Witness Name: Professor Charlotte Watts

Statement No: 1

Exhibits: CW/01 – CW/13

Dated: 1 August 2025

THE INDEPENDENT UK COVID-19 INQUIRY

WITNESS STATEMENT OF PROFESSOR CHARLOTTE WATTS

I, PROFESSOR CHARLOTTE WATTS, Executive Director of Solutions at Wellcome Trust, at Gibbs Building, 215 Euston Road, in my capacity as a former individual member and Co-Chair of the Children's Task and Finish Group ('**CTFG**'), will say as follows:

Section 1: Introduction

1.1 I make this statement pursuant to the Covid-19 Inquiry's Rule 9 request of 2 June 2025 ('**the Rule 9 request**').

1.2 The matters I set out within this statement are within my own knowledge save for where I state otherwise. Where I refer to facts not within my own knowledge, I will provide the source for those facts. The contents of this statement are true to the best of my knowledge and belief.

1.3 This statement addresses my role and involvement in the approach to the Covid-19 pandemic as relating to children and young people in England, Wales, Scotland and Northern Ireland from 1 January 2020 until 28 June 2022 ('**the Specified Period'**).

1.4 For the avoidance of doubt, this statement has been prepared based on my personal recollections and is being made in my personal capacity, with the views expressed being my own.

My Role and Background

1.5 I currently work as Executive Director of Solutions at the Wellcome Trust, having joined in March 2025. The Wellcome Trust supports science to solve the urgent health challenges facing everyone. My role within the trust is to support transformative research investments, public engagement and policy influence, to improve global health.

1.6 Prior to this, I held the following positions:

a) Chief Scientific Adviser ('**CSA**') and Director for Research and Evidence at the UK Foreign Commonwealth and Development Office ('**FCDO**'), seconded from the London School of Hygiene and Tropical Medicine ('**LSHTM**'), from September 2020 to March 2025;

b) CSA for the Department for International Development ('**DFID**'), from September 2015 to September 2020, seconded from the LSHTM;

c) Professor of Global Health and Development at the LSHTM, University of London, from October 2024 to March 2025; and

d) Professor of Social & Mathematical Epidemiology, LSHTM, University of London, from October 1990 to September 2024.

1.7 I hold the following qualifications

a) Doctor of Philosophy (PhD) in Mathematics from University of Warwick in 1990 (thesis on the stochastic stability of diffeomorphisms).

b) Master of Science (MSc) in Mathematics from Marlboro College, Vermont, in 1986 (thesis on catastrophe theory).

c) Bachelor of Arts (BA) in Mathematics from Exeter College, University of Oxford, in 1984.

Professional Expertise

1.8 In 1995 I received a two-year fellowship from the Wellcome Trust, to enable me to switch fields from theoretical mathematics to public health. With the support of the fellowship, I received further training in health policy, planning and financing at the LSHTM. This training included taught modules on epidemiology, economics, and social research methods.

1.9 Over the next 20 years at the LSHTM, I led projects and built up multi-disciplinary teams, focused on generating evidence to inform policy, including on HIV and on the prevention of violence against women. My research and these teams included infectious disease modelling, health economics and behavioural science.

1.10 Over my academic career, I served on numerous UN technical and Government advisory boards, including for the World Health Organisation.

1.11 In 2017 I was made a Fellow of the Academy of Medical Sciences, and Foreign Associate Member of the US National Academy of Medicine.

1.12 In 2019 I was appointed a Companion of the Order of St Michael and St George ('**CMG**') *"for services to global health and international development."*

1.13 In 2020 the LSHTM awarded me the Sir Edwin Chadwick medal, for the epidemiological research on violence that I had led.

1.14 In September 2020 I was seconded as CSA to DFID, and then in 2025, as CSA to FCDO. In these roles I advised ministers and senior officials, oversaw the Departments' research investments, and co-led the UK's overseas science and innovation diplomatic network.

1.15 In 2022 I was awarded an honorary doctorate from the Liverpool School of Tropical Medicine.

Key papers undertaken and a summary of documents to which I contributed for the purposes of advising the SAGE and its subgroup, CTFG, during the Specified Period

1.16 During the Specified Period, I did not publish any academic papers relevant to the issues being considered by the Inquiry.

1.17 The CTFG produced a number of papers for the purposes of advising the Scientific Advisory Group for Emergencies ('**SAGE**'). These papers were the product of the collective work of members of the CTFG, signed off by me as the Chair of the group, and on behalf of the group.

a) Interdisciplinary Task and Finish Group on the Role of Children in Transmission (TFC): Modelling and Behavioural Science Responses to Scenarios for Relaxing School Closures, 30 April 2020. https://www.gov.uk/government/publications/tfc-modelling-and-behavioural-science-responses-to-scenarios-for-relaxing-school-closures-30-april-2020 **[CW/01 – INQ000650274]**

b) Summary of TFC: Modelling and Behavioural Science Responses to Scenarios for Relaxing School Closures, 1 May 2020. TFC: Modelling and behavioural science responses to scenarios for relaxing school closures, 1 May 2020 - GOV.UK **[CW/02 – INQ000074926]**

c) Paper by CTFG: Comments on sequencing of social distancing measures (schools), 20 May 2020. TFC: Comments on sequencing of social distancing measures (schools), 20 May 2020 - GOV.UK **[CW/03 – INQ000194026]**

d) Paper by CTFG: Risks associated with the reopening of education settings in September, 8 July 2020. https://www.gov.uk/government/publications/tfc-risks-associated-with-the-reopening-of-education-settings-in-september-8-july-2020 **[CW/04 – INQ000074935]**

e) Paper by CTFG: Update on Children, Schools and Transmission, 4 November 2020. TFC: Children and transmission, 4 November 2020 - GOV.UK **[CW/05 – INQ000074948]**

f) Paper by CTFG: Update to 4th November 2020 paper on Children, Schools and Transmission, 17 December 2020. TFC: Children and transmission - update paper, 17 December 2020 - GOV.UK **[CW/06 – INQ000074951]**

g) Paper by CTFG: Update to 17th December 2020 paper on Children, Schools and Transmission, 10 February 2021. TFC: Children and transmission - update paper, 10 February 2021 - GOV.UK **[CW/07 – INQ000073882]** Paper by CTFG: Paper on Higher Education Settings, 10 February 2021. TFC: COVID-19 in higher education settings, 10 February 2021 - GOV.UK **[CW/08 – INQ000192115]**

Scope of this Statement

1.18 This Statement reflects my personal recollection of the focus of discussions and analyses produced by the CTFG that I co-chaired with the CSA to the Department of Education. To the extent possible, I have reviewed the papers produced by the CTFG, to help inform my statement. Given the passage of time, there may be some gaps in my recollection of discussions and events.

Terminology Used in this Statement

1.19 Throughout this statement, and unless otherwise stated, my use of the words "child" and "young person" shall be used to refer to the definition as given in the Module 8 Provisional Outline of Scope, namely that "child" refers to an individual aged 0-18 and "young person" refers to an individual who was a) a care leaver between the ages of 18 and 25; or b) had special educational needs and/or disabilities (up to 25 years old); or c) was 18 to 25 and attended further and/or higher education and/or training; or d) was between the ages of 18 and 25 and in the custody of the state.

1.20 Unless otherwise stated, I am also adopting the following definitions:

a) The term "special educational needs and/or disabilities" ('**SEND**') is used broadly and is intended to encompass children with SEND (England and Northern Ireland), additional support needs (Scotland) and/or additional learning needs (Wales).

b) "School" should be interpreted broadly so as to include all settings in which children receive education up to the age of 18. This should therefore include early years settings, schools and colleges.

c) The CTFG is often referred to as the Task and Finish Group (Children) ('**TFC**'). Throughout this statement, I will refer to the group as the CTFG.

Section 2: Overview of SAGE and its Subgroups and their Role, Function, and Responsibilities During the Pandemic.

2.1 During the Specified Period, I was a participant in both SAGE and its subgroup, CTFG. I also attended several meetings of both the Scientific Pandemic Influenza Group on Modelling ('**SPI-M**') and the Scientific Pandemic Insights Group on Behaviour ('**SPI-B**'); co-chaired a special task and finish group to develop evidence-based approaches to testing in care homes; and led on SAGE papers to learn lessons from country red listing. In the following section, I will explain my role and involvement in these groups, as well as give a general overview of the groups' function.

My role and involvement in SAGE

2.2 SAGE provides scientific and technical advice to support government decision makers during emergencies.

2.3 I was invited to be a participant of SAGE by the Government Chief Scientific Advisor ('**GCSA**') and the Chief Medical Officer ('**CMO**') prior to the first precautionary meeting on Wuhan Coronavirus ('**WN-CoV**') held in January 2020. I was invited due to my role as CSA to DFID, as well as due to my epidemiological expertise, spanning both modelling and the use of evidence to support HMG responses to disease outbreaks (such as Ebola in DRC).

2.4 I attended the first SAGE meeting on 22 January 2020 and I believe that I went on to attend a further 96 SAGE meetings, making 97 in total. **[CW/09 – INQ000089720]**

2.5 My role at SAGE was three-fold: (i) drawing on my epidemiological expertise, to comment on papers being discussed; (ii) to listen and communicate back to DFID/FCDO the relevant insights coming from the SAGE discussions; and (iii) where requested by GCSA or CMO, to lead or contribute to specific papers and sub-groups.

My role and involvement in CTFG

2.6 As set out at section 3 below, early on in the pandemic, issues of existing evidence on children's risk of infection, severe illness and death, as well as their role in wider transmission, were considered by the established working groups (the New and Emerging Respiratory Virus Threats Advisory Group (NERVTAG), SPI-B and SPI-M).

2.7 In April 2020, the CTFG, a mult-disciplinary subgroup of SAGE, was set up. As noted at SAGE 26 [16 April 2020], Julia Gog was to "*lead an integrated group of SPI-M, SPI-B and NERVTAG members to provide recommendations on transmission on COVID-19 in children and within schools, ensuring research questions are fed into relevant studies and research requiring new funding is fed directly into UKRI.*" The group was to commence by 27 April 2020. **[CW/09 – INQ000089720]** Terms of Reference for the new group were published that month. **[CW/10 – INQ000548284].**

2.8 Shortly after the establishment of CTFG, I was asked to Chair the group, given my epidemiological training, and experience leading multi-disciplinary teams. The CSA to the Department of Education ('**DfE**') also attended CTFG.

2.9 My role within CTFG was to act as Chair, supported by Julia Gog and Brooke Rogers as lead representatives from the epidemiological modelling and behavioural science disciplines respectively. I attended SAGE meetings on behalf of the CTFG in order to help synthesis and represent the views and analysis produced by CTFG to SAGE. This included providing written and/or verbal updates at SAGE meetings, as and when required. I was also responsible for liaising between the CTFG and SAGE, where the expertise of the group was relevant to the discussion at hand. The CTFG was initially supported by the SAGE secretariat, but then evolved to be supported by DfE.

2.10 From the minutes that I have reviewed, I believe that I attended 11 meetings of the CTFG.

Section 3: The decision to close schools as announced on 18 March 2020

3.1 In this section, I set out the involvement that I, as a member of SAGE had in the decision to close schools announced on 18 March 2020. It is worth emphasising that the CTFG had not been established at the time this decision was announced.

3.2 Initial SAGE, NERVTAG, SPI-M and SPI-B discussions on children focused on seeking to understand the degree to which children of different ages are at risk of acquiring, getting sick or dying from Covid-19 and the potential role of children in wider Covid-19 transmission. Epidemiologically important details, including whether asymptomatic infected children can infect others, were also discussed. With the potential exception of children with co-morbidities, over time, evidence and consensus built that young children were at lower risk of severe illness and death. See, for example, the minutes of SAGE 6 [11 February 2020]; '*Information about* *children remains limited … there is no clear modelling evidence that children are either protected or less susceptible, but clinical reports suggest that severity of disease may be less.'* **[CW/09 – INQ000089720]** I was aware of the discussions taking place in the existing sub-groups at that time but I was not an active participant in the substance of those discussions. My role at the SPI-B and SPI-M meetings that I did attend was as a mathematician, and experienced modeller, to help ensure the integrity of the modelling processes being followed.

3.3 An important focus in early SAGE discussions was on what actions could be taken to reduce the rates of Covid-19 transmission, and specifically, whether the reproductive rate ('**R0**') could be less than one (which would mean that rates of infection were decreasing).

3.4 Temporary school closures are often used to help tackle flu outbreaks. During the early meetings of SAGE, the effect of shutting schools to limit the spread of Covid-19 was considered. At that stage, it was not well understood what the impact of shutting schools would be. As noted in the minutes of SAGE 4 [4 February 2020] there was "*ignorance about the impact of WN-CoV among children*" and that "*it is possible that school closures in reaction to further cases of WN-CoV in the UK would be less effective than in previous [sic flu] epidemics, when children were more susceptible to the disease, and infectivity periods were shorter.*" The possibility of regional closure of schools was also discussed at that meeting. **[CW/09 – INQ000089720]**

3.5 It was noted in a situation update at SAGE 7 [13 February 2020] that school children are critical to transmission because *"they have less immunity than adults and due to their social mixing patterns",* however, the impact of Covid-19 on school children was still poorly understood. SPI-M were tasked by SAGE to use DfE data to model scenarios and parameters under which school closures could be useful and not useful in a) delaying the peak of the UK epidemic, and b) bringing down the peak of the UK epidemic. SAGE stated their intention to model to assume a similar pattern of infection of influenza. On the basis of what was known at the time, I consider that to have been a reasonable assumption to make. **[CW/09 – INQ000089720]**

3.6 The SPI-M paper on modelling of school closures was discussed at SAGE 9 [20 February 2020]. I had no substantive role in the preparation of that SPI-M paper. Although the focus of discussions was on whether school closure could help reduce R0, I can recall that input, especially from SPI-B participants, highlighted that the overall effect of school closures on transmission was difficult to predict, influenced, for example, by the response of parents and children to school closures. A significant factor in their effectiveness, for example, was whether children (or parents) congregated elsewhere, when schools closed. At SAGE 16 [16 March 2020], there was an action for SPI-M to coordinate further rapid modelling of school closures taking account of key factors and at-risk groups, SAGE noting the potential advantages and risks of closures. **[CW/09 – INQ000089720]** Again, I did not play a substantive role in that further modelling.

3.7 Additional modelling analysis, produced by modellers from LSHTM on 17 March 2020 (subsequently published on 19 June 2020), estimated that the addition of school closure to other social distance measures on 7 March 2020 was likely to further reduce deaths by around 9%. **[CW/11 – INQ000548285]**

3.8 At SAGE 17 [18 March 2020], SAGE advised that available evidence now supported implementing school closures on a national level as soon as practicable to prevent NHS intensive care capacity being exceeded. Although it was recognised that there was uncertainty, the available evidence suggested that school closures, combined with other measures, could help to bring the R0 number below 1. The impact of keeping schools open for particular groups was considered. **[CW/09 – INQ000089720]**

3.9 I was present at SAGE 17. In my view, the advice given by SAGE was reasonable, based on the information known at the time, noting the complexity of the issue. The impact of reasonable alternatives had been considered by SAGE and were factored into the advice ultimately given.

Could schools have re-opened at an earlier point than September 2020?

3.10 At SAGE 25 [14 April 2020], as noted in the minutes, the situation was improving: the number of deaths were plateauing, and transmission in the community was thought to be declining. At this point, it was assessed that although the R0 in the community is highly likely to be under 1, relatively small changes to the approach could push the R0 back above 1. **[CW/09 – INQ000089720]** At this time, I and other SAGE members agreed with the view that we needed to be cautious, as the situation still felt precarious. Importantly, there was still limited data to guide decisions; the availability of testing was very limited; there were no reliable community estimates of rates of transmission; and SAGE was still debating the degree to which cloth masks may provide protection.

3.11 In July 2020, the CTFG considered the risks associated with the potential reopening of education settings in September. **[CW/04 – INQ000074935]** This paper detailed the relatively low risk of Covid-19 to students associated with attending educational settings; the Covid-19 related health risks for staff who are older and have a different physiology; the impact that increased attendance in reopened education settings will have on transmission in the wider community, including to household members of children in school. The paper also detailed the risks associated with continuing to keep schools closed, which included the risks to student mental health, wellbeing, welfare, socialisation and development; as well as the medium and longer-term impact on educational attainment, health outcomes and productivity, and increasing educational and societal inequalities, associated with lost education.

3.12 On 30 April 2020 (SAGE 30), CTFG produced modelling to consider different approaches to school opening using scenarios provided by the DfE. The modelling provided a relative assessment on overall diseases transmission of adopting different approaches to lifting restrictions. The findings broadly suggested that although there were different potential impacts on R0, depending upon the size and age of the groups returning to school, the most critical issue determining the overall impact of relaxing restrictions on schools is likely to the levels of adherence to existing measures elsewhere in the community. That is, 'if relaxing school closures results in falling adherence to existing social distancing and other measures elsewhere in the community'. **[CW/01 – INQ000650274]** Wider advice considered factors affecting whether parents may send their children to school; and whether children would want to attend.

3.13 Although the scenarios considered were provided by the DfE, the role of the CTFG and SAGE was to provide an assessment of available evidence and the insights from modelling analysis, which could then be used by Ministers and policy leads, to help inform decisions. I was not sighted or part of discussions on how this analysis was used as policy decisions were made.

Section 4: Autumn and Winter 2020

4.1 In this section, I will address the impact of decisions made in Autumn/Winter 2020 which would have impacted the school closures in January 2021.

4.2 The issue of schools was discussed by SAGE on several occasions during Autumn / Winter 2020. Having reviewed the relevant papers, I find there is nothing I can add to the minutes of the relevant SAGE meetings; in particular; SAGE 62 [15 October

2020], SAGE 65 [4 November 2020], SAGE 72 [10 December 2020] and SAGE 73 [17 December 2020]. **[CW/09 – INQ000089720]** At these meetings, SAGE endorsed a paper produced by CTFG titled, 'Update on Children, Schools and Transmission. This paper was produced on 4 November 2020 **[CW/05 – INQ000074948]** with an update on 17 December 2020 **[CW/06 – INQ000074951].**

4.3 I would note the presence of a new variant of Covid-19 in late December 2020. As SAGE 74 [22 December 2020] noted, *"There is high confidence that this variant is spreading faster than other SARS-CoV-2 virus variants currently circulating in the UK, based on several different analyses. The cause (or causes) of that faster spread are unclear, but evidence is consistent with an increase in transmissibility being a factor."* And that, *"It is highly unlikely that measures with stringency and adherence in line with the measures in England in November (meaning with schools open) would be sufficient to maintain R0 below 1 in the presence of the new variant. R0 would be lower with schools closed, with closure of secondary schools likely to have a greater effect than closure of primary schools."* **[CW/09 – INQ000089720]**.

Section 5: The closure of schools in January 2021

5.1 As far as I can recollect, I was not part of any discussions with policy leads about potential alternatives to school closures in January 2021. I cannot comment on whether any such alternatives were considered.

5.2 In terms of the decision to close schools (to most children) as announced on 4 January 2021, it is important for this to be contextualised in the reality of what was happening at that time. As noted at SAGE 75 [7 January 2021], *"the numbers of cases, hospital admissions and deaths had increased to high levels, and were still increasing, putting pressure on the NHS in many places."* The Office for National Statistics ('**ONS**') survey also suggested that there were more than a million people with Covid-19 in the community. Vaccines were starting to be rolled out, but the more infectious B.1.1.7 variant was spreading rapidly, with SAGE concluding that *"it will spread faster in all settings than the wild-type variant, and in the presence of the new variant, it is even more important to have mitigation measures in place in all settings."* **[CW/09 – INQ000089720]**.

5.3 I am asked about the effect of school closures on transmission rates and the children themselves. At SAGE 73 [17 December 2020], SAGE endorsed an updated CTFG paper on 'children, schools and transmission'. **[CW/06 – INQ000074951]**

This was prior to the emergence of the B.1.1.7 variant. The paper found accumulating evidence that: Increased transmission amongst school children when schools are open, especially for children of secondary school age (and reductions in transmission in children following school closure for half term, and transmission rates increasing post half-term return to school).

a) Infected children can transmit within households, as well as schools; with ONS data discussed at SAGE 65 indicating that children aged 12-16 were playing a higher role in introductions infection into households than older groups.

b) No evidence of difference in the rates of teachers/education workers testing positive for SARS-CoV-2 compared to key workers and other professions.

c) Clear evidence of the negative educational impact of missing school, particularly for younger children, and that school closures cause impairment to the physical and mental health of children, with evidence suggesting that the mental health of adolescents was particularly effected.

5.4 As flagged previously, there was also modelling by LSHTM that estimated that school closures were helping to reduce wider spread of infection, and the associated death rates that the country experienced. **[CW/11 – INQ000548285].**

5.5 I am asked whether it was feasible to open schools prior to the phased re-openings that occurred in March 2021.

5.6 As can be seen from the minutes of SAGE meetings held throughout January 2021, myself and CFTG were tasked by SAGE to work with DfE to review the impact on children of school closures; and the epidemiological impact of schools reopening.

5.7 As a result, a range of modelling analyses were conducted by SPI-M, to provide insights into the impact of the removal of restrictions, both on schools, and more broadly. This analysis was based initially on a range of scenarios, provided by the DfE, spanning keeping schools closed, to lifting all restrictions. As part of the modelling, a range of options to try to bring children back into school were considered, including options such as whether both primary and secondary schools were opened, staggered or alternate week teaching schedules, and strict mask wearing. The importance of environmental measures, including ventilation and surface cleaning, were also highlighted. In practice, some options (such as staggered schedules) were not considered feasible to implement, especially at short notice.

5.8 Throughout this whole period, it is important to remember that the role of SAGE and CTFG was not to support day to day operational planning, but rather to provide initial analysis. Because of this, the CFTG and SPI-M papers focused on drawing out the key insights that would be relevant to inform policy discussions.

Section 6: Reflections and Lessons Learned

6.1 The CTFG structure, drawing together expertise from SPI-B, SPI-M and NERVTAG, provided a useful fora to support different perspectives on schools. Their analyses illustrate the complexity of decision making about closing or opening schools. The closure of schools, and the reductions in mixing achieved through this intervention helped to reduce the peak of the epidemic, and prevent health services from becoming over-whelmed, and so saved lives. The CTFG repeatedly provided evidence of the negative impact of school closure, and its impact on children's education and emotional wellbeing was recognised and highlighted. Initially, the scale and duration of these impacts were not well understood, although data from the ONS studies did start to document the increase in anxiety and depression in children.

6.2 The full scale of the implications are now only being more fully appreciated. However, given the role of school closure in reducing R0, and the real risk to life of not reducing rates of spread of infection, it is not clear whether this would have changed decisions about school closure.

6.3 A stronger focus on the breadth of impacts of school closure on children may have helped focus senior minds not only on options to try to support educations remotely, but also to consider on-line options to support face to face / strongly interactive engagement for children, even during lock down.

6.4 As we seek to learn from the pandemic, I believe that it is important to not only speak about the impact of school closure on children, but also to appreciate and thank children, whose education was disrupted, for their contribution to preventing a larger scale of deaths.

6.5 Looking back, I wonder whether there could have been options to:

a) Innovate in approaches to ensuring face to face teaching could continue for longer – for example by using un-used buildings and/or recruiting additional 'tutors' (for example from companies that could not operate due to restrictions), to support and supplement teachers, to work and engage with small groups of children during lock-down periods.

b) Have an expanded focus during locking in online activities that help mimic and create the social interactions that occur in and around school attendance, given their importance for reducing isolation, and supporting social and mental wellbeing.

6.6 Looking forward, I hope that:

a) Some of the inequalities highlighted by lock down (such as differential access to computers/lap-tops and internet) have been recognised and addressed.

b) In the construction and refurbishment of schools, factors such as adequate ventilation and access to green outside space, is being supported, both to support preparedness for future outbreaks, but also to support child wellbeing.

c) In and out of school activities and support recognise and are seeking to address the legacy impacts on children that Covid-19 caused.

The Lancet Commission

6.7 I have been asked to consider the recommendations of the Lancet Commission and, generally, whether improved ventilation and filtration systems may be effective in reducing the transmission of disease in schools.

6.8 The recommendations of the Lancet Commission are as follows:

(a) The establishment of safe schools, workplaces, and public spaces, including investments in ventilation and filtration systems as tools to fight disease and promote long-term resilience, health, and wellbeing; and

(b) Permission for schools to implement stringent and evidence-supported control strategies early in an outbreak situation, to prioritise in-person learning.

6.9 The Environmental Modelling Group ('**EMG**'), led by Professor Cath Noakes, considered evidence on how factors in the physical environment may affect the probabilities of transmission. Early advice, in April 2020, highlighted the uncertainties in the relative importance of different modes of spread (spanning close range droplet, surface contact and aerosol transmission), and highlighted how the density of people in indoor spaces (such as in classrooms or staff rooms) would influence likely levels of exposure to virus droplets. It also suggested that ventilation levels in schools may be lower than other buildings, with older schools potentially having poorer levels of ventilation. I am not aware of the specific evidence on ventilation (that was reviewed by EMG), but I did support the CTFG (Meeting 5 – 7 July 2020) statement that suggested that handwashing, regular cleaning of surfaces (especially frequently touched surfaces), and ventilation, are important areas of focus for preventive action [**CW/12- INQ000250973**].

6.10 To note also, the challenge in adhering to ventilation advice was highlighted in expert discussions, given both that there is a necessary behavioural component (people have to act to open windows themselves), the challenge of sustaining this in winter, and at times, it is not feasible to open windows (e.g. if they have been painted closed). Challenges highlighted in CTFG Paper: Children and transmission - update paper, 10 February 2021 [**CW/07– INQ000073882**], included that fire doors were being propped open for ventilation, and balancing room temperature with the need for adequate ventilation was a common issue.

6.11 Although this is an area outside my specialised area of expertise, based upon the expert advice produced by the EMG group, I do think that ensuring that schools can be ventilated could have a preventive benefit for Covid-19 or other airborne infections. Given the challenges associated with relying on opening windows and doors, to maintain ventilation, there is probably a case for considering additional approaches to ventilation, such as mechanical ventilation. I am not qualified to judge what the wider health or educational benefits of improving ventilation and air-quality in schools, but based upon early suggestions in CFTG (Meeting 2) that some schools may have lower ventilation rates than other building, as a starting point it would be good to clarify what the current DfE / HSA guidance is on air quality, and explore whether the levels of ventilation in schools meets recommended standards [**CW/13- INQ000250969**].

6.12 Other measures to reduce the transmission of disease within schools, include promoting good hygiene practice (including in the preparation of food, washing of hands using soap, school cleaning protocols), and ensuring that clear and operable protocols are in place to identify and respond to sick children and disease outbreaks in schools.

6.12 I have also been asked to consider the following;

The Lancet Commission on lessons for the future from the Covid-19 pandemic (Sachs, Jeffrey D et al. The Lancet, Volume 400, Issue 10359, 1224 - 1280) concluded: "*As the pandemic entered its third year, schools continued to impose* *stringent restrictions. Although efforts should be made to reduce undue risk of infection to children, it should further be recognised that it is possible to keep schools open without putting students and adults at excessive risk. Because of the lower risk of severe COVID-19 among children, and considering the harms of school closures, in-person learning should be prioritised*".

6.13 I agree with many elements of this conclusion. There is good evidence of the lower risk of severe Covid among children (especially young children), and there is evidence of the negative impact of school closure on in-person learning and children's wider social development and mental health. However, there is also modelling evidence that suggest that school closure and lockdowns helped reduce the levels of deaths from Covid-19. Given this, I would support an approach that recognises the significance of the wider impacts of school closure on children, and factors this into considerations about response options.

6.14 However, through my involvement in CTFG, and thinking back to the early days of the pandemic, I feel very aware that, in the face of a new virus, assuring adults in schools and parents that the risk is 'not excessive' is easier said than done. In the face of a new infection, parents/carers will understandably want to protect their children, and many will choose to keep them at home. Similarly, the ability of schools to implement protective measures may still vary widely – for example, in their ability to effectively ventilate classrooms, limit class sizes, or stagger learning sessions.

6.15 Ensuring also that adults are not 'at excessive risk' is challenging, not only definitionally, especially given the incomplete understanding of long-covid, but also because you need to not only consider the risk to adults in schools, but also the risk to older/vulnerable adults / grandparents in the households and communities that children live in. For this reason, although I would want to ensure that lessons about the severe impacts of keeping children out of school are appreciated and considered, I would be cautious about making broad assertions about what is or isn't feasible, or to feel confident that that a consensus could be achieved on what constitutes 'excessive risk'.

6.16 The key challenge when responding to the question of whether or not to close schools, in isolation, is the centrality of children's connections to the wider community in which they live, that will include people at high risk from Covid-19. In the early stage of the epidemic, when the UK was facing exponential increases in infection, I believe that school closures were needed, along with wider restrictions, to reduce the rate of population spread.

6.17 Towards the later stages of the Specified Period, CTFG also highlighted the interconnectedness of the effect of different decisions, such as to lift restrictions in schools may require delays in lifting restrictions on workplaces. They also highlighted how a wider range of social and behavioural factors are likely to influence the likely impact of any measures, such as if restrictions on schools are lifted, whether this may affect the degree to which other protective behaviours are sustained. The CTFG/SPI- B modelling in particular highlighted the challenge of identifying options that could be taken without pushing R0 over 1.

6.18 Whilst the SAGE and CFTG produced evidence to help inform consideration of the health implications of different decisions, when there are constrained options to not deploy or lift restrictions, the choice across sectors, including for example between reducing restrictions on schools or workplaces, is ultimately political. As a member of SAGE, I was not sighted on what conversations were had at a political level.

6.19 With effective vaccines, and the increasing levels of vaccine/infection derived immunity, clearly the options to keep schools open / support in-person learning is greatly enhanced. With adequate pandemic preparedness, the period between a new outbreak, and effective vaccines, diagnostics and therapeutics will hopefully be shortened. Inevitably however, there will be a phase where rapid action, in the face of a significant threat and limited evidence, may need to be made. Decisions should be informed both by lessons from inquiries such as this, but also from expert analysis and advice on the fundamental epidemiology of the disease being faced. Clearly, for example, if Covid had predominantly impacted on children, school closure would have been a priority early intervention, and there would have been severe caution in lifting restrictions.

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.

Personal Data

Signed: ___________________________

Dated: 01 – 08 - 2025