Response to UK COVID-19 Public Enquiry request M2/SAGE/01/CXE

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

Please see my attached CV

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.

NERVTAG Appointed 22nd Nov 2019-Current

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 applied for the post in November 2019 following its advertisement and was interviewed by Peter Horby and Jonathan Van Tam on the 12th of November 2019.

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

My first NERVTAG meeting regarding the pandemic was on the 13th of January 2020, the key discussion at this time point was on the emergence of the Wuhan Novel Coronavirus, to perform a risk assessment, discuss travel advice, screening and case definitions.

The following table lists the NERVTAG meetings since 2020, including extraordinary meetings and non-COVID-19 meetings.

	2020 NERVTAG meetings 1 – 40: attendance	2021 NERVTAG meetings 41-63:attendance	2022 - NERVTAG meetings 64-65: attendance	2020 Birdtable meetings	Other Extraordinary meetings*	Non COVID-19 meetings 2020-2022
Cariad Evans	32	20	2	7	3	4

*The other extraordinary meetings took place on:

- 03/03/2020
- 26/04/2020
- 21/12/2020
- 23/12/2020
- 12/01/2021
- 19/01/2021
- 09/07/2021
- 25/11/2021

My contribution to NERVTAG is in the capacity of a Clinical Virologist working within an NHS

Laboratory and to give my opinion on the clinical concerns from a virological perspective, impact on hospital IPC, patient care and NHS testing/laboratory diagnostics. All contributions and comments or queries are recorded in the NERVTAG meeting minutes.

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

My role in NERVTAG has been very clearly defined to provide expert advice, based on scientific evidence and not to provide policy advice or personal opinion. I was involved in regularly reviewing NERVTAG papers written by colleagues for submission to SAGE, assimilating rapidly emerging global/UK/PHE surveillance data, reviewing all the current literature in the early stages of the pandemic and working with NERVTAG colleagues in compiling relevant information and evidence for new papers. In meetings I would question any comments or assumptions made by others, ensure a clinical virological perspective had been considered or included and I led a variety of papers for presentation at SAGE.

I presented 2 papers to CMOs office, providing a succinct summary of the evidence to date and answered any questions they may have had, to then inform policy decision making.

I was not a SAGE committee member and did not attend any meetings, my NERVTAG co-authors presented any relevant papers on my behalf.

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.

Below are the key documents that I was lead author or a co-author on for NERVTAG. There are many other papers written by NERVTAG, which we reviewed as part of the NERVTAG committee for our colleagues, to ensure robust quality and evidence base before SAGE presentation. All papers can be found hosted here nervtag - Search - GOV.UK (www.gov.uk)

13.4.20
NERVTAG paper: Duration of infectiousness following symptom onset in COVID, 13 April 2020 (publishing.service.gov.uk)

28.5.20
Microsoft Word - NERVTAG paper - viral dynamics of infectiousness 110620.docx (publishing.service.gov.uk)

31.07.20
Microsoft Word - NERVTAG paper for SAGE- Respiratory viral infections and interaction with SARS CoV2 – FC-26-04_Final.docx (publishing.service.gov.uk)

25.9.20
S0735_Update_on_immunity_to_SARS_CoV2.pdf (publishing.service.gov.uk)

23.10.20
S0790_NERVTAG_-_Is_there_evidence_for_genetic_change_in_SARS-CoV-2.pdf (publishing.service.gov.uk)

30.04.2021
S1211_NERVTAG_B.1.1.7_growth_rate.pdf (publishing.service.gov.uk)
22.10.21
S1396_NERVTAG_Respiratory_infections__their_interactions_with_SARS-_CoV 2_and_implications_for_winter_2021_2022__20_September_2021.pdf (publishing.service.gov.uk)

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 not given any interviews, nor written any articles in reference to my work for NERVTAG. I have kept out of any political or media attention during the pandemic and focused on my NHS clinical work and my role in NERVTAG.

I have been involved in clinical research during the pandemic and these papers and publications are available on my attached CV.

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 believe the initial committee of NERVTAG did compile of a considered diverse group of experts, who alongside invited guests from key agencies (NHSE/PHE/DHSC) worked well in the early stages of the pandemic to respond to the demands and review the evidence. However, as the pandemic evolved and the huge body of research grew, I felt we rapidly became quite a small group to handle such a wealth of data. At this time point additional NERVTAG members were co-opted which I think was a positive and necessary move. However, it was not clear how these individuals were identified and as a committee member we were informed of their addition but with no explanation of the rationale or due process involved. I think some transparency around this would have been helpful, or a committee discussion on who was felt to be an important scientific addition for consideration.

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

I feel NERVTAG seemed well commissioned/positioned to work on pertinent key research questions that SAGE or CMOs office raised and it was then our role to try and respond. I think we could have considered a more strategic approach to linking with other groups in the wider COVID community who evolved over time to share knowledge, prioritise research questions and avoid duplication.

b. The resources and support that were available;

As a clinician I believe it is important to be clear that our NHS role was our priority and we had no dedicated resource or time for our NERVTAG responsibilities. I did all my NERVTAG work out of hours in my spare time, as I was simultaneously running a clinical virology lab and responding to an unprecedented pandemic. I managed to fulfil this role to the best of my ability and there were no available Clinical Virologists to offer me additional support or capacity. There was a one-off offer of some financial renumeration for my hospital, which at a later date was used for some junior staff salary support but wasn't of personal benefit to myself. Therefore, in my opinion, this is a huge challenge to any clinician on these committees. I believe the chair was quite cognisant of this and careful not to place too much pressure or papers on me, but it was hard to avoid it in the early days. Later we had support with a Public Health Registrar which made a huge difference as they led the paper writing under the supervision of the Chair and we provided review and expert opinion.

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

I believe NERVTAG did succeed in its aims of providing independent scientific advice, that was balanced and reflected the uncertainty of much of the evidence at the given time. The continued challenge was the ever emerging data and information which potentially influenced advice or made earlier assumptions/advice out of date rapidly. In the future using 'live' documents which could evolve and respond to new data/additions may help and documentation of the current

understanding at each time point helpful.

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

The subgroups of SAGE appeared to work independently, and it was not always clear if you only sat on one group like I did on NERVTAG, what the other groups were working on. This was likely necessary to some extent and this information was then amalgamated at SAGE. I believe it was more SAGEs responsibility to ensure the groups were focusing on correct workstreams and working effectively.

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

In my observation there were no real structures or policies for such a pandemic and therefore everything was being designed from scratch.

With regard to operational structures and policies for NERVTAG we adhered to SAGE paper structure guidance and weighting to present the scientific data. I believe there could have been more support with literature reviews and systematic approaches to scientific data assimilation, to ensure a standard approach in hindsight. I believe papers were also written in a format which suited each main author rather than a predefined structure, it could be helpful in the future to have some paper writing guidance and standards much like a journal publication to ensure consistency.

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 an important lesson for NERVTAG and its role in the pandemic response is to consider the sizeable demand that such a rapidly evolving situation places on the committee and for a significant duration. I think with this experience in mind early expansion of NERVTAG committee should be considered. I believe duplication of roles/positions maybe beneficial to provide resilience and support to members if they had joint responsibility for their role, plus a colleague who can cross cover key duties/decisions, resulting in individuals being able to provide greater input rather than having to spread themselves thinly. I do believe this process would have to have significant transparency and opportunity for others to apply via advert, like usual appointments, rather than co option. If going to advert is challenging due to processes required and time being limited, I think consideration could be made for a rapid pandemic appointment process to overcome this in the future. The addition of Public Health Registrars was hugely beneficial.

In addition, I believe an annual review and reflection of the committee's contributions and appraisal of its members may be helpful, so individuals can objectively review their contributions and position. Also, reflection on the committees ability to respond to the demand and access additional resource or connect to other emerging national bodies of expertise would be beneficial.

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 email communications, computer files of draft papers and written notes on meetings and subgroup discussions around the papers I led.

MBChB DTM&H MRCP ID (UK) FRCPath
Curriculum Vitae

DOB: PD
GMC
MDU
Email: PD
Research Gate PD
Twitter PD

Qualifications

2014 FRCPath Virology, Royal College of Pathologists, London
Speciality Certificate Exam for Infectious Diseases RCP (UK)
2012 Medical Doctorate, University of Sheffield
2006 MRCP (UK), Royal College of Physicians, London
2004 Diploma in Tropical Medicine and Health, London School of Tropical Medicine. **2001** MBChB, University of Sheffield

Employment History

January 2016 to Current **Virology Consultant**
Sheffield Teaching Hospital NHS Foundation Trust
October 2008 to October 2015 **Speciality Training in Infectious Diseases & Virology** Sheffield Teaching Hospital NHS Foundation Trust
October 2006 to 2008 **Clinical Research Fellow**
Sub-investigator Phase 1 Clinical Trial
University of Sheffield
February 2005 to August 2006 **Senior House officer**
GUM / Neurology / ID / Haematology
Sheffield Teaching Hospital NHS Foundation Trust
October 2004 to December 2004 **General Medicine at Mbarara Hospital, Uganda** July 2004 to October 2004 **Expedition Medic Blue Ventures, Madagascar** January 2004 to April 2004
Student at London School of Tropical Medicine & Hygiene
August 2002 to December 2003 **Senior House officer**
Cardiology/General Medicine/Renal
Sheffield Teaching Hospital NHS Foundation Trust
August 2001 - August 2002 **Pre-registration House Officer General Surgery/Urology/Diabetes/ID**

Roles and Responsibilities

- **Member of the National High Consequence Infectious Diseases Network and Deputy Lead for Sheffield (2018-present)**
- **Member of NERVTAG -Scientific Advisory Group on New and Emerging Respiratory Viruses (Dec 2019-present)**
- **Research Lead in Virology- working with ISARIC/CCP/COG-UK**
- **Member of UKHSA Working groups on PPE/face coverings and AGPs •**

Clinical Lead for Derbyshire Pathology and Influenza POCT

- **Chair of charity Sheffield Health Action Resource for Ethiopia (SHARE)- assisting in COVID response**
- **Currently a member of the Clinical Expert Group at STH for the COVID pandemic response**

Recent Publications

Correlating IgG Levels with Neutralising Antibody Levels to Indicate Clinical Protection in Healthcare Workers at Risk during a Measles Outbreak Siyuan Hu et alAugust 2022 Viruses 14(8):1716 DOI: 10.3390/v14081716

Altered subgenomic RNA abundance provides unique insight into SARS-CoV-2 B.1.1.7/Alpha variant infections Matthew D. Parker et al July 2022Communications Biology 5(1) Follow journal DOI: 10.1038/s42003-022-03565-9

Characterising within-hospitalSARS-CoV-2 transmission events using epidemiological and viral genomic data across two pandemic waves Benjamin B. Lindsey et al February 2022 Nature Communications 13(1):671 DOI: 10.1038/s41467-022- 28291-y

Universal Use of Surgical Masks is Tolerated and Prevents Respiratory Viral Infection in Stem Cell Transplant Recipients David G Partridge et al September 2021 The Journal of hospital infection DOI: 10.1016/j.jhin.2021.09.005

Long-term survivors following autologous haematopoetic stem cell transplantation have significant defects in their humoral immunity against vaccine preventable diseases, years on from transplant Hayley Colton et al August 2021Vaccine 39(34):4778-4783 DOI: 10.1016/j.vaccine.2021.07.022

Diagnosis of SARS-CoV-2 Infection with LamPORE, a High-Throughput Platform Combining Loop-Mediated Isothermal Amplification and Nanopore Sequencing Leon Peto et al March 2021Journal of Clin Microbiology 59(6)DOI: 10.1128/JCM.03271-20

Altered Subgenomic RNA Expression in SARS-CoV-2 B.1.1.7 Infections March 2021 Matthew D Parker DOI: 10.1101/2021.03.02.433156 LicenseCC BY-NC-ND 4.0

Editorial: Asymptomatic SARS-CoV-2 infection: the tip or the iceberg?Alexander J Keeley,1,2 Cariad M Evans,1,2 Thushan de Silva1,2 Thorax June 2020

Roll out of SARS-CoV-2 testing for healthcare workers at a large NHS Foundation trust in the United Kingdom, March 2020•Alexander J Keeley et al *Eurosurveillance 09 April 2020*

Spike mutation pipeline reveals the emergence of a more transmissible form of SARS CoV-2 –Korber B, et al July 2020Cell

Point of care tests for influenza and other respiratory viruses. Cariad Evans and Mohammad Raza. Contributed our experience as an 'early adopter' to the *PHE guidance November 2018*

A unified personal protective equipment ensemble for clinical response to possible high consequence infectious diseases: A consensus document on behalf of the HCID programme Bozena Poller et al, Cariad Evans *Journal of Infection, August, 2018*

'VIOLET' – a fluorescence-based simulation exercise for training healthcare workers in the use of personal protective equipment Bozena Poller, et al Cariad Evans *Journal of Hospital Infection, February, 2018*