

Written evidence submitted by Professor Graham Medley, London School of Hygiene & Tropical Medicine (C190124)

I am writing to clarify three issues that arose during the evidence that I gave to the Science and Technology select committee on 2nd March 2022.

First, Aaron Bell MP suggested that modellers did not use the latest information in the modelling and referred in particular to the situation in June 2021. I did not refute that suggestion strongly enough. The modellers have **always** used the best data available to them, which is usually the most recent. For the parameter in question (vaccine efficacy against Delta variant), the modelling included sensitivity analyses that largely covered the estimates released after the modelling.

For clarification, the modelling was discussed by SPI-M-O and SAGE Wednesday 9th June, released Monday 14th June and PHE published updated estimates later that same day. The vote in House of Commons was Wednesday 16th June. If asked, I am confident that SPI-M-O would have redone modelling based on new estimates, but this would have taken several days to finalise.

A wider point is that with all the best intentions, this will happen during a fast-moving epidemic as far as the modelling evidence is concerned. Management of the information flows is going to be an important part of thinking future pandemic responses, but decision makers are unlikely to have all the most recent information and corresponding analysis in front of them at the same time.

Second, you, and other members, were particularly interested in the lack of prior probabilities assigned to different scenarios. There are many good reasons why modellers should not do this when we cannot accurately assess these probabilities. Given a set of scenarios that are all possible, decision-makers' focus should then be on the outcomes of the scenarios rather than which is more likely to occur. If there is indication that one scenario is more likely, then there is a danger that decisions are taken for that scenario and the other possibilities are downplayed. Epidemics are particularly challenging, because the epidemic drives the decisions, and the decisions alter the epidemic.

Third, and finally, I am not sure that I sufficiently gave the impression that it is the **modelling** rather than the individual models which provide the evidence. Graham Stringer MP is quite right to be sceptical of individual models, which is why SPI-M-O takes a consensus view on the conclusions that can be drawn from the models rather than simply presenting the graphs. With regard to the Omicron wave, the modelling conclusions were that it was almost certain that there would be large wave of infections, with a subsequent wave of hospitalisations that would be determined by behaviour, severity and impact of boosters. The only numerical prediction we made was that there would be between 1000 and 2000 admissions per day by the end of the year.

I hope that this serves to clarify. Thank you for giving me the opportunity to explain the role of modelling in providing scientific evidence during the epidemic, and thank you for your kind words of support and thanks to the members of SPI-M-O.

10 March 2022