Witness Name: Professor Anthony Costello

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UK COVID-19 INQUIRY

WITNESS STATEMENT OF PROFESSOR ANTHONY COSTELLO

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Introduction and Expertise

1. I make this statement in response to the UK-Covid 19 Inquiry's Rule 9 request sent on behalf of Module 2.

2. I am a Professor of Global Health and Sustainable Development at the UCL Institute for Global Health. I have held a part-time position at UCL since I left my role in 2018 as Director of Maternal, Child and Adolescent Health at the World Health Organization in Geneva.

3. As **Director of the WHO Maternal, Newborn, Child and Adolescent Health** department I joined the core emergency team in October 2015 that tackled the **global zikavirus epidemics** which affected pregnant mothers and their newborn infants in 86 countries. In March 2015, Brazil had reported a large outbreak of Zika virus infection and in early 2016, WHO declared that the recent association of Zika infection with clusters of microcephaly and other neurological disorders constituted a Public Health Emergency of International Concern. I was involved in the development of integrated surveillance systems, prevention strategy through integrated management of vectors, risk communication and community engagement, strengthening health systems for care and support for individuals and families and communities, research studies commissioned to to improve prevent, detect and control

zikavirus, production of public health guidelines to minimise the impact of the virus, and to provide clinical support to infected women and to those whose babies suffered brain damage. I learned much about national and global public health and epidemic emergency management from 18 months involvement with this programme.

4. **The UCL Institute for Global Health (IGH)** is a world-leading centre of research and teaching excellence in global health. It implements and evaluates innovative, workable solutions to global health problems through research and teaching. Our research in developing and transitional countries develops the scientific basis for improvement in clinical practice and public health. More information about its partnerships and research can be found on the UCL website **(AC/01 [INQ000273748]).**

5. IGH has 125 staff working across several centres addressing: 1) Climate change, migration, conflict and health, 2) Clinical research, epidemiology, modelling and evaluation, 3) Research in Infection and Sexual Health, 4) Gender and Global Health, 5) Global Health Economics, 6) Global Non-Communicable Diseases, 7) The Health of Women, Children and Adolescents, 8) Population Research in Sexual Health and HIV and 9) Pragmatic Global Health Trials.

6. My current role has three components: Chair of the Lancet Countdown for Climate and Health Action based at UCL, Senior Adviser for the Children in All Policies secretariat in partnership with WHO and UNICEF also based at UCL, and as founder member of Independent SAGE.

Pandemic management overview

Public health failure in the UK

7. Alongside war, tackling a pandemic is the prime security responsibility for any government. SARS-CoV2 is the most dangerous virus to emerge in recent history. Despite the efforts of some journalists, TV presenters, and conspiracy theorists to cast this as a 'mild infection', by the middle of 2023 the Covid-19 pandemic had killed over 226,000 citizens in the UK, 1.2 million people in America, and up to 20 million worldwide if we allow for under-reporting of deaths in many emerging economies. Up to ten times these numbers may be suffering long term effects from post-Covid syndromes. Families deserve an explanation of our response in western countries, and some reassurance that lessons have been learned.

8. Our vaccine successes should not blind us to the degree of public health failure. Exhibit **AC/01a [INQ000273596]** shows the mortality consequences of the pandemic after three years. A massive difference emerges between East and West. The US, UK and European Union all failed despite having at least a month longer to prepare than in East Asia.

9. One might have expected the reverse situation. East Asia was hit first by the pandemic whilst the West had more time to prepare. Some people argue that demographics can explain the difference. Countries with a higher proportion of people over 70 will inevitably experience higher death rates from a virus that selectively kills this age group. Or we can speculate that some countries fiddle the figures. Some observers have even adopted racist tropes that suggest East Asian people are more compliant and malleable people, or success occurred because they lived under autocratic governments.

10. I believe that, despite some evidence for demographic differences in some states, much less so for manipulative reporting, the major reason for the observed difference in death rates was a failure of public health systems. Unlike East Asian states, western nations had degraded their public health systems and failed to implement the most basic infection control measures that could have suppressed their epidemics more rapidly. They had built economies with steadily rising socio-economic inequalities that rendered millions of people more vulnerable to a pandemic. Derelict public health systems meant vulnerable groups like the elderly and front-line workers died unnecessarily.

11. Between the third week of January, when the Chinese coronavirus epidemic became a public health emergency of international concern, and March 12 when the government presented their bizarre 'herd immunity' policy, something went terribly wrong in Whitehall. The public didn't know anything about pandemic discussions, analysis of the science, nor, indeed, who were actually taking the decisions. Everything was confidential and restricted. We didn't learn anything about COBRA decisions nor that the Prime Minister had failed to attend the first five meetings, apparently absent on holiday or dealing with his divorce. The discussions of scientists on SAGE were under wraps. So were the minutes from the New and Emerging Virus Technical Advisory Group (NERVTAG). Yet poor decisions in secret February would lead to tens of thousands of preventable deaths, prolonged national lockdowns, far longer than anything in East Asia, and the biggest economic collapse in the past 300 years.

12. Almost three years on, the post-pandemic impacts have contributed to the worst cost-of-living crisis in 40 years. In 2022 an emerging narrative in the right wing press was that the costs of lockdown have been severe, undeniably true, and that, as Jeremy Warner, deputy editor of the Telegraph wrote; *"Ministers, it can reasonably be argued, had little choice but to respond in the way they did… it (was) impossible to know the degree of threat posed by the virus, at least initially".* **(AC/02 [INQ000280044])**

13. His second conclusion is undeniably false. We did know the degree of threat before the end of January 2020 but failed to take appropriate action. If our public health systems and medical advice had been appropriate, and our politicians had been alert, we could have

slashed death rates, dramatically shortened or stopped national lockdowns and blunted many of the adverse economic impacts of the pandemic. What is most worrying is that lessons have not been learned and public health systems have not been strengthened.

14. The UK government developed a unique and bizarre 'influenza' strategy that would allow the virus to spread. They kept their planning over-centralised, and did not devolve power to local authority-led public health teams and communities. All western nations failed to mobilise communities or to employ sufficient community health workers linked to primary and secondary care providers. Without community management of care and isolation, the virus could spread unchecked, sometimes exponentially. The consequence was the need for prolonged national lockdowns which caused terrible economic and social damage.

15. No Asian state had a national lockdown and their economies survived with much less damage. UK policy was "*an extraordinary example of how, starting with a mistake, a remorseless logician can end up in Bedlam",* as Keynes once put it. Compounding these errors, the UK, USA and some other wealthy nations failed to protect vulnerable groups, or to provide adequate financial and sickness pay support for people who needed to isolate. Not only did the UK ignore the urgency of the crisis from the World Health Organization on January 28 2020 that "*stopping the spread of this virus in China and globally is WHO's highest priority"* but also the advisers failed to set up plans for an effective find, test, trace, isolate and support system **(AC/03 [INQ000268221])** and **(AC/03a [INQ000268222]).** WHO published their initial Strategic preparedness and Response Plan on February 4 2020 **(AC/03b [INQ000249652])** in which they outlined the pillars of action required for a response and later revised it a year later **(AC/03c [INQ000249653]).** On March 13, Dr Mike Ryan, WHO head of emergencies, again emphasised the importance of acting fast to suppress the virus. **(AC/03d [INQ000268216])**

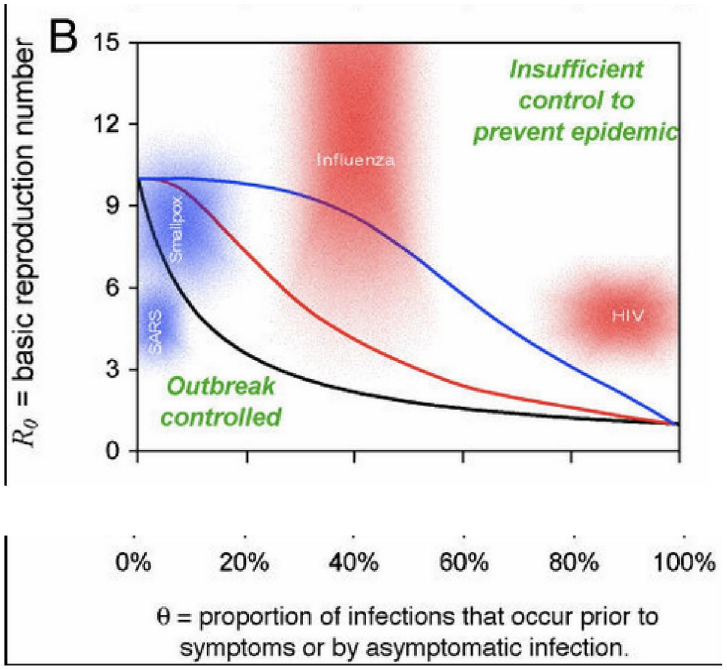
16. The UK neglect of public health measures continued throughout subsequent waves, when leaders prematurely called an end to the pandemic and talked about 'freedom days' without maintaining sensible safeguards. The UK, Canada, Japan and the European Union actively conspired to protect vaccine patents which left over a billion people in low income countries without access to vaccines. And senior UK advisers and politicians downplayed the long term health consequences of Covid.

Key rules for controlling an epidemic

17. The factors that make an infectious disease outbreak controllable were described clearly in a 2004 paper from Imperial College authors Christophe Fraser, Steven Riley, Sir Roy Anderson and Neil Ferguson. **(AC/04 [INQ000249654]).**

18. They analysed the likely success of two simple public health measures in controlling outbreaks: (i) isolating symptomatic individuals and (ii) tracing and quarantining their contacts. They showed that the success of these control measures depends on two key factors: the proportion of transmission occurring prior to the onset of clear clinical symptoms (or through patients with no symptoms) and the transmissibility of the bug (measured by the reproductive number R0).

19. They looked at two moderately transmissible viruses, severe acute respiratory syndrome coronavirus (SARS1) and HIV, and two highly transmissible viruses, smallpox and pandemic influenza. As the Figure from their paper shows, severe acute respiratory syndrome and smallpox are much easier to control using these simple public health measures whereas influenza (too transmissible) and HIV (too many carriers without symptoms) cannot be controlled. The coloured lines reflect different scenarios for the effectiveness of isolation and contact tracing. Measuring the numbers of 'no symptom' and 'pre-symptomatic' infections is done by contact tracing and becomes a priority during an outbreak of a new virus like Sars Co-V2.



20. By late January 2020 we knew that the reproductive rate (R0) of the new coronavirus SARsCo-V2 infection was around three, similar to its cousin SARsCo-V1. We knew that the proportion of cases presenting with symptoms had a 10-20% risk of hospitalisation and a 3-5% risk of death among those hospitalised (the case fatality rate, CFR). This CFR was

lower than for SARs1 (up to 15% CFR) and MERs (above 30%) but 300-500 times higher than for the 2009 H1N1 influenza outbreak which only killed 1 in 10,000 people infected.

21. But we didn't yet know the proportion of the population who were infected without symptoms. If this was high or very high the overall infection fatality rate would be much lower than the case fatality rate, and the epidemic might quickly die out as herd immunity built up across the whole population. But even if cases without symptoms were 40-50% of the population, the graph above suggests we would still have a decent chance of suppression with an R0 of three. But we desperately needed a lab test to tell us the true extent of infection.

22. Nonetheless we knew that the virus was much less transmissible than flu, and had a longer incubation period. We also knew from coronavirus experts that other common strains of the virus did not produce a strong immune response. And we knew that the case fatality rate was not low. Using mathematical modelling guidance in the WHO Weekly Epidemiological Record WHO, we can see how this scenario fits into their recommendation to implement the most stringent interventions immediately and watch carefully for the population response **(AC/05 [INQ000249655]).**

Risk assessment by the end of January 2020

23. An important question is whether by the end of January 2020 the government advisers fully appreciated the threat facing Britain? Individually yes they had. In a Reuters interview John Edmunds, a key SAGE modeller, said that "*from about mid January onwards, it was absolutely obvious that this was serious, very serious.*" **(AC/06 [INQ000249656]). H**is colleague, Graham Medley, professor of infectious diseases modelling at the London School and chairman of the Scientific Pandemic Influenza Group on Modelling (SPI-M) said it was "*clear that this was going to be big from the first meeting*."

24. But these views were not reflected in the official government statements on risk. On January 21, scientists on the New and Emerging Respiratory Virus Threats Advisory Group (NERVTAG), whose advice informed SAGE, had only elevated the UK risk warning for COVID-19 from "very low" to "low" **(AC/07 [INQ000023119]).** More surprising, six weeks later, on March 12, the risk level, set by the government's top medical advisers, remained astonishingly at "moderate," suggesting only the possibility of a wider outbreak **(AC/07a [INQ000308758].** To his credit John Edmunds, two weeks beforehand, had protested and asked for the risk to be raised to high but the message reaching MPs and cabinet members from their chief medical officer in early March, at a time when the epidemic was about to go exponential, was no more than a moderate risk. In short, not close to reality. On March 5 Whitty had announced the four stages of the UK response and that the UK now was mainly in the delay phase **(AC/08 [INQ000249659]):**

- **contain the virus**
- **delay its transmission**
- **research its origins**
- **mitigate its impact.**

The initial response from advisers

25. When Sir Jeremy Farrar in his book referred to the planning call on January 28, with Vallance, Whitty and Walport, the four key clinicians, he wrote about Whitty: *"the infectious disease community can sometimes adopt a slightly weary attitude of 'We've seen it all before and these things are never as bad as you think'. And that was Chris (Whitty) initially: he wanted to be much more cautious, to wait and weigh everything before taking action."* **(AC/09 [INQ000273794]).** He also noted that there was "*palpable tension between Patrick and Chris in the early weeks of 2020*".

26. Whitty is a naturally cautious person and wants to have evidence behind any decision he makes. But in an emergency there is a need for strong leadership and fast decision-making. Emergencies require rapid action based on precedent and best practice. You cannot do randomised controlled trials with a pandemic or the climate. As Dr Mike Ryan, head of Emergencies at WHO put it: *"Speed trumps perfection when it comes to dealing with emerging epidemics like coronavirus. The greatest error is not to move and to be paralysed by the fear of failure.*" **(AC/10 [INQ000268218]).** Anthony Seldon reports that the PM saw Whitty as his guru and sought briefings from him in February. One number ten staffer said Johnson *"was absolutely captivated by what Whitty said. He was hugely influential, and tailored his advice to Boris's mindset."* (Anthony Seldon. Johnson at 10. The Inside Story). **(AC/11 [INQ000280128]).** Another aide present at these briefings told Seldon: *"Whitty was always very measured and hedging on the progress of the virus when talking to him. It wasn't presented as serious then. Yes, it could threaten the country perhaps in March, but the virus didn't demand imminent action from Boris from the way Chris spoke about it."* **(AC/11 [INQ000280128]).** If true, this was dangerous. Here was a Prime Minister who in February 2020 didn't delve into the data nor ask many questions and was pre-occupied with other personal matters during a two week break at Chevening. The job of the CMO should have been to lay out the worst case scenario in no uncertain terms, not adjust his message to what Johnson wanted to hear. Seldon says that Whitty was hesitant to advise radical action and preferred to present SAGE's view as a single position to COBRA and the PM *'rather than a spectrum with greater complexity'*. **(AC/12 [INQ000280129])**

Two *"major strategic errors"* made by senior advisers and SAGE

27. On Monday January 27 2020 I sent a text to Dr Peter Singer, a Canadian physician and one of Dr Tedros's closest advisers at WHO, to apply a bit of pressure. I knew Peter well and we often exchanged twitter messages. **(AC/13 [INQ000273598])**. "*Peter, can you persuade Tedros to declare a PHEIC (*Public Health Emergency of International Concern*) immediately?? Otherwise I fear WHO will be made a scapegoat and look a bit ridiculous. 250,000 cases are predicted in Wuhan alone within a week. It's in 17 countries and exploding. This is going exponential and is already ten times the size of SARs! Best Anthony".* I was certain he knew all this, but a bit of outside pressure might strengthen his arm. In fact, Tedros was already on his way to Beijing, together with Dr Mike Ryan, to find out more from China and to meet President Xi JinPing. The PHEIC committee had agreed to meet again within ten days to review the data given the rapidity of change. In fact, three days later on January 30 WHO did declare a PHEIC.

28. On January 27, Sir Patrick Vallance called a smaller meeting attended by Chris Whitty (CMO), Sir Jeremy Farrar (online), Jonathan van Tam and Dame Jenny Harries (both deputy CMOs) and Sir Mark Walport, head of UK Research and Innovation (UKRI). Here were six physicians who were effectively in charge of guiding our pandemic response. Despite their experience, their knowledge of public health was not all it might have been. "*That call (on Monday 27 January) listed the first steps needed to take to get on top of vaccines, treatments and diagnostics"* wrote Farrar in his book. **(AC/14 [INQ000273795]).** No mention of public health measures, nor the so-called 'non-pharmaceutical interventions' that infection control experts and WHO had emphasised were so important. Our scientific and medical leaders' priorities were biomedical, not public health action.

29. On the next day, the 28 January SAGE held their second meeting with scientific advisers and observers, with the addition of the chief scientist to the food standards agency, an expert in ecology and food security. No independent public health scientist was invited. The minutes describe their assessment of case fatality rate (less than SARs and MERs, but uncertain), reproductive rate of infection (2-3), doubling rate (3-4 days), incubation period (average 5 days but variable) and duration of infectivity and therefore isolation (14 days a reasonable estimate). But the minutes confirm two literally fatal errors for the UK strategy. **(AC/15 [INQ000057492])**

<u>The wrong virus</u>

30. First, "*it was agreed that* ***Pandemic Influenza infection control guidance should be used as a base case and adapted***." In other words, they would base their plans on a very different virus from coronavirus because that's how they had planned in the past. Indeed, bizarrely, they referred to their sub-groups as SPI-M and SPI-B…. the Scientific Pandemic Influenza Groups on Modelling, and on Behaviour. From now on their strategic and

management decisions would draw upon a blinkered plan for the wrong virus, influenza, not a coronavirus.

31. **Why was this such a serious mistake?** The UK Pandemic Influenza Preparedness Strategy was written in 2011. **(AC/16 [INQ000249697]).** It recognises that an influenza pandemic *"may significantly disrupt the normal functioning of society. It is necessary to mobilise the collective efforts of society in order to manage the impact of a pandemic. For these reasons, a new influenza pandemic continues to be recognised as one of the greatest threats facing the UK".* The strategy refers to the four pandemics in the past century, 1918-1919 "Spanish Flu" that killed up to 50 million people, 1957 – 1958"Asian Flu" that killed up to 4 million, mainly children, 1968 – 1969 "Hong Kong Flu" that killed a similar number in all age groups, and 2009 – 2010 "Swine Flu" that was much milder.

32. The report states that: *"the short incubation period of influenza means that within a relatively short period of time a significant number of cases will appear across the globe…it almost certainly will not be possible to contain or eradicate a new virus in its country of origin or on arrival in the UK. The expectation must be that the virus will inevitably spread and that any local measures taken to disrupt or reduce the spread are likely to have very limited or partial success at a national level and cannot be relied on as a way to 'buy time' ".* **(AC/16 [INQ000249697]).** So for influenza epidemics, as we saw in the Figure above, testing and contact tracing go out the window because the incubation period is too short, just a day or two, and the transmission rate too high to make a difference. But a 2006 paper from a WHO Writing Group[1] (on which Peter Horby, chair of NERVTAG and Jonathan van-Tam were authors) wrote after the SARS1 epidemic:

"*The incubation period for influenza averages 2 days (range 1–4 days), and the serial interval (the mean interval between onset of illness in 2 successive patients in a chain of transmission) is 2–4 days. Also, viral excretion peaks early in illness. These factors enable influenza to spread rapidly through communities.* ***By contrast, severe acute respiratory syndrome (SARS) has a serial interval of 8 to 10 days, and peak infectivity does not occur until week 2 of illness, which allows more time to effectively implement isolation and quarantine measures.*****" (AC/16a [INQ000273743]).**

33. No one on SAGE appears to have contested this influenza strategy, and no coronavirus expert was brought in. Ironically, a detailed review of coronaviruses was published by Chinese scientists that week in the Journal of Medical Virology. **(AC/17 [INQ000249698]).** They noted that newly evolved Coronaviruses posed a global threat to public health and that maladjusted immune responses could result in different expressions of disease and impaired lung function and gas exchange.

<u>The wrong guidance</u>

34. The second fatal error was an action point later recorded in the SAGE Jan 28 minutes: ***"Scientific Pandemic Influenza Group on Modelling (SPI-M) to advise on actions the UK could take to slow down the spread of the outbreak domestically, even if widespread globally.***" **(AC/15 [INQ000057492]).** They were removing the possibility of epidemic suppression, and essentially handing over public health advice and decision-making to mathematical modellers, without any inputs from experts in frontline epidemic and pandemic management, nor from international experts who were firefighting the epidemics in east Asia.

35. To be fair, the modellers were all excellent in their field and they gave a huge amount of time to analysing the pandemic, entirely without payment or favour. But the modellers on Spi-M were not specialist public health experts. Their background was in physics, maths, zoology or economics and, although they had expertise in infectious disease epidemiology, the practical issues of management on the ground were not their speciality. For the next few months they would model meticulously the impacts of university and school closures, home isolation, household quarantine and social distancing. **But at no time were they asked to model the impact of a rigorous test, trace and isolate programme, especially in hotspot areas**, which, if it had dropped the reproductive rate of infection below one, meant local outbreaks could have been extinguished. That is exactly what happened in South Korea, Japan, Vietnam, Taiwan, Singapore and China. There is no mention of suppression of the epidemic in any subsequent SAGE meeting.

36. **N**o inputs were sought from East Asian colleagues. In his book, published 18 months later, Jeremy Farrar wrote**;** "*The world had all the information it needed by 24 January: a potentially fatal novel respiratory disease that could spread between people without symptoms, with no vaccines or treatments, that had already ravaged a huge, highly connected Chinese city. I wish SAGE had drawn on a wider group of experts with first-hand insights from China and the surrounding region"* **(AC/18 [INQ000273796]).**

37. From January 28 the UK advisory die **was** cast. The UK medical and scientific group of experts saw it as a flu epidemic. In their view there was nothing the UK could do to stop it, only to manage its progress to protect the NHS. The countries that had previous experience of SARs (China, Japan, Singapore, Canada, Hong Kong) and their neighbours took the opposite view. First hand experience taught them that the coronavirus was very different from influenza. They were determined to suppress it as quickly as possible, and to keep it that way until a vaccine could be found. They planned immediately to nip outbreaks in the bud, they rapidly developed tests, ensured results were available quickly, implemented plans for large scale contract tracing, provided financially supported isolation and quarantine facilities to stop transmission, ensured speedy clinical care, used simple apps and mobilised thousands of community health workers.

East Asia action to suppress their epidemics within two months

38. The UK, USA and European countries had a head start on Asia. The larger countries like South Korea, Japan and China were hit immediately and had to respond quickly. This they did, with great effect, as did smaller territories like Taiwan, Singapore, Hong Kong and poorer countries like Thailand and Vietnam. They all successfully suppressed their epidemics within two months, using tried and tested public health measures, without national lockdowns, and they avoided crashing their economies. So what did they do?

South Korea

39. After China declared the arrival of a new virus on December 31 2019, South Korea's Emergency Operation Centre was quick to respond. **(AC/19 [INQ000273735]).** Their Standard Manual mandated that a Blue alert should be declared whenever a new virus emerged and was spreading in another country. By January 20 when news of the Wuhan crisis reached the global media and a first confirmed case arrived in the country, they raised the alert to Yellow. A week later they raised the risk colour again to Orange which meant emergency responses had to include cross-government engagement and special control measures. These measures included entry screening, with early detection of cases among all inbound travellers. The Ministry of Health and the Korean Centre for Disease Control (KCDC) were mandated to start coordinated epidemiological investigations, to develop an effective and reliable test as quickly as possible, and coordinate treatment plans for patients.

40. The KCDC approved a Real Time Reverse Transcription Polymerase Chain Reaction (RT-PCR) diagnostic kit within just six hours under a fast-track authorisation process run jointly with the Ministry of Food and Drug Safety (MFDS). Between February 16 and 22, they tested 19,406 people, catching 526 cases. Between February 23 and 29 they did 91,025 tests and found 2887 cases. It's worth noting that South Korea and the UK identified the viral genetic sequence on the same day, so there was no technical reason why the Koreans should have moved much quicker than the British.

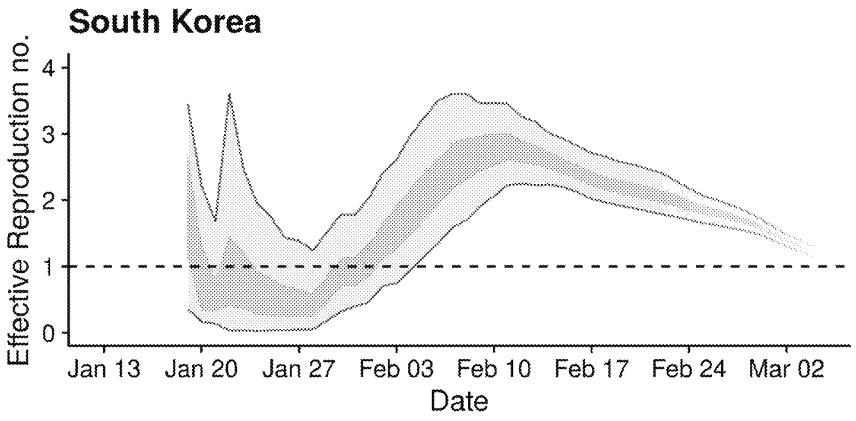
41. Separate from the Health Ministry, the Ministry of Information and Security was tasked with setting up a system to monitor all those in 14 day 'self-quarantine', closely co-operating with local governments. The government defined a suspected case as anyone with fever or respiratory symptoms within 14 days of contact with a confirmed patient, and a confirmed patient as anyone with a positive test regardless of symptoms. Across the country, with a special focus on two hotspot areas, more than seventy mobile testing camps were set up so that people with symptoms could get a test locally. A 'Call Center 1339' enabled anyone to declare themselves as a suspected case. The government also developed a simple, speedy app that allowed community health workers to visit the home and take a test, for

patients to inform local health workers of any deterioration in symptoms, and to monitor the movements of the infected person for the next 14 days, the prescribed isolation period. This two way system reassured the patients and allowed for effective isolation. Further, they could track contacts by self-disclosure from suspected cases, and under the Infectious Disease Control and Prevention Act, with the patients permission, they could monitor credit card usage, CCTV and mobile phone GPS data for improved contact tracing.

42. Their largest outbreak followed a superspreader event in a religious gathering in Daegu and was met by a massive suppression response. One thousand young public doctors were mobilised and national universities despatched respiratory specialists. Hundreds more doctors volunteered. Every patient was admitted to hospital, which reduced the death rate as well as limiting transmission.

43. The government also set up a website immediately to give full disclosure of information about tests, cases and hospitalisations available in both Korean and English. For outside pandemic observers like me, we could monitor what was happening in South Korea in late February 2020, at a time when the UK response was secret and dysfunctional. All these South Korean systems were operational in the first half of February.

44. On March 6 Adam Kucharski, a mathematical modeller who advised SAGE, reported that his projections showed South Korea was now close to an R value below one and the epidemic being stopped. **AC/20 [INQ000268217]**. In other words, suppression was achievable within about six to seven weeks.



45. A similar analysis of the response in Taiwan also showed that a combination of case-contact isolation and social distancing brought the R value down to 0.85 and stopped the epidemic in its tracks. Either intervention alone would have been insufficient. **(AC/21 [INQ000249699])**

Japan

46. **(AC/22 [INQ000273711])** The frequency of earthquakes, volcanic eruptions and tsunamis mean the Japanese government and people have a strong sense of crisis management. Their detailed emergency laws and regulations apply to necessary measures, financial support, penalties for noncompliance, and implementation limits. Every year the National Conference on Disaster Prevention Promotion invites participants from various sectors, including government, industry, academia, civil society bodies, and citizens' groups to discuss coordinated responses to emergencies. Disaster prevention education is in the curriculum of Japanese primary and secondary schools. Nationwide the government holds disaster prevention drills, promotes crisis and public health education, updates emergency manuals, and uses TV to remind people of emergency responses.

47. The 'Sendai Model' of anti-epidemic countermeasures had three pillars: early detection and early response to cluster infections; ensuring the provision of medical resources for early diagnosis of patients and intensive treatment of severely ill patients; and third, citizens behavior change and restrictions on social movement. Countermeasures for cluster infections meant local arrangements for infected persons to be admitted to hospital or elsewhere, 14-day quarantine, epidemiological investigations in hospitals and elderly care facilities, and comprehensive tracking of the chain of cluster infections to ensure isolation of contacts. Secondly, the model focused on three threats to transmission: confined spaces, close human contact, and crowds of people. To avoid these '3 elements+α', citizens were asked to limit their outings, and hospital institutions and elderly care facilities were heavily restricted. If local transmission rose rapidly, an emergency declaration was issued to expand the staff of health centers, local labs and quarantine centers.

China and the WHO report of February 24 2020.

48. **(AC/23 [INQ000249700]).** On February 16 Dr Bruce Aylward from WHO and Dr Wannian Liang of the People's Republic of China led a team of 25 national and international experts from China, Germany, Japan, Korea, Nigeria, Russia, Singapore, the United States of America and the World Health Organization. They spent nine days in field visits and on the tenth day published their report, accompanied by a press conference in Geneva, widely covered by media around the world. Like any WHO publication the language is diplomatic so it immediately attracted heavy criticism from Taiwan, sinophobes, anti-multilateralists and others suspicious of Chinese manipulation such as the US Brownstone organisation. **(AC/24 [INQ000249701]).** Criticism about some of the deferential language is fair enough. But the details of the China response reveals most of the infection control principles seen in South Korea and Japan.

49. On *leadership* China immediately established a Central Leadership Group for Epidemic Response and the Joint Prevention and Control Mechanism of the State Council. Xi Jinping personally directed the initial programme and requested that prevention and control of COVID-19 be the top priority of government at all levels.

50. *Protocols* for COVID-19 diagnosis and treatment, surveillance, epidemiological investigation, management of close contacts, and laboratory diagnostic testing were formulated at speed and rolled out in early February. Wildlife and live poultry markets were placed under strict supervision. Surveillance activities and epidemiological investigations started immediately and an ambitious research programme was formulated.

51. The *lockdown in Hubei province* including Wuhan, a city of 11 million and the epicentre of the epidemic, was managed with community health workers. Despite ongoing outbreaks in their own areas, provincial governors and mayors from all over China collectively sent a total of nine thousand health care workers, equivalent to a coverage of one worker per 1220 population, and tons of vital PPE supplies into Hubei and Wuhan.

52. The *community health care workers* operated in teams of five and responded to reports of cases, arranged for diagnostic tests or rapid lung CT scans, booked quarantine in community centers or hospital admission, and helped with distribution of food and pharmaceuticals for residents under lockdown who were allowed out to designated shops for essential food and pharmaceuticals each day. They also focused on *contact tracing.* New technologies were applied such as the use of big data and artificial intelligence (AI) to coordinate contact tracing and identification of hotspot areas.

53. To ensure people complied with quarantine, the government agreed to pay *rental bills and income support*. Health insurance payments and financial compensation schemes were implemented quickly.

54. The report emphasises the *"relentless focus on improving key performance indicators, for example constantly enhancing the speed of case detection, isolation and early treatment".* For *speedy treatment* hospitals were repurposed, a huge new quarantine hospital facility in Wuhan was built within eight days, and community premises were repurposed throughout the country. Across the country Fangcang shelter hospitals were large-scale, temporary hospitals, rapidly built by converting existing public venues, such as stadiums and exhibition centres, into health-care facilities. They served to isolate patients with mild to moderate COVID-19 from their families and communities, while providing **medical care, disease monitoring, food, shelter, and social activities.(AC/25 [INQ000249702]).**

55. The WHO report published on February 24 2020, and covered by global media, concluded that *"separation of infected from uninfected persons is fundamental to pandemic control.*

Shelter hospitals in China probably did much to abort the pandemic and suppress viral transmission".

56. Outside Hubei province, devolution of responsibility to provincial and municipal government was key. *There was no national lockdown*. In lower intensity areas of the country, pre-school preparation was improved. The report noted (NB. Seventeen days before the UK March 12 press conference) that China was *"working to bolster its economy, reopen its schools and return to a more normal semblance of its society, even as it works to contain the remaining chains of COVID-19 transmission."* Health and welfare services were provided to returning workers in a targeted and 'one-stop' manner.

57. The report tried to quantify what was happening from available data and noted that "*on the first day of the advance team's work there were 2478 newly confirmed cases of COVID-19 reported in China. Two weeks later, on the final day of this Mission (Feb 23), China reported 409 newly confirmed cases. This decline in COVID-19 cases across China is real….(it) has averted or at least delayed hundreds of thousands of COVID-19 cases in the country.*" Our medical and scientific advisers, and SAGE minutes, made no mention of the WHO Report.

Impact in East Asia compared with the UK

58. By the end of 2020, the death rates from Covid were 1407 per million (UK), **1036 (USA), 28 (Japan), South Korea (18) and China (3). (AC/26 [INQ000273601]). I**n other words, during the first year of the pandemic, the UK had 50 times the Covid death rate of Japan, 78 times Korea, and 469 times China. The economic costs in terms of GDP per head in constant 2015 US dollars (estimated by the World Bank) were three times that of Japan, fourteen times South Korea, and 22 times China. It's difficult to blame that difference on demographic differences or faulty reporting. Even if we assume that China under-reported deaths in the early phase of the Wuhan epidemic it could not explain such huge differences in outcomes. (Certainly they suppressed data on deaths from Covid in late 2022 and 2023 when they finally lifted all Covid-19 restrictions.)**. (AC/26a [INQ000273602]).**

Adjusted to 2023 World Bank estimates of GDP changes in 2020

Country	Covid deaths per million (2020)*	GDP (in constant 2015 trillion $US) 2019	GDP (in constant 2015 trillion $US) 2020	GDP per capita growth 2020 (%)	Gains or losses in billions (constant $US 2015)	Gains of losses in US $ per head
UK	1394	3.19	2.83	-11%	-343	-5044
USA	1051	19.93	19.372	-2.8%	-558	-1666
S Korea	18	1.64	1.63	-0.7%	-18	-352
Japan	28	4.57	4.38	-4.3%	-197	-1564
China	3	14.3	14.52	2.2%	315	233

* from Our World in Data.

The UK failure to 'Act Fast'

<u>The ineffective test, trace and isolation programme: the hole in the government strategy.</u>

59. If we had spoken to any of the advisers leading the epidemic responses in east Asia they would have told us to suppress the epidemic quickly through an effective system to find and test for the virus, place infected households in isolation with proper financial, food and pharmaceutical support, and to set up a national contact tracing system through community workers and volunteers under supervision.Why were we so slow to set up national testing or to mobilise community contact tracers and volunteers Why did our policy of 'self-isolation' fail miserably. And what did these failures mean for future waves of infection, death rates and economic costs to the nation?

60. On 23 March 2020 Paul Romer, a Nobel prize-winning economist, wrote a blogpost about his models of social distancing and community mass testing **(AC/27 [INQ000249703])**. "If *we contrast a nonspecific policy of social distance with a targeted policy guided by frequent testing … how much more disruptive is the nonspecific policy? Answer? Way more disruptive."* He recognised that an economy can survive with 10% of its population in isolation, but it can't survive when that figure is 50% or above without severe economic damage. Without effective community case finding and testing in place to detect new outbreaks and isolate individuals, we faced hugely damaging national lockdowns, perhaps over and over again.

61. By early February Cobra, UK Sage or any pandemic crisis management team should have known the importance of finding cases and testing, **especially in hotspot areas**. They should have started to organise district teams of community health workers or volunteers to help infected households to isolate for 14 days. The same community system would trace

contacts, monitor cases where symptoms deteriorate, and make sure food and sickness benefits compensate those asked to isolate. Above all, east Asia had shown that suppression was possible and could prevent the need for prolonged lockdowns.

62. Closing down a pandemic means **acting fast and targeting hotspots**. In the earliest stages of a pandemic we can isolate any case and their household simply on the basis of symptoms such as a cough, breathlessness, fever or fatigue. But as a sensitive (few false negatives) and specific (few false positives) test becomes available the process is refined and helps to follow up contacts. Forward contact tracing is chasing up the people who have been contacts since the case probably became infected. Backward contact tracing is chasing those people with whom the case had been in contact in the week or two before they had developed symptoms. Whether we identify cases on the basis of symptoms, or doing a test, or whichever contact tracing we want, we need boots on the ground. Trained health workers or volunteers.

63. By the end of March, three months after the virus was decoded in Wuhan, England and Wales had failed to set up an effective test, trace and isolate programme. Frontline workers were doing their jobs without adequate personal protective equipment. Public Health England (PHE) had not increased the daily number of tests in line with European neighbours. Worse, advisers had stuck to their policy of letting the virus spread, with only a token commitment to local public health teams. As other countries acted swiftly to contain the epidemic, the government was indecisive and delayed, and forced, too late in the day, to impose a national lockdown.

64. Coordination of the UK response was chaotic. Leaders across key bodies (Downing Street and its advisers; Cobra; the Department of Health and Social Care; NHS England; PHE and its Scottish, Northern Irish and Welsh counterparts; the National Institute for Health Research; the chief medical officer, Chris Whitty; the chief scientific adviser, Sir Patrick Vallance; and the Scientific Advisory Group for Emergencies) rarely knew what each other was doing. The system was orderless. No detailed plan or leadership structure, the wrong strategy, on the back of ten years of cuts and reforms to public health structures.

65. A key reason for dither was that the 'let it spread like influenza' strategy at the end of January meant little urgency or attention was given to scaling up testing or contact tracing. Even when the initial strategy was found to be wrong, some senior advisers stuck to their guns that suppression of the epidemic was not a realistic option. *"The fundamental assumption remained that we can't do lockdown and we can't do suppression because it just means a second peak later,"* said Cummings to the Health Select Committee. *"The Government and No. 10 were not operating on a war footing in February on this in any way, shape or form. Lots of key people were literally skiing in the middle of February."*

Mobilising a national response

66. Within two weeks of recognising the scale of the epidemic, China had mobilised 9000 community workers in teams of five to close down the epidemic in Wuhan, covering a population of 11 million. **(AC/23 [INQ000249700]).**

67. Within 2-3 weeks South Korea had mobilised 1000 junior doctors, hundreds more volunteers, and many other test and lab technicians to set up mobile testing centres **(AC/19 [INQ000273735]).** They helped to close down two hotspot regions from a super-spreading event, 4482 infections mostly arising from 'patient 31' who attended the Shincheonji church in Daegu, and from another outbreak after a workshop for fitness dance instructors held in Cheonan.

68. Vietnam, Singapore and Taiwan implemented similar rapid suppression of their epidemics with mobilisation of health workers as a key success factor. **(AC/28 [INQ000249704]); (AC/29 [INQ000249705]).**

69. Even in Nepal, a low income country, the government recognised that contact tracing and isolation could not be managed centrally and should be devolved locally. From March 2020 onwards they set up 8241 quarantine centres across the country staffed by local community health workers and volunteers, especially along the border with India, using school buildings, hotels and government facilities, and 238 holding centres for some of the 500,000 Nepali migrant returnees without symptoms. Those with symptoms were admitted to health facilities. **(AC/30 [INQ000249706])**

70. In the UK even the pandemic influenza plan was explicit about mobilising communities. *"It is necessary to mobilise the collective efforts of society in order to manage the impact of a pandemic."* **(AC/16 [INQ000249697], para 1.3).** But there was no serious attempt to do this. The SAGE did not discuss community mobilisation nor had any expertise in this area. The only mention I can find in the 120,000 word report released by the four CMOs of the United Kingdom in November 2022 (updated January 2023) is a brief statement in the contact tracing section. In this Report they still refer to the 'Contain' phase of their strategy 'Contain, Delay, **R**esearch, Mitigate' as if this was the correct thing to do, despite the strategy never being discussed by SAGE **(AC/31 [INQ000249707]):**

"*Point 7*: *The health equity dimension to contact tracing is important but was not always fully addressed. Some people were not closely engaged with formal information sources and were disengaged from systems delivering elements of the pandemic response. Long-term engagement with all communities is important in reducing the risk that people become disengaged or misinformed."*

71. Sadly, they don't appear to think that the CMO's or the GCSA are responsible for emphasising or forming policy on community interventions nor to provide evidence-based advice to Ministers about how to do it: **"***Point 3: The scientific and public health principles of contact tracing and self-isolation are well established, and most of the challenges in this pandemic were operational, and not directly within the remit of CMOs or GCSA."*

72. This was a key example of their failure to build in public health science and social science into their discussions on SAGE and into policies for pandemic planning. A key role for the CMO and GCSA is to be involved in public health policy formation and their views are contested in Section 7 of this report.

73. The NHS did put out a call on March 24 2020 for 250,000 volunteers to "*rally the troops*" for the war on coronavirus **(AC/32 [INQ000268210]).** They said the nation was looking to help up to 1.5 million people who had been asked to shield themselves from coronavirus because of underlying health conditions, to deliver medicines, drive patients to appointments, bring them home from hospital and check up on people isolating at home. Over the first four days **750,000 volunteers** answered the call, with, no doubt, a large number of retired doctors, nurses and paramedics amongst them. This was a golden opportunity to help scale up a find, test, trace and isolate programme across the UK, linked to district public health protection teams and general practices.

74. The Chinese mobilisation of 9000 community health workers for 11 million population had shut the epidemic down quickly, and limited spread elsewhere. They had a coverage of roughly one health worker per 1220 population or a team of five workers per 6000 population. England had a population of 56.5 million people in 2020 within 309 districts: 32 London boroughs, 36 metropolitan districts, 181 non-metropolitan districts, 58 unitary authorities (such as the East Riding of Yorkshire or the County of Durham), the City of London and the Scilly Isles **(AC/32 [INQ000268210]).**

75. To gain a coverage equivalent to Wuhan, England would have needed just over 46,000 community health volunteers, or, on average, 150 volunteers per district nationally, obviously adjusted for the size of the district population. This was eminently achievable, given that sixteen times this number had volunteered. My guess is that among the 750,000 were more than 150 volunteers per district from groups including retired health workers, teachers, community and ethnic minority leaders, trained social workers, data experts, university or medical and nursing school students and retired councillors.

76. The NHS volunteer recruitment was turned over to a mobile app called GoodSam where doctors, nurses, pharmacists and local authorities could ask for help. By mid-April fewer than 20,000 tasks had been given to the 750,000 volunteers. Many *volunteers were frustrated by the lack of engagement.* Two thirds had not been given a task two months

later. No attempt was made to link this resource to a broader find, test, trace and isolate programme.

Our district health protection teams were bypassed

77. In each district **a health protection team (HPT)** is made up of a multi-disciplinary team of microbiologists, doctors, nurses, emergency planners, and scientific, surveillance and administrative staff. Their statutory roles are to provide surveillance of infectious diseases, planning for outbreak management, risk communication, provision of expert advice, immunisation, education of professional groups and research. Had the volunteers been placed under the supervision of district health protection teams and linked with existing primary care trusts, a highly effective find, test trace and isolate system could have been put in place by early April, or much earlier if this had been properly planned for. Remember that many of these districts still had extremely low case rates in late March so they could have targeted priority hotspot areas in parts of inner London, the West Midlands and Glasgow, the places with high community transmission. But this didn't happen. Local authority health protection teams were largely by-passed by the Department of Health. District public health directors didn't have a presence on SAGE.

78. The government had already decided to go down ***a privatised route***, quite separate from the existing NHS laboratories, the district HPTs and our primary care system of 35,000 GPs that provided for almost the whole population and had the details of their medical records at their fingertips. It was to prove a disastrous mistake **(AC/33 [INQ000249708]).** Without a functional find, test, trace and isolate system, the ending of a lockdown would mean a relentless rise of cases, hospitalisations and deaths in the succeeding waves of the pandemic.

Civil society mobilised themselves

79. Civil society and non-government organizations however did mobilise themselves. A study of 9000 active volunteers (only 2%) who responded to a questionnaire in 2021 reported that they had significantly higher life satisfaction, feelings of worthwhileness, social connectedness, and belonging to their local communities **(AC/34 [INQ000249709]).**

80. A more comprehensive review of over 4000 local groups and up to three million participants involved in Covid19 volunteering by Professor John Drury's team at Sussex University showed volunteers were mostly women, middle-class, highly educated, and working-age **(AC/35 [INQ000249710]).** They concluded that a **decentralised model was superior to a centralised method** of command-and-control although all volunteer groups reported a common challenge of a lack of leadership and difficulties in reaching especially vulnerable groups. The NHS responders scheme and other smaller groups also faced challenges with

retention and nurturing relationships with volunteers. Nonetheless overall volunteer contributions to Covid19 support nationally was impressive, if somewhat difficult to quantify.

The UK failures in pandemic preparedness for Find, Test, Trace, Isolate, Support (FTTIS) between January and March 2020

Communities and in public health systems

81. Given the need to act fast in a pandemic, a systems approach argues for a standing army of trained volunteers, something like a territorial army. Pandemic preparedness means having a community team of trained volunteers ready to go, allied to professional district public health teams. East Asia proves the point. Asking district public health teams to train volunteers in contact tracing and pandemic support, perhaps with two to three day training workshops annually, would not cost very much, and could be critical in closing down a pandemic in its early stages, as well as supporting greater vaccination coverage and other public health initiatives.

82. The 2022 Lancet Covid Commission goes way beyond vaccines and drugs in highlighting the importance of public health systems **(AC/35 [INQ000249710]):**

"*Strong public health systems should include strong relationships with local communities and community organisations; surveillance and reporting systems; robust medical supply chains; health-promoting building design and operation strategies; investments in research in behavioural and social sciences to develop and implement more effective interventions; promotion of prosocial behaviours; strong health education for health promotion, disease prevention, and emergency preparedness; effective health communication strategies; active efforts to address public health disinformation on social media; and continuously updated evidence syntheses*" **(AC/36 [INQ000249711]).**

83. A comprehensive review from the London School of Economics reported that Government policy can improve adherence to restrictions and reduce the negative impacts of the pandemic on disadvantaged groups by placing central importance on the role of communities, social networks and households in economy and social life. **(AC/37 [INQ000249712]).**

National testing

84. There is no obvious reason why the UK could not have built testing capacity more rapidly. Like Korea we developed a WHO approved test on January 10 2020. But Korea immediately approached their pharmaceutical companies to help expand testing. We didn't. On January 28 the second SAGE meeting noted that we didn't have testing capacity

beyond 500 tests per day, presumably referring to the limited testing capacity within PHE laboratories, so it was ignored as an option by SAGE modellers **(AC/15 [INQ000057492]).**

85. On the fourth meeting, Feb 4, SAGE minutes state that *"Although the UK is building regional diagnostic capability within weeks, overall capacity is limited. Capacity cannot be substantially increased during this winter influenza season" (***AC/38 [INQ000051925]).** No subgroup to look at large scale testing was set up by the CMO or SAGE.

86. PHE had just eight regional laboratories: in London, the South west of England, South-east, East, Midlands, Yorkshire and Humber, North east and North west. But the UK overall had 44 specialist molecular virology labs capable of processing PCR and other laboratory infection tests. For some reason, the molecular virology labs were actually forbidden by PHE to do or develop testing up until the end of March. Further, we have always had huge research capacity to do PCR tests in universities and research institutes that wasn't tapped into.

87. On March 12 we stopped all community testing at a time when there were less than 10 deaths and only 500 confirmed cases countrywide. Most local authorities had tiny numbers of cases. Before we stopped we were only doing 1500 tests per day whereas Korea had reached over 20,000 tests daily two weeks earlier. This should not have happened.

88. But on March 12 we simply stopped containment under the false pretext that WHO had now declared a pandemic. On March 13 WHO pointedly reminded the world, perhaps with an eye on the UK, that containment (test, trace, isolate) should NOT be stopped. Dr Tedros, Director General WHO, said "*The idea that countries should shift from containment to mitigation is wrong and dangerous.*" **(AC/39 [INQ000268213]).**

89. In December 2022 when the four UK CMO's published a 'A technical report for future UK Chief Medical Officers, Government Chief Scientific Advisers, National Medical Directors and public health leaders in a pandemic' they defended the failure to set up testing at scale:

"The difficulty scaling existing systems was for several reasons, including: the limited size of the pre-existing diagnostic industry (which was not the case in all comparable countries, some of which were able to scale more quickly); the fact that pre-existing testing systems used multiple small labs with multiple platforms and space constraints. Although they had an expert workforce, many smaller labs also faced difficulties rapidly expanding the workforce. At the same time, global testing supplies (particularly swabs and reagents) were significantly impacted by both increasing demand and reduced production in spring 2020 as the epidemic spread more widely, including to regions producing test materials. This was exacerbated by the fact that testing platforms were previously only validated for certain

swab types, so it was difficult to flex to alternative supply routes when existing supplies were disrupted." **(AC/40 [INQ000249714]).**

90. The Report makes no mention of the errant 'contain' strategy that did not view suppression as possible, the failure to match the speed of response in East Asian countries, the lack of a sub-group specifically tasked with test production and scale-up, the failure to involve the 44 NHS molecular virology labs, nor to involve scientific leaders like Sir Paul Nurse (head of the huge Crick Institute) and Sir Venki Ramakrishnan, President of the Royal Society, both Nobel prize winning biochemists. Their argument that testing platforms were '*only validated for certain swab types*' smacks of pedantry. This was a pandemic threatening the lives of hundreds of thousands, not a research grant review.

91. At least the American head of the Covid response, Anthony Fauci, director of the National Institute of Allergy and Infectious Diseases, admitted their own failings when he told a House Committee on March 12 2020, *"The idea of anybody getting (tested) easily the way people in other countries are doing it, we're not set up for that.That is a failing. Let's admit it."* **(AC/41 [INQ000249715]).**

92. The UK strategy, that ignored UK coronavirus experts and effective country responses in Asia, followed the rulebook for pandemic influenza which meant development of testing had a low priority. Recall what Sir Patrick Vallance, the government's chief scientific adviser, **told a press briefing in March 12 2020, about the need for infection to spread:** *"It's important to recognise that it's not possible to stop everybody getting it, you can't do that,…it's also not desirable because you want immunity in the population … to protect ourselves in the future"*. **The next day he stated that about 60% of the population would need to become infected for society to have "herd immunity" - effectively some 40 million people in the UK. (AC/42 [INQ000249716]).**

93. We can compare the South Korean strategic response with the UK. With bitter experience of Middle Eastern Respiratory Syndrome in 2015, the Koreans were determined to stop this new coronavirus in its tracks. On January 27 at a train station in Seoul, a senior Korean infectious disease expert summoned government officials and 20 biotech company chiefs to tell them about the urgent need for a test to suppress the new virus quickly **(AC/43 [INQ000249717]).** He said *"We acted like an army"*. Government officials told the companies that regulatory approval would be rapid; a week later the Korean CDC approved the first company test kit, with others following quickly. Within three weeks they had drive-through test centres in the two hotspot areas, and reached a peak of 20,000 tests per day in late February (well within the capacity of the UK NHS testing system if we had done the same) to suppress the epidemic within two months.

94. None of these actions was beyond the wit and capability of the UK. But our strategy was wrong and public health infectious disease leadership was missing. The UK has one of the strongest biotech industries in the world. We had 44 highly skilled and quality controlled NHS molecular virology labs available to take on the work, all linked through data channels to hospitals and GPs across the country. Stubborn delays meant that the CMOs would later claim *"As community transmission picked up following widespread incursions in February 2020 from multiple countries… testing capacity was insufficient to flag all cases needing contact tracing. Available tests had to be prioritised for clinical care and in settings with vulnerable people such as hospitals and care homes."* **(AC/40 [INQ000249714]).**

95. The problem was that we ignored Asia experience and WHO advice about the importance of suppression when transmission rates were much lower. When the strategy failure became evident later in March, and cases exploded, mass testing became urgent and essential. But horrified NHS experts watched on as a Deloittes-led private solution unfolded, to set up huge Lighthouse laboratories without data links to the NHS, bypassing district public health, NHS systems and regulatory standards.

The Lighthouse Labs

96. By late March the failure of our scientific strategic advice had probably persuaded our politicians to take matters into their own hands. Matt Hancock and his colleagues decided to set up a network of huge private labs running parallel to the NHS. They were to be staffed by new recruits and volunteers, largely drawn from the private biotech sector **(AC/33 [INQ000249708]).**

97. The President of the Institute of Biomedical Sciences Allan Wilson quickly spoke out against the plan. Wilson represented scientists from 130 NHS labs across the country, and said these NHS labs should have been the central plank on which testing infrastructure for the national programme was built. **"***But instead they somehow either made an assumption that we couldn't do it or based on a political decision decided they did not want to ask the NHS labs to deliver this and they went to the private sector,"* **he said.** *"It just seems perverse that we created this whole additional structure rather than looking at what was in their own backyard."* **(AC/44 [INQ000249718]).**

98. He went on to say that the problem was not a lack of capacity within the NHS system, simply a matter of supplies, which would be worsened under a competitive 'Wild West testing scenario'. **(AC/45 [INQ000249719]).** He and others were deeply concerned about the quality of the new labs and the lack of linkage with NHS data systems. **"***…two testing streams now exist: one delivered by highly qualified and experienced Health and Care Professions Council (HCPC) registered biomedical scientists working in heavily regulated United Kingdom Accreditation Services (UKAS) accredited laboratories, the other delivered*

mainly by volunteer unregistered staff in unaccredited laboratories that have been established within a few weeks….we have not been involved in assuring the quality of the testing centres and are now being kept at arm's length from their processes, even when they exist close to large NHS laboratories."

99. The new super labs in Milton Keynes, Glasgow and Alderney Park, were set up with advice from Deloittes, an audit, consulting and financial agency, who were awarded by the Department of Health and Social Care (DHSC), without any open, competitive tender, a £145m testing contract for just 153 days of work. One senior virologist said that "*when Deloittes phoned me and asked for advice on setting up Lighthouse Labs ….(I said) to have it under control of an NHS laboratory would be the obvious thing…how are you going to get it to assimilate into NHS data systems?"* **(AC/46 [INQ000249720]).** But this was ignored. Another complained that his NHS molecular virology lab had capacity to test more, and could get the results to where they should be so that patients could be treated quickly or cases isolated. A third expert virologist Professor Will Irving said *"We heard stories about thousands of samples being sent to the United States for testing which is just plain ridiculous. It just seems there is a rush to do everything privately"*. **(AC/46 [INQ000249720]).**

100. The Lighthouse labs were enthusiastically welcomed by Professor John Newton, our National Testing Coordinator who called them "*the biggest network of diagnostic labs in British history.*" But these short-lived mega-labs were mired in delays, scandal and concerns about quality. One experienced whistleblower Dr Julian Harris was astonished at the lack of experience in managing biosecure labs, and called the working practices "*chaotic and dangerous.*" **(AC/47 [INQ000249721]).**

101. On Sky News Professor Donna Hall chair of the Bolton NHS Foundation Trust complained that there was no need to move swabs from Bolton to Milton Keynes, and that local labs lacked confidence in the Lighthouse lab quality. *"It doesn't make sense to set up a separate system of privately run labs for Covid Testing when local NHS lab capacity is still not being used. Outsourcing to private companies for profit instead of using our NHS."* **(AC/48 [INQ000273604]).** Later we would learn that civil servants had expressed extreme reservations.

102. The Good Law project reported in May 2022 that; *'Civil servants described the Government's shambolic testing programme as "unlegit" and "no way to do business", in new internal emails we can publish today. The emails were uncovered in the course of our legal action over the award of multimillion-pound testing contracts to Abingdon Health during the pandemic…The contracts were awarded secretly, without any advertisement or competition.'* **(AC/49 [INQ000249722])**

103. On July 10 2020 seventy leading virologists from the UK Virology Network wrote to Professors Whitty and Vallance, *"to express our concern over lack of engagement by policymakers with clinical virology expertise in the UK in the management of the Covid-19 (Sars-CoV-2 pandemic)".* **(AC/50 [INQ000249723]).** They complained that testing contracts were being awarded on ideological grounds to private companies rather than decisions based on expertise. They worried that the government had also rushed into buying antibody tests that were then found to be useless. Whitty and Vallance didn't reply to the virologists. When they wrote again a month later they were told to take issues up with local managers. It will be for the Public Inquiry to explore whether the two advisers expressed reservations to Ministers about these concerns. When, in September, the virologists wrote to Baroness Dido Harding, the new head of Test and Trace, they didn't even receive an acknowledgement.

104. Concerns about quality at a new Lighthouse lab in Wales meant its opening was delayed until October 2020. In the same month, the government paid a £2 million fine in the courts to avoid scrutiny over the awarding of IT contracts for the superlabs. A British company Diagnostics AI brought the lawsuit claiming that their bid had been ignored despite their software spotting positive cases that their European rival UgenTec, who won the contract, had missed **(AC/51 [INQ000249724]).**

105. In late 2021 quality issues ended in debacle when 43,000 people were wrongly given negative PCR results by Immensa, a private Wolverhampton company. Dr Kit Yates, a biological mathematician from the University of Bath, said it was *"inconceivable that telling 43,000 people they were negative when in fact they were positive, making them believe they could safely go into schools and workplaces where they may have infected others, did not have an impact on the prevalence of Covid in the south-west".* **(AC/51 [INQ000249724]).** The government was forced to suspend the company but allowed it to continue offering tests through a sister company, Dante Labs.

Contact tracing

106. Why did advisers capitulate over contact tracing? Their erroneous influenza strategy ruled out the need for any large scale contact tracing. On February 18 2020 SAGE minutes note that Public Health England could cope with only five coronavirus cases per week generating 800 contacts that would need contact tracing. That could perhaps be scaled up to 50 cases per week and 8000 contacts but if sustained transmission took off contact tracing would be 'unviable.' **AC/52 [INQ000106114].**

107. In the absence of a single independent public health voice no one appears to have asked the obvious question: if PHE, (which I was told by an internal registrar at the time had only 270 trained contact tracers), cannot manage national contact tracing how do we devolve

power and resources to the public health protection teams in every district? The disconnect between PHE and local authorities was a key systems failure, and the absence of any initiative to remedy it arose from a lack of clear leadership. In all epidemic control, mobilisation of people locally is absolutely critical. Yet DoH, senior advisers, SAGE and PHE ignored this component and came up with no plans to solve it.

108. Contact tracing could have been expanded rapidly with the involvement of local authority public health teams assisted by Public Health England support. Environmental health officers and trained volunteers could have been recruited especially focused on hotspot areas or where new outbreaks emerged. Sexual health contact tracers could also have been mobilised. Meaghan Kall, an excellent government epidemiologist tweeted: *"I still think it was a huge oversight that our NHS sexual health advisers who are professional contact tracers were never drafted in or consulted on Test and Trace. Instead they're still facing redundancy due to budgets cut because their skills aren't needed"* **(AC/53 [INQ000268219])** to which Ceri Evans, President of the Society of Sexual Health Advisers, replied *"From the beginning of the pandemic, I lobbied, pleaded and begged for our hugely experienced members to be utilised in COVID contact tracing. I offered training, advice and resources and I was stonewalled at every turn"*. The UK has 350 highly trained sexual health advisers **(AC/54 [INQ000268215]).** Close liaison with GP surgeries and databases would have enabled interpretation of symptoms and tests to ensure a more rapid response to patients who deteriorated.

109. Certainly, when community transmission is exponential and at its peak, contact tracing becomes formidably difficult. But we had six weeks between the decision that this was a Public Health Emergency of International Concern (January 30) and the rapid increase in cases, in which backward or forward contact tracing could have helped abort the exponential rise and the long lockdown. With 270 PHE contact tracing experts as trainers, 309 district public health protection teams, and an average of 150 volunteers recruited per district in thirty teams of five, a system to manage test, trace, isolation compliance and support, and to monitor symptoms was a management challenge that should have been fundamental to a pandemic plan and written in a standard manual, if we had one. I don't see why this couldn't have been done.

110. This is a systems issue for the future. Communication in vulnerable, poor and ethnic communities also needs local people, not national press conferences. For contract tracing, perfect must not be the enemy of the good. We can't wait for 100% reliable tests, robust protocols, randomised trials, and impeccable apps. By mid-February 2020 South Korea had developed a rough and ready two way app to monitor whether cases were isolating at home (from GPS signals) and to get feedback from patients on symptom deterioration Public health must think global but act local.

111. The 2023 CMO's Report states blandly "*By summer 2020, however, feedback from local authorities and the public indicated that the centralised, national contact tracing model did not always make best use of local expertise, and the focus of national tracing teams might have constrained the timely identification and management of local clusters and outbreaks.*" **AC/55 [INQ000268204]** *and downloaded as* **AC/31 [INQ000249707]** By summer? That's five months after the PHEIC was declared. District public health offices were screaming about this in March. For decades WHO and others had emphasised the importance of devolution in public health infection control. Surely the district officers and national advisers were talking with one another, weren't they**?**

112. The CMOs state: *"In England, a new national large-scale contact tracing system, NHS Test and Trace, was set up in May 2020, without a local delivery arm at that time, while existing Public Health England (PHE, subsequently the UK Health Security Agency (UKHSA)) health protection teams continued to manage complex or high-risk settings and outbreaks."* **(AC/55 [INQ000268204])**. So it took four months to set up NHS Test and Trace *without* a local delivery arm? This admission of failure is almost incredible and requires a massive change to our pandemic systems, advice and management in future.

113. As to the national system that was set up, the CMO Report says: *"In England, NHS Test and Trace contracted commercial providers to run the call centre and provide the call handler-facilitated contact tracing service, to call or visit cases and contacts linked to international travel, to improve compliance with self-isolation and reduce the risk of transmission of imported SARS-CoV-2 variants of concern. While the web-based contact tracing tool was initially developed in-house by PHE (latterly UKHSA), a commercial company was contracted to maintain and further develop the platform."* **(AC/55 [INQ000268204])**

114. NHS Test and Trace was a system that couldn't possibly work. A testament to privatised folly. Contractors with no experience in contact tracing, running call centres hundreds of miles from outbreak localities, staffed by thousands of minimum wage operators with no health expertise. And with no focus on hotspot areas. It would absorb an astonishing £37 billion of public money, ten times the UK annual public health budget, and fail to suppress transmission. We shall have to wait for the Public Inquiry to learn whether advisers on SAGE or in PHE raised their concerns with Ministers, but no self-respecting public health adviser could have possibly supported such a harebrained and exorbitant scheme.

115. We get a hint from the CMOs that they wish to shift the blame. *"The scientific and public health principles of contact tracing and self-isolation are well established, and most of the challenges in this pandemic were operational, and not directly within the remit of CMOs or GCSA. However, if contact tracing at this scale is needed again, operational planning and*

experience on scaling up across the 4 nations will be helpful." **(AC/55 [INQ000268204])**. So if it was not within the remit of CMOs and chief scientific advisers, why not? Sir Paul Nurse's stinging indictment from his Radio 4 Today programme in May 2020 rings in our ears: *"Who is in charge?' … Do we have a proper government system in here that can combine tentative knowledge, scientific knowledge, with political action?"* **(AC/56 [INQ000249726]).**

116. The CMO and GCSA and SAGE should have been central to explaining the population health science and plans around setting up a find, test, trace and isolate programme. To say it was not within their remit is wrong. As Sir Paul Nurse said '*It was little like pass the parcel. No clear lines of responsibility*'**.**

What role was played by the concept of 'behavioural fatigue'?

117. At a press conference on March 9, Whitty had argued that it was too soon to implement a lockdown: *"There is a risk that if we go too early, people will understandably get fatigued and it will be difficult to sustain this over time."* **(AC/57 [INQ000249727]).** Vallance endorsed this view three days later: *"Anything too onerous suggested by the government … might be adopted enthusiastically for a few weeks but then people get bored and leave their homes just as the peak of the illness hits, the government fears".* **(AC/58 [INQ000249728]).**

118. The idea that '*the British public would not accept Wuhan-style measures*' reflects a concept that senior advisors referred to on many occasions about 'behavioural fatigue'. It is strange that this idea had not been endorsed by behavioural scientists like Professors Stephen Reicher and John Drury who advised SAGE as part of the behavioural science group Spi-B. So why did Whitty and Vallance repeatedly emphasise the importance of 'not going too soon' because of the risk of behavioural fatigue as a reason to delay restrictions? They used this argument later to resist further circuit-breakers.

119. But Reicher and Drury contested the view that people who break the rules do so because of psychological failings, such as they are 'too weak, too stupid or too immoral' **(AC/59 [INQ000249729]).**

120. Prime Minister Boris Johnson would speak in the summer, (ironically, given his later fines), about people '*flouting or 'brazenly defying restrictions*'. The media talked of 'covidiots' holding large house parties. But these assumptions were dangerous because adherence to restrictions and hygiene measures was actually extremely high (>90%). During the alpha wave in 2021, 85% of the public endorsed the January 'lockdown' and 77% said it should have happened sooner **(AC/60 [INQ000249730]).**

121. The only major compliance problem arose with low levels of 'self-isolation' by infected cases and contacts. A government funded study reported that "*Combining data from 14*

April 2020 to 27 January 2021 (waves 12 to 42), of those who reported having experienced symptoms of covid-19 in the past seven days (excluding those who reported receiving a negative covid-19 test result since having developed symptoms), only 20.2% (95% confidence interval 18.8% to 21.5%, n=720/3567) said they had not left home since developing symptoms." (**AC/60 [INQ000249730]).**

122. The reason for non-adherence was not behavioural fatigue, but lack of resources and financial support for working people,. It's worth noting that in New York, (where support included money, hotel accommodation, food, mental health support and pet care) adherence with self-isolation was 94% **(AC/59 [INQ000249729]).**

123. The inspiration for the 'delay because of fatigue' policy came from David Halpern, another member of SAGE. He was director of the Behavioural Insights Team (or nudge unit) set up by David Cameron, and a behavioural economist whose multi-million pound company had advised government on pensions, tax payments and efforts to make supermarkets less 'obesogenic'. In early March he gave a press interview in which he mentioned 'herd immunity' for the first time and said he favoured delaying a lockdown because of the risk of 'behavioural fatigue' **(AC/61 [INQ000281261]).** But Halpern's 'nudge' interventions are often over-hyped without good evidence, or based on small studies involving students as guinea pigs. Within days of his interview, 600 behavioural scientists from across the UK wrote an open letter to government complaining that delaying social distancing measures on the basis of 'behavioural fatigue' was dangerous and not supported by any good evidence. The government did not reply **(AC/62 [INQ000249731]).**

124. Later 'behavioural fatigue' became 'pandemic fatigue', an idea also promoted in a WHO Europe report published in October 2020, with a dubious statistic that 60% of some populations were now experiencing 'fatigue'. **(AC/63 [INQ000249732]).** But as Professor of Decision Science, Nigel Harvey, explained, this was not a real phenomenon. **AC/64 [INQ000249733].** Non-compliance could be explained by several different factors such as reduced trust in authorities, decreases in perceptions of risk, increased complacency and changes in values (eg, an increased emphasis on libertarianism). Each required different policy responses. "*..increased libertarianism requires government information to emphasise our interdependence, increased complacency requires incentives to abide by regulations, errors in risk perception require better risk communication.*"

<u>The 'herd immunity policy' role in delaying the UK's epidemic response.</u>

125. In the week of March 9th, people from SAGE and elsewhere in the Government started to talk publicly about herd immunity. According to Cummings' evidence to the Health Select Committee, *"It is not that people are thinking, "This is a good thing" that we actively wanted. It was that it was a complete inevitability—the only real question is one of timing. It is either*

herd immunity by September or it is herd immunity by January, after a second peak. That was the assumption, up until Friday 13 March…herd immunity was regarded as an unavoidable fact. The only question that we practically had was one of timing." He went on, *"Hancock himself and the chief scientist and the chief medical officer were all briefing senior journalists during the week of the 9th, "This is what the official plan is".*

126. At this time some SAGE members were aware of the great risks of not suppressing the epidemic and allowing exponential spread. On March 9 Professor Steven Riley, a modeller from Imperial College, was so worried that he circulated to all SAGE Spi-M members a devastating paper about the exponential expansion of the epidemic, that the UK strategy was wrong and needed to go into reverse, immediately **(AC/65 [INQ000249734]).** He wrote:

"The UK is currently planning a mitigation response to the COVID-19 epidemic rather than ongoing containment…We show that critical care facilities in the UK would be saturated quickly. The country would then have to either struggle on to the availability of a vaccine without a functioning health system or attempt the most stringent possible interventions to lower incidence back to containment levels. Over the same period of time, either of these scenarios would likely have far greater economic costs than would result from an immediate switch now to ongoing containment. These results directly support current advice from the World Health Organisation and are consistent with policy decisions made by China, Hong Kong, Singapore, Japan, South Korea and most recently Italy…there are no significant advantages of aiming for mitigation over suppression… it cannot be cheaper to spend 18 months in a higher incidence (managed flattening) than a low incidence regime (maximum protection or suppression) …(which) appears to be a more attractive strategy."

127. On the same day, March 9, Medxriv, the pre-peer review journal being scrutinised intensively by all pandemic researchers, published a paper from Chinese and Canadian scientists showing that the effective reproduction number for the Guangdong province and mainland China had fallen below the threshold 1 since February 8th and 18th respectively, while the effective reproduction number for South Korea remained high until March 2. In other words, the Chinese epidemic was on the wane, and the one in S Korea had peaked.They concluded that "*the experience of outbreak control in mainland China should be a guiding reference for the rest of the world including South Korea*." **(AC/66 [INQ000249735]).**

128. Unfortunately, the next day, the March 10 SAGE meeting failed to discuss Riley's analysis of the exponential threat to the UK, the need to change strategy and the imminent collapse of the health service. Neil Ferguson (Riley's boss) didn't raise it, perhaps because he didn't agree **(AC/67 [INQ000109125]).**

129. On March 10, unaware of Rileys confidential report, I tweeted that "*A new preprint on the scale of US spread estimated that, by March 1, there were already 9,484 Covid-19 cases in the US." If so, assuming doubling every 5 days, US will see 607,000 cases by end of March."* **AC/68 [INQ000268214], AC/69 [INQ000249737].** In fact an Imperial modelling paper in early April suggested that between the beginning and the end of March, UK cases rose from less than a hundred to almost 450,000. **(AC/70 [INQ000249738]).**

130. Meanwhile Cummings and the Cabinet Office were getting extremely anxious. *"in the first 10 days of March I was increasingly being told by people, "I think this is going wrong," but I was also really, really worried about smashing my hand down on a massive button marked: "Ditch the official plan. Stop listening to the official plan. I think that there's something going wrong." I did do that, as we will come on to, but around about March 5th I was still reluctant to do that."* On March 7 Marc Warner (Ben's brother) met Cummings. A fellow in physics at Harvard University, with a PhD in quantum computing from Imperial College London, he had been hired to bring data skills to the Cabinet office and had been asked to attend NHS meetings. He was really worried about the NHS plan and, according to Cummings, said *"(It) could easily be mad. It could be incredibly destructive. Has this really been tested? Have you really thought it all through? Should I and some others start thinking about a plan B?".*

131. Cummings sent texts to the PM and Vallance on the evening of March 11 saying "*Very sensible people, including former CDC officials, and doctors are saying the risks of delay are much, much higher than the risks of going too soon. If…we're waiting, and effectively just keep telling people to wash hands, there's going to be massive pushback saying, 'Why wait five days? Why not move now? Why not flatten earlier?' Proposing tomorrow that we delay action until next week will require extremely clear justification with supporting data, models, etc. We would have to make it public for global scrutiny. I and others had this kind of mounting panic about the whole thing."*

132. The next morning on March 12 Cummings sent a text to PM Johnson at 7.48am. *"We've got big problems coming. The Cabinet Office is terrifyingly shit. No plans. Totally behind the pace. We must announce today, not next week, 'If you feel ill with cold or flu, stay home'. Some around the system want a delay because they haven't done the work. We must force the pace. We are looking at 100 to 500,000 deaths between optimistic and pessimistic scenarios. You've got to chair the daily meetings in the Cabinet Room, not Cobra"*

133. That day news emerged that Trump was planning to bomb Iraq which distracted half of Downing Street. In the Cabinet meeting the atmosphere was blithely unsuspecting. According to Cummings, the Cabinet Secretary, Mark Sedwill, said, *"Prime Minister, you should go on TV tomorrow and explain to people the herd immunity plan and that it is like the old chicken pox parties. We need people to get this disease, because that is how we*

get herd immunity by September." When told that he shouldn't use the analogy of chicken pox parties, he asked why not? Ben Warner, in attendance said, *"because chicken pox is not spreading exponentially and killing hundreds of thousands of people."* The Cabinet room froze, he said. Astonishingly, most politicians were quite sanguine about what was planned and had been reassured by Whitty's address to parliament the week before.

134. In the afternoon came the March 12 press conference. The delay strategy was announced, 'herd immunity' mentioned, and Whitty confirmed that a worst case scenario could infect up to 80% of the population with an overall 1% mortality rate (ie. up to 464,000 dead UK citizens). No mention was made of a 'suppression' strategy implemented by East Asian countries that had aborted their epidemics at speed. No mention either about scaling up test and trace nor of the costs associated with letting a dangerous virus rip (the economic damage in the UK turned out to be tenfold worse than in Asia in 2020), nor of the social costs to families and the health service of an uncontrolled pandemic.

135. The government advisers had ignored advice from WHO and the lessons from China, east Asia, and Italy by stopping community testing. They also chose to delay sensible measures for social distancing such as banning mass events like Cheltenham and European Cup games, mandating use of masks in public spaces, and restrictions on travel, especially from hotspots like London, the West Midlands and Glasgow. It would take another 12 days for the government to impose stricter social distancing and belatedly rush into a full national lockdown.

136. The media were understandably confused the next day. John Crace in the Guardian, like many journalists, was mistakenly gushing about Vallance and Whitty. *"Both men were hugely impressive: when they were sure of the numbers they said so, and when they weren't they also said so….Boris, Whitty and Vallance were as one, though. The science was on their side. Which presumably meant that it wasn't on the side of all those countries who had made more radical, earlier interventions."* **(AC/71 [INQ000249739]).**

137. Vallance told ITV News that the advice the Government was following was not looking to suppress the disease but to help create a "*herd immunity in the UK*" and that ideally 60% of the UK would become infected to ensure we were "*all a bit protected*" **(AC/72 [INQ000249740]).** The Times and Telegraph led with the headline of Boris Johnson's quote that *"Many more families are going to lose loved ones"* and also that markets had suffered the worst day since Black Monday. The Mail, Express and Sun went with the same message, also quoting the PM's figure that 10,000 people may already be infected. One or two critics, including Jeremy Hunt, said that the lack of restrictions did not mirror what was happening elsewhere, including in Scotland and Ireland. To address these concerns Vallance told ITV News: *"If you look at what other countries have done, some of them*

have jumped very quick on some measures that actually may be slightly less effective and aren't concentrating on the ones that really are the most impactful." **(AC/72 [INQ000249740]).**

138. The fifteenth SAGE meeting on Friday 13 March remained insouciant. There was no mention of Riley's paper nor of the China and Korea data published in Medxriv. And no concern expressed about the CMO's decision to stop community testing and contact tracing. **(AC/73 [INQ000109142]).** They were *"unanimous that measures seeking to completely suppress spread of Covid- 19 will cause a second peak. SAGE advises that it is a near certainty that countries such as China, where heavy suppression is underway, will experience a second peak once measures are relaxed."*

139. This was an unintentional but lethal mistake. When China, S Korea and other Asian states lifted domestic restrictions a few weeks later, no large second peak happened, although China and Taiwan kept their borders closed. Small outbreaks were quickly snuffed out. SAGE also saw no strong scientific grounds to hasten or delay implementation of household isolation or social distancing. They did report that there might be some 'minor gains' from going early with personal self-isolation if people were symptomatic. They indicated that scientific evidence supported household isolation being implemented '*as soon as practically possible*', but given that no plans existed to implement this policy, their suggestion lacked any urgency. Yet for the previous six weeks, isolation had been promoted as the cornerstone of control by East Asian states and the WHO.

Meltdown in the Cabinet office

140. On Friday March 13 the government did postpone the London Marathon, the Premier League and the English Football League games and May's local elections. Behind the scenes Downing Street was heading into outright panic. In the evening Warner and Cummings shared their concerns with Vallance, showing him graphs that projected exponential spread. Vallance soon realised that his and Whitty's strategy was for the birds. According to Cummings evidence to the Health Select Committee: *"I am extremely concerned,"* Vallance said. *"It seems that something has gone fundamentally wrong in the wiring of the system. (These) graphs are showing that even on the best-case scenario with the official plan, you are going to completely smash through the capacity of the NHS—not by a little bit but multiple times."*

141. Vallance, a clinical pharmacologist and drug development expert, had relied on the modellers and infectious disease people to guide him. Now he recognised the scale of the error. Cummings said that they would have to sit down with the Prime Minister tomorrow and explain how he would have to ditch the whole official plan, because *"we are heading for the biggest disaster this country has seen since 1940".* He put a summary of plan B on

whiteboard, shared later on Twitter and with journalists. Whilst doing this, Helen MacNamara, the Deputy Cabinet Secretary, rushed into the room. According to Cummings she said *"I have just been talking to the official Mark Sweeney, who is in charge of co-ordinating with the Department for Health. He said 'I have been told for years that there is a whole plan for this. There is no plan. We are in huge trouble.' I have come through here to the Prime Minister's office to tell you all that I think we are absolutely fucked. I think this country is heading for a disaster. I think we are going to kill thousands of people."*

142. What happened over that weekend remains a big question for the Public Inquiry. The Prime Minister was briefed on the Saturday morning but on Monday 16 pubs and restaurants were still not closed, and many sports events were not cancelled. At this exploding stage of the epidemic, every day of delay mattered, cases were spreading like wildfire, thousands of deaths would follow. It seems that arguments continued between those who remained convinced that suppression would just lead to a huge second wave, and those that understood the imminent threat of death to thousands of people and an overwhelmed health service.

143. On March 16, almost in self-defence, Ferguson and his Imperial team of modellers published an online report which remained sceptical of East Asian successes. *"The major challenge of suppression is that this type of intensive intervention package – or something equivalently effective at reducing transmission – will need to be maintained until a vaccine becomes available (potentially 18 months or more) …while experience in China and now South Korea show that suppression is possible in the short term, it remains to be seen whether it is possible long-term, and whether the social and economic costs of the interventions adopted thus far can be reduced."* **(AC/74 [INQ000249742])**

144. This comment was misleading. Strict interventions for 18 months were not necessary in Asia. None of these countries had a national lockdown. Once hotspots were suppressed, most areas in the country got back to normal with only minor social and economic inconvenience. Surveillance continued intensively and if an outbreak occurred restrictions were re-imposed in that locality. But the so-called 'stringent' controls of East Asia were short-lived. The prolonged lockdowns of the UK were soon to start, far more stringent in their effects, after yet another delay. On March 16 Cummings approached the Cabinet Office Civil Contingencies Secretariat about their plans for action: *"What is the view of the Cabinet Office Civil Contingencies Secretariat on the various pandemic plans that have been given? Because as far as we can tell from our meetings, and as far as I can tell from our meetings, some of them don't exist, and the ones that do exist have got gaping holes." To which we were given the answer, "These plans are not held centrally by the Cabinet Office."*

The systemic failures of SAGE and its sub-groups

WHO Scientific Advisory Groups

145. The day I started work at WHO I was told I was no longer an *independent* scientist. As an international civil servant my job was to convene, facilitate and assist the preparation of meetings and reports, and join discussions, but scientific interpretation would be decided by invited independent scientists under a chosen independent chairperson. For example, the WHO Scientific Advisory Group of Experts (SAGE) on Immunization had an independent chair and an independent board of a broad range of outside experts with clear roles and responsibilities, terms of office and selection criteria **(AC/75 [INQ000249743]).** Board members were not paid and had to publicly declare any conflicts of interest. WHO staff prepared for meetings, arranged travel and rooms, and collated the extensive documentation to inform the detailed 2-3 day meetings that reviewed the science and policy for global vaccination.

146. WHO Advisory meetings had to be *diverse*. We brought in experts from every region, from many disciplines, balanced by gender and ethnic representation. Our definition of science was not simply '**bio-technical'**. We invited laboratory scientists, epidemiologists and infectious disease modellers of course, but also public health scientists, psychologists, economists, social scientists, gender and communications experts, and primary and hospital health professionals and fieldworkers who understood the needs of vulnerable populations in different settings. The model of health was **'biopsychosocial.'**

147. Views expressed were *candid* and disagreements noted. Minutes and the final report were finalised with consultant and WHO support under the supervision of the independent meeting chair(s). We would circulate any report to attending experts for final approval. Feedback was sought and reports amended if reasonable objections were made or errors spotted. When reports were published, if appropriate, press conferences addressed media questions.

UK SAGE system weaknesses

148. In contrast the UK SAGE for the pandemic did not follow such rules. The clubbable recruitment of selected experts, the lack of independence of government civil servants, the missing voices, the lack of social and ethnic diversity, the narrow view of science, and the slow response to the immediate crisis in February 2020 arose from the lack of a formal standing committee for pandemic management. It was as if the UK was being attacked by a belligerent state with no formal lines of responsibility in our military services, no detailed military plans and no frontline soldier on the advisory committee. The critical early mistakes in pandemic assessment arose from this system failure.

149. In May 2020, after stinging criticism of SAGE from the Parliamentary Health Select Committee which reported that their advice represented the "*biggest failure of scientific advice to Ministers in a generation*", Sir Patrick Vallance defended SAGE in the Sunday Telegraph. *"Sage stood up for Government emergencies at the request of Cobr (the civil contingencies committee), and when the emergency is a health one it is co-chaired by the Government Chief Scientific Adviser and the Chief Medical Officer. It is made up of scientists with diverse relevant expertise, who for this emergency have since January been crunching data, analysing information and giving frank and objective advice. The participants vary depending on the topic and the expertise needed, but there has been a core of scientists who have attended most meetings. For Covid it has included academics, clinicians, departmental chief scientific advisers and scientists from the NHS, Public Health England and other governmental bodies including the devolved administrations."* **(AC/76 [INQ000249744]).**

150. His description is correct but belies the problem of pandemic management. A pandemic is a scientific challenge only if we take a broad model of 'science' - biopsychosocial rather than biotechnical. Experts should be transparent, independent, diverse and candid. Observers, not members, should include civil servants, state advisers and Ministerial scientists but they should not dominate discussions. All SAGE experts were good people, who gave their time generously, the independents voluntarily and unpaid. They discussed the challenge from their own disciplinary perspective. But the SAGE was not a PAGE, a pandemic advisory group of experts. The balance was wrong. The focus was too biomedical and mathematical.

SAGE lack of openness and transparency

151. Unfortunately a culture of openness was conspicuous by its absence. Everything was, at first, shrouded in secrecy. This was a process inherited by Sir Patrick Vallance from his predecessors. It was not until Friday April 24 2020, three months after the pandemic exploded, that the Guardian leaked details about the make up of SAGE **(AC/77 [INQ000249745]). It** would take the government another two weeks to release formal minutes of SAGE meetings. Curiously, and coincidentally, they did so on the same day that Independent SAGE met for the first time and called for their release. To be fair to Patrick Vallance, he recognised in his May 30 Telegraph article that *'Good science involves sharing findings and interpretations for others to challenge, build on and replicate… We learn from each other and we learn from mistakes.'* (**AC/75 [INQ000249743]).**

152. He also pointed out that SAGE evidence in the past was only published at the end of any particular crisis, and, before SAGE existed, science advice to government was often not published at all. Scientists exposed to the glare of the media might also feel intimidated and reluctant to challenge accepted wisdom. Science is a constant process of debate, so any

threat of scapegoating will deter honest disagreement. Vallance wrote that "*Sage is not an infallible body of experts and nor is there cosy group think*." Others in government and outside strongly disagreed. When the chair of the Health Select Committee, Jeremy Hunt, asked Dominic Cummings, the Prime Minister's senior adviser about '*the dangers of group-think, people going on tramlines, and precisely experts talking to each other and insiders talking to each other*", Cummings replied: *"There is absolutely no doubt at all that the process by which SAGE was secret, and overall the whole thinking around the strategy was secret, was an absolutely catastrophic mistake, because it meant that there was not proper scrutiny of the assumptions and the underlying logic."* The Select Committee reached the same conclusion. My impression is that Vallance was keen to be open and transparent but he had inherited a system that required major reform. A pre-existing pandemic manual should have made explicit the formation, selection, roles and responsibilities of a PAGE (Pandemic Advisory Group of Experts) rather than a SAGE, and such a standing committee should be meeting on a regular basis to protect us from any future pandemic. None has yet been formed.

Was there group think?

153. Actually, I believe that Vallance has a point about SAGE not being 'cosy group think'. Many psychologists are sceptical of the idea of 'groupthink', first proposed by Yale psychologist Irving Janis to describe the flawed decision-making before the Bay of Pigs fiasco when the US attempted to invade Cuba in April 1961: "*group decision-making under conditions of stress.... Janis and other researchers have found that in a situation that can be characterized as groupthink, individuals tend to refrain from expressing doubts and judgments or disagreeing with the consensus*." **(AC/78 [INQ000273603]).** But 'groupthink' is contested by many behavioural psychologists because it misrepresents how groups make poor decisions, why they do and how to stop them making poor decisions in future. **(AC/62 [INQ000249731]).**

154. Rather than 'groupthink', I believe that incorrect scientific advice arose from a **systems failure**. The government SAGE failed in key aspects because first there was no standing pandemic committee that should have met at least annually and conducted role plays and pandemic games to test systems in advance, and to develop detailed procedural guidelines for a rapid response (the UK should study Japan in this regard). Second, there were no guidelines about selecting a balance of disciplines for a pandemic, no rules about truly independent scientists, no formal process or criteria for transparency, no guidelines for the responsibility and tasks of key members, and the absence of many relevant experts in the room.

155. Vallance inherited a culture of secrecy and was keen to amend it. Vallance and Whitty might share some of the blame for their selection of experts, but their predecessors like Sir Mark Walport and Dame Sally Davies should have recognised the need for a pandemic standing committee, a detailed pandemic plan and a standard manual of operations, like those in Japan, Korea and China.

156. Certainly a lack of transparency also suppressed a wider, more peer-reviewed response from the scientific and public health community. Formal systems for representation prevent the formation of cabals. The shaping of the pandemic Scientific Advisory Group of Experts, like so many institutions of the British state, was not systematic. Selection was based on closed networks of people drawn from elite groups, trusted not to cause trouble over policy, perhaps choosing only those who would not be too dissident.

Diversity within SAGE?

157. Four lead physicians were on the initial advisory group that set up SAGE: Sir Patrick Vallance, chief scientific adviser, Professor Chris Whitty, chief medical officer, Sir Jeremy Farrar, director of the Wellcome Trust, and Sir Mark Walport, chief executive of UK Research and Innovation, the umbrella organisation for all UK research bodies. The four physicians knew each other well. All were educated at independent schools, from a clinical academic background, and trained in the Golden Triangle of Oxford, Cambridge and London. Sir Mark Walport had probably been influential in all of their appointments. Walport or Vallance had also appointed the chief scientists in every Ministry, many of whom sat on SAGE.

158. The makeup of Sage reflected an oddly skewed and overwhelmingly **biomedical view of science**. Many other perspectives would have brought value to a pandemic crisis team. Why did Sage not consult public health epidemiologists in the frontline in China or Hong Kong, such as Prof Gabriel Leung? The group did not get inputs from infectious public health experts at the World Health Organization, such as Doctors Mike Ryan, Bruce Aylward, Sylvie Briand or Maria Van Kerkhove who led the teams responsible for containing Covid-19 across the world. Professor Sir David King, the former chief government scientist, told me he always sought international experts to give advice.

159. As happens on WHO advisory groups, a pandemic advisory group needs to bring together experts in a broad range of disciplines: of course, lab sciences like virology, molecular genetics, immunology; clinical scientists and practitioners from primary and intensive health care professionals: public health, epidemiology and modelling; social as well as behavioural scientists; communications experts; those with wide field experience in infection control and community mobilisation. It is vital that advisers maintain close links with those implementing the logistics of policies. There was no coronavirus immunologist to examine whether this

virus produces lasting and protective immunity. And no social scientists to work on the harnessing of community engagement, nor a logistician, who would have expertise in planning for the delivery of supplies and resources during a pandemic.

160. Most astonishing of all was that balanced scientific advisory group for a pandemic would, at the very minimum, include experts who work at the frontline of an epidemic, especially those in public health science, primary care, nursing and intensive care. When official minutes were released finally in May showing the list of SAGE attendees **I simply couldn't believe that they didn't invite a single independent, public health scientist** with expertise in infection control to advise the government. It's like organising a meeting of the military Strategic Command made up of civil servants, mathematicians and politicians, without a soldier present. Worse, this state of affairs continued for the rest of 2020 despite much public criticism. That the SAGE coordinators did not reach out to the wider public health community of experts suggests a siege mentality. A letter sent to the CMO's from Professor Trish Greenhalgh and 21 UK public health leaders, including the President of the Faculty of Public Health, went unanswered **(AC/79 [INQ000249746]).** A public health challenge of this size requires public health expertise and international voices from experts in the frontline of emergency infection control.

161. As to other measures of diversity, the **gender balance** of Sage was predictably skewed. If we look at the make-up of three early SAGE meetings we find an absence of diversity. The makeup of SAGE meetings rarely had more than 30% women attendees. And **none of the attendees at SAGE meetings were from minority ethnic groups** unless you include Jonathan van Tam, whose grandfather was prime minister of Vietnam under French rule for six months in 1952-1953. Given that coronavirus was later shown to disproportionately affect people from black and ethnic minority communities, the lack of black experts was a troubling omission. As the editor of the Lancet emphasised: *'we must embrace the whole of society in thinking about health—class, ethnicity, gender, capital, politics, culture. The social and the biological must be integrated, reconstituting the complexity, unity,* **and interdependence that binds together a multidimensional society..' (AC/80 [INQ000249747]).**

162. To address the lack of scientific expertise among British civil servants Patrick Vallance and his predecessor Mark Walport, backed keenly by Dominic Cummings, were absolutely right to appoint official government scientists in every Ministry. Ministers and senior officials needed to know about scientific methods, new technologies and data, and how to evaluate policies appropriately. But to place the same advisers as independent scientific experts on committees like SAGE was a fundamental error. **Civil servant advisers cannot be truly independent.** Their bosses were in the same room: Sir Patrick Vallance and Professor Chris Whitty, to say nothing of the Prime Minister's most senior adviser, Dominic

Cummings, or his data acolyte Ben Warner. Their decision to speak freely was compromised. Whether they like it or not, their career conflicts of interest could inhibit candid and free expression, in the same way I was no longer an independent scientist when I joined WHO and became an international civil servant. Of course they should attend as observers and contribute to discussions, but the primacy of independence and diversity of views and disciplines should take precedence.

163. Given this was a public health crisis affecting the whole population, and particularly a huge challenge to the NHS, we must explore **why the SAGE ignored independent population and health care experts**, why most experts chosen were civil servants or bureaucrats, and why dissident public health opinion was persistently excluded, not only in early March when the evident mistakes required immediate correction? Why were **no voices heard at any time from affected countries eg Hong Kong, South Korea, Taiwan or from WHO**? Hopefully the Public Inquiry will try to answer these questions.

164. The Institute for Government review of science advice in a crisis in December 2020 agreed that *"there are valid criticisms about the range of disciplines represented in its membership, with discussion often dominated by epidemiologists and modellers and a lack of external public health experts" but go on to report "the greater problem has been chaotic decision making from the top of government. This has repeatedly created problems in how SAGE work is commissioned and how its members understand the way their advice is used by government*." **(AC/81 [INQ000249748]).** Certainly, the Ministers listening to SAGE advice also had views that were steeped in a complex mix of '*laissez-faire individualism, anti-welfarism and paternalism*' **(AC/82 [INQ000249749]).**

Have lessons been learned?

165. There is little evidence that lessons of these system failures have been learnt. In November 2022, a 120,000 word document prepared by Whitty and the other CMOs from Scotland, Wales and Northern Ireland, on recommendations for future CMOs about pandemic management made no reference to the importance of acting fast, to the formation of a broad-based pandemic standing committee, nor about the importance of community and national mobilisation for test, trace and isolate. No recommendations are made about the lamentable government failure to support poor families to isolate, nor the failure to devolve resources to local public health teams so that they could find and pay contact tracers, and no reference made to the policy failures that privatised test and trace so disastrously.

166. Why not? Because they suggested that "*Consistently staying in our area of expertise (science and medicine) was important*". And that "*Sometimes independent scientists had strong views on policy choices. Informed debate is important, but the blurring of science advice and policy opinion could cause confusion.'* **(AC/83 [INQ000249750]).** This raises

the important question of the relationship between the CMOs, GCSA and policymakers which is dealt with below in Section 7. Equally their exclusion of independent public health as a crucial scientific discipline on SAGE could be considered a policy opinion about what constitutes medical science. This over-medicalisation of health represents a continuing systems failure.

Was there was an over-reliance on modelling during the pandemic, and whether its limitations meant that it played too influential a role in UK scientific advice?

167. I agree with the key conclusions laid out in the BMJ paper authored by Pagel and Yates. **(AC/84 [INQ000249751]).**

- Mathematical modelling is intrinsically difficult given the complexity of relationships between parameters and difficulty quantifying those parameters
- Modelling needs input from a much wider range of sources including domain experts
- Data sharing and communication of results could be improved so that people understand the limitations of models and how much certainty there is the projections.
- Policy makers and the public often had poor understanding of key concepts such as exponential growth and the limitations of long-term forecasting

168. Despite the limitations of mathematical modelling early in a pandemic, it still had an important role to play. Neil Ferguson and his team alerted people to the reality of what a pandemic potentially means in terms of casualties as early as January. Steven Riley produced an excellent paper warning of the **need to abruptly change strategy on March 9** (circulated to SAGE **AC/65 INQ000249734])** and this should have immediately led to closure of 'parliament in person' for the budget statement on March 11 (which may have prevented infection of the high command), strict social distancing, reversal of the no community testing plan, banning of large scale sporting and other events, rapid progression to a national lockdown. This would have saved thousands of lives.

169. Yes, there was no analysis of a rapid suppression strategy (which cannot be laid at the door of the modellers) which meant too much emphasis was placed by SAGE on modelling of other social restrictions, rather than developing an East Asian type approach to suppression of transmission in hotspot areas. This could have averted a prolonged national lockdown and perhaps any national lockdown.

170. But modelling throughout the pandemic was thorough, meticulous and for the most part valuable in guiding policy. There were issues I believe in sharing data between different modelling centres across the UK, but others will brief the Inquiry on this. The modellers

worked intensively over a long period and gave their time voluntarily without fear or favour. Independent SAGE largely agreed with SAGE modelling conclusions after the first national lockdown began.

Should economic modelling have formed part of the SAGE remit?

171. Economists vary hugely in their underlying values and ideology. Economic modelling is probably less accurate than infectious disease modelling so I am not convinced economic modellers would have added a lot of value given the complexity of the variables to be measured when creating economic models. The reality is that the economic effects of failing to act early in the pandemic to suppress the virus, and failing to set up an effective find test trace and isolate programme to suppress future outbreaks quickly, meant prolonged national lockdowns and much greater economic damage in countries such as the UK.

172. At the end of 2020 the worst impact on GDP among East Asian countries was minus 0.9% in China and minus 4% in Japan. In the UK, although the UK economy grew by four percent in 2021, there was a record eleven percent fall in GDP in 2020 (the largest in 300 years), which was a direct result of the Coronavirus pandemic, and more than eleven times the negative impact of countries in East Asia. Overall GDP growth was slightly positive for East Asia unlike other sub-regions (**AC/85 [INQ000273600**). In 2020, the first year of the COVID-19 pandemic, the global economy shrank by approximately 3 percent, and global poverty increased for the first time in a generation **(AC/86 [INQ000249752]).**

173. Nonetheless having Treasury economists as observers on a Pandemic Advisory Group of Experts would be valuable, more to monitor the procurement of pandemic supplies during the crisis, and to ask questions about the cost-effectiveness of interventions which might have prevented the scandal of cronyism, corruption and the waste of tens of billions of pounds.

The relationship between scientists and decision-makers

Overview

174. A report by Independent SAGE referred to the existence of *"a complex relationship between science and policy, in which politicians appeared to cherry-pick scientific data to support specific policies that seemed to reflect political agendas"* **(AC/87 - INQ000249753)** The Institute for Government has written that *"in the initial months, ministers put too much weight on SAGE - relying on it to fill the gap in government strategy and decision-making that was not its role to fill*? **(AC/81 [INQ000249748]).**

175. In brief, scientific advisers and policymakers constructed a Catch-22 that appeared to absolve either of them from accountability. I disagree with the Institute for Government statement. The problem with SAGE was that its formation, membership and remit was far too narrow. For pandemic management to be successful you need an overlapping team of policymakers and scientists from both natural, medical, behavioural and social sciences to work together, under the ongoing scrutiny of the elected government. The military and civil servants work on various plans and options in great detail in preparation for war, rehearsing its plans at regular intervals with war games. They work closely with political leaders on the strategies open to them. Pandemic preparation should be no different. The death toll of Covid19 (226,000 by July 2023) has been almost three times that of the Blitz in World War 2.

The Catch-22 that protected Ministers and Senior Advisers from accountability

176. In the early months of the Covid pandemic our ministers hurried, daily, to say that they were 'following the science'. Senior advisers like Walport, Vallance and Whitty repeatedly said to the press 'We advise, Ministers decide'.

177. Let us unpick the erroneous idea that senior health and science advisers had no role or responsibility in policy or operational planning. Pielke has proposed four levels of science inputs to policy: the **'pure scientist'**, who sees their role as presenting facts and leaving any decision to others, the **'science arbiter**', who acts as a resource for decision-makers, answering queries, as necessary but not suggesting what those questions should be, the **'issue advocate**', who focuses on a particular issue and advises decision-makers on what the should do, and the **'honest broker'**, who provides information on a wide range of options but leaves the decision-maker to decide based on preferences and values **(AC/87 [INQ000249753]).**

178. The distinguished social scientist Sheila Jasanoff, founder of the Science Technology and Society program at Harvard University John F Kennedy School Government has argued that ""*although pleas for maintaining a strict separation between science and politics continue to run like a leitmotif through the policy literature, the artificiality of this position can no longer be doubted. Studies of scientific advising leave in tatters the notion that it is possible, in practice, to restrict the advisory practice to technical issues or that the subjective values of scientists are irrelevant to decision-making*" (**AC/88 [INQ000280127]).**

The roles of the government's Chief Medical Officer (CMO) and Chief Scientific Adviser (CSA)

179. The CMO plays a leading role in advising on the national response to public health emergencies and attends the COBRA meetings on health emergencies like pandemics

(AC/89 [INQ000249754]). The CMO also co-chairs the Scientific Advisory Group for Emergencies (SAGE) with the government's chief scientific advisor. They had the power to set up *ad hoc* advisory groups in response to a public health emergency. So they could have set up emergency working groups at the end of January 2020 on how to develop a test rapidly, how to manage contact tracing nationally at scale and how to achieve optimum isolation of cases and their household members. But they didn't, based on the wrong strategy they adopted on January 28.

180. Nonetheless other advisers could have strengthened the CMO's hand. If the development of a test for the virus at scale in February 2020 was a prime objective, as it should have been, we might have expected Vallance, Walport or Farrar, as lead clinical advisers to play a coordinating role to persuade Whitty to make this happen. Farrar, like many officials, went away for the first two weeks of February, first to attend the Munich Security Conference and then for a family skiing holiday. He wrote that on his travels and holiday he spent a great deal of time worrying about the origins of the virus, and the possibility that this had arisen from a lab leak in Wuhan, or as part of a bioterrorism plot. A whole chapter in his book describes the calls and discussions he had with international experts. But the absolute priority of catalysing the development of a rapid test for the new virus gets no mention. Whitty, Vallance and others had created a strategy that gave little value to testing. If they had wanted a test urgently, their notion was that they were only responsible for advice, not operational matters, and left that to junior civil servants within Public Health England and the Department of Health. They absolved themselves of a clear duty for chief medical and scientific officers to lead key policy in a pandemic response.

181. In May 2020 Patrick Vallance wrote in the Sunday Telegraph: *'Science advice to Cobr and to ministers needs to be direct and given without fear or favour. But it is advice. Ministers must decide and have to take many other factors into consideration. In a democracy, that is the only way it should be. The science advice needs to be independent of politics….Sage is not a body that has any accountability for operational aspects whether that be testing, PPE or NHS delivery.'* **(AC/76 [INQ000249744]).**

182. In other words Vallance, Whitty, and the SAGE they had constructed, could in no way be blamed for operational failures, they claimed. Civil servants were under the control of political masters. But with politicians avoiding conviction and responsibility, and without any experience in public health or pandemic management, this position of 'no operational accountability' by the medical and scientific lead advisers can be **challenged on five grounds:**

1. Their job descriptions give them a central role in policy formation and operational planning?

183. The Chief Medical Officer's (CMO's) key role is described by the Institute for Government: *The chief medical officer is the country's most senior medical adviser, providing advice to the secretary of state for health and, when necessary, the prime minister. The CMO is also the head of the public health profession and represents it within government. The role has three overarching responsibilities: to provide i**ndependent advice on public health issues**, in particular during public health emergencies; **to recommend policy changes** to improve public health outcomes; and to act as **an interface between the government and medical researchers and clinical professionals**. The CMO plays a prominent role in supporting the government's response to public health emergencies. Alongside ministers, the CMO is **responsible for keeping the public informed on health issues of high public concern** and explaining the government's response. The CMO has a **statutory duty to produce an annual report** on the state of public health and to support work to improve public health across England. This provides both a survey of public health, and a detailed analysis of one or more specific public health issue, where **the CMO believes policy intervention is required.*** **(AC/89 [INQ000249754]).**

184. So the CMO does play an absolutely crucial role in health policy formation, not just as an adviser. He works with the Department of Health and Social Care, public health agencies, and the National Health Service, to convert the advice from expert committees into a policy response. He advises the Prime Minister in person about the best options for policies to tackle a public health emergency. The same applies to the Chief Scientific Adviser on matters related to science such as vaccines**. (AC/90 [INQ000249755]).** They have a clear and crucial role in policy formation. And both should give advice that is autonomous '*to ensure that governments do not simply seek advice that aligns with what they want to hear….The UK's advice system was not autonomous, being designed to answer questions posed by government with advisers appointed by government*'

185. It's true that the CMO's direct management of doctors has only ever extended to a small group of medical civil servants directly employed within his department in Whitehall. But he can influence wider public health structures through strong leadership and alliances with politicians and senior health officials. Certainly the reforms and power struggles in the Department of Health over the past few decades had left the CMO with competing voices in public health policy, many of whom went 'missing in action' during the pandemic, but Whitty's leadership or lack of it was critical. In his December 2020 annual health report Whitty made no mention of public health, nor the failure to suppress the virus because of slow implementation of public health measures. The tone is bland and optimistic: *"the long run history of the nation (and of humanity in general) demonstrates relatively consistent improvements to health, wellbeing and productivity, even through events such as wars and*

pandemics. This is due to the remarkable, steady advance of medical science, and improvements in people's standards of living." **(AC/91 [INQ000249756]).**

186. Whitty did reiterate correctly the four ways in which deaths and illness would be affected by the pandemic: directly from the virus; indirectly from health services being overwhelmed; indirectly from routine, urgent and non-Covid related healthcare being postponed, reduced or cancelled; and indirectly from the effects of public health and social distancing restrictions. But he didn't want to analyse the first year of the pandemic. *"COVID-19 is likely to have an impact on public health globally, in the UK, and in England specifically, for many years. Rather than do a partial analysis, a thorough look back to learn lessons should be conducted when we have some distance, more data and evidence."*

187. Two and half years later the CMO still didn't analyse public health system failures. In November 2022, the Department of Health and Social Care released an 'independent' technical report produced by the collective of UK chief medical officers to provide lessons for future UK Chief Medical Officers, Government Chief Scientific Advisers, National Medical Directors and public health leaders in a pandemic. **(AC/92 [INQ000249757])** Of the 62 reviewers of their report, 51 were either in government service or members of SAGE. No attempt was made to gain true critical review from outsiders. *"As CMO or GCSA, many people legitimately want to know your advice on medicine, public health and science, and less constructively answers to questions which are political"* they wrote. *"Consistently staying in our area of expertise (science and medicine) was important…Sometimes independent scientists had strong views on policy choices. Informed debate is important, but the blurring of science advice and policy opinion could cause confusion*." **(AC/92 [INQ000249757]).**

188. The importance of public health science and evidence, which to the CMO collective raises '*questions which are political*', rather than expertise in '*science and medicine*', is not discussed. The report implies, quite incredibly, that public health and the social and infection control measures for the most vulnerable, are not within the remit of medical science. As Kerr White from the Rockefeller Foundation wrote *'the two cultures of 'medicine' and 'public health' seemed to live in different, unfriendly worlds and that this had not always been the case*'. (**AC/93 [INQ000249759]).**

189. The CMO report goes on *"The period of greatest difficulty is early in the pandemic when least is known, the route out via medical countermeasures is not yet clear and public concern is understandably greatest… A major aim of medical science is to transition as rapidly as possible from non-pharmaceutical interventions to drug, vaccine, engineering or diagnostic-driven strategies but this will always take time."* **(AC/92 [INQ000249757]).** Most public health professionals don't use the phrase 'non-pharmaceutical interventions'. They

prefer the term 'public health and social measures', which no strategy should ever *'transition as rapidly as possible from*'. This dismissive categorisation of public health and social measures (a key remit for chief medical officers in the past) as simply '*non-pharmaceutical interventions*' speaks volumes.

2. Are the posts of GCSA and CMO covered by civil servant rules or do they occupy special positions with greater independence?

190. Neither Vallance nor Whitty were career civil servants. The government chief scientific adviser advises the Prime Minister and Cabinet Office on aspects of science, engineering and technology, to ensure that *effective systems* are in place within government for delivering, managing and using science **(AC/94 [INQ000249758]). T**he chief scientist provides advice to the Prime Minister and members of the Cabinet through mechanisms that are efficient, effective, speak truth to power and are embedded in Government systems. He also appoints and supervises chief scientific advisers within each Ministry to '*perform an independent challenge function to their department, ensuring that advice is robust, relevant and high quality and that there are mechanisms in place to ensure that policy making is underpinned by science and engineering'*. So independence, effective systems, speaking truth to power and independence of view is a critical aspect of the GCSA role.

191. The idea of a CMO had first been established in 1855 with the appointment of Dr John Simon as Medical Officer to the General Board of Health to help tackle cholera epidemics **(AC/95 [INQ000273703])** He appointed twelve doctors as cholera inspectors and a Medical Council to investigate the scientific basis of the epidemic. Over time, the CMO became a government-appointed doctor and senior civil servant who not only advised the government but also spoke to the nation on public health matters.

192. So GCSAs and CMOs are ***different from other civil servants***. Career civil servants must be impartial, appointed for their expertise, show loyalty to the government of the day and maintain a low public profile. They are selected on merit, with security of tenure so that they can work for any government regardless of political hue. By contrast the chief scientist and medical officer have a high public profile, are not career civil servants, and the CMO has always had independent statutory authority to issue annual national reports and to speak to the nation about health without government approval **(AC/96 [INQ000249660]).**

193. **Th**eir role is, by its nature, in a state of tension. Advise governments, speak for public health and for health profession standards. They must get on with political and civil service colleagues, maintain confidentiality where necessary, but also show *an ethical duty to the population they serve.* They must *express concerns about political decisions that could harm public health*. The Institute for Government agrees that the CMO has a far more

independent status in government than other civil servants **(AC/97 [INQ000249661]). CMOs have in the past publicly criticised government policy, for example on** health inequalities and minimum alcohol pricing. They have engaged actively with the public and the media, particularly during health emergencies.

194. Further, when Sir David King was appointed as chief government scientific adviser under the Tony Blair and Gordon Brown governments he made it clear to his political masters that he would publish all advice that he gave to them and place it in the public domain. This was accepted by the Prime Minister **(AC/98 [INQ000268212]).**

3. A pandemic is a threat requiring medical leadership and involvement in policy.

195. A pandemic threatens hundreds of thousands of lives so our CMO and GSCSA must contribute to policy and leadership. In a war political leaders and generals work together. The military have a high degree of autonomy under broad political guidelines and are held accountable for their leadership. If Vallance and Whitty were not in charge of key pandemic strategy who was? Chris Whitty is an intelligent adviser but not a natural leader compared to his predecessors, like Sir George Godber, for many the greatest CMO. Godber worked under Aneurin Bevan to plan the formation of the National Health Service, and fought to defend investment in primary care and to redistribute medical specialists to areas of greatest need. Godber's successors, Sir Donald Acheson, Sir Kenneth Calman and Sir Liam Donaldson, were also medical doctors whose work focused on community and public health leadership. But, in a break with tradition, Dame Sally Davies and Sir Chris Whitty have been senior clinicians without training in public health.

4. Are there circumstances under which civil servants should resist their political instructions?

196. The pandemic would expose Whitty and Vallance to the media in a way unparalleled in CSA or CMO history, with weekly press conferences, relentless questions from the press and TV, and the daily barrage of social media. Initially they were widely praised for their demeanour and intelligence. Later they would face criticism from libertarians for supporting restrictive social measures. Others said they were too closely aligned with their political masters and not contesting political decisions which damaged public health. You can't be an '*attorney for the poor*' if you are sycophantic to the powerful they argued.

197. One example of a senior civil servant turned whistleblower is Josie Stewart, a senior civil servant at the Foreign Office who revealed the chaotic response to the fall of Kabul and her concerns about the erosion of civil servant independence. *"I increasingly saw senior officials interpreting their role as doing what ministers say and providing protections to ministers. It was almost as if their first loyalty [was] to their political leaders rather than to*

the public. Essentially people who said 'yes' and went along with it and bought into this shift in culture and approach were those whose careers went well. Those who resisted either found themselves buried somewhere or looking for jobs elsewhere." **(AC/99 [INQ000249662]).**

198. Maybe senior figures involved in pandemic advice to policy did contemplate resignation after the herd immunity disaster. Jeremy Farrar is refreshingly honest and shares his doubts in his book. (**AC/100 [INQ000273797]).** In Chapter 9 p.228/9, he outlines the mistakes that were made early on with the wasted month of February, the herd immunity policy that was not discussed and did not originate from SAGE, the delay in lockdown, the failure to set up testing quickly, the decision to abandon community testing, and regrets over not speaking truth to power. In Chapter 7 he discusses '*Are we complicit in the outcomes?*'. In September 2020 he wrote "*I began to question the point of giving advice to a body that chose not to use it. There comes a time when you have to ask yourself, and the people you trust, whether you are indeed complicit with the decisions that are made as a result.*" More than a year later, in November 2021, to his credit, Jeremy Farrar did resign from SAGE and worried that he should have done so earlier.

5. Moral obligation and complicity

199. The public inquiry and the courts will decide the moral and legal obligations of politicians and civil servants who took part in, or were aware of, the corruption involved in procurement, any lies told about care home protection, and the conflicts of interests with the VIP lane and the assignment of contracts to testing companies. Scientific misjudgment done in good faith and with limited evidence does not fall into this category. But there is a grey area when it comes to critical failures of policy that increased the risk of transmission, for example **the refusal to pay adequate sick pay or rapid compensation to frontline workers and people on benefits when they became infected**.

200. A key element of the East Asian infection control strategy was to quarantine households where an infection emerged so that the epidemic could be stopped and the need for a more general lockdown averted. Public health practice has known this since time immemorial. WHO made it very clear from the very start of this pandemic that supported isolation was the key method to suppress the epidemics. South Korea, China, Japan and other Asian states had generous and organised policies to ensure families asked to isolate for 14 days had their income protected and their bills paid.

201. Our UK government didn't. Sickness pay policies were among the weakest of OECD countries **(AC/101 [INQ000273597]).** Of all the policy mistakes made by the UK government, the decision to penny pinch on sick pay was the most egregious.**The failure**

to provide sick pay support to cases and contacts to help them isolate was the biggest economic failure of the UK response.

202. People are naturally concerned about how to pay bills, feed their family and not worry about a loss of income. If people don't comply with isolation the virus will inevitably spread. Rising infections lead to more symptomatic cases, more hospitalisations, more deaths, more Long Covid. In turn, bereavements, fear and an overwhelmed health service lead to new lockdowns with massive economic and social costs through furlough payments and business support. The imbalance between sick pay 'savings' and furlough scheme 'expenditure' was truly shocking, the economics of the madhouse. It cost the country hundreds of billions of pounds. Thousands of lives were lost as the epidemics spread without effective suppression. Yet both politicians and medical advisers parroted the idea that public health measures had to be balanced with the economy; even though lack of compliance with quarantine was an obvious reason for virus transmission and the need for a broader lockdown.

203. The government spent only £54 million in 2020/21 and £72 million in 2021/2022 on statutory sickness pay for those earning more than £118 per week **(AC/102 [INQ000249663]).** Two million people working part-time earned less than that. In one survey of 31,111 claims made for the £500 support only 10,916 (35%) were paid out, often with weeks of delay. Unsurprisingly, many low income families with symptoms decided not to be tested and remained at work, infecting others. By contrast, the Coronavirus Job Retention Scheme, furlough - cost a staggering £70bn, a thousand times more. It kept people close to their jobs and prepared the labour market for a strong recovery as part of an estimated £122bn which also included the self-employed income support scheme. (AC/103 [INQ000249664]). A further £103bn was given as loans and grants to businesses and another £20 billion on subsidies for transport companies, a total of close to £250 billion. Yet the government ignored all appeals to support people to isolate, and the advisers did not appear to challenge this decision despite the evident cost in terms of illness, hospitalisations, deaths and damage to the economy.

204. The legal philosopher Eric Boot addresses civil servant complicity. *'Civil servants who are complicit in government wrongdoing incur a moral obligation to remedy the injustice they have contributed to by disclosing it, and, if they do, what is the nature and the strength of this obligation?'* **(AC/104 [INQ000249665])**. All civil servants have a right and duty to become whistleblowers when they believe government wrongdoing is happening. And they cannot hide behind '*calculated silence*'.

205. According to Christopher Kutz, the *'intentional participation in a collective venture is a basis for accountability for the harms and wrongs that result from this venture.'* He calls this the

"*complicity principle*." **(AC/105 [INQ000249666])** p256 and p258). Boot goes further: *"Civil servants who are complicit in secret government wrongdoing are under a pro tanto obligation to reveal that wrongdoing (when disclosure is the most effective way of addressing it, the strength of which (and thus the likelihood of its being defeated by countervailing moral reasons) will vary in accordance with (1) the gravity of the wrongdoing, (2) one's responsibility for that wrong-doing, and (3) one's contribution to the wrongdoing. This obligation is, further-more, not limited to those who actively contribute to wrongdoing, but extends to those who are mere bystanders, whose silence can amount to complicity when it is a causal factor in allowing the wrongdoing to continue."* **(AC/104 [INQ000249665],** page 158).

206. A basic principle of public service is that public office requires employees to place loyalty to the Constitution, the laws and ethical principles above private gain. In America, for example, civil servants do not swear loyalty to their superiors but to support and defend the Constitution of the United States against all enemies, foreign and domestic. Boot suggests that the most effective way to remedy classified government wrongdoing is by disclosing it.

207. Whether Whitty and Vallance's reticence to use their independent voices in public or to criticise policy reflected their political allegiance to the government, or a misunderstanding of their role as predominantly loyal civil servant, or their natural disposition as quiet advisers rather than confrontational leaders, is difficult to judge. Certainly they were working with an erratic Prime Minister and a government fervently committed to minimal state intervention. But with high office comes high responsibility, especially with so many lives at stake from policy decisions. Over the course of the pandemic, the Prime Minister held regular data briefings and review meetings with Whitty and Vallance, with visualisations prepared by the Covid-19 Taskforce known as the 'Cabinet Office Dashboard' **(AC/106 [INQ000268203])**. Did they raise issues with Johnson about failures of policy on effective quarantine, payments for supported isolation or care home protection?

208. Sometimes Vallance and Whitty seem to have indicated their private concerns by a strategy of not appearing at press conferences. For example, when the UK hit a fifth wave of coronavirus in the winter of 2021/2022, after the government's 'freedom day' announcement in July 2021 had suspended all preventive measures, there was a clamour for masks and social distancing to be reimposed as the NHS looked likely to be overwhelmed. For a full month, until the crisis subsided, the CSA and CMO remained incommunicado, an example of '*calculated silence*'.

209. Joe Sim and Steve Tombs, two professors of criminology at the Open University, are more unforgiving about the sound of silence **(AC/107 [INQ000280130]).** They point to how state talk dwindled during 2021 even though 74,000 deaths occurred, and the policy effectively

became 'See No Covid, Hear no Covid, Speak no Covid'. They are severely critical of the advisors. *"The abject acquiescence of the government's medical advisors, who stood passively with Johnson and his Ministers for two years at the press briefings, reinforced this silencing. It was not only their talk – the masses of questions they answered over two years, the profusion of graphs and data they produced and the endless statements they made - but it was their servile, lethal silence which also led the UK to a point where, as we have noted above, there were over 200 deaths a day in March/April 2022…(rising to) 646 people - just under 27 an hour - reported on April 21 had died over the previous 24 hours*" **(AC/107 [INQ000280130]).**

210. Should they have resisted aberrant decisions more forcefully by going public with their concerns? And was it wise, given their relative independence, to only ever be seen at the side of the Prime Minister? This gave the false impression that they were part of the political decision-making. When the 'herd immunity policy' unravelled and we were forced into a national lockdown, why did they not reach out for support from prominent figures in the public health community or from Independent SAGE?

211. The clear system reform required is to ensure that the independence of GCSA and CMO advice is made public within a short time-frame, and that advice given to Ministers is discussed in public and media fora by these independent advisers separately from political press conferences.

Government decision-making

212. Several issues impeded effective government decision-making:

- The decision in late January 2020 of key advisers to allow the virus to spread meant we had the wrong strategy from the very beginning.
- It remains unclear who created the 'Coronavirus Action Plan' strategy 'contain, delay, research and mitigate' announced on March 3 2020. According to Jeremy Farrar, Professor John Edmund said *"I went back to the minutes to see if we had ever properly discussed that four-phase strategy. The answer was no.*" (Spike, pp 97/98) Presumably the strategy was either created by politicians, GCSA or the CMO. The CMO still makes reference to the 'contain' phase.
- There was no detailed pandemic plan or manual of guidelines for immediate action.
- There was a lack of leadership by the Prime Minister who failed to attend the first five Cobra meetings and who did not ask appropriate questions nor take the threat of the pandemic seriously until mid-March. He also failed to attend the Cobra meeting on March 20.

- The chaotic management of the pandemic showed no clear lines of responsibility, and a failure to bring together a coherent management team with both political and expert advisors working in harmony.

- The approach to the pandemic was 'bio-technical' rather than addressing much broader issues relating to public health, community mobilisation, logistics, vulnerable groups and a strategy in line with international experience and WHO policy.

- The ideology of the government had made public health systems derelict and underfunded over the previous decade, and they preferred an unworkable private sector system for the find, test, trace isolate, support (FTTIS) system to suppress the epidemics, that was clearly ineffective.

- Procurement of essential supplies to protect front-line staff became embroiled in a VIP lane system of cronyism that wasted billions of pounds.

- The refusal to pay adequate sick pay for cases to isolate led to prolonged lockdowns and a massively higher expenditure of hundreds of billions of pounds on furlough and business support.

- The Secretary of State for Health, Matt Hancock, appears to have alienated almost everyone else during his time in office: the Prime Minister, Sir Simon Stephens, Dominic Cummings, Kate Bingham, Mark Sedwill, and Chancellor Rishi Sunak. This was not conducive to coordinated planning.

- The experience of vaccine development and roll-out showed that when Sir Patrick Vallance and Dame Kate Bingham took the clear lead in commissioning vaccines, and Minister Nadhim Zahawi and Dr Emily Lawson from NHS England combined to develop a clear roll-out strategy that linked GPs, primary care and community workers, we achieved great success. We had not seen a similar definition of roles and responsibilities earlier in the pandemic.

- Sadly Dame Kate later lamented the deterioration in the national systems for vaccine development. She gave a withering critique of the political dismantling of the procurement infrastructure that she had built up in her evidence to the Science and Technology Select Committee in December 2022. Asked by the chair Greg Clark MP what had happened she said ""Asked by the chair Greg Clark MP what had happened she said "What has gone wrong is that there has been no expert or leader to co-ordinate the activities for everything from vaccine innovation scale-up to landscaping and figuring out where the new variants and the new potentially pandemic viruses may come from—people who understand manufacturing

scale-up, clinical development and regulations. All of that is gone. Maybe there is somebody secret out there who is doing that, but not as far as I can see. We have the capability in the country, but it cannot be done in a vacuum. We need to have an expert leader to bring that together and to try to get us back into a better position….we do not have a lot of people within Whitehall who understand vaccines, relationships with industry and all of that, but actually, I am beginning to think it is deliberate Government policy not to invest and not to support the sector" **(AC/108 [INQ000268211]).**

A "lack of joined-up thinking" in government decision-making as the UK exited the first national lockdown.

213. There was clear tension between different factions of the Tory party, and between the prime Ministers office and the Chancellor's team, as cases began to rise in the autumn of 2020 after the first lockdown. The Treasury's view was that "*we would be able to stay ahead of the virus*" after lifting restrictions **(AC/109 [INQ000273704]).** To this end the Chancellor sought the advice of 'herd immunity experts' and authors of the Great Barrington Declaration who, against all the available evidence and the views of SAGE and Independent SAGE, took the view that they could allow the virus to spread and simply 'shield' vulnerable people from its effects. As Jeremy Farrar wrote in his book: **(AC/110 [INQ000273798])** "*By early October the Great Barrington Declaration (GBD) was getting a lot of publicity as an 'alternative' scientific theory. This was the dangerous proposition to allow the virus to sweep through the population quickly so that herd immunity could build up…(it) was ideology masquerading as science and the science was still nonsense, There was no evidence to support its central idea that herd immunity was a viable strategy.*"

214. Back in March, Professor Sunetra Gupta had claimed that half of the UK had already been infected and was on its way to acquiring herd immunity, a proposition that was not supported by antibody tests. Only six per cent of the UK population had been infected by September 20. The UK members of GBD included Prof Sunetra Gupta, Oxford-based theoretical epidemiologist, Prof Carl Heneghan (GP academic), Dr Karol Sikora (cancer specialist) and Mail on Sunday columnist Peter Hitchens.

215. I agree with Professor Mark Woolhouse's comment that the sequencing of relaxations in summer 2020 "*often felt arbitrary, given that the policy objective was still to keep the R number low. There were no reliable estimates of how much transmission was occurring in places like gyms, hairdressers or churches.*" **(AC/111 [INQ000273793])**

The 'Eat Out to Help Out' scheme

216. **The Eat Out to Help Out (EOTHO) scheme aimed to boost demand and protect jobs in the food service sector by offering government-subsidised discounts on food and non-alcoholic drinks eaten in cafes or restaurants. Businesses taking part in EOTHO offered a 50 per cent discount, up to £10 per person on Monday to Wednesdays during August 2020. By the end of September 2020, £849 million had been claimed through the scheme, providing discounts for over 160 million meals in August.**

217. One study from the London School of Economics found more people visited pubs and restaurants in August when the scheme was running, but only on the days discounts were available **(AC/112 [INQ000249668]).** This increase did not carry over into September once the scheme had ended, and had only a temporary impact on the number of job vacancies being advertised.The study could not verify whether the increased demand for workers led to more people actually being hired – and, if so, if these jobs were permanent. The authors, said: *"Data limitations and the interaction between different policies complicate any cost-benefit calculation of the programme. On top of that, there is evidence from other research indicating the increase in footfall due to Eat Out To Help Out (EOTHO) had an adverse effect on new Covid-19 cases."*

218. By contrast, the entire six-week free school meals scheme that covered the summer holidays cost only £120m. More than 1.3m children were eligible for the Covid Summer Food Fund, which was introduced following a campaign by Manchester United and England football star Marcus Rashford..

Impacts of EOTHO on transmission, cases and deaths

219. I am not a modeller. Soon after EOTHO ended Warwick University modellers reported that clusters of infections rose by 8-17% but these figures were queried by the organisation Full Fact. A year later, a paper in the Journal of Economics leveraged spatially and temporarily granular data from England to make four observations.**(AC/113 [INQ000249669])** They reported: " *First, the EOHO scheme has led to a significant increase in restaurant visits over and above the levels in the previous year and to potentially shifting visits to the weekdays on which the discount was available. Second, areas that had more uptake of the scheme saw a notable increase in new COVID-19 infections detectable one week after the scheme launched. Third, the time patterns of the differential emergence of COVID-19 infections across areas with larger uptake closely track the time pattern of visits that the scheme appears to have induced when studying Google (2020) mobility data and aggregate data from restaurant booking sites. Fourth, we observe a notable decline in new infections in areas with higher take-up of the EOHO scheme around a week after the scheme ended."*

220. **Other government policies on 'a pandemic of inequality', tackling transmission in schools and behavioural interventions.See the sections on Independent SAGE below**

Transparency and communication of scientific advice and by decision-makers

221. The issues about transparency of scientific advice have been covered previously. Patrick Vallance inherited a UK government system that "*did not see transparency of evidence as an integral part of managing the Covid-19 crisis*". A key system issue is to ensure the mechanism for transparency are agreed for any future pandemic. The Institute for Government observed that *"decision-making at the centre of government was too often chaotic and ministers failed to clearly communicate their priorities to science advisers."* **(AC/81 [INQ000249748]),** Sections 5 and 6 cover this in detail.

Communications

222. The Institute for Government report **AC/81 [INQ000249748]** that the government's communication of risk was "*confusing...ministers have switched back and forth between alarm and reassurance, while failing to drive home key messages, such as the risk of gathering in indoor and poorly ventilated settings."*But the communications challenge is not simply one of crafting messages. It is about a system that should devolve power, support interaction with local communities, and tackle communication with professional support rather than simply antiquated press briefings with flags and pedestals. A key system change would start with a full review of communications and community engagement strategy.

Independent SAGE: formation and operation

223. Independent SAGE was set up to provide open and transparent advice about public health issues relating to the Covid pandemic. Concern had been expressed about the transparency of scientific and policy advice within government during March and April 2020 when no public access was provided to the minutes of scientific meetings, nor to who was actually providing the advice. Independent SAGE was founded with the intention of putting scientific facts and debate into the public domain. We believe openness and transparency leads to better understanding and better decision making. We also believe it to be the responsibility of scientists and those with specialist knowledge to engage with the public and policy makers, in order to ensure that science benefits all of society.

224. I was a founder member of Independent SAGE. In March and April 2020, through Twitter, TV interviews, articles in the Guardian and speaking at online webinars, I expressed the view that the UK Covid strategy was deeply flawed and had ignored essential public health principles for infection control. For example see my articles in the Guardian, Telegraph and New Statesman. **(AC/114 [INQ000249670], AC/115 [INQ000249671], AC/116**

[INQ000249672], AC/117 [INQ000249673], AC/118 [INQ000249674], AC/119 [INQ000249675], AC/120 [INQ000249676], AC/121 [INQ000249677], AC/122 [INQ000249678], AC/123 [INQ000249679]).

225. At this time the UK government was not following WHO policy. For example, on April 14 2020 WHO updated their Feb 3 Strategic Preparedness and Response Plan and emphasised six priority actions for countries before lifting restrictions:

    - That transmission is controlled;
    - That health system capacities are in place to detect, test, isolate and treat every case and trace every contact;
    - That outbreak risks are minimised in special settings like health facilities and nursing homes;
    - That preventive measures are in place in workplaces, schools and other places where it's essential for people to go;
    - That importation risks can be managed;
    - That communities are fully educated, engaged and empowered to adjust to the "new norm" **(AC/124 [INQ000228104]).**

Setting up Independent SAGE

226. In April I was contacted by Sir David King, former chief government scientist, and Carole Cadwalladr of 'All the Citizens' about forming an independent group of scientists to assess and monitor UK strategy given the secrecy and lack of public health expertise within the work of official SAGE. Sir David was concerned about the lack of public discourse around not just the UK's strategy but the way in which it was being conducted and whether it conflicted with WHO advice.

227. At the end of April I sent Sir David King a long list of potential experts in public health, primary and intensive care, epidemiology, data analysis and communication, virology, immunology, community mobilisation, and work with ethnic minorities. We agreed that Sir David would chair the group, that we should hold regular meetings in public, and we would issue short reports on our website about new developments, and encourage engagement with the public through social media and the mainstream media. A few invitees were too busy or reluctant to be involved but most people accepted.

228. The first 90 minute meeting was held on May 4 2020 with the following expert panellists:

- Professor Gabriel Leung, Hong Kong University, Epidemiologist and epidemic control clinician
- Professor Gabriel Scally, President of Epidemiology & Public Health section, Royal Society of Medicine; current advisor to the government of Ireland
- Professor Helen Ward, Professor of Public Health, Imperial College London
- Professor Allyson Pollock, Professor of Public Health, University of Newcastle
- Professor Anthony Costello, Professor of Global Health, UCL; former Director at WHO
- Professor Karl Friston FRS, computational modeller, UCL in charge of developing a generative SEIR COVID19 model
- Professor Susan Michie, UCL, behavioural psychologist, member of SPI(B), SAGE sub-committee
- Professor Deenan Pillay, Professor of Virology UCL, former SAGE member
- Professor Kamlesh Kunti, Professor of Primary Care & Diabetes, University of Leicester
- Professor Christina Pagel, mathematician and professor of operational research, UCL
- Dr Zubaida Haque, Deputy Director Runnymede Trust. Commissioner on the Women's Budget Group Commission on a Gender-Equal Economy and a Fellow of the Royal Society of Arts.
- Dr Alison Pittard, Dean Faculty of Intensive Medicine
- Professor Martin McKee, Professor of European Public Health, London School of Hygiene and Tropical Medicine; WHO advisor; Research Director of European Observatory of Health Systems & Policies

229. While the Independent SAGE panel was on air for this first public meeting, the government responded by finally releasing a list of government SAGE membership - minus two names - after they had withheld this information for three months. They also announced that they had just published some - but not all - minutes of their meetings.

230. Independent SAGE subsequently ran weekly online public meetings and produced short reports developed by a broad range of experts from epidemiology, primary care, virology and immunology, public health, global health, infection control, behavioural science and minority and BME issues **(AC/125 [INQ000268220]).** The expert panel and guests answered questions from the public and media about science and policy issues relevant to the pandemic. We also provided our independent public health reports and recommendations to the chief government advisers, to the public online, and coordinated access to the media for our experts to answer pandemic questions.

Evolution of Independent SAGE over time.

231. Independent SAGE has produced more than 40 short expert reports, many more briefs and short statements to help the public, and hosted multiple public engagement events. We have answered questions relating to the science from the public, journalists and broadcasters across a whole range of topics. Report and statement categories include:

    - Education (21)
    - Find, Test, Trace, Isolate, Support (17)
    - Inequalities and Ethnic Minorities (9)
    - Lockdowns (17)
    - Media highlights (198)
    - Mitigation measures (54)
    - Overall COVID-19 Strategy (64)
    - Public Inquiry (2)
    - Q&As (4)
    - Recent reports (4)
    - Short statements (52)
    - Vaccines & variants (30)
    - Briefings (presentations & youtube links) (127)

232. The format of our 60-75 minute public meetings was first to have a 10-15 minute review of available Covid data presented by Professor Christina Pagel (and later by other excellent data scientists like Dr Kit Yates and Dr Duncan Robertson) followed by a 15-20 minute discussion with one or two invited experts on a particular topic, followed by questions from the public and media. We have had contributions from UK experts, doctors, nurses, NGOs, trade unions, MPs, shadow Ministers and patient groups on a wide variety of public health, scientific, clinical, social and BME issues. The night before our public meeting the expert group would have a 60-90 minute private discussion online to share and clarify messages.

233. All of our expert panellists involved are doing this as **unpaid voluntary work**. They commit hours of their time every week to discuss the science, explain it to and discuss it with the public and produce reports. They put advice into the public domain because they believe the public wants to hear about the science surrounding COVID-19 and the thinking that underpins the government's strategy. Online meetings are still ongoing, live every fortnight (through public demand), to discuss data, questions about the pandemic, variants and immune issues, Long Covid, vaccination, clinically extremely vulnerable groups, mental health, protection in the work place, global responses and to answer any other pandemic-related questions from the public.

    <u>International perspective to learn lessons from other countries.</u>

234. We have also had guest contributions from numerous international experts from WHO, from East Asia, the USA, Canada, EU states, Israel, Africa, Latin America and India. Examples of international experts include:

- Right Hon Helen Clark, Former Prime Minister of New Zealand,
- Professor Elias Mossialos, director of LSE Health, Former Minister of State in Greece,
- Professor Eric Topol, Founder & Director, Scripps Research Translational Institute USA
- Professor Deborah Lupton, Centre for Social Research in Health, University of New South Wales
- Julia Moore Vogel, Program Director, Scripps Research
- Sir David Nabarro, WHO Special Envoy on Covid-19 for the World Health Organization,
- Professor Peter Hotez, US vaccinologist
- Dr. Yaneer Bar-Yam, Israeli specialist in the quantitative analysis of pandemics
- Dr Danilo Buonsenso, Italian paediatrician.

Overview of the issues addressed by Independent SAGE during the Covid-19 pandemic.

<u>The 'find test, trace, isolate, support' system</u>

235. I have already discussed the failure to develop a rapid and effective FTTIS system above because:

- it was critical to the early response,
- It explains why the UK suffered such a long national lockdown with all the economic and social damage it caused, and why we had to have repeated long lockdowns before vaccination lowered the risk
- It was a prime reason why we established Independent SAGE.

236. In Independent SAGE reports, and in our meetings weekly, we explained why the government system of FTTIS was not fit for purpose and how it could be improved. These issues were not discussed in SAGE, nor in the national press conferences. See our Independent SAGE Report on Sept 11 2020 Testing for COVID-19: the why, the who and the how **(AC/126 [INQ000249681]).**

237. Our Independent SAGE Short Statement on June 26 2020 **had already** raised major concerns that Test & trace was still **'deeply inadequate' (AC/127 [INQ000268206]):**

"*If current infection rates continue, we could see 20,000 more deaths by spring 2021.*

- *Chief Medical Officer Chris Whitty suggests virus will continue to circulate at 'significant' levels; at current levels this shows at least 20,000 more people could die by April even before further rules relaxed*
- *Re-opening of pubs & restaurants on Independence Day 'sends totally wrong message to public.'*
- *Independent SAGE 'extremely concerned' that infection rate has stopped declining. Lifting of multiple restrictions at once = 'too much risk'*
- *'We need to understand that thousands of people will die even without a second spike if we don't keep trying to suppress the spread'*
- *Test & trace still 'deeply inadequate' – only one third of people providing at least one contact*
- *Key data missing from government's figures. No numbers at all on number of people isolating following contact tracing*

We are extremely concerned about what our analysis of the data shows. The number of cases has stopped declining and even if we carry on at the same level, without any second spike, tens of thousand of people could die. It seems astonishing that the government would choose this moment to relax multiple rules at the same time. We are particularly concerned at the decision to do this on both a weekend day and American Independence Day. It sends totally the wrong message to the public. Stephen Reicher, Professor of Social Psychology at the University of St Andrew, a member of both SAGE'S SPI-B and Independent SAGE's behaviour science sub-group, said: "Things are not back to normal and we can't act as if they are back to normal." He added: "It is a national scandal that pubs have opened before schools."

National and local lockdowns

238. **For a summary of our reports on lockdowns see (AC/128 [INQ000268209]).**

Why a population immunity strategy won't work

239. **See our Report on September 25 2020 (AC/129 [INQ000249682]);** *"A deliberate strategy of attempting to raise the level of population immunity by allowing or encouraging people at lower risk of hospitalisation or death to become infected is not only unlikely to achieve the desired objective of population immunity (often called "herd immunity"), but risks a significant amount of avoidable death and illness, without protecting the economy."*

A six week plan to reduce cases

240. See our Report on October 16 2020 which outlined a six week plan to get Covid-19 cases down and to rebuild the public health and social scaffolding we need to ease restrictions safely **(AC/130 [INQ000249683]).**

Suppression or containment?

241. See also our report on the strategy for Covid-19: maximum suppression or mere containment **(AC/131 [INQ000249684]):**

"*We welcome the following features of the UK Government's Roadmap for England for Spring 2021: (a) Measures introduced in 5-week phases, with time gaps built-in for data-informed reviews against four tests (relating to vaccination rollout and efficacy – and viral spread and mutation). (b) Prioritising school opening and then outdoor activity, the latter being associated with at least 20x less risk than indoor activity.*

However, there are clear deficits in the approach, which endanger its overall ambition of ensuring that the route out of lockdown is 'one-way' and irreversible. These include:

- *The absence of an overall strategy for pandemic control over and above vaccination*
- *Opening of schools and colleges on a single date (March 8th) without sufficient mitigating or compensatory measures*
- *Insufficient focus on addressing inequality, thus risking turning COVID into a disease of the poor.*

This paper addresses these three areas with links to Independent SAGE's previous report, which sets out recommendations for a sustainable suppression strategy for keeping society open."

Social distancing guidelines and ending restrictions

242. See our Independent SAGE statement on 2m vs 1m social distance guidance in indoor settings. June 22 2020**. (AC/132 [INQ000249685]):**

"*Independent SAGE warns that it is not safe to relax social distancing rules for indoor settings and that the government's proposal to reduce to 1 metre will 'effectively end' social distancing in Britain.*

- *Risk of transmission still too high to reduce social distancing rules indoors, say committee of leading scientists chaired by former Chief Scientific Adviser, Sir David King*
- *Impending government announcement expected on Tuesday to pave way to open offices, restaurants and pubs too soon, say scientists*
- *Independent SAGE says it is 'crucial' that government publishes evidence behind decision so public, parents and businesses can make their own decisions*
- *Daily number of new cases still too high, evidence needed that it has dropped to much less than 1,000 a day before relaxing rules*
- *Reducing the measure to 1 metre indoors will 'effectively end' social distancing measures*
- *BME and low-paid groups are most as risk as a higher proportion areunable to work from home*
- *Government ignoring advice of its own SAGE committee which recommends keeping 2 metre rule*
- *No way of containing outbreaks without a functioning contact tracing system in place*
- *Risk greatest indoors – 97% of superspreading events occurring in indoor spaces"*

243. See also **(AC/133 [INQ000268207])** on the Roadmap for ending all restrictions.

Shielding

244. See the 30 June 2020 Independent SAGE Report **AC/134 [INQ000273599]:**

"*We have deep concerns about the plans for shielding to be 'paused' on 1st August. At the same time that 'pausing' is implemented, statutory sick pay for those shielding will be stopped. The free food boxes that have been provided by the government for those shielding will also be stopped. In addition, the new guidance on 'pausing' includes the advice that "you can go to work, if you cannot work from home, as long as the business is COVID-safe."*

As a more equitable alternative to these policies we recommend that the government:

- *Removes the 'return to work' advice from the guidance on the pause in shielding on 1 August.*
- *Ensures that there is no pressure from employers for people shielding to return to work until scientific studies have been carried out in the actual environments of workplaces about risks of transmission. We have, at present, very little evidence about how to ensure "COVID -safe" working practices in various industries and the service sector.*
- *Consults with shielded persons, relevant charities, and unions who are protecting the interests of shielding people about the implications of their current policies and develops new ones.*
- *Reviews the potential joint impact of changing statutory sick pay, Treasury furlough and central government shielding policies as they may disproportionately impact minority ethnic groups and precarious workers.*
- *Introduces new employment regulations at the central level that prevent discrimination against people shielding because they are vulnerable to COVID-19.*
- *For those returning to work, a full Risk Assessment is carried out by employers and individuals are given PPE and/or adjustments are made to their working environment."*

Opening of schools after the first national lockdown

245. Key findings of our schools report was published May 28 2020 after a public consultation on May 22, **(AC/135 [INQ000249686]):**

'*Government is failing to follow the advice of its own SAGE group in opening schools June 1, says Independent SAGE*

- *Independent SAGE chaired by former Chief Scientific Adviser publishes full report on schools reopening following consultation with parents and teachers*
- *Concludes government is not following advice of its own SAGE group reports*
- *Analysis by both SAGE & Independent SAGE reports show it is unsafe to open schools on June 1*
- *R will rise above 1 according to government's own figures*

- *Additional risk raised by questions over 'trust in the government and its messaging'*
- *Decision to re-open must be made based on risk assessment with schools and parents on a case-by-case basis*
- *Report warns of new surge in COVID-19 cases as result of 'top-down decision-making without engagement' with risk of schools being 'institutional amplifiers'*
- *Public consultation held with BMJ and Mumsnet fed into final report which includes a roadmap for school reopening & comprehensive q&a for parents and teachers*
- *Government must explore non-school alternatives for children over summer holidays led by community workers and volunteers including the use of independent school facilities and football stadiums.*"

246. Our report made an estimate of the risks related to different stages of opening and recommended a delay in reopening from June 1 to June 15 to halve the risk of being exposed to a contagious classmate, and to allow schools. We wrote:

"Delaying a school reopening by two weeks (to 15th June) approximately halves the risk that a child will be infected and delaying the reopening till September is less risky still. Staying at home at all time points is about half as risky as going to school, but also means that children do not get the benefit of having face-to-face learning and seeing their friends.Risk of death is extremely small for children at all time points. To put the very low chances of death from COVID-19 in perspective, the daily chance of being killed in a road traffic accident is about 0.074 per million (0.07/M). So, schools reopening in September present a slightly lower risk and reopening in June a slightly higher risk to a child than the background risk of a road traffic accident."

247. Table 1 shows the impact of delaying school reopening:

DATE OF RETURN	JUN 1		JUN 15		SEP 1	
	School	home	school	home	school	home
WHAT IS THE CHANCE A CHILD WILL BE EXPOSED TO A CONTAGIOUS CLASSMATE TODAY?	4.21%	1.76%	2.09%	0.87%	0.49%	0.19%
WHAT IS THE CHANCE A CHILD WILL CATCH THE VIRUS TODAY?	1.46%	0.61%	0.72%	0.30%	0.15%	0.06%
WHAT IS A CHANCE A CHILD WILL DIE FROM THAT INFECTION? (per million)	0.23/M	0.10/M	0.11/M	0.05/M	0.02/M	0.01/M

248. We assessed the strength of **epidemiological evidence** on whether children are less likely to be infected than adults, how sick do children get, and conflicting evidence about whether schools could trigger new outbreaks in the community.

249. We emphasised the importance of **local decision-making through a robust test and trace system locally**:

"We stress the importance of local considerations; some areas, especially rural ones, might be ready to reopen schools earlier than other places. Estimates of levels of infections must be based on up-to-date, real time, detailed, local data on suspected and confirmed cases. To ensure that any local outbreaks are quickly identified and contained, we strongly recommend that local test, track and isolate programmes are in place and are tested and shown to work locally before schools reopen." "Robust testing and tracing procedures, along with support for people and families to self- isolate, will reduce the chance of infectious staff, parents, or children attending school (or anywhere else). They will also quickly spot any new cases of infection that do arise in a school. So if a class or school then has to close temporarily after reopening, this should not then be seen as a failure — or evidence that opening was premature — but instead as an integral part of a community-based tracking and testing programme that will play an essential role in delaying, and hopefully preventing, any second wave of infection. In other words, the school community may have a central role to play in not only meeting the educational and other needs of children but also in providing an effective surveillance structure that will be essential in keeping local communities safe. We need a capability for local real time "Test, Trace and Isolate" data to ensure a rapid response, with clear criteria to act and plans in

place to re-close schools if need be. Planning for such re-closure is essential and must include measures to maintain educational opportunities for pupils".

250. We considered the **risks to parents and teachers** linked with other risk factors:

"*such as age, being male, coming from a low income background, underlying health conditions (e.g. diabetes, high blood pressure) and being from Black and Minority Ethnic (BAME) backgrounds may make teachers and staff more. vulnerable to death, in particular in cities with high BAME populations (Williamson et al.,2020). The risks for those most vulnerable and those shielding are very much higher than an adult without any risk factors. Jan 2019 Department of Education statistics on pupil characteristics showed that over a third (33.5%) of pupils in primary schools were from minority ethnic backgrounds and as were just under a third (31.3%) in secondary schools (Department for Education, 2020). Additionally, many support workers are from lower income and BAME backgrounds, rendering them more vulnerable to infection and subsequent complications. It is therefore important to consider local COVID 19 infection and death rates as the best indicator of the risk from any future school-based outbreaks.*'

Safe learning

251. The Report also emphasised the need for **strong government measures to protect children,** especially those from **deprived communities,** and to provide for **children's safe learning** if any school had to re-close due to an outbreak. *Returning to school is important for children psychologically and socially, as well as educationally and we should aim to support all year groups to return to school safely. In vulnerable households or where there is a history of domestic abuse it is even more important. We therefore raise the possibility of using a wide range of empty facilities - independent schools, sports facilities as examples - to allow those most in need of face-to-face education and social support to receive it, not only during the summer school term but also over summer holidays. This could be in the form of summer camps where social and physical development could be supported, with some education where possible. We note that SAGE too emphasised the need to support schools and students in more deprived areas.* Some observers have falsely claimed that Independent SAGE supported prolonged school closures. Our report suggested schools could open if there was an effective local test and trace system as early as mid-June 2020, and that holiday interventions to allow children to catch up should be a high priority. Neither local test and trace, nor investment in vacation interventions, received proper attention and investment.

Face coverings and masks

252. See our Independent SAGE report July 15 2020 'Policy for England on face coverings to reduce transmission of SARS-CoV-2 An Independent SAGE Report following public consultation on 14th July 2020 15 th July 2020' **(AC/136 [INQ000249687]).**

"The government should:

- *Launch a comprehensive public information campaign to promote effective wearing of face coverings in enclosed public indoor spaces where distancing from others is not possible. It should*

  - tailor the campaign to communities, using a range of languages and media (including non-digital media) in a culturally appropriate manner.

  - explain how face coverings can provide a benefit, what kinds of coverings to use, as well as how they should be worn, stored, and disposed of or cleaned, and why some people will not be able to wear face coverings.

- *Promote adherence to wearing face coverings by engaging with communities, explaining and encouraging, with enforcement kept light touch as in Scotland.*

- *Ensure equity, including access to free face coverings for those who cannot afford to buy them.*

- *The Government, employers and other relevant organisations should*

  - *Ensure that face coverings are used alongside, not instead of, other protective measures such as continued rigorous hand cleansing regimen, physical distancing measures, cough and sneeze etiquette, as well as improving ventilation.*

  - *Engage with appropriate organisations to address the needs of those with physical or mental health conditions or disabilities."*

<u>Inequalities and ethnic minorities.</u>

253. Dr Zubaida Haque, Professor Kamlesh Khunti and Dr Tollulah Oni brought invaluable experience and insights to our work on this important topic. In our November 2020 Report 21 on **Covid-19 and Health Inequality** we noted that the most deprived neighbourhoods in England had a COVID-19 mortality rate more than twice that of the most affluent **(AC/137 [INQ000249688])**. Likewise, people in the lowest paid occupations were twice as likely as those in higher occupational groups (such as professionals and business leaders) to die from COVID-19.

254. This report examined these inequalities in COVID-19 in more detail – contextualising them within the wider issue of health inequalities. The report provided an overview of socio-economic health inequalities in the UK, summarised epidemiological evidence of socio-economic inequalities in relation to COVID-19 (both in the UK and internationally) and examined the pathways linking COVID-19 and inequality. It also examined inequalities and the impact of the emergency policy response to COVID-19, including the lockdown, the emerging parallel pandemic of restricting non-COVID NHS services, mental health impacts, rising homelessness and school closures. Part four examined the emerging evidence of an unequal COVID-19 economic crisis and the impact that it could have on future health inequalities.

255. The report concluded by outlining some key recommendations whereby local government and devolved authorities, the NHS and national government could act to reduce these inequalities.

256. In January 2021 our Report on **Racialised Stigma and Inequalities** discussed recommendations to promote social cohesion **(AC/138 [INQ000249689]):**

"The COVID-19 pandemic has led government, media, and social media to develop narratives to attempt to explain the dangers of transmission. Too often these explanations have generated blame narratives that divide communities into 'spreaders' of the virus and those who are vulnerable to such spread. These accounts land in already divided social environments and can lead to increased division, stigma and hate crimes, especially in areas bearing the strain of long-term regional lockdowns and economic disadvantage. Greater divides are likely to lead to worse public health, social and economic outcomes. Therefore, such government and media communications can directly increase the structural racism faced by minoritised ethnic and religious groups. This report presented recommendations for avoiding the fueling of stigma. This was particularly important during the second wave of COVID-19 and in the context of localized mass testing and the vaccine roll-out. Recent research indicated that preventing an increase in social divisions is the most effective route for public health interventions. Areas that are high on the index of multiple deprivation, but which have had investment in social cohesion also had lower rates of transmission of Covid-19. Greater divides were likely to lead to worse public health and social outcomes."

<u>Long Covid</u>

257. As early as January 2021 we reported on Long Covid and the threat it made to hundreds of thousands of people infected **(AC/139 [INQ000249690]).** We wrote that Long COVID – when symptoms of COVID last for many weeks and months – affects people of all ages and even those with mild initial symptoms. Current best estimates were that between

5-10% of people who get COVID will develop Long COVID. We didn't yet know "*how long it takes for lingering symptoms (most commonly fatigue) to resolve, but for some people there will be permanent organ damage. New specialised services are being set up to help those with Long COVID recover. These need to be expanded across the country and existing national guidelines communicated to all clinicians. As this is still a new condition, it is important to set up national databases and research projects to learn more about risk factors, causes, time course and treatments, in partnership with patients.*"

258. The ONS did much valuable work on documenting the scale and nature of this huge problem which affected, at any one time, over two million people and undoubtedly contributed significantly to the 450,000 people aged 16-64 who are missing from employment figures in May 2023 compared with pre-pandemic employment levels. We are disappointed that in 2023 surveys of Long Covid were stopped.

259. The latest 2023 superb review on the mechanisms underlying Long Covid is written by Indie SAGE member Professor Danny Altmann and colleagues **(AC/140 [INQ000249691]).** They conclude "*The oncoming burden of long COVID faced by patients, health-care providers, governments and economies is so large as to be unfathomable, which is possibly why minimal high-level planning is currently allocated to it. If 10% of acute infections lead to persistent symptoms, it could be predicted that ~400 million individuals globally are in need of support for long COVID. The biggest unknowns remain the joined-up scheme of its pathogenesis and thus the best candidate therapeutics to be trialled in randomized controlled trials, along with a better understanding of the kinetics of recovery and the factors influencing this. Some countries have invested in first-round funding for the pilot investigations. From the above, far more will be needed.*"

Myths to counter misinformation and disinformation about Covid

260. There are a lot of myths circulating on social media, in the newspapers and on TV. Some of these myths have their origins in genuine ignorance or confusion (misinformation) and some are spread deliberately with intent to deceive (disinformation). On 7th October 2022, Independent SAGE ran a special live streamed 'myth-busting' session for the public to address some of the common misconceptions about the virus which are currently circulating. We described 12 myths about the pandemic and provided an explanation of why they were wrong **(AC/141 [INQ000249692]).**

Launch and contributions of the Behavioural Advisory Subgroup

261. The formation of the group recognised the central role of the behavioural and social sciences in the response to Covid-19. Every measure to counter the spread of infection is dependent upon the understanding, engagement and adherence to guidance of the public,

whether that be self-isolating, social distancing, practising self-protective behaviours such as hand cleansing, getting tested or (eventually) getting vaccinated. See **(AC/142 [INQ000268208]).**

262. The Independent SAGE Behavioural Advisory Group included leading authorities in anthropology, behavioural sciences, criminology, health studies and psychology. Some of the members also participated in UK-wide and Scottish government advisory groups. Its role was complementary, not an alternative, to these other roles. It supported Independent SAGE in looking in depth at key policy issues, including ones not currently on the government's agenda.

263. The Behavioural Advisory Group aimed to help in the development of constructive proposals and policies that would help the UK Government lead the country out of the worst public health crisis of our lifetime.

264. Members of the Behavioural Advisory Group were as follows:

- **Imran Awan** is Professor of Criminology at Birmingham City University and a leading expert on Islamophobia and countering extremism. He is a participant in the UK government's SPI-B group.
- **Val Curtis** was Professor of Hygiene and Director of the Environmental Health Group at the London School of Hygiene and Tropical Medicine. She is an evolutionary anthropologist specialising in hygiene behaviour globally. She is a participant in SPI-B. (Sadly died in 2021)
- **John Drury** is Professor of Psychology at the University of Sussex specialising in research on collective behaviour including behaviour in emergencies. He is a participant in SPI-B.
- **Susan Michie** is Professor of Health Psychology and Director of the Centre for Behaviour Change, University College London. Her research focuses on behaviour change in relation to health and the environment. She is a participant in SPI-B and advises the World Health Organization on behavioural science in relation to Covid-19.
- **Ann Phoenix** is Professor of Psychosocial Studies at the Thomas Coram Research Unit, UCL Institute of Education. Her research focusses on racialised and gendered identities, family lives and home, migration and transnational families.
- **Stephen Reicher** is Professor of Psychology at the University of St. Andrews. His work addresses group processes, with special emphasis on processes of leadership, influence and collective action. He is a participant in SPI-B and in the Advisory Group to the Scottish Chief Medical Officer on Covid-19.

- **Elizabeth Stokoe** is Professor of Social Interaction at Loughborough University. She is an expert in conversation analysis. She is a consultant for SPI-B.
- **Robert West** is Emeritus Professor of Health Psychology at University College London and Editor-in-Chief of the journal *Addiction*. He specialises in addiction and behaviour change. He acts as advisor to Public Health England on tobacco control and behaviour change. He is a participant in SPI-B.

Liaison by Independent SAGE with official SAGE and its sub-groups

265. Professor Sir David King shared our reports in the first year of the pandemic with Sir Patrick Vallance. Professor Susan Michie and Professor Stephen Reicher were on the SAGE Scientific Pandemic Influenza (sic) Behaviour group as well as on Independent SAGE. I understand that several members of Independent SAGE such as Professors McKee, Pillay, Friston and Khunti had informal connections and discussions with SAGE members. In 2021 Professor Khunti joined the official SAGE group to advise on primary care and non-communicable disease issues. We made approaches to SAGE members and senior advisers to join our public meetings but these were rebuffed.

266. Given my own experience as a director at WHO, and the public concerns I raised about SAGE's failure to follow WHO advice, I was a little surprised that no-one from the CMO's office made any contact with me. Having worked with Professor Whitty in the past I would have been happy to help. On March 15 2020 I had emailed Chris Whitty saying:

"*Dear Chris, I know you must be incredibly busy and under great pressure. I quite understand the need to stagger some measures around social distancing, but many of us are at a loss to understand why the government has abandoned intensive population surveillance, contact tracing and quarantine nationwide, which is the bedrock of WHO advice on epidemic control. Korea, Japan, Taiwan, Hong Kong and China did this to suppress their epidemics. If population surveillance can be restored and effectively rolled out (with large scale community mobilisation and testing centres) I think we can get broad consensus to support you. But without it, I fail to see how you can really delay a huge epidemic in the next month which could totally overload the health system. I'm copying Devi, David, Richard and Jason, who I think agree with me. Warm regards, Anthony*".

I didn't receive a reply. **(AC/142a - INQ000282428)**

267. **Siege mentality**. On March 17 Richard Horton emailed me to say "*Patrick Vallance said that he had approached scientists who disagree with the government's strategy. Have you been engaged with*?" The answer was No. Official SAGE seemed to have a siege mentality with regards to external criticism. It would have been much better if they reached out to public health leaders and some dissident voices

268. There was a marked difference in the issues that SAGE and Independent SAGE explored. Little attention was given by SAGE to modelling the importance of test and trace, to analysing the systemic failures of contact tracing, and no analysis was conducted on the low level of financial support for lower income households who were asked to isolate. These were key issues addressed by population health scientists. The financial support for poor households was absolutely critical in ensuing compliance with isolation and quarantine. East Asian states showed how generous financial and logistic support to households was critical in their rapid suppression of their national epidemics, which in turn led to avoidance of national lockdowns and the economic harms that that caused. The absence of any independent public health scientist on SAGE contributed to this myopic approach.

Did Independent SAGE succeed in guiding or influencing UK policy decisions?

269. The evidence that we brought to the public domain through our Reports, online discussions and media interviews undoubtedly had an influence on public debate and the timing and nature of some of the decisions of government. But the government and SAGE advisers did not reach out to our experts who could have helped them, especially in the areas of public health, community engagement and mobilisation, data presentation, social safety nets for vulnerable and minority groups and for a mechanism to ensure cases were found and isolated effectively.

270. In our first Report in May 2020 **(AC/143 [INQ000249693])** we laid out the priorities for measures to be taken to support a gradual release from social distancing measures through a sustainable public health response to COVID-19. We drew extensively on the policy considerations proposed by the World Health Organization, which provided a clear structure on which an effective policy should be based given the inevitability that the virus would continue to cross borders. Many of these issues were not adequately addressed by the government which led to sustained transmission of the virus leading to many preventable deaths.

271. From April 2020 onwards, having lost confidence in SAGE, the government put ideology before evidence and went for a disastrous privatised and ineffective FTTIS. In autumn 2020 Chancellor Sunak sought the advice of a small group of 'herd immunity' scientists (linked with Professor Sunetra Gupta of Oxford) who wanted to let the virus spread unchecked, despite evidence that failed to support their ideas and against the advice of both SAGE and Independent SAGE.

Lessons Learned and Recommendations for System Change

Systems Lessons to ensure we Act Fast with the Right Strategy

272. Comprehensive public health measures are crucial for early management of a pandemic. Unless there is unequivocal evidence about the Ro and the level of asymptomatic infection to rule out 'find, test, trace and isolate' measures, it should be a national priority to rapidly develop a test incorporated into our national health service, to set up and mobilise a large scale national contact tracing system, and to ensure all members of the population receive adequate financial and community support to isolate effectively.

273. Clinicians are not the right people to lead on strategy for a pandemic.

274. Senior public health officials with extensive experience in population infection control must be at the centre of strategy decisions. There is a strong case now for the UK to have both a chief medical officer (CMO) to advise on medical interventions (vaccines, drugs, health care) and a chief public health officer (CPHPO) to advise on disease prevention, pandemic management, vulnerable populations and public health strategies.

275. International and independent expertise should always be sought in planning and tackling a pandemic, with representation on any future SAGE or PAGE (Pandemic Advisory Group of Experts).

276. A pandemic threatens the lives of citizens more than warfare. Any strategy must have 'no regrets'. Better to go hard and fast, than regret delays later.

277. A new strategy should be designed **and tested** for mechanisms for communication about health and emergencies through local media, schools, in public meetings and with vulnerable or minority groups.

278. Public trust has been eroded by disinformation on both social and mainstream media. We need a proactive strategy to tackle disinformation especially among marginalised groups. Anti-vaccination disinformation is dangerous and health professionals that spread it through malice or for money should be heavily sanctioned.

Systems Lessons for an Expert Advisory Group

279. Scientists and policymakers must work more closely and collaboratively together in order to ensure the effective translation of scientific advice into evidence-based policy. The definition of science by SAGE during Covid was far too narrow.

280. We need a national standing committee, a Pandemic Advisory Group of Experts (PAGE), that meets at least annually to review all strategic, logistic, microbiological, infection control and community mobilisation activities relevant to a national pandemic response. The Institute for Government wrote that *"as an ad hoc committee, SAGE was not designed for*

the semi-permanent role it has had during the Covid crisis." A PAGE would give the threat of a pandemic the heft that it deserves.

281. The committee should produce a detailed Pandemic Manual for Operations, updated annually, with clear guidelines for the immediate national response.

282. I agree with Professor Neil Ferguson that the Inquiry would "*benefit from looking outside the UK for examples of alternative models of scientific advisory structures*". We might learn from the procedures of WHO for its expert advisory groups e.g for global vaccination and for its crisis team. We should also look at countries like South Korea and Japan for ways in which they consult with local government, run annual emergency preparation workshops, and how they develop their detailed pandemic manuals of guidance for action.

283. Formal guidelines should be developed quickly for the selection and terms of service for PAGE membership to ensure independence, gender, ethnic and discipline diversity, transparency and candour, and term limits.

284. The PAGE should be co-chaired by a senior politician (perhaps the chair of the Health Select Committee to keep a slight distance from government) and the chief medical officer.

285. If the CMO has little public health training, a chief public health officer with experience and expertise in infection control should be appointed and asked to be the co-chair.

Systems Lessons on Leadership and Accountability

286. I have already mentioned the need for a national standing committee, a Pandemic Advisory Group of Experts (PAGE), and a Pandemic Manual for Operations, updated annually, with clear guidelines for the immediate national response. In addition we need;

287. A clear decision-making organogram that defines the technical and political leadership working in tandem, and how decisions will be made and by whom. In the early stages of a possible pandemic the Prime Minister must chair Cobra meetings when pandemic threats arise.

288. Independent data and mathematical experts must be on standby to advise civil service decision-making from day one to scrutinise the recommendations of pandemic and scientific advisory groups.

289. Clarity on the *independence* of advice from chief scientific and medical advisers, and their separation from political 'ownership' through defined independent exposure to the media.

290. Clear protocols for plans and actions in the early stages of a pandemic with defined management roles and responsibilities.

291. The district public health teams should be directly engaged in developing local manuals for pandemic action, in recruitment and training of a standing cadre of volunteers (one per 1000 population) who can assist in emergencies, and can liaise with the public and vulnerable groups to counter misinformation or disinformation.

System Lessons on Growing Inequality as a Root Cause Of Poor Pandemic Outcomes

292. The roots of poor public health lie in growing economic inequalities, from policies that put market dogma before livelihoods and opportunities for people. Since 1980, social and economic inequalities have soared within many nations, including the UK. A key priority is to tackle inequality of opportunity, poverty and 'levelling up' across the UK through progressive economic policies

293. Inequality of investment in pandemic preparedness. Since 2008 the UK National Risk Register has in every year rated a viral pandemic as the top civil threat. The UK keeps a standing army, air force and navy. In 2019/20 it spent £39 billion on defence because the first duty of a government is to keep its population secure. In the same year we spent just 8% of this figure for all public health activities, despite the NHS Long-Term Plan making prevention of ill-health a priority **(AC/144 [INQ000249694]).** For infectious disease surveillance and control, the budget in 2018/2019 was just £86.9 million, about 0.22% of the defence budget. Spending to prevent a pandemic is an investment not a cost. This pandemic has damaged the UK economy to the tune of many hundreds of billions of pounds and the economic damage is ongoing with up to half a million of our workforce still missing due to sickness, much of it probably due to Long Covid.

294. *"Although a viral pandemic was known to be our top threat and the UK thought it was well-prepared for one, clearly we were not. We must learn from our successes and failures in this pandemic to be better prepared for the next one that will inevitably strike."* wrote Venki Ramakrishnan, Nobel Laureate and President of the Royal Society in the Sunday Observer (**AC/145 [INQ000249696]).** **"***That would be a way to honour the tens of thousands of deaths – each one a tragedy"***.**

Statement of Truth

I believe that the facts stated in this witness statement are true. I understand that proceedings may be brought against anyone who makes, or causes to be made, a false statement in a document verified by a statement of truth without an honest belief of its truth.

Signed: _____ Personal Data _____

Dated: _____September 25 2023_____