Witness Name: David Crossman

Statement No.: 2

Exhibits: DCC2

Dated: 16 November 2023

UK COVID-19 INQUIRY

WITNESS STATEMENT OF DAVID CROSSMAN

In relation to the issues raised by the Rule 9 request dated 10 August 2023 in connection with Module 2A, I, David Crossman, will say as follows: -

1 I am David Crossman of the University of St Andrews. I am the Dean of the University of St Andrews School of Medicine and honorary consultant cardiologist at NHS Fife. I have been in this position since 2014. I am a clinical medical academic with an academic interest in cardiology having been appointed as Professor of Clinical Cardiology at the University of Sheffield in 1994. I have published on coronary artery disease and a number of clinical trials. I am a Fellow of the Royal Society of Edinburgh. I am a Fellow of the American College of Cardiology and Fellow of the European Society of Cardiology. As a Dean of a medical school I am a member of Medical Schools Council (UK) and I am also a member of the executive of that group and a Trustee.

2 I was also the Chief Scientist Health within the Health and Social Care Directorate of the Scottish Government from 2017 to 2022 being renewed in 2020 after my first 3 year term. This post was a 2 day a week secondment. Relevant to the period of this part of the inquiry I expanded my commitment by not undertaking clinical work for NHS Fife. This allowed me to undertake the expanded roles for Scottish Government during the period of the pandemic. Notwithstanding that, the line management of this post did not change which was to the CMO in Scotland (Chief Scientist Health).

3 In my responses it is important to understand my role in Scottish Government during the pandemic and the period covered by this module. Formally I was "Chief Scientist Health". In that specific role and within the boundaries of that post I was to advise on research, development and innovation (RD&I) within the NHS in Scotland. Along with the civil servant head the Chief Scientist Health oversees the Chief Scientist's Office which has a budget of approximately £65 million to fund RD&I within the NHS in Scotland. I had no locus in public health or matters relating to health care delivery. Within the remit of RD&I my line management was the Chief Medical Officer (CMO) in Scotland. I would occasionally have meetings with minsters on matters of RD&I when that was relevant, and they agreed to that.

4 Scotland has a Chief Scientific Adviser (CSA) who covers advice on all aspects of science. During the pandemic this was Professor Sheila Rowan for the first part and then Professor Julie Fitzpatrick. In addition, there is a Chief Scientist Environment who was Professor Andrew Millar who advises on environmental matters. There is a Scottish Scientific Advisory Committee (SSCA) which is independently chaired but supported by the secretariat that supports the CSA. The CSA, the Chief Scientist Health and the Chief Scientist Environment are all ex officio members of the SSCA.

5 I have prepared this statement myself by reference to my memory of events, to records and materials provided to me by the Scottish Government. I have also received assistance from the Scottish Government Covid Inquiry Information Governance Division and the Covid-19 Advisory Group secretariat to enable the statement to be completed.

6 Unless stated otherwise, the facts stated in this witness statement are within my own knowledge and are true. Where they are not within my own knowledge, they are derived from sources to which I refer and are true to the best of my knowledge and belief. I feel it is important for the UK COVID Inquiry to understand that I left my role in Scottish Government in April 2022. With this my archives of material disappeared, my Scottish Government computer was returned, and I stopped any involvement in the management of the pandemic, public health in Scotland or any other advisory interactions. I have not been given back my Scottish Government computer for the preparation of this report.

7 I have answered the questions put to me by the inquiry to the best of my ability. Where I am unable to answer the questions posed, for example because the question falls

outwith my remit as Chief Scientist Health, I have informed the inquiry of this and the reasons why in accordance with the instructions outlined in the Rule 9 request. There are places where I am asked questions that realistically can only depend on my recall of events which are sometime ago and my mechanisms for corroboration of my recall do not exist. Nonetheless I have tried my very best to answer the questions posed to me but indicate that these arise from my recall or personal impressions.

8 References to exhibits in this statement are in the form [DCC2/xxx - INQ000000].

Sources of advice: medical and scientific expertise, data and modelling

Your roles and responsibilities

9 At the start of the pandemic there was a rush to get things underway. My impression was that there were too few individuals to deliver and advise. Clear to me was that very experienced civil servants were being moved from other parts of government to support the Covid-19 response.

10 From January until around the middle of March 2020, I was not involved in pandemic management. I could see that individuals with governmental advisory function in the other nations were having some role in pandemic response and I was aware that some strategies were emerging for example in testing for SRAS-CoV-2 infection. I was not formally asked to expand my role but it was the absence of a SARS-CoV-2 testing strategy in Scotland when there was one in England and Wales that caused me to contact Catherine Calderwood (then CMO) and bring this to her attention as I was concerned that without the ability to test for the causative agent the pandemic would be unmanageable. At that stage I offered my services to the CMO to help with the response. The CMO responded that it would be helpful to have a strategy but if I was going to do this it needed to be done quickly. I responded and delivered the first strategy with a civil servant (Mary Stewart, Head of Unit, Covid Public Health Directorate) by the 28th March and this seemed to establish me as a useful adviser to the Scottish Government's response **[DCC2/001 INQ000316271 and DCC2/001a INQ000316272].** With that strategy, which the First Minister (FM) referred to in one of her briefings [DCC2/002-INQ000316273], a testing team was established. After a few days of helping establish this I became purely advisory, and this continued throughout the pandemic chairing the Scottish Scientific Advisory Board on Testing ("SABoT").

11 In my role as Chief Scientist Health, I advised on the research response that would be funded by the Scottish Government in relation to the Covid-19 pandemic. Within my research advisory role I was invited to UK meetings which articulated with the delivery of research relevant to the pandemic (e.g.The Vaccines and Therapeutics Taskforce) as well as attend the National Core Studies meetings organised by GoScience. I was asked to Chair a review of the National Core Studies by UKRI in early 2022.

12 The responsibility for preparing a testing strategy evolved into chairing the Scottish Scientific Advisory Board on Testing ("SABoT"). The testing strategy was completed on 28 March 2020 and the first meeting of SABoT was on 1 April 2020 [DCC2/003 -

INQ000316289]. SABoT was a sub-group of the Scottish Government Covid-19 Advisory Group (hereafter "the Group"). The Group was chaired by Professor Andrew Morris of the University of Edinburgh. I was the vice-chair.

13 This extended role for me, arising from events around the 28th March 2020, in helping advise on the pandemic appeared to be welcomed and the CMO and DCMO included me in their regular morning catch up meetings. These meetings were informal and discussed matters of fact. I am not aware of minutes being taken at these meetings. It was through these that any advice I offered was given to the CMO in Scotland, as well, of course as a member of the Group.

14 This extended role for me (beyond RD&I), however, neither extended to meeting the FM or her minsters directly, nor being part of cabinet meetings nor being asked to appear at press briefings. The position I was in did not generate a place for me at SAGE, which did surprise me, and is covered directly in the questions below. I had no direct or formal interactions with the National Clinical Director ("NCD").

15 Being close to the CMO's team and included in briefings as well as the vice-chair of the Group and Chair of SABoT I, therefore, have knowledge of, and opinions on, some of the matters raised in the questions posed to me in the Module 2A. I will address them in the context I have set out above, but I will avoid speculating where I feel that I was not sufficiently involved, and this will include many of the questions that directly relate to decision making.

16 The intention of the Group was to (in the main) interpret work undertaken by SAGE and apply it to a Scottish perspective. The remit of SABoT broadly related to the Scottish Government's testing strategy and the scientific basis for this throughout the course of the Covid-19 pandemic. [DCC2/004 –INQ000316290].

17 I did attend some SAGE meetings, as discussed further on in my statement. I did not attend any meetings of the 4 Nations' Chief Medical and Scientific Officers, SPI-M, SPI-B, JCVI, or UKHSA. I did attend the JBC meetings with the CMO [DCC2/005 – INQ000316274]. My memory is that I did observe one or two NERVTAG meetings but the Chair of that group subsequently indicated that only formal members should attend and I attended no further. I was not closely enough involved in the mechanism of evolution of some of these groups (for example JBC) to be able to comment on the specific issue of their evolution.

18 I am asked for my understanding of the overarching principles which guided core political and administrative decision making within the Scottish Government. While I cannot say definitively how scientific and medical advice was received by the Scottish Government, I do think it was factored in considerably. The core decision makers required to have fundamental principles and sometimes complicated molecular biology explained to them. I got the impression that the decision makers within the Scottish Government appreciated that we were providing detailed advice that was not overly simplified. It was up to them what they made of it, but there was never an insinuation that they were receiving too much information. There were occasions when the decision makers would ask for further clarity on our advice. I take this as an indication that they were taking the scientific and medical information on board.

19 I do not know whether the First Minister or any other individual involved in core decision making referred to "following the science" (Q9). I do recall that she did not like the term "herd immunity". Herd immunity is a widely used colloquialism in the scientific community. The First Minister I was told did not wish the public referred to as a "herd", but she did not force us to change our language when talking in the Group or elsewhere. I continued to use the term when discussing the pandemic with my colleagues.

20 I was not a decision maker in the management of the pandemic, so I do not know the extent to which scientific advice was taken into account. However, the policies undertaken by the Scottish Government do suggest that it was. For example, within SABoT we recommended testing wastewater for the presence of SARS-CoV-2 [DCC2/006 – INQ000218091]. We established a system across the country with the Scottish Environment Protection Agency to measure this. Further, scientific advice was also put to the Cabinet Secretary (Jeane Freeman) to advise the need for increased capacity for genomic sequencing of SARS-CoV-2 and this was supported financially. These two programmes would not have been established if the Scottish Government decision makers were not taking into account scientific advice.

21 I was not involved in any communication strategies so do not know whether "following the science" was an effective message to the public.

22 "The idea that no death from novel Coronavirus is acceptable" is a quote from the book "The Year the World Went Mad" by Professor Mark Woolhouse. Professor Woolhouse was a member of the Group and SABoT. I respect him very highly and he would provide the Group with clear views. I do not know, however, where this quote comes from. I

cannot recall any decision maker saying this. When providing advice, the models used by the Group included reasonable worst-case scenarios. The key word here is "reasonable"; whether to adopt specific policies was ultimately judgment call on the part of the decision makers. As I was not one of the decision makers, I do not know what the policy was in the use of Covid-19 safe measures in the suppression of the pandemic.

23 The Group and SABoT would respond to advice requests from the Scottish Government, Public Health Scotland and NHS Scotland. The Group's advice was issued to CMO and copied to Ministers and policy makers, as set out in the statement of 23 June 2023 from the Chair of the Group [DCC2/007 - INQ000215468].

24 I did not interact with the Scottish Health Boards, local authorities, primary care services, or independent sector care providers.

25 I would describe my working relationship with the CMO (Gregor Smith) as excellent. I got on very well with him and I think he got on well with me. (My interaction with Catherine Calderwood on COVID19 matters was brief as she left office early in the pandemic). I had little direct involvement with Scottish ministerial decision makers. As a member of the Group, I attended a number of 'Deep Dives' attended by Ministers, as described later in this statement and, separately, on one occasion relating to a request for support of increased capacity for genomic sequencing of SARS-COV-2, which was supported **[DCC2/008 INQ000316291, DCC2/008a INQ000316292, DCC2/008b INQ000316293].**

26 I did not attend any cabinet meetings, SGORR or the Four Harms group. I did not help prepare any written advice for the meetings of these groups.

Informal decision making and communication.

27 The Inquiry should also be aware that I left my post in Scottish Government at the end of April 2022 having served my full term. With that I returned my laptop and I have no longer access to any source e mails or data and gave up any continuing role in pandemic management.

28 I am asked about communications and decisions made outside formal government processes. I deliberately did not Tweet my views. Having looked through my personal phone WhatsApp history I can find that during the period in question I was included in the following: [Scottish] SAGE, (members Gregor Smith (CMO), Jim McMenamin

(Public Health Scotland),Nicola Steedman (DCMO) and Daniel Kleinberg (civil servant)); CMO Clinical COVID Group (Gregor Smith (CMO), Marion Bain (DCMO), Nicola Steedman (DCMO), Graham Ellis (DCMO), Alison Strath (Chief Pharmaceutical Officer), Delina Cowell (CMO support); CMO Weekly Call Group (Gregor Smith (CMO), Marion Bain (DCMO), Nicola Steedman (DCMO), Graham Ellis (CMO), Alison Strath (Chief Pharmaceutical Officer), Delina Cowell (CMO support). I am not longer part of these groups and removed from them when I left Scottish Government. These are on my personal phone (I never had a government phone) and I have downloaded what I have as I have never deleted these. They are now supplied as 3 separate files as exhibits.

29 I was involved in calls led by the CMO and deputy CMO, which I contributed to on a regular and consistent basis. These informal calls were not minuted and I do not know why. In any event, no policy decisions were taken on these calls. They were largely for information dissemination but members gave their opinions to each other freely.

30 I have retained no formal or informal communications from my time in the Group. My computer was issued by the Scottish Government and taken away at the end of my involvement in April 2022. I believe the data on my computer has been wiped though I have no record that this is fact.

31 I do not know what the process was for recording meetings. Meetings of the Group were attended by a member of the Scottish Government Secretariat who would record the minutes.

32 Any minutes taken at the meetings of the Group would record dissent or disagreement. Any disagreements within the group were on the interpretation of science and the application of well-trodden scientific principles in the management of infectious diseases. If there were ever any differences of opinion, in my view, it was usually because there was not enough scientific evidence to reach a definitive conclusion, so it became an opinion. Any differences of opinion were managed by Professor Morris. What to do with these opinions was ultimately the task of the decision makers. It is important to note that the Group was never advising on whether a specific policy ought to be adopted by the Scottish Government.

33 I was involved in a multitude of meetings over the course of the Covid-19 pandemic. I have not kept a chronological list of the meetings I participated in. The only informal meetings were the morning briefs I would have with the CMO.

34 I am not aware of any informal or private communications regarding significant decision making or advice in managing the Covid-19 pandemic response.

35 There was a Slack channel for the Group. Academic articles were posted on the Slack channel and the purpose was to inform the Group of contemporary or relevant scientific articles. It was a useful tool as there was an extraordinary amount of new data and this was a good way to bring it to the Group's attention. Decision makers did not have access to the Slack channel as I understand it. I believe that the contents of the Slack channel are no longer available.

36 Papers, agendas, minutes, papers from SAGE and advice from the group were all contained in Objective Connect - a password protected corporate information sharing platform.

37 I do not recall there ever being any Scottish Government advice regarding communications within informal groups. There was some discussion about contact with the press, but I do not think there was any guidance on how to use the Slack channel. The advice on speaking to the press is that it had to be made known you were doing so as an individual, not on behalf of the Group.

38 I am not aware of how policies were decided upon so cannot comment on whether informal communications affected the efficacy of this.

Scottish Government Covid-19 Advisory Group and SAGE

39 The Group was formed on 25 March 2020. The then CMO, Catherine Calderwood, only told me about the formation of the Group after this had occurred. I recall telling her that it would be sensible to have one of the scientific advisors appointed to it and she suggested that I be vice-chair indicating that the Chair (Andrew Morris) had been appointed.

40 I do not know if any issues had been identified with the way that medical and scientific advice had been provided to the Scottish Government prior to the formation of the Group. The Group had a policy of being open regarding our meetings and membership.

I do not know when membership of the Group was made public or why the first meeting only occurred on 26 March 2020.

41 I was not involved in making recommendations to the First Minister in April 2020 regarding the activities of the Group. I was also not consulted for my views on the Group's membership though I do recall Andrew Morris calling me as vice-chair and letting me know the membership.

42 The Group had expertise in virology and immunology. We also had a specific sub- group for considering educational issues - Subgroup on Education and Childrens' Issues. The Group did not have input from health economics, respiratory medicine, the economy or ethics. I believe that the NCD considered the issue of at-risk and vulnerable groups.

43 At the outset, the Group was explicitly told not to consider economic issues when advising on measures to combat Covid-19. I presumed that decision makers were receiving separate advice from economic experts. I recall that we did ask whether we should take economic considerations into account, but we were explicitly told not to.

44 The Group was focused on case numbers and how to reduce them. This in my view was appropriate at the outset of the pandemic. A priority was ensuring that the NHS was not overwhelmed, which was a real possibility and avoiding very large numbers of deaths that would occur in the event of an overwhelmed NHS. Suppressing case numbers was the best way to do this, though we perhaps should have broadened our focus as the pandemic unfolded into the impact of lockdowns and other measures on a wider range of health issues (e.g. non-covid deaths and mental health).

45 I think that the Group was appropriate for advising on scientific measures and did as well as it could. The Group's members and particularly the supporting civil service team demonstrated an extraordinary work ethic. I did not express any concerns regarding the adequacy or sufficiency of scientific advice and I did not express any concerns about the SAGE system. I had a personal feeling that the integrated data information systems that were available later in the pandemic would have been helpful earlier on. Prior to this it seemed that sometimes there might be data and information known to some and not others, but I am not in a position to give any examples of this.

46 I am asked about the scientific advice provided to the Scottish Government before the formation of the Group between January 2020 and February 2020. The Group was

formed in March 2020. During the period of January and February 2020 I was neither asked for any advice and was nor at any meetings where advice was being given to the CMO. As I have said I directly contacted the CMO in March to offer help on a testing strategy. Please see paragraph 131 and 132 of this statement which gives more detail.

47 In my M2A Questionnaire [DCC2/060 - INQ000130148] I refer to a "powerful external adviser". This was Sir Jeremy Farrar. Sir Jeremy Farrar attended a Deep Dive session on 16 December 2020 [DCC2/009 – INQ000233316] where to my recollection he suggested that schoolteachers be given preferential access to vaccines. I discussed this with the CMO the following morning, who declined Sir Jeremey Farrar's advice. I think he was right to do so. For rolling out the vaccines, we followed the advice of the JCVI (Joint Committee on Vaccination and Immunisation). Preferential of this type vaccination was not JCVI policy and the CMO saw no reason to deviate from their guidance. The JCVI had done a very good job throughout the pandemic and I had confidence in their recommendations and my recollection is that was also the case for the CMO.

48 I do not know whether preferential vaccination for teachers would have had an impact on the school closure policy.

49 I did not directly provide advice to the Scottish Government so do not know when advice was or was not followed.

50 I recall that during my informal meetings with the CMO I expressed a dissenting view regarding the Scottish Government's Covid 19 “levels” system for the Scottish local authorities. I did not consider that this approach would adequately reduce case numbers or the progression of the pandemic – my concern was that varying by local authority seemed unlikely to outwit the virus. I did not take steps to persuade the Scottish Government to change their decision. I have explained that I was not directly involved with decision making.

Sub-groups

51 I think SABoT was a good way of doing things and we had useful discussions at our meetings. Participants were very keen to get involved.

52 As I was not involved in providing direct advice, I do not know how effective SABoT was in informing the response of the Scottish Government to the pandemic. Suffice to say we were asked to continue throughout the pandemic.

Operation of advisory structures

53 I am asked several questions about advice given to the Scottish Government decision makers and the effectiveness of advice from the Group. I do not know how to answer this and I am not aware of how the Group's discussions were presented by the CMO to the Scottish Government. Other than the fact that the Group's meetings were minuted, I do not know how the information was given to decision makers. I presume that the CMO/DCMOs contributed to briefings to Ministers, but I do not know. Aside from a handful of "Deep Dive" meetings (discussed later in my statement), I was not involved in meetings with decision makers.

54 I did not provide weekly briefings to Cabinet meetings or contributed towards policy papers to Ministers.

55 The Chief's group meetings were just a way for scientific advisers to stay connected. It was really just a communication group. I did not recall if those meetings were recorder however, I am aware these minutes were located and provided to the Inquiry [DCC2/010 – INQ000292568], [DCC2/011– INQ000292569], [DCC2/012 – INQ000292571], [DCC2/013 – INQ000292573], [DCC2/014 – INQ000292572], [DCC2/015 – INQ000292574], [DCC2/016 – INQ000292575], [DCC2/017 – INQ000292576] [DCC2/018 – INQ000292570

56].

57 I do not know how core decision makers commissioned the Group for advice. Civil servants in the secretariat supporting the group commissioned some of the work and I was aware that on occasions the First Minister would pose the group questions. I cannot recall what these were.

58 The Scottish Covid-19 dashboards were informative. Their usefulness was informed by the fact that accurate data was being fed into them.

59 I did not communicate any advice to core decision makers regarding relevant policy options. I cannot recall that the group ever took into account palatability of policy decisions when considering policy options. I think that the information included in the minutes and any papers would have been clear and comprehensive. I do not know what

mechanisms there were for core decision makers to challenge medical and scientific advice provided.

60 For meetings of the Group, the Scottish Government Secretariat prepared the agenda and Professor Morris would discuss with them the priorities. There was a clear dialogue between the Chair, the Group and the subgroups for what to discuss.

61 I do not think that the Group was too heavily influenced by a particular scientific discipline. We would not be able to do anything without accurate epidemiology and modelling of the disease pandemic. We were asked about reasonable worse-case scenarios and the modelling provided by and large got this right. I think the information would have informed decision makers of what they needed to know about protecting the public.

62 I do not know how conflicting data modelling was considered by decision makers. I do not know how any differences or conflicts would have been reconciled.

63 There was no external assessment or peer review of the group in the interests of avoiding "groupthink". This was probably viewed as unnecessary as the Group had a wide inclusivity of membership, involving numerous experts from a range of different disciplines. All agreements and disagreements were aired at the meetings and recorded in the minutes. We could have sent our opinions to similar groups in a different country such as Germany or Sweden, but I cannot think of any practical benefit this would have given us.

64 All agreements and disagreements within the Group were aired and recorded in the minutes.

65 I do not know whether scientific advice or data modelling was followed by decision makers on an individual item basis, but the pattern was that at least in part advice and modelling fed into policy from the decision makers. I cannot recall discussions around identifying data that should have been sought.

66 The Group was explicitly told not to weigh medical and scientific advice with other considerations. I do not recall that the Group had access to information or advice from patient groups.

Mechanics of the provision of Group advice

67 The purpose of the "Deep Dives" is addressed in paragraph 11 of the statement of 23 June 2023 by the Chair of the group (INQ000215468). I did attend some of these Deep Dives but I do not have the minutes.

68 Sir Jeremy Farrar did attend a deep dive meeting on 16 December 2020 [DCC2/009 – INQ000233316]. I do not know why he was invited. I presume it was because he was seen as a luminary. He suggested that teachers should be prioritised for vaccines (see above – paragraph 47), but I do not recall any other contribution that he made.

69 I do not have any records of the Group providing advice to SGORR. I have answered how much I was aware of in terms of the Group being commissioned and on occasions responding to First Minister's questions. I cannot be specific on issues we addressed that was specifically not requested of the Group. My memory is that the agenda for the Group was largely to review what had been discussed at SAGE.

70 Any dissent within the Group's meetings was recorded in the minutes. The CMO along with DCMOs were regular attendees at the meetings so they would have heard the discussion as well. It is no surprise given the nature of academic discussion that there were differences of opinion. Other than saying this would have been recorded in minutes and those who had responsibility for directly advising decision making ministers were in attendance, I cannot say how effectively any difference of opinion might have been relayed to minsters. Suffice that in general a consensus was reached and this was not usually challenging to achieve and emerged from expertise on any specific area being respected.

71 No members of the Group were ever removed from it that I am aware of. There was a good balance of disciplines. I am not aware of any of the Group's participants not being invited to meetings because they had a different view. Other members were invited to the Group over time. For example, Professor Stephen Reicher provided a very strong voice with regards to psychology and behaviour. Professor Nick Hopkins was added to the Group so we could have another view from that particular discipline.

72 I am not aware of personal briefings provided by policy leads within the Scottish Government regarding the work of the Group. I do not have any copies of any such briefings.

73 I do not recall the Group providing advice about medically vulnerable groups, aside from discussions regarding pregnant women. SAGE had a sub-group dedicated to ethnic minorities, but we did not have an equivalent and I have no recollection of this being considered as an additional subgroup of the Group.

74 In terms of discussions regarding the medically vulnerable, I recall that this was dealt with by the CMO and the NCD. I do not recall this forming part of the Group's discussions. To my recollection, the definition of "vulnerable group" was dealt with by the Deputy CMOs. With regard other sources of information I am not aware of any specific source relied upon, rather all members of the groups would draw on what was available to them from the breadth of academic output. I do not have the ability to answer specifically what advice was received form the Group on NPIs. With regard to advice on travel and Borders I find it difficult to recall the “tenor” of advice. With regard to the Group’s involvement in decisions making it would be fair to say that it did not view itself as decision making but advisory.

SAGE

75 I note in my previous statement M2A Questionnaire [DCC2/060 - INQ000130148] that I did not attend SAGE meetings which occurred early in the pandemic. I thought it would be useful for me to be at SAGE and asked both Catherine Calderwood and Gregor Smith that I be allowed to attend. Gregor Smith advised he was supportive of my attending, but that the response he received from SAGE was that I could not attend as all the available spaces for Scotland had been taken. I was allowed/invited to attend when others from Scotland could not – hence my occasional attendance.

76 I found this uncomfortable considering my role as Chief Scientist Health. Even within my specific role of overseeing RD&I within Scotland I had imagined that the importance of research in managing the pandemic would be a central part of the work of SAGE. I understand that some of my equivalents in the other devolved administrations attended these meetings and other members of SAGE were giving a research perspective. Furthermore, I was a regular attendee of the Covid-19 Science Coordination Group which considered the agenda for SAGE meetings. However, I was not involved with any specific discussions on the representation of Scotland and the DAs on SAGE and I did not directly contact Patrick Vallance. As I have said elsewhere, I raised the question of my participation through my line manager – the CMO for Scotland. I am asked about the timing of Scottish representation on SAGE. I am not in a position to answer this – I

was aware that Andrew Morris was invited to attend fairly early in the course of the pandemic.

77 No minutes were kept for the Covid-19 Science Coordination Group. I suspect this was because the chair, Patrick Vallance, wanted to keep the dialogue speedy. To my memory there were no new papers tabled at these meetings though I think documents were produced that highlighted upcoming papers for SAGE. Personally, I always viewed this meeting's primary function as a SAGE planning meeting and activity dissemination to a wider group of people including Departmental advisers. I do not know whether minutes were kept for the Go Science 4 Nation Co-ordination Group.

78 I am unsure what or how SAGE or the UK Government took into account the Scottish perspective. Covid-19 is an indiscriminate virus. The main difference is that healthcare is devolved to Scotland and data is collected through the devolved health system. The modelling teams in Scotland headed up by Audrey MacDougall and Mel Giarchi provided data to the Scientific Pandemic Influenza Group on Modelling (SPI-M) and my impression is that this was welcomed. The Go Science 4 Nation Co-ordinating group was a chance for advisers from the 4 nations to speak to the secretariate of SAGE. I do not recall being asked by others in Scotland to take items to this meeting and I assumed therefore that other channels allowed for Scottish issues (and other DAs) to be represented.

79 I was not aware there being a difference between the advice given by SAGE and the Group. For example, I cannot recall the Group disagreeing with SAGE's advice regarding modelling or NPIs. I also cannot recall there being conflicts between SAGE and the Group with regards to data, modelling and advice.

80 Minutes and information were shared between SAGE and the Group. I recall that at one point sensitive information apparently was leaked to the press but I cannot recall what or when that was. I seem to recall that there was an insinuation from SAGE that the leak had occurred in Scotland. My memory of this incident is limited, and I cannot recall the exact time and circumstances of the leak. In any event, I do not recall it leading to information being withheld from the Group.

81 I think it was reasonable, initially, for SAGE to recommend planning in reference to influenza pandemic assumptions. Very early in the pandemic it was not certain what the mechanism of spread for SARS-CoV-2 was but data emerged for this to be a

respiratory route. I do not know how this recommendation from SAGE affected the pandemic response in Scotland.

82 I was distant from the decision making process for managing the pandemic in Scotland. I do not know the extent to which decision makers considered influenza pandemic models. I do not recall the roles of SAGE or the Group changing during the course of the pandemic.

83 I was not a regular attendee at SAGE meetings so do not know why the Scottish Government did or did not ask members to raise questions related to Scotland.

84 I felt that SAGE was well constituted and that there was a good balance of different disciplines for its early stages. It is fair to say that the makeup articulated a medical/scientific approach. Behavioural scientists were also part of SAGE. There was though no economic representation that I am aware of. As the pandemic evolved some other members and groups were appointed, such as the ethnicity subgroup of SAGE, which in my view were useful and important. Other wider groups beyond medicine and representing society and its diversity were not at SAGE. Therefore, my view, is that representation and membership was quite focussed on a "medical" model.

85 In the future, I think the UK Government needs to clearly set out how it works with the devolved administrations and who it invited to attend SAGE meetings or its equivalent from the outset. On reflection I do wonder if the other impacted groups of society and departments of government might or should have had more presence at SAGE from the outset (eg education, economy, patients/carers). This is a difficult balance but something I imagine others have reflected on.

86 I do not know what the key sources of data and modelling information were in the Scottish Government's response to Covid-19.

87 Information about transmission, symptomatology, infection case rates, mutation, re-infection and death rates in Scotland came from a range of data sources and this included the ZOE Health Study app. I was not directly advising the Scottish Government so cannot say whether they felt they had adequate access to reliable data and modelling information.

Data

88 I am asked about digital services which were established to assist with Scottish Government decision making and management of the pandemic. I did not receive output data from the digital services run through Scottish Government other than when they were rolled into the data overviews from Audrey MacDougal's team. I was not involved in decision making, directly advising decision makers, or management so cannot comment on this.

89 I would not say that there were data that were not made available to me, though clearly if it is unknown to me, I cannot be certain. There were, however, some data which simply did not exist. A good example is the formalisation of sequencing data, which did not come about until later in the pandemic. Other times, data was found in different places and needed to be put together and analysed. An example of this would be real time NHS data that was analysed by Professor Aziz Sheikh. This approach by him and his team was helpful in providing evidence for some of the interventions. I personally was not involved in the dissemination of data between Scottish Government directorates and the Scottish Government, NHS and the care sector.

90 The early construction of a single, unified data source used by all would have been useful for aiding the understanding of Covid-19. I only later in the pandemic became aware of the PHS Dashboard and did not use this. The team headed up by Audrey MacDougall eventually pulled all of the sources (internal and external) together and I think they did a good job. The weekly briefings they provided were informative and well attended by Scottish Governments civils servants but to my memory these only occurred (or I was only invited to them) later in the pandemic. To begin with however, to my memory, a range of resources were of availbale to me which included the Zoe data and the independently curated Travelling Tabby [DCC2/019 – INQ000316275]. The latter was a freelance website that was providing really accurate and contemporary data. In the early stages of the pandemic, the website was the only reliable source to me for recording excess mortality. There seemed to be many sources and many analyses on going. The side effects of vaccination would be a good example. I was not clear who gathered these data and made the decisions about what to analyse. It would have been preferable if the data was coming from an official channel even if this was just curating and presenting the multiple sources of data. Though a small example I was surprised that I relied on the freelance traveling tabby data. I understand that the operator of the website was awarded an MBE in 2022 for his efforts.

91 I do not know whether data visualisation was used when providing advice to decision makers.

92 The teams headed up by Audrey MacDougall and Mel Giarchi provided very good data assessing the impact and effectiveness of NPIs. I was aware that at times Professor Woolhouse reviewed their output and agreed with their models.

93 I do not know what exact data was available to Scottish Ministers. With regards to the Group, we had sufficient information in order to achieve the goals within our remit.

Modelling

94 Modelling was provided by SAGE academics and the Scottish Government's modelling teams headed by Audrey MacDougall and Mel Giarchi.

95 I did not think it was necessary for the Group to commission its own modelling. I presume that had we asked to do this, it would not have been refused. The Group had access to modelling prepared by SAGE, which included the models from Scottish Government teams, Imperial College London and the University of Warwick.

96 I do not know what modelling was available to the Scottish Government and how it was explained to decision makers.

97 I am not in a position to say whether there was a consensus approach to modelling adopted throughout the pandemic. The models generally assessed three scenarios: the best, middle and reasonable worst-case scenarios. My view is that they were successful in assessing these scenarios; models inherently do not seek to provide completely reliable estimates.

98 I do not know about reliability of modelling in the initial months of the pandemic, whether there was sufficient transparency regarding the use of models, or whether models informed advice to decision makers.

99 I suppose that the models were biased towards a specific outcome in the sense that "reasonabl worst case scenario" would be something that led to consideration of a national lock down.

100 I do not know how key decision makers were assisted in understanding the models.

101 The models were regarding cases of Covid-19. I did not see any models regarding the economic implications of NPIs. I am not aware of modelling on the impact of NPIs, or Covid-19 on vulnerable and at-risk groups.

102 Data was widely made available to teams working at the Universities of Edinburgh and Strathclyde. Professor Aziz Sheikh of the University of Edinburgh also ensured that other groups such as those at the University of St Andrews got access to this data.

103 A real game-changer with the provision of real-time data from the NHS. This allowed us to quickly analyse the effect Covid-19, for example pregnant women and the impact of vaccination in that group.

Conclusions

104 In any future pandemic, accurate real-time data made available to all involved would be very useful from the outset. A universal source would be helpful. If there were any limitations in the modelling undertaken, it is that the sole focus was on cases of Covid-19.

Other sources of information and advice

International sources of information/advice

105 I did not collaborate or liaise with international organisations or counterparts in other governments. I did not provide direct advice to decision makers so do not know whether information from these sources informed advice to decision makers. I do not know the extent to which advice to decision makers took into account the nature and timing of NPIs it imposed on other countries.

106 I am asked about the information the Scottish Government had available from January to March 2020 regarding the response of other countries to Covid-19. This was before the creation of the Group. I was also never involved in providing direct advice to the Scottish Government so do not know how the experience of other countries was factored into this advice.

107 I do not know what prompted the invitations of Andreas Poemsgen and David Nabarro to meetings of the Group and education sub-group and I cannot recall a specific impact that their visits made on the Group. I do not know whether Scottish Government decision makers were following advice from the WHO during the pandemic.

108 It was interesting to see how other countries were responding to Covid-19. I am not aware that there was ever a recommendation that we ought to deliberately ignore what other countries were doing. However, my view is that there was no fixed model of

managing the Covid-19 pandemic that could be applied to every country. Decisions had to be made in reference to what was best for the UK and Scotland. I do not know the extent to which decision makers took into account the experience of other countries. I did not have regard to scientific advisory structures in other countries and do not know whether core decision makers did either.

109 My view is that the International Comparators Joint Unit (ICJU) was effective in understanding how other countries were responding to the Covid-19 pandemic. Initially, the literature was heavily security monitored and I was not allowed to circulate it to anyone. I do not know why there was such secrecy over the information though I do recall a comment made that some of the content of the reports had direct "sources" who the ICJU wanted to protect.

Other sources of information/advice

110 I do not recall seeking independent advice external to the government to inform the discussions of the Group. SABoT had a broad membership which included mathematicians and members of the Royal Society. The Group and SABoT were provided with some good data from scientists e.g. Chris Robertson at University of Strathclyde and Professor Aziz Sheikh [DCC2/020-INQ000316276].

111 People were very generous with coming forward with data. I did not have any concerns about the adequacy of evidential sources. I do not know how any inadequacies were framed to decision makers as I was not involved in directly providing advice.

112 The Chief Science Office instituted two projects with regards to Covid-19: the "Rapid Research in Covid-19 Programme" [DCC2/021-INQ000316277] and "Long Term Effects of Covid-19 Infection "[DCC2/022 –INQ000316278].

113 I do not know the extent to which this research assisted the Scottish Government's management of the pandemic. I also do not know what the main findings of other research projects were that were relied upon by decision makers in the Scottish Government.

114 I understand that research projects prepared by Professor Aziz Sheikh of the University of Edinburgh and Professor Chris Robertson of the University of Strathclyde were provided to the Scottish Ministers. I do not know the extent to which the Scottish Ministers relied upon this research.

115 I did not consult with any interest groups from January 2020 to April 2022. I do not know whether the Scottish Government did. I do not know how the Scottish Government ensured that information from interest groups/stakeholders was considered when making decisions. I did not provide direct advice to decision makers so do not know how the risk of information overload or repetition was mitigated.

116 I am asked whether nosocomial deaths were significantly higher than care home deaths. The answer to this question is outwith my knowledge. I was not involved with meetings between the Scottish Covid Bereaved and Scottish Government and cannot comment on what may or may not have been discussed.

117 The ZOE Health Study provided details regarding Covid-19 symptoms [DCC2/023 – INQ000316279]. I recall that the Zoe Study helpfully mapped the symptoms described by those suffering from COVID-19 and how these changed through the pandemic. I do not know if these directly influenced official advice on symptoms. I was not in correspondence with the UK Health Security Agency throughout the pandemic. I do not know what drove decisions regarding the identification of Covid-19 symptoms.

118 We received very helpful data from bodies external to governmental structures, such as the MRC - University of Glasgow Centre for Virus Research [DCC2/024 – INQ000316280] on matters of viral evolution and sequence changes.

119 I do not know the extent to which decision making in the Scottish Government relied upon information from the Joint Biosecurity Centre.

Intergovernmental working

120 I do not know how decision makers in the UK Government communicated with the Scottish Ministers.

121 Go Science organised the four nations group that met initially on a weekly basis, thereafter on a fortnightly basis. This was a fairly informal opportunity for people to share intelligence on what was going on in the four nations. I do not believe minutes were kept of these meetings.

122 I do not hold the minutes of the four nations group. I rather suspect not much flowed back form these meetings to Scottish Government. The CMO was responsible for communicating any discussions to decision makers in the Scottish Government. I do

not know the extent to which these meetings assisted the Scottish Government in managing the pandemic in Scotland.

123 We were not actively tracking steps other devolved administrations were taking in their response to Covid-19, though we would consider the outcomes of different measures.

124 I did not play a role in coordinating matters which involved both devolved and reserved competencies.

Funding and competence

125 At the outset of the Covid-19 pandemic, there was a great deal of funding made available to conduct SARS-CoV-2 testing. I am asked about funding being withdrawn and the impact that had. I can only think of one UK Covid-19 project that had its funding removed: the University of Glasgow Lighthouse Laboratory. This project undertook mass testing of very many samples for SARS-Cov-2. The project had its funding removed in 2022 in line with the end of the pandemic.

126 I do not know the specifics of how any Covid-19 project was funded and I cannot comment on the decision to withdraw funding from the UK Lighthouse Laboratory. I do not recall myself or the Group were ever asked to take funding considerations or the Scottish Government's devolved competencies into account. I presume decision makers would have received advice regarding delivery or funding from elsewhere.

127 I am not in a position to comment on the impact of the constitutional settlement upon finances and finance raising powers and the possible impact this may or may not have had on management of the pandemic.

Conclusions and lessons learned.

128 I do not know whether the communication of medical and scientific advice to Scottish Government decision makers was effective as I was not involved in this.

129 The membership of the Group and SAGE was constituted so that there was a wide range of views. Membership was broadly appointed but was from an academic background. There was rigorous debate. I would suggest that the groups were effectively self-scrutinising. All minutes of the Group were published and members of

the Group had a chance to review and comment on them if they did not think they were reflective.

130 As I did not give advice directly to the First Minister, any cabinet secretaries, ministers, seniors civil servants or special advisors between January 2020 and April 2022, I cannot comment on whether they understood the medical and scientific advice. I cannot comment on their performance.

131 I am not aware of how my counterpart in the UK Government performed.

Initial understanding and responses to Covid-19 in the period from January to March 2020

Initial Understanding of the nature and extent of the threat

132 I first learnt about COVID-19 from the media in early January 2020. I had my immediate personal views but these were not sought by Scottish Government in this period. (My personal view was that I was very concerned – other corona viruses had given rise to very serious illnesses). It was only with my coming forward myself with an offer to help in relation to a testing strategy (covered elsewhere in this document) that I had any input into Scottish Government's response to COVID-19 during this period. I was not aware of who the Scottish Government were consulting with at this time, only becoming aware that Andrew Morris had been asked to Chair the Group in March 2020 as stated elsewhere in my responses. I was not aware of reasons for the delay in setting up the Group after the invitation to Andrew Morris to chair the group.

133 As an academic and appreciating the seriousness of the situation I read widely from my own source material and spoke to colleagues but this was not initiated by Scottish Government and no material was supplied by them to me. My view was that this illness presented a serious threat to the UK and Scotland. I am asked if advisers reacted appropriately to the news in January 2020. Looking back I think I could have been more vocal to those I had contact with about my concerns. Should I have put myself forward before I did in mid -March 2020 with regard testing strategy? Perhaps I should but I don't know if I would have had much traction.

134 The only contribution I made during this time was in testing and this is covered elsewhere in my response.

Pre-lockdown phase

135 Please see above – I was not involved and cannot comment.

Flattening the curve

136 I had no part in the plans arising from "Flattening the curve" philosophy. I was aware that unless reasonable worst-case numbers could be reduced there was a real concern that the NHS would not be able to deal with the number of cases coming forward that needed hospital care.

Herd Immunity

137 From the outset of the pandemic academics pointed out the role of herd immunity in ending the spread of SARS-CoV-2. This is an established piece of knowledge for infectious agents and can be carefully modelled based on the reproduction number. Herd immunity as a concept used by academics in discussion does not sperate the two routes to this state – through natural infection or vaccination. My perception is that questions in this module arising from considering Herd Immunity were based on the possible consideration of allowing this state to be achieved through natural infection (and not though vaccination). If this is the case, I am not aware of any practical suggestion that this was a way to manage the disease at the start of the pandemic when vaccines had not then been invented and rolled out.

138 A sperate potentially contentious point (as I have covered elsewhere) is that the FM is said to have not wanted the term (herd Immunity) used in communications preferring population immunity. In advisory meetings the term herd immunity was continued to be used as academic vernacular but as I have stated I am not aware of any serious consideration being given to allow mass population infection to control the virus through obtaining herd immunity. The reasons for this were well known – the unpredictability of the infection in vulnerable groups and the time it would take, and numbers of waves required, to obtain that state.

Pre-lockdown developments

139 I was not involved in any pre-lockdown developments as this was prior to my role in the Group/at SG, therefore I cannot give useful, informed answers.

Super-spreader events

140 I was not involved in the super spreader developments in question as this was prior to my role in the Group/at SG, therefore I cannot give useful, informed answers.

Testing

141 As I have laid out elsewhere in March 2020 I was aware of the absence of a SARS-CoV-2 testing strategy in Scotland when there was one in England and Wales. This caused me to contact Catherine Calderwood (then CMO) and bring this to her attention. I was concerned that without the ability to test for the causative agent the pandemic would be unmanageable. The CMO responded that it would be helpful to have a strategy but if I was going to do this it needed to be done quickly. I responded and delivered the first strategy with a civil servant (Mary Stewart) and this I think established me as a useful adviser to the Scottish Government's response. With that strategy, which the FM referred to in one of her briefings [DCC2/002-INQ000316273] a testing team was established and after a few days of helping establish this I became purely advisory and this continued throughout the pandemic chairing a Scientific Advisory Board on Testing.

142 Once again I state that I had limited direct contact with the FM or ministers on the matter of Testing – other than one meeting with Jeanne Freeman on 12th March 2021 focussed on the need for resource for SARS-Cov-2 sequencing, which she supported.

143 At the start of the pandemic I had some direct contact with Richard Foggo (director) as it was he who recommended that the Scientific Advisory Board on Testing (SABoT became a subgroup of The Group – a suggestion I welcomed and thought a good way to co-ordinate subgroups. Initially I worked with Mary Stewart on the first testing strategy, later Niamh O'Connor. As the role of testing and practicalities of testing became more established it was led by Christine McLaughlin who headed up Scottish Testing Oversight Group. I am asked about the knowledge of the WHO guidance on testing and how this was followed. I cannot now recall the degree to which the SABoT investigated the WHO recommendations and how far advice was aligned to these.

144 Following the first strategy document there was a Strategic Oversight Board for Testing that was formed and to my memory I was part of that. As the testing capacity and plans to work alongside the Lighthouse Laboratory in Glasgow (UK testing infrastructure) developed and with the appointment of a Director of Testing and the formation of a Delivery Board the Scientific Advisory Board was formed and Terms of Reference for

this were written [DCC2/025–INQ000316281 and INQ000316284]. It was led by Christine McLaughlin.

145 The use of testing for asymptomatic cases was much debated and the position evolved. Initially capacity was an issue which limited testing only to symptomatic cases. As capacity increased this expanded and I recall clearly that the SABoT recommended contacts as the first and most obvious asymptomatic cases to test as they were the most likely to be infected. I think this drove the initial part of the asymptomatic testing strategy.

146 The timeline of development of testing is one that I can only now recall from memory. I do clearly recall though that early on (April/May 2020) that we had limited data on which to base our estimates of the number of cases that we would need to test. I recall making some calculations on the basis of case rate data from the Zoe app in the absence of other data being available to calculate the capacity needed for implementation of the strategy. I do recall that early on capacity was a major issue. Other than pcr based tests there was uncertainty about the accuracy of other tests in particular early lateral flow tests and the utility of antibody tests. The drive was to grow capacity for pcr-based tests.

147 There were very limited numbers of test initially (Jan -Feb 2020). As I have said above, the infrastructure was not in place for mass testing – indeed I recall that there was even a shortage of swabs for swabbing cases. There were no lateral flow devices that had been assessed for accuracy. Indeed when mass testing was suggested there was some scepticism of the ability to achieve this and its usefulness.

148 I was not directly involved in the strategic development of the Test and Protect Scheme. Its separateness from the UKG Test and Trace scheme I assumed was because health matters are fully devolved.

149 I was not involved in the practical aspects of Test and Protect.

150 Two areas I was involved in and I felt that worked well were Genomic sequencing of the SARS-CoV-2 virus and the establishment of waste-water testing for the viral remnant found in waste water. The latter became a supplementary surveillance system. Genomic testing of the SARS-CoV-2 pathogen was essential for identifying the way in which cases spread – a sort of forensic approach to the spread of cases in an area. The technique became even more powerful in documenting the evolution of new variants and the arrival of these in the UK and Scotland. Waste water testing was a new

method in the management of an infectious pandemic (and new to infections beyond gastrointestinal and enteric pathogens). It allows an unbiased and population bases approach to the level of infection in a population contributing to the effluent in a waste water sample. I felt this was an important public health development and enthusiastically supported its development.

151 I do not recall what targets were set in Scotland for numbers of test. It should be noted that some tests from Scottish samples went through the UK (Lighthouse) system and others were tested in Scotland.

152 A problem with the Lighthouse system that I think never got sorted was getting positive samples returned to Scotland for genomic testing.

153 Wastewater testing became a well established system with a highly informative system covering most of Scotland. It would be for others in PHS to comment on its effectiveness. I would comment that it was highly effective at showing when case numbers had really fallen in communities.

Decisions in relation to non-pharmaceutical interventions (NPIs)

154 The appropriate use of NPIs was much debated by many academics at the start of the pandemic and later how these were to be used for reopening schools and the use of public spaces including hospitals and care homes. I was not involved with any discussions with decision makers on these matters. I had my own personal views but these were not part of any communications to ministers on these subjects and did not influence policy – as I have said I had limited contact with ministers.

Long COVID

155 I was not involved with Scottish Government's decisions on Long COVID and cannot directly answer these questions. I cannot say whether the issue of generating a cohort of people with Long-Covid was a major driver for the use of any particular NPI strategy.

156 It was clear early on that little was known about Long COVID. As Chief Scientist Health at CSO I was part of the process that established a research call for projects in Long COVID [DCC2/022 –INQ000316278]. Personally, I was concerned that we understood (scientifically) too poorly what Long COVID was and how it came about.

Specific Measures

157 I had no role in plans relating to religious worship. I think this area may have been led by the NCD.

158 I had no role in decisions on face coverings. The questions mention a "letter from you dated 17th March 2020". I do not think this letter was from me.

NHS Capacity

159 I was not involved in decision making with Scottish Government in this area including plans around the Louisa Jordan Hospital, ICU bed expansion or the provision of PPE.

160 Early on in the pandemic it was clear to me and the Group (see para 44) that if some of the reasonable worst-case scenarios were to happen there would be considerable pressure on hospital. I am asked if the key decisions made were effective In protecting the NHS from being overwhelmed. At one level they were – the NHS more or less survived but at the cost of routine care.

Schools

161 I had no involvement with the decision making about school closures or re-opening. I was part of discussions at the Group where the Education subgroup reported back.

Vulnerable and at Risk Groups

162 I was not involved in the decisions around vulnerable groups.

163 I became aware fairly early on (my memory is in April/May of 2020) of the increased risk for some of these groups through papers that I saw and read from SAGE and the open access publications. I cannot say how my understanding evolved chronologically on the growth of the risk groups – suffice to say that I had knowledge of ethnicity, obesity and diabetes (which often intersect) being over represented in deaths from COVID-19 was known by summer 2020.

164 In relation to any predictability of excess risk my personal view was only that it would be consistent with health outcomes for many other conditions being worse in these groups.

165 I was not directly involved in work in the area of at risk groups and cannot comment on the impact of these characteristics on public-facing staff.

166 In terms of protection of health care workers I was aware through family members and acquaintances that early in the pandemic the level of protection for all in this group was fairly rudimentary. In the future much greeter and freer access to PPE should be available up front with any pathogen of uncertain infectivity and case fatality.

Vulnerabilities relating to pre-existing health conditions

167 I was not involved with the decisions made with regard to these groups and have no recollection of the chronology of development in this area.

168 In answer to the question arising from Clinically Vulnerable Families statement. I am not in a position to comment other than to observe that I was not part of any group where these individuals were represented as a specific group.

Decisions relating to the first lockdown

169 I was not involved in the decision making on the national lock downs and I cannot comment on information that may or may not have informed decision making.

170 I am asked if I think a lockdown could have been avoided. I imagine it's possible to speculate that it could have been but my personal view is that this virus was only going to yield to severe measures to control its transmission once established.

Continuation of the first lockdown

171 I was not involved in the decision making on the national lock downs and I cannot comment on information that may or may not have informed decision making.

172 In terms of a Zero COVID policy my personal view from early in the pandemic was that this was not a sustainable strategy because it required complete isolation and that this was not going to be manageable without control of borders either within the UK or outside the UK.

173 I was not involved with the preparation of Covid-19: A framework for decision making" nor the "four harms".

Effectiveness of the first lockdown

174 I am not aware of the assessments undertaken that are discussed in this section. I was not part of this decision making. I was of course aware of how case numbers had fallen during that time and the impact on the measures of transmission from papers at SAGE. As I state elsewhere in this statement – lockdowns work applied at this level of stringency in limiting case numbers whilst applied but come at a significant cost to society. It is also fair to say that my impression was learnt from the experts that earlier lockdowns have a greater effect in terms of case numbers and probably on duration of the particular epidemic phase.

175 I cannot comment of what Scottish Government had "learned" from the first lock down. What I personally had learned was that severe lockdowns work for the control of SARS-CoV-2 virus transmission but at significant cost. They may ultimately only delay cases. My personal thinking was that until we had a vaccine to take the population towards herd immunity there would be a need for more of these measures to avoid deaths and pressure on the NHS. I think this was a widely held belief in the academic and medical community.

Decisions relating to easing the first lockdown in the period from May 2020 to September 2020

176 I am asked about a series of policy decisions made by the Scottish Government in relation to the first lockdown. I was not involved in providing direct advice to Scottish Government decision makers. I refer to the minutes of the Group for what we were asked to consider during this period of time [DCC2/026 -INQ000217424].

177 Specifically, I do not know how decisions were reached, I did not provide direct advice to decision makers, I do not know anything about the timing of decisions made, or what factors were considered in making decisions. I do not know if policy makers were presented with advice regarding alternatives to lockdown. I do not know the extent to which "Report 9", published by the Imperial College Covid-19 response team, influenced Scottish Government decision making. I do not know what advice the Scottish Government decision makers received in relation to an exit strategy from the first lockdown. I do not know how the Scottish Government decision makers factored in the likely availability of a Covid-19 vaccine.

178 As I am not aware of the factors under consideration by Scottish Government decision makers, I cannot provide a view as to whether the exact timing of the first lockdown was appropriate.

Continuation of the first lockdown

179 In my interpretation, "Zero Covid" does not mean literal elimination of Covid-19 but rather refers to keeping infection rates as close to zero as possible. An example of a country which adopted a "Zero Covid" policy is the People's Republic of China.

180 That is my own interpretation. I do not know how decision makers interpreted the meaning of "Zero Covid" and what advice they received in relation to it. I know that many were interested in the approach taken by New Zealand and is associated practicalities and limitations. I do not know if it was seriously considered for Scotland or the UK. Personally, it always seemed an unlikely strategy for a country such as ours with open borders and high levels of connectedness to the outside world.

181 I am asked about the Scottish Government strategy published in April 2020 regarding the management of the Covid-19 pandemic. I was not involved in the publication of this strategy and I did not provide advice to those who were preparing it.

Effectiveness of the first lockdown

182 I have not been involved in any assessments regarding the impact of the first lockdown. I have not been asked to consider any assessments or participate in any lessons learned exercises.

Conclusions and lessons learned

183 I am asked about lessons learned by the Scottish Government in relation to the first lockdown. I was not involved in the decision making process so do not know what lessons were learned by Scottish Government decision makers. I have elsewhere in this statement given my own personal conclusions.

Decisions relating to easing the first lockdown in the period from 29 May 2020 to 7 September 2020

General

184 I am asked about a series of policy decisions made by the Scottish Government from 29

May 2020 to 7 September 2020. I was not involved in providing direct advice to Scottish Government decision makers. I refer to the minutes of the Group for what we were asked to consider during this period of time.

The steps taken to ease the first lockdown

185 I am asked a series of questions regarding the scientific advice taken into account by and relied upon by the Scottish Government decision makers. I am also asked about how these decisions were communicated to the Scottish public.

186 I did not provide direct advice to the Scottish Government decision makers. I was never asked to comment upon or provide advice regarding the communication of policy decisions. Public communication is outwith my area of expertise. I do not have any insight as to the effectiveness of the Scottish Government's public communications strategy.

187 I am asked about the Scottish Government four phase "Route Map" published on 21 May 2020 to [DCC2/027 – INQ000131072]. I was not involved in the drafting or publication of this document. I cannot comment on the rationale of the document or how it was communicated to the public.

188 I do not know what advice was received by Scottish Government decision makers relating to the wearing of face masks or reopening of schools.

189 I recall that at one of the JBC meetings we discussed border control. I refer to [DCC2/005 - INQ000316274] . However, I was not involved in the decisions regarding travel restrictions and do not know what advice was provided to decision makers with regards to travel restrictions.

190 I am asked about further social restrictions put in place over the summer of 2020 and several events which occurred over this period of time. I was not involved in management of localised outbreaks of Covid-19. I was not asked to consider or provide advice in relation to any localised outbreaks of Covid-19. **Eat Out to Help Out.**

191 I had no involvement in the Eat Out to Help scheme. I do not know who formulated the scheme, the justifications for it, or the medical and scientific advice provided to decision makers who implemented the scheme.

Conclusions and lessons learned.

192 I am not aware of any assessments which have been done regarding the effectiveness of the restrictions implemented over the period from 29 May 2020 to 7 September 2020. I have not been asked to consider any assessments or participate in any lessons learned exercises.

193 I am asked about lessons learned by the Scottish Government in relation to the period from 29 May 2020 to 7 September 2020. I was not involved in the decision making process so do not know what lessons were learned by Scottish Government decision makers.

Decisions relating to the period between 7 September 2020 and the end of 2020

194 I am asked about a series of policy decisions made by the Scottish Government from 7 September 2020 to the end of 2020. I was not involved in providing direct advice to Scottish Government decision makers. I refer to the minutes of the Group for what we were asked to consider during this period of time [DCC2/028-INQ000217890, DCC2/029- INQ000217900, DCC2/030 - INQ000217915, DCC2/031 -INQ000217942, DCC2/032 -INQ000217959, DCC2/033- INQ000217976, DCC2/034- INQ000217996, DCC2/035-INQ000218003, DCC2/036-INQ000218023]

195 I am asked about the rationale and scientific basis for decision making, and how these decisions were communicated to the Scottish public. I was not involved in providing advice to decision makers and I was never asked for advice regarding the communication of decisions to the Scottish public. I am not an expert in public communications. I do not have any insight as to the effectiveness of the Scottish Government's public communications strategy.

196 I recall that within the scientific community there was concern regarding the Alpha/Kent and Delta variants of Covid-19. We considered this in the Group, and I refer to the Group's minutes which have been made available to the Inquiry [DCC2/037-INQ000218048]. I have been informed that the Group's minutes were issued to CMO by the secretariat, copied to Ministers and senior officials. I do not know what other information may have been communicated to Scottish Government decision makers on these variants.

197 I am asked about advice given by myself or my colleagues to the Scottish Ministers in relation to a "circuit breaker" in around September 2020. I do not know what medical or

scientific information Scottish Government decision makers were provided with in relation to a "circuit breaker". I am told that the Group issued two pieces of advice in September 2020: on 14 September 2020 the Group provided advice on 'creating a COVID-Safe Culture in Universities' [DCC2/038 - INQ000217892 and INQ000217893] and on 21 September 2020 the Group provided advice on adherence to control measures for COVID-19 [DCC2/039-INQ000217898].

The five-tier covid management system.

198 I am asked a series of questions about the five-tier Covid management system. I was not involved in the decision-making process and I did not provide advice to the Scottish Government decision makers. I do not know why the Scottish Government decided to implement the five-tier Covid management system, what the reasoning was behind this, and the medical or scientific information considered by decision makers in relation to this system. My personal view, as stated elsewhere paragraph 50, is that a local authority graded tiered/level system was unlikely to be very helpful in containing transmission across Scotland and might lead to communication difficulties.

199 I am not an expert in public communications. I do not have any insight as to the extent of understanding of the five tier covid management system by the Scottish public or the effectiveness of the Scottish Government's public communications strategy.

200 I recall that we did discuss the five tier covid management system in meetings of the Group. I refer to the Group's minutes which have been made available to the Inquiry [DCC2/040 - INQ000217942]. I have been informed that the Group's minutes were issued to CMO by the secretariat, copied to Ministers and senior officials.

Conclusions and lessons learned.

201 I have not been involved in any assessments regarding the impact of policies over the period from 7 September 2020 to the end of 2020. I have not been asked to consider any assessments or participate in any lessons learned exercises.

202 I am asked about lessons learned by the Scottish Government in relation to the period from 7 September 2020 to the end of 2020. I was not involved in the decision making process so do not know what lessons were learned by Scottish Government decision makers.

Decisions relating to the second lockdown (January 2021 to 2 April 2021)

203 I am asked about a series of policy decisions made by the Scottish Government from January 2021 to 2 April 2021. I was not involved in providing direct advice to Scottish Government decision makers.

Background to the second lockdown.

204 I was not involved in the discussions around a lockdown policy relating to the Christmas of 2020.

The second lockdown

205 I am asked about the medical/scientific advice provided to the Scottish Government decision makers during the course of the second lockdown. I do not know what advice Scottish Government decision makers received.

206 With regards to my personal views regarding the second lockdown, I recall that during the Groups' discussions I made clear that an earlier lockdown would lead to a shorter spike in the transmission of Covid-19. My views on the second lockdown have not changed since the date of the meeting.

207 I have nothing further to add regarding the timeliness of the decision to impose a second lockdown. It was not the role of the Group to make policy decisions.

208 I am asked about the consideration given by the Scottish Government in relation to the Great Barrington Declaration made in October 2020. I do not know the extent to which decision makers within the Scottish Government considered the Great Barrington Declaration. I recall that in October 2020 the World Health Organisation and other leaders concluded that the Great Barrington Declaration was scientifically and ethically flawed as a model for managing the Covid-19 pandemic. I agreed with that position and have nothing further to add.

209 I learned that lockdowns are effective in suppressing the spread of Covid-19 though it is possible that they may not limit total case number over the long term. However, lockdowns come at great economic and societal cost. Weighing up whether these costs were proportionate to suppressing the spread of Covid-19 was the role of decision

makers in the Scottish and UK Governments. This was beyond my role of Chief Scientist Health, as vice-chair of the Group, or chair of SABoT.

210 I do not know what medical or scientific advice was made available to decision makers when it was announced that attendance could resume at schools and the lockdown would continue until mid-February 2021. I am not an expert in public communications. I do not have any insight as to the effectiveness of the Scottish Government's public communications strategy.

The easing of the second lockdown

211 I was not involved with the decision making or communication strategy with regards to the easing of the second lockdown. I do not know what scientific or medical advice was provided to Scottish Government decision makers with regards to this.

Conclusions and lessons learned

212 I was not involved in decision making or providing advice to Scottish Government decision makers, so I do not know what the exact purpose of the second lockdown was. If the purpose of the second lockdown was to reduce the transmission of Covid- 19, then it was successful in doing so.

213 I have not been involved in any assessments regarding the impact of the second lockdown. I have not been asked to consider any assessments or participate in any lessons learned exercises.

214 I am asked about lessons learned by the Scottish Government in relation to the second lockdown. I was not a member of the Scottish Government so do not know what lessons were learned by Scottish Government decision makers.

Decisions relating to the period between April 2021 and April 2022

General

215 I am asked about a series of policy decisions made by the Scottish Government from April 2021 to April 2022. I was not involved in providing direct advice to Scottish Government decision makers. I refer to minutes of the Group for what we were asked to consider during this period of time [DCC2/041 - INQ000218135, DCC2/042 - INQ000218144, DCC2/043 - INQ000218153, DCC2/044- INQ000218160, DCC2/045 -

INQ000218169, DCC2/046 -INQ000218188, DCC2/047-INQ000218192, DCC2/048 - INQ000218199, DCC2/049- INQ000218208, DCC2/050 - INQ000218231, DCC2/051 INQ000218239, DCC2/052- INQ000218253, DCC2/053 -INQ000218263, DCC2/054 -INQ000218270].

216 I believe information relating to the easing of the second lockdown can be found in the SAGE papers. I refer to [DCC2/058 - INQ000376205], [DCC2/059 - INQ000376206]. I do not know how this information was communicated to UK or Scottish Government decision makers.

217 I am asked about the rationale of rules regarding the exact number of individuals and households that could mix together from 16 April 2021. I was never involved in creating policy or providing advice relating to policy. The actual management and behavioural rules were the remit of civil servants in the Scottish Government. I was not involved in communicating advice to the public.

The move to level zero

218 I was not involved in decision making so do not know why the decision was made to move Scotland to level zero restrictions.

219 I am referred to Scotland having a different traffic light system from England on 18 September 2021. I do neither know the rationale, nor the scientific or medical advice relied upon in deciding to have a different system. I do not recall either myself or the Group being asked to consider the impact that a difference in rules would have.

220 I was not involved in the planning of the COP26 summit which took place in Glasgow between 31 October 2021 and 12 November 2021.

The emergence of the "Omicron" Variant (first detected in South Africa in November 2021)

221 I am asked when I first received information about the Omicron variant of Covid-19. I do not recall the exact date. As previously noted, I returned my Scottish Government laptop in 2022. I have not kept a record of my correspondence.

222 I recall that the scientific community thought that the Omicron variant would be similar to Delta, in being a more spreadable and possibly more deadly variant of Covid-19. I think the information I received about this came from SAGE.

223 For the Group's discussion on Omicron, I refer to document the Group's minutes which have been made available to the Inquiry [DCC2/051 -INQ000218239].I have been informed that the Group's minutes were issued to CMO by the secretariat, copied to Ministers and senior officials.

224 I am asked about the Scottish Government strategy and decisions made in relation to managing the Omicron variant. I was not involved in the decision making process and did not provide advice to decision makers so cannot comment upon this.

225 I am asked whether a further lockdown should have been implemented in December 2021. I do not know what factors decision makers had to weigh up before implementing NPIs. I do not know whether there should have been a further lockdown and why the decision was made not to proceed with this. I do not know the medical or scientific information relied upon by Scottish Government decision makers during this period. I do not know how these decisions were communicated to the Scottish public.

The lifting of restrictions in April 2022

226 I was not involved in the decision to lift restrictions on 18 April 2022 and did not provide advice in relation to this. The final meeting of the Group was on 3 February 2022.

227 I do not know how continuing risks were communicated to the Scottish public.

Conclusions and lessons learned

228 I am not aware of any assessments that had been made with regards to the effectiveness of restrictions during the period from April 2021 to April 2022. I have not been asked to consider any assessments or participate in any lessons learned exercises.

229 I am asked about lessons learned by the Scottish Government from April 2021 to April 2022. I was not involved in the decision making process so do not know what lessons were learned by Scottish Government decision makers.

Conclusions and lessons learned from the use NPIs in response to the pandemic

230 In my opinion, there are several key areas where the UK and Scottish Governments' performed well with regards to responding to Covid-19.

231 The vaccination programme was extraordinary (in a good way). Industry was able to produce an effective vaccine remarkably quickly, quicker and at larger scale than any vaccine previously developed is extraordinary. The UK Government was able to purchase early in the course of the pandemic and provide them to the population at large. The JCVI instituted a sensible rollout programme that was well delivered. It was not simply a free for all and it ensured that the most vulnerable individuals had priority access to the vaccine. There was monitoring of the side effects and efficacy which was helpful in dispelling comments from those who were less supportive of mass vaccination.

232 The testing programme was very effective once it was up-and-running. If someone thought they may have Covid-19, it was very straightforward for them to get tested and for the result to be processed very quickly. Lateral flow testing was successful with a high level of public acceptance. These successes however took time to set up.

233 The UK was also world-leading in terms of SARS-CoV-2 sequencing. Scotland was particularly involved in this, with the Universities of Edinburgh and Glasgow contributing key research. Scotland was also ahead of the world in setting up a waste water surveillance system, which is ongoing. This was completely innovative and I am not aware of a similar programme being implemented anywhere else at the time.

234 I am asked to comment on any obstacles in relation to decision making. The Group and I were never asked to consider the practicalities of our recommendations so I cannot comment on this. I also feel I cannot comment on missed opportunities as I do not know how decisions were reached. I do not know how decision makers balanced competing interests together. I would comment that for any policy in relation to health it was essential to keep the public on board and agreeable to the implementation of that policy.

Care homes and social care

235 I am asked a series of questions regarding Scottish Government decision making relating to managing hospitals and care homes. These questions span a wide range of time, predating the imposition of the first lockdown.

236 I was not involved in providing direct advice to Scottish Government decision makers. I cannot recall the Group ever being asked to comment specifically on the impact that Covid-19 had in care homes or any measures to manage Covid-19 in care homes. The first meeting of the Group was on 1 April 2020.

237 I am aware that early in the pandemic availability of PPE was limited in the UK as a whole. In future, it is important that PPE is well stockpiled and readily available. I do not know whether the Scottish Government prioritised PPE for specific sectors over others.

Borders

238 I was not involved in the decision making process and I did not provide direct advice to decision makers. I do not know which ministers, senior civil servants and advisers were primarily involved in decision making regarding internal or international UK borders. I believe the JBC did consider this border controls and I refer to [DCC2/005 - INQ000316274]. I do not know what advice or guidance was provided to the Scottish Government with regards to controlling internal UK borders.

239 I am asked whether on reflection, the UK borders should have been closed between January to March 2020. International Borders are a reserved matter for UK decision makers. I was not involved in providing advice to UK Government decision makers. I do not know what options were available to UK Government decision makers and what "closing" the border would have entailed. I cannot comment on how decisions were reached with regards to the UK border and if a specific decision ought to have been taken at a specific point in time.

The remainder of the pandemic

240 I was not involved in the decision making process or providing direct advice to decision makers within the Scottish Government. I do not know what advice was provided directly to Scottish Government decision makers with regards to quarantine/screening, border control, testing of passengers, the testing of travellers arriving in the UK or travel advice to UK nationals. I have no insights as to the basis of divergent decisions between Scotland and the rest of the UK. The Group was not asked to consider if Scotland ought to diverge from the rest of the UK with regards to managing the Covid-19 pandemic. I cannot comment on the rationale of particular decisions made by the Scottish Government. I also do not know what worked well, what the obstacles were, or if there were any missed opportunities.

Decision making between the Scottish Government and (A) the UK Government and (B) the other devolved administrations in Wales and Northern Ireland.

241 I was not involved in any communications between the UK Government and devolved administrations. I do not know how inter-governmental communications inform decision

making. I therefore do not know how inter-governmental structures could be made different.

242 As previously noted in my statement, in the future the UK Government needs to clearly set out who from the devolved administrations are invited to attend SAGE meetings from the outset. Reciprocally, I think Scottish Government and the Health Directorate should be clearer about how it wishes to use its scientific advisors.

243 I am asked about representatives of the devolved administrations not being present at the initial meetings of SAGE. I do not know exactly when the "initial" meetings of SAGE occurred. I was not a regular attendee at SAGE and I am not aware of when exactly Scottish Government representatives would attend. It would have been helpful had the UK Government made clear from the outset who from the devolved administrations was to attend SAGE meetings.

244 I do not know what involvement the Scottish Government had with the three UK "tsars".

245 As I was not involved in decision making, I do not know how the four nations took into account at risk and vulnerable groups, individuals working across internal UK borders, Covid-19 restrictions over the festive period in December 2020, how the experience of other States was learned from, and whether the Scottish Government was informed about decision making by the UK Government.

246 As I was not involved in decision making, I do not know whether inter-governmental working was effective.

Interrelation between the Scottish Government and local government

247 I did not have any interaction with the Scottish local authorities over the course of the Covid-19 pandemic. I do not recall the Group or myself ever being asked to provide advice to local authorities.

Covid-19 public health communications

248 I am asked about a series of decisions made in relation to public health communication strategy by the Scottish Government. I was not involved in providing direct advice to Scottish Government decision makers. I do not recall either the Group or myself ever being asked to comment on public health communication strategy. I do not have any

insight as to the effectiveness of the Scottish Government's public communications strategy.

249 At paragraph 40 of the Group's corporate statement Professor Morris states [DCC2/007 – INQ000215468] that the Group did provide some advice on risk and risk communications. In answer to the questions, I was not involved in directly providing advice to Scottish Government decision makers. I was also not involved in the constitution or remit of the Group. I do not know why the Group was not asked to consider public health communication strategy. I do not know who the key individuals were in devising and implementing the public health communication strategy. I do not know what the rationale was behind any of the decisions made by the Scottish Government throughout the Covid-19 pandemic. I, therefore, do not know whether the message promulgated by the Scottish Government was a fair and accurate reflection of its rationale.

Effectiveness of messaging

250 I am asked how persons such as myself were selected to present certain public health messages or play a role in television briefings. I was not asked to do this and therefore did not present any public health messages or play a role in television briefings so cannot comment upon this.

Maintenance of public confidence

251 Upon assuming the role of Chief Scientist Health, I was bound by the terms and conditions of the Civil Service code.

252 I am asked a question regarding my statement on 15 March 2021 that I was "wholly confident" in the Oxford AstraZeneca vaccine. I did not make this statement. It was probably made by CMO Gregor Smith.

Public health & coronavirus legislation & regulations

253 I was not involved in the strategy relating to nor the drafting of any legislation or regulations enacted during the Covid-19 pandemic. I cannot recall the Group or I ever being asked for advice regarding how legislation or regulations should be drafted. I do not know the ministers, senior civil servants or advisers who were primarily involved in decision

making in this area. I do not know what medical or scientific advice was provided to the Scottish Government with regards to legislation and regulations.

Key challenges and lessons learned

254 I have not provided evidence to any UK parliament or Scottish parliament select committees or Scottish Parliament Committees. I have not contributed towards any internal or external reviews, or lessons learned exercises.

255 I have been invited to identify what I consider to be the key issues and junctures in the decision making process relating to the management of the pandemic in Scotland. I was removed from the decision making process as I did not provide direct advice. I do not feel I can comment on the process or any challenges there may have been. I do not know whether core decision makers felt they had adequate medical and scientific advice.

256 I do not know whether members of the Group have been involved in any lessons learned exercises. If they have not been involved, I do not know why.

257 In the pandemic Scotland adopted the "levels" rather than the "tiers" system. I have not seen evidence to suggest that this made any difference to the outcome in terms of infection of Covid-19.

258 Personally, I think it would have been helpful if the Scottish and UK Governments could have been more aligned in responding to the pandemic. I feel that some of the differences resulted in unnecessary confusion. I am not aware of data that shows a difference in outcomes but I have not actively researched this.

259 For example, Scotland had a different number of levels to the English tier system. There was also a decision made early on that Scotland should have a separate NHS app. I do not know why these decisions were taken. I am not aware of whether it was thought that these differences would result in a different outcome. I am not aware of any medical or scientific advice which considered there would be a different outcome.

260 I do not know what the decision makers required so cannot comment on what difficulties they may have had in considering expert advice.

261 I have not been involved in any internal or external reviews, lessons learned exercises or any other reports relating to the provisional outline for Module 2A.

262 I am not aware of any initiatives or activities involving changes to the role and performance to the medical officers of the Scottish Government. I do not know what the outcome of any of these reviews have been. I do not know whether the Scottish Government has responded to any conclusions of these reviews.

Documents

263 I was provided with a laptop from the Scottish Government at the outset of the pandemic on which all e mail and correspondence was conducted with Scottish Government. This was taken from me when I left my role as Chief Scientist Health and I believe the hard drive was wiped. I have not kept any hard copy emails or correspondence relating to what I have discussed in this statement. I was a member of 3 Whats app groups as identified in paragraph 28. These were on my personal phone, and I have downloaded these and sent to Scottish Government officials. I have been informed that these have been supplied as three separate files as exhibits (I believe under section 21). I was not a member of any other informal or private communication groups. I have not kept any diary, notes or voice memos during this period. I have been informed that all meeting papers, minutes, advice and other key material relating to the Group's activities has been prepared and made available to the Inquiry.

264 I had a meeting with Jeane Freeman and there should be a record of this [DCC2/057 - INQ000316287 and INQ000316288].

265 I have not provided any evidence to Westminster or Scottish Parliamentary Committees.

Statement of truth

266 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 statement of truth without an honest belief of its truth.

Signed ...

Personal Data

Dated: 16/11/2023