

UK COVID-19 Inquiry: Module 2 - Rule 9 Request to Dr Moritz Gerstung - Reference: M2/SAGE/01/MG

Please provide the following information:

1. A brief overview of your qualifications, career history, professional expertise and major publications.

At the time of my participation I was a research group leader at the European bioinformatics institute EMBL-EBI near Cambridge since 2015. I have a track record of research in computational genome evolution. Prior to the pandemic my laboratory has mostly investigated the evolution of cancer genomes. Due to the close links with my colleagues at the Wellcome Sanger Institute, where I was a postdoctoral researcher from 2012-2015, I became involved in their SARS-CoV-2 genomic surveillance programme, which was the largest such programme in the world. Due to the scale of the data generated, my group's expertise in analysing large amounts of genome sequencing data to study the spread of genomic variants was of great use. I have published more than 70 research publications in major scientific journals, including Nature, Science and Cell.

2. A list of the groups (i.e. SAGE and/or any of its sub-groups) in which you have been a participant, and the relevant time periods.

SPI-M

3. An overview of your involvement with those groups between January 2020 and February 2022, including:

a. When and how you came to be a participant;

I was encouraged by SPI-M members Ewan Birney and Graham Medley to provide excerpts of our analyses of the Delta variant to 2 SPI-M meetings in May and June 2021. The analyses were conducted independently of SPI-M as part of our work with the Wellcome Sanger Institute's genomic surveillance programme.

b. The number of meetings you attended, and your contributions to those meetings;

2 SPI-M meetings on May 19, 2021 and June 9, 2021. We submitted two short vignettes of our research about the spread of the Delta variant.

c. Your role in providing research, information and advice.

The papers were presented (about 5-10 minutes) and discussed with all other SPI-M members (another 5-10 minutes). In these meetings also a number of other analyses by other groups pertaining the same questions were presented and discussed.

4. A summary of any documents to which you contributed for the purpose of advising SAGE and/or its related subgroups on the Covid-19 pandemic. Please include links to those documents where possible.

We have contributed two papers related to the growth rate of the delta variant.

At the beginning of the Delta wave in April 2021 there were questions as to whether the rising cases were driven by ongoing travel-associated introductions from India, or the result of a genuine intrinsic growth advantage. India's sparse genomic surveillance did not provide clear answers.

The first paper in May highlighted a spread of the Delta variant in various local authorities, consistent with a viral growth advantage.

A second paper in June attempted to provide more accurate growth advantage estimates, which were important for epidemiological modeling and planning of further reopening steps.

5. A summary of any articles you have written, interviews and/or evidence you have given regarding the work of the above-mentioned groups and/or the UK's response to the Covid-19 pandemic. Please include links to those documents where possible.

The analyses contributed to the aforementioned SPI-M meetings have been peer reviewed and published in the journal Nature.

<https://www.nature.com/articles/s41586-021-04069-y>

I have conducted a number of interviews with different European press outlets (e.g. Die Welt and Le Monde) about our analyses of the SARS-CoV-2 variants. The reason being that I have been working at EMBL, a pan-European international research organisation with close links to all member states.

6. Your views as to whether the work of the above-mentioned groups in responding to the Covid-19 pandemic (or the UK's response more generally) succeeded in its aims. This may include, but is not limited to, your views on:

a. The composition of the groups and/or their diversity of expertise;

SPI-M was composed of some of the world's most recognised pandemic disease modellers.

b. The way in which the groups were commissioned to work on the relevant issues;

I can't comment on this question.

c. The resources and support that were available;

The organisation of the two meetings I have attended was very professional and followed scientific standards.

d. The advice given and/or recommendations that were made;

Based on different models a consensus view was formulated and passed to other committees. This was also published on the government's website.

e. The extent to which the groups worked effectively together;

Generally there was a great level of exchange between the scientists involved.

f. The extent to which applicable structures and policies were utilised and/or complied with and their effectiveness.

The analyses of the Alpha and Delta variants each led to changes in the government's covid response, which in my eyes were justified. At the time other countries with less established surveillance systems and modeling expertise were eager to emulate these specific capabilities.

I can't comment on other questions.

7. Your views as to any lessons that can be learned from the UK's response to the Covid-19 pandemic, in particular relating to the work of the above-mentioned groups. Please describe any changes that have already been made, and set out any recommendations for further changes that you think the Inquiry should consider making.

Genomic surveillance has been one of the successes of the UK's covid response. Rather than abandoning the infrastructure, it should be repurposed to other pathogens. The global spread of the pandemic also highlighted the need for, and value of, an internationally coordinated approach.

Also the ONS infection survey is envied by the rest of the world as one of the most epidemiologically rigorous assessments of pathogen spread. It was extremely insightful at times when the true rate of infections remained unknown. As a future recommendation it would be little extra effort to broaden the analysis of pathogens tested beyond SARS-CoV-2.

Wastewater analysis can provide further insights, as shown recently for vaccine derived polio cases.

8. A brief description of documentation relating to these matters that you hold (including soft copy material held electronically). Please retain all such material. I am not asking for you to provide us with this material at this stage, but I may request that you do so in due course.

Two 2-3p documents summarising our analyses of the spread of the Delta variant.