	55.5	87.8	86.4	153.4	57.5	64.3	49.2	28.1	8.0	5.6	11.8
22	51.0	84.9	72.9	138.3	64.6	65.2	52.2	25.5	9.1	5.6	10.4
23	41.0	54.7	51.4	154.6	62.6	50.7	34.3	19.6	8.6	3.1	13.3
24	36.5	45.4	46.6	151.9	60.7	50.5	31.0	17.3	9.4	6.6	3.0
25	36.5	54.7	57.9	146.4	69.3	52.6	35.1	20.6	14.7	4.6	4.4

Heat map shows age-specific incidence (cases per week per 100,000 population). Cases dated by notification date. Case data from 13 May 2021 onward are estimates based on the number of positive tests reported.

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Growth rate

The growth rate is currenty estimated at +2% (+0.2 — +3.9) per day.

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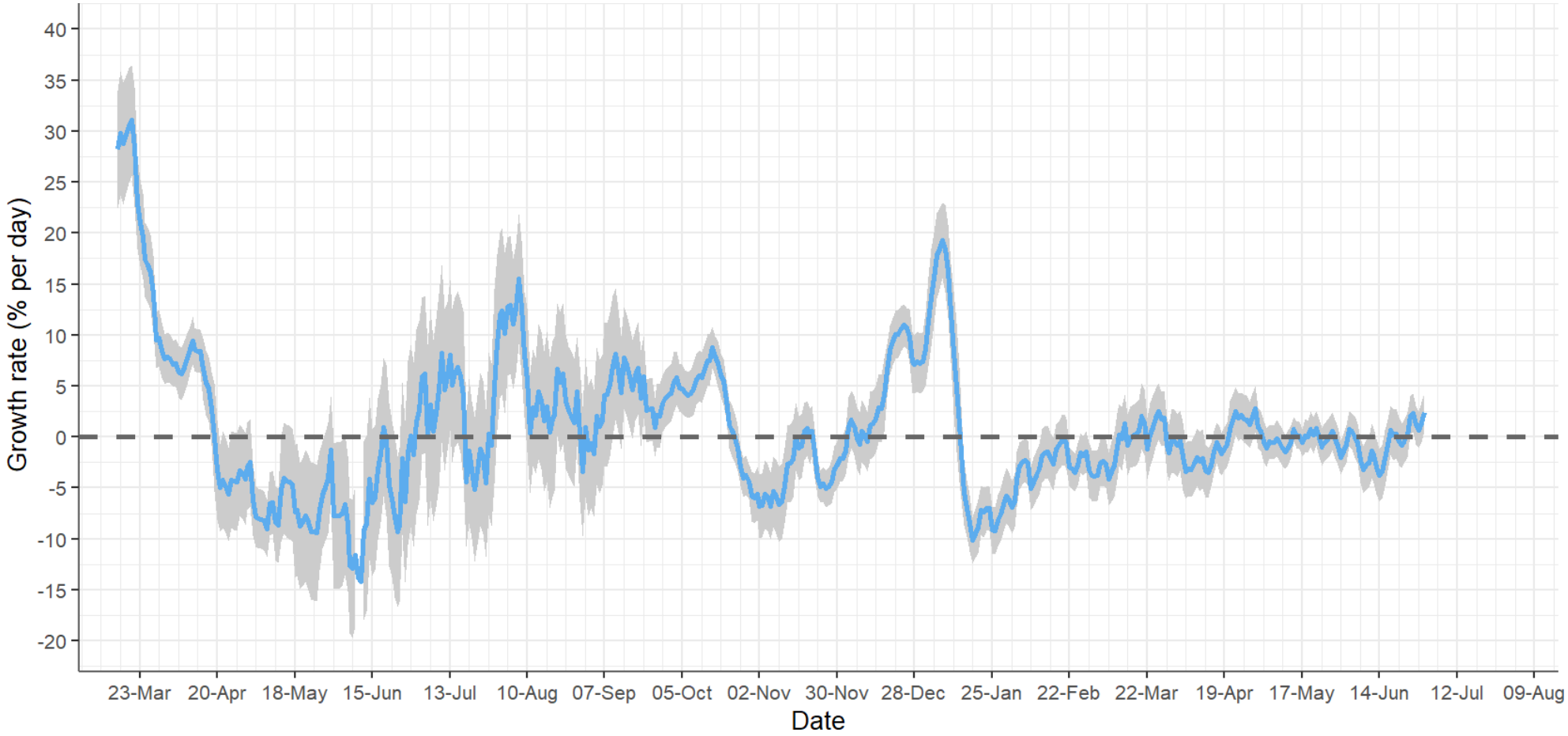

CIDR data to midnight Wed 12 May 2021 and CCT data to Wed 30 Jun 2021. Cases dated by event creation / case creation date.
Growth rate in case counts using a 14-day window, cases dated by event (notification) date. Mean and 95% confidence intervals

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Situation analysis 1 July 2021

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- Incidence increasing
  - Cases (7-day average) 387 cases per day; 14-day incidence 103 per 100,000
  - Growth/decline rate at +2% per day (0% to +4%), reproduction number 1.0 – 1.2
  - Incidence increasing across all age groups 5-65 years
  - Numbers in hospital and ICU static
- A concern this is the beginning of an increase in incidence associated with the delta variant, presenting significant dangers to unvaccinated and partially vaccinated groups
  - We must limit transmission as vaccination proceeds
  - Outdoors is lower risk, but we still need to take the basic precautions
    - Social distance, face coverings, hand hygiene, ventilation
  - We need to keep close contacts low, and minimize the risk of transmission during any close contact

Background

Coronavirus
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- Summer 2020 – effective reproduction number 1.4 - 1.6
  - moderate social mixing / higher social mixing
- UK estimates of transmission advantage
  - of alpha variant over ancestors 40-90%
  - of delta over alpha 40-60%
- ECDC using more conservative estimates
  - delta advantage over alpha of 55%
  - lower estimate of alpha advantage over ancestors at 27%
- Vaccine effectiveness
  - reduced first dose effectiveness leading to increased transmission

Model scenarios

Coronavirus
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Advice

- Optimistic
  - moderate social mixing (as end July-early August 2020) from 5 July 2021, conservative transmission advantage
    - alpha 27% more transmissible than antecedents, delta 55% more transmissible than alpha
- Central 1
  - higher social mixing (as end August-early September 2020) from 5 July 2021, conservative transmission advantage
    - alpha 27% more transmissible than antecedents, delta 55% more transmissible than alpha
- Central 2
  - moderate social mixing, higher transmission advantage
    - alpha 50% more transmissible than antecedents, delta 60% more transmissible than alpha
- Pessimistic
  - higher social mixing, higher transmission advantage
    - alpha 50% more transmissible than antecedents, delta 60% more transmissible than alpha

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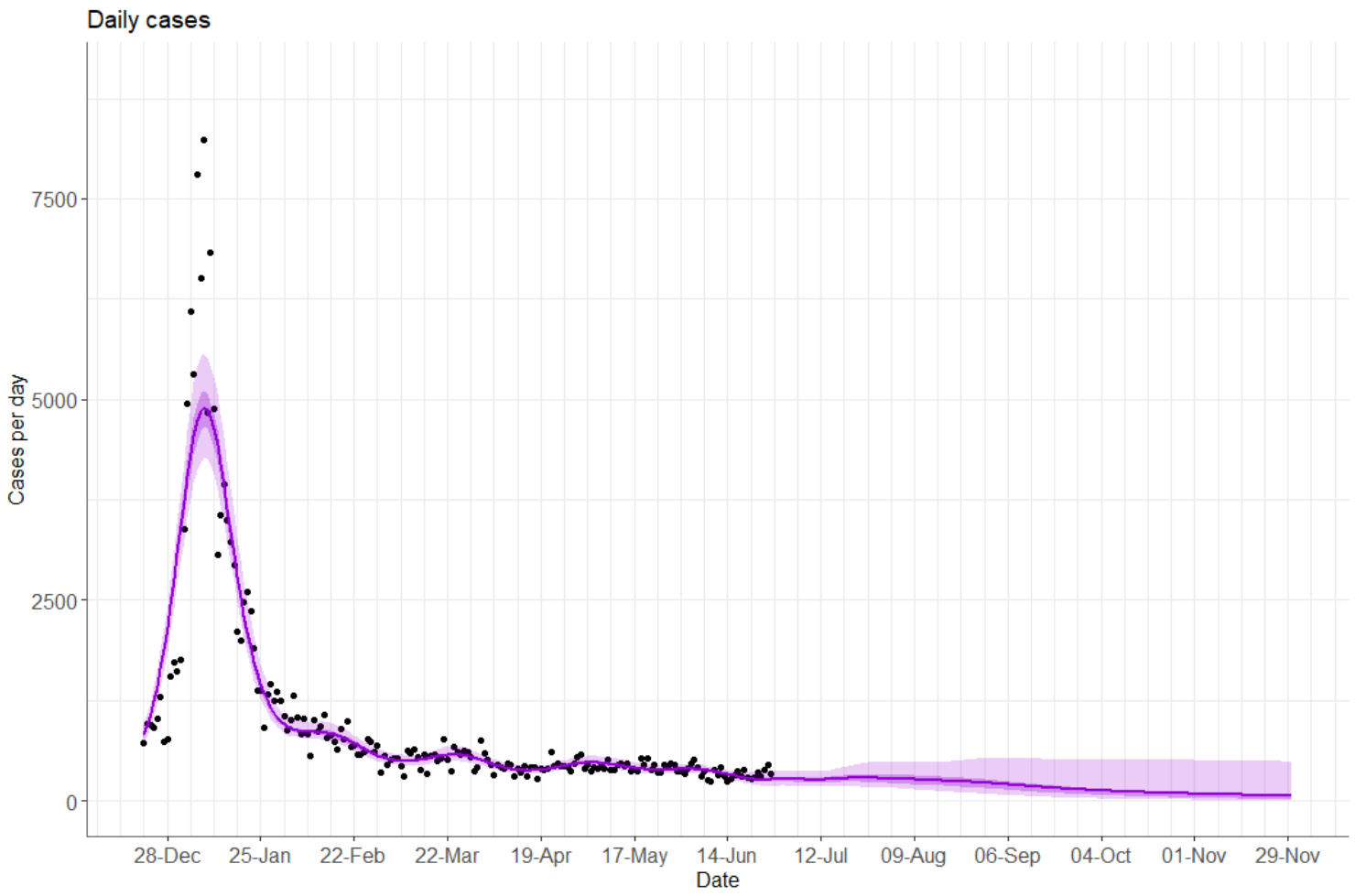
Model scenario without delta variant

A step change in close social contact, to moderate levels, from 5 July 2021 has minimal impact on case counts

Coronavirus
COVID-19
Public Health
Advice



Cases, admissions and deaths over the three months July – September 2021. Data are mean (rounded to the nearest 100 for cases, and the nearest 5 for other parameters) and 95% confidence intervals

	Cases	Hospital admissions	ICU admissions	Deaths
Jul	8,200	155	20	25
Aug	7,800	150	20	30
Sept	5,100	100	15	25
Total	21,100 (10,400 – 42,600)	405 (374 – 446)	55 (42-71)	80 (67-91)

Homogeneous population SEIR model scenario estimates of new cases per day; confidence intervals generated from 1000 runs of the model with different assumptions on asymptomatic fraction, transmissibility of asymptomatic infections, latent period and duration of infectious period. The solid line is the ensemble average of all runs, dark ribbon the interquartile range, and the light ribbon the 2.5 and 97.5 percentiles. Points are actual case counts to date. The effect of vaccination included according to vaccination plan of 23 June 2021. A step change in close social contact is introduced on 5 July 2021 and maintained constant thereafter.

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Model scenario - delta - optimistic

Moderate social mixing from 5 July 2021, conservative transmission advantage (alpha 27% more transmissible than antecedents, delta 55% more transmissible than alpha

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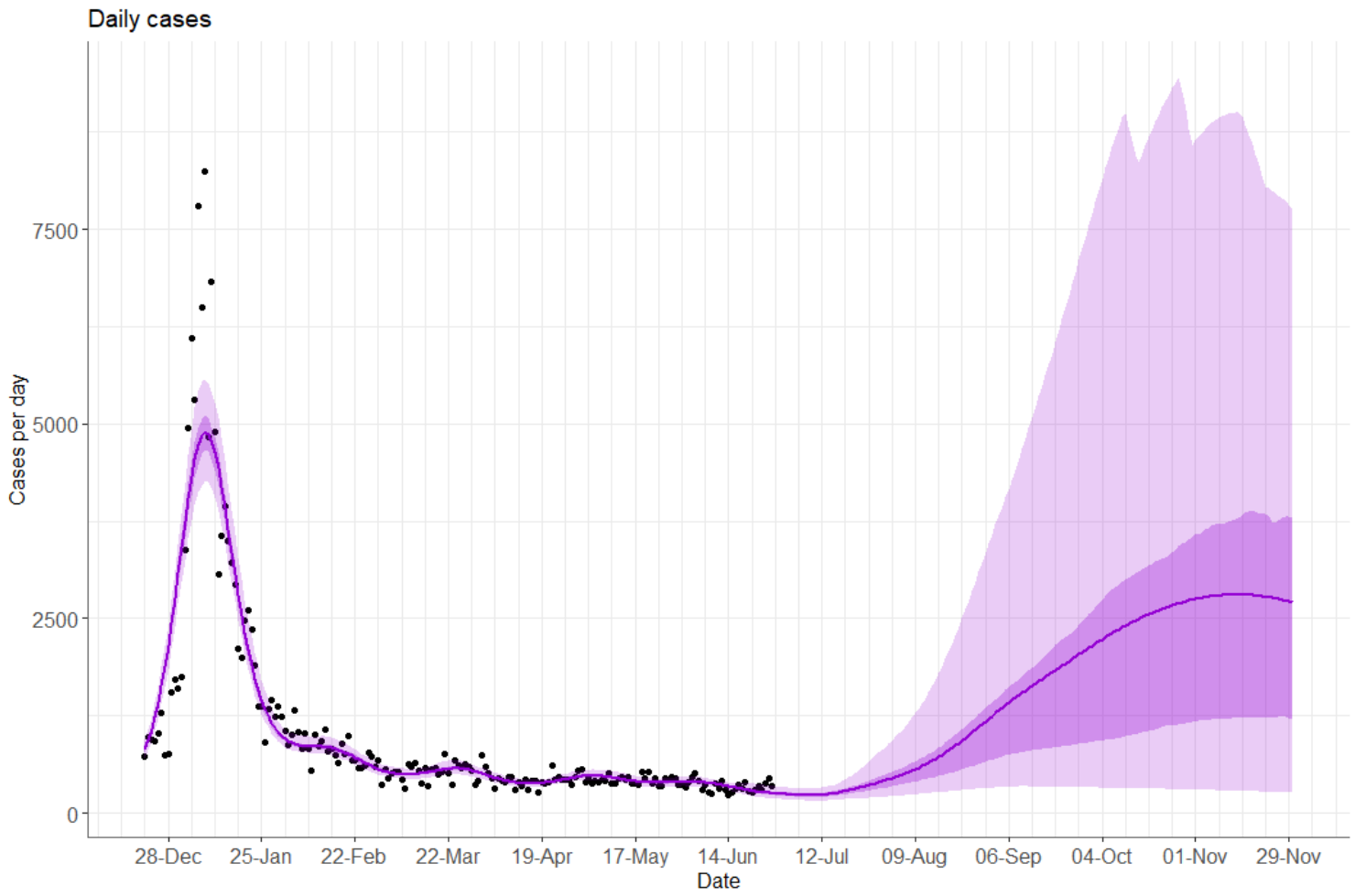

Cases, admissions and deaths over the three months July – September 2021. Data are mean (rounded to the nearest 100 for cases, and the nearest 5 for other parameters) and 95% confidence intervals

	Cases	Hospital admissions	ICU admissions	Deaths
Jul	9,000	160	20	25
Aug	23,000	420	50	60
Sept	49,000	950	125	165
Total	**81,000** (23,100 – 230,600)	**1,530** (1,394 – 1,660)	**195** (148-247)	**250** (216-288)

Homogeneous population SEIR model scenario estimates of new cases per day; confidence intervals generated from 1000 runs of the model with different assumptions on asymptomatic fraction, transmissibility of asymptomatic infections, latent period and duration of infectious period. The solid line is the ensemble average of all runs, dark ribbon the interquartile range, and the light ribbon the 2.5 and 97.5 percentiles. Points are actual case counts to date. The effect of vaccination included according to vaccination plan of 23 June 2021. Delta variant replaces alpha in July 2021. A step change in close social contact is introduced on 5 July 2021 and maintained constant thereafter.

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Model scenario - delta - optimistic

Hospital admissions and deaths: the model performs well in predicting actual admissions and deaths (points) from historic case data, and shows a slow increase in adverse outcomes as in late summer and early autumn 2021.

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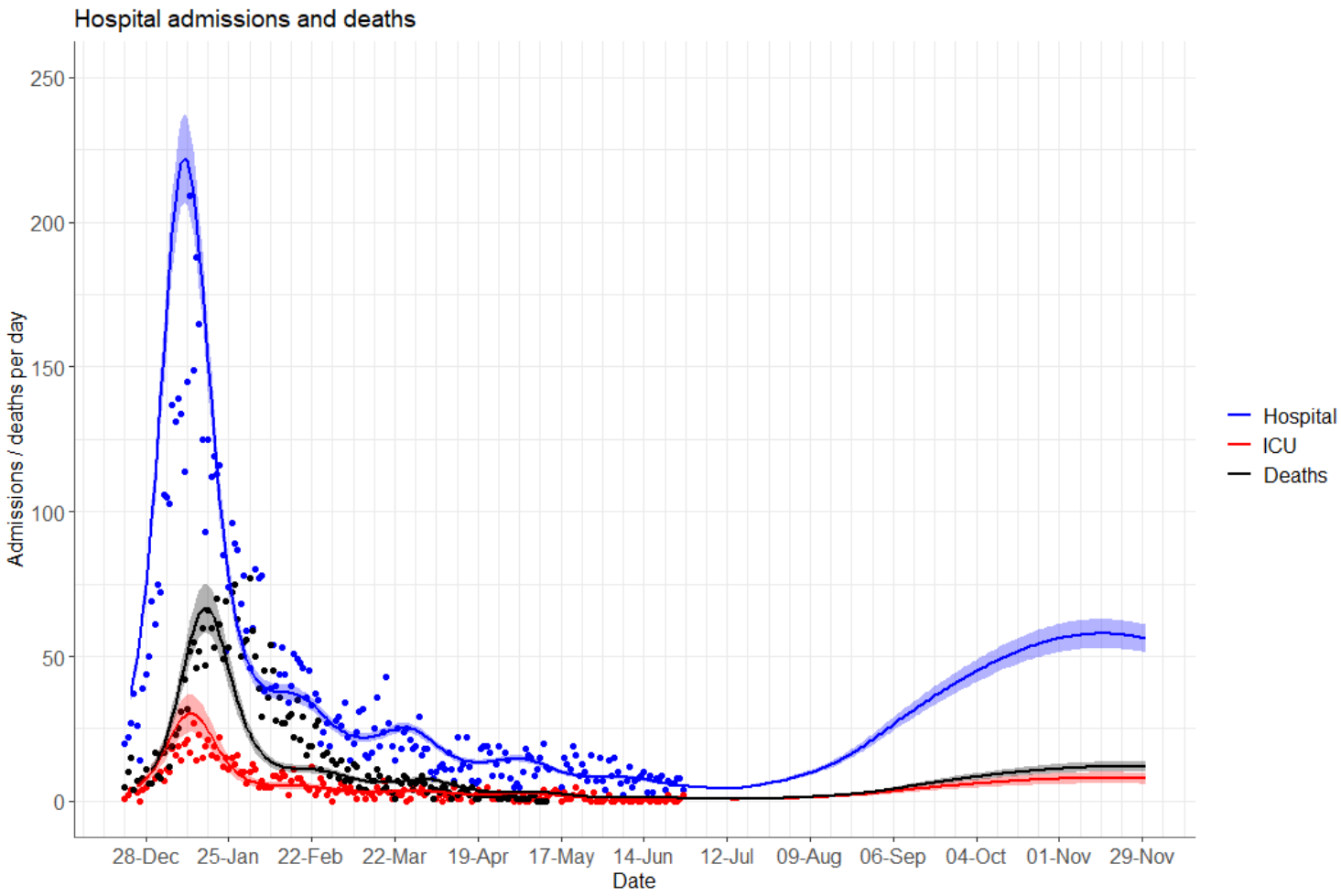

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Estimates of daily admissions to hospital and critical care, and daily deaths, based on the mean estimated daily cases from the homogeneous population SEIR model. The solid line is the mean, and the ribbon represents the 95% confidence interval. Points are actuals to date. The effect of vaccination included according to vaccination plan of 23 June 2021. Vaccination reduces the risk that symptomatic infection will lead to severe disease. The effectiveness of vaccines in this regard is assumed to be similar for alpha and delta variants. The risk of severe disease and mortality is also assumed to be similar for alpha and delta variants; there is emerging evidence it may be higher for the delta variant.

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Summary

Coronavirus
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	Cases	Hospital admissions	ICU admissions	Deaths	
No delta variant	21,000	405	55	80	
Optimistic	81,000	1,530	195	250	Moderate social mixing, alpha 27% more transmissible, delta 55% more transmissible than alpha
Central 1	187,000	3,490	450	545	Higher social mixing, alpha 27% more transmissible, delta 55% more transmissible than alpha
Central 2	408,000	7,690	985	1,230	Moderate social mixing, alpha 27% more transmissible, delta 55% more transmissible than alpha
Pessimistic	682,000	12,985	1,685	2,170	Higher social mixing, alpha 50% more transmissible, delta 60% more transmissible

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