

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

Date: 24th February 2021

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

Summary

1. SPI-M-O's best estimate for **R in the UK is between 0.6 and 0.9**, and in **England, Scotland, and Wales it is between 0.7 and 0.9. For Northern Ireland, R is between 0.6 and 0.9**. These estimates are based on the latest data, available up to 22nd February, including hospitalisations and deaths as well as symptomatic testing and prevalence studies.
2. SPI-M-O is confident that R is below 1 across all NHS England regions. Although the epidemic continues to decrease across all the nations, transmission is heterogeneous more locally. This heterogeneity contributes to the variation in R estimates and is important for future patterns. While R is below 1, prevalence is still high across the country.
3. There are some indications that the rate of decline in infections is starting to slow particularly in children and young adults. As the community prevalence decreases, high transmission in particular settings, including prisons, will start to become more detectable and influential. This is to be expected, and was the pattern seen in April and May 2020.
4. SPI-M-O estimates that there are between **9,000 and 25,000 new infections per day in England**.

Incidence and prevalence

5. Combined estimates from six SPI-M-O models, using data available up to 22nd February, suggest there are between **9,000 and 25,000 new infections per day in England**.
6. The ONS community infection survey for the most recent week of the study (13th to 19th February) estimates that an average of **373,700 people had COVID-19** in the community in England (credible interval **346,400 to 401,300**). The survey does not include people in care homes, hospitals, or prisons. Estimates from across the four nations of the UK are:

England	373,700 (credible interval 346,400 to 401,300)
Scotland	23,400 (credible interval 18,600 to 29,000)
Wales	14,700 (credible interval 11,100 to 18,800)
Northern Ireland	9,500 (credible interval 6,600 to 13,100)

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 shrinking¹.
8. SPI-M-O's consensus estimate is that the **growth rates in the UK is between -6% and -2% per day and in England is between -5% and -3% per day**. SPI-M-O's national and regional estimates of growth rates are summarised in Table 1 and Figure 3.
9. The reproduction number is the average number of secondary infections produced by a single infected individual. R is an average value over time, geographies, and communities. This should be considered when interpreting the R estimate for the UK given the differences in policies across the four nations.
10. SPI-M-O's best estimate for **R in the UK is between 0.6 and 0.9**, and in **England, Scotland, and Wales it is between 0.7 and 0.9. For Northern Ireland, R is between 0.6 and 0.9²**. SPI-M-O's agreed national estimates are summarised in Table 1 and Figures 1 and 2. R is an indicator that lags by two to three weeks, and these estimates are based on the latest data available up to 22nd February.
11. SPI-M-O is confident that R is below 1 in all NHS England regions. The regional R estimates can be seen in Table 1 and Figure 4, with a general pattern of decrease and / or flattening trends. Some data sources, such as NHS 111 calls and certain age groups in the ONS COVID-19 Infection Survey, suggest there may be a flattening or upticks in cases in certain areas, with larger outbreaks amongst different age groups creating some regional variation. It is important that these areas are monitored carefully over the coming weeks, particularly once measures start to be relaxed; it may be possible to learn more about communities and settings that have slower rates of decline and where the areas with the first signs of growth are.
12. Although R is below 1, prevalence remains very high. Relaxation of measures will need to be done carefully.
13. There are tentative signs of the impacts of vaccines at the population level, however, it is currently difficult to disentangle these effects from those resulting from the generally decreasing epidemic and decreasing hospital burden. The earliest signs of prevention of

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

² 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. R estimate intervals for the UK may not exactly correspond to its constituent nations for the same reason.

hospitalisations might be seen in health care workers but, for the wider population, the distribution of deaths by age is also worth monitoring closely in coming weeks.

Impact of new variants on transmission

14. There are several potential reasons for the faster growth rate of the B.1.1.7 variant of SARS-CoV-2, which has become the dominant strain in the UK. These could be either increased transmissibility, increased duration of infectiousness, or a shorter generation time. As previously discussed, the last of these would have implications for calculation of R. Further work is needed to understand which of these may be driving the differences seen, but a different generation time cannot be ruled out.

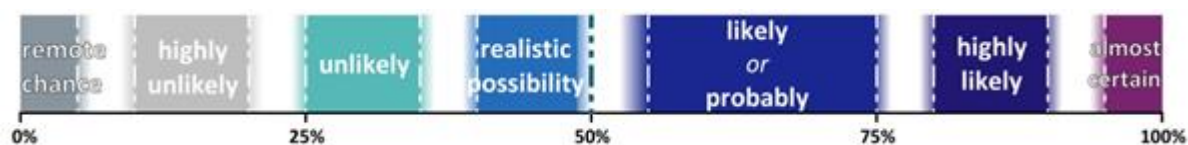
Testing of contacts

15. There is a paucity of information on the relationship between testing and infectiousness. This information has high value as it would aid the design of more effective and efficient testing programmes. In particular, a laboratory study where the results of PCR tests, lateral flow tests, and virus culture can be compared both between individuals and longitudinally for individuals would enable testing results to be more directly linked to transmission risk.

Care Homes

16. Estimates of vaccine uptake in care homes are approximately 95% of residents and 70% of staff³. Lower coverage in staff is due to a complex mix of access to vaccines and some hesitancy, but coverage is gradually improving. In order to limit outbreaks through vaccination alone, staff coverage would need to increase to a *minimum* of 75% in every care home setting. The distribution of vaccine uptake between care homes is an important measure of the success of the programme.

Annex: PHIA framework of language for discussing probabilities



³ Footnote added for release: this relates to older adult care homes, as of 18 February 2021

Table 1: Combined estimates of R values and growth rates in the UK, four nations, and NHS England regions (90% confidence interval) ⁴

Nation	R	Growth rate per day
England	0.7 to 0.9	-5% to -3%
Scotland	0.7 to 0.9	-5% to -2%
Wales	0.7 to 0.9	-5% to -2%
Northern Ireland	0.6 to 0.9	-7% to -3%
UK	0.6 to 0.9	-6% to -2%

NHS England region	R	Growth rate per day
East of England	0.6 to 0.8	-7% to -4%
London	0.6 to 0.8	-8% to -5%
Midlands	0.7 to 0.9	-6% to -3%
North East and Yorkshire	0.7 to 0.9	-5% to -2%
North West	0.7 to 0.9	-6% to -2%
South East	0.7 to 0.9	-5% to -2%
South West	0.6 to 0.8	-7% to -4%

⁴ 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. R estimate intervals for the UK may not exactly correspond to its constituent nations for the same reason.

Figure 1: SPI-M-O groups' estimates of median R in the UK, including 90% confidence intervals. Bars represent different independent estimates. The grey shaded area represents the combined numerical range and the black bar is the combined range after rounding to 1 decimal place. The UK estimate of R is the average over very different epidemiological situations and should be regarded as a guide to the general trend rather than a description of the epidemic state.

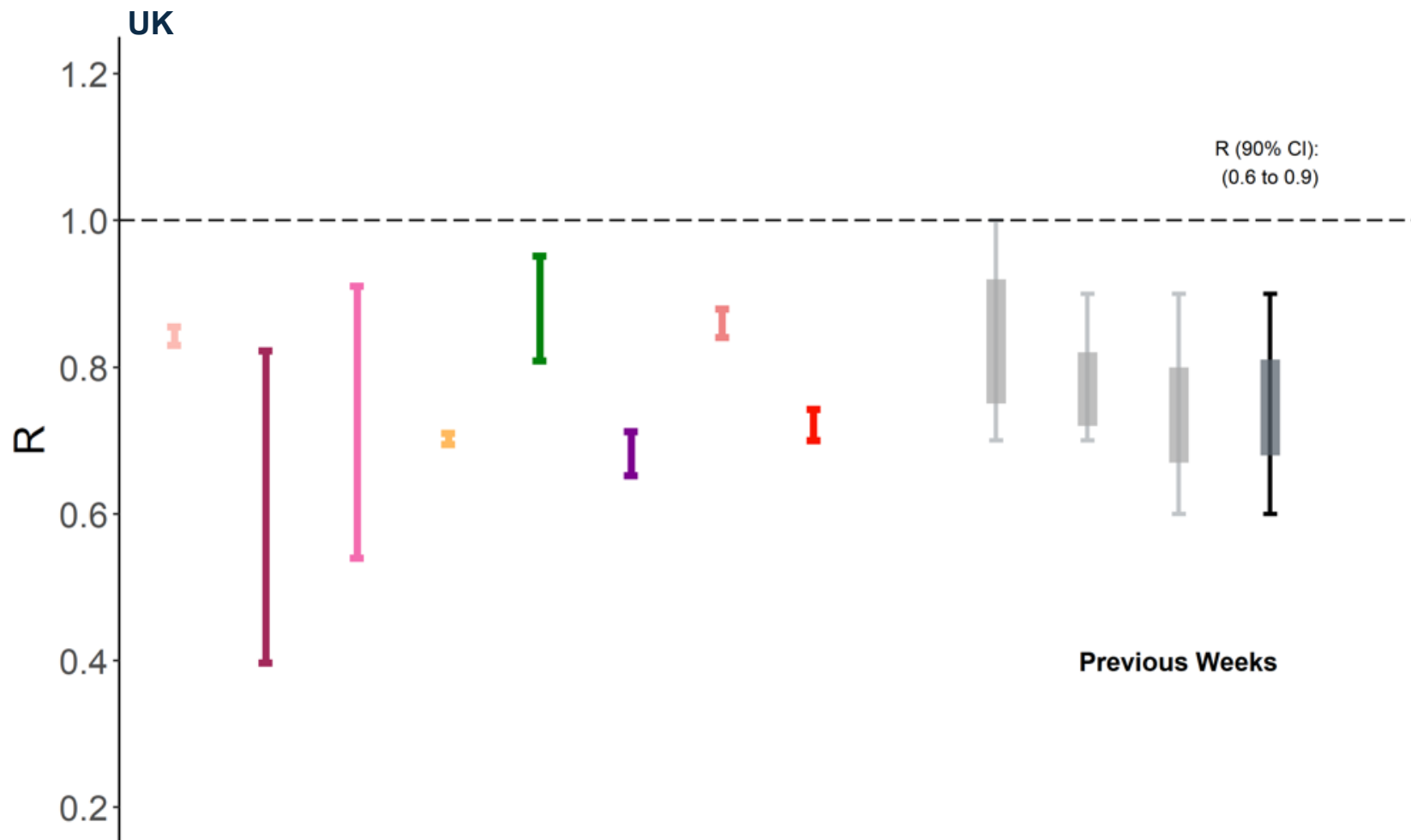


Figure 2: SPI-M-O groups estimates of median R in the four nations of the UK, including 90% confidence intervals. Bars represent different independent estimates. The grey shaded areas represent the combined numerical range and the black bars are the combined range after rounding to 1 decimal place.

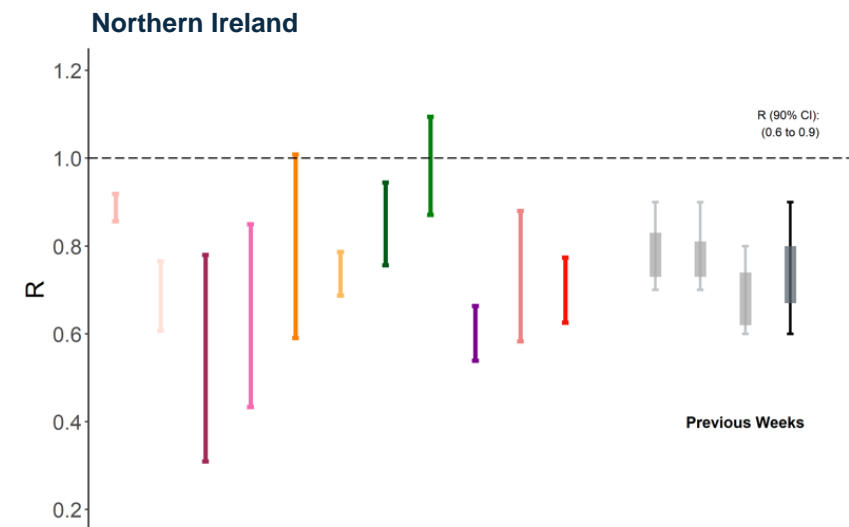
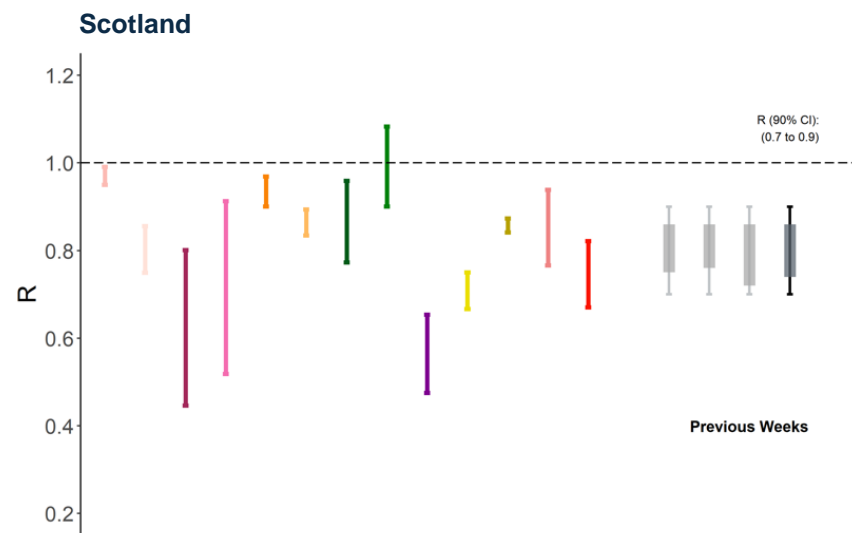
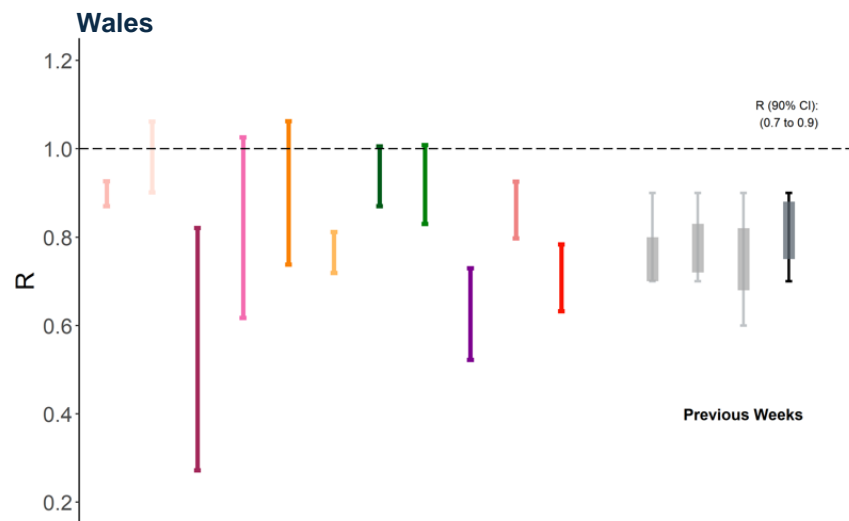
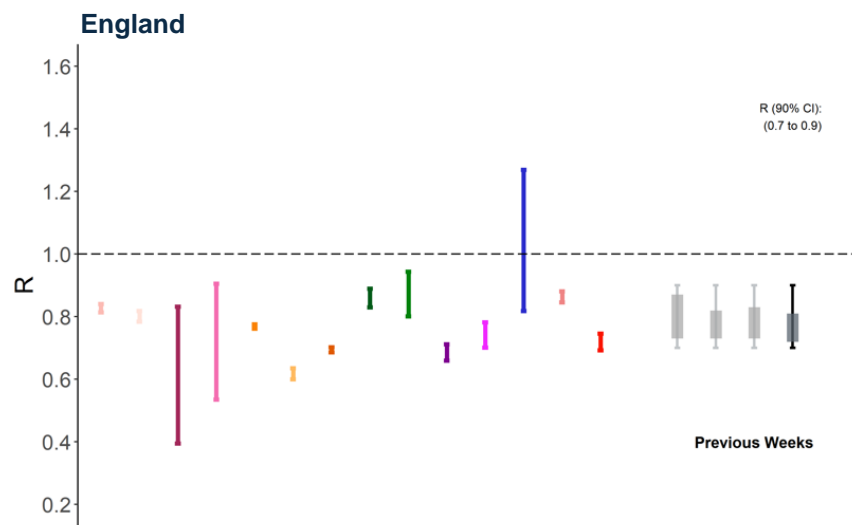


Figure 3: SPI-M-O groups' estimates of the growth rate in NHS England regions, including 90% confidence intervals. Bars represent different modelling groups. The grey shaded areas represent the combined numerical range and the black bars are the combined range after rounding to 2 decimal places.

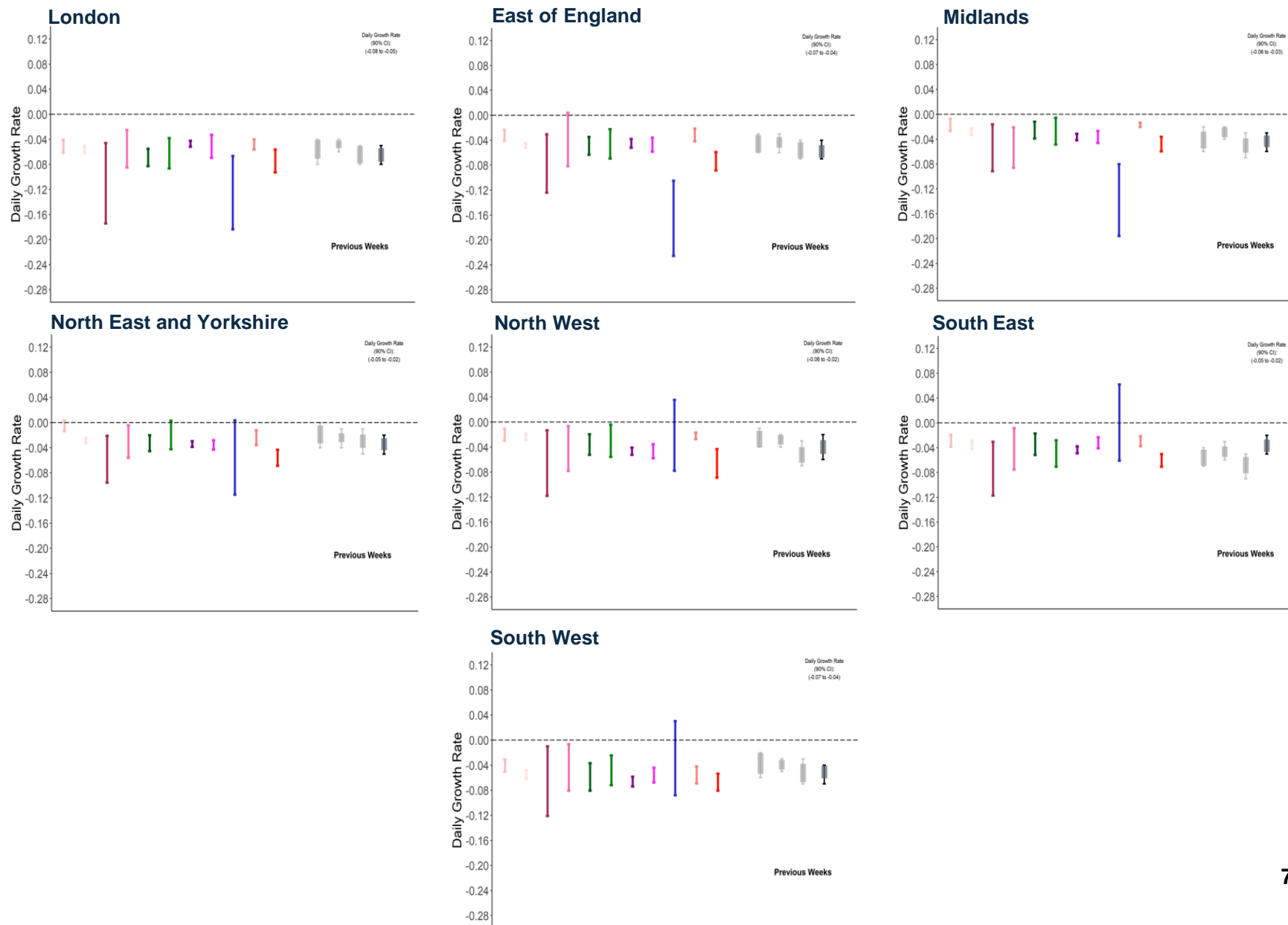


Figure 4: SPI-M-O groups' estimates of median R in the NHS England regions, including 90% confidence intervals. Bars represent different independent estimates. The grey shaded areas represent the combined numerical range and the black bars are the combined range after rounding to 1 decimal place.

