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UK COVID-19 INQUIRY

WITNESS STATEMENT OF DR BARRY JONES – ON BEHALF OF THE COVID-19 AIRBORNE TRANSMISSION ALLIANCE [IN RESPONSE TO THE INQUIRY'S MODULE 3 RULE 9 REQUEST FOR EVIDENCE REF: M3/CATA/01]

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1. I am Dr Barry Jones BSc (Hons), MBBS, MD, FRCP, Chair of the Covid-19 Airborne Transmission Alliance (CATA). I am also lead for the British Association for Parenteral & Enteral Nutrition (BAPEN) of which I am a Trustee and Chair of Faculty. I provide this statement in response to the Inquiry's Rule 9 request for evidence on behalf of CATA and have drawn on the knowledge and experience of the wider members of CATA when compiling this evidence.

2. In response to this Rule 9 Request in relation to Module 3, I propose to respond to the Inquiry's questions under six broad headings : i) overview of who CATA is, how it was formed and why; ii) the scientific evidence base for the airborne transmission of Covid-19; iii) discussion of principles of pandemic management, infection prevention controls and Respiratory Protective Equipment (RPE); iv) CATA's position, advocacy and government engagement; v) the ongoing battle between science and policy related to Covid-19 in healthcare settings and vi) the impact on healthcare systems and workers.

I. Overview of CATA

A. Introduction

3. CATA is a voluntary association of professional and scientific bodies in the health sector, supported by individuals who have been invited to join it to bring technical expertise or relevant lived experience of COVID-19 in healthcare. CATA represents over 65,000 healthcare professionals from the following bodies:

    a. Association for Respiratory Technology & Physiology
    b. British Association for Parenteral & Enteral Nutrition
    c. British and Irish Association of Stroke Physicians
    d. British Dietetic Association
    e. British Occupational Hygiene Society
    f. British Society of Gastroenterology
    g. College of Paramedics
    h. Doctors Association UK
    i. National Nurses Nutrition Group
    j. Patient Safety Learning
    k. Queens Nursing Institute
    l. Royal College of Speech and Language Therapists

    In addition, the following individuals provide expert support to the work of CATA:

    - David Osborn: Chartered Safety and Health Practitioner
    - David Tomlinson: Consultant Cardiologist and Electrophysiologist
    - Geraint Jones: Advanced Pharmacist in HIV and Homecare
    - Dr Gillian Higgins: Research Fellow in Cell Engineering/Reconstructive Plastic Surgery
    - Dr Marianne Tinkler: Respiratory Consultant
    - Dr Nathalie MacDermott: Academic Clinical Lecturer in Paediatric Infectious Diseases
    - Dr Tom Lawton MBE: ICU Consultant and Anaesthetist

4. The make-up of the group means that it includes individuals who are among the foremost experts in the fields of prevention and management of hazardous exposures in the workplace and serious infection control. Above all, CATA members, by dint of their professional background, have a deep understanding of the challenges of managing risks to healthcare workers (HCWs) in specific healthcare and community healthcare settings. CATA is not a

charity, or a legal entity and the opinions of its members are reflected by an executive drawn from its wider membership.

5. The focus of CATA is on ensuring that policy makers, employers and professionals make decisions and form policy and guidance, founded on the well-established science regarding airborne (i.e., via aerosol inhalation) transmission of SARS-CoV-2. We have a particular focus on the implications for the health and safety of healthcare professionals, working both in healthcare settings and in the community.

6. CATA was initially constituted as the Aerosol Generating Procedures Alliance (AGPA). AGPA was formed in August 2020 and by September 2021, prior to its subsequent name-change, consisted of the Association for Respiratory Technology & Physiology (ARTP); BAPEN; British Association of Stroke Physicians (BIASP); British Dietetic Association (BDA); British Society of Gastroenterology (BSG); Chartered Society of Physiotherapy (CSoP); College of Paramedics (CoP); Confederation of British Surgery (CoBS); Doctors Association UK (DAUK); Fresh Air NHS (FANHS); GMB Union (GMBU); Hospital Consultants and Specialists Association (HCSA); Med Supply Drive UK (MSDUK); National Nurses Nutrition Group (NNNG); Queen's Nursing Institute (QNI); Royal College of Speech and Language Therapists (RCSLT); Trident HS&E (THSE); Unite the Union (UtU). AGPA was a voluntary association which brought together professional bodies and individual experts with a common expertise in the science and practice of healthcare. As will be explained below, AGPA subsequently changed its name to the Covid Airborne Protection Alliance (CAPA) since it was felt that this better explained its aims and objectives.

7. AGPA's focus was to address the consequences of the decision made in March 2020 to downgrade the protective equipment recommended to protect HCWs against SARS-CoV-2 transmission from the RPE required to protect against airborne viruses (predominantly FFP3 single use respirators) to Fluid Resistant Surgical Masks (FRSMs), except in relation to a few categories of medical procedures, termed "Aerosol Generating Procedures" (AGPs). Its particular concern was for the protection of the health and safety of HCWs in all healthcare settings including in the community from this exclusion of respiratory protections which would have previously been mandated in the case of exposure to SARS coronavirus. AGPA members held the view that the official list of designated AGPs fell far short of the mark in that it did not include all the medical procedures which generate aerosols. Neither did it address

the fact that natural activities such as coughing, sneezing, singing, speaking and even tidal breathing generate significant amounts of aerosol which present a significant hazard to HCWs if not provided with adequate respiratory protection.

8. AGPA changed its focus to the changing policy of healthcare policy bodies, the UK Government ("Government") and health sector employers. These policies were based upon an assumed pathway for the transmission of SARS coronavirus predominantly via large droplets (i.e., via ballistic impact with susceptible mucosa) occurring within 2m of an infectious individual, and via touch transfer of live virus from deposits on surfaces (i.e., fomites): aerosol transmission risk was stated to occur purely during AGPs in healthcare settings. In September 2021, AGPA, with a broadened membership became the Covid Airborne Protection Alliance (CAPA).

9. CAPA's central focus was to ensure that there was an understanding of the implications of the airborne (i.e., via infectious aerosol inhalation out with the narrow context of AGPs) transmission route of the virus. In particular, CAPA's advocacy centred on the need for appropriate risk management, controls of the spread of airborne SARS-CoV-2, and the protection of the health and safety of HCWs. It sought to highlight risks from not only hospital contexts, but for HCWs in the community and in non-institutional settings.

10. CAPA still campaigns with Government for recognition of airborne transmission and proactively supports the NHS in development of new guidance which, it is hoped, will prescribe appropriate and legally required respiratory protection for HCWs. With the announcement of the Inquiry, CAPA turned its attention to preparing to apply for core participant status. Not all members of CAPA wished to remain in this phase of activities, so CAPA changed its name to CATA. CATA membership is now made up of those organisations which remain and is further assisted by a number of individuals, including a number of clinicians afflicted by Post-Covid Syndrome (Long Covid).

11. It is worth reiterating that the unifying feature which brought together the organisations and individuals in CATA was, and remains, a desire for policy and practice to follow scientific evidence. The organisations in CAPA, which by 2021 represented over a hundred thousand HCWs, were not all known to each other, worked in distinct sectors of health and had no common framework or agreement. However, each organisation in turn, in the interest of their

members or in the furtherance of the protection of health, had and continue to have a sole desire that the science of transmission of SARS-CoV-2 should be consistently informed by the most reliable evidence base to protect human life and preserve human health. AGPA/CAPA also worked closely with other professional Healthcare bodies and in June 2021, when we met with the Department of Health and Social Care (DHSC), we were part of a consortium representing about 1 million HCWs with the Royal College of Nursing (RCN), British Medical Association (BMA), the Royal College of Midwives (RCM) and others (see paragraphs 231 and 357).

12. At the heart of CATA's evidence is the contention that the Government continued to deny a basic scientific fact – that the transmission of SARS-CoV-2 occurs importantly via the airborne route, via inhalation of infectious aerosols released secondary to normal physiological processes including coughing, sneezing, singing, speaking and tidal breathing. Latterly, even following the Government's concession that SARS-CoV-2 transmission was via the airborne route in this manner, a small group of individuals constituting the Infection and Prevention Control (IPC) Cell have resisted this contention, with the effect that protections for HCWs from the airborne transmission of SARS-CoV-2 were effectively denied to them. The authors of current guidance (National IPC Manuals) still adhere to the concept of AGPs, although the version for England admits to the airborne route for SARS-CoV-2 transmission, while the version for Scotland has not moved on from the droplet route and surgical masks (see paragraph 76). However, the various 4-nation NIPCMs continue to demonstrate ambiguity and inconsistency in their guidance.

13. As will be detailed throughout this statement, CATA members repeatedly and consistently provided Government with the scientific evidence in support of the airborne route of transmission of SARS-CoV-2 out with AGPs but were met with continuous resistance from Government and a constant failure to act. Such resistance to CATA's membership, which consisted of the country's doctors, nurses, allied health professionals, infection specialists, respiratory protection specialists – indeed precisely the people the public turn to for their own protection of health – cannot be justified.

14. Further, CATA's interpretation of the science was not a UK-centric view. The nature of airborne SARS-CoV-2 transmission was an internationally held view consistently right through the pandemic and the basis of national policy in the United States and across Europe. Indeed,

the Government's own COVID national core study – the world's largest COVID-19 nationally-led research project – confirmed the airborne transmission model, yet the Government and IPC Cell did not recognise this when it came to the exposure of HCWs. This becomes even more perplexing when considering the much publicised public health message from the UK Cabinet Office [BJ/56 - INQ000273881] with the mantra "Hands, Face, Space, Fresh Air", which implied that the airborne route was important. CATA calls for an explanation of why this was this not applied to HCWs.

15. Finally, the adoption of airborne transmission control measures in many non-healthcare settings (and some healthcare settings) in the UK and its noticeable impact on controlling the spread of SARS-CoV-2, contrasted strongly with the lack of effectiveness of infection spread in those healthcare settings where predominant droplet and fomite transmission precautions were followed.

16. Understanding the science of transmission is thus critical because it was, and continues to be, central to informing the correct strategy for protecting HCWs (and healthcare service users). By adhering to a transmission model that was not supported by the weight of scientific evidence (large droplet and fomite transmission) and discounting the evidence in support of airborne transmission out with AGPs, UK healthcare authorities and the Government endangered the health and lives of HCWs and the patients they worked with.

II. The scientific evidence base for the airborne transmission of SARS-CoV-2

I shall consider this topic under the following three headings:

A. Background / General Principles
B. Coronavirus transmission
C. The scientific evidence base for airborne transmission of SARS-CoV-2

A. Background / General Principles

17. In order to provide the Inquiry with an understanding of the evidence base for the aerosol transmission of SARS-CoV-2, it is first necessary to set out the evidence base as it existed before March 2020 ("the relevant period").

18. At first sight this may seem like a contradiction in terms – since how can anyone provide credible evidence about the properties of a particular virus before it even existed in the world? The SARS-CoV-2 virus which causes the disease "Covid-19" did not exist (or was not known to mankind) before the latter months of 2019. However, in reality it was far from a little-known virus and, for many years prior to the pandemic, it had been known that betacoronaviruses, including SARS, are transmitted by the airborne route.

19. All living creatures and organisms evolve over time, whether through the process of natural selection or, in more recent times, genetic manipulation by man. It does not matter whether SARS-CoV-2 was formed naturally in a cave full of bats or artificially in a Wuhan laboratory, the fact remains that a change to the genetic structure took place which enabled it to readily pass from human to human and then spread rapidly throughout the world to a defenceless population with no immunity.

20. We are familiar with this process as the SARS-CoV-2 virus has evolved into "variants", such as alpha, delta, omicron etc, any of which may become predominant depending upon how well suited it is to the environment in which the virus finds itself.

21. Therefore, by definition, the evidence base which underpins any planning and preparation for future pandemics must centre around similar organisms, with the assumption that a slight genetic change (mutation) will substantially increase the risk to human health, either by disease severity, transmissibility or resistance to humans' immune response.

22. It is therefore quite valid for scientists, such as microbiologists, virologists and epidemiologists, to consider existing viruses of which we have had experience and make reasonable assumptions as to the properties and behaviour (including transmissibility) of future variants based on credible past research.

23. The closest known relative to the virus which causes Covid-19 is SARS-CoV, which caused the SARS pandemic in 2003 (Severe Acute Respiratory Syndrome). Due to the similarities between them, the novel coronavirus which caused the current pandemic was named SARS-CoV-2. As a convention, SARS-CoV is now referred to as SARS-CoV-1.

24. From a pandemic management perspective, it was entirely reasonable to assume that SARS-CoV-2 would have very much the same properties of SARS-CoV-1 and implement emergency plans accordingly.

25. It is CATA's contention that the scientific evidence base for aerosol/airborne transmission of all respiratory diseases including SARS and other coronaviruses was already well-established long before the 'relevant period' and therefore, in the absence of any sound, compelling evidence to the contrary, airborne precautions would be taken to protect HCWs. No such sound evidence, which was sufficiently compelling upon which to make decisions upon which thousands of lives depended, was ever provided (or existed).

B. Coronavirus transmission

26. In Part C I shall include details of the scientific and technical evidence proving airborne/aerosol transmission. First, however, it may be helpful for me to provide an explanation of coronavirus transmission.

27. The first, and most important point is that the ability of a virus, bacteria, pollen grain or any other biological particle to become airborne (entrained in the air) has nothing whatsoever to do with the effect (the disease) it may eventually have on a human once it enters the body.

28. Before considering the virus, which causes Covid-19, let us consider a much older and well understood disease, namely tuberculosis (TB). It is universally accepted that TB is spread by the airborne route.

29. The organism which causes TB is a form of bacterium known as a bacillus. When an infectious person exhales, coughs or sneezes, the bacteria are ejected into the surrounding air via the nose or mouth. However, they are not on their own. They are entrained in tiny droplets known as aerosols. These are formed deep in the lung as the tiny airways (known as bronchioles) expand and contract as air rushes in and out of the lungs as a person inhales and exhales.

30. Once exhaled and out in the open air, the aerosols are so small that they are not greatly influenced by gravity and remain airborne, being swirled around by air currents and can remain airborne (and infectious) for hours. They will particularly accumulate and build up in

indoor locations such as rooms and wards. The danger they present to other people will depend on a number of factors:

a. the number of infectious people in a given space;
b. the size of the space (the smaller the space the greater the danger);
c. the amount of ventilation available to refresh the air in the space;
d. activities which may increase the amount of airborne aerosols such as coughing, sneezing, shouting, crying/wailing, singing etc.; and
e. in a healthcare environment, where workers are providing close-quarter care for infectious patients, the effectiveness of respiratory protection they are wearing which filter out the hazardous aerosols before they can be inhaled is of crucial importance to their safety. If they are not wearing effective RPE then they will be at much greater risk from inhaling the virus laden aerosols in the air around them. This is because the Hierarchy of Controls (which will be described in more detail at paragraph 107 of this statement, but in brief summary provides a guideline for different strategies to manage workplace hazards) does not mitigate risks for close quarter care, when the only option is to provide appropriately fitting RPE. RPE is at the bottom of the Hierarchy of Controls because it fails to danger. In the context of infectious diseases, this means that when RPE fails, its result is predicted to be infection of a member of staff.

31. Research into how diseases spread between people has been going on for a very long time. Early evidence of airborne transmission of respiratory diseases dates back to the 1940s when an engineer, William Firth Wells, installed ultraviolet lights in school classrooms to sterilise the air. He studied the rates of cross-infections of measles between the pupils and found it to be significantly lower in the classrooms which had the disinfected air. This could not have occurred if transmission was just due to droplets which fall straight to the ground after being exhaled. It can only have been due to viruses being inactivated by virtue of them hanging in the air.

32. Some 20 years later Wells undertook a simple, but effective experiment pumping air from a ward containing TB patients into cages containing guinea-pigs housed in another room, higher in the building. The guinea-pigs became infected with TB. The key point about droplets is that the clue is in the name – i.e., they drop. Whereas droplets are influenced more by gravity, aerosols are so small that they hang in the air and can drift in whatever direction the air

currents take them. So, because it is only aerosols that can travel upwards, Wells' experiments confirmed that, without doubt, TB was spread by aerosols i.e., the airborne route.

33. The fact that TB is transmissible via the airborne route is confirmed by the UK's acknowledged experts, the Joint Committee on Vaccination and Immunisation (JCVI), in their authoritative document "Immunisation against Infectious Diseases" (The "Green book") chapter 32 (Tuberculosis) [BJ/1 - INQ000300290]. This confirms that almost all cases of TB in the UK are acquired through the respiratory route, by breathing in infected respiratory droplets from a person with infectious respiratory TB. The terms "aerosols" and "respiratory droplets" are virtually synonymous, the common factor being that they are inhalable from the surrounding air.

34. Now turning to consider the SARS-CoV-2, the infectious agent which causes Covid19. The TB bacillus is absolutely massive in comparison with SARS-CoV-2. In fact, it is 260 times the size of the virus. It is a simple matter of physics that if a relatively enormous object such as a TB bacillus can become entrained in an aerosol, then, most certainly, so can a tiny virus.

35. Assuming we accept that a SARS-CoV-2 virus can become entrained within an aerosol, we then have to consider whether, and how, the aerosol can enter the human body and initiate an infection.

36. This is an area which WHO, UK Public Health authorities and especially Infection Prevention and Control practitioners seem to struggle with. The Inquiry Team, other Core Participants and the general public may be astounded to learn that, confronted with a global pandemic, scientists could not even agree amongst themselves as to what an aerosol actually was – the futile debates about the size of an aerosol continued while people were dying.

37. IPC practitioners, who seem to hold sway with WHO and Public Health authorities, claim that it is a droplet whose size is less than approximately 5 microns in diameter (a micron being one thousandth of a millimetre[1]). This figure is not set in tablets of stone and, some will say it

[1] The unit of measurement known as a 'micron' may equally be referred to as a 'micrometre' and denoted by the symbol 'μ'.

extends to 10 microns. On the face of it, that may seem reasonable since particles of around this size are, and always have been, termed “respirable”.

38. The origin of this 5 to 10 micron threshold dates back decades and stems more from airborne hazards such as dusts (e.g. silica, coal dust etc) and fibres (e.g. asbestos) whose diameters are below that size and can penetrate right down into the deepest parts of the lung (known as the alveolar region). The alveoli are tiny little “air sacs” where the oxygen from the air passes through into the blood and carbon dioxide comes out the other way. This is illustrated in Figure 1 below.

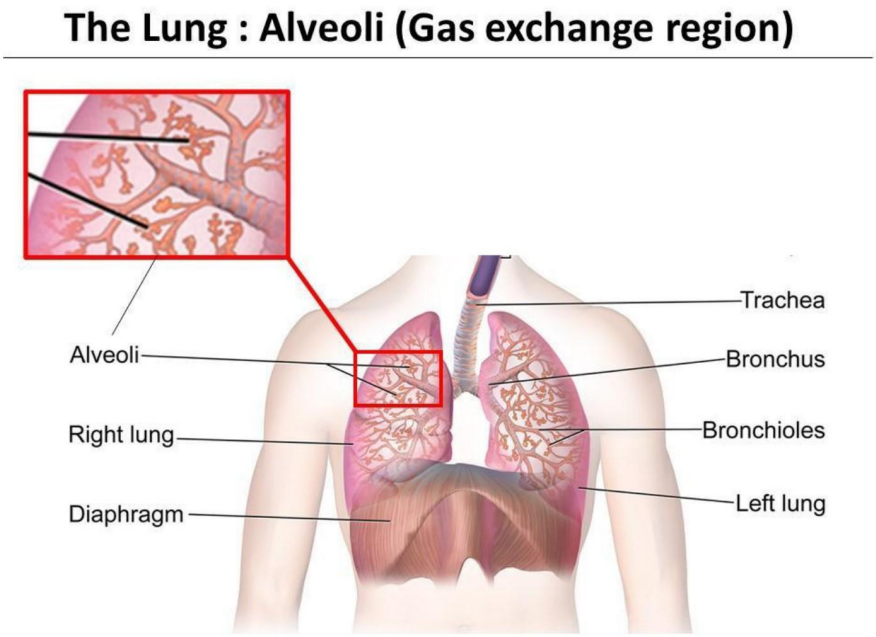

Figure 1: The human respiratory system[2]

39. The human body does have some defences against particles that are larger than this size. They come in the form of tiny hairs known as “cilia” which line the upper parts of the respiratory system. These are covered in sticky mucus which helps trap, filter out and remove dust particles etc. This is illustrated in Figure 2 below.

[2] This is a modified version of a graphic cited from Blausen.com staff (2014), "Medical gallery of Blausen Medical 2014", WikiJournal of Medicine 1 (2), DOI:10.15347/wjm/2014.010. ISSN 2002-4436.

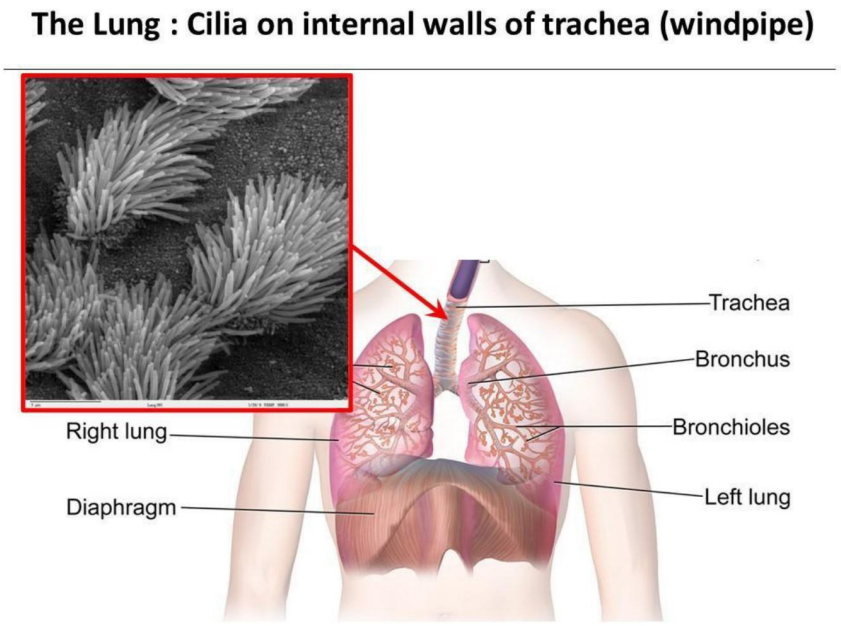

Figure 2: Cilia lining the inside of the upper airways.[3]

40. So, where an airborne particle or droplet only (or mainly) causes disease in the alveolar region then this 5 to 10 micron threshold does have relevance. However, that is not the case with Covid-19. To appreciate this, we need to understand a little more about the mechanism by which the SARS-CoV-2 virus attacks the body.

41. In order to attack the body, the virus first has to find its way into the cells of the body where it can then replicate itself. In order to get into the cell, it has to find something called a "receptor". This is like a 'hook' onto which it can latch and then sneak into the cell. The receptors to which the SARS viruses attach are called "ACE2"[4]. The mechanism by which these gain entry into the cell is illustrated in Figure 3 below:

[3] This is a modified version of two graphics cited from:
(1) Blausen.com staff (2014), "Medical gallery of Blausen Medical 2014", WikiJournal of Medicine 1 (2), DOI:10.15347/wjm/2014.010. ISSN 2002-4436; and
(2) Charles Daghlian (7 October 2006), "Bronchiolar epithelium 3 – SEM", Wikipedia.

[4] Angiotensin Converting Enzyme 2.

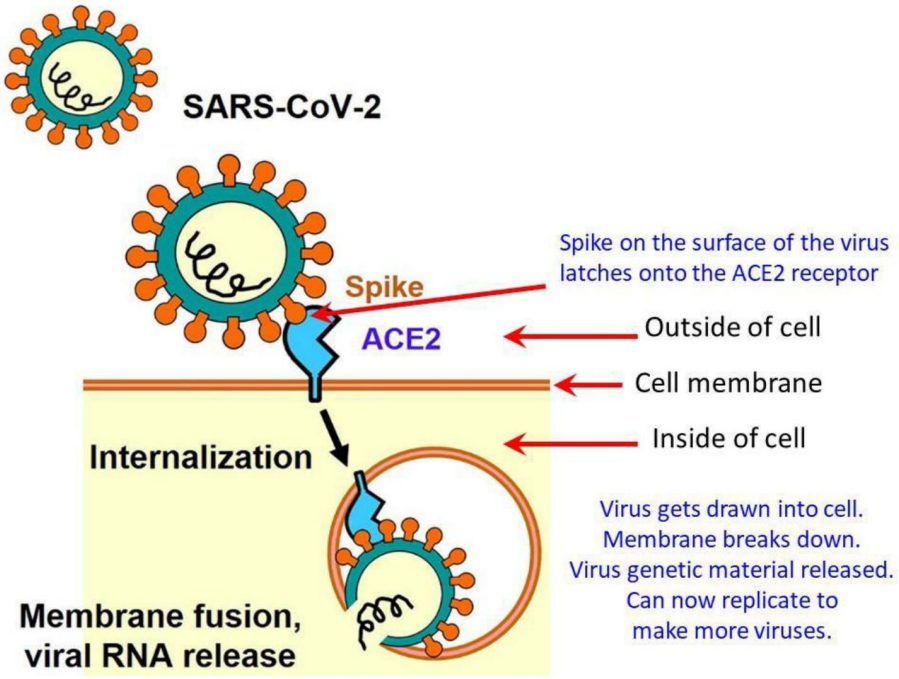

Figure 3: Illustration as to how SARS-CoV-2 viruses gain entry into human cells.[5]

42. A crucial difference between Covid-19 and TB is that the ACE2 receptors are not confined to the lung but, very early on in the pandemic, were discovered to be just as abundant in the nose (the nasal epithelial cells) as they are in the alveoli in the lungs [**BJ/7** INQ000300560]. This means that it is not just the aerosols which are below the 5 micron threshold which can trigger the disease, but particles/droplets ten times larger.

43. By focusing on the 5 micron threshold, the scientists in WHO, Public Health Authorities and IPC practitioners are totally missing the point that airborne aerosols up to 100 microns in size can, and will, trigger the disease if they can reach the nose or the throat. It is a fallacy to believe that surgical masks (even fluid resistant ones) will prevent these aerosols from reaching the nose and the mouth and initiating the disease.

44. It is CATA's contention that this conceptual flaw in the thinking of these policy-forming organisations, coupled with the poor state of the United Kingdom's pandemic preparedness and the lack of stockpiled RPE, will have been a major factor in the infection and mortality rate

[5] K Kuba et al, Front. Immunol., 22 December 2021, Sec. Viral Immunology, Volume 12 - 2021 [BJ/2 - INQ000300439].

amongst HCWs and hospital-acquired infections – as well as infections among the general population.

45. We therefore needed a better definition of an aerosol than the 5 micron threshold. Ironically there were better, more appropriate definitions available, but these were not accepted by the IPC Cell. There are two primary scientific definitions that CATA considers should have been considered by the IPC Cell – which are explained in paragraphs 46 – 49 below.

46. Early in the pandemic, advice was being given by competent and well-respected scientists in the Environmental Modelling Group (EMG). EMG provides technical, scientific advice to the Government's Scientific Advisory Group for Emergencies (SAGE). EMG played a leading role in this, with the group being co-chaired by three highly eminent scientists including the Health and Safety Executive's (HSE) Chief Scientific Advisor, Professor Andrew Curran. In a report to SAGE in April 2020 [BJ/4 - **INQ000192047** EMG provided a definition of aerosols, cautioning that "aerosol size extends up to 100μm (microns)" and would reach the nose and mouth. Given that this definition had the backing of the HSE's Chief Scientific Advisor, it should have been accepted by the IPC Cell. The fact that it was not accepted demonstrates that extant science was not being followed from a very early stage in the pandemic.

47. This definition was further confirmed in a paper in July 2020 named 'A Rosetta Stone for Understanding Infectious Drops and Aerosols' [BJ/5 - INQ000300575] by the eminent and well-respected scientist Professor Donald K Milton, MD, DrPH. Milton recognised that the medical terms (aerosol/droplet) which had been established over a century before were now outdated. Scientists, he felt, needed to move to a more nuanced terminology which would facilitate the communication between the various scientific disciplines. In other words, it was about time they "all start talking the same language" and got on with the job of limiting the damage being done by Covid-19.

48. From 14 January 2021, following SAGE's 76th meeting, Milton's description and definitions of aerosols and ballistic droplets were formally accepted by SAGE as the definition that they would use from thereon. He defined three types of aerosol and clarified what was meant by a "droplet". These were:
    a. Respirable aerosols (less than 5μm): (will pass deep into the lungs i.e. the 'alveoli');
    b. Thoracic aerosols (5-15μm): (thoracic = chest)

c. Nasopharyngeal aerosols (15-100µm); (nasopharyngeal = nose and throat)

d. Ballistic droplets: over 100µm

The introduction of the term "ballistic" was helpful, being defined as "moving under the force of gravity only", as opposed to aerosols which are "airborne", being defined as "transported by air", which hang in the air and move with air currents. Ballistic droplets can impinge directly on a person's nose, mouth or eyes and initiate infection if they should be within close range. Milton illustrated the underlying principles of disease transmission from an infectious person ('the index case') to another person with a diagram (to which additional text has been added) at Figure 4.

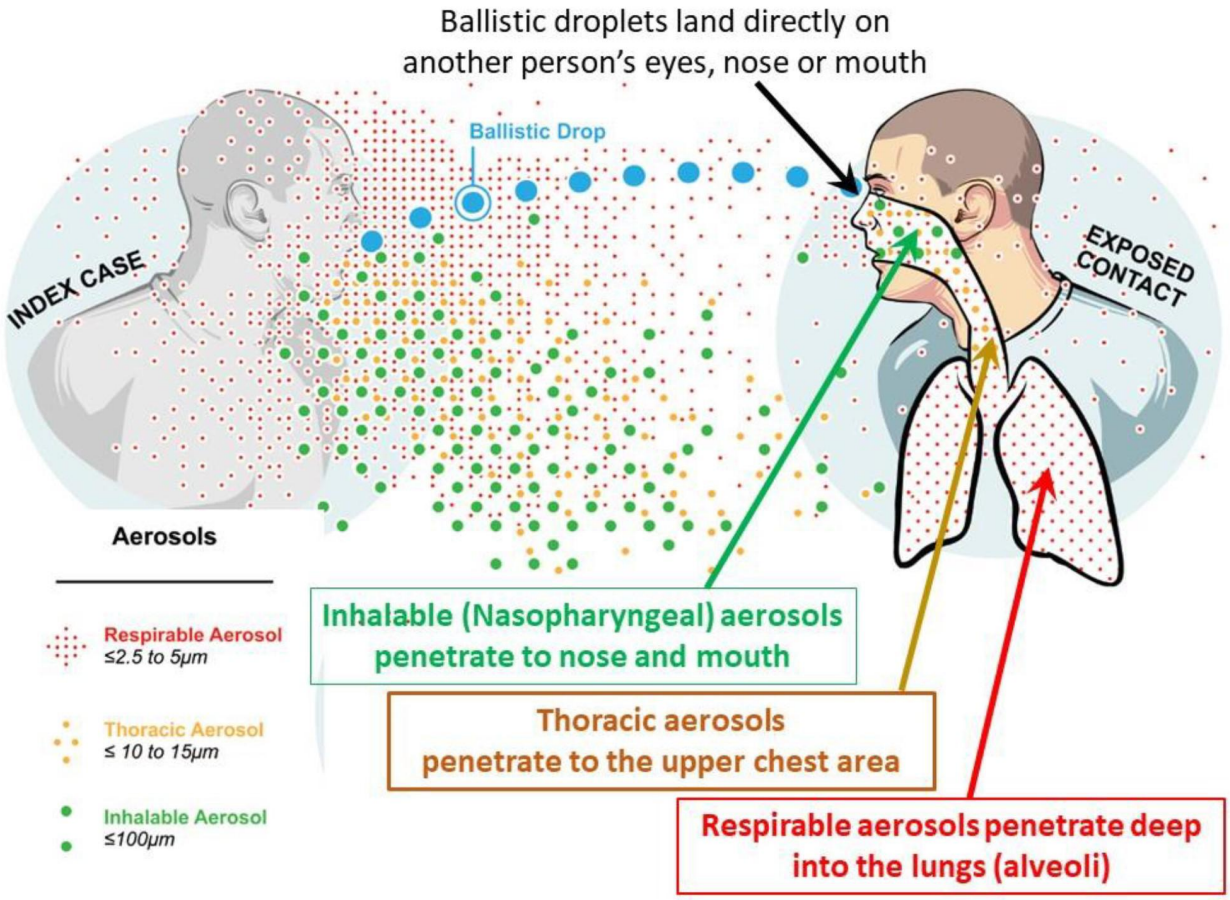

Figure 4: Pathways followed by different aerosol fractions and droplets.[6]

[6] This diagram (to which additional text has been added) is cited from Donald K Milton, 'A Rosetta Stone for Understanding Infectious Drops and Aerosols', *Journal of the Pediatric Infectious Diseases Society*, Volume 9, Issue 4, September 2020, Pages 413–415 [BJ/5 - INQ000300575].

These underlying principles regarding the range of respiratory particles and their potential spread over distances have also been demonstrated in a graphic by Professor Lindsey Marr, in the paper 'Dismantling myths on the airborne transmission of severe acute respiratory syndrome coronavirus-2' [BJ/5d - INQ000300588].

49. Milton also explained the importance of these concepts in understanding the effectiveness of using surgical masks as "source control" as shown in Figure 5. The diagram also illustrates the limitations of surgical masks in that a significant amount of respirable aerosols escape from surgical masks into the surrounding air:

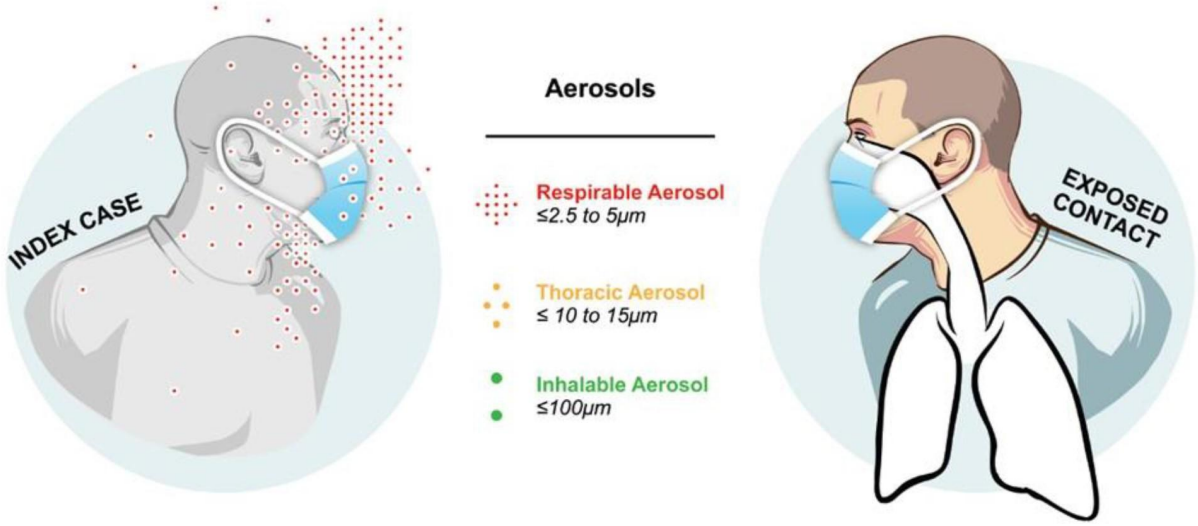

Figure 5: Diagram illustrating the use of surgical masks in respect of 'source control'.[7]

50. Notably, the Respiratory Evidence Panel (REP), a part of UK-HSA, widely acknowledged as the definitive experts in respiratory protection, second only to the HSE, reviewed all available evidence (including that of the EMG) [BJ/4 - **INQ000192047** and confirmed that, in the UK, both SAGE and PHE have adopted the Milton definition of aerosols, implicitly rejecting the 5 – 10 micron definition used by the WHO [BJ/5a - **INQ000120649**.

51. However, CATA notes that, despite the assertion that PHE use the Milton definition (100 microns), the extant IPC guidance issued by PHE **BJ/74a - INQ000271659** at section 8b/8c

[7] This diagram is also cited from Donald K Milton, 'A Rosetta Stone for Understanding Infectious Drops and Aerosols', *Journal of the Pediatric Infectious Diseases Society*, Volume 9, Issue 4, September 2020, Pages 413–415 [BJ/5 - INQ000300575]

clearly defines the cut-off between aerosol and droplets as 5 microns. This exemplifies the confusion and ambiguity that has pervaded official bodies throughout the pandemic.

52. Despite Milton's best endeavours to align scientists' terminology and thinking, the IPC Cell resolutely refused to be parted from their 5 micron threshold. This has pervaded IPC guidance right through from the very start of the pandemic [BJ/6 - **INQ000325350** to the present day. Anything larger than 5 microns was, and still is, considered to be a "droplet", not an "aerosol" and therefore only warrants surgical masks by way of 'protection'. It is CATA's contention that, until this conceptual flaw is overturned, health and social care workers will continue to contract dangerous respirable diseases from their patients and each other.

53. The phrase used in every version of IPC guidance was "*droplets penetrate the respiratory system to above the alveolar region*" as if to say that this doesn't matter, and the disease was only initiated down in the alveoli. Had the IPC Cell and their researchers in the group in Scotland "Antimicrobial Resistance and Healthcare Associated Infection" (ARHAI) considered the reports such as "Single-cell RNA expression profiling of ACE2, the putative receptor of Wuhan 2019-nCoV, in the nasal tissue: Chao Wu et al" **BJ/7 - INQ000300560** they would have known, as far back as February 2020 that infection in the nose is a very significant location for the infection to take hold.

54. By way of a high-level summary of that report, at a very early stage in the pandemic the similarities between SARS-CoV (from the 2002/3 outbreak) and SARS-CoV-2 (aka novel coronavirus 2019-nCoV) had already been recognised by scientists investigating the properties and characteristics of the new virus. It was quickly recognised that the method of entry into the human cells was via the ACE2 receptor (see paragraph 41 above) which was known to be abundant in the alveoli, deep in the lungs (see paragraph 38 above). This discovery had been reported on 26 January 2020 in "Single-cell RNA expression profiling of ACE2, the putative receptor of Wuhan 2019-nCov" [see BJ/7a - INQ000300606]. The clinical manifestation of the disease was primarily in the lung, and this was plainly evident by the large numbers of patients dying as a result of their breathing difficulties. With attention understandably being focused on learning more about the infection mechanisms in the lung, not much attention was given to the upper respiratory tract. The research by Chao Wu and colleagues convincingly established that the ability of the virus to penetrate the epithelial cells in the nose was comparable to its ability to penetrate the cells in the alveoli. Put another way,

the nose was an equal target for the virus as the lung. Their findings had a huge significance in terms of respiratory protection of workers since it was now known that it was not just the respirable aerosols (5 microns or less) which could initiate disease but the inhalable (nasopharyngeal) aerosols (less than 100 microns) which could initiate disease. As a consequence of this, RPE would need to be worn which would be effective at filtering out the nasopharyngeal aerosols. It was not just a question of putting a barrier (such as a FRSM) in the path of ballistic droplets which might happen to land on the nose or mouth of the HCW.

55. In October 2022 a glimmer of hope appeared on the horizon that scientists would indeed start 'talking the same language' as regards aerosols vs droplets. This came in the form of a letter from the Chief Medical Advisor of UK-HSA to CAPA. In it she asserted that "*We recognise that a strict dichotomy between droplet and airborne transmission is no longer useful*" [BJ/8 - INQ000300607]. However, this apparent shift in thinking has not been reflected in the IPC manuals.

56. Finally, to conclude this section it is appropriate to further consider the importance of SARS-CoV-2 virus in the lining of the nose where, as previously mentioned, the virus can accumulate in significant amounts. This is why many lateral flow tests now only require swabbing of the nose and not the throat. Having gained a foothold in the lining of the nose and started the process of virus replication, the virus then seeks out a route to spread itself throughout the body.

C. The Scientific evidence base for airborne transmission of SARS-CoV-2

57. I will now provide further detail as to the scientific evidence base for this aerosol/airborne route of transmission of SARS-CoV-2. Prior to the current pandemic, the World Health Organisation (WHO) had published conflicting statements regarding airborne transmission of SARS, with some publications stating that it was not transmitted via the airborne route and others stating that it was. This unhelpful ambiguity continued long after the arrival of the current pandemic.

58. WHO had accepted that SARS coronaviruses were transmissible via the airborne route, as can be seen in their guidance on SARS [BJ/11a - INQ000300317], where they categorically state "*SARS is an airborne virus*". They also recognise that it can be spread through "*small droplets of saliva*" and indirectly via touching contaminated surfaces (otherwise known as

"fomite transmission"). Having recognised that SARS-CoV-1 could be transmitted by all three routes, airborne, droplets and fomites there was no reason to suppose that SARS-CoV-2 would not also be transmitted by all three routes, including and especially "airborne".

59. In 2014 WHO published their Guidelines "Infection Prevention and Control of Epidemic and Pandemic prone acute respiratory infections in health care" [BJ/12 - **INQ000114293** At section 1.3.1 they acknowledge that "*transmission through infectious respiratory aerosols of various sizes may occur at short range*". It is precisely this short-range transmission from infectious patient to HCW that members of CATA have been most concerned about since early in 2020 – indeed close quarter care of patients is arguably what HCWs do most.

60. Other paragraphs from this same document are highlighted in [BJ/13 - INQ000300338] which indicate that when a new infectious disease is identified, it should be considered possible that it is airborne and appropriate precautions adopted.

61. Similarly, the UK Government had previously declared SARS to be an airborne disease, as can be seen in the list of High Consequence Infectious Diseases (HCID) pre-dating the current pandemic (13/5/2019) [BJ/14 - INQ000300369], with SARS alongside MERS and Avian Flu under the "Airborne HCID" heading.

62. At the outset of the Wuhan outbreak, in January 2020, the Chinese authorities supplied the genetic sequence of the novel coronavirus which was instantly recognisable as a very close relative of the SARS coronavirus which had caused the pandemic in 2003 [BJ/15 - INQ000300381]. The genome sequences were found to be 79% identical to SARS-CoV-1. This, together with the fact that the binding mechanism by which the virus gained entry into human cells was consistent with the same mechanism as in SARS-CoV-1 (i.e., angiotensin-converting-enzyme 2 (ACE2)) demonstrated the close relationship between the two beta-coronaviruses.

63. It is a basic principle of virology, affirmed by the WHO in 2014 that viruses do not change their mode of transmission. They stated, in their guidance on Ebola, that *"scientists are unaware of any virus that has dramatically changed its mode of transmission"* [BJ/16 - INQ000300394].

64. Similarly, it is an underpinning aspect of evolution and natural selection that a virus would not successfully evolve into a less efficient variant (such as downgrading from 'airborne' to 'droplet' or from 'droplet' to 'contact').

65. Following the SARS outbreak in 2003 research was carried out which had demonstrated that it was transmissible via the airborne route:

- In 2004 Li et al [BJ/17 - INQ000300407] demonstrated that a large SARS outbreak which occurred in a Hong Kong hospital was attributable to airborne transmission.

- In 2004 Christian et al [BJ/18 - INQ000130560] challenged the view that SARS Coronavirus was transmitted by droplet route or aerosol-generating procedures.

- In 2005 Booth et al [BJ/19 - INQ000300427] demonstrated SARS outbreaks in Toronto hospitals were attributable to airborne transmission.

- In 2016, researchers demonstrated that another coronavirus, Middle East Respiratory Syndrome (MERS) was proven to be airborne in two South Korean hospitals where infectious patients were being treated [BJ/20 - INQ000300440].

66. Furthermore, a 2013 paper co-authored by Sir Jonathan Van-Tam, former Deputy Chief Medical Officer (CMO), and Lisa Ritchie (who in fact chaired the IPC Cell in the early stages of the pandemic) also confirmed that the main routes of transmission of the SARS-CoV-1 virus were via the droplet and aerosol/airborne routes [**BJ/53 - INQ000130561**]. The paper concluded that HCWs should use FFP3 respirators for protection from SARS.

67. Thus, given the evidence of the preceding paragraphs, it was abundantly clear that the novel coronavirus was a new airborne SARS coronavirus. Indeed, the virus was classified by the UK Government as an airborne HCID along with SARS, MERS etc [BJ/22 - INQ000300462].

68. In January 2020 Public Health England (PHE) confirmed in their IPC guidance that, as regards coronaviruses in general, airborne transmission can occur from respiratory secretions as well as faecal material [BJ/23 - INQ000300472].

69. The first official confirmation internationally that the new coronavirus was airborne, being transmitted through aerosols, came on February 8 2020 in a press conference by the Shanghai Municipal People's Government [BJ/24 - INQ000300485]. The Chinese authorities had had the longest and best opportunity to study the behaviour of the new virus. Confirmation was given that the virus-carrying droplets form aerosols which are stably suspended in the air and people may become infected by inhaling the virus aerosols.

70. The mode of transmission was confirmed as airborne by Dr Tedros Ghebreyesus, the Director General of the WHO, on 11th February 2020 when he confirmed to the world "Corona[virus] is airborne" [BJ/25 - INQ000273879]. However, by way of evidencing the mixed and contradictory messaging given out by WHO, within minutes Dr Tedros had changed his statement to say that corona was not airborne but spread by droplets instead. This followed intervention by a concerned colleague, Dr Ryan, who seemingly disavowed Dr Tedros of the notion that the disease was "airborne". Dr Tedros responded that he had used the "military word airborne" and that he actually meant the disease was spread by droplets or respiratory transmission. This engenders even more confusion and further impacts upon WHO's credibility since "respiratory transmission" (i.e., transmission from one person's respiratory system to another person's respiratory system through the medium of the air in between them) is synonymous with "airborne transmission".

71. Notably, in the UK, on 28 January 2020, SAGE, the formal advisor of government on public health emergencies, published a report confirming a "respiratory" transmission-route of Covid-19 [BJ/25a - INQ000300509]. Further, on 5 March 2020, CMO, Professor Chris Whitty, confirmed that the disease was airborne, stating like "all viral infections that have a very strong force of transmission and are airborne have the capacity to travel worldwide" [BJ/26 - **INQ000130504** and BJ/27 - INQ000273880].

72. It is clear that senior and very competent scientists and medical practitioners were quite certain about the airborne nature of the pandemic disease. However, after these initial statements the authorities retreated into the dogma that the disease was not airborne and was only spread either by droplets from an infected person landing directly upon the mouth, nose or eyes of another person or by a person touching a surface upon which these infectious droplets had fallen and then self-inoculating by touching their mouth, nose or eyes. There then

followed an absolute and vehement denial of the airborne route and they stressed the need for more research.

73. It is CATA's contention that the early claims by WHO and UK Government Departments and Agencies that further research was needed to ascertain the mode of transmission (for example see [BJ/27a - INQ000300534] and [BJ/27b - INQ000300535]) were nothing short of prevaricating and in CATA's view were:

    a. a means of allaying public fears and panic, should it be realised that the air one breathed could initiate the infection;
    b. a convenient set of easy to understand control measures based on 'droplet and fomite transmission' which involved washing hands whilst singing 'happy birthday' twice and maintaining 2 metres distance;
    c. a delaying tactic in order to provide justification for provision of inadequate respiratory protection for HCWs because of the world-shortage of proper RPE which existed as a result of poor pandemic planning (particularly in the United Kingdom).

74. Besides, if further research was needed, then the "precautionary principle" should have been observed and the pandemic management should be based around worst case i.e., that the disease is spread by the airborne route. The precautionary principle is discussed in more detail at paragraphs 90 to 96 and paragraphs 362 to 375 of this statement.

75. As the pandemic progressed, different UK government and public health bodies formally accepted the scientific evidence base for the airborne route of transmission at various stages. The first traceable UK Public Health Authority recognition came from the Public Health Agency Board (Northern Ireland) at a Board Meeting on 20 February 2020 where it was "explained that the virus is transmitted through coughing and sneezing, and that it is also airborne" [BJ/27c - INQ000300536]. On 12 May 2020, the Health and Safety Executive Chief Scientific Advisor, Professor Andrew Curran, stated in oral evidence, "there are three major transmission routes: from surfaces, from the air and from people" [BJ/27d - INQ000300537]. On 25 October 2020 PHE published a report stating "SARS-CoV-2 is primarily transmitted between people through respiratory (droplet and aerosol) and contact routes … Airborne transmission may also occur in poorly ventilated indoor spaces, particularly if individuals are in the same room together for an extended period of time" [BJ/27e - INQ000300538]. Further,

on 18 November 2020 the DHSC and the UK Cabinet Office released a public information video in which airborne transmission was graphically depicted [BJ/56 - INQ000273881].

76. However, it should be highlighted that, even following formal recognition of the airborne transmission, government and public health bodies in the UK did not appropriately apply that knowledge to the guidance being provided for the protection of HCWs. As will be discussed in further detail throughout this statement and as noted in paragraph 14 above – while members of the public were being advised to ventilate their homes to prevent airborne transmission [BJ/56 - INQ000273881] IPC Cell guidance failed to provide a mandate for the provision of RPE that would be effective at protecting HCWs from an airborne disease (other than in the context of AGPs). Indeed, the guidance produced by the IPC Cell never formally recognised SARS-CoV-2 as unambiguously airborne transmissible – and while the National IPC Manual in England, which replaced IPC Cell guidance, published on 8 June 2022, finally recognized SARS-CoV-2 as airborne, it continued to recommend the use of FRSMs for routine care of infectious patients [BJ/27f - INQ000300539]. It should be noted that despite sharing the same scientific base, the National IPC Manual in Scotland still adheres to the droplet route with surgical masks for routine non-AGP care with Covid-19 (see paragraph 12).

III. Discussion of principles of pandemic management, infection prevention controls and RPE

77. I shall consider this topic under the following headings:

A. The known risk of the SARS/Coronavirus as a cause of major hazard or as a pandemic risk
B. Requirements for the management of SARS Coronavirus incidents prior to 2020
C. Controls for the management of SARS Coronavirus
D. Basic Principles of RPE
E. Types of respiratory protection
F. The Established State of Knowledge About the Appropriate Management of SARS Coronavirus
G. RPE capacity for the protection of HCWs prior to 2020 –
   G1. Volume of RPE
   G2. Diversity of RPE

G3. Training on RPE

G4. Fit Testing

G5. Expiration & Maintenance

G6. General Capacity for Protecting the Health and Safety of Workers in Health Contexts

H. Management of Risk and Pandemics Planning in the UK Healthcare Context

I. What are the risks arising from a pandemic virus within healthcare? –

I1. Frontline staff and patients

I2. Staff-to-staff infection

I3. Capacity, continuity, resilience and sustainability

J. Environmental controls for pandemic preparedness

K. Management systems for pandemic management

L. Human Resources and workforce planning for pandemic readiness

M. Procurement contingencies for pandemic readiness

A. The known risk of the SARS/Coronavirus as a cause of major hazard or as a pandemic risk

78. In 2008 SARS/Coronavirus had been identified as a potential significant cause of a major hazards incident and was specifically dealt with in the Health Protection Agency's 2008 'Chemical, Biological, Radiological and Nuclear (CBRN) incidents: clinical management & health protection' [BJ/28 - INQ000130543]. It was identified as a disease for which aerosol transmission risk precautions needed to be followed. The risk posed by SARS/Coronavirus was further reiterated when the clinical guidance was reissued in 2018.

79. Prior to the Covid-19 pandemic the UK's only fully articulated pandemic strategy was for Influenza in 2011. The UK Influenza Pandemic Preparedness Strategy [BJ/29 - **INQ000102974** was created as a result of the Independent Review following the H1N1 outbreak in 2009 [BJ/30 **INQ000022705**]. The Influenza Strategy stated:

> *"A pandemic is most likely to be caused by a new subtype of Influenza A, but the plans could be adapted and deployed for scenarios such as the outbreak of another infections disease, eg Severe Acute Respiratory Syndrome (SARS) in healthcare settings, with an altogether different pattern of infectivity."*

80. The last phrase, written in a way which is open to misunderstanding or misinterpretation, nonetheless reflects the distinct difference of transmission routes between Influenza viruses and SARS viruses, as it was understood in the Influenza Strategy. The Influenza Strategy's position was that whilst some influenza viruses are predominantly spread by droplets, others (including the more dangerous ones such as avian flu viruses) are known to be airborne and have pandemic potential. It should be noted that there is significant debate as to whether the Influenza Strategy's position regarding the transmission routes of influenza is scientifically accurate – nonetheless, the 2011 Influenza pandemic strategy as published was firmly based upon a droplet model of transmission.[8] In order to address the difference in transmission routes and also to consider the implications for healthcare settings, the text of the strategy might have been more helpfully expanded.

81. As noted in our Rule 9 statement in Module 1 [INQ000174768], it is significant that influenza planning was based on droplet mode of transmission, as there was a very close similarity between the actual management of the COVID-19 pandemic, including the management of transmission in healthcare, and the prescriptions of the 2011 Influenza Pandemic Strategy. Adherence to this strategy for a SARS Coronavirus pandemic, as opposed to following the specific prescriptions set out above and in the CBRN guidance, necessarily resulted in the wrong and inappropriate controls of infection in settings where healthcare was provided. This was also the conclusion of a Rapid Review published in 2020 from Imperial College hospital, London [BJ/30a - INQ000300561].

B. ***Requirements for the management of SARS Coronavirus incidents prior to 2020***

82. It is helpful, especially in the light of the 2011 Influenza Strategy, to contrast the management of an Influenza virus and a SARS coronavirus. It is also important because the New and Emerging Respiratory Virus Threats Advisory Group (NERVTAG) made critical decisions which impacted the response to COVID-19 predicated on the need to be prepared for an Influenza pandemic.

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[8] Further information regarding transmission routes of Influenza, as understood by the UK Influenza Strategy, can be found in the DHSC's guidance on 'UK Influenza Pandemic Preparedness Strategy: Routes of Transmission of the Influenza Virus' [BJ/31 - INQ000130565].

83. Whilst the Influenza Strategy was based on the view that influenza can be spread by droplet transmission, the role of aerosol transmission of influenza was stated to be unclear at the time of the 2011 strategy and was, in 2016, judged by NERTVAG to be less than previously thought. The implications of this for general pandemic preparedness drove some management decisions in relation to the availability of respiratory protection for HCWs. The fact that some recommendations of NERVTAG in 2016 were not acted upon further impacted on this.

84. Management of the UK healthcare Respiratory Protection Equipment (RPE) stockpile and the capability to fit that equipment effectively and safely was determined by NERVTAG, who made these decisions based on the assumed requirements needed to manage an Influenza pandemic. However, it must be reiterated that while changes in the understanding and management of Influenza took place between 2008 and 2016, there was no change in the understanding and management of SARS Coronavirus, as evidenced by the 2018 CBRN incidents Clinical Guidance [BJ/32 - INQ000130577]. It is unclear whether NERVTAG considered the RPE requirements for the UK for the management of a pandemic that was transmitted by an aerosol route (such as SARS), despite this having been highlighted as a possibility by the UK 2011 Strategy.

C. *Controls for the management of SARS Coronavirus*

85. In order to understand how to effectively control SARS-CoV-2 transmission, it is useful to provide a simple summary of the differences between droplet and airborne transmission and then to examine how these relate to the legal duties which guide how science is used to inform practice.

86. Airborne transmission generally has the following features. The infectious viral material:

- is exhaled (e.g., through breathing, coughing, sneezing, speaking and/or singing);
- is in smaller droplets;
- remain suspended in the air because of their small size;
- carry sufficient “load” in small particles to enable the virus to cause an infection if inhaled by another person;
- remain viable in the air for relatively longer periods of time;

- are carried long distances (more than a metre) because they are lighter and therefore more mobile;
- are capable of being inhaled, unless prevented from doing so by a fine particulate filter;
- pose a major risk of infection through inhalation, rather than other forms of contact.

87. Where the predominant route for these viruses is by droplets, this route of infection differs in that infectious materials:

- are expelled through extreme respiration events or secretion (coughs, running noses, sharing/splashing of body fluids);
- are in larger size droplets;
- fall from the air because of their size;
- travel less distance because of size and weight;
- may require larger droplets for spread because they need to carry sufficient "load" to enable the virus to cause an infection in another person;
- may remain viable for relatively shorter periods of time;
- may be prevented by droplet/splash barriers or simple filters;
- may pose a more of a risk of infection through contact, rather than inhalation.

88. The distinctions between these two modes of transmission are not hard and fast and are constituted by facts of virology, including the viability of a virus in different conditions (which can include humidity, temperature, light and susceptibility to disinfection substances, whether naturally or artificially occurring). Further factors relate to immunology and what factors influence infection processes in the human body. They also draw on physical properties of particle size and the influence of movements of air, gravity on small particles and the attractiveness of surfaces, such as electrical charge.

89. Knowledge of the scientific properties in relation to each of these dimensions has been successfully studied by researchers in great detail, such as the work done by the UK's National Core Study. However, at the outset of the pandemic, there was insufficient knowledge and methodologies available to quickly determine how each of these elements worked in relation to the Covid-19 virus as a matter of certainty. Given the harmful consequences for human health and the lack of clarity in the relationship between infection and prognosis, infection research models with volunteer models, such as Cambridge

Bioresource [BJ/33 - INQ000273882] were neither practicable nor ethical. The evidence base was therefore largely drawn from observational studies. This included consideration of the environments where Covid-19 infection was spreading and also what precautionary methods were effective in preventing infectious spread.

90. In the absence of scientific certainty, it is not a matter of policy choice. British law provides the framework for decision making. The Control of Substances Hazardous to Health Regulations 2002 (COSHH) is the law that requires employers to control substances that are hazardous to health and includes infectious diseases. Employers are to prevent or reduce workers' exposure to hazardous substances by:

- finding out what the health hazards are;
- deciding how to prevent harm to health (risk assessment);
- providing control measures to reduce harm to health;
- making sure they are used;
- keeping all control measures in good working order;
- providing information, instruction and training for employees and others;
- providing monitoring and health surveillance in appropriate cases;
- planning for emergencies.

91. Whilst knowledge gaps exist, the HSE recommends a precautionary approach (the Precautionary Principle) to risk management with control strategies aiming to reduce exposure as much as possible.

92. It is CATA's contention that COSHH principles were not followed by the Government and IPC. As our evidence will show, there was insufficient planning for a pandemic emergency involving an airborne agent, insufficient communication, inadequate maintenance and management of control measures, inadequate provision of control measures, denial of availability of control measures, a prioritisation of convenience (both political and managerial) over health protection, all founded on a refusal to follow the scientific evidence on the nature of the hazard being faced.

93. Most particularly, CATA contends that the deviation from the precautionary principle in the context of workplace health protection manifested itself in a way that is characterised in the

paper by Leslie Rushton [BJ/34 - INQ000300563] which reflects on the work of the Interdepartmental Liaison Group on Risk Assessment (ILGRA) on the policy and application of the precautionary principle.

94. Had the precautionary principle been followed from the outset, controls which could prevent airborne transmission would have been consistently aspired to. As the scientific evidence from the outset indicated and as research has subsequently vindicated, SARS-CoV-2 is airborne. Deaths and illness among HCWs arose from a reversal of the precautionary principle by the Government and IPC. In the absence of explicit evidence being accepted at governmental and IPC level, SARS-CoV-2 was to be treated only as being airborne in the narrow context of AGPs, where there was an "accepted" scientific hazard.

95. The problem that ILGRA identified with the misuse of the precautionary principle was one of paralysis by analysis. It highlighted that the absence of evidence is not a reason not to take action. Instead, the absence of evidence should be an impetus to act to prevent potential harm and, from a regulatory point of view, to reverse the burden of proof, so that an employer or duty-holder has the obligation to show evidence that a hazard is not harmful.

96. This leads to a significant observation about the relationship between law and science in the context of the pandemic. Health and Safety Law in general and the COSHH Regulations in particular are cited in general terms in all of the documentation around infection prevention and control throughout the management of the pandemic. Readers are reminded to observe these duties. However, the guidance documents themselves implement a reversal of COSHH principles and the precautionary principle.

97. Following an anonymous survey of our members, one of CATA's expert members summarises the position early on in the pandemic, the abandonment of the precautionary principle not only went against law and scientific reasoning, but also common sense:

> *Higher viral exposure dose is known to correlate with more significant disease for a lot of viruses. It is well known that HCWs are at much higher risk of high viral exposure dose and therefore at much higher risk of poorer outcomes from infection (either death or long-term sequelae), yet still it was felt acceptable to downgrade the Personal Protective Equipment (PPE) and prevent any healthcare worker not working in intensive care from accessing RPE. Within a couple of months of the pandemic there*

was data indicating infection rates of HCWs were minimal in intensive care settings, but much higher in all other locations in the hospital. There was ONS data demonstrating HCWs were 3 times as likely to become infected with SARS-COV2 as the background population in their communities. The evidence was clear HCWs were at risk, the evidence was clear the virus was spreading easily in hospital settings, yet still UK authorities didn't feel the need to provide HCWs with RPE. It was apparent from the way COVID spread on the Diamond Princess cruise ship in February of 2020 that there was likely a significant aerosol spread of COVID-19. The concern should have been sufficient enough to ensure the precautionary principle was applied to HCWs working with infected patients. **Irrelevant & Sensitive**

Irrelevant & Sensitive

98. In such contexts, the regulator and enforcer of Health and Safety Law, the HSE, would normally step in. However, HSE neither did nor could it engage. Those HSE experts who would have been most helpful in supporting healthcare in developing control strategies were not available because they were allocated to round the clock duties with the PPE Market Surveillance Team undertaking the checking of PPE that was being procured because of the insufficiency of the government stockpile.

99. Health and Safety legal principles, critical to the protection of the most vital asset during a pandemic (healthcare professionals) were simply abandoned in favour of Infection Prevention and Control approaches. Infection Prevention and Control specialists followed "evidence-based approaches," in the model of the WHO recommendations on IPC [BJ/35 - INQ000300564]. The effect of such approaches is to implement methodologies which are supported by evidence, rather than to see the absence of evidence as a risk. It is worth noting that the WHO's own evidence base for the effectiveness of most of the recommended measures is "low quality" or "extremely low quality."

100. As is discussed later in the particular context of AGPs, the threshold of what constituted and constitutes good evidence for the Government and IPC to see as the basis of evidence-based practice has been problematic. CATA has consistently highlighted to Government the scientific evidence base as it has developed in detailed, considered and objective terms. The Government, and ultimately (when even the Government accepted the scientific evidence) the IPC Cell have been inexplicably resolute in their acceptance of some scientific evidence (e.g., the validity of AGP studies) and implacably opposed to the acceptance of other

evidence, including that produced by the Government's own COVID National Core Research Project. It must be emphasised that at no point was there any new evidence available or offered in support of the downgrading of Sars-CoV-2 from an airborne pathogen to a droplet transmitted one.

101. While CATA is primarily motivated by the desire for practice in the prevention of death and illness to be informed by science, the Alliance has increasingly wondered why the constitutional and legal mechanisms designed to ensure that science informs public and employer decision-making were consistently ignored.

102. The framework for pandemic management, which is ultimately a constitutional framework for the protection of fundamental rights, such as life and security of person, did not include the absolute predominance of IPC guidance as a legal or organisational principle. However, that IPC guidance was followed and deferred to by employers, policy-makers and the Government to the exclusion of all other considerations is an undoubted fact.

103. Health and Safety law, designed to determine the process of risk management in employment settings, including in situations of uncertainty or extreme danger seemed unknown and ignored in most healthcare contexts. In this way those fundamental rights were undermined. CATA member employees seeking to assert their rights under the law to have appropriate RPE or to remove themselves from danger found themselves under threat of disciplinary action or dismissal e.g., the following public stories are indicative of widely reported experiences of CATA members. [BJ/36 - INQ000300565], [BJ/37 - INQ000300566], [BJ/38a - INQ000300567].

104. In the results of our anonymous survey, one of CATA's members vividly describes the situation:

> *I only became aware that the PPE for HCWs working with patients with COVID had been downgraded when I started working on a COVID ward in April 2020. There was no announcement or explanation given for the change in PPE, it happened overnight on the 16th of March 2020. When I questioned this at* I&S I&S *Hospital in April 2020 no explanation was given as to the reason. When I challenged them on airborne spread they dismissed me, but couldn't quote any scientific papers demonstrating COVID was not spread through airborne*

transmission, all they could provide was the NHS IPC cell flow chart on PPE for COVID. I have 5 weeks of emails challenging the PPE at I&S *(I can provide these) before I contracted COVID again which left me with neurological damage that remains to this day. I was shouted down in offices and referred to as an anxious* I&S *My expertise in this area was completely dismissed.*

105. It continues to be the case that many healthcare settings discourage the wearing of RPE or requests for appropriate RPE, despite the legal position entitling HCWs to undertake a risk assessment and consider the adequacy of other controls. In the results of our anonymous survey, it is passionately summarised by a CATA member as follows:

> *We were cannon fodder and we remain cannon fodder. The UK authorities will make exactly the same decisions again in the future unless they choose to acknowledge clearly that this virus is predominantly aerosol spread and frontline workers need to be protected accordingly. Why is the PPE guidance for HCWs different to that advised to employees at the Animal and Plant Health Association, which is part of DEFRA. They wouldn't handle a bat without full RPE, they wouldn't investigate an outbreak of avian influenza on farm without full RPE, even avian influenza known to have minimal animal to human spread.*

106. In order to understand the control options for SARS-CoV-2 through the relevant period of the pandemic, it is helpful to review the basic principles for the control of exposures in healthcare settings and for HCWs in the community.

107. The management of workplace hazards is expected to be undertaken in line with **the Hierarchy of Controls** which identifies strategies to control risks in order of the likely effectiveness. All levels of the hierarchy are normally relevant to effective risk management and reliance on only some approaches are unlikely to be the most effective (or lawful) means by which hazards can be controlled.

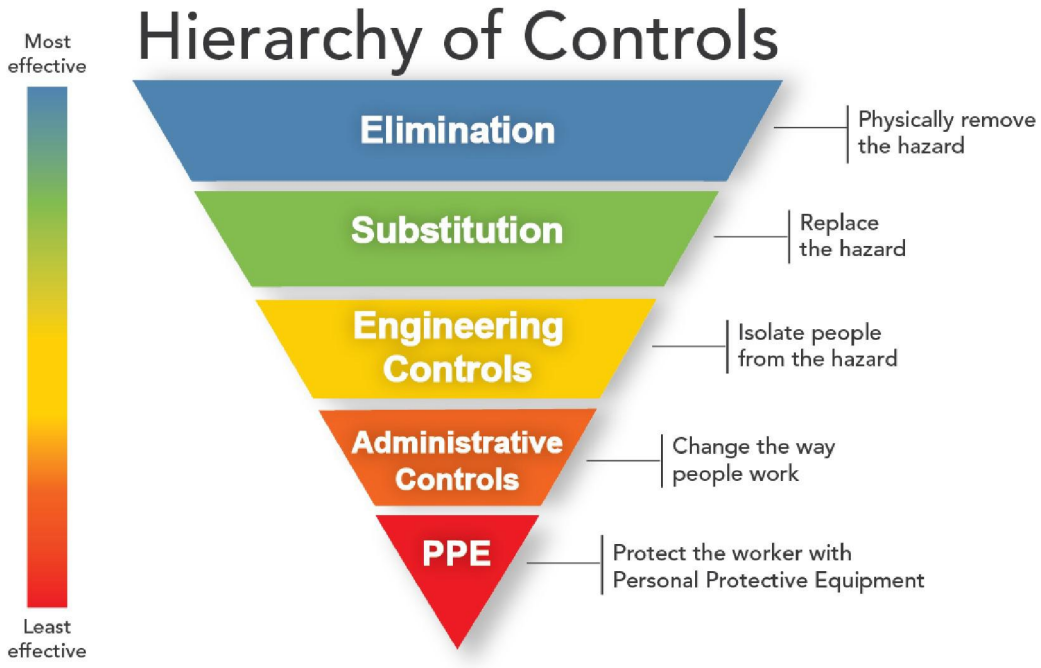

Figure 6: Hierarchy of Controls

108. As highlighted by the independent report by the Healthcare Safety Investigation Branch 'COVID-19 transmission in hospitals: management of the risk - a prospective safety investigation' [BJ/39 - INQ000130588], the health sector did not understand the basic principles of the Hierarchy of Controls or its applicability to the management of SARS prior to 2020. Nor was this an explicit feature of either the CBRN guidance or the 2011 Influenza strategy. The failure to use systematic and proven approaches to the management of risk in the strategies and in approaches resulted in gaps in the consideration of how to manage pandemic risks in each of these documents and throughout the UK literature on pandemic preparedness.

109. Identifying and isolating symptoms in patients (Patient-identified symptoms) can assist in enabling the highest level of hazard controls in the Hierarchy of Controls. This is called **Elimination, as per the diagram above**. For healthcare settings, this approach theoretically allows for infected patients to be isolated or excluded, so as to avoid infectious spread. It is not generally available in normal community settings but was ultimately implemented in the UK by lockdown precautions.

110. Other countries, such as New Zealand had been effective in excluding SARS-CoV-2 transmission from their jurisdiction and managing small outbreaks through traditional isolation means. However, in the UK, Covid-19 rapidly took hold in the community.

111. Elimination of the risk of exposure to the virus for all HCWs was not possible in the UK, since sick members of the public need to be attended to by frontline workers to help manage the virus itself as well as other healthcare needs they may have.

112. At the outset of the pandemic, there was no rapid test available, nor a set of reliable symptoms or clarity about whether asymptomatic patients could spread the virus. Any admission to a healthcare setting and any administration of healthcare in the community ran the risk of exposing HCWs to Covid-19.

113. However, it is important to note that once rapid testing did become available from 9 April 2021 [BJ/40 - INQ000300569], the opportunity to segregate infected patients in healthcare settings became possible. However, by this time Covid-19 was endemic within many healthcare settings, being transmitted between patients and between HCWs and from HCWs to patients, because of the absence of other effective controls for airborne transmission. This "nosocomial" form of infection, where healthcare settings are a place of infection transmission, was investigated early in the pandemic in the Health Service Investigation Branch's Inspection of Infection Transmission in Hospitals [BJ/39 - INQ000130588], highlighting the systematic defects in risk management which created an almost irreversible trend of infection and re-infection.

114. Innovations such as "virtual wards" [BJ/41 - INQ000300570] reduced the number of infected patients being held in hospital settings, but obviously increased the number of infected people being handled by paramedics and ambulances.

115. Indeed, healthcare continued to be delivered outside of hospital settings. HCWs, such as paramedics, nurses, speech and language therapists (SLT) and doctors do not work in contexts where they determine who may be excluded from treatment areas. The options to eliminate exposure for those working in community settings were very limited and it became apparent that consideration of how to manage exposure in these contexts had not been a significant feature of pandemic planning.

116. The second level of control, **Substitution,** is not, strictly speaking, an option for the management of infectious diseases in healthcare. It primarily relates to changing the hazardous agent (usually a chemical substance) to a different substance which is inherently less dangerous. ("Substitution" was perhaps erroneously used in some contexts to describe virtual appointments and virtual wards. However, this is not substituting the hazard, but distancing from it.) [BJ/42 - **INQ000257972**]

117. **Engineering controls,** which might include physical barriers, building design, ventilation, the use of air pressure and other mechanical or infrastructural techniques are a major element of the management of respiratory risk. While these measures can be implemented to great effect, their implementation is often resource-intensive and requires a full understanding of the science, particularly the physics, of the respirable hazard.

118. This is an area where the science of transmission becomes critical, as engineering controls which are effective against larger droplets, may not be effective against smaller particles. This is because particles behave in different ways when travelling through the air, for example, some particles can be suspended in the air longer and travel further than others. The size of particles can have a profound effect on control effectiveness.

119. For example, where small particles are suspended in the air, ventilation will be effective in removing or dehydrating them. However, ventilation is unlikely to have a major impact on larger droplets. Screens may be effective in preventing large droplet movement but may conversely create an obstacle to good ventilation and therefore create concentrations of infectious material where small particles are involved. Critically, large droplets tend to have a trajectory and can be obstructed by barriers and low-level filters, while small particles can move more fluidly through the air and are only captured by fine filters.

120. When determining whether a fluid resistant surgical mask is likely to be effective, compared with an FFP3 mask, or whether barriers, rather than ventilation are a priority, the science of aerosol transmission is critical in determining appropriate engineering controls. The limitations on the effectiveness of FRSMs is discussed later.

121. In the same way as engineering controls can be consciously used to control the spread of infection, building design and engineering features can negatively impact the control of infection. Poorly ventilated, confined spaces have the potential to increase respiratory risk.

This consideration was not a feature of pandemic preparedness. In a healthcare setting design, the areas of concern include the design of ambulances, wards, staff spaces, public spaces or in the commissioning of new buildings. The Health Building Note (HBN) 00-01 [BJ/43 - INQ000130589] designing health and community care buildings takes account of ventilation but does not consider the potential impact of ventilation on the control of CBRN or respiratory risk (though it does consider carbon footprint, privacy and noise). The importance of ventilation management for healthcare is well known and was highlighted by Florence Nightingale as far back as in her 1863 book "Notes on Hospitals". The recommended ventilation rate posited by Nightingale, still compares favourably with current standards set out by the Chartered Institute for Building Services Engineers for hospital wards.

122. Healthcare and other buildings developed or in operation prior to the pandemic, do not appear to have been engineered or designed for use in a way that consciously took into account what would be needed to manage a respiratory pandemic. Consideration of the engineering controls needed to manage respiratory risk, seem entirely absent from UK infrastructure development and planning.

123. Specialist engineered isolation facilities, such as negative pressurised rooms, were recognised as appropriate settings for the management of SARS risk in the CBRN guide. However, guidance to healthcare settings on how to set up negative pressure rooms focused on individual isolation e.g. The Health Building Note 04-01 Supplement 1 'Isolation facilities for infectious patients in acute settings' [BJ/44 - INQ000130590]. The absence of serious consideration of the relationship between the health infrastructure (**Engineering controls**) and pandemic risk is illustrated by its absence in the 2007 (and still extant) Health Building Note 00-07 'Resilience planning for NHS facilities' [BJ/45 - INQ000130591].

124. Ambulances were not designed with consideration of ventilation in the event of airborne pathogens [BJ/46 - INQ000300572 and BJ/47 - **INQ000257965** - AACE's lack of recognition of the increased risk to staff and patients while waiting at hospitals for prolonged periods to handover. Poor ventilation in the vehicles and inadequate PPE resulted in up to 15% staff sickness in January 2021 [BJ/47a - **INQ000257964**].

125. **Administrative controls** such as separating groups of people, implementing remote working, managing people traffic flows or even the way in which people respire, can have an

impact on managing infectious transmissible risk. Administrative controls are limited by the infrastructure available as well as personnel and expertise. In healthcare contexts, where demand is high and expertise and personnel are needed, personnel and administrative strategies to ensure business continuity are critical. Pandemic risk was not a feature of the 'Operational Workforce Planning' methodology used by the NHS, for example [BJ/48 - INQ000130592].

126. It is not possible for CATA to list all of the UK healthcare guidance and documents which should have reflected the need to factor in pandemic risk but did not. The guidance documents exhibited throughout this statement are therefore provided by way of example.

127. **PPE** is the lowest level of the Hierarchy of Control. This is not because it is the last consideration or the least effective means of protecting people. Properly managed PPE is the difference between life and death in many safety critical industries and in healthcare when dealing with infectious agents. It is at the bottom of the Hierarchy of Control because it is the last line of individual defence, and it fails to danger. If PPE is relied upon and does not work, then only the body's own natural protections are left. PPE failure therefore directly exposes a worker to a hazard. Furthermore, if the wrong type of PPE is used for a given type of hazard, then this substantially increases the risk to the wearer in that they will be lulled into a false sense of security and so will not take other precautions to keep themselves safe, such as increasing distance from hazards and reducing time exposed to hazards. In some circumstances this can lead to a higher level of risk than if they were not wearing the PPE at all.

128. As evidenced by the CBRN and 2011 Influenza strategy, the UK's pandemic response in respect of the protection of HCWs rested almost entirely on PPE and hand washing.

D. Basic Principles of RPE

129. In respect of controlling respiratory risk through PPE, the form of PPE required is RPE. However, the elements of RPE effectiveness go beyond merely the possession of the equipment. These are legal requirements outlined by the HSE, PPE Regulations, but summarised simply below:

a. RPE needs to be available that can be worn by the demographic of potential users, depending on facial size and shape and also obstacles to some forms of PPE fit, such as beards or facial asymmetry.

b. RPE needs to be put on properly (and safely removed) in order to maintain its effectiveness in the control of respiratory exposures.

c. Some types of RPE require a tight fit and a good seal to the face in order to work properly. Such equipment needs to be fitted and tested to ensure that it is being worn correctly and providing effective filtration.

d. RPE which can become less effective over time, such as most disposable masks because of the degradation in straps, seals and electrostatic charge, needs to be in date. RPE should never, therefore, be used beyond the manufacturer's specified expiry date.

e. The supply, resupply and (in the case of reusable RPE) maintenance of RPE needs to be effectively and prospectively managed.

f. The quality of RPE and its compliance with UK quality standards for tested effectiveness needs to be assured.

130. Other forms of PPE, such as gowns (or aprons), gloves, visors and safety goggles are part of the PPE "ensemble" which are appropriate for protection against the droplet transmission of infectious diseases. In respect of some viruses such as SARS Coronavirus, where aerosol transmission is a major route of infection but where droplet transmission can also be assumed to be a route, this additional PPE equipment is likely to further reduce the risk of transmission through touch contact and eyes.

131. The absence of a capability in respect of each or any of the elements of PPE management would mean that RPE risks failing as an effective control - and that fails to danger. While the UK was not a major manufacturer of RPE, it was a world leader in the science and management of it and our standards are highly regarded. There was no absence of expertise in the management and deployment of RPE, with clear and effective guidance provided by

the HSE and the Fit2Fit programme supported by the British Safety Industries Federation (BSIF). The UK deployed millions of items of our RPE every year and industries and SMEs managed thousands of reusable respiratory systems.

E. Types of respiratory protection

132. Surgical masks, or FRSMs (fluid resistant surgical masks), are designed to protect others from the wearer expelling droplets during respiration, speaking, coughing etc. As stated in the CBRN guidance [BJ/28 - INQ000130543], "*surgical masks do not protect against the infection following inhalation of small (< 5 micrometres) particles*" because they only reduce the risk of the wearer infecting another. Because they do not provide material protection to the wearer from respirable risks, FRSMs are not, and never have been, classed as RPE.

133. FRSMs have never even been formally classed by the HSE as PPE. Nonetheless, Government departments, politicians and the media regularly and erroneously refer to them as such. This is well explained by the HSE on their web page [BJ/49 - INQ000130544] concerned with protection of HCWs during a pandemic. FRSMs are regarded as a "*source control*" in infection control. These are known as Type IIR (European standard) or Level 2 (US standard) masks.

134. This position has followed on from the 2008 HSE Laboratory's 'Research paper RR619' [BJ/50 - **INQ000101591**], into respiratory protection against bioaerosols. The paper was commissioned as part of UK pandemic preparations and confirmed that FRSMs were ineffective against bioaerosols, with live viruses being detected behind each type of mask tested. The HSE subsequently published online guidance (now withdrawn) [BJ/51 - INQ000130546] that FFP3 filtering masks should be worn when attending a SARS patient (referring to SARS-1).

135. The lower level of respiratory protection is provided by respiratory protection equipment offering 95% filtration of small (< 5 micrometres) particles. The UK (formerly EU standard) for single use filtering face pieces is termed FFP2. Where there is uncertainty about the infective load required for infection or where the wearer is likely to be in contact with high amounts of respirable material over a prolonged duration, this percentage protection is unlikely to provide sustained protection. For this reason, respiratory protection that is 99% efficient in filtering

small particles, was the required protection for health workers for protection against SARS infection by patients in the CBRN guide. Disposable filtering face pieces with this protection level are known as FFP3 (UK and Europe) or N99 in the United States. It should be noted that such masks filter particles not only <5 microns, but those of larger size which are also airborne.

136. To be effective, FFP2 and FFP3 masks need to be fitted such that air can only be inhaled and exhaled through the filtration surface and not through any seal around the face. To maintain an effective seal, such a mask:

(a) needs to be of a corresponding size to meet the shape of the wearer's face;
(b) needs to be fitted to the morphology of the individual's face;
(c) needs to be held tightly against the face (invariably by appropriately placed straps round the head that prevent a breaking of the face seal when moving);
(d) needs to maintain shape;
(e) needs replacement after contamination or extensive use;
(f) where used as source control (to prevent the wearer infecting someone else), it should not have an exhalation valve;
(g) needs to be mechanically (quantitative) fit tested or qualitatively fit tested, using aroma/taste detection kits;
(h) must not be used beyond the manufacturer's recommended expiry date, due to the degradation of materials with time.

Fit testing also serves to provide some training for the user in respect of donning, checking a good fit has been obtained and doffing (taking off RPE safely). Because RPE is not effective unless these matters are observed, there is a legal requirement that RPE is fitted and tested – as indicated in HSE Approved Codes of Practice and guidance [BJ/52a - **INQ000269676]** and in NHS risk assessment guidance [BJ/52b - INQ000300391].

137. The CBRN (Chemical, Biological, Radiological and Nuclear) incidents: clinical management & health protection (Health Protection Agency, 2008) [BJ/28 - INQ000130543] provides the definitive guidance for the management of chemical, radiological and biological risks in clinical settings. This guidance considers not only the management of risk of infection between patients (Infection Prevention and Control), but also focuses on the protection of

health workers. As well as the legal rights that health workers have as employees, they are also essential to maintaining national resilience and continuity in the management of pandemics and, if infected, become a significant cause of persistent infection spread within healthcare settings (nosocomial infection). The guidance specifically states that in the case of contact with a patient suspected of having SARS, "*a fitted FFP3 mask, must be worn.*" In 2018, it reinforced that: "*Smallpox and SARS may also be transmissible from person to person by airborne spread: airborne isolation infection precautions are required*" and that there was a requirement to "*enforce AEROSOL spread infection control.*" In addition, it emphasised as follows: "*Note: surgical masks do not protect against the infection following inhalation of small (< 5 micrometres) particles." If coronavirus suspected FFP3 respirator (fit tested/checked)*".

138. Not all individuals can wear filtering face pieces. Those who wear beards for religious observance and others who have some disabilities or illnesses need to be particularly considered. There are widespread alternative powered air purifying respirator hoods (PAPR) which are not close-fitting but offer the same level of protection. These do, however, require management and decontamination. Other forms of reusable RPE are available.

F. The Established State of Knowledge About the Appropriate Management of SARS Coronavirus

139. The existing scientific evidence base and knowledge regarding the airborne transmission of the Covid-19 virus has been discussed in detail in Part II of this statement. In particular, I refer again to the 2013 paper co-authored by Sir Jonathan Van-Tam, former Deputy CMO, and Lisa Ritchie [BJ/53 - INQ000130561], which confirmed that the main routes of transmission of the SARS-CoV-1 virus were via the droplet and aerosol/airborne routes [BJ/53 - INQ000130561] and concluded that HCWs should use FFP3 respirators for protection from SARS. The role of Dr Van-Tam in the management of the Covid-19 pandemic is well known. Lisa Ritchie took on responsibility for the national IPC Cell during the early stages of the pandemic.

140. The diagram at Figure 7, taken from that paper, illustrates clearly the route to decision-making about the use of FFP3 respiratory protection. However, by 2020, there was no UK capacity to implement this guidance at pandemic scale.

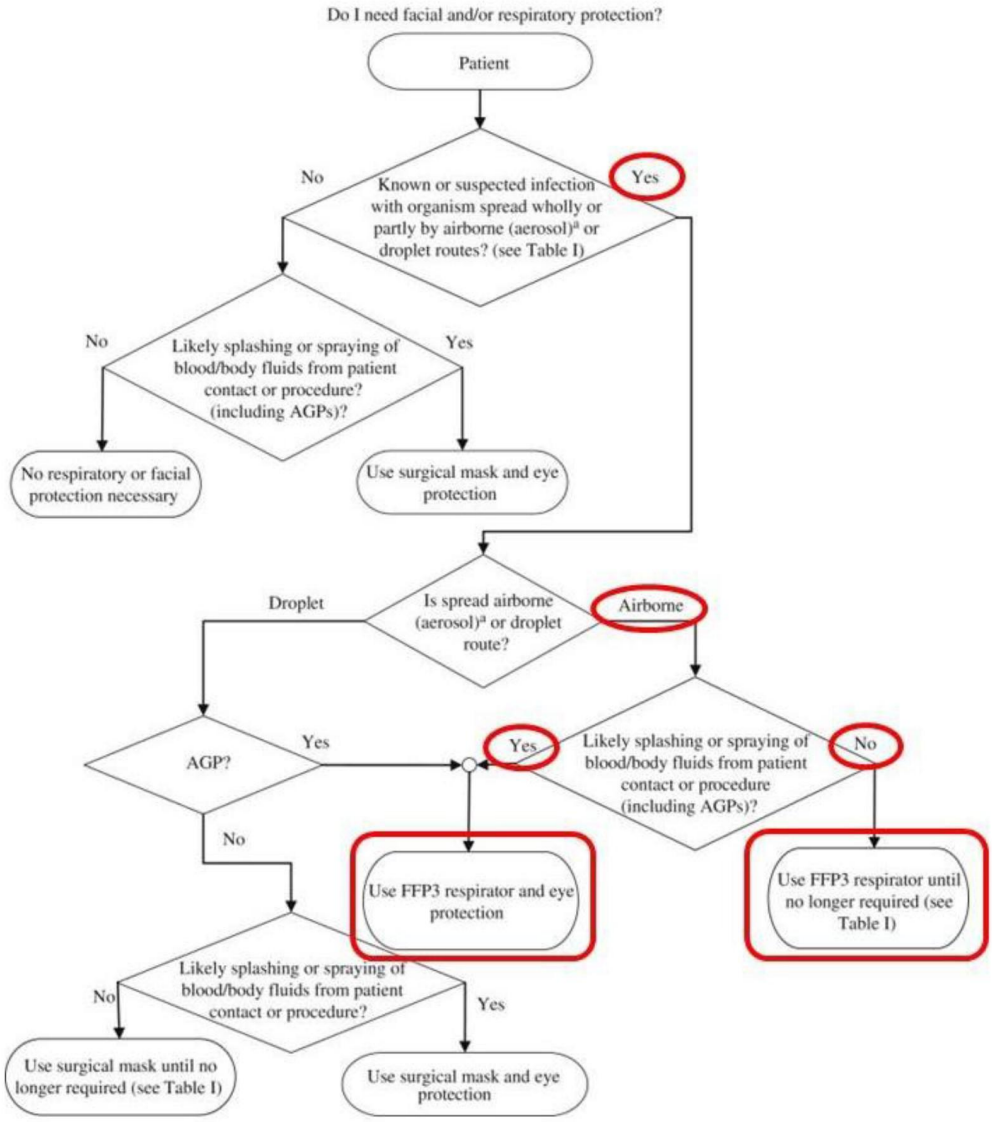

Figure 7: Flow-chart: Decision making process to determine level of HCW protection. Pathway for airborne virus transmission shown in red.

141. Until March 2020, SARS was also classified as an Airborne HCID by PHE, the management of which in clinical settings also required the use of FFP3 masks. In January 2020, Covid-19 was specifically added to the list.

142. A HCID is defined as:

- an acute infectious disease;

- typically has a high case-fatality rate;
- may not have effective prophylaxis or treatment;
- often difficult to recognise and detect rapidly;
- ability to spread in the community and within healthcare settings;
- requires an enhanced individual, population and system response to ensure it is managed effectively, efficiently and safely.

143. In March 2020, around the time the UK decided to implement its first national lockdown and Covid-19 deaths peaked at almost 1,000 in one day, the following statement was made:

> *"Now that more is known about COVID-19, the public health bodies in the UK have reviewed the most up to date information about COVID-19 against the UK HCID criteria. They have determined that several features have now changed; in particular, more information is available about mortality rates (low overall), and there is now greater clinical awareness and a specific and sensitive laboratory test, the availability of which continues to increase.*
>
> *The ACDP is also of the opinion that COVID-19 should no longer be classified as an HCID.*
>
> *The World Health Organization (WHO) continues to consider COVID-19 as a Public Health Emergency of International Concern (PHEIC), therefore the need to have a national, coordinated response remains and this is being met by the government's COVID-19 response.*
>
> *Cases of COVID-19 are no longer managed by HCID treatment centres only. HCWs managing possible and confirmed cases should follow the National infection prevention and control manual for England (or the equivalent devolved administration infection prevention and control manuals), which includes instructions about different personal protective equipment (PPE) ensembles that are appropriate for different clinical scenarios."* [BJ/54 – INQ000130562]

144. It is to be noted that SARS-CoV-2 had previously been defined as an airborne HCID along with its close relative SARS-CoV-1 and the reason for this change in classification was not based on changes in the evidence base around its route of transmission, rather, the mortality

rate and testing capability. To many scientists and HCWs, it seemed incongruous to no longer consider this a disease with high consequence and slavishly apply the pre-defined criteria without any degree of flexibility, given that:

- The disease had significant transmissibility (Reproduction Number R_0) of around 3;
- Symptomless transmission had been confirmed, making this a more dangerous disease;
- A significant number of deaths (4,613) had already occurred around the world;
- A significant number of deaths had occurred to HCWs, as evidenced in Italy;
- Just two days earlier WHO had declared a global pandemic.

145. The revised IPC manual removed the requirement for aerosol precautions, including RPE, from most treatment contexts. The availability of FFP3 protection was restricted to those undertaking so-called AGPs.

146. In March 2020 NERVTAG made the decision to downgrade respiratory protection from FFP3 to FRSM. CATA notes that Sir Jonathan Van-Tam and Lisa Ritchie played a leading role in this NERVTAG decision – in spite of the conclusions of their 2013 paper discussed above. [BJ/53 - INQ000130561]

147. CATA also notes Sir Jonathan Van-Tam's lesser known involvement in co-chairing a NERVTAG sub-committee on the pandemic facemasks and respirators in 2016 [BJ/55 - **INQ000257946** where it was decided that, in the event of a pandemic, all general ward, community, ambulance and social care staff would be denied FFP3 and other respirators except when performing AGPs or working in ICU/HDU areas. This leads one to the supposition that the ensuing denial of airborne transmission by the IPC Cell and the associated refusal to equip HCWs on general wards, ambulance staff etc. with respirators may have been motivated by their concern at being blamed for the crisis facing the country due to the lack of respirators in the pandemic stockpile arising from the poor decisions taken in 2016.

148. The decision-making regarding recommending RPE in UK healthcare settings by the UK authorities may have been influenced by mortality rate. It may be that because SARS-1 and MERS had a higher mortality rate RPE was recommended. As Covid 'only' had a Case Fatality Ratio of around 3% then RPE wasn't considered necessary. Aside from not reflecting the judgements of health and safety law, and the impact in absolute numbers in the context of pandemic infection, this decision-making does not take into account the morbidity someone might suffer from being infected with Covid. Many viral illnesses carry the risk of post-viral syndromes and sequelae, which materialises in Covid-19 in the form of Long Covid or lasting respiratory damages. Higher viral exposure dose is known to correlate with more significant disease for a lot of viruses such as influenza A, influenza B, Rhinovirus, Enterovirus, RSV, Parainfluenza, **Coronavirus** and Adenovirus. There was no evidence base to indicate this would not be the case in relation to Covid-19.[9]

149. No definitive review or evidence by 2020 established that, contrary to previous clinical evidence, SARS Coronavirus was not transmitted by the aerosol route. Nor was there evidence that this was or was not the main route of transmission at the time. However, in March 2020, the WHO, despite the protestations of many of the world's experts, declared it to be a fact that Covid-19 was not transmitted via aerosols and categorised any claims that the disease was airborne as "misinformation" [BJ/55b - INQ000300579]. But by December 2021, they had reverted to the common understanding that SARS Coronavirus could be transmitted by airborne routes. The real "misinformation" was the public assertions that began in March 2020, such as those of the WHO, that Covid-19 was not airborne, which had devastating effects, and led to inappropriate and ineffective risk control measures being implemented, presenting great risk to UK HCWs. This is exemplified in a Rapid Review from Imperial College and Hospital published in late 2020 [BJ/30a - INQ000300561]. This review finds "*that the evidence base for HMG's PPE guidelines is not based on SARS-CoV-2 and requires generalisation from low-quality evidence in which other pathogens/particles were tested. There is a paucity of high-quality evidence regarding the efficacy of RPE specific to SARS-CoV-2. HMG's PPE guidelines are underpinned by the assumption of droplet transmission of SARS-CoV-2".* The review goes on to state that "It is evident from the WHO, the European Centre for Disease Prevention and Control and the Centers for Disease Control and Prevention guidance that the indications for the use of RPE are not based solely on the

[9] For further analysis of the impact of higher viral exposure on the severity and duration of hospital stays in adults with acute respiratory illness see [BJ/55a - INQ000300578]

protective abilities of respirators and FRSMs. Instead, a triaging system based on an expected shortage of global stock and supply, combined with current understanding of likelihood of exposure to aerosolised SARS-CoV-2 is used. *There is active discussion regarding the droplet transmission of SARS-CoV-2 with an accepted uncertainty in understanding. Given this uncertainty, a cautious approach should be taken in the protection of HCWs".* The review concludes *"Therefore, use of a respirator would be the more cautious option".*

150. During the time whilst PHE was vehemently denying that airborne transmission existed, the Cabinet Office was putting out public information videos [BJ/56 - INQ000273881] graphically depicting airborne transmission. These videos [BJ/57 - INQ000273883] caused HCWs to wonder how the virus could be airborne in domestic and other indoor premises, but not airborne when they were caring for known infectious patients. During this same period of time, in November 2020, eminent UK scientists of the JCVI published a chapter of the "Green Book" [BJ/58 - **INQ000059136** which clearly stated: "*SARS-CoV-2 is primarily transmitted by person-to-person spread through respiratory aerosols*". This added to the confusion and distrust amongst HCWs.

G. RPE capacity for the protection of HCWs prior to 2020

G1. RPE capacity for the protection of HCWs prior to 2020 – Volume of RPE

151. Following an outbreak of Swine Flu in 2009, the Government established the UK's national pandemic stockpile as an epidemic was seen as the number one threat on the national risk register. Almost £500 million was spent on hundreds of millions of items to protect HCWs in the case of an outbreak. A 'Consumable Procurement Specification List' 2009 stipulated that the stockpile should contain 28.1 million respirators. By 30 January 2020 the stockpile held at 26.3 million [BJ/64 - INQ000130553].

152. The lone published review of RPE by NERVTAG conducted in 2016 [BJ/59 - INQ000130548], only considered the potential requirement of FFP3 masks in the context of influenza. Their conclusions may easily be read as suggesting that a smaller reserve of respiratory protection equipment was needed. The state of affairs in 2020 therefore reflects either a conscious decision or mismanagement leading to a reduction in the volume of RPE items.

G2. RPE capacity for the protection of HCWs prior to 2020 – Diversity of RPE

153. As identified, RPE is available to meet the varied morphology of human faces. There is a global market for RPE meeting industrial use of it for the filtration of aerosols and dusts. Manufacturers provide for the full variety of different ethnic groups and gender differences. In purchasing RPE for a large workforce such as the NHS, consideration of the diversity of that workforce and a model of the proportionate selection of size and type would be expected. This would not only be pragmatic but vital to discharge any duty under the Equality Act 2010. Prior to the Covid-19 pandemic, available PPE in the UK was modelled on Caucasian males, so that women, smaller individuals and people of non-Caucasian ethnic backgrounds, or those with certain disabilities and illnesses, were not likely to gain a good fit from standard RPE[10]. At the commencement of the pandemic, the experience of CATA's member organisations was that RPE was not readily fitting groups other than Caucasian males. We refer the Inquiry to the Impact Statement of CATA member, Nathalie McDermott in Annex 2, for more information about her personal experiences in this regard.

154. This would tend to indicate that the stockpile had not been managed through the proper selection of RPE, with any regard to the known diversity of the workforce. During a NERVTAG meeting on 6 March 2020, NERVTAG member Ben Killingley (SAGE EMG co-chair, pan flu 2016 stockpile review co-chair) stated that UCLH are no longer performing fit testing due to inadequate stocks for those who have been fit tested and NERVTAG member, Cariad Evans, commented that the lack of masks seemed to be wider than a local issue as they were also having trouble procuring the masks that they were fit-tested for [BJ/59e - **INQ000087540].** The provision of PPE suited to those for whom close fitting respirators would not be suitable, for medical and ethnic reasons, did not appear to have been a factor considered in stocking or preparing for PPE availability. Neither were other factors considered such as the importance, in some circumstances, of voice communication between HCW and their patient or service-

[10] For further analysis and examples in RPE/PPE fit testing failures for non-Caucasian males, please also see Helen Fidler, 'PPE: 'one size fits all' design is a fallacy', Nursing Standard. 35, 6, 23-23. doi: 10.7748/ns.35.6.23.s12 [BJ/59b - INQ000300582], Gillian Christina Higgins, Jasmine Ho, Eleanor Robertson, Niall McLean, Chris Horsley, James Douglas, 'Covid-19: Health and social care workers need, want, and deserve reusable FFP3 respirators', BMJ 2021;372:n759 [BJ/59c - INQ000300583], and A. Regli, A. Sommerfield and B. S. von Ungern-Sternberg, 'The role of fit testing N95/FFP2/FFP3 masks: a narrative review', Anaesthesia, 76: 91-100, https://doi.org/10.1111/anae.15261 [BJ/59d - INQ000300584].

user. This is particularly relevant for persons with certain disabilities, including those with hearing impairment, where lip-reading assists communication.

G3. RPE capacity for the protection of HCWs prior to 2020 – Training on RPE

155. There is not much evidence about RPE capacity training for HCWs prior to 2020. The Health and Social Care Act 2008: code of practice on the prevention and control of infections and related guidance [BJ/60 - INQ000130549] identifies the requirement for such training in relation to HCIDs, which includes coronaviruses such as SARS and MERS and did include Covid-19 up until its removal on 13 March 2020.

156. Our members observe that there was a lack of widespread understanding about the effective use of RPE among HCWs and no evident national programme or authoritative healthcare specific training resources, guides, posters or videos. For example, the prevalence of HCWs wearing beards and FFP3 masks served as striking evidence of a lack of training and awareness.

G4. RPE capacity for the protection of HCWs prior to 2020 – Fit Testing

157. The effectiveness of RPE depends upon it fitting properly. Even if properly selected for a potential morphological fit, the RPE needs to be tested to ensure it provides a proper seal. In 2016, updated recommendations from the NERVTAG facemask and respirators sub-committee made the following observations, noting that it was not within its remit to develop guidance on infection prevention and control and the use of PPE:

> *"Fit testing in the face of an emerging pandemic is a major challenge but it is important. Adding 'call down' fit testing as part of the procurement (including the fit testing solution etc.) would be advantageous. Just in time fit testing was proposed – however, there may not be sufficient time to put this in place, between pandemic virus emergence and the first UK impact. It was agreed that there is no substitute for a rolling programme of fit-testing in NHS trusts during inter-pandemic periods. There should be a caveat about fit testing in any recommendations."* [BJ/55 - **INQ000257946**]

158. Fit testing was not, as far as the members of CATA can determine, included in the UK Government's procurement strategy prior to the Covid-19 pandemic. Neither the BOHS, which hosts most expert fit-testers, nor the British Safety Industries Federation (BSIF) which operates the fit testing accreditation scheme for the UK (Fit2Fit), can see any evidence of a rolling programme of fit testing or the training of fit testers. Indeed prior to the pandemic, BSIF were concerned enough about the absence of fit testing in the NHS that they developed a simplified fit test course, which was offered to the DHSC to roll out to NHS Trusts in order to enable them to have fit test capability of their own. The DHSC declined, saying that procurement was determined at Trust level. As at 2023, there are still only 61 Fit2Fit accredited fit testers within the NHS and most Trusts have none. The majority of HCWs in Northern Ireland were fit tested by providers from the Republic of Ireland because of the absence of local capacity.

159. The capacity for fit testing was further impacted by the quality of available equipment. Whilst FFP3 is the usual recommended control measure to prevent exposure to a biological agent, in April 2020, in response to the impact of the COVID-19 pandemic, the HSE recognised the likelihood that global supplies of FFP3 respirators could be compromised. The demand for RPE posed by the pandemic and the shortage of FFP3 respirators in the supply chain, meant that an increased number of HCWs needed to wear FFP2 respirators for respiratory protection against the Covid-19 virus.

160. In March 2020, the WHO advised the use of a particulate respirator at least as protective as a US National Institute for Occupational Safety and Health (NIOSH)-certified N95. Research concluded that N95 and FFP2 are equivalent at filtering non-oil-based particles such as bioaerosols, including Covid-19, therefore FFP2 will provide minimum protection against the coronavirus.

161. Early in the pandemic, HSE scientists were asked by the Government to undertake a Rapid Evidence Review [BJ/61 - INQ000130550] in order to confirm the equivalence of N95. The HSE confirmed that whilst use of FFP3 devices represents best practice, if these were not available due to the impact of the pandemic on stock availability, then FFP2 or N95 masks represented an acceptable, pragmatic compromise and could be used as an alternative to FFP3 respirators as a contingency measure. It should be noted that at no time has the HSE

publicly authorised the use of surgical masks for respiratory protection in circumstances where a risk of disease-transmission via airborne aerosols exists.

162. Portacount machines are used within the health and social care sector for face fit testing of RPE. The TSI Portacount is an ambient particle counting device which is used to conduct Fit Testing by providing a quantitative assessment of face seal leakage. Essentially, it counts the number of particles that are able to escape around the seal and into a respiratory mask, thereby evading the filter. It is an alternative method of ensuring that RPE fits properly from the qualitative method, which relies on the wearer to smell or taste a substance. In that type of fit test, if the wearer can smell or taste the substance in the air behind the mask, then the seal is not effective. There are currently 2 models available: the model without N95 technology incorporated and a model with incorporated technology. The health and social care sector routinely use Portacount machines without incorporated N95 technology to face fit test for FFP3. However, these models are unable to achieve a face fit pass rate for FFP2 of 100 as stated in INDG479 the HSE's guidance on RPE fit testing [BJ/62 - **INQ000269542** In simple terms, a protection factor means that the air inside the respirator is a certain amount cleaner than the air outside the respirator. Thus, a protection factor of 100 means that the air inside the respirator is 100 times cleaner than that of the air outside the respirator.

163. To maximise the availability of face fit testing during the pandemic and to allow the use of all face fit testing machines available, HSE agreed a temporary deviation from current INDG479 guidance and accepted a face fit factor of 25 for FFP2, in contradiction of previous guidance, which required a fit factor of 100 [BJ/62 - **INQ000269542** This is because the criteria of achieving a fit factor of 100 could not be measured using Portacount models 8030 and 8040 which do not have N95 technology. This temporary deviation only applied to fit testing using the older Portacount models (8030 and 8040), but it is hard to determine how many tests may have been affected.

G5. RPE capacity for the protection of HCWs prior to 2020 – Expiration & Maintenance

164. The safety and effectiveness of FFP3 respirators declines over time. This is because the elements that ensure proper fit (straps and padding) can degrade. Also, there is a risk of the electrostatic charge that assists in filtering being adversely affected. Channel 4 reported

documents and photographs that evidenced the expiry of FFP3 respirators in the national pandemic stockpile stock in early 2020 [BJ/64 - INQ000130553]. According to the report:

> *"All in all, 19.9 million FFP3 respirators expired between 1 June 2019 and 1 January 2020 and therefore could have been delayed until tests confirmed they could be readmitted. More than 84 million facemasks also expired over the same period."*

165. During the pandemic frontline HCWs across the four nations were provided with time-expired PPE (both FFP3 respirators and FRSM masks). This can be evidenced by Government documentation released at the time such as:

- The letter dated 20 March 2020 from Professor Keith Willett (NHS Strategic Incident Director) to all NHS Trusts, Clinical Commissioning Groups, GP practices etc., which confirms that some issued PPE 'may appear to have out-of-date 'use by/expiration' dates or have re-labelled 'use by expiration' dates'. [BJ/64a - **INQ000252604**
- The publication on 26 March 2020 by the Scottish Government "Keeping healthcare workers safe" [BJ/64b - INQ000300591], which confirmed that extra respirators were being issued despite 'not previously being used because they had passed their expiry date'.

166. This issue has also been covered in articles in numerous newspapers and professional journals such as:

- The Nursing Times article dated 17 March 2020: "Nurses raise alarm after practices sent PPE with altered expiry date" [BJ/64c - INQ000300592];
- The Guardian article dated 2 July 2020: "UK officials 'put lives at risk' over out -of -date PPE for care homes" [BJ/64d - INQ000300593];
- The British Medical Journal article dated 3 July 2020: "Distribution of faulty and out of date PPE is a national scandal says BMA" [BJ/64e - INQ000300594];
- A Pulse article dated 16 March 2020: 'GPs being sent 'out of date' face masks with concealed best before dates' [BJ/64f - INQ000300595]; and
- A Sky News Article dated 10 December 2020: 'Covid-19: Expired PPE stock covered with new dates – while one box was full of insects, MPs told' [BJ/64g - INQ000300596].

167. CATA also wishes to highlight the disturbing situation, covered widely in the media, concerning hundreds of FRSMs (in more than 80 batches) which were supplied to HCWs by

Cardinal Health, and which had similarly been relabelled beyond their expiry date. These batches had an expiry date of 2013/2014 - and so, given that such masks are typically given an expiry date of up to five years following their manufacture, likely would have been purchased in around 2009 and have been roughly 11 years old at the time of the pandemic. While HCWs were told that medical equipment, including PPE and FRSMs were subject to testing prior to reapproving their shelf-life, defects were discovered by HCWs when using these batches, including: (a) the ties and stitching coming away from the mask; and (b) a degraded foam strip on the mask, both of which are observable signs of the deterioration that the shelf-life aims to enable them to be safe and usable. As a result, an email was sent out from the PPE Dedicated Supply Channel instructing that all masks from the affected lot numbers be destroyed and a "destroy order" issued by the DHSC on 26 June 2020. Prior to this being identified all HCWs supplied with the relevant batches would have been put at risk. In addition, CATA notes that, despite the "destroy order" in June 2020, employees in NHS Blood and Transplant were not alerted to the problem until almost a month later, during which time they could have continued to be exposed to danger. [BJ/65 - INQ000130555].

168. CATA contends that it is essential that the nature and adequacy of the "stringent testing" being performed on time-expired PPE, before it was released to HCWs, as well as the transparency of such testing and any disclosure of its results, is investigated in this Inquiry.

169. The reliance on expired PPE/RPE may have been a result of shortages and problems with stockpiling prior to the pandemic. CATA notes that the attempted legislation in April 2020 to permit PPE re-use, which was rejected after a legal challenge by NR NR serves as evidence of shortages at the start of the pandemic [BJ/64h - INQ000300597]. CATA also notes that the Inquiry has already heard evidence in Module 1 of its investigations that the most recent stock of UK PPE was purchased as an emergency for 2009-2010 swine flu – as seen in the draft DHSC report 'analysis of PPE issue, dated 21 September 2020 [BJ/64i - INQ000057530]. In addition, the Inquiry has heard evidence in Module 1 that PPE stores in central Scotland in April 2020 had just a single day's supply of FFP3 masks [BJ/64j - INQ000108737].

170. By 2020, HSE had lost most, if not all of its specialists in PPE from its field team, although it does not appear that this was seen as a national risk. The PPE (Enforcement) Regulations 2018 had come into effect to ensure the quality of PPE in general use and standards of PPE

imported into the UK. However, no active work appears to have been done to bring this into effect and there is no publicly available evidence of market surveillance to test the quality of imported PPE over the period since the implementation of the regulations, during which time millions of items of PPE were procured. The Inquiry may wish to also seek further evidence on this issue from the Medicines and Healthcare products Regulatory Agency (MHRA) as they have regulatory and enforcement responsibility for 'medical devices' such as surgical masks and it was they who issued the order to destroy the affected masks.

171. By the time of the Covid-19 outbreak in 2020, the global market for RPE was becoming flooded with "fake" respirators which, despite bearing CE markings (or similar) had not been tested and verified in line with the 2018 Regulations. It is not clear at what point the NHS supply chain became vulnerable to "fake" or inappropriate PPE.

G6. General Capacity for Protecting the Health and Safety of Workers in Health Contexts

172. HSE had regulatory responsibility for PPE in healthcare settings. Under the 'Revised incident selection criteria' 2014 [BJ/66 - INQ000130556], the HSE did not appear to have a clear duty to investigate deaths as a result of exposure to a biological agent such as SARS. Their overall responsibilities in relation to pandemic impact, including within the healthcare sector, were not laid out amongst the Civil Contingencies considered in their 'Memorandum of Understanding' with the Health Protection Agency agreed in 2019 [BJ/67 - INQ000130557]. CATA's observation is that the HSE regarded issues such as the adequacy of RPE and fit testing as matters relating to clinical standards which were either outside its expertise or jurisdiction.

173. Alongside this absence of direct HSE support for hospital trusts, was an absence of workplace health protection expertise within the workforce. Whilst it may seem counter-intuitive, the health service lacked the ability to manage the health of its own workforce. Prior to the Agenda for Change in 2004, when pay conditions and employment status in the NHS was fundamentally changed, the NHS directly employed workforce health protection scientists, called occupational hygienists. By 2020, there were only three occupational hygienists employed in the entire NHS.

174. In principle, occupational hygienists are trained to implement PPE programmes and to address and create controls for novel health hazards (including biological hazards) that are customised to workplace needs. They specifically focus on the prevention of exposures to hazards that are harmful to health in the workplace. Occupational hygienists are specialists in the management of respiratory risk and are specifically trained to manage biological risk across all work contexts. The occupational hygiene team in HSE were at the forefront of devising and helping the implementation of measures in the UK workplace which enabled the reduction in Covid-19 cases most evidenced in the 2021 lockdown.

175. By virtue of Regulation 7 of the Management of Health and Safety at Work Regulations 1999, occupational hygienists are required to provide services in all safety critical industries where there is a risk of harmful exposures to health. The work of occupational hygienists on the implementation of the Hierarchy of Controls enabled effective management of SARS Coronavirus across the UK's critical infrastructure, preventing the failure of power supplies, defence infrastructure and most other essential services.

176. Healthcare employs HCWs, who may be more-or-less effectively supported by infection control teams. However, the healthcare infrastructure is supported by a vast array of other workers, often contracted by or not even under the direct control of healthcare trusts. This can range from catering, laundry, and facilities workers through to agency staff, administrators and managers. Infection Prevention and Control experts focus on Standard Infection and Control measures and only at an advanced level are trained to use pandemic level PPE. They are not trained to implement the Hierarchy of Controls for the control of biological exposures across the healthcare infrastructure and into the community.

177. From the outset of the pandemic, occupational hygienists were called in to help with the implementation of PPE programmes, to develop ventilation and other systems to support the Hierarchy of Controls and to address issues emerging from the poor management of PPE and IPC precautions. While standard Infection Prevention and Control measures may have been understood by many members of the frontline clinical staff, there is little evidence of other staff or workers being prepared or supported for pandemic incidents. The absence of occupational hygiene expertise to support protection against hazards directly arising from the pandemic, but also indirectly arising from it, had further results.

178. At the heart of the problems experienced with the poor preparedness for implementation of RPE programmes and the development of nosocomial infections was the failure to understand critical differences between the duty of the employer to protect employees against exposure to a hazard such as Covid-19 and the measures used to prevent infections in healthcare settings and control their spread. There are critical strategic and practical differences between good occupational hygiene which aims to minimise the exposure of workers to hazards and Infection Prevention Control which aims to minimise the risk of infection spread in patients.

179. In the UK, this was exemplified by the distinction between the protections and measures outside of the clinical space to prevent the spread of Covid-19 and those in the clinical space. Even where RPE was available, staff teams would remove PPE and share confined staff rooms for breaks. Administrative staff were required to work in the healthcare settings, even when work could be achieved remotely. The management of health risk amongst contract staff in catering and other services was not consistently under the control of those overseeing the control of the spread. All these features, identified in reports, such as the Health Safety Investigation Branch (HSIB) Investigation [BJ/39 - INQ000130588], arose out of a focus limited to Infection Prevention Control in healthcare settings. Most concerning is that the consideration of the protection of healthcare staff working in community settings (from paramedics, community nurses through to SLTs) did not include a systematic consideration of the risk to them from being in uncontrolled contexts.

180. The UK should have learned lessons in general terms about its vulnerability to Influenza. Influenza had been determined to be the pandemic risk, but SARS Coronavirus was also identified as such. The UK's strategy for addressing a pandemic risk was centred around a virus transmitted primarily via droplet routes as, according to the Influenza Strategy, some types of influenza are. The Inquiry may wish to note, for any interim findings, that the most dangerous types of influenza (such as avian flu H5N1) are airborne. The particular strain of avian flu, widely present in the UK since autumn 2022 is airborne and, according to the ACDP, some limited human-to-human transmission has already begun. The UK thinking about preparedness lacked depth in the consideration of the potential diversity of impacts on the population, considerations of the impact on healthcare provision of a sustained and mutating virus for which there were no effective vaccines or medicines. There was no nationwide

consideration about how to implement a Hierarchy of Controls throughout healthcare to avoid dependence on PPE.

181. The UK's PPE strategy for healthcare assumed that the next and only pandemic would be Influenza via droplet transmission. However, warning signs about the absence of the ability to manage, procure and implement effective and non-discriminatory PPE programmes were not heeded. Reliance upon droplet transmission was a conceptual flaw in the thinking of the public health policy makers. With PPE both the first and final line of respiratory protection, the risks were not managed. Basic observance of the legal requirements for the effective protection of HCWs were not present.

182. The UK did not have a plan to address an aerosol-transmitted disease, nor were they in a position to deliver practices in accordance with the WHO's 'infection prevention and control of epidemic-and pandemic-prone acute respiratory infections in health care guidance' (2014) [BJ/68 - INQ000130558].

183. PHE's CBRN strategy [BJ/28 - INQ000130543] nonetheless stated what the requirement and the plan should be in 2018:

> **"Droplet spread disease precautions**
>
> *Droplets are particles (> 5 micrometres) generated when a patient coughs, sneezes or talks, and during cough-provoking procedures (eg bronchoscopy, chest physiotherapy, suctioning, intubation, nasogastric tube insertion, nebuliser therapy, non-invasive ventilation, CPAP).*
>
> *Droplets expelled by an infected patient can travel for short distances through the air and, if deposited on the mucosal surfaces of the eyes, nose or mouth (or subsequently transferred there by hand-face contact) can infect anyone nearby (traditionally, within 1 metre, but possibly, at greater distances).*
>
> *Diseases that are transmissible by droplet spread include: coronaviruses, influenza,* pneumonic plague, monkeypox, smallpox, Mycoplasma pneumoniae, adenovirus, RSV,

whooping cough, group A streptococcal infections and meningococcal meningitis (Neisseria meningitidis).

Smallpox and SARS may also be transmissible from person to person by airborne spread: airborne isolation infection precautions are required."

184. In a March 2020 study by scientists, including the leading authorities from the Centres for Disease Control in America published a comparative study of SARS CoV1 and SARS CoV2 [BJ/69 - INQ000130559], concluding that:

"Our results indicate that aerosol and fomite transmission of SARS-CoV-2 is plausible, since the virus can remain viable and infectious in aerosols for hours and on surfaces up to days (depending on the inoculum shed). These findings echo those with SARS-CoV-1, in which these forms of transmission were associated with nosocomial spread and super-spreading events, and they provide information for pandemic mitigation efforts."

185. However, the airborne isolation infection precautions could not feasibly be delivered in the UK in relation to either the healthcare estate or its PPE management regime.

H. Management of Risk and Pandemics Planning in the UK Healthcare Context

186. From the outset of the pandemic, the management of health risk in the healthcare sector was entrusted to the UK's healthcare Infection Prevention and Control infrastructure for management and technical leadership. The UK's ability to manage Infection Prevention and Control is subject to the oversight of the Care Quality Commission (CQC), having received additional focus arising from the high level of hospital acquired infections. However, although failures of IPC management and standards were highlighted in reports over the preceding decade, CQC did not focus on IPC performance and management at a national level.

187. In 2008, a Parliamentary paper, the House of Commons Public Accounts Committee's 'Reducing Healthcare Associated Infection (HCAI) in Hospitals in England', highlighted the need for a joined-up and systematic approach to managing the risks of healthcare acquired infections [BJ/70 - INQ000130564]. Ten years later a Parliamentary paper, 'Raising standards

of infection prevention and control in the NHS', reiterated the need to focus on this area of healthcare performance [BJ/71 - INQ000130567].

188. The UK had identified significant issues with HCAI management and effectiveness of infection prevention and control as an area requiring significant focus and better management. That focus has largely excluded respiratory routes of infection, despite the fact that respiratory infections account for 22.8% of UK HCAIs. This was understandable, given the crisis in management of HCAIs, which resulted in 300,000 infections in 2008 and was still resulting in the same number of infections a decade later. Even up to the time of writing in June 2023, around 30% of patients in hospital with Covid-19 contracted the disease in hospital, as opposed to being admitted with it. However, there was an understanding of the role of other transmission routes in contributing to nosocomial infections.[11]

189. The effectiveness of the UK's management of Infection Prevention and Control was already questionable in 2020 while being faced with standard conditions. Despite making gains and being the subject of considerable focus, the UK IPC infrastructure was not in a good place to face a pandemic and was not equipped to address the challenge of a respiratory illness, especially one transmitted by an airborne route. The UK's IPC focus was on major risks of patient infection, which were not perceived as including diseases transmitted via aerosol or aerosol/droplet routes. It does not appear that there is any UK literature available to CATA members which considers the full range of risks to healthcare staff posed by a pandemic infection. Moreover, such was the challenge on UK IPC professionals, the quality standards and governance, committing resources away from standard HCAIs and Standard Infection Control Precautions (SICPs) or using techniques that may compromise standard HCAI infection control may well have been perceived as compromising the long-term strategic objectives and approaches being promoted by UK IPC leaders.

I. What are the risks arising from a pandemic virus within healthcare?

I1. What are the risks arising from a pandemic virus within healthcare? - Frontline staff and patients

[11] For example, as seen in NHS Scotland's ARHAI 'Transmission Based Precautions definitions literature review' [BJ/72 - INQ000130568], although it downplayed the risk, compared to the evidence base upon which it drew, as per Bing-Yuan *et al* [BJ/73 - INQ000130569], referenced in the review.

190. When assessing the risk of a pandemic to healthcare, as with any organisation, there needs to be a multi-dimensional response. A pandemic, by its definition, cannot be regarded as simply an unusual clinical risk, or even an unusual IPC challenge. The formulated strategy for healthcare to deal with a potential influenza pandemic did consider both infection risks to *patients* and also infection risks of *staff* as agents of retransmission of infection to other patients. The National Influenza Pandemic Strategy also considered the impact of fatigue on staff.

191. IPC guidance prior to the pandemic also stated that employers had health and safety legal duties towards HCWs that needed to be risk managed. In contrast, the 2011 pandemic strategy highlighted that employers outside the healthcare sector had a responsibility for the health and safety for their staff and that health and safety duties remained unchanged but was silent on whose duty it was to maintain the health and safety of healthcare staff.

192. Neither IPC nor pandemic strategy considered in detail the implications of the management of health and safety duties towards frontline healthcare staff. The assumption was that if patients were protected against infection, then staff would be protected by the same systems and to the level of protection required by health and safety law. While the point may seem legalistic, the standard of care for patients in relation to IPC was as defined in NHS Professionals Infection Control Policy Clinical Governance V5 May 2018 [BJ/74 - INQ000300599], i.e., compliance with Standard Infection Prevention and Control procedures. However, the focus of these standards are routine situations and do not aim to protect the worker, but to prevent the worker from causing infection to patients. Throughout the first and second waves of the pandemic, IPC guidance was prescriptive in that it specified that FRSM must be worn when providing direct care within 2 metres of a suspected or confirmed Covid-19 case. It is CATA's contention that this prescription was a most dangerous instruction, in that it presented mortal risk to healthcare staff with the probable consequence of hundreds of HCW deaths and thousands of cases of Long Covid along with an increase in transmission risk to patients amongst others.

193. Later in 2021, IPC guidance was amended such that if an "*unacceptable risk of transmission remains following a 'hierarchy of controls' risk assessment*" then RPE, such as FFP3 respirators, may be used for non-AGP activities [BJ/74a - **INQ000271659**]. However, the IPC authors introduced the concept of 'risk assessment' without any appreciation that, in

virtually all scenarios of patient care (other than in purpose-built HCID rooms), it is impossible to undertake a 'suitable and sufficient' risk assessment in the context of close-quarter care of infectious patients. There are a number of reasons for this such as:

- Infectious aerosols in the air around the patient cannot be detected by any human sense (sight, smell etc);
- The concentration of the infectious agent (SARS-CoV-2 virions) suspended in the air around the patient cannot be directly measured by any meter, monitor or other direct-reading instrument;
- The effect of infection upon the worker cannot be reliably predicted. Even young, healthy, non-BAME, non-pregnant HCWs can (and have) become seriously ill with COVID-19, with many going on to either die or develop serious chronic complications;
- The IPC guidance did not specify that the risk was from an airborne route irrespective of procedure, so it was impossible to perform a risk assessment.

194. The HSE have been asked how they, themselves, would conduct such a risk assessment but have remained silent [BJ/75 - INQ000130570].

195. IPC guidance recommended the use of FFP3 masks for AGP procedures in respect of SARS coronavirus but played down the need for this as required by evidence. However, emergency planning guidance highlighted the importance of health workers protecting themselves against infection, reflecting health and safety rules which adopt the concept of the precautionary principle. That is, if it is unknown whether a hazard may (in this case) be transmitted via an aerosol route, then aerosol precautions should be used. In other words, the precautionary principle should have been invoked as the default, but it was not.

196. The precautionary principle should remain in place until such credible scientific evidence exists which shows beyond reasonable doubt that (in this case) the disease is not transmitted via an aerosol route. However, the 'precautionary principle' was removed from IPC guidance in mid-March 2020 without any such evidence. The Inquiry may wish to explore this with those responsible for publishing the guidance.

197. The relevance of protecting HCWs from the risk of infection was really only considered in the IPC guidance and the Influenza Strategy as being needed to manage the risk of onward transmission of infection within the frontline healthcare setting. However, this failed to recognise other dimensions of pandemic risk, aside from the mere protection of the health and lives of the workers themselves. These dimensions of risk go to the heart of resilience, business continuity and sustainability of UK healthcare provision itself.

I2. What are the risks arising from a pandemic virus within healthcare? – Staff-to-staff infection

198. Infection prevention and control strategies and the 2011 Influenza Pandemic Strategy defined the healthcare frontline as being almost entirely in the clinical setting, i.e., the interface between healthcare staff and patients. However, the nature of a pandemic is such that it cannot just be viewed in healthcare as a HCAI on wards and in operating theatres, or something contained in rooms with a few patients with high-risk disease. By definition, a pandemic infection is not contained to clinical contexts, and healthcare management needs to consider all routes of infection, not just clinical contexts. The UK approach to pandemic planning in healthcare did not do this and did not integrate the clinical control of infections with the general management of a pandemic in a busy high-risk and complex workplace such as a hospital.

199. A notable risk in the pandemic context, is that staff can infect other staff, whether frontline or not, irrespective of infections acquired from patients. However, because of their specific public-facing nature, the risk of acquiring infection from patients in the healthcare context is higher and predictable. Therefore, it is necessary for high-risk settings to have measures in place to control the risk of infection between frontline staff and other frontline staff, or between frontline staff and support staff. Those measures themselves should be planned according to the Hierarchy of Controls. The barrier between staff and infection by patients in standard infection controls is solely through the use of PPE ensembles. There is no provision in the IPC guidance beyond PPE, other than handwashing (and specific provision around staff with diarrhoea in relation to intestinal viruses remaining off shift), to restrict the potential that infection may be spread from staff to staff.

200. Thus, the sort of measures used for the management of inter-staff infective risk in other occupational contexts were not articulated or planned for in the healthcare setting. PPE is at the bottom of the Hierarchy of Controls because it fails to danger. In the context of infectious diseases, this means that when PPE fails, its result is predicted to be infection of a member of staff. In the absence of other control measures, then a transmissible disease has no further barriers against the infection of other workers.

201. As would be demonstrated by the HSIB's prospective report on the management of nosocomial infections in the early stages of the pandemic, the UK's approach to pandemic management in healthcare did not have a plan for the management of infection between frontline staff and between frontline and support staff. Given the absence of other planned control measures in place, the importance of avoiding PPE failure was critical, as it was the sole method relied upon to prevent not only infection of frontline workers, but also other workers that they may further infect. The potential for patient-to-staff, staff-to-staff and patient-to-patient cross-infection has been robustly proven by studies involving Whole Genome Sequencing (a form of DNA fingerprinting) – as in Lindsey et al 'Characterising within-hospital SARS-CoV-2 transmission events' [BJ/76 - INQ000130571].

I3. What are the risks arising from a pandemic virus within healthcare? Capacity, continuity, resilience and sustainability

202. While the 2011 pandemic strategy acknowledged the likely impact on fatigue in healthcare staff, there was not a more specific consideration of the likely short, medium and long-term effects of a pandemic on healthcare. Immediate infection of frontline workers would be likely, resulting in less staff being available, potentially following a random and unpredictable pattern. This would be the predictable consequence of any failure of containment of patient-generated infection risk, environmental risk or staff-to-staff infections, but also, at the pandemic level scale anticipated by the 2011 strategy, because of the likelihood of community acquired infection.

203. Business continuity planning to ensure the assignment of staff resources to areas of critical need would need to be in place to anticipate the impact of a pandemic on the ability to deliver services. However, the impact of additional demand, sickness and death on the

availability of staff would need consideration. Beyond recovery, the lasting impacts of sickness, overwork, stress and trauma arising from a pandemic would need to be in plan.

204. CATA's members are not aware of any published or disseminated national plan to support and guide employers and team leaders on how to manage these aforementioned pressures. The willingness of HCWs to put themselves and their families in harm's way by providing frontline services in any future pandemic (particularly one with a higher mortality rate) has been irreversibly damaged by the flawed arrangements for their protection, the resulting harm caused, and the uncaring way in which Health Trusts have sacked those who are too chronically ill to work. This experience may result in a further breakdown of trust in the country's health services. Future pandemic planning will somehow need to take this factor into account.

205. Moreover, specific considerations relating to HCWs in pandemic situations were not explored. Many industries require workers to spend long shifts in PPE, including uncomfortable RPE. There are decided mental and physical challenges which flow from that. It appears that pandemic planning didn't envisage the need to manage prolonged PPE usage, enhanced hand-washing and administrative controls to address pandemic management. All of these issues were documented risks arising from epidemics in the past, and in the general methodology of emergency planning and business continuity for pandemics [BJ/77 - INQ000130572].

J. Environmental controls for pandemic preparedness

206. In the management of pandemic risk in a healthcare setting, PPE should be the last line of defence. This is not only because it fails to danger, but it is also the most resource intensive and makes every person wearing it a front line of defence. Effective pandemic protection manipulates the environment to minimise the transmission and viability of an infectious agent. This is one of the oldest principles of healthcare from before the time when science had provided a clear understanding of the nature of infectious diseases.

207. In planning for the containment of an infectious disease, the environmental aspect of strategy is critical. The Francis Crick Institute was opened in 2016 and had been designed with an eye to the use of naturally anti-microbial surfaces, effective ventilation and a whole

host of precautions designed to limit infectious spread. At the same time, while a very extensive guide to controlling CO_2 emissions was made, the 'Health Technical Memorandum 07-02: EnCO2de 2015 – making energy work in healthcare' [BJ/78 - INQ000130573], no systematic guide for designing out nosocomial infections was extant. This is despite this being repeatedly highlighted in research, such as in the Association Of Medical Microbiologists' New Hospital Developments Project Group's 'Building new hospitals: a UK infection control perspective' [BJ/79 - INQ000130574] – which stated:

> *"Building design in relation to infection control needs stricter national regulations, allowing Infection Control Teams to focus on more local usage issues. Further research is needed to provide evidence regarding the relationship between building design and the prevalence of infection."*

208. Since 2015, perhaps 10 new hospitals have been built, with billions expended in the construction of new wards.

209. Furthermore, since 2007 it has been, and still remains, a strict requirement of the Construction Design and Management Regulations (CDM) that designers have a statutory duty to "*avoid foreseeable risks to the health and safety of any person… using a structure designed as a workplace*" (Regulation 11(3)(e) [BJ/79a - INQ000300601]. The HSE's Approved Codes of Practice relating to the CDM 2007 Regulations confirms that this duty applies to designers responsible for ventilation systems (para 116(c)) [BJ/79b - INQ000300602]. Further, there is a duty on designers to ensure that any structure which will be used as a workplace will meet the relevant requirements of the Workplace (Health Safety and Welfare) Regulations 1992 – which cover hospitals (see para 17 of the accompanying Approved Code of Practice) and include a requirement for effective ventilation (see Regulation 6) [BJ/79c - INQ000300603 and BJ/79d - INQ000300604]. Given the foreseeability of an airborne-transmissible pandemic and the persuasive arguments put forward by Stockley et al [BJ/79e - INQ000300605], it seems that this statutory duty has not been well met. Indications drawn from the HSIB report and others suggest that poor design of new healthcare facilities limited the opportunity for effective implementation of environmental controls or even contributed to the spread of SARS-CoV-2 in a way that could have been anticipated and provided for at design stage.

210. While these features have a general positive impact on the reduction of other hospital acquired infections (that cost an estimated £774 million a year to the NHS), they also provide effective pandemic risk reduction. The Environmental Design Strategies to Decrease the Risk of Nosocomial Infection in Medical Buildings Using a Hybrid MCDM model [BJ/80 - INQ000130575] helpfully drew together known (prior to the pandemic) design features to prevent general nosocomial infections (not just pandemic risk) within healthcare buildings:

a. Optimization of Sanitary Ware Layout and Design - While the NHS's standard for the design of sanitary provision does consider infection prevention and control in Health Building Note 00-02: Sanitary spaces [BJ/80a - INQ000300608], it does not consider the key ergonomic elements outlined in the literature for the reduction of infectious risk and makes no reference to ventilation or the containment of risks, for example of infectious spread by "toilet plume aerosols" [BJ/81 - INQ000130576]. The faecal-oral route of transmission of SARS 1 was already known and there was recognition of the risk early in the pandemic in relation to Covid-19 risk, but by then problems had already been designed into NHS buildings. [BJ/82 - INQ000130578].

b. Comfortable and Efficient Public Space/ Control the Crossing and Gathering of Crowd Movement Lines – As Xiong puts it:

> "*crowd density in an enclosed space is positively correlated with the infection rate, and poor design can increase the time that patients remain in hospital…Insufficient waiting space, complex and tortuous streamline design, long distances between departments, and poor guide design increase the risk of infection….in some narrow, crowded, and poorly ventilated indoor environments, aerosol transmission in close contact through some small, atomized particles is combined with respiratory droplets and contact transmission….*
>
> *"The design for medical buildings must separate different types of traffic routes to control. The flow lines for common, susceptible, and*

high-risk groups must be distinguished in terms of the contact risk elements, and the range of movement within the hospital must be controlled.

"The design for moving lines must use the path-finding characteristics of patients because difficulty in identifying a location is a common reason for unnecessary contact between patients. Specific measures include simplifying the paths, arranging rooms according to patients' path-finding habits, and reducing invalid space transfer.

"*Practical experience shows that a space can be classified according to the risk of Nosocomial Infection and cleanliness. There are ordinary areas, high-risk areas, and buffer areas. Significant buffer areas can be established in different cleanliness conversion areas and materials and colors can be used to emphasize the level of risk."* [BJ/80 - INQ000130575]

211. Health Building Note 009 Infection Control and the Built Environment [BJ/83 - INQ000300609] considers only clinical spaces and does not consider these crucial issues in the control of general nosocomial infection in non-clinical context. In effect, in the design of buildings, the impact of non-clinical spaces on infection transmission risk is not considered. The risk of airborne transmission is played down in the design guidance: "*This route is only relevant for a small number of infections, principally tuberculosis.*" It is an explicit design consideration only in relation to isolation rooms and is not mentioned as a potential risk in the guide to microbial infection for contractors.

212. The inherent weakness in the aforementioned design approach is that it provides only one line of effective defence. If isolation fails, then there are no further elements of designed building controls to prevent infectious spread, particularly to staff and public areas. Even for the prevention of a droplet-spread respirable infection route, the design of UK hospitals would not have features to prevent person-to-person transmission in any context outside of clinical ones and, more specifically, isolation spaces.

Correct Air Circulation and Purification – Per Xiong's summary of the literature:

> *"Previous studies show that a building's properties, especially the source of ventilated air and the airflow rate, are related to the diversity and composition of indoor bacterial communities. Hobday and Dancer noted that buildings are designed to increase exposure to outdoor air and sunshine to inhibit the survival and transmission of indoor infectious agents. However, many hospitals rely on mechanical ventilation, so air flow and filtering must be designed to prevent Nosocomial Infection."* [*BJ/80 – INQ000130575*]

213. Ventilation is specifically the subject of the "Health Technical Memorandum 03-01 Specialised ventilation for healthcare premises" [BJ/84 - INQ000130579 and BJ/85 - INQ000130580]. In its latest version, published in 2021, it explicitly states that the document was prepared before the pandemic. There is no consideration of the role of ventilation in nosocomial infection control, the need for ventilation to address CBRN or pandemic risk. The flawed thinking underpinning this document can be evidenced by the statement "most healthcare staff are no more at risk from airborne hazards when at their workplace than they are when not in a healthcare environment." There is no consideration of risks in non-healthcare settings.

214. Hospitals are places where people with infectious diseases go. People do not always know that they are infectious. Neither do the staff who deal with them (whether healthcare or support staff). Some HCIDs and HAIs are transmitted through a respiratory route. Therefore, staff in healthcare contexts are inherently at a higher risk of airborne transmission. The probability is higher and the impact from the type of exposure (e.g., for a rare but dangerous disease) is also higher.

K. Management systems for pandemic management

215. Pandemics require specialised management preparedness, response and contingencies. The Inquiry will no doubt be aware of the findings of Exercise Cygnus in 2016, which had established that the UK's preparedness for response to a large-scale influenza pandemic was inadequate and had made recommendations regarding PPE, which were not followed. This

was further highlighted by Exercise Iris in Scotland which identified general issues with the capability of the UK and Scottish authorities to supply, manage and deploy PPE. All these exercises highlighted significant challenges with aspects of the management of any future pandemic, while not considering all of the dimensions which may be anticipated from a prolonged and widespread pandemic.

216. Significant factors which did not arise in the planning for the pandemic, but which would be routine considerations in the context of emergency planning include:

a. Readiness and accessibility (including distribution and procurement) of the necessary equipment and materials (including PPE and sanitation products) required to manage a pandemic situation. As identified earlier, NERVTAG in 2018 had indicated that this was a national issue. However, the management skills to implement something like an RPE programme safely and effectively were simply not in place. This was particularly critical because systems for the use of sustainable (reusable) PPE, such as powered respirators require not only access to equipment, but the management and processes needed to maintain it. The impact of not having the capability to manage reusable RPE with a high protection factor would always fall particularly on those who cannot easily wear close-fitting disposable RPE. These are groups such as those who wear beards for religious observation, have medical or disability reasons preventing effective face fit and also those with different facial morphology than available RPE.

b. In the event of any national emergency, especially one which may be dynamic, effective channels of communication are vital. For healthcare having a single authoritative and joined up communications structure is essential to deliver a nationally coordinated response, capable of adaptation to local need and for the sharing of emerging intelligence to manage risk. The table-top exercises for pandemic preparedness in some ways have to sacrifice the methodology of communication in the creation of a scenario. However, notwithstanding this, Cygnus and Iris both identified the need to enable better communication. There was an absence

of consideration of how to achieve messaging which was consistent, but crafted to be meaningful for leadership, management and clinical leads. Even more problematic was the question of how to integrate the complex interaction between infection prevention and control guidance on protecting the legal rights of workers in healthcare under COSHH. This was ambiguous and perhaps inadequately considered in the 2011 pandemic plan for Influenza.

L. Human Resources and workforce planning for pandemic readiness

217. Perhaps because all the modelling for pandemic planning considered localised and short-term incidents, the normal considerations of business continuity planning seem to be absent from any shared management documentation and guidance for UK pandemic planning. While the 2011 Influenza plan considered the possibility of fatigue, the direct and foreseeable impact of a pandemic illness on the health workforce and its supporting staff and supply chain was not explicitly considered.

218. Workers in healthcare are more likely to be exposed to the risk of infection than other workers. This can and should be effectively controlled. However, they also experience societal infection risks. Typically, this will have an impact on reducing access to high speciality workforce members, depleting shifts and reducing overall capacity. These issues in workforce planning are likely to become more pronounced and less predictable as a pandemic takes root. It is not apparent to CATA that considerations of how this risk might be managed was a feature of UK preparedness for a pandemic.

219. The nature of a viral pandemic is that the greater the level of replication through spread, the greater the possibility of mutation and new variants. Coronaviruses are relatively good examples of this. With a rapidly moving and poorly understood disease, the transmission of knowledge and training to counter that disease needs to move faster than the disease itself if knowledge is to be effective. In the contemplation of pandemic planning, the need for dynamic communication and ongoing adaptive training was not a feature of the management infrastructure. The capability to move from status quo based “deep” and “routine” learning and knowledge to dynamic and contingent knowledge transfer was not factored into pandemic management thinking. In effect, it meant that pandemic readiness was premised on the

pandemic risk that was known and understood, but did not consider that a critical factor in enabling spread might be a "surprise factor" – that the infection that might take hold would be the one that we did not know how to manage and may require different responses to those that healthcare professionals and systems were accustomed to dealing with. Adaptable and dynamic knowledge transfer and the capability of staff at all levels not only to learn new information and skills, but to challenge their approaches and change their minds as the evidence evolved, were not planned elements of the approach to pandemic management.

220. This "surprise factor" came with 'symptomless transmission' and associated 'superspreading'. For instance, with SARS-1 the lag time between onset of symptoms and maximum infectivity was 5 to 7 days, which allowed time to isolate infectious patients at an early stage. However, with SARS-CoV-2 the lag time may be zero (i.e., infectious as soon as symptoms show) or even negative (at maximum infectivity before symptoms show). The Government was on notice about this circumstance early in February 2020, given a well-publicised outbreak in Sussex stemming from a symptomless 'index case' but failed to address this in its pandemic management policy during the ensuing months.

M. Procurement contingencies for pandemic readiness

221. We have already highlighted that NERVTAG had identified that there were fundamental unresolved problems with the procurement and maintenance of PPE and also the ability to manage a programme of fit testing. No action was taken in this respect and the HSE, who were the regulatory body responsible for PPE were depleted in resources and unable to focus on this from a regulatory perspective. In classic consideration of business continuity, there was not a sustainable UK supply chain in the event of a global pandemic increasing demand internationally.

222. There was no clear plan that identified at a technical level what suitable PPE would be needed. BSIF has categorised the existing stockpile as "*inadequate*" [BJ/85a - INQ000300610]. CATA considers it probable that it had not been subject to audit to see whether it was suitable prior to the pandemic, with whatever was cheapest or available being bought. Staff were neither trained to implement face fit testing (essential for effective deployment) or to get access to external supply of expertise. The assumption was that single-use RPE would be sustainable and consideration of sustainability of the resource and the

desirability of reusable RPE was not present, even leaving aside cost considerations. The failure of pandemic procurement is a matter of public record, but focus has been placed on the material availability of PPE, rather than the procurement of the skills required to make it effective and the choice of sustainable alternatives to single-use RPE.

IV. CATA's position, advocacy and government engagement

223. I will address this topic under the following headings:

A. The State of Pandemic Preparedness in the UK
B. How AGPs Became the Mainstay, rather than the Fallback for Infection Prevention and Control
C. CATA's repeated call for an objective scientific basis for the handling of the pandemic
D. CATA's engagement with public bodies, healthcare employers and the government

A. The State of Pandemic Preparedness in the UK

224. In 2011, the UK had a pandemic preparedness plan. It was for one type of pandemic – a droplet-spread, local hot-spot driven incidence of Influenza. By 2018, many of the elements of that plan were either not in place or had been in place but had been dismantled. Our healthcare infrastructure was quite literally built on the assumption that the one form of infectious disease which was not going to happen was an aerosol transmitted virus that would become nationally and globally pandemic and to which we had no immediate cure, vaccine or treatment.

225. We were somewhat prepared for a droplet-spread respiratory virus. However, when SARSCoV-2 emerged, WHO and NERVTAG initially claimed they did not know whether it was spread by an airborne route or by droplet transmission. Evidence indicated that SARSCoV-2 might have been transmitted by the airborne route. Other coronaviruses, including its close-relative SARS-CoV-1, were also known to be airborne transmitted. No virus has ever been known to change its mode of transmission to one with a lesser capability for infection. Contingency planning suggested that it should be treated as being spread by this route. The legal principles of health and safety at the time – the precautionary principle and the COSHH regulations – determined that it must be treated as if there was a risk of infection by this route.

226. However, instead of adapting our pandemic plan to address the threat according to these principles, the UK government deployed the plan that they had. The scientific assumption that a pandemic would not be spread by an airborne route, which we have outlined as being designed into our health infrastructure, was therefore fundamentally entrenched. It is CATA's contention that subsequently all official scientific pronouncements and infection control guidance were adapted and designed based upon this assumption. This was not, in CATA's submission, a finding of science, but a reflection of adherence to the planned-for model.

227. This approach found endorsement by the WHO. However, at the beginning of 2020, the largest funding nation of the WHO, the US, was threatening to withdraw funding from the WHO. This left the UK as the largest total funder, bearing in mind additional funds through the GAVI alliance. It would be a legitimate question for the Inquiry to determine whether the UK influenced the WHO's widely criticised and surprising decision to announce in March 2020 definitively that COVID-19 was not transmitted via an airborne route without a significant change in the scientific evidence base.

B. How AGPs Became the Mainstay, rather than the Fallback for Infection Prevention and Control

228. Even in respect of infections that are largely spread by larger respirable droplets, there is a long-standing acceptance of the likelihood of increased transmission risk arising from infectious fluids becoming aerosolised. The concept that AGPs may create an increased risk of aerosolisation of infectious fluids was hypothesised as a result of high recorded instances of infections of HCWs in certain contexts. These hypotheses were based upon studies which had extreme limitations. The hypothesis developed in a paper by Tran and others in 2012 highlighted its own limitations, but was used by WHO, HPS and PHE to justify their AGP lists thereafter [BJ/86 - INQ000130581]:

> *"Despite the comprehensive nature of the search, the limitations of the included studies serve to emphasize the lack of high-quality studies which have examined the risk of transmission of microbes responsible for acute respiratory infections to HCWs caring for patients undergoing aerosol generating procedures. In addition, the findings serve to highlight the lack*

of precision in the definition for aerosol generating procedures. Further, the results of this report should not be generalized to all acute respiratory infections because the evidence available is strictly limited to SARS (1)."

229. In 2016, the UK's scoping report on AGPs concluded that the AGP hypothesis was one that was lacking in a firm evidence base [BJ/87 - INQ000130582]:

> *"The existing evidence is substantially heterogeneous, leading to difficulty in interpreting findings and forming recommendations. Much of the variation in countries AGP list content may be attributable to a reliance on expert opinion in the absence of evidence. A stronger evidence base and standardised recommendations would inform health policy and practice, improve resource allocation and help to ensure optimum patient care."*

230. In 2017 Health Protection Scotland (HPS) scrutinised the Tran review and AGP hierarchy, concluding as well that it consisted of an "extremely limited volume and quality of studies" that "should be used for academic purposes only and not for clinical decision making" [BJ/87a - **INQ000257934**

231. A fundamental flaw in the evidence base was the failure to create a reference point based on the science of how aerosols behave. In order to definitively determine whether aerosols are created as a result of clinical procedures, aerosols should have been detected in studies and not presumed. However, the AGP list was compiled from studies which did not, by and large observe whether aerosols were caused through those procedures in a way that was somehow more problematic than those created through, coughing, breathing or shouting, etc. The AGP list was compiled based on a hypothesis that infection of HCWs could be more likely because the procedure was inducing more coughing (for example) during close quarters care. The absence of an interdisciplinary approach to the critique of the evidence base determining infection transmission risk resulted in a crucial policy focus on prioritising HCWs for RPE based on the procedures that they were carrying out (AGPs) over the risk of infection because of their working location (poorly ventilated spaces, uncontrolled community environments and contact with population groups not taking public health measures). The critique of the

evidence base for AGPs is most eloquently summarised in the 2022 rapid review on AGPs [BJ/88 - INQ000130583]:

> *"In the process of conducting the review it became apparent that the major change in the evidence base around AGPs during the pandemic has come from important advances in the ability to detect aerosol produced during medical procedures (either within hospitals or in simulated models with varying degrees of fidelity). This clinical aerosol science has enabled a quantitative assessment of aerosol generation that can be useful to inform the relative risk association with these activities.*
>
> *In particular, volitional coughing from study participants has been operationalised as a reference for risk, such that aerosol generated from volitional coughs can be used as an appropriate relative risk comparator for aerosol generating procedures. The volitional cough has the advantage that it can be detected above baseline aerosol levels (if in a clean environment) and is a discrete, transient event. There is considerable variation between both individuals and between studies reflecting individual respiratory (patho)physiology, measurement techniques and experimental conditions. Nonetheless using within-subject comparisons has demonstrated that several AGPs on the extant list produce much less aerosol than a cough and so by this measure can be considered as not being high risk for aerosol generation. Importantly, there is an increasing evidence base of aerosol measurements during normal respiratory activities such as tidal breathing, breathing during exercise, talking, shouting and singing. Each of these activities generates measurable aerosol in a graded and proportionate way and importantly this physiological respiratory aerosol has been demonstrated to contain SARS-CoV-2 in patients with COVID-19.*
>
> *"For many of the reviewed procedures, the aerosol generated by natural respiratory activities exceeded that produced by the actual procedure, often by more than an order of magnitude. It is further apparent that the source of the detected aerosol in several of the AGPs that do generate*

increased aerosol (such as, upper gastro-intestinal endoscopy) is predominantly from the patient's own respiratory activities (i.e., coughing) rather than from the actual procedure."

232. It is CATA's contention that risk of exposure to airborne Sars-CoV-2 should be based on situational not procedural factors.

233. In 2018, however, PHE adopted the Hierarchy of AGPs and the allocation of RPE to health workers was still prioritised by IPC guidance (now withdrawn) [BJ/89 - INQ000130584], based on the concept of an increased risk associated with AGPs, despite the concept being largely discredited as a basis for infection risk assessment by the NHS's own research.

234. By March 2020, HCWs were being placed under pressure to comply with the revised IPC guidance downgrading PPE masks to FRSM (surgical masks) except in AGPs and critical care areas. Many HCWs were made to feel unsafe by the sudden downgrading of PPE requirements, with many arriving at work on 13 March 2020 to find that they would only be provided with FRSMs and not RPE, even when treating Covid-19 positive patients, without any discussion, warning or alternatives being provided – for example we refer the Inquiry to the experience of a Consultant Geriatrician in Cambridge in David Shukman's article in the Guardian 'How healthcare workers came to feel "expendable"' [BJ/88a - INQ000300612].

235. HCWs were frequently being told to follow diagrams and guidance such as PHE's 'A Visual Guide to safe PPE' [BJ/88d - **INQ000080940],** 'Additional Considerations in addition to standard infection prevention and control precautions where there is sustained transmission of COVID-19' table [BJ/88e - INQ000300616] and 'Recommended PPE for primary, outpatient, community and social care by setting, NHS and independent sector ' table [BJ/88f - INQ000300411] – all of which only recommended the use of FFP masks in the context of AGPs.

236. We have heard a number of examples of individual experiences among CATA's members of the pressure applied to HCWs to comply with such guidance – for example, some members experienced being chastised or challenged by colleagues and managers for opting to wear higher levels of respiratory protection in settings that had not been classified as AGPs and

being asked to remove it. We refer the Inquiry to the impact statement of Nathalie MacDermott in Annex 2 for which outlines her experiences in this regard.

237. CATA members have also informed us that in some healthcare settings, such as in staff rooms and staff hubs, HCWs were given specific instructions not to wear any PPE/RPE at all, without any clear explanation being provided, and some were challenged by colleagues for choosing to wear even low level protection, such as an FRSMs, in those areas.

238. Some members even experienced these "no PPE" instructions occurring in spaces that were open plan with or close to hospital wards and patients. For example, see Figure 8 below, which was taken on 12 May 2020, of an open plan staff hub in which "no PPE" was permitted.

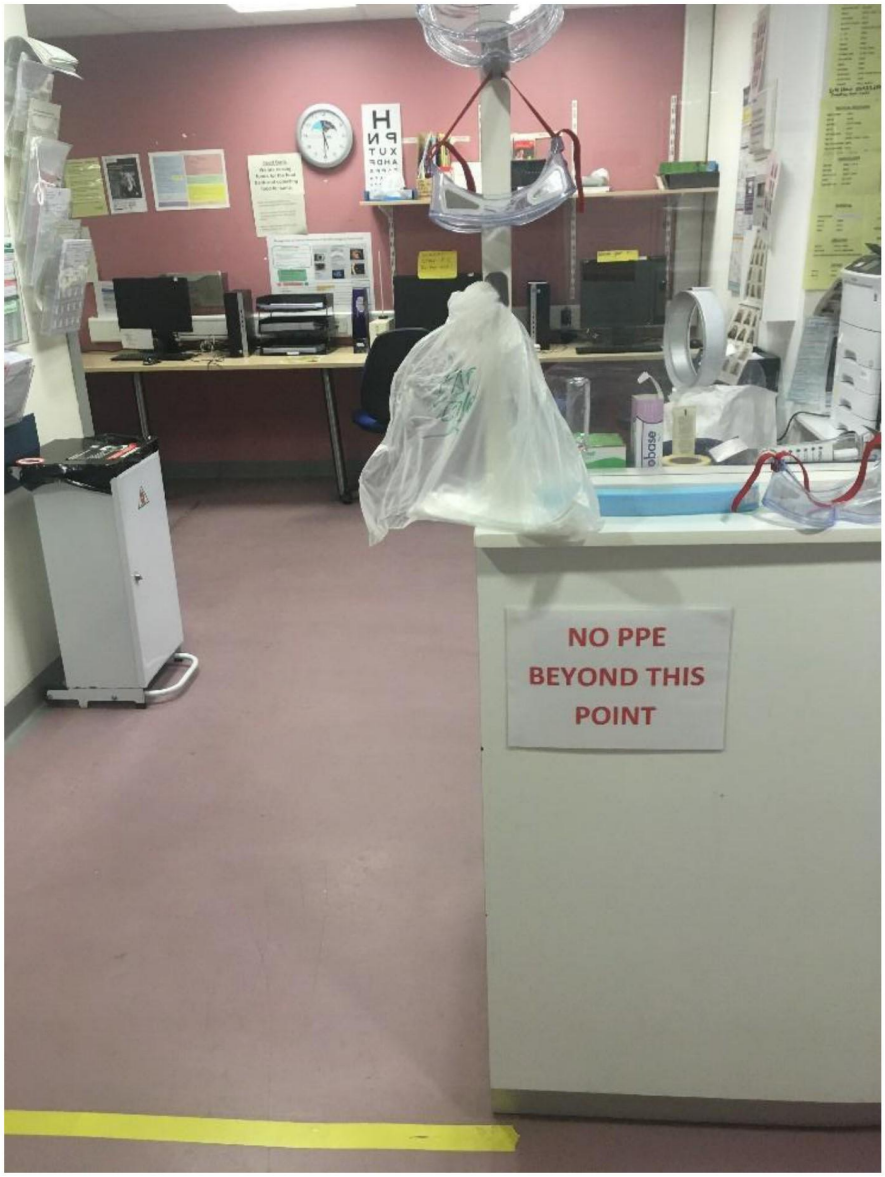

Figure 8: “No PPE beyond this point”

239. It was clear to our members, and many other HCWs, even in the early stages of the pandemic that the guidance on PPE/RPE, and the pressures being put on HCWs to wear lower levels of PPE/RPE, put HCWs, and in turn their patients, at greater risk of infection with Covid-19. These fears and concerns of our members have been proven to be correct. Indeed, CATA wishes to draw the Inquiry’s attention to an important 2022 paper, ‘Airborne protection for staff is associated with reduced hospital-acquired COVID-19 in English NHS Trusts’, which indicated that RPE use was associated with a 33% reduction in hospital acquired infection odds in the Delta wave, and 21% in the Alpha wave [BJ/88c - INQ000300614]. In addition, in

a 2023 report 'COVID-19: examining the effectiveness of non-pharmaceutical interventions' the Royal Society has highlighted *"the weight of evidence… suggests that wearing masks, wearing higher quality masks (respirators), and mask mandates generally reduced the transmission of SAR-CoV-2 infection"* [BJ/88g - **INQ000282456**]

240. We have already provided evidence of our member organisations creating their own guidance in opposition to the official contemporaneous guidance which did not address the concerns raised by their members in practice. The guidance drafted by our member organisations applied to procedures not on the AGP list but considered by our members to be associated with the generation of aerosols which placed members at enhanced risk of exposure and infection. Another poignant example is the supplementary guidance released by a number of leading surgical bodies during the pandemic, which recommended that surgeons use higher levels of respiratory protection than that being recommended in UK government guidance, in order to adequately protect themselves from Covid-19 – this is discussed in more detail in the British Journal for Surgery article 'Personal Protective Equipment (PPE) for Surgeons during COVID-19 Pandemic: A Systematic Review of Availability, Usage, and Rationing' [BJ/88b - INQ000300613].

241. CATA's origins are founded in AGPA, which, as discussed before, consisted of healthcare professional and scientific bodies who challenged the notion that the AGP list was a legitimate, lawful, ethical or scientifically valid basis to restrict the legally and professionally required respiratory protection. At heart, its existence was a response to the inadequate scientific basis for the restriction of PPE to a discredited list of procedures, predicated on a route of transmission of infection (droplet) which was a convenient proposition, rather than founded in scientific fact.

242. Having written to the Prime Minister, Secretary of State, PHE, NHS England, NERVTAG and many other bodies, the Alliance realised that our name (AGPA) was a distraction from our real purpose. We therefore altered the name to CAPA in September 2021. This meant we could more easily focus on the implications of a failure to recognise the airborne route and in particular, the need for better ventilation and FFP3 protection for <u>all close contact care in all healthcare settings.</u> By this point, we had been joined by the QNI, so the community issues could be highlighted to a greater extent. Indeed, we attracted more members throughout 2020 to 2022 including FANHS, MSDUK, BOHS and David Osborn (Health and Safety expert). We

successfully involved the media and for a while we had the support of Irrelevant & Sensitive I&S. He published many useful supportive pieces until his retirement from the I&S in October 2021 [such as BJ/88a - INQ000300612 discussed above]. We collaborated with the Royal College of Nursing (RCN) and BOHS to produce the first Risk Assessment Tool in December 2021 [BJ/232 - INQ000300475]. As IPC guidance continued to omit clear indications of the route of transmission, CAPA, RCN and the British Medical Association (BMA) campaigned in a coordinated manner to change the guidance.

243. The Inquiry will need to determine whether the UK's preparation for a pandemic was fundamentally flawed because it anticipated one transmitted by droplets, rather than aerosol; and as a consequence, it ignored the appropriate legal duties and established emergency planning principles that were applicable. The Inquiry will also need to explore whether there was a doctrinal adherence to "expert opinion" in relation to AGPs and how infection prevention should be managed. In essence, the investigation is about whether there was a disregard of scientific evidence bases, resulting from a stubborn refusal to accept inconvenient truths.

C. CATA's repeated call for an objective scientific basis for the handling of the pandemic

244. Throughout the Alliance's existence, CATA has mobilised its considerable scientific and medical expertise to try and inform decision-makers from Prime Ministers, Secretaries of State, other Ministers, Government Departments to the leadership of the NHS. CATA understands the governance requirements in the determination of matters at a time of crisis and the challenges associated with leadership in these times. However, the public law duty to take into account relevant considerations and disregard irrelevant ones becomes even more critical at times of national emergency.

245. Moreover, CATA has always drawn attention to existing health and safety obligations which were never planned to be diminished in either law or policy, as well as scientific fact, resting on a pre-existing and growing evidence base. Responses to focused and science-based inquiry and advice from CATA were consistently provided in general political terms such as "*the safety of HCWs is our greatest priority*", "*We are working hard to provide PPE*" and "*our experts are keeping the evidence under review*" (for example [BJ/115 - INQ000130522 and [BJ/101a - INQ000130506. These responses indicated a failure to

engage or perhaps understand the scientific and practice-based nature of the material being provided. Moreover, in the case of employers or those exercising control over the health and safety of employees, this illustrated a failure to engage with duties under the Health and Safety at Work Act etc 1974 to consult with the employee groups expressing concern.

246. In all CATA's correspondence in its capacity, either as a collective voice of the workforce, or as a group of scientific and professional bodies, there was not one reasoned, evidence-based or technical response provided. Nor indeed was there any indication that the legitimate concerns for safety were being considered. CATA would like the Inquiry to determine whether decision-makers involved with the early implementation of the pandemic response were ever apprised of the crucial scientific and other observations by AGPA or CAPA to enable them to make the modifications envisaged for other routes of transmission identified in the 2011 Influenza Pandemic Strategy.

247. We have reason to believe that information was filtered by civil servants and policy gatekeepers to prevent the reception by decision-makers of inconvenient scientific, technical and front-line truths. For example, at a meeting on 3 June 2021 between AGPA and DHSC and others, the DHSC repeatedly refused any opportunity to discuss FFP3 masks and the principle of airborne transmission, particularly at close quarters despite these being the main reasons for the meeting being convened and this being made clear to the attendees both before and during the meeting.

248. The meeting occurred as a result of a letter from AGPA and others to the Prime Minister, dated 18 February 2021 [BJ/89a **INQ000114283**], in which we outlined arguments regarding inadequate protection for HCWs in respect of airborne transmission and the need for increased respiratory protections. As we did not receive a response to this letter until 7 May 2021 [**BJ/148a - INQ000114417**], we sent a letter to the CMOs on 12 March 2021 [BJ/89c - **INQ000114297**] expressing our concerns in respect of the IPC advice and stating that "*the insistence on surgical masks as adequate protection... is utterly irresponsible as such masks are not designated as PPE against airborne transmission*". The meeting was scheduled for 22 April 2021, but was rescheduled by the DHSC due to a change in the approach, now requiring all signatories to the letter to the Prime Minister dated 18 February 2021 to attend in addition to the signatories to the letter to the CMOs, as described in an email from Tom Embury to AGPA and others [BJ/89d - INQ000300618]. In addition to the concerns expressed

in the relevant letters, it was made clear to the DHSC that the primary concern of AGPA was in respect of airborne transmission and PPE guidance; see for example, the email from Kamini Gadhok to Alastair Hardisty and other DHSC colleagues dated 5 May 2021 [BJ/89e - INQ000300619], in which she outlined updates in guidance of the WHO, CDC and ECDC, stating that the changes are "*important for resolving our members concerns and enabling a solution to be reached on the issue of respiratory PPE*". The HSE were also invited to attend the meeting [BJ/89o - INQ000300631], but they declined [BJ/89p - INQ000300632].

249. The meeting that took place on 3 June 2021, was held subject to the Chatham House rule, which was invoked shortly after the meeting started, and, as such, no formal minutes of the meeting were circulated to us. However, we have exhibited the agenda to the meeting and the attendee list at [BJ/89f - **INQ000114333**]. The Chair of the meeting was Michael Dynan-Oakley, Deputy Director of PPE Policy Briefing & Engagement at DHSC. CATA understands that the attendees at the meeting were wider than the list in the agenda, however, as minutes were not circulated, neither was a full list of attendees. We have also disclosed the draft briefing note prepared by myself for my introduction (although note that this does not amount to a verbatim account of what was actually said at the meeting) [BJ/89g - INQ000300621] and a PowerPoint presentation [BJ/89h - **INQ000114414**], prepared and delivered by AGPA members at the meeting. Both these documents refer to the need for better protection against airborne transmission for HCWs and the inadequacy of the existing regime.

250. As detailed above, we concluded the meeting feeling many of our questions had not been answered and our main concerns had not been addressed. Following the meeting, Tom Embury emailed DHSC colleagues on 7 June 2021 [BJ/89i - INQ000300623] seeking further clarification on issues relating to IPC guidance and attaching a Situation-Background-Assessment-Recommendation Report (SBAR) [BJ/89j - INQ000300626] and the PowerPoint presentation [BJ/89h - **INQ000114414**] On 17 June 2021, AGPA and RCN wrote to DHSC again [BJ/89k - INQ000300627]. We received a response from Michael Dynan-Oakley on 23 June 2021 [BJ/89m - **INQ000114267** and BJ/89l - INQ000300628] which notably did not refer to close-range exposure or address the issues with respiratory protection we had raised. We expressed our disappointment in the lack of engagement with these central issues in our joint response with the RCN dated 8 July 2021 [**BJ/89n - INQ000114265**].

251. At the invitation of the Rt Hon Jeremy Hunt MP, detailed written evidence was submitted to the Health and Social Care Committee (HSCC) which he chaired [BJ/90 - INQ000130585]. The report provided accurate and well-founded scientific and legal information intended to alert the Committee to the extreme danger that HCWs were being placed in by being issued with inadequate respiratory protection. However, the report, which highlighted the concerns of professional bodies about the risk of death and illness (and the scientific basis for this) was not mentioned in the text of the report but was included in the list of references to evidence submitted. Similarly, AGPA, together with the RCN, submitted written evidence to the Public Accounts Committee voicing similar concerns [BJ/91 - INQ000130586]. These representations were neither referenced nor reflected in any public document. While the determinations of Parliamentary inquiries may be beyond the scope of this Public Inquiry, our experience is another indicator of the extent to which the legitimate concerns of healthcare professionals and the scientific evidence which they put forward to underpin those concerns were excluded from public discourse.

252. CATA firmly believes that, as the pandemic progressed, the Government's refusal to substantially change its approach to RPE was due to the fact that to do so may indicate that there had been inadequate preparation for a pandemic and that, in choosing to implement the Influenza Pandemic Plan without consideration of the implications of the mode of transmission of the infection, it had made some fundamental errors. This is highlighted by the Government's *Coronavirus Action Plan* of 3 March 2020 [BJ/91a - **INQ000057508],** which stated that the Influenza Pandemic Strategy would be followed, admitting of important differences in the two diseases, but at no point considering the potential difference of transmission route.

253. The 4-Nations IPC Guidance document was authored by the "IPC Cell." Its existence is not reflected in the "hub and spoke" governance model for pandemic and emergency, nor was it listed as a formal body in the Government's Pandemic Plan of 3 March 2020 [BJ/91a - **INQ000057508],** or apparent in governance which was the basis for pandemic emergency planning exercises like Cygnus and Iris. Its membership was not made public, although the unsatisfactory operation of IPC arrangements was remarked upon in May of 2021, when changes were brought into effect in its operation and leadership. The minutes of the IPC Cell meetings were never put in the public domain, despite being the basis for almost all operational decisions about health and safety of staff and patients in the UK. However, a few

sets of notes were released in response to a Freedom of Information request [BJ/92 - INQ000130587]. The notes of one such meeting record the fact that "*Public Health England are recommending FFP3 masks in all medium/high risk pathways (irrespective of AGPs) as there could be increased airborne transmission in these pathways*". In response, a representative from Northern Ireland voiced a concern that if there was a move to FFP3, "*colleagues might think they have not been appropriately protected with what has been previously recommended*" [BJ/92 - INQ000130587].

254. This discussion in itself indicates a series of fundamental failures in governance and decision-making. It poses the question immediately of why the body legally responsible for the protection of public health (PHE) could be over-ruled by a non-statutory group. It also indicates irrelevant considerations in decision-making relating to the IPC Cell's role. The IPC Cell's terms of reference and the relationship with general health and safety were inadequately defined and managed. This led to IPC guidance which was in effect contradictory to public health decision-making and health and safety law.

255. In the setting up and management of the IPC Cell in governance, operational and legal terms, there was a fundamental failure in pandemic planning. Either the pandemic plan had failed to determine that preventing and controlling infection would need a specific focus in healthcare settings or a decision was made to remove IPC control from the existing governance arrangements and establish a separate body. If it was the former, then it shows a fundamental flaw in the appreciation of the role of and risks to healthcare in pandemic contexts. If the latter, then the Inquiry will need to satisfy itself of what the basis of that decision was and what fundamental flaw in governance and legal arrangements required such a move.

256. CATA respectfully suggests that the Inquiry may also wish to investigate:

a. the methods of research which fed into the development of the IPC guidance;
b. the competencies and mix of relevant professional skills that should be taken into account when assembling a group such as the "IPC Cell" in any future pandemic (or resurgence of Covid-19);
c. the requirement for close involvement with stakeholders from all medical and care professions.

257. CATA further suggests that individuals who have been involved in the formulation of pre-pandemic policies or made key decisions at the outset of the pandemic should not be placed in key, influential positions within such a group in view of potential conflicts of interest.

258. CATA consists primarily of those involved directly in the delivery or management of healthcare. The fact that CATA members, as critical players in healthcare delivery, remain in principled objection to the Government's pandemic planning, is an indication of how profoundly important the failure to prepare for an airborne transmission virus is to the nation's healthcare provision. The fact that the Alliance still exists and still needs to campaign is even more demonstrative. The health and safety protections required to protect HCWs against Covid-19 are the same as would be legally required to protect a worker in a car body shop from the threat of occupational asthma. The fact that the organisation most critical to the continued health and life of the country was unprepared for the risk of respiratory disease that could be transmitted through a respiratory route is wholly indicative of the lack of preparedness.

259. The primary significance of the airborne route of SARS-CoV-2 transmissions are part of the unequivocal findings of the UK's national core study on Covid-19, the WHO's change of viewpoint and the Cabinet Office's confirmation of airborne transmission in January 2022. Nonetheless, the IPC guidance and current practice still deprives HCWs of the right to be protected from infection. While current vaccines are largely effective against existing strains of Covid-19, the absence of large scale systematic testing means that our ability to detect vaccine-resistant strains in the community is limited and it is likely that the first point of identification and the main hub of transmission for any new SARS-CoV-2 strain is likely to be in healthcare settings. Currently, we are in no better position in the governance and organisation of healthcare to respond to this in relation to worker health protection.

D. CATA's engagement with public bodies, healthcare employers and the government

260. AGPA and CAPA's engagement with decision-makers in relation to the protection of HCWs from infection by Covid-19 spans the entire pandemic and reflects the diverse membership of the organisation. It is not possible at this stage to include every item of correspondence from every member. Key engagements are outlined below and identify several broad phases.

261. Before engaging in a detailed account of the interactions between CATA and public bodies, it may be helpful to provide an overview of how these interactions developed.

262. Initially, before AGPA was formed and in its early incarnation, members of CAPA/CATA were in search of guidance, clarity and explanation, in particular in relation to inconsistencies around the definition and identification of AGPs.

263. However, it soon became apparent that decision-making, who was making the decisions, and the principles involved in arriving at them, were becoming increasingly problematic.

264. CAPA's members, who, as professional bodies, were used to developing detailed practice guidance, started developing frameworks for the management of risk in the delivery of healthcare in the pandemic setting. Professional groups were involved in a variety of settings from providing speech and language therapy to gastric feeding – areas which had never been subject to significant research in relation to transmission of respiratory infections. While initially welcomed, such developments started to be deprecated by public bodies as they went against generic IPC guidance.

265. CAPA's members moved to a phase of marshalling scientific evidence and professional expertise to provide decision-makers with a more reliable, consistent and relevant evidence base than what they appeared to be drawing on as the basis of their decisions. These broadened to consider observations and evidence that suggested that close quarters care in a variety of healthcare contexts were giving rise to high levels of infection from Covid-19, which were consistent with the evidence base for aerosol transmission. At the same time other professional groups, not involved in AGPs started to align with AGPA in trying to ensure that decision-makers were apprised of the evidence base. From CAPA members' perspective, it was not a case of trying to lobby for an alternative understanding of the scientific evidence, but trying to ensure that public decision-makers acknowledged the existence of important and credible science to inform decision-making. It is fair to say that at this stage CAPA still were of the opinion that it was misunderstanding and the absence of scientific data on the part of employers and public decision-makers that was giving rise to a view that Covid-19 was spread via droplets.

266. CAPA's continued contention that the application of the precautionary principle, based on the high probability of the airborne transmission of SARS-CoV-2 led many organisations to ask for the availability of FFP3, other RPE or other effective controls. None of the members of CATA particularly wished for their members to have to wear uncomfortable and inconvenient RPE as a matter of principle, it was often simply the only effective control that appeared to be available. This specific ask was one that was resisted robustly, and members began to be informed that part of the rationale for not providing FFP3 or similar protection was the absence of capability within healthcare to provide effective RPE, rather than a purely scientific base. In effect, the argument turned, in some contexts, to one of practicability, rather than applicability. Key authorities including the IPC cell, the independent AGP panel, Public Health England, ARHAI (Scotland) who were responsible for providing clear and consistent guidance maintained that there was no need to provide FFP3 or similar protection[12]. This was despite the growing scientific evidence for airborne transmission and CAPA's call for the application of the precautionary principle.

267. Responses to CAPA became more standardised, evasive or deflecting. More and more of the responses to queries about health and safety protections were responded to by reference to Infection Prevention and Control guidance[13], which itself made references to other Health and Safety duties, but which nobody could articulate or would take responsibility for. In some instances, professional bodies were simply not replied to at all. I refer the Inquiry to Annexes 1 and 3 for a full breakdown of the correspondence to and from CATA members.

268. CAPA's membership and expertise grew to a point where the organisation represented over 100,000 people - a significant number of HCWs in the UK – all asking the same questions as to why UK policy in healthcare settings would not admit the risk of infection from airborne exposure and the need for the relevant respiratory protection when treating patients in circumstances where the risk of infection was high.

12 For example, see: BJ/23 - INQ000300472, BJ/92I - INQ000330903, BJ/92J - INQ000300672, BJ/92M - INQ000300675, BJ/92N - INQ000300676, BJ/92O-INQ000300677, BJ/92P - INQ000300678, BJ/92Q - INQ000300679 and BJ/92R - INQ000300389, BJ/92S - INQ000300681

BJ/92U - INQ000300683, BJ/92V - INQ000300684, BJ/92W - INQ000300685, BJ/92X - INQ000300686, BJ/92Y - INQ000300687, BJ/92Z - INQ000300688, BJ/92AA - INQ000300636, BJ/92AB - INQ000300637, BJ/92AC - INQ000189373, BJ/92AD - INQ000189371, BJ/92AE - INQ00018937

BJ/92AF - INQ000189386, BJ/92AG - INQ000189387, BJ/92AH - INQ000189388, BJ/92AI - INQ000189389, BJ/92AJ - INQ000189390, BJ/92AK - INQ000189391, BJ/92AL - INQ000189392, BJ/92AM - INQ000189374, BJ/92AN - INQ000189375, BJ/92AO - INQ000300650

BJ/92AP - INQ000300651, BJ/92AQ - INQ000300652, BJ/92AR - INQ000300653, BJ/92AS - INQ000300654, BJ/92AT - INQ000300655, BJ/92AU - INQ000300656, BJ/92AV - INQ000300657, BJ/92AW - INQ000300658, BJ/92AX - INQ000300659, BJ/92AY - INQ000300660

BJ/92AZ - INQ000300661

13 For example, see: BJ/115 - INQ000130522, BJ/187 - INQ000130534, BJ/89a - INQ000114283, BJ/208 - INQ000257968, BJ/117 - INQ000257950, BJ/92a - INQ000300635, BJ/249 - INQ000300494, BJ/240 - INQ000300486, BJ/8 - INQ000300607, BJ/247 - INQ000300492

BJ/92BB - INQ000300664.

269. CAPA's communications continued to highlight the burgeoning evidence that supported airborne transmission as a significant exposure risk and to highlight inconsistencies in messaging by public authorities. However, it also started to emphasise legal duties relating to proper risk assessment.

270. CAPA's members started to develop tools to enable workplaces and managers to assess their Health and Safety duties and some of these tools were adopted in some workplaces, although none were officially acknowledged by healthcare bodies.

271. Ultimately, in early 2022, the Cabinet Office changed its position on airborne transmission and PPE. However, other public authorities, such as the Scottish Government, did not. Neither did the IPC guidance change.

272. Only after the period to which the Inquiry relates were CATA finally was able to engage directly with members of the IPC in relation to the review of IPC training and education. However, the resolute refusal to admit to the now overwhelming evidence of airborne transmission and the need for appropriate RPE continued.

273. To date CAPA has not had responses to several critical governance, operational and scientific questions which should be available in the public domain. We refer the Inquiry to Annex 3 of this statement, which provides details of our correspondence to government, public bodies and public officials, the relevant questions asked, and the response, or lack of, received to the same. Please note that the list of correspondence in Annex 3 is not exhaustive but includes most of the letters that have been sent either by the Alliance collectively (AGPA/CAPA/CATA) or by its member organisations and individuals prior to our coalescence as AGPA/CAPA/CATA.

274. By way of overview of key healthcare policy events during the pandemic, and the key communication and engagement had between CATA and Government, I have provided a timeline at Annex 1 – for the avoidance of doubt, AGPA/CAPA's engagement with government across the pandemic is far more extensive than the communications referred to in this timeline.

V. The ongoing battle between science and policy related to COVID-19 in healthcare settings

275. The ongoing divergence of scientific views over airborne transmission (and the methods to control it) can be characterised as a polarisation of views between some in the scientific community and the IPC Cell. To the best of our knowledge, the IPC Cell has never acknowledged the aforementioned errors.

276. The IPC Cell guidance has been the dominant practical guidance determining the control and transmission of COVID-19 in hospitals. It is our view that this has been followed to the exclusion of the appropriate Health and Safety Law, emerging scientific development, and international good practice.

277. The IPC Cell was set up in response to the public health threat of COVID-19. NHS England/Improvement set up an emergency response structure within the organisation, the National Incident Response Board (NIRB) being the key operational arm of this with different committees called 'cells' feeding into it. It is of note that the existence and remit of an IPC Cell is still not a feature (as at the time of writing) of any Emergency Preparedness Planning and Resilience Governance Documentation, including in the Incident Response Plan (National) Annex A – Protracted incidents [BJ/93 - **INQ000113335**] which outlines Cells feeding into the NHS Emergency Response governance structure.

278. What we know of the IPC Cell derives from a response to a Freedom of Information request from March 2021 [BJ/94 - INQ000300690]:

> *The IPC cell was established after the first Wuhan Novel Coronavirus incident management team (IMT) meeting on 23 January 2020. The IPC cell function is to provide infection prevention and control advice, review/develop guidance for the NHS and NHS commissioned services. The UK IPC cell membership includes senior IPC representatives from Public Health Wales (PHW), Public Health Agency (PHA) Northern Ireland, Health Protection Scotland (HPS)/National Services Scotland, Public Health England (PHE) and NHS England/Improvement. They report into their own organisation governance systems. NHS England / NHS Improvement have been the lead organisation hosting, minuting and coordinating cell meetings…The remit of the IPC cell includes reviewing international guidance*

and the published literature (national and international) to assess the learning and scientific evidence base to inform IPC practice recommendations, specifically the prevention of transmission and management of COVID-19 in NHS settings.

[Its membership consists of] Senior IPC representatives from Public Health Wales (PHW), Public Health Agency (PHA) Northern Ireland, Health Protection Scotland (HPS)/National Services Scotland, Public Health England (PHE) and NHS England/Improvement.

The IPC measures recommended are underpinned by the National Infection Prevention and Control Manual practice guide and associated literature reviews. [BJ/95 - INQ000300691]

279. Two observations may be made here. First is that the IPC Cell is not a wholly science-led organisation, as indicated by its constitution. Science and evidence are "included" in its remit. The IPC Cell, it would seem, blends a role as scientific adviser on infection control and also manager of delivery, given the remits of the bodies. Second, the body is not accountable, other than back to its own organisations. In that sense, it is not governed, nor perhaps directed or led. The absence of clear terms of reference and the dynamics of several organisations representing different national organisations without clear leadership are not characteristics of a well-defined governance body.

280. The absence of transparency, inclusion within the group of representatives from expert organisations or other organisations (such as HSE) with expertise or insight into the management of infectious risk in other parts of the community render it susceptible to problems associated with closed decision-making bodies.

281. Given the limited amount of information we do know about the remit of the IPC, the downgrading of SARS-CoV-2 from an Airborne Infectious Disease of High Consequence would have been essential to deviate from the essential requirement, set out in the March 2020 Literature Review Personal Protective Equipment (PPE) for Infectious Diseases of High Consequence (IDHC) [BJ/96 - **INQ000150676**], to use FFP3's. While SARS-CoV-2 was classified as High Consequence, the level of protection could not have been downgraded to FRSM from FFP3 without contradicting the science and good practice for HCW protection.

282. The March 2020 Literature Review identified SARS coronavirus (and novel variants) as an infectious disease of high consequence ("IDHC") and identified the following:

> *The Advisory Committee on Dangerous Pathogens (ACDP) guidance on management of VHF and IDHC states that 'when selecting PPE, the infection risk, the tasks to be undertaken, the environment in which the PPE is being used and the person using the PPE must be considered.*
>
> *Guidance has differed on whether respiratory protective equipment (FFP3) is required for these pathogens; or if a surgical mask is sufficient (except during AGPs).* [reference is made here to the *European Centre for Disease Prevention and Control. Interim ECDC public health guidance on case and contact management for the* ***new influenza A(H1N1) virus*** *infection.*]
>
> *It has been shown that both surgical masks and N95 respirators were protective during the SARS epidemic, but it is unclear whether one offered superior protection over the other.*[14]

283. It continues:

> *Current NHS Scotland guidance for severe respiratory illness caused by novel or emerging pathogens recommends that a fit-tested, fit-checked FFP3 respirator is worn for all patient care activities. A recent (2016) survey of RPE in NHS Scotland showed that powered respirators with hood/helmets are increasingly used as an alternative to FFP3 respirators, particularly where staff have been unable to pass a fit test with an FFP3 respirator or are unshaven (unpublished).*

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[14] Reference is made here to *Seto WH, Tsang D, Yung RW, Ching TY, Ng TK, Ho M, et al. Effectiveness of* ***precautions against droplets and contact*** *in prevention of nosocomial transmission of severe acute respiratory syndrome (SARS) [BJ/96a - INQ000300693],* but then *Teleman MD, Boudville IC, Heng BH, Zhu D, Leo YS. Factors associated with transmission of severe acute respiratory syndrome among health-care workers in Singapore. Epidemiology & Infection [BJ/96b - INQ000300694]* which states "*N95 masks (adjusted OR 0.1, 95% CI 0.02-0.86, P=0.04) remained strongly protective but gowns and gloves had no effect*".

284. On 5 March 2020, in oral evidence to the House of Commons HSCC, Professor Chris Whitty stated, "*All infections that have a very strong force of transmission and that are airborne have the capacity to travel worldwide*" [BJ/26 - **INQ000130504**. However, on 13 March 2020, Professor Tom Evans, Chair of the JCVI wrote to the Deputy CMO Jonathan Van Tam DHSC stating the unanimous view of the Advisory Committee on Dangerous Pathogens (ACDP) committee that SARS-CoV-2 should be declassified as an airborne HCID (High Consequence Infectious Disease) [BJ/97 - **INQ000130524**. This letter followed a communication from Sir Jonathan Van Tam who had just announced to NERVTAG that he had recommended NHS to change from FFP3 to FRSM. It is clear from ACDP's explanation that the basis for declassification was concerned with the availability of laboratory tests and lower mortality rates associated with SARS-CoV-2. Nonetheless, there was no suggestion that its status as 'airborne' had altered from that originally declared in January. SARS-CoV-1 remains classified as an airborne HCID to this day.

285. The DHSC aimed to shift from FFP3 masks to surgical ones. NERVTAG was told the same day that the Government supported changing PPE recommendations and within hours FFP3s were no longer required on the wards [BJ/97a - **INQ000212195** Up until then, many HCWs were working on the assumption that these were needed for protection from the disease. The decision was made without direct consultation of the workforce or localised risk assessment and was implemented without advice being sought or consultation from many professional bodies (other than those Royal Colleges consulted via the Association of Royal Medical Colleges (ARMC)) including those that would become CATA members. On 16 March 2020, New IPC guidance [BJ/6 - **INQ000325350**] was issued by PHE which downgraded FFP3 RPE to FRSM infection control masks in all circumstances except AGPs.

286. It was explained to Kamini Gadhok the CEO of RCSLT by Esther Taborn of NHSE Infection Control in an email [BJ/98 - INQ000300697] of 20 March 2020:

> *As we moved from containment phase, changes have been made to ensure that healthcare workers are protected and all hospitals remain safe, now and in the future. Therefore, different PPE and mask/respirator combinations are now being recommended for different clinical scenarios and settings; this includes consideration of the infection status (confirmed versus possible cases) and the risk of exposure to aerosols containing virus. This risk-based*

approach and the recommendations have been reviewed and approved by experts including NHS England and NHS Improvement, Public Health England, and the New and Emerging Respiratory Virus Threats Advisory Group (NERVTAG).

287. On the 25 March 2020, BOHS, the Society of Occupational Medicine, the Faculty of Occupational Medicine, among others signed a letter to Matt Hancock, copied to the CEO of PHE and to the CMO, observing:

> *We are concerned about Personal Protective Equipment (PPE) availability and current PHE recommendations which do not seem to be science/evidence based [BJ/98a - INQ000130539].*

288. In a letter to the chief executive of PHE, Professors Ewan MacGregor and Professor John Cherrie[15] provided the following feedback on the guidance [BJ/98b - INQ000300698].

> *Your advice seems to be largely, but not exclusively based on the on the Offeddu et al systematic review and meta-analysis, which broadly concluded that both the surgical mask and the FFP3 respirator both achieve similar protection. In the guidance for infection prevention and control in healthcare settings it is concluded that:*
>
> *"Evidence suggests that use of both respirators and surgical face masks offer a similar level of protection, both associated with up to an 80% reduction in risk of infection." Offeddu V, Yung CF, Low MSF, et al. (2017) Effectiveness of Masks and Respirators Against Respiratory Infections in Healthcare Workers: A Systematic Review and Meta-Analysis. Clin Infect Dis; 65: 1934-1942.*
>
> *Offeddu et al observed that: "Overall, the evidence to inform policies on mask use in HCWs is poor, with a small number of studies that is prone to reporting biases and lack of statistical power."*

[15] A member of BOHS's COVID Expert Group/member of HSE's Workplace Health Expert Committee and both of whom are international authorities on the protection of occupational risk.

As a result, in the UK the majority of NHS health care workers are now wearing surgical masks, and only those undertaking aerosol generating procedures or working within critical care are being provided with the FFP3 respirator, often with inadequate training and policing of their use.

We believe the dependence on this meta-analysis is flawed, because it is based on low quality papers and as concluded within the meta-analysis it did not take into account the generally poor compliance with use of PPE in the studies. The guidance also displays no evidence of competence in occupational medicine, hygiene or safety. We have not been able to establish if anyone specialising in these disciplines have been involved in the evaluation.

In the early stages of the outbreak in the UK, HCW had access to FFP3 respirators when working with any confirmed or suspected COVID-19 case, which was in line with practice in other areas of the world.

[…] The level of risk for healthcare workers interacting with confirmed COVID-19 patients varies, there are reports from HCW that a number of UK hospitals have implemented COVID-19 wards, this could mean 30 patients within one area who all have the disease. There are also areas with uncertainty, such as emergency departments where there will be increasing numbers of unconfirmed cases walking through the doors. There is an important gap in our knowledge concerning the concentration of SARS-CoV-2 virus in the air in our hospitals and so in our opinion it is impossible to reliably identify tasks where a respirator is not necessary.

The fact that PHE is recommending equipment which it believes reduces exposure and risk of infection by 80% is erroneous as we consider the actual protective effect of surgical masks in practice is more likely to be around 65% (based on tests with inert particles rather than liquid aerosol containing virus). In contrast, FFP3 respirators are likely to offer around 95% reduction in aerosol exposure. This level of reduction in risk of infection offered by surgical masks with a potentially fatal agent would be completely unacceptable in any other occupational setting. The advice also displays no insight into the issues of training, reinforcement and

monitoring of behaviours and we consider would not comply with the Management of Health and Safety Regulations 1999.

An example of good practice would be the nuclear industry, where no exposure is the target and widely achieved, and if someone were to die, there would be widespread concern and a public enquiry.

289. The shortage of RPE and of fit testing equipment had already come into the public domain and was the subject of a letter of concern by the CEO of the Royal College of Nursing, Dame Donna Kinnear, to DHSC at this time [BJ/99 - INQ000300699]. However, Professor Yvonne Doyle, the Medical Director of PHE, provided evidence to MPs at a meeting of the HSCC where she denied that the reason for the downgrade was the absence of the availability of RPE [BJ/100 - **INQ000130541** However, she co-signed a letter from NHSE/I, PHE and the Academy of Royal Medical colleges on 28 March 2020 in which PPE supply issues are highlighted. [BJ/101a - **INQ000130506**

290. On 26 March 2020, the Allied Health Professions Federation wrote to the Secretary of State for Health, expressing concern that speech and language therapists (SLTs) were not being given FFP3 RPE for dysphagia assessment [BJ/102 - **INQ000130540** n common with the previous letters, no reply was received and on 27 March, RCSLT issued their own guidance, extending the definition of AGPs to a large number of procedures that SLTs may undertake [BJ/103 - **INQ000130542** It carried an endorsement from Suzanne Rastrick, Chief Allied Health Professions Officer (England) advising all SLTs to follow RCSLT not PHE guidance. In the absence of evidence, the RCSLT adopted a precautionary approach and shared it with PHE a few days later as part of its response to their *Consultation: COVID-19 – guidance on personal protective equipment in secondary care [BJ/104* - **INQ000130507** while requesting the inclusion of cough-inducing procedures into the AGP list in order to secure adequate RPE protection. A detailed, but negative response was received[16].

291. The RCSLT continued to highlight the risks and evidence relating to their area of practice through all means possible. SLTs work in close proximity with patients whose mouths need to

[16] Note that coughing associated with COVID-19 infection and induced by the procedures are now acknowledged in the NHS's latest review of AGP research and in the National Core Study, as the cause of most infection, as opposed to procedures themselves.

be exposed. Treatment and therapy take place in private areas. This may involve procedures which require the practitioner to insert medical equipment such as a small flexible telescope into the mouth, which can induce coughing or other responses. Other forms of respiration and expression, including stronger exhalation, may be required. As practitioner experience and observation would readily indicate, the risk of exhalation of aerosolised particles is likely to be high. However, AGP studies had not focused materially on this area of healthcare practice. Consequently, essential procedures were excluded, resulting not only in the denial of RPE, but also denial of the aerosol risk which would give rise to other control measures such as ventilation.

292. On 28 March 2020, the PHE, the AoRMC and NHSE- wrote to the NHS, admitting PPE supply issues and directing the use of RPE only for AGPs, in Intensive Care Units and in certain Emergency Department areas [BJ/105a - INQ000300297]. The letter stated "COVID-19 is not airborne, it is droplet carried." At that point, there had been no major shift in scientific evidence to suggest a change in the mode of transmission, although it did mirror a change in messaging from the WHO, which again came under sustained criticism from global experts for what appeared to be an unsupported assertion. As the WHO noted:

> *At the same time, other countries and organizations, including the US Centers for Diseases Control and Prevention and the European Centre for Disease Prevention and Control, recommend airborne precautions for any situation involving the care of COVID-19 patients, and consider the use of medical masks as an acceptable option in case of shortages of respirators (N95, FFP2 or FFP3).* [BJ/27a - INQ000300534]

293. In late March 2020, BOHS members were involved in writing to WHO from the UK WHO -affiliated Institute of Occupational Medicine, one of the UK's leading expert institutions on the prevention of disease as follows:

> ***You state in your guidance that the SARS-CoV-2 virus is not airborne, but the published evidence for this is quite weak. We find insufficient scientific evidence to support this position. While we agree that is probable that most of the viral dose, emitted during cough or sneeze will be in large droplets which will quickly fall onto surfaces, the potential for smaller droplets,***

containing virus load to persist is not negligible. We note that in the WHO database of publications on coronavirus disease (COVID-19) there are five publications that support a potential aerosol (respirable size) transmission route. The question of whether there is a significant proportion of viral dose in the airborne has huge implications for selection of mitigation measures, both PPE and ventilation. The consequences of calling it wrong has profound implications for the health of millions of workers. WHO needs to be sure that its advice is soundly based on the available scientific evidence.

In short, we think the current guidance being given by WHO and being incorporated by national Governments is insufficiently prudent and have asked WHO to review, and to support research to really establish the level of persistence. [BJ/105a - INQ000300297]

294. The European (and US) guidance clearly identified the use of lower levels of protection as being associated not with the mode of transmission, but with the growing global shortage of RPE.

> *Based on the current knowledge on the transmission of COVID-19, in which respiratory droplets seem to play a major role (although airborne transmission cannot be ruled out at this stage), and taking into consideration the possible shortage of PPE in healthcare settings due to the increasing number of COVID-19 patients, the suggested set of PPE for droplet, contact and airborne transmission (gloves, goggles, gown and FFP2/FFP3 respirator) can be adapted for the clinical assessment of suspected COVID-19 cases as below: …If there is a shortage of FFP2/FFP3 respirators, healthcare workers performing procedures in direct contact with a suspected or confirmed case (but not at risk for generating aerosol) can consider wearing a mask with the highest available filter level, such as a surgical mask, in addition to gloves, goggles and gown.* [BJ/106 - INQ000300298]

295. This European guidance was revised on 31 March 2020 to say "*Healthcare workers in contact with a suspected or confirmed COVID-19 case should wear a surgical mask or, if available an FFP2 respirator tested for fitting, eye protection (i.e. visor or goggles), a long-*

sleeved gown or apron, and gloves with similar" provisions for those involved in patient transport [BJ/107 - INQ000300299].

296. This highlights important differences in the approach of the UK from the Europe and the US. The latter did not exclude the potential for aerosol transmission of SARS-CoV-2 because the evidence suggested it was possible, whereas the UK stated that, in the absence of evidence that transmission was definitely happening, SARS-CoV-2 was to be considered as not being transmitted by the airborne route. Secondly, Europe and the US required the use of the highest protection factor of RPE available, depending on supply factors. The UK explicitly restricted the availability of RPE to those in specific areas and disciplined staff who wore masks, other than surgical masks when in contact with SARS-CoV-2 infected patients, even when in close quarters.

297. The practical effect of the first contention – the absence of airborne transmission – was that other non-RPE control measures, in particular the role of ventilation in preventing aerosol transmission, was not emphasised. A cursory mention of ventilation in the April-July 2020 IPC guidance states:

> *For example, ensuring good ventilation, including in admission/waiting areas, is an appropriate precaution to minimise opportunistic airborne transmission risk.* [BJ/107a - INQ000300300]

298. Without effective RPE, the absence of a focus on ensuring ventilation had the effect of concentrating airborne viral particles in healthcare settings, whether they were waiting areas, wards or staffrooms. The decision to treat SARS-CoV-2 as not being airborne because of the absence of high-quality evidence that it was may have had the effect of managing the shortage of PPE, but it also ensured that improved ventilation, which would have had a significant effect on nosocomial transmission and the mortality rate of healthcare staff and patients, was ignored.

299. As a result of the downgrading of protection for healthcare staff in most areas of COVID-19 care to surgical masks as standard, staff were provided with a false assurance of the risks of infection. Staff were denied the RPE, which, but for shortages, the precautionary principle and COSHH would have entitled them to. It was a decision by the Government and healthcare

authorities, that in effect, exposed workers to the risk of death or illness and denied them the information to make an informed decision about whether to accept that risk.

300. Aside from leaving behind the precautionary principle, the other COSHH principle that was deviated from was that exposure to hazards should in any case be "*as low as reasonably practicable*" (ALARP). This concept which balances the duty to use the most effective means available to control a hazard with pragmatism, based on local risk assessment and other practical considerations, is designed to assist employers in attempting to reduce risk as far as is possible. The effect of the hard lines in the IPC guidance was to circumvent the employer's obligation to reduce risk where it was practicable by making available RPE or other controls where available, even if not in the limited circumstances of AGPs etc. At the earlier stages of the pandemic, this approach would have justified the difficult decisions about balancing risk and availability. By not applying this principle through the whole pandemic period to which the Inquiry relates, including periods where RPE availability ceased to be a problem, employers failed to apply an essential COSHH legal principle in favour of IPC guidance.

AGP controversy

301. By the end of March 2020, PHE issued guidance on nasogastric tube (NGT) insertion to members on its website, which included a statement that NGT was not currently considered as an AGP. BAPEN and then, subsequently, multiple professional bodies were dissented from PHE guidance [BJ/108 - **INQ000130518** and provided guidance to their members that NGT insertion was/might be an AGP. BAPEN obtained support of 20 other professional bodies directly or indirectly including all Royal Colleges of Physicians and Surgeons in the UK, and 4 international "Parental and Enteral Nutrition" societies to this effect. [BJ/109 - **INQ000130521**

302. In the context of RCSLT, the professionals most expert in the professional practice of dysphagia assessment and other related procedures were over-ruled by a Government body which had no direct knowledge of the operational or clinical context, or direct understanding of the research base. Over the following years, BAPEN, the RCSLT and many other CAPA members would not only make representations but sought to marshal scientific evidence to determine whether the evidence supported their practical observations [BJ/110 - **INQ000130517** BJ/111 - INQ000300304]. It is worth observing that there is no evidence that the authors of the AGP guidance had first hand or professional knowledge of the procedures

about which they were writing. No recognition of the expert evidence sources within AGPA was ever acknowledged by PHE or other government departments.

303. The evidence base for most decisions appears to be derived from reviews of sets of studies or meta-analyses, undertaken on behalf of decision-makers by researchers [BJ/112 - INQ000300305]. It is entirely possible that the authors had not read the primary research from which the review evidence was derived. They therefore could not be said to have secondary knowledge. Readers of the research on AGPs [BJ/113 - INQ000300306] [BJ/114 - INQ000300307] [BJ/115 - **INQ000130522**] would quickly become aware of the weak evidence base upon which the research was founded as pointed out by BAPEN [BJ/108 - **INQ000130518**] [BJ/103 - **INQ000130542**], because the authors themselves highlighted it. They would also become aware that it would be a matter of luck whether a clinical procedure had been the subject of research study since only those considered to be AGPs following studies of SARS 2003 were included.

304. Decisions about the inclusion of NGT into the AGP list would primarily impact the question of whether HCWs would need to wear higher protection factor RPE and whether ventilation precautions would be needed to dissipate aerosols. The main, if not sole impact of this decision, would be to determine whether COVID-19 infection would be transmitted to the HCWs performing or supporting the procedures. In this context, decisions about the inclusion in the AGP list overlap general infection prevention and control with the specific duties of employers under COSHH. These at the very least require that a risk assessment is undertaken in the circumstances where the hazardous exposure was happening in order to determine appropriate controls. It goes without saying that a risk assessment based on fallacious information regarding the predominant and most dangerous route of transmission or no information at all is bound to fail to danger.

305. By excluding NGT insertion (and other similar procedures) from the AGP list, the opportunity to risk assess clinical situations for risks of exposure to hazardous substances was prevented. Healthcare professionals trusted to use their expertise and training to save the lives of others were denied the opportunity to apply their expert clinical knowledge to the assessment of risk to themselves, colleagues and other patients. This denial was not on the basis of the application of superior scientific knowledge, overwhelming research evidence or systematic observation and enquiry. Instead, the inversion of the precautionary principle, on

the pretext of the absence of evidence, was imposed on professional bodies in contradiction to the evidence and experience immediately available to them.

306. The description of NGT insertion outlined in Dr Barry Jones's investigation of the potential for it to be a procedure which could expose HCWs to the risk of COVID-19 infection illustrates this:

> *We have been told that to protect ourselves and others, we must practice physical distancing of 2 metres to avoid being caught by droplets from coughing. Droplets containing Covid-19 virus are sized at around 10 microns and do not penetrate the lungs to the same depths as an aerosol of 5 microns or less. However, it seems that even coughing can produce an aerosol as defined in the latest PHE guidance.*
>
> *This states that one of the procedures which creates an aerosol is "Induction of Sputum (coughing)". It is clear from our expert nutrition nurse specialists that NGT placement induces coughing often enough for NGT placement to be regarded as an AGP. Since all patients with Covid-19 undergoing insertion of NGT have a cough unless heavily sedated on a ventilator, insertion of an NGT is most likely to induce further coughing and aerosol production.*
>
> *Furthermore, Covid-19 patients in hospital are in an environment in which aerosols are being produced as a result of suction, CPAP, ventilation, nebulisation or chest physiotherapy. The spread of aerosols in an enclosed space is much greater than 2 metres and for longer (BSG Endoscopy guidance in Covid-19 crisis). NGT placement has been regarded as a NON-AGP under ideal conditions with no coughing or sneezing induced by the procedure and until recently that was the view driving advice on PPE requirements during NGT placement.*
>
> *A Canadian systematic review in 2012 found little evidence in favour of NGT generating aerosol and increased risk of transmission to healthcare workers (Tran et al, 2012). This review found only 2 low quality studies of NGT transmission to healthcare workers during the SARS 2003 outbreak. The use of this evidence for practical clinical purposes was discounted both by Tran et al and in the HPS*

document which underpins the evidence base of the latest PHE guidance and WHO guidance…[BJ/110 - **INQ000130517**

307. It is not clear why PHE [BJ/115 - **INQ000130522**] discounted the evidence provided to it by professional bodies whose clinical experience of treating COVID-19 patients demonstrated to them that they were in close contact with patients emitting aerosols through coughing during procedures. COVID-19 was a new disease and clinical experience, in the absence of research experiments, was likely to be the best and only evidence-based route for determination of infection risk.

308. A middle ground may have been to enable healthcare sectors to undertake risk assessments, as is required by the law and in line with the way in which millions of healthcare decisions are made every day for the protection of health. This could even be situated within the health and safety legal principle of reduction of the exposure risk "So Far as Reasonably Practicable", to take account of the varied availability of PPE and the balance of the societal risk and individual burden. This was the effect of the European approach. However, there was a hard line drawn in relation to the availability of RPE only for AGP and other limited circumstances. In other words, RPE was restricted to procedures rather than situations and took no account of the more general risk associated with normal respiratory functions.

309. This, combined with a hard line of a procedure, no matter in what circumstances carried out, being either an AGP meriting protection from aerosol risk or not being an aerosol risk, effectively undermined the development of professional clinical practice to enable a risk-based approach to infection prevention and control and directed employers to act in a way that was unlawful in the normal operation in the management of hazards in the workplace. Ultimately, it also meant that observational or population studies which could determine where different practices may impact positively on the infection risk to clinicians and patients were effectively prevented from being undertaken.

310. As a result of BAPEN's approaches to government [BJ/109 - **INQ000130521** and in particular, the CNO England Ruth May [BJ/124 - INQ000300327], the CMO England, Chris Whitty, set up an Independent High Risk AGP panel to look into our concerns over NGT as a non-AGP in May 2020. AGPA expressed its disappointment at the failure of the panel to make its findings known expeditiously and received 2 emails in response [BJ/116a - INQ000300309 and BJ/116b - INQ000300310]. The panel eventually reported in January 2021 [BJ/117 -

INQ000257950 but made no mention of our criticisms of the limited evidence base and found no new studies of NGT insertion and AGP status. The expert opinions expressed by BAPEN, and others, were ignored and no attempt was made to include BAPEN or other AGPA experts. This same panel went on to publish a further review of the literature in July 2021 but included dysphagia assessment on this occasion. Once again, no new papers were found for NGT and not a single paper found on dysphagia assessment. Even the most definitive paper produced by the RCSLT expert panel [BJ/117a - INQ000300312 or BJ/111 - INQ000300304] was not included. The panel concluded that NGT insertion and dysphagia assessment were not AGPs based on inadequate studies or none at all. This was not a valid scientific approach [see BJ/117 - I **INQ000257950**

311. The level of scientific evidence included in the deliberations of the IHR AGP panel was such that only high-level evidence could be included. This was admitted by one of the scientists involved in gathering evidence for the IHRAGP panel and IPC Cell when Dr Barry Jones, Chair of AGPA/CAPA/CATA and Kamini Gadhok MBE, former CEO of RCSLT, attended a meeting of the NHSE IPC Improvement Programme at the end of 2022. Thus, there was an inappropriately high threshold for evidence being used to direct guidance and policy to the exclusion of conflicting expert opinion from multiple professional bodies.

312. To this day, currently active guidance is to be found in the National IPC Manuals. AGPs remain a principle indication for RPE despite the version for England stating that RPE should be worn by HCWs when "caring for patients with a suspected or confirmed infection spread by the airborne route" [BJ/27f - INQ000300539]. It also confirms that SARS-CoV-2 is airborne. The version for Scotland still adheres to the droplet paradigm with FRSM as the only "PPE" except for AGPs. This is but one of the inconsistencies which AGPA/CAPA has pointed out on numerous occasions to the CMOs, UKHSA and Scottish authorities. Consistency of guidance across the 4 nations is essential for effective IPC.

313. However, responses to CATA members continued to rest on the basis of assessment of evidence and scientific argument. In good faith, CATA members therefore continued to work to assemble research and scientific data to support the assertion that procedures other than those on the list generated aerosols and, increasingly, that in any case, evidence was mounting that SARS-CoV-2 was airborne. CATA members continued to write to Government

bodies that they assumed may have control or direction over the control of the pandemic. The existence and predominance of the IPC Cell was not understood, and the assumption was that IPC guidance was science-led and subject to governance by the leadership of the Health Service or by Government.

The individual HCW and covid risk in the workplace

314. A significant development in mid-March 2020 was not anticipated by pandemic planning. The shortage of HCWs required the recall of thousands of retired HCWs to work. Many of these would have been potentially vulnerable because of age and health but would not have been face-fit tested and were probably not active members of employee or professional organisations, as such not having a voice in health and safety conversations. It is a matter that CATA believes the Inquiry should note that these workers will once again leave the workforce, some suffering the ill-health consequences of inadequate protection. It should also be noted that some of them died of COVID19 whilst providing these services. At the time the Government put out the call for retirees to return to service it had available to it credible evidence that 3.6% of those aged 60-69 would die if they caught the disease, this figure rising to 8% for those aged 70-79 and (if any) 14.8% of those older than that [BJ/118a - INQ000300314]. There is no systematic means by which the experience, concerns and impacts of the pandemic on their working experience can be captured without greater outreach by the Inquiry.

315. Parallel to the changes taking place relating to messaging about the route of transmission and the controls needed to manage SARS-CoV-2 was the developing situation around RPE. BOHS, was asked by HSE to undertake a review of the scientific base for reuse of disposable FFP3 respirators because shortages in the supply chain had become critical. Notwithstanding the absence of evidence, some NHS employers started developing their own methods for trying to clean their own masks. The RCSLT reported instances of more than one person wearing the same FFP3 single use mask.

316. NHS employers also started asking businesses, including asbestos companies for donations of RPE equipment, in particular qualitative fit test kits and surplus masks. A member of the HSE Market Surveillance Team and a BOHS member drafted the following for distribution to all BOHS members, many of whom are qualified RPE experts.

It is BOHS's understanding that there is a national shortage of qualitative fit testing (QLFT) solutions leading to problems in the NHS with the face fit testing of particulate respirators for frontline NHS staff. This seems to be the highest priority.

The QLFT solutions should be compliant with the requirements of BS ISO 16975-3:2017:

- *Bitter-tasting test agent – 13.5 mg BitRex (denatonium benzoate CAS No. 3734-33-6) in 100 ml of a 5 % sodium chloride (NaCl) solution (5 mg NaCl/95 ml distilled water)*
- *Sweet-tasting test agent – 0.83 g sodium saccharin CAS No. 128-44-9 (USP grade) in 100 ml distilled water*

Qualitative face fit test kits are also in short supply and more in circulation within NHS Trusts would be welcomed. OLFT test kits should comply with the requirements stated in Paragraph 8.5.3.2 of BS ISO 16975-3:2017 [BJ/119 - **INQ000130505**

317. As observed earlier, the HSE, who regulate the use of RPE, dropped the requirement to use FFP3 and then instead promoted FFP2 respirators when treating patients with confirmed cases of COVID-19 in April 2020. HSE teams were seemingly still working on the assumption that health service employers were applying COSHH principles such as ALARP and the precautionary principle. In our view, the downgrading in the protection factor was to reflect the difficulties in availability of quantitative fit testing equipment (Portacounts) and availability issues, not because of a perception of lessened risk or that FFP2s would provide equivalent protection.

318. By April, the prevalence of COVID-19 within the community and among members of healthcare staff had moved the model of pandemic management beyond a containment phase. Such a situation went beyond the lines of the anticipated pandemic plan, which considered only localised and contained pandemic challenges. Staff-to-staff transmission was now a real risk, as well as patient-facing dangers. The absence of the means to social distance in paramedic vehicles and in healthcare teams, combined with poor estate design for rest rooms, staff rooms and changing rooms meant that members of teams infected because of the absence of adequate RPE could easily retransmit the infection.

319. In early April, RIDDOR, the statutory duty which requires the reporting of incidents of injury and death arising from exposure to workplace hazards was, in effect, changed. HSE wrote in response to a query about RIDDOR in healthcare settings as follows:

> *Thank you for taking the time to report your concern to Health and Safety Executive (HSE) regarding Coronavirus and RIDDOR reporting.*
>
> *In general, Covid 19 is a public health issue and the Department of Health & Social Care (DHSC), working closely with Public Health England (PHE) and the devolved administrations, is the lead Government department for the UK response.*
>
> *In a work situation, it will be very difficult, if not impossible, for employers to establish whether or not any infection in an individual was contracted as a result of their work. Therefore, diagnosed cases of Covid 19 are not reportable under RIDDOR unless a very clear work-related link is established.*
>
> *In some very limited circumstances, where an individual has either been exposed to or contracted Covid 19 as a direct result of their work, those instances could become reportable under RIDDOR either as a Dangerous Occurrence (under Regulation 7 and Schedule 2, paragraph 10) or as a disease attribute to an occupational exposure to a biological agent (under Regulation 9 (b)).*
>
> *For an incident to be reportable as a Dangerous Occurrence, the incident must result (or could have resulted) in the release or escape of the hazard group 3 Covid 19 virus. An example could include a phial known to contain the Covid 19 virus being smashed in a laboratory, leading to people being exposed.*
>
> *For an incident to be reportable as an occupational exposure to a biological agent, the diagnosis of Covid 19 must be directly attributed to an occupational exposure. Such instances could include, for example, frontline health and social care workers (e.g. ambulance personnel, GPs, social care providers, hospital staff etc) who have been involved in providing care/ treatment to known cases of Covid 19, who*

subsequently develop the disease and this is reliably attributed to their work and verified by a registered medical practitioner's statement.

HSE do not anticipate receiving many cases of RIDDOR reportable incidents, as such cases will not be easy to identify, and are anticipated to be rare, especially as prevalence of Covid 19 increases in the general population. [BJ/119a - INQ000300316]

320. This approach was applied with the narrowest of interpretation in healthcare settings, effectively depriving the workforce of the opportunity for an investigation of death arising from lack of protection in the workplace. It deprived HCWs of routes to compensation and, critically removed the ability of the HSE and government to maintain an overview of where and how failures in protection were resulting in infection and serious illness or death. This approach by HSE was heavily criticised in Parliament in June 2020 and the subject of sustained criticism by experts, such as Professor Raymond Agius. Its effect was to limit the Government's ability to be able to track mortality rates and get an evidence base for occupational causes of COVID deaths. In the period between March and May 2020, ONS [BJ/120 - INQ000300319] reported of the general working population:

Nearly two-thirds of these deaths were among men (3,122 deaths), with the age-standardised mortality rate of death involving COVID-19 being statistically higher in men, at 19.1 deaths per 100,000 men aged 20 to 64 years compared with 9.7 deaths per 100,000 women (1,639 deaths).

…Of the specific health care professions, nurses had elevated rates among both sexes (50.4 deaths per 100,000 men or 31 deaths; 15.3 deaths per 100,000 women or 70 deaths).

321. The significantly higher levels of occupational mortality among certain areas of healthcare was a clear contra-indicator of HSE's assumption, especially when considering failure or absence of available RPE and other controls in healthcare settings was relatively easy to correlate with exposure and death.

322. However, HSE's science division continued to work to understand COVID-19 infections. On April 14 2020 the SAGE EMG, co-chaired by HSE's Chief Scientific Advisor, Prof Andrew Curran and Prof Cath Noakes, published a report **[BJ/4 - INQ000192047]** which confirmed that aerosols up to 100 microns are airborne and were inhalable, thereby overturning the scientific position held amongst IPC personnel that the threshold for inhalability was 5 microns. The significance of this was to reinforce that respiratory infection routes were more significant in the transmission of SARS-CoV-2 and that controls, other than standard infection prevention and control for droplet transmission, would require reconsideration. No such reconsideration happened in relation to the IPC guidance.

323. Importantly, the report went on to state:

> *Although close range exposure is widely thought to be dominated by droplets, laboratory and modelling studies [17][39] examining exposure (1-2m) to different sized particles suggests that inhalation exposure to fine aerosols (airborne risk) could be a more significant part of transmission than the direct deposition of droplets onto mucous membranes.* ***This may be significant for the PPE requirements of those in close proximity to infected people and for Aerosol Generating Procedures in clinical environments.*** [emphasis added]. *The mathematical model in [17] while not validated with humans (would be very hard to do) enables a method for estimating the relative importance of the droplet deposition and inhalation routes for different distances between people.*

324. CATA can find no evidence that this important evidence was ever considered or acted upon in the consideration of PPE requirements, then and now. It is not even reflected in the text of the NERVTAG and EMG report, "Role of aerosol transmission in COVID-19 – 22 July 2020" [BJ/122 **INQ000070870**] which directly references it as a source. Indeed, reading the text of that publication would seem to directly contradict the findings. In the application of COSHH, this should have justified more consideration. Indeed, by the time of the publication of the initial findings of the UK's National Core Study Programme in November of 2021, which established unarguably the airborne route of transmission, the inadequacy of FRSMs and the necessity of ventilation, as well as the pathway to infection and shedding of virus in nasal epithelial cells, it became clear that this scientific evidence was not being acted upon by the IPC Cell. The UK Government's extensive research and scientific base is still not reflected in

the IPC guidance and at the time of writing in June 2023 the IPC Manual in respect to COVID-19 still rests on a Review or the knowledge of RPE and transmission from 2018, reflecting the absence of updating of the scientific evidence base available to infection control staff.

325. EMG also submitted a crucially important paper to SAGE on May 11 2020 [BJ/121B - **INQ000192131**]. This confirmed unequivocally that "**SARS-CoV-2 is stable in the aerosol state in indoor environments**". This information, had it been made public at that time, would have added enormous weight to the representations being made by BAPEN, RCSLT and subsequently AGP Alliance and CAPA concerning the airborne transmission route of COVID-19 and the need for RPE for HCWs. However, this paper was not released into the public domain until 15 months later in August 2021, as evidenced by [BJ/121C - INQ000300322]. The reasons for this delay were investigated by CATA member Dr David Tomlinson via a Freedom of Information request. His findings are reported in section 8.1 of his report [BJ/121D - INQ000300323] – which concludes that publication was delayed because of US Homeland Security considerations of "National Security". However, it would appear that these US National Security concerns were resolved within a couple of months and SAGE could have published the data concerning the stability of SARS-CoV-2 in the airborne state in June 2020. In fact, as revealed at Figure 9 of David Tomlinson's report it was published locally by the Welsh Government in a paper concerning the impact of COVID-19 with respect to children and education [BJ/121E - **INQ000311898**]. However, this Welsh paper was marked "Official Sensitive" and was not therefore widely circulated. CATA did not become aware of the data until it was published on the SAGE website in August 2021. It is CATA's contention that, had this information been published and properly acted upon by the responsible Government Departments and the IPC Cell, the need would have been recognised for RPE to be provided for HCWs, thereby significantly reducing the risk of death and long-term health conditions which arose in the second and subsequent waves.

326. It is noted that ARHAI, the organisation largely responsible for advising the IPC Cell on transmission routes and PPE requirements, failed to include any mention of this research concerning the stability of viable virus in aerosols in any of its "Rapid Reviews of the literature for IPC" [BJ/92AF - INQ000300641 to BJ/92AZ - INQ000300661 inclusive]. CATA would have expected that ARHAI would have had access to all EMG papers even if these hadn't been put in the public domain. Even after the paper had been published by SAGE in August 2021,

ARHAI failed to mention it and continued to play down the importance of airborne transmission.

Communication and engagement

327. On 22 April 2020 RCSLT wrote to Matt Hancock about AGPs as applicable to SLTs, with the support of the Intensive Care Society, National Tracheostomy Safety Project, British Thoracic Society, ENT-UK, UK Swallowing Research Group, European Society for Swallowing Disorders, and BAPEN [BJ/123 - **INQ000130519**], but did not receive a reply.

328. The letter was copied to CEO NHS, CEO PHE, Professor Powis, National Medical Director of NHS-England (NHSE) and Suzanne Rastrick, Chief Allied Health Professions Officer at NHSE. RCSLT also sent it to the CMO Chris Whitty, with further published supporting evidence of the airborne transmission of COVID-19. It is worth noting that, as well as including professional bodies, these groups encompassed all of the specialists in these procedures. In the assessment of the risk of specific procedure, especially in a novel context where research is not present to identify what is actually happening in practice, it seems implausible that policy makers can be better informed in determining risk than the entire body of professional practice.

329. Following the same theme, on 1 May 2020, BAPEN wrote to the Secretary of State [BJ/109 **INQ000130521** in relation to the risks of NGT insertion, with a supporting statement from the Royal College of Physicians again making the case for the inclusion of this procedure on the AGP list because of its propensity to induce coughing. It was a position supported by the British Society for Gastroenterology, the Royal College of Nursing, ENT-UK/, IGSG, RCP, RCSLT, BDA, BASP and ASPEN. It was copied to the CEO of NHSE, the National Medical Director of NHSE, NERVTAG and many others.

330. In a letter from Duncan Selbie to BAPEN [BJ/115 - **INQ000130522**, the CEO of PHE, on 5 May 2020, the then current guidance was reiterated with no reference to the scientific and clinical issues raised. The letter also incorrectly stated that "*studies of clinical procedures were assessed for their association with historical transmission events and generation of aerosols/environmental contamination*". BAPEN had already highlighted that a significant error in the scientific basis of the guidance was that no research papers using aerosol studies had actually been reviewed or referenced in the AGP guidance by WHO/HPS or PHE, and

certainly none in relation to NGT insertion. In making this response and in determining the continued relevance of the guidance to a common procedure that would expose specific HCWs to potentially fatal risk, it is clear from the record that PHE was failing to take into account all relevant considerations and evidence relating to airborne transmission.

331. On 12 May 2020 [BJ/124 - INQ000300327], the Chief Nursing Officer Ruth May responded to BAPEN, agreeing with Susan Hopkins to ask the CMO of England to set up a review. An "Independent High Risk AGP Panel" was set up, which first met at the end of July and reported in January 2021. CATA has not been able to secure all the minutes. The report was published later than projected, despite considering no evidence other than the evidence that had been provided already by BAPEN on 16 April 2020. No reference was made to the evidence provided by BAPEN and there was no critique of the science or engagement with stakeholders. After five months, the Panel concluded that no change to the list was required.

332. Over subsequent months, the experience of CAPA members was monotonously similar with communication with Government departments, employers, the WHO, updating the evidence base, eliciting more professional evidence and support and focusing on areas where clinical practice indicated the need to extend the categories where risk was manifesting through the nature of the process and the incidence of infection reported by members.

333. The College of Paramedics (CoP), whose members administer life-saving treatment in the case of cardiac arrest were another important group of health workers similarly affected. The Resuscitation Council UK highlighted the infection risk of CPR, and their view that it should be classified as an AGP, with which the CoP concurred [BJ/125 - **INQ000257947**. In contrast, the New and Emerging Respiratory Virus Threats Advisory Group (NERVTAG) published guidance on 24 April 2020 [BJ/125a - INQ000300329], which was applied by PHE [BJ/126 - **INQ000257949** and remained in place until May 2022. The PHE, in applying the guidance, stated:

> *"It is biologically plausible that chest compressions could generate an aerosol, but only in the same way that an exhalation breath would do. No other mechanism exists to generate an aerosol other than compressing the chest and an expiration breath, much like a cough, is not currently recognised as a high-risk event or an AGP." NERVTAG also stated that it "does not consider that the evidence supports chest compressions or defibrillation being procedures that are*

associated with a significantly increased risk of transmission of acute respiratory infections."

Based on this evidence review, the UK IPC guidance therefore will not be adding chest compressions to the list of AGPs. Healthcare organisations may choose to advise their clinical staff to wear FFP3 respirators, gowns, eye protection and gloves when performing chest compressions but we strongly advise that there is no potential delay in delivering this life saving intervention.

334. We note that NERVTAG's position outlined above contradicted a position it articulated before the pandemic in September 2016 [BJ/126a - INQ000300331], which classified 'non-invasive ventilation and cardiopulmonary resuscitation' as AGPs.

335. The impact of NERVTAG and PHE's position in respect of the COVID-19 pandemic on paramedics was to lead to absurd results, such as paramedics awaiting a manager's arrival to perform risk assessment and fit testing at community locations (see [BJ/126b - INQ000300332]), which states that fit checks are required every time FFP3's are required; note that this document also states *"COVID-19 is not airborne, it is droplet carried).* While the Association of Ambulance Chief Executives ("AACE") attempted to provide guidance to the ambulance sector during the pandemic [BJ/127 - **INQ000249085** they published a position statement dated 4 May 2020, outlining the different positions of NERVTAG, the Resuscitation Council and PHE, which ultimately favoured the position of PHE endorsing NERVTAG's findings [BJ/127a - **INQ000257955**]. The AACE published a further statement in January 2021 which referred to "*significant staff anxieties being caused by misunderstandings and misinformation surrounding safe Infection Prevention and Control (IPC) precautions for ambulance staff (including safe levels of PPE) when treating and responding to COVID-19 patients*", but reassured staff that IPC measures reflected best practice and dynamic risk assessments were required rather than changes to recommended PPE [BJ/127b - INQ000300335].

336. It is worth noting that, once again, the evidence base to determine the risk was limited. Once again, default interpretation by Government was that if there was limited high threshold evidence of risk, then the approach to take was to assume lower risk. This, again, is a reversal of the precautionary principle and of ALARP in the context of COSHH. In June 2020, the

International Liaison Committee on Resuscitation issued a consensus statement [BJ/128 - INQ000300336] providing a comprehensive review on CPR and COVID-19 and recommended the use of RPE suitable for AGPs. Again, this scientific and clinical perspective was not reflected in a change in PHE guidance.

337. In July 2020, a team of the leading experts in the prevention of respiratory hazards commissioned by BOHS produced a matrix of exposure controls for different occupations exposed to COVID, based upon mortality data, aerosol science and all of the available research data. The group was entirely independent of healthcare and professional bodies. Its conclusions and recommendations mirrored those of the professional bodies in the nascent AGPA [BJ/129 - INQ000300337]. It was considered an authoritative point of reference by the UK's Industrial Injuries Advisory Council (IIAC) [BJ/130 - INQ000300339]. In truth, the BOHS matrix, which was used across a wide range of occupational settings in the UK and internationally, was simply an application of COSHH principles to the specific context of COVID-19.

338. In August 2020, the AACE published a presentation of What Went Well with the management of the pandemic **BJ/127** **INQ000249085** They highlighted their inclusion in the IPC Cell from the outset and the effectiveness of the advice that they provided. Irrespective of any impact on the physical health of paramedics, the ongoing stress relating to the absence of RPE, combined with the continued challenges of the pandemic must be considered a factor in the finding by Mind that paramedics were the sector of the blue light services with the worst mental health impacts (at 62% reported poor mental health).

339. August 2020 also saw the first meeting of the AGP Alliance, while continuing to work in tandem with the RCN and RCP. Dr Barry Jones of BAPEN was elected chair. AGPA produced a position statement on AGPs/PPE, (Updated in October 2020) supported by BAPEN, BDA, RCSLT, BASP, CoP, CSP, NNNG, BSG, HCSA, GMB, Unison, and UtU in Health which drew on clinical experience and scientific analysis of the reality of COVID-19 to itemise many non AGPs which AGPA considered should be included in the AGP list.

340. It also considered the growing evidence from Government, independent academic and international research around the risk of close contact infection and aerosol transmission

through, e.g., coughs. AGPA started to pool together responses that its members had received and started to question:

- Why public bodies seemed impervious to the changing evidence around COVID-19 transmission science.
- Why public bodies would not respond to scientific concerns or engage in scientific dialogue.
- Why clinical observation and professional expertise was not a factor in discussion, let-alone decision-making about clinical risk, albeit clinical risk to the HCW themselves.
- Why were some bodies unresponsive and others denying responsibility.
- Why was there no transparency on the IPC Cell membership and operation which seemed to be determining not only clinical policy, but health and safety policy for HCWs.

341. Outside of healthcare, the science of COVID-19 and effective controls had been progressing. [BJ/132 - **INQ000203993]**

342. AGPA members, above all, sought evidence-based explanations or responses to their queries across the board about how risk decisions had been arrived at around procedures and the clinical contexts in which they were expert, but where their expertise was clearly not being drawn upon. To the AGPA, (in line with expected health and safety approaches) a key expectation was that the precautionary principle should be used.

343. The AGPA wrote to the Prime Minister to reflect the change in understanding and growing evidence on the airborne transmission route of Covid-19. The AGPA first wrote to the Prime Minister on 25 September 2020 [BJ/190 - INQ000300428] raising their concerns and asking for urgent action. This letter was copied to The Rt Hon Matt Hancock MP, the Secretary of State for Health and Social Care, NERVTAG and the AGP Panel. No response was received.

344. The AGPA was also involved in a joint letter to the Prime Minister on 18 February 2021 **BJ/89a** - **INQ000114283**, which highlighted the level of concern about the lack of response to correspondence asking for a change to UK IPC guidance using the evidence base on airborne transmission of Covid-19 to effectively protect HCWs. The letter was signed by members of the AGPA as well as other professional bodies and experts, including the British Medical Association (BMA), Royal College of Nursing (RCN), Royal College of Midwives

(RCM), Royal Pharmaceutical Society, QNI, UK Critical Care Nursing Alliance and Professor T Greenhaigh. It therefore carried the support of organisations representing the majority of HCWs. The letter was copied to Matt Hancock, Mr Robin Swann MLA, Minister for Health, Jeane Freeman OBE, Cabinet Secretary for Health and Sport and Vaughan Gething MS, Minister for Health and Social Service. A response was sent by the Prime Minister's office on 7 May 2021 [BJ/148a INQ000114417] to Dame Donna Kinnar (CEO and General Secretary of the RCN). This response from Number 10 to the letter of 18 February 2021 should be read in the context of the presentation made at the meeting with DHSC held on 3 June 2021 (all signatories representing the majority of HCWs had been invited) and the follow up emails and correspondence, as referred to at paragraphs 240 – 242 of this statement.

345. In October 2020, the Healthcare Safety Investigation Branch (HSIB), the safety investigation organisation of the NHS, published its investigation into what was driving nosocomial infections in healthcare. Its findings highlighted that in most of the Trusts observed, irrespective of the duties under health and safety law, forms of relevant infection control, other than PPE to mitigate the spread of respiratory virus were not often in contemplation.

346. It also highlighted that the mismatch between IPC guidance and professional guidance was being resolved often in favour of the professional guidance by CAPA members because the national guidance simply did not reflect the risk. It was summarised well here:

> *3.3.17 One common example the investigation found related to guidance about whether resuscitation should be considered an aerosol generating procedure (AGP): "…the clinicians followed the Resuscitation Council guidance and the Resuscitation Council has been really clear about the risk from chest compressions and the aerosol…PHE has taken a very purist view of, well, it's not an AGP…but we all know the chaos of a resus [resuscitation] and there's bodily fluids and vomit…In practice, I think at best 90% of the country is going with the Resuscitation Council, I think ignoring PHE, but it's still absolutely unresolved.'* [BJ/39] - [INQ000130588]

347. The Report also highlighted the variation in approaches found among employers to the management of risk. This meant that the experience of professionals in one part of the country around health and safety protections could be very different from another. As the Report states:

3.3.20 One reference trust explained: "…we went for what we would consider was the safest, so if a college said something…and [IPC guidance] said it wasn't, we would treat it as [what the college said]. You might be accused of wasting stuff [PPE supplies] but you weren't putting staff at risk."

348. The inconsistency in national practice was characterised by an increasingly frustrated AGPA in an unanswered letter to Jeremy Hunt MP as a "Post code lottery" [BJ/192 - INQ000300430]. As the NHS's own investigation report was making abundantly clear, the problem could not be resolved without working with the professional body members of CAPA, if for no other reason than to resolve the inconsistent and confusing advice. The experience of interacting with Scotland's government was no different, with unanswered correspondence by AGPA to Jeanne Freeman, Cabinet Secretary for Health & Sport, Scotland, Dr Gregor Smith CMO Scotland, Carolyn MacDonald, Chief Allied Health Professions Officer, Scotland, Prof Mahmood, HPS [BJ/133 - INQ000300343].

349. In November 2020, Chapter 14a of 'COVID-19 the green book' was pre-published by PHE/JCVI **BJ/58 INQ000059136** which stated that SARS-CoV-2 was airborne. It was formally published on 25 January 2021 after MHRA approval.

350. In December, WHO extended their guidance for FFP3 in that they "may be used by health workers when providing care to COVID-19 patients in other settings if they are widely available and if costs is not an issue." [BJ/193 - **INQ000349135**

351. By the end of 2020, with the preponderance of governmental bodies accepting the fact that SARS-CoV-2 could be airborne, the existence of "far-field" transmission and the removal of practical obstacles such as extreme global shortages of FFP3s, AGPA members assumed that the scientific and practical obstacles to achieving protection of HCWs at high risk of exposure to SARS-CoV-2 may have become easier. The focus of control moved from droplet precautions, such as handwashing, to airborne precautions, such as ventilation. However, achievable indoor ventilation levels were known to be ineffective to control short-range (less than 1m) transmission. It was the entire premise of social distancing rules.

352. In January 2021, FreshAir NHS, with the support of AGPA, wrote an open letter to the Prime Minister highlighting that those working close to patients needed protection, on the basis of the developed science, from the risk of inhalation of the virus. HCWs were now demonstrated to be four times at risk of infection than the general population. Where suitable RPE was available, such as in ICU's, the risk was halved [BJ/135 - INQ000300345]. The letter was also sent to First Ministers of the devolved nations, and to Matt Hancock, Vaughan Gething, Minister for Health and Social Services, Wales, Jeanne Freeman, Cabinet Secretary for Health & Sport, Scotland, Robin Swann, MLA Minister of Health, Northern Ireland. No reply was received.

353. In January 2021, a letter from CEO CoP was sent to the 4 nation Council of Allied Health Professionals [BJ/136 - **INQ000257963**] asking for parity of RPE with ICU staff and pointing out that 18 paramedics were known to have died from workplace exposure to COVID. This was evidence that current RPE precautions were insufficient to prevent infection, illness and death.

354. As the Kent variant emerged, the BMA sent an open letter to all CEOs at NHS Trusts England [BJ/137a - INQ000300347]. It may seem surprising, but this was the first piece of correspondence by AGPA members or their affiliates which is not based upon the science of transmission, on clinical observation, mortality and infection rates and the lived experience of health professionals but refers to the Health and Safety duties of the employers.

355. In correspondence to Ruth May, CNO, [BJ/138 - INQ000300348] AGPA highlighted the inconsistency in local practice in the availability of RPE. It challenged the statement by DHSC: "The safety of NHS and social care staff has always been our top priority, and we continue to work tirelessly to deliver PPE to protect those on the front line. UK guidance on the safest levels of PPE is written by experts and agreed by all 4 CMOs. The guidance is kept under constant review based on the latest evidence and data". AGPA members were not aware that the IPC Cell, so far as it was constituted, had any experts involved who had knowledge of the control of respiratory exposure and, so far as it is possible to determine, no recognised expert in RPE was directly consulted in the formulation of any iteration of the IPC guidance. The Inquiry has the means that we do not have, which is to determine whether the IPC Cell had the direct benefit and input from RPE experts and those who were experts in the protection of workers from bioaerosols.

356. AGPA member David Osborn contacted HSE to reflect concerns about the absence of adequate respiratory protection for HCWs transferring COVID-19 infected patients to social care, which appeared to fall short of COSHH requirements [BJ/138a - INQ000300349]. HSE's response referred him back to IPC guidance [BJ/138c - INQ000300351][17]. IPC guidance specifically states that it is subject to Health and Safety duties.

357. By January 2021, AGPA had concluded that scientific and direct approaches were not being responded to or not being addressed. In a public statement, they highlighted that almost 50,000 NHS staff were off work due to Covid or isolation [BJ/139 - INQ000300366]. AGPA also wrote to all MPs to highlight the crucial issue of protection.

358. In contrast, Professor Jenny Wilson, President of the Infection Prevention Society (IPS) was emphatically opposed to AGPA's position. In her presentation "Should all HCWs caring for patients with COVID-19 wear FFP3"? [BJ/139a - INQ000300367] she propounded a view that reinforced a discussion in June 2020 with the CEO of BOHS in which she explained that IPC specialists did not have the skills, nor did they desire the means to implement RPE programmes. From a workforce point of view, and given the many challenges of standard infection control, the lack of specialism in respiratory IPC may be understandable due to the strain on financial resources, as well as the fundamental shift in the role of infection prevention specialists required to take on the additional duty to acquire and maintain expertise in RPE management).

359. As IPS members almost certainly dominated the IPC Cell and the information reaching them, it may be relevant for the Inquiry to consider whether the reason for continued adherence to standard IPC controls, such as hand hygiene and FRSM use, was motivated by the challenges faced by those who would need to implement them, rather than a pure consideration of the science.

360. In early February 2021, it was unsurprising that a review of the IPC guidance, indicated in correspondence with CNO Ruth May & Susan Hopkins, Strategic Response Director Covid-19, [BJ/139b - INQ000300368] and reported in the Guardian, made no change to the existing guidance, purportedly because the science had not changed. A DHSC spokesperson stated:

[17] For further examples of David Osborn's correspondence with HSE on issues of respiratory protection for HCWs, see exhibits [BJ/138b - INQ000300350] to [BJ/138q - INQ000300365] inclusive.

In response to the new Covid-19 variants that have emerged in recent weeks, the UK Infection Prevention Control Cell conducted a comprehensive review of evidence and concluded that the current guidance and PPE recommendations remain appropriate. New and emerging evidence is continually monitored and reviewed by government in conjunction with our world-leading scientists.

361. This may be seen as somewhat disingenuous. Indeed, it would be fair to summarise scientific evidence as not indicating significant differences between the existing and new COVID-19 variants, which might merit change in control measures. However, as already outlined, the changes in what was known about the existing virus and even the Government's own position of the nature of airborne transmission had changed.

362. AGPA members continued to send emails and letters to all relevant authorities and as the recorded deaths of HCWs edged towards 1,000, ultimately on 18 February 2021 wrote yet again to the Prime Minister, with the usual support of the RCN, RCMidwives, Queens Nursing Institute, UK Critical Care Nursing Alliance and Prof T Greenhalgh. The letter was copied to the SoS for Health and the 4 nations' Health Ministers **BJ/89a** - **INQ000114283**. The letter highlighted the urgent need for protections within healthcare that were, in many cases, mandated for other workplaces and reconsideration in the IPC guidance of the scientific evidence base on transmission and control.

363. AGPA asked for improved workplace ventilation, the reinstatement of the precautionary principle, employee consultation and stakeholder engagement, including with independent expertise. It also asked for the collection & publication of data on occupational exposure of HCWs and the publication of all the scientific evidence of airborne transmission that had been available to the decision-makers. It once again made reference to the latest evidence and international clinical practice, as well as messages from the Government itself.

364. BOHS, not yet a member of AGPA, continued to be concerned about the effectiveness of controls in healthcare settings and wrote to the Deputy First Minister of Scotland. The response from the Scottish authorities reflected a continued insistence on the use of FRSM for HCWs in Scotland [BJ/158a - INQ000300392].

365. The Royal College of Nursing had been active throughout this time. A significant step was the publication of a review on behalf of the RCN by Professor Dinah Gould (Professor of Nursing and an expert on clinical infection) of the "RCN Independent review of guidelines for the prevention and control of Covid-19 in health care settings in the United Kingdom: evaluation and messages for future infection-related emergency planning" [BJ/141 - **INQ000114357**] It was co-authored by CAPA members, Dr Barry Jones and Dr Christine Peters.

366. The Advisory Committee on ARHAI subsequently responded to the RCN review. It stated that the HSE had approved the PPE section within UK IPC COVID-19 guidance. CATA asserts that the reliability of this assertion should be investigated. This is significant because in matters relating to the use of RPE for health protection in the workplace, HSE's endorsement as the regulator would be significant in suggesting that the IPC guidance was compliant with Health and Safety standards.

367. By March 2021, a report of the Industrial Injuries Advisory Council ("IIAC") [**BJ/130** - INQ000300339] highlighted that data was showing greater than average infection rates in healthcare and social care workers. According to IIAC's Position Paper 48, risk of death more than doubled amongst workers in social care and nursing, particularly in males. It highlighted:

> *39. The British Occupational Hygiene Society (BOHS) has developed a Risk Matrix (see Appendix Table 1) to synthesise the science into a set of practical guidance on the types of control measures that should be adopted to protect workers. This is based on the likelihood and duration of exposure. The highest risk ratings are for care workers, and then 'public facing' workers with a high chance of face-to-face contact. The BOHS Matrix also provides best practice advice on the control measures that should be used to protect workers in the various exposure categories. In line with the guidance from the Health and Safety Executive (HSE), these focus on control at the source of the potential infection, for example isolation of infected people, restricted staff access, physical distancing, regular surface disinfection, use of personal protective equipment (PPE).*
>
> *40. PPE can never completely protect the wearer: the effectiveness of respirators and face coverings, for example, depends on factors such as mask type/material, fit to the face, and consistency of wearing. While good PPE practice may be feasible in a hospital*

environment, it is not necessarily as feasible in many other workplaces where workers are at potential risk. Other controls such as plastic screens, simple visors, and cloth face coverings are likely to offer suboptimal protection, particularly as there is growing concern that airborne transmission may be a significant infection mechanism in some workplace outbreaks.

368. It continues to be the case that surgical masks (FRSM) are not designated as RPE, i.e., designed to protect the wearer from inhaling hazardous substances. This was confirmed as PHE's understanding in email correspondence sent on 2 March 2021 [BJ/143 - INQ000300372] where it states that they "*agree that surgical masks are not (and have never been) designated as PPE*" but nonetheless, FRSM were being used, not because of shortages, but because PHE claimed that the mode of transmission made them effective protection against infection.

369. The scientific advice to government on FFP3 use was somewhat at variance with this approach. The March 25th SAGE meeting #84 agreed "*It remains the case that available evidence on use of FFP3 face masks is limited (though this does not mean there is no effect)…. Decision makers in the NHS will need to consider the extent to which they take a precautionary approach*." [BJ/143a - **INQ000120606** Despite the advice, there is no evidence that such a consideration was given by the IPC Cell, the relevant decision-making body. Absence of substantial action in the face of absence of substantial evidence remained the default position, rather than the legal and scientifically advised position which would have proposed a more widespread use of FFP3 respirators.

The precautionary principle

370. In April 2021, the SAGE paper [BJ/144 - **INQ000075022** addressed the importance of applying the precautionary principle in this context:

> ***The precautionary principle has been defined, for example, by the United Nations Conference on the Environment and Development (UNCED) in 1992 as: 'where there are threats of serious or irreversible environmental damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent degradation.' Thus, the precautionary principle describes an approach that***

should be adopted for addressing hazards subject to high scientific uncertainty, and rules out lack of scientific certainty as a reason for not taking preventive action. *Although invoking the precautionary principle means taking action when scientific uncertainty rules out sufficient information for risk assessment, it does not mean that a risk-based approach is abandoned – decisions continue to be informed by the best available scientific advice, taking into account the uncertainties.*

371. CATA notes that the above emboldened language is lifted verbatim, but without attribution, from the Health and Safety Executive's strategic document "Reducing Risks and Protecting People" (aka "R2P2") [BJ/145 - INQ000300375]. This document sets out the long-established framework for decision-making which is at the core of the HSE's operating philosophy. However, the further interpretation deviates in substance from HSE's elaboration of the application of the principle with the effect of diluting it. It is submitted that, the HSE's own formulation, as set out, for example, in the document guidance note published by HSE's Hazardous Installations Directorate "HID's approach to 'As Low as Reasonably Practicable (ALARP) decisions" is the correct one:

"The precautionary principle (see R2P2 paragraph 91) will be invoked where:

1. there is good reason, based on empirical evidence or plausible causal hypothesis, to believe that serious harm and societal risk might occur, even if the likelihood of harm is remote; and
2. the scientific information gathered during the risk assessment is sufficiently uncertain (see R2P2 paragraphs 86 et seq. (PDF)) to make it impossible to confidently rule out a particular measure by CBA (Cost Benefit Analysis) considerations." [BJ/146 - INQ000300376]

372. The SAGE paper does go on to the address the current state of knowledge around the mode of transmission, stating:

Approaches to infection prevention therefore need to recognise the uncertainty around transmission routes and build on the hierarchy of control approach to better consider the spectrum of risks in both clinical and non-clinical areas. This includes:

- *Openly recognising that airborne transmission can occur but that evidence suggests it is most likely in poorly ventilated spaces and that applying full conventional airborne precautions throughout a hospital is neither practical nor likely to be necessary.*

373. While the SAGE guidance was still conservative in relation to hospital settings, perhaps because of their apparent misunderstanding of the application of the precautionary principle, it did set out clearly the factors which would justify the use of FFP3 level RPE in healthcare contexts. Notably, reference is not purely related to AGPs, but to the environmental and exposure context.

> *Where an unacceptable risk of transmission remains after rigorous application of the risk assessment process (including application of measures higher in the hierarchy of controls) it may be necessary to consider the extended use of appropriate RPE (such as FFP3 masks) for patient care in specific situations. The decision to implement FFP3 respirators for the care of patients with suspected/proven COVID-19 should be based on an IPC risk assessment of the care area with effective leadership and organisational support. In particular, this should consider the likelihood of interaction with an infectious COVID-19 patient, the duration and proximity of exposure, and the application of other IPC measures.*
>
> *…As above, other factors that need to be considered is whether the care area is considered high risk because of poor ventilation and/or over-crowding - can these risks be addressed, or a more suitable area used? Are there other measures under the hierarchy of controls that can be taken e.g. improving air flow and dilution by opening windows or enhancing mechanical ventilation systems?*

374. In many of the community-based healthcare contexts (such as those experienced by RCSLT) and the context of paramedic treatment, this shift in approach could have been of critical importance to the level of protection afforded to many of CATA's members. In many hospital contexts, because of the limitations of building design (such as limited ventilation and the absence of spaces to manage close quarters contact) it would also have been potentially significant.

375. WHO's updated guidance from December 2021 echoed this change in approach [BJ/147 - INQ000300377]:

"The virus can spread from an infected person's mouth or nose in aerosols small liquid particles when they cough, sneeze, speak, sing or breathe. Another person can then contract the virus when infectious particles that pass through the air are inhaled at short range… The virus can also spread in poorly ventilated and/or crowded indoor settings, where people tend to spend longer periods of time. This is because aerosols can remain suspended in the air or travel farther than conversational distance (this is often called long-range aerosol or long-range airborne transmission)."

376. In the US, the CDC Standard Precautions for SARS-CoV-2 required the use of a NIOSH-approved N95 or equivalent or higher-level respirators, gowns, gloves, and eye protection in the presence of an infected patient. The European Centre for Disease Prevention & Control [BJ/148 - INQ000300378] made recommendations that were similar, but crucially placed the decision-making under the supervision of a health and safety committee or OSH experts at facility level. In the UK, there was no such explicit supervision or link with Health and Safety governance within healthcare.

377. However, acknowledging that "*[t]here is now a better understanding of the role of C-19 airborne transmission… along with importance of ventilation*" a letter of May 7 on behalf of the Prime Minister to Dame Donna Kinnear, [BJ/148a - **INQ000114417**] stated that the "IPC Cell (NHSE) agreed that no changes to current PPE requirements needed…Consensus among 4 nation CMOs that existing guidance on face masks and FFP3 by HCWs is correct." It did add that FFP3s might be used as a result of risk assessment and that HCWs were at higher risk than other groups, but it was unclear how this would be achieved if the guidance remained unchanged.

378. On 1 June 2021 revised IPC Guidance was issued which for the first time allowed for RPE (FFP3 etc) to be used beyond AGPs, but only subject to a rigorous risk assessment and implementation of the "hierarchy of controls" [BJ/74a - **INQ000271659**]. In practice, this change, which still did not implement the precautionary principle, made no material difference in many workplaces. This was because of a fundamental and widespread lack of understanding of a key principle of the hierarchy of controls within healthcare settings.

379. The hierarchy of controls prefers more reliable controls to less reliable ones. Elimination of a hazard (such as remote treatment of patients) is to be preferred to engineering controls (such as a negative pressurised room). This is because the risk of failure increases as you move down the hierarchy. Reliance on PPE is at the bottom of the hierarchy because it fails to danger in the event that it is worn or used incorrectly, is of the wrong type for the respirable hazard in question or material degradation occurs as a result of being used beyond its expiry date. However, effective implementation of the hierarchy of control requires that not only are higher levels of control preferred, but that there is an assessment of their effectiveness and likelihood of failure.

380. In a healthcare treatment context, removing symptomatic patients may be a step towards elimination, but it will not effectively remove the risk of exposure to an infected person. General ventilation may reduce the amount of airborne particles moving around a room, but as an engineering control, it won't impact aerosols being directed at persons in close proximity. Limiting the duration of exposure through short shifts may be an administrative mechanism to reduce the likelihood of inhaling an infectious load, but it will not prevent exposure. RPE on its own may be subject to failure if not fitted properly, but it may be the only option when other controls may fail.

381. In February 2021, a summary of HSE inspections of hospitals detailed numerous matters of concern [BJ/149 - **INQ000323772**]. The report recommended:

> *We strongly recommend NHS Trusts and Boards review the detailed findings of the inspections in Annex 1 and take the following action to reassure themselves that adequate COVID control measures are in place and remain so during the pandemic:*
>
> *1. Review their risk management arrangements to ensure they are adequately resourced.*
> *2. Consider how well the various parts of the risk management system coordinate with each other, including the health and safety team, departmental managers, infection control and occupational health colleagues and whether they could be improved.*
> *3. Ensure compliance with their legal obligations to consult with trade unions and employee representatives by ensuring they are engaged in the risk assessment*

process. Worker engagement in this process is critical to establishing workable control measures.

4. Review all non-patient facing areas to ensure a suitable and sufficient risk assessment has been carried out and the control measures identified have been implemented – in line with relevant guidance, including - Making your workplace COVID-secure during the coronavirus pandemic (hse.gov.uk). Consider how well the risk assessments for these areas have applied the hierarchy of control and have they:

- *Identified the maximum room occupancy numbers and the optimum layout and seating arrangements in all areas? For example, in libraries, the laundry, porters lodge, clinical records, rest rooms, toilets, locker rooms, post rooms, changing rooms, offices, canteens, training rooms, doctors' common room*
    - *i. Considered how ventilation could be improved in all areas? Could windows be unsealed to open, are doors left open, how are rooms with no windows or air conditioning being ventilated?*
    - *ii. Implemented mitigating measures where it is not possible to maintain social 2m distancing? For example, by proving physical barriers (screens), one-way systems or rearranging /modifying layout.*
    - *iii. Checked the adequacy of their cleaning regimes in non–clinical areas? Have they consistently considered high touch surfaces, for example printers, vending machines, kettles, photocopiers, door handles etc?*

5. Review the provision of lockers and welfare facilities to ensure they can accommodate the number staff on shift in a COVID secure manner.

6. Establish routine monitoring and supervision arrangements to ensure control measures identified in the risk assessment are implemented and are being maintained.

7. Review your arrangements regularly to ensure they remain valid and act on any findings.

382. In summary, the HSE's report highlighted levels of failures of COVID-19 workplace management in non-clinical settings which caused an infection risk. This failure in terms of

health and safety duties to workers was, however, widely used to suggest that the infection of HCWs was arising from staff-to-staff transmission. In truth, the health and safety failures in non-clinical areas made it hard to determine the impact of airborne transmission from a statistical perspective and increased overall risk. However, the evident lack of capability to undertake risk assessments and implement controls in the general workplace is a serious failure for the Inquiry to consider.

383. Critical to the risk assessment of hazards in UK health and safety law is the aim of reduction of the risk "so far as is reasonably possible" or "ALARP". This means using all practicable means to reduce risk. However, in the implementation of IPC guidance, this continued not to be the case. RPE was seen as a rare exception to the tools available for risk reduction, rather than a protection which should be made available where there were insufficient alternative effective methods of control, as in many cases of close quarters treatment, involving the face and mouth, of infected patients. Once again AGPA pointed out to public bodies the limitations of the latest iteration of the guidance [BJ/150 - INQ000300382].

More urgent advocacy and leadership

384. As discussed, earlier on in this statement, earlier in March 2021, in response to a letter from AGPA, the RCN, and Professor Trish Greenhalgh to the national CMOs, CNOs and CAHPF, Chris Whitty agreed to have a meeting. This was originally planned for 22 April but was cancelled on the day and reorganised twice before taking place with the DHSC and PHE in June 2021, shortly after the new IPC guidance was issued. Signatories to the joint letter written to the Prime Minister in February 2021 were invited to attend this meeting. AGPA members joined by the Royal College of Nursing, BMA, Royal College of Midwives, Royal College of Pharmacists and others, representing over 1 million of the 1.3 million health workers, met with the DHSC, IPC Cell members and others. The meeting, entitled *Infection Prevention Control (IPC) Guidance Stakeholder Engagement* provided an opportunity to reinforce the message that there was a growing body of evidence that COVID-19 was airborne, that working in close proximity to infected patients was hazardous, whether or not engaged in AGPs procedures and that HCWs needed the protection of RPE where other controls would not be effective. No action was taken in response to these representations. The AGPA was not provided with answers to questions about close range aerosol risk. A written response following the meeting broadly reiterated the same lines that AGPA had been

receiving for over a year and did not address the critical issue of close-range transmission. [BJ/89l - INQ000300628 and BJ/89m - **INQ000114267**

385. AGPA, along with RCN, Unite, RCSLT, BDA, CoP, BAPEN, FreshAir NHS and Medical Supply Drive UK, made a formal response to the Public Accounts Committee's call for evidence on initial lessons from the Government's response to the SARS-CoV-2 pandemic. While it was published, the Committee made no mention of our case for airborne mitigation.

386. In July 2021, when writing to Dr Jenny Harries, CEO UKHSA, who was commissioned to review the IPC guidance [BJ/151 - INQ000300383], the AGPA and RCN summarised the matters that were still of concern to its members, numbering over a million HCWs who, according to HSE findings, were not being consulted at local level. The letter, which was never responded to, highlighted:

- *Recognition of airborne transmission of covid-19 outside of AGPs and the increasing evidence supporting this as a primary mode of transmission in all settings.*
- *The need for clarity of the UK IPC guidance to recognise airborne transmission of covid -19 and risks to health professionals in close proximity to patients with known or suspected covid-19 through short range aerosol transmission not mitigated via ventilation.*
- *The lack of stakeholder engagement and consultation in the development of UK IPC guidance, specifically those organisations represented in the letter.*

387. In July 2021, the Independent High Risk AGP Panel published a summary of recommendations arising from evidence reviews to date regarding AGP's [BJ/117 - **INQ000257950**]. Despite the availability of evidence [BJ/117a - INQ000300312], NGT insertion and dysphagia were still excluded on the basis of "absence of evidence." Once again, this highlighted a 'catch-22' in the sense that, in the absence of evidence, the precautionary principle should apply, but was not being applied because the relevant scenarios were not classified as an AGPs, nor was there adequate risk assessment.

388. A shift in the science was represented by two updates on 19 July 2021. A review of the HSE RIDDOR guidance removed reference that inferred that FRSMs represented an "effective control measure". At the same time, Government guidance asserted the importance of ventilation to control the airborne transmission of COVID-19, including *COVID-19 Guidance*

on the ventilation of indoor spaces to reduce the spread of respiratory infections, including coronavirus (COVID-19) [BJ/117b - **INQ000223595].**

389. The Respiratory Evidence Panel's report on *The role of face coverings in mitigating the transmission of SARS-CoV-2* further developed the evidence base, finding, among other things:

> *Person-to-person transmission mainly occurs by direct transmission of droplets (respiratory particles with ballistic trajectory that directly deposit on mucous membranes) and by airborne transmission of aerosols (respiratory particles that remain suspended in the air and can be inhaled); although the extent to which airborne transmission occurs is still unknown and is the subject of extensive discussion and controversy in the scientific community….*
>
> *Therefore, close contact transmission (< 2 metres) is expected to be the main transmission mode, whether it is through direct contact with ballistic particles or through inhalation of particles suspended in the air. Risk of transmission at greater distance is considered to be low outside, but there are still some uncertainties about transmission risk indoors, where respiratory particles from an infectious individual could remain suspended in the air for longer, particularly in poorly-ventilated spaces. Whilst some risk of transmission via fomites (where transmission occurs through contact with infectious virus on surfaces) has been acknowledged, the risk is thought to be low compared to direct transmission and airborne transmission....*
>
> *Whilst the evidence suggests that N95 respirators might be effective in reducing infection risks in healthcare settings, the results are less clear for surgical masks. Factors that might impact these results (including when comparing results between respiratory viruses) include i) the uncertainty related to the airborne transmission of SARS-CoV-2 and the ability of face coverings to block small aerosols* **BJ/5a** - **INQ000120649**

390. The findings were entirely in line with the professional views of CAPA/CATA members, bioaerosol science and gave further weight to AGPA's arguments. AGPA changed its name to the Covid Airborne Protection Alliance ("CAPA") in recognition that the issue of focus was not the inclusion of procedures into the limited AGPA list, but the acceptance that controls were needed for all HCWs at risk from infection through airborne transmission.

391. Nonetheless, in recognition that such a shift had not occurred in the IPC guidance, when there was a consultation about IPC guidance in October 2021 [BJ/92A - INQ000300635], despite not being invited to provide evidence, CAPA, BAPEN and RCSLT submitted evidence [BJ/261 - INQ000300512, BJ/262 - INQ000300513, **BJ/226 - INQ000300469]** in a further attempt to explain the risks of the airborne route of transmission and the risks associated with other procedures not accepted as AGPs, such as NGT insertion. The hope was to influence the future provision of IPC guidance, but once again our expertise was ignored. Despite the growing UK Government scientific base and public campaign on ventilation to control airborne transmission, the November 2021 iteration of the IPC guidance did not contain any mention of the route of transmission. In a letter to me dated 21 October 2022, Professor Susan Hopkins, CMA at the UKHSA, unbelievably claimed that the decision to remove reference to the route of transmission from IPC guidance had been influenced by feedback to the consultation [BJ/8 - INQ000300607].

392. Towards the latter part of 2021, CATA focused on the growing issue of the systematic misunderstanding of risk assessment taking place in healthcare settings. Senior managers, operational managers, IPC leads and clinicians clearly continued to lack the coordination and understanding required to discharge the duties outlined in the HSE's summary of healthcare inspections. Through engagement with senior management and publications, CATA sought to try and help develop a better understanding of the relationship between infection control guidance and Health and Safety legislation. This culminated in the publication by the RCN of a risk assessment tool developed by RCN, BOHS and CAPA designed to help managers and healthcare staff bridge the gap in understanding about how and when RPE should be used in the management of risk in various settings.

393. In November 2021, a letter was sent to Sarah Newton, Chair of HSE by Prof Agius, (BMA), Kevin Bampton (BOHS), Rose Gallagher (RCN), Dr Christine Peters (FreshAir NHS), Dr Barry Jones (CAPA) highlighting the need for HSE to ensure that Health and Safety law was being observed in the NHS [BJ/153 - **INQ000118441**. The reply deferred once again to the IPC Cell and identified that HSE were not public health experts [BJ/230 - INQ000300473].

394. The development of the *IPC guidance Consensus statement on RPE and risk assessment: risk assessment and greater use of RPE* [BJ/154 - INQ000300386] conflicted somewhat with new UKHSA general guidance, although the latter did indicate that HCWs

should "*Use FFP3 for AGP or if risk assessment indicates*", with the caveat that FFP3 level protection should only be used in the case of wholly airborne infections, such as tuberculosis. This was further in contrast with the December 2021 WHO interim guidance which advised HCWs to "*use respirators when entering infected patient's room*" and "*wear respirator when performing AGPs*" or "*when ventilation is poor or unknown*", or when HCWs "*prefers*". [BJ/154a - INQ000300387]

395. By January 2022, around 20,000 NHS staff were off work with Covid-19, or isolating. While this was only 40% of the peak in 2021, the impact on frontline healthcare, resilience, mental health and the sustainability of the service was still significant. CAPA and BOHS wrote to the CEO of the NHS Confederation and Primary Care Federations [BJ/155 - INQ000300388], who immediately responded that they would be distributing the letter to all NHS Employers. CAPA's letter advised of the existence of the RCN risk assessment tool, genomic evidence of the presence of COVID-19 with surgical masks (Francis et al) and reiterated legal obligations.

396. The IPC issued updated guidance in January 2022 for winter 2021 to 2022 **BJ/92r** - INQ000300389], which omitted reference to the restriction of FFP3 use to situations of "wholly" or 100% airborne transmission:

> *6.5.6 Respiratory protective equipment (RPE)/FFP3 (filtering face piece) or powered air purifying respirator (PAPR) hood*
> *A respirator with an assigned protection factor (APF) 20, that is, an FFP3 respirator (or equivalent), must be worn by staff when:*
> • *caring for patients with a suspected or confirmed infection spread by the airborne route (during the infectious period)*
> • *when performing AGPs on a patient with a suspected or confirmed infection spread by the droplet or airborne route*
> *Where a risk assessment indicates it, RPE should be available to all relevant staff.*

397. This change in IPC guidance reflected statements in UK Government guidance published on 19 January 2022:

> *The risk of catching or passing on COVID-19 can be higher in certain places and when doing certain activities. COVID-19 is spread by* ***airborne transmission****, close contact via droplets, and via surfaces.* ***Airborne transmission is a very***

significant way that the virus circulates. *It is possible to be infected by someone you don't have close contact with, especially if you're in a crowded and/or poorly ventilated space.* [BJ/157 - INQ000300390]

398. GPs were also emailed about risk assessments and the legal requirement in certain contexts for FFP3 masks that have been fit tested [**BJ/52b** INQ000300391].

399. Whilst it was positive that Government guidance recognised the airborne transmission route of COVID-19 and that the updated IPC guidance did move in the right direction regarding FFP3 mask, crucially, the IPC guidance still did not state that the transmission route of SARS-CoV-2 was airborne. Without an understanding of the transmission route, it would be impossible to determine effective controls or to properly undertake risk assessments.

400. Notwithstanding CAPA's concerns about the IPC guidance's non-recognition of airborne transmission route, even the positive changes in the guidance did not encompass all healthcare. After the publication of the revised IPC guidance, the Association of Ambulance Chief Executives' AA(CE) position statement advised ambulance services of no change in PPE and continued to advise droplet-only precautions. In February 2022, CAPA wrote to Sir Chris Whitty to highlight the inconsistencies in current guidance. This letter was forwarded to UKHSA [BJ/237 - **INQ000074820**].

401. In response to questions put to the Cabinet Secretary for Health and Social Care by CAPA, BOHS and Mark Griffin MSP, the Deputy Chief Nursing Officer suggested that after risk assessment, if the risk is still high, FFP3 could be used [BJ/158a - INQ000300392]. However, at that time Scottish National Infection Prevention and Control Manual (NIPCM) guidance still continued to state that droplet transmission precautions applied for all except AGPs. This guidance still restricts FFP3 use to those seasonal infections (excluding COVID-19) which are "wholly" transmitted by the airborne route.

402. Perhaps coincidentally, within days of this response, the Scottish Health Minister admitted that more than 500,000 FFP3 masks needed to be removed from the stockpile as they were out of date [BJ/159 - INQ000300393].

403. In the ensuing months, in correspondence between CAPA and UKHSA, there continued to be agonising discussions about what was or was not inconsistent in the guidance and in the effect in practice. In CAPA's letter of 11 April 2022, it outlined this in detail, including the chronology of changes to IPC guidance from wholly transmissible, to transmissible by airborne route, to predominantly transmissible by airborne route. [BJ/161 - INQ000300396]

404. The fact that HSE's Chief Scientist and leader of the National Core Research Project on COVID-19 stated in October 2021 that: "airborne transmission of small particles is absolutely critically important" and "we could have focused more on airborne transmission at the start, definitely" [BJ/160 - INQ000300395] makes the HSE positions throughout the pandemic all the more shocking and reinforces the principle that HSE have never approved FRSM as RPE.

405. In April 2022, CAPA sent an extensive critique to the Chief Executive of HSE highlighting the organisation's lack of presence or direct involvement in the protection of HCWs. The letter questions why the precautionary principle does not apply. [BJ/161 - INQ000300396].

406. Once again CAPA asked for clarification of the governance and membership of the IPC Cell (whose minutes have never been published), for a response to the issues raised in the CAPA/RCN letter to Dr Harries of UKHSA in 2021 and asserted that, in the light of the current evidence, the AGP list is no longer relevant, given the nature of the risk of any close-quarter care of infected COVID-19 patients. The widespread international acceptance of the airborne route as the predominant route for infection was also pointed out, referred to Gould and others' publication for RCN in April 2022, "Raising the bar", which summarised the situation as:

> *Indications for the use of face coverings (what type to use and when to wear them) are not the same in all guidelines. In the current pandemic situation, continuing use of the terms 'droplet' and 'airborne' precautions is unhelpful. It has resulted in conflict of opinion surrounding the use of personal protective equipment, specifically face coverings. Current IPC guidance does not appear to align with the World Health Organization definition of how Coronavirus disease is transmitted leaving many health care workers at risk from infection in the workplace due to variation in the application of use in personal protective equipment (PPE) (WHO, 2021) [BJ/162 - INQ000300397]*

407. In the same month, after extended correspondence and a meeting with the Scottish First Minister, CAPA in Scotland received an email response from the Scottish Government

Directorate for the CNO [BJ/239 - INQ000300483 and **BJ/92BB - INQ000300664].** In it, for the first time, there is written concession by NHS Scotland that COVID-19 can be spread by an airborne route when performing AGPs, or in crowded areas, confined spaces or where there is close contact, and that staff are permitted access to FFP3 based on staff preference.

408. CAPA's members, for the most part, were active professionals engaged in the day-to-day work of treating or preventing ill-health. Two years of campaigning as individual organisations, AGPA and CAPA had passed. The aim of the organisations was to save lives and prevent illness of HCWs and consequently to save the health and lives of the public. CAPA's ask was simple:

- to achieve the precautionary principle in the absence of evidence when faced by a new disease;
- to base decisions on the scientific evidence of the likely and then proven airborne transmission of SARS-CoV-2;
- to have guidance that admitted of the professional expertise around the risks of particular areas of healthcare practice;
- to not restrict access to protections against infection risks on the basis of arbitrary or unequal assessment of risk;
- to be transparent in decision-making, consistent in communication and reasonable in the exercise of power;
- to act in a way which enabled HCWs to reasonably be informed of the risks that they were assuming and to exercise professional judgement.

409. To this day, these principles are not apparent in the guidance and approach to infection, prevention and control. Little has changed, other than in the formal recognition that SARS-CoV-2 is airborne (in England, but not in Wales or Scotland, in hospitals more so than in ambulances and in some cough-inducing procedures and not others). This does not bode well at all for the UK's preparedness for a future respiratory pandemic.

410. Throughout the period of CAPA's campaigning, clinical and microbiological experts, respiratory and safety experts and the supporting organisations spent thousands of hours collectively trying to help public bodies understand and acknowledge the evidence. The contribution of most of those experts was in their own time, after delivering the services that

kept the country healthy and safe. After more than two exhausting years, CAPA decided to stop actively campaigning, but to remain constituted in case the need arose to address further developments.

411. CAPA reconstituted as CATA, with slightly fewer members to represent the interests of a variety of health professions and experts to the COVID-19 Inquiry. CATA hopes that its contribution to the Inquiry will be valued and engaged with to greater effect than the manner in which it has been treated by those in positions of authority entrusted with protecting the health of the country's HCWs.

Advocacy and engagement in Scotland

412. I wish to highlight that CATA members engaged with government and public health authorities not just in England, but throughout the devolved nations. For example, in Scotland, Dr Gillian Higgins, had a meeting with the Scottish CMO, Gregor Smith, on 21 April 2020, at which she provided data regarding the lessons to be learned from the spread of pandemic in China, set out the scientific evidence that SARS-CoV-2 was airborne and that FFP3 masks and appropriate ventilation can prevent infection, and provided details of manufacturers able to provide reusable respirators [BJ/163 - INQ000300398]. On 3 June 2021, the same data was also provided at a meeting with the IPC Cell and DHSC. On 25 June 2021, Gillian Higgins met with Nicola Sturgeon and again provided a list of references on the scientific evidence base for airborne transmission of SARS-CoV-2 and evidence in respect of the appropriate RPE required to protect HCWs [BJ/164 - INQ000300399 and BJ/165 - INQ000300400]. On 13 April 2022, Gillian Higgins had a further meeting with the Scottish CMO and Chief Nursing Officer (CNO), Alex McMahon, at which she again provided evidence relating to airborne transmission and appropriate RPE [BJ/166 - INQ000300401]. These are just some key examples of Gillian Higgins' communications with the Scottish government and public health bodies, which continued throughout the pandemic. Notably, in spite of engagement of this kind from the very early stages of the pandemic, it has still not been formally acknowledged in Scotland that SARS-CoV-2 is airborne and FFP3 masks are still not provided in line with COSHH principle to HCWs for protection from the virus outside of Covid ICUs. CATA wishes to highlight that the lack of consensus regarding guidance for HCWs has led to inequality and a postcode lottery in respect of the level of protection provided to them.

VI. Impact

413. As a result of the way in which science was denied and protection restricted, especially in the context of denial of the information to make life and death choices in an informed way, many of CATA's members lost their health or security of person. If even one death may have arisen out of the extensive failures of State that we have catalogued, we believe it is only the Inquiry that can provide Article 2 ECHR protection in relation to the thorough investigation of the cause of that death. CATA has every confidence that the Inquiry will investigate and find the answers that HCWs have been so long denied.

414. This witness statement ends not with my words, but with the words of some of the members summarising the impact of those matters documented above [Annex 2].

CONCLUSION

415. It may be assumed that AGPA and CAPA were simply campaigning for FFP3 level protection. This is not the case. More fundamentally, AGPA and CAPA were campaigning about issues that go to the heart of health protection in this country. One of our strongest criticisms is the fact that government decision making – especially in the early stages of the pandemic – failed to incorporate well known sources of expertise, the practice and evidence-led decision making of others and lived experiences of those affected by the disease. CAPA's membership drew upon a greater pool of professional expertise than those informing government decision-making. One would have thought that when faced with a new and emerging threat, the professionals on the ground would be those who would be relied upon to provide the intelligence to best equip decision-making. At the very least, one would have expected the expertise of these professionals to have been listened to and not ignored.

416. From the start of the Covid-19 pandemic, a risk tool existed to enable the appropriate use of the precautionary principle in the absence of evidence. Instead, there was equivocation over evidence and the professional judgement of "Senior IPC leads". Perhaps this approach reflected a distrust of the professional expert outside the Government apparatus. It could reflect a dependence in NHS leadership on a model of evidence-led practice, which then fails in the face of the absence of evidence. This seems to fly in the face of the precautionary principle. There may even be an element of insularity or an instinct for self-preservation within the IPC community. CATA hopes that the Inquiry will investigate why and how, in a country of so much expertise in the area, was the pool of expertise determining the protection of our

most crucial national asset – healthcare – so limited. CATA hopes that the Inquiry will get to the bottom of this, to ensure that relevant expertise is listened to and engaged with in the future. In doing so, the Inquiry will be able to contribute not only to our understanding of the management of the COVID-19 pandemic, but also to our understanding of how science and expertise are to be used in the management of healthcare and, more particularly, the prevention of hospital acquired infections.

417. Various COVID-19 related reports[18] have highlighted that partnership is essential for the maintenance of health and safety in the workplace. Consultation and collaborative solutions in healthcare settings are essential in managing clinical risks that pose a danger not only to patients, but to HCWs. It is CATA's belief, based on experience, that the relationships between management and staff in healthcare settings were often undermined by the implementation of policies and approaches that alienated, obfuscated and side-lined the concerns of staff.

418. The Inquiry should consider whether the exclusion of HCWs from decisions about the management of health risks during the pandemic contributed to the recent unprecedented decisions to undertake industrial action. It is critical that the Inquiry determines whether the current model of bypassing health and safety consultation under IPC mandates and other operational management is necessary, appropriate or even legal.

419. The absence of transparency and clarity in communication and explanation of who decisions were being made by, why they were being made and how they were being made created doubt, mistrust and uncertainty. In a modern democracy, it is not just the ballot box which is dependent on transparency. The governance of all the UK's major institutions of health depend on the ability of those who participate to have a full and clear understanding of the governance and clinical processes. Transparency and accountability is at the heart of effective risk management. In professionally led organisations, peer led scrutiny is beneficial for all concerned and increases the quality of the work produced. This broke down from the outset of the pandemic. The fact that decisions impacting the entire healthcare system were made in a secretive "Cell", the implications of which appeared in footnotes of an appendix to an NHS emergency plan, is fundamentally undemocratic and reckless.

[18] See The Robens Report [BJ/166a - INQ000300402] echoed in HSE's February 2021 summary or areas of eminent concern about the management of COVID-19 in healthcare

420. By resisting an acceptance of the transmission route of the virus, the IPC essentially robbed HCWs of a definitive means by which risk assessment and effective controls could be implemented. Healthcare is not all undertaken in clean ICU units or in hospitals. During the pandemic, HCWs were in a whole variety of circumstances where the messy, unpredictable, and dangerous business of saving people's lives goes on.

421. The extent to which the false assurance that airborne transmission was not a risk contributed to activities that increased risks to the safety of HCWs needs to be investigated by the Inquiry. It is unlikely that we will ever know for certain, due to difficulty in quantification. However, the decision to promote a message that was definitive about the absence of airborne transmission on the basis of the absence of positive evidence of airborne transmission is an important one. It deliberately downplayed the risk and must have involved a conscious decision on the part of policy-makers. The Inquiry needs to understand why there was a positive and affirmative message about something that was scientifically contended and probably not justified by the evidence. Who made such a decision is also important.

422. CATA remains concerned that the health and safety rights of HCWs were not understood by a number of the professional bodies. Principles like those found in COSHH and consultation rights seemed to be poorly understood. The resources, management skills and infrastructure to protect the health and safety of workers in a safety-critical industry seemed largely absent. In a workplace where respiratory risk is potentially high, where dangerous substances and hazardous situations are commonplace, but the skills and education levels of the staff are high, it is a matter of genuine public importance that the Inquiry understands why so little health and safety capability was present.

423. NHS decision-making and communication in times of crisis should be functional and the challenges of national crisis planned for. The reality is that, even after years of living with COVID-19, the guidance available is inconsistent and disparate and the methods of communication during the crisis periods were confusing and poorly managed. AGPA/CAPA/CATA on many occasions genuinely were unable to understand who was in charge. Moreover, it was often CATA who were pointing out to public authorities the material inconsistencies in their messaging. The Inquiry should seek to understand how this lack of coordination and communication came to pass and why it is still unresolved.

424. CATA ultimately found itself trying to address the disconnect between decisions made by organs of State which had been set up in a time of national crisis. Many of our members had to step into the breach and show leadership, in critical areas of standard setting. By early 2022, the Government itself had finally acknowledged much of the science and response that CATA members had campaigned to be recognised, yet even after this acknowledgement, the IPC Cell seemed to play an outsized role in driving infection control in pandemic management. This was despite the fact that such the guidance they offered was supposed to be subsidiary to the Health and Safety legal framework. The jurisdiction of the Health and Safety regulator, the HSE, appeared to be curtailed. It appears that the HSE was missing in action in the worst crisis in health and safety in living memory.

425. The Inquiry will look at decision-making in Module 2 and CATA urges the Inquiry to investigate to what extent normal governance and the relevant legal framework for protection of HCWs was suspended. Our understanding was that if there was a suspension of rights, pursuant on a national emergency because of a threat to the Nation, then there should have been an official declaration of this event so that there is clarity about the applicable standards.

Statement of Truth

426. 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** Dr Barry J M Jones

Dated 8th September, 2023

ANNEX 1

DATE	DOCUMENT	COMMENTS	EXHIBIT
05/03/2020	Health and Social Care Committee – Oral Evidence: Preparations for the Coronavirus HC, 36.	In oral evidence to the House of Commons Health and Social Care Committee, Professor Chris Whitty stated, "All infections that have a very strong force of transmission and that are airborne have the capacity to travel worldwide" (HSCC Preparations for Coronavirus HC 36, Page 3, Para 4). However, on 13 March 2020 Professor Tom Evans, Chair of the JCVI wrote to Deputy Chief Medical Officer Jonathan Van Tam of the DHSC stating that the ACDP committee was unanimously of the view that Covid-19 should be declassified as a HCID. It is clear from the PHE explanation that the basis for declassification was concerned with the availability of laboratory tests and lower mortality rates associated with SARS-CoV-2. Nonetheless, there was no suggestion that its status as 'airborne' had altered from that originally declared in January. The DHSC aimed to shift from FFP3 masks to surgical ones. NERVTAG was told the next day that the government supported changing PPE recommendations and within hours FFP3s were no	**BJ/26 - INQ000130504** [BJ/97 - **INQ000130524** [BJ/174 - INQ000148459]

		longer required on the wards. This item had not been on the agenda and was dealt with briefly under AOB during a meeting otherwise dedicated to discussion of transport of infectious test materials – see the Written Evidence submitted by David Osborn (section 9) for further information. A member of the ACDP committee later confirmed to a BBC reporter that the reason for this was that there were not enough FFP3 masks to go round.	
16/03/2020	New IPC Guidance (COVID-19: Guidance for Infection Prevention and control in healthcare settings Version 1.0).		[BJ/6 - **INQ000325350**
22/03/2020	Communication by Susan Hopkins.	Communication by Professor Susan Hopkins publicising the new PPE poster defining when FFP3 and FRSM should be worn.	N/A
26/03/2020	Minutes of Select Committee Meeting - Yvonne Doyle (PPE downgrade not due to shortage).	Professor Yvonne Doyle (Medical Director, PHE) provided evidence to MPs at a meeting (Q259) of the Health and Social Care Committee. She denied that the reason for the downgrade was due to there not being enough FFP3 kit to go around.	[BJ/100 - **INQ000130541**

26/03/2020	Allied Health Professions Federation (AHPF) letter to Secretary of State Matt Hancock.	AHPF letter to Secretary of State Matt Hancock regarding FFP3 for SLTs. No reply was received. Concern was expressed over SLTs not having FFP3 for dysphagia assessments or procedures in common with respiratory physiotherapists. The letter also mentions community/primary care/community nurses.	[BJ/102 - **INQ000130540**
27/03/2020	RCSLT guidance on personal protective equipment (PPE) and COVID-19.	RCSLT guidance on PPE was issued. For RCSLT purposes, this extends the definition of AGPs to a very large number of procedures that SLTs may undertake. Susan Rastrick, Chief Allied Health Professions Officer (England), advised all SLTs to follow RCSLT and not PHE guidance. She subsequently rowed back from this position.	[BJ/103 - **INQ000130542**
28/03/2020	Academy of Medical Royal Colleges (AoRMC)/PHE/NHSE - letter to NHS.	AoRMC, PHE and NHSE letter to NHS regarding PPE supply and downgrading of Covid19 as a HCID. The letter admits to initial PPE supply issues. FRSMs are recommended for all non AGP, Intensive Care Units, Hot Area Emergency Departments. AoRMC was involved in this	[BJ/101a - **INQ000130506**

		decision and provided advice to all NHS settings. States that "COVID-19 is not airborne; it is droplet carried."	
29/03/2020	Consultation: COVID-19 – guidance on personal protective equipment in secondary care.	RCSLT responded to Consultation: COVID-19 – guidance on personal protective equipment in secondary care by Public Health England. RCSLT provided a very detailed response and asked for procedures undertaken by SLTs that induce a cough to be considered AGPs to enable access to the appropriate PPE/RPE. RCSLT shared its PPE guidance (dated 27 March 2020) with PHE. No response was received.	**BJ/104 - INQ000130507**
30/03/2020	Redeploying your Allied Health Professions (AHP) workforce safely.	NHS Redeploying AHP workforce safety document and response from RCSLT.	[BJ/170 - **INQ000130509**
31/03/2020	Letter to the Editor regarding Respiratory Protective Equipment and Covid-19.	BAPEN issued initial safety guidance on NGT insertion to members on website including statement that NGT is not currently considered an AGP. Within days, this view was challenged by BAPEN and the guidance was revised on its website. Subsequently, multiple	N/A

		professional bodies were found to dissent from PHE guidance and state NGT insertion is/might be an AGP. BAPEN obtained the support of 20 other bodies directly or indirectly including all Royal Colleges of Physicians and Surgeons in Great Britain, and four international "Parental and Enteral Nutrition" societies.	
02/04/2020	Provision of personal protective equipment for aerosol generating procedures (AGPs).	RCSLT wrote to Secretary of State Matt Hancock (1): "Provision of personal protective equipment for aerosol generating procedures (AGPs)". No reply was received until 12 August 2020 from Jo Churchill MP. The letter pointed Matt Hancock to RCSLT evidence showing that dysphagia assessment, multiple upper airway procedures & NGT insertion should be considered AGPs, mentioned close range care risk and asked for his help. RCSLT had also spoken to NHSE/I & PHE about this.	[BJ/171 - **INQ000130511**
03/04/2020	National IPC – AGP agreement with Royal College of Speech and Language Therapists' response.	RCSLT responded to consultation on National IPC-AGP agreement. The response discusses dysphagia assessment/tracheostomy	[BJ/172 - **INQ000130512**

		procedures/induction of sputum.	
08/04/2020	Recommended PPE for healthcare sectors.	PHE, AoRMC, PHW, HPS, PHA and NHS published an online table of PPE for various settings/procedures. The only indication for use of FFP was for AGPs. All other indications were for use of FRSM Type 11R.	**BJ/88f** INQ000300411]
12/04/2020	Practical Advice and Guidance for management of nutritional support during COVID-19.	NNNG guidance on feeding Covid-19 patients safely.	[BJ/175 - **INQ000130515**
14/04/2020	Evidence of environmental dispersion for different mechanisms, and the risks and potential mitigations/measures of control within different environments from what we know about COVID-19: A brief evidence summary for SAGE.	This paper was published by the EMG, chaired by HSE's Chief Scientific Advisor, Professor Andrew Curran. It confirmed that aerosols up to 100 microns are airborne and inhalable, thereby overturning the popularly held notion amongst IPC personnel that the threshold for inhalability was 5 microns.	[BJ/4 - **INQ000192047**
15/04/2020	An overview of opinions on nasogastric tubes as aerosol generating procedures during the Covid-19 crisis.	BAPEN guide on feeding via nasogastric tube during COVID-19 crisis.	[BJ/110 - **INQ000130517**
16/04/2020	Letter regarding Nasogastric (NGT)/nasojejunal tube (NJT) placement and	BAPEN wrote to CEO PHE Duncan Selbie to request review of the AGP list to include NGT insertion. The	[BJ/108 - **INQ000130518**

	aerosol generation (AGP).	letter was endorsed by RCN & BDA. The response can be seen on 5 May 2020 below. The letter points out that droplet/aerosol definition in use may be wrong and outlines the evidence base for NGT as a non-AGP by WHO/HPS/PHE. The letter dissects review for WHO by Khai Tran et al in 2012, highlighting that only two studies found, both of which were small and retrospective observational studies of SARS-1. Tran categorised these studies as low quality and neither looked into aerosol or droplets. The letter points to fact that HPS went on to say, "given the extremely limited volume and quality of studies available, this hierarchy (of AGPs) should be used for academic purposes only and not for clinical decision making" and refers to the precautionary approach. Our letter noted the change in the AGP list to include upper GI endoscopy and nasendoscopy. Our position was supported by BDA, NNNG, RCN, Intercollegiate General Surgery Group, ASPEN.	
22/04/2020	Aerosol generation: experiences and evidence from the speech and	RCSLT wrote to Secretary of State Matt Hancock (2) on aerosol generating procedures as applicable to	[BJ/123 - **INQ000130519**

	language therapy profession.	SLTs, Support of Intensive Care Society, National Tracheostomy Safety Project, British Thoracic Society, ENT-UK, UK Swallowing Research Group, European Society for Swallowing Disorders and BAPEN. No reply was received but see the reply to letter RCSLT's letter to the Secretary of State of 2 April 2020 on 12 August 2020 below. This was the second letter from RCSLT to Secretary of State with many other professional bodies in support. The attached article was published June 2021. The letter was copied to CEO NHS, CEO PHE, Professor Stephen Powis, National Medical Director of NHS-England (NHSE), Susan Rastrick, Chief Allied Health Professions Officer NHSE. It was also sent to CMO Chris Whitty. Airborne transmission was referred to on page 2 of the article attached to letter, as well as aerosol generating procedures, dysphagia assessment and COVID-19 under the heading of 'COVID-19 transmission and aerosols'.	

24/03/2020	Operation Nightingale: speech and language therapy modelling.	SLT modelling on - lack of workforce planning.	[BJ/176 - **INQ000130520**
01/05/2020	Nasogastric tube insertion and aerosol generation during the Covid-19 crisis.	BAPEN sent a letter to the Secretary of State Matt Hancock (3), including the RCSLT letter above, a letter from British Association of Chest Physicians (BACP) and a statement from Royal College of Physicians (RCP) on NGT as an AGP. The letter was endorsed by RCP London, BSG and BASP.	[BJ/109 - **INQ000130521**
01/05/2020	Request for swallow assessment and nasogastric tube insertion to be recognised as aerosol-generating procedures.	BASP sent a letter to the Head of Allied Health Professionals. No replies were received except from the CNO England referred to below. The letter asked that NGT insertion and swallowing assessments be made AGPs. The position was supported by BSG, RCN, ENT-UK, Intercollegiate General Surgical Group (IGSG), RCP, RCSLT, BDA, BASP and ASPEN. This letter was copied to CEO NHSE, National Medical Director NHSE, Suzanne Rastrick (Chief Allied Health Professions Officer NHSE), CEO AoRMC, NERVTAG and	[BJ/177 - INQ000300414]

		Ruth May (CNO England) (the latter separately on 12 May 2020).	
05/05/2020	Nasogastric (NGT)/nasojejunal tube (NJT) placement and aerosol generating procedures (AGPs).	Duncan Selbie, CEO PHE responded to BAPEN's letter of 20 April 2020. The response was copied to NERVTAG by PHE but no reply was received. The CEO PHE replied with reiteration of current guidance, no comment on our scientific criticisms and erroneously referred to "studies of clinical procedures were assessed for their association with historical transmission events and generation of aerosols/environmental contamination". No such papers using aerosol studies were reviewed or used in the AGP guidance by WHO/HPS or PHE, as in our letter of 16 April 2020. No studies of aerosol or droplet transmission were reviewed in the context of NGT insertion.	[BJ/115 - **INQ000130522**
06/05/2020	Letter to NERVTAG.	RCSLT forwarded their evidence on Dysphagia and AGP, and letter to the Secretary of State to NERVTAG and PHE. No reply received. This followed PHE response to BAPEN's letter above.	[BJ/178 - **INQ000130523**

12/05/2020	Assessing the evidence base for medical procedures which create a higher risk of respiratory infection transmission from patient to healthcare worker.	The Situation, Background, Assessment and Recommendations (SBAR) of NHS Scotland (National Services Scotland) published, providing rationale for AGPs in detail.	[BJ/179a - INQ000300416]
12/05/2020	Email to Ruth May.	BAPEN emailed CNO Ruth May asking for her help with letter sent to Secretary of State on 1 May 2020. Ruth May responded by email to BAPEN and agreed with Susan Hopkins to ask CMO England to set up a review. An Independent High Risk AGP Panel was to be set up, which first met at the end of July 2020 and reported in January 2021 – however its minutes were incomplete and published late. Its report was also published later than promised with no changes to guidance on AGP list despite finding no new evidence other than that in our letter of 16 April 2020. Nor was reference made to our letters with scientific critique of the guidance. There was no engagement with us as stakeholders.	[BJ/180 - INQ000300417]
13/05/2020	Enteral tube feeding safety in COVID-19 patients.	BAPEN Guidance to members on Enteral Tube Feeding of COVID-19 patients.	[BJ/181 - **INQ000130528**

14/05/2020	Covid-19 and nasogastric tube aerosol generation.	BAPEN wrote to WHO leader, Dr Maria Van Kerkhove. No response was received.	[BJ/182 - **INQ000130529**
15/06/2020	BAPEN InTouch Newsletter June 2020.	BAPEN "In Touch" article by Barry Jones summarising BAPEN's views on NGT insertion.	[BJ/183 - INQ000300420]
08/07/2020	Coronavirus: WHO rethinking how Covid-19 spreads in air.	BBC report published regarding the WHO reviewing route of transmission. The review still uses the 5 microns cut off for droplets/aerosol.	[BJ/184 - INQ000300421]
09/07/2020	Transmission of SARS-CoV-2: implications for infection prevention precautions.	WHO report 'Transmission of SARS-CoV-2: Implications for Infection Prevention precautions' published. The report had a long section on airborne transmission and gives examples of clusters (choir practice, fitness classes, known super-spreading events etc.), but then says these infections could be attributed to poor hand hygiene.	[BJ/185 - **INQ000130532**
23/07/2020	Email to WHO.	BAPEN wrote a third time to WHO. No response was received, despite assistance from the Chair of WHO Mass	[BJ/186 - **INQ000130533**

		Meetings committee, Dr Brian McCloskey.	
12/08/2020	Letter from Jo Churchill.	Jo Churchill MP responded to RCSLT's letter of 2 April 2020. The letter does not include response to the letter of 22 April 2020. There was also no mention of the need for RPE for SLTs, only that guidance includes SLTs.	[BJ/187 - **INQ000130534**
20/08/2020	N/A	AGP Alliance meets for first time.	N/A
28/08/2020	Letter to Royal College of Physicians (RCP).	Letter sent to RCP from BDA, RCSLT, BAPEN and AGPA. The reply received rejected the invitation for RCP to join AGPA.	[BJ/188 - **INQ000130535**
September 2020	The AGP Alliance Position statement on AGPs/PPE.	AGPA Position Statement on AGPs/PPE (updated October 2020), with BAPEN, BDA, RCSLT BASP, CoP, Chartered Society of Physiotherapy (CSP), NNNG BSG, HCSA, GMB, Unison, Unite the Union in Health. The statement itemised many non AGPs which AGPA thought should be AGP. The statement highlighted the risks due to close contact within 1 metre. It also highlighted that coughing is a symptom of Covid-19 and thus a risk of aerosol transmission for which there is growing	[BJ/189a - INQ000300426]

		evidence from around the world. The statement states that the health and safety of HCWs was being disregarded without clear reason. It highlights the lack of responses to our letters and lack of clarity on membership of IPC Cell or Independent High Risk AGP Panel. The statement confirms a list of supporting bodies. This statement was supported by an unprecedented Alliance, in agreement that "the science is clear. The evidence is clear. The risks are clear" and that the safety of HCWs must come first.	
25/09/2023	Letter to Prime Minister, Boris Johnson.	The AGPA wrote to Boris Johnson, setting out their position on AGP guidance and the risk to HCWs and enclosing the AGPA Position Paper.	[BJ/190 - INQ000300428]
October 2020	COVID-19 transmission in hospitals: management of the risk – a prospective safety investigation.	Healthcare Safety Investigation Branch (HSIB) published an investigation on Covid-19 Transmission in hospitals. The paper makes several mentions of "airborne", including a statement that "one health Trust explained that the only defence against this (airborne) is dilution or air changes."	**[BJ/39 - INQ000130588]**

28/10/2020	Letter to Jeremy Hunt.	The AGPA wrote to Jeremy Hunt MP with a copy of our above letter to the Prime Minister. No response was received. The letter refers to the AGPA's position on the science of transmission, highlighted the need for a precautionary approach, referred to there being a "post code lottery" in respect of protection from Covid-19 and made an offer to assist.	[BJ/192 - INQ000300430]
05/11/2020	Letter to Jeanne Freeman.	The AGPA wrote to Jeanne Freeman, Cabinet Secretary for Health & Sport, Scotland. The letter was copied to Dr Gregor Smith CMO Scotland, Carolyn MacDonald, Chief Allied Health Professions Officer, Scotland and Professor Mahmood Adil, Health Protection Scotland. No responses were received. The letter made the same points as in the letter to the Prime Minister and Jeremy Hunt but to the Scottish government.	[BJ/133 - INQ000300343]
18/11/2020	Hands. Face. Space. Ventilation.	The DHSC published a public information video of aerosol from mouths, confirming that COVID-19 is spread by the airborne route.	[BJ/56 - INQ000273881]

November 2020	Green Book Chapter 14a - COVID-19 - SARS-Cov-2.	Chapter 14a of the 'Green Book' published.	**BJ/58** **INQ000059136**
November 2020	N/A	PHE stated that Covid-19 is airborne. Initially this was in a provisional document awaiting MHRA approval, which was subsequently approved and republished (post-MHRA approval) on 25th January 2021. This was an important change in government messaging but was not taken up across all relevant bodies.	N/A
01/12/2020	Mask use in the context of COVID-19.	WHO Guidance 'Masks in the context of Covid-19' published, recommending respirators (FFP3 etc) be worn for AGPs. The WHO slightly broadened the scope for use of FFP3 in that they "may be used by health workers when providing care to COVID-19 patients in other settings if they are widely available and if costs is not an issue".	[BJ/193 - **INQ000349135**
21/12/2020	Emails to AGP Panel.	Barry Jones writes by email to the Chair of the Independent High Risk AGP (IHR AGP) Panel regarding their delayed report. The emails asked why it took so long to publish and why no minutes were published. On 23 December 2020, a reply was received from the IHR AGP Panel Chair to	[BJ/194 - INQ000300432]

		Barry Jones, stating the report was due in the first week of January. Please see the report dated 11 January 2021 detailed below. There were multiple emails from Barry Jones to IHR AGP Panel administrators over second half of 2020. In September 2020, Viviana Finistrella stated that the panel had lost our contact details in August 2020.	[BJ/116a - INQ000300309]
03/01/2021	Improve Ventilation of Care Settings & Upgrade Respiratory Personal Protective Equipment.	Open Letter from FreshAir NHS co-signed by AGPA Chair sent to Prime Minister, Boris Johnson. No response was received. the letter discussed the shift of emphasis towards ventilation but notes that ventilation does not mitigate against close range exposure within 1 metre. The letter also highlighted that HCWs were at four times the risk of general population unless in ICU where risk was halved due to better PPE. This letter was also sent to First Ministers of the devolved nations, SoS Matt Hancock, Vaughan Gething MS Minister for Health and Social Services, Wales, Jeanne Freeman Cabinet Secretary Health & Sport Scotland, Robin Swann MLA (Members of the	[BJ/135 - INQ000300345]

		Legislative Assembly) Minister of Health Northern Ireland.	
06/01/2021	Letter to Matt Hancock.	Letter sent from the CEO of CoP to the four nation Chief Allied Health Professionals Officers. The letter asked for parity of PPE with ICU staff and stated 18 paramedics have died so far. It also commented on the insufficient evidence that current PPE was adequate for purpose. The response received on 8 April 2021 is detailed below.	[BJ/136 - **INQ000257963**
07/01/2021	Letter from BMA to CEOs of NHS Trusts England.	The BMA sent an open letter to all CEOs of NHS Trusts England. AGPA was not involved but is the letter was relevant to our case. The letter demanded improved PPE in face of new variant of concern "Kent" or alpha variant. Importantly, it was the first mention of the legal aspect of health and safety in respect of this issue.	[BJ/137a - INQ000300347]
08/01/2023	Letter to Ruth May.	Letter sent from AGPA to Ruth May CNO England, copying Suzanne Rastrick. No reply was received from either. Ruth May had responded to emails before Christmas, and this led to the Chair of the AGP Panel replying to our emails on the evening of 24 December 2020, stating that the report	[BJ/138 - INQ000300348]

		was not available until the New Year). The letter named some Trusts which were giving higher grade PPE (RPE). The letter also stated that "Guidance from PHE is clearly not fit for purpose". The letter used a quote from a BMJ article from DHSC: "The safety of NHS and social care staff has always been our top priority, and we continue to work tirelessly to deliver PPE to protect those on the front line. UK guidance on the safest levels of PPE is written by experts and agreed by all 4 CMOs. The guidance is kept under constant review based on the latest evidence and data."	
11/01/2021	IHR AGP Panel.	The IHR AGP panel reported. There was no mention of our evidence or stakeholder involvement. In addition, the publication of minutes was delayed until December and were incomplete when published.	[BJ/92BA - INQ000300663] [BJ/117 - **INQ000257950**
15/01/2021	Discharge of Covid positive patients into Care Homes.	Email sent by David Osborn to HSE, raising concern regarding the discharge of patients to care homes and their HCWs not having RPE. The correspondence pointed out the legal	**[BJ/138a - INQ000300349]**

		requirement for RPE for airborne hazards such as COVID-19. The response from HSE was that this PPE was specified in the IPC guidance (to all intents and purposes saying it was not HSE's concern).	
15/01/2021	Healthcare workers issue emergency call to Matt Hancock: 'Stop praising us and start protecting us!'	AGPA issued an Emergency Call to the Secretary of State. The statement stated, "Stop praising us and start protecting us", "Don't let the air we share be what kills us." and referred to 49,000 NHS staff being off work due to Covid or isolation. No reply was received.	[BJ/139 - INQ000300366]
19/01/2021	Letter to Matt Hancock regarding PE provision for frontline health and care staff.	The AGPA sent a letter to Secretary of State Matt Hancock (4) (following open letter from FreshAir NHS to SoS). The letter regarded PPE provision for frontline health and care staff, called for improved ventilation and improved PPE and invoked the new variant as a good reason to change guidance. No reply was received.	[BJ/196 - INQ000300435]
19/01/2021	Letter to Dr Hopkins and Ruth May.	SCP (Social Partnership Forum) of unions wrote to Dr Susan Hopkins (Strategic Response director) and CNO Ruth May.	[BJ/197 - INQ000300436]

		The response on 29 January is detailed below. The SCP letter requested upgraded guidance, but the reply refuted this. AGPs remained the only indication for FFP3 in medium to high-risk pathways and the response claimed that the lack of change was a result of latest evidence but there was no mention of alternative views.	
21/01/2021	Template letter for sending to MPs.	A letter to all MPs was agreed and by the AGPA, for all members to send to their own MPs.	[BJ/198 - INQ000300437]
29/01/2021	Infection Prevention Society (IPS) statement.	The President of the IPS released a statement titled "Should all HCWs caring for patients with COVID-19 wear FFP3"?	[BJ/139a - INQ000300367]
29/01/2021	Response to SPC letter received from CNO Ruth May and Susan Hopkins.	A response to the SPC letter of 19 January 2021 was received from CNO Ruth May and Susan Hopkins, Strategic Response Director Covid-19. AGPs remained the only indication for FFP3 in medium to high-risk pathways and the response claimed that the lack of change was a result of latest evidence but there was no mention of alternative views.	**[BJ/139b - INQ000300368]**

10/02/2021	Email from Andrew Goddard (President of Royal College of Physicians).	The President of RCP responded to BAPEN. The email exchange discussed the downgrade of PPE to FRSM for all activities except AGPs. The RCP President referred to the fact that PPE was in short supply at this time and confirmed that he was told of shortages early in pandemic, alongside Dame Donna Kinnear of the RCN.	[BJ/168 - INQ000300404]
18/02/2021	Letter from Harriet Baldwin MP.	Multiple letters were sent to MPs. The example response from Harriet Baldwin here stated that FFP3 may not always be needed, discussed that FFP2 may be more appropriate, but made no reference to FRSMs.	[BJ/201 - INQ000300442]
February 2021	BAPEN In Touch Newsletter Issue 100.	BAPEN In Touch Newsletter Issue 100 - 'Update on AGPA activities'.	[BJ/202 - INQ000300443]
18/02/2021	Letter to Prime Minister, regarding protecting health care workers - better ventilation, PPE, awareness and research.	A third letter was sent to the Prime Minister from 21 signatories including AGPA, BMA, RCN, RC Midwives, Royal Pharmaceutical Society, QNI, UK Critical Care Nursing Alliance and Professor Trish Greenhalgh. It was copied to the Secretary of State and devolved nation Health Ministers. - No response was received until May 2021.	**BJ/89a** **INQ000114283**

		The letter made demands for: • Improve ventilation • Amended IPC guidance to reflect airborne route •Application of the precautionary principle • Collection and publication of data on occupational exposure of HCWs (quotes 930 HCWs dead) • Publication of ALL scientific evidence of airborne transmission. • Involvement of stakeholders The letter quoted CDC, SAGE, European Centre for Disease Prevention and Control (ECDC), and the government's own public health messaging for own homes.	
23/02/2021	Response to Rita Grigoriado.	The Deputy First minister John Swinney in Scotland responded to Rita Grigoriado, BOHS, regarding the use of Medical Grade Respirators for COVID-19 protection. The response did not refer to any change to transmission routes, with no change from droplet spread. It stated it was fine to use FFP3 if a HCW wishes to for AGP in all pathways.	[BJ/291 - INQ000300551]

28/02/2021	RCN Independent review of guidelines for the prevention and control of Covid-19 in health care settings in the United Kingdom: evaluation and messages for future infection-related emergency planning.	The RCN responded to THE ARHAI review of literature behind guidance. The main author was Professor Dinah Gould. This was published on RCN website but also submitted to journals for publication with Barry Jones & Christine Peters as co-authors. The ARHAI subsequently responded to the RCN review, claiming that the Health and Safety Executive had approved the PPE section within UK IPC COVID-19 guidance. In turn the HSE in a letter confirmed that HSE were not involved in directing, influencing, or supporting PHE/DHSC PPE policy in relation to the COVID-19 infection prevention and control guidance for healthcare settings. The RCN later published a further report on 19 April 2022 - “Raising the bar” by Professor Dinah Gould, Dr Edward Purssell, and Rose Gallagher. The report quotes the 2021 WHO statement “indications for the use of face coverings (what type to use and when to wear them) are not the same in all guidelines. In the current pandemic situation, continuing use of the terms ‘droplet’ and ‘airborne’ precautions is unhelpful. It has resulted in	[BJ/141 - **INQ000114357** [BJ/292 - INQ000300552] [BJ/293 - INQ000300553] [BJ/162 - INQ000300397]

		conflict of opinion surrounding the use of personal protective equipment, specifically face coverings. Current IPC guidance does not appear to align with the World Health Organization definition of how Coronavirus disease is transmitted leaving many HCWs at risk from infection in the workplace due to variation in the application of use in personal protective equipment (PPE)."	
March 2021	The industrial injuries advisory council Position paper 48 COVID-19 and occupation.	The paper showed greater than average infection rates in healthcare and social care workers and that the risk of death more than doubled amongst workers in social care and nursing, particularly in males. The paper referred to "growing concern that airborne transmission may be a significant infection mechanism."	[**BJ/130** - INQ000300339]
02/03/2021	Covid coughing study suggests NHS staff at far greater risk than thought.	Guardian article published on PPE and HCWs. A DHSC spokesperson said: "The safety of NHS and social care staff has always been our top priority and we continue to work tirelessly to deliver PPE to those people who protect us all on the frontline." "In response to the new Covid-19 variants that have	[BJ/200 - INQ000300441]

		emerged in recent weeks, the UK Infection Prevention Control Cell conducted a comprehensive review of evidence and concluded that the current guidance and PPE recommendations remain appropriate. New and emerging evidence is continually monitored and reviewed by government in conjunction with our world-leading scientists." FreshAir NHS and DAUK were also quoted in the article.	
02/03/2021	Official: Your email to Public Health England.	David Osborn correspondence with PHE concerning wrong PPE being used. The email thread (with PHE response embedded in red text) stated "Agree that surgical masks are not (and have never been) designated as Personal Protective Equipment" but confirmed that the provision of surgical masks instead of FFP3 was "not related to shortages or rationing of PPE but mode of transmission".	[BJ/143 - INQ000300372]
12/03/2021	Letter to Chief Medical Officers regarding urgent review of PPE and ventilation guidelines consistent with airborne	AGPA, RCN, Professor Trish Greenhalgh wrote a letter to the four nation CMOs, copied to CNOs and Chief Allied Health Professions Officer requesting meeting.	**[BJ/89c - INQ000114297]**

	transmission of COVID-19.	Professor Chris Whitty responded within 24 hours by email, agreeing to set up a meeting with DHSC.	
25/03/2021	Letter from Gregor Smith regarding request for urgent review of PPE and ventilation guidelines consistent with airborne transmission of COVID-19.	The CMO Scotland Gregor Smith responded to the letter to the CMO of 12 March 2021.	[BJ/204 - **INQ000114412**
25/03/2021	Eighty-fourth SAGE meeting on COVID-19.	At SAGE meeting #84, it was stated that "It remains the case that available evidence on use of FFP3 face masks is limited (though this does not mean there is no effect)". Decision makers in the NHS will need to consider the extent to which they take a precautionary approach."	**[BJ/143a - INQ000120606]**
27/03/2021	BMJ article 'Letters – Selected from rapid responses on bmj.com'.	In letters in the BMJ, 'Zhang and colleagues' discussed "Making PPE more sustainable".	[BJ/206 - INQ000300447]
31/03/2021	Telegraph article - "Full PPE for wrong staff was virus spreader, says research".	Telegraph article published by Henry Bodkin, Health Correspondent .	[BJ/207 - INQ000300448]
08/04/2021	Letter from Jo Churchill.	The CoP CEO, a member of AGPA, received a response from Jo Churchill to the CoP letter to the Secretary of State on 6 January 2021. The response advised use of risk assessments and	[BJ/208 - **INQ000257968**

		stated, despite the new variant, "current guidance remains appropriate".	
10/04/2021	International Press release (from CSP).	International press release received by AGPA via CSP	[BJ/209 - INQ000300450]
14/04/2021	AGP Alliance Statement – "recognition of the role of airborne transmission".	AGPA Press Statement released, welcoming Government recognition of airborne transmission.	[BJ/210 - INQ000300452]
19/04/2021	"COVID-19: Better ventilation, PPE, awareness and collaboration" briefing paper.	AGPA and partners briefing paper released.	[BJ/211a - INQ000300453]
20/04/2021	N/A	The planned meeting with the DHSC, PHE and IPC was cancelled. It was postponed so that all signatories on the February letter to Prime Minister could join, not just those signatories from the CMO letter of March 2021. It was originally to be reorganised within 2 weeks but local elections in England occurred on 6 May 2021 which delayed the meeting until 3 June 2021.	[BJ/89d - INQ000300618]
22/04/2021	Aerosol generating procedures, dysphagia assessment and COVID-19: A rapid review.	RCSLT Report published, regarding AGPs, dysphagia assessment and COVID-19.	[BJ/117a - INQ000300312]

23/04/2021	SAGE PAPER.	SAGE published a paper dated 25/03/21 – "Masks for HCWs to mitigate airborne transmission of SARS-CoV-2". Whilst accepting "airborne" transmission, the tone of the paper was decidedly "anti-PPE", describing them as a "bolt-on" rather than being a necessity when other elements of the 'hierarchy of control' are impracticable (see section 10 of David Osborn's paper for further detail [BJ/174]).	[BJ/144 - **INQ000075022**
30/04/2021	WHO: Coronavirus disease: How is it transmitted?	The WHO updated their guidance on transmission of Covid-19. Whilst for healthcare facilities the focus of an increased risk of infection was when performing AGPs, this guidance highlighted the other transmission risks that were applicable to the majority of NHS workers across a range of settings (not just hospitals). This is key when taking account of the fact that NHS workers have greater levels of exposure and for longer periods of time when seeing COVID-19 patients. The guidance stated "The virus can spread from an infected person's mouth or nose in aerosols small liquid particles when they cough, sneeze, speak, sing or	[BJ/294 - INQ000300554]

		breathe and can remain suspended in the air or travel farther than 1 metre (long-range). The virus can also spread in poorly ventilated and/or crowded indoor settings, where people tend to spend longer periods of time."	
10/02/2021	Centre for Disease Control & Prevention (CDC) article.	CDC have since taken down this web page. The CDC who set the guidance for PPE in the USA stated, "HCP who enter the room of a patient with suspected or confirmed SARS-CoV-2 infection should adhere to Standard Precautions and use a NIOSH-approved N95 or equivalent or higher-level respirator, gown, gloves, and eye protection."	[BJ/295 - INQ000300555]
09/04/2021	Canadian webinar – panel discussion on airborne transmission of COVID-19.	In this webinar, Dr John Conly downplays and trivialises the importance of the airborne route of transmission of COVID-19 and adequate RPE to combat this route of transmission. Dr Conly comes under fire for his comments. Dr Conly was a co-author of the 2012 Tran review, was chair of the WHO Infection Prevention and Control Research and Development Expert Group for COVID-19, and a member of the WHO Health Emergencies	[BJ/296 - INQ000300556]

		Programme (WHE) Ad-hoc COVID-19 IPC Guidance Development Group and the External Guideline Development Group, COVID-19: Occupational Health and Safety for Health Workers.	
May 2021	BAPEN: 'In Touch' newsletter Issue 101.	Update published on Alliance news.	[BJ/212a - INQ000300454]
07/05/2021	Response from Downing Street to the letter to the Prime Minister from RCN, AGPA, BMA and RCM.	An official response on behalf of the Prime Minister to letter from RCN, AGPA, BMA and RCM in February received by Dame Donna Kinnear, CEO RCN. Official on behalf of Prime Minister. The letter replied with IPC guidance based on the updated WHO guidance in 2021. The letter stated, "there is now a better understanding of the role of Covid-19 airborne transmission… along with importance of ventilation". However, it also stated "IPC Cell (NHSE) agreed that no changes to current PPE requirements needed". It referred to a consensus among four nation CMOs that existing guidance on face masks and FFP3 by HCWs is correct, that FFP3 should be worn for AGPs, and that risk assessments should include use of FFP3 – but the letter did not state how. The letter agreed that	[BJ/148a - **INQ000114417**

		HCWs are at a higher risk than other groups.	
14/05/2021	Brighton hospital: Third of Covid deaths likely infected on wards.	BBC South East News article published. Jeremy Hunt MP quoted as stating 20-40% of infections are nosocomial.	[BJ/213 - INQ000300455]
17/05/2021	Press release from AGPA.	Press release from AGPA published – "Global recognition that Covid-19 is airborne shows UK is lagging behind."	[BJ/214 - INQ000300456]
27/05/2021	Dominic Cummings: How the UK ignored evidence that the virus is airborne.	Article published in which Dominic Cummings was quoted as saying airborne transmission was ignored to Parliamentary Committee.	[BJ/215 - INQ000300457]
28/05/2021	N/A	The Public Accounts Committee called for evidence on initial lessons from Government's response to the Covid-19 pandemic. See the response provided by the AGPA on 6 June 2021 below.	N/A
01/06/2021	Revised IPC Guidance.	Revised IPC Guidance issued. This was the first time IPC guidance allowed for RPE (FFP3 etc) to be used beyond AGPs – but only subject to a rigorous risk assessment and implementation of the "hierarchy of controls". The guidance failed to appreciate that it is not always possible to do a	[BJ/74a - **INQ000271659**

		'suitable and sufficient' risk assessment (as required by HSE Legislation) for close-contact care of an infectious patient. Neither are any of the control measures in the 'hierarchy' practical for this task (except in a specialist HCID room with extraction ventilation close to the patient's head).	
02/06/2021	DHSC meeting and PHE guidance.	The Chair of AGPA wrote by email to Robert Wilson of the BMA regarding the latest iteration of IPC guidance and the BMA's press release.	[BJ/150 - INQ000300382]
03/06/2021	Meeting with DHSC, PHE, IPC cell and AGPA, RCN, BMA, RCM and others on Zoom regarding "PPE IPC guidance Stakeholder engagement."	The AGPA and others attended a meeting with DHSC, PHE and the IPC cell. The meeting was chaired by civil servant department director of PPE Policy Briefing and Engagement, Michael Dynan-Oakley. The meeting was held under the Chatham House rule and so no formal minutes were circulated. The PowerPoint given at the meeting and the Situation Background Assessment Recommendation Report provided after the meeting by the AGPA are exhibited. In the meeting the AGPA were not provided with answers to the question of close-range aerosol risk.	[BJ/89f - **INQ000114333**] [BJ/89g - INQ000300621] [BJ/89i - INQ000300623] [BJ/89j - INQ000300626]

06/06/2021	Written evidence submitted by a joint response from Royal College of Nursing, Unite the Union, GMB, Royal College of Speech and Language Therapists, British Dietetic Association, College of Paramedics, British Association for Parenteral and Enteral Nutrition, Fresh Air NHS and Med Supply Drive UK.	This was a formal response to the Public Accounts Committee's calls for evidence on initial lessons learnt from the Government's response to the Covid-19 pandemic. It was referenced in published documents as ILG0014 but with no mention of our case for airborne mitigation. It was jointly submitted by AGPA with RCN, Unite the Union, RCSLT, BDA, CoP, BAPEN, FreshAir NHS and Medical Supply Drive UK.	**[BJ/91 - INQ000130586]**
06/06/2021	ECDC (European Centre for Disease Prevention & Control) publish a guidance on 'Infection prevention and control and preparedness for COVID-19 in healthcare settings'.	The guidance recommended that HCWs in contact with a possible or confirmed COVID-19 case should wear a well-fitted respirator and eye protection (i.e., visor or goggles). It states in case of shortage of respirators, the use of medical face masks and options for prolonged use of respirators, decontamination and reuse of respirators can be considered in agreement with the health and safety committee or OSH experts at facility level. It should be noted that ECDC recommendations across the EU as far back as the third edition (15 May 2020) were that FFP2	[BJ/148 - INQ000300378]

		respirators should be worn by all HCWs providing care to patients and residents of care homes in areas with community transmission.	
18/06/2021	Email from DHSC regarding the meeting with AGPA on 3 June 2021.	The DHSC responded in writing following the previous meeting 3 June 2021. The response made no mention of the unanswered question on close range risk.	[BJ/217 - INQ000300459]
23/06/2021	Letter from the DHSC to all attendees to the meeting with the AGPA on 3 June 2021.	The letter provides the DHSC's response to the issues discussed at the meeting.	[BJ/89m - **INQ000114267**
July 2021	In Touch Issue 102. InTouch Newsletter.		[BJ/218 - INQ000300460]
08/07/2021	Letter to DHSC from the AGPA and RCN.	This letter responded to the above DHSC letter 23 June 2021.We expressed our disappointment with the lack of answers to our principal questions.	**[BJ/89n - INQ000114265]**
08/07/2021	Letter to Dr Jenny Harries.	Letter sent from the RCN and AGPA to Dr Jenny Harries, CEO UKHSA. No reply received.	[BJ/151 - INQ000300383]
08/07/2021	Independent High Risk AGP Panel Summary of Recommendations arising from evidence reviews to date.	The IHR AGP panel published a summary of its evidence reviews from April 2020. The report made no change to NGT insertion status and dysphagia assessment not being classified as an AGP	[BJ/117 - **INQ000257950**

		despite not a single paper being found to review, including the expert RCSLT paper.	
12/07/2021	The Approved List of biological agents.	The HSE published a revision to the 'Approved List of Biological Agents'. It formalised the classification of SARS-CoV-2 as hazard group 3 (which had been provisionally classified in January 2020).	[BJ/220 - INQ000300463]
16/07/2021	Letter from Scottish Government regarding solutions for enhanced protection from airborne COVID-19 transmission.	The Scottish Government responded to Gillian Higgins' correspondence to Nicola Sturgeon of 7 May 2021.	[BJ/221 - INQ000300464]
19/07/2021	Further guidance on RIDDOR reporting of COVID-19.	Published following "Freedom Day". Overnight, the HSE removed reference within their online RIDDOR-reporting guidance that compliance with PHE guidance (which included the wearing of FRSMs) represented an "effective control measure".	[BJ/222 - INQ000300465]
19/07/2021	Guidance on the ventilation of indoor spaces to reduce the spread of respiratory infections, including coronavirus (COVID-19).	Government guidance on ventilation was advised in view of airborne transmission. This guidance was applied for the public, but not HCWs.	[BJ/117b - **INQ000223595]**

25/07/2021	Public Accounts Committee (PAC) Report: Initial lessons from the government's response to the COVID-19 pandemic.	PAC report published: The "Lessons learned" report only mentioned AGPA and RCN evidence in the list of evidence. It did not consider any of the content in their final report.	[BJ/223 - INQ000300466]
27/07/2021	N/A	Unite organised a demonstration outside DHSC. AGPA did not participate.	N/A
August 2021	Shifting Legal Issues Around Coronavirus Leave - NHS Leaders Potentially Exposed.	Article published by Kevin Bampton (CEO BOHS).	[BJ/224 - INQ000300467]
03/08/2021	When it comes to staff safety during the pandemic, the buck stops with chief executive.	Statement published by CAPA, BOHS, Fresh Air NHS, RCN and BMA (Raymond Agius) concerning legal liabilities. It stated that the buck stops with Chief Executives.	[BJ/225 - INQ000300468]
18/08/2021	N/A	The AGP Alliance changes its name to – the Covid Airborne Protection Alliance (CAPA).	N/A
06/10/2021	Infection Prevention and Control for Seasonal Respiratory Infections in Health and Care settings including SARS-CoV-2 for Autumn Winter 2021/2022: Feedback Form.	On 5 October 2021 CAPA responded to calls for feedback on latest IPC guidance. CAPA, RCSLT, and BAPEN responded separately. On 6 October 2021 BAPEN responded to IPC feedback concentrating on issue of AGPs.	[BJ/226 - INQ000300469]

		The IPC guidance, when produced in November 2021, did not take account of BAPEN's submissions.	
12/10/2021	Sixth Report of the Health and Social Care Committee and Third Report of the Science and Technology Committee of Session 2021–22.	The Sixth Report of Health & Social Care and Science & Technology Committees of House of Commons was published. The letter submitted by David Osborn was referred to in the references (CLL0113) but not referred to in text or conclusions. Lessons learned in respect of RPE should have been included but were not discussed in the report.	[BJ/227 - **INQ000090541]**
14/10/2021	Respiratory Evidence Panel (REP) report on 'the role of face coverings in mitigating the transmission of SARS-CoV-2'.	This a report by world recognised experts commissioned by the Government to consider airborne transmission and mitigation. It dispelled the myth that aerosols are only less than 5 microns – and up to 100 microns are inhalable (therefore presenting risk of disease). Detailed consideration of "Airborne transmission" pages 11-14.	**BJ/5a - INQ000120649**
October 2021	In Touch article Issue 103. InTouch Newsletter.	CAPA/CATA Chair, Dr Bary Jones summarises the representations that Alliance and its partners (RCN, BMA etc) have been repeatedly making to Government in respect of	[BJ/297 - INQ000300557]

		procedures, such as nasogastric tube insertion, and how these representations had been dismissed by Government departments. Dr Jones concluded his article with a few words which sum up CATA's collective opinion: "Our Government has been badly advised with bad science".	
05/11/2021	Stop Covid-19 hanging around.	Westminster Council published a video of aerosols from mouths.	[BJ/57 - INQ000273883]
17/11/2021	Guidance - Coronavirus: how to stay safe and help prevent the spread.	Public health message published on how to avoid Covid-19 by opening windows due to airborne risk which they state is a significant route of transmission.	[BJ/228 - INQ000300471]
25/11/2021	Letter to Sarah Newton.	Letter sent to Sarah Newton, Chair HSE from Professor Raymond Agius, (BMA), Kevin Bampton (BOHS), Rose Gallagher (RCN), Dr Christine Peters (FreshAir NHS), Dr Barry Jones (CAPA). See the reply below on 15 December 2021.	[BJ/153 - **INQ000118441**
15/12/2021	Response to letter of 25 November 2021 from Chair of HSE.	The response regards the IPC Cell as the experts. It suggests that it is not HSE's responsibility to deal with public health matters and that review of the guidance is to be left to the DHSC.	[BJ/230 - INQ000300473]

21/12/2021	Infection prevention and control for seasonal respiratory infections in health and care settings (including SARS-CoV-2) for winter 2021 to 2022.	The IPC guidance – includes a consensus statement on risk assessments and greater use of RPE. CATA notes that without a clear route of transmission, it is not possible to complete risk assessment.	[BJ/231 - INQ000300474]
21/12/2021	UKHSA guidance update.	UKHSA guidance update published in conjunction with above consensus statement. It recommends to "use FFP3 for AGP or if a risk assessment indicates it is necessary. It also recommends FFP3 if caring for patients with an infection spread wholly by the airborne route like TB (which CATA considers is incorrect). It is not consistent with Consensus document.	[BJ/231 - INQ000300474]
22/12/2021	WHO interim guidance.	The WHO published revised guidance to "use respirators when entering infected patient's room" and "wear respirator when performing AGPs" or "when ventilation is poor or unknown, or when HCW "prefers" to wear RPE. Airborne or aerosol transmission are not mentioned in the rationale for the changes. The guidance referred to only five poor papers purporting to show respirators reducing transmission - but not the Ferris paper from Cambridge. The guidance	**[BJ/154a - INQ000300387]**

		also says “or medical masks” – please refer to the correspondence with UKHSA in 2022 for more detail on this issue.	
20/12/2021	Open letter to CEOs.	Open letter to CEOs and members from BMA, HCSA and Doctors Association UK published in BMJ on 30 December 2021. A spokesperson for the DHSC for England stated that the guidance on the appropriate levels and standards of personal protective equipment (PPE) were written by clinical experts and would be “amended accordingly if appropriate.” The spokesperson also stated, “The safety of the NHS and social care staff has always been our top priority, and we continue to deliver PPE to protect those on the frontline,”. A Guardian article was published on 27 December 2021 – including the response from DHSC.	[BJ/299 - INQ000300559]
23/12/2021	COVID-19 workplace risk assessment toolkit.	Publication of RCN, BOHS, and CAPA risk toolkits.	[BJ/232 - INQ000300475]
January 2022	N/A	In January 2022, 20,000 NHS staff were off with Covid or isolating. The Office for National Statistics (ONS) recorded figures for this parameter. This is	N/A

		compared with 49,000 in the height of second wave.	
10/01/2022	Letter to CEO of NHS Confederation regarding resources for your members on protection from seasonal respiratory illness including COVID-19.	Letter sent from CAPA to the CEO of NHS Confederation and Primary Care Federations. It was signed by BOHS, FreshAir NHS and CAPA. It received an immediate reply indicating the letter was to be sent round to all NHS Employers. The letter advises of the RCN's website for risk assessment tool. It also referred to genomic evidence that NHS workers have caught Covid-19 whilst wearing surgical masks and that this led to further nosocomial infections (referencing the Francis et al 2021 article). It refers to legal requirements and the fact that more than 30 Trusts were using FFP3 or equivalent at that time.	[BJ/155 - INQ000300388]
17/01/2022	Guidance - Infection prevention and control for seasonal respiratory infections in health and care settings (including SARS-CoV2) for winter 2021 to 2022.	Updated IPC guidance Infection prevention and control for seasonal respiratory infections in health and care settings (including SARS-CoV-2) for winter 2021 to 2022 published. The December 2021 IPC guidance cited above referring to "wholly" was amended to:	**BJ/92r - INQ000300389**

		"6.5.6 Respiratory protective equipment (RPE)/FFP3 (filtering face piece) or powered air purifying respirator (PAPR) hood. A respirator with an assigned protection factor (APF) 20, that is, an FFP3 respirator (or equivalent), must be worn by staff when: - caring for patients with a suspected or confirmed infection spread by the airborne route (during the infectious period); - when performing AGPs on a patient with a suspected or confirmed infection spread by the droplet or airborne route; - Where a risk assessment indicates it, RPE should be available to all relevant staff".	
18/01/2022	Coronavirus: Stay safe and help prevent the spread.	Guidance published on "Understanding the risks of COVID-19", stating "'the risk of catching or passing on COVID-19 can be higher in certain places and when doing certain activities. COVID-19 is spread by airborne transmission, close contact via droplets, and via surfaces. Airborne transmission is a very significant way that the virus	[BJ/157 - INQ000300390]

		circulates. It is possible to be infected by someone you don't have close contact with, especially if you're in a crowded and/or poorly ventilated space." It refers to risk assessment which looks very much like RCN, BOHS, CAPA risk tools. It is noted that this IPC guidance now accorded with the latest WHO guidance on using FFP3 or when entering an infected patient's room.	
18/01/2022	Email to GPs.	An email was sent to GPs regarding risk assessments and freely available FFP3 masks. This was another sign Government agreed that Covid-19 is airborne but there was still no change to IPC guidance for HCWs.	N/A
19/01/2022	National ambulance service Infection prevention & control group (NASIPCG) IPC for Seasonal Respiratory Infections in health and care setting guidance update.	NASIPCG and AACE Position statement published. It did not change PPE recommendations and still advised use of droplet precautions.	[BJ/233 - **INQ000257971**
20/01/2022	The Covid Airborne Protection Alliance (CAPA) press release.		[BJ/234a - INQ000300477]
31/01/2022	CAPA statement - Welcoming		[BJ/234b - INQ000300478]

	Government statement that Covid-19 is airborne.		
31/01/2022	N/A	BOHS joins CAPA	N/A
03/02/2022	Letters from Helen Sharma.	Letters from Helen Sharma of CSP regarding Scottish government guidance. See response of 18 February 2022 below.	[BJ/235 - INQ000300479]
09/02/2022	Advisor to Government Agency Demands Police Investigation into 'Criminal' Healthcare Worker COVID Deaths.	Byline Times article on David Osborn's letters published.	[BJ/236 - INQ000300480]
11/02/2022	Letter from CAPA to Chris Whitty.	Letter from CAPA to CMO Sir Chris Whitty regarding inconsistencies in current guidance. Initial responses were received on 12 and13 February 2022 from the CMO. The letter was also forwarded to UKHSA – see the response on 21 March 2022.	[BJ/237 - **INQ000074820**
18/02/2022	Letter from Deputy Chief Nursing Officer (DCNO) Scotland.	Letter sent from DCNO Scotland on behalf of the Cabinet Secretary for Health and Social Care to Mark Griffin MSP in response to BOHS letter regarding uses of FFP3. The letter advised use of FFP3 for other respiratory infections such as TB. It also admits that after a risk	[BJ/158A - INQ000300392]

		assessment, if the risk still high, FFP3 can be used. CATA note that this conflicted with ongoing Scottish National Infection Prevention and Control Manual guidance which still stated droplet transmission for all except AGPs.	
23/02/2022	N/A	CoP joins CAPA in the Public Inquiry in the UK. CoP is also a Core Participant in the Scottish Public Inquiry.	N/A
23/02/2022	"More than 500,000 face masks removed from national stockpile after expiring" article.	Scottish Health Minister admitted that more than 500,000 FFP3 masks were to be removed from stockpile as they were out of date.	[BJ/238a - INQ000300482]
24/02/2022	Letter to First Minister clarifying routes of transmission of SARS-CoV-2 and providing appropriate protection to the healthcare workforce in Scotland.	Letter from CAPA sent to Scottish First Minister for face-to-face meeting between Gillian Higgins, Christine Peters and the First Minister. The letter notes the First Minister's recognition of the airborne route.	**BJ/239** **INQ000300483**
25/02/2022	N/A	CAPA Scotland meets the First Minister in person.	N/A
21/03/2022	Letter from Susan Hopkins regarding inconsistencies between public messaging on airborne transmission of	Susan Hopkins responded to the letter to the CMO of 11 February 2020, which was forwarded to UKHSA. The letter referred to guidance issued jointly with	[BJ/240 - INQ000300486]

	Covid-19 and IPC guidance across the UK.	DHSC, PHW, PHSNI, NHS Scotland, UKHSA & NHSE. It also referred to evidence from ARHAI Scotland underpinning guidance. It also states that RPE/PPE recommendations “have not changed” since January 2022. In fact, it did change with removal of the word “wholly” from the mode of transmission. Dr Hopkins goes on to state that at a meeting in March 2022, a minor amendment of section 6.5.6 of Covid-19 guidance was made to replace the word “wholly” with” predominantly” and was published on 15 March 2022. AGPs remained the principal indication for RPE in the guidance. Again, this is inconsistent and prevaricates over the most dangerous mode of transmission, rendering risk assessment impossible. The letter claimed guidance followed WHO but omitted December 2021 Interim WHO guidance which stated use of RPE on entering a room of Covid-19 patients. The letter also advocates for risk assessment without	

		mentioning main mode of transmission.	
29/03/2022	Letter to John Crookes regarding endorsement of the RCN COVID-19 workplace risk assessment toolkit by HS.	Letter sent by RCN, BMA, and CAPA letter to HSE regarding risk assessment tools.	[BJ/241 - INQ000300487]
11/04/2022	CAPA letter to UKHSA regarding inconsistencies between public messaging on airborne transmission of Covid-19 and IPC guidance across the UK. Response to your letter of 21 March 2022.	CAPA responded to the UKHSA's letter of 21 March 2022 above. The UKHSA's reply of 17 June 2022 can be seen below. The letter included: • The chronology of changes to IPC guidance from wholly transmissible to transmissible by airborne route to predominantly transmissible by airborne route. • Andrew Curran of HSE's statement that the: "airborne route is most critical". • Discussion of the threshold for the definition of aerosol. • Reference to the fact that HSE have never approved FRSM as PPE/RPE. • Discussion of the precautionary principle. • Discussion of the lack of clarity on who has final responsibility for IPC	[BJ/161 - INQ000300396]

		guidance, stating that governance around the IPC Cell was unclear. • Discussion of the lack of stakeholder involvement and trite comments in response to our letters. • Discussion of the lack of response to our CAPA and RCN letter to Dr Jenny Harries of UKHSA in June 2021. • Our assertions that the AGP list was now obsolete, with supporting comments. • Dispute that the UKHSA had been "following WHO guidance". • Discussion of the lack of credible evidence for the droplet route of transmission from official bodies and the fact that other countries now follow aerosol paradigm. • Discussion of the fact that the letter from the UKHSA did not deal with inconsistencies pointed out by us.	
11/04/2022	Letter from Chris Whitty regarding inconsistencies between public messaging & IPC guidance across the UK.	Email sent to CMO Chris Whitty to inform him of UKHSA correspondence. The correspondence asked why the precautionary principle was not invoked in view of the scientific	[BJ/242 - INQ000300488]

		uncertainty claimed by UKHSA.	
14/04/2022	CAPA letter to Deputy CNO England.	CAPA sent a letter to the Deputy CNO England, Duncan Barton (Ruth May was away ill), highlighting legal principles. See the response of 20 May 2022 below.	[BJ/243 - INQ000300489]
19/04/2022	Raising the Bar: An RCN commissioned review of national and international guidelines and the evidence they present to underpin standard and transmission-based precautions.	The RCN published a "Raising the Bar" review of transmission-based precautions by Dinah Gould, Edward Purcell, Rose Gallagher. Barry Jones and Christine Peters of FreshAir NHS worked on the drafts of this document but it was published by RCN online without their names.	[BJ/162 - INQ000300397]
22/04/2022	Letter to Sajid Javid.	Letter from CAPA to Secretary of State (5) Sajid Javid MP. No response received.	[BJ/244 - INQ000300490]
28/04/2022	Letter from Lee-Ann Wilson CNO regarding Healthcare Associated Infection (HCAI) and Antimicrobial Resistance (AMR) Policy Unit (PU).	The Scottish Government Directorate for CNO replied to Gillian Higgins' correspondence of 24 February 2022 to First Minister: The letter: • Admits Covid-19 can be spread by airborne route when performing AGPs, or in crowded areas. Or in confined spaces or where	**BJ/139a** INQ000300367]

		there is close contact (the 3 Cs). • Permits access to FFP3 based on staff preference. • Advocates risk assessments to assess concerns of staff, not use of FFP3.	
29/04/2022	CAPA letter to HSE.	CAPA sent a letter to HSE (Sarah Albon Chair HSE) The letter included very detailed critique of HSE's involvement or lack of it during pandemic. No reply received.	[BJ/246 - INQ000300491]
20/05/2022	Reply from Deputy CNO England Duncan Barton.	Deputy CNO England Duncan Barton responded to CAPA letter of 14 April 2022. The letter: • States that staff can use RPE if local risk assessment using hierarchy of controls finds unacceptable risk. • Fails to realise that close contact can only be mitigated by RPE. • Admits number of patients and staff who have contracted Covid-19 within a healthcare setting rather than the community cannot be accurately stated.	[BJ/247 - INQ000300492]
May 2022	COVID-19: An update on	The RCSLT published their Covid-19 update and	[BJ/248a - INQ000300493]

	transmission and guidance to reduce health risks in the post pandemic workplace.	guidance on reducing risk of transmission of Covid-19 and selection of appropriate RPE/PPE.	
June 2022	N/A	CAPA suspended active campaigning but agreed to respond as appropriate to events. Almost all CAPA members continued as CATA members for the Public Inquiry.	N/A
17/06/2022	Letter from Susan Hopkins regarding inconsistencies between public messaging on airborne transmission of Covid-19 and IPC guidance across the UK. Response to your letter of 11 April 2022.	Dr Susan Hopkins UKHSA responded to our criticism of her original response to our letter of 11 March 2022. The letter: • Apologised for the lack of response to the letter to Jenny Harries, UKHSA, of June 2021 (with RCN). • Stated that the IPC guidance is four nations. (However, CATA notes that it was interpreted differently in the four nations). • Claimed that the round of consultation in September 2021 led to removal of mode of transmission from IPC guidance. (However, CATA notes that it contributed to that consultation, as did the BMA and RCN, and none advocated removal of mode of transmission.	[BJ/249 - INQ000300494]

		• Claimed that the WHO recommended medical masks (FRSM) with no change since October 2021. • Misquoted ECDC community guidance. • Noted IPC guidance was now replaced by NIPCMs in the four nations.	
14/07/2022	Letter to Dr Susan Hopkins regarding inconsistencies between public messaging on airborne transmission of Covid-19 and IPC guidance across the UK - Response to your letter 17 June 2022.	CAPA responded to Dr Susan Hopkins UKHSA letter of 20 June 2022. The letter made the following points: • CAPA and individual members contributed to IPC consultation in September 2021 despite not being invited to do so, even after assurances at our meeting with DHSC in June 2021. • The mode of transmission clarity being advocated by CAPA had been ignored and the commitment by NHS IPC team to publish consultation responses was not met. • The WHO interim guidance reiterated including use of medical masks as in WHO guidance December 21. • CAPA clarified the ECDC guidance. • CDC guidance is explicit for all HCWs to wear N95.	[BJ/250 - INQ000300496]

		• New NIPCMs (England) include “wholly or partly” with regard to viruses including coronaviruses. In Table Annex 11, states coronaviruses are said to be transmitted by droplet and airborne routes but that routine care attracts only FRSM protection. In addition, a footnote to this Table notes, “FFP3 must be worn when caring for infection spread by airborne route, when performing AGPs…, and when deemed after risk assessment”. • CAPA noted that the precautionary principle was reinstated. • CAPA noted that the Scottish NIPCM states Covid-19 is droplet spread with no mention of airborne route.	
14/08/2022	IPC Letter to NHSS regarding forthcoming UK IPC guidance for the remobilisation of health and care services.	Scotland remobilised the IPC letter to NHSS, Scottish Government CNO/CMO (Gregor Smith) and National Clinical Director to NHS Scotland boards and others. AGPs remained the main indication for RPE.	[BJ/251 - INQ000300497]
21/10/2022	Reply from Dr Susan Hopkins UKHSA to letter from CAPA 14 July 2022.	Dr Susan Hopkins UKHSA responded to letter from CAPA of 14 July 2022. The letter: • Stated that the decision to remove modes of	[BJ/8 - INQ000300607]

		transmission from NIPCMs was made after the consultation in September 2021 to which CAPA contributed and stated that over 7000 comments had been received. • Admitted the airborne route was known as far back as June 2020 (by PHE) and referred to guidance in September 2020 – that "SAR-CoV-2 is primarily transmitted through respiratory (droplet and aerosol) and contact routes… Highest where people are in close proximity (within 2 meters)". • Referred to further updated guidance in October 2021 that "when someone breathes, speaks, coughs or sneezes, they release droplet or aerosol particles containing SARS-CoV-2. … Transmission risk is highest in close proximity (particularly within 2 metres)" • Agreed that the Aerator study is important and that "aerosols can be found outside AGPs through coughing and respiratory activity". • Stated "we endorse support for local decision making for wider use of FFP3 masks".	

		• Stated that WHO's interim guidance in December 2021 on the use of RPE or medical masks when entering room of infected/suspected Covid-19 patient did not imply a preference for one mask over another (i.e., suggesting no difference between FFP3 and FRSM). • Stated "we recognise that a strict dichotomy between droplet and airborne transmission is no longer useful…".	
02/11/2022	CAPA letter to Secretary of State Steven Barclay MP.	CAPA sent a letter to the Secretary of State (6) Steven Barclay MP. The response by email from a DHSC official on 22 December 2022 is below.	[BJ/252 - INQ000300498]
22/12/2022	Response from Secretary of State by J Rawlinson.	The response did not answer our specific request of Secretary of State to ensure HCWs have necessary RPE. Instead, it stated the DHSC is not responsible for guidance in clinical settings, and that this is instead set by NHS IPC team with reference to UKHSA.	[BJ/253 - INQ000300499]

ANNEX 2

Impact statement

I am an expert in epidemic and pandemic diseases having spent a significant period of time responding clinically to cholera outbreaks and Ebola outbreaks, as well as responding to disaster settings in which disease outbreaks are highly likely and need to be prevented. My PhD, awarded by Imperial College London, investigated genetic susceptibility to Ebola virus disease in Sierra Leone and involved the study of disease transmission in communities throughout Sierra Leone and the recruitment of over 2500 people to my study. I have trained hundreds of healthcare workers in Liberia, Sierra Leone and South Sudan on personal protective equipment, how to appropriately don and doff PPE, when PPE is necessary, the quality of PPE that is necessary and how to care for people with highly infectious diseases. I have developed PPE guidelines, as well as guidelines for the management of high consequence infectious diseases. I have worked alongside the World Health Organisation, DfID (now FCDO), USAID and the US OFDA as well as many non-governmental organisations. I was awarded a medal from the UK Government for my service in West Africa when David Cameron was Prime Minister, called the 'Ebola medal for service in West Africa'. I am trained as a team lead for the UK Emergency Medical Team (part of FCDO and the WHO emergency medical teams system). I am currently an NIHR Clinical Lecturer in Paediatric Infectious Diseases at King's College London.

During the first 2 months of 2020, I undertook repeated media interviews to warn of the potential risks of COVID and to discuss what we knew of the disease and its mechanisms of spread. These interviews are still widely available, one of which featured in the Sky film 'This England'. In February of 2020, during the outbreak of COVID on the Diamond Princess cruise ship docked in Japan, it became apparent to me that the spread of COVID likely had an aerosol component as too many of the new infections on board the ship could not be explained through droplet or fomite transmission. At the beginning of March 2020, I returned to clinical work at Great Ormond Street Hospital ("GOSH").

At this time, staff were complaining about the lack of fit testing and so GOSH agreed to fit test staff. The fit testing felt like a token gesture, as it wasn't carried out thoroughly. I failed the fit testing on two masks I was tested on at GOSH. My experience of fit testing since leaving GOSH has been similar, in that I have failed tests on every variety of masks and reusable respirators that I have tried. The fit testing exercise at GOSH became redundant anyway though, because only those working on the COVID intensive care ward were provided full PPE/RPE. The only mask I was permitted to wear was a fluid resistant surgical mask.

Shortly after I started working at GOSH a senior surgeon returned from I&S and refused to self isolate despite government advice. A wave of infection was triggered throughout the senior executive team at GOSH which then spread down through the consultant teams to the junior doctors because at that time we were not permitted to wear any form of face mask in our offices, which were not appropriately ventilated. Several doctors were sharing very small offices and the disease spread easily. I was first infected with COVID through contact with an infectious colleague in one of these offices at the end of March 2020. I was off work for 10 days, but after 4 weeks had made a full recovery. I was fortunate, the I&S in my department went on to die from their infection after spending over a month in intensive care, she was aged in her early 50's and left behind I&S children. The I&S for my department spent two months in intensive care and did not return to work for nearly a year.

By the time I had returned to work, GOSH had introduced a policy requiring staff to wear surgical masks in communal areas. I am convinced that GOSH only changed their policy because of an outcry from concerned staff. This was at a time when hundreds of staff were off work with COVID, which had been reported in the media.

When I returned to work in April 2020, I went to work on the COVID ward at GOSH. This ward was a repurposed ward called I&S ward, which was originally designed to be a private day case unit and was not designed (nor appropriately ventilated) for the management of cases of infectious diseases, especially not those spread through aerosols. On my first day, I was surprised to discover that I was only permitted to wear a surgical face mask, a flimsy plastic apron and a pair of gloves, despite working with children and their parents who had tested positive for COVID. I was often within 1 metre of my patients as it is not possible to examine a child at a great distance. We were also at the beginning of the first wave of multisystem inflammatory syndrome following COVID infection and so many of our patients deteriorated rapidly and needed urgent resuscitation. These patients were not ventilated, so they were coughing, shouting and crying, as afraid children often do. On I&S ward, we were only allowed to wear visors if we were performing AGPs. I was so concerned that my team were only wearing fluid resistant surgical masks and were not protecting their eyes, that I recommended they wear visors during all patient interactions.

I challenged our infection control team and said that the 'PPE' provided was inadequate for the disease we were dealing with and that they were putting healthcare workers at risk. They repeatedly rebuffed my conversations and emails about aerosol spread and respiratory protective equipment and said they were 'following the guidelines'. When colleagues chose to wear a higher grade of PPE they were told off by senior nursing staff and site practitioners who visited the ward and were told to take it off. There were 20,000 FFP2 masks on site at the hospital (as stated to me by the I&S for infection control at GOSH at the end of April 2020), and a large stock in the cupboard on our ward, but we were not permitted to wear them in case the trust ran out of FFP3 masks on the COVID intensive care ward (I&S Ward"), the only ward at the hospital whose staff were allowed to wear FFP3 masks, or RPE in general.

I attempted to show the early evidence for aerosol transmission and work with the infection control team to develop PPE protocols/guidance which would optimise safety while balancing the limited stocks of PPE/RPE. I repeatedly tried to explain that the distinction between AGPs and non-AGP's for the purpose of access to RPE did not make sense in practice and, in the absence of evidence to the contrary, a precautionary approach should be taken in order to protect staff. I could see that these policies were putting staff at risk. All my suggestions were rebuffed. In a meeting with the I&S infection control and the I&S department of paediatric infectious diseases on 21st May 2020, I was shouted down and told the evidence I had provided regarding aerosol transmission was just "my opinion" and was not scientifically robust enough, despite no evidence being provided to the contrary and only the national PPE guidance flow chart being provided again.

On 23rd May, I developed symptoms of COVID again. This time I did not fully recover, after 2 weeks I realised I was developing neurological symptoms, these symptoms continued to get worse and I have never recovered from them. I have been diagnosed with a COVID related myelopathy, in other words damage to my spinal cord secondary to COVID. This affects my mobility, my bladder and bowel function and leaves me with constant pain and fatigue to varying degrees. I walk with crutches and require a mobility scooter to travel longer distances. I am registered as disabled, hold a blue badge and am awarded personal independence payments (PIP). I have returned to work with several adaptations in place and provision of a mobility scooter and minicabs through Access to Work. I struggle with executive functioning and as a result I now struggle greatly working in a clinical setting, the additional physical demands of clinical work and the impact on my health have made me realise that my clinical career is now unlikely to continue.

I am due to gain my certificate of completion of training in paediatric infectious diseases in the next 6 months. At that point I will step back from clinical work and will try to continue in my

research career part time. While I am determined to try and return to responding to disasters and epidemics, the practicalities of this are difficult and as a result many agencies don't wish to deploy me. The NHS and aid world have lost a highly trained consultant in paediatric infectious diseases and an expert in epidemic and pandemic diseases, all because the NHS and UK government wouldn't provide respiratory protective equipment and continued to deny the possibility of aerosol spread despite the clearly mounting scientific evidence.

My story is one of thousands. The detriment to the NHS of its loss of staff while currently in a staffing crisis and the financial implications to our nation should not be underestimated.'

Dr Nathalie MacDermott
Pronouns: she, her
NIHR Academic Clinical Lecturer
King's College London

Impact Statement – anonymous [1]

1. I am employed as an Advanced Pharmacist in an I&S department. Prior to the COVID-19 pandemic I worked between the I&S Department and the I&S Department in two hospitals. In March 2020, I volunteered to assist on COVID-19 positive wards.

2. I decided to put myself forward to move to the COVID-19 positive wards because I was healthy, young and one of the fittest members of my department. At the time, I thought that COVID-19 wouldn't affect someone like me, the general consensus was that it was only dangerous if you were over 65 or clinically vulnerable. I wanted to alleviate the stress from my colleagues who couldn't work on the COVID-19 positive wards due to having childcare commitments or being vulnerable themselves. I had no dependents and therefore went into the role feeling confident that I would be ok.

3. On 13 April 2020, at the age of 30, I was diagnosed with COVID-19. When I was first diagnosed, my symptoms included a feeling of dehydration and fatigue, as though all my energy was gone. These symptoms developed and left me bed bound for a couple of days; I had pins and needles and my body felt painful to touch. I also had a very distinctive cough, a lack of taste and smell and a headache that would start at the base of my skull and move towards my forehead. I had never felt any illness like this before. I&S albeit I wasn't back to full health as I was determined to get back to the wards and help support the team as the first wave of the pandemic was beginning to significantly impact our services.

4. The months after the initial infection were quite troublesome, I had a distinct feeling of lethargy and shortness of breath on minimal exertion. I felt my symptoms mimicked that of a chest infection and I had mentioned this to others who had also tested COVID positive, as it was becoming increasingly clear that 'COVID pneumonia' usually ran parallel with infection. Naturally, I was very anxious during the early stages of the illness, especially having seen outcomes of patients who had been admitted onto the COVID positive wards, we saw as many as seven patients passing away from the illness per day. I mentioned it to a physician colleague who kindly listened to my chest with a stethoscope, and it was noted that there was consolidation at the base of my lungs.

5. From July 2020, my health began to significantly deteriorate. I started to experience symptoms of what is now recognised as Post-COVID Syndrome (**Long COVID**). It began with a lump in my throat, it felt almost football sized, making it difficult to swallow and it burned. I then began to suffer with intense stomach pain just below my ribcage, it would double me over in pain and on one occasion I found myself pacing the office in work to try and ease the feeling and pain. About a week after the pain began, I started to experience a constant stomach grumble and was advised to seek medical advice as I was experiencing symptoms indicative of appendicitis. Blood tests ruled this out.

6. For the following 14 – 15 weeks, I was frequently using the toilet, sometimes for up to 7 – 8 hours a day with diarrhoea. I could also barely walk for 5 – 10 minutes around the estate I lived on at the time. On one occasion, I was physically sick and had turned blue due to the breathlessness that I was experiencing. I felt like I was dying, it was terrifying.

7. On 17 November 2020, I was formally diagnosed with Long COVID, Post-COVID related anxiety and Rhinitis after having sought, and self-funded, a private consultation with a consultant who was leading one of the few Long COVID Services in London at that time.

8. Alongside the above symptoms, I also began to experience heart palpitations, which ultimately led to a diagnosis of myocarditis and Long COVID-related Inappropriate Sinus Tachycardia. Additionally, I have unilateral tinnitus which has also been attributed to COVID-19.

9. My Long COVID and associated symptoms have previously been described by medical professionals as a disability under the Equality Act 2010 and adjustments to my day-to-day work have been recommended.

10. I have had Long COVID and its associated symptoms and diagnoses for nearly 3 years. I am unsure how long these symptoms will last as the research into Long COVID isn't clear. However, my symptoms have not eased up and I believe I will have them for a long time yet.

Physical Symptoms

11. My Long COVID and associated diagnoses mean that I have suffered/suffer with the following physical symptoms:

    a. Central stabbing chest pain in lower part of sternum and epigastrum, radiating to right lower abdomen.

    b. Lower abdominal pain whilst at work, burning in nature.

    c. Diarrhea, initially 10 – 14 x a day for 12 – 14 weeks, then reduced to 3 x a day (with medication).

    d. Shortness of breath.

    e. Fatigue, feeling tired and physically exhausted after one flight of stairs.

    f. Ongoing cough and urge to clear throat.

    g. Nausea.

    h. Vomiting.

    i. Bowel frequency (no regularity and increased frequency).

    j. Neurocognitive / neurological issues; forgetfulness.

    k. Unilateral tinnitus.

    l. Presyncope (feeling like you are about to lose consciousness).

    m. A feeling of hypoglycaemia (where blood sugar has gone down).

    n. Low mood and intense worry/concern around symptoms.

    o. Increased heard rate upon minimal exertion.

    p. Nocturnal pains.

    q. Weight loss (over 10kg).

    r. Hiccups.

    s. Numbness/tingling in left arm.

    t. "Brain Fog."

12. Prior to contracting COVID-19 and subsequently developing Long COVID, I was a fit, healthy and active young man with no underlying health conditions. I used to go to the gym four to five times a week and play football weekly. Suddenly, my life changed, and I began experiencing a multitude of life-altering symptoms. I was being investigated and examined by a range of specialists for symptoms and conditions that had not troubled me in the past.

13. I was incredibly worried and overwhelmed by the sudden change in my health and my life. I&S I&S detailing my "horrendous list of symptoms". I find it hard to believe and am extremely saddened by the way my life has changed since contracting COVID-19 and subsequently Long COVID.

Mental Health Issues

14. A few months into my physical symptoms developing, it became harder to contain my distress. I felt anxious and overwhelmed and still feel that way to this day. Writing this statement has been incredibly difficult. I broke down into tears having to re-live everything that has happened and continues to happen to me since I contracted COVID-19 and subsequently Long COVID. Long COVID has been the most difficult experience of my entire life.

15. I first sought medical advice about my mental health in November 2020 after a prolonged period of feeling anxious, tearful and a general sadness at my ongoing symptoms. I was prescribed anti-anxiety medication which I still take regularly.

16. My anxiety was heightened by the financial impact of my health condition. I remember receiving a letter about Statutory Sick Pay in March 2021 and I felt panicked. I was self-funding private health care throughout the development of my symptoms and I still do to this day. It has put a significant financial strain on me and that causes me daily worry.

17. I also suffer with 'brain fog'. I struggle to retain focus and have struggled to keep up with conversations or forgotten what my partner had said to me moments ago. When I mentally exert myself, it feels as if my head is bombarded, full of noise and voices. It is so overwhelming.

18. Sometimes it feels as though my brain has 'switched off.' I've done silly things like leave my mugs in the fridge, I have poured orange juice onto the toaster and placed a roll of kitchen roll in my dog's bowl. Even last week I forgot how to order a coffee and was left pointing at what I wanted. It is embarrassing. Every time I experience an episode of brain fog, I am reminded of just how impacted I have been, these aren't normal behaviours let alone those of a pharmacist.

19. Beyond a diagnosis of anxiety and problems with 'brain fog,' I also struggle to deal with my new situation emotionally. I feel angry and upset about my new way of life.

20. The harshest reality of my situation is that I contracted COVID-19 whilst working on the COVID-positive wards, I wanted to do my bit to help out and ease some of the pressure.

21. Due to the newness of the illness, I have no idea how long I will be impacted by my symptoms but I'm not sure if I will ever feel like myself again.

Medication

22. Over the past three years, I have been prescribed a lot of different medication to try to deal with my multiple symptoms. I am still taking multiple medications daily.

23. It has been a real challenge both mentally and physically to continue to undergo so many tests and examinations from specialists to reduce my symptoms for my debilitating conditions. My arms were consistently bruised due to all the testing and I have been left with scars due to having so many blood tests taken.

24. Much of the medication I was prescribed didn't work at all or failed to make a real impact which added to my overall worry and distress about how this illness will continue to affect me and whether I will suffer like this for the rest of my life.

25. Although the medication doesn't completely relieve me of my symptoms, without it I would be in much more pain with my gastro symptoms and would have more frequent bouts of diarrhoea and loose stools. I also purchase dietary supplements in the hopes that it will assist or slightly relieve any of my ongoing symptoms. Without my heart medication I would have daily palpitations, chest pain, dizziness, an unpredictable heart rate and would be placed at a higher risk of developing additional cardiovascular issues. Without my anxiety medication I would suffer a more unstable mood, heightened anxiety and worry relating to my ill-health and various symptoms.

26. I also still suffer from tinnitus and fatigue which no medication can be prescribed for. I have to try managing these symptoms myself and just 'get on with it.'

27. Outside of prescription medication, I have been to counselling to help me manage my emotions and adjust to life with multiple debilitating conditions; this required two separate courses of cognitive behavioural therapy (CBT). I have also changed my diet on numerous occasions, trying gluten-free, dairy-free, anti-inflammatory and FODMAP (fermentable oligosaccharides, disaccharides, monosaccharides and polyols) diets, all to no avail. I have tried meditation with applications from the Apple Store, such as 'Headspace', 'Balance' and 'Calm' – ironically, due to my lack of concentration and feelings of pain, I find it really difficult to focus and achieve the true aim of mindfulness and meditation.

Impact on activities of daily living

28. As well as the anxiety and the brain fog that I suffer from, when my symptoms were at their worst, I was unable to look after myself at all. My partner became my carer. Even the most basic of tasks were difficult, I was constantly coughing whilst trying to shower and would become breathless when getting dressed. For example, I would often need to take a break between putting on each sock. I spent months sleeping almost constantly due to the fatigue. I would not even wake for food or water and my partner had to regulate my sleep because of this.

29. As mentioned, I used to be an avid exerciser and really enjoyed visiting the gym multiple times per week. This became an absolute impossibility due to me being unable to walk even 100m without feeling breathless. I have started trying to go back to the gym, but my level of fitness has completely changed. When I attempted a session last week, I had to take a 25-minute rest due to feeling faint and lightheaded. Losing this part of my life has had a big impact on me emotionally and physically, especially since I lost a lot of weight due to my conditions. I don't look or feel the same anymore. I was pretty toned before I was diagnosed with COVID-19 and now I don't feel comfortable with the way I look in clothing due to the change in my appearance.

30. I live with the constant fear of embarrassment due to my gastro issues; I worry about having a flare up in a space I don't consider safe and have to plan how and when I will be able to relieve myself at any moment. I now plan my days so as to avoid leaving the house early in the morning as this is when my gastro issues are at their worst. I am therefore completely restricted with how I plan my life and how I spend my time generally has been severely impacted.

31. Due to the unpredictability of my symptoms, I am unable to achieve a 'normal' bedtime or waking pattern, often waking through the night in pain or to empty my bowels. I find that I am awake by 5am most mornings with a burning in my lower abdomen, and I rush to use the toilet. Every night my sleep is disrupted because of my condition.

32. I wear loose-fitting clothing most of the time as anything tight around my abdomen increases the feeling of pain, for example, I struggle to wear belts as these push against my stomach and amplify my symptoms.

33. I have had to cancel my attendance at multiple family events including birthdays, visits, coffee catch ups and I postpone meet ups with friends due to my gastro symptoms. It is embarrassing having to cancel plans and explain to my friends and family that I can't attend because of 'stomach issues.' I always have to check if there are toilet facilities available and live in fear of an 'accident' happening should I experience a flare up. This affects every aspect of my daily life; I only feel safe when I am at home and know that a toilet is nearby. This shouldn't be my life, in my early 30s.

34. In the earlier days of my illness, I would not even be able to leave the house to visit the supermarket due to the risk of there being no toilet facilities and the embarrassment of those consequences. I was therefore completely reliant on others for the most basic of daily activities, eating, drinking and shopping.

35. To this day I refrain from using public transport due to the potential lack of toilet facilities. I choose to drive, which is more of a financial burden, so that I am more likely to be able to stop and use toilet facilities if I need them.

36. The daily impact of my symptoms is so great that it has damaged personal relationships in my life. I was unable (and still am unable) to tell my family the true extent of my symptoms so as not to

worry them. My I&S was clinically-extremely vulnerable, and I did not want to place any further burden on my family. My I&S passed away in I&S 2021, leaving behind my I&S I was, and still am, unable to be as involved as much as I would like to be as a familial support for her due to my fluctuating and limiting symptoms. This is incredibly painful; it is difficult to accept that as a young man I am unable to care for or interact with my I&S in the way she needs me.

37. My condition also affected my relationship with my partner both on a personal and intimate level. My condition meant that my partner had to be a caregiver and the thought of having to be cared for is unbearable. I&S however, our relationship broke down. I have no doubt that my symptoms caused us both significant physical and psychological harm and is the reason for us parting ways. I am extremely saddened by this and find it incredibly difficult to talk and write about. Thinking back to our time together before my conditions is too painful. I can't believe how much my disability has taken from me.

Impact on working life

38. I have really struggled with having to explain my symptoms to my colleagues due to how personal my symptoms are. I feel embarrassed and do not enjoy having to be so frank about my condition.

39. Prior to the pandemic, I was working in predominantly patient facing roles on wards and in clinics, however, as a result of my symptoms I am no longer able to do this and now mostly work from home, performing admin-related tasks. I had always enjoyed the patient contact elements of my work, but now my job is completely different.

40. On the days that I am required to be at work in person, it is often a struggle to manage my symptoms, particularly my gastro issues, and I often have to go to work on only a few hours' sleep as a result of the difficulty I have sleeping.

41. In addition, my job prospects have been limited following the pandemic, as I am no longer in a position to apply for the client-facing positions into which I would previously have hoped to progress.

Conclusion

42. My life has completely changed since I contracted COVID-19 and I fear I will never be the old me again. All I want is to feel like me again. I was never an overly confident person, but the confidence I did have has completely depleted, all I want is to be fit and well again but currently I am not.

43. I feel lost, abandoned and distraught. My disability has turned my life upside down and continues to do so. I have lost my partner, my normal way of life, job prospects, money, my enjoyment of the small things and my freedom. My life has changed forever.

Impact statement – anonymous [2]

I am a respiratory consultant working in a hospital with a range of patients with respiratory symptoms.

I was clinically infected with Covid in early March 2020 before it was recognised that Covid was circulating widely in the community. PPE (fluid resistant surgical mask (FRSM), apron and gloves) were only recommended for patients with a travel history from China or Italy.

The week I got infected, looking back I saw several patients with unexplained hypoxia and what we know now as Covid symptoms. I wasn't wearing any mask at all whilst caring for unwell respiratory patients at close distance. I also performed a bronchoscopy procedure on one of these patients with a surgical mask. This was classed as an Aerosol Generating Procedure (AGP). This patient's history and CT scan has been discussed retrospectively in a multidisciplinary meeting and felt to be consistent with Covid pneumonitis.

I was unwell and off work for a week before slightly improving. The initial self-isolation advice came into force on day 6 of my illness. When I attempted to return to work on day 8 of symptoms, I still had a severe cough so I tried to get a Covid swab as I was concerned this was Covid and I didn't want to risk transmission to colleagues or patients. Clinical colleagues all agreed swabbing would be sensible but that they couldn't access one for me as I hadn't returned from China or Italy so didn't meet the strict criteria. I then became more unwell again (what we now know is that patients can become unwell again at day 7 -10) and I was very unwell at home. Looking back, I should have attended hospital as I was very breathless, had chest pain and severe headache. It has subsequently been shown on CT scan that I fractured 2 ribs from coughing during this period. I was off work for a further 3 weeks.

I have suffered with long Covid since then. This has massively impacted my life both at work and home. For 2 years I struggled to look after my children, struggled to go to the park, and was unable to have days out with my family. During this time, I was only able to attend work on and off. I have had to slowly build up my work hours from 2 hours a week and it remains a struggle. I have struggled to recover generally, but thanks to my long Covid medical team and the support of my family, I have recovered to some sense of normality at home.

However, at work I am still unable to do my old role. I am only able to work 18 hours this is 60% of my original less than full time hours and am unable to do on-call or ward work. This has been a big adjustment personally and professionally.

The failure of the Government to recognise the possible presence of Covid circulating earlier impacted many people like me. If there had been access to community testing, we would have recognised the virus was circulating much more widely, possibly protecting people sooner. There is evidence from historic respiratory samples that Covid was circulating in the community in February / early March.[1]

It was clear to me as a respiratory consultant that physiologically coughing would generate aerosols (like the AGP procedures), yet even when PPE was being used for patients with Covid and a cough, only a FRSM was required/ provided. The AERATOR study has subsequently shown this and found "Coughing was associated with the highest aerosol emissions of any recorded activity".[2] Yet medical staff looking after Covid patients who weren't undergoing "AGPs" – so the majority of nurses, doctors, cleaners and other healthcare staff –

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[1] See the following scientific study: Retrospective screening of routine respiratory samples revealed undetected community transmission and missed intervention opportunities for SARS-CoV-2 in the United Kingdom [BJ/284 - INQ000300544]

[2] See Aerosol emission from the respiratory tract: an analysis of aerosol generation from oxygen delivery systems [BJ/285 - INQ000300545]

were caring for patients with simply FRSMs which doesn't provide protection against aerosol transmission.

A 2021 PHE review concluded that, "patients with SARS-CoV-2 infection who are breathing, talking or coughing generate both respiratory droplets and aerosols, but FRSM (and where required, eye protection) are considered to provide adequate staff protection".[3] This statement in itself is conflicting as FRSM does not protect against aerosolised Covid transmission.

Guidance to ensure appropriate FFP3 masks (as so many other countries were routinely issuing for health care workers) would have reduced the number of occupationally acquired Covid infections in healthcare workers. This has been demonstrated in a Cambridge study which found the following:

"…healthcare workers caring for patients with COVID-19 were at a greater risk of infection than staff on non-COVID-19 wards, even when using the recommended respiratory protective equipment. As a result, its infection control committee implemented a change in respiratory protective equipment for staff on COVID-19 wards, from FRSMs to FFP3 respirators.

Prior to the change in respiratory protective equipment, cases were higher on COVID-19 wards compared with non-COVID-19 wards in seven out of the eight weeks analysed by the team. Following the change in protective equipment, the incidence of infection on the two types of ward was similar.

The results suggest that almost all cases among healthcare workers on non-COVID-19 wards were caused by community-acquired infection, whereas cases among healthcare workers on COVID-19 wards were caused by both community-acquired infection and direct, ward-based infection from patients with COVID-19 – but that these direct infections were effectively mitigated by the use of FFP3 respirators".[4]

Additionally, the scale and impact of occupational acquired Covid infections, including on those healthcare workers still suffering with long Covid like I am, is unknown. RIDDOR reports have not routinely been done on healthcare acquired infections. I requested a RIDDOR report from my employer and this has been declined on the basis that infection control precautions at the time were followed. At the time of my infection this was not PPE. However, it is clear my Covid infection arose from my work with sick respiratory patients. RIDDOR reporting is a requirement recognised by the Industrial Illness Advisory Council.

The Industrial Injuries Advisory Council report has reviewed studies and found the incidence of Covid in healthcare workers is statistically higher than in the general population.[5]

I hope that as I am recovering, I will not ever need to have evidence of my contraction of Covid in the workplace, along with a RIDDOR report, to enable me to access compensation, however I have colleagues who have lost jobs and incomes as a result of the disability of long Covid.

Covid continues to have an ongoing impact on me. Before I contracted the virus, I was at the start of my consultant career and had a young family and was fit and active. Life is better now as I have recovered significantly, but I still often feel a shadow of my former self, and have had to accept that I may not be able to fulfil my dreams and aspirations at home or at work, which is both a personal loss, but also to the NHS as I was at the start of my senior consultant career. The number of NHS workers still unable to work due to their long Covid is an under-

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[3] See Independent High Risk AGP Panel Systemic Review: Background Paper [BJ/286 - INQ000300546]

[4] See FFP3 respirators protect healthcare workers against infection with SARS-CoV-2 [BJ/287 - INQ000300547]

[5] See Covid-19 and Occupational Impacts [BJ/288 - INQ000300548]

recognised silent impact of the pandemic. There was a failure to follow scientific evidence, or in the place of uncertainty, ensure that healthcare staff had higher protection to reduce occupational infections, rather than the delayed recognition and non-evidenced based PPE we were provided with.

Impact statement Royal College of Speech and Language Therapists (RCSLT)

The initial impact of not having certain procedures such as dysphagia assessments included in the list of aerosol generating procedures (AGPs) to enable access to appropriate RPE and reduce the risk of transmission of Covid-19 was an increase in anxiety and fear amongst speech and language therapists (SLTs).

On 27 March 2020, the RCSLT issued their own guidance [BJ/103 - **INQ000130542**] extending the definition of AGPs to a large number of procedures that SLTs may undertake. It carried an endorsement from Suzanne Rastrick, Chief Allied Health Professions Officer (England) advising all SLTs to follow RCSLT not PHE guidance. In the absence of evidence, the RCSLT adopted a precautionary approach. However, there were tensions locally and Ms Kamini Gadhok MBE, the RCSLT CEO, was contacted on a number of occasions to discuss the rationale for producing RCSLT profession specific guidance. She was able to persuade the local IPC leads who contacted her of the need to take a precautionary approach.

The RCSLT did not collect any formal statistics on how the pandemic affected health and wellbeing but did undertake a survey (see below). SLTs, as with other healthcare workers (HCWs), reported high levels of sickness, both Covid infections and other infections, with an impact on their mental health including PTSD, depression and anxiety.

The RCSLT had also set up a COVID-19 Advisory group in April 2020 to engage members from across the UK and to better understand the 'reality on the ground'.

Members reported anger that the government did not have sufficient supplies to supply hospitals to keep staff safe and that PPE supplies were not always fit for purpose (for example, a visor with Chinese instructions saying not fit for medical use).

Outbreaks occurred on other wards which meant limited access to RPE (as precious RPE was concentrated on the Covid zones). Staff were uncertain about the potential dangers arising from close-contact work with patients whose infection status was as yet unknown. Covid testing took several days.

Rationing of RPE was a constant source of stress, with staff faced with the unenviable choice of going and seeing the patient anyway or delaying assessments. High caseloads, pressure for beds and compassion for patients often meant delay wasn't an option and so staff would constantly put themselves in danger. Once FFP3 supplies arrived, supplies of fit test solution were not available. In one location staff had to source these from a staff relative in the building trade. RCSLT members reported that fit test kits were (and still are) in short supply across hospitals and insufficient for staff numbers requiring testing.

Constant changing of mask supplier and design during all Covid waves meant repeat fit-testing was needed, with the same issues of lack of solution and lack of access to fit testing kits and large numbers of staff all needing testing at once. There was a constant risk of exposure from outbreaks and lack of RPE. Staff sickness rates from Covid infection remained on average at least double the rate of infection in the general population and members reported that many staff have had Covid 3 or 4 times.

A key concern was that the daily work SLTs do which carries aerosol risks was still not acknowledged. The view, as shared with other professional bodies, was that government guidance should have leaned towards protecting staff in the light of lack of evidence rather than the opposite. Also, that government guidance did not later acknowledge the evidence regarding aerosol transmission of Covid-19 like other countries. There was a sense that, as front-line staff, SLTs 'were sacrificed'.

The impact was significant not just on health and well-being but also on staff retention with staff leaving posts.

Over time, the lack of consistency of guidance across government departments about the transmission of Covid-19 created further confusion. This also impacted on morale. As HCWs, SLTs work across non-NHS settings and are also members of the public.

SLTs working with children asked for clarity on access to appropriate PPE when working in schools and education settings. Concerns included the lack of clarity for all SLTs, including those working in private practice, on how to provide care and reduce the risk of transmission of Covid-19 in a school setting (including when caring for children with medical needs). There was also confusion on the rationale as to why guidance for schools and teachers was different from that for HCWs working in schools, particularly in the management of AGPs in schools.

The RCSLT contacted the COVID-19 Children, Young People and Schools (CYPS) Team / PHE asking for clear guidance on PPE for healthcare professionals working in education settings during June - October 2020 but these issues were not resolved. The final document on conducting AGPs in schools published on 29 October 2020, not only omitted dysphagia assessments but members reported that the advice was not practical, for example asking health staff to organise fit testing for school staff. The advice was also considered to be vague and vary significantly from guidance for hospital settings. This lack of consistency increased the level of frustration as some SLT service managers had staff working both in hospital and school settings.

During the time whilst PHE was not providing RPE guidance in line with airborne transmission of Covid-19, the Cabinet Office was putting out public information videos [BJ/56 - INQ000273881] graphically depicting airborne transmission. These videos [BJ/57 - INQ000273883] caused HCWs to wonder how the virus could be airborne in domestic and other indoor premises, but not airborne when they were caring for known infectious patients. During this same period of time, in November 2020, eminent UK scientists of the Joint Committee on Vaccination and Immunisation (JCVI) published a chapter of the "Green Book" ("Immunisation against infectious disease") **BJ/58 - INQ000059136** which clearly stated: "*SARS-CoV-2 is primarily transmitted by person-to-person spread through respiratory aerosols*". This added to the confusion and distrust amongst SLTs and other HCWs.

The RCSLT conducted a survey of members between 10 February – 24 February 2021 (inclusive). 503 people responded to the survey.

Members were asked whether they had experienced an increase in any of the following since the beginning of the pandemic:

85% reported an increase in anxiety

40% reported an increase in depression

81% reported an increase in low mood

65% reported an increase in difficulties sleeping

76% reported an increase in exhaustion

64% reported an increase in irritability

68% reported an increase in difficulties with concentration

RCSLT members were asked whether they have sought help for their wellbeing:

20.9% have sought help from their employer

15.9% have sought help from a GP

4.8% have sought help from their university

16.3% said they would like to access support but have not had time

10.5% said that they have received support, but it is not enough

RCSLT members were asked whether they have been concerned about their safety at work. The three most frequently reported were:

49.1% reported juggling too many things/conflicting priorities/tasks/decisions

39.4% reported feeling over-tired

37.2% reported risk of COVID-19 infection

RCSLT members were asked about workforce capacity since the start of December 2020:

27.8% reported reduced capacity/staffing.

Where this was the case, the 3 most commonly reported reasons for this were:

Vacant posts (60.7%)

Staff being redeployed (34.3%)

Staff sickness (30.0%)

In addition to the above-mentioned details relating to RPE, we offer three further points by way of a conclusion:

- Wider issues for the speech and language therapy profession ranged from the appropriateness of redeployment decisions to the adequacy of professional insurance cover;

- The COVID-19 pandemic continues to affect the profession in a range of ways, including:
    - unprecedented demand for SLT services;
    - the novel condition of post-COVID syndrome;
    - long-term cohort effects for children and adults;
    - increased waiting times;
    - increased workload;
    - higher levels of sickness and low morale.

- Dysphagia interventions are still not listed as AGPs.

In all these respects, the impact of the pandemic continues.

Ms Kamini Gadhok MBE, RCSLT representative on CATA

Mr Derek Munn, Director of Policy and Public Affairs, RCSLT

Impact statement – Patient Safety Learning (PSL)

One area of patient safety and staff safety concern that Patient Safety Learning (PSL) highlighted during the height of the pandemic pertained to the use and availability of Respiratory Protective Equipment (RPE) for staff interacting with Covid-19 patients. In particular, the availability of FFP3 respiratory masks.

Along with other organisations, we drew attention to significant safety concerns around the airborne nature of Covid-19 and appropriate PPE provision in response to this. We made the case that FFP3 respiratory masks should be available to all staff caring for Covid-19 patients, not limited to staff working in intensive care units, in recognition of the risks associated with this.[1]

We know that frontline healthcare staff were disproportionately affected by Covid-19 infections and during the height of the pandemic. It also became clear that significant numbers of patients acquired Covid-19 while being in hospitals and other care settings.[2] PSL believes the lack of recognition of the airborne nature of Covid-19 transmission by policy makers, which contributed to decisions around appropriate RPE for staff caring for Covid-19 patients, significantly increased risks to the safety of healthcare staff, their loved ones and patients.

[1] Fresh Air NHS, Patient Safety Learning and the Safer Healthcare and Biosafety Network, Government guidance continues to put staff and patients at risk from the airborne nature of Covid-19, 6 July 2021. [BJ/289 - INQ000300549]

[2] HSIB, Covid-19 transmission in hospitals: management of the risk – a prospective safety investigation, 29 October 2020. **[BJ/39 - INQ000130588]**

QNI Community Nursing – Covid Inquiry Impact Statement

Community nurses work in various community and primary care settings. In terms of the total nursing population, there is no direct measure of the number of nurses working in a community or primary care nursing context, but it is likely to be more than 200,000.

Personal Protective Equipment (PPE) was an issue across the community nursing sector throughout the Covid-19 pandemic, especially during the early days. The problem was threefold, involving a lack of proper PPE and a lack of clarity and uncertainty on IPC guidance, as well as needing to be faster to practically respond to the increasing knowledge concerning the airborne transmission methods of Sars-Cov-2.

Where guidance was provided, it was felt that it prioritised hospital settings and then lagged behind for those working in community and primary care settings. Even when finally published for community and primary care settings, it needed to be adapted for specific situations, mainly addressing what were widely considered the primary audiences outside of the hospital, so centred on GP surgeries and care homes with guidance only loosely fitting other contexts. This was very frustrating for nurses working daily in non-clinical contexts delivering clinical care with little control over those settings alongside other competing complex needs.

District (Adult Community) Nursing

District nurses continued to work throughout the pandemic, and along with their close colleagues, Children Community Nurses were one of the few frontline services to still enter people's homes as a regular part of their everyday work. They did so initially with no PPE or guidance on protecting themselves in their daily working environment, and there was a strongly felt sense of being the 'forgotten health care service'. When PPE was issued, it was inadequate, given the developing science and knowledge on the transmission of Sars-Cov-2. Due to their role, District Nurses find themselves in different uncontrolled and unpredictable working environments multiple times on any given day. Therefore, it is extremely difficult to put any form of meaningful controls into those working environments on a consistent basis.

Ancillary to this, but also importantly, District Nurses found it challenging to get supplies. This included PPE but also wider equipment. Supply lines for community services were generally weak, with significant reliance on getting stock from GP surgeries. This supply route dried up as GP surgeries closed their doors to all but the most essential visitors.

Children Community Nursing (CCN)

CCN Nurses had the same problems already outlined for their District Nursing colleagues. In addition, there was an added level of complexity as their work crossed both home and education settings, with the majority of those they cared for attending either mainstream schools with special resource provision, special schools or, in some cases, both. A final level of complexity is that children and young people (CYP) being cared for often have both complex health as well as additional learning needs.

This all means for CCNs that CYP care can be more complex than it is for adults as there are often competing concerns, especially during the pandemic, between keeping children in education for their development set against protecting them from harm and putting in place shielding measures. This needed to be balanced appropriately and recognised in guidance but was generally not.

An example of this could be seen in guidance released in July 2020 regarding schools reopening, which stated that CYP requiring aerosol-generating procedures (AGP) must be taught in a separate classroom with all staff wearing enhanced PPE even if there was no evidence of the children having COVID-19. Further, it was unclear at the time whether oral suction was included in the AGP list. Schools generally were not provided with enhanced PPE or access to FIT testing, only registered special schools could access NHS supplies directly for their PPE. It was unclear, therefore, how to support schools with procurement and when supplied, for example, if done so by the local authority, these were often not fit for purpose and had to be replaced by NHS-funded PPE. It was also unclear who should be trained to do the FIT testing. For example, within East London NHS Foundation Trust and its Complex Needs Speech and Language Therapy Team, the Therapy Lead became the FIT tester and went to schools to conduct FIT testing. There was no arrangement or commissioning, so nationally, it varied across CCN teams who would carry this out. Some areas were explicitly funded to set up a team focused on managing/supporting CYP with AGP in schools, the training and FIT testing. There were no national risk assessments for these children, only the hospital acute guidance transferred into the community setting, which assumed every child requiring AGP was carrying Covid-19. There was no mention of testing as part of the risk assessment (like the care home pathway), which would have reduced the need for these CYP to be isolated and enabled them to be part of the classroom with their peers and better balance their learning needs.

General Practitioner Nursing

In May 2020, the QNI surveyed 3177 nurses concerning the then-still-developing pandemic. It found that GPNs faced significant challenges in obtaining the right type or quantity of PPE. Some GPNs felt they were exposed to increased risk compared to other workers – for example, some remarked they were seen as the front-of-house professionals seeing patients. Covid-19 has exacerbated underlying issues around remuneration, working conditions, terms of employment and perceptions of the value of the role. It also raised issues around job security as demand fell. Key findings from the report were:

- 65% of respondents had the necessary equipment available to work all the time, with 14% reporting lacking equipment. It would subsequently be recognised that the PPE used did not offer the protection required.
- General Practices significantly changed how they offered services to their registered populations to reduce the spread of the virus. This included taking measures to mitigate footfall into surgeries, decreasing routine face-to-face consultations and providing, wherever possible remote, telephone and digitally enabled consultations.
- 22% reported less capacity due to colleagues on sick leave or being shielded.
- Issues such as anxiety and uncertainty appeared, for example, 'I am not an anxious person generally but feel the new way of working has caused me stress in a way I have never known before, but now I realise this, I am mostly able to manage it.'
- A very mixed sentiment was shared in responses, for example, 'Worry about all my patients and also have lost many in care homes, the staff are doing fabulous work, and I am proud of them' and 'the behaviour of others' (occasionally positive but primarily negative) also featured alongside personal risk. For example, 'It's sickened me to see how nurses have been forced to put themselves at risk when the Drs in the surgery hide away in their rooms and refuse to undertake face-to-face consultations for fear of catching the virus' and 'my surgery is fantastic; however, I would like the GPs to see their own patients if they decide to bring them in. I feel a little vulnerable having to see PPE patients three days a week.'

Care Home Nursing

By way of background and context to Care Home Nursing, it is important to state there are far more beds in care homes with nursing than in hospitals in England, with three times as many beds in the care sector overall than in hospitals. The care delivered in a home can sometimes be as intensive as in a hospital – particularly for end-of-life care - and it is hugely skilled work. The people living in their care homes need a combination of support for complex physical and cognitive needs. A nursing or residential care home is a person's home, often for months or years and at an important part of their life, usually the final years. End-of-life care is thus an unavoidable reality for everyone working in this setting, requiring highly complex negotiation and close working with family members and other healthcare professionals.

The QNI in May/June surveyed 168 individuals working across both nursing homes and care homes; 70% (114) of respondents were Registered Nurses (RN), and 28% (46) were managers. Key finds were:

- Only 66% of respondents reported always having appropriate PPE. In contrast, at the opposite end, 1% of respondents reported never having access to the proper type and quantity of PPE during the first three months of the pandemic (March-May 2020). It would subsequently be recognised that the PPE used did not offer the protection required.
- During March and April 2020, 21% reported receiving residents from the hospital sector who had tested positive for Covid-19 in the hospital. 43% of respondents reported receiving residents from the hospital with an unknown Covid-19 status during March and April 2020.
- Being able to access other services was an issue for some respondents. 54% of respondents reported it was easy or somewhat easy to access hospital care, with 25% reporting it was somewhat difficult or very difficult during March-May 2020.
- 23% reported it was easy or somewhat easy to access District Nursing services, with 33% reporting it was somewhat difficult or very difficult during March to May 2020. However, most respondents were also Registered Nurses, so they may have been able to provide some services a District Nursing service would provide.
- When asked about respondents' experience of working during March-May 2020. Around 20% of responses reported positive or mixed sentiments around the experience of working through Covid-19, for example, pride in their colleagues or new workforce opportunities. 80% of responses reported very negative experiences such as not being valued, poor terms and conditions/changes to terms and conditions of employment, feeling unsupported/blamed for deaths, colleagues in other areas refusing help, feeling pressured to take residents from hospitals with unknown Covid-19 status and lack of clear guidance. 56% felt worse or much worse in terms of their physical and mental well-being, while 36% reported no change.
- There was substantial concern in the media/press during Covid over decision-making around do not attempt cardiopulmonary resuscitation (DNACPR). While the majority reported no change to the approach being taken on this, 1% reported negative changes which they found challenging, such as blanket DNACPR decisions or decisions taken about resuscitation status by others (GPs, hospital staff or clinical commissioning groups) without discussion with residents, families or care home staff or that they disagreed with some of the decisions on legal, professional or ethical grounds.

Implications of Long Covid for the Community Nursing Population

One of the final key challenges to the community nursing sector is the ongoing issue of Long Covid. There is currently no unified definition of Long Covid; various descriptors based on the duration of symptoms, clustering or groups of symptoms, or a combination of both. By its very nature, this makes analysis of the numbers involved and the impact on individuals, services

and broader society challenging. The range of symptoms reported and experienced by sufferers also further complicates what treatment and services people need and how to coordinate these.

There is a specific ongoing concern over Long Covid and the community nursing sector, which has an older and female workforce and, as such, is more likely to suffer from Long Covid as its workforce population matches those with increased likely prevalence.[1]

For community nurses, there is also a significant emotional component to Long Covid. They strongly feel they are letting colleagues down and the patients they serve. Alongside this, if able to work, they often feel unable to perform at the same level to give the complex care required of them. This means there are two strands to the overall impact; the patient care aspect and the result for staff themselves suffering and either being off work entirely or less able to perform their roles at the same level as pre-infection.

[1] See: 'Prevalence of ongoing symptoms following coronavirus (COVID-19) infection in the UK: 2 February 2023', Office for National Statistics. [BJ/290 - INQ000300550]

Impact statement - BAPEN

As the pandemic gathered momentum in March and April of 2020, BAPEN members became concerned that their close proximity to patients when performing essential procedures was placing them at risk of contracting Covid-19. At first, PPE seemed appropriate for the risk in that FFP3 respirator masks were advised under the then extant guidance. However, FFP3 masks were not always available. After the downgrading of Covid-19 as an HCID and the almost immediate withdrawal of FFP3 masks as RPE, the protection on offer was nothing more than flimsy paper FRSM surgical masks (which are not, and never have been classified as PPE despite the claims to the opposite by the government bodies responsible for IPC guidance). Even these basic masks were in short supply. This immediately caused alarm and fear amongst the doctors, nurses, dietitians and pharmacists who comprise BAPEN's membership.

BAPEN leaders were inundated with requests for clarification of guidance on the use of PPE when performing close contact procedures such as nasogastric tube insertion. This procedure became the go to method of providing essential nutritional support for most patients during the pandemic. This was because the alternative of percutaneous endoscopic gastrostomy became less available due to restrictions placed on this procedure due to the workload of gastroenterologists and their nursing colleagues. Parenteral nutrition for the number of patients in critical care requiring nutritional support was not a practicable alternative and few received this mode of support during the various waves of the pandemic. The dependence on NGT insertion meant that nursing, medical, dietetic and speech & language therapists placing such tubes were exposed to infection unless provided with full RPE in the form of FFP3 masks or PAPR hoods. Whilst the IPC guidance from March 2020 onwards stated that NGT insertion was not an AGP, this did not accord with the expert opinion of BAPEN members who knew that profuse uncontrollable coughing with or without provocation from tube insertion posed a risk of exposure to aerosols containing the virus for periods of up to 30 minutes at close proximity - less than 1 meter. To be blunt, our members regarded this risk as obvious and no more than common sense whatever the so-called IPC experts were saying. The confusion caused by the change in transmission route from airborne, prior to the pandemic, to droplet in March 2020 left our members disorientated and dismayed. Our members realised the change in guidance was due to inadequate supplies of PPE but in particular, RPE. But we all knew that "it's the air we share that is killing us".

It was therefore a great relief to them when BAPEN produced its alternative guidance that NGT insertion should be regarded as a high-risk procedure due to the exposure to aerosols generated by coughing - a characteristic of Covid-19 and NGT insertion.

Many of our members used the BAPEN guidance to persuade their managers that RPE must be provided and if not, then the procedures would not be performed. In many cases, this approach often proved successful but it was an extremely stressful and a demanding additional burden at a very stressful and emotionally demanding time with so many critically ill patients and deaths.

We have heard of many cases where management was not only unsympathetic to requests for better protection but gave active disciplinary threats to those demanding it.

The issue of non-availability or permissibility of FFP3 RPE was felt most severely on non-critical care areas such as stroke wards or ENT wards. This is because RPE was permitted under IPC guidance only in critical care areas where many AGPs were being performed on multiple patients. Outside of critical care areas, only procedures classified as AGPs would attract RPE. As it became known that the infection rates in critical care were half those in non-

critical care areas, consternation grew. Staff shortages increased to critical levels due to staff absences as a result of Covid-19 and in particular, nosocomial infections acquired in the workplace. Stress levels of all staff rose. Redeployment to unfamiliar areas compounded these issues. That HCWs of all types rose to the occasion and placed themselves and their families at risk of infection, hospitalisation, death or long covid is remarkable and praiseworthy. Staff knew that they were being placed in harm's way without adequate protection. It was for this reason that BAPEN leaders sought to investigate the true scientific background to the IPC guidance and found it wanting.

It cannot be emphasised enough that the demoralisation and stress caused by this implacable resistance by government, NHS and its constituent bodies to accept that IPC guidance was wrong had a devastating effect on morale which continues to this day. Indeed, the inconsistencies in guidance from various government bodies added to the dismay of all HCWs but it persists to this day in that in Scotland, the droplet route and surgical masks are still described as the choice for almost all procedures and situations except AGPs. When the Cabinet Office promoted its public health video on improved ventilation to deal with aerosol production, BAPEN members asked why this did not apply to them when in harm's way caring for Covid patients.

It was therefore perplexing for our members that our numerous approaches to government requesting changes to IPC guidance were either ignored or rebuffed with platitudes about wanting to protect the HCW workforce as a top priority. As expressed in our joint letter to Boris Johnson, the PM, in February 2021, the healthcare professions had lost confidence in the guidance which was only as good as the outcomes determined by the measures therein. Since there have been 200,000 deaths in the UK including at least 2,300 HCWs, the guidance was clearly not fit for purpose. As each variant of concern emerged, we remonstrated with government to enhance IPC guidance to permit RPE in all patient areas in all settings but these requests were ignored. We also asked that instead of praising the NHS staff, the government should protect them.

Many of our members contracted Covid-19 whilst at work treating patients not only at close quarters but in areas with poor ventilation. Strategies for minimising cross infection of HCWs from other staff members or patients was not in place and supplies of PPE were inadequate in all settings where our members work including the community and care homes. We were told by many members that it was not "if" they caught the virus, but "when" as it was seen as inevitable. This failure to protect the very people providing the life saving care needed by so many during the pandemic is a disgrace to the NHS.

BAPEN members are most appreciative of the efforts made on their behalf by BAPEN and its colleagues in AGPA and CAPA and support CATA's participation in the Covid-19 Public Inquiry to ensure answers are obtained to explain the gross failure of duty of care exhibited by the NHS and to ensure that there are lessons learned and implemented for future pandemics.

Never has there been a more blatant case of government and NHS ignoring the obvious and failing to invoke the precautionary principle. As many of our members have pointed out, you don't have to be an expert to see that transmission of the Covid virus was transmitted by more than just droplets and fomites, or that a poorly fitting paper mask is no protection against it. Just as parachutes and seat belts have never been subject to randomised double blind controlled trials or meta-analyses of such trials, the engineering solutions to Covid-19 in the form of improved ventilation and proper respiratory protective equipment were denied to NHS staff and BAPEN members because of a stubborn adherence to a non-scientific rationale which denied the airborne route or the expert opinions of members of BAPEN and similar professional bodies. BAPEN hopes that the Public Inquiry will uncover the reasons behind the

resolute obstruction, obfuscation, deception, denial and dogmatic adherence to a patently incorrect rationale for IPC guidance throughout the pandemic.

Many Trusts defied national IPC guidance to protect their employees better. We know of at least 36 where proper PPE was permitted and encouraged. For example, in Southampton University NHS Trust, a radical programme of design, development and production of power assisted respirator hoods took place early on. Distribution was across the whole Trust and many adjacent hospitals and all staff were provided with these reusable RPE systems. This Trust experienced markedly reduced nosocomial infection rates and HCW sickness rates compared to other trusts where no such measures were in place.

In Cambridge, replacement of surgical masks with FFP3 masks led to a dramatic reduction in infection rates.

Sadly, for many in other less progressive and caring Trusts, staff were not so lucky and deaths and Long Covid bear testimony to the impact of misguided and inconsistent IPC guidance. Those responsible for this tragic failure to provide the most precautionary approach to preventing staff infection in their place of work must surely be identified and measures put in place to prevent such a miscarriage of leadership in any future pandemic. Our members deserve nothing less.

- This report summarises April 2020 responses to the BASP survey of impact of COVID-19 on stroke care.
- 140/667 (21%) BASP members took part in our survey.
- Responses covered most regions of the UK and Eire.
- 84% of respondents were stroke physicians and 61% were from university or teaching hospitals.

Key facts & figures from the BASP COVID-19 stroke services survey, April 2020

Positives	Areas for concern
Nobody reported that thrombolysis or thrombectomy had stopped.	***Some impact*** was reported on ***thrombolysis by 59%*** and ***thrombectomy by 75%***.
85% reported continuing to provide an out-of-hours acute stroke service.	***Only 71%*** report adequate compliant ***PPE*** across the United Kingdom and Eire.
Only 8% respondents reported that TIA clinics have been stopped.	***42% reported reduced activity*** at TIA/stroke clinics.
98% reported that ***stroke unit care*** is still being provided.	Only ***20%*** reported ***no impact*** on stroke unit care.
53% reported ***staff redeployment from other specialties*** to help deliver stroke services (e.g. neurology 32% and clinical academics 14%)	***75%*** reported ***stroke staff deployment to other areas***
97% reported ***new or more frequent use of the following approaches to care***: • shadow rotas (65%) • telephone consultation (89%), telemedicine (36%), or NHS Attend Anywhere (29%) • early supported discharge (32%)	***Reduced activity*** was also reported in: • investigations (***32%***) • carotid endarterectomy (***27%***) • rehabilitation (***33%***) ***30%*** reported reduced quality of rehabilitation (mainly due to early discharge and reduced community rehabilitation) ***Stroke research has been affected significantly:*** • No impact in only 4% • 42% stopped

These findings have already led to ***targeted actions by BASP*** to address areas for concern:

- ***Regular communications*** with BASP members.
- ***Set up a BASP COVID-19 resource hub*** with guidance, updates, and relevant research.
- ***Supported a media campaign*** to encourage hospital attendance for TIA and stroke.
- ***Lobbying leads in all UK nations*** to regard swallow assessment and nasogastric tube insertion as aerosol-generating procedures.

We are grateful to participants in the BASP services surveys. Please continue to take part so that we can identify and address evolving areas of concern during these rapidly changing times.

Michelle Dharmasiri, Fergus Doubal, Kath Pascoe, and Richard Marigold, *Clinical standards committee;* **Naomi Fulop and Angus Ramsay**, *UCL Department of Applied Health Research;* **David Werring**, *BASP secretary;* **Rustam Al-Shahi Salman**, *BASP president*

Annex 3

Date	Exhibit number	Description	What question was asked?	Was the correspondence replied to? If so, were the specific questions answered?
25/03/2020	BJ/98a - INQ000130539; **BJ/98a - INQ000130539**	Letter by occupational health professional bodies (including BOHS) to Secretary of State ("SoS") Matt Hancock.	The letter outlines the gap in support for the health of healthcare workers, and outlines observable problems with RPE availability, use and guidance. The letter indicates that there was a lack of a clear RPE plan, in contrast to other safety critical industries where there is a residual risk of exposure of the workforce to aerosol-based hazards.	No response.
26/03/2020	BJ/102 - **INQ000130540**	Letter from the Allied Health Professions Federation ("AHPF") to SoS Hancock.	The letter seeks confirmation that frontline staff will be able to access FFP3 masks. Concern expressed over healthcare workers not having access to FFP3 for dysphagia (swallow assessments which induce a cough) as well as other treatments. The letter also mentions community/primary care/community nurses and indicates a failure of pandemic planning to consider the context of community healthcare delivery.	No response.
29/03/2020	BJ/104 - **INQ000130507**	RCSLT response to PHE's consultation on guidance on personal protective equipment in secondary care,	In its very detailed response, RCSLT asks for procedures undertaken by SLTs that induce a cough to be considered AGPs to	No response.

Date	Exhibit number	Description	What question was asked?	Was the correspondence replied to? If so, were the specific questions answered?
	BJ/103 - **INQ000130542**	enclosing its own guidance on PPE dated 27 March 2020.	enable access to the appropriate PPE/RPE. Indicates that secondary care had not been adequately planned for in the context of pandemics.	
02/04/2020	BJ/171 - **INQ000130511**	Letter from RCSLT to SoS Hancock.	The letter outlined evidence showing why dysphagia assessment, multiple upper airway procedures & NGT insertion should be AGPs. The letter indicates insufficient consideration in planning for the management of exposure risks of transmission as a result of close care and asks for help.	No response until 12 August 2020, from Jo Churchill MP [BJ/187 - **INQ000130534** The letter from Jo Churchill MP does not respond to letter of 2 April 2020. There is no mention of the need for RPE for SLTs, only that updated guidance by PHE (June 2020) includes the work of SLTs. The guidance did not address the concerns raised in the letter.
16/4/2020	BJ/108 - **INQ000130518**	Letter from BAPEN, BDA & RCN to the CEO of PHE, Duncan Selbie.	The letter includes a critique of AGP list on scientific grounds and highlights the need for the Precautionary Principle to be applied. The letter asks for a change in guidance regarding NGT insertion.	Response from Duncan Selbie on 5 May 2020, copied by him to NERVTAG [BJ/115 - **INQ000130522** No response from NERVTAG. The letter did not address the scientific critique of the AGP list, it just referred to updated IPC guidance, and that the AGP list is kept under review by

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				PHScot & NERVTAG. The letter incorrectly states that a rapid evidence appraisal of AGPs were assessed for their historical transmission and generation of aerosols. the latter is incorrect as aerosol studies of poor quality were performed in only a few of the procedures investigated and none for NGT insertion, which was subject of the original letter. No reply to concerns about the quality of evidence used.
06/05/2020	BJ/123 - **INQ000130519** BJ/256 - INQ000300504	Letter from RCSLT to SoS Matt Hancock (2) and evidence paper regarding aerosol generation.	The letter draws attention to the enclosed review of evidence regarding aerosol generation and oropharyngeal dysphagia assessment. The letter hopes that this evidence will result in appropriate changes to Public Health England's PPE Guidance.	No response.
01/5/2020	BJ/109 - **INQ000130521**	Letter from BAPEN to SoS Matt Hancock (3), enclosing letters from RCSLT, BASP and RCP.	The letter asks for revision of AGP list in line with professional opinions. Attached to the letter from BAPEN are letters from RCSLT, BASP & RCP all asking	No response from SoS or others copied in. Ruth May, CNO, did respond but not on behalf of SoS. See

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		This letter is copied to the NHS, PHE, NHSE, and AoRMC.	for similar changes in guidance.	12th May 2020 below.
12/05/2020	BJ/124 - INQ0003 00327	BAPEN emailed CNO of England, Ruth May, with a copy of letter sent to SoS Matt Hancock on 1 May 2020.	Email and letter request a review of the AGP list.	Ruth May responds via email the same day and agrees with Susan Hopkins to ask CMO England to set up a review. An Independent High Risk AGP Panel was set up. The Panel met at the end of July and reported in January 2021.
May to August 2020	BJ/257 - INQ0003 00505 **BJ/138a I NQ000300 349** BJ/258 - INQ0003 00506	BAPEN emails to Dr Maria Van Kerkhoven of the WHO.	To ask for her comments/support for change in the WHO's AGP list.	No response.
July to December 2020	**BJ/194 - IN Q0003004 32** BJ/260 - INQ0003 00511	AGP Alliance email chain with the Independent High Risk AGP Panel.	AGP Alliance explains its expertise to the High Risk AGP Panel and outlines its concerns about the existing AGP list. AGP attempts to engage with the panel to assist them with their investigations.	No engagement with the AGP Alliance. No response until September and the Panel's report delayed until January 2021.
25/09/2020	BJ/190 - INQ0003 00428	Letter from the AGP Alliance to Prime Minister Boris Johnson and copying SoS Matt Hancock, NERVTAG & AGP Panel.	The letter argues that that current government guidance does not reflect the best available evidence on AGP and leaves health and care professionals, their patients and colleagues at increased risk of COVID-19 transmission.	No response from either the Prime Minister or any of those copied.

Date	Exhibit number	Description	What question was asked?	Was the correspondence replied to? If so, were the specific questions answered?
			The letter asks the PM to personally intervene to instigate an urgent review of AGP and provide transparency on how such guidance is determined. The letter refers to the need to apply the precautionary principle in the provision of PPE for healthcare workers, where there is any reasonable chance that a procedure is aerosol generating.	
28/10/2020	BJ/192 - INQ0003 00430	Letter from the AGP Alliance to Jeremy Hunt MP, Chair Health Select Committee.	Letter refers to an enclosed letter to the PM dated 25 September 2020. Letter explains that certain procedures, not currently described as AGPs, do generate aerosols and that the precautionary principle should be adopted. AGP Alliance offers to assist and asks for Select Committee to look into concerns raised.	No response.
05/11/2020	BJ/133 - INQ0003 00343	Letter from the AGP Alliance to Jeanne Freeman MSP, Cabinet Sec for Health & Sport, Scotland, copied to CMO Scotland, CAHPO & HPS.	Letter asks for personal intervention to urgently instigate a review of the definition AGPs and how such guidance is determined. The letter outlines the need to apply the precautionary principle to provide PPE for risk of airborne transmission.	No response from either Jeanne Freeman or those copied.

Date	Exhibit number	Description	What question was asked?	Was the correspondence replied to? If so, were the specific questions answered?
20/12/2020	BJ/282 - INQ0003 00542	Emails to Rt Honourable Greg Clark MP	Emails expressing concern about the failure of PHE guidance to reflect scientific evidence and failing to protect healthcare workers.	Response to Greg Clarke MP received from Jo Churchill MP on 17 May 2021 [BJ/283 - INQ000300543]. The response did not address the concerns raised by the constituent of Greg Clark. It was merely a copy and paste of a letter sent to Chris Skidmore MP [BJ/281 - INQ000300541].
06/01/2021	BJ/136 - **INQ00025 7963**	Letter from the College of Paramedics to SoS Hancock.	Letter ask for paramedics to be treated equally to ITU and other healthcare workers working in high-risk settings. The letter asks for an urgent review of the levels of PPE protection for its members and for the precautionary approach to PPE to be taken.	Response received from Jo Churchill MP, DHSC, on 8 April 2021 [BJ/208 - **INQ000257968** The response simply reiterated current IPC guidance, said it applied to paramedics and failed to answer any of the genuinely held concerns about paramedic safety.
8/01/2021	BJ/138 - INQ0003 00348	Letter from the AGP Alliance to CNO Ruth May.	The letter asks Ruth May to intervene to issue a statement about the use of PPE, to assist and protect healthcare workers.	No response.
Jan 2021 and July 2021	BJ/92BA - INQ0003 00663 BJ/117 - **INQ00025 7950**	Independent High Risk AGP Panel report published.		Panel first sat July 2020 and published its first report in January 2021 and its final report July 2021. Conclusions of the report failed to

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				address scientific criticism of evidence base for NGT insertion or dysphagia assessment and failed to find any new evidence for either. AGPA evidence disregarded and not engaged with. For evidence disregarded, see BJ/124 - INQ000300327, BJ/108 - **INQ000130518** BJ/171 - **INQ000130511** BJ/255 - INQ000300501, BJ/256 - INQ000300504, BJ/109 - **INQ000130521** BJ/111 - INQ000300304. The Panel found no new evidence that contradicted the scientific evidence raised by AGPA members. The report concluded that no changes to AGP list were needed.
19/01/2021	BJ/196 - INQ0003 00435	Letter from the AGP Alliance to SoS Hancock.	Letter asks Matt Hancock to intervene to ensure FFP3 masks are available to all healthcare workers and to improve ventilation in clinical settings, based	No response

Date	Exhibit number	Description	What question was asked?	Was the correspondence replied to? If so, were the specific questions answered?
			on the precautionary approach. The letter asks for protection against new variant and explains that the AGP list not sufficient to keep healthcare workers safe. The letter points out that IHR AGP panel was not tasked to opine of the adequacy of current PPE guidance.	
27/01/2021	BJ/135 - INQ0003 00345	Open letter from FreshAir NHS and 1,654 individuals, AGPA members, to the Prime Minister, First Ministers, SoS and Ministers of Health in devolved nations.	Letter outlines why the AGP list is not appropriate and urging all necessary precautions be taken to mitigate airborne transmission of Covid-19 in healthcare settings. The letter asks for an urgent review of national PPE guidelines and for the immediate improvement of natural ventilation in hospitals. The letter asks for a common-sense approach to be taken, using advice and evidence from professional bodies and associations, rather than basing policy on the incomplete and poor-quality evidence available about the infectious risks of	No response

Date	Exhibit number	Description	What question was asked?	Was the correspondence replied to? If so, were the specific questions answered?
			everyday procedures undertaken by healthcare professionals.	
01/02/2021	BJ/279 - INQ0003 00533	Letter from David Osborn to Rt Hon Chris Skidmore MP	The letter concerns the flawed PHE guidance which it argues is seriously endangering the lives of healthcare workers.	Chris Skidmore MP received a response from Jo Churchill MP on 17 May 2021. The letter does not address the concerns raised. It is almost identical to BJ/280 - INQ000300540 – see BJ/281 - INQ000300541 for a side-by-side comparison.
18/02/2021	**BJ/89a** **INQ00011 4283**	Letter from 21 professional bodies (including CATA members) to the PM, SoS, First Ministers and Health ministers.	The letter calls for: 1. Improved ventilation. 2. The amendment of IPC guidance, in line with precautionary principle. 3. The amendment of all government guidance to reflect the airborne transmission of the virus. 4. The collection and publication of data of healthcare worker infection at work. 5. The publication of all scientific evidence on airborne transmission and to undertake research where gaps exist.	No response until 7 May 2021. The response was sent by Number 10 to the CEO of the RCN [BJ/148a - **INQ000114417**. The response admits that understanding of the airborne rout of transmissions is better now, but that the IPC cell has reviewed the evidence and determined that no changes to its guidance is needed. The letter states that the 4 CMOs agree with current guidance on the use of PPE, namely that FFP3 masks should

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				only for worn when performing AGPs. The response refers to ONS data which shows that Covid-19 related deaths at work since 9 March 20202 has shown that healthcare workers are at greater risk. As such, the Government is prioritising the vaccine rollout for healthcare workers and the delivery of PPE to frontline healthcare workers. Advocates for SAGE consulting widely and will publish their minutes (no mention of IPC Cell minutes)
12/03/2021	**BJ/89c - INQ000114297**	Letter from AGP Alliance and others to the 4 nation CMOs and copied to CNOs and CAHPOs.	The letter requests a meeting to facilitate an urgent review of guidance on the prevention and control of COVID-19 in health care settings. Particular attention is drawn to the need to provide health and care staff with the PPE essential for the prevention of airborne transmission of COVID-19.	Prompt response only from the England CMO Chris Whitty, who agreed to set up a meeting. Response received from Gregor Smith, CMO Scotland, on 25 March 2021 IBJ/204 - **INQ000114412** This response was short and did not commit to anything, contradicting the response of Chris Witty.

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06/06/2021	**BJ/91 - INQ000130586**	Evidence submitted by the AGPA & RCN in response to the UK Parliament Committee for Public Accounts' call for evidence.	Detailed evidence submitted about the insufficiency of IPC guidance, the lack of transparency around IPC guidance decision making, the lack of stakeholder engagement, the inconsistency in the provision of PPE, and the impact of the pandemic on healthcare workers.	The Select Committee's report was published on 19 July 2021 [BJ/223 - INQ000300466]. A reference to the evidence submitted by AGPA members on 6 June 2021 was included in the report, but its contents were not mentioned in the body of the report, nor was there any mention of the request for the mitigation and risks of the airborne route of transmission.
03/06/2021	BJ/89f - **INQ000114333**	Meeting between AGPA, RCN, BMA, RC Midwives and others and the DHSC.	In this meeting, detailed presentation provided by AGPA members and RCN to staff at the DHSC [BJ/89h - **INQ000114414** which outlined concerns about IPC guidance, the implications for the airborne route of transmission and called for better protection for healthcare workers.	Commitments were made by DHSC staff during the meeting to continue to engage with AGPA members on the issues raised. However, the response received after the meeting did not address the concerns raised [BJ/89m - **INQ000114267** and BJ/89 - INQ000130584]. No engagement occurred with AGPA or other attendees.
4/06/2021	BJ/90 - INQ000130585	Written Evidence by David Osborn to the House of Commons Health and Social Care Select Committee.	Detailed written evidence submitted to the Select Committee, which expressed concerns about the improper use of PPE and the dangers posed	The Select Committee published a "Lessons Learned" report on 21 Sept 2021 [BJ/227 - **INQ000090541]**

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			to healthcare workers by the extant IPC guidance.	The report made no mention of the issues raised in the written evidence. It was merely noted that the evidence was submitted in a list of evidence received.
22/09/21 to 06/10/21	BJ/92A - INQ0003 00635 BJ/261 - INQ0003 00512 BJ/262 - INQ0003 00513 **BJ/226 - I NQ00030 0469**	IPC guidance consultation. CAPA/BAPEN/RCS LT were not invited to respond but submitted evidence.	The responses from CAPA/BAPEN/RCSLT outline, among other things, the need for clear PPE guidance based on airborne risk and mitigation and provided criticism of the existing AGP list.	The IPC guidance, when produced in November 2021 did not take account of the submissions from CAPA/BAPEN/RCSL T in any way. Reference to the route of transmission was withdrawn altogether.
25/11/2021	BJ/153 - **INQ00011 8441**	Letter from Prof Agius, (BMA), Kevin Bampton (BOHS), Rose Gallagher (RCN), Dr Christine Peters (FreshAir NHS), Dr Barry Jones (CAPA) to Sarah Newton, Chair of HSE.	The letter request information on the involvement of HSE in the creation of IPC guidance.	Response from Sarah Newton received on [BJ/230 - INQ000300473]. The response was unhelpful in that it pointed to the IPC Cell as being comprised of experts and explained that it was not HSE responsibility to deal with public health matters. This response conflicted with comments made by DHSC during meeting on 3 June 2021.

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08/02/2022	BJ/277 - INQ0003 00530	Letter from David Osborn to Jeremy Hunt MP.	The letter expresses concern that the Committee which Mr Hunt chaired did not see fit to consider that the wrong type of masks were being used and putting healthcare workers at risk.	Response received from Jeremy Hunt MP via email on 21 March 2022 [BJ/278 - INQ000300531]. The response essentially said that the Committee didn't have time to consider the issues in question.
11/02/22	BJ/237 - **INQ00007 4820**	Letter from CAPA members to England CMO, Chris Whitty.	The letter seeks clarification of inconsistencies in IPC guidance relating to PPE across 4 nations.	Response received the next day from Chris Whitty, which merely referred the CAPA letter on to UKHSA [BJ/242 - INQ000300488]. Further response from Susan Hopkins, CMA UKHSA, received on 21 March 2022 [BJ/240 - INQ000300486]. This response confirmed that the existing guidance would remain unchanged and unhelpfully contained inaccurate claims to align with WHO guidance.
24/02/2022	BJ/239 - INQ0003 00483	Letter from CAPA members (19 signatures) to Nicola Sturgeon, First Minister, Scotland.	The letter seeks clarification of inconsistencies in Scottish IPC guidance and recognition of airborne route of transmission.	No formal response provided to CAPA chair, but CNO, Scotland provided a response to Gillian Higgins on 28 April 2022 [BJ/92BB - INQ000300664]. The response states that access to FFP3 RPE for AGPs or

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				crowded areas or close contact should by informed by risk assessments after the application of the hierarchy of controls. The response recognises that the airborne route of transmission exists in certain scenarios, but there would be no change in Scottish IPC guidance. The response also claimed that UK IPC guidance is outside the remit of the Scottish government.
11/4/2022	BJ/161 - INQ0003 00396	Letter from CAPA to Susan Hopkins, CMA.	This letter is in response to letter from Susan Hopkins on 21 March 2022. This letter seeks further clarification of inconsistencies in IPC guidance and use of precautionary principle. The letter seeks clarity on where responsibility and accountability for the existing guidance rests. The letter outlines the lack of transparency in the formulation of IPC guidance.	Response provided by Susan Hopkins on 17 June 2022 [BJ/249 - INQ000300494]. The response did not address the issues raised.
14/4/2022	BJ/243 - INQ0003 00489	Letter from CAPA to Deputy CNO, Duncan Burton (in CNO's absence).	The letter asks for clarity on the route of transmission to enable risk assessments.	Response received from Duncan Burton on 20 May 2022

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			Reference is made to COSHH. The letter asks for reassurance that healthcare worker safety will not be compromised and seeks data on the number of healthcare workers with work acquired COIVD-19.	[BJ/247 - INQ000300492]. The response was inadequate because it alleged that RPE can be used if a risk assessment shows risk after the hierarchy of controls has been assessed. The response did not address the inconsistencies pointed out in the CAPA letter. The response also claimed that data on healthcare worker infections was available, but not the data on how many infected had been at work. The response mentions that HSE supports current IPC guidance in terms of PPE.
20/04/2022	BJ/244 - INQ0003 00490	Letter from CAPA to SoS, Sajid Javid.	The letter, among other things, asks for clear acceptance of the airborne route of transmission and the need for RPE.	No response.
29/04/2022	BJ/246 - INQ0003 00491	Letter from CAPA to Sarah Newton, Chair, HSE.	This detailed letter expresses concern that IPC policy, guidance and practice in relation to Respiratory Protective Equipment is leaving healthcare workers at significant risk.	Response received from Sarah Albon, CEO HSE, on 26 May 2022 [BJ/274 - INQ000300526]. See below.

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06/05/2022	BJ/264 - INQ0003 00515	Letter from CAPA to Debbie Gillatt, Non-Exec Director, HSE.	This letter requests HSE to issue statutory guidance for protection of healthcare workers from Covid-19.	No direct response received, though response received to BJ/246 - INQ000300491 from Sarah Albon to on 25 May 2022 [BJ/274 - INQ000300526].
06/05/2022	BJ/265 - INQ0003 00516	Letter from CAPA to Elaine Bailey Non-Exec Director, HSE.	As above.	No direct response received, though response received to BJ/246 - INQ000300491 from Sarah Albon to on 25 May 2022 [BJ/274 - INQ000300526].
06/05/2022	BJ/266 - INQ0003 00517	Letter from CAPA to Ken Robertson, Non-Exec, HSE.	As above.	No direct response received, though response received to BJ/246 - INQ000300491 from Sarah Albon to on 25 May 2022 [BJ/274 - INQ000300526].
06/05/2022	BJ/267 - INQ0003 00518	Letter from CAPA to Susan Johnson, Non-Exec, HSE.	As above	No direct response received, though response received to BJ/246 - INQ000300491 from Sarah Albon to on 25 May 2022 [BJ/274 - INQ000300526].
06/05/2022	BJ/268 - INQ0003 00519	Letter from CAPA to Claire Sullivan, Non-Exec, HSE.	As above	No direct response received, though response received to BJ/246 - INQ000300491 from Sarah Albon to on 25 May 2022 [BJ/274 - INQ000300526].

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06/05/2022	BJ/269 - INQ0003 00520	Letter from CAPA to Ged Nichols, Non-Exec, HSE.	As above	No direct response received, though response received to BJ/246 - INQ000300491 from Sarah Albon to on 25 May 2022 [BJ/274 - INQ000300526].
06/05/2022	BJ/270 - INQ0003 00522	Letter from CAPA to Martin Esom, Non-Exec, HSE.	As above	No direct response received, though response received to BJ/246 - INQ000300491 from Sarah Albon to on 25 May 2022 [BJ/274 - INQ000300526].
06/05/2022	BJ/271 - INQ0003 00523	Letter from CAPA to Rev Gina Radford, Non-Exec, HSE.	As above	No direct response received, though response received to BJ/246 - INQ000300491 from Sarah Albon to on 25 May 2022 [BJ/274 - INQ000300526].
06/05/2022	BJ/272 - INQ0003 00524	Letter from CAPA to John McDermid, Non-Exec Director, HSE	As above	Response via email from John McDermid on 10 May 2022 [BJ/273 - INQ000300525]. Inadequate response as he said that the response was outside the remit of HSE. He did though share CAPA's concerns on a technical level. John McDermid seems to suggest that the inability of the HSE to act is due to insufficient

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				funding and resources. This does not stand up to scrutiny as no significant expense would be incurred issuing Improvement Notices to NHS, UK-HSA, NHS directing them to comply with COSHH Regulations and to provide RPE for close-contact care of infectious patients and work in high-risk areas. NB: Ms Albon's reply [BJ/274 - INQ000300526] reiterated that the issue is a public health matter and the responsibility of DHSC and UK-HSA, not HSE. She made no mention that HSE's inactivity was due to insufficient funding.
14/07/22	BJ/250 - INQ0003 00496	Letter from CAPA to Susan Hopkins, UKHSA.	This is a follow up letter again asking from inconsistencies in the IPC guidance to be resolved.	Response received from Susan Hopkins on 21 October 2022 [BJ/8 - INQ000300607]. The response did not address all the inconsistencies raised. The response claimed that the decision to remove information on modes of transmission from

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				the 4 nations IPC guidance was taken by the 4 nations IPC cell and followed a consultation which generated over 7000 comments.
11/08/2022	BJ/275 - **INQ000130570**	Letter from David Osborn to Rick Brunt, Director, HSE.	This letter poses the question: "How can a decision as to FRSM vs FFP3 be made on the basis of 'risk assessment' for close-quarter care of infectious patients?"	No response received.
02/11/2022	BJ/252 - INQ000300498	Letter from CAPA to SoS Steven Barclay.	The letter asks the SoS to personally ensure that RPE is available to all healthcare workers at risk.	Response provided to Kamini Gadhock via email on 22 December 2022 from J Rawlinson, Department of Health and Social Care [BJ/253 - INQ000300499]. The response did not respond to the request made. The response claimed that it was not the DHSC's responsibility for setting the guidance, instead it was the responsibility of the NHS Infection Prevention and Control team, with reference to evidence from the UK Health Security Agency. The response said that supporting frontline workers remained a priority

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				for the Government and that it has extended its offer of free personal protective equipment to frontline health and social care staff in England until the end of March, thereby facilitating the use of face coverings in health and care settings.
27/03/2023	BJ/276 - INQ0003 00528	Email from David Osborn to Rick Brunt, Director, HSE.	Follow up to letter on 11 August 2022 [**BJ/75 - INQ000130570**	No response has been received.