Personal Data

3rd Nov 2023

Dear Baroness Hallett and team,

Many thanks for providing the opportunity to provide information that may be of use to the UK Covid-19 Public Inquiry.

Following publication of document INQ000280651 – Witness statement of Professor Carl Heneghan, dated 24th Sept 2023 [https://covid19.public-inquiry.uk/documents/inq000280651-witness-statement-of-professor-carl-heneghan-dated-24-09-2023/] – I would like to highlight evidence demonstrating that Professor Heneghan may be in breach of Section 35(2) of the Inquiries Act 2005.

1. **Professor Heneghan's evidence to the UK Covid-19 Public Inquiry: SARS-CoV-2 transmission is stated to be via hands, contaminated surfaces and large respiratory droplets.**

Paragraphs 52 and 53 of Professor Heneghan's statement of truth, dated 23rd Sept 2023, concern SARS-CoV-2 transmission, as shown in the figures, below.

Transmission

52. Understanding transmission is crucial to determining when and how to intervene to reduce the spread of infection. A 2018 review predating the SARS CoV-2 pandemic indicated that the evidence of the mode of transmission of the primary respiratory viruses was mixed (droplets, contact, fomites, aerosol) and probably depended on the situation at the time (Exhibit CH/38 [INQ000268297]). Our work on transmission is unique as it represents the largest body of evidence on the transmission of a single agent (SARs-CoV-2) in a single place, following protocols which developed over time as our understanding did. We also proposed a hierarchical framework based on our experience of systematically reviewing and synthesising over 400 primary studies for an evidence-based update of the modes of transmission for SARS-CoV-2 (Exhibit CH/03 [INQ000268226]). These studies revealed significant methodological shortcomings with a lack of standardisation in the design, conduct, testing and reporting of SARS-CoV-2 transmission. While this situation is in part excusable at the outset of a pandemic, evidence rules of proof for assessing the

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transmission of this virus are needed for this and future pandemics of viral respiratory pathogens. Evidence published on 6 April 2023 highlights that SARS-CoV-2 RNA was found on primary cases' and contacts' hands and on frequently touched household surfaces associated with the transmission, identifying these as potential vectors for the spread in households (Exhibit CH/39 [INQ000268298].

53. Further adding to this was a hospital-based study that sought to determine the detection and quantification of infectious severe acute respiratory coronavirus 2 in diverse clinical and environmental samples (Exhibit CH/40 [INQ000268299]. The findings offered compelling evidence that large respiratory droplets and contact (direct and indirect, i.e., fomites) are important modes of SARS-CoV-2 transmission.

Notably, Professor Heneghan's evidence herein describes the importance of he and his colleagues' work [presumably a reference to Professor Heneghan's co-authors of the World Health Organisation sponsored Living Systematic Reviews on the modes of transmission of SARS-CoV-2] *'systematically reviewing and synthesising over 400 primary studies for an evidence-based update of the modes of transmission of SARS-CoV-2 (Exhibit CH/03 [INQ000268226]).'*

Regarding modes of transmission, Professor Heneghan provided the Inquiry with links to two studies, one of which supports the hypothesis that contaminated *'hands and…frequently touched household surfaces,'* may facilitate SARS-CoV-2 transmission [paragraph 52], while the other is stated as offering *'compelling evidence that large respiratory droplets and contact (direct and indirect, i.e., fomites) are important modes of SARs-CoV-2 transmission'* [paragraph 53].

2. **Professor Heneghan's co-authored manuscript: *SARS-CoV-2 and the role of close contact in transmission: a systematic review'*, 6th July 2022: SARS-CoV-2 transmission is stated to be *'primarily aerosols and respiratory droplets and to a lesser extent through fomites'* [https://f1000research.com/articles/10-280].**

Authors: Igho J. Onakpoya, Carl J. Heneghan, Elizabeth A. Spencer, Jon Brassey, Annette Plüddemann, David H. Evans, John M. Conly, and Tom Jefferson.

Professor Heneghan's stated roles: Conceptualization, Data Curation, Formal Analysis, Funding Acquisition, Investigation, Methodology, Supervision, Writing – Original Draft Preparation, Writing – Review & Editing

Key statement on SARS-CoV-2 transmission from manuscript introduction: '*Current evidence from epidemiologic and virologic studies suggest SARS-CoV-2 is primarily transmitted via exposure to infectious respiratory fluids such as fine aerosols and respiratory droplets, and to a lesser extent through fomites; however, the relative contributions of the different modes of transmission is not completely understood*[3–5]*.'*

In summary, I respectfully suggest that the evidence above indicates that in his witness statement to the UK Covid-19 Inquiry, 24th Sept 2023, Professor Heneghan provided an importantly 'distorted' evidence base underlying the known routes of SARS-CoV-2 transmission – in particular, through failing to acknowledge the known importance of aerosol inhalation (i.e., the airborne route).

Additional inspection of the World Health Organisation-sponsored Living Systematic Reviews on SARS-CoV-2 modes of transmission, co-authored by Professor Heneghan, indicates further instances of distorting the evidence base underlying SARS-CoV-2 modes of transmission, resulting in the failure to affirm airborne transmission.

As the first peer reviewer to Professor Heneghan's manuscript *'SARS-CoV-2 and the role of airborne transmission: a systematic review'* [https://f1000research.com/articles/10-232/v3] and the first respondent providing comments to Professor Heneghan's manuscript *'SARS-CoV-2 and the role of close contact in transmission: a systematic review'* [https://f1000research.com/articles/10-280], I respectfully suggest that the evidence described below provides an important background to Professor Heneghan and colleagues' approach to evidence synthesis, which will hopefully be of interest to the Inquiry both in terms of recognising possible witness bias, and possibly identifying important lessons to be learned with respect to flaws in the creation and governance oversight of Infection Prevention and Control policy at the World Health Organisation.

In summary:

- In their systematic review into airborne transmission (version 1, 24th Mar 2021, v2, 6th Sept 2021 and v3, 19th Oct 2022) Professor Heneghan and colleagues state that there is insufficient evidence to support a definitive role for airborne transmission.
- However, in their systematic review into the role of 'close contact', a rejection at peer review, 7th Mar 2022, led Professor Heneghan and colleagues to acknowledge that SARS-CoV-2 was primarily transmitted as 'fine aerosols and respiratory droplets' (version 2, 6th July 2022).

Evidence from Professor Heneghan and colleagues' WHO-sponsored Living Systematic Reviews into the modes of SARS-CoV-2 transmission

Authors: Igho J. Onakpoya, Carl J. Heneghan, Elizabeth A. Spencer, Jon Brassey, Annette Plüddemann, David H. Evans, John M. Conly and Tom Jefferson

Author narrative 1 – SARS-CoV-2 transmission is NOT PROVEN to be airborne

Manuscript: *'SARS-CoV-2 and the role of airborne transmission: a systematic review'* [https://f1000research.com/articles/10-232/v3]

Publication dates: 24th Mar 2021, 6th Sept 2021 and 19th Oct 2022

Concluding statement from abstract (every version): *'SARS-CoV-2 RNA is detectable intermittently in the air in various settings. Standardized guidelines for conducting and reporting research on airborne transmission are needed. The lack of recoverable viral culture of SARS-CoV-2 from air samples prevents firm conclusions about the definitive role of airborne transmission in SARS-CoV-2.'*

Key statement from main manuscript [conclusion, every version]: *'The lack of definitive consistently recoverable viral culture samples of SARS-CoV-2 prevents firm conclusions to be drawn about the relative contribution of airborne transmission of this virus. Although airborne transmission of SARS-CoV-2 cannot be ruled out, particularly in certain situational settings, further research is required to investigate the plausibility of such transmission.'*

Author narrative 2 – SARS-CoV-2 transmission IS KNOWN to be airborne

Manuscript: *'SARS-CoV-2 and the role of close contact in transmission: a systematic review'* [https://f1000research.com/articles/10-280]

Publication dates: 9th Apr 2021, 6th Jul 2022 and 7thNov 2022

Key statement from manuscript introduction (v1, 9th Apr 2021): *'Current evidence from epidemiologic and virologic studies suggest SARS-CoV-2 is primarily transmitted via respiratory droplets and direct and indirect contact[2,3]. However, controversy still exists about how the virus is transmitted and the relative frequency of the modes of transmission and if these modes may be altered in specific settings[4,5].'*

Key segments of peer review response, 7th Mar 2022 [rejection on multiple grounds, Kevin Escandón, Division of Infectious Diseases and International Medicine and Angela K. Ulrich, Center for Infectious Disease Research and Policy, University of Minnesota, Minneapolis, MN, USA; Division of Environmental Health Sciences, School of Public Health, University of Minnesota, Minneapolis, MN, USA (my emphasis, in bold)]:

- 'First, this systematic review in its current version fails to provide an accurate and updated picture of the existing evidence. We reviewed this manuscript in February 2022, two years into the pandemic, and while SARS-CoV-2 transmission remains a topic of great relevance, the picture regarding the modes of transmission is much clearer now than one year ago due to numerous epidemiologic and lab-based studies. Given this evidence, **the WHO and the general scientific community agree that SARS-CoV-2 can be transmitted via droplet, short-range aerosol, long-range aerosol, and less frequently via fomites. This systematic review should be updated to reflect the most recent evidence.'**
- '*"Current evidence from epidemiologic and virologic studies suggest SARS-CoV-2 is primarily transmitted via respiratory droplets and direct and indirect contact".* This sentence is not properly supported by current data; the authors rather cited two WHO 2021 resources. **The authors must acknowledge airborne transmission – a route of transmission accepted by both WHO and CDC. Note that respiratory transmission of inhalable particles is the dominant mode of transmission, especially short-range.** Indirect droplet / contact / fomite transmission is estimated to be minor.'

Authors' responses to these points raised at peer review 1, 6th Jul 2022, respectively (my emphasis, in bold):

- *'The review was submitted in March last year at the start of the pandemic; however, it took a long time before undergoing peer review. We have now updated the review to reflect the most recent evidence focused on the transmission associated with close contact. We updated our searches up till 30/04/2022.'*
- *'We wish to thank the reviewer for this comment. We have updated the information and referenced the CDC and the WHO. The CDC statement suggests that exposure with infection occurs in 3 principal ways including inhalation of fine respiratory droplets, deposition of respiratory droplets and particles on exposed mucous membranes, splashes and sprays 'and touching mucous membranes with hands soiled by virus contained in respiratory fluids" (Scientific Brief: SARS-CoV-2 Transmission | CDC). They openly acknowledge the relative contributions of the modes of transmission outlined are unquantified and difficult to establish.* ***We have revised the statement to state that the virus is primarily transmitted through exposure to infectious respiratory fluids such as fine aerosols, respiratory droplets, and added a further reference****(https://www.cdc.gov/coronavirus/2019-*

ncov/science/science-briefs/sars-cov-2-transmission.html). ***The WHO states "available evidence continues to suggest that SARS-CoV-2 can spread from an infected person's mouth or nose in small liquid particles when the person coughs, sneezes, sings, breathes or talks, by inhalation or inoculation through the mouth, nose or eyes. These liquid particles are different sizes, ranging from larger 'respiratory droplets' to smaller 'aerosols."*** *Current evidence suggests that the virus spreads mainly between people who are in close contact with each other, typically within 1 metre,* ***They also indicate that "the virus can also spread to others through aerosols at longer (beyond the typical 1 metre distance) distances. The risk of long-distance aerosol transmission is higher in poorly ventilated and/or crowded indoor settings"*** *and further discuss transmission through fomites but acknowledge data is limited. Similar to the CDC they indicate the many challenges in working out the presence and transmission of infectious viruses. Rather than state the respiratory transmission of inhalable particles is the dominant mode of transmission we would prefer a more cautious scientifically based response and acknowledge the gap in knowledge in this area. Infection prevention and control during health care when coronavirus disease (COVID-19) is suspected or confirmed (who.int)'*

Key revised statement from manuscript introduction (v2, 9th Jul 2022): *'Current evidence from epidemiologic and virologic studies suggest SARS-CoV-2 is primarily transmitted via exposure to infectious respiratory fluids such as fine aerosols and respiratory droplets, and to a lesser extent through fomites; however, the relative contributions of the different modes of transmission is not completely understood[3–5].'*

Conclusion

These authors of the WHO-sponsored Living Systematic Reviews have sought to publish a narrative that SARS-CoV-2 transmission is NOT airborne in their review of evidence underlying the airborne route of transmission, yet, following peer review have, since 6thJuly 2022 conceded that SARS-CoV-2 transmission IS KNOWN to be airborne in their related manuscript concerning the role of 'close contact'.

This World Health Organisation sponsored research team includes:

- Dr John M. Conly, Chair of the WHO Infection Prevention and Control Research and Development Expert Group for COVID 19 and a member of the WHO Health Emergencies Programme (WHE) Ad hoc COVID 19 IPC Guidance Development Group.
- Professor Carl Heneghan, Director for the Oxford Centre for Evidence Based Medicine, and
- Professor Tom Jefferson, member of the WHO COVID 19 Infection Prevention and Control Research Working Group and funded by NIHR UK and the World Health Organization (WHO) to update Cochrane review A122, Physical Interventions to interrupt the spread of respiratory viruses.

It is clearly extremely concerning that views of these 'powerful' scientists, running counter to the observable nature of reality, have, to-date, been permitted to remain unchallenged despite open peer review.

Finally, I have additional information concerning the outcomes following a formal expression of concern over the manuscript *'SARS-CoV-2 and the role of airborne transmission: a systematic review'* [https://f1000research.com/articles/10-232/v3], commencing December 2021, over the research practice of Professor Heneghan and Dr John M. Conly, to the University of Oxford and Calgary University, respectively. This may be of interest to the Inquiry since the outcome following University Research Governance review suggests important 'weaknesses' in processes underlying research governance at these major institutions, possibly indicative of a more widespread problem in science. Notably, the UK Research Integrity Office

[UKRIO] has been helpful with progressing my concerns and has requested the use of my accrued evidence in its report into concerns over research governance in major scientific institutions, due for release later this year.

I confirm that I have no conflicts of interest in providing this information to the UK Covid-19 Public Inquiry.

I would be happy to provide further information, as appropriate, to further assist your investigations.

Yours sincerely

Personal Data

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