IEMAG briefing

1 July 2021

Coronavirus
COVID-19
Public Health
Advice

Cases, numbers in hospital and intensive care

Case counts have increased significantly in recent weeks, and the numbers of people in hospital are also beginning to increase.

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	Apr 2020	Summer 2020	Oct 2020	Dec 2020	Jan 2021	16 Jun	23 Jun	30 Jun	7 Jul	14 Jul	Daily count 14 Jul
Cases confirmed per day	859 18-04	8.7 25-06	1158 21-10	262 12-12	6520 10-01	*318*	*319*	*365*	*320*	*605*	783
14-day incidence *per 100,000 population*	212 19-04	3.0 04-07	306 26-10	79 09-12	1532 15-01	*101*	*94*	*101*	*121*	*157*	
Hospital in-patients	862 17-04	9 02-08	333 01-11	198 16-12	1949 24-01	62	48	45	49	59	73
Hospital admissions per day	*85* *04-04*	*<1* *10-07*	*27* *26-10*	*11* *13-12*	*158* *15-01*	*7*	*6*	*6*	*9*	*8*	13
ICU confirmed cases	150 *14-04*	4 *04-08*	43 *04-11*	26 *27-12*	217 *28-01*	22	14	14	15	17	20
ICU admissions per day	*14* *31-03*	*<1* *03-06*	*4* *03-11*	*1* *16-12*	*20* *17-01*	*<1*	*<1*	*<1*	*1*	*1*	2
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 **605 up from 461** seven days ago.

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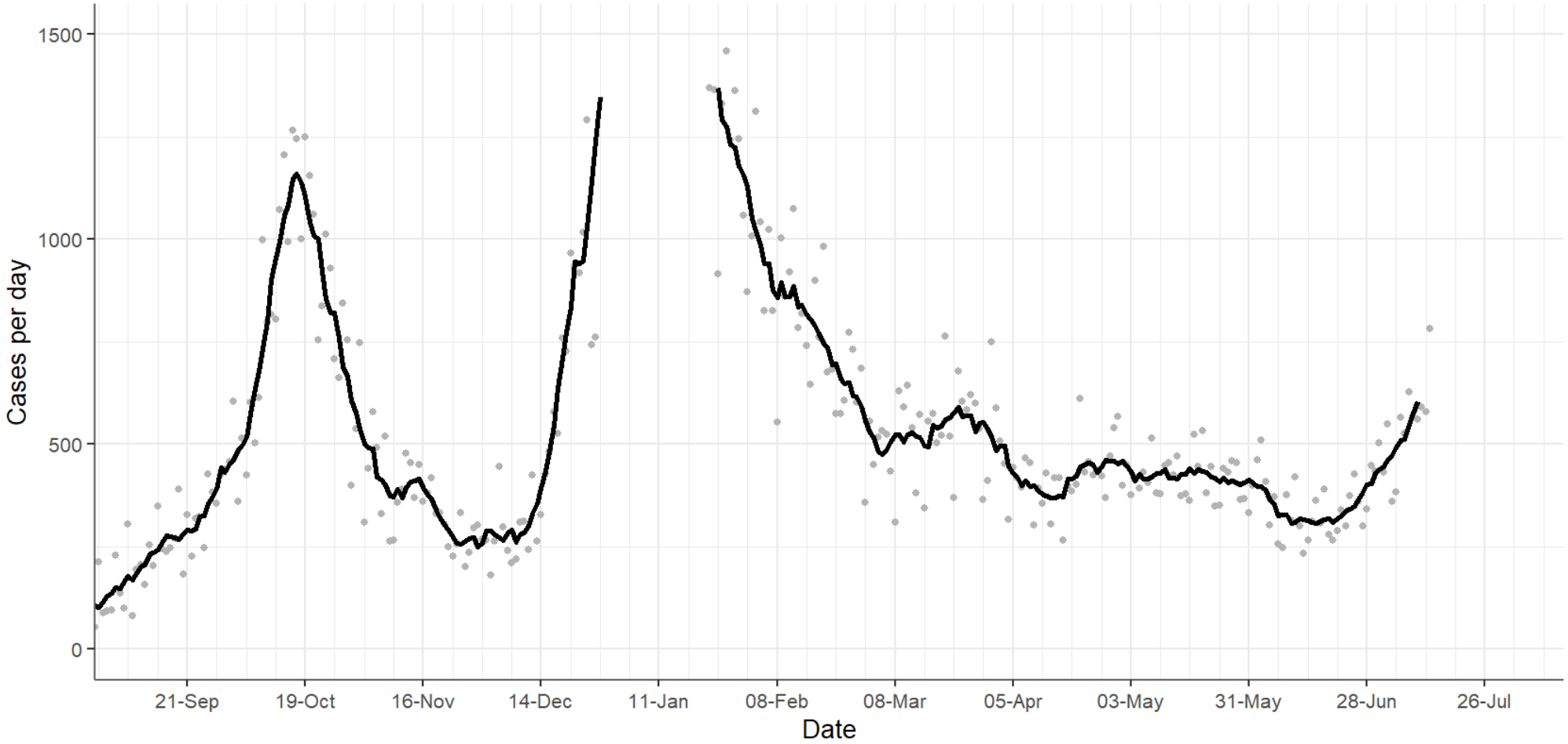

Daily count (points) and 7-day average (line) of the number of laboratory confirmed new cases by date on which they were notified HPSC. Case counts may change due to denotification of cases. Case data from 13 May 2021 onward are provisional based on the number of positive tests reported through the HSE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

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Confirmed cases each day

When case counts are displayed on a log-linear plot, where exponential growth appears as a straight line, it is clear that case numbers are now growing exponentially, at rates similar to or marginally less than the rate seein in late summer 2020 (+4% per day)

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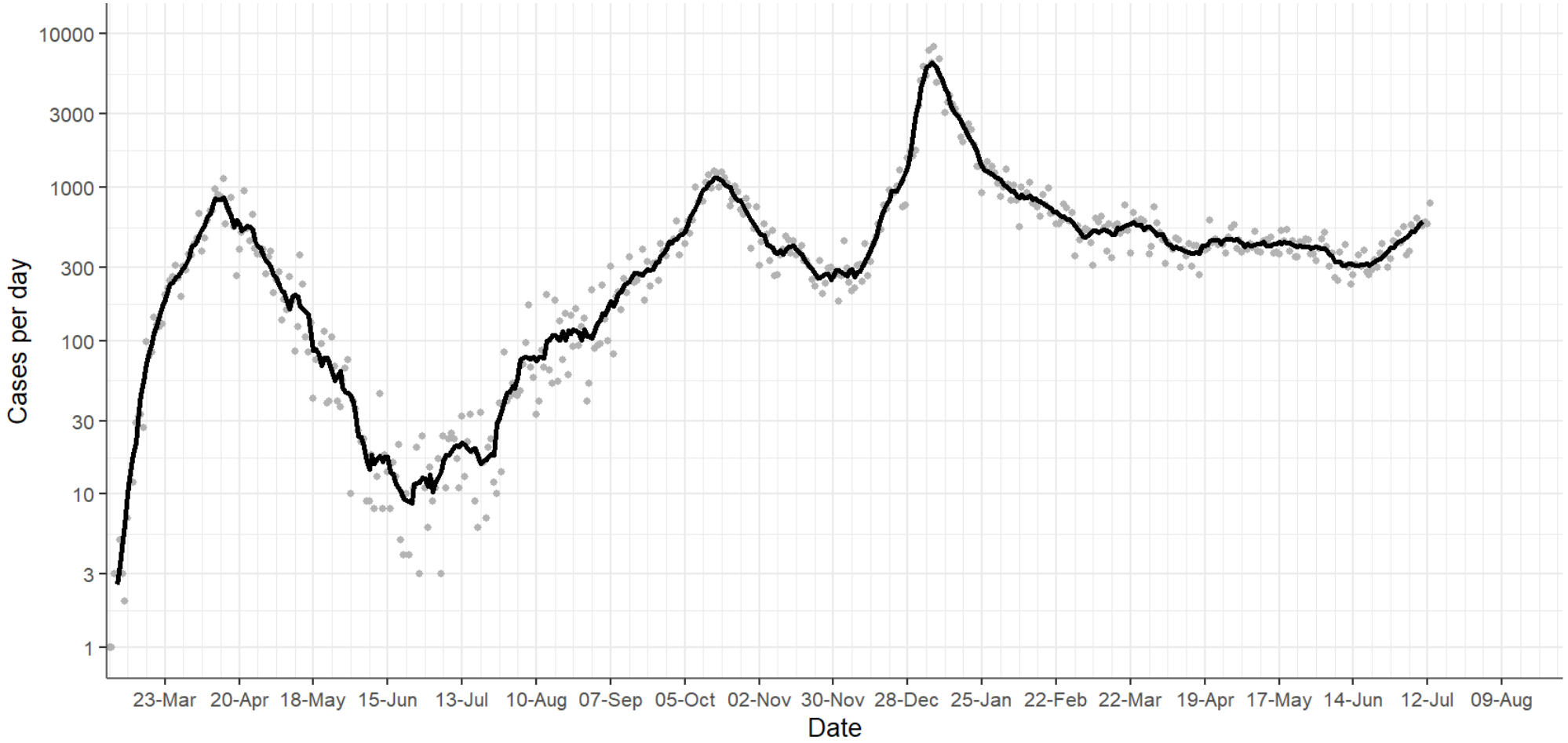

Daily count (points) and 7-day average (line) of the number of laboratory confirmed new cases by date on which they were notified HPSC. Note logarithmic scale. Case counts may change due to denotification of cases. Case data from 13 May 2021 onward are provisional based on the number of positive tests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

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Confirmed cases in acute hospitals

The number of people in hospital with confirmed SARS-CoV-2 infection. The number of people in hospital is **73**. The number of admissions and newly confirmed cases in hospital per day has increased slightly to 8-9 per day.

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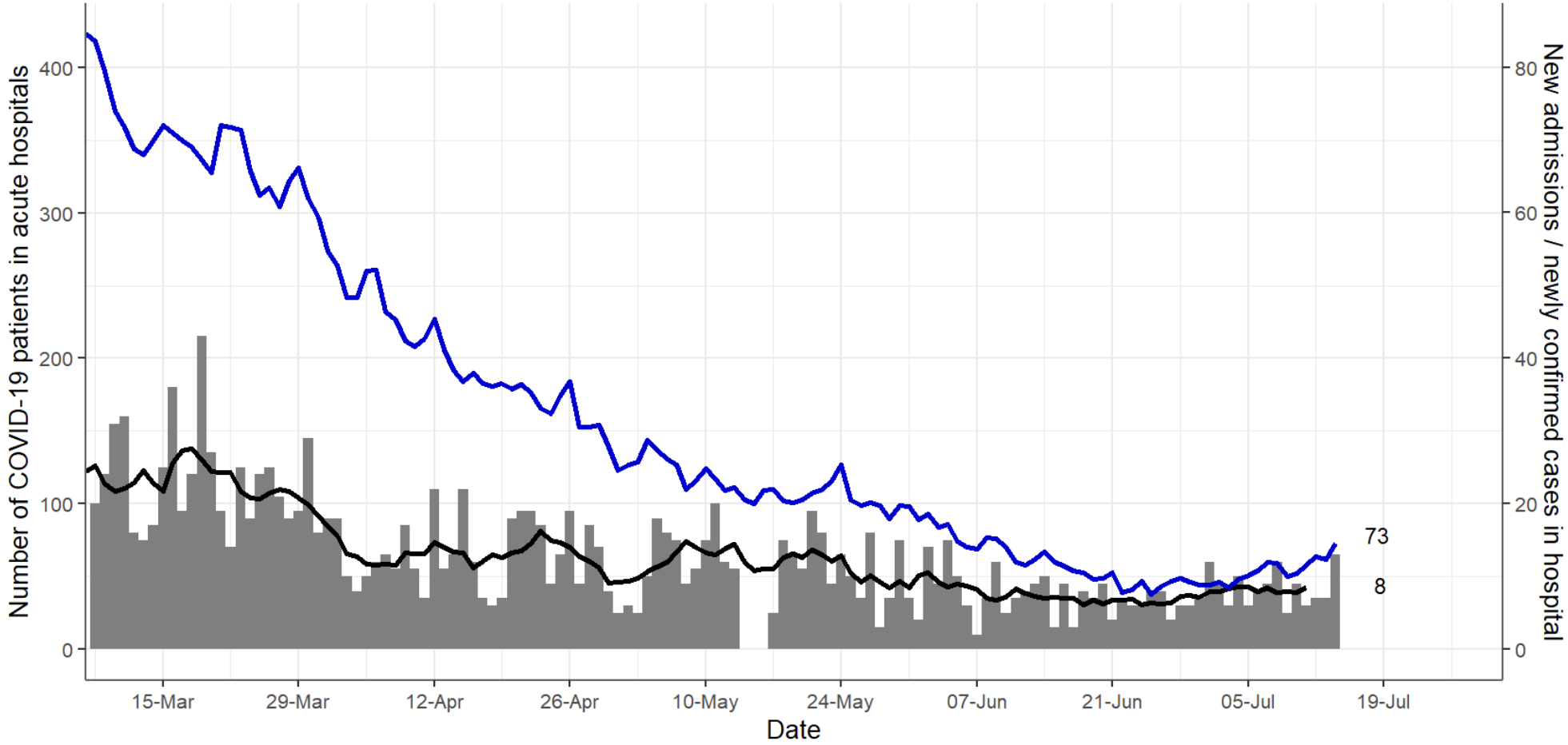

HSE PMIU-SDU data to Wed 14 Jul 2021. Number of in-patients with COVID-19 (blue line) and number of newly admitted or newly confirmed cases per day (columns, with 7-day moving average, black line, secondary y-axis) on HSE acute hospital sites

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Confirmed cases in intensive care

The number of people in ICU with confirmed SARS-CoV-2 infection and the number requiring mechanical ventilation remain low but have started to trend upward.

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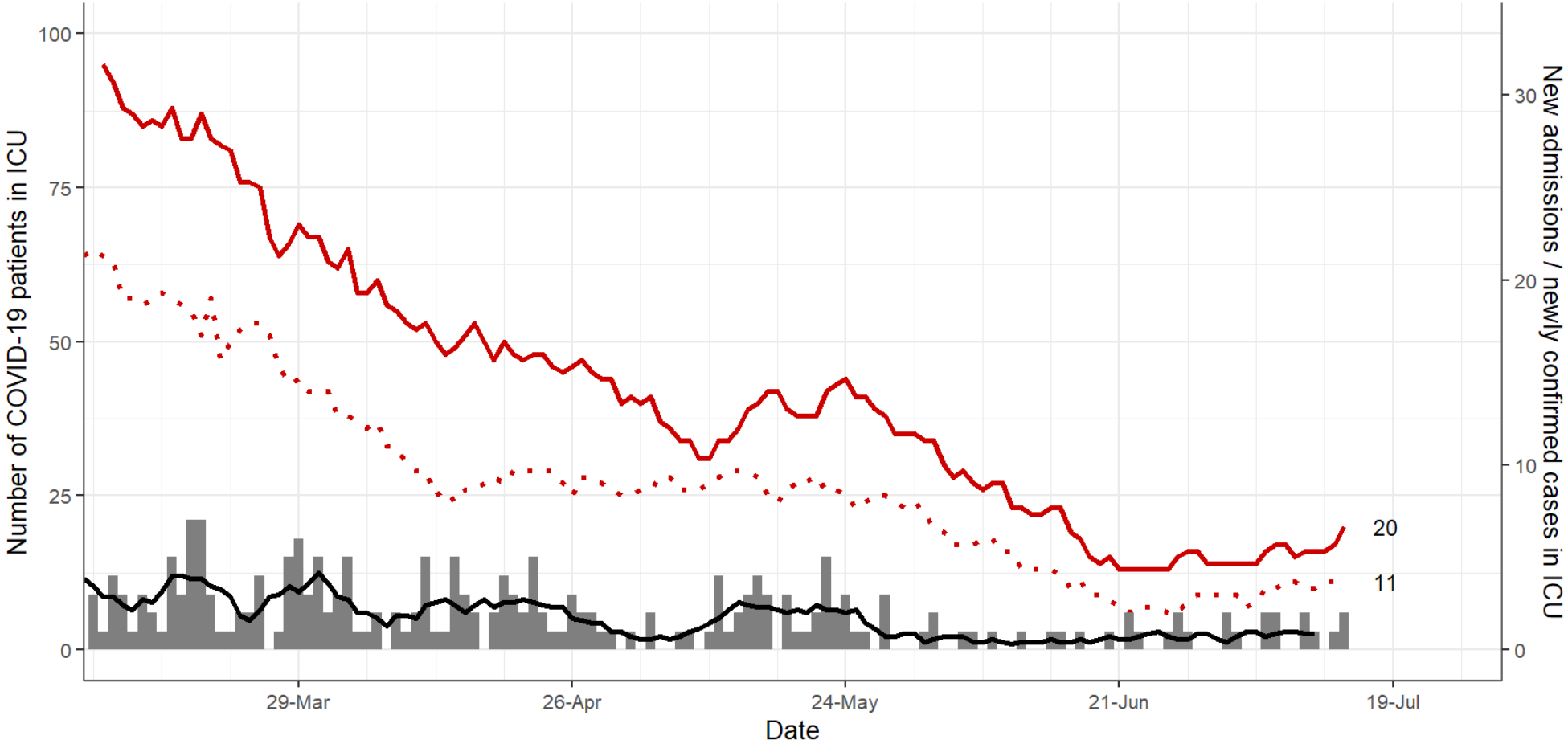

NOCA ICU-BIS data to Wed 14 Jul 2021. Number of patients with COVID-19 in ICU (red solid line) and number requiring mechanical ventilation (IMV, red dotted line) and number of new admissions per day (columns, with 7-day moving average, black line, secondary y-axis).

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Cases and hospitalisation

When the number of new cases per day, and the number of people in hospital and ICU are compared on a log-linear plot, it is apparent that in earlier phases of the pandemic, when case numbers increased, the number of people in hospital and ICU, after a delay, started to grow at similar rates. The relationship has changed due to vaccination. It is clear that numbers in hospital are starting to grow, but the growth rate, and relationship between case counts and admissions, is not yet established.

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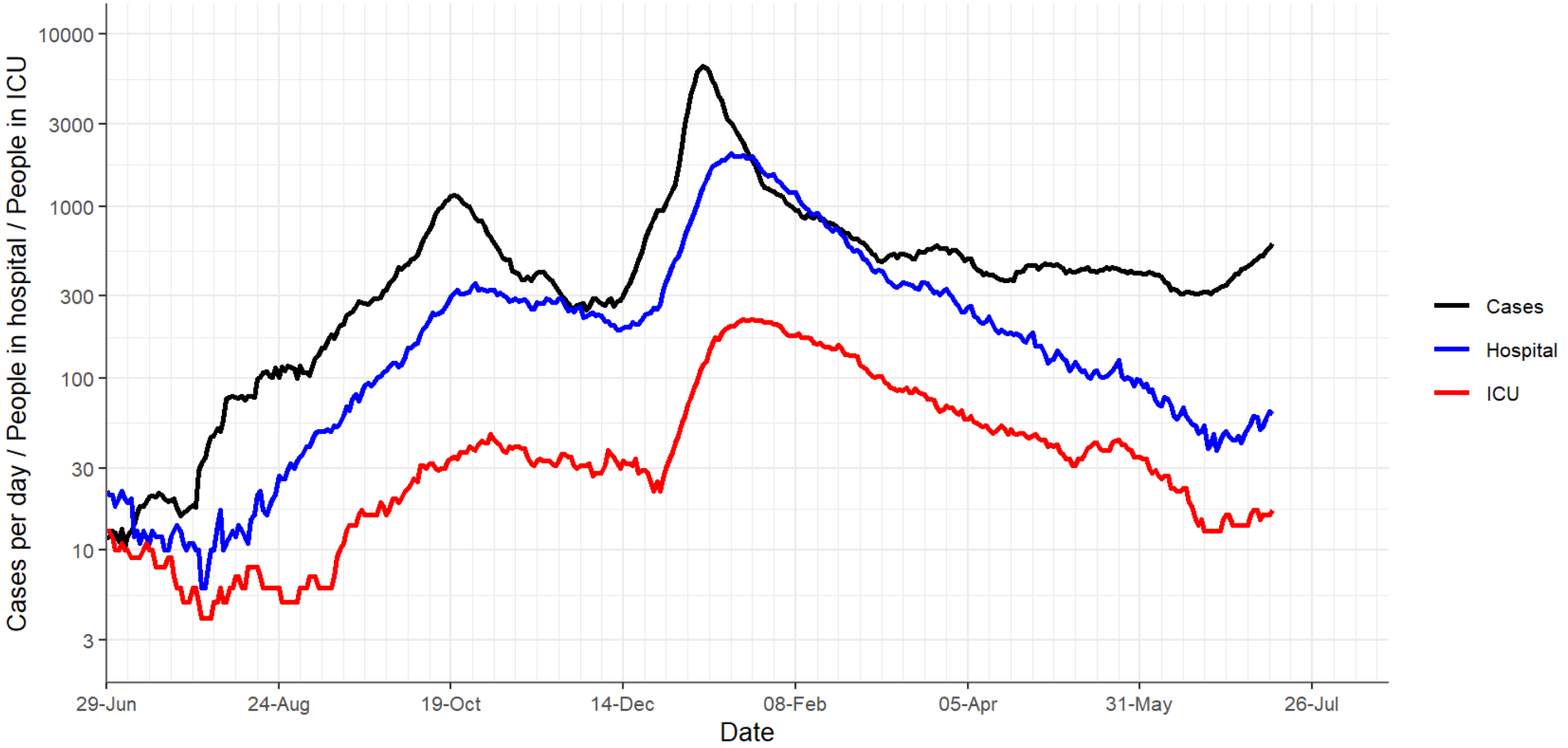

Cases per day (7-day average) and number of people with confirmed SARS-CoV-2 infection in hospital and in ICU.
CIDR data to Wed 12 May 2021, CCT data to Tue 13 Jul 2021, with HSE PMIU-SDU and NOCA ICU-BIS data

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Age-specific incidence

Incidence is rising very rapidly in young adults, most markedly in those aged 19-24 years, but also in sthose aged 25-34 years and in adolescents, where most of the increase is accounted for by the 16-18 year old group.

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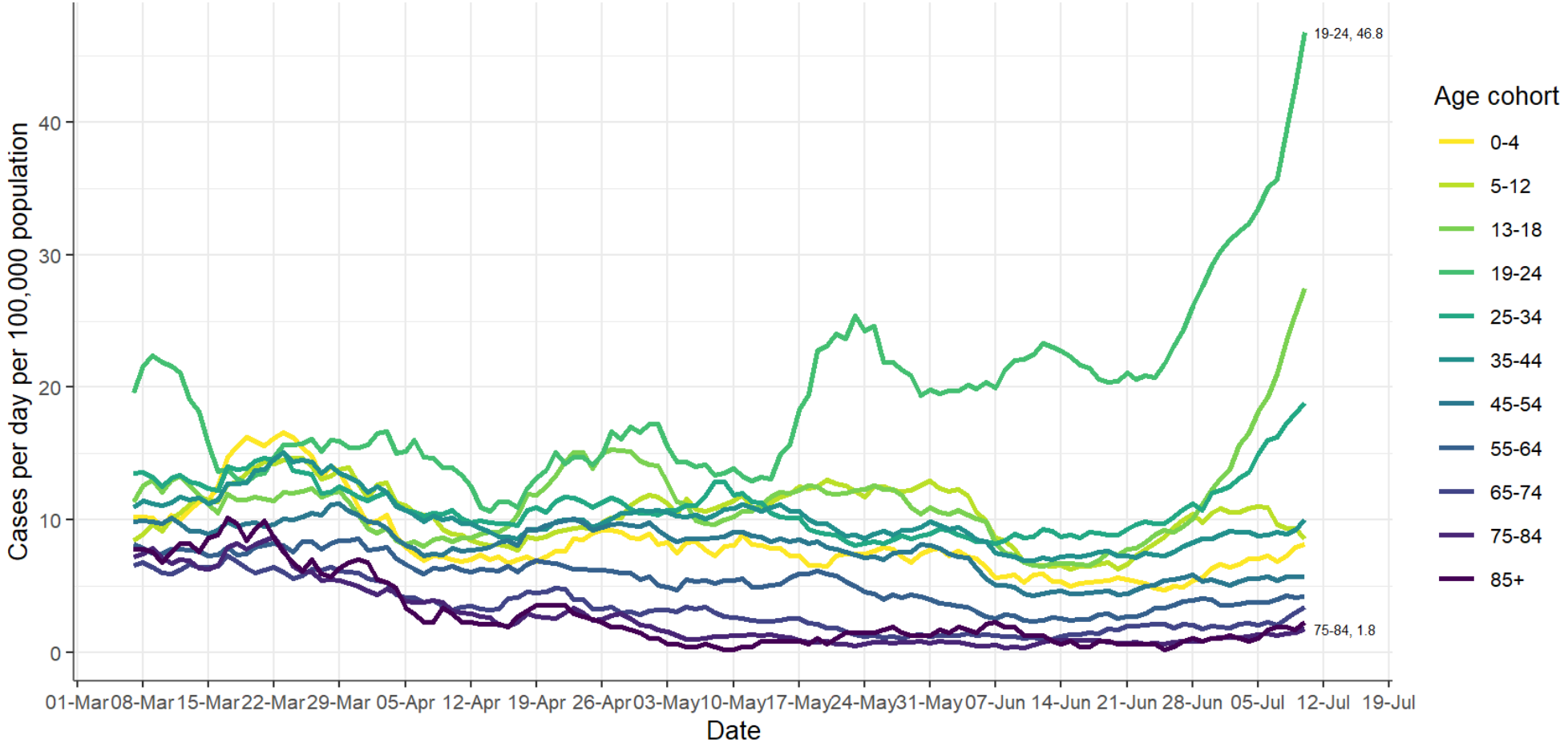

Age-specific incidence (cases per day per 100,000 population). 7-day moving average.
CIDR data to midnight Wed 12 May 2021 and CCT data to Tue 13 Jul 2021. Cases dated by event creation / case creation date

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Growth rate

The growth rate is currenty estimated at +3.5% (+2.4 — +4.5) per day.

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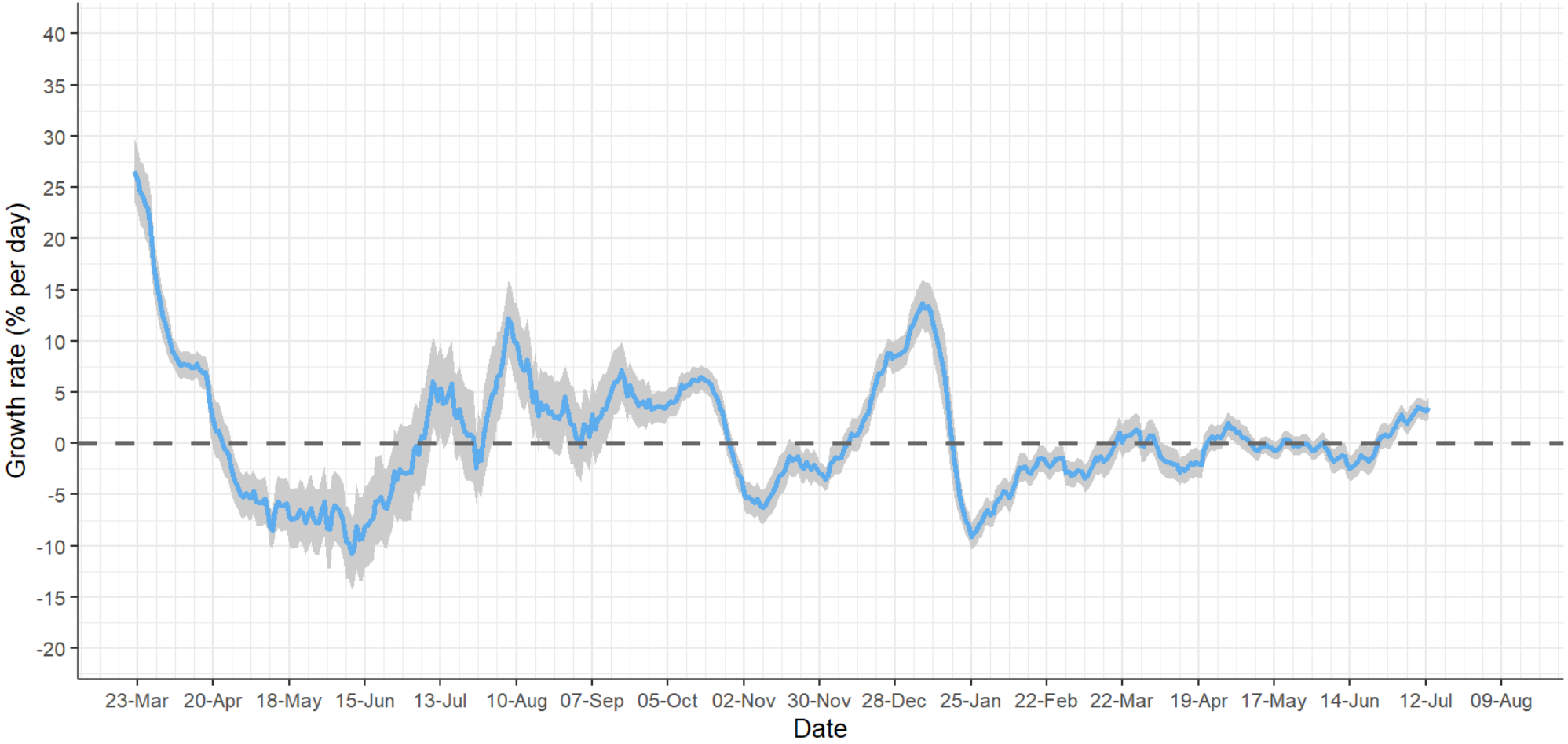

CIDR data to midnight Wed 12 May 2021 and CCT data to Tue 13 Jul 2021. Cases dated by event creation / case creation date.
Growth rate in case counts using a 21-day window, cases dated by event (notification) date. Mean and 95% confidence intervals

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Model scenario – optimistic – 25 June 2021

Moderate social mixing from 5 July 2021, delta 70% of transmissions by 18 July, conservative transmission advantage (alpha 27% more transmissible than antecedents, delta 55% more transmissible than alpha)

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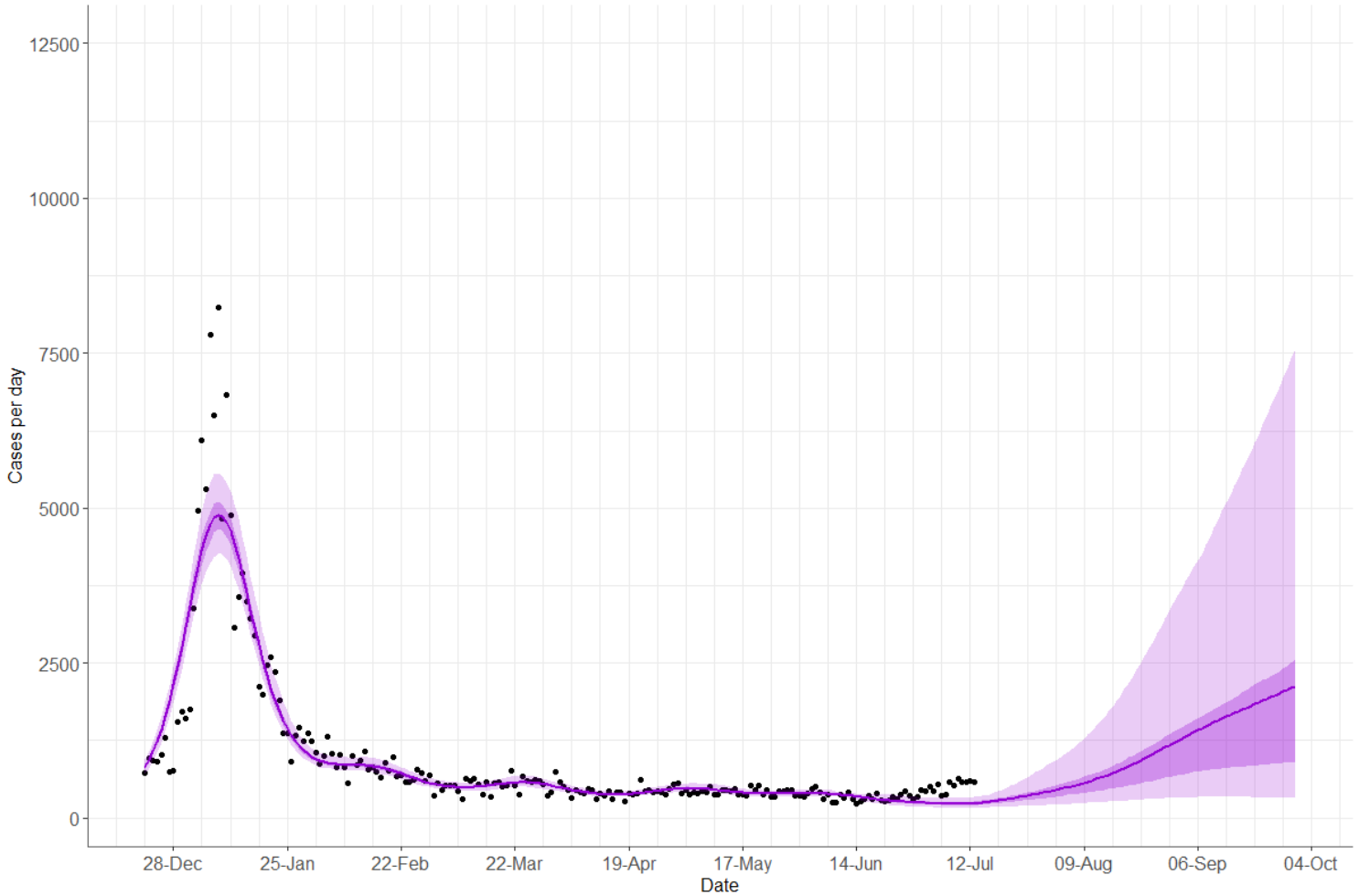

Cases, admissions and deaths over the three months July – September 2021. Data are mean (rounded to the nearest 100 for cases, and the nearest 5 for other parameters) and 95% confidence intervals

	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, accounting for 70% of transmissions by 18 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 – optimistic – 9 July 2021

Moderate social mixing from 19 July 2021, delta 70% of transmissions by 3 July, conservative transmission advantage (alpha 27% more transmissible than antecedents, delta 55% more transmissible than alpha) no acceleration of vaccination programme

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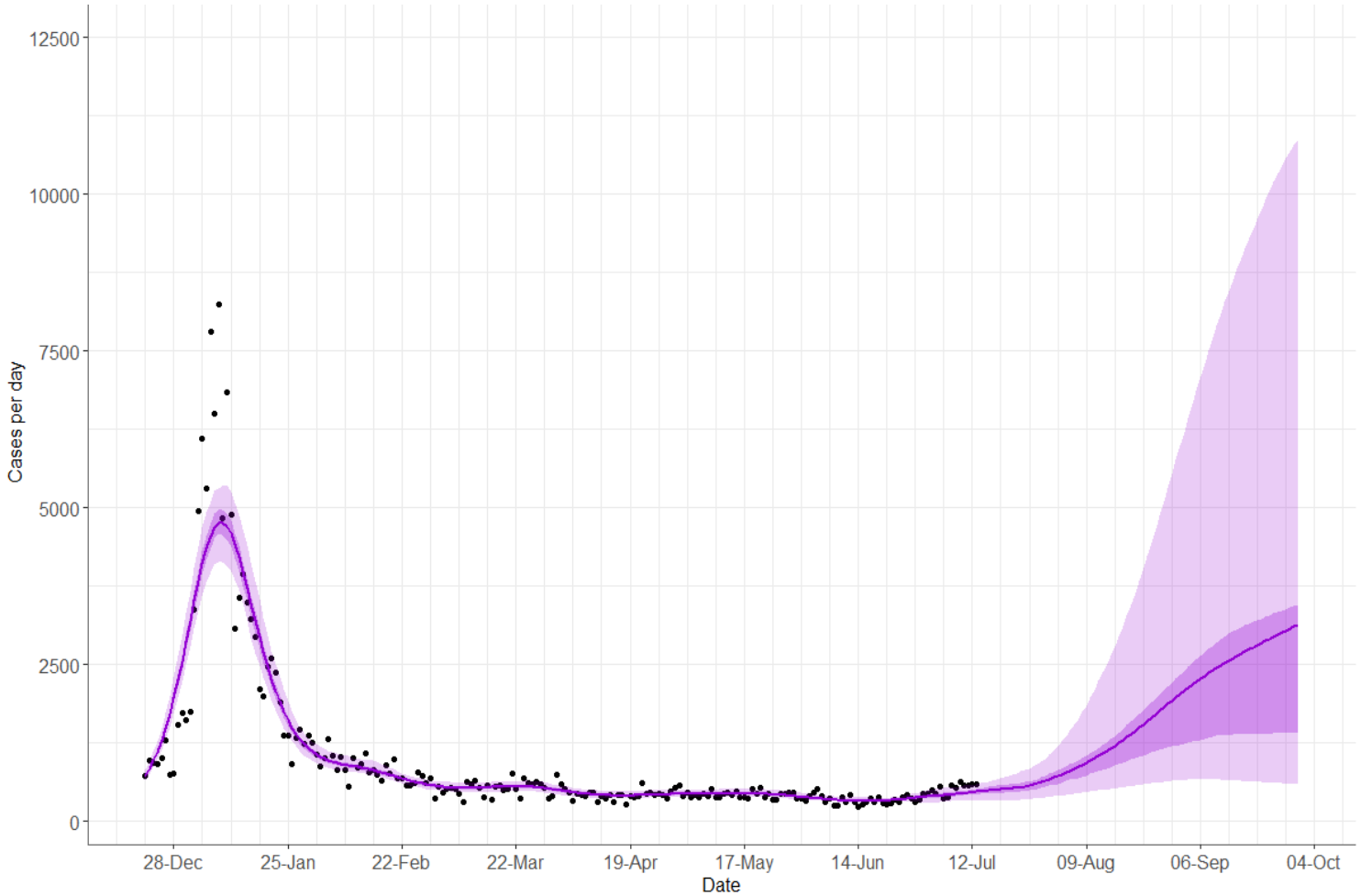

Cases, admissions and deaths over the three months July – September 2021. Data are mean (rounded to the nearest 100 for cases, and the nearest 5 for other parameters) and 95% confidence intervals

	Cases	Hospital admissions	ICU admissions	Deaths
Jul	15,000	270	35	45
Aug	39,000	690	85	100
Sept	76,000	1490	200	265
Total	**130,000** (45,000 – 366,000)	**2,450** (2,235– 2,665)	**320** (240-400)	**410** (350-465)

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, accounting for 70% of transmissions by 18 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 – optimistic – accelerated vaccination

Moderate social mixing from 19 July 2021, delta 70% of transmissions by 3 July, conservative transmission advantage (alpha 27% more transmissible than antecedents, delta 55% more transmissible than alpha) accelerated vaccination programme

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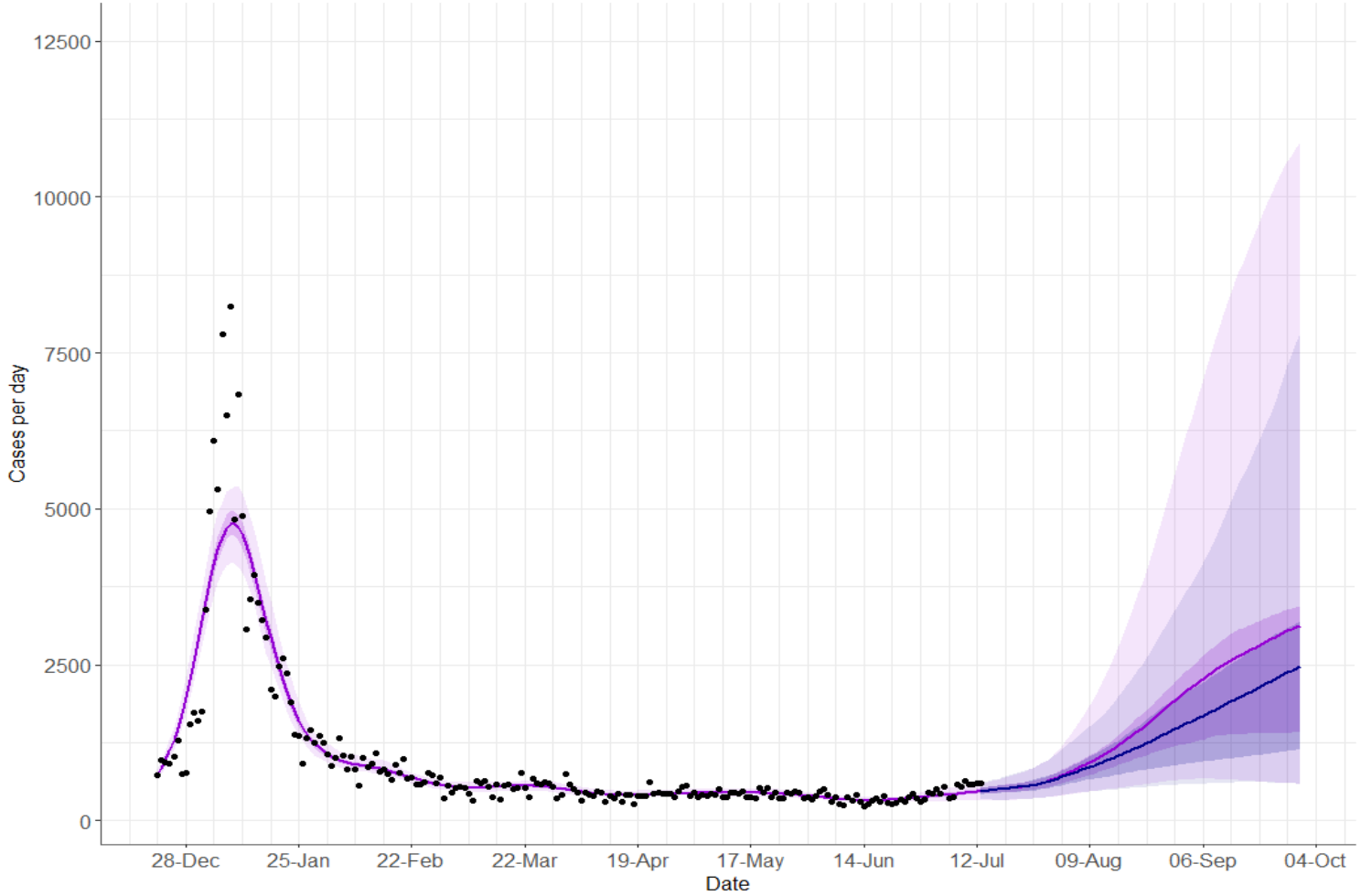

Cases, admissions and deaths over the three months July – September 2021 with accelerated vaccination programme. Data are mean (rounded to the nearest 100 for cases, and the nearest 5 for other parameters) and 95% confidence intervals

	Cases	Hospital admissions	ICU admissions	Deaths
Jul	15,000	270	35	45
Aug	33,000	590	75	90
Sept	57,000	1,125	150	200
Total	**105,000** (43,000 – 244,000)	**1,985** (1,810– 2,160)	**260** (195-325)	**335** (285-380)

Vaccination
— 23 June 2021
— Accelerated

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.. Delta variant replaces alpha in July 2021, accounting for 70% of transmissions by 18 July 2021. A step change in close social contact is introduced on 19 July 2021 and maintained constant thereafter. The original vaccination plan of 23 June 2021 (violet) is compared to an accelerated vaccination plan with an additional uptake of 200k doses of Janssen and 100k two-dose regimens of Astra-Zeneca in July and August.

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Model scenarios

Social mixing increases from 19 July 2021, delta 70% of transmissions by 3 July, accelerated vaccination programme

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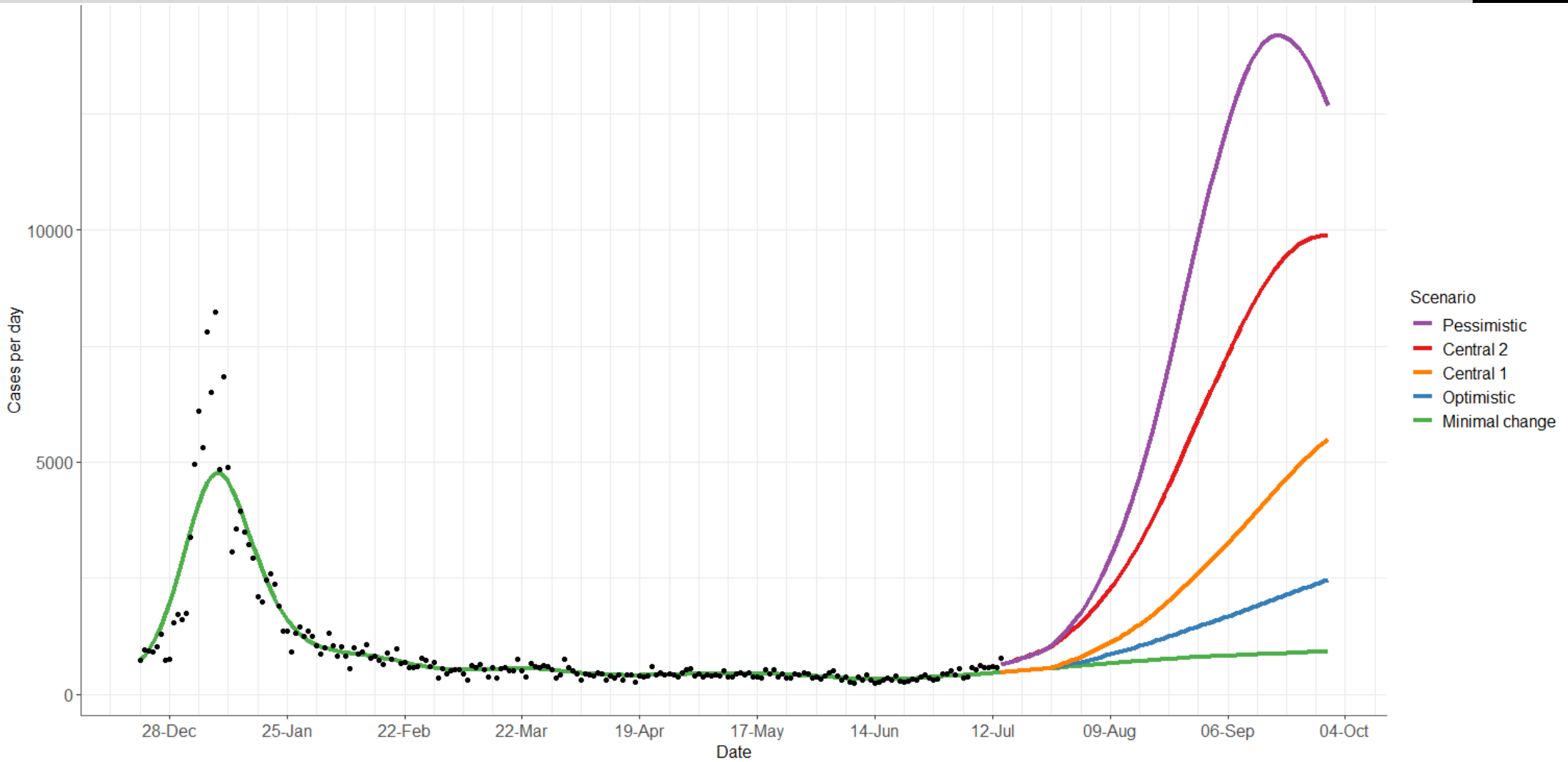

Homogeneous population SEIR model scenario estimates of new cases per day, data are the mean of 1000 runs of the model with different assumptions on asymptomatic fraction, transmissibility of asymptomatic infections, latent period and duration of infectious period. Confidence intervals not shown. Delta variant replaces alpha in July 2021, accounting for 70% of transmissions by 18 July 2021. A step change in close social contact is introduced on 19 July 2021 and maintained constant thereafter. The accelerated vaccination plan with an additional uptake of 200k doses of Janssen and 100k two-dose regimens of Astra-Zeneca in July and August. Scenario assumptions set out in summary slide

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Summary

A comparison of model scenarios from 25 June 2021 with revised scenarios from 9 July 2021. The revised scenarios include an earlier introduction of the delta variant (reaching 70% on 3 July rather than 18 July) and the acceleration of the vaccination programme.

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Original scenarios 25 June 2021	Cases	Hospital admissions	ICU admissions	Deaths	
No delta variant	21,000	405	55	80	Moderate social mixing, no delta variant
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

Revised scenarios 9 July 2021	Cases	Hospital admissions	ICU admissions	Deaths	
Minimal change	62,000	1,185	160	210	Minimal additional social mixing, alpha 27% more transmissible, delta 55% more transmissible than alpha
Optimistic	105,000	1,985	260	335	Moderate social mixing, alpha 27% more transmissible, delta 55% more transmissible than alpha
Central 1	185,000	3,455	445	550	Higher social mixing, alpha 27% more transmissible, delta 55% more transmissible than alpha
Central 2	379,000	6,505	915	1,150	Moderate social mixing, alpha 27% more transmissible, delta 55% more transmissible than alpha
Pessimistic	566,000	10,730	1,390	1,760	Higher social mixing, alpha 50% more transmissible, delta 60% more transmissible

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Situation analysis 14 July 2021

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- Incidence increasing rapidly, especially in unvaccinated population
  - Cases (7-day average) 605 cases per day; 14-day incidence 157 per 100,000
  - Growth/decline rate at +3.5% per day (2.4% to +4.5%), reproduction number 1.1– 1.3
  - Doubling time 15-29 days
  - Numbers in hospital increasing, numbers in ICU starting to increase
- The trajectory over the next 10 weeks is very uncertain
  - in terms of case numbers and how they will translate into severe disease and hospitalisation
  - mitigated by decision on indoor hospitality
  - depends greatly on the level of social contact, and transmissibility of delta variant
- We need to continue to contain the infection as the vaccination programme proceeds
  - We still need to take the basic precautions
    - isolate if symptomatic and seek test, social distance, face coverings, hand hygiene, ventilation
  - The unvaccinated in particular need to keep close contacts low, and minimize the risk of transmission during any close contact