

## Covid-19 Inquiry: Module 1

### Written Closing Statement of the Government Office for Science

#### Introduction

1. The Government Office for Science is grateful for the opportunity to contribute to this Module of the Inquiry. During the course of Module 1, the Inquiry has received and considered evidence from GO-Science,<sup>1</sup> and has also heard evidence from two former Government Chief Scientific Advisers, Sir Mark Walport and Sir Patrick Vallance. These closing submissions distil the key aspects of their evidence and identify the key issues they would invite the Inquiry to address when formulating its conclusions and recommendations in relation to future pandemic preparedness.
2. These submissions deal in turn with the following matters:
  - 2.1. **The roles and structures of GO-Science, the GCSA and SAGE.**
  - 2.2. **Preparedness as insurance against future risk.** An overarching cultural question, which must be confronted when undertaking any analysis of preparedness, is the extent to which we, as a country, are prepared to spend money on structures and capabilities which we hope will never need to be used.
  - 2.3. **The benefit of a broad and flexible approach to preparedness.** Robust and effective national preparedness does not depend on the ability to make highly accurate predictions. Efforts should be focused on identifying broad areas for national improvement which should underpin government risk planning. Resilience should be built into the day-to-day, from improving data availability and integration to expanding and maintaining diagnostic capacity; from developing international collaboration to detect and address pandemic risks, to identifying and addressing inequalities at home, and their uneven impact on health emergency outcomes.

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<sup>1</sup> Including two witness statements from Dr Stuart Wainwright OBE, former Director of GO-Science, made on behalf of GO-Science: [INQ000148407](#), [INQ000148406](#)

- 2.4. **Embedding structural resilience in government in ‘peacetime’.** GO-Science sees the strength in having a single authoritative point of accountability for resilience. This would not replace the specialisms across departments in their respective areas, but would centrally coordinate these efforts, ensure that plans turn into actions, preserve and maintain institutional memory, and provide a single docking point within the government for science advice;
- 2.5. **Current structures for science advice during an emergency, and why they should be preserved.** In contrast to the areas of potential improvement GO-Science has identified in respect of peacetime resilience, present structures for delivering science advice to COBR are now, and must remain, clear and direct; and
- 2.6. **Building a resilient public health infrastructure.** A better funded public health system would deliver a double benefit for resilience: first, improving baseline health, to mitigate the impact of pandemic particularly on vulnerable and marginalised groups; and secondly, maintaining an infrastructure and workforce which could pivot to the delivery of essential services, such as contact tracing, in the event of a pandemic.

### **GO-Science, the GCSA and SAGE**

3. The Government Office for Science, “GO-Science”, is a small organisation. Prior to and during the Covid-19 pandemic it formed part of the Department for Business, Energy and Industrial Strategy (BEIS). It is now part of the Department for Science, Innovation and Technology (DSIT). At the head of GO-Science is the Government Chief Scientific Adviser (GCSA) who reports to the Cabinet Secretary. Together, GO-Science and the GCSA provide science advice to the Prime Minister and the Cabinet, and promote and support the provision of science advice across Government.
4. While the Inquiry is understandably focussed on the provision of science advice in an emergency, these processes are intended to deal with all aspects of science advice in Government, at all times. Most of the work of the GCSA and GO-Science relates to a wide variety of non-emergency matters. Additionally, the GCSA leads the network of Chief Scientific Advisers (CSAs). Each government department has (or should have) its own CSA

and each Devolved Administration has (or should have) its own Government CSA, all with a direct line of communication to the GCSA.

5. During government-wide emergencies, GO-Science convenes and provides secretariat support for the Scientific Advisory Group for Emergencies (SAGE). SAGE is, generally, chaired by the GCSA; during the pandemic it was co-chaired by Sir Patrick Vallance, then GCSA, and the Chief Medical Officer, Sir Chris Whitty. Further detail in respect of roles of the GCSA, SAGE and GO-Science can be found in the third witness statement of Dr Wainwright<sup>2</sup> and the first witness statement of Sir Patrick Vallance.<sup>3</sup>
6. SAGE is not a permanent, standing committee and it does not have ‘members’. It exists only when it is activated by COBR in response to an emergency.<sup>4</sup> Its role is to bring together experts relevant to that emergency to inform science advice in a way that is co-ordinated, comprehensive and comprehensible. This model allows for flexibility and a tailored response to the emergency that is being faced.
7. The Inquiry has already heard and received evidence from a number of individuals who have participated in SAGE, and is likely to draw on the evidence of more former SAGE participants in later modules. Those who participate in SAGE, and its sub-groups, are experts drawn from across the country, from inside and outside government. Those who attend give independent advice: their analysis, drawn from their expertise and experience. Participants are assembled based on the specific emergency under consideration.
8. A number of key points should be made regarding the roles and the remit of SAGE and the GCSA:
  - 8.1. **GO-Science, the GCSA and SAGE are not the only formal sources of science advice to Government, even during an emergency.** Different government departments lead on different areas, which are related to their own work and expertise. The Department of Health and Social Care (DHSC) is the lead department for pandemics and draws on its own network of scientists, clinicians and public health

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<sup>2</sup> Third Witness Statement of Dr Stuart Wainwright OBE, [INQ000148407](#)

<sup>3</sup> First Witness Statement of Sir Patrick Vallance, dated 11/04/2023, [INQ000147810\\_0003-8](#) paragraphs 5-23

<sup>4</sup> The GCSA can also convene a precautionary SAGE meeting, before being activated by COBR, as was done on 22 January 2020.

experts to inform that planning. Most government departments have their own CSAs, and their own structures and processes by which science advice is provided internally to senior civil servants and Ministers. Organisations such as the United Kingdom Health Security Agency (UKHSA) provide operational science and advice to DHSC. SAGE and the GCSA do not have, and would not wish to establish, a monopoly on science advice. That would simply create a bottleneck.

- 8.2. **The GCSA and SAGE provide science advice only.** Along with the various science advice sources, policy-makers benefit from advice on a range of different matters – economic, legal, ethical, political, and on occasion national security – from inside and outside of government. SAGE is a science body and, for the reasons discussed below, should remain so.
- 8.3. **The GCSA and SAGE do not make policy.** They provide evidence and advice to policy makers, who weigh it against other sources of evidence and advice in order for policy decisions to be made. In our democratic system elected politicians make those decisions and, in making them, are accountable to Parliament and to the electorate.
- 8.4. **The GCSA and SAGE are not responsible for the operational delivery of science.** Their role is to provide advice. Whether that advice turns into policy, and if so, how that policy is put into practice, are matters which fall to decision makers and to other departments and organisations. For example, while the GCSA and SAGE may, depending on the issue or emergency, provide advice relating to health issues within science, it is not their role to be involved in the delivery of healthcare, public health systems, or to provide public health advice.
- 8.5. **The GCSA and SAGE are convened by the UK Government, with SAGE reporting via COBR.** Formally it is not their role to provide advice elsewhere (for example, directly to individual departments or the Devolved Administrations, other than through COBR on request), and it would not be practical to do so given pressures on their capacity. The advice SAGE provides in an emergency can be disseminated to Devolved Administrations and individual departments either via COBR, through the SAGE minutes, or by those observing or participating in SAGE

meetings from those bodies. The GCSA is accountable to the PM, to Cabinet and to the Cabinet Secretary.

- 8.6. **SAGE is a pro-active as well as a reactive advisory committee.** As Sir Patrick Vallance explained, and as required by the Code of Practice for Scientific Advisory Committees and Councils,<sup>5</sup> science advisory committees should be “*a mix of response mode, i.e. things that the department wishes to know, and things that the experts wish to say or wish to look at... it is about challenge as well as support and information provision.*”<sup>6</sup> While SAGE necessarily provides advice on the emergency for which it is activated, SAGE participants, and the GCSA, are flexible and reactive, and are not constrained by the requirement for a specific commission nor reliant on a minister knowing which questions to ask.<sup>7</sup>
- 8.7. **SAGE provides open and transparent science advice.** During the pandemic, and at Sir Patrick Vallance’s insistence, SAGE published its minutes and its papers. GO-Science has introduced new internal guidance to ensure that in future emergencies, SAGE papers and in particular minutes will be published as soon as is practically possible, from the outset.<sup>8</sup> Sir Patrick Vallance highlighted the importance of this transparency, including to encourage further scientific scrutiny of the advice<sup>9</sup> and the practice of publishing SAGE documents should be maintained. Other areas of advice were not made public during the pandemic and thus were not subjected to the same level of debate and scrutiny. This is likely to have contributed to science advice provided by SAGE being given particular prominence in the minds of the media and the public in relation to policy.
9. The SAGE model is flexible and effective. It ensures that the right expertise is assembled quickly to provide high-quality and transparent scientific advice in an emergency. The organisational structure is clear and GO-Science provides an effective secretariat. There is a single ‘docking point’ into central government through COBR. The unprecedented

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<sup>5</sup> Code of Practice for Scientific Advisory Committees and Councils 2021, dated 14/12/2021; [INQ000101646\\_0011\\_19 paragraphs 3.4 and 6.1](#)

<sup>6</sup> [Sir Patrick Vallance](#), 22 June 2023, 139/17-140/6

<sup>7</sup> [Sir Patrick Vallance](#), 22 June 2023, 136/23-137/3

<sup>8</sup> SAGE Development Programme, [INQ000142161\\_0004](#) paragraph 2

<sup>9</sup> [Sir Patrick Vallance](#), 22 June 2023, 140/15 - 142/23

challenges faced by SAGE in providing science advice during the pandemic meant that there were inevitably areas in which operational effectiveness and/or efficiency could be improved, as identified in Sir Patrick Vallance’s evidence, but the essential mechanism for providing the Government with science advice in an emergency is sound and the pandemic demonstrated that it is fit for purpose.

10. Within GO-Science itself, significant work has been done to improve the preparedness and resilience of SAGE and its GO-Science secretariat. The SAGE Development Programme evolved from an internal ‘ways of working’ document in March 2020 into a more formal programme to improve the SAGE mechanism.
11. A key aim of the SAGE Development Programme was to make GO-Science a “*response ready organisation*”, in recognition of its experiences during the Covid-19 response, which required GO-Science to rapidly expand and adapt to the unprecedented pace and volume of work required to operate SAGE effectively.
12. Many of the initial recommendations of the SAGE Development Programme were targeted at the Covid-19 response itself, and therefore required immediate action. Later phases of the programme focused on work strands for the longer term, which included the transparency of SAGE (discussed above); its secretariat and ways of working; and the recruitment, induction, diversity and support of SAGE experts. The Inquiry has been provided with a report on the work completed under the SAGE Development programme.<sup>10</sup>

### **Insuring against future risk**

13. Module 1 of the Inquiry examined issues of resilience and preparedness. GO-Science considers there to be a fundamental over-arching consideration to which any analysis of how better to deal with future pandemics is inevitably subject: the extent to which we, as a society, wish to devote resources to, in effect, purchasing insurance against hazards of this nature. Although the choice as to allocation of resources will always remain a political one, this module of the Inquiry provides a valuable opportunity to reflect on the value of

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<sup>10</sup> SAGE Development Programme Internal Report - March 2023, [INQ000142161](#)

insurance against future risks that have the capacity to cause widespread illness, death and profound social upheaval.

14. In some areas the value of insuring against future risk is well understood. Sir Patrick Vallance gave the example of expenditure on the armed forces: *“you don't turn round after 20 years and say, ‘What a waste of money that was, we haven't had a war’”*.<sup>11</sup> The effective protection of society from natural hazards, which can be just as devastating as security threats, requires a similar mindset. Sir Oliver Letwin described the need to *“change the culture so that it's accepted that consciously spending money that we hope will never be used is a good thing to do”*,<sup>12</sup> if to do so might protect lives and the economy.
15. When planning for a future pandemic it needs to be understood that you may not need everything you pay for and that innovation, whether scientific or technological, inevitably comes with failure, which has to be priced in and accepted as part of the process. In the field of pandemic preparation, the concept of value for money has to be considered by Government in its broadest sense. It is anticipated that the Inquiry will hear further evidence relevant to this point, particularly in Module 4.
16. That necessary cultural shift towards structural and financial investment against future pandemics, underpins and runs through the more specific changes GO-Science wishes to emphasise in this closing statement. The approach to risk planning for future pandemic requires structural change in at least two respects. First, a need to focus on cross-cutting capabilities and a wider range of scenarios and not to become overly focused on specific plans for specific types of pandemic; and second, the need for systemic and structural resilience to be built in during ‘peacetime’.

### **Flexible preparedness, not specific predictions**

17. The Covid-19 pandemic, and the work of the Inquiry to date, have demonstrated the need for a focus on cross-cutting capabilities and a wider range of scenarios and not specific plans for specific types of pandemic. The response to the emergency that eventuates will inevitably need to be targeted, but the preparation needs to be broad.

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<sup>11</sup> [Sir Patrick Vallance](#), 22 June 2023 159/22-24

<sup>12</sup> [Sir Oliver Letwin](#), 20 June 2023, 52/15-19

18. Predicting the next pandemic with any sort of precision is impossible. There are too many variables. The Inquiry heard evidence which was apparently predicated on a belief that our powers of prediction need to be improved. It was suggested, for example, that treatments and vaccines that would have been effective against Covid-19 should or could have been stockpiled. This suggestion does not stand up to any scrutiny. Some drugs that proved to be effective against Covid-19 were available before January 2020, most notably Dexamethasone – but it took national-scale clinical trials for its efficacy to be established in this disease, and many experts thought it would not work. It cannot sensibly be suggested that Dexamethasone should have been stockpiled on the off-chance that it might have been effective against an as-yet unknown coronavirus. Other therapeutics and vaccines were only created during the pandemic and as a result of knowledge of the structure of SARS-CoV-2. It is plainly not possible to stockpile a drug or vaccine which has not yet been invented.
19. The Inquiry has also explored the notion of “groupthink”. In his evidence, Dr Richard Horton appeared to suggest that there was a degree of *“groupthink in the medical and public health community that really focussed on influenza as the threat”* rather than considering threats from other infectious diseases. He characterised this as *“Western groupthink”*.<sup>13</sup> Whether or not there is merit in the argument that there was groupthink in the pandemic planning documents and the NSRA is a matter that GO-Science leaves to those who were responsible for drawing up those documents, but it disagrees that there was general groupthink across the scientific community and in the science advisory groups.
20. Indeed, Dr Horton’s later evidence would seem to support GO-Science’s view. He referred to *“20 years of documented evidence about the growing danger of coronaviruses”*,<sup>14</sup> derived from the 2002/03 SARS outbreak that *“spurred on a huge interest and research activity into coronaviruses ... a surge of new research ... and it only redoubled when MERS in 2012 came on the scene ... both in the general medical literature and the speciality literature, there’s an enormous discussion about the dangers of SARS CoV and MERS – and zoonotic infections in general ... this has been a central debate in the global health community over 20 years about those threats and what we do about them”*.<sup>15</sup>

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<sup>13</sup> [Dr Richard Horton](#), 13 July 2023, 69/1-12

<sup>14</sup> [Dr Richard Horton](#), 13 July 2023, 83/20-23

<sup>15</sup> [Dr Richard Horton](#), 13 July 2023, 87/11-88/11



21. The Inquiry’s own expert, Dr Claas Kirchhelle, put his view succinctly: *“I think at the scientific level there is no evidence whatsoever of groupthink”*.<sup>16</sup> He pointed to the existence of pandemic planning for SARS, MERS and *“across multiple pathogens”*, and expressly rejected the idea that the failure to update plans in light of increased knowledge of asymptomatic infection and aerosolised transmission amounted to groupthink. He warned against what might be described as the lawyer’s fallacy, *“that a legal document is not necessarily representative of a very diverse ecosystem of thinking about pandemics”*<sup>17</sup>. He also pointed to the existence of the phase one clinical trial of a MERS coronavirus vaccine starting in Oxford as *“physical evidence that groupthink was not present”*<sup>18</sup>. His rejection of the notion of scientific groupthink as a causative element to a lack of preparedness was unequivocal and compelling.
22. Further evidence of the absence of groupthink can be found in the science guidance documents prepared under Sir Mark Walport’s leadership, and the Golden Hour documents that followed under Sir Patrick Vallance. Both addressed the risk of emerging infections; the Golden Hour document contained a number of annexes specific to different routes of infection.<sup>19</sup> The Inquiry has heard about Exercise Alice, a tabletop exercise based on a MERS outbreak that created valuable learning, particularly on the containment phase of any future pandemic. Sir Chris Whitty’s evidence to the Inquiry was that the recommendations that emerged from Exercise Alice were *“incremental re-statements of existing thought ... a bringing together and saying we’ve got to be more systematic about something we were already thinking about”*.<sup>20</sup>
23. An important factor in the UK’s inability to contain SARS-CoV-2 in 2020 was that it had not invested sufficient energy and resource in a public health infrastructure that could monitor an outbreak through data analysis and respond to it through mass testing, tracking, case isolation and (when necessary) imposition of non-pharmaceutical interventions. This was the result of policy decisions. It was not the consequence of scientific groupthink, or scientists focussing excessively on pandemic influenza, or a scientific doctrine that considered containment impossible. As Dr Kirchhelle and Professor John Edmunds have

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<sup>16</sup> [Dr Claas Kirchhelle](#), 10 July 2023, 100/20-21

<sup>17</sup> [Dr Claas Kirchhelle](#), 10 July 2023, 100/20-23

<sup>18</sup> [Dr Claas Kirchhelle](#), 10 July 2023, 102/3-14

<sup>19</sup> SAGE Science Guidance Paper: Emerging Infections (H24) [MW/30: [INQ000142139](#)]; SAGE Science Guidance document on Pandemic Influenza (H23); Golden Hour documents in use in January 2020 on Pandemic Influenza, [INQ000142159](#); and Emerging Infectious Diseases, [INQ000190636 and annexes thereto](#).

<sup>20</sup> [Sir Chris Whitty](#), 22 June 2023, 85/20-25

suggested, it also gives rise to the question of whether the UK would have performed any better if the UK had been hit with an influenza pandemic.<sup>21</sup>

24. Two other points should also be remembered. First, planning for pandemic influenza, and identifying it as the most realistic threat, was rational and based on sound evidence: see, among others, the evidence of Dr Kirchhelle.<sup>22</sup> Second, there was an attempt to contain SARS-CoV-2 in the UK from January until early March 2020, as will be explored further in Module 2.
25. What the debate about “doctrine”, “groupthink” and excessive focus on pandemic influenza does show, is that while a country cannot and should not plan in reliance on specific predictions, we can take steps to be better prepared and more resilient. We can assess, and build, capability to research, trial, and roll out existing treatments when faced with a new hazard. We can invest in capacity to discover, invent, manufacture and distribute a new treatment or vaccine at speed should the need arise. We can make the most of what we know, while acknowledging where we will need to act fast to adapt.
26. This approach is exemplified by the 100 Days Mission, a global public-private effort to harness scientific innovation in order to reduce the time taken to develop and make available safe, effective and affordable diagnostics, therapeutics, and vaccines (DVTs).<sup>23</sup> The 100DM emphasises the benefits of investment in developing DVTs for prototype pathogen classes of concern.<sup>24</sup> We can consider what capabilities will be required to deal with future pandemics, whether those capabilities exist and how can they be expanded quickly should the need arise. A further focus of the 100 Days Mission is on investment in simplified manufacturing processes, to allow easy scale up.<sup>25</sup>
27. In the context of a future pandemic, and based on recent experience, some of the key areas to address to improve resilience for future emergencies are set out below.

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<sup>21</sup> [Dr Class Kirchhelle](#), 10 July 2023, 102/19-130/6; Witness Statement of Professor John Edmunds, dated 14/04/2023 [INQ000148419\\_0008-11](#)

<sup>22</sup> [Dr Class Kirchhelle](#), 10 July 2023, 101/6-16

<sup>23</sup> 100 Days Mission to respond to future pandemic threats, report dated 12/06/2021 [INQ000064663\\_0030-31](#). Further details of the work done on the 100 Days Mission is set out in the statements First Witness Statement of Sir Patrick Vallance, dated 11/04/2023, [INQ000147810\\_0031-33](#) paragraphs 98-101; Fourth Witness Statement of Dr Stuart Wainwright, dated 13/04/2023, [INQ000148406\\_0025](#) paragraphs 61-64

<sup>24</sup> [INQ000064663\\_0027](#)

<sup>25</sup> [INQ000064663\\_0031](#)

## Data

28. Access to reliable and relevant data is critical in responding to a pandemic or indeed any major emergency, and understanding of and planning for data access and data flow should form part of the planning for each risk identified on the NSRA.<sup>26</sup> Crucial questions include what data will be required, who holds it, how can it be obtained and analysed? Initially during the Covid-19 response, this was an area of weakness – data were not available, or were not shared, or could not be collated and analysed rapidly. This hampered advice and resulted in under-informed decisions. This weakness was addressed, and data collection, usage and presentation then improved markedly.<sup>27</sup>
29. A central issue for this Inquiry, and for future emergency planning more generally, is to determine which data will be required in the event of an emergency, to what extent people are willing to share data in the event of an emergency, how data can be shared - including mechanisms for interoperability between systems, and how to establish and maintain structures to achieve this. The Inquiry has heard evidence of effective data systems and data presentation mechanisms set up during the response, including the ONS Coronavirus Infection Survey, the Joint Biosecurity Centre (JBC), and the Situation Centre for data (SitCen).<sup>28</sup> These developments should be maintained, to avoid the need to create data systems from scratch in the midst of an emergency. While the examples above are relevant to pandemic planning, the need for better data and data systems applies equally to planning and preparation for all national emergencies.

## Testing and tracing

30. An appreciation of the testing and tracing capability required in respect of pandemic risks, and the infrastructure needed to provide it, will be key to improvements in preparedness. A number of witnesses have provided important evidence to the Inquiry regarding the role of well-resourced test and trace capability. In particular:

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<sup>26</sup> First Witness Statement of Sir Patrick Vallance, dated 11/04/2023, [INQ000147810\\_0028-30](#) paragraphs 87-94; [Sir Patrick Vallance](#), 22 June 2023, 168/21 - 170/24

<sup>27</sup> First Witness Statement of Sir Patrick Vallance, dated 11/04/2023, [INQ000147810\\_0028-30](#) paragraphs 87-90; [Sir Patrick Vallance](#), 22 June 2023, 167/22-24; [Sir Chris Whitty](#), 22 June 2023, 112/8-17; [Dame Sally Davies](#), 20 June 2023, 169/10-18

<sup>28</sup> First Witness Statement of Sir Patrick Vallance, dated 11/04/2023, [INQ000147810\\_0029-30](#) paragraphs 90-94

- 30.1. Dr Catherine Calderwood, Former Chief Medical Officer for Scotland, described learning in March 2020 from the CMO of Singapore that Singapore had a specialised taskforce with test and trace capabilities, which had sat dormant since the 2003 SARS outbreak in that country, and was ready to be mobilised at an early stage of an epidemic.<sup>29</sup>
- 30.2. Professor David Heymann, in his expert report prepared for the Inquiry, described several measures taken post-SARS in Singapore, Japan, Korea, Taiwan, Hong Kong, and elsewhere. These included strengthening disease detection networks and carrying out cross government pandemic containment simulation exercises. These countries all had success in slowing the initial domestic spread of Covid-19, and a key shared feature of their response was the rapid investigation of initial outbreaks to prevent further spread.<sup>30</sup>
- 30.3. Professor Whitworth and Dr Hammer, experts to the Inquiry, identified lessons which could be learned from other countries’ preparedness structures, including the experiences of China and neighbouring countries during the early stages of the Covid-19 pandemic in respect of “*being able to scale up diagnostic testing expertise and capacity early in an epidemic [and] being able to scale up case detection and contact tracing*”.<sup>31</sup>
31. Sir Mark Walport illustrated how the lack of priority accorded to public health over several decades meant that much of the traditional infrastructure for the control of infectious diseases has been lost. As a result, when the pandemic struck, the capacity for testing, tracing and isolation had to be built, largely from scratch.<sup>32</sup> Similar observations were made by other witnesses, in particular Dr Claas Kirchhelle, who described the de-prioritisation of public health testing in NHS laboratories.<sup>33</sup> Success in testing and tracing requires prior investment in those areas. The UK could not replicate, for example, the initial South Korean response to the pandemic because it had not made the investment South Korea had in its public health systems.

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<sup>29</sup> [Dr Catherine Calderwood](#), 5 July 2023, 18/1 - 19/4

<sup>30</sup> Expert Report by Professor David Heyman, dated 19/05/2023, [INQ000195846\\_0014](#) paragraphs 64-65

<sup>31</sup> Expert Report by Professor Jimmy Whitworth and Dr Charlotte Hammer for Module 1 dated 26/05/2023, [INQ000196611\\_0035](#), paragraph 88(b)

<sup>32</sup> Witness Statement of Sir Mark Walport, dated 08/04/2023, [INQ000147707\\_0043-47](#) paragraphs 123-141

<sup>33</sup> Expert report of Dr Claas Kirchhelle, dated June 2023, [INQ000205178\\_0039-40](#) paragraph s52-53

## Therapeutics and Vaccines: development and manufacturing

32. The therapeutics and vaccines developed and manufactured during the Covid-19 pandemic will be considered in detail in Module 4. A broader point arises in respect of preparedness. In January 2020, the industrial vaccine base in the UK was in a significantly depleted state and was not commensurate with the national excellence in vaccine research. Manufacturing capability had to be reactivated quickly, during the emergency.<sup>34</sup> Not only must excellence in our scientific research base be preserved, we must address how that research translates into manufacturing. We must assess the manufacturing capacity required and understand where that capacity is held.
33. Sir Patrick Vallance warned the Inquiry not to “*dream that you can have a vaccine factory sitting there waiting for a pandemic. It's going to be staffed by people who don't know how to make vaccines. You need everyday activities that you can then scale quickly*”.<sup>35</sup> The 100 Days Mission, discussed below, is focussed on the need to embed preparedness in everyday practice, in respect of vaccines, therapeutics and diagnostics.
34. Preparedness also requires investing public money in a future risk which may never eventuate. As discussed above, this requires a cultural shift. It requires investment in projects which may not only be unused, but which may fail entirely. Those controlling the public purse, and taxpayers, may well consider it counter-intuitive to make investments which are likely to fail. Sir Patrick Vallance gave the compelling example of the Vaccine Taskforce:

*“...it was very, very possible, even likely, that it would fail, and at the end of it of course it was a great success and the National Audit Office wrote a report saying what a great success it was. If it had failed, the National Audit Office, I suspect, would have written a report saying what an outrageous waste of public money the whole thing was, and yet both things were totally possible.”<sup>36</sup>*

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<sup>34</sup> [Sir Patrick Vallance](#), 22 June 2023, 162/2-9

<sup>35</sup> [Sir Patrick Vallance](#), 22 June 2023, 162/12-16

<sup>36</sup> [Sir Patrick Vallance](#), 22 June 2023, 163/12-20

35. This is not a novel concept in pandemic planning. In her comprehensive independent review in the wake of the H1N1 (“Swine Flu”) pandemic, published in July 2010, Dame Deirdre Hine evaluated the government’s decision to procure up to 132 million doses of influenza vaccine, sufficient to protect 100% of the population. Criticisms of that decision as representing poor value for money were noted to be heavily reliant on hindsight, Dame Deirdre emphasising that *“the essential consideration here was how much one is willing to pay for an insurance policy against the emergence of a very severe virus”*. While the low virulence of H1N1 rendered population vaccine rollout unnecessary, that could only be known after the event, and despite the vaccines not being required, she did not criticise the decision to purchase them.<sup>37</sup>
36. Neither is this a concept which applies only to vaccines, or to pharmaceuticals more broadly. All aspects of pandemic preparedness will cost money and take time. Although, as discussed below, some capabilities can be put to good public health use during ‘peacetime’, public money will need to be spent with no guarantee of return. The conventional analysis applied by the National Audit Office and the Public Accounts Committee requires revision when applied to the building up of effective resilience against future pandemics. The extent to which politicians and, ultimately, the population, wish to invest in this insurance is a political question, but it is one which must be asked, and the impact of the choices must be understood.

### Diagnostics

37. As with vaccines and therapeutics, in respect of diagnostics we must take stock of what has been achieved during the pandemic, and what still needs to be done. Capabilities built during the response must be preserved and adapted for our future needs. The evidence of Sir Mark Walport and Dr Kirchhelle, above, regarding public health investment, is again relevant. How can we ensure that every-day healthcare in this country uses a domestic diagnostic capacity so that it can be pivoted to emergency pandemic response at short notice when required? What support and partnerships do we need to develop with industry to foster a strong diagnostic capability?

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<sup>37</sup> Report by Dame Deirdre Hine, *An independent review of the UK response to the 2009 influenza pandemic*, dated 01/07/2010, [INQ000022705\\_0129-130](#) paragraphs 7.40 - 7.44

38. Sir Patrick Vallance explained how an everyday domestic capacity would provide both a present and a future benefit, “*the more the NHS use routine near patient rapid diagnostics, the more you have an industry, the more you're able to scale that for pandemic preparedness*”.<sup>38</sup> Sir Chris Whitty endorsed the importance of the ability to scale up in predictable areas which will very likely be required in future responses, including diagnostic skills.<sup>39</sup> Professor Whitworth and Dr Hammer similarly recommended ensuring good epidemiological surveillance through, *inter alia*, the development of diagnostic tests with a focus on the capabilities within the NHS, public health, and academia.<sup>40</sup> They additionally highlighted the importance of maintaining sufficient reserve capacity within the health system, particularly laboratory capacity, in order to ensure there is capacity to develop and run new diagnostic tests for novel diseases, while maintaining the everyday delivery of health services.<sup>41</sup>

### Equipment

39. The Inquiry has heard some limited evidence on the availability of equipment, in particular specialist PPE, and the extent to which sufficient stockpiles were held. It is assumed that this matter will be explored further in later modules. While the purchase, storage, and distribution of equipment are operational functions, and therefore outwith the realm of science advice, it is self-evident that assessment of and planning for future risks will require an up-to-date appreciation of the equipment we require and where it can be sourced from; an understanding of what can and cannot be stockpiled; and knowledge of the industrial and manufacturing capacity on which we will be able to call.

### International co-operation

40. All pandemics are international, and the effective response to a future pandemic will inevitably be an international endeavour. The 100 Days Mission is intrinsically important in this regard in respect of diagnostics, vaccines and therapeutics, with its focus on the need for international cooperation prior to and throughout a pandemic and its practical

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<sup>38</sup> [Sir Patrick Vallance](#), 22 June 2023, 162/20-23

<sup>39</sup> [Sir Chris Whitty](#), 22 June 2023, 97/4-9 and 108/3-5

<sup>40</sup> Expert Report by Professor Jimmy Whitworth and Dr Charlotte Hammer for Module 1 dated 26/05/2023, [INQ000196611\\_0036](#) paragraph 88(f)

<sup>41</sup> [Professor Whitworth](#), 14 June 2023, 149/9-25

emphasis on, for example, the benefits of international networks of clinical trials with effective data sharing.<sup>42</sup>

41. Other areas of co-operation are also required, notably in surveillance for novel and emerging viruses, and in respect of the initial (non-pharmaceutical) public health response. The World Health Organisation will continue to play a central role, and it is important that any structural changes made at a national level dovetail with the work that is being done on the international plane. Relationships should be in place in advance as far as possible, so that we know whom we can call upon, and other countries are able to call upon us.

#### Vulnerable groups and health inequalities

42. The final point is one of particular importance. Pandemics feed off inequality, and drive inequality. The Inquiry heard evidence of the importance of identifying and considering those with health inequalities during the planning and preparation stage.
43. Sir Patrick Vallance told the Inquiry that the impact of inequalities on outcomes in a pandemic needs to be better understood. While SAGE identified the uneven impact of Covid-19 during the response (an issue which will be covered in more detail in Module 2), an appreciation of inequality and its impacts needs to be embedded in the process and considered from a science advice perspective from day one, *“it needs to be one of those questions on the first SAGE... what are the issues around inequality that you should be thinking about now?”* Behavioural and social science advisors, in particular, have a key role to play in identifying research and other steps which can be taken in advance of another emergency.<sup>43</sup>
44. The Technical Report on the Covid-19 Pandemic in the UK identified and detailed the way in which the pandemic, in common with many others, reflected and in many cases exacerbated existing inequalities.<sup>44</sup> The report highlights the need for reactive and ongoing research on disparities, which must begin at the start of a pandemic. This is work which can be strengthened in ‘peacetime’. It also described an appreciation of how continual

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<sup>42</sup> 100 Days Mission report, [INQ000064663\\_0018](#)

<sup>43</sup> [Sir Patrick Vallance](#), 22 June 2023, 165/5-166/8

<sup>44</sup> Technical report on the COVID-19 pandemic in the UK. A technical report for future UK Chief Medical Officers, Government Chief Scientific Advisers, National Medical Directors and public health leaders in a pandemic, dated 01/12/2022, [INQ000101642\\_0086-98](#) Chapter 2 - Disparities



dialogue with local communities was important in understanding risks and vulnerabilities, and in co-designing effective responses.

45. Sir Patrick Vallance co-authored the Technical Report, alongside CMOs and other experienced colleagues. It was written for future UK CMOs, GCSAs, National Medical Directors and public health leaders in a pandemic. Documenting what has been learned during the Covid-19 response should help to highlight these important issues at an earlier stage of an emergency, and to keep disparities in mind when preparing during the ‘peacetime’ years. However, the authors recognise that their observations and recommendations are by no means exhaustive, and work to reduce disparities continues.
46. The Technical Report also covered many other areas on which the Inquiry will be focussing during this and later modules, from modelling and testing to non-pharmaceutical interventions and care homes. For the purposes of Module 1, the Inquiry may be particularly interested in the sections entitled “*Reflections and advice for a future CMO or GCSA*” at the end of each chapter, which distil the key learning points identified by the authors, and which should underpin future planning.<sup>45</sup>
47. The topics highlighted above are matters of general application that should underpin and run through future governmental risk planning and should, if approached correctly, provide answers that will be adaptable to the next pandemic. They do not depend for their success on correctly guessing what the next pandemic will look like. They will lead to a better balance between prevention, mitigation and response. They will identify, in advance, areas of strength, and areas of relative weakness, so that they can be addressed before the pandemic, rather than during it.
48. Those scientific areas in which the UK was strong going into the pandemic were those in which it did well: the quality and breadth of its science base, expertise in genomic sequencing, expertise in pharmaceuticals and vaccines, large-scale national clinical trials. Conversely, areas of national weakness led to vulnerability: the absence of a major domestic diagnostic industry and difficulties in scaling up manufacturing of diagnostics, challenges in the scaling and operations of the public health system infrastructure, the need for further

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<sup>45</sup> [INQ000101642](#)

work on evaluating non-pharmaceutical interventions, the underlying health inequalities and co-morbidities within the UK population, and the lack of excess capacity in the NHS even in ‘normal’ times.

49. Sir Patrick Vallance discussed one potential initiative which has been raised in respect of strengthening national resilience: the creation of an academic institute for pandemic preparedness, which would bring together expertise and identify further areas for research.<sup>46</sup> The Inquiry has heard other proposals for building resilience and preparedness. Whatever steps are taken, national strengths must be maintained, and weaknesses identified and addressed.
  
50. As to the structure within which such planning should be undertaken, the Inquiry has heard extensive evidence concerning the compilation and operation of the NSRA. GO-Science is not the Lead Government Department (LGD) for any of the risks in the NSRA and there will be other Core Participants better placed to assist the Inquiry with these issues and the extent to which the NSRA model is effective in ensuring that the relevant LGDs accurately identify and assess the risks for which they are responsible.
  
51. The principal role for GO-Science in respect of the NSRA is to challenge and provide input to the methodology used during its production. In this regard it commissioned an external review in 2018, followed by a more comprehensive review of methodology by the community of CSAs prior to the publication of the 2019 NSRA,<sup>47</sup> which led to the Civil Contingencies Secretariat commissioning a report from the Royal Academy of Engineering (RAEng).<sup>48</sup> That report made important, sensible, and practical recommendations on many aspects of the methodology, including on the use of reasonable worst-case scenarios (RWCS).<sup>49</sup> Sir Patrick Vallance has endorsed the RAEng recommendations on these points.<sup>50</sup> This process has led to significant improvements but there is more work to do to implement the report’s recommendations, including on not using likelihood as a driver for

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<sup>46</sup> First Witness Statement of Sir Patrick Vallance, dated 11/04/2023, [INQ000147810\\_0033](#), paragraph 105

<sup>47</sup> Letter from Sir Patrick Vallance to Katherine Hammond, regarding National Security Risk Assessment 2019, dated 18/07/2019, [INQ000213808](#)

<sup>48</sup> Royal Academy of Engineering, External Review of the National Security Risk Assessment (NSRA) Methodology, dated September 2021, INQ000068403

<sup>49</sup> Further detail on GO-Science and the GCSA’s roles in respect of the NSRA and National Risk Register: Third Witness Statement of Dr Stuart Wainwright, [INQ000148407\\_0026-28](#), paras 88-96, and First Witness Statement of Sir Patrick Vallance, dated 11/04/2023, [INQ000147810\\_009-10](#) paras 24-29

<sup>50</sup> First Witness Statement of Sir Patrick Vallance, dated 11/04/2023, [INQ000147810\\_009-10](#) paras 28-29; [Sir Patrick Vallance](#), 22 June 2023, 156/23-157/1

prioritisation, compound risks, and construction of RWCS. This work is being taken forward by the Cabinet Office, with GO-Science providing support on the development of chronic risks, which are now considered separately from acute risks.

### **Improving structural resilience within government**

52. The second topic addressed in these closing remarks is an inevitable consequence of the first and relates to the need to embed structural resilience in government in ‘peacetime’.
53. The effective formulation and delivery of a resilience plan of the type described above cannot simply be allocated to a single government department on the existing NSRA model. Pandemics require an integrated, cross- and inter-governmental response. They present funding challenges which cannot be met by a single department with a budget from which to meet all its day-to-day requirements.
54. Nor can the effective oversight and delivery of a plan of this nature be fragmented across the various branches of government with an interest in its constituent elements. It is essential that there is a senior and authoritative single point of accountability and responsibility within government to drive resilience and implement plans.
55. Lead Government Departments must continue to play a pivotal role in preparation for risks falling within their domain. LGDs are where the subject expertise can be found. They have close ties with relevant specialist Public Sector Research Establishments, Arm’s-Length Bodies and executive agencies. The Department of Health and Social Care is the appropriate lead department for a health risk such as a pandemic. Different risks, for example, relating to space weather or a malicious cyber-attack, require different departments’ expertise and capabilities. Some risks will span two or more departmental areas. The purpose of centralised oversight is not to replace this specialism, but to enhance and support a department-led response.
56. The Inquiry has heard about recommendations and action points which were not followed through. There is no point in running exercises like, for example, Exercise Alice – which did address containment and mitigation and did provide an opportunity to take action to

develop capabilities that would have been valuable when the pandemic struck – without having someone responsible for co-ordinating and overseeing the response to the report, and being responsible for ensuring that actions are followed through.

57. Sir Patrick Vallance spoke of the benefit of ministerial oversight and a single point of accountability in ensuring that reports or letters once produced give rise to a practical plan of action, “*otherwise things get diffuse, and don’t happen*”.<sup>51</sup> He noted the related need for important papers (for example strategic preparedness documents) to contain not only a date of creation, but a “*sell-by date*”. Rather than the same documents rolling over and becoming out of date, review would be mandated, and necessary changes made.<sup>52</sup>
58. GO-Science’s own efforts to develop robust and formal structural systems around action tracking and institutional memory have included the development of knowledge and information management systems and guidance, subject to six-monthly review and with the aim to better support the SAGE secretariat and participants; and the implementation of the SAGE Recommendations Tracker, a system for logging and monitoring internal and external recommendations, decisions and actions, which are reviewed and audited on a quarterly basis to monitor continuous improvement.<sup>53</sup> Further detail of improvements to ways of working can be found in the statements of Dr Wainwright.<sup>54</sup> The promotion and central coordination of similar processes of ongoing assessment, improvement and the consolidation and retention of information could benefit many areas of government.
59. A clear structure of accountability and responsibility will address the tendency to believe that as long as a report has been written and stored the problem has been solved; it will create an institutional memory and repository of relevant information, which will be preserved when officials and ministers inevitably move on; it will ensure that documents and plans relating to resilience are kept under regular review and not allowed to drift into obsolescence.

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<sup>51</sup> [Sir Patrick Vallance](#), 22 June 2023, 164/14-21

<sup>52</sup> [Sir Patrick Vallance](#), 22 June 2023, 135/8-136/12

<sup>53</sup> SAGE Development Programme Internal Report, dated March 2023, [INQ000142161\\_0004\\_0006](#)

<sup>54</sup> Third Witness Statement of Dr Stuart Wainwright, [INQ000148407\\_0012-22](#), paragraphs 10-53

60. Crucially, from a science perspective, it will also provide a clear docking point within the government for relevant scientific advice during normal times. Both former Government Chief Scientific Advisers spoke of the need for scientific advisers to be proactive and not simply answer the questions that they are set by government.<sup>55</sup> That approach will only be effective if there is a clear and direct route by which such advice can find its way to the right person’s desk.

### **Preserving structures for science advice during an emergency**

61. The provision of science advice during the Covid-19 emergency will be the subject of detailed consideration in during Module 2. This section therefore deals only briefly with the overall efficacy of the present science advice structures during emergencies.
62. In contrast to the areas for improvement set out in the section above, the existing structure for the delivery of science advice to COBR during a pandemic, or other emergency, is now clear and fit for purpose. COBR commissions SAGE and the GCSA provides the link between SAGE and COBR.
63. The Inquiry has produced a series of detailed graphical representations of all the various government bodies and departments involved in pandemic preparedness and response.<sup>56</sup> Whatever may be said of the overall picture, the established route of SAGE science advice in an emergency is, and must remain, simple and clear. Sir Mark Walport (GCSA during several SAGE activations prior to Covid-19)<sup>57</sup> described a “*hardwired*” mechanism, by which the GCSA chairs or co-chairs SAGE, then communicates that science advice into COBR.<sup>58</sup> It is anticipated that the adjustments made at the CCS level during the Covid-19 response to cope with the scale of the emergency will be covered in more detail in Module 2. A key lesson from this process was, as discussed above, the need for a consistent single docking point for SAGE science advice.

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<sup>55</sup> [Sir Patrick Vallance](#), 22 June 2023, 136/23-137/3; [Sir Mark Walport](#), 21 June 2023, 20/25-21/6

<sup>56</sup> UK Pandemic Preparedness Organograms, dated between 2009 and 2020, [INQ000204014](#)

<sup>57</sup> Witness Statement of Sir Mark Walport, dated 08/04/2023, [INQ000147707\\_0011-13](#) paragraph 28

<sup>58</sup> [Sir Mark Walport](#), 21 June 2023, 12/13-13/14

64. During the pandemic SAGE could commission sub-committees to undertake specialist pieces of work as required. As with SAGE, discussed above, the constitution and remit of these groups is flexible and reactive. There is no fixed ‘membership’, each activation is tailored depending on the nature of the emergency and the needs of decision makers. Further detail on the constitution and work the sub-committees during the Covid-19 response will be considered in Module 2, while a broader overview of these advisory groups is provided by Dr Wainwright.<sup>59</sup>
65. CSAs within their respective in departments have an important role in embedding science advice and capability throughout government.<sup>60</sup> They have a direct line of communication with the UK GCSA, who supports them and leads the CSA network, which comprises all departmental CSAs and the Devolved Administration GCSAs. It is not a body for emergency response, rather it is a permanent network, for ensuring the day-to-day integration of science throughout government. Sir Jeremy Farrar, who has extensive international experience of science advisory structures, considered that the British model of having CSAs in each department was *“the best system in the world and everything should be done to maintain it”*<sup>61</sup>
66. These structures work well, and any suggestion that they should be changed, other than through the incremental developments already being worked through by GO-Science, should be rejected. Adding mandatory representation of all the devolved nations’ health CSAs to the CSA network, would risk actively harming a body that has developed organically into a highly effective means of cross-government collaboration, and one that concerns the full spectrum of scientific advice, not just health.<sup>62</sup>
67. Whilst care must be taken to ensure to manage the total number of SAGE attendees, particularly to allow the effective operation of meetings, there is force in ensuring that representatives of the Devolved Administration are invited from the outset to SAGE meetings where emergencies concern them. SAGE is the appropriate forum for this link, rather than the CSA network.

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<sup>59</sup> Third Witness Statement of Dr Stuart Wainwright, [INQ000148407\\_0017-26](#), paragraphs 44-87;

<sup>60</sup> See, for further detail, the Science Capability Review: Realising our ambition through science, dated 01/11/19, [INQ000061614](#)

<sup>61</sup> [Sir Jeremy Farrar](#), 29 June 2023, 10/22-12/15

<sup>62</sup> [Sir Patrick Vallance](#), 22 June 2023, 149/23-150/19

68. A rare, possibly unique, criticism of the SAGE structures came in the evidence of Dr Horton, an external observer who did not attend SAGE and who, based on his description of the advisory structures, may have misunderstood how they worked.<sup>63</sup>
69. In fact, the position was clear: NERVTAG (like SPI-M and SPI-B) became a de facto subgroup of SAGE, which was co-chaired by the CMO and the GCSA, who jointly presented its (published) minutes to the core decision-makers as formal science advice. These structures were intended to, and did, provide a single forum for the central science issues and prevented the type of buck-passing that Dr Horton purported to identify.<sup>64</sup>
70. The concept of “groupthink” in pandemic planning has been considered earlier in this statement. In respect of SAGE, a number of steps were taken during the pandemic to guard against groupthink and optimism bias. These are set out in Sir Patrick Vallance’s witness statement.<sup>65</sup> They included:
- 70.1. Publishing the SAGE minutes to allow for challenge from scientists and journalists.
  - 70.2. The inclusion of a large number of scientists within SAGE and its subgroups (over 350 in total), with participation regularly being refreshed.
  - 70.3. Encouraging a culture in which all were listened to and encouraged to participate.
  - 70.4. From April 2020, inviting Sir Ian Boyd to act as an observer at each meeting with a remit to identify problems with groupthink or ways of working.
  - 70.5. In May 2020, asking Sir Adrian Smith to undertake interviews with attendees and others to provide a report on what SAGE could do better.
  - 70.6. The use of small group “brainstorming” meetings that brought together SAGE participants and other scientists to think through designated topics ranging from “virus evolution” to something as broad as “what are we missing”.

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<sup>63</sup> [Dr Richard Horton](#), 13 July 2023, 82/10-17

<sup>64</sup> Although the central issues were considered at SAGE, the Inquiry has heard that it was not, could not, and would not wish to be the only source of science advice in Government.

<sup>65</sup> First Witness Statement of Sir Patrick Vallance, dated 11/04/2023, [INQ000147810\\_0020-23](#), paras 63 to 72

- 70.7. Drawing on international perspectives, through personal communication and contacts and, on occasion, attendance at meetings.
- 70.8. Ensuring and encouraging other forms of science research and advice, such as through the Royal Society and other learned bodies, and the National Core Studies programme.
71. The Inquiry will no doubt hear more about these measures in Module 2, but the witness evidence adduced in Module 1 suggests that they were effective. Sir Jeremy Farrar thought that there was “*a very high degree of challenge*” in the SAGE discussions in which he took part<sup>66</sup>. Dr Jim McMenamin was asked if there were “*mechanisms in place to promote challenge and to ensure a range of views?*” He answered that there were and added, “*There were great opportunities for colleagues to be able to say without reservation what their own views were about particular challenges, and to challenge mindset about any key things that were being discussed.*” He spoke of the “*extraordinary examination, forensically at times, of the key challenges,*” and had “*nothing but respect*” for the SAGE participants.<sup>67</sup>
72. Some witnesses supported the establishment of other SAGE-like groups to deal with economics or “*whole of society issues*” – see Sir Jeremy Farrar.<sup>68</sup> However, there was overwhelming support for SAGE remaining a science advisory body. Sir Jeremy Farrar considered that trying to include other elements would result in a “*huge, unwieldy*” group that would lack clarity, particularly when providing advice at short notice.<sup>69</sup> Appending a few additional experts to SAGE would serve no purpose: as Sir Chris Whitty explained, adding two economists would not create “*a situation where SAGE suddenly became and economically extraordinarily competent body. It would be a competent scientific body with two economists on it. Which does not strike me as actually answering any terribly useful question*”.<sup>70</sup> More fundamentally, there is a constitutional issue. It is likely that science advice will have to be balanced against advice that may point in a different direction or which brings into account different factors. Making those trade-offs is a matter for democratically elected politicians,

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<sup>66</sup> [Sir Jeremy Farrar](#), 29 June 2023, 15/17-19

<sup>67</sup> [Dr Jim McMenamin](#), 22 June 2023, 194/1-195/8

<sup>68</sup> [Sir Jeremy Farrar](#), 29 June 2023, 13/19-14/6

<sup>69</sup> [Sir Jeremy Farrar](#), 29 June 2023, 14/7-14/13

<sup>70</sup> [Sir Chris Whitty](#), 22 June 2023, 89/23-90/3



not for advisors. It is better, then, for the advice streams to remain separate until they are considered together by the policymakers.

73. The evidence adduced in Module 1 points very strongly to the conclusion that the SAGE structures work well and should not be subject to substantial change. However, that is not to say that work does not need to be done, and is not being done, to improve SAGE's processes and in particular its resilience. The matters that had been identified prior to the Inquiry's hearings are set out in Sir Patrick Vallance's witness statement<sup>71</sup>. To those can be added the need to consider how best to ensure that the right people are involved in SAGE at the right time, whilst maintaining effective working. This will include considering the participation of Devolved Administrations in activations that may concern them. GO-Science would welcome and consider carefully any further recommendations that the Inquiry makes.

### **Building a resilient public health infrastructure**

74. This statement has alluded, above, to the impact of the lack of prioritisation of public health which has resulted in the loss of capabilities – we lacked a robust structure for test and trace on day one of the pandemic because there had been little attention or funding accorded to infectious disease control over a number of decades.
75. A better developed, better funded public health system – delivered at a local level and including a large cohort of Community Health workers – would have a double benefit in this context. During 'peacetime', it would improve the health, and access to healthcare, of the general population, including vulnerable and marginalised groups; in the event of a pandemic, it would provide a ready-made infrastructure and workforce that could pivot to testing and tracing.
76. The Inquiry has made clear its concern to address the important issue of inequality of impact and outcome, and rightly so. That is not an issue that can be addressed during the course of a pandemic. It has to be dealt with at a structural level in advance. A high quality and properly resourced public health system is essential to achieving this.

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<sup>71</sup> First Witness Statement of Sir Patrick Vallance, dated 11/04/2023, [INQ000147810\\_0016-19](#), paras 53-58

77. Sir Mark Walport provided an example of how this double benefit could be achieved:<sup>72</sup>

*“... the only thing you can do there when the pandemic arises is try to reduce transmission. Resilience is actually about providing the public health coverage to reduce that vulnerability ... getting public health out into the community. So a workforce that could help in screening for hypertension, diabetes, heart disease, would then be a workforce that could be re-purposed for the purposes of vaccination, and all of the things that – testing and things like that. So I think it is about how we look and see how we can make the population the most resilient, which will protect us against the effects of future pandemics.”*

## **Conclusion**

78. GO-Science and the current and former GCSAs are grateful for the opportunity to take make these closing submissions. We wish to conclude by reiterating our commitment to providing the Inquiry with whatever further assistance and support it may require as it completes this important aspect of its work.

**2 August 2023**

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<sup>72</sup> [Sir Mark Walport](#), 21 June 2023, 68/6-18