UK COVID-19 Inquiry: Module 2 - Rule 9 Request to Dr Rohini Mathur - Reference: M2/SAGE/01/RM

Please provide the following information:
1. A brief overview of your qualifications, career history, professional expertise and major publications.

Qualifications:
2002-2006 BSc Health Studies and Gerontology, University of Waterloo, Canada
2006-2007 MSc Reproductive and Sexual Health, LSHTM, UK
2011-2014 PhD Epidemiology, LSHTM, UK

Career History
Oct 2022 – present Professor and Chair of Health Data Science, QMUL, UK
2021-2022 Associate Professor, LSHTM, UK
2017-2021 Assistant Professor, LSHTM, UK
2014-2017 Research Fellow, LSHTM, UK

Professional Expertise
I am an epidemiologist focused on the identifying ethnic and social inequalities in chronic and infectious disease management and outcomes and the solutions necessary to address them. I have developed methods for optimizing observational approaches to studying ethnic inequalities which have been applied across a range of clinical areas and large-scale real-world datasets.

Major Publications
1. R Mathur, CT Rentsch, C Morton, WJ Hulme, A Schultze, B MacKenna, RM Eggo, K Bhaskaran, AYS Wong, EJ Williamson, H Forbes, K Wing, HI McDonald, C Bates, S Bacon, AJ Walker, D Evans, P Inglesby, A Mehrkar, HJ Curtis, NJ DeVito, R Croker, H Drysdale, J Cockburn, J Parry, F Hester, S Harper, IJ Douglas, L Tomlinson, S Evans, R Grieve, D Harrison, K Rowan, K Khunti, N Chaturvedi, L Smeeth, B Goldacre. "Ethnic differences in COVID-19 infection, hospitalisation, and mortality: an OpenSAFELY analysis of 17 million adults in England", Lancet, April 2021 https://www.thelancet.com/article/S0140-6736(21)00634-6/fulltext

2. K Mansfield*, R Mathur*, J Tazare*, A Henderson*, A Mullick* et al. Indirect acute effects of the COVID-19 pandemic on physical and mental health in the UK: a population-based study, Lancet Digital Health, Feb 2021 *Joint first author* https://www.thelancet.com/journals/landig/article/PIIS2589-7500(21)00017-0/fulltext

3. Mathur, R., Farmer, R., Eastwood S., Chaturvedi, N., Douglas, I., Smeeth, L. "Ethnic differences in initiation and intensification of antidiabetic therapy and therapeutic inertia in adults with type 2 diabetes: A cohort study in the UK Clinical Practice Research Datalink", PLOS Medicine, April 2020 https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7228040/

4. Mathur R, Hull S, Hodgson S, Finer S. Characterisation of type 2 diabetes subgroups and their association with ethnicity and clinical outcomes: a UK real-world data study using the East London Database. British Journal of General Practice, February 2022 https://bjgp.org/content/72/719/e421

5. Farmer, R*. Mathur, R*. Bhaskaran, K. Eastwood, S. Chaturvedi, N. Smeeth, L. "Promises and pitfalls of E-Health records analysis", *Joint first authorship", Diabetologia Dec 2017 https://pubmed.ncbi.nlm.nih.gov/29247363/

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.

SAGE Ethnicity Sub-group – September 2020 – May 2021

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 invited to join the SAGE ethnicity subgroup on behalf of Ben Goldacre. The first meeting I attended was in September 2020.

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

I attended 13 meetings. My role included conducting and presenting analyses, providing feedback for analyses conducted by other group members, authoring reports, and identifying priorities for next steps.

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

I conducted statistical analyses for the ethnicity sub-group using data from the ONS and the OpenSAFELY platform to examine ethic differences in COVID-19 infection and outcomes and associations with household size. These analyses were incorporated into presentations and written reports for SPI-M and the main SAGE committee.

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.

1. Mathur R, Bear, L., Kamal, A., Robertson, E., Platt, L., Hippisley-Cox J., Khunti, K., Uddin, N., Eggo, R., Oni, T., Nafilyan, V., Katikireddi, V. "Housing, household transmission and ethnicity", Presented at SAGE November 26th, 2020
   https://www.gov.uk/government/publications/housing-household-transmission-and-ethnicity-26-november-2020

2. Lal S, Katikireddi V, **Mathur R,** Khunti K "Drivers of the higher COVID-19 incidence, morbidity and mortality among minority ethnic groups" Presented at SAGE September 23rd, 2020
   https://www.gov.uk/government/publications/drivers-of-the-higher-covid-19-incidence-morbidity-and-mortality-among-minority-ethnic-groups-23-september-2020

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.

Articles:

1. Mathur, R., Bear, L., Khunti, K., Eggo, R. "COVID-19 and ethnic minorities in the UK: a need for urgent action", Invited Comment, Lancet, November 2020

2. Mathur, R. "Electronic health records and COVID-19: what the data tells us about inequalities", Invited Comment, Royal College of Physicians Magazine, September 2020

3. R Mathur, CT Rentsch, C Morton, WJ Hulme, A Schultze, B MacKenna, RM Eggo, K Bhaskaran, AYS Wong, EJ Williamson, H Forbes, K Wing, HI McDonald, C Bates, S Bacon, AJ Walker, D Evans, P Inglesby, A Mehrkar, HJ Curtis, NJ DeVito, R Croker, H Drysdale, J Cockburn, J Parry, F Hester, S Harper, IJ Douglas, L Tomlinson, S Evans, R Grieve, D Harrison, K Rowan, K Khunti, N Chaturvedi, L Smeeth, B Goldacre. "Ethnic differences in COVID-19 infection, hospitalisation, and mortality: an OpenSAFELY analysis of 17 million adults in England", Lancet, April 2021

4. V Nafilyan, N Islam, D Ayoubkhani, C Gilles, V Katikireddi, R Mathur, A Summerfield, K Tingay, M Asaria, A John, P Goldblatt, A Banerjee, M Glickman, K Khunti. "Ethnicity, Household Composition and

COVID-19 Mortality: A National Linked Data Study", Journal of the Royal Society of Medicine, Mar 2021

5. K Mansfield*, R Mathur*, J Tazare*, A Henderson*, A Mullick* et al. Indirect acute effects of the COVID-19 pandemic on physical and mental health in the UK: a population-based study, Lancet Digital Health, Feb 2021 *Joint first author*

6. Williamson, E.; Walker, AJ.; Bhaskaran K.; Bacon, S., Bates, C.; Morton,CE.; Curtis H.; Merkhar, A.; Evans, D.; Inglesby, P.; Cockburn, J.; McDonald, HI;, MacKenna, B.; Tomlinson, L.; Douglas, J.; Rentsch, CT.; Mathur, R.; Wong, A.; Grieve, R.; Harrison, D.; Forbes, H.; Schultze, A.; Croker, R.; Parry, J.; Hester, F.; Harper, S.; Perera, R.; Evans, S.; Smeeth, L.; Goldacre, B.;OpenSAFELY: factors associated with COVID-19-related hospital death in the linked electronic health records of 17 million adult NHS patients, Nature, July 2020

7. Aldridge, R., Lewer, D., Katikreddi, S.V., Mathur, R., Pathak, N., Burns, R., Fragaszy, E., Johnson, A.M., Devakumar, D., Abubakar I., Hayward, A. "Black, Asian, and Minority ethnic groups in England are at increased risk of death from COVID-19: indirect standardisation of NHS mortality data", Wellcome Open Research, April 2020

Interviews:
- BBC News 22nd October 2021 https://youtu.be/lpsYF-3yt_Y
- Sky News May 1st 2021 https://youtu.be/PtmF8xeRl00
- Podcast 'Lancet Voice' April 30th 2021 (Season 2 episode 10) https://www.thelancet.com/the-lancet-voice/2021

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;**
      The SAGE Ethnicity subgroup included a very diverse range of expertise and experts in terms of geography, sector (academia, public sector, community organisations), subject area and methodological approaches.

b. The way in which the groups were commissioned to work on the relevant issues;
The work commissioned for the Ethnicity subgroup was communicated clearly and focused on topics which were timely and relevant and within our expertise to address.

   b. **The resources and support that were available;**
The support from GO Science was excellent- people went out of their way to support us, make sure that things happened in a co-ordinated way and happened on schedule, which was often tight.

   c. **The advice given and/or recommendations that were made;**
The advice and recommendations stemming from the work of the Ethnicity subgroup were appropriate and reflected the evidence as we had presented it.

   d. **The extent to which the groups worked effectively together;**
In my experience of working with the Ethnicity Subgroup and SPI-M, groups worked well together and were respectful and collaborative on topics which required joint efforts.

f. The extent to which applicable structures and policies were utilised and/or complied with and their effectiveness.
From my experience the structures and policies were well adhered to and respected. I cannot comment on whether or not they were effective.

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.

The key lessons learned from the UK's response to the pandemic was how quickly and effectively individuals and groups can come together to produce robust evidence and rapidly in response to time pressure. All of the people I worked with were collegial, respectful, and united in pursuit of a common goal. The research and collaboration undertaken during the pandemic greatly advanced the way data science is conducted in terms of linking datasets, bringing together a wide range of expertise and disciplines, and collaborative and transparent working practices.

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.

Meeting minutes, reports presented to SAGE