Witness Name: Dr Roland Salmon
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UK COVID-19 INQUIRY

WITNESS STATEMENT OF DR ROLAND SALMON
(General Medical Council No. 2650548)

I, Dr Roland Salmon, will say as follows: -

1. I am a registered medical practitioner on the specialist register in Public Health and the GP register. I graduated in history before training in medicine and after working in hospital and completing vocational training for general practice, I trained in public health with my training having, by choice, a particular emphasis on communicable disease and environmental health. Between 1990 and my retirement in 2013 I worked as Regional Epidemiologist for the Communicable Disease Surveillance Centre (Wales) and from 1998, I was its Director. The Communicable Disease Surveillance Centre (Wales) was, from 1990 until 2003 part of the Public Health Laboratory Service, a network of area, regional and reference microbiology laboratories and epidemiology offices that, since 1939 and the establishment of the Emergency Public Health Laboratory Service at the outbreak of the Second World War, had been a mainstay of the UK's arrangements for for dealing with infectious diseases. Between 2001 and 2003, I was Director of the Regional Services division, comprising the Regional Epidemiology Offices in England, Wales and Northern Ireland, and a member of the Public Health Laboratory Service's Top Management Committee. On the Public Health Laboratory Service's abolition in 2003, in Wales, unlike England, the service was not broken up but its microbiology laboratories in Wales and the Communicable Disease Surveillance Centre (Wales) became part of the National Public Health Service for Wales, latterly, from 2009, Public Health Wales NHS Trust.

2. My experience is in “field” (or “applied” or “intervention”) epidemiology. The mainstay of this is the timely analysis of surveillance data and investigation of outbreaks,

frequently to support tactical and operational decisions but also to aid policy formulation. I spent eight years, up to 2019, as a member of the Department of Health's Advisory Committee on Dangerous Pathogens (ACDP), including two years as acting chair and eight years as chair of its Transmissible Spongiform Encephalopathy (TSE) Working Group, having prior to that been a member of the Government's Spongiform Encephalopathy Advisory Committee (SEAC). From 2003 to 2013, I was a member of the Scientific Advisory Committee (Conseil Scientifique) of The French National Institute for Public Health Surveillance (Institut de Veille Sanitaire) and subsequently until its incorporation in Sante Publique France in 2016, a member of its Management Board (Conseil d'Administration). I, thus, have considerable experience of infectious diseases as well as, at a number of levels (local government, devolved government, central government, European), the official machinery for dealing with them. Subsequent to my retirement from the NHS I also completed a three year term on the board of the Food Standards Agency.

3. In summary, my career has been mainly centred on communicable disease control and health protection, including senior management experience, teaching and externally funded research, with some clinical activity throughout. I have appended a list of my hundred plus publications on diverse aspects of disease surveillance, outbreak investigations and applied research (RLS/1 -INQ000130864)

4. Currently, I am Senior Crematorium Medical Referee for the Cardiff Council Crematorium, an office that I have held since 1999. This requires me to review the applications and medical certificates, relating to deceased individuals, to authorise their cremation. This enabled me, with my fellow Referee, Dr Stephen Monaghan, to undertake a study of those Covid-19 deaths, during the first wave, whose cremations we authorised, a study subsequenly published in the peer reviewed journal, "Epidemiology and Infection" (RLS/8 -INQ000222469). I am also an occasional Medical Officer at public events for Saint John Ambulance Cymru, a role that I have fulfilled since 1992. These two roles were the only ones that I held during the specified period of the Pandemic.

5. The only organisation that I am currently a member of, that was established specifically to address the Pandemic, is the Health Advice and Recovery Team (HART). HART, that I was invited to join in May 2021, is a free association of doctors, scientists,

psychologists, economists and other academic experts, linked by the view that less restrictive but more focussed approaches to the pandemic would have produced better health outcomes for the population. Through contacts in HART, I have attended two in-person and one virtual meeting of the All Party Parliamentary Group on Pandemic Response and Recovery (joint chairs, Esther McVey MP and Graham Stringer MP). I am, of course, like many doctors, a member of several professional organisations. Of these, the only one that is directly relevant is the Faculty of Public Health (of the Royal Colleges of Physicians).

6. I wrote, with colleagues, all very experienced in infectious diseases, to the President of the Faculty of Public Health, **Name Redacted**, on 5th October 2020 (RLS/2 INQ000130865), following a public statement by the Faculty and her signing, on behalf of the Faculty, a letter to the UK's Chief Medical Officers, posted on the blog site of the British Medical Journal on 21st September 2020, that stated,
"We strongly support your continuing efforts to suppress the virus across the entire population, rather than adopt a policy of segmentation or shielding the vulnerable until "herd immunity" has developed."

Since this was contrary to our views, I asked what the consultation process had been that had led her, apparently, to give that letter the institutional support of the Faculty. To her credit, she was prepared to get into a dialogue and after email exchanges and two Zoom conferences, she facilitated three colleagues and I publishing a critical piece on the Faculty's blog, "Better Health for All", entitled "The (A) View from Wales" (RLS/3 - INQ000130866). I remain amazed, to this day, that despite a consciously critical tone, that we adopted to promote debate, it attracted not one comment; something that it is hard to see as anything other than by design.

7. I had no formal communication at any level with Welsh Government or its advisory groups throughout the pandemic.

8. I had limited formal engagement with Public Health Wales. At the invitation of a former colleague, I participated, as an independent expert, in a single virtual meeting, on Wednesday 28th October 2020 and some correspondence of a Task and Finish Group

in the Cwm Taf Morgannwg Health Authority area, "to advise the Incident Management Team/RSOG on the way forward post lockdown and in doing so hopefully influence the strategy in Wales more widely". This came about, I think, as a result of my public pronouncements questioning the effectiveness of lockdowns, as well as discussions that former colleagues and I had intiated with the President of the Faculty of Public Health, in which we had involved the Board Member for Wales. My contribution to discussions was limited, I believed, although re-reading the meeting notes (RLS/4 - INQ000130867), they did echo, at least in part, a number of themes that I was raising with politicians in Wales, at the time. Whether the Task and Finish Group finished, was overtaken by events or simply decided to dispense with my help, I do not know.

9. Informally and with it being widely rumoured that a short "circuit breaker" or "firebreak" lockdown was likely in Wales, I wrote, on 18th October 2020, to politicians in Wales, selected on the basis that I had met them at some previous point in my career, as well as to my Member of Parliament at Westminster, Name Redacted Labour). The Wales based politicians included several Welsh Government ministers. They were:

- Rhun Ap Iorwerth (Plaid Cymru), Health Spokesperson
- Andrew R. T. Davies (Conservative), Opposition Leader in the Senedd
- Mark Drakeford (Labour), First Minister
- Vaughan Gething (Labour), Health Minister
- Dr Dai Lloyd (Plaid Cymru)
- Julie Morgan (Labour), Health Minister

The body of the text of the letter is appended (RLS/5 - INQ000130868). It pre-dates, of course, both the arrival of vaccines and the emergence of more transmissible variants. After explaining why Covid-19 was not unprecedented (subsequently the subject of a separate and informal submission by me to Module 1 of the Inquiry and appended (RLS/6 - INQ000130869) the letter went on to discuss; why earlier lockdowns have not been successful and why circuit-breakers would not work and may not have been necessary before proposing workable approaches centred on the person ("targeted shielding", "focussed protection"). The letter attempted to set out a viable way to co-exist with SARS CoV2 whilst mitigating its worst effects, a framework, that I still think, represented the best approach. The framework, that it sets out, focusses, variously, on the protection of i) vulnerable individuals ii) vulnerable (at-risk) locations iii) vulnerable occupations.

10. The letter ignored the usual conventions of writing to elected politicians being both lengthy and referenced. Nevertheless, it prompted a personal acknowledgement from Dai Lloyd and a lengthy and detailed email exchange with Rhun Ap Iorwerth (RLS/7 - INQ000130870) as well as a Zoom discussion with Andrew R. T. Davies. However, beyond automatically generated email acknowledgements, there was no response, at the time, from the politicians from Wales' governing Labour Party or from my MP. Over a year later, I resent it, on 2nd January 2022 with an offer of an in-person or virtual meeting, to Vaughan Gething, by this time Minister for the Economy, following a chance encounter in the street, suggesting that its approach might contribute to a constructive discussion of recovery from COVID-19. Disappointingly, I received an email from his Diary Secretary on 19th January declining my invitation due to heavy diary pressure. A little later in 2022, on 5th February, I answered my front to door to find my MP, Jo Stevens, delivering the local Labour Party ward newsletter. She asked me if there was anything that I wished to discuss and to her surprise, I enquired when I might expect a reply to my email of Autumn 2020. I resent it, as asked and duly received a reply on 18th February 2022 expressing the hope that "you will take the opportunity to submit evidence to the public inquiry as I would suggest, would be the most direct and suitable avenue for the discussion and recognition of your views that you have outlined."

11. At the time, I did learn something of my letter's reception by Welsh Government. In the letter, whilst making clear that the views expessed are my own, I acknowledge that, "In developing the ideas in this letter, I have had the advice and help, by correspondence, of a phalanx of very experienced public health doctors, that I gratefully acknowledge". When Welsh Government passed my letter for comment to Public Health Wales, the response of its Executive Board was to contact those doctors still working for Public Health Wales to ask "whether such contact took place and whether you are aware of the acknowledgement". This is particularly extraordinary as this was hardly a detail that I would have made up. Sadly, it did not presage any discussion of any kind of the approaches to the Pandemic that I was proposing.

12. Similarly, I had no communication with the UK Government. However, save for appending my signature to two or three group letters querying aspects of non-

pharmaceutical interventions and vacine policy, at no point had I contacted them directly not least as the management of the Pandemic in Wales was largely a devolved matter.

January to March 2020

13. Like many, I learned of the emergence of the Pandemic via the BBC News at New Year 2020 and its arrival in Italy over the weekend of 22nd and 23rd February 2020. Some seven years retired from the NHS and knowing, in part from my term as a member of the Advisory Committee on Dangerous Pathogens that had ended in April 2019, of the efforts that had been put into Pandemic Flu planning and the National Risk Register. I had no particular reason to suppose that the threat was not being taken seriously nor that the necessary preparations were not being made. I was encouraged to read the editorial of my friend and former colleague, John Watkins, of Cardiff University and Public Health Wales in the British Medical Journal of 28th February 2020 that said wisely,

"Given the lessons from 2009—which taught us that containment for a globally disseminated disease was futile—and accepting that most of the exported covid-19 cases from China (and elsewhere) are undetected, is it not time to admit that a global pandemic is on us? The World Health Organization is reluctant to say so. Once the disease is recognised as a global pandemic, nations, commerce, and healthcare can move into a much more rational phase with resources targeted at those most at need."

14. I assumed that, broadly, therefore, this process of preparation, focussed on protecting those most at risk, that, even at this stage, could be categorised as "focussed protection", was under way. I was hopeful that the UK would not, therefore, follow, the global fashion for lockdowns. I have chosen, in media interviews, at the risk of trivialising their impact, to liken this to political leaders' version of the ice-bucket challenge. Certainly and more substantially, I would see this fashion for lockdownsas the most significant example to date of what **Name Redacted** Professor in Political Economy at Goldsmiths, University of London, described, in his London Review of Books Winter Lecture, as "The Reaction Economy". In this "Reaction Economy", to an extensive degree, the ubiquity, immediacy and volume of digital information results in the split second emotional response being imbued with so much cultural and moral value that it comes to determine policy. Thus, I have heard several individuals, politicians and

doctors and scientists alike introduce into discussion, as a final definitive argument for lockdowns, "if/when we saw those images from Italy.....".

15. With Wales having recently entered lockdown, on 24th March 2020, in a letter to the Western Mail, “the national newspaper of Wales”, entitled, “Will social distancing actually work”, I wrote,

“This new virus will keep circulating until either we’ve all had it or vaccines or effective treatments become available, both solutions possibly years away. Distancing just makes the virus get round slower, and the pandemic last longer. Distancing also means less wealth and resilience to fight it.”

Whilst I acknowledge the political context that meant that some sort of lockdown was, intially at least, probably unavoidable, I have never been convinced that it was an appropriate strategy at any time or for any duration. It is worth noting, at this point, that by prolonging the Pandemic ("flattening the curve" in the jargon current at the time) you also prolong the period of exposure of the vulnerable members of the community. Thus, for example, Rice and colleagues, from Edinburgh University, writing in the British Medical Journal of 7th October 2020, as an accompanying editorial noted, estimated "that closing schools and universities would actually increase the number of deaths overall (compared with not closing schools). This is because school and university closures prevent transmission among young people but prolong the pandemic so a greater number of older and more vulnerable people eventually become infected (by the young) and die." The high levels of transmission in health and social care settings would similarly have made a greater contribution to higher rates of serious disease and death during a more prolonged pandemic.

16. Does this mean that I think that herd-immunity was an appropriate strategy to respond to the threat of Covid-19? Herd immunity is not a strategy but rather a time honoured epidemiological term that is used to characterise the resistance of a community to an infectious disease. The term "refers to the decreased probability that a group or community will experience an epidemic after the introduction of an infectious agent, although some persons in the group may be individually susceptible to the agent" (Lillienfeld DE, Stolley PD. "Foundations of Epidemiology". Oxford University Press 1994). Time honoured or not, those of us with experience of dealing with the media on

infectious disease topics know that it's a term best avoided or, at the very least, its more humane sounding equivalent "population immunity" should be used. The strategy that I have favoured throughout is the one of "focussed protection" that I commended to politicians in Wales. Inasmuch as the virus would continue to circulate and otherwise healthy people would become infected and then recover then population immunity would be boosted. This makes, as far as it occurs, population immunity a beneficial by-product of a strategy of focussed protection.

17. Concerning other measures proposed during this intial phase of the pandemic, I am sceptical that bans on international travel would have achieved very much, given the UK's interconnectedness with the rest of the world and its reliance on both trade and service industries.

18. Finally, sufficient data may have been gathered by UK Public Health Agencies in the first weeks of the Pandemic but it certainly wasn't being made readily available in contrast to other large European countries such as France and Germany, something that formed the basis of a rapid reaction that I made to an article in the British Medical Journal on 5th March 2020.

March 2020 - May 2022

19. I always considered the firebreak to be a mistake. As I wrote to "The Times" on 20th October 2020,

"With an effective two week firebreak, the [Welsh Government's Technical Advisory Group] document's reasonable worst case scenario predicts a reduction of 750 deaths up to the end of March. This comes at a cost of £300 million set aside from Welsh Government's Economic Resilience fund. Those dying from Covid, in the first wave were, on average 80 years old and had two other serious illnesses. Whilst each of those 750 is a fellow human, the cost per life saved could exceed by tenfold the thresholds normally used by the National Institute of Clinical Excellence to rule on the introduction, or otherwise, of equally life-saving NHS treatments as varied as new cancer drugs or suicide prevention."

As Wales now grapples with the economic and health consequences of the cost of living crisis, this letter should appear less as calculating, something that it was never intended

to be and more as setting out the framework within which, in the event, an incorrect decision was made.

20. Local and regional restrictions also contributed little. The necessary circulation of key workers, who by the nature of their occupations are often among the most connected of individuals, is enough to make sure that any virus would spread, despite local and regional restrictions. Efforts to enforce these would have been better directed at supplementing efforts in settings where spread was demonstrated to occur such as hospitals, care homes, prisons and some factories.

21. Legal requirements to wear face masks may help promote the social acceptability of the practice but studies of mask wearing in real life, as opposed to laboratory type settings, tend only to show modest benefits. Nevertheless mask wearing is relatively low effort, low cost and not overly constraining and for that reason, I have been relatively untroubled when its been made a requirement. In this respect, I am aware that others would disagree with me strongly.

22. Given the social importance of schools and educational settings, allied to the relatively benign nature of SARS CoV2 infection for almost all children and young adults, I would not have closed schools and other educational settings. I acknowledge that there are legitimate concerns for the health of older staff (age being the single biggest risk factor for severe Covid-19 disease) and staff and children, vulnerable due to other illnesses. I would have wished to see this addressed for these individuals, following appropriate risk assessment, by a combination of permitted and appropriately remunerated sickness absence, possibly some early retirement and home working and schooling. In fact, the Welsh Government produced an excellent workplace risk assessment tool, in June 2020 ("All Wales COVID-19 Workforce Risk Assessment Tool"), which would have appropriately supported such an approach but as far as I am aware, it was not widely used. Nevertheless, for the majority of staff and students, school and other educational settings should have functioned as normal.

23. Requiring isolation is established public health practice for many infectious diseases. In my view it is reasonable to use it to stop the spread of SARS CoV by restricting the contact of infected people with vulnerable people or preventing infected

people freely to access some settings where spread has been demonstrated to occur. Nevertheless policies of this nature can be resource intensive, in terms of the time of public health personnel and such policies contribute most when focussed on the situations that represent the greatest risk of spread.

24. Regarding the decisions made by Welsh Government, they could be said to be of a piece with the decisons made by many other jurisdictions round the globe. As will have become clear, I see many of the non pharmaceutical interventions as being inappropriate and lacking justification, so their timing is not relevant. Among the Welsh Government's more singular decisions, in addition to the firebreak, were closing selected supermarket aisles and pubs prohibited from selling alcohol. By contrast, I think that the rapid immunisation of those at risk was of enormous benefit and the roll out in Wales, benefiting, in my view, from the relatively straightforward and centralised organisation of the NHS in Wales, was well managed and notably efficient.

25. Of course, the justification was frequently made, and certainly not just in Wales, that decisions were taken because ministers were "following the science". However as Erica Thompson wrote in her book, "Escape from Model Land" , quoted by Richard Horton, the Editor of the Lancet on 14th January 2023, "the idea of 'following the science' is meaningless". All decisons are permeated by matters of ethics, politics and social values. This is merely to echo an article in the British Medical Journal, as long ago as 27th February 2012, by Keith Humphreys of Stanford and Peter Piot, Dean of the London School of Hygiene and Tropical Medicine, entitled, "Scientific evidence alone is not sufficient basis for health policy" and occasioned ultimately by the celebrated debate on drug safety, in 2009, between the then Labour UK Government and the psychiatrist, Professor David Nutt, who had been sacked as Chair of the Advisory Council on the Misuse of Drugs. To use a favourite analogy of mine, simply to be following the science would be akin to asking the pilot or the coach driver to choose your holiday destination. This analogy makes clear that the science sets the inevitable framework within which decisions are made. Some decisions are harder, nonetheless, even to sit within a scientific framework: the firebreak, closing selected supermarket aisles, pubs prohibited from selling alcohol, already mentioned, as well as vaccine passports for night clubs. The Inquiry may wish to take a view on the appropriateness of these. I hesitate to invoke other interests here. Rather I think that they are explained by the dominance of

mathematical modelling in the scientific advisory machinery. Welsh ministers, like many politicians and journalists, internalised the widely popularised idea of the effective reproductive rate (Rt) as a sort of epidemic volume control responding in small increments/declines to their “cautious” changes, such as these; a framework that entirely ignores the determinant role of social networks in epidemic patterns. Welsh Government’s Technical Advisory Committee (TAC) was chaired by the Chief Scientific Advisor, not the Chief Medical Officer and despite a number of members, experienced in all aspects of infection, it had been suggested, privately, to me, that it was the mathematical modellers that dominated the agenda. Certainly the TAC’s outputs, available online, are consistent with this explanation, for example, a paper showing that the Welsh Government’s two week October firebreak was “successful”. In this paper, arcane mathematics is used to claim success, whilst, from a simple eyeballing of the observed COVID incidence, it would be difficult to conclude other than that any effect was marginal at best.

26. This begins to explain the Wales Online headline of 22nd March 2022, "Covid lockdown restrictions did not help save lives in Wales" that you have asked me about, specifically. The article reports an interview that I had given that morning to Natasha Livingstone on BBC Radio Wales Breakfast. The article then goes on to quote me correctly and this makes clear that my views are a little more nuanced.

"I think that is because the evidence is increasingly appearing that really that sort of stuff hasn't worked., or hasn't worked very much in any consistent way. We have just had a massive study of excess deaths from all 191 countries around the world, done by academics in the United States. The one thing that is very clear from that, apart from the fact that excess mortality is higher than we might expect, is that how well, badly, countries have done bears little relation to how strict or consistent their different, wider measures have been. We might value the Welsh Government's cautious approach, because we might value caution as a virtue. But I am afraid to say there is not much evidence that it has actually saved any lives, or any more lives than more haphazard approaches.....Now that we can look at the number of excess deaths from all causes, we see that Wales has done much the same as Scotland, Northern Ireland, England and other countries in Europe, despite radically different approaches with different degrees of restrictions being taken in those different countries. It is very hard to make a case for the measures that have been taken."

This longer quote begins to outline my reasoning. I might observe that it's paradoxical that you have asked me, specifically, to explain why lockdowns did NOT work when, for all interventions in health, the usual convention is to require those who propose them to produce the evidence that they DO work.

27. The article to which I am referring was published in the Lancet on 10th March 2022 and was authored by the Covid-19 Excess Mortality Collaborators and the Institute of Health Metrics and Evaluation at the University of Washington in Seattle. It measures excess deaths around the world up until the end of 2021. As I mentioned, Western European countries mostly have similar excess death rates. In fact. Wales is estimated to have a very slightly higher rate than the other three constituent countries of the UK. That article did highlight a few countries that had done particularly well in minimising deaths over the period of the Pandemic up until the end of 2021. Notable among these were Australia, New Zealand, South Korea, Taiwan and Norway. Although some would see this as a product of lockdowns, these countries were aided by being either geographically isolated (Australia, New Zealand, South Korea) or diplomatically isolated (Taiwan). They were able to restrict importation of the virus in a way that would not have been really practicable in the UK and Wales. South Korea and Taiwan were also able to mobilise massive human and technical resources for testing and tracing, although these testing and tracing methods were frequently intrusive (in South Korea the public health authorities monitored mobile phone and bank card usage) and in the case of South Korea, still, eventually, were overwhelmed. Like South Korea, these other countries frequently ran into problems once the virus eventually started to circulate. I have, personally, always been impressed by the response of Sweden, a country that based its measures on its Pandemic Flu plan and had the wisdom to acknowledge that it was the burden of disease over the whole duration of SARS CoV2's circulation, not to mention the burden that would occur as the result of any Public Health measures, that had to be taken into account. The result was much less restriction on everyday activity with little appreciable evidence of additional harm.

28. It is reasonable to ask whether the Welsh Government could have diverged markedly from the decisions being taken by the UK Government for England, given the high level of economic and social interaction with England? I see no objection, in principle, to this and it has happened before. Wales refused to endorse claims from

Department of Health in England, in the early 1990s that Bovine Spongiform Encephalopathy ("Mad Cow Disease") could not transmit to humans, chose to wait before embarking on the smallpox vaccination of health care workers, before the Iraq war, due to the high levels of side effects documented in the United States, and during the 2009 Swine Flu pandemic, Wales chose to use usual healthcare providers, bypassed in England by the costly, centralised and often ineffective “Flu Line” (National Pandemic Flu Service). During the Covid 19 Pandemic, however, there were not really any approaches that were substantially different from those being followed in England and like England, they did not really evolve over the course of the Pandemic. Wales may have benefitted from a more consistent and sympathetic presentation. Further the press conferences in Wales that I watched, usually kept separate the scientists, doctors and administrators on the one hand and the elected politicians on the other. This had the merit of helping to clarify the separation of the scientific and technical elements of the decision making from the political. In global terms, such a separation was unusual but is to be commended.

29. Ultimately, I see the lessons that are to be learned by the Welsh Government from the Covid 19 Pandemic are similar to those that are to be learned by the UK Government and can be divided into first, those related to the operation of the scientific advisory mechanisms and their interaction with the political process and secondly, questions of capacity in the NHS, the care sector and public health.

30. Those lessons on the scientific advisory mechanisms are very similar to the lessons identified by Wales' former Chief Medical Officer, Dame Deirdre Hine, when in July 2010, she produced her independent review of the UK Response to the 2009 Influenza Pandemic. She recognised the attractiveness of mathematical modelling to hard pressed politicians and for that matter journalists, something very much in evidence during the Covid 19 Pandemic with its endless and not always accurate expositions of the R number. She had even gone so far as to advise that between emergencies, "Ministers and senior officials should receive training on the strengths and limitations of scientific advice as part of their induction. It may also be helpful if a briefing is prepared during the early stages of a pandemic explaining for the benefit of the CCC and senior officials the limitations of science, and particularly of modelling. This could include what

can and cannot be expected of SAGE and the SPI-M, depending on what sort of data may be expected to be available under different scenarios."

Had something like this occurred a more critical view of the limitations of modelled predictions might have taken place, limitations that had been seen in the past and which I commented upon in an OpEd in the French newspaper Le Monde of 8th April 2020, in a letter to the London Review of Books of 4th June 2020 and in a number of rapid reactions in the British Medical Journal, searchable on that journal's website. By contrast theren were excellent empirical (field) studies (*eg* Williamson and colleagues, published in Nature in 2020, de Lusignan and colleagues published in Lancet Infectious Disease, also in 2020 and Docherty and colleagues published that year in the British Medical Journal) including some performed in Wales (Emmerson and colleagues and Thomas and colleagues published in, respectively, Influenza and other Respiratory Viruses in 2021 and Epidemiology and Infection in 2022). These studies seemed to exert much less influence on policy. Notably, the opportunity does not appear to have been taken to trial, or otherwise to evaulate, the effectiveness of non pharmaceutical interventions such as school closures, mask wearing and social distancing measures *(eg* the firebreak, restricting alcohol in pubs and closing selected supermarket aisles). Had the scientific emphasis been different, more empirical/field based, some of the more excessive restrictions might have been recognised as superfluous. The Inquiry might usefully ask whether such field epidemiology studies were ever proposed and if so, what was the fate of those proposals?

31. Given that, within the Technical Advisory Committee in Wales, there were, as I have noted, several members with extensive on the ground experience of managing infectious disease problems and that, even in Wales, the mathematical modellers were still quite so influential raises questions about the roles played by the Chief Scientific Advisor, and the Chief Medical Officer. These two officials represent a critical part of the interface with elected politicians, an interface that appears not to have functioned as it should.

32. Before leaving the question of the adequacy of the scientific advisory machinery, it should be noted that, for whatever reason, no attempt at a comprehensive and

quantitative evaluation of the downsides of the measures being taken appears to have been produced despite the UK Governments have recognised methods for impact assessments and despite Wales having set itself an obligation to perform tasks of this nature with its progressive and laudable, "Wellbeing of Future Generations Act 2015".

33. Secondly, there are questions of capacity in all the sectors of health and social care. It should be acknowledged that, in practice, resilience is the obverse of efficiency. A resilient system demands some spare capacity, to be used in the event of unforseen emergencies and a several decades long emphasis on efficiency has stripped the health and care sector of any spare capacity. Very high occupancy rates, in our hospitals, for example, are the norm. If, however, as we found in our study of Covid-19 deaths that we authorised for the Cardiff Council crematorium, in around a half, infection was acquired in a health or care setting (RLS/8 - INQ000222469), then, as had been suggested for the role of schools (discussed above), "flattening the curve" could actually have increased mortality. This would have happened because, high levels of infection would have been present, for a longer period (*eg* not 12 but 32 weeks, as the original, influential Imperial College model predicted) in hospitals and other care settings. People, vulnerable by reason of their age or other illnesses, were, of necessity, admitted to these settings where they contracted COVID-19. Healthcare acquired infection, rather than contributing at the margin, albeit an important margin, to the scale of the problem, thus, was a key driver of overall mortality.

34. Overall, in conclusion, whilst acknowledging its highly complex nature, it is difficult to see the whole episode as anything other than a failure to apply long-learned lessons in the management of infectious diseases. Rather, responses, too often, seemed to be determined by political and social fashions and orthodoxies.

Statement of Truth

I believe that the facts stated in this witness statement are true. I understand that proceedings may be brought against anyone who makes, or causes to be made, a false

statement in a document verified by a statement of truth without an honest belief of its truth.

Personal Data

Signed: _____

Dated: 14th July 2023