

## Module 2 of the UK Covid-19 Public Inquiry

UK COVID-19 Inquiry: Module 2 - Rule 9 Request to Dr Rosalind Eggo - Reference: M2/SAGE/01/RE

Dear Mr Suter,

Please find in line my responses to your questions in plain text. I will be happy to clarify if needed.

Yours sincerely,

Rosalind Eggo

### Questionnaire Responses

Please provide the following information:

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

#### Qualifications

Imperial College London	2011
<i>PhD: Spatio-temporal dynamics of the 1918 influenza pandemic</i>	
Imperial College London	2007
<i>MSc Modern Epidemiology - Distinction</i>	
Cambridge University, Pembroke College	2005
<i>BA Hons Natural Sciences – 2:i</i>	

#### Career History

<b>London School of Hygiene &amp; Tropical Medicine</b>	<b>May 2015 – Current</b>
<i>Associate Professor</i>	<i>Dec 2020 - Current</i>
Infectious disease modelling of COVID-19 transmission and interventions	
· Modelling and economic evaluation of pandemic interventions	
· Electronic health record data analysis on COVID-19	
<i>Assistant Professor</i>	<i>Feb 2018 – Dec 2020</i>
HDR UK Innovation Personal Fellowship	
· Modelling of electronic health record data on chronic disease exacerbations	
<i>Assistant Professor</i>	<i>July 2017 – Feb 2018</i>
Supervisor: Prof. Mark Jit	
· Modelling and economic evaluation of UK vaccination programmes	
<i>Research Fellow</i>	<i>May 2015 – July 2017</i>
Supervisor: Prof. John Edmunds	
· Modelling strategies for Ebola vaccine trials in West Africa	

- Development of methods for outbreak data analysis and transmission modelling

**University College London**  
Research Associate

**Oct 2014 – May 2015**

Supervisor: Prof. Harry Hemingway

- Big data analytics of linked electronic health records.
- Analysis of patient-specific risk factors for severe health outcomes.

**The University of Texas at Austin, USA**  
Postdoctoral Fellow

**July 2011 – Oct 2014**

Supervisor: Prof. Lauren Ancel Meyers

- Dynamics of endemic respiratory viruses in adults and children, with special focus on populations at risk of severe disease.
- Analysis of community structure in large networks and implication for influenza-like epidemic dynamics.

### Professional Expertise

My research focuses on the transmission dynamics of directly-transmitted viral pathogens. I have worked on a range of infections, but my main interest is on respiratory viral infections. I use a range of epidemiological techniques, including modelling, to answer questions of scientific interest and public health relevance about transmission and control of pathogens.

### Major Publications

Effectiveness of airport screening at detecting travellers infected with novel coronavirus (2019-nCoV). Quilty, BJ; Clifford, S; CMMID working group, Flasche, S\*; **Eggo, RM\***; *Eurosurveillance*. 2020.

Early dynamics of transmission and control of COVID-19: a mathematical modelling study. Kucharski AJ; Russell TW; Diamond C; Liu Y; Edmunds WJ, Funk S, CMMID working group, **Eggo RM**. *Lancet Infectious Diseases*. 2020.

Feasibility of controlling COVID-19 outbreaks by isolation of cases and contacts. Hellewell, J; Abbott, S; Gimma, A; Bosse, NI; Jarvis, CI; Russell, TW; Munday, JD; Kucharski, AJ; Edmunds, WJ; CMMID working group; Funk, S\*; **Eggo, RM\***. *The Lancet Global Health*. 2020.

Age-dependent effects in the transmission and control of COVID-19 epidemics. Davies NG; Klepac P; Liu Y; Prem K; Jit M; CMMID working group; **Eggo RM**. *Nature Medicine*. 2020.

Effects of non-pharmaceutical interventions on COVID-19 cases, deaths, and demand for hospital services in the UK: a modelling study. Davies, NG; Kucharski, AJ\*; **Eggo, RM\***; Gimma, A; CMMID working group; Edmunds, WJ. *The Lancet Public Health*. 2020.

Global, regional, and national estimates of the population at increased risk of severe COVID-19 due to underlying health conditions in 2020: a modelling study. Clark A; Jit M; Warren-Gash C; Guthrie B; Wang HHX; Mercer SW; Sanderson C; McKee M; Troeger C; Ong KI; Checchi F; Perel P; Joseph S; Gibbs HP; Banarjee A; CMMID working group; **Eggo RM**. *Lancet Global Health*. 2020.

Respiratory virus transmission dynamics determine timing of asthma exacerbation peaks: Evidence from a population-level model. **Eggo, RM**; Scott, JG; Galvani, AP; Ancel Meyers, L. *Proceedings of the National Academy of Sciences*. 2016.

Case fatality risk of the SARS-CoV-2 variant of concern B. 1.1.7 in England, 16 November to 5 February. Grint DJ; Wing K; Williamson E; McDonald HI; Bhaskaran K; Evans D; Evans SJW; Walker AJ; Hickman G; Nightingale E; Schultze A; Rentsch CT; Bates C; Cockburn J; Curtis HJ; Morton CE; Bacon S; Davy S; Wong AYS; Mehrkar A; Tomlinson L; Douglas IJ; Mathur R; Blomquist P; MacKenna B; Ingelsby P; Croker R; Parry J; Hester F; Harper S; DeVito NJ; Hulme W; Tazare J; Goldacre B\*; Smeeth L\*; **Eggo RM\***. *Eurosurveillance*. March 2021.

**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.**

During the pandemic I was a member of the SAGE subgroups: SPI-M-O, Children's Task and Finish, Ethnicity. I attended SAGE twice. Dates of meetings are given in the next section.

I was on parental leave 1 September 2021 - 6 March 2022 and did not participate in any activities relating to my profession during that time.

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

- **When and how you came to be a participant;**

SPI-M-O: First meeting 02/03/20. Invited on 1 March following work with Dr N Davies (LSHTM) and others on the relative contribution of different age groups in transmission. I had shared this work with Prof G Medley (LSHTM) and SPI-M secretariat on 1 March. I attended 56 SPI-M-O meetings.

Ethnicity: First meeting 01/9/20. Invited as representative from SPI-M-O.

Children's Task & Finish: First meeting attended 23/4/20.

SAGE: Invited to SAGE 65. This meeting included discussion of a Children's T&F paper, and I was in the Children's T&F group.

Presented a paper at SAGE 94. The paper was commissioned to examine evidence for international vaccination. Led by Prof J Gog and myself.

- **The number of meetings you attended, and your contributions to those meetings;**

Please find below for SPI-M-O, Ethnicity, Children's Task & Finish, SAGE, and other key meetings respectively.

SPI-M-O:

Attended 56 of 104 meetings. A table with dates and attendances was provided to me by SPI-M-O Secretariat and I added papers from the list they sent where I was a named author. I did not add papers where the group authorship for the LSHTM CMMID Covid-19 working group is given because due to the timelines of SPI-M papers it was not always possible to

review them before submission to SPI-M\*. I have copies of my authored papers but I assume they are all available centrally so I have not attached them. At meetings I would participate in discussion orally and by text in the chat box.

\*1 exception is the first listed paper which I was heavily involved in, before we had settled on a convention for author names and the working group.

Date of Meeting	Attended	Paper	Authors
27/01/2020	N		
03/02/2020	N		
10/02/2020	N		
17/02/2020	N	Traveller-focussed interventions to delay an outbreak of COVID-19	LSHTM nCoV working group
19/02/2020	N		
24/02/2020	N		
26/02/2020	N		
02/03/2020	Y	The effect of social distance measures on deaths and peak demand for hospital services in England	Nick Davies, Adam Kucharski, Rosalind Eggo, John Edmunds
		COVID-19 dynamics in children: implications for policy	LSHTM COVID analysis team, especially Nicholas G. Davies & Rosalind M Eggo
09/03/2020	N	Estimating the impact of regional triggers for COVID-19 non-pharmaceutical interventions	Nicholas Davies, Adam Kucharski, Rosalind Eggo, John Edmunds
11/03/2020	N		
16/03/2020	Y	The impact of aggressively managing peak incidence	Nick Davies, Adam Kucharski, Roz Eggo and John Edmunds
17/03/2020	Y	COVID-19 dynamics in children: implications for policy	Nicholas G. Davies, Petra Klepac, Yang Liu, Kiesha Prem, Mark Jit, CMMID COVID-19 working group, Rosalind M Eggo
20/03/2020	N		
23/03/2020	N		
30/03/2020	N		
06/04/2020	N		
13/04/2020	N		
20/04/2020	N		
27/04/2020	N		
04/05/2020	N	Modelling scenarios for relaxation of lockdown in England	Nicholas Davies, Adam Kucharski, Rosalind Eggo, John Edmunds
11/05/2020	N		
13/05/2020	N		
18/05/2020	N		
27/05/2020	N		

03/06/2020	N		
10/06/2020	N		
17/06/2020	N		
24/06/2020	N		
01/07/2020	N		
08/07/2020	N	Update (3 July 2020) on susceptibility and transmission of SARS-CoV-2 by children and adolescents	Russell Viner, Roz Eggo
15/07/2020	N		
22/07/2020	N		
29/07/2020	Y	Spatial patterns in Facebook movement data in the UK: implications for local movement restrictions	Hamish Gibbs, Yang Liu, Adam Kucharski, Rosalind Eggo & the CMMID COVID-19 working group
05/08/2020	Y		
12/08/2020	Y	Strategies to reduce the risk of SARS-CoV-2 re-introduction from international travellers	Samuel Clifford, Billy J. Quilty, Timothy W. Russell, Yang Liu, Yung-Wai Desmond Chan, Carl A. B. Pearson, Rosalind M. Eggo, Akira Endo, CMMID COVID-19 Working Group, Stefan Flasche, W. John Edmunds
19/08/2020	Y		
26/08/2020	Y	Brief Review of ethnicity, household characteristics, and transmission: existing evidence	Rohini Mathur, Rosalind Eggo
02/09/2020	Y		
09/09/2020	N		
16/09/2020	Y	Recent dynamics of hospitalisations and age-stratified cases in France	Adam Kucharski, Nick Davies, Rosalind Eggo
23/09/2020	Y		
30/09/2020	Y		
07/10/2020	Y		
14/10/2020	Y		
21/10/2020	Y		
28/10/2020	Y	Changes in mobility in areas under local restrictions as observed in Facebook data, with comparison to Google mobility data (where available)	Hamish Gibbs, Adam Kucharski, Rosalind Eggo & LSHTM COVID-19 working group
04/11/2020	Y	Effect of local tiers and national restrictions on movement patterns	Hamish Gibbs, Rosalind Eggo & the CMMID COVID-19 working group
11/11/2020	Y		
18/11/2020	Y		
25/11/2020	Y		
02/12/2020	Y		
09/12/2020	Y		



16/12/2020	Y		
22/12/2020	Y		
06/01/2021	Y		
13/01/2021	Y		
20/01/2021	Y		
27/01/2021	Y		
03/02/2021	Y		
10/02/2021	Y		
17/02/2021	Y		
24/02/2021	Y		
03/03/2021	Y		
10/03/2021	Y		
17/03/2021	Y		
24/03/2021	Y		
31/03/2021	Y		
07/04/2021	Y		
14/04/2021	Y		
21/04/2021	Y		
28/04/2021	Y		
05/05/2021	Y		
12/05/2021	Y	Modelling importations and local transmission of B.1.617.2 in the UK	Adam Kucharski, Nicholas Davies, Rosalind Eggo, Sebastian Funk
19/05/2021	Y	Dynamics of B.1.617.2 in the UK from importations, traveller-linked and non-traveller-linked transmission	Adam Kucharski, Nicholas Davies, Rosalind Eggo, Sebastian Funk
26/05/2021	Y	Dynamics of B.1.617.2 in the UK from importations, traveller-linked and non-traveller-linked transmission	Adam Kucharski, Nicholas Davies, Rosalind Eggo, Sebastian Funk
02/06/2021	Y	Dynamics of B.1.617.2 in England NHS regions from importations, traveller-linked and non-traveller-linked transmission	Adam Kucharski, Nicholas Davies, Rosalind Eggo, Sebastian Funk
09/06/2021	Y	Dynamics of Delta variant in England NHS regions from importations, traveller-linked and non-traveller-linked transmission	Adam Kucharski, Nicholas Davies, Rosalind Eggo, Sebastian Funk
16/06/2021	Y		
23/06/2021	Y		
30/06/2021	N		
07/07/2021	Y		
14/07/2021	Y		
28/07/2021	Y		

11/08/2021	Y
25/08/2021	Y
08/09/2021	N
22/09/2021	N
06/10/2021	N
13/10/2021	N
03/11/2021	N
24/11/2021	N
01/12/2021	N
08/12/2021	N
15/12/2021	N
22/12/2021	N
30/12/2021	N
06/01/2022	N
12/01/2022	N
19/01/2022	N
26/01/2022	N
02/02/2022	N
16/02/2022	N
09/03/2022	Y
23/03/2022	Y

Ethnicity:

Attended 15 of 17 meetings. The table below with dates and attendances was provided to me by the GO-Science Secretariat. At meetings I would participate in discussion orally and by text in the chat box.

<u>Meeting</u>	<u>Attended</u>
Meeting 1 - 28.08.2020	N
Meeting 2 - 01.09.2020	Y
Meeting 3-15.09.2020	Y
Meeting 4- 22.09.2020	Y
Meeting 5- 29.09.2020	Y
Meeting 6- 13.10.2020	Y

Meeting 7-20.10.20	[No record found]
Meeting 8-3.11.20	Y
Meeting 9-10.11.20	Y
Meeting 10-17.11.20	y
Meeting 11- 8.12.20	y
Meeting 12 - 15.12.20	y
Meeting 13 - 5.1.21	y
Meeting 14 - 12.1.21	y
Meeting 15 - 26.1.21	y
Meeting 16 - 9.3.21	y
Meeting 17 - 23.3.21	y

#### Children's Task & Finish:

I did not receive information on meeting attendance from the Secretariat, so I have searched my email but the volume of my inbox means it is possibly incomplete.

Meetings: 23 April 2020, 7 July 2020, 14 Sept 2020, 27 Oct 2020, 15 Dec 2020.

At meetings I would participate in discussion orally and by text in the chat box.

The Task & Finish group requested a literature review which I completed with Prof R Viner and then was asked to update. This gave rise to the papers

- "Susceptibility and Transmission in Children - updates from the last few weeks - 29-Apr-20" which went to SAGE 30.
- "Update (3 July 2020) on susceptibility and transmission of SARS-CoV-2 by children and adolescents" which went to SAGE 46.

#### SAGE:

I attended 1 meeting, and presented at 1 meeting (as above). For SAGE 94 I co-led the writing of a paper with Prof J Gog (Cambridge), and had other named contributors given here:

<https://www.gov.uk/government/publications/international-vaccination-potential-impact-on-viral-evolution-and-uk-public-health-21-july-2021>

#### Other:

I also attended an in-person meeting on 1/3/20 which gave rise to the SPI-M-O papers "Adoption and impact of non-pharmaceutical interventions for COVID-19" and "Summary of Key Agreements Meeting of NHS Planning and Epidemiological Modellers, 01/03/2020." presented at SPI-M on 2/3/20.



I also attended a meeting on 5 Aug 2020 on Covid-19 in Higher Education and Further Education.

- **Your role in providing research, information and advice.**

I participated in meetings and collated scientific evidence when requested.

**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.**

I have added documents in the table above which I contributed to subgroups and to SAGE. All of the documents should be available centrally from Secretariats, but if you do not have access to any I will be able to provide.

**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.**

I have given interviews (television, radio, print) but did not comment on the work of the above-mentioned groups, and generally did not answer questions about policy decisions/choices and the UK's response to the Covid-19 pandemic. I have detailed television, podcast and print/online below, but not radio, as I think I did at most 2 or 3 radio interviews and cannot find a record of them (I recall doing a local BBC station from the Midlands and an evening call in on LBC).

Television:

I unfortunately did not record all dates, but in brief, I did interviews on Sky News (in person), Al Jazeera News twice (in person), Channel 4 News 4 times (3 in person, 1 remote), ITV News London once (in person), Channel 5 News once (in person, same date as ITV News London). I did not do in person activities after 13 March 2020. I was interviewed for Newsnight once in person (possibly Jan or Feb 2020) and did 1 remote interview (around July 2020). I participated in a documentary by Dr Hannah Fry in summer 2020.

I have managed to retrieve some excerpts from online archives.

25 Feb 2020

<https://www.channel4.com/news/so-far-in-uk-cases-weve-seen-have-been-brought-in-from-outer-places-dr-rosalind-eggo-on-coronavirus>

10 Mar 2020

<https://www.channel4.com/news/deciding-when-to-put-extra-measures-in-place-a-really-difficult-decision-dr-rosalind-eggo-on-coronavirus>

22 Nov 2020

<https://www.channel4.com/news/despite-positive-signs-its-too-early-to-relax-restrictions-says-infectious-disease-modeller>

Podcast:

24 Jan 2020

<https://www.theguardian.com/science/audio/2020/jan/24/the-wuhan-outbreak-science-weekly-podcast>

Print/online:

This list may unfortunately not be exhaustive, but I have found the following links. The articles were usually interviewing a range of scientists.

7 Jan 2020

<https://www.newscientist.com/article/2229196-doctors-scramble-to-identify-mysterious-illness-emerging-in-china/>

21 Jan 2020

<https://www.newscientist.com/article/2230724-sixth-person-dies-as-wuhan-coronavirus-spreads-between-people/>

27 April 2020 <https://www.nature.com/articles/d41586-020-01248-1>

5 Aug 2020 <https://www.nature.com/articles/d41586-020-02278-5>

22 May 2020

<https://www.theguardian.com/science/2020/may/22/children-covid-19-adults-data-coronaviruses>

11 March 2020 <https://www.bbc.co.uk/news/av/health-51230386>

4 March 2020

<https://www.npr.org/sections/health-shots/2020/03/04/811146915/how-computer-modeling-of-covid-19s-spread-could-help-fight-the-virus>

20 June 2020

<https://www.npr.org/sections/goatsandsoda/2020/06/20/880983822/coronavirus-mystery-are-kids-less-likely-to-catch-it-than-adults-are>

3 April 2021 <https://www.nytimes.com/2021/04/03/health/coronavirus-variants-vaccines.html>

21 Jan 2021 <https://www.wired.co.uk/article/covid-19-pandemic-over>

- 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;**

I can only give views on SPI-M-O as it is the field I work in, but membership was broad in institutions represented and there were people specialised in different methods and techniques.

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

I did not have visibility on this.

**c. The resources and support that were available;**

The Secretariats were outstanding.

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

Recommendations were evidence-based and always included confidence statements.

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

I did not have visibility on this.

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

I do not know about structures and policies.

**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.**

I do not have recommendations relating to the work of the above-mentioned groups.

One recommendation (personal view only) is to decrease friction for data sharing of NHS data without compromising data security, for example following recommendations in the Goldacre report.

**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.**

I have the manuscripts detailed above as well as some emails relating to them - no emails were deleted but not all communication was by email. I do not generally take meeting notes so do not have many hardcopy notes from work or subgroup meetings.