

**SPI-M-O**

# **Medium-Term Projections**

**24<sup>th</sup> March 2021**

# SPI-M-O Medium-term Projections

- **These projections are not forecasts or predictions.** They represent a scenario in which the trajectory of the epidemic continues to follow the trends that were seen in the data up to 22<sup>nd</sup> March.
- The delay between infection, developing symptoms, the need for hospital care, and death means **they will not fully reflect the impact of behavioural changes in the two to three weeks prior to 22<sup>nd</sup> March.**
- **These projections include the potential impact of vaccinations over the next three weeks.** This has been based on a rollout scenario provided by Cabinet Office for modelling purposes; it assumes an average of 3.9 million doses are administered per week across the UK.
- The projections assume vaccinations are administered according to JCVI's priority order, with 95% coverage in the over 80s and care home residents; 95% coverage in 70 to 80 year olds; 85% coverage in 50 to 70 year olds and care home workers; and 75% coverage in under 50 year olds.
- Modelling groups have used their expert judgement based on evidence from the [JCVI](#), [Public Health England](#), [Scottish universities and Public Health Scotland](#), as well as other published sources when making assumptions about vaccine effectiveness. A table summarising these assumptions is available in the annex.
- Modelling groups have used data from contact surveys, [previous findings](#), and their own expert judgement to incorporate the impact of re-opening schools. **The projections do not include the effects of any other future policy or behavioural changes.**
- Some of the projections this week have lower intervals that reach 0 for deaths and hospital admissions. Projecting forwards is difficult when the numbers of cases, admissions and deaths fall to very low levels.
- Not all modelling groups produce projections for both hospitalisations and deaths so there will be some differences between the models included in the combined projections for each metric.

## Metrics:

- **New hospitalisations per day:** Number of individuals admitted with COVID-19 and inpatients newly diagnosed with COVID-19. Data definitions differ slightly across all four nations.
- **New deaths per day (by date of death):** The number of COVID-19 deaths within 28 days of a positive test. Data definitions differ slightly across all four nations.

# Modelled projections based on trends to 22<sup>nd</sup> March 2021

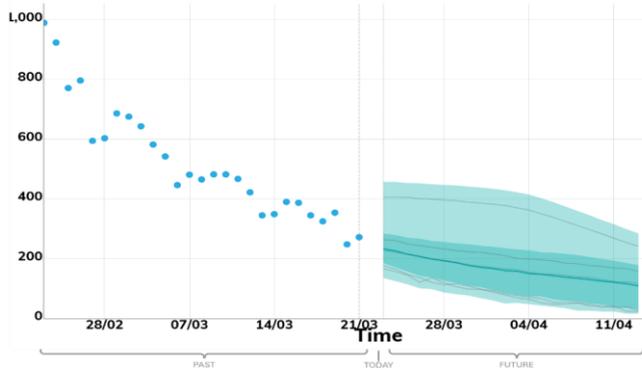
## New hospital admissions per day

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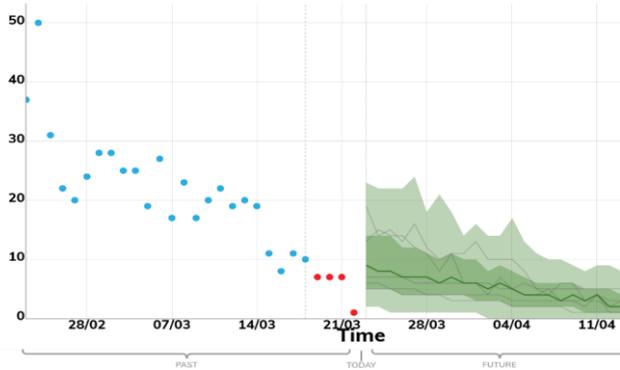
### Key

- Real data
- Expected to Increase
- Projection Midpoint
- High and low estimates 5<sup>th</sup> to 95<sup>th</sup> percentile
- High and low estimates 25<sup>th</sup> to 75<sup>th</sup> percentile
- Models

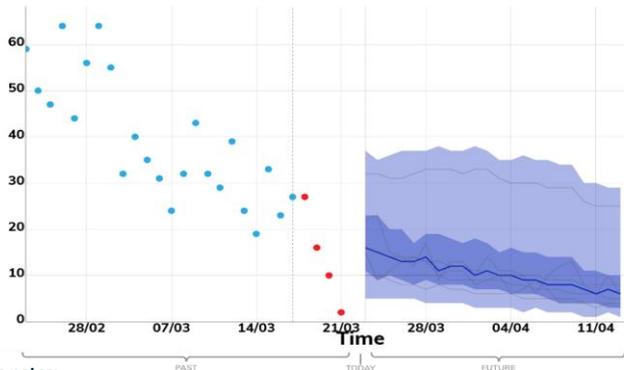
### ENGLAND



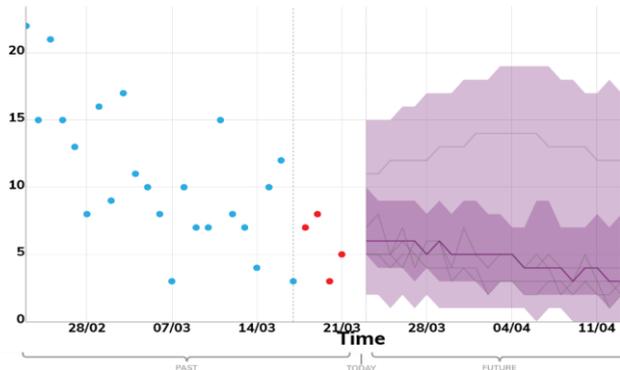
### WALES



### SCOTLAND



### NORTHERN IRELAND



These fan charts show the **90% credible interval and interquartile range** of the combined projections based on current trends. They cannot account for behavioural changes in the two to three weeks prior to 22<sup>nd</sup> March, as these will not yet have been reflected in epidemiological data.

These projections *include* the **potential impact of vaccinations over the next three weeks**. This has been based on a rollout scenario provided by Cabinet Office for modelling purposes; with 95% coverage in the over 80s and care home residents; 95% coverage in 70 to 80 year olds; 85% coverage in 50 to 70 year olds and care home workers; and 75% coverage in under 50 year olds. The vaccine effectiveness assumptions used by each group are summarised in the annex.

**Other than the reopening of schools, these projections do not include any effects of future policy or behavioural changes.**

#### Data notes:

England: Number of patients admitted with confirmed COVID-19 and the number of inpatients diagnosed with COVID-19 in the past 24 hours. Taken from NHSE COVID-19 Situation reports.

Wales: Number of patients admitted with confirmed COVID-19 and inpatients diagnosed with COVID-19. Provided by Public Health Wales.

Scotland: Number of patients who tested positive for COVID-19 in the 14 days prior to admission, on the day of admission, or during their stay in hospital. Readmissions within 14 days of a positive test are excluded. Provided by Public Health Scotland.

Northern Ireland: Number of patients admitted with confirmed COVID-19 and inpatients diagnosed with COVID-19. Provided by Health and Social Care Northern Ireland.

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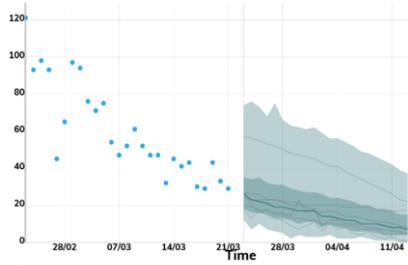
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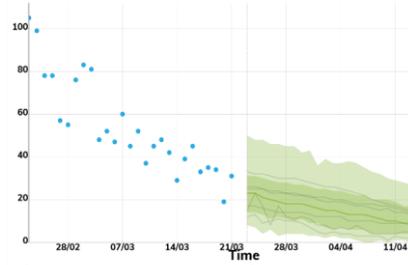
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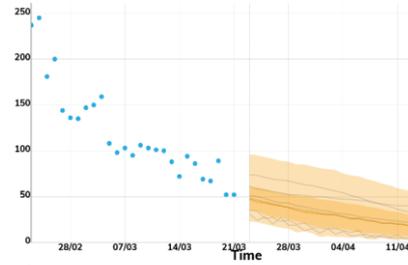
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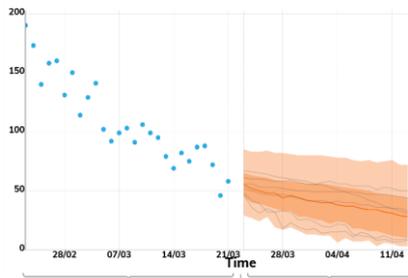
### EAST OF ENGLAND



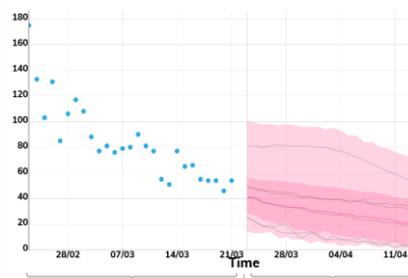
### MIDLANDS



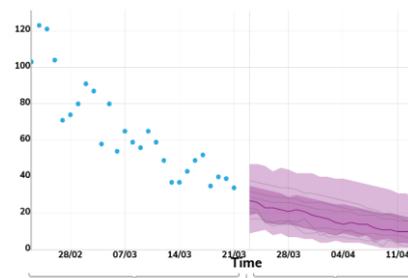
### NORTH EAST AND YORKSHIRE



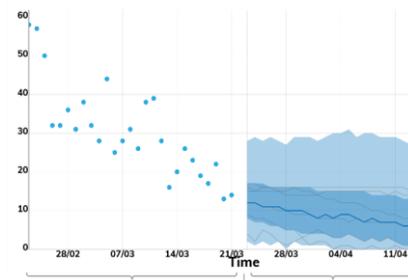
### NORTH WEST



### SOUTH EAST



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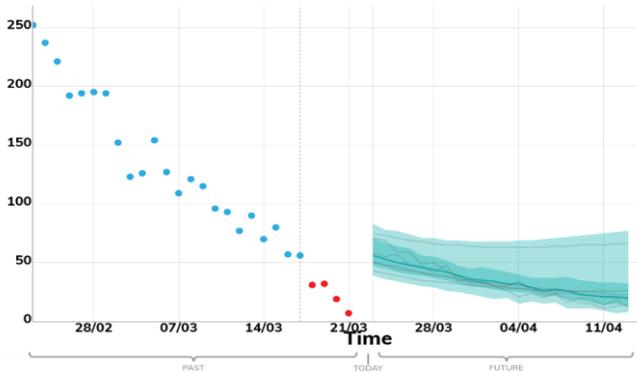
England: Number of patients admitted with confirmed COVID-19 and the number of inpatients diagnosed with COVID-19 in the past 24 hours. The past data is taken from the NHS England COVID-19 Sitreps.

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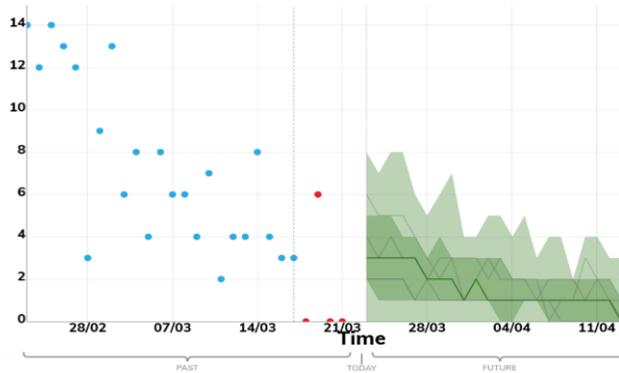
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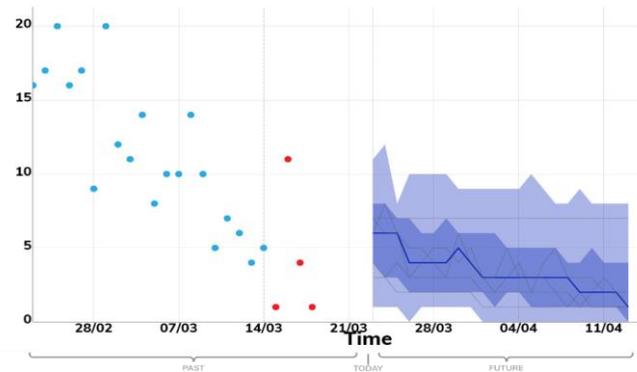
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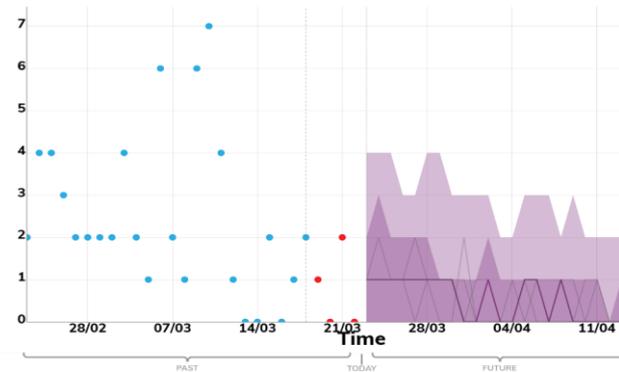
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### Data Notes:

The number of COVID-19 deaths (by date of death) within 28 days of a positive test. The past data for England is taken from the PHE line list of deaths. The past data for Scotland, Wales, and Northern Ireland is taken from the Coronavirus (COVID-19) in the UK dashboard on Gov.uk.

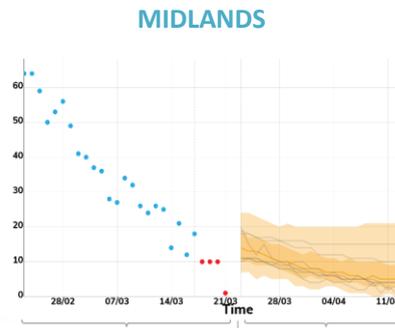
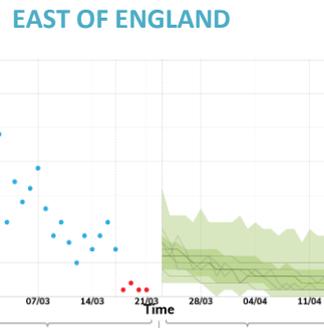
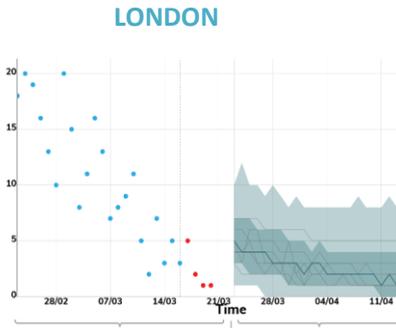
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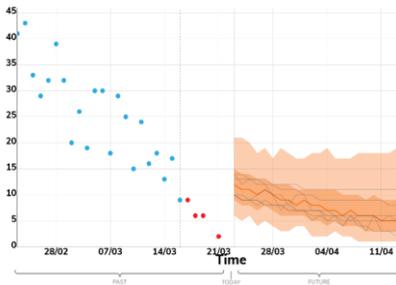
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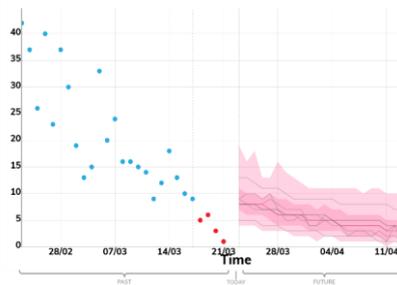
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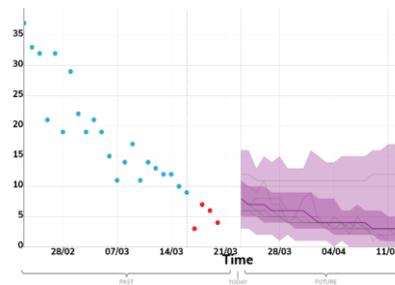
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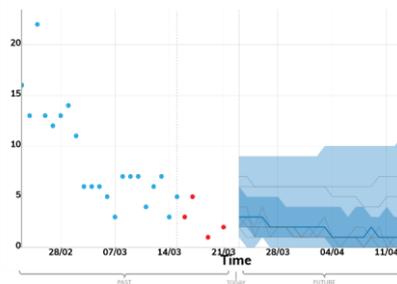
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## Annex: SPI-M-O Vaccine Effectiveness Assumptions

<b>Table 1: Vaccine reduction in risk of hospitalisation or death</b>							
		LSHTM (Transmission)	Imperial	Manchester [1]	Warwick [2]	PHE	Scottish Government
Pfizer-BioNTech	1st Dose	91%	86%	75%	80%	80%	88%
	2nd Dose	98%	98%	75%	90%	95%	95%
Oxford-AstraZeneca	1st Dose	73%	80%	75%	80%	50%	75%
	2nd Dose	85%	80%	75%	90%	70%	84%

<b>Table 2: Vaccine reduction in risk of infection</b>							
		LSHTM (Transmission)	Imperial	Manchester [1]	Warwick [2]	PHE	Scottish Government
Pfizer-BioNTech	1st Dose	70%	65%	75%	60%	48%	48%
	2nd Dose	85%	94%	75%	70%	60%	60%
Oxford-AstraZeneca	1st Dose	31%	63%	75%	60%	48%	48%
	2nd Dose	31%	63%	75%	70%	60%	60%

[1] Manchester's model does not split vaccine effectiveness by vaccine type or different doses.

[2] Warwick's vaccine effectiveness assumptions are based on a weighted average of the two vaccines.