

Witness Name: Sir Christopher Stephen Wormald
Statement No.: 6
Exhibits: CW6/1-CW6/86
Dated: 6 June 2023

UK COVID-19 INQUIRY

SIXTH WITNESS STATEMENT OF SIR CHRISTOPHER STEPHEN WORMALD

I, Sir Christopher Stephen Wormald, of the Department of Health and Social Care, 39 Victoria Street, London SW1H 0EU (the Department), will say as follows:

1. I make this statement in response to the supplementary Rule 9 request from the UK COVID-19 Public Inquiry (the Inquiry), dated 17 April 2023, requiring the Department to provide the Inquiry with a further witness statement in respect of specified matters relating to Module 1. This statement should be read in conjunction with my first statement concerning Module 1, dated 25 November 2022 (my first statement) and my second statement concerning Module 1, dated 10 May 2023 (my second statement).
2. As this is a corporate statement on behalf of the Department of Health and Social Care (the Department) it necessarily covers matters that are not within my own personal knowledge or recollection. Where a matter is within my personal knowledge, I have sought to make this clear. This statement is to the best of my knowledge and belief accurate and complete at the time of signing. Notwithstanding this, it is the case that the Department continues to prepare for its involvement in the Inquiry. As part of these preparations, it is possible that additional material will be discovered. In this eventuality the additional material will of course be provided to the Inquiry and a supplementary statement will be made if need be.
3. For matters before 2016, my statement relies on Departmental records. For matters after 2016, I am relying on my own experience and recollection, and Departmental records. I have also consulted with colleagues in the Department, in order to provide as robust an account as possible on behalf of the Department.

Structure of this statement

4. The matters referred to in this statement relate, for the most part, to the date range specified by the Inquiry, namely between 11 June 2009 and 21 January 2020. I will make it clear where I refer to matters outside this range.

5. In order to provide the Inquiry with the further evidence it requires as quickly as possible within this statement, I have focused on the following key areas of concern to the Inquiry:
 - 5.1. Epidemiological Issues
 - 5.2. Response Capabilities
 - 5.3. Governance Structures
 - 5.4. International Bodies
 - 5.5. Clinical Countermeasures
 - 5.6. Legislation

Epidemiological Issues

6. Within my first statement (at paragraph 36) I explained that the planning assumptions which were applied to a plan for pandemic influenza would have considerable overlap with a plan for other diseases easily transmitted by the respiratory route due to shared characteristics. I am asked to consider the extent to which the differences between these types of pathogens were taken into account within these planning assumptions.

7. There are a wide variety of possible pathogens which can lead to a pandemic, each of which will pose distinct challenges to any response. Within each pathogen there are also ranges of possible disease characteristics, as both the mortality and the transmissibility can cover a very wide range, which will significantly impact the measures that need to be taken in response. Given the significant uncertainty regarding these characteristics, both within and between pathogens, it is impossible to accurately predict every eventuality. Therefore, the Department's approach to pandemic preparedness was to ensure that there were core capabilities in place, based on our understanding of how the most significant threats we faced were likely to materialise, which could be applied to known and emerging disease threats.

8. The Department was aware that the mode of transmission of any pathogen was important when planning a response (for instance, a disease with a faeco-oral transmission method is unlikely to be significantly impacted by a reduction in sexual

contact). Therefore, our planning assumptions acknowledged that respiratory diseases tended to share characteristics - a pathogen transmits via droplets or aerosols and sometimes fomites (objects contaminated by droplets directly or indirectly) between people in the same space - so some responses (such as reducing contact between people) will work across respiratory pathogens. Although there will also be specific measures in response to a particular pathogen (such as a disease specific vaccine), we considered that there was good reason to believe that the assumptions which applied for influenza would, generally speaking, at least be relevant to other respiratory diseases.

9. The Department used these assumptions to model the reasonable worst-case scenario (RWCS) in terms of transmission and infection rates for a respiratory disease, which in turn informed our pandemic preparedness plans. However, some aspects of pandemic preparation are very difficult to model in advance of the emergence of a particular disease. Other than in very general terms, it is difficult to predict and therefore accurately plan for the impact of a novel disease on a particular group of people, but systems were in place to perform this task once a new disease which posed a pandemic threat had emerged.
10. It should be noted that an important difference between COVID-19 and other diseases transmitted by the respiratory route (such as Middle East respiratory syndrome (MERS) and Severe Acute Respiratory Syndrome (SARS)), is the degree to which COVID-19 transmitted asymptotically. Asymptomatic transmission happens when the infected person does not have any symptoms but still passes the pathogen on to another person. This is relevant to the issue of planning assumptions because a virus with significant asymptomatic transmission would put different pressures on particular areas relevant to preparation (such as Personal Protective Equipment (PPE) outside clinical settings and testing),
11. The planning assumptions employed during Exercises Winter Willow, Cygnus, Valverde and Alice did not necessarily reflect this distinction, as we focused on the disease profiles of the main threats as we understood them according to the National Risk Register (NRR) (for example, the 2017 edition identified both the risk of pandemic influenza and of a severe new emerging infection of a SARS or MERS-type). There is very limited evidence of significant asymptomatic transmission in SARS and MERS, and so both were thought to have very low rates of asymptomatic transmission.

12. The mortality rates for SARS (10%) and MERS (35%) were also relevant to the planning assumptions we employed during some of the exercises mentioned above. In contrast to historical influenza outbreaks, including the 2009 Swine Flu pandemic and 1918 Influenza Pandemic, outbreaks of SARS and MERS both presented with lower case numbers, higher case fatality rates and as part of regionalised containable outbreaks. This experience suggested that future outbreaks of these diseases would require a High Consequence Infectious Disease (HCID) containment response, as opposed to the broader societal response required for a disease of pandemic scale. Notably, these mortality rates were both in fact higher than the applicable rate for COVID-19.
13. Looking back at the exercises mentioned above and the planning assumptions on which they were based, I am conscious that some of the assumptions we later used proved to be of relevance to the COVID-19 pandemic. For instance, despite initially relating to a different coronavirus (MERS), our investment in the UK Vaccine Network proved to be of direct relevance to providing a pharmaceutical countermeasure to the COVID-19 virus.
14. It should also be noted that the assumptions we used did not underestimate the possible scale of the threat posed by a pandemic. The RWCS for an influenza pandemic envisaged that a larger number of hospitalisations and deaths would occur than actually took place during the COVID-19 pandemic. It is therefore not accurate to suggest that planning on the basis of influenza led to an underestimate of the health impact of a pandemic, when considering what occurred during the COVID-19 pandemic.
15. I consider that the planning assumptions which we used prior to the emergence COVID-19 were a reasonable reflection of the advice we had received and the significance of the most likely disease threats which we believed we faced. It is notable that a similar approach was taken in many comparable European countries. Although I acknowledge that, in some respects, particular assumptions later proved to be different to the disease profile of COVID-19 (such as lack of significant asymptomatic transmission), I do consider that they were reasonable to make at the time.
16. I am asked to consider whether a response plan for SARS, MERS or coronaviruses generally, would have been more or less suited to adaptation for use in an outbreak

of COVID-19 as opposed to influenza. Regardless of its basis, the more that a disease plan resembled the disease characteristics of COVID-19, the better it would have been adapted to an outbreak of the disease. However, as explained above, our understanding of the likely characteristics of such diseases suggested that they would be suitable for a HCID response, based on low volume containment methods. This proved to be less applicable to COVID-19, which was in fact a wider pandemic and more akin to what we had anticipated for influenza. This serves to demonstrate the difficulty of predicting the precise nature of a disease simply by reference to the pathogen which causes it. Rather, we considered that due to the wide variation in possible disease profile, both within and between coronaviruses and influenza, a response plan which was specifically applicable to one type of disease could well be adaptable to the other.

17. Within my first statement (at paragraph 46) I provided some details of the SARS outbreaks which occurred between 2002 and 2004. The report relevant to the SARS outbreaks is now exhibited at (CW6/1). This was an internal report produced by the Department in 2005 (the 2005 SARS report), which contains an assessment of the impact and lessons learned from the outbreaks.

18. SARS disappeared for reasons which are not entirely clear in 2004, although control measures are believed to have contributed significantly to this. These control measures were based on preventing an infected person from spreading the disease to others. Within the 2005 SARS report these control measures were identified as:

- 18.1. identifying and isolating cases at the earliest opportunity (within 3 days of onset of symptoms);
- 18.2. rigorous infection control in the management of all confirmed and suspected cases in healthcare settings (including hospital isolation and clinical staff using full PPE etc);
- 18.3. monitoring the health of close contacts of infected cases;
- 18.4. limiting the movement of people from areas of known community transmission;
- 18.5. limiting mass gatherings where possibly infected people could infect others.

19. Within the 2005 SARS report, the general learning from the outbreak was noted to be the importance of:

- 19.1. a strong public health infrastructure and robust contingency planning;
- 19.2. co-ordination between public health and health service responses at all levels;

- 19.3. a clear command and control structure, to allow a decisive public health lead to be given at all levels;
 - 19.4. integrated communicable disease surveillance at national and local levels;
 - 19.5. surge capacity in hospitals and public health systems, including diagnostic services;
 - 19.6. clear and transparent communications throughout the outbreak - between and within key organisations and with the public, to secure their active participation in prevention and control measures - with information tailored to their needs;
 - 19.7. data handling systems to cope with the vast amount of information generated;
 - 19.8. international co-operation, co-ordination and assistance.
20. The 2005 SARS report also identified a number of points of learning concerning infection control which were considered critical to prevent the spread of infection to healthcare workers and other patients. These included:
- 20.1. strict adherence to infection control measures in hospitals;
 - 20.2. increased infection control measures which were essential during invasive medical procedures performed on SARS patients;
 - 20.3. rapid detection of illness and isolation of cases;
 - 20.4. the proper training and monitoring of healthcare staff in the application of infection control procedures;
 - 20.5. good personal hygiene measures practiced by the public.
21. Due to the high fatality rate for MERS, learnings from the outbreak centred around the need to ensure that there was adequate capacity and capability of resources - such as suitably trained clinical staff, PPE of sufficient quantity and clinical beds - in order to respond effectively to the virus (CW6/2). Outside of the UK, the most controversial and wide-ranging responses to MERS concerned restrictions to the movement of symptomatic, exposed and asymptomatic patients, for instance, the use of hotels to house such people in South Korea.

Response Capabilities

22. Within my first statement (at paragraph 93), I explained that infectious disease specific response capabilities were developed following previous disease outbreaks, pandemics and in response to other emergency health threats. These capabilities were relevant in the context of the COVID-19 pandemic. For instance, plans relating to response capabilities, such as medical evacuation (MEDEVAC), were available for use if required. MEDEVAC protocols were further developed to respond to the

2015 Ebola outbreaks and were further used in response to the 2019 outbreak (CW6/3). Capability for aeromedical evacuation for Ebola cases was also available through a civilian option with a World Health Organization (WHO) chosen MEDEVAC provider.

23. The UK's ongoing MEDEVAC capability is supported by specialist NHS Hazardous Area Response Teams (HART). HART is a specialist team of ambulance staff who have been trained to provide life-saving medical care in complex and challenging environments such as industrial accidents and natural disasters. They also provide high containment patient transfer capabilities for HCIDs and other threats. Plans relating to response capabilities outlined how NHS England maintained a minimum of one designated vehicle per ambulance trust for the purposes of transporting a patient(s) with HCID (including Ebola).
24. Experience gained from the planning process was put to use during the planning and operations for repatriation of British nationals from Wuhan and for supporting the return to the UK of British Nationals travelling on cruise ships in early 2020.
25. The specialist capabilities that are in place to deal with HCID are considered in my first statement at paragraph 300. The NHS High-Level Isolation Units and the seven-specialist airborne HCID treatment centres in England have limited capabilities to provide care to patients with such diseases, given their rarity in this country. Although the surge facilities are capable of providing support in the case of higher numbers of small clusters, they require significant resources and are therefore not suitable for scaling up to accommodate the significant numbers of patients who would require treatment during an event such as a pandemic. More recently, NHS England (NHSE) has agreed 20 further Specialist Regional Infectious Diseases Centres which will provide additional capacity in the event of a significant outbreak of a HCID, this has happened in the context of recent H5N1 ("avian flu") preparedness activity.
26. Within my first statement (at paragraph 95), I considered the impact of the work done as part of Operation Yellowhammer on the UK's response capabilities. An example of where such capabilities have been enhanced and emergency response capability improved is through the establishment of a Voluntary Emergency Response Team (VERT) by the Operational Response Centre (ORC) within the Department. This function, which was initially established as part of Operation Yellowhammer, was retained during the COVID-19 pandemic and was deployed to mobilise resources

from across the Department quickly, in support of incident planning and response. The Department used resourcing plans from Operation Yellowhammer which included draft rotas for up to a 24/7 model. In wave 1 of the pandemic, the Department implemented an extended hours model of 7am – 10pm (CW6/4-CW6/5). A further example of the way in which Operation Yellowhammer impacted the Department's response capabilities is in supply resilience. Work established through our multi-layered approach included building government and industry owned stockpiles, partnerships with industry and establishing the 24/7 National Supply Disruption Response Centre to support emergency supply response. This all enhanced the Department's ability to respond to a range of supply disruptions and help ensure continuity of supply during the pandemic.

27. Operation Yellowhammer also led to stronger links being forged between the Department and local level services, which arose due to a need to understand localised planning and readiness to respond to a possible 'no deal' EU exit. The concept of subsidiarity applied to these links, as information sharing and assessments were undertaken by local structures, such as Local Resilience Forums. Such bodies clearly had (and continue to have) an application within incident management structures in the context of disease response capabilities.
28. To clarify, the UK-wide approach to emergency planning (referred to in paragraph 95 of my first statement) pre-dated Operation Yellowhammer and did not arise as a result of it. Operation Yellowhammer included an assessment of the response to a RWCS in the event of a 'no deal' EU exit, which reinforced the need to maintain a UK-wide approach to emergency planning, but this general approach was already well established at the time (CW6/6-CW6/7).
29. This approach has been developed over many years and ensures that there is robust collaboration between the four nations of the UK on incidents that have a cross-border interest, such as a pandemic. Mutual aid has been a key aspect of this work, and has been deployed before, during and since the COVID-19 pandemic. As a result of the concept of subsidiarity, mutual aid typically takes place following requests made at a local level, for example between NHS Trusts or equivalent local health boards. Occasionally, such requests are coordinated centrally, either by NHSE or the Department. Within this approach, the Department acts as the primary conduit for coordination and information sharing between the NHS and wider government functions.

30. The Department continues to engage the health and social care system to test the robustness of communications in the event of an incident. This occurs through regular interaction between the communications teams within the Department and others across the health and social care system, for instance with NHSE and the UK Health Security Agency (UKHSA). An example of this recently occurred in relation to the communications issued by the UKHSA in response to the Mpox (Monkeypox) outbreak from May 2022 to January 2023 (CW6/8-CW6/10).
31. During the time period relevant to this statement, the Department undertook a number of exercises both intended and used to test capabilities and train staff. These are detailed at paragraphs 333-354 of my first statement and represent the position as of January 2020. Shortly following that date, the Department took part in Exercise Nimbus (February 2020) (CW6/11-CW6/20). This was a Civil Contingencies Secretariat (CCS) led whole of government table-top exercise. It was used to rehearse ministerial-level decision making for the UK's pandemic preparedness and response within the context of what was known at that point about the COVID-19 outbreak. I consider that, taken collectively, the learning that was generated from the exercises which occurred prior to the COVID-19 pandemic was of significant assistance to our planning and early response.
32. Within my first statement (at paragraph 430), I explained some of the key elements relating to funding of the 'Defence in Depth' strategy, which underpins the national pandemic preparedness approach. The details of this strategy, which was originally established within the 2007 National Framework (CW/394), are set out as part of the 2011 UK Influenza Pandemic Preparedness Strategy (CW/3). The details of the Department's spending on pandemic preparedness are taken from the annual accounts published at the time. This is the best audited information of actual spend available to the department. Full copies of the relevant annual accounts are documented (CW6/21).

Governance Structures

33. Within my first statement (at paragraph 96), I explained that pandemic influenza was the highest risk on both the NRR and the National Security Risk Assessment (NSRA), and that the Department was the Lead Government Department (LGD) for this pandemic risk. The Cabinet Office (CO) was (and remains) responsible for establishing and overseeing the processes of both the NRR and NSRA, which

includes the selection of specific risks and the assignment of them to LGDs (CW6/22).

34. The process by which specific risks were selected and formulated involved commissions from CCS (which sits within the CO) to the Department as LGD, requiring it to provide details of risk names and descriptions within risk scenarios. This typically occurred every two to three years and was a whole of government exercise, which included HM Treasury. Risks considered needed to pass a minimum threshold, were based on a RWCS and included an impact assessment (CW6/23-CW6/34).
35. When commissioned for risk assessments to include in what became the 2019 edition of the NSRA the Department followed a two-stage process. Firstly, the risk for inclusion in the NSRA was confirmed as the risk of an influenza pandemic; then, a draft RWCS and draft impact assessment that would be subject to expert scrutiny prior to cross-Government sign-off at Ministerial level.
36. The central RWCS, and “variations” describing alternative scenarios of less/more impactful or reasonable influenza pandemic scenarios were produced with input from experts from the Department and Public Health England (PHE), building on previous advice provided by the Scientific Pandemic Influenza Group on Modelling (SPI-M) (CW/1). Working with subject matter experts from across Government and NHS England, the impact of the advised RWCS on different sectors of society, including the economy and essential services, was assessed according to a methodology provided by the CO (CW6/35-CW6/37).
37. The draft RWCS and impact assessments were then cleared within the Department by CMO and at Director General level. Following a period of challenge and review managed by CO, the final versions were agreed by the Department prior to clearance across Government, this includes review and sign-off by the Government Chief Scientific Advisor (GCSA).
38. The Department provided submissions to the CO in advance of the 2016 NRA and the 2019 NSRA concerning an influenza-type disease pandemic and an outbreak of an emerging infectious disease (CW6/38-CW6/60). PHE were commissioned to advise on the Emerging Infectious Disease (EID) risk and associated RWCS.

Departments were encouraged to use the Economic Impact Assessment tool provided by CCS to assess the economic impact of the risks included in the 2016 NRA and 2019 NSRA. As an example, for the 2019 NSRA, Departmental analysts used the estimated number of fatalities and casualties from the pandemic influenza RWCS and input them into the tool. Based on this information, the tool subsequently calculated the economic impact of the scenario. This approach ensured consistency of estimates, which allowed impacts to be compared across the risks identified in the registers.

39. The selection of these two specific risk scenarios occurred in coordination with CCS and was informed by information provided by the Department as described above. The submission process then allows CCS to compare and prioritise these risks alongside others, in order to inform emergency plans and capabilities. The guidance produced by CCS to support this exercise explains this process in more detail (CW6/61).
40. The pandemic influenza RWCS was based on the planning scenario advised by SPI-M. The current RWCS, advised by SPI-M, is outlined in Annex 2 of its 2018 Modelling Summary (CW/1). The RWCS is based on SPI-M's analysis of previous influenza pandemics and seasonal influenza over the past century. It is an unmitigated pandemic, meaning it does not assume that interventions are successful at reducing transmission or severity of the virus. This is designed to support the government's 'Defence in Depth' approach to pandemic planning, which provides greater resilience and reflects the possibility that one or more mitigations may be ineffective.
41. To reflect the inherent uncertainty about the characteristics of a future pandemic influenza virus, the 2019 NSRA included several variations to the RWCS. These variations were based on the impact of previous influenza pandemics, the zoonotic influenza viruses circulating at the time, and scientific advice on the potential impact of clinical countermeasures (e.g. antiviral medication).
42. The government's likelihood assessments for an influenza-type disease pandemic included in the NRR and NSRA were based on the empirical evidence from previous pandemics caused by novel strains of influenza. The most serious of these to occur in the past century was the 1918/19 flu, which had a similarly high case fatality ratio (2-3%) and impact to the RWCS. Therefore, for the 2019 NSRA, it was judged that the likelihood of the RWCS occurring was approximately 1-2% within the next two

years, but it was also noted that milder influenza pandemics are more likely. The influenza pandemics in 1957/58 and 1968/69 were also large but had much lower mortality in comparison and the 2009/10 Swine Flu outbreak was comparatively mild.

43. The economic analysis conducted by the Department to support the procurement of pandemic countermeasures and consumables assessed the impact of an intervention across a range of plausible pandemic scenarios, not only a severe pandemic. The likelihood of these scenarios occurring was assessed using the same approach as the likelihood assessment in the NSRA. To align with the empirical evidence that four influenza pandemics have occurred over the past century (1918-19, 1957-58, 1968-69, and 2009-10), the analysis typically assumed there was a 4% probability of an influenza pandemic with any severity occurring in any year, whilst emphasising high uncertainty in this regard.
44. These likelihood assessments were consistent with the CO's analysis of the scientific evidence base on pandemic influenza in 2011 (**CW/389**). This analysis noted that it is not possible to quantitatively estimate the probability of a pandemic virus emerging; therefore, the likelihood of a pandemic cannot be predicted beyond empirical assessment.
45. Following submission of the risk scenarios, the NSRA provided all Departments with planning assumptions in respect of pandemic influenza. The National Resilience Planning Assumption (NRPA) process is led by CO, based on NSRA submissions. Thereafter, the Department oversaw planning and preparedness work within the health and social care sector based on these assumptions through the board of the Pandemic Influenza Preparedness Programme (PIPP) (at paragraphs 105 and 233-234 of my first statement). These planning assumptions therefore determined planning and preparedness around countermeasures, including stockpiles of medicines, vaccines, PPE, and hygiene consumables. Broader sectoral planning outside of health and social care remained the responsibility of other UK government departments and was overseen by the Pandemic Flu Readiness Board, which was co-chaired by the Department and the CO.
46. Within my first statement (at paragraph 326), I explained that alongside more formal governance structures such as the PIPP, I established a series of regular internal meetings to consider the Department's work on pandemic preparedness and the papers are exhibited at (CW6/62-CW6/80). These stopped when our focus shifted to

the ongoing to COVID-19 situation with meetings on that beginning on 20 January 2020. After the end of the acute phase of the pandemic, I restarted these meeting in 2022. Following the Living with COVID-19 programme launch, regular meetings were established with the pandemic preparedness team, with the first meeting held on 9th November 2022. The meetings have recently considered issues such as Mpox, Avian Influenza as well as general pandemic preparedness.

International Bodies

47. Within my first statement (at paragraphs 207-214), I set out how the UK operates as a Member State of the World Health Organization (WHO). The international surveillance, alert and response systems including those of WHO, The World Organisation for Animal Health (WOAH) and The Food and Agriculture Organization of the United Nations (FAO), are critical tools to inform better public health decision making including early detection of threats with pandemic potential. To maximise impact, systems should be interoperable, enabling the combination of data from systems monitoring human, animal and environmental ecosystems at local, national, regional and global levels. They should be pathogen agnostic i.e. capable of detecting a wide range of potential threats and should routinely collect and analyse data from multiple sectors. Global and regional systems rely on the strength of individual WHO member state systems, including sub-national systems. This includes surveillance capability, but also the ability to analyse and assess information quickly and to report it appropriately.

48. The Department values such systems and is actively involved in supporting them, as well as encouraging better information and data sharing between the UK and international community wherever possible. This has recently included sponsorship of the One Health Intelligence Scoping Study, which sought to map and identify opportunities for interoperability within and across systems of various organisations (including the WHO and others) and launching the International Pathogen Surveillance Network during the UK's G7 Presidency in 2021, to develop pathogen genomic sequencing capability globally.

49. The Intergovernmental Negotiating Body (INB) was established in December 2021 to draft and negotiate a new Pandemic Instrument (the Instrument) designed to improve global pandemic preparedness and response. The INB comprises all WHO member states, including the UK, and is chaired by representatives from each WHO region. The current target date for agreeing the text of the Instrument is at the World

Health Assembly in May 2024. In July 2022, Member States agreed that the Instrument should be legally binding, while also containing non-legally binding provisions.

50. The WHO published the Zero Draft of the Instrument on 1 February 2023 (CW6/81-CW6/82). Formal negotiations on the Zero Draft began in February 2023. The INB Bureau developed and circulated another draft, the 'Bureau's Text', in May 2023. The Bureau's Text will be the basis of discussion for upcoming meetings of the INB in summer 2023. The Department and Foreign, Commonwealth and Development Office (FCDO) jointly lead the UK's delegation to the INB and have worked with other departments across government to consider our approach to negotiating the Instrument. The UK delegation has delivered interventions and submitted written contributions to the INB as part of the drafting and negotiation processes (CW6/83-CW6/85). Further information on the on-going process for negotiation of the Instrument is available on the WHO website.

Clinical Countermeasures

51. Within my first statement (at paragraph 390-394) I explained that the stockpiling of clinical countermeasures was a critical component of the Department's PIPP, in line with the 'Defence in Depth' approach. Such an approach was (and still is) considered as essential part of preparation for any future pandemic, which remains one of the highest natural hazard risks facing the UK. Accordingly, steps such as this, taken by the Department in order to prepare for such an event, must be seen in the context of the significant threat that pandemic influenza poses to the UK.
52. Once COVID-19 had been identified, rapid work took place to develop vaccines, therapeutics and diagnostics. However, the Department can only stockpile medicines and vaccines which have already been developed in response to known threats, therefore we were not able to stockpile a vaccine or antiviral treatment for COVID-19 because they didn't exist prior to the virus emerging.
53. During the COVID-19 pandemic, such stockpiling meant that some of the clinical countermeasures that had been prepared to tackle pandemic influenza (such as antivirals), remained unused due to their specificity to that disease. I do not consider that this was as a result of an inadequacy within the 'Defence in Depth' approach, which combines behavioural interventions and pharmaceutical countermeasures. The Department plans for a range of risks and expert advice continues to advise that

this covers pandemic influenza. Rather, this situation came about as a result of a focus within the Department's planning for a future pandemic on the risk posed by influenza, as it was considered to be the greatest disease threat facing the UK.

54. The Department is expanding our approach to clinical countermeasures to cover the five main routes of transmission. The Department commissioned a review of our emergency preparedness countermeasures in order to ensure that our approach is applicable to a broader range of pathogens with pandemic potential and other emerging infectious disease threats. This review continues to take expert advice on the range of materials which should be held or contracted for, in order to expand UK preparedness for a broader range of pandemic risks (CW6/86). The review was used as a vehicle through which we addressed the recommendations of Boardman relevant to future pandemic preparedness PPE. The Boardman review of Government COVID-19 Procurement December 2020 is referred to in my second statement (paragraph 4).

Legislation

55. Within my first statement (at paragraph 412), I explained that the Department progressing the draft Pandemic Flu Bill in 2019. As of January 2020, this Bill had been drafted and remained within the Department. This went on to form the basis for the Coronavirus Bill and later the Coronavirus Act 2020. I have considered this in more detail at paragraphs 304-305 and 330 of my first statement to the Inquiry.

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: 6th June 2023