

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

*Date: 31<sup>st</sup> March 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, Scotland, and Northern Ireland are between 0.8 and 1.0. For Wales, R is between 0.7 and 0.9.** These estimates are based on the latest data, available up to 29<sup>th</sup> March, including hospitalisations and deaths as well as symptomatic testing and prevalence studies, and do not yet reflect the *full* effect of re-opening of schools in England.
2. **SPI-M-O is *not confident* that R is *now below 1* in any NHS England region.** The upper limit of the range for all seven regions is 1, reflecting a flattening in transmission across the country. There continues to be heterogeneity at a sub-regional level, and it is important that these areas are carefully monitored as measures start to be relaxed.
3. **No UK estimates for R or growth rate have been agreed** by SPI-M-O this week. As restrictions are lifted differentially across the four nations, UK level estimates become less meaningful and are easily biased by the smaller number of model outputs combined in their calculation. SPI-M-O advises that R and growth rates for the four nations and NHS England regions are more robust and useful metrics than those for the whole UK.
4. SPI-M-O estimates that there are between **6,000 and 12,000 new infections per day in England.**

## Incidence and prevalence

5. Combined estimates from seven SPI-M-O models, using data available up to 29<sup>th</sup> March, suggest there are **between 6,000 and 12,000 new infections per day in England.**
6. The ONS community infection survey for the most recent week of the study (21<sup>st</sup> to 27<sup>th</sup> March) estimates that an average of **148,100 people had COVID-19** in the community in England (credible interval **129,700 to 167,400**). The survey does not include people in care homes, hospitals, or prisons.

## 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 estimate for the **growth rate in in England, is between -4% and 0% 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 value over time, geographies, and communities.
10. SPI-M-O's best estimates for **R in England, Scotland, and Northern Ireland are between 0.8 and 1.0. For Wales, R is between 0.7 and 0.9**. SPI-M-O's agreed national estimates are summarised in Table 1 and Figure 1. R is an indicator that lags by two to three weeks and, therefore, does not yet reflect the *full* effect of the latest measures across the four nations, including the re-opening of schools in England from 8<sup>th</sup> March. These estimates are based on the latest data, available up to 29<sup>th</sup> March.
11. Due to the lag in these indicators, SPI-M-O is *not confident* that R is *now* below 1 in any NHS England region, and these estimates can be seen in Table 1 and Figure 3. The upper limit of the range for all seven regions is 1, reflecting a flattening in transmission across the country. There continues to be heterogeneity at a sub-regional level, and it is important that these areas are carefully monitored as measures start to be relaxed.
12. Although R may still be below 1 nationally, prevalence remains high so relaxation of measures needs to be conducted carefully.
13. Estimates of R and growth rate for the UK as a whole are averages over different epidemiological situations and should be regarded as a guide to the general trend rather than a description of the epidemic state. They also rely on combining a smaller number of models to generate said estimates than those used at the nation level. As restrictions are lifted differentially across the four nations, UK level estimates become less meaningful than previously, and are more easily biased by the models combined in their calculation. SPI-M-O considers the estimates for the four nations and NHS England regions as more robust and useful metrics than those for the whole UK. As a result, **no UK estimates for R or growth rate have been agreed**. SPI-M-O will review whether UK estimates should be continued given the greater confidence in the four nation and regional estimates.

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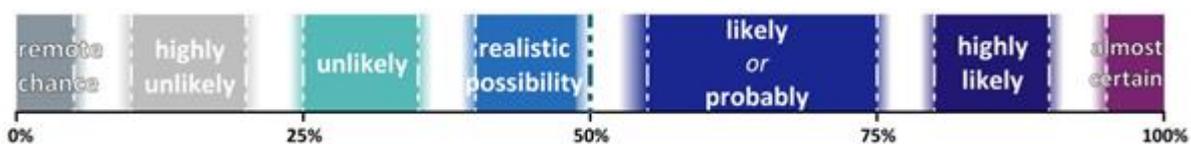
<sup>1</sup> Further technical information on the growth rate can be found in [Plus magazine](#)

14. **Particular care should be taken when interpreting the R and growth rate estimates for Scotland, Wales, Northern Ireland, London, and South West.** These estimates 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. Estimates of R and the growth rates per day become less reliable and less useful in determining the state of the epidemic when disease incidence is low or where there is significant variability in the population, for example, local outbreaks. Both are average measures and smooth over outbreaks at small spatial scales or over short periods of time.
15. SPI-M-O is concerned that, as prevalence of infection increases and a large proportion of the adult population is vaccinated, the current definition of death (i.e. death within 28 days of a positive COVID-19 test) will become increasingly inaccurate as a measure of the health burden of the epidemic. It will also potentially distort estimates of vaccine efficacy.

### Regional variation

16. SPI-M-O has been monitoring spatial heterogeneity in observed patterns at an upper/lower tier local authority (UTLA / LTLA) level. There is consensus that estimates of R have, and continue to, increase across most regions, and some analyses suggest that growth is positive in some locations. There is considerable heterogeneity in prevalence across regions, with isolated areas of concern being highlighted by multiple research groups. There is a strong signal of higher and persistent prevalence in the North East<sup>2</sup>, and some areas in Scotland are appearing, although inconsistently between research groups.
17. Some places are diverging and are on very different epidemic trajectories to the country as a whole, or even the broader regions they are in. These places may reach very high local prevalence before they would trigger a signal at the regional level.
18. It is important to continue to monitor both incidence/prevalence and R/growth rate within regional hotspots as restrictions are eased. Any divergence may be exacerbated over this time and result in these regions becoming major areas of concern in the future.

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



<sup>2</sup> Clarification added for release: This relates to North-Eastern England, including Yorkshire and the Humber, rather than only the North East region.

**Table 1:** Combined estimates of R values and growth rates in the four nations, and NHS England regions (90% confidence interval)<sup>3</sup>

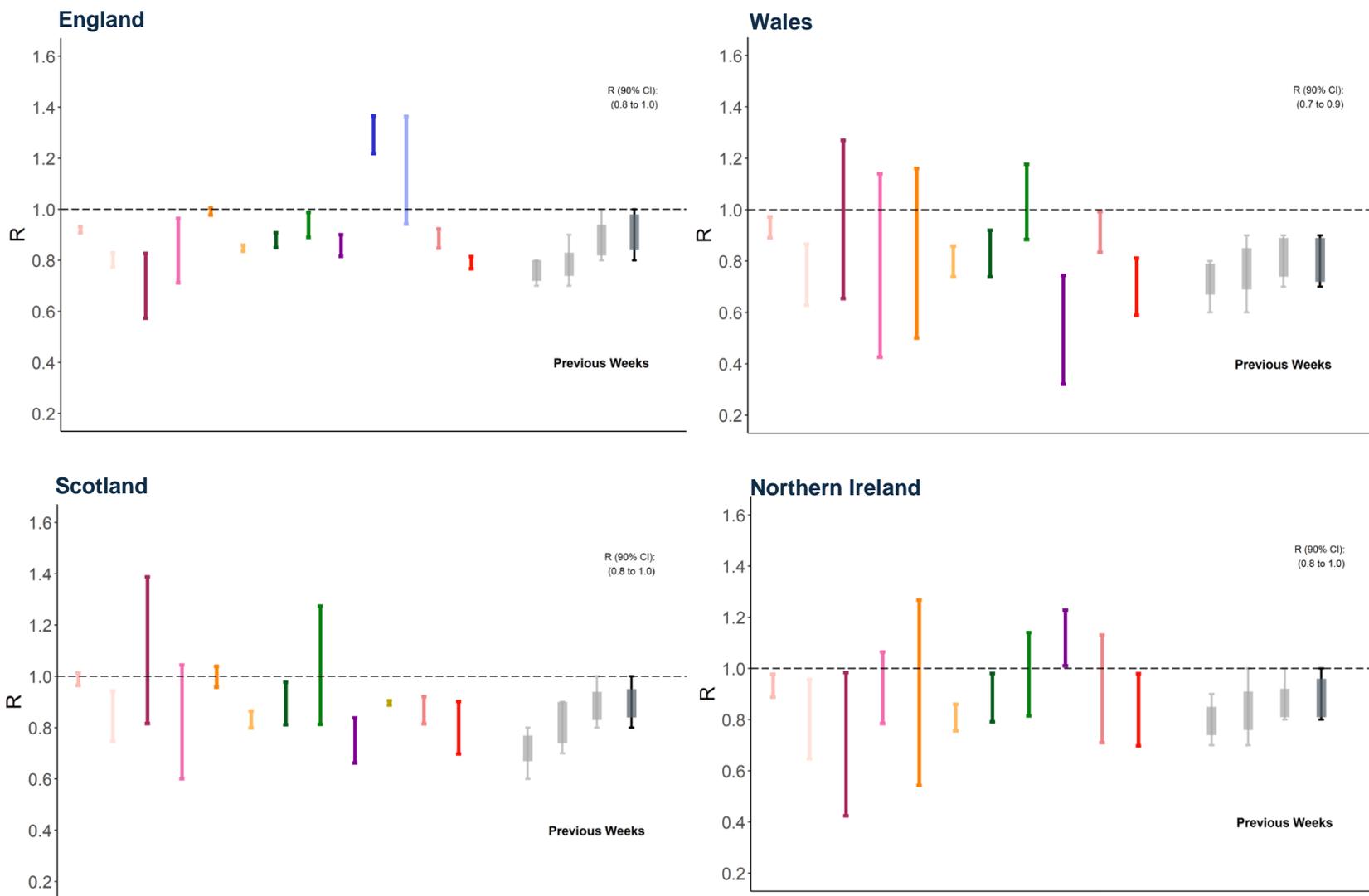
<b>Nation</b>	<b>R</b>	<b>Growth rate per day</b>
<b>England</b>	0.8 to 1.0	-4% to 0%
<b>Scotland*</b>	0.8 to 1.0	-4% to -1%
<b>Wales*</b>	0.7 to 0.9	-5% to -2%
<b>Northern Ireland*</b>	0.8 to 1.0	-4% to 0%

<b>NHS England region</b>	<b>R</b>	<b>Growth rate per day</b>
<b>East of England</b>	0.7 to 1.0	-6% to -1%
<b>London*</b>	0.7 to 1.0	-5% to -1%
<b>Midlands</b>	0.7 to 1.0	-5% to -1%
<b>North East and Yorkshire</b>	0.8 to 1.0	-4% to 0%
<b>North West</b>	0.8 to 1.0	-4% to 0%
<b>South East</b>	0.7 to 1.0	-5% to -1%
<b>South West*</b>	0.7 to 1.0	-5% to 0%

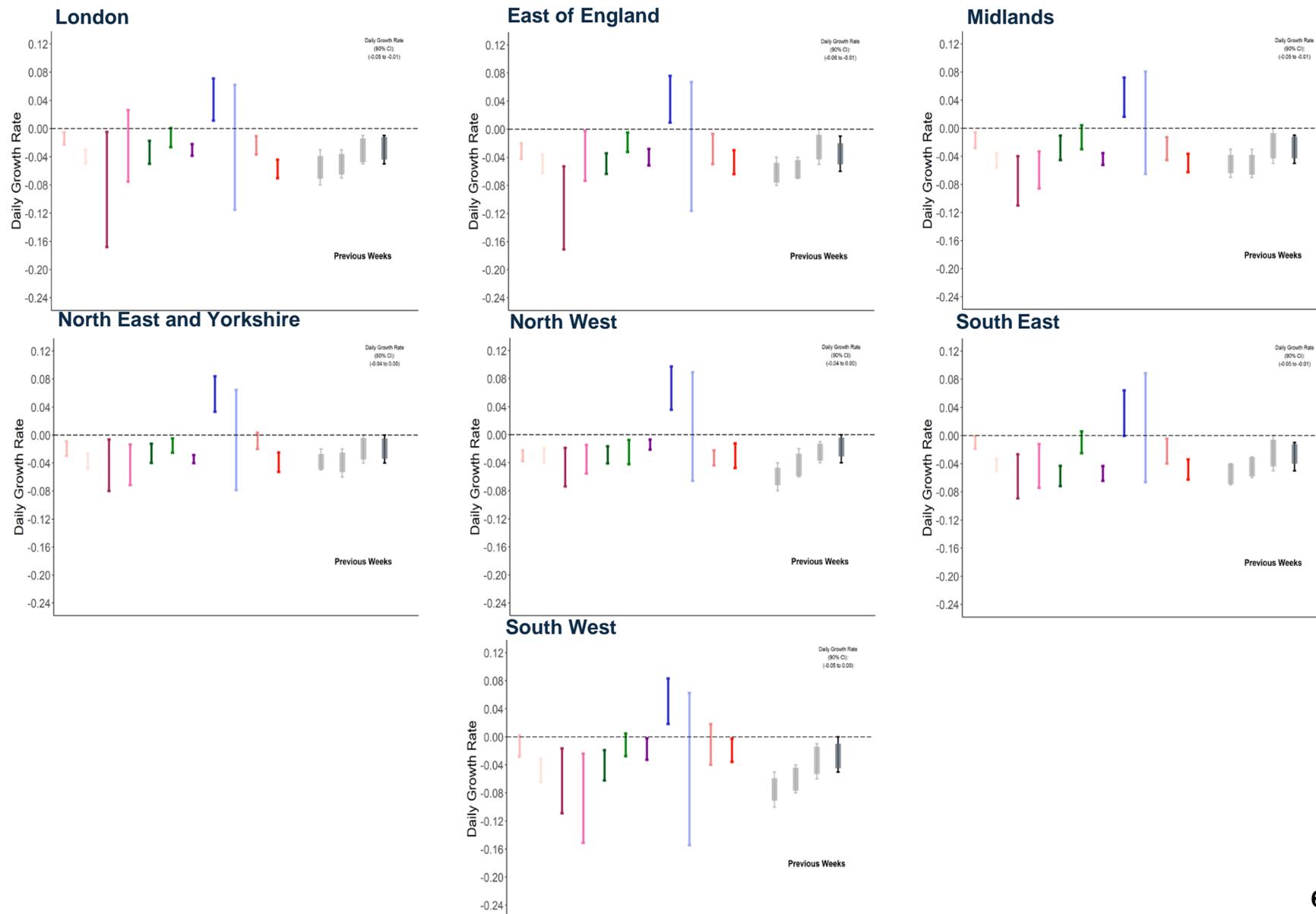
<sup>3</sup> The estimate intervals for R and growth rate may not exactly correspond to each other due to the submission of different independent estimates and rounding in presentation.

\* 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.



**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.

