

SPI-M-O

Medium-Term Projections

As at 07/10/2020

SPI-M-O medium-term projections

- These projections are a **draft under development** and represent SPI-M-O's **best assessment of the potential trajectory** of the epidemic over the next 6 weeks, based on current trends and the data available up to **7th October 2020**. Projections for **hospitalisations and deaths** are provided for **England, Scotland, Wales, Northern Ireland and NHS England regions**.
- The projections **portray a range of possible futures** and are produced by fitting epidemiological models to trends in the past data. SPI-M-O members extrapolate forwards and use their expert judgements about how viral transmission will change **in the absence of additional government intervention or behavioural changes**.
- **These projections will continue to be developed over the coming weeks** and therefore, these slides should be considered as **drafts for discussion** and a **work in progress**.
- The delay between infection, developing symptoms, the need for hospital care, and death means **these projections cannot fully reflect changes in transmission which might have occurred over the past two to three weeks**, including any impact from the recently announced measures. Projections in the nearer term, however, are more certain; for example, those projected to die from COVID-19 in two weeks' time are likely to already be infected.
- **Making projections at the when the epidemic is changing is particularly challenging**; this was the situation in the UK at the time these projections were developed. The lagged nature of many data streams makes it difficult to detect and interpret changes.

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.

Modeled Projections Based On Trends Seen Up To 07/10/20

New hospital admissions per day LOG SCALE

These are projections based on current trends and not forecasts

Key

- Real data
- Unconfirmed data
- Today's date

Each coloured bar is the output from a different epidemiological model assessed by SPI-M-O, giving projections at 2, 4 and 6 weeks from their production. Each bar's length shows the model's 90% credible interval. Black bars are statistical combinations of all models, showing the 90% credible interval.

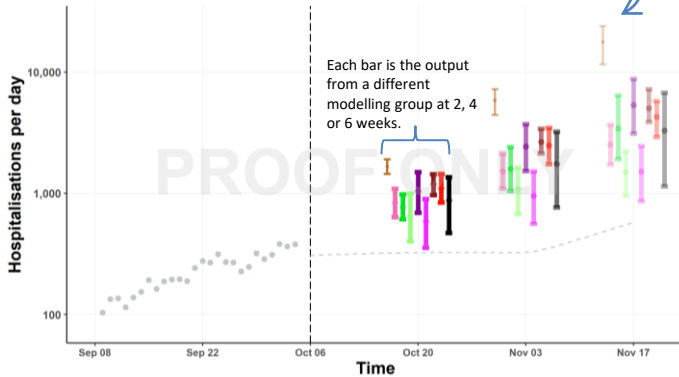
Projections can't account for policy or behavioural changes in the 2-3 weeks prior to 7th October, as they will not be reflected in epidemiological data. Nor can they reflect future changes. They are not forecasts.

Each model projection is for continued exponential growth in hospital admissions and deaths.

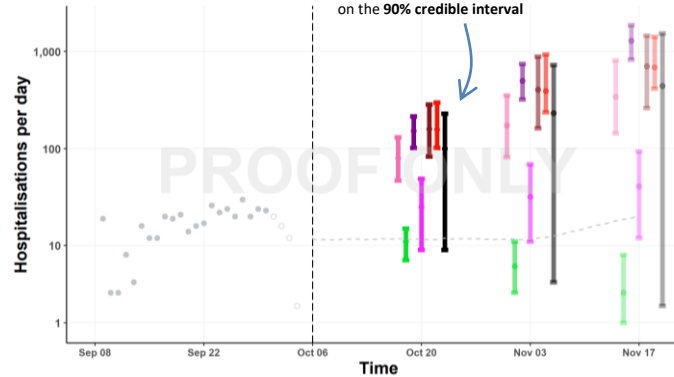
Different groups' projections are similar in the short term. Beyond this, the models diverge. This is because a) different messages are coming from different streams of data and b) in a period of exponential growth, small differences in growth rates quickly compound to large difference in outcomes after several weeks.

These are **draft projections which are a work in progress** and will evolve further over coming weeks.

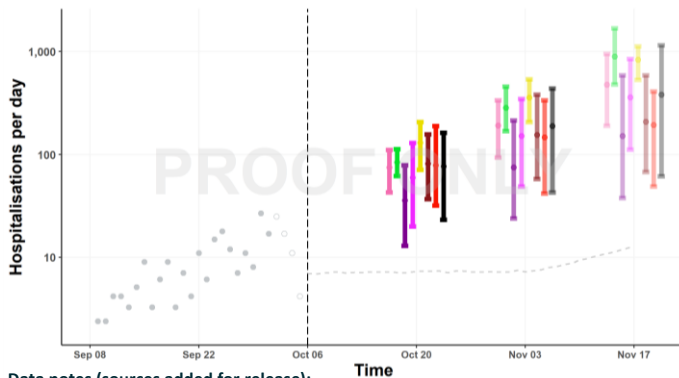
ENGLAND



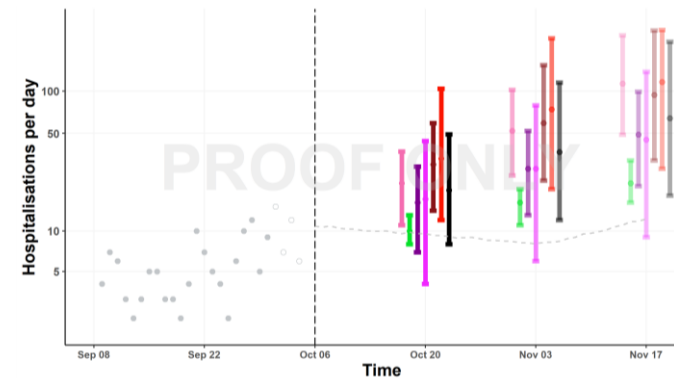
WALES



SCOTLAND



NORTHERN IRELAND



Data notes (sources added for release):

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 the NHSE COVID 19 Sitreps.

Wales: Number of patients admitted with confirmed COVID-19 and the number of patients diagnosed with COVID-19 on the day of admission. Provided by Public Health Wales.

Scotland: Number of patients admitted with confirmed COVID-19 and inpatients diagnosed with COVID-19 within 7 days of admission. Provided by Public Health Scotland.

Northern Ireland: Number of patients admitted with confirmed COVID-19 and the number of inpatients diagnosed with COVID-19. Provided by HSCNI.

For clarity, in some cases, y axes do not show complete extent of projections.

Footnote added for release: "Unconfirmed" data relates to data that was incomplete at the point of projection, and expected to increase.

Footnote added for release: The pale grey dotted curves plotted for the four nations relate to estimates of hospital admissions from the reasonable-worst case scenario (RWCS) commissioned by the Cabinet Office Civil Contingencies Secretariat. Please note that this RWCS was not agreed or used for planning by the Welsh Government, Scottish Government or Northern Ireland Executive.

Modeled Projections Based On Trends Seen Up To 07/10/20

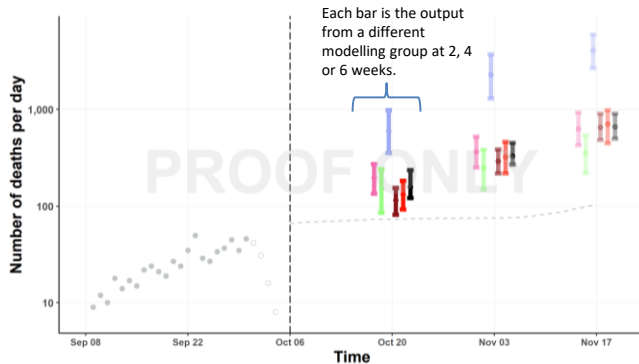
New deaths per day LOG SCALE

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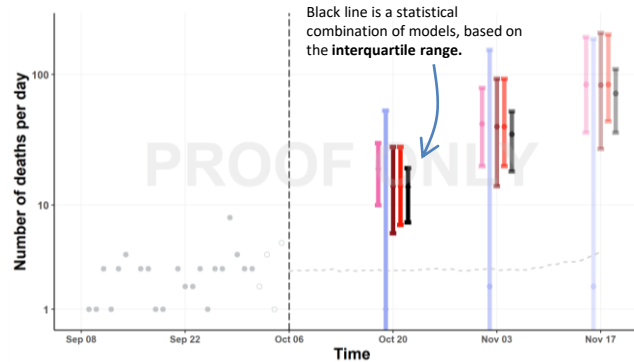
Key

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- Unconfirmed data
- Today's date

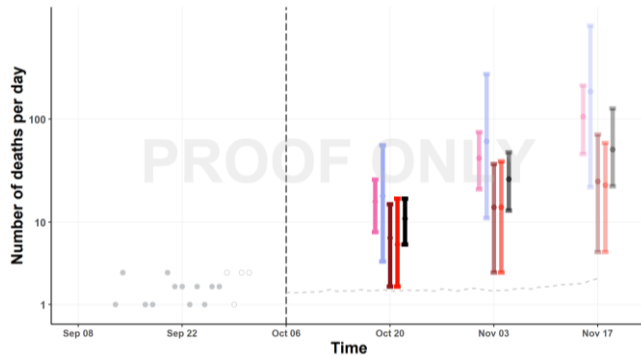
ENGLAND



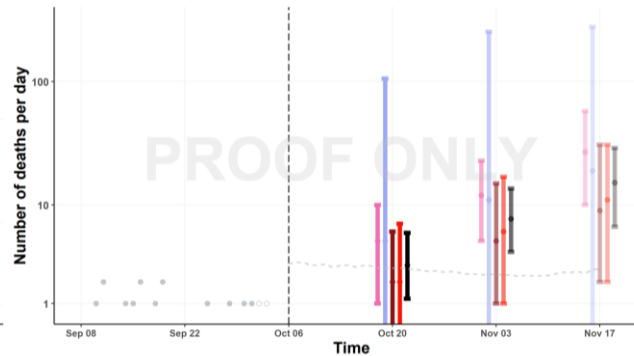
WALES



SCOTLAND



NORTHERN IRELAND



Each coloured bar is the output from a different epidemiological model assessed by SPI-M-O, giving projections at 2, 4 and 6 weeks from their production. Each bar's length shows the model's **90% credible interval**. Black bars are statistical combinations of all models, showing the **interquartile range**

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Each model projection is for continued exponential growth in hospital admissions and deaths.

Different groups' projections are similar in the short term. Beyond this, the models diverge. This is because a) different messages are coming from different streams of data and b) in a period of exponential growth, small differences in growth rates quickly compound to large difference in outcomes after several weeks.

These are **draft projections which are a work in progress** and will evolve further over coming weeks.

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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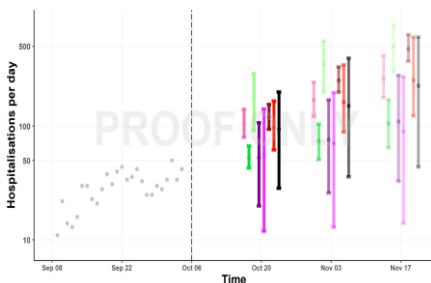
New hospital admissions per day **LOG SCALE**

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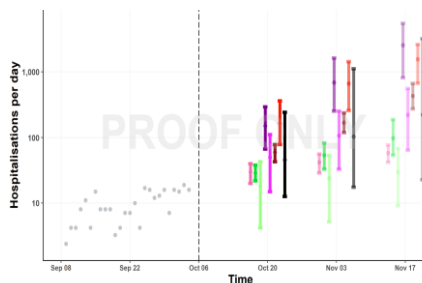
Key

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LONDON



EAST OF ENGLAND



MIDLANDS



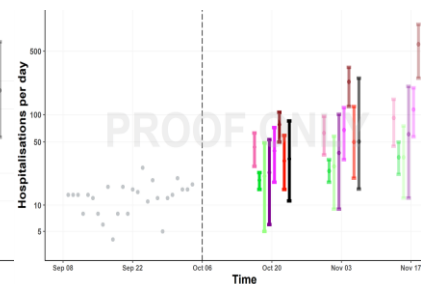
NORTH EAST AND YORKSHIRE



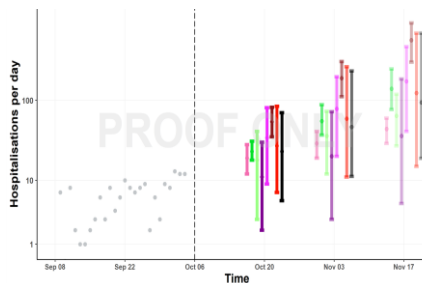
NORTH WEST



SOUTH EAST



SOUTH WEST



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Source added for release: The past data for England taken from the NHS England SitReps.

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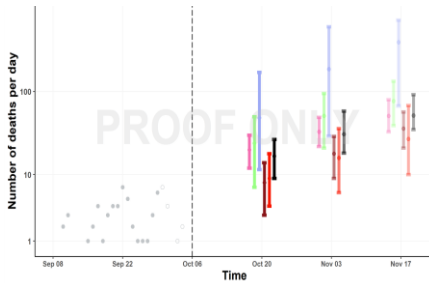
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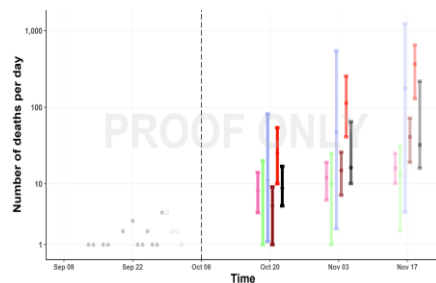
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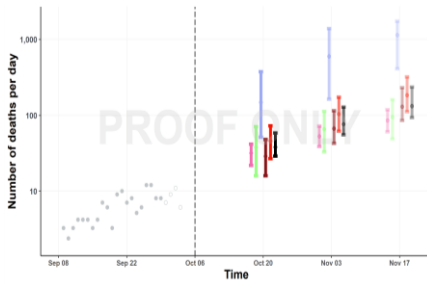
EAST OF ENGLAND



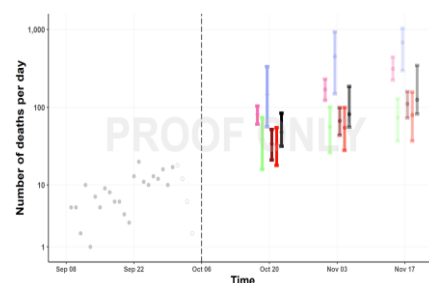
MIDLANDS



NORTH EAST AND YORKSHIRE



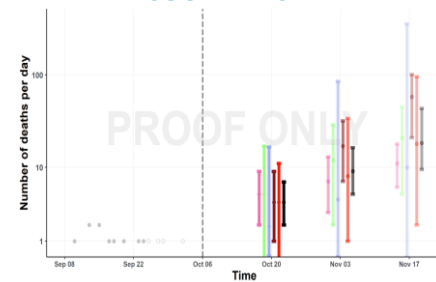
NORTH WEST



SOUTH EAST



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