Witness Name: Professor Sir Jonathan Nguyen-Van-Tam
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UK COVID-19 PUBLIC INQUIRY

MODULE 1

FIRST WRITTEN STATEMENT OF PROFESSOR SIR JONATHAN NGUYEN-VAN-TAM

Contents

I, PROFESSOR SIR JONATHAN STAFFORD NGUYEN-VAN-TAM, will say as follows:

Section 1: Introduction

1.1. I make this statement in response to a Rule 9 request received from the UK COVID-19 Public Inquiry ("the Inquiry") on 17th May 2023.

1.2. I am an epidemiologist and physician specialising in public health, mainly communicable disease control. I have a medical degree, a Diploma of Membership of the Faculty of Public Health of the Royal Colleges of Physicians and a doctorate in medicine (DM) in epidemiology and public health from the University of Nottingham. I am a Fellow (and Hon. Fellow) of the Faculty of Public Health, a Fellow (and Hon. Fellow) of the Royal Society of Public Health, a Fellow of the Royal College of Pathologists, a Fellow of the Royal Society of Biology, an Hon. Fellow of the Royal College of Physicians, and an Hon. Fellow of the Faculty of Pharmaceutical Medicine.

1.3. I am currently Senior Strategy Adviser to the University of Nottingham School of Medicine. Over the course of a 36-year career I have held a range of positions in both the private and public sectors. Between 2004 and 2007, I was Head of the Pandemic Influenza Office at the Health Protection Agency Centre for Infections ("Colindale"). Between 2005 and 2009, I was a member of the UK national Scientific Pandemic Influenza Committee ("SPI"). I was a member of the UK Scientific Advisory Group for Emergencies ("SAGE") during the 2009-10 A/H1N1 influenza ("swine flu") pandemic. I chaired the European Centre for Disease Prevention and Control ("ECDC") Expert Advisory Group on H5N1 ("bird flu") vaccines and have acted as a short-term consultant and temporary adviser to the World Health Organisation, ECDC, and the European Commission on multiple occasions since 2005. I am the Senior Editor of the textbook, *Introduction to Pandemic Influenza*, and I have published more than 200 peer-reviewed scientific papers. Most of my academic career has been spent studying the epidemiology and control of respiratory virus infections.

1.4. I was the Chair of the New and Emerging Respiratory Virus Threats Advisory Group ("NERVTAG") from 2014 to 2017, before joining Government. Following my appointment as Deputy Chief Medical Officer ("DCMO") for England in October 2017, I continued to attend NERVTAG as an observer. When the COVID-19 pandemic began, I attended most NERVTAG meetings as an observer. However, that became

increasingly difficult over time as the work on developing a vaccine (which was my priority) intensified.

1.5. I was DCMO between October 2017 and March 2022. My portfolio was vaccines, pharmaceuticals, health protection and biosecurity.

1.6. I have been asked by the Inquiry to address a number of questions about NERVTAG. In preparing this statement, I have drawn on material from the Second Witness Statement of Professor Sir Christopher Whitty (the "Module 1 OCMO Corporate Statement"), to which I contributed.

Section 2: NERVTAG

2.1. NERVTAG is a Department of Health and Social Care ("DHSC")[1] expert committee advising the Government on the threat posed by new and emerging respiratory viruses. It provides clinical and scientific advice and is supported by a scientific secretariat from the UK Health Security Agency ("UKHSA"). The membership of NERVTAG is publicly available as are the minutes of its meetings and its annual reports.

2.2. NERVTAG members are independent experts who volunteer to provide their expertise and are competitively appointed. In my view, that appointment process is both rigorous and satisfactory. In respect of my own appointment, I recall a lengthy recruitment application process including the need to provide a 'statement of suitability'. Subsequent interviews were conducted by very senior officials and independent external interviewers. My appointment had to be approved by the then Chief Medical Officer ("CMO"). When recruiting members as Chair, I was responsible for reviewing applications and CVs before chairing a panel that oversaw appointments. The DH Senior Responsible Owner, which at various times has been the CMO or another senior official within DH, has to approve all appointments to NERVTAG.

2.3. NERVTAG was established in 2014, replacing SPI and extending the role of the group to cover not only pandemic influenza but any new, emerging respiratory virus threat to the UK. With this expanded remit, NERVTAG has routinely considered a range of respiratory viral threats, including avian influenza viruses and MERS. However, throughout my tenure, the virus that NERVTAG considered to pose the highest

[1] Department of Health ("DH") prior to January 2018

pandemic risk was influenza and, in my opinion, that continues to be the case to this day. My rationale for selecting influenza as still the most credible future pandemic threat hinges on two facts: 1) the very high mutability of the influenza A virus; and 2) the historical fact of three influenza pandemics in the 20th Century (1918, 1957 and 1968) and one so far in the 21st Century (2009).

2.4. On its establishment, it was agreed that NERVTAG would draw on the expertise of scientists and healthcare professionals, including infectious diseases and respiratory clinicians, microbiologists (primarily virologists), respiratory immunologists, public health practitioners, emergency planners, and colleagues in related disciplines. It is scientifically independent and, in my view, its membership represents a broad and comprehensive range of scientific and technical disciplines. The current Chair of NERVTAG is Professor Sir Peter Horby of the University of Oxford.

2.5. Between 2014 and the beginning of 2020, NERVTAG met two to three times per year. That was an appropriate number taking into account the relatively infrequent emergence of new respiratory virus threats over that period (only influenza AH7N9 and MERS were particularly new concerns) and the number of requests and commissions emanating from officials at DH. It should be noted that the last SARS-CoV-1 cases occurred in May 2004 after which there were no data anywhere in the world suggesting that virus was being transmitted to or between humans.

2.6. Naturally NERVTAG took (and takes) into consideration past respiratory virus outbreaks to inform its advice. Indeed, it is not obvious how it could provide any advice without doing so. However, NERVTAG was (and is) not asked to predict the threats that might emerge in the future and as Chair, I would have refused such a speculative request without evidence. As I set out in my foreword to NERVTAG's First Annual Report (2014-2015):

> *"In the post-pandemic period we have seen further emerging respiratory virus threats with potential consequences for humans; Influenza A(H7N9), A(H5N8) and A(H5N6), and the Middle East Respiratory Syndrome coronavirus (MERS Co-V). We are reminded that we cannot predict the future, beyond saying that another pandemic is inevitable at some point, but it seems quite clear that the range of major respiratory virus threats to public health may well extend beyond influenza"* **[JVT1/01 – INQ000142125]**.

2.7. As Chair of NERVTAG, I was conscious that the committee's role was to provide independent and informed advice addressing the requests made of it. NERVTAG does not define its own remit, it responds to requests and will confine its advice to the brief provided. That is how a government advisory committee should operate. If it is not directly responding to the requests put to it, then it is not fulfilling its purpose. To the best of my recollection, during my time as Chair, requests of NERVTAG came exclusively from DH. Under normal (i.e. non-pandemic) conditions, had any requests been received directly from other Government Departments, I would have referred the enquirer to DH prior to accepting or rejecting the commission. My approach when chairing NERVTAG was to encourage DH to think carefully about the questions it put to the committee and ensure that the committee was, in turn, disciplined in answering them. I laid out my approach in the foreword to NERVTAG's first Annual Report:

> *"The underpinning ethos of NERVTAG will always be that it exists to service the Government's need for timely, independent, scientific and clinical advice; and that it should be task-oriented, responding to requests from DH, Public Health England (PHE) and the NHS, by creating outputs and deliverables to meet these needs"* **[JVT1/01 – INQ000142125]**.

I was pleased that my successor as Chair continued in the same vein.

2.8. The extent to which NERVTAG advice was acted upon was a matter for DH and, while I have no doubt that decision makers always had a number of competing objectives to balance, my experience as Chair was that some NERVTAG advice was not acted upon because of budgetary constraints. For example, that was my experience in relation to a recommendation made on multiple occasions between 2015 and 2019, namely that the Pandemic Flu Clinical Guideline from 2007 ("the Clinical Guideline") be updated. I should be clear that if that guidance had been updated, it would have been influenza-specific and of very limited use for SARS-CoV-2. That is because neuraminidase inhibitors (anti-influenza drugs) were wholly ineffective against SARS-CoV-2 and whilst antibiotics are needed frequently after influenza to treat secondary bacterial pneumonia, they were needed to treat bacterial complications in only about 1 in 50 hospitalised SARS-CoV-2 cases **[JVT1/02 – INQ000204007]**.

2.9. In 2015, DH commissioned NERVTAG to advise on the composition of the national stockpile of antibiotics for pandemic influenza. A sub-committee was convened to consider the matter. As the sub-committee noted, the current stockpile was based on

the, now outdated, Clinical Guideline. I considered that the request from DH was approaching matters in the wrong order; the Clinical Guideline should have been updated before the stockpile was reviewed. Otherwise there risked being a discordance between the stockpile composition and the Clinical Guideline, which could pose problems in a future pandemic. I made that point to DH officials when the advice was commissioned and it is reflected in the Formal Recommendations that the sub-committee ultimately made:

> *9.1 In offering an expert view to the Department of Health on the issue raised, the Committee advised that the recommendations are offered in the absence of an updated Pandemic Flu Clinical Guideline and recommends that its advice should be reviewed once an update is completed.*
>
> *9.2 The Committee recommends that the Department of Health commission an update to the 2007 Pandemic Flu Clinical Guideline to take into account the latest available evidence.* **[JVT1/03 – INQ000204011]**

2.10. However, officials at DH were clear that they wanted the stockpile advice without first undertaking that work. DH's response to the recommendation that the Clinical Guideline be updated was that *"A mechanism for taking this work forward are* [sic] *to be discussed with PHE within the context of the pandemic preparedness programme budget"* **[JVT1/04 – INQ000204010]**. I am not aware what, if any, work was done on this in the period December 2015 to mid-2017.

2.11. At NERVTAG's meeting on 14th June 2017 there was further discussion on the point and following that meeting I contacted DH to re-express concerns that NERVTAG had made new recommendations regarding the composition of pandemic stockpiles, but the Clinical Guideline had not yet been updated to reflect that **[JVT1/05 – INQ000022790]**. DHSC (as it by then was) subsequently commissioned NERVTAG to undertake a review of the Clinical Guideline, to scope the updates that were required and to report back. A NERVTAG sub-committee was convened in October 2018 for that purpose. I was a member of that sub-committee. I refer the Inquiry to the sub-committee's report, which sets out its terms of reference and the rationale for the review **[JVT1/06 – INQ000204008]**. The sub-committee presented its findings at NERVTAG's next meeting on 12th December 2018 (which I attended as an observer having by then been appointed DCMO), and it was agreed that another formal recommendation would be put to DHSC that the Clinical Guideline should be updated

in the next six to nine months **[JVT1/07 – INQ000023035]**. The minutes of NERVTAG's subsequent meetings on 17th June 2019 **[JVT1/08 – INQ000023057]** and 17th December 2019 **[JVT1/09 – INQ000023102]** record that this work was initially de-prioritised due to EU Exit planning before DHSC tasked NHS England with taking it forward. I am not aware of how that work progressed, but I note that the minutes of NERVTAG's meeting on 20 August 2020 record that the Clinical Guideline was *"under development by DHSC"* **[JVT1/10 – INQ000204004]**.

2.12. NERVTAG's efficiency and ability to respond to requests at short notice was first really tested during the COVID-19 pandemic and, in my view, it responded well. I would, for example, highlight the speed with which NERVTAG was convened in early January 2020 in response to emerging reports of cases of 'pneumonia of unknown aetiology' detected in Wuhan. At 17:28 on Thursday 9th January 2020, the Office of the CMO ("OCMO") emailed DHSC to request that NERVTAG meet the following Monday (13th January 2020) **[JVT1/11 – INQ000047488]**. That meeting was convened at 10:00 on Monday morning.

2.13. In the period January 2020 to June 2021, NERVTAG met 75 times in relation to COVID-19 (not including further meetings of its subcommittees) (see summary in NERVTAG's fifth Annual Report – **[JVT1/12 – INQ000204006]**). In the same period, the group prepared and published 37 papers on topics ranging from SARS-CoV-2 transmission dynamics, to changes in the viral phenotype. As a result of COVID-19, NERVTAG went from a committee that met two or three times a year, to one that met almost weekly in response to a broad range of requests from DHSC, SAGE and OCMO. Despite the hugely increased demand placed on the committee, its voluntary membership was well maintained throughout the pandemic.

Section 3: Middle Eastern Respiratory Syndrome ("MERS")

Background

3.1. MERS is a viral respiratory disease caused by a coronavirus that was first identified in the Kingdom of Saudi Arabia ("Saudi Arabia") in 2012.

3.2. MERS has been reported in 27 countries since 2012, with approximately 80% of human cases reported by Saudi Arabia. There have been three cases of MERS

imported into the UK since 2012, with 1,500 possible imported cases tested in UK labs in the same timeframe. There was transmission of two cases in 2013 and one subsequent death, with a total of five MERS cases in the UK. The most recent UK case was identified in August 2018, with previous cases diagnosed in 2012-13. The WHO report that up to September 2019, a total of 2,468 laboratory-confirmed case of MERS have been reported globally, including 851 associated deaths **[JVT1/13 – INQ000204009]**.

3.3. Although most cases have been directly or indirectly linked to camel exposure in the Arabian Peninsula, there was a significant outbreak of MERS in the Republic of Korea ("South Korea") in 2015, which involved 186 cases, including 36 fatalities, 44% of which were nosocomial (transmitted within a healthcare setting) **[JVT1/14 – INQ000204002]**. All, or a great majority, of human-to-human transmission was from symptomatic people. Asymptomatic transmission of MERS from human-to-human is thought to be very rare, although asymptomatic infection without onward transmission may still occur.

3.4. The mortality rate (case fatality rate) for people with MERS as reported to the WHO is approximately 35% **[JVT1/15 – INQ000204005]**.

3.5. Unlike SARS-CoV-2, MERS-CoV does not currently pass easily from human-to-human and the risk to residents in the UK from imported cases with the existing variant of MERS remains very low. Identifying MERS and SARS patients by their symptoms and isolating them contained the spread of those outbreaks because a high proportion of patients displayed symptoms in the early stages of infectiousness whilst transmissibility only peaked later on, so patients (of whom there was a small number) were able to be isolated for most of the time they were infectious.

NERVTAG response in 2014

3.6. NERVTAG was convened for the first time on 19th December 2014. The minutes of that meeting record that *"…The committee noted that there is the potential that a healthcare associated outbreak or cluster of MERS-CoV could occur, although, based on present evidence, it is unlikely that this would lead to sustained community transmission in the UK"* **[JVT1/16 – INQ000022719]**.

3.7. At the relevant time, with NERVTAG in its infancy, there was no standardised risk assessment tool in place. However, one of the things I did as Chair was to implement

such a tool. One of the 'Actions' recorded in the minutes from NERVTAG's first meeting was *"The Chair and Secretariat will undertake work offline to develop a risk assessment tool/template similar to CDC IRAT* (the US Center for Disease Control and Prevention's Influenza Risk Assessment Tool)*"* **[JVT1/16 – INQ000022719]**. Dr Gavin Dabrera of Public Health England ("PHE") was subsequently commissioned to undertake that work. The development of the risk assessment tool was incremental and iterative. For example, on 30th June 2016, Dr Dabrera presented a first draft to the committee and a number of suggestions were made for how to improve it **[JVT1/17 – INQ000022730]**. The minutes show that at the next meeting, on 2nd December 2016, Dr Dabrera presented a revised version, some further comments were made, and it was agreed that after taking into account those additional comments, the tool would start to be used with effect from the next meeting without bringing it back to the committee for further ratification **[JVT1/18 – INQ000022739]**. The minutes of the next two meetings (14th June 2017 **[JVT1/05 – INQ000022790]** and 23rd January 2018 **[JVT1/19 – INQ000022880]**) show that the risk assessment tool continued to be refined as necessary. I cannot say when a final version of the tool came into use, but I can say that by the end of my tenure as Chair it was very much the case that it was being used to assess all pathogens considered by NERVTAG. As a member of the HPA scientific secretariat supporting NERVTAG, and as a Consultant Epidemiologist, Dr Dabrera will have drawn on his day-to-day work at Colindale to populate the risk assessment tool for each pathogen under consideration. He would have updated the evidence from the academic and grey literature[2] before each NERVTAG meeting.

3.8. The assessment at the end of 2014 that an outbreak of MERS was unlikely to lead to sustained community transmission in the UK represented the expert view at that time based on the evidence of transmissibility that we had seen. That is the purpose of an advisory committee such as NERVTAG and is the same for advisory committees across the health system. Expert advisers consider evidence and combine it with their previous knowledge and experience to offer a learned view, which can then be translated into one central view of the committee. If there were individual views at NERVTAG that diverged from the central view, as Chair I would have ensured that they were reflected in the minutes. To date, NERVTAG's central view that an outbreak

[2] The term "grey literature" is used to refer to reports of scientific research that have not been published in, for example, a peer-reviewed academic journal or information from sources such as ProMED, a website providing global reports on infectious disease outbreaks.

of MERS-CoV is unlikely to lead to sustained community transmission in the UK has stood the test of time and it also remains my view currently.

3.9. That view also informed the plans that were in place to respond to a possible outbreak of MERS-CoV in the UK. While I cannot recall the specifics of those plans, I can say that they were broadly formulated around having to deal with a small number of imported cases, but the notion of widespread community transmission was always considered to be a remote possibility. For example, Exercise Alice[3] (in which I was not invited to take any active part) was based on a scenario that involved three suspected cases in UK nationals who had returned to England following a visit to Saudi Arabia **[JVT1/20 - INQ000022732]**.

3.10. The minutes of the December 2014 meeting also show that a paper from the CDC on medical counter measures and therapeutics for MERS-CoV was shared and the committee was invited to comment. However, I do not recall any discussion on this paper, and I note that the minutes suggest comments were to be provided separately via Professor John Watson, who was DCMO at the time. It would have been up to members to email Professor Watson with their comments.

Section 4: Other coronaviruses

4.1. Prior to 2002, only four human coronaviruses were circulating despite there being many animal coronaviruses. These four viruses (229E, NL63, OC43 and HKU1) caused mild disease ('colds') in the great majority of people. SARS-CoV-1 was a new coronavirus with significant mortality that emerged in China, probably in 2002, and which was reported to the WHO in 2003. It caused a patchy global epidemic affecting several countries and territories with some spill-over cases including in the UK. It disappeared in 2004 for reasons that are not entirely clear (although control measures contributed significantly) and to date has not re-emerged in humans. Control measures are far easier to implement and more likely to succeed when a pathogen causes people to be infectious to others mainly well after symptom onset, as was the case with SARS-CoV-1.

[3] Exercise Alice was a tabletop simulation exercise delivered on 15 February 2016 and supported by the Department of Health, NHS England and Public Health England. The exercise was commissioned by the Department of Health in response to concerns raised by the Chief Medical Officer about the UK's planning and resilience to respond to an outbreak of MERS-CoV in England.

4.2. The experts that formed the NERVTAG committee would therefore have been well aware of other coronaviruses. However, during my time as Chair, the only coronavirus that had ongoing human cases was MERS-CoV. As Chair, it was my job to ensure the committee considered all new and emerging respiratory viruses once they emerged or re-emerged, but not to speculate on what might emerge in the future. If new data had emerged on SARS-CoV-1, or there was indication of an outbreak, then I think it is almost guaranteed that the committee would have discussed it. However, as SARS-CoV-1 has not re-emerged in humans to date, there has been no call for NERVTAG to consider it as a potential risk to the UK and that is why any assessment of it is absent from the minutes for the period of my tenure as Chair and, indeed, thereafter.

Section 5: NERVTAG Sub-committee on Facemasks and Respirators Stockpile

5.1. NERVTAG was never responsible for the acquisition of stockpiles of PPE or antiviral drugs or vaccines. As Chair, I was clear that NERVTAG should not venture into policy or commercial matters. That can be seen, for example, in the committee's minuted discussion on 27th November 2015 in relation to a request from DH on the antivirals stockpile:

> *"The committee was advised that operational issues were considered out of scope… The committee was also advised that overall cost effectiveness and affordability concerns were outside of the scope of the discussion"* **[JVT1/21 – INQ000022726]**.

However, NERVTAG did have a role to answer science-based questions posed by DH officials as that science related to decisions that DH might later take about PPE, antivirals and vaccines. For example, in November 2015, DH requested that a NERVTAG sub-committee be convened, with the objective:

> *"To provide the Department of Health (DH) with an expert view on the continued clinical and microbiological appropriateness of health Departments stockpiling facemasks and respirators for UK use in an influenza pandemic"* **[JVT1/22 - INQ000056937]**.

5.2. On 15th January 2016, the NERVTAG Sub-committee on the Pandemic Influenza Facemasks and Respirators Stockpile, chaired by Dr Ben Killingley (I was the vice-chair), met to discuss this issue **[JVT1/23 – INQ000101083]**. In addition to considering the stockpile within the context of a possible influenza pandemic, the Sub-committee was also asked to advise in relation to MERS-CoV. That advice is set out in the Sub-committee's Formal Recommendations to the Department of Health, published online:

> *"The subcommittee felt that respirators would be needed for all clinical interactions with MERS Cov patients given the high fatality rates and occurrences of HCW transmissions. This virus does not currently appear to have the same pandemic potential as influenza and therefore stockpiling specifically for this purpose is not necessary. Should there be an outbreak, respirators could be drawn from the influenza stockpile in the unlikely event that usual business supplies prove inadequate"* **[JVT1/24 – INQ000022737]**.

5.3. I do not recall whether any other respiratory viral threats, beyond MERS-CoV and influenza, were considered by the Sub-committee, but I note that the minutes do not record any such discussions. With that said, experts on the Sub-committee will have been aware of SARS-CoV-1 and the logic of the recommendation set out above would apply to SARS-CoV-1 in the same way that it applied to MERS-CoV. As far as other novel coronaviruses or "Disease X" are concerned, as I have explained above, it was the committee's (and any sub-committee's) job to deal with known or recognised new and emerging viruses but not to speculate on what else could emerge in the future. That would not have been evidence-based and would have been potentially very misleading.

5.4. At its meeting on 30th June 2016, NERVTAG formally ratified the Sub-committee's recommendations **[JVT1/17 – INQ000022730]**. One of those recommendations was that

> *"the Department of Health commission an update to the 2009 Pandemic Flu infection control guidance* ("the Infection Control Guidance") *to take into account the latest available evidence".*

5.5. The Sub-committee further advised that its other recommendations on the issue raised should be reviewed once the Infection Control Guidance had been updated. However, DH's response to the recommendation that the guidance be updated was that *"This work is not considered a priority at this time and will be deferred for consideration at a*

future time" **[JVT1/25 – INQ000022731]**. I do not recall what happened with regard to this recommendation. However, in preparing this statement I have reviewed the relevant NERVTAG minutes, which indicate the following:

5.5.1. At NERVTAG's meeting on 23rd January 2018 (which I attended as an observer), it was noted that Dr Lisa Ritchie of Health Protection Scotland had volunteered to take forward a piece of work across the devolved administrations to review the Infection Control Guidance **[JVT1/19 – INQ000022880]**.

5.5.2. At the group's next meeting, on 21st June 2018 (which I attended as an observer) it was noted that Dr Ritchie had requested further details on the scope of the work. A new action was created for DHSC to send a formal commissioning note to Dr Ritchie outlining the scope of the work, timelines, and reporting arrangements ("Action 7.2") **[JVT1/26 – INQ000022974]**.

5.5.3. At the group's next meeting, on 12th December 2018 (which I attended as an observer), Action 7.2 was marked as complete, and it was noted that the deadline for completion of the work was June 2019 **[JVT1/07 – INQ000023035]**.

5.5.4. At the group's next meeting, on 17th June 2019 (which I attended as an observer), it was noted that work on the Infection Control Guidance was ongoing and that a draft would be circulated in July or once available ("Action 9.4") **[JVT1/08 – INQ000023057]**.

5.5.5. At the group's next meeting, on 17th December 2019 (which I attended as an observer), a near final draft of the revised Infection Control Guidance was presented and NERVTAG members were asked to send comments via the Secretariat by the second week of January 2020 **[JVT1/09 – INQ000023102]**.

5.5.6. In January 2020, all NERVTAG work inevitably pivoted towards COVID-19. At the first Non-COVID-19 related NERVTAG meeting of 2020, on 8th July 2020 (which I did not attend), it was noted that the action for members to send comments on the Infection Control Guidance was "complete" and other actions in relation to finalising and publishing it were now closed as the guidance had been published when it was adapted in response to COVID-19 **[JVT1/27 – INQ000204003]**.

5.6. To the best of my knowledge, the Sub-committee on Facemasks and Respirators Stockpile has not, to date, revisited its 2016 recommendations. With the exception that it provided further advice on eye protection in September 2017 following a discrete request to do so **[JVT1/28 – INQ000101175]**.

5.7. I have been asked to opine on what was known, at the time the Sub-committee was convened, about the risks of aerosol transmission of influenza, MERS-CoV and SARS-CoV-1. The Sub-committee's conclusions and responses to DH-posed questions are a good indication of the state of knowledge on this issue at the time. The Sub-committee acknowledged that

> *"The evidence to support the plausibility of aerosol transmission of influenza is stronger now than it was prior to the 2009 pandemic. However, considerations of the infectious dose needed for onward transmission and whether these are regularly achieved through aerosol inhalation have not yet been determined. The relative importance of aerosol transmission compared to other routes is still unknown"* **[JVT1/23 – INQ000022737]**.

It then recommended (in relation to preventing the spread of an influenza pandemic):

1) that fluid-repellent surgical masks with eye protection should be used for routine close patient contact in instances when respirators are not specifically recommended; and
2) that respirators should be worn all the time in ICU/HDU areas when patients with pandemic influenza are being cared for in that area and in non-ICU/HDU areas, when aerosol generating procedures ("AGPs") are being performed.

The Sub-committee's recommendation in relation to preventing the spread of MERS-Cov is set out in full at paragraph 5.2 above and, as already suggested, its logic would equally apply to SARS-CoV-1.

5.8. In summary, the role of aerosols in the transmission of influenza, MERS-CoV or SARS-CoV-1 could not be ruled out, but the evidence was poorly understood and not clear. The distinction between recommending the use of respirators for all clinical interactions with MERS-CoV patients and only in aerosol generating procedure hotspots for influenza patients is not a reflection of the understanding of the relative importance of aerosols in the transmission of these diseases. Rather, it reflects the fact that MERS-CoV had a known high case fatality rate and transmission to healthcare workers was well documented. Given the reasonable planning scenarios for small numbers of MERS-CoV cases it therefore made sense to recommend high protection for attending healthcare workers.

Statement of Truth

I believe that the facts stated in this witness statement are true. I understand that proceedings may be brought against anyone who makes, or causes to be made, a false statement in a document verified by a statement of truth without an honest belief of its truth.

Signed…… **Personal Data** ……

Dated……11th June 2023……