

# SPI-M-O: Consensus Statement on COVID-19

*Date: 14<sup>th</sup> April 2021*

All probability statements are in line with the framework given in the Annex.

## Summary

1. SPI-M-O's best estimates for **R in England and Northern Ireland are between 0.7 and 1.0. For Scotland and Wales, R is estimated to be between 0.8 and 1.0 and 0.7 and 1.2 respectively.** These estimates are based on the latest data available up to 12<sup>th</sup> April, including hospitalisations and deaths as well as symptomatic testing and prevalence studies. They will not reflect behavioural changes which have taken place since the easing of restrictions from 29<sup>th</sup> March or 12<sup>th</sup> April.
2. **SPI-M-O is *not confident* that R is *currently* below 1 in most NHS England regions.** The upper limit of the range is 1 for three of the seven regions and another two regions have estimates that span 1, reflecting continued flattening in transmission in some regions, but signals of increasing transmission in others. There continues to be heterogeneity at a sub-regional level, and it is important that these areas are carefully monitored as measures are relaxed. Transmission remains highly heterogeneous more locally.
3. Estimates of R and growth rates are becoming less reliable and less useful in determining the state of the epidemic as hospitalisations and deaths reach low levels.
4. SPI-M-O estimates that there are between **4,000 and 8,000 new infections per day in England.**

## Incidence and prevalence

5. Combined estimates from seven SPI-M-O models, using data available up to 12<sup>th</sup> April, suggest there are between **4,000 and 8,000 new infections per day in England.** The ONS community infection survey estimates that there were 11,100 new infections per day in England (credible interval of 9,000 to 13,500) on 31<sup>st</sup> March 2021.
6. During the most recent week of the study (4<sup>th</sup> April to 10<sup>th</sup> April), the survey also estimates that an average of **112,600 people had COVID-19** in the community in England (credible interval **96,700 to 130,100**); this is in line with the previous week's data. The survey does

not include people in care homes, hospitals, or prisons. Estimates from across the four nations of the UK are:

England	112,600 (credible interval 96,700 to 130,100)
Scotland	10,500 (credible interval 6,400 to 15,600)
Wales	3,300 (credible interval 1,500 to 6,000)
Northern Ireland	2,600 (credible interval 1,000 to 5,100)

## Reproduction number and growth rate

7. For small daily changes, the growth rate is approximately the proportion by which the number of infections increases or decreases per day, i.e. the rate at which an epidemic is growing or shrinking<sup>1</sup>.
8. SPI-M-O's consensus estimates for the **growth rates in the four nations are:**
  - England** is between **-6% and -1% per day**,
  - Scotland** is between **-4% and 0% per day**,
  - Wales** is between **-5% and +1% per day**; and
  - Northern Ireland** is between **-5% and -1% per day**.

SPI-M-O's national and regional estimates of growth rates are summarised in Table 1 and Figure 2.

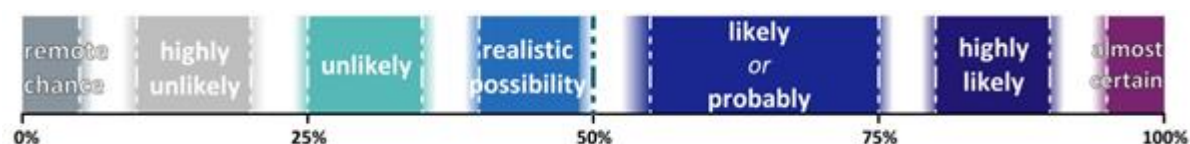
9. The reproduction number (R) is the average number of secondary infections produced by a single infected individual; it is an average over time, geographies, and communities.
10. SPI-M-O's best estimates for **R in England and Northern Ireland are between 0.7 and 1.0. For Scotland and Wales, R is between 0.8 and 1.0 and 0.7 and 1.2 respectively.** SPI-M-O's agreed national estimates are summarised in Table 1 and Figure 1, and these are based on the latest data available up to 12<sup>th</sup> April. R is an indicator that lags by two to three weeks and, therefore, it is likely that the impact of the re-opening of schools from 8<sup>th</sup> March is reflected in these estimates but not the impact of behavioural changes that have happened since easing of restrictions from 29<sup>th</sup> March and 12<sup>th</sup> April.
11. Due to the lag in these indicators, **SPI-M-O is *not confident* that R is *currently* below 1 in most NHS England regions**, and these estimates can be seen in Table 1 and Figure 3. The upper limit of the range for three of seven regions is 1 and another two regions have estimates that span 1, reflecting a large-scale flattening in transmission. In particular, hospital admissions in London are no longer clearly falling.
12. Variation at different spatial scales is partly stochastic (chance effects), and partly driven by effects such as variable timing of school holidays, and different variant representation.

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<sup>1</sup> Further technical information on the growth rate can be found in [Plus magazine](#)

13. There is evidence of changing death rate after hospital admission. It is unclear, from population level data if this is due to vaccination or other effects, such as pressure on hospitals.
14. There continues to be significant heterogeneity at a sub-regional level, and it is important that these areas are carefully monitored as measures are relaxed.
15. **Estimates of R and growth rates become more uncertain as hospitalisations and deaths reach low levels.** These estimates are becoming less reliable and less useful in determining the state of the epidemic as these data reach low levels and as clustered outbreaks start to make up a greater proportion of cases. Both R and growth rates are average measures and smooth over outbreaks at small spatial scales or over short periods of time. They should not be treated as robust enough to inform policy decisions alone.

### Annex: PHIA framework of language for discussing probabilities



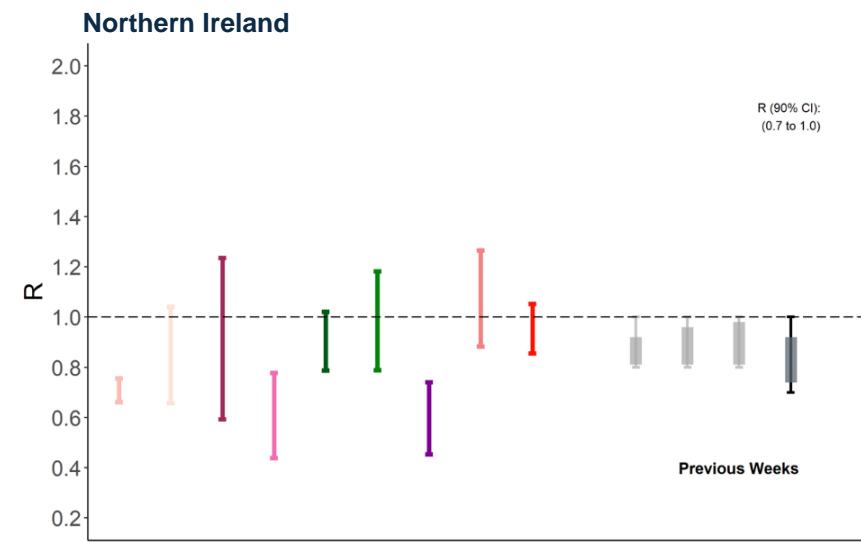
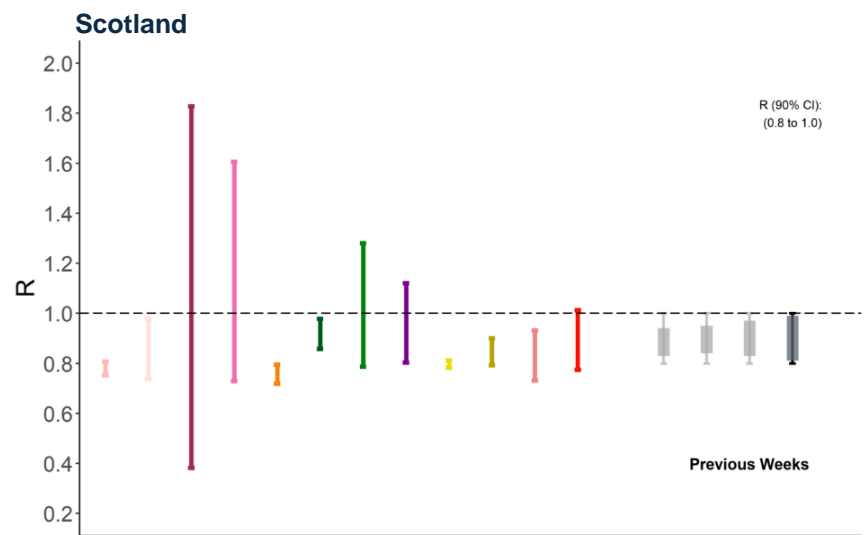
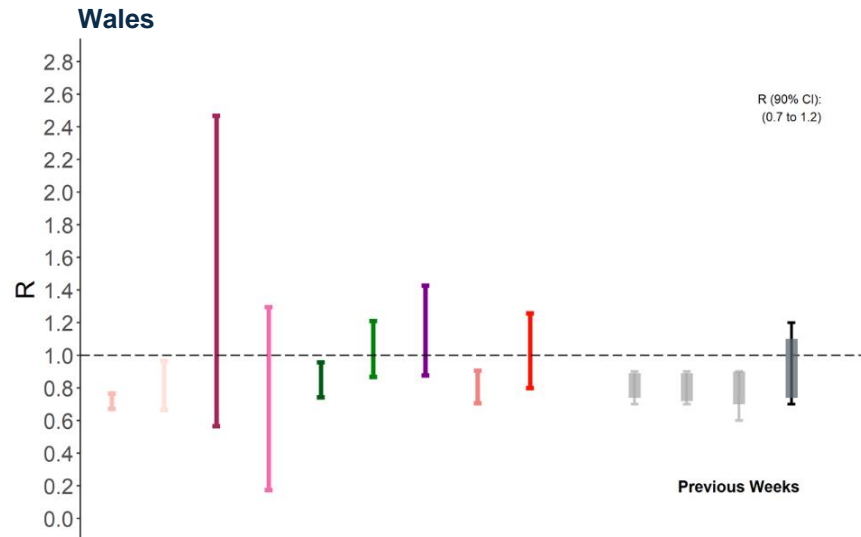
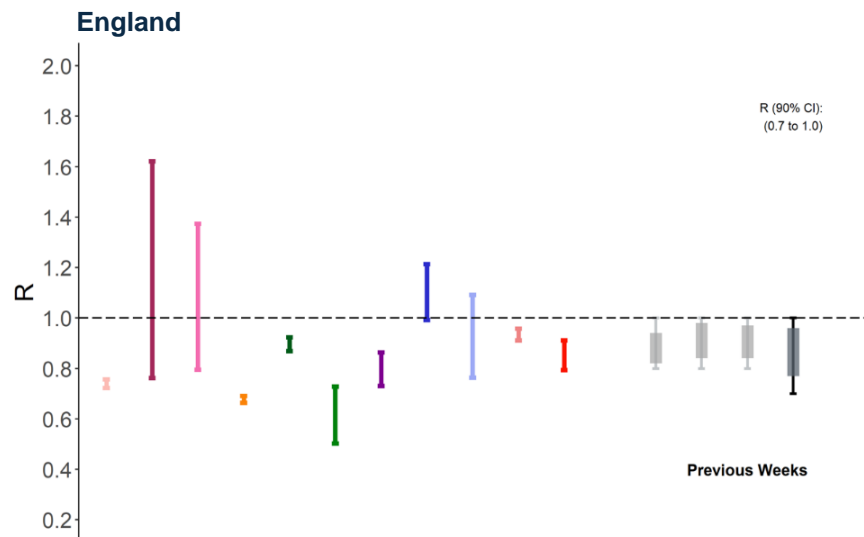
**Table 1:** Combined estimates of R values and growth rates in the four nations of the UK and NHS England regions (90% confidence interval)<sup>2</sup>

Nation	R	Growth rate per day
England	0.7 to 1.0	-6% to -1%
Scotland*	0.8 to 1.0	-4% to 0%
Wales*	0.7 to 1.2	-5% to +1%
Northern Ireland*	0.7 to 1.0	-5% to -1%
NHS England region	R	Growth rate per day
East of England*	0.7 to 1.0	-6% to -1%
London*	0.8 to 1.1	-5% to 0%
Midlands*	0.7 to 1.0	-7% to -2%
North East and Yorkshire	0.7 to 1.0	-6% to -1%
North West*	0.6 to 0.9	-7% to -2%
South East*	0.6 to 0.9	-8% to -2%
South West*	0.7 to 1.1	-7% to 0%

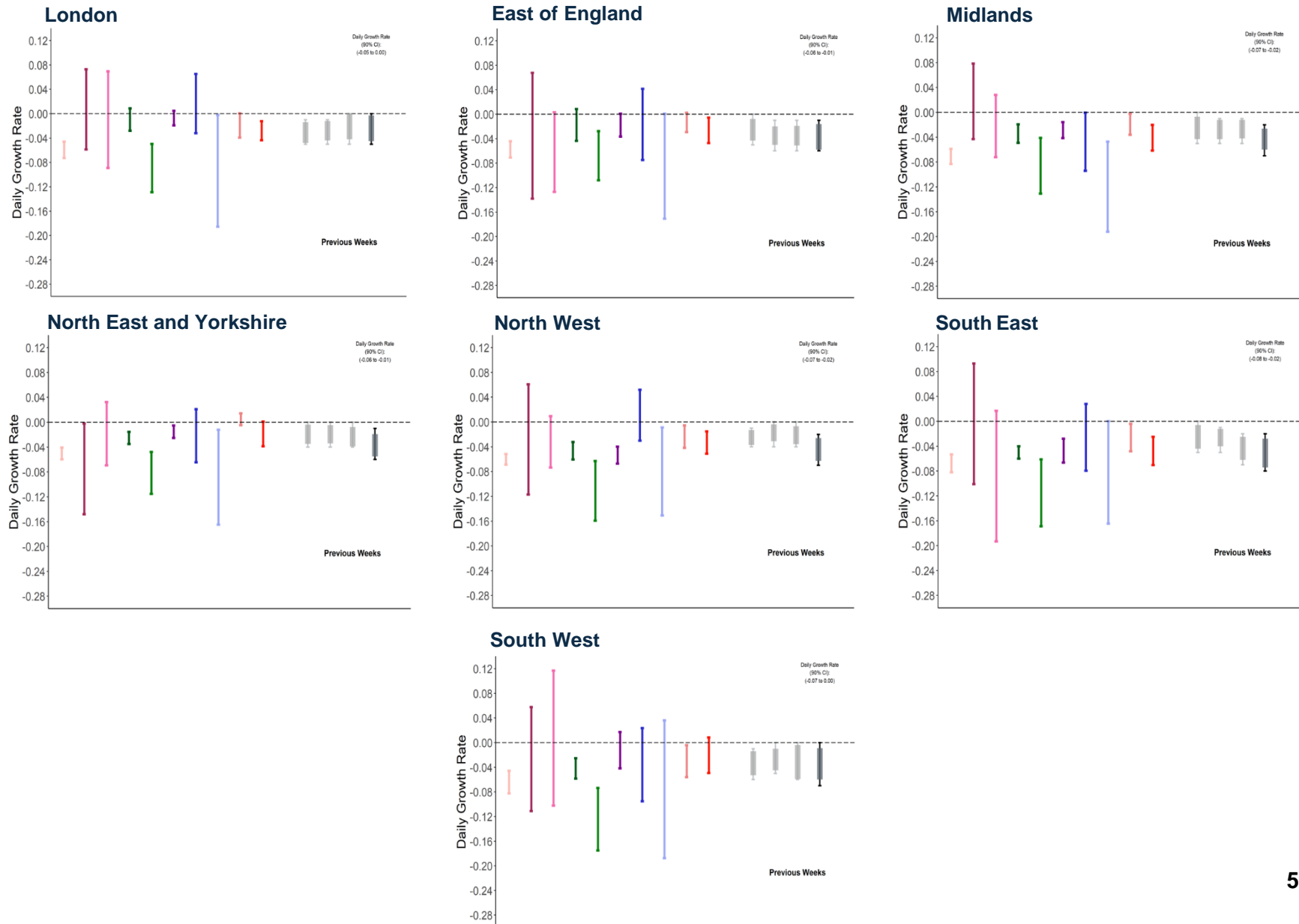
<sup>2</sup> The estimate intervals for R and growth rate may not exactly correspond to each other due to the submission of different independent estimates and rounding in presentation.

\* Particular care should be taken when interpreting these estimates as they are based on low numbers of cases or deaths and / or dominated by clustered outbreaks and so should not be treated as robust enough to inform policy decisions alone.

**Figure 1:** SPI-M-O groups estimates of median R in the four nations of the UK, including 90% confidence intervals. Bars represent different independent estimates. The grey shaded areas represent the combined numerical range and the black bars are the combined range after rounding to 1 decimal place. Please note: the scale for the Wales plot is different from those for the three other nations.



**Figure 2:** SPI-M-O groups' estimates of the growth rate in NHS England regions, including 90% confidence intervals. Bars represent different modelling groups. The grey shaded areas represent the combined numerical range and the black bars are the combined range after rounding to 2 decimal places.



**Figure 3:** SPI-M-O groups' estimates of median R in the NHS England regions, including 90% confidence intervals. Bars represent different independent estimates. The grey shaded areas represent the combined numerical range and the black bars are the combined range after rounding to 1 decimal place.

