

**Questionnaire response from Prof. S Vittal Katikireddi, University of Glasgow**

15<sup>th</sup> September 2022

**UK COVID-19 Inquiry: Module 2 - Rule 9 Request to Professor Vittal Katikireddi - Reference: M2/SAGE/01/VK**

I have provided the requested information in my point-by-point response below, with your questions highlighted in bold.

**Please provide the following information:**

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

Current employment:

- Professor of Public Health & Health Inequalities, University of Glasgow
- Honorary Consultant in Public Health, Public Health Scotland

Qualifications

- Fellowship of the Faculty of Public Health (FFPH), 2015
- PhD. The relationship between evidence and public health policy, University of Glasgow, 2013
- Postgraduate Certificate in Academic Practice (PGCAP), University of Glasgow, 2012
- MSc – Public Health Research, University of Edinburgh, 2009
- Membership of the Royal College of Physicians (MRCP), 2008
- MB ChB, University of Edinburgh, 2004
- BSc (Hons), Medical Sciences – Genetics, University of Edinburgh, 2001

Employment history

- NHS Research Scotland Senior Clinical Fellow, MRC/CSO Social and Public Health Sciences Unit (SPHSU), University of Glasgow (Jan 2016 onwards).
- SCREDS Clinical Lecturer, MRC/CSO Social and Public Health Sciences Unit (SPHSU), University of Glasgow (Mar 2014 – Dec 2015).
- CSO-funded Clinical Research Fellowship, MRC/CSO Social and Public Health Sciences Unit (Jul 2010 – Jul 2013).
- Public Health Specialty Registrar, Lothian Health Board (Aug 2008 – Dec 2015)
- Acute Care Common Stem (ACCS – Intensive Care Medicine/Anaesthetics): Specialty Trainee, Royal Preston Hospital, Preston (Aug 2007 – Aug 2008).
- Senior House Officer posts: Care of the elderly/Stroke medicine, St. George's Hospital, London (Feb 2007 – Aug 2007); Critical care rotation, Queens Medical Centre, Nottingham (Feb 2006 – Feb 2007); Emergency Medicine, Senior House Officer, Leeds General Infirmary (Aug 2005 – Feb 2006).
- Pre-Registration House Officer: Western General Hospital, Edinburgh (Aug 2004 – Aug 2005).

Selected publications

*From 224 total; 47,801 citations; h-index 63; i-10 index 149 (google scholar; 7/5/2022).*

1. Katikireddi SV, Cerqueira-Silva T, Vasileiou E, et al. Two-dose ChAdOx1 nCoV-19 vaccine protection against COVID-19 hospital admissions and deaths over time: a retrospective, population-based cohort study in Scotland and Brazil. *The Lancet* 2022; 399(10319): 25-35.

2. Cerqueira-Silva T, Katikireddi SV, de Araujo Oliveira V, et al. Vaccine effectiveness of heterologous CoronaVac plus BNT162b2 in Brazil. *Nat Med* 2022, 28: 838-843.
3. Simpson CR, Shi T, Vasileiou E, Katikireddi SV, et al. First-dose ChAdOx1 and BNT162b2 COVID-19 vaccines and thrombocytopenic, thromboembolic and hemorrhagic events in Scotland. *Nat Med* 2021, 27: 1290-7.
4. Patone M, Handunnetthi L, Saatci D, Pan J, Katikireddi SV, et al. Neurological complications after first dose of COVID-19 vaccines and SARS-CoV-2 infection. *Nat Med* 2021; 27: 2144–53.
5. Shimonovich M, Pearce A, Thomson H, Keyes K, Katikireddi SV. Assessing causality in epidemiology: revisiting Bradford Hill to incorporate developments in causal thinking. *Eur J Epidemiol* 2021, 36(9): 873-87.
6. Katikireddi SV, Lal S, Carrol ED, et al. Unequal impact of the COVID-19 crisis on minority ethnic groups: a framework for understanding and addressing inequalities. *J Epidemiol Community Health* 2021: jech-2020-216061.
7. Niedzwiedz CL, Green MJ, Benzeval M, et al. Mental health and health behaviours before and during the initial phase of the COVID-19 lockdown: longitudinal analyses of the UK Household Longitudinal Study. *J Epidemiol Community Health* 2020: jech-2020-215060.
8. Douglas M, Katikireddi SV, Taulbut M, McKee M, McCartney G. Mitigating the wider health effects of covid-19 pandemic response. *BMJ* 2020; 369: m1557.
9. Niedzwiedz CL, O'Donnell CA, Jani BD [...] Katikireddi SV. Ethnic and socioeconomic differences in SARS-CoV-2 infection: prospective cohort study using UK Biobank. *BMC Medicine* 2020; 18(1): 160.
10. Katikireddi SV, Niedzwiedz CL, Dundas R, et al. Inequalities in all-cause and cause-specific mortality across the life course by wealth and income in Sweden: a register-based cohort study. *Int J Epidemiol* 2020; 49(3): 917-25.
11. Campbell M, Katikireddi SV, Hoffmann T, Armstrong R, Waters E, Craig P. TIDieR-PHP: a reporting guideline for population health and policy interventions. *BMJ* 2018, 361, k1079.
12. Katikireddi SV, Whitley E, Lewsey J, Gray L, Leyland AH. Socioeconomic status as an effect modifier of alcohol consumption and harm: an analysis of linked cohort data. *Lancet Public Health* 2017, 2(6): e267-e276.

**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 main group: Attendee of full meeting on 4<sup>th</sup> June 2020 and attended part of the meeting (related to ethnic inequalities) on 17<sup>th</sup> December 2020.

SAGE ethnicity subgroup: Regular attendees of meetings of this subgroup throughout (although I was unable to attend the last one due to a medical appointment). The first meeting I attended was on 21<sup>st</sup> August 2020 and the last meeting was 9<sup>th</sup> March 2021.

In addition, I was co-chair of the Scottish Government's Expert Reference Group on Ethnicity and COVID-19 and was an occasional member of the Cabinet Office's International Best Practice Advisory Group. I have not provided further details of these groups as they were not part of SAGE, but can do so if that is required.

**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 first contacted in May about research I led on ethnic inequalities in COVID-19. I had a virtual meeting with the Sir Patrick Vallance and Chris Whitty on 2<sup>nd</sup> June 2020 to give them a verbal briefing of our research. Following this, I was invited to attend the SAGE meeting later that week. I was then recontacted by e-mail in August 2020 and asked if I would take part in an ethnicity subgroup for SAGE which I agreed to do.

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

As noted above, I only attended two meetings of the main SAGE group. I attended nine meetings of the subgroup, as well as attending informal meetings to discuss and coordinate writing of documents to support the activity of the subgroup. My role was as an ordinary member and therefore included describing my understanding of the relevant evidence base, providing constructive feedback on discussions and volunteering to help draft and edit documents submitted to SAGE from the Ethnicity subgroup.

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

As a public health doctor who specialises in health inequalities and social epidemiology, my role was largely to provide a summary of the relevant evidence base on these topics, as well as helping conduct bespoke analyses to support SAGE's work. My most notable contributions were leading on the creation of a framework to understand key drivers of ethnic inequalities in COVID-19 and leading an analysis demonstrating ethnic inequalities in vaccine intentions (based on the UK Household Longitudinal Study, also known as Understanding Society). In addition, I contributed to the writing of relevant papers which summarised relevant evidence about actions which might help mitigate ethnic inequalities in COVID-19 outcomes, largely from a social determinants of health perspective.

**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 led the drafting of a framework to understand the drivers of ethnic inequalities in COVID-19, available here:

<https://www.gov.uk/government/publications/drivers-of-the-higher-covid-19-incidence-morbidity-and-mortality-among-minority-ethnic-groups-23-september-2020>

I arranged for one of my research team to conduct new analyses of vaccine hesitancy using the UK Household Longitudinal Study (also known as Understanding Society) and drafted the text included in a paper for SAGE. This comprises section 3 of this document, and I also helped provide some feedback on other sections of the document:

[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/952716/s0979-factors-influencing-vaccine-uptake-minority-ethnic-groups.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/952716/s0979-factors-influencing-vaccine-uptake-minority-ethnic-groups.pdf)

I also helped support the drafting of the following paper on housing and household transmission, but I did not play a leading role for this paper:

[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/943178/S0923\\_housing\\_household\\_transmission\\_and\\_ethnicity.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/943178/S0923_housing_household_transmission_and_ethnicity.pdf)

**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 written several scientific articles related to the COVID-19 pandemic. I have limited the list to those which relate to my SAGE-related activity. However, a full list of my publications is available on my University webpage: <https://www.gla.ac.uk/schools/healthwellbeing/staff/vittalkatikireddi/>

Niedzwiedz, C. L. et al. (2020) Ethnic and socioeconomic differences in SARS-CoV-2 infection: prospective cohort study using UK Biobank. *BMC Medicine*, 18, 160. (doi: 10.1186/s12916-020-01640-8) (PMID:32466757) (PMCID:PMC7255908)

Douglas, M., Katikireddi, V. , Taulbut, M., McKee, M. and McCartney, G. (2020) Mitigating the wider health effects of covid-19 pandemic response. *British Medical Journal*, 369, m1557. (doi: 10.1136/bmj.m1557) (PMID:32341002) (PMCID:PMC7184317)

Harrison, E. M. et al. (2020) Ethnicity and outcomes from COVID-19: the ISARIC CCP-UK prospective observational cohort study of hospitalised patients. *SSRN Electronic Journal*, (doi: 10.2139/ssrn.3618215) (Submitted)

Aldridge, R. W., Lewer, D., Katikireddi, S. V. , Mathur, R., Pathak, N., Burns, R. and Fragaszy, E. B. (2020) 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*, 5, 88. (doi: 10.12688/wellcomeopenres.15922.2) (PMID:32613083) (PMCID:PMC7317462)

Hastie, C. E. et al. (2020) Vitamin D concentrations and COVID-19 infection in UK Biobank. *Diabetes and Metabolic Syndrome: Clinical Research and Reviews*, 14(4), pp. 561-565. (doi: 10.1016/j.dsx.2020.04.050) (PMID:32413819) (PMCID:PMC7204679)

Sattar, N. et al. (2020) BMI and future risk for COVID-19 infection and death across sex, age and ethnicity: preliminary findings from UK biobank. *Diabetes and Metabolic Syndrome: Clinical Research and Reviews*, 14(5), pp. 1149-1151. (doi: 10.1016/j.dsx.2020.06.060) (PMID:32668401) (PMCID:PMC7326434)

Niedzwiedz, C. L. et al. (2021) Mental health and health behaviours before and during the initial phase of the COVID-19 lockdown: longitudinal analyses of the UK Household Longitudinal Study. *Journal of Epidemiology and*



*Community Health*, 75(3), pp. 224-231. (doi: 10.1136/jech-2020-215060) (PMID:32978210) (PMCID:PMC7892383)

Katikireddi, V. , Hainey, K. and Beale, S. (2021) The impact of COVID-19 on different population subgroups: ethnic, gender and age-related disadvantage. *Journal of the Royal College of Physicians of Edinburgh*, 51(S1), S40-S46. (doi: 10.4997/JRCPE.2021.240) (PMID:34185037)

Nafilyan, V. et al. (2021) Ethnicity, household composition and COVID-19 mortality: a national linked data study. *Journal of the Royal Society of Medicine*, 114(4), pp. 182-211. (doi: 10.1177/0141076821999973) (PMID:33759630) (PMCID:PMC7994923)

Robertson, E., Reeve, K. S., Niedzwiedz, C. L. , Moore, J., Blake, M., Green, M. , Katikireddi, S. V. and Benzeval, M. J. (2021) Predictors of COVID-19 vaccine hesitancy in the UK household longitudinal study. *Brain, Behavior, and Immunity*, 94, pp. 41-50. (doi: 10.1016/j.bbi.2021.03.008) (PMID:33713824) (PMCID:PMC7946541)

Mutambudzi, M. et al. (2021) Occupation and risk of severe COVID-19: prospective cohort study of 120 075 UK Biobank participants. *Occupational and Environmental Medicine*, 78(5), pp. 307-314. (doi: 10.1136/oemed-2020-106731) (PMID:33298533)

Katikireddi, S. V. , Lal, S., Carrol, E. D., Niedzwiedz, C. L. , Khunti, K., Dundas, R. , Diderichsen, F. and Barr, B. (2021) Unequal impact of the COVID-19 crisis on minority ethnic groups: a framework for understanding and addressing inequalities. *Journal of Epidemiology and Community Health*, 75(10), pp. 970-974. (doi: 10.1136/jech-2020-216061) (PMID:33883198)

I have not spoken to the media about any SAGE-related work that I have been involved in. However, I did give an interview to Newsnight (I think it was broadcast on 25<sup>th</sup> February 2021) as part of a broader package discussing health inequalities in relation to COVID-19 outcomes. I also spoke to Amelia Hill at The Guardian about the potential consequences of the pandemic on younger generations – reported here:

<https://www.theguardian.com/uk-news/2020/oct/20/generation-z-on-covid-i-was-living-in-a-family-but-feeling-really-alone-pandemic>

**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;**

As someone who was not a core member of the main SAGE group, I do not feel well able to comment on their composition and their expertise. In relation to the ethnicity subgroup, I feel that the group generally included relevant expertise. In terms of presenting evidence, I think the subgroup generally presented relevant evidence in a fair and timely way.

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

As far as I could tell, this seemed appropriate. One thing that is worth noting is that my experience of the subgroup (and my more limited experience of the main group) is that the focus was on conveying the evidence in a practical manner, rather than to determine policy.

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

In general, this seemed appropriate based on my experience although work was often required at pace.

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

My personal experience was that the advice given was often appropriate, but it was not always clear if it was acted upon. My impression more broadly is that there were often delays in implementation of some actions that would have been more effective (and required for shorter periods of time) if implemented more quickly.

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

As far as I could tell, coordination seemed appropriate. I noticed a change in the way attendance at the main group worked over time, with me being able to attend and provide input (when I felt I had relevant expertise) during the whole meeting on the first occasion but only for a very specific section of the meeting on the second occasion. I found that my understanding of the overall process was better at the first meeting and I felt that the broader inclusion probably did help me understand how the groups interacted and I believe that including a broader range of perspectives in the main meetings probably did add value.

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

My impression is that they were but I do not feel that well placed to comment.

**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 think it is important that the role of SAGE is clearly understood. My experience was that we were careful to focus on trying to describe the available evidence (although noting that much was unknown).

**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 copies of the circulated material for the above meetings e.g. agendas and meeting papers. I would expect these to be the same as those held by the secretariat. In addition, I have some draft copies of documents which I contributed to writing. I think these drafts are generally quite similar to the final versions, but have bits missing (which were yet to be written) etc. I also have draft copies of the above listed research papers, but again I do not believe the drafts convey substantively different content.