

Witness Name: Jenny Harries

Statement No. 1

Exhibits: JH/M2 0001-0660

Dated: 22 August 2023

## UK COVID-19 INQUIRY

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### WITNESS STATEMENT OF PROFESSOR DAME JENNY HARRIES

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1. I, Professor Dame Jenny Harries, of the UK Health Security Agency, 10 South Colonnade, London, E14 5EA, will say as follows:
2. I am employed by the UK Health Security Agency (UKHSA) as the Chief Executive, a post for which I have had full executive operational responsibility since the organisation's inception on 1 October 2021. Prior to this I was formally appointed as CEO of UKHSA on 1 April 2021 supporting the organisations formation. Additionally, I took over executive operational leadership of NHS Test & Trace (NHSTT) from 7 May 2021.
3. Before joining UKHSA, I was the Deputy Chief Medical Officer (DCMO) for England between 2019 and 2021 and the Regional Director of the South of England within Public Health England (PHE) between 2013 and 2019. Along with the Regional Director role I was interim Deputy National Medical Director for PHE between 2016 and 2017 providing specific support for strategic incident response. From April 2017 until July 2019 when I moved to the DCMO role, I held the strategic incident, Deputy Medical Director role in PHE on a formal basis alongside the Regional Director role.

4. I am a clinical doctor with specialist training in public health medicine, the latter undertaken in Wales. I hold a medical degree (MB ChB) and Fellowship of the Faculty of Public Health (FFPH) by examination. I hold other formal qualifications relevant to my current role including a BSc in Pharmacology, a Masters degree in Public Health (MPH), a Masters degree in Business Administration (MBA), a Postgraduate Diploma in Health Economics Evaluation, and a Postgraduate Certificate in Strategic Planning and Commissioning. I am a Fellow of the Chartered Management Institute, a visiting Professor of Public Health at the University of Chester and an Honorary Fellow of both the Faculty of Occupational Medicine (FFoM) and of the Royal College of Paediatrics and Child Health (FRCPCH).
5. Prior to my roles with PHE and Department for Health and Social Care (DHSC) and since 2009 I worked as a Director of Public Health in Norfolk & Waveney, Swindon and Monmouthshire and was additionally a chief officer in the two former Local Authorities. I have worked in clinical, operational, policy and health service economic and evaluation roles in the UK and globally since qualifying in medicine and have been a member of a number of national advisory groups including the Joint Committee on Vaccination and Immunisation, the National Advisory Committee on the NHS Constitution, the NHSE Clinical Priorities Advisory Group and the Women's Health Taskforce.
6. In my national work I have contributed to various significant health protection incidents including the Novichok poisonings (2018), the first cases of Monkeypox in the UK (2018), Zika (2016) and support to other global crises such as the Hurricane Irma response (2017). I was the National Programme Director for Ebola screening and the UK returning workers programme from 2014 to 2016 and the Senior Responsible Officer (SRO) for the subsequent development of the High Consequence Infectious Disease (HCID) programme. I have contributed knowledge to a number of relevant advisory groups as required during the current pandemic, chaired the SAGE Social Care Working Group from the end of the first wave of the pandemic in 2020 until leaving the DCMO post, led clinical work on the initial shielding programme and acted as SRO for coordination of the subsequent Enhanced Protection Programme for those who may remain more clinically vulnerable to serious outcomes from COVID-19.
7. I make this statement in response to the request from the UK Covid-19 Inquiry ("the Inquiry"), dated 14 October 2022, under Rule 9 of the Inquiry Rules SI

2006/1838, requiring UKHSA to provide the Inquiry with a corporate witness statement in respect of specified matters relating to Module 2.

8. 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 UKHSA continues to prepare for its involvement in the Inquiry and it is possible that additional relevant information may come to light as the Inquiry progresses. In this eventuality the additional information or relevant material will be provided to the Inquiry and a supplementary statement will be made if requested by the Inquiry.
9. The matters in my statement rely on a mixture of my own experience, the records of UKHSA and its predecessor organisations, and the input from a significant number of colleagues within UKHSA, who were employees of PHE and NHSTT, and those who have since left but hold relevant knowledge. These colleagues have been consulted as far as is practical, in order to provide as robust an account as possible on behalf of UKHSA.
10. While I have aimed for there to be a consistent level of factual detail provided in response to the questions posed by the Rule 9 request, as a result of the significant number of individuals that contributed to this statement, there may be some natural variation in that level of detail. I understand and expect that the Inquiry will request further detail on any matter if they require it.
11. Exhibits have been listed in this statement in response to the Inquiry's request and in order to provide context. I have not been able to review all the documents exhibited and a number of documents pre-date my own involvement or are derived outside the boundaries of my own operational sphere and in this case, I have relied upon subject matter experts to assist with the information presented.

#### Structure of the statement

12. The matters referred to in this statement relate, for the most part, to the date range as specified by the Inquiry, namely between 1 January 2020 and 24 February 2022. I will make it clear where I refer to matters outside this range.
13. This statement has six main sections, each containing clearly defined subsections covering the role of UKHSA and its predecessor organisations in relation to the following:

- a. Section 1: Introduction to UKHSA and predecessor organisations (paragraphs 25-182);
  - b. Section 2: Advice and briefings prepared by UKHSA on the public health and coronavirus legislation and regulations (paragraphs 183-331);
  - c. Section 3: The initial response to COVID-19 (paragraphs 332-488);
  - d. Section 4: Public health advice to support key government decisions on the use of non-pharmaceutical interventions (paragraphs 489-642);
  - e. Section 5: Data collection, analysis and dissemination (paragraphs 643-799);
  - f. Section 6: Behavioural science, communications and guidance (paragraphs 800-839).
  - g. Annex A: Health inequalities and COVID-19 disparities data from Module 1, as requested by the Public Inquiry (pages 216 – 230)
  - h. Annex B: Summary of health Inequality publications from Module 1, as requested by the Inquiry (pages 231 – 234)
14. UKHSA and its predecessor organisations worked, and continues to work, on a wide range of activities under our responsibility for protecting every member of every community from the impact of COVID-19, providing intellectual, scientific and operational leadership at national and local level, as well as on the global stage, to make the nation's health secure. Due to the scope of the Inquiry's Module 2 investigation and the particular requests made of UKHSA under Rule 9, it is inevitable, therefore, that not all of these activities undertaken will feature in this statement. We anticipate additional points will instead feature in a future module of the Inquiry or in response to further requests under Module 2.

### **Introduction**

- 15. This statement provides an explanation of the role of UKHSA and its three main predecessor organisations in the context of the UK Government's response to the COVID-19 pandemic between 1 January 2020 and 24 February 2022.
- 16. Prior to the pandemic only PHE existed. NHSTT and the Joint Biosecurity Centre (JBC) were independently created in May 2020, with the latter being incorporated

within NHSTT in June 2020. The Community Test Programme, which was established in DHSC in November 2020, was merged into NHSTT in April 2021. From 1 October 2021, PHE and NHSTT, including the JBC, ceased to exist and UKHSA was launched operationally.

17. Compiling an account of the response to COVID-19 on behalf of these organisations is therefore an inherently complex challenge. UKHSA's predecessor organisations had their own remits, structures, systems and cultures and existed over different time periods often with very rapid recruitment and short retention of temporary workforces. UKHSA is also unique in its vision, remit, capabilities, structure, skills and experience. As a relatively new organisation in continues to mature and develop.
18. These organisations all played a significant role in responding to the COVID-19 pandemic. For PHE this was broadly in two areas: providing scientific advice and guidance to the Chief Medical Officer (CMO), ministers, professionals and the public; and undertaking a range of specific operational and scientific delivery, research and evaluation tasks including specialist contact tracing and vaccine programme implementation and evaluation. NHSTT was created in May 2020 to build and operate the UK's COVID-19 mass testing and contact tracing service. The JBC was an integral part of NHSTT (except for a brief period when it was first created) and provided collation and analysis of data on disease prevalence and transmission, vaccine uptake and health service utilisation to support ministerial decisions on potential interventions locally and nationally including at the UK's borders.
19. Contributing to the nation's collective record is crucial – we have a responsibility to learn from this pandemic to ensure that the impact of any similar events can be minimised. Experiences of loss and suffering, felt across the nation, continue to affect the lives of many. The burden of the pandemic, as with all infectious diseases, was not evenly shared but reflected and reinforced the health inequalities that existed before it.
20. Understanding how and why the nation experienced the pandemic as it did will present invaluable lessons, both in preparedness and operational response but also where undeniable scientific advancements have been made at unprecedented pace. In early January 2020, the UK was one of the first countries in the world to develop a highly sensitive laboratory test for the virus; this was

possible as a result of PHE's scientific collaborations that preceded the pandemic. Thereafter, in the UK, lateral flow tests were evaluated, procured, deployed and made freely available, and the first vaccine and first monoclonal antibody were licensed in November 2020; and in 2021, the first COVID-19 specific drug was available. This represents a radically compressed timeline alongside comparable pandemics of the past.

21. From the initial days of the pandemic and throughout, experts across UKHSA, and its predecessor organisations, provided world-leading skills and capabilities including in: diagnostics and virology; procurement, logistics and operational delivery of end to end testing services, including high throughput laboratory infrastructure, as well as test performance monitoring; surveillance and epidemiology; genomics and technical briefings; data collection, modelling and statistical analysis; diagnostics, therapeutics and vaccines development and evaluation; evidence and critical appraisal, behavioural science; and advice and guidance.
22. The transparency and speed with which scientific data, information and evidence was shared and operational capability was built was unprecedented, including world-leading innovations such as the UK COVID-19 Dashboard. Existing opportunities to build and strengthen partnerships and collaborations across countries, national government departments and agencies, local government and communities, sciences, research funders, academia and industry have been realised more fully and proactively and there is a broader horizon of opportunity ahead.
23. The scientific achievements of the pandemic also gave impetus to the ambition of the 100 Days Mission. This was announced on 4 June 2021 under the UK's presidency of the G7, we are committed to working together to develop an arsenal of safe and effective diagnostics, therapeutics and vaccines available within the first 100 days of a future pandemic threat being identified.
24. For the scientific advancements achieved during the pandemic to persist and grow effective resourcing, skills, capabilities, and scalability will be required on a long term, stable footing. Taking the lessons forward will ensure the nation is ready for future health threats.

## **Section 1: Introduction to UKHSA and predecessor organisations**

25. The following is a summarised high-level view of UKHSA's establishment and relationship to its predecessor organisations, its remit and strategy, governance, staffing and organisational structure. It remains an organisation in early development.

#### The UK Health Security Agency

26. An introduction to the UKHSA establishment has been provided in Section 1 of UKHSA's witness statement for Module 1 of the Inquiry dated 14 April 2023 and is repeated here to provide context to this Module. Further information relating to PHE and NHSTT is provided beneath the introduction to UKHSA.
27. UKHSA was formally established on 1 April 2021 and became operational on 1 October 2021. It combines the health protection, clinical and scientific functions of PHE, created in 2013, with NHSTT, established in May 2020, the latter having itself 'absorbed' the function of the JBC prior to UKHSA's creation. The key steps leading to these arrangements are set out below.
28. UKHSA has been established as an Executive Agency of DHSC. The framework in which UKHSA operates is set out in the Framework document between the Department of Health and Social Care and the UK Health Security Agency, which was published on 27 January 2022 and is exhibited here. [Exhibit: JH2/01 - **INQ000203658**]. This states that "UKHSA has been established by the Secretary of State for Health and Social Care as this country's permanent standing capacity to prepare for, prevent and respond to infectious diseases and other threats to health". UKHSA is primarily an operational agency with expert staff who perform a wide range of clinical and scientific functions to protect public health. It also provides expert public health advice to government as well as wider policy advice on related topics, although government policy is ultimately the responsibility of ministers. This was the same for UKHSA's predecessor organisations.
29. On 18 August 2020 the Secretary of State for Health and Social Care announced that a new national body would be established to bring together the health protection elements of PHE with NHSTT under a single leadership team [Exhibit: JH2/02 - **INQ000223297**]. This was announced as the National Institute for Health Protection (NIHP), although Ministers later changed the name to UKHSA. The announcement said that the NIHP would be a new organisation whose primary focus was to ensure we have the best capability to control infectious

disease and deal with pandemics or health protection crises. The overall transition programme (which also included the move of most of the rest of PHE into DHSC and some other smaller changes) was led by DHSC. A transition team was established within NHSTT to develop the structure of the new organisation.

30. On 24 March 2021 the Secretary of State for Health and Social Care announced the appointments of myself and Ian Peters, and that the organisation would be called the UK Health Security Agency [Exhibit: JH2/03 - INQ000223298]. On 1 April 2021 I was formally appointed as Chief Executive of UKHSA and Ian Peters was formally appointed as Chair (non-executive) of the future Advisory Board. From April to October 2021 the component organisations retained their identities, responsibilities, and structures whilst transition to the new organisation continued.
31. UKHSA became fully operational from 1 October 2021. On this date staff officially transferred to UKHSA from PHE and NHSTT, and the predecessor organisations ceased to be separately operational. Some functions and staff from PHE transferred elsewhere, most notably the health improvement functions of PHE were predominantly transferred to the Office for Health Improvement and Disparities in DHSC, and those supporting elements of screening and immunisation to NHS England (NHSE).
32. Over time other functions have been integrated into UKHSA. With effect from 1 April 2022, UKHSA took responsibility for work previously done by the Borders and Managed Quarantine Service (MQS) in DHSC. The MQS programme had provided hotel quarantine for people legally required to isolate on return to the UK from 'Red List' countries. At the time of transfer from DHSC to UKHSA the programme had ceased live operations, following the Government's decision to end hotel quarantine for COVID-19, which took effect on 15 December 2021. UKHSA took responsibility for follow-up work including any outstanding litigation matters, as well as policy on relevant potential future health protection functions at the border.
33. With effect from 1 October 2022, responsibility for procurement and sourcing of appropriate current and immediate future COVID-19 vaccines for national programmes - that had previously been led by the Vaccine Task Force (VTF) within the Department for Business, Energy, and Industrial Strategy (BEIS) - transferred to UKHSA as the new Covid Vaccine Unit (CVU), with the Director



reporting to the Chief Executive. Some other functions of the VTF transferred to the Office for Life Sciences and DHSC or remained with BEIS.

34. Since UKHSA was not established for much of the period in scope for Module 2, this corporate statement also provides evidence to the Inquiry in relation to the work of predecessor organisations for the period from 1 January 2020 until 30 September 2021. The subsequent subsections outline the role and responsibility of these predecessor organisations and have been drafted with input from current and former senior officials wherever possible.

#### Public Health England

35. Section 2 of UKHSA's witness statement for Module 1 dated 14 April 2023 provided a detailed description of the establishment of PHE, its roles and responsibilities, governance structures and organisation. A summary is provided here and the Inquiry is directed to that statement for further details. It is worth stating that PHE was the only one of UKHSA's predecessor organisations that existed prior to COVID-19, and it had a broad public health remit, beyond health protection activity, which it continued to deliver alongside the COVID-19 specific response until 1 October 2021.
36. PHE was established as an Executive Agency of DHSC on 1 April 2013 to protect and improve the nation's health and wellbeing and reduce health inequalities. It primarily covered England, although had some UK-wide responsibilities, for example international health protection relations and radiation protection. Please note that, for consistency, I refer to the DHSC throughout, rather than the Department of Health ("DH") as it was known prior to 2018. The Health Protection Agency was by far the largest organisation transferring into PHE at inception, and approximately 70 other organisations sent staff to the new agency. These included the National Treatment Agency, NHS Strategic Health Authorities, Primary Care Trusts and NHS Trusts.
37. At the start of the pandemic, PHE had four core functions, as set out in its Framework Agreement [Exhibit: JH2/04 - INQ000090327]. They were to:
  - a. Protect the public from infectious diseases and other public health hazards;
  - b. Provide expert advice to help improve public health;

- c. Provide data, analysis and expertise in support of sustainable health and care services;
  - d. Ensure the public health system has the capacity to tackle existing and emerging public health challenges.
- 38. PHE was a Category 1 Responder under the Civil Contingencies Act (CCA) 2004 and, as such, responded to infectious disease, chemical, radiological and environmental incidents. PHE also maintained critical national scientific infrastructure and hosted World Health Organisation (WHO) Collaborating Centres and Reference Laboratories.
- 39. In terms of responding to the COVID-19 pandemic, PHE had two main roles, as set out in Introduction to Public Health England, exhibited here [**Exhibit: JH2/05 - INQ000203623**]. Working alongside DHSC, the NHS and wider government, they were:
  - a. Providing scientific advice and guidance to the Chief Medical Officer (CMO) and government that focused on the practical application of scientific evidence and research, including translating relevant advice from the Scientific Advisory Group for Emergencies (SAGE) and other groups and committees and its own expert groups, as appropriate, into evidence-based guidance for clinicians and the public;
  - b. Undertaking a range of specific operational and scientific delivery tasks where it continued to deliver routine health protection response services, for example, testing and contact tracing as well as piloting new models of testing or service delivery, to adopt and implement at scale.
- 40. Between the beginning of January and the end of March 2020, as the scale of the required response to the COVID-19 pandemic and level of demand upon PHE's resources became clearer, PHE implemented business continuity and organisational resilience plans, detailed and exhibited in paragraph 59 of this statement, and carried out a reprioritisation exercise to maximise its contribution to the government's response.
- 41. On 29 April 2020 the Private Secretary to the Prime Minister commissioned a paper outlining PHE's role in responding to COVID-19, via the private office of the Secretary of State for Health and Social Care. In response, PHE produced the

document 'Introduction to Public Health England', which was presented to the Prime Minister's office on 7 May 2020. The note to the Prime Minister's office which accompanied this document set out a number of themes where it was felt that PHE could make the biggest difference to the Government's COVID-19 response. These included early warning surveillance and mass mobilisation of testing and tracing. The document is exhibited at paragraph 39 and the note is exhibited here [Exhibit: **JH2/06** - INQ000203660].

42. PHE used the following frameworks to guide its actions during the first wave of the pandemic: the updated 2020 Coronavirus Plan for England (published by DHSC); the four phases contain, delay, research, mitigate (as defined by the CMO); the internal PHE National Incident Emergency Response Plan (NIERP) [Exhibit: **JH2/07** **INQ000090416**]; and the internal PHE COVID-19 Concept of Operations [Exhibit: **JH2/08** - INQ000203639].
43. PHE's remit letter for 2020-2021, dated 29 April 2020 [Exhibit: **JH2/09** - **INQ000090337**] recognised the crucial role it had to play in supporting the government's response to the pandemic, particularly through collaboration with DHSC and delivery partner organisations to mitigate the effects of COVID-19 on the health and care systems.
44. As specified in the 2020-21 remit letter, the Government expected PHE to "focus on the response to COVID-19, supporting national and local efforts to prevent and respond to cases in England, the devolved administrations, and to support the global health community to deliver the COVID-19 response". There was recognition that PHE's role had, and would continue, to vary, in response to operational demands and included:
  - a. "Surveillance and modelling to inform action at national and local level;
  - b. Monitoring the impact of social and behavioural interventions over time;
  - c. Providing expert advice to DHSC, other Government departments and scientific advisory groups, including national work to support vulnerable groups;
  - d. Supporting local forums and NHS regional hubs responsible for leading multi-agency response at local level;

- e. Targeted contact tracing as appropriate;
  - f. Clinical diagnostic testing and genome sequencing to inform public health interventions;
  - g. Supporting and delivering evidence-based public health communications and guidance;
  - h. Public health activity at major ports as required to respond to the outbreak;
  - i. Identifying and implementing lessons from the management of the incident both during and after the outbreak and the longer-term public health impacts of the pandemic.”
45. The remit letter also outlined the expectations that PHE would:
- a. Continue to deliver its essential activities that protected and improved the public’s health, including tackling outbreaks and incidents, continuing surveillance of healthcare associated infections, responding to hazards, and working with DHSC to deliver legal obligations, preparations and ambitions for the future relationship with the EU and the rest of the world, and
  - b. Need to maintain its “preparedness and be ready to...move forward on...broader priorities including: support and advice on the Government’s prevention and levelling up priorities, specifically including work on childhood obesity, mental health, smoking, health inequalities and the needs of the most vulnerable groups in society, and NHS-led national screening programmes; developing and implementing wider public health programmes, including for sexual health and antimicrobial resistance; contributing to the development and implementation of a number of cross-government programmes, such as on rough sleeping and illicit drugs...delivering evidence reviews commissioned by DHSC, and work to create the future UK infrastructure for public health scientific capabilities and capacity through the Science Hub Programme”.
46. As set out in paragraph 61 of the Introduction to Public Health England, during the COVID-19 global epidemic PHE’s Category 1 responder status, alongside its remit responsibilities, translated into undertaking:

- a. “International surveillance and intelligence from countries already affected;
  - b. Enhanced surveillance within the UK during each phase of the epidemic and adherence to UK responsibilities under the International Health Regulations;
  - c. Production of specific clinical and public health advice, guidance and information to national and local government, the health system, education, business and transport etc;
  - d. Public facing public health communications, including the preparation of detailed guidance and developing the media campaigns (reflecting government policy decisions);
  - e. Developing initial test assays and undertaking the first tests whilst supporting DHSC and NHS in roll-out of testing under the Government’s Testing Plan, as part of a wider network of testing capacity;
  - f. Control and contact tracing in containment and mitigated phases, when the focus has been on local outbreak control;
  - g. Monitoring the impact of social and behavioural interventions over time;
  - h. Scientific inputs to SAGE and other relevant scientific groups and committees and across government, including via modelling, virology and behavioural sciences and scientific secretariat support to expert COVID-19 committees;
  - i. Port health services to support Border Force, the Department for Transport, the NHS and the travel industry” [Please see exhibit at **paragraph 39** on ‘Introduction to Public Health England’].
47. Following the decision in August 2020 to create a new health protection organisation, the remit letter to PHE, published on 13 July 2021, stated that, alongside its support to the newly established (but not yet operational) UKHSA in relation to the COVID-19 response and health protection functions, it was also expected to take action on the following health promotion activities: reducing health inequalities, obesity, healthy weight and nutrition, mental health, tackling health harms, sexual and reproductive health, public health reforms and evidence reviews [**Exhibit: JH2/10 - INQ000203619**].

48. The role of PHE in responding to the COVID-19 pandemic changed with the creation of the national testing programme in DHSC then the establishment of NHS Test and Trace, as detailed below.
49. The subsection of this statement starting at **paragraph 69** provides more detail of the specific COVID-19 response measures and governance structures through which PHE delivered its response to the COVID-19 pandemic.

#### NHS Test & Trace

50. The immediate forerunner to NHSTT was the National Testing Programme (NTP), which was announced on 2 April 2020 and was initially set up in DHSC. Its aim was to provide coronavirus tests to everyone who needed them through a phased approach, starting with patients, NHS workers and their families, other critical key workers and then expanding to the wider community over time.
51. The wider testing strategy, which the Government also announced on 2 April 2020, saw the establishment of the five testing “pillars” **[Exhibit: JH2/11 - INQ000203614]**:
  - a. Pillar 1: Scaling up NHS swab testing for those with a medical need and, where possible, the most critical key workers [COVID-19 Polymerase Chain Reaction (PCR) testing, utilising PHE and NHS laboratories];
  - b. Pillar 2: Mass-swab testing [COVID-19 PCR testing] for critical key workers in the NHS, social care, and other sectors;
  - c. Pillar 3: Mass-antibody testing to help determine if people have immunity to the coronavirus;
  - d. Pillar 4: Surveillance testing to learn more about the disease and help develop new tests and treatments; and
  - e. Pillar 5: Spearheading a Diagnostics National Effort to build a mass-testing capacity at a completely new scale.
52. The NTP leadership structure saw each of the 5 pillars being led by a Director and reporting into the Second Permanent Secretary in DHSC. The lead Ministers were the Secretary of State for Health and Social Care, and Lord Bethell, Parliamentary Under Secretary of State.

53. NHSTT was formally established in May 2020 to lead an 'at scale' national testing and tracing service, working with PHE and others. The JBC was initially established separately in the Cabinet Office (CO) and then transferred into NHSTT on 1 June 2020. In April 2021, the Community Testing Programme, which had been established within DHSC to support local authorities to deliver a local approach to population asymptomatic testing, was also transferred into NHSTT.
54. Baroness Dido Harding was appointed on 7 May 2020 to lead the programme of testing and tracing, with Professor John Newton as the professional link into public health expertise [Exhibit: JH2/12 - INQ000203663]. On 27 May 2020 the government announced the launch of the NHS Test and Trace Service with Dido Harding as the Executive Chair. In that announcement she noted that "This is a brand new service which has been launched at incredible speed and scale. NHS Test and Trace already employs over 40,000 people, both directly and through trusted partners, who are working hard to deliver both testing and contact tracing at scale" [Exhibit: JH2/13 - INQ000107094].
55. NHSTT became operational on 28 May 2020. As detailed in the announcement, it was established to carry out these functions:
- a. Test: increase availability and speed of testing;
  - b. Trace: identify any close contacts of anyone testing positive for coronavirus and alert those most at risk of having the virus of the need to self-isolate;
  - c. Contain: identify localised outbreaks and support effective local responses;
  - d. Enable: provide information to government to support wider understanding of coronavirus and explore further easing of infection control measures.
56. Baroness Dido Harding held the role of Executive Chair until 7 May 2021. NHSTT was subject to the Department's financial, information and staffing controls. The Secretary of State for Health and Social Care had ministerial accountability for the NHSTT programme. Up to 2 December 2020 the Executive Chair reported directly to the Prime Minister and the Cabinet Secretary. From 3 December 2020 until 7 May 2021 the Executive Chair reported to the Secretary of State for Health and Social Care.

57. The second Permanent Secretary of DHSC acted as Accounting Officer (AO) for NHSTT from 28 May 2020 until 31 March 2022. The UKHSA CEO's AO appointment letter confirmed that she was AO for UKHSA from 1 April 2021 and would be responsible for NHSTT and PHE budgets once they had transferred into UKHSA when it became operational on 1 October 2021. From 1 October 2021 to 31 April 2022, the DHSC Second Permanent Secretary remained the AO for NHSTT spend, while the UKHSA CEO had responsibility for operational policy decisions and was the delegated budget holder and SRO for the NHSTT programme.
58. The senior leadership of NHSTT were initially recruited in the period between the appointment of Baroness Harding (on 7 May) and the launch of NHSTT (on 28 May). Appointments included Michael Brodie as the interim Director of Trace, Sarah-Jane Marsh as the Director of Testing and Tom Riordan as the Director of Contain. They were joined by other senior appointments including a Chief Operating Officer, Chief of Staff, Director of Enable. Tom Hurd was seconded from the Home Office (from 12 May to June 2020) to set up the new Joint Biosecurity Centre (see below for detail on JBC).
59. Further developments to the governance structure during the first two months of NHSTT's existence saw the introduction of the formal Executive Committee, comprised of senior leaders from each Division across operational and corporate areas. NHSTT published its first Business Plan on 30 June 2020, setting out its priorities for delivery in the forthcoming months [Exhibit: JH2/14 - INQ000203616]. One further Business Plan and two Delivery Plans were published between July 2020 and September 2021 [Exhibit: JH2/15 - INQ000059228] [Exhibit: JH2/16 - INQ000203617] [Exhibit: JH2/17 - INQ000203622].

#### The Joint Biosecurity Centre

60. The JBC was established in May 2020 to provide additional and complementary objective analysis and assessment of data and data derived evidence to build on that already in place at a local and regional level across the UK, and to inform local and national decision making in response to COVID-19 outbreaks [Exhibit: JH2/18 - INQ000195927]. This included helping to inform:



- a. “action on testing, contact tracing and local outbreak management in England;
  - b. assessment of the risks to UK public health from inbound international travel;
  - c. advice on the COVID-19 alert level.”
61. The JBC was originally conceived as a 'stand-alone' organisation. However, within its first four weeks it was incorporated into NHSTT as it became clear that the JBC played an integral part in informing the testing, tracing and local contain work of NHSTT, and JBC relied on NHSTT data and infrastructure. It was therefore integrated into NHSTT, reporting directly into the Executive Chair.
62. For the majority of the period covered by this module (between 8 June 2020 and May 2021), JBC was led by Dr Clare Gardiner who served as the Director General [Exhibit: JH2/19 - INQ000223299], succeeding Tom Hurd (12 May 2020 to June 2020) who had been appointed specifically to build the initial operating capability of the JBC.
63. Dr Gardiner was supported by Directors with responsibility for Health Analysis, Response, Support and Learning, Data and Data Science, Programmes and Future Capability and Surveillance and Immunity.
64. The JBC brought together data science, assessment, and public health expertise to provide analysis and insight on the status of the COVID-19 epidemic in the UK and the drivers and risk factors of transmission. This insight supported decision-makers at a local and national level to take effective action to break the chains of transmission, and in turn, protect the public.
65. The JBC’s monitoring programmes were designed to understand the rate of COVID-19 infections and how the virus was spreading. They helped to assess the impact of measures taken to contain the virus, to inform current and future actions, and to develop new tests and treatments. The data and insight generated also helped strengthen our scientific understanding of COVID-19, inform government policy decisions and work across the COVID-19 testing programme.
66. The JBC worked in partnership with PHE to strengthen knowledge and understanding of the evolving COVID-19 epidemic and provide insight to national and local decision-makers, local health protection teams and others. JBC created

routine operational links with academic organisations and the scientific community to maximise opportunities for innovation. The JBC complemented the work of the Scientific Advisory Group for Emergencies (SAGE), supporting its scientific consensus with operational capability, including data analysis and epidemiological expertise.

67. One of the JBC's key responsibilities was to provide data and analysis to support those overseeing the COVID-19 incident response, principally through the Local Area Committee (LAC) command structure: Bronze, Silver, and Gold. This is outlined in more detail in paragraphs 90-101 below. In addition to the government's LAC command structure, the UK COVID-19 Alert level methodology was developed by the JBC [Exhibit: JH2/20 - INQ000203624]. The alert levels were originally defined in the UK government's COVID-19 recovery strategy 'Our Plan to Rebuild' in May 2020 (most recently revised in August 2022) [Exhibit: JH2/21 - INQ000203627] and the COVID-19 risk ascertainment was communicated at a UK-wide level.
68. The JBC provided data and insight about COVID-19 across all four nations of the UK and worked collaboratively with devolved administrations as equal partners. A Political Agreement and an Agency Agreement set out the arrangements for how JBC would operate on four nations basis. In addition, a JBC ministerial board was established to enable ministers from all four nations to contribute to JBC oversight, and a JBC technical board that included the four CMOs was established to ensure JBC products were of sufficient clinical and scientific rigour [Exhibit: JH2/22 - INQ000203662].

#### COVID-19 incident response measures

69. The following subsections set out the specific COVID-19 emergency response arrangements through which UKHSA's predecessor organisations and, upon its establishment UKHSA, responded to the pandemic, with particular focus on interactions with the highest decision-making structures in Government. This section also describes how scientific advice was provided to Government by UKHSA and its predecessors, including interactions with the CMO.
70. At the outset of the COVID-19 pandemic response, PHE was the only existing predecessor organisation to UKHSA. It is important to note that during the first six months of 2020 the pandemic moved at an unprecedented pace and it continued

to change in the subsequent months. In order to respond it became clear that existing structures and processes, including those in PHE, needed to change. Between January and March 2020 there was evolution of the PHE emergency response actions to manage the increasing scale of the pandemic response. The establishment of NHSTT, including the functions of JBC, brought further change to emergency response arrangements, as did the eventual transition to UKHSA.

#### COVID-19 incident response: internal governance arrangements

71. Section 3 of UKHSA's witness statement for Module 1 dated 14 April 2023 provided a detailed description of PHE's initial emergency response measures up until 25 January 2020, and how PHE fulfilled its role as a Category 1 responder under the CCA 2004. Therefore, this section will focus on the activities post 25 January 2020, in particular the co-ordination of information and advice and how these were fed into Government decision making structures, and then how these structures evolved with the establishment of NHSTT.
72. Section 3 of UKHSA's witness statement for Module 1 dated 14 April 2023 referred to above also described in detail PHE's role in preparing for pandemics and other public health emergencies within the wider health system framework, the latter overseen by DHSC. Although PHE had a pandemic influenza specific plan, it routinely operated an all-hazards approach to emergency planning for health emergencies, and the NIERP outlined PHE's detailed arrangements for responding to such incidents. The NIERP is exhibited at paragraph 42. The NIERP was supported by threat-specific plans, for example the Pandemic Influenza Strategic Framework and the PHE Central Incident Response Plans, which provided detailed Emergency Preparedness, Resilience and Response (EPRR) at local level in the PHE Regional Centres.
73. As referenced in paragraph 189 of UKHSA's witness statement for Module 1 dated 14 April 2023, the DHSC Operational Response Centre (ORC) was set up on 19 January 2020 and convened a daily meeting, starting 20 February 2020, to review the epidemiology of COVID-19 and co-ordinate health system action. This was attended by representatives from PHE, DHSC, NHS England and the CMO's office.
74. PHE operated three levels of incident response: routine (those manageable within normal operational capability for both health and business continuity incidents),

standard (incidents that require co-ordination and/or resources over those provided by the normal operational capacity) and enhanced (the scale of the incident response requires a more significant mobilisation of resources and thus a greater level of strategic response). The response to the COVID-19 pandemic was an enhanced response, and PHE established an enhanced incident on 8 January 2020.

75. PHE managed the initial response to the COVID-19 pandemic in line with the NIERP. A Strategic Response Group (SRG) was established which aimed to provide strategic decision making around advice provided by PHE to DHSC. This was led by the Strategic Response Director (SRD), who provided overall strategic leadership and oversight of the PHE COVID-19 incident response. The role of the SRD for the COVID-19 incident began on rotation. Professor Yvonne Doyle CB, PHE's Medical Director and Director for Health Protection, was appointed Senior Responsible Officer (SRO) for the incident and, with this, the terms SRD and SRO were used interchangeably with the establishment of the PHE COVID-19 Cabinet (see paragraph 77). In August 2020 Professor Susan Hopkins was appointed the PHE SRD/SRO and subsequently also the Chief Medical Advisor to NHSTT (in September 2020), thus providing strategic oversight across the incident to both responding organisations.
76. Tactical and operational decision making was the responsibility of the Incident Director (ID) who was a senior public health expert. The SRD worked with the ID to agree what support the ID needed to enable the response. There were two IDs at the outset of the COVID-19 incident response, on rotation, and this number increased as the response grew in size and duration.
77. On 9 March 2020, the SRG was stood down and the PHE COVID-19 Cabinet was established to provide the strategic oversight role, although the SRD role remained [Exhibit: JH2/23 - INQ000203630]. This was in response to recognition that the COVID-19 incident required an approach over and above that set out in the NIERP due to the unprecedented scale of response and to allow for adequate oversight between the PHE incident response governance and business as usual governance, via the PHE Management Committee.
78. PHE COVID-19 Cabinet was supported by the Incident Management Team (IMT). The IMT was responsible for operational and tactical decision making and was led by the ID. The IMT consisted of the teams responsible for IMT Internal Business

and IMT cell coordination and the PHE National Incident Coordination Centre (NICC). Core work and activity within the PHE COVID-19 incident response took place in a number of incident response “cells”. These response cells were small teams focused on specific areas of delivery and expertise such as virology, epidemiology, modelling and surveillance and brought together staff from different parts of the agency to focus on that particular issue within the COVID-19 response. The terms of reference for these incident response cells is exhibited here [Exhibit: JH2/24 - INQ000203638]. There were also response cells for Clinical and External Guidance and a number of enabling cells whose function was to support the incident response, for example, finance and HR. Most technical cells were led by a public health specialist, and were composed of PHE scientists, public health consultants, and support staff.

79. The NICC was responsible for the co-ordination of activity and communications for the COVID-19 enhanced incident, and its primary functions included: supporting the ID to direct and coordinate the response strategy and operations across PHE, advice on policy as directed by the ID; and manage information relevant to the incident and disseminate it as necessary.
80. A further function of the NICC was to liaise with DHSC and other parts of government. Early in the incident response, based on previous large incident response learning, PHE convened a PHE ‘DHSC liaison’ function within the incident response. This composed of a team of PHE staff, co-located with DHSC teams at the DHSC’s Victoria Street headquarters, to directly align each of the operational functions of the DHSC ORC and share situational awareness. This liaison team supported senior PHE officials who attended meetings at DHSC’s Victoria Street HQ and facilitated rapid communication and response to the busy battle rhythm of daily meetings and requests for information or advice from DHSC or other parts of Government. The PHE ‘DHSC liaison’ team helped escalate urgent priorities to the PHE incident management team.
81. The role of the PHE COVID-19 Cabinet, as outlined in its terms of reference, was to:
  - a. “Provide overall strategic leadership and direction to the incident;
  - b. Provide assurance of PHE’s professional and management response in supporting the UK Government’s strategy to manage the Covid-19 incident;

- c. Address any matters arising or referred by the Incident Director;
  - d. Oversee PHE corporate resilience and, as necessary, the repurposing of people and resources from across the organisation to ensure sufficient resources to deliver agreed workstreams;
  - e. Support the SRO in their role of cross government liaison and communication, including supporting the tripartite arrangements in place with DHSC and NHSE/I;
  - f. Ensure there are appropriate levels of governance and programme management;
  - g. Operationally link "business as usual" and the COVID-19 incident response;
  - h. Identify, monitor and where possible mitigate against risks, and escalate issues to the PHE Management Team;
  - i. Report progress to the PHE Management Committee and Advisory Board."
82. The membership of the PHE COVID-19 Cabinet is described in the exhibit at paragraph 78. The PHE cabinet met on a daily basis, and meetings were chaired by the PHE CEO or SRO/SRD for the COVID-19 incident response. The PHE COVID-19 Cabinet were supported by a secretariat function (the Cabinet Secretariat Cell) who co-ordinated meetings and maintained a standing agenda and a log of decisions/actions.
83. On 4 May 2020 the PHE COVID-19 Cabinet signed off the updated PHE COVID-19 Concept of Operations (CONOPs) to ensure PHE delivered the relevant actions that were within, and consistent with, the UK Government's Coronavirus Action Plan, and in accordance with the PHE NIERP (exhibited at paragraph 42) The CONOPs provided the strategic framework for making key decisions for how PHE COVID-19 responsibilities were fulfilled and its implementation was overseen by the PHE COVID-19 Cabinet.

Establishment of NHSTT and move to NCRC governance of incident response

84. It is important to understand how quickly NHSTT operations were built in the Summer of 2020, and how much was being learnt about COVID-19 as a disease. At this stage it was not known when a vaccine might be available, and the

government was working to enable the country to come out of its first national lockdown. This meant that governance arrangements evolved rapidly.

85. During 2020, as NHSTT grew in scale, the NHSTT leadership recognised there was a need to better co-ordinate the COVID-19 incident response to maximise capability and remove the risk of duplication of activity, as separate organisations were responding quickly to a rapidly changing situation. This coincided with the operational merging of some teams, for example, integration of PHE field epidemiology expertise with JBC analyst teams to create the Joint Situational Awareness Team, which led on the production of data outputs related to the epidemiology of COVID-19 that informed Government decision making. The proposal to create the Joint Situational Awareness Team was submitted on 7 July 2020 for discussion at PHE COVID-19 Cabinet.
86. A central incident governance and co-ordination structure and function was stood up by NHSTT in August 2020 and was known as the National COVID-19 Response Centre (NCRC). The NCRC was established as a cross-organisational structure (NHSTT, including JBC and PHE) with a central team to co-ordinate the short-term national level response to support local authorities during the pandemic. It did this by bringing together existing capabilities across organisations and providing a mechanism for joined up ways of working.
87. Its main function was to provide local and regional partners with a 'Single Point of Contact' to national systems, facilitate the co-ordination of rapid cross government activities on localised response, and combine JBC, Contain, other NHSTT and PHE capabilities and capacities to provide common information and response mechanisms. It had its own governance structure and reported into the NHSTT Executive Committee.
88. Key roles including an NCRC ID who provided an operational lead, who worked with the Public Health IDs who provided public health and/or clinical expertise (this role was covered on a rota basis). The CONOPs for the NCRC is exhibited from September 2020 and October 2020 [Exhibit: JH2/25] [Exhibit: JH2/26] - INQ000203629].  
- INQ000251882

89. The NCRC provided the secretariat and co-ordinating function for the following key meetings:
- a. A daily situational awareness meeting where data from the JSAT report was presented. This report, produced jointly by PHE and JBC, brought together information and intelligence from a variety of sources to give regional directors summaries of specific topics, including the national context, local authority information on testing, incidence and mortality, and hospitalisation. This information was provided via graphs, tables and maps, supported by explanatory narrative. An early example is exhibited [Exhibit: **JH2/27**] - **INQ000203628**].
  - b. An end of day meeting referred to as the NCRC 'Bird Table' where that day's priority activity or concerns were reviewed. [Exhibit: **JH2/28**] - **INQ000203633**; [Exhibit: **JH2/29**] - **INQ000203640**].
  - c. A PHE IMT Business meeting which provided a forum where the PHE ID and relevant colleagues could consider emerging issues and topics in greater depth, provide strategic oversight and make key decisions on scientific or clinical advice and operational issues within PHEs remit [Exhibit: **JH2/30**] - **INQ000203637**].
  - d. The variant-specific response meetings which began as the Variant and Mutations Taskforce and later became Variants of Concern Bronze level meeting from February 2021 [Exhibit: **JH2/31**] - **INQ000203632**].
  - e. A variants technical group which conducted horizon scanning and risk assessments of novel variants of SARS-CoV-2 [Exhibit: **JH2/32**] - **INQ000203642**].

Bronze/Silver/Gold local area committee

90. In June 2020 the Cabinet Office Committee COVID-O (Operations) approved the establishment of the Bronze/Silver/Gold (B/S/G) hierarchy of meetings of the Local Area Committee (LAC) to provide a governance framework where local, regional and national data were reviewed, and operational decisions around potential local support and/or restrictions were made.



91. The B/S/G hierarchy of meetings, which began in June 2020, was based on an established emergency response structure of subsidiarity where decisions are made at the lowest appropriate level, whilst escalating higher level decisions up the hierarchy as needed. Within the COVID-19 response, the B/S/G hierarchy of meetings provided the national governance framework for the consideration of data and local insight to inform Ministerial decisions about the potential application of localised restrictions such as non-pharmaceutical interventions, as well as specific areas of support. Further details on these meetings are provided below.
92. From August 2020 the secretariat for B/S/G was provided by the NCRC which, as previously explained, was a joint function resourced by PHE and NHSTT (including JBC) staff. NCRC administered all aspects of the meetings, other than the final recommendations from Gold which were summarised initially by the Secretary of State for Health and Social Care's private office and tabled for consideration and agreement at COVID-O. The process for each of these meetings, and the responsibility of UKHSA's predecessor organisations is set out below.

#### Bronze LAC

93. Bronze meetings were initially chaired by leaders from NHSTT. From August 2020 they were chaired by the NCRC ID and supported by the PHE Public Health ID. The meetings were held up to three times a week, with variations in cadence based on need. These meetings looked to identify areas and key issues of concern. Membership of the group was at least one representative from each of the following: NCRC ID, PHE Regional Directors of Public Health, NHSTT COVID-19 regional partnership teams, representatives from NHSTT/JBC, DHSC, PHE and other government departments.
94. The meeting considered an information pack, based on JBC and other analysis, which contained data on a range of early warning indicators including case rates and testing levels, and a set of recommendations for public health action, including by Lower and Upper Tier local authority and regional levels. The primary data source used was COVID-19 testing data to identify which areas had the highest prevalence of COVID-19 and the fastest growing rates. The pack was initially known as the "watchlist" pack, and later, with the use of mitigations at tiered control levels, as the "Bronze" pack.

95. During meetings this was brought together with the local knowledge and professional judgement of PHE Regional Directors of Public Health, to add vital qualitative context to the indicators and to come to a consensus position on where interventions may need to be put in place. The proposed necessary public health mitigations would be discussed, and content agreed for consideration at the Silver meeting.

#### Silver LAC

96. The Silver Meeting was chaired by the CMO for England with input from PHE Regional Directors of Public Health. NCRC provided the secretariat and formal minutes were signed off by the CMO. Meetings were held weekly, but could be called on an ad-hoc basis if necessary, based on emerging data. Silver meetings focused on the local and national epidemiology, analysis and issues raised by regional and national public health leads from PHE and NHSTT (including JBC) at Bronze meetings. Membership of this group was at least one representative from each of the following (with multiple attendees from JBC and PHE from relevant teams): CMO, Cabinet Office Task Force, Senior officials from NHSTT/JBC, PHE, Regional Partnership Teams and stakeholders from across other government departments.
97. An updated version of the information pack, reflecting discussions at Bronze, was presented at the Silver meetings for consideration. Silver was an epidemiologically focused meeting, and the operational aspects of potential public health interventions were returned to Bronze group for further consideration, information or development, and then escalated to Gold. At Silver meetings the relevant PHE Regional Director of Public Health (RDPH) could provide a view on the local epidemiological and operational context as well as interventions potentially needed in their area. When tiered regional interventions ended, Silver meetings continued as a means to monitor the epidemiology of COVID-19, and to obtain insight from local areas through the relevant PHE RDPH.

#### Gold LAC

98. The weekly Gold meeting was chaired by the Secretary of State for Health and Social Care (or a Minister from DHSC). The meeting reviewed recommendations from Bronze and Silver. The information from Silver meetings provided critical insight for further consideration and decision making, at Ministerial level, on

potential necessary public health interventions including for local and regional control of COVID-19. Gold was the final stage in the LAC governance structure before escalation to COVID-O, with the Secretary of State for Health and Social Care providing the final approval of any escalations requiring the attention of COVID-O.

99. The first Gold meeting was held on 11 June 2020. From February 2021, given the developing national epidemiological context, these decisions focused more on new variants, vaccine uptake and the steps to be taken to move the country out of lockdown. The membership of this group included at least one representative from each of the following (with multiple attendees from JBC and PHE from relevant teams): Secretary of State for Health and Social Care, Cabinet Office Task Force, Senior NHSTT, JBC and PHE officials, Regional Partnership Teams, Devolved Administrations (DAs) and other government Ministers.
100. The information and recommendations in the Gold pack were sent to the respective Cabinet Office policy teams within the COVID-19 Taskforce. This included the national overview situation report (data packs). The Gold LAC recommendations were presented to COVID-O, usually a few hours after the Gold Meeting had finished, alongside the relevant data slide decks, where useful and necessary, and papers from other government departments. With the change of Secretary of State in June 2021, Gold LAC was used as a forum to escalate concerns to the Secretary of State and as a way of sharing local insight on the monitoring of COVID-19.
101. Exhibited here are examples of the Terms of Reference, Agenda and Actions from the Bronze, Silver and Gold Meetings: [Exhibit: JH2/33 - INQ000203641] dated 27 April 2022; [Exhibit: JH2/34 - INQ000203636] dated 24 April 2022; [Exhibit: JH2/35 - INQ000203645] dated 18 May 2021; [Exhibit: JH2/36 - INQ000203613] dated 2 September 2020; [Exhibit: JH2/37 - INQ000203635] dated 13 April 2022; [Exhibit: JH2/38 - INQ000203644] dated 18 May 2021; [Exhibit: JH2/39 - INQ000203657]; [Exhibit: JH2/40 - INQ000203634] dated 2 March 2022.

COVID-19 incident response: cross-government co-ordination

Interaction with DHSC and the Secretary of State for Health and Social Care

102. Meetings with the Secretary of State for Health and Social Care were convened by DHSC and held on a regular basis during January and February 2020. PHE attended when invited in an advisory role, and primarily to present the epidemiology and latest data. PHE was usually represented by a senior person or persons within the incident response, for example, the CEO, the Medical Director and SRD for the COVID-19 incident; Director of the National Infections Service; or Emeritus Medical Director. Other attendees included the Permanent Secretary and other DHSC officials, CMO, Special Advisors, managerial, operational and clinical leads as well as a representative from the Adult Social Care sector, who would have had an interest in decisions relating to that sector (for example testing and infection control). PHE did not receive a formal agenda or minutes of these meetings and was not involved in communication of the discussion and outcomes of these meetings with CO or the Prime Minister's office.
103. Members of the leadership team of NHSTT initially met daily with the Secretary of State for Health and Social Care and, from June 2020 onwards, at least weekly in meetings with the Prime Minister, the Chancellor of the Exchequer, the Chancellor of the Duchy of Lancaster and the Secretary of State for Health and Social Care.
104. PHE and NHSTT officials also attended a number of ministerially led groups which covered topics such as the establishment of mass testing, establishment of mass contact tracing, PPE supply, adult social care and schools.

#### Cabinet Office meetings and engagement with other departments

105. Throughout the pandemic officials from PHE, NHSTT/JBC and UKHSA attended various cross-government meetings organised by the CO as required. This included regular meetings at official level to provide information (for example on epidemiology, public health advice, or operational delivery) that would often inform advice produce by the Cabinet Office COVID-19 Taskforce, as well as updates on delivery. Senior leaders regularly attended relevant ministerial meeting as well as providing input via DHSC to support the Secretary of State for Health and Social Care in his attendance at other ministerial meetings.
106. Between January and March 2020 PHE officials attended COBR meetings, when required, to contribute to discussions including the implementation of social distancing measures, self and household isolation and serosurveillance.

107. There were also two formal sub-committees established by the Prime Minister in May 2020 – COVID Operations (COVID-O) to deliver the Government’s policy and operational response and COVID Strategy (COVID-S) to oversee the Government’s response. COVID-O meetings were held regularly, chaired by the Chancellor of the Duchy of Lancaster, and attended by the Secretary of State for Health and Social Care and the Chancellor, to make decisions on operational issues, for example agreeing decisions on local lockdowns and new restrictions or changes to education testing policy.
108. Attendees included the CMO/DCMO and relevant senior officials, including from NHSTT and PHE, where required. Contributions to these meetings were submitted and presented via DHSC, and PHE and NHSTT were occasionally directly tasked with actions by COVID-O (where relevant some specific actions are mentioned in this statement). Contributions on issues at these meetings from PHE and NHSTT/JBC officials included testing delivery, Community Testing and issues relating to self-isolation.
109. JBC analysis of the likelihood of community transmission of COVID-19 within a given overseas country or territory (drawing on information from other teams in PHE, for example the Emerging Infections Team) informed the Secretary of State for Health and Social Care recommendations to COVID-O on protective measures to be taken at the border.
110. Since October 2021 UKHSA officials have contributed to COBR and COVID-O meetings, discussing issues covering testing capacity and supply and self-isolation rules.
111. There were regular official-level meetings and other discussions with other government departments, for example to develop specific testing policy and guidance for schools, prisons and other settings. These included regular meetings to review potential policies for specific sectors, and their operational feasibility, such as a weekly meeting of senior officials to review testing in educational settings. Similarly, officials engaged with counterparts in the Home Office, Foreign Office and Department for Transport about health controls at the border. These were a means of fostering cross government understanding and agreement on health protection policy including testing and ensuring wider awareness of developments.

Provision of clinical or public health advice and scientific advice to government during the COVID-19 pandemic

112. UKHSA and its predecessor organisations, in particular PHE, had a key role in providing both clinical and public health advice and scientific advice to Government. This was both direct from PHE to Government and indirect, such as the inputs contributed through SAGE or the CMO.

Clinical, scientific and public health advice directly provided

113. As described in paragraphs 102–104 of UKHSA's witness statement for Module 1 dated 14 April 2023, PHE had a staff of public health experts, including clinical public health and infectious disease specialists. This expert capability and remit has been retained by UKHSA.
114. During the COVID-19 pandemic, PHE provided expert clinical and public health advice to Government through different routes. In paragraphs 90-101 is a description of the Bronze / Silver / Gold meetings. Others are described below:
- a. Advice specifically commissioned by senior Government officials, the CMO, or Secretary of State for Health and Social Care, cleared via formal incident, scientific and/or publication governance routes;
  - b. Via a formal submission to DHSC Ministers, often incorporating expert PHE advice in submissions produced by NHSTT;
  - c. During formal meetings where public health advice was specifically sought and was formally minuted (such as the DHSC-led Social Care COVID-19 Oversight Group, set up on 23 March 2020);
  - d. During ad-hoc meetings, or as part of direct discussion between senior PHE officials and senior Government officials, for which formal minutes were not always produced or shared with PHE (for example, early meetings during the pandemic between the Secretary of State for Health and Social Care and senior PHE officials).

Clinical, scientific and public health advice provided predominantly with and through other organisations or expert groups

115. Scientific and medical advice to government was provided by the Government's Chief Scientific Advisor and the CMO. This advice was based on the consensus view of scientific advisory groups, primarily SAGE, sub-groups of SAGE, and other advisory groups such as the New and Emerging Respiratory Virus Threats Advisory Group (NERVTAG). A critical role for PHE (and subsequently UKHSA) was to commission and produce critical appraisals and primary research for these groups. Scientific advice within PHE was drawn from:
- a. Existing expertise, and internally funded operational science and research, for example, development of the first laboratory test for COVID-19 or evaluation of the effectiveness of COVID-19 vaccines;
  - b. Research funded by Government or other external sources, including work delivered in partnership, for example, via Health Protection Research Units (HPRUs);
  - c. Work on rapid critical appraisal reviews of the evidence to inform guidance.
116. Specific examples of how PHE, and latterly UKHSA, provided scientific advice to Government are described throughout this corporate statement, in summary examples included:
- a. Virological and epidemiological data to describe incubation periods and infectivity windows to inform self-isolation guidance;
  - b. Scientific advice to inform tools and strategies for testing, including prioritisation of testing;
  - c. Scientific advice relating to variants of COVID-19 based on genomic and epidemiological data;
  - d. Behavioural science advice to inform public health interventions such as non-pharmaceutical interventions (NPIs) and vaccination programmes;
  - e. Advice on case definitions for COVID-19;
  - f. Public Health management of contacts of cases of COVID-19.

High-level summary of UKHSA's working relationship with the CMO

117. There are four CMOs in the United Kingdom who are appointed to advise their respective governments. The CMO for England, Professor Sir Chris Whitty, is the UK government's principal medical adviser and chief public health adviser, and the professional head of all directors of public health in local government and of the medical profession. This includes all senior medically qualified staff in UKHSA through the UKHSA CEO and the UKHSA Chief Medical Advisor Responsible Officer role, with similar arrangements in place for its predecessor organisations. Each CMO is assisted by one or more Deputy Chief Medical Officers (DCMOs). Immediately prior to my appointment as CEO of UKHSA, I was one of the DCMOs for England from 2019-2021.
118. PHE, NHSTT and UKHSA worked very closely and collaboratively with the CMO and DCMOs, providing public health advice, evidence and other information. In addition to SAGE (as covered above) the CMO Senior Clinicians' group (SCG) was a key route for this engagement.
119. The SCG brought together senior clinical staff from across the health systems of the four UK nations to support knowledge sharing and active inquiry in the response to COVID-19. The meeting was initially set up by the CMO as weekly from 4 March 2020. The SCG was not a decision-making body. Its main purpose was to share knowledge and provide a support base for working through complex clinical challenges. The SCG was initially an England focused meeting and convened by CMO's office. Attendees included the CMO, DCMOs, the NHSE Medical Director, NHSE Director of Emergency Planning, the PHE Medical Director, and the PHE Incident Director. After the first meeting the membership widened to include all four nations' Chief Nursing Officers, CMOs and relevant DCMOs.
120. JBC provided data analysis to the four UK CMOs on a range of issues including the status of the national level of the pandemic, which informed the CMO's recommendation on the national alert level.
121. The CMOs provided technical oversight of some of the work of JBC under the governance arrangements agreed when JBC was established. A CMO-chaired technical board met monthly, or more frequently if needed, to review, technically critique, update as appropriate and ultimately endorse the methodology used by JBC to produce its assessments. Exhibited here are the Terms of Reference for the Technical Board [Exhibit: JH2/41 - INQ000203661].



122. Individual senior analysts within the JBC and clinical professionals across PHE would also seek CMO advice and pass on information urgently on an ad hoc basis as appropriate as new or novel data was received.

High level summary of the decision-making arrangements with regional and local administrations

123. COVID-19 presented an unprecedented challenge to national, regional and local public health and emergency planning arrangements. Local authorities have always played a critical role in public health protection, emergency response and infectious disease control. Local authorities were crucial in responding to the COVID-19 pandemic at a local level including by supporting the Test, Trace and Isolate processes and systems. One route for engagement with local partners was through Local Resilience Forums (LRFs), which were existing formal multi-agency partnerships established by the CCA 2004 and made up of representatives from local public services, including the emergency services, local authorities and the NHS.
124. At the outset of the COVID-19 pandemic PHE activated the NIERP, which provided detailed arrangements for responding to incidents and emergencies, supported by PHE threat-specific plans and by PHE local EPRR arrangements with local responders through the PHE Regions and Centres. In Section 3 of UKHSA's witness statement for Module 1 dated 14 April 2023 is information on how PHE managed its regional EPRR arrangements.
125. PHE Health Protection teams, originally within PHE Centres and later within PHE (subsequently UKHSA) Regions, provided the key interface between local resilience fora and Public Health England for matters of health protection. Representatives from PHE Health Protection teams would join relevant meetings, alongside key local leaders including Directors of Public Health or their team representatives and other Local Authority officials. Information and co-ordination between the national PHE response and PHE health protection teams was co-ordinated via a specific incident cell, the Centres and Regions Operating Centre (later renamed the Regions Operations Centre) which formed part of the cellular support mechanisms of the NIERP incident response.
126. PHE's regional teams worked with regional and local partners both collectively and individually. Collectively, regions worked together to solve issues of common

concern. Through a network of local sites, regions also operated individually to respond to the locally defined needs of their local public health system especially local government and the local NHS.

127. PHE regional representatives also co-operated with other stakeholders including NHS bodies, the Local Government Association, the emergency services and the academic, research and third sectors.
128. Following the creation of NHSTT, NHSTT and PHE worked collaboratively through Regional Partnership Teams (RPTs) which were established on an interim basis in May 2020 as part of the COVID surge response, working in partnership with local systems to deliver a strong and integrated, local, regional and national response in England. Bringing together key partners RPTs added significant value to the COVID response by effectively linking the national and local response and supporting the local responses including policy, resource, and operational perspectives. RPTs formed the running link with local area COVID response teams. There was one RPT in each of the nine recognised government regions. **[Exhibit: JH2/42 - INQ000203625]**. Local stakeholders provided views which were a key component of decisions regarding local interventions.
129. NHSTT Contain provided regular updates to local partners and sought feedback from a range of local leaders through various boards, including: the Local Outbreak Advisory Board, hosted by the Local Government Association, attended by nominated local councillors; and the Chief Executives Sounding Board, hosted by The Society of Local Authority Chief Executives (SOLACE) and Senior Managers attended by Chief Executives.
130. Data from PHE and NHSTT/JBC (as appropriate) on geographical and population transmission was shared with Local Authorities to inform local outbreak planning, so that teams across the country could quickly and effectively respond, working with the national government when necessary.
131. The nine NHSTT RPTs worked closely with local authorities and wider local systems to support the local response, ensuring they were able to implement their COVID-19 local outbreak management plans. The NHSTT RPTs provided ongoing oversight and assurance, escalating risks and issues as needed, including via the national local action committee command structure; providing additional support and escalating requests for surge assistance; as well as

identifying evidence and good practice and disseminating this widely, both to limit viral transmission and to support specific services and populations, for example, social care (please see exhibit at paragraph 128 above).

132. NHSTT RPTs worked and engaged with Upper and Lower Tier Local Authorities by attending relevant Local Resilience Forum, Strategic and Tactical Co-ordination Group meetings, intelligence cells organised by RPTs; as well as routine meetings with (sub-regional) Local Authority Chief Executives and Directors of Public Health to understand the issues that local authorities wished to escalate to the National Bronze, Silver and Gold meetings.
133. In addition, RPTs provided the JBC and DHSC with additional data and intelligence, sourced from local authorities, to provide local granularity and assist interpretation including to inform decisions relating to non-pharmaceutical interventions. They also provided Government with insight into local, sub-regional and regional concerns and issues, including political, economic, social and operational impacts.
134. Following the creation of UKHSA in October 2021, and continuing in the present, Regional Deputy Directors of Health Protection (RDDs) provide the professional and managerial leadership of UKHSA's health protection teams around the country. These regional teams correspond with the regional PHE teams that previously existed. They have responsibility for managing productive and effective relationships with local partners that facilitate and enable system wide health protection service response. Locality lead consultant models are the cornerstone of engagement with local authority Directors of Public Health (DsPH). Consultants continue to be the primary relationship managers for DsPH with RDDs providing a second line of engagement on national, regional and strategic issues.
135. RDDs provide a specialist public health leadership role in setting and driving regional and local priorities. Together with their teams, RDDs have a strategic and advisory role in leading engagement and relationship management with local authority Directors of Public Health, and with Regional Directors of Public Health, Directors of Infection Prevention Control, Medical Directors, Directors of Nursing, directly elected Mayors, and newly created Integrated Care Organisations.
136. At Local Authority level, HPTs continue to attend Health Protection Committees/Boards that report to Local Authority Health and Wellbeing Boards.

Consultants in Health Protection and Practitioners work within local systems to identify local priorities and contribute to the delivery of bespoke programmes of work as a subject matter expert.

137. The direct input of HPTs and the RDDs' leadership role is articulated on a topic basis throughout the modules identified by the Inquiry. Key areas of work include support on outbreak investigation and management, specialist support to care homes and educational settings.
138. Nationally, UKHSA has nurtured a collaborative relationship with the Local Government Association (LGA) and Association of Directors of Public Health (ADPH) engaging in discussions through the Future Health Protection System Co-Design Group with a commitment to open and direct engagement leading to co-design and co-production of the health protection system and services.

#### Liaison with Devolved Administrations

139. Health and social care is a devolved function that is the responsibility of each of the three governments in Scotland, Wales and Northern Ireland. Health Protection services are provided and/or led by Public Health Scotland, Public Health Wales and Public Health Northern Ireland respectively for each nation. Officials in UKHSA and its predecessor organisations worked routinely with their counterparts in each of these agencies, as well as the devolved governments, as part of health protection planning and response prior to and during the UK government's response to the pandemic. Details of these are set out here.
140. Although health is a devolved matter, a critical part of the pandemic response has been a UK wide approach, and there has been a high level of co-ordination between the senior health professionals across the UK, building on existing emergency response arrangements. For example, there were expert scientific advisory groups convened at a UK level which provided advice to the CMOs of the four nations, there was a four nations response in diagnostics and surveillance, as described in paragraphs 650-667 at Section 5 of this statement, and NHSTT provided services to support testing in all four nations.
141. Each of the Devolved Administrations (DAs) has a CMO and a chief scientific adviser (CSA). From the early phase of the pandemic both the CMOs and CSAs routinely liaised professionally to provide co-ordinated evidence-based advice,

where relevant, appropriate to their own populations. Each UK nation has its own health protection teams, scientists, research, academic and clinical experts with some specialist skills available to all four nations sited within UKHSA. As outlined in Section 3 of UKHSA's witness statement for Module 1 dated 14 April 2023 there is routine exercising of public health emergency response arrangements and routine engagement on issues of public health importance through formal and informal meetings including policy, professional, clinical and academic linkages.

142. Due to the nature of the pandemic, there was a recognised need for very close working with all the DAs including both the health departments and the public health agencies. DA national public health agency representatives attended the daily PHE IMT meetings as well as other meetings, for example those relating to the development of contact tracing models and variant technical meetings. This collaboration led to, for example, agreeing the commission on the UK national community infection survey, which is described in further detail at paragraph 617 in Section 4 of this statement.
143. PHE engaged in regular stakeholder engagement meetings with the DAs to share information, guidance, and public health advice throughout the pandemic, as described in the following paragraphs.
144. There were extant arrangements in place with the Five Nations group (a forum for discussion, debate and collaboration between partners in England, Scotland, Wales, Northern Ireland and the Republic of Ireland) for example with partners across the health and justice sectors. Building on those arrangements, from March 2020, PHE convened the Five Nations Health and Justice COVID-19 Contact Group meeting on a weekly and then monthly basis. These meetings covered country-specific and general situational updates, including issues such as visiting policies in prisons and the prevalence of antibodies amongst prison staff [Exhibit: JH2/43 - INQ000203646]; [Exhibit: JH2/44 - INQ000203647].
145. PHE officials also attended quarterly, 4-nation meetings chaired by the Department for Education's Chief Scientific Advisor when invited to discuss evidence on particular topics, including the balance of potential interventions and long-term harms for children and young people [Exhibit: JH2/45 - INQ000203650].

146. The COVID-19 National Testing Programme, established by DHSC, covered the DAs from its inception and this was carried over with the creation of NHSTT. This agreement was ratified in MOUs between the Secretary of State for Health and Social Care and his devolved counterparts [Exhibit: **JH2/46** - INQ000203654]; [Exhibit: **JH2/47** - INQ000203653]; [Exhibit: **JH2/48** - INQ000203656].
147. A Strategic Testing Group was set up to ensure there was a co-ordinated response across the DAs, Crown Dependencies and British Overseas Territories on the government's testing response, with alignment on approach, where possible, including on areas such as:
- a. Supply and distribution of swab testing for critical key workers in the NHS, as well as key workers in other sectors;
  - b. Antibody testing and immunity detection;
  - c. Surveillance testing and the development of new tests and treatments;
  - d. Increasing mass-testing capacity for the UK at a completely new scale.
148. This group initially met twice a week, moving to weekly meetings once regular engagement with working level contacts had been established. It also served as a forum to escalate, discuss and resolve high-level and/or strategic issues at a senior level across the DAs, Crown Dependencies and British Overseas Territories on all aspects of the testing programme, as set out in the government's testing strategy [Exhibit: **JH2/49** - INQ000203655].
149. The need to work with the DAs was recognised as an important aspect of NHSTTs ability to deliver its remit: both formally to deliver the testing programme UK-wide with the DAs as equal partners, and informally on a significant number of critical areas where a UK-wide approach was agreed as the most effective way to break the chains of transmission.
150. The national testing programme was largely delivered by NHSTT on a four nations basis, although some testing, for example, for hospital patients was undertaken on a devolved basis. Key elements delivered by NHSTT included procurement and distribution of tests (both PCR and LFDs) to essential workers, other priority and

targeted groups, and the general public; and providing administrative and digital infrastructure for individuals to book tests and receive test results.

151. At the outset of the Testing Programme, the four nations' Chief Medical Officers made a joint agreement that testing capacity would be allocated across the four nations based on population. The testing capacity percentages for the DAs were; Scotland 8.28%, Wales 4.78% and Northern Ireland 2.85%. It was also decided that actual testing capacity should be based on 80% of the total theoretical capacity of the system. The 80% capacity figure represents an international industry guideline, this is used as a 'rule of thumb' measure for operationally sustainable utilisation in large, high throughput laboratories.
152. Lateral Flow Devices were allocated to DAs at the point of procurement based on population shares for each nation to use based on their policy decisions. If required, DAs could request additional procurement beyond their allocated percentage.
153. The Testing programme supported DAs when their need for testing capacity went beyond this allocation. An example of this was in September 2021 when Northern Ireland experienced levels of PCR test demand significantly above their Barnett allocation of lab capacity. The Testing programme agreed to double the operational lab capacity for Northern Ireland and increase test booking slots for a period of time to help cope with the increase in demand.
154. Contact tracing and outbreak management were undertaken on a devolved basis, but with strong communication links across the four nations to co-ordinate approaches as far as possible.
155. The JBC also established Ministerial, Steering and Technical Boards in line with their formal written agreements with the DAs. In August 2020, Health Ministers from the four nations agreed the document, "Participation of the Devolved Administrations in the Joint Biosecurity Centre" [Exhibit: JH2/50] - INQ000203652]. This document, referred to as the JBC "Political Agreement", set out the principles that underpin a UK-wide JBC. NHSTT also fed into the agenda setting and briefing for the weekly UK Health Ministers' Forum. This was an informal arrangement with a focus on discussing shared priorities and developing strong relationships between the Ministers.

156. It set out accountability and governance arrangements, how data access and use would work, the UK Covid-19 Alert Level and other JBC analytical products such as strategic assessments by sector or community and situational awareness reports. Local decision-making arrangements, staffing arrangements, and legal requirements were also included.
157. A separate agreement, the Agency Agreement between the Secretary of State for Health and Social Care and the Devolved Administrations relating to the Joint Biosecurity Centre [Exhibit: JH2/51 - INQ000203649] commenced on 5 November 2020. This agreement sets out the legal basis allowing the JBC to act UK-wide in carrying out its functions [Exhibit: JH2/52 - INQ000203651].
158. The Political and Agency Agreements introduced four nation governance for the JBC with a Ministerial Board comprising the four Health Ministers, Steering Board for Director General level colleagues and Technical Board made up of the four nations' CMOs and CSAs.
159. A four nation officials' group was established within JBC to support implementation of the Agency Agreement. This group was known as "The Implementation Group for the Agency Agreement" (TIGAA). As part of implementation, Wales and Scotland provided Senior Liaison Officer embeds at SCS1/G6 level who worked within JBC for around two days per week ensuring join up across nations.
160. As well as regular four nations engagement at official working level, there was senior official oversight at the UK Government and Devolved Administrations Board (UKG-DA Board). The first Board meeting was held on 19 March 2021 chaired by NHSTT Executive Chair Dido Harding. The purpose of the UKG-DA Board was to establish senior permanent four nations governance across respective test, trace, contain and protect programmes, enabling the four governments' strategic oversight of UK-wide opportunities and issues. The Board's remit was to consider issues including but not limited to testing policy and operations, contact tracing, containment, borders and international arrivals, self-isolation and support schemes.
161. The Board continues to operate in a revised form, as the UKHSA-DG Board, with a wider remit than COVID-19. It also provides a high-level forum for escalating any issues that arise in relation to activities UKHSA undertakes on behalf of the DAs.



The UKHSA-DG Board is chaired by the UKHSA Director General for Strategy, Policy and Programmes, with an 'open' invitation to the UKHSA CEO to join for specific topics or at the request of the DAs. It is attended by representatives from each of the DAs and their public health agencies [Exhibit: **JH2/53** - **INQ000203648**]. The Board supplements the Common Framework on Public Health Protection and Health Security which provides a formal basis and governance structure for collaboration between all parts of the UK on health security and health protection policy.

#### Lessons identified related to government decision making

162. UKHSA is a new organisation and as such, identifying and implementing lessons has formed a central part of UKHSA's creation and remains key to UKHSA's ongoing evolution as we continue to build our capabilities to tackle current and future health threats. This will include reflecting learnings identified through the UK Covid-19 Public Inquiry.
163. From the outset of the COVID-19 response in early 2020, PHE, NHSTT and subsequently UKHSA initiated a multi-modality programme of lessons identification activity. PHE incident response cells conducted rolling improvement/lessons identification discussions which were recorded and tracked to support response interventions. Debriefs, surveys and internal audits during the main phases of the response identified further tactical and strategic successes and challenges. A comprehensive repository of lessons identified has been collated during the period and now forms the basis of formal lessons identified activity in UKHSA. An itemised list is included in the document previously provided as part of the general disclosure [Exhibit: **JH2/54** - **INQ000101059**].
164. In June 2020, the Government Internal Audit Agency conducted an audit review of the effectiveness of the point in time arrangements in place to manage multiple incidents (including Novichok, Ebola, Listeria and Grenfell Tower) and business as usual activities in PHE [Exhibit: **JH2/55** - **INQ000101060**]. Due to the ongoing nature of COVID-19 the recommendations from this audit were not formally implemented but were fed into an internal process focusing on key findings around PHE's organisational remit, preparedness and business continuity, incident management, decision making, data, people and communications, prior to the creation of UKHSA.

165. UKHSA's creation on 1 October 2021, brought together different organisations to provide a more integrated health security capability than existed pre-pandemic. UKHSA also integrated the COVID-19 Vaccine Taskforce, now Covid Vaccine Unit (CVU) in October 2022 to ensure the UK remains protected from COVID-19 and best engages with the new global COVID-19 vaccine market as well as amplifying opportunities with other UKHSA directorates to support research and development of wider vaccine opportunities.
166. In addition to UKHSA's organisational learning, in my role as Chief Executive of UKHSA as well as my former role as DCMO, I co-authored the "Technical report on the COVID-19 pandemic in the UK", published by DHSC, which summarises high level technical and professional learning for future UK Chief Medical Officers, Government Chief Scientific Advisers, National Medical Directors and public health leaders in any future pandemic. This document is provided as an exhibit in paragraph 643.
167. UKHSA is committed to being a learning organisation, focused on continuous improvement. An internal assurance process for lessons identified within UKHSA is currently being developed to monitor and report on implementation of technical, structural, operational and cultural lessons that have been identified both prior to and during the COVID-19 Pandemic. This builds upon routine incident response arrangements, which include after-action debriefs, evaluations and continual integration of evaluation findings.
168. UKHSA has been asked to reflect on key learnings in relation to input into government decision making as part of this statement. UKHSA welcomes the Inquiry's role to draw conclusions on lessons from the pandemic, which will draw on evidence from many other contributors, and does not wish to pre-empt that vital work. Based on the lessons identified work of UKHSA and its predecessor organisations outlined above, supplemented by reflections from past and current senior leaders involved in the pandemic, we have outlined several preliminary lessons in paragraphs 169 to 176 below:
169. Well established national and local frameworks for governing health incidents existed prior to the pandemic and were implemented at the onset of the pandemic, as described in this statement. However, the scale of a pandemic which affects not just health but economy, education and the population were not sufficient to

govern an incident of the magnitude of the pandemic, which required a whole of government response at scale.

170. It took time for decision-making structures appropriate to the scale of the response to be established. Normalised ways of working across local, regional, and central government within public health could not keep pace with new central coordination functions, impacting national to local communication. The evolution of government decision making structures, as outlined in this statement, such as establishment of the Bronze/Silver/Gold process in June 2020 provided a new way of working and improved alignment and communication across the national, regional and local levels and allowed agreed health input into government decision-making. Having established or pre-agreed cross-government coordination and decision-making mechanisms capable of handling an incident of the scale of COVID-19 would be beneficial in a future pandemic. These mechanisms require a pre-existing data infrastructure.
171. The scale and complexity of the response to COVID-19 exceeded the capacity of the UK's existing public health infrastructure. This required new infrastructure to be established in addition to existing public health structures. There is a need to ensure adequate resourcing of public health capacity and infrastructure so that the UK has the capabilities required to secure health and to rapidly scale sufficient capacity to mount the required initial response while mobilising broader resources to scale up further as needed. Additional funding on a no regrets basis at the early stages of health response is necessary to allow scaling before demand outstrips capacity. The response also required an influx of people with diverse, multidisciplinary skillsets to set up new services rapidly, for example building digital infrastructure or people delivering front-line services and logistics capabilities. Beyond the support of the armed forces, there was no standing capability within the civil service to rapidly bring in this additional workforce. Establishing infrastructure and mechanisms that enable rapid surge capability from a broad range of skillsets could be a key learning for cross-government preparedness for future threats.
172. Planning for future health threats needs to ensure the recognised all-hazards approach gives proportionate practical consideration and capacity to cover all transmission routes, including new and emerging disease, radiological, chemical, nuclear and environmental. This is reflected in UKHSA's remit and strategy.

173. Rapid translation of real-time data to inform and evaluate policy and operational decisions is critical to public health emergencies. The curation and analysis of data during the pandemic required considerable new resources and infrastructure which was not already established within PHE or elsewhere. Obtaining, sharing and publishing data posed significant challenges across organisations within the health family, as data sharing agreements were not in place for all required connections and had to be established. Appropriate mechanisms and agreements on data sharing combined with the necessary skills and culture of collaboratively sharing data should be a priority for government to enable better outcomes and will be important in both peacetime and in the face of a future pandemic.
174. A significant amount of legislation had to be made and amended as part of responding to the pandemic, including regulations on self-isolation, contact details, national and local NPIs, and approval of test devices (Section 2 provides detail on advice that UKHSA and its predecessors provided on this legislation). A more flexible statutory framework that provided a range of powers for use during a pandemic could have simplified and streamlined the response to the pandemic. A full review would provide an opportunity to consider how such a framework could be designed and operate. As with other infectious diseases, COVID-19 had a disproportionate impact on the most vulnerable, and consideration of health inequalities must be central to decision making in relation to tackling health incidents. Predecessor organisations and all public health professionals are trained to be aware of this but the COVID-19 pandemic has been a seminal moment for wider understanding. UKHSA recognises the critical importance of consideration of health inequalities across all of its work, and in particular in planning for future health threats and pandemics, including how services can be designed to reach the most vulnerable first.
175. A new pathogen requires the rapid development evaluation and introduction of diagnostics, vaccines and therapeutics, which enable protection of the population without sole reliance on NPIs. The UK therefore needs to maintain in-country capability to surge sufficient laboratory and genomics capacity through maintenance of partnerships developed during the pandemic and through retention on-shore of biotechnical industries. In addition to pandemic preparedness, such capabilities can be used to reduce ongoing endemic and seasonal health threats, sexually transmitted and respiratory infections.

176. The scientific capabilities of UKHSA need to be better understood and supported as part of national critical infrastructure for the benefit and efficiency of cross government policy and emergency response arrangements.

#### Transition to UKHSA

177. UKHSA has been asked to reflect if the establishment of UKHSA during the pandemic impacted the Covid-19 response. The announcement of NIHP on 18 August 2020 and then UKHSA on 24 March 2021 are covered in paragraphs 29 – 30 of this statement. Unfortunately, the NIHP announcement was reported in the Daily Telegraph on 15 August [Exhibit: **JH2/56** - **INQ000223301**] in advance of the Secretary of State's speech or communication to staff. This resulted in significant upset and uncertainty for staff who were working tirelessly on the response to COVID-19.
178. The transition from PHE and NHSTT to UKHSA took place between the announcement in the autumn of 2020 and UKHSA becoming fully operational on 1 October 2021, although work to build the new organisation continued after this date, and the move of much of the Vaccines Taskforce into UKHSA took place the following October. The overall transformation (including the moves of other parts of PHE into DHSC and elsewhere) was led by DHSC, which published an overview of the plans on 15 September 2020 [Exhibit: **JH2/57** - **INQ000223302** and more details on 29 March 2021 [Exhibit: **JH2/58** - **INQ000223303**].
179. Given the close working that was required between PHE and NHSTT/JBC in responding to COVID-19, there were clearly benefits to combining their capabilities in a single organisation under a clear leadership structure. Through the transition period teams from the organisations worked increasingly closer together under the leadership of Dido Harding then myself.
180. The transition was coordinated by a dedicated transition team and included work to design a new organisational structure and match senior staff to new roles; merge corporate services such as strategy, finance, and HR; and to bring together existing IT and other systems. The transition required a significant amount of leadership time, in particular to design and implement the new senior structure and has involved large changes for corporate service functions. It is also important to note that for the vast majority of staff the transition to UKHSA resulted in no

changes to their role, location or immediate line management including for expert PHE staff working in laboratories and in front-line Health Protection Teams and for NHSTT staff delivering operational test and trace services.

181. Throughout the transition period, and following UKHSA becoming operational on 1 October 2021, the COVID-19 pandemic and the necessary public health response to it has continued to change rapidly. The response to this changing situation has involved very large changes to the size and shape of the organisation, in particular to the overall budget and to the scale of test and trace operations, workforce, procurement and logistics. For the relevant teams these necessary operational changes were much more significant than the transition from PHE and NHSTT/JBC to UKSHA. Uncertainty about the timing of some of these changes (driven by the evolution of the pandemic and government decisions) combined with uncertainty about future budgets, created uncertainty and concern for many staff who were on temporary contracts.
182. During the transition period UKHSA and its processors continued to provide the government with expert clinical, public health and science advice, and data analysis, and implemented a wide range of operational services. Just after the transition to UKHSA in Winter 2021, UKHSA rapidly stood up the response to the Omicron variant, which involved (amongst other things) delivering an unprecedented number of tests and assessing the continued efficacy of vaccines against the variant.

## **Section 2: Advice and briefings prepared by UKHSA on the public health and coronavirus legislation and regulations**

183. This section sets out the advice and briefings that were provided by UKHSA and its predecessor organisations to Ministers, the Prime Minister's Office, or Cabinet regarding proposed or enacted legislation in key areas. The advice and briefings referred to are exhibited in this statement. Final versions of these documents are included where available, but in some cases a draft version may be presented. The role of UKHSA and its predecessor organisations was to provide advice on the public health issues or the impact of the operational delivery implications. That was done either direct to ministers or via officials in DHSC and the CO. Final decisions about the legislation and regulations were for Ministers and Parliament.

184. Given the volume of changes to legislation and regulations, this section focuses on the formal written advice provided by UKHSA and its predecessors – primarily in the form of submissions to ministers – and does not detail internal discussions that led to that advice. For the majority of the period, after the formation of NHS Test and Trace (NHSTT) on 28 May 2020, advice was provided by NHSTT. The advice from NHSTT would frequently incorporate expert public health advice from PHE and epidemiological or modelling advice from JBC and PHE provided expert scientific input indirectly as described in other sections, for example through SAGE meetings. Where UKHSA has a record of the response from ministers that is included in this statement.
185. In many cases final decisions on the legislation and regulations would be taken in the relevant ministerial committee meetings (e.g. COVID-O, COVID-S, or smaller meetings of key ministers). UKHSA does not have a full record of those meetings, which were organised by the CO.
186. This section of the statement has been structured in accordance with the legislation that UKHSA and its predecessors provided advice on, as follows:
- a. The Health Protection (Coronavirus, Restrictions) (Self-Isolation) (England) Regulations 2020 (referred to as the 'Self-Isolation Regulations').
  - b. The Health Protection (Coronavirus, Collection of Contact Details etc and Related Requirements) Regulations 2020 (referred to as the 'Contact Details Regulations').
  - c. Various regulations regarding localised restrictions.
  - d. The Health Protection (Coronavirus, Restrictions) (All Tiers) (England) Regulations 2020 (referred to as the 'Tiers Regulations').
  - e. The Medical Devices (Coronavirus Test Device Approvals) (Amendment) Regulations 2021 (referred to as the 'Coronavirus Test Device Approvals (CTDA) Regulations').
187. Many of these pieces of legislation had a number of different iterations and/or were amended by other statutory instruments (SIs). For ease of reading, this statement uses a consistent short reference, as described above, in relation to all

the amended forms of the legislation and relevant additional SIs. The specific legislation is exhibited throughout the statement for reference.

188. DHSC led on policy advice and briefings to Ministers for the Coronavirus Act 2020, which came into force on 25 March 2020, and the emergency Health Protection (Coronavirus) Regulations 2020 that preceded it. No evidence has been found that PHE provided formal written advice or briefings on the drafting of this legislation.
189. Before the introduction of legislation for people who were symptomatic, tested positive, or were a close contact of someone with COVID-19, guidance on self-isolation was provided in PHE's Stay at Home guidance. PHE's role in COVID-19 guidance is covered in Section 6 of this statement.

#### The Health Protection (Coronavirus, Restrictions) (Self-Isolation) (England) Regulations 2020

190. This section addresses the policy advice that UKHSA and predecessor organisations provided to Ministers in relation to The Health Protection (Coronavirus, Restrictions) (Self-Isolation) (England) Regulations 2020 (the 'Self-Isolation Regulations') [Exhibit: JH2/59 - INQ000203851].
191. The Self-Isolation Regulations, which covered England only, came into effect on 28 September 2020 and were revoked on 24 February 2022.
192. This section is structured according to the following themes:
  - a. Self-isolation regulations and enforcement (paragraphs 193-241).
  - b. Self-isolation support measures (paragraphs 242-268).

#### Self-isolation regulations and enforcement

193. On 18 September 2020 Covid-19 Taskforce (CO TF) submitted advice regarding isolation support payments and a legal duty to self-isolate to COVID-O [Exhibit: JH2/60 - INQ000062633]. NHSTT contributed to the paper but did not attend the meeting. The recommendations were agreed at COVID-O on 18 September 2020 [Exhibit: JH2/61 - INQ000119891].



194. On 26 September 2020 a submission by NHSTT regarding regulations on the legal duty to self-isolate for those who test positive or are notified they are a close contact of someone who has tested positive for COVID-19 was submitted to the Secretary of State for Health and Social Care [Exhibit: JH2/62 - INQ000203849]. The submission was agreed and the Self-Isolation Regulations were signed on 27 September 2020 [Irrelevant & Sensitive]. The Self-Isolation Regulations came into force on 28 September 2020.
195. On 15 October 2020 a submission by NHSTT sought the Secretary of State for Health and Social Care's approval to designate the payment for Fixed Penalty Notices to the Criminal Records Office and sign the Designation Order attached to the submission [Exhibit: JH2/64 - INQ000203848]. The Secretary of State for Health and Social Care approved the recommendations and signed the designation order on 22 October 2022 [Exhibit: JH2/65 - INQ000203727].
196. On 21 October 2020 a submission by NHSTT requested the Secretary of State for Health and Social Care's confirmation that only police constables should be able to use reasonable force to enforce the Self-Isolation Regulations, and that there was no intention for reasonable force powers to be granted to PCSOs, local authority officers or other designated individuals [Exhibit: JH2/66 - INQ000203681]. This was approved by the Secretary of State for Health and Social Care and MS(PSM) on 22 October 2020 [Exhibit: JH2/67 - INQ000203751].
197. On 17 November 2020 information from NHSTT was included in a note to the Home Secretary. The note addressed issues arising from the enforcement of the self-isolation regulations and the issuing of Fixed Penalty Notices [Exhibit: JH2/68 - INQ000203791].
198. On 24 November 2020 a submission by NHSTT to the Secretary of State for Health and Social Care set out the rationale for using a confirmatory PCR test as a follow up to a positive LFD test result and that initially the legal duty to self-isolate should be triggered by the confirmatory PCR [Exhibit: JH2/69 - INQ000203842]. The Secretary of State for Health and Social Care's office confirmed that this was approved on 25 November 2020 [Exhibit: JH2/70 - INQ000203785].

199. On 26 November 2020 a submission by NHSTT regarding further amendments to the Self-Isolation Regulations was submitted to the Secretary of State for Health and Social Care [Exhibit: **JH2/71**] - **INQ000203836**].
200. On 27 November 2020 further advice was submitted to the Secretary of State for Health and Social Care by NHSTT in relation to the enforcement of the Self-Isolation Regulations and the issuing of Fixed Penalty Notices. On 1 December 2020 NHSTT provided an update to the Secretary of State for Health and Social Care with more information on the nature of the problems identified by policing colleagues and how they were seeking to resolve them [Exhibit: **JH2/72**] - **INQ000203762**].
201. On 9 December 2020 a submission by NHSTT setting out plans for implementation of a revised self-isolation policy and connected operational considerations was sent to the Secretary of State for Health and Social Care [Exhibit: **JH2/73**] - **INQ000203822**].
202. On 10 December 2020 a submission by NHSTT recommending amendments to the Self-Isolation Regulations and The Health Protection (Coronavirus, Restrictions) (All Tiers) (England) Regulations 2020 (the 'Tiers Regulations') was sent to the Secretary of State for Health and Social Care [Exhibit: **JH2/74**] - **INQ000203819**].
203. On 10 December 2020 the Secretary of State for Health and Social Care agreed with this advice [Exhibit: **JH2/75**] - **INQ000203807**]. This change came into force in England, Scotland and Northern Ireland on 14 December 2020. It already applied in Wales [Exhibit: **JH2/76**] - **INQ000203724**]; [Exhibit: **JH2/77**] - **INQ000203854**].
204. On 10 December 2020 a submission by NHSTT setting out a proposed approach to address the issue of the lack of evidence for issuing Fixed Penalty Notices (for those who tested positive) was submitted to the Secretary of State for Health and Social Care [Exhibit: **JH2/78**] - **INQ000203837**]. On 14 December 2020 Ministers agreed the proposal described at paragraph 8 of this advice but did not agree with the recommended requirement for photo ID [Exhibit: **JH2/79**] - **INQ000203818**].

205. On 4 January 2021 a submission by NHSTT setting out advice on suspending routine confirmatory PCR testing and instead using a positive LFD result as the trigger for the legal duty to self-isolate and for contact tracing was submitted to the Secretary of State for Health and Social Care [Exhibit: JH2/80 - INQ000203691]. Recommendations were approved and came into effect on Monday 25 January 2021 [Exhibit: JH2/81 - INQ000203756].
206. On 25 January 2021 a submission by NHSTT regarding the police enforcement of self-isolation rules for people who had tested positive for COVID-19 through amending the Self-Isolation Regulations was submitted to the Secretary of State for Health and Social Care [Exhibit: JH2/82 - INQ000203705].
207. On 27 January 2021 a subsequent submission by NHSTT regarding signing an amendment to Self-Isolation Regulations was submitted to the Secretary of State for Health and Social Care [Exhibit: JH2/83 - INQ000203830]. The Health Protection (Coronavirus, Restrictions) (All Tiers and Self-Isolation) (England) (Amendment) Regulations 2021 [Exhibit: JH2/84 - INQ000203852], which amended the Self-Isolation Regulations, were signed by the Secretary of State for Health and Social Care and came into force on 29 January 2021 [Exhibit: JH2/85 - INQ000203804].
208. On 19 February 2021, a submission by NHSTT recommended that the Secretary of State for Health and Social Care confirm his agreement to additional amendments to the Self-Isolation Regulations [Exhibit: JH2/86 - INQ000203678].
209. On 26 February 2021 a submission by NHSTT to the Secretary of State for Health and Social Care, dated 25 February 2021, recommended an amendment to the Self-Isolation Regulations allowing for the power to use and disclose contextual information collected and shared by NHSTT with the police to support enforcement of the Self-Isolation Regulations [Exhibit: JH2/87 - INQ000203708] [Exhibit: JH2/88 - INQ000203857], which amended the Self-Isolation Regulations to address this issue, came into force on 29 March 2021.
210. On 8 March 2021 a submission by NHSTT on amendments to self-isolation regulations and collection of contact detail regulations, further to the submission of 19 February 2021, was sent to the Secretary of State for Health and Social Care

[Exhibit: **JH2/89**] - **INQ000203670**]. A response from Private Office on 10 March 2021 indicated that Ministers were content with the proposed amendments [Exhibit: **JH2/90**] - **INQ000203775**].

211. On 19 March 2021 a submission by NHSTT recommending publication of the MoU between DHSC and the NPCC, was sent to the Secretary of State for Health and Social Care [Exhibit: **JH2/91**] - **INQ000203838**] [Exhibit: **JH2/92**] - **INQ000203806**]. The MoU was published on 22 March 2021 [Exhibit: **JH2/93**] - **INQ000203858**].
212. On 18 March 2021 a submission by NHSTT regarding the re-introduction of confirmatory PCR for positive results from supervised LFD tests was sent to the Secretary of State for Health and Social Care. [Exhibit: **JH2/94**] - **INQ000203695**]. This was agreed [Exhibit: **JH2/95**] - **INQ000203754**].
213. At the end of March NHSTT contributed to two DHSC submissions. On 21 March 2021 a DHSC submission to the Secretary of State provided advice on the steps out of lockdown [Exhibit: **JH2/96**] - **INQ000223304**]. DHSC submission to the Secretary of State, dated 24 March 2021 summarised the findings of the six months review of the Self-Isolation Regulations. [Exhibit: **JH2/97**] - **INQ000203696**]. The Secretary of State for Health and Social Care agreed that the Self-Isolation Regulations should remain in force [Exhibit: **JH2/98**] - **INQ000203732**].
214. Following a commission from NHSTT, the PHE COVID-19 Public Health Advice, Guidance and Expertise (PHAGE) team produced a report on 7 June 2021 outlining PHE's position in respect of whether the increasing vaccination coverage in England warranted a review of policies relating to testing, tracing and self-isolation [Exhibit: **JH2/99**] - **INQ000203666**].
215. On 15 June 2021 NHSTT submitted a paper to the four UK Chief Medical Officers seeking steers around changes to self-isolation, quarantine and testing policies for fully vaccinated individuals [Exhibit: **JH2/100**] - **INQ000203790**].
216. A submission dated 28 June 2021 by NHSTT, regarding potential changes to self-isolation requirements for fully vaccinated contacts was submitted to the Secretary of State for Health and Social Care, seeking agreement in advance of a COVID-O meeting [Exhibit: **JH2/101**] - **INQ000203730**]. The Secretary of State for

Health and Social Care agreed the recommendations [Exhibit: **JH2/102**] - **INQ000203749**].

217. On 5 July 2021 a DHSC paper informed by the 29 June NHSTT advice went to COVID-O [Exhibit: **JH2/103**] - **INQ000203725**].
218. On 6 July 2021 Secretary of State for Health and Social Care announced that fully vaccinated individuals and under 18s would be exempt from self-isolation from 16 August 2021 [Exhibit: **JH2/104**] - **INQ000203821**].
219. On 14 July 2021 a submission by NHSTT to make the changes announced on 6 July 2021 to the Health Protection (Coronavirus, Restrictions) (Self-Isolation) (England) (Amendment) Regulations 2021 was sent to the Secretary of State for Health and Social Care. This provided full advice on the issues following initial advice provided on 7 July. [Exhibit: **JH2/105**] - **INQ000203825**]. The proposed amendments were agreed and they came into force on 16 August 2021.
220. On 15 July 2021 a submission by NHSTT on the proposed approach to the exemption from isolation for critical workforces was sent to the Secretary of State for Health and Social Care ahead of discussions at COVID-O on 16 July 2021 [Exhibit: **JH2/106**] - **INQ000203674**]. The COVID-O paper was attached as an annex to submission [Exhibit: **JH2/107**] - **INQ000203711**].
221. On 27 July 2021 a submission by NHSTT was sent to the Secretary of State for Health and Social Care recommending that where an individual was not able to verify that they are exempt from self-isolation, they be advised to gather evidence of exemption and update their certification record [Exhibit: **JH2/108**] - **INQ000203729**]. The attached exhibit is a draft of this submission: A search has been conducted to find the final submission within UKHSA's records without success. There is a typographical error in the attached exhibit which erroneously dates it as 27 July 2020.
222. On 7 September 2021 a submission (dated 6 September 2021) by NHSTT was sent to the Secretary of State for Health and Social Care regarding aligning the Self-Isolation Regulations with International Travel Regulations in relation to attending funerals and death bed visits. The submission recommended that no changes should be made to the domestic regulations, which at the time only

allowed positive cases or close contacts who are close family members to leave self-isolation to attend a funeral [Exhibit: JH2/109 - INQ000203834].

223. On 13 September 2021 a submission by NHSTT recommending amendments to the Self-Isolation Regulations was submitted to the Secretary of State for Health and Social Care [Exhibit: JH2/110 - INQ000203672]. An email from his office on 20 September 2021 indicated that the Secretary of State for Health and Social Care agreed the recommendations [Exhibit: JH2/111 - INQ000203746].
224. On 30 September 2021 an updated submission by NHSTT further to the submission of 7 September 2021 regarding funerals and death bed visits was sent to the Secretary of State for Health and Social Care recommending that no changes should be made [Exhibit: JH2/112 - INQ000203835].
225. UKHSA formally came into existence on 1 October 2021, and from that date advice that would have previously been authored by NHSTT or PHE was authored by UKHSA.
226. On 14 October 2021 a submission by UKHSA recommending that the domestic self-isolation exemption be extended to contacts able to verify their vaccination records, including English residents who registered their overseas vaccinations and those vaccinated in the EU with approved vaccines was submitted to the Secretary of State for Health and Social Care [Exhibit: JH2/113 - INQ000203698]. On 26 October 2021 the office of Secretary of State for Health and Social Care responded [Exhibit: JH2/114 - INQ000203808].
227. On 3 November 2021 the office of Secretary of State for Health and Social Care confirmed that he was content with all recommendations, except for, on the question about recognising overseas vaccinations for the purpose of domestic self-isolation policy, wishing to maintain the existing position of only accepting vaccines for domestic self-isolation purposes where they can be directly validated. He requested that further advice on a longer-term solution be submitted by the following Thursday (11 November 2021) [Exhibit: JH2/115 - INQ000203761].
228. On 6 November 2021 the office of Secretary of State for Health and Social Care responded, agreeing to no changes for positive cases but making amendments to allow unvaccinated contacts to make death bed visits or attend funeral provided they take a test first. [Exhibit: JH2/116 - INQ000203759].

229. On 11 November 2021 a submission by UKHSA setting out advice in respect of aligning self-isolation policy with borders policy by extending the existing exemption to those vaccinated overseas was submitted to the Secretary of State for Health and Social Care [Exhibit: **JH2/117**] - **INQ000203700**].
230. On 12 November 2021 a submission by UKHSA setting out advice on interim arrangements for individuals who were fully vaccinated in UK Overseas Territories and Crown Dependencies if identified as a contact while in the UK was submitted to the Secretary of State for Health and Social Care [Exhibit: **JH2/118**] - **INQ000203701**]. There is a typographical error in the attached exhibit which erroneously dates it as 2 November 2021.
231. On 18 November 2021 the office of Secretary of State for Health and Social Care confirmed his agreement to these recommendations. [Exhibit: **JH2/119**] - **INQ000203803**].
232. On 29 November 2021 a submission by UKHSA regarding changes to the Self-Isolation Regulations in response to the Omicron variant was sent to the Secretary of State for Health and Social Care [Exhibit: **JH2/120**] - **INQ000203827**] (please note that typographical errors in this document date it 29 November 2020 and indicate that the regulations are to come into force on 30 December 2021, which should read 30 November 2021 as stated in paragraph 20 of the submission). The Health Protection (Coronavirus, Restrictions) (Self-Isolation) (England) (Amendment) No.4) Regulations 2021 came into force on 30 November 2021.
233. On 29 November 2021 an email from UKHSA to the office of Secretary of State for Health and Social Care recommended proceeding with the changes to the Self-Isolation Regulations for people who were 'fully vaccinated' overseas (as set out in the submission of 11 November) notwithstanding the arrival of Omicron variant [Exhibit: **JH2/121**] - **INQ000203792**]. The changes came into force on 9 December 2021.
234. On 13 December 2021 a submission by UKHSA was sent to Secretary of State for Health and Social Care recommending further changes to the Self-Isolation Regulations which removed the requirements introduced on 30 November 2021 regarding self-isolation of close contacts of a suspected case of the Omicron variant. This submission concerned implementation of decisions that had been

- taken by COVID-0 in meetings on 8 and 10 December [Exhibit: [JH2/122](#)] - [INQ000203826](#)].
235. On 14 December 2021 The Health Protection (Coronavirus, Restrictions) (Self-Isolation) (England) (Amendment) (No. 6) Regulations 2021 (“Amending Regulations”) came into force [Exhibit: [JH2/123](#)] - [INQ000203855](#)].
236. On 19 December 2021 a submission by UKHSA providing advice on shortening the self-isolation period for positive cases of COVID-19 was submitted to the Secretary of State for Health and Social Care. This set out two main approaches, with a recommendation to shorten the legal self-isolation period to 7 days, and an alternative approach that would not amend the regulation but rely on the ‘reasonable excuse provision’ [Exhibit: [JH2/124](#)] - [INQ000203677](#)].
237. On 20 December 2021 the office of Secretary of State for Health and Social Care responded, agreeing a ‘reasonable excuse’ option to implement the changes faster without changing regulations. [Exhibit: [JH2/125](#)] - [INQ000203802](#)]. These changes came into effect on 22 December 2021.
238. On 12 January 2022 COVID-0 considered changes to the self-isolation policy for positive cases supported by an evidence pack and paper produced by the Cabinet Office C19 Taskforce. The UKHSA provided detailed data and analysis to inform this evidence pack, along with contributions from HMT, BEIS, and DHSC [Exhibit: [JH2/126](#)] - [INQ000091527](#)]. The Committee agreed the recommendations [Exhibit: [JH2/127](#)] - [INQ000091529](#)].
239. On 9 February 2022 the Prime Minister announced to Parliament his intention to revoke remaining COVID-19 regulations early. On 17 February 2022, in response to this direction, UKHSA provided a submission to Secretary of State for Health and Social Care outlining a practical framework to achieve this outcome, including revocation of the Self-Isolation and the No.3 Regulations on 24 February 2022 and the ending of Test and Trace Support Payments and the Medicines Delivery Service. The submission included detailed advice in annexes on the public health implications, equalities duty, NHS duties and Family Test. [Exhibit: [JH2/128](#)] - [INQ000203671](#)] [Exhibit: [JH2/129](#)] - [INQ000203714](#)] [Exhibit: [JH2/130](#)] - [INQ000203719](#)] [Exhibit: [JH2/131](#)] - [INQ000203720](#)] [Exhibit: [JH2/132](#)] - [INQ000203722](#)] [Exhibit: [JH2/133](#)] - [INQ000203723](#)]. On 19 February 2022 the Secretary of State for Health and Social Care agreed the approach outlined.



240. On 21 February 2022 a submission by UKHSA regarding the revocation of the Self-Isolation Regulations was sent to the Secretary of State for Health and Social Care [Exhibit: **JH2/134**] - **INQ000203828**].
241. On 22 February 2022 the DHSC Parliamentary Under Secretary of State confirmed she was content to sign the revocation regulations [Exhibit: **JH2/135**] - **INQ000203824**] [Exhibit: **JH2/136**] - **INQ000203738**].

#### Self-isolation support measures

242. This section addresses the policy advice provided to Ministers in relation to financial and practical support measures aimed to help remove barriers to self-isolation and improve adherence before the revocation of the Self-Isolation Regulations as described in paragraphs 238-240.
243. On 23 June 2020 a note by NHSTT was submitted to the Secretary of State for Health and Social Care to contribute towards a response to the Prime Minister's request for advice on financial support for people who are required to self-isolate, compliance with test and trace, and local lockdowns [Exhibit: **JH2/137**] - **INQ000203683**].
244. On 21 July 2020 a submission by NHSTT regarding options for financial support to incentivise people to stay at home and self-isolate was sent to the Secretary of State for Health and Social Care [Exhibit: **JH2/138**] - **INQ000203684**].
245. On 22 August 2020 a submission by NHSTT setting out the proposed terms of a pilot for financial support for people on low income for self-isolation was sent to the Secretary of State for Health and Social Care [Exhibit: **JH2/139**] - **INQ000203685**].
246. On 31 August 2020 a submission by NHSTT regarding the launch of the pilot for financial support for people on low income for self-isolation was sent to the Secretary of State for Health and Social Care [Exhibit: **JH2/140**] - **INQ000203686**].
247. On 1 September 2020 the office of the Secretary of State for Health and Social Care indicated the need to immediately begin the policy design of the next stage of the intervention [Exhibit: **JH2/141**] - **INQ000203741**].

248. On 25 September 2020 a submission by NHSTT was sent to the Secretary of State for Health and Social Care requesting approval of the size and design of the Test and Trace Self-Isolation Payment Scheme (TTSP) discretionary hardship fund. This followed agreement by COVID-0 on 18 September that local authorities should have such a fund [Exhibit: **JH2/142** - **INQ000203728**].
249. On 25 September 2020 the office of Secretary of State for Health and Social Care confirmed his agreement. [Exhibit: **JH2/143** - **INQ000203817**].
250. On 3 November 2020 a submission by NHSTT recommended that the Parliamentary Under Secretary of State for Innovation note the ongoing action to address low uptake of the TTSP and provide input on further work that should be undertaken [Exhibit: **JH2/144** - **INQ000203669**]. There is a typographical error in the name of this exhibit; the submission is dated 3 November not 3 October 2020.
251. On 9 November 2020 the office of the Secretary of State for Health and Social Care confirmed that he had reviewed and was content with the current position, but that reforms were needed regarding index cases [Exhibit: **JH2/145** - **INQ000203744**].
252. On 19 November 2020 a submission by NHSTT setting out work underway to reform the TTSP and requesting steers was submitted to the Secretary of State for Health and Social Care [Exhibit: **JH2/146** - **INQ000203688**]. On 23 November 2020 the office of the Secretary of State for Health and Social Care responded to the request for a steer.
253. On 1 December 2020 a submission by NHSTT was submitted to the Secretary of State for Health and Social Care regarding the development of targeted support measures to improve public adherence to self-isolation and requesting a steer on certain aspects [Exhibit: **JH2/147** - **INQ000203689**]. On 3 December 2020 the office of the Secretary of State for Health and Social Care responded and provided his comments [Exhibit: **JH2/148** - **INQ000203750**].
254. On 10 December 2020 a submission by NHSTT submission on the development of the TTSP and other targeted support measures to help improve compliance with the requirement to self-isolate and increase testing uptake was submitted to

- the Secretary of State for Health and Social Care [Exhibit: **JH2/149**] - **INQ000203690**].
255. On 17 December 2020 an email was received from the Secretary of State for Health and Social Care's Private Office that this was to be progressed by way of a letter from the Secretary of State to the Chancellor of the Exchequer [Exhibit: **JH2/150**] - **INQ000203742**].
256. On 12 February 2021 a submission by NHSTT seeking approval of the business case to HM Treasury for non-financial support options for those self-isolating was submitted to the Secretary of State for Health and Social Care [Exhibit: **JH2/151**] - **INQ000203706**], together with the accompanying Business Case [Exhibit: **JH2/152**] - **INQ000203707**].
257. On 17 February 2021 Secretary of State for Health and Social Care confirmed this had been reviewed and was content with the recommended options in the submission [Exhibit: **JH2/153**] - **INQ000203745**].
258. On 11 March 2021 a submission by NHSTT was sent to the DHSC Parliamentary Under Secretary of State providing an update on the Medicines Delivery Service (MDS) to support individuals self-isolating after testing positive for COVID-19 or being identified as a close contact and a summary of the equalities impact assessment [Exhibit: **JH2/154**] - **INQ000203709**]; [Exhibit: **JH2/155**] - **INQ000203715**].
259. On 18 March 2021 a submission by NHSTT (dated 17 March) was sent to the DHSC Parliamentary Under Secretary of State seeking agreement to ringfence funding for the new local authority framework for practical support via a S31 grant and then seek MHCLG ministerial approval for ringfencing that S31 grant [Exhibit: **JH2/156**] - **INQ000203676**].
260. On 26 March 2021 a submission by NHSTT was sent to the DHSC Parliamentary Under Secretary of State providing an update on the package of local authority practical support for self-isolation and a summary of the equalities impact assessment [Exhibit: **JH2/157**] - **INQ000203710**].
261. On 6 April 2021 both the offices of Secretary of State for Health and Social Care and the Parliamentary Under Secretary of State agreed with the recommendations [Exhibit: **JH2/158**] - **INQ000203793**].

262. On 12 April 2021 a submission by NHSTT was sent to the Secretary of State for Health and Social Care proposing two pilots of alternative approaches to provide financial support for people required to self-isolate [Exhibit: **JH2/159**] - **INQ000203692**]. The first alternative was a £500 payment for those earning less than £26,000 (or an equivalent hourly rate), or on means-tested benefits, who would lose income because of having to self-isolate. The second alternative was a payment of 70% of lost earnings or £500, whichever was higher, for those earning less than £26,000 (or an equivalent hourly rate), or on means-tested benefits, who would lose income because of having to self-isolate, with total payments capped at £1,000 for the period of self-isolation.
263. On 14 April 2021 the office of Secretary of State for Health and Social Care confirmed that he was content for the proposals to be shared with HMT to commission pilots of the proposed approaches [Exhibit: **JH2/160**] - **INQ000203743**].
264. On 10 May 2021 a submission by NHSTT regarding the future of support for Self-Isolation was shared with the DHSC Parliamentary Under Secretary of State [Exhibit: **JH2/161**] - **INQ000203850**].
265. On 22 June 2021 HMT agreed the extension of the funding of practical and financial support until 30 September 2021 [Exhibit: **JH2/162**] - **INQ000203731**].
266. On 26 July 2021 an updated version of the Local Authority Practical Support Framework, now entitled the Self-Isolation Support Framework, was published. The framework contained guidance for Local Authorities and Voluntary and Community Sector Partners on Practical and Financial Support for Self-Isolation. [Exhibit: **JH2/163**] - **INQ000203820**].
267. On 28 July 2021 a submission by NHSTT sought a number of steers from the Secretary of State for Health and Social Care regarding the future of the TTSP [Exhibit: **JH2/164**] - **INQ000203693**].
268. On 2 September 2021 a submission by NHSTT was sent to the Secretary of State for Health and Social Care providing a draft letter (included in Annex A of the below exhibit) to the Chancellor of the Duchy of Lancaster, setting out why both extending support for self-isolation to the end of March 2022 and introducing

England-wide eligibility criteria for the TTSP would help to support the Government's COVID-19 response during the autumn and winter period [Exhibit: JH2/165 - INQ000203831]. The Secretary of State for Health and Social Care was content with the advice and this letter was sent on 3 September 2021 [Exhibit: JH2/166 - INQ000203796].

The Health Protection (Coronavirus, Collection of Contact Details etc. and Related Requirements) Regulations 2020

269. This section addresses the policy advice that UKHSA and predecessor organisations submitted to Ministers in relation to The Health Protection (Coronavirus, Collection of Contact Details etc. and Related Requirements) Regulations 2020 (the 'Contact Details Regulations', sometimes referred to in exhibited documents as the 'Customer Logs Regulations').
270. On 24 June 2020 a submission by NHSTT was sent to the Secretary of State for Health and Social Care regarding the requirement for businesses to maintain customer logs [Exhibit: JH2/167 - INQ000203843]. On 25 June 2020 the office of the Secretary of State for Health and Social Care confirmed that he agreed this submission and that he was content for it and relevant documents to be shared with BEIS. [Exhibit: JH2/168 - INQ000203809]
271. On 30 June 2020 a submission by NHSTT was sent to the Secretary of State for Health and Social Care, requesting agreement of the guidance regarding the requirement for businesses to maintain records of staff, customers and visitors [Exhibit: JH2/169 - INQ000203846]; [Exhibit: JH2/170 - INQ000203716]; [Exhibit: JH2/171 - INQ000203717].
272. On 1 July 2020 the final version of the guidance was cleared by the Secretary of State for Health and Social Care as well as BEIS, MHCLG and DCMS [Exhibit: JH2/172 - INQ000203800]. The guidance was published on 4 July 2020.
273. On 21 August 2020 a submission by NHSTT setting out three options for mandating the customer, visitor and staff logs policy, including QR codes, on the NHS COVID-19 App was sent to the Secretary of State for Health and Social Care. [Exhibit: JH2/173 - INQ000203845]. Option A was mandating that relevant businesses must have a system in place to record contact details from customers, visitors, and staff, but it not being mandatory that individuals must

provide these details in order to visit the premises. Option B was mandating that businesses in the hospitality sector must have a system in place to record contact details from customers, visitors, and staff, and that it would be mandatory for individuals visiting the premises to provide these. Option C was to increase participation of businesses and organisations maintaining logs via other methods such as increased communications and better support, including promoting App Check-in features as an alternative to logs for App users.

274. On 27 August 2020 offices of both the Secretary of State for Health and Social Care and the Parliamentary Under Secretary of State indicated they favoured option B mandating that businesses in the hospitality sector must have a system in place to record contact details from customers, visitors and staff and making it mandatory for individuals visiting the premises to provide these. [Exhibit: **JH2/174**] - **INQ000203777**].
275. On 8 September 2020 a submission by NHSTT with further advice on the proposal to make it compulsory for individuals to provide their contact details as well as for designated venues to collect contact information from customers, visitors and staff was sent to the Secretary of State for Health and Social Care [Exhibit: **JH2/175**] - **INQ000203839**].
276. On 9 September 2020 the office of the Secretary of State for Health and Social Care confirmed that he wanted to proceed with mandating businesses to collect this information for contact tracing purposes. [Exhibit: **JH2/176**] - **INQ000203799**].
277. On 14 September 2020, a submission by NHSTT providing advice on key policy questions requiring resolution in order to draft the regulations was sent to the Secretary of State for Health and Social Care [Exhibit: **JH2/177**] - **INQ000203840**].
278. On 15 September 2020 the office of Secretary of State for Health and Social Care indicated that he was minded to include places of worship within this guidance. Further advice was provided by NHSTT in an email the same day. On 16 September 2020, the office of the Secretary of State for Health and Social Care confirmed his agreement that businesses should be mandated to collect information for contact tracing purposes and that places of worship should be

excluded from this requirement [Exhibit: **JH2/178** - INQ000203747] [Exhibit: **JH2/179** - INQ000203748].

279. On 17 September 2020 the final draft regulations and accompanying Explanatory Memorandum for signing the regulations on the legal requirements for designated venues to collect customer, staff and visitor contact details were submitted by NHSTT to the Secretary of State for Health and Social Care, who approved it the same day [Exhibit: **JH2/180** - INQ000203760]; [Exhibit: **JH2/181** - INQ000203679]; [Exhibit: **JH2/182** - INQ000203680]; [Exhibit: **JH2/183** - INQ000203816].
280. The Contact Details Regulations came into force on 18 September 2020 (exhibited at paragraph 190 above). On 24 September 2020 the NHS COVID-19 App was launched in England and Wales, and the NHS QR code component of the legislation came into force.
281. On 25 September 2020 a submission by NHSTT was sent to the Secretary of State for Health and Social Care regarding the new legal duty to self-isolate and setting out proposed amendments to the Contact Details Regulations [Exhibit: **JH2/184** - INQ000203823]. The office of the Secretary of State for Health and Social Care confirmed on 26 September 2020 that he was content with the proposed amendments [Exhibit: **JH2/185** - INQ000203776].
282. On 23 October 2020 a submission by NHSTT was sent to the Secretary of State for Health and Social Care regarding proposed amendments to the Self-Isolation and Contact Details Regulations [Exhibit: **JH2/186** - INQ000203841].
283. On 27 October 2020 the office of the Secretary of State for Health and Social Care confirmed that Ministers had reviewed and were content with the amendments to the Contact Details Regulations subject to two exceptions. [Exhibit: **JH2/187** - INQ000203813].
284. On 27 November 2020, a submission by NHSTT on the use of customer, visitor and staff logs and the NHS COVID-19 app venue alert functionality was sent to the Secretary of State for Health and Social Care [Exhibit: **JH2/188** - INQ000203682].
285. On 29 November 2020, a submission by DHSC officials was sent to the Secretary of State for Health and Social Care Health seeking confirmation that he was

content to sign the Protection (Coronavirus, Restrictions) (Local Authority Enforcement Powers and Amendment) (England) Regulations 2020 [Exhibit: **JH2/189** - INQ000203789]; [Exhibit: **JH2/190** - INQ000203853]. This submission contained details of proposed amendments to these Regulations, which had been led by NHSTT.

286. On 30 November 2020 the office of Secretary of State for Health and Social Care confirmed he had approved the Explanatory Memorandum (EM) and agreed to sign the amended Contact Details Regulations [Exhibit: **JH2/191** - INQ000203763].
287. On 1 December 2020 the office of the Secretary of State for Health and Social Care confirmed he was content with the recommendations set out in the submission. In response to the same submission, DHSC Parliamentary Under Secretary of State requested and received further NHSTT advice about venue check-in statistics in international comparisons with QR code systems [Exhibit: **JH2/192** - INQ000203778] [Exhibit: **JH2/193** - INQ000203859].
288. On 28 January 2021 a submission by NHSTT was presented to DHSC Parliamentary Under Secretary of State seeking his views on proposed next steps to improve compliance rates and further strengthen enforcement against designated venues that fail to adhere to the rules [Exhibit: **JH2/194** - INQ000203844].
289. On 5 February 2021 Ministers agreed with all the recommendations in the submission. They requested further advice on what actions were needed to deliver the improvements ahead of publishing the roadmap out of lockdown [Exhibit: **JH2/195** - INQ000203810].
290. On 11 February 2021, a submission by NHSTT setting out the actions and timelines for implementation to improve compliance and strengthen enforcement against venues that fail to adhere to the rules of the contact details regulations was sent to the DHSC Parliamentary Under Secretary of State [Exhibit: **JH2/196** - INQ000203784].
291. On 17 February 2021 an email from the office of the Parliamentary Under Secretary of State confirmed that Ministers were 'strongly supportive' of the work



set out in the submission and wanted to pursue all the measures described within it to the full [Exhibit: JH2/197 - INQ000203812].

292. On 19 February 2021, as part of a submission to amend the Self-Isolation Regulations (exhibited at paragraph 282 above), NHSTT recommended that the Secretary of State for Health and Social Care confirm his agreement to the removal of the lead member rule from the Contact Details Regulations. Ministers were content with the amendments to the Contact Details Regulations as contained in the email exhibited at paragraph 283.
293. On 18 March 2021 a submission by NHSTT regarding a six-month review of the Contact Details Regulations was sent to the Secretary of State for Health and Social Care, requesting his decision on whether these Regulations were still necessary, proportionate and should remain in place until 24 September 2021 when they were due to expire [Exhibit: JH2/198 - INQ000203833].
294. On 22 March 2021 the office of Secretary of State for Health and Social Care confirmed that he was content with the submission apart from the recommendation for a minor amendment to the Regulations requiring that all venues in scope provide an option to 'check in' which did not require an individual to own a smartphone or other form of technology (paragraph 15 in the submission). NHSTT advised that this recommendation had been included in the signed regulations and the Secretary of State for Health and Social Care confirmed he was happy for this to remain but would like to explore removing it at the next possible Statutory Instrument update [Exhibit: JH2/199 - INQ000203814].
295. On 23 March 2021 a submission by NHSTT setting out the new operating model of the Contact Details Regulations regarding alerts being sent to individuals who had visited venues identified as having two or more positive cases on the same day was sent to the DHSC Parliamentary Under Secretary of State [Exhibit: JH2/200 - INQ000203847].
296. On 1 April 2021 the office of the Secretary of State for Health and Social Care responded stating that Ministers had noted their agreement, and that the Secretary of State for Health and Social Care had requested some further information regarding the circumstances under which a venue would be closed.

That additional information was provided by NHSTT, based on work by PHE, in an email on 8 April 2021 [Exhibit: **JH2/201** - INQ000203815].

297. On 2 July 2021 a submission by NHSTT was submitted to the Secretary of State for Health and Social Care setting out the rationale for maintaining the measures contained within the Contact Details Regulations until their expiration date on 18 September 2021 [Exhibit: **JH2/202** - INQ000203667].
298. On 3 July 2021 the office of the Secretary of State for Health and Social Care confirmed that he was content with the PM's decision in a meeting on Friday 2 July that these regulations should be removed as part of step 4 announcement and to reintroduce guidance for this policy [Exhibit: **JH2/203** - INQ000203798].
299. On 11 November 2021 a submission by UKHSA was submitted to the Secretary of State for Health and Social Care, recommending that he agree to continue the venue alerts guidance policy until 31 March 2022. [Exhibit: **JH2/204** - INQ000203699]. On 23 December 2021 the Secretary of State for Health and Social Care confirmed that he agreed that the policy should continue at least until 31 March 2022 [Exhibit: **JH2/205** - INQ000203805].
300. As part of the Government's Living with COVID strategy, detailed at paragraph 239 of this statement, this guidance was withdrawn on 24 February 2022 from which point, customers, visitors and staff were no longer asked to check into venues either by using the NHS COVID-19 app, or by leaving their contact details.

#### Localised restrictions

301. Localised restrictions were used for the period of July – October 2020 and were introduced through regulations. The regulations expired after 28 days unless extended by Parliament.
302. The first localised restrictions came into effect on 4 July 2020. The final set of localised restrictions came into effect on 3 October 2020.
303. JBC provided policy advice to Ministers to support the making of regulations and these are exhibited in a table grouped by area [Exhibit: **JH2/206** - INQ000203788].

## The Health Protection (Coronavirus, Restrictions) (All Tiers) (England) Regulations 2020

304. Policy on tiering, and the formulation of the Tiering Regulations, was led by DHSC. DHSC submissions referenced epidemiological evidence and analysis provided by JBC and PHE that went through Gold Local Area Committee (LAC) meetings.
305. On 30 November 2020 a submission by the DHSC's Social Distancing Strategy Directorate was submitted to the Secretary of State for Health and Social Care advising on a revised tiering system, ready for England coming out of the national lockdown as of 3 December 2020 [Exhibit: **JH2/207**] - **INQ000203829**]. JBC and PHE epidemiological evidence and analysis was included with the submission as Annex G [Exhibit: **JH2/208**] - **INQ000203721**].
306. On 16 February 2021 a submission by the DHSC's Social Distancing Strategy Directorate was submitted to the Secretary of State making recommendations on a statutory review of all the tiers regulations [Exhibit: **JH2/209**] - **INQ000203713**]. JBC and PHE epidemiological evidence and analysis was included with the submission as Annex E [Exhibit: **JH2/210**] - **INQ000203718**].

## The Medical Devices (Coronavirus Test Device Approvals) (Amendment) Regulations 2021

307. This section addresses the policy advice that UKHSA and predecessor organisations submitted to Ministers in relation to The Medical Devices (Coronavirus Test Device Approvals) (Amendment) Regulation (the 'Coronavirus Test Device Approvals (CTDA) Regulations'), which came into force on 28 July 2021.
308. On 16 December 2020 a submission by NHSTT was sent to the Secretary of State for Health and Social Care and the DHSC Parliamentary Under Secretary of State regarding the validation of private LFD and PCR tests [Exhibit: **JH2/211**] - **INQ000203675**].
309. Between December and May work was undertaken on consultation and development of how best to legislate to deliver the recommendations in this advice. A submission by NHSTT setting out the recommendations for this work and containing recommendations regarding the draft Statutory Instrument creating the regulations that would become the CTDA Regulations was sent to the Secretary of State for Health and Social Care and DHSC Parliamentary Under

Secretary of State on 22 May 2021 [Exhibit: **JH2/212** - **INQ000203712**]. A further submission by NHSTT was sent to the DHSC Parliamentary Under Secretary of State regarding the Impact Assessment for the draft Statutory Instrument [Exhibit: **JH2/213** - **INQ000203783**].

310. On 12 June 2021 a submission by NHSTT to the Secretary of State for Health and Social Care and the DHSC Parliamentary Under Secretary of State recommended splitting the legislation regarding testing validation into two separate Statutory Instruments to avoid significant delays [Exhibit: **JH2/214** - **INQ000203673**]. The Written Ministerial Statement was approved by the DHSC Parliamentary Under Secretary of State on 15 June 2021 and cleared by the Secretary of State for Health and Social Care and the Prime Minister's Office on 16 June 2021 [Exhibit: **JH2/215** - **INQ000203752**].
311. On 20 August 2021 a submission by NHSTT seeking approval of the recommended plan for delivering a full laboratory test product validation process ahead of legislation making this a legal requirement and requesting a steer on which levers to encourage use of the laboratory validation process should be explored further was sent to the DHSC Parliamentary Under Secretary of State [Exhibit: **JH2/216** - **INQ000203697**].
312. On 4 October 2021 a submission by UKHSA (which took over NHSTT responsibilities from 1 October) recommending disapplying validation requirements to allow some tests to remain on sale whilst their validation application was being considered past the end of the transition period, in order to avoid supply issues in Coronavirus lateral flow tests devices was sent to the Secretary of State for Health and Social Care [Exhibit: **JH2/217** - **INQ000203694**].
313. On 1 November 2021 a submission by UKHSA recommending updates to the temporary protocol disapplying validation of LFDs with the addition of seven further tests in procurement by NHS Scotland and Public Health Wales was sent to the Secretary of State for Health and Social Care [Exhibit: **JH2/218** - **INQ000203832**]. This was agreed by Secretary of State for Health and Social Care and Parliamentary Under Secretary of State (Minister for Vaccines and Public Health) [Exhibit: **JH2/219** - **INQ000203740**].

314. On 11 February 2022 a submission by UKHSA recommending the introduction of two new emergency protocols, replacing the existing protocol which was due to expire on 28 February 2022, to keep some unvalidated coronavirus tests on sale to the public to address the risk to public health from the lack of supply was sent to the Secretary of State for Health and Social Care. The two protocols would allow use of molecular assays and professional use LFDs in the NHS, and general use of self-test LFDs that had demonstrated good professional use data. [Exhibit: JH2/220 - INQ000203704].

The Health Protection (Coronavirus, International Travel and Operator Liability) (England) Regulations 2021

315. This section addresses the policy advice that UKHSA and predecessor organisations submitted to Ministers in relation to The Health Protection (Coronavirus, International Travel and Operator Liability) (England) Regulations 2021 (the 'International Travel Regulations'), which came into force on 17 May 2021 replacing The Health Protection (Coronavirus, International Travel) (England) Regulations 2020.
316. The Department for Transport (DFT) and DHSC led on policy advice and briefings on COVID-19 to Ministers for international arrivals. As detailed in Section 1, the Managed Quarantine Service was a part of DHSC until its residual non-operational functions were transferred to UKSA in April 2022. Prior to that date, PHE and NHSTT provided input to Government where required, including advice on public health issues and the interaction between international and domestic regimes, although final documents were generally owned by the MQS team in DHSC or by other departments.
317. On 18 August 2020 DHSC arranged a working group for testing of international arrivals comprised of representatives of PHE, NHSTT as well as other government departments such as DFT, Foreign and Commonwealth Office and the Home Office. UKHSA does not have a full record of those meetings, which were organised by the DHSC.
318. On 7 October 2020, at the request of the Prime Minister, the Government announced the launch of the Global Travel Taskforce. Co-chaired by the Secretary of State for Transport and the Secretary of State for Health and Social Care, the aim of the Taskforce was to consider steps that Government could take

to encourage the safe recovery of domestic and overseas travel and tourism while reducing the risk of imported cases [Exhibit: JH2/221 - INQ000251883]

319. The NHSTT policy team contributed to advice regarding changing legislation on testing requirements for entry to the UK. From May 2021 the NHSTT policy team, and later the UKHSA policy team authored a number of submissions putting advice to Ministers. Colleagues in DHSC and other departments also continued to provide advice to Ministers on this area.
320. On 18 May 2021 a submission by NHSTT was sent to the DHSC Parliamentary Under Secretary of State recommending that he agree to amend the International Travel Regulations so that the minimum standards for PCR tests aligned with the thresholds that would be used by the future Central Validation Service when it became operational later in the summer [Exhibit: JH2/222 - INQ000251884]
321. On 4 June 2021 a NHSTT submission to the DHSC Parliamentary Under Secretary of State sought clearance to lay a Statutory Instrument extending the deadline of the UKAS accreditation process on 8 June 2021 [Exhibit: JH2/223 - INQ000251885]
322. On 18 June 2021 a submission by NHSTT was sent to the Secretary of State for Health and Social Care regarding exemptions from testing requirements for those transiting onwards to Crown Dependencies [Exhibit: JH2/224 - INQ000251886]
323. On 8 July 2021 NHSTT sent a submission to the Secretary of State for Health and Social Care and DHSC Parliamentary Under Secretary of State regarding the workforce testing arrangements for amber vaccinated arrivals [Exhibit: JH2/225 - INQ000251887]. The recommendations within the submission were agreed and changes to workforce testing arrangements came into force on 19 July 2021 [Exhibit: JH2/226 - INQ000251888]
324. On 21 July 2021 a submission by NHSTT regarding additional reporting requirements for international private testing providers to improve service delivery was sent to the Secretary of State for Health and Social Care and Parliamentary Under Secretary of State [Exhibit: JH2/227 - INQ000251889]. These changes came into effect on 23 August 2021.
325. On 20 August 2021 a submission (dated 19 August 2020) by NHSTT regarding changes to private testing provider reporting requirements was sent to the DHSC

Parliamentary Under Secretary of State [Exhibit: JH2/228 - INQ000251890]. On 20 August the DHSC Parliamentary Under Secretary of State agreed to these changes [Exhibit: JH2/229 - INQ000251891]

326. On 6 August 2021 a submission by NHSTT regarding changes to legislation for improvements to private provider testing standards was sent to the Secretary of State for Health and Social Care and the Parliamentary Under Secretary of State. These changes came into force 17 September 2021 [Exhibit: JH2/230 - INQ000251892]
327. On 12 October 2021 a submission by UKHSA to provide advice on timescales to announcing travel related LFD testing to the public, risks to delivery of an LFD testing model and advice on surveillance testing was sent to the Prime Minister's Office [Exhibit: JH2/231 - INQ000251893]
328. On 15 October 2021 a further submission by UKHSA was sent to the Secretary of State for Health and Social Care on the same topic [Exhibit: JH2/232]. The content of this submission was agreed by the Secretary of State for Health and Social Care 15 October 2021 subject to updates [Exhibit: JH2/233 - INQ000251894]
329. On 14 October 2021 a submission by UKHSA recommending approval of the proposed day 2 LFD testing regime, test standards and private provider requirements was sent to the Secretary of State for Health and Social Care [Exhibit: JH2/234]. This was approved and the LFD changes came into force on 24 October 2021 [Exhibit: JH2/235 - INQ000251897]
330. On 13 December 2021 two notes written by UKHSA were submitted to the Secretary of State for Health and Social Care, as requested by SPADs, regarding updating guidance for under 5s [Exhibit: JH2/235] and amending regulations in respect of disabled travellers unable to take a day 2 test [Exhibit: JH2/236 - INQ000251899]. These changes came into force 18 December 2021.
331. On 18 March 2022 the International Travel Regulations were revoked.

### **Section 3: The initial response to COVID-19**

332. This section of the statement provides my understanding of the organisational knowledge of the nature and the spread of SARS-CoV-2 and of COVID-19 between 1 January 2020 up to and including the date of first UK national lockdown on 26 March 2020. The early parts of this section primarily cover the activity of

PHE, which was the only predecessor organisation to UKHSA which existed during this period. Later parts of this section cover work to increase testing capacity, and these go beyond the specified period in some instances for purposes of narrative clarity.

333. As detailed in Section 1 of this statement, UKHSA and its predecessor organisations' roles in the decision-making processes were predominantly through: the provision of data and other scientific information, for example, epidemiological data; the provision of scientific advice to key individuals, committees, and organisations within the established emergency response arrangements; as well as participation in meetings as subject matter experts or to fulfil prescribed roles. Our advice therefore has been provided to Government through a number of routes, including directly to Department of Health and Social Care (DHSC) or the Chief Medical Officer (CMO) and through the New and Emerging Respiratory Virus Threats Advisory Group (NERVTAG), SAGE and the SAGE sub-committees.

#### The emergence of SARS-CoV-2

334. In UKHSA's witness statement for Module 1 dated 14 April 2023 I provided detail on PHE activity during the initial COVID-19 response up to 21 January 2020 in Section 8, 'Standing up response plans for COVID-19'. I have included some of this detail again to aid the Inquiry's understanding and I have focused on those actions that contributed to key Government decisions within the scope of Module 2.
335. On 31 December 2019 the on-duty epidemiologist in the Epidemic Intelligence team, in PHE's Tuberculosis, Acute Respiratory, Gastrointestinal, Emerging & Zoonotic Infections and Travel Health Division (TARGET, part of the National Infection Service), which carried out routine epidemic intelligence activities to detect and assess potential emerging infectious disease threats to the UK, identified an unusual signal of reports from the Wuhan Municipal Health Commission of a cluster of viral pneumonia of unknown aetiology (cause) in Wuhan City, Hubei Province of China. On the same day this information was shared, via the EpiIntel briefing, which was routinely shared with a distribution list of key stakeholders via a distribution list including the PHE Medical Director and relevant colleagues in PHE Emergency response teams and National Infections Service, the DAs, CO, DHSC, other government departments and the CMO and



DCMOs, plus colleagues within NHS England emergency response and the High Consequence Infectious Diseases Network [Exhibit: JH2/237 - INQ000223305].

336. Further information on the viral pneumonia of unknown cause, (later confirmed as a novel coronavirus) was gathered from a range of open sources, for example, Ministries of Health and other official government sources from other countries; international organisations such as European Centre for Disease Control and Prevention (ECDC), the WHO, the US Center for Disease Control and Prevention (CDC) and media over subsequent days.
337. PHE virologists began collaboration with WHO technical leads from 1 January 2020, building on existing emergency preparedness diagnostic development work. Following the SARS outbreak in 2003, HPA (predecessor of PHE) recognised the potential for this family of viruses to pose an emerging threat and developed detection capability using a pan-coronavirus test. This technical approach provided a viral diagnostic testing capability for coronaviruses but was not suited for mass population testing use. It was utilised in the detection of the first UK case of MERS in 2012, which was also only the second global case. However, it provided an essential diagnostic assay in January 2020 whilst a specific SARS-CoV-2 test was developed which I describe later in the statement.
338. On 2 January 2020 PHE sent a formal briefing to the CMO with a summary of the information known at this time [Exhibit: JH2/238 - INQ000223306]. On 5 January 2020 the CMO emailed colleagues in DHSC and the PHE Medical director suggesting three triggers for escalation when considering the risk to the UK [Exhibit: JH2/239 - INQ000223307]. The triggers were:
- a. Healthcare workers dying. This is often the early warning that a new infection is both severe and transmissible;
  - b. Evidence of person-to-person spread;
  - c. Geographical spread implying a zoonosis is spreading through animal or human transmission.
339. On 5 January 2020 a WHO Disease Outbreak News (DON) notification was published highlighting that, as of 3 January 2020, 44 patients with pneumonia of unknown cause were detected in Wuhan City. Of these 11 were severely ill, and

the remaining patients were clinically stable. The DON notification also stated, “no evidence of significant human to human transmission and no health care worker infections reported” [Exhibit: [JH2/240](#) - INQ000223308].

340. On 8 January 2020 PHE activated its highest level of response – an Enhanced National Response – and established an IMT and SRG, as mentioned earlier in this statement. On the same day media sources reported an imminent announcement by China of a new coronavirus as the cause of unexplained pneumonia in Wuhan. In relation to any potential controls or specific health advice needed for travellers and/or at the border, DHSC commissioned PHE, on 17 January 2020, to set out a menu of precautionary measures that might be considered, either in a small escalation of COVID-19 (as it became known), or in a significant escalation, focused on airports that received direct flights from Wuhan [Exhibit: [JH2/241](#) - INQ000223309]. PHE shared a draft of this paper with DHSC on 20 January 2020 [Exhibit: [JH2/242](#) - INQ000051708].
341. In the NERVTAG meeting on 21 January 2020, the committee analysed reports from mainland China and agreed that there was clear evidence of human-to-human transmission [Exhibit: [JH2/243](#) - INQ000023119]. However, at this stage the extent of transmissibility between people was not clear. At this meeting PHE:
- a. provided an update on epidemiology and outlined that the situation was rapidly changing since the written update had been produced and circulated to NERVTAG members on 20 January 2020,
  - b. outlined proposed changes to the existing UK risk assessment, which were supported by NERVTAG, as follows:
    - i. Impact of the disease - raised from 'low/moderate', to 'moderate',
    - ii. Risk to UK population - raised from 'very low' to 'low',
    - iii. Risk to UK travellers to affected parts of China - raised from 'low' to 'moderate',
  - c. outlined progress on diagnostics, including confirming that the pan-coronavirus Polymerase Chain Reaction (PCR) test (“assay”) was able to detect the novel coronavirus and the progress that PHE had made with global collaborators to develop a specific PCR assay to detect this novel virus,

- d. presented an updated risk assessment to NERVTAG highlighting the emerging evidence of human-to-human spread, including from a potential 'super-spreader' event in a neurosurgical unit in mainland China, the wider geographic case distribution but without severe disease, and reviewing the modelling and other insights available from the NERVTAG members [Exhibit: **JH2/244** - INQ000101205].
342. Potential border restrictions were also discussed at the NERVTAG meeting on 21 January 2020. DHSC asked NERVTAG to reconsider the issue of port health 'screening' and asked it to comment on proposed interventions, some of which had been included as possible precautionary activities in the paper submitted to DHSC from PHE exhibited in paragraph 340. NERVTAG considered that port of entry screening, as discussed in the paper, for those travelling from Wuhan was not advised at this point and that providing information to travellers and providing effective means for proper assessment of travellers who became febrile at appropriate healthcare settings was likely to be a more effective intervention.
343. On 22 January 2020 DHSC announced, and PHE immediately introduced, enhanced monitoring for direct flights to England from affected areas, the definition of which was updated as the virus spread [Exhibit: **JH2/245** - INQ000223314] [Exhibit: **JH2/246** - INQ000223315]. PHE notified the airlines directly of the new arrangements [Exhibit: **JH2/247** - INQ000119494] which consisted of:
- a. Providing information to passengers in the form of leaflets and posters at airports and in-flight messaging;
  - b. Enhanced public health protection measures, including implementing a requirement for a General Aircraft Declaration (GAD) to be submitted to PHE's Health Control Unit (HCU) based at Heathrow Airport. If there were no symptomatic individuals on the flight, disembarkation occurred as usual. If symptomatic individuals were reported, the HCU would carry out a public health risk assessment liaising with PHE HPT colleagues for specialist public health advice as required and arrange any control actions such as isolation as necessary [Exhibit: **JH2/248** - INQ000223317].
344. PHE identified 1,466 passengers returning to the UK from Wuhan via direct flights from 10 January 2020 up to, and including, 24 January 2020 (when direct flights

ceased) and took steps to contact them. These numbers are captured in PHE's incident response Situational Report (SitRep) for 6 February 2020 [Exhibit: JH2/249 - INQ000223324]. PHE's EpiCell routinely shared these reports with DHSC for information and the relevant extract is represented in the Port Health situational report [Exhibit: JH2/250 - INQ000223325].

345. On 24 January 2020 PHE representatives attended a COBR meeting from which actions for PHE to lead were noted. These included [Exhibit: JH2/251 - INQ000061616]

- a. Working with the Border Force, airline carriers and the Department for Transport to ensure receipt of passenger name records where possible;
- b. Providing regular updates to Ministers on the progress of contact tracing of recent returners from Wuhan.

346. On 28 January 2020 PHE presented an update paper to NERVTAG providing a summary of the epidemiology of the Wuhan Novel Coronavirus [Exhibit: JH2/252 - INQ000223327]. At this meeting PHE:

- a. Provided a summary of the current known epidemiology of the virus confirming 4,585 cases had been reported in mainland China, with 70 reported outside the country;
- b. Confirmed that at that date there was not yet any official or published evidence or sufficient case data to draw firm conclusions regarding the contribution of asymptomatic transmission to the spread of the novel coronavirus. There was further discussion by NERVTAG members with the general view taken that the force of infection from asymptomatic individuals, if present, was likely to be lower than symptomatic individuals;
- c. Confirmed the estimated reproduction number from a WHO Emergency Committee meeting on 22 January 2020 where they stated that "Human-to-human transmission" is occurring and a preliminary estimate of R0, the reproduction number of the virus of 1.4-2.5, was presented [Exhibit: JH2/253 - INQ000047820]. The reproduction number (R) is the average number of secondary infections produced by a single infected person.

347. Following this meeting PHE implemented the action to send reported daily case numbers from mainland China, at a provincial level, to the Imperial College modelling team to inform the risk calculations to calculate the volume of screening that would be required if the case definition was broadened to additional provinces beyond Wuhan and Hubei. It was agreed that these calculations would be discussed at the next NERVTAG meeting to inform an update to the case definition. It was noted that any such decision would require DHSC to coordinate with external organisations such as NHS111 and the Foreign Office.
348. On 30 January 2020 WHO declared the WN-CoV outbreak as a public health emergency of international concern. Internationally there had been 97 confirmed cases outside of mainland China reported from 18 countries at this point. Most of these international cases had travelled to Wuhan. However, person to person transmission events had been reported in Vietnam, Germany, Japan, and the USA. By this date, 161 people in the UK had been tested for WN-CoV – all were negative.
349. However, on the following day, 31 January 2020, two cases of WN-CoV were confirmed in the UK. PHE's SitRep from 31 January 2020 circulated to external stakeholders including DHSC, DAs, NHS, NHSE, NERVTAG and National Travel Health Network and Centre confirmed, "As of 31/01/2020 09:00, there have been 177 individuals tested in the UK: 2 were positive and 175 were negative. Contacts of the confirmed cases are currently being identified" [Exhibit: JH2/254 - INQ000119467].
350. The 'PHE SitRep 31 January 2020' also provided an update to the UK risk assessment (dated within the document as 21/01/2020, but the correct date is 31/01/2020):

Current impact of the disease is: Moderate

Based on limited currently available information on the transmission of the disease,

- the risk to the UK population is considered: Moderate
- the risk to UK travellers to affected areas of China is: Moderate

This is based on limited information and remains under review as more data emerges.

351. On 4 February 2020 PHE presented a paper to SAGE on asymptomatic transmission [Exhibit: **JH2/255** - **INQ000074909**]. In this paper PHE assessed the extant evidence for asymptomatic transmission of 2019nCoV (subsequently known as SARS-CoV-2) and compared this to what was understood of viral shedding and asymptomatic transmission in the closest known genetically related virus, SARS-CoV in humans. The paper noted that the available data at the time for 2019nCoV did not provide evidence for major asymptomatic or sub-clinical transmission although it also indicated the limitations of available data.
352. It is important to clarify that the paper presented to SAGE by PHE sought to consider what proportion of transmission might come from asymptomatic individuals. The importance of potential asymptomatic infection was recognised from the beginning in the PHE scientific advice, using the analogy with other respiratory viruses (influenza) and the conceptual framework of the mathematical relationship between disease control and proportion of asymptomatic infection. This is demonstrated in the paper to SAGE by the inclusion of the analogy of respiratory viruses, inclusion of which outlines the relationship between control of virus transmission, the amount of asymptomatic transmission and the summary of early case reports for SARS-CoV-2.
353. On 11 February 2020 the Coronavirus Study Group (CSG) of the International Committee on Taxonomy of Viruses announced “severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2)” as the name of the new virus. This name was chosen because the virus is genetically related to the coronavirus responsible for the SARS outbreak of 2003. While related, the two viruses are different. On the same day WHO announced “COVID-19” as the name of this new disease following guidelines previously developed with the World Organisation for Animal Health (OIE) and the Food and Agriculture Organization of the United Nations (FAO) [Exhibit: **JH2/256** - **INQ000223331**].
354. There were four information sharing calls held between five nations (Australia, Canada, New Zealand, United Kingdom, United States) from 11 to 21 February 2020, which originated out of a bilateral call between UK and Australia where joint discussion on emergent issues was felt useful. These calls compared models of investigation and control between the different countries. Attendees were largely

medical consultants from PHE involved in incident response. The first call focused on border control measures, case investigation and case definition, contact tracing, and cruise ships. Subsequent calls focused on issues arising from repatriation of citizens from the Diamond Princess cruise ship, quarantine arrangements arising from repatriation, and control measures on return. For example, one meeting dealt specifically with the epidemiological follow-up of repatriation cohorts, including developed protocols for repatriation and management approaches (email examples below). Much of the information was received via International Health Reporting or other routes (e.g. publicly available from Japan), however there were details shared about approaches each country was taking to repatriation, such as pre-flight assessment and quarantine periods on return [Exhibit: JH2/257 - INQ000223332] [Exhibit: JH2/258 - INQ000223333] [Exhibit: JH2/259 - INQ000223335] [Exhibit: JH2/260 - INQ000223338].

355. PHE presented a further paper to SAGE on 18 February 2020 showing very early virological analysis of samples from UK cases of SARS-CoV-2. This paper set out current understanding regarding viral shedding from humans infected with the virus, although data remained limited at this stage as only nine cases of SARS-CoV-2 had been detected in the UK. All cases were identified through detection of SARS-CoV-2 in upper respiratory tract samples. Lower respiratory tract material was available in very few cases and no blood samples demonstrated the presence of SARS-CoV-2 RNA [Exhibit: JH2/261 - INQ000074915].
356. Work to understand the transmission dynamics of SARS-CoV-2 developed over the next few months, as demonstrated in the tracking of cases through First Few Hundred (“FF100”) epidemiological studies, establishing household contact studies and outbreak investigations in different settings, such as in the military and the “Easter 6” study in care homes, as well as regular sampling of returning traveller cohorts, including UK nationals from Wuhan and cruise ships which were quarantined. Further information and evidential exhibits on FF100 can be found at paragraphs 656-667 in Section 5 of this statement.
357. A paper by PHE was presented to SAGE on 24 February 2020, considered three scenarios for action if evidence of an epidemiologically linked group of COVID-19 cases in the UK (an “outbreak”) were to be recorded. The scenarios considered were i) a community-based outbreak, ii) a hospital outbreak and iii) an outbreak on a ship in a UK port. These scenarios were outlined for the containment phase of

the pandemic at a point where there was no sustained community transmission in the UK. Recommendations for containing the outbreak and slowing the spread included standard public health outbreak measures such as contact tracing, isolation of cases and closures of individual settings such as a school or care home [Exhibit: JH2/262 - INQ000074910]. The paper was incorrectly dated 2019.

“Guidance for social or community care and residential settings on COVID-19” – Care Sector

358. On 25 February 2020 “Guidance for social or community care and residential settings on COVID-19” was published on PHE’s website (the “February PHE Guidance”) [Exhibit: JH2/263 - INQ000223341]. This guidance was commissioned by DHSC and brought together contributions from across government, NHSE/I and the adult social care sector, to articulate clearly: infection prevention protocols; when to notify the PHE HPTs; decontamination advice; and current understanding of symptoms and isolation requirements.
359. PHE based its guidance on the information and evidence known at the time. As such, the February PHE Guidance began with the following paragraph: “This guidance is intended for the current position in the UK where there is currently no transmission of COVID-19 in the community. It is therefore very unlikely that anyone receiving care in a care home, or the community will become infected. This is the latest information and will be updated shortly.”
360. Whilst the risk was perceived as low, the guidance stated what measures care homes should take to protect residents so that they could plan and prepare. It provided detailed guidance on the virus and its management, including section 17, which was headed “Specific actions for social and community care staff visiting patients...providing care to residents”.
361. PHE had pre-existing guidance on management of cases and outbreaks of acute respiratory infections in care homes (and other settings) which informed the actions of Health Protection Teams [Exhibit: JH2/264 - INQ000223342]. Care homes were familiar with this guidance and its recommendations. This included advice on isolation of infected patients and on testing suspected cases and management of contacts. The February PHE guidance approach built on existing good practice for managing infectious disease in care homes, including guidance on the circumstances in which self-isolation was required, both in respect of staff



and care home residents, infection prevention protocols and decontamination advice.

362. The February PHE Guidance was following the “case definition” applicable at the time, in line with WHO data and UK surveillance. The case definition was based on whether a person had travelled to, or worked in, one of fifteen specific countries/regions which had been particularly affected by COVID-19, as set out the Chief Medical Officer Alert issued on 25 February 2020 [Exhibit: JH2/265 - INQ000087259]. The CMO Alert linked to guidance that PHE had developed collaboration with the NHS on: initial assessment and investigation of cases; infection prevention and control guidance; guidance on diagnostics; guidance for primary care.
363. The scientific understanding at the time was that there was very limited evidence of transmission from asymptomatic cases and the February PHE Guidance stated, “there is currently little evidence that people without symptoms are infectious to others.” It was not until April 2020 that the scale of asymptomatic transmission between individuals was better evidenced and understood.
364. The February PHE Guidance built on existing PHE outbreak and flu guidance for care homes and applied this to the current available evidence regarding COVID-19. At this stage the UK was still in the ‘contain’ phase (i.e. seeking to isolate all contacts through pre-existing methods of local contact tracing and isolation of suspected cases), and this guidance reflected the state of knowledge of the virus and transmission rates within the country at the time. It was not until 12 March 2020 that the government announced that it was moving its COVID-19 response from the ‘contain’ to the ‘delay’ phase, after the UK’s CMOs raised the risk to the UK from moderate to high. As a result, on 13 March 2020 the February PHE Guidance was withdrawn, and superseded by the March PHE Guidance, which reflected the changing phases of the pandemic.
365. Advice and proposals for guidance for the sector, in preparation for the move from contain to delay, were already in development by PHE by 29 February 2020. In fact, over 29 February 2020 and 1 March 2020, PHE had circulated internally three proposed versions of updated guidance on social care which was being prepared for the “delay” phase of the pandemic. This reflected the need to update the February PHE Guidance to ensure care settings had appropriate up to date advice on mitigations to reduce transmission and advice on how to manage

suspected or confirmed cases if there was the possibility of increased cases in the community. The guidance was initially sent to the Secretary of State for Health and Social Care and CMO on 4 March 2020. The exhibited minutes of the IMT meeting on 4 March confirm that '5 pieces of guidance sent to CMO and the Secretary of State for Health and Social Care and are ready to be put up. These are education, employment, cleaning, transport and social care and these will be looked at by 12.00 with aim to get back to PHE by 17.00' [Exhibit: **JH2/266**] - **INQ000223344**]. But, as the guidance provided advice relating to the delay phase, publication was delayed until 13 March on the basis that the move to the delay phase was imminent [Exhibit: **JH2/267**] - **INQ000223345**]. The Government wanted to communicate all changes to policy as a result of this move together where possible, as set out in the Protocol for Moving from Contain to Delay described below. Further details are below at paragraph 374.

#### Update to case definition and move to Delay phase

366. On 25 February 2020, with emerging epidemiology and the agreement of the CMO, PHE revised the geographical component of case definitions and the recommended management of individuals with recent travel to specific locations in China, Republic of Korea and Italy. PHE was asked to provide visual materials, including maps specifying the "containment areas" (areas for which enhanced suspected case management applied) in these three countries, so they could be used in public press briefings and made available on the GOV.UK website, to support public and clinical awareness of changes in case management. A formal CMO alert was also issued to ensure immediate distribution to and awareness in frontline staff [Exhibit: **JH2/268**] - **INQ000119491**].
367. At the SAGE meeting on 27 February 2020, initial modelling, based on the characteristics of the virus and transmission factors known at the time, suggested that without any mitigations, the peak of a UK epidemic would likely occur two to three months after sustained human-to-human community transmission was evident within the UK population. The first person recorded in the UK as infected with the virus but with no known international links, therefore suggesting community transmission was occurring, was on 28 February 2020.
368. On 4 March 2020 a meeting was held to advise the four UK CMOs on the deteriorating COVID-19 epidemiological situation in Italy. A paper for PHE

representatives to present at that meeting was prepared on 3 March 2020

[Exhibit: **JH2/269** - INQ000223347].

369. The approach to port health changed in response to the frequent changes in geographic case definitions. Previously, direct flights from affected areas were required to provide a General Aircraft Declaration (GAD) even if there was no one who was symptomatic on board. On 4 March, given the frequency of flights and volume of passengers, airlines and airports from Northern Italy which were now classed as an "affected area" under the case definition, PHE, DHSC, DFT, and the aviation industry agreed a pragmatic approach, in that a GAD was required only when there was illness on board a flight [Exhibit: **JH2/270** - INQ000223348]; [Exhibit: **JH2/271** - INQ000223350].
370. On 5 March 2020 the geographic case definition was further revised with the whole of Italy being classed as Category 2 (travellers do not need to undertake any special measures, but if they develop symptoms they should self-isolate and call NHS 111) [Exhibit: **JH2/272** - INQ000223351]; [Exhibit: **JH2/273** - INQ000223352]; [Exhibit: **JH2/274** - INQ000223353]; [Exhibit: **JH2/275** - INQ000223355]; [Exhibit: **JH2/276** - INQ000223354]. The adjusted approach and protocol were to be implemented immediately with the expectation that it would be rolled out across all airports and airlines by 11 March 2020. PHE set out the approach in a paper for DHSC on 6 March 2020 [Exhibit: **JH2/277** - INQ000223360]; [Exhibit: **JH2/278** - INQ000223361].
371. Of the more than a quarter of a million passengers who went through enhanced monitoring between 22 January 2020 and 12 March 2020 when the approach next changed, 129 ill passengers were identified through this process, with 59 of this group being taken for further assessment. No confirmed COVID-19 cases were identified through this process [Exhibit: **JH2/279** - INQ000223363].
372. In 2018 PHE had developed guidelines for large scale contact tracing if required for a public health incident. The document set out principles to be applied and how coordination was planned to work, rather than operational detail which would inevitably vary depending on the specific nature of the incident [Exhibit: **JH2/280** - INQ000148388]. PHE set up a designated contact tracing cell as part of its incident response and this appeared on the daily SitRep report from 19 February 2020 [Exhibit: **JH2/281** - INQ000223365].

373. The government's initial plan [Exhibit: **JH2/282**] - **INQ000057508**] for dealing with the pandemic, launched on 3 March 2020, consisted of four phases, the first of which was "contain". This phase was aimed at detection of early cases, follow up of close contacts and prevention of the disease moving to sustained community transmission if reasonably possible. Prior to this, in February 2020, PHE worked to identify potential evidenced points where it might be decided that contact tracing and isolation were no longer effective interventions for control of the pandemic during the Containment phase [Exhibit: **JH2/283**] - **INQ000087180**].
374. On 7 March 2020, the Civil Contingencies Secretariat circulated the 'Protocol for moving from Contain to Delay' following a discussion at COBR(O) the previous day [Exhibit: **JH2/284**] - **INQ000223368**]; [Exhibit: **JH2/285**] - **INQ000223370**].
375. On 8 March 2020 PHE provided input to DHSC into a submission to be sent to the Secretary of State for Health and Social Care the following day titled, 'Transitioning from Contain to Delay: advice in advance of COBR(M) on 9 March'. PHE provided advice in Annex A on how interventions would change from Contain to Delay on port health, testing, surveillance, contact tracing, with more detail on PHE's approach in Annex B, which had been sent to DHSC previously [Exhibit: **JH2/286**] - **INQ000223371**] (DHSC owns the submission. The document provided is a draft sent to DHSC with PHE's contribution). For contact tracing PHE proposed that it should 'aim to contain as many cases as possible for as long as possible, however, as contact tracing capacity is reached there will be a need for contact tracing to be targeted'. The targeted population was to be determined by available evidence and expert opinion and focused on 'areas which will reduce morbidity and mortality and limit situations which have high potential for spread'. PHE continued to carry out targeted contract tracing, focused on localised outbreaks, throughout the pandemic, alongside the work of NHS Test and Trace.
376. On 10 March 2020 SAGE discussed a paper to which PHE data professionals contributed, drawing on early clinical evidence which suggested that the clinical course of COVID-19 infection in younger children was milder than adults, and noting reports of asymptomatic infection in children, which was consistent with emerging evidence in adults [Exhibit: **JH2/287**] - **INQ000119702**].

377. By this date the scale of the global spread of the virus was also becoming clearer and, having studied the outbreaks in Europe, SAGE estimated that without mitigation the peak of the first wave was likely to occur at the end of May/early June 2020.
378. Upon case numbers increasing with community transmission PHE advised an evidence-based approach to targeting public health interventions with available resources to maximise protection of the public's health. Recommendations included critical management of case identification including surveillance, contact tracing, testing and treatment as:
- a. a move to a national surveillance system combining laboratory and community (via sentinel GP practices) surveillance;
  - b. targeted contact tracing;
  - c. testing according to prioritisation of clinical need;
  - d. moving to a 'warn and inform' model at ports and airports [Exhibit: JH2/288 - INQ000223373].
379. The 'PHE SitRep 14 March 2020' [Exhibit: JH2/289 - INQ000251900] provided an update to the UK risk assessment stating it was reviewed and raised on 12 March 2020 as:
- Current impact of the disease is: High
  - The risk to the UK population is considered: High
380. On 12 March 2020, following the Prime Minister's announcement [Exhibit: JH2/290 - INQ000223374] that the UK was moving into the 'delay' phase of the response, individuals with mild symptoms were asked to self-isolate at home, and PHE published stay at home guidance for individuals who had symptoms (new continuous cough, and/or high temperature) [Exhibit: JH2/291 - INQ000223375].
381. International reports between January and March 2020 noted differential transmission characteristics within and between different countries. Some European countries saw large, confirmed outbreaks earlier and sometimes more localised than in the UK, whereas genomic sequence data suggested the UK experienced multiple rapid introductions nationwide. However, there was a limit on

national testing capacity at this stage and more granular understanding of the UK epidemiology progressed through the duration of the pandemic. Global epidemiological COVID-19 data were collated from official open sources and via the PHE International Health Regulations National Focal Point and were disseminated to DHSC by PHE from the start of the enhanced response via standard reporting mechanisms. The previously exhibited SitRep from 16 March 2020 in paragraph 369 showed that, at this time, cases were rising significantly on a daily basis in Italy, Spain, France and Germany.

382. Between 12 and 31 March 2020 the recurrent review of both UK and global epidemiology, on an ongoing basis, indicated very rapid progression of the pandemic in the UK, even with interventions implemented to 'flatten the curve', with ICU cases doubling every three to five days. This evidence led to a significant change in the scientific advice that informed policy. SAGE discussed a 'Reasonable Worst-Case Planning Scenario' paper on 29 March 2020 [Exhibit: **JH2/292** - **INQ000119708**]. The paper was prepared by the CO and endorsed by the Scientific Pandemic Influenza Group on Modelling (SPI-M-O) to which PHE also contributed through individual technical experts. Reasonable worst-case scenarios are not forecasts but are required to ensure Government has agreed planning assumptions in place to enable respond to a range of scenarios.
383. In the early phase of the pandemic, including during March 2020, a number of recognised parameters helpful to forward prediction of infectious disease transmission were unavailable for use by experts. In early March 2020 the likely level of spontaneous reduction in social mixing, the compliance rate for social distancing interventions, including stay at home guidance and some other key parameters were not known. Projected case numbers and deaths varied significantly according to the values of these parameters across modelling approaches.
384. On 20 March 2020 NERVTAG noted that, whilst there were data for people testing positive for SARS-CoV-2 without symptoms, there was very little information regarding transmission, and the data from reported cases of asymptomatic transmission was not sufficient to provide conclusive evidence at that time [Exhibit: **JH2/293** - **INQ000119619**].
385. The COVID-19 Genomics UK (COG-UK) Consortium tabled a report for SAGE on 23 March 2020 which was discussed at the SAGE meeting on 31 March 2020.

The report analysed 260 SARS-Cov-2 genomes with initial findings confirming 'a large number of independent SARS-CoV-2 introductions to the UK from multiple locations around the world.' The Executive Chair of COG-UK was the NIS Director from PHE, and the consortium included representatives from PHE. The genomics work was expanded over the next few months and was a notable part of the 'Easter 6' study in care homes in April 2020 [Exhibit: JH2/294 INQ000223378].

#### Declassifying Covid-19 as a High Consequence Infectious Disease (HCID)

386. The following paragraphs provide an explanation of PHE's role in decisions to classify and declassify Covid-19 as a HCID in the UK. A HCID is defined according to the following criteria:
- a. acute infectious disease,
  - b. typically has a high case-fatality rate,
  - c. may not have effective prophylaxis or treatment,
  - d. often difficult to recognise and detect rapidly,
  - e. ability to spread in the community and within healthcare settings,
  - f. requires an enhanced individual, population, and system response to ensure it is managed effectively, efficiently, and safely.
387. HCIDs are further divided into contact and airborne groups:
- a. contact HCIDs are usually spread by direct contact with an infected patient or infected fluids, tissues, and other materials, or by indirect contact with contaminated materials and fomites,
  - b. airborne HCIDs are spread by respiratory droplets or aerosol transmission, in addition to contact routes of transmission.
388. Diseases classified as HCIDs present an enhanced risk to individual and population health and require additional measures such as enhanced infection prevention and control measures in clinical settings, and thorough public health investigation. Pathogens with HCID status also require specific handling in the

laboratory setting, such as the use of higher containment facilities. An existing list of diseases classified as HCIDs has been agreed by the public health agencies of the four UK nations and is informed by advice from scientific advisory committees. It is published on the UKHSA website [Exhibit: [JH2/295](#)] - INQ000148350].

389. At the start of the pandemic the four nations public health HCID group was responsible for making recommendations on HCID classifications that went to the Advisory Committee on Dangerous Pathogens (ACDP) to consider, and where appropriate, endorse. The group was made up of representatives from PHE and health professionals from across the UK, as well as experts from the HCID Clinical Network.
390. On 10 January 2020 the interim recommendation of this group was to classify COVID-19 as an HCID while more was learnt about the disease. This was based on consideration of the UK HCID criteria and the evidence available about the virus and disease during the early stages of the outbreak and was circulated to the Incident Director at PHE on 10 January 2020 and discussed at the Incident Management meeting on 13 January [Exhibit: [JH2/296](#)] - INQ000223380]; [Exhibit: [JH2/297](#)] - INQ000223381]. The NHS HCID commissioned units providing specialist beds to care for patients with HCIDs and prevented nosocomial transmission when there were no community cases of infection. There are commissioned contact and airborne HCID beds (contact 4 beds and airborne 14 beds), and there are surge capabilities for exceeding routine HCID bed numbers, for example in the Royal Free Hospital there are power respiratory hoods and a dedicated infectious diseases ward that can be transferred to HCID use. The surge capacity and commissioning is the responsibility of the NHS.
391. As COVID-19 cases started to emerge in February 2020, all contacts of cases were also identified and closely monitored by local HPTs who followed up by telephone to assess subsequent development of any symptoms. PHE advice on clinical management of cases at this time was therefore tailored to HCID centres. Additional guidance sought to provide information around early identification, referral, and preventive measures, which utilised standard infection prevention and control precautions [Exhibit: [JH2/298](#)] - INQ000223382].
392. On 16 March 2020 a group of infectious disease experts from the four nations reviewed up to date information against the UK HCID criteria. They determined that further data on cases meant that there was more information available about



mortality rates (lower overall than most other current HCIDs), and there was greater clinical awareness as well as a specific and sensitive laboratory test.

393. As a result, the group forwarded a recommendation to the ACDP to declassify COVID-19 as an HCID. This was endorsed by ACDP [Exhibit: **JH2/299** - **Exhibit JH2/25 - INQ000251882**] [Exhibit: **JH2/300** - **INQ000223384**] and agreed by NHSE and the CMO. From 19 March 2020 COVID-19 was no longer considered an HCID and cases could be treated at all hospitals rather than specialist HCID units. The following exhibit details the original and updated review [Exhibit: **JH2/301** - **INQ000119498**].

#### UKHSA's role in developing a test for Covid-19

394. In this section I will provide an overview of UKHSA's role in developing a specific test for COVID-19. PHE had developed a pan-coronavirus molecular test or 'assay' following the global outbreak of SARS in 2003. This assay allowed for the detection of any coronavirus and detected the first case of MERS in the UK in 2012. PHE had also developed specific assays for individual known coronaviruses including four endemic coronaviruses, and additionally SARS and MERS. Once the genome was released in January 2020 PHE's scientists worked with global virology colleagues to develop a specific test for SARS-CoV-2.
395. The main diagnostic technology for COVID-19 initially was based on PCR testing, although this section also provides information on the development of other diagnostic technologies. PCR testing is a biochemical test which detects the specific building block (viral Ribonucleic Acid [RNA]) sequence of Severe Acute Respiratory Coronavirus 2 (SARS-CoV-2), the causative agent of COVID-19. It is a well-established approach to laboratory testing for all viruses, including other respiratory pathogens such as influenza.
396. It requires a sample, in this case from the nose or throat, from the patient (taken via swab) which is inactivated and then amplified (replicated) until it reaches a volume where RNA can be detected. This test takes around four hours to complete, but the preparation of clinical samples for testing and the analysis of laboratory results means that the "end to end" process from sample received in the laboratory to patient report being issued is around ten to twelve hours, not including transportation time. Testing arrangements require complex laboratory infrastructure, highly skilled staff and high value equipment and machinery.

397. The Government's UK Pandemic Preparedness Strategy (2011), produced before PHE was created, set out responsibilities including with regards to testing [Exhibit: **JH2/302** - **INQ000013191**]. This strategy highlights the importance of a developing a specific diagnostic test for the influenza virus in the detection phase. The subsequent treatment phase is based on clinical criteria and did not include the use of diagnostic tests in the community to access treatment. The DHSC "Health and Social Care Influenza Pandemic Preparedness and Response" plan (2012) briefly mentions development of diagnostics tests three times (page 24, 29 and 45) and states it was a public health responsibility in the Detection and Assessment and Treatment and Escalation phases [Exhibit: **JH2/303** - **INQ000022710**].
398. China released the first viral genome sequence on 10 January 2020 and deposited four further genomes on 12 January 2020 in the viral sequence database curated by the Global Initiative on Sharing All Influenza Data (GISAID). On 17 January 2020 the WHO published guidance on the development of laboratory testing for the virus [Exhibit: **JH2/304** - **INQ000106044**]. It recommended that PCR testing should be developed and patients who met the case definition should be tested. At this time this included those admitted to hospital with severe respiratory infection and travel history to Wuhan or known contact with a confirmed case.
399. During January 2020 PHE colleagues worked with international collaborators to develop a specific PCR test to detect this novel coronavirus. This was achieved without any virus material using the pathogen genome and required global collaboration between laboratories with coronavirus expertise in Europe, UK and Hong Kong. The assay was available and in use from 21 January 2020 and the methodology was shared publicly on 23 January 2020 in a peer-reviewed publication [Exhibit: **JH2/305** - **INQ000119567**]. The assay was used at PHE's Colindale laboratory to diagnose the first case in England on 31 January 2020 alongside the previously developed pan-coronavirus assay. PHE then started to develop workflows to implement and scale this methodology within its internal network and shared the detection methodology with the NHS.
400. PHE isolated and grew the SARS-CoV-2 virus from the first UK diagnosed case, which provided essential control material for the expanded use of the PHE assay. Shipments of live SARS-CoV-2 virus, containing control materials from PHE Colindale to partners in academia, other government institutes and industry,

began on 17 February 2020, as soon as this material was available, supporting the development of commercial diagnostic assays and wider capability.

401. PHE also developed COVID-19 serology evaluation. These assays targeted antibodies to components of the virus and were used to determine levels of exposure/infection and immunity (and subsequently vaccination and immunity) rather than as a primary diagnostic tool.

#### Increasing testing capacity

402. In this section I will describe the involvement of UKHSA and its predecessor organisations in attempts to increase testing capacity, focusing on developments from January to March 2020 and providing an outline for the period thereafter.
403. PHE's remit was to carry out reference laboratory and specialist testing for some local outbreaks, including HCIDs such as Ebola virus. The rare and imported pathogen laboratory and the specialist reference laboratories at Porton Down were, and still are, key centres of specialist expertise. PHE did not test for all outbreaks, for example, it did not routinely test for most flu cases. It provided the diagnostic expertise to develop and validate new assays and methods and validate commercial assays. PHE provided reference specialist laboratories for the generation of detailed information on pathogens – for example understanding the virulence and antimicrobial resistance; testing for the national surveillance programmes and providing methods (including genome sequencing) to understand transmission, clusters and outbreaks. It also provided national services where developing these services in the NHS would be inefficient or costly for example imported rare pathogens, tuberculosis susceptibilities to drugs and PCR testing for vaccine preventable meningococcal infections. Where there were validated assays, the methodologies were published for the NHS to use delivering diagnostic assays for clinical care pathways.
404. The majority of testing capacity for hospital patients resided in the NHS. [see slide 12 of the report dated 01 May 2020 on PHE and NHS testing capacity from **Exhibit: JH2/306 - INQ000223390**]. NHS laboratories also tested for pathogens causing outbreaks in hospitals and other settings in their locality according to locally agreed contracts.

405. Local HPTs and national experts responded to live incidents and outbreaks, often requesting further investigation of routine laboratory samples with genome sequencing or specialist techniques to understand the source of an infection or its route of transmission.
406. PHE was not a regulatory body and did not provide approvals, accreditations or endorsements of any products or laboratories, including any COVID-19 diagnostic assays or commercial tests to be used in NHS or other laboratories. It undertook evaluations of diagnostic technologies rather than specific products. From March 2020 onwards PHE did play a role in the evaluation of specific commercial products including PCR, antibody and antigen tests but not in a regulatory or approval role [Exhibit: JH2/307 - INQ000223391].
407. On 26 March 2020 the Secretary of State for Health wrote to Sir John Bell accepting his offer of help asking him to lead the COVID Testing Scientific Advisory Panel (CTSAP), a voluntary group set up to support the UK Government programme to increase the UK's COVID testing capacity. CTSAP supported the NHSE testing triage process to review and evaluate offers to supply test kits, consumables and other testing equipment, as well as new and complete testing solutions. The letter to Sir John which includes the Terms of Reference is provided as an exhibit [Exhibit: JH2/308 - INQ000251901].
408. DHSC had overview of the work of PHE and the NHS on testing. The Secretary of State for Health and Social Care told the Science and Technology Select Committee on 21 July 2020 that he was responsible for the testing strategy [Exhibit: JH2/309 - INQ000223392].
409. An internal paper from PHE's Virology Cell, dated 29 January 2020, explained the current COVID-19 testing arrangements. Initially PHE developed a gold standard approach whereby each sample of the virus was tested concurrently with three different assays at PHE Colindale. In late January 2020 this changed to the new COVID-19 single frontline test using one assay and the current process was outlined in an internal paper [Exhibit: JH2/310 - INQ000119504].
410. In late January 2020, following the development of the test described above and in lieu of an available commercial test, PHE created the first-generation COVID-19 test kit to increase testing capacity with initial rollout to NHS laboratories.

411. Between 11 and 17 February 2020 PHE rolled out its diagnostic test to the PHE and PHE-affiliated laboratories, as well as laboratories in the DAs: three contracted NHS Laboratories (Southampton, Leeds, and Newcastle), five PHE laboratories (Colindale, Cambridge, Birmingham, Manchester and Bristol, the latter two operated by PHE in partnership with the NHS), two laboratories in Scotland, and one each in Wales and Northern Ireland. The increase in diagnostic capacity in the UK, from one to twelve laboratories, accelerated the country's testing capability.
412. By 26 February 2020 (when the cumulative total confirmed cases in the England was 36), there was testing capacity of more than 2,000 samples per day at PHE or PHE affiliated laboratories. At this time there were approximately 36 PHE laboratory staff working to process samples, with an additional 10 medical staff or equivalent issuing and managing results.
413. In the 'contain' phase of the virus (January and February 2020). The PHE test was used to determine individuals who had the virus, so that they and their contacts could be isolated to contain the spread of the virus. This was based on the case definition as it stood at the time. which was those who had symptoms of COVID-19 and recent travel history to a country of high incidence, or a known contact of a case. PHE and PHE-affiliated laboratories in the NHS were able to meet the demand for those meeting these criteria at the time. However, once there was established community transmission, demand on testing capacity increased.
414. On 1 March 2020 PHE produced a report to support national testing development titled 'Laboratory testing capacity and prioritisation of testing' [Exhibit: JH2/311 - INQ000223394]. This included plans to increase capacity, noting that capacity would be increased should a decision be made to allow laboratories to process samples as Category 2+ (see also paragraph 420 onwards). The report forewarned that current PHE laboratory demand was beginning to approach capacity levels and that increases in testing capacity were likely to be slower than the increase in demand. PHE began to develop an outline prioritisation approach if capacity was reached or turnaround times of testing declined (see paragraph 422 onwards).
415. On 8 March 2020 PHE set out its current and projected future availability, capacity and speed of testing in response to a request from the Secretary of State [Exhibit: JH2/312 - INQ000119505]. The report confirmed capacity for 2,100 tests per

day within PHE at that time. With the addition of the first phase of NHS laboratories, it was predicted that capacity would increase to 4,500 tests per day over the next four weeks. Overseen by PHE and NHSE, the addition of NHS laboratories in each of the 29 pathology regions was predicted to add an additional 3,000-4,000 tests per day totalling 7,500-8,000 tests a day.

416. It should be noted that, at this time, countries across the world were increasing their testing rates to tackle their local outbreaks, leading to a global shortage of reagents and other consumables (swabs and plastic consumables) required for testing, as detailed in this note from 12 March 2020 [Exhibit: JH2/313 - INQ000223396]. This hindered PHE's work to scale up testing in NHS laboratories throughout March and April 2020 [Exhibit: JH2/314 - INQ000223397].
417. In February and March 2020, issues with contamination were identified which impeded the rollout of the kit. In late March 2020 PHE undertook investigations after it identified test kits were producing discordant results, detecting that performance of a critical enzyme component had degraded, potentially due to chemical contamination during manufacture, potentially related to commercial manufacturers rapidly ramping up production to meet demand. Contaminated commercial batches of reagents meant that key stock had to be discarded, hindering testing expansion to regional and then NHS laboratories [Exhibit: JH2/315 - INQ000223398] [Exhibit: JH2/316 - INQ000223399].
418. On 5 April 2020 PHE provided advice on PCR (Pillar 1 and 2) and antibody (Pillar 3) diagnostic testing for COVID-19 to the Minister for Innovation Exhibit: JH2/317 - INQ000119500].
419. On 10 April 2020 PHE provided a briefing note to the Secretary of State for Health and Social Care, Lord Bethell and the CMO on the performance of PHEs first generation COVID-19 test kit [Exhibit: JH2/318 - INQ000223401] [Exhibit: JH2/319 - INQ000223403].

#### Classification level of SARS-CoV-2

420. The Advisory Committee on Dangerous Pathogens ("ACDP"), which sets the classifications for biological agents according to the level of risk of infection to humans, had met on 13 February 2020 and agreed a provisional classification for SARS-CoV-2 as an CL3 pathogen (where CL4 is the highest, for example Viral

Haemorrhagic Fevers, such as Ebola virus) [Exhibit: JH2/320]. Therefore, the laboratory work conducted in January and February 2020 needed to be performed at Containment Level 3 (CL3).

421. The handling of CL3 pathogens occurs in a 'closed' environment, requiring stringent safety measures, and making them unsuitable for large-scale processing. This meant that testing could only happen in laboratories which were designated as having the specific facilities and procedures in place to prepare hazardous clinical materials for testing [Exhibit: JH2/321 - INQ000223404]. CL3 laboratories are limited in number and are only able to process a small number of samples per day, as they are also utilised for processing existing CL3 pathogens. Additionally, the small scale and/or absence of CL3 facilities across the country can prevent the rollout to a wider range of locations.
422. The CL3 requirement was a barrier to the national expansion of COVID-19 testing. PHE formally requested, on 28 February 2020 through HSE, permission from ACDP for testing to be carried out at a lower level of containment, provided that certain conditions could be met to maintain safety. The email sharing request for permission is exhibited [Exhibit: JH2/322 - INQ000223405] as is the request for permission; [Exhibit: JH2/323 - INQ000223406]. PHE recommended that laboratory biosafety risk management was revised to a level deemed appropriate to the emerging risk identified through the increasing epidemiological information, in order to enable an expansion in testing.
423. On 1 March 2020 HSE and ACDP agreed with PHE's recommendation for testing being carried out at CL2 provided that the derogation was specifically limited to COVID-19 screening, appropriate controls were put in place (sometimes referred to as CL2+) and that PHE work with HSE to develop communications to make these provisions clear [Exhibit: JH2/324 - INQ000223410].
424. On 12 March 2020 PHE published the guidance document 'COVID-19: safe handling and processing for samples in laboratories' [Exhibit: JH2/325 - INQ000223411]. This decision meant that swab sample testing could now be carried out more widely across the NHS, universities, and commercial laboratories, as well as paving the way for the design and development of new testing facilities such as in Milton Keynes, Manchester, and Glasgow.

425. The decision also provided the ability to rapidly increase laboratory capacity over the coming months. Throughout March and April 2020, PHE worked with NHSE to provide advice and guidance to establish wider testing in all other NHS Laboratories [Exhibit: JH2/326 - INQ000223412].

#### Prioritisation of testing capacity

426. On 1 March 2020 PHE circulated an internal discussion paper 'Laboratory testing capacity and prioritisation of testing' which outlined the development of what became the basis of the prioritisation of testing guidance as the UK was preparing to enter the next phase of the pandemic. It stated: "At present whilst in the containment phase, the majority of laboratory testing (>90%) is carried out for individuals in the community who are in self-isolation following a history of travel from a specified country or area. As an increase occurs in the testing of surveillance streams involving more severe cases or as we move to the next (pandemic) phase, existing laboratory capacity may not be sufficient and there may be a need to introduce prioritisation of testing." The report is exhibited earlier in this statement at paragraph 414.
427. On 8 March 2020 PHE detailed its advice on the proposed approach to testing in annex B of the submission sent to the Operational Incident team at DHSC for the Secretary of State for Health and Social Care titled 'Transitioning from Contain to Delay: advice in advance of COBR(M) on 9 March'. This document is exhibited at paragraph 372 and confirmed that clinical testing for the virus would transfer to NHS, supplemented with targeted testing by PHE for high-risk groups.
428. Rapidly rising case numbers leading up to the move from 'contain' to 'delay' on 12 March 2020 meant that testing of all suspected cases was not feasible due to testing capacity, as all individuals with symptoms were now assumed to be infectious and those who were not considered 'high risk' were no longer required to test. Careful consideration was given to how to prioritise testing across the population.
429. Due to the very limited testing available in March 2020, DHSC needed to make decisions on prioritising testing capacity to those where a diagnosis was required to assist management and treatment, and to support surveillance, such as those hospitalised and, in the event of an outbreak, in a vulnerable setting. This mirrored wider recommendations from NHSE to NHS laboratories at that time that tests



which were not essential to managing a patient's condition safely should be stopped.

430. Together with the NHS and DCMOs, PHE developed a prioritisation of COVID-19 testing based on clinical and epidemiological need. The prioritisation groups were reviewed and agreed by the DCMOs, PHE Medical Director, PHE NIS Director, PHE Incident Director, NHSE Medical Director and NHSE Strategic Incident Director. The document dated 11 March 2020 [Exhibit: **JH2/327**] - **INQ000087299**] was sent from the PHE ID to testing laboratories with information on DHSC, NHS and PHE agreement to prioritise testing capacity in the following order:
- a. Group 1 (test first): Patient requiring critical care for the management of pneumonia, acute respiratory distress syndrome (ARDS) or influenza-like illness (ILI), or an alternative indication of severe illness has been provided, for example severe pneumonia or ARDS;
  - b. Group 2: All other patients requiring admission to hospital for management of pneumonia, ARDS or ILI;
  - c. Group 3: Clusters of disease in residential or care settings e.g. long-term care facility, prisons, boarding schools;
  - d. Group 4: Community patient meeting the case definition and not requiring admission to hospital – over 60 years or risk factors for severe disease (recognising that this is challenging); over 60s should be prioritised over other risk factors;
  - e. Group 5: Community patient meeting the case definition and not requiring admission to hospital – under 60 years and no risk factors for complication;
  - f. Group 6 (test last): Contacts of cases.
431. Following this, on 12 March 2020 at the Tripartite Senior Clinician's Group chaired by the CMO, the consensus view was that PHE should publish the top three priority groups to share with the health and care system. The message on how PHE, together with NHS England and DHSC will prioritise testing for those most at risk of severe illness from the virus was published on 14 March 2020 on GOV.UK [Exhibit: **JH2/328**] - **INQ000119553**].

## Evaluation of commercial PCR assays

432. During March and throughout April 2020, PHE supported the evaluation of commercial PCR assays (diagnostic tests to detect viral RNA) and instruments to determine whether these were fit for purpose for deployment into the NHS and shared this information with NHS Laboratories. On 13 March 2020 the PHE Virology cell distributed NIS laboratory evaluations of commercial PCR tests. This helped inform the choices being made by those NHS laboratories that introduced the commercial diagnostic tests for the virus on the commercial testing platforms that they had already installed. Although PHE's primary focus was 15 molecular assays that were first to market, PHE did not rule out testing others if they offered substantial improvement on the assays that were already being tested [Exhibit: JH2/329 - INQ000119621].
433. The tests that were evaluated at this point were from:
- a. PrimerDesign (also referred to as "Novacyt," the name of its parent company) [Exhibit: JH2/330 - INQ000119625]
  - b. Roche [Exhibit: JH2/331 - INQ000119622]
  - c. Seegene [Exhibit: JH2/332 - INQ000119626]
  - d. AusDiagnostics [Exhibit: JH2/333 - INQ000119530]
  - e. Altona [Exhibit: JH2/334 - INQ000119528]
  - f. Viasure [Exhibit: JH2/335 - INQ000119472]
434. PHE produced a series of summary reports on the products they were evaluated and these were shared, as and when they became available, on the weekly diagnostic conference call which was co-ordinated by PHE's Virology cell. This ensured that key information was cascaded to NHS colleagues and the Das at pace. Where appropriate PHE also shared reports of evaluations conducted by NHS sites. This provided a central point of reference.
435. Enzyme Linked Immunosorbent Assays (ELISA) is a method to detect and quantify various substances that may be present in a sample. They are often used to detect antibodies in human samples to determine if someone has previously been exposed to, or infected with, a microbe. In this case, the ELISA was used to

measure the presence and amount of COVID-19 antibodies, produced in response to COVID-19 infection, present in a sample. Rather than diagnosis of a current, ongoing infection, this ELISA allows detection of a previous, historical infection (even if this infection was not diagnosed at the time) and is very useful for population surveillance. In contrast, Polymerase Chain Reaction (PCR) is used to detect and diagnose current, ongoing infection but cannot be used to determine if someone has had a previous infection. PCR is a method to detect nucleic acids (RNA and DNA), allowing tiny quantities of viral RNA present during infection to be amplified and measured.

436. PHE staff at Porton Down undertook work on assessing the ELISA from commercial suppliers. In mid-March 2020 Euroimmun released the first commercial ELISA assay for COVID-19, which was rapidly tested and implemented at the Porton Down laboratory within two weeks, to permit testing to show exposure to SARS-CoV-2 through detection of specific antibodies to the virus.
437. Their assessment enabled assessment of the immune response to the virus over time after infection and therefore levels of previous total infection in the population. Subsequently, other commercial suppliers placed similar products on the market over the next two months which were also assessed at Porton Down, and the results of these assessments were published on the GOV.UK website by mid-May 2020 [Exhibit: JH2/336 - INQ000223428].
438. PHE (Porton Down) and a clinical/research team at the University of Oxford and Oxford University Hospitals NHS Foundation Trust were commissioned by the Department of Health and Social Care to evaluate several commercial immunoassays for SARS-CoV-2 antibody detection available on the UK market. Over a three-week period in May-June 2020 a larger comparison of four commercial and one in-house ELISA assays was also conducted and published [Exhibit: JH2/337 - INQ000223429]. Two of these assays, the Oxford in-house S assay and Roche S and N assays, were then also used for assessing the levels of previous infection, natural and vaccine induced immunity in the population on a much larger scale in various projects, including the ONS study, as described in paragraph 617 in Section 4 of this statement, to inform the Covid vaccination strategy.

#### Scaling up testing capacity

439. On 12 March 2020 Roche Diagnostics contacted PHE and the Prime Minister's Office to advise that their new SARS-CoV-2 PCR test, which had just been granted emergency approval by the United States Food and Drug Administration, would be arriving in Europe for distribution the following week. They further advised that their new test could be run on Roche PCR machines already located across the UK.
440. On 14 March 2020, following rapid engagement with the Medicines and Healthcare Products Regulatory Authority (MHRA), the Prime Minister's Office and the Government Chief Scientist, it was agreed that PHE should form a public-private partnership with Roche, a global diagnostics commercial company, to deploy their new test to increase NHS testing capacity. PHE awarded Roche a contract for £21 million by call-off from a framework agreement in line with the framework terms and conditions.
441. On 17 March 2020 PHE briefed DHSC on the partnership through an email, note and Roche slide pack to Lord Bethell, DHSC Minister for Innovation [Exhibit: JH2/338 - INQ000223430]; [Exhibit: JH2/339 - INQ000119503]; [Exhibit: JH2/340 - INQ000223432]. This subsequently became part of Pillar 1 of the national testing programme (Paragraphs 49 and 442 provides full details of this programme). PHE led the programme to rapidly roll the test out across the UK, using the Roche Cobas high throughput systems which were based mainly in public sector organisations (the NHS in England, Public Health Wales, the NHS in Scotland and the health service in Northern Ireland). By the end of April 2020 Roche testing had increased PCR capacity by approximately 5,000 tests per day - see slide 12 of the exhibited report. [Exhibit: JH2/341 - INQ000223435].
442. On 15 March 2020 the PHE Director of the NIS proposed that the Prime Minister's Office urgently convene a roundtable on testing, focusing on mechanisms to mobilise national testing capabilities and identify key industry partners. In anticipation of this meeting, the Director of the NIS drafted a three-point plan for testing, which was agreed with the Secretary of State for Health and Social Care on the morning of 17 March 2020 [Exhibit: JH2/342 - INQ000223436"].
443. That evening the Secretary of State for Health and Social Care chaired the roundtable at the Prime Minister's Office with the Prime Minister joining as soon as he was able to. The invite list included cross-government officials from the Prime Minister's office, DHSC (including one of the Deputy CMOs), PHE, Office for Life

Sciences, NHSX and MHRA, academia, scientific and charitable organisations (for example the Director of the Wellcome Trust) and industry representatives (including ThermoFisher Scientific, Roche Diagnostics, Qiagen, Boots and Amazon).

444. The output of the meeting was set out in the document “Coronavirus mass testing strategy: Output from the Downing Street testing workshop” [Exhibit: **JH2/343** - **INQ000055915**], which was prepared by PHE and adopted by Lord Bethell. The workstreams subsequently became the first four pillars of the five-pillar DHSC testing strategy, as set out at paragraph 51. In the same week a senior leader, on loan from NHSX to DHSC, was appointed to lead and co-ordinate this work. Over the following weeks, PHE supported pillars 1 (increasing PCR testing for the NHS) and 4 (surveillance), with the latter being established at PHE Porton Down in February 2020.
445. At the SAGE meeting on 16 March 2020 PHE explained how testing was being scaled up over the coming weeks to 10,000 per day, with tests focused on intensive care units, hospital admissions and key workers. PHE also provided an update that it was urgently assessing commercial self-test options, with accuracy a key criterion. Also at this meeting, SAGE asked PHE to update SAGE group members at the next meeting on the potential efficacy and feasibility of rolling out a rapid home swab test for antigens, including the mechanism for collection and developing a proposal for ramping up antibody serology and diagnostic testing capacity, with input from Defence Science Technology Laboratory and the National Laboratories Alliance [Exhibit: **JH2/344** - **INQ000075664**].
446. On 17 March 2020, after modelling indicated the need for capacity to deliver 25,000 tests per day by the end of April 2020, PHE and the NHS formulated a joint plan, as exhibited at paragraph 442, to increase testing capacity to this level. This set out measures to increase capacity, including viral antigen detection tests and sero-surveillance (blood). The press release included announcements from the Prime Minister calling on companies to work with the government to rapidly develop antibody tests, as well as an aim to develop a point-of-care test for use outside of hospitals [Exhibit: **JH2/345** - **INQ000119743**]. Digital systems and infrastructure to collect samples and key data for diagnostic and public health purposes and after lab processing return results to individuals were established by NHS X. Operations were later picked up by NHS Digital.

447. On 2 April 2020 the Secretary of State for Health and Social Care announced the target to increase capacity to 100,000 tests per day by the end of April 2020. A daily capacity forecast is exhibited at slides 8 and 9 of a PHE Testing update from 2 April 2020 [Exhibit: **JH2/346** - **INQ000223440**]. That same day, the Secretary of State for Health and Social Care launched a plan to scale up testing programmes and on 4 April 2020 the plan was published on GOV.UK [Exhibit: **JH2/347** - **INQ000106325**]. It had five pillars as set out at paragraph 51.
448. DHSC created the Covid-19 National Testing Programme (NTP) to expand PCR Covid-19 testing to be available firstly for high priority groups and then to the general public under Pillar 2 of the programme. The NTP is described at paragraph 50 of Section 1 of this statement. This approach was supported by the PHE executive team and on 1 April 2020 Professor John Newton was seconded from PHE to DHSC to the role of National Testing Co-ordinator, which he held until June 2020. Officials from PHE, the Office for Life Sciences, Number 10 and DHSC, and Deloitte management consultants also provided support to the programme. The programme became part of NHSTT when the latter was established on 28 May 2020.
449. In early April 2020 there were offers of capacity from small laboratories, although the volumes were not adequate to provide large scale operations at pace. A decision was made by the DHSC's Testing Operations Director to focus attention on offers of substantial volumes, prioritising offers of support for consumables and/or laboratory space, to provide additional testing capacity of 20,000 tests per day or more and building capacity via the Lighthouse laboratories. These were diagnostic testing facilities purposefully created to process COVID-19 samples that were contracted by DHSC with input from PHE specialists and other specialist stakeholders.
450. On 9 April 2020 the Secretary of State for Health and Social Care opened the first Lighthouse laboratory in Milton Keynes. Two further Lighthouse Laboratories, Alderley Park and Glasgow, became operational in April 2020 and helped rapidly increase the country's capacity to test for coronavirus to tens of thousands of samples each day [Exhibit: **JH2/348** - **INQ000223443**].
451. On 30 April, 122,000 tests were processed in partnership with a series of private labs, high-throughput facilities dedicated to COVID-19 testing (Lighthouse Labs)

surpassing the 100,000 target set by the Secretary of State. Within PHE and NHS laboratories (pillar 1), capacity reached 33,875 on 28 April 2020.

452. By mid-May 2020, as part of a broader increase in testing, the Secretary of State for Health and Social Care raised the testing capacity target to 200,000. DHSC announced on 31 May 2020 that the target had been achieved. [Exhibit: **JH2/349** - INQ000223444].
453. By this stage, as part of pillar 2, a network of walk-in local test sites, regional test sites and mobile testing units was being built. From June 2020 additional lab capacity began to come online. As such, over the summer the Lighthouse Lab network expanded with sites around the country. Slide 10 in the exhibited PHE and NHS testing daily status report shows the increase in testing capacity from different streams, for example on 28 July [Exhibit: **JH2/350** - INQ000223445] and 28 October [Exhibit: **JH2/351** - INQ000223446].
454. By the summer of 2020 the NHSTT Innovation Team had considered all testing methods, including lateral flow antigen (LFD), LAMP, LAMPore which could be delivered outside labs, and identified a pipeline of new products that would allow for greater capacity for testing that. On 15 August 2020 Lord Bethell commissioned PHE to lead a time-limited programme to evaluate candidate LFDs tests for SARS-CoV-2 [Exhibit: **JH2/352** - INQ000223447].
455. This programme was carried out in partnership with the University of Oxford, building on a previous collaboration between May and July 2020 to assess commercial antibody tests for SARS-CoV-2, which had also been at Ministerial request (see paragraph 441). Oversight of the LFD evaluation programme was provided by Professor Sir John Bell, Regius Professor of Medicine at Oxford University and the Government's Life Sciences Adviser. An evaluation protocol was developed, agreed by DHSC Ministers, and published on GOV.UK. The protocol set out an approach to evaluation of candidate products, the majority of which were LFDs. Phase 1 was led by DHSC / NHSTT and involved a desktop review of information provided by the product's manufacturer [Exhibit: **JH2/353** - INQ000223448].
456. Through this process DHSC determined which candidate products should be referred to PHE Porton Down for evaluation under Phase 2 of the process, which was an initial and rapid assessment to determine specificity and sensitivity. If a

product met the standard required at Phase 2 it proceeded to Phase 3, which involved evaluation of specificity and sensitivity against a larger panel of SARS-CoV-2 positive and negative samples.

457. The results of Phase 2 and 3 evaluations were shared, as they became available, with DHSC who were responsible, with NHSTT, for purchasing decisions and roll-out nationally. The legal manufacturer of each successful product was responsible for meeting the associated regulatory requirements of the MHRA governing points of care testing devices, including self-use by the public. The results of the first Phase 2 evaluations were shared with DHSC before the end of August 2020. Later in the evaluation programme a summary of LFDs that had passed Phase 3 of the PHE/Oxford evaluations was published by DHSC on the government website. Decisions on publication of results and when were controlled and made by DHSC.
458. LFDs that passed the laboratory evaluation were then put into a real-world testing environment (as in the Liverpool pilot discussed at paragraph 463 below). People visiting walk-in or drive-in PCR testing centres were asked to also take an LFD test for the purposes of the analysis.
459. The Innova LFD was the first test to pass validation at PHE Porton Down on 11 September 2020, with the first contract awarded to Innova on 17 September 2020 for assisted test (where a clinician/ trained professional takes the swab) in packs of 25.
460. On 16 October 2020 the Prime Minister announced that the UK would be trialling new COVID-19 tests, confirming scientists and companies in Britain and around the world had been developing new tests which were faster, simpler and cheaper. A number of these have been evaluated by PHE research scientists in partnership with Oxford University. The performance of some of these tests was promising and therefore formal evaluation of them in places in which they could be used more widely, for example, in schools, colleges and universities was actively considered [Exhibit: JH2/354]. This will be covered in more detail in the 'Testing' module. - INQ000086826
461. A summary of how LFD validation and procurement occurred is set out in Annex D of this later submission from July 2021 [Exhibit: JH2/355 - INQ000223449].



462. On 31 October 2020 the UK's laboratory testing capacity reached the target of processing 500,000 tests per day [Exhibit: **JH2/356**] - **INQ000223450**].
463. On 3 November 2020 DHSC announced a pilot scheme of whole city testing in Liverpool [Exhibit: **JH2/357**] - **INQ000086810**]. This was implemented from 6 November 2020, in a partnership between NHSTT, Liverpool City Council, NHS Liverpool Clinical Commissioning Group, Cheshire & Merseyside Health & Care Partnership and the University of Liverpool. The LFD used in the pilot was the Innova SARS-CoV-2 assisted test. Details of the scheme were included in an evaluation published on 7 July 2021 [Exhibit: **JH2/358**] - **INQ000223452**]. Building on this pilot, the government later rolled out community testing across the country – see paragraph 471 for details of the Community Testing Programme.
464. The first batch of 'self-tests' were bought from Innova in November 2020. To enable use of a 'self-test' LFD as quickly as possible, DHSC applied to the MHRA for an 'Exceptional Use Authorisation' (EUA) for the Innova self-test to ensure a continued supply of medical devices. To expedite appropriate regulatory approvals so the test could be used as quickly as possible, DHSC took on responsibility to be the 'legal manufacturer' of the new Innova 'self-test' product. On 22 December 2020 the NHS-branded product was granted an EUA for six months, as set out in a GOV.UK press release the following day [Exhibit: **JH2/359**] - **INQ000223453**].
465. From November 2020, with the aim of securing PCR laboratory capacity for the long-term, discussions began in NHSTT on plans to build two large laboratories termed "mega-labs". They would use ePCR technology to provide a total of 600,000 high-sensitivity tests per day at a significantly lower cost than private laboratories. This was announced on 16 November 2020 [Exhibit: **JH2/360**] - **INQ000223454**]. NHSTT submitted advice to the Secretary of State for Health and Social Care on 17 December to continue with the Leamington Spa lab but pause the proposed high throughput lab in Scotland [Exhibits: **JH2/361**] - **INQ000223455**] [**JH2/362**] - **INQ000223456**]. Following further discussions with ministers, the opening of the mega-lab at Leamington Spa was announced in July 2021 [Exhibit: **JH2/363**] - **INQ000223457**] [**JH2/364**] - **INQ000223458**] following the commencement of testing from June 2021.
466. From February 2021, in response to decreased demand, NHSTT began the process of consolidating and decommissioning the laboratory network. The

consolidation process involved a combination of terminating contracts on surge capacity and decommissioning some laboratories. Test and Trace sent a submission to Secretary of State for Health and Social Care on 4 February 2021 representing collective advice to review and reduce PCR laboratory testing capacity to be in line with the reduction in PCR testing demand after the winter 2020/21 ramp-up and in the context of the rollout of the vaccine programme and the introduction of LFD testing [Exhibit: JH2/365 - INQ000223459]. This approach to reduce testing capacity was in line with the clinical scenario modelling of the likely virus spread. The scope and final option were agreed by NHSTT and PHE.

467. On 5 April 2021 the Secretary of State for Health and Social Care announced that twice weekly rapid testing would be made available to everyone in England from 9 April 2021 [Exhibit: JH2/366 - INQ000223460].
468. Over the following months testing capacity remained under review. When demand for tests increased, steps were taken to expand capacity. In July 2021 surge capacity was procured from commercial providers in response to increased demand for symptomatic PCR tests [Exhibit: JH2/367 - INQ000223461]. By November 2021, capacity was around 400,000 tests per day. However, following the detection of the Omicron variant, modelling indicated a need to further increase capacity. On 29 November 2021 NHSTT provided advice to the Secretary of State for Health and Social Care which recommended operational routes to increase PCR capacity [Exhibit: JH2/368 - INQ000223462].
469. At this time demand for LFD tests had doubled, putting strain on LFD stocks and more tests needed to be procured [Exhibit: JH2/369 - INQ000223463]. The continuity of supply was ensured by bringing forward delivery of contracted volumes procured from overseas manufacturers, military support for UK-based suppliers to rapidly package kits and securing additional procurement.
470. By February 2022 the size of the laboratory network had been reduced in line with the demand profile. The laboratory network maintained capacity to respond effectively to new waves if required and continued recognising inherent uncertainties in the future trajectory of the virus.

#### Community Testing Programme

471. Following Cabinet committee agreement, the Government announced the Community Testing Programme (CTP) in its Winter Plan, published 23 November 2020 [Exhibit: **JH2/370** - **INQ000137262**] The CTP enabled local authorities with high COVID-19 prevalence to identify asymptomatic individuals within their own communities through providing free asymptomatic testing, using rapid response lateral flow devices, so these individuals could isolate. The programme was governed by a national framework set by the DHSC and subsequently NHSTT.
472. The CTP initially offered local authorities in Tier 3 and then Tier 4 when it was created, the opportunity to participate in a six-week testing surge. Policy on tiering, and the formulation of the Tiering Regulations, was led by DHSC's Social Distancing Strategy Directorate, as described in paragraphs 561-564 in Section 4 of this statement. DHSC invited local authorities in these tiers to submit proposals based on the published community testing prospectus [Exhibit: **JH2/371** - **INQ000223465**].
473. The programme supported local authorities with funding, test devices and other testing material such as Personal Protective Equipment (PPE). Funding was allocated on a cost per test basis and local authorities were reimbursed through a ringfenced grant (as set out in section 31 of the Local Government Act 2003). Testing carried out under the Community Testing Programme was underwritten by a letter of comfort (dated 23 December 2020), issued by the Secretary of State for Health and Social Care, which indemnified LAs in the programme against clinical negligence for any testing undertaken by LAs under the collaboration agreement if it was carried out in accordance with standard operating procedures.
474. Throughout December 2020, the epidemiological picture continued to evolve, rapidly leading to most local authorities moving onto tiers 3 and 4 before the third national lockdown on 6 January 2021. As a result, Community Testing was extended to all English local authorities and Ministers decided that the programme would run to at least the end of March 2021. The extension of CTP enabled local authorities to continue to build local testing capability and capacity, which was critical in protecting against surges in infection rates. During this phase, the focus of testing was on the 10 to 17 million workers who could not work from home during lockdown.

475. From April 2021, CTP was joined by new testing channels: pharmacy collect, which allowed members of the public to collect test kits from pharmacies; community collect, whereby the public could collect tests from local and regional testing sites; and GOV.UK home ordering. These formed a 'universal testing offer,' increasing the accessibility of LFDs across the country and enabling home testing. CTP was extended for another three months, until the end of June 2021.
476. With the vaccination programme underway and the universal testing offer established, Ministers decided that community testing should focus on those communities and individuals who were disproportionately impacted by COVID and/or likely to be underserved by testing and vaccination services.
477. On 1 July 2021, CTP became the Targeted Community Testing service (TCT) and enabled local authorities to provide testing to groups of people sharing protected characteristics who were, or may have been, subject to greater risk.
478. Following the success of the vaccination programme, in early 2022 the population had much stronger protection against COVID-19 than at any other point in the pandemic. Vaccine-induced immunity, natural immunity, access to antivirals and increased scientific and public understanding all reduced risk, leading to relatively mild disease in most people and some protection against long COVID. For this reason, in its strategy on 'Living with COVID-19', published 21 February 2022, the Government announced its decision to end the Targeted Community Testing service, as well as the universal testing offer. The service formally closed on 31 March 2022.

#### Evaluation of approaches in other countries to testing including South Korea and Germany

479. These subsequent paragraphs will describe the involvement of UKHSA and its predecessor organisations in evaluation of approaches in other countries to testing including, as requested by the Inquiry, South Korea and Germany.
480. Throughout the pandemic PHE monitored developments internationally and provided regular updates to the DHSC, who led the development of the government's testing strategy. From January to March 2020 daily updates regarding positive cases in other countries were provided to DHSC through PHE's EpiCell which fed into DHSC's daily SitRep reports. PHE supported DHSC, who were responsible for co-ordinating the evidence base, to inform the scale up of the

testing programme, including comparative approaches between international countries. PHE supplied the reference and epidemiological data to help the decision making. On 17 March 2020 DHSC commissioned management consultants to undertake a rapid assessment on testing approaches by other countries. In late March and early April 2020 DHSC sighted senior PHE officials on the findings of this assessment [Exhibit: **JH2/372** - INQ000223466] [Exhibit: **JH2/373** - INQ000223467] [Exhibit: **JH2/374** - INQ000223470].

481. In April 2020, PHE specifically engaged with international public health organisations in Sweden and Germany where approaches to testing were discussed. On 8 April 2020 PHE's Emeritus Medical Director held a bilateral call with the Public Health Agency of Sweden and the readout from the meeting confirmed that testing focused on patients and hospital staff with fewer tests being carried out than other countries. The Swedish Government had put a target of 100,000 tests a week and some testing had been done on commercial serology kits [Exhibit: **JH2/375** - INQ000223471].
482. On 17 April 2020 analysis regarding Germany's approach to testing was circulated by the Foreign and Commonwealth Office (FCO) to several recipients in Government including PHE, DHSC, BEIS and FCO [Exhibit: **JH2/376** - INQ000223472].
483. On 12 November 2020, NHSTT convened an International Forum which met every two weeks for the purpose of exchanging policy and strategy on testing for COVID-19 [Exhibit: **JH2/377** - INQ000223474]. The first session of this forum comprised six countries, including South Korea and Germany. Examples of the Newsletters are enclosed that show the focus on test and trace approaches in other countries [Exhibit: **JH2/378** - INQ000223475] [Exhibit: **JH2/379** - INQ000223476] [Exhibit: **JH2/380** - INQ000223477]. This forum still meets once a month and now comprises eighteen countries.

#### South Korea

484. The emerging epidemiology and available testing capacity differed between countries according to demographic composition and population distribution. For example, South Korea was in a fundamentally different situation from the UK because the epidemiology was different (the level of infection in the community was never as widespread in South Korea as it was in the UK in early March 2020)

and because extensive testing capacity was available from the beginning of the outbreak.

485. Two high-level meetings were held between PHE, NHSTT and the Korea Disease Control and Prevention Agency (KDCA) and testing approaches were discussed. The first meeting took place on 17 December 2020 [Exhibit: JH2/381 - INQ000223478] and the second meeting took place in June 2021 [Exhibit: JH2/382 - INQ000223479]. Both were very successful and there was interest from both sides in following up after the meeting, which led to regular contact between PHE's Head of Global Strategy and KDCA's Deputy Director for International Affairs. There was monthly correspondence on development of the agenda for the June 2021 meeting and again monthly correspondence to negotiate the MOU, in addition to ad hoc questions from KDCA regarding vaccinations [Exhibit: JH2/383 - INQ000223480] [Exhibit: JH2/384 - INQ000223481]. UKHSA signed an MOU for continued collaboration with KDCA in May 2022, although this is not in scope [Exhibit: JH2/385 - INQ000223482].

#### Germany

486. PHE had an existing MOU [Exhibit: JH2/386 - INQ000223483] with the Robert Koch Institute (RKI) which allowed for regular exchange on national approaches, including testing. Ten informal bilateral meetings were held with the RKI in 2020 and 1 in 2021 to share information [Exhibit: JH2/387 - INQ000223484]. A high-level meeting was held on 4 September 2020 which covered testing approaches. [Exhibit: JH2/388 - INQ000223485] [Exhibit: JH2/389 - INQ000223486].
487. In addition, Professor Yvonne Doyle, Director for Health Protection in PHE was appointed by Baroness Dido Harding, NHSTT Executive Chair, to lead a piece of work to inform the design of the operating model of UKHSA. This involved interviewing senior influential figures working in the field of public health from other countries on their approaches, including on testing. [Exhibit: JH2/390 - INQ000223487]. Professor Doyle interviewed KDCA on 18 March 2021 and RKI on 18 March 2021 as part of the international scoping for planning the new UK agency. Other countries included the Netherlands, Norway, France, Canada, Singapore, and Japan. [Exhibit: JH2/391 - INQ000223488]. The results of this international scoping was discussed at the UKHSA Transition Extraordinary SteerCo meeting on 16 April 2021 [Exhibit: JH2/392 - INQ000251904]

488. NHSTT co-produced a report with the International Comparators Joint Unit (joint unit between Cabinet Office and the Foreign, Commonwealth and Development Office) in May 2021 which focused on enduring transmission and included comparators on international testing approaches. [Exhibit: JH2/393 - INQ000223489].

**Section 4: Public health advice to support key government decisions on the use of non-pharmaceutical interventions**

489. This section sets out the role of UKHSA, and its predecessor organisations, in providing public health advice to support key government decisions on the use of non-pharmaceutical interventions (NPIs) and communicating the government's decisions through the public facing guidance it coordinated and published on behalf of the government. COVID-19 guidance for the public and professional bodies is further explained in Section 6 of this statement.

490. This section of the statement has been structured as follows:

- a. Overview of NPIs;
- b. Key teams and structures that provided the expert public health and clinical advice to decision makers about the effectiveness and implementation of individual and collectively applied NPIs and also inputted into guidance to disseminate these NPIs;
- c. Chronological account of the involvement of UKHSA and its predecessors in key decisions regarding specific NPIs:
  - i. January - March 2020;
    1. Early advice and guidance;
    2. Lockdown and associated NPIs.
  - ii. April 2020 - February 2022 using a timeline approach focussing on;
    1. Lockdowns;
    2. Local and regional restrictions;
    3. Circuit-breakers;

4. Travel restrictions throughout the pandemic.

d. Impact of NPIs upon at-risk and other vulnerable groups;

i. Shielding;

ii. Prisons.

491. UKHSA and its predecessors' role in COVID-19 legislation, surveillance and guidance supporting NPIs is covered in Section 2, Section 5 and Section 6 respectively. Key dates and events will be repeated in this section to help contextualise the input into key decision making throughout the period.

Overview of NPIs

492. NPIs are public health and/or behavioural interventions that aim to prevent and/or control transmission of infectious pathogens, such as SARS-CoV-2, in the community and which are not solely dependent on medicines, antivirals and/or vaccines.

493. Individual and local NPIs are used routinely to prevent transmission of infectious disease, not just in pandemics. For example, individuals with infection or infection risk are asked to stay away from school or work; local centres may be closed where there is a source outbreak. In addition, routine infection control in hospitals requires NPIs although this section will not deal with infection prevention and control (IPC) measures in healthcare.

494. The aim of NPIs is also outlined in the DHSC's UK Influenza Pandemic Preparedness Strategy 2011 (extant strategy available at the time of the COVID-19 pandemic) as part of a pandemic response to protect the public by 'reducing the risk of transmission and infection with the virus as far as possible, supported by good hygiene advice, appropriate behavioural interventions, and provision of personal protective equipment for front-line health and social care staff' (exhibited at paragraph 397 in Section 3 of this statement).

495. Throughout the COVID-19 pandemic UKHSA and its predecessors provided evidence, where available, on the application of public health interventions relevant to the epidemiological conditions and viral characteristics known at the time. As medical treatments and vaccines became available, at the end of 2020



and then more widely in 2021, NPIs became more targeted to specific regions, settings or population cohorts, to reduce transmission of the virus and minimise subsequent serious health outcomes.

496. Many NPIs used in this pandemic were also not mutually exclusive, such as regulations or guidance to work from home and closure of settings (most of which were workplaces and educational settings). This had implications for communication and implementation of NPIs, public interpretation and acceptance, and for generating and analysing evidence on the impacts of individual NPIs or NPI packages.
497. The NPIs discussed in this section cover a wide range of different interventions. Chapter 8 of the Technical Report on the COVID-19 pandemic in the UK [Exhibit: JH2/394 - INQ000223490] groups NPIs under 7 distinct categories.
498. The examples given throughout this section effectively limit non-essential social and workplace interactions and population movements and aim to break chains of transmission or general viral transmission - for example travel restrictions, closure of non-essential settings and stay-at-home orders, face coverings, hand washing. This section focuses on the NPIs mentioned in paragraph 3 of the Module 2 outline of scope and briefly mentions other NPIs such as contact tracing or ventilation measures. Various measures will be addressed in detail in future modules of the Inquiry.
499. Attempts to separate the effectiveness of individual NPIs is both difficult and potentially misleading, as NPIs were usually implemented together, and compliance was to several concurrent NPIs. For example, the CORSAIR reports exhibited at paragraph 520 identified that people who complied with social distancing were also likely to follow the guidance to wear a face covering and stop attending non-essential settings. Each NPI also had disbenefits, for example, the potential negative effects of lockdown or of face coverings on certain groups of people, and these had to be continually weighed against the epidemiological position at each stage of the pandemic. Chapter 8 of the Technical Report on the COVID-19 pandemic in the UK includes more details of key NPIs utilised in the pandemic, considerations in their implementation and emerging evidence arising from their use.

Key teams and structures contributing for PHE/JBC/NHSTT to provide expert scientific and clinical advice from January 2020-February 2022

Public Health England

500. For the initial period referenced (January- March 2020), PHE was the only one of UKHSA's predecessor organisations in existence, as NHSTT and JBC were not established until May 2020. PHE played an advisory role to both DHSC and SAGE to provide available evidence to inform key decisions by Ministers and Government on the introduction, easing or withdrawal of both advisory and compulsory NPIs.
501. PHE had two critical support roles in relation to the use of NPIs and associated decision making during the COVID-19 response: providing advice to the government to inform decisions then providing advice to the public and others to take action.
502. PHE's first role was the provision of the current evidence base, available at the time, in relation to specific NPIs through evidence reviews and scientific papers. This was delivered through a number of channels: to policy leads in DHSC and other government departments; to the CMO and DCMOs; via advice and evidence to NERVTAG, the secretariat for which was provided by PHE; and to SAGE and its sub-groups. NERVTAG relied on a number of sources, including PHE, to provide input in the form of papers and contribution to discussions in meetings, on specific NPIs. The exhibited document lists the key PHE papers provided to NERVTAG on NPIs [Exhibit: JH2/395 - INQ000223491].
503. PHE's second role was to disseminate technical advice and provide information to the public and relevant stakeholders once ministers and other decision makers determined the policy on NPIs. PHE did this by publishing guidance on GOV.UK, and by communicating it to relevant stakeholders including NHS England, Directors of Public Health and frontline health and social care professionals. This information was provided in an accessible format to different communities and stakeholders, including to settings such as schools and care homes.
504. These roles were neither exhaustive nor exclusive – other organisations and individuals also provided support in these areas, for example advice from other government departments to their sectors, such guidance for local councils during

the coronavirus (COVID-19) outbreak issued by the Ministry of Housing, Communities & Local Government (MHCLG) [Exhibit: JH2/396 - INQ000223492]. As such, PHE did not publish the totality of guidance over the course of the pandemic.

505. Specific teams within PHE provided input and advice to science groups and through decision making channels. These included the Joint Modelling Team (JMT), which was the key business unit conducting visualisation, analytic and mechanistic modelling activities during the first three months of the response. The JMT was formally established on 27 January 2020, bringing together expertise that existed in PHE's Emergency Preparedness, Resilience and Response (EPRR) team and the Statistics, Modelling, and Economics Department. The JMT used the data it curated to undertake a range of analyses, including initial growth estimates and scenario models for COVID-19, and provided quantitative information to the response, both within PHE and to wider UK government via the DHSC committee SPI-M. On 28 January 2020 SAGE agreed that SPI-M would operate as a formal sub-committee of SAGE [Exhibit: JH2/397 - INQ000057492]. An operational sub-group, SPI-M-O, brought together a range of modelling and scenarios from different organisations to develop consensus statements for SAGE.
506. PHE's External Guidance Cell and Clinical Guidance Cell, which from September 2020 merged to become PHE's Advice and Guidance team (PHAGE), translated the government-agreed policy on NPIs into published guidance.
507. PHE's Senior Medical Advisors (SMAs) provided expert public health clinical advice to PHE, across all government departments, agencies and other stakeholders. The SMAs advised on how the public health advice should be applied across a range of situations during the response.
508. PHE's International Cell coordinated PHE's international epidemic intelligence activities and the UK's international reporting obligations to inform the UK public health response for COVID-19.
509. The Behavioural Science Team (BST) provided advice and recommendations, using evidence from the behavioural and social sciences, to inform the design and delivery of public health guidance, communications and interventions. Throughout the pandemic the BST worked with PHE's External Guidance Cell or PHAGE to

provide behavioural science input into drafts of COVID-19 guidance. Similarly, the BST also supported PHE's and UKHSA's Communications Team in drafting and editing communications in line with evidence-based best practice for public health communications, to ensure that the communication of advice and guidance was clear, actionable, and contained sign-posting that would help people to adhere to it. A member of PHE's BST was also asked to participate in SPI-B, the behavioural and social science sub-group of SAGE, bringing individual technical expertise to the group [Exhibit: JH2/398 - INQ000223973].

510. Specialist teams within PHE also provided expertise within and beyond the organisation to inform decision making around certain NPIs in specific settings such as prisons, care homes, and schools.

#### The Joint Biosecurity Centre

511. The Joint Biosecurity Centre (JBC) was responsible for bringing together a range of health and non-health data, as well as local insights on this data, to inform decision making about the implementation of NPIs. It oversaw the collation of data, analysis and evidence for CMO and the wider public health family to inform decision making about the implementation and impact of NPIs. This was primarily undertaken through the Bronze/Silver/Gold Local Action Committee (LAC) meetings, as described in Section 1 of the statement, with evidence-based recommendations to the CMO for England, the Secretary of State for Health and Social Care and other Ministers on where NPIs could be deployed based on the latest data on COVID-19 prevalence and NHS pressure.
512. A summary of the epidemiological data was published online to inform the public of the data used for decision making. The JBC also provided analysis of the impact of NPIs, particularly in relation to the effects of NPIs on mobility (for example Google travel data, Transport for London travel journey data, spending data) and on the changes in the number of contacts and cases by age. The JBC held formal observer status for the Scientific Pandemic Influenza Group on Modelling, Operational sub-group (SPI-M-O).
513. The JBC led further 'deep dive' investigations to understand the local picture and associated data on case rates and transmission in specific contexts. As well as contributing to the rapid investigation preceding the Leicester lockdown, the JBC also conducted industry specific research, such as on the food production and

farming sectors. These reports were used internally within Government and informed the work of teams within PHE, NHSTT, DHSC and CO. Two example reports are exhibited here: [Exhibit: **JH2/399**] - **INQ000223495**]; [Exhibit: **JH2/400**] - **INQ000223496**].

### NHS Test & Trace

514. As described in Section 1 of this statement, NHSTT was established in May 2020 to lead an 'at scale' national testing and tracing service, working with PHE and others. NHSTT policy teams worked closely with, and provided support to, DHSC on a wide range of public health and coronavirus legislation and regulations, as described in Section 2 of the corporate statement, covering areas such as self-isolation, localised restrictions and decisions on tier levels, and how these tiers operated. The work of NHSTT, specifically in relation to testing, will not be covered in this section of the statement as it will be covered in the later module on testing.
515. Within NHSTT, the Evaluation and Social Research Unit (later moved into UKHSA's All Hazards Intelligence Directorate as the Social Research and Evaluation Unit), provided evidence to inform the response to the COVID-19 pandemic by assessing and evaluating the implementation and impact of some NPIs. Much of this work related to testing, which will be covered in a later module. Work on self-isolation is detailed in paragraph 554 below.
516. The Customer Insights team, within NHSTT's Customer, Communication and Innovation Group, provided and utilised market research to generate evidence-based insight about the public's attitudes to testing and deployed those insights across NHSTT to inform the design and delivery of public health guidance, communications and interventions. The work of the team will be covered in more detail in the later module on testing.

### UKHSA

517. When UKHSA became operational on 1 October 2021 it combined the health protection, clinical and scientific functions of PHE with NHSTT, including the JBC. From that date it took on the role of providing clinical and public health advice and evidence on NPIs and overseeing the collation of data and analysis to inform decision making about the implementation and impact of NPIs.

Chronological account of the involvement of UKHSA and its predecessors in key decisions regarding specific NPIs

January - March 2020

518. On 10 January 2020 PHE issued guidance based on pre-existing guidance developed in response to MERS and SARS coronaviruses [**Exhibit: JH2/401**]-**INQ000101202**]. It was aimed at NHS acute trusts who would be responsible for monitoring and treating patients with COVID-19 in the event cases reached the UK. Advice was provided around environmental cleaning, IPC precautions including hand hygiene, isolation and PPE. This advice specifically covered IPC measures in healthcare settings and will be considered in detail in a later module of the Inquiry. These measures overlapped with NPIs as they were designed to limit routes of transmission of the virus.
519. On 28 January 2020 NERVTAG discussed PHE's review of extant advice to the UK Government on wearing of face masks by the public, in the event of pandemic flu, as it may apply to COVID-19. NERVTAG endorsed PHE's advice that no changes should be made and that the wearing of face masks should not be recommended, as there was no current evidence to support reduction of transmission of COVID-19, but that emphasis on hand hygiene should continue (please see exhibit at paragraph 346(c) in Section 3). The effectiveness of NPIs in managing previous viral outbreaks was discussed at this meeting, as well as evaluation of emerging information on the transmission of COVID-19. The table exhibited at paragraph 502 sets out key papers relating to NPIs taken to NERVTAG and SAGE throughout the pandemic by PHE or, subsequently, UKHSA, and sub-groups of SAGE which had a PHE/UKHSA presence.
520. In February 2020 the BST helped set up the NIHR-funded COVID-19 Rapid Survey of Adherence to Interventions and Responses (CORSAIR) study, which analysed population survey data collected by DHSC [**Exhibit: JH2/402**]-**INQ000223498**]. The outputs of this project were briefing papers for DHSC, SAGE and others on a range of topics and examples are given below in chronological order.
521. On 3 February 2020 PHE contributed to a SPI-M-O paper, 'Consensus view on the impact of possible interventions to delay the spread of a UK outbreak of 2019-nCov-3.' On 4 and 13 February 2020 the paper was discussed at SAGE. At this

stage, whilst airborne viral transmission could be predicted, the relative importance of asymptomatic to symptomatic transmission, or of respiratory to touch, could not be assessed with precision so early in the pandemic. On the best available evidence and expert opinion, the paper concluded that a combination of voluntary home isolation of those with respiratory symptoms and school closures would likely have an impact in reducing the spread of the virus, although this would depend on timing of these interventions.

522. On 20 February 2020 PHE published a blog about self-isolation [Exhibit: JH2/403 - INQ000223499] on its public-facing website. Public Health Matters blogs were a routine way in which PHE would communicate with the public during incidents and outbreaks. The blog provided an accessible summary of current self-isolation guidance for people who were symptomatic, tested positive or were a close contact of someone with coronavirus. The PHE BST helped to edit this blog, particularly sections which encouraged people to plan for the eventuality of self-isolation if they were a COVID-19 case or contact, and signposting to sources of support and guidance.
523. On 24 February 2020 the WHO held a press conference stating that the current reported evidence on the COVID-19 outbreak still aligned with epidemic status. It stressed that planning must be embraced around “large-scale implementation of high-quality, non-pharmaceutical public health measures”, such as case detection and isolation, contact tracing and monitoring/quarantining and community engagement [Exhibit: JH2/404 - INQ000223500].
524. On 3 March 2020, following a commission from SAGE, a paper was written by SPI-B considering public attitudes and support, likely levels of adherence and barriers, facilitators and communication issues associated with a number of behavioural and social interventions including isolation, social distancing and school closures [Exhibit: JH2/405 - INQ000129014]. A member of the PHE BST was a participant in the SPI-B group and contributed to consensus discussions and the development of this paper. This, and subsequent SPI-B papers, represented a consensus position of the SPI-B group and were presented back to SAGE, by the SPI-B chairs, to inform SAGE’s advice to Government.
525. On 4 March 2020 PHE contributed in a similar capacity to the SPI-B paper ‘Insights on combined behavioural and social interventions’ (discussed at SAGE on 5 March 2020). This summarised the scientific evidence and expert consensus.

It suggested the combination of interventions most likely to be socially acceptable were isolation of symptomatic cases and at-risk members of the public, social distancing and prevention of public gathering. It noted school closures were likely to be highly disruptive and likely to present an unequal burden to different sections of society [Exhibit: JH2/406 - INQ000109111].

526. In this early stage of the pandemic PHE utilised evidence on the use of NPIs from other known respiratory viruses. On Test and Trace Support Payments (TTSP), just prior to the move from the contain to the delay phase, PHE produced a paper for DHSC and CMO on its approach, on transitioning from containment to delay [Exhibit: JH2/407 - INQ000223503].
527. In the paper, PHE stated that it would “continue to play a key part in advising SAGE on measures such as school closures, mass gatherings, self-isolation and social distancing and will evaluate the impact of these measures.” The paper outlined a high-level summary of changes PHE would make on proposed interventions, grouped under the headings:
- a. Surveillance to inform action;
  - b. Reducing opportunity for widescale spread and reducing the size of the peak;
  - c. Move to targeted contact tracing;
  - d. Support the NHS to increasing diagnostic testing;
  - e. Supporting communication and guidance; and
  - f. Consolidating and reducing activity in ports.
528. On 12 March 2020 PHE published the first version of the ‘Stay at Home Guidance’ (exhibited at paragraph 377 of Section 3 of this statement), an early example of guidance published by PHE during the pandemic. This provided public guidance on the decision that those with symptoms of COVID-19 (cough or fever) should be advised to isolate at home for ten days. It used evidence-based advice from PHE’s in-house BST on how to communicate the guidance in a way that would maximise engagement and take-up. Until its withdrawal on 24 February 2022, PHE and subsequently UKHSA, updated it regularly throughout the pandemic in



line with evidence reviews and government policy and utilising the expertise of the BST and the PHE communications team.

529. On 16 March 2020, one week before the first national lockdown was announced by the Prime Minister, the PHE modelling team were amongst four academic institutions and research groups that submitted papers in advance of the SPI-M-O meeting held that day. These papers and discussion at the meeting informed the further SPI-M-O paper, 'Consensus view on behavioural and social interventions'. The same day this paper was discussed at SAGE. "It was agreed that the addition of both general social distancing and school closures to case isolation, household isolation and social distancing of vulnerable groups would be likely to control the epidemic when kept in place for a long period. SPI-M-O agreed that this strategy should be followed as soon as practical, at least in the first instance." [Exhibit: **JH2/408** - **INQ000119704**].
530. On 18 March 2020 PHE contributed to a briefing paper to DHSC, written as part of the CORSAIR study around knowledge of COVID-19 symptoms and behavioural intentions when ill [Exhibit: **JH2/409** - **INQ000196806**]. The report concluded that public health messaging was likely to be having a positive influence on NPI compliance for adherence to isolation guidance if symptomatic: "increased knowledge about coronavirus, having heard more about coronavirus, using unofficial sources (social media, search engines, and friends and family) as a key information source, having seen advice on how to protect oneself and others, and having seen advice on handwashing were associated with trying to stay at home and avoid contact with others if ill."
531. On 19 March 2020 PHE produced its weekly National COVID-19 Surveillance report summarising information from the surveillance systems used to monitor COVID-19 [Exhibit: **JH2/410** - **INQ000223506**]. PHE also provided data on confirmed cases to SAGE and DHSC at this time via the COVID-19 Dashboard it created and managed [Exhibit: **JH2/411** - **INQ000223507**]. These products provided national and global epidemiological, clinical and behavioural data and a breakdown of cases by age and gender. More information on these products is provided in Section 5 of this statement.
532. On 22 March 2020 a paper was presented to a SAGE subcommittee on further and current levels of adherence [Exhibit: **JH2/412** - **INQ000074912**].

533. On 23 March 2020 the PM announced the first UK/Four Nations lockdown [Exhibit: **JH2/413** - INQ000088033].
534. On 23 March 2020, PHE published "Staying at home and away from others (social distancing) guidance" [Exhibit: **JH2/414** - INQ000223510]. The Government rules appear in black, setting out the policy context. The guidance then presented the current public health safety measures on NPIs including isolation, facemasks and testing. As noted in Section 6 of this statement, PHE was commissioned by DHSC, Cabinet Office and other departments for specific pieces of guidance. Whilst guidance may have been badged as PHE guidance, the content of the guidance received input and clearance from external departments.
535. As outlined in the overview of this section, NPIs are designed to reduce the likelihood and rate of transmission of infection, particularly where pharmaceutical countermeasures are unavailable to manage population risk effectively. Whilst principles of transmission reduction are applied routinely in localised settings and population cohorts on a routine basis, during lockdown, measures encompass most or all of the population and may be applied through a targeted, tiered or total approach.
536. On 26 March 2020 the Health Protection (Coronavirus, Restrictions) (England) Regulations 2020 came into force to underpin the restrictions announced on 23 March. Section 2 of this statement provides further detail on this and other COVID-19 response legislation.

#### April 2020 - February 2022

537. In the first week of April 2020 the government conducted the first review of the UK/Four Nations lockdown, as per its legal duty to review these restrictions every three weeks [Exhibit: **JH2/415** - INQ000223511]. PHE's incident team surveillance cell produced a paper [Exhibit: **JH2/416** - INQ000120420] for SAGE detailing extant surveillance systems expected to continue long term which would be able to monitor the impact of lifting restrictions as well as enhancements under exploration.
538. In early April 2020 PHE contributed to a series of CORSAIR study briefing papers to DHSC. These included: on 3 April 2020, a briefing paper to DHSC on the latest findings concerning adherence to social distancing [Exhibit: **JH2/417** -

**INQ000196807**]. On 7 April 2020, adherence to self-isolation [**Exhibit: JH2/418**  
- **INQ000196808**]. and on 9 April 2020, a briefing paper to DHSC on the  
latest findings concerning the uptake of hand hygiene behaviours [**Exhibit: JH2/419**  
- **INQ000196809**]. These papers were shared with the secretariat and  
participants of the SAGE sub-group SPI-B, to inform their discussions and  
consensus advice to SAGE.

539. On 10 April 2020 PHE produced a paper for the Cabinet Office proposing a system of measures consisting of contact tracing, testing, and the NHSX app that could be employed once a phase of easing restrictions was underway. The paper suggested a largely automated system of contact tracing should be supplemented by enhanced efforts by HPTs and functional systems to control outbreaks and transmission in higher risk situations. The proposed model could be scaled up and amended with the needs of the response and other developments [**Exhibit: JH2/420** - **INQ000223516**].
540. On 16 April 2020 the Foreign Secretary announced, at the daily Downing Street press briefing, the decision to keep lockdown in place for at least three more weeks, unless all five conditions could be met [**Exhibit: JH2/421** - **INQ000086576**]:
- a. 1. Evidence that the NHS can cope across the UK;
  - b. 2. A sustained fall in daily death rates;
  - c. 3. Evidence that the rate of infection is decreasing;
  - d. 4. Confidence that supplies of testing and PPE are able to meet demand;
  - e. 5. No risk of a second peak that would overwhelm the NHS.
541. On 28 April 2020 PHE submitted the following paper via SPI-M to SAGE, 'Impact of gradual reopening strategies using POLYMOD contact data' [**Exhibit: JH2/422** - **INQ000223518**]. It informed the SPI-M-O Consensus Statement on 27 April 2020 [**Exhibit: JH2/423** - **INQ000223519**]. This paper looked at the impact on the reproduction (R) number of various activities and concluded that re-opening schools, work and allowing social visits was most likely to negatively impact the R number, although re-opening libraries and parks was most likely to keep the R below 1. Along with the three other similar but separate modelling approaches

from Imperial College London, the University of Bristol and the University of Warwick, this paper was used in the scientific advice to inform a more targeted approach to NPIs within the population and specific regions (restrictions increasing and decreasing depending on the epidemiological parameters contributing to R).

542. The COVID-19 Rapid Evidence Service was set-up in April 2020 to support the use of evidence to inform PHE's COVID-19 response. The team produced a range of outputs to different timeframes and for different purposes, but the rapid reviews (which generate new knowledge through systematically finding, synthesising and appraising evidence) were more focused on supporting decision making. Rapid reviews were mainly commissioned internally by the COVID-19 Incident Directors (ID), by the advice and guidance team within the Public Health Advice, Guidance and Expertise function (PHAGE), the Adult Social Care cell (both of whom produced and updated COVID-19 guidance) and by Senior Public Health and Senior Medical Advisors (SMA) also within PHAGE who were advising policy teams in DHSC and NHSTT. Some were commissioned indirectly by other government departments, including DHSC and DfE.
543. The rapid reviews were undertaken by methodology experts (including information scientists and reviewers) with input from topic advisors (senior public health professionals). The rapid reviews followed agreed standardised processes, including quality assurance processes and sign-off, initially by Incident Directors, then later by the Head of PHAGE. Rapid reviews were shared with relevant stakeholders, including DHSC, and used to inform government guidance as appropriate. Some reviews were shared in early drafts with CMO and CO through submissions and were subject to the 'gridding' process to agree the date for publication (this also ensured all relevant officials, such as CMO's Office, were sighted in the lead up to publishing). Evidence gaps identified via rapid reviews were incorporated into information on emerging research priorities shared by PHE and later UKHSA with external funders.
544. While most rapid reviews were published online and available to the public, some reviews were only available on request, usually due to delays that resulted in the reviews becoming out of date and thus of limited utility to the wider public (noting that the reviews became out of date very quickly due to the rapid generation of evidence on COVID-19). Delays were due to limited capacities and prioritisation of new reviews, as well as to the transition from PHE to UKSHA. From Summer

2023, reviews, that were marked as available on request but had not been published, will be published on new website: [Exhibit: JH2/424]- INQ000223520].

545. Evidence summaries or evidence briefings to provide access to the available evidence – for example, lists of primary studies or summaries of existing systematic reviews – were intended for internal use only and were therefore not published online.
546. On 11 May 2020 the Cabinet Office published the UK Government’s COVID-19 recovery strategy [Exhibit: JH2/425]- INQ000223521] and announced the establishment of the JBC, which would have responsibility for setting the COVID-19 alert levels of risk and communicating these to ministers and local agencies, to reduce spread of the virus at local level. The levels were:
- a. level 1: COVID-19 is not known to be present in the UK;
  - b. level 2: COVID-19 is present in UK, but the number of cases and transmission is low;
  - c. level 3: a COVID-19 epidemic is in general circulation;
  - d. level 4: a COVID-19 epidemic is in general circulation; transmission is high or rising exponentially;
  - e. level 5: as level 4 and there is a material risk of healthcare services being overwhelmed.
547. One of the key objectives of the JBC, and later UKHSA, was to provide advice to the CMOs who, in turn, advised ministers on the UK coronavirus (COVID-19) alert level, and communicate the current risk at a UK-wide level clearly to the public. Whilst the UK COVID Alert Level was not directly related to decision making around the imposition of local or national lockdowns, it was used by Ministers as a communication tool for the public to aid adherence to NPIs.
548. On 25 May 2020 the JBC presented a paper to SAGE for discussion on COVID-19 Alert Levels [Exhibit: JH2/426]- INQ000119952].
549. On 29 May 2020 PHE completed a review of the impact of social and physical distancing measures on COVID-19 activity, as detected through the different

surveillance systems [Exhibit: JH2/427]- INQ000223523]. The report found a clear impact of the social and physical distancing measures on COVID-19 activity in England, which was first detectable through community indicators within a week of the introduction of mandatory measures. In line with these findings, the Technical Report on the COVID-19 pandemic in the UK concluded that physical distancing was identified as an important tool to reduce transmission early in the pandemic. The relative importance attributed to physical distancing shifted as evidence strengthened on the role of airborne, as opposed to fomite, transmission. However, widespread reduction in physical proximity of community contacts was important in interrupting both routes. In fact, physical distancing had its greatest impact on reducing respiratory droplet transmission. Please also see chapter 8, on non-pharmaceutical interventions, of the Technical Report exhibited at paragraph 497.

550. From 1 June 2020 the JBC worked in partnership with PHE, wider NHSTT, DHSC and local HPTs to provide advice, analysis and data at a regional and local level across the UK to Ministers, to inform evidence-based decisions on the use and cessation of NPIs. This informed a more targeted approach to NPIs, with local and regional restrictions occurring where there was evidence of rising cases, outbreaks and/or healthcare impact. Specific examples of the information provided by JBC are set out below.
551. In June 2020 the Cabinet Office Committee COVID-O (Operations) approved the establishment of the Bronze/Silver/Gold (B/S/G) hierarchy of meetings of the Local Area Committee (LAC). These provided a governance framework where local, regional and national data were reviewed, and operational decisions around potential local support and/or restrictions were made. Further information on these meetings is provided in paragraphs 88-99 of Section 1.
552. Following the first national lockdown, and before the introduction of tiers, localised restrictions came into force. These localised restrictions were introduced through regulations. The JBC provided policy advice to Ministers to support the making of these regulations and these are exhibited in a table at paragraph 302 in Section 2 of this statement. This included JBC and PHE epidemiological evidence and analysis. When a spike in case rates was identified in one region, the JBC worked with the relevant local authorities to establish the feasibility of implementing various NPIs. JBC used these local insights, combined with the numerical data, to develop recommendations for interventions.

553. These recommendations were tested with officials in Bronze LAC meetings, then with the CMO in Silver LAC meetings, and finally with Ministers in the Gold LAC meetings [Exhibit: **JH2/428**] - **INQ000119808**]. Once the Secretary of State for Health and Social Care and any other Ministers at the meeting decided on which NPIs to implement and for which geography, JBC would typically provide a paper to COVID-O (in some instances Cabinet Office determined that additional COVID-O approval was not necessary) and later to Number 10 setting out the proposal for its approval. After approval had been received JBC briefed local authorities on the NPIs they would need to implement in their area.
554. From June-October 2020 local restrictions were introduced in this way in Leicester, Blackburn, Luton and Bradford, North of England, Bolton, and finally, the North East and North West of England, as shown in the table exhibited above.
555. In June 2020 JBC and PHE worked in collaboration with local contacts to identify the factors that were contributing to high infection rates in Leicester, which was the first local authority to be the focus of specific NPIs. The JBC produced situational reports detailing headline data about cases in Leicester [Exhibit: **JH2/429**] - **INQ000223525**] [Exhibit: **JH2/430**] - **INQ000223526**].
556. The report, in the form of Annex J of a DHSC submission recommending localised restrictions in Leicester, was sent to the Secretary of State for Health and Social Care. On 29 June 2020 the restrictions were announced in Parliament and on 4 July 2020 the first localised restrictions came into effect.
557. In June 2020 PHE conducted a rapid review to assess the effectiveness of interventions to reduce COVID-19 transmission in schools [Exhibit: **JH2/431**] - **INQ000223527**] [Exhibit: **JH2/432**] - **INQ000223528**]. This review was commissioned internally by ID and Children and Young People (CYP) SMA. Findings of the reviews were shared with the Advice and Guidance cell, CYP SMA as well as with the educational taskforce within PHE who then shared it with DfE in July 2020 [Exhibit: **JH2/433**] - **INQ000223529**]. Due to the evidence moving very quickly, this review was updated in September 2020 [Exhibit: **JH2/434**] - **INQ000223532**]. A further update of this rapid review is outlined later in this statement.

558. On 9 July 2020 recommendations were agreed at SAGE 46, with contributions from PHE officials attending this meeting, which informed planning for the autumn and winter [Exhibit: JH2/435 - INQ000075460].
559. Starting in August/September 2020, to help build the evidence base on self-isolation compliance, the Social Interventions and Behaviour Change team, in NHSTT's Evaluation and Social Research Unit, undertook and commissioned a range of surveys and analysis to measure self-isolation compliance among cases and contacts. A later summary of this evidence from November 2021 is provided at paragraph 591.
560. Informing this work, and the other key outputs of this team, were evaluation of the self-isolation pilot programme and effectiveness dashboards for isolation compliance, based on identified indicators. The dashboards also enabled the team to answer ad hoc queries from policy colleagues, Cabinet Office Taskforce and supported a range of evaluation work.
561. On 16 September 2020 PHE contributed to a SPI-M-O consensus statement [Exhibit: JH2/436 - INQ000223534], which considered the R rate, forecast hospitalisations, and the impact of "circuit breakers" i.e. the re-introduction of significant NPIs, similar to those in force during late May 2020, for two weeks, over the October 2020 half-term break. The group stated that this "reduces the reproduction number below 1 resulting in reduced prevalence," and as such, "have the potential to substantially reduce cases, hospitalisations, and deaths." An accompanying paper was produced by the University of Warwick Modelling Team [Exhibit: JH2/437 - INQ000223535].
562. On 17 September 2020 the consensus statement was provided to SAGE and considered at SAGE 57 [Exhibit: JH2/438 - INQ000120558]. The minutes of that meeting state that "a 'circuit-breaker' type of approach, where more stringent restrictions are put in place for a shorter period, could have a significant impact on transmission. Modelling indicates that a 2-week period of restrictions similar to those in force in late May could delay the epidemic by approximately 4 weeks." On 21 September 2020 SAGE included a circuit-breaker was included in the list of NPIs that it advised should be considered for immediate introduction [Exhibit: JH2/439 - INQ000212102].



563. On 21 September 2020 SAGE concluded that the lockdown introduced in March 2020 was associated with a reduction in the reproduction number (R) - from an estimated range of 2.5-3.0 to an estimated range of 0.5-0.7 – though with an initial period of continued high case rates due to ongoing household transmission [Exhibit: **JH2/440** - INQ000223538].
564. In September 2020 PHE and the JBC provided epidemiological evidence and analysis to inform DHSC-led policy on tiering and the formulation of the Tiering Regulations. COVID -O agreed to the tiering framework which represented an integrated framework of social contact restrictions to control the spread of the virus in a targeted and proportionate way [Exhibit: **JH2/441** - INQ000223539].
565. On 30 September 2020 the JMT produced a report which looked at evidence on the impact of local and national interventions on infection rates, and the potential impact of a 'circuit breaker' [Exhibit: **JH2/442** - INQ000223540].
566. As covered in more detail in Section 5 of this statement, different NPIs were applicable to different tiers under the new local Covid Alert levels, which were announced by the Prime Minister on 12 October 2020 [Exhibit: **JH2/443** - INQ000137280]. JBC assessed the impact that NPIs were having on the spread of the virus: at an aggregated level of the local authority in the case of the tiering policy; for those local authorities in Enhanced Response Areas (ERA) and also at the individual level in the case of the self-isolation support policy as described at paragraph 748 of Section 5 of this statement in the exhibit on the 'Local Interventions Analysis Framework'.
567. On 5 November 2020 the second national lockdown was announced [Exhibit: **JH2/444** - INQ000075751]. In advance of this decision JBC provided data and analysis, which drew on data and expertise from PHE, NHSTT, SPI-M and other partners, and was presented through the Bronze, Silver and Gold LAC decision meetings structure. The data provided showed the majority of English local authorities had seen case rises and cases had increased significantly in educational and care home settings.
568. During the November lockdown, JBC worked with Cabinet Office to continue to develop an analytical framework to place Lower Tier local authorities (LTLA) in England in the new refreshed Tiers once that lockdown ended. This is set out under the heading national and Regional Assurance in the contain framework

guide for local decision makers, exhibited at paragraph 771 in Section 5. The framework was discussed with the Cabinet Office and was published as part of the CONTAIN framework. The content of NPIs in the form of Tiers was led by the Social Distancing Strategy Directorate in DHSC Policy. The second exhibit at paragraph 777 of Section 5 of this statement references the analytical frameworks used to assess the impact that non-pharmaceutical interventions were having on the spread of the virus.

569. The LAC report from 23 November 2020 proposed the allocation of areas to Tiers [Exhibit: **JH2/445** - INQ000223543].
570. Throughout the latter half of November and early December analysis and assessments continued to be produced for the LAC Action Committee meetings – with recommendations made about allocation of LAs to Tiers (at this point there remained just three Tiers 1-3).
571. Tiering was introduced to replace the national lockdown that came to an end on 3 December 2020 as a way of managing the spread of the virus. Policy on tiering, and the formulation of the Tiering Regulations, was led by DHSC’s Social Distancing Strategy Directorate with epidemiological evidence and analysis provided by JBC and PHE through Local Area Committee (LAC) meetings, as explained in Sections 1 and 2 of this statement and described in para 85, below with the announcement of an additional tier.
572. On 13 December 2020 the exhibited paper from the Secretary of State for Health and Social Care sets out LAC Gold recommendations to COVID-O [Exhibit: **JH2/446** - INQ000223544] and confirms that the southeast of England had begun to demonstrate alarming and accelerating rates of change. The emergence of an immune escape variant (subsequently known as “Alpha”) was driving this rate of change. DHSC, Cabinet Office, and the JBC began discussing a possible new “Tier 4.”
573. On 19 December 2020 the Prime Minister announced the introduction of “Tier 4” [Exhibit: **JH2/447** - INQ000054363]. At this time, case rates exceeded 500 per 100,000 across a large number of LTLAs that were to be placed in Tier 4; this data is shown in the Gold pack produced by the JBC and PHE for the week commencing 21 December 2020 [Exhibit: **JH2/448** - INQ000223546].

574. The data in the Gold packs suggested that London schools may be contributing to wider transmission - with seeding within multigenerational families increasing the rate of growth and stretching the capacity of local NHS systems. In the run up to Christmas JBC analysis and assessments highlighted the impact the new, more infectious, COVID variant was having on case rates and doubling times, resulting in unsustainable pressures on the NHS. The new variant could be tracked using S-Gene Target Failure. The LAC Gold Committee meeting recommended further areas were moved to Tier 4. JBC's situation report to the Silver and Gold meetings for w/c 28 December [Exhibit: JH2/449 - INQ000223548].
575. On 4 January 2021 the Prime Minister announced a new national lockdown. This reflected concerns that the four-tier system was not containing the spread of the more transmissible Alpha variant, illustrated by a majority of the country being in Tier 3 and more entering Tier 4 as a result of the Alpha variant, and case rates being ten times higher than those which had been required to escalate them to the highest level under the previous tiers [Exhibit: JH2/450 - INQ000113648].
576. In February 2021 the government announced the Roadmap out of lockdown with 4 phases between March and June 2021, with a minimum of five weeks between each step: four weeks for the scientific data to reflect the changes in restrictions and to be analysed; followed by one week's advance notice of the NPIs and restrictions that would be eased [Exhibit: JH2/451 - INQ000075756].
577. Also in February 2021 the JBC produced, and published [Exhibit: JH2/452 - INQ000223551], analysis on the impact of test, trace and isolate [Exhibit: JH2/453 - INQ000223552] [Exhibit: JH2/454 - INQ000223553].
578. JBC provided analysis and assessment at each stage on whether each of the Government's 4 'tests' had been met. An example Deep Dive Regional Overview for the w/c 22 March 2021 is exhibited [Exhibit: JH2/455 - INQ000223554]. This analysis was considered and refined through the Gold LAC meetings and informed the advice presented to Ministers at Covid-O. The tests were:
- a. The vaccine deployment programme continues successfully;
  - b. Evidence shows vaccines are sufficiently effective in reducing hospitalisations and deaths in those vaccinated;

- c. Infection rates do not risk a surge in hospitalisations which would put unsustainable pressure on the NHS;
  - d. The assessment of the risks is not fundamentally changed by new variants of concern.
579. JBC produced a series of assessments to inform each step of the 2021 Roadmap. These assessments provided the public health position on whether each of the '4 tests' for moving to the next stage of the roadmap had been met and predicted the effect of each reduction on cases, hospitalisations and deaths. This assessment was fed into the Cabinet Office COVID-19 Taskforce and informed their advice to Ministers as to whether the requirements were met to move to the next roadmap step. An example of JBC's assessment of the four tests in relation to Step 3, can be see exhibited at paragraph 577 below.
580. In February 2021, PHE conducted an update of the rapid review on transmission in school settings and effectiveness of interventions to reduce COVID-19 transmission in schools. The update had been requested by the Advice and Guidance cell within the PHE COVID-19 response [Exhibit: **JH2/456**]- **INQ000223555**]. Initial findings of the review were shared with DfE on 11 February 2021 [Exhibit: **JH2/457** - **INQ000223556**] [Exhibit: **JH2/458** - **INQ000223557**] and then presented to an Educational Stakeholders meeting held by DfE on 18 February 2021 [Exhibit: **JH2/459** - **INQ000223559**]. Lines based on the initial findings of the review were provided to DfE on 19 February 2021 to inform DfE evidence summary published on 22 February 2021 [Exhibit: **JH2/460** - **INQ000075546**], in advance of schools reopening on 8 March 2021. The slides and briefing were also shared internally with Advice and Guidance on 25 February 2021 [Exhibit: **JH2/461** - **INQ000223561**]. The final version of the review was shared internally and with DfE in April 2021 before publication [Exhibit: **JH2/462** - **INQ000223564**].
581. In April 2021 NHSTT and PHE published a delivery plan on GOV.UK detailing how they were supporting delivery of the roadmap to transition out of lockdown [Exhibit: **JH2/463** - **INQ000223567**]. This incorporated 4 workstreams for both organisations:
- a. Continue to develop a response that is fair, works for all and targets enduring transmission;

- b. Ensure our advice, guidance and actions are evidence-based and timely;
  - c. Continually improve our end-to-end subservice, in line with evidence of need;
  - d. Help contain further outbreaks, particularly variants of concern.
582. On 5 May 2021 JBC sent a submission [Exhibit: **JH2/464**] - **INQ000223568**], to the Secretary of State for Health and Social Care, summarising the health evidence and assessment against the four tests ahead of Step 3 no earlier than 17 May 2021. Detailed evidence supporting the assessments against each test were set out in the slide deck in the annex to the submission [Exhibit: **JH2/465**] - **INQ000223569**]. The slide deck was also sent to the Cabinet Office Taskforce on 5 May 2021.
583. On 2 June 2021 PHE provided scientific advice through SPI-M-O. The 2 June SPI-M-O consensus statement concluded that “taking step 4 later both delays the peak of hospital admissions and shrinks their total number”. [Exhibit: **JH2/466**] - **INQ000223896**]. On 9 June JBC produced an Insight Report on the predicted effects of Step 4 [Exhibit: **JH2/467**] - **INQ000223571**].
584. On 10 June 2021 JBC provided the CMO’s Office with an updated analytical review of progress against Step 4 [Exhibit: **JH2/468**] - **INQ000223572**] [Exhibit **JH2/469**] - **INQ000223573**].
585. On 14 June 2021 DHSC sent a submission to the Secretary of State Parliamentary Under Secretary of State for Innovation (Lords) [Exhibit: **JH2/470**] - **INQ000223575**]. In it, DHSC stated that, at a meeting on 14 June 2021, Covid-O considered the latest data provided by the Cabinet Office, JBC, SPI-MI, ONS and PHE, including review of progress against the four tests, and concluded that Step 3 should be extended until 19 July 2021 [Exhibit: **JH2/471**] - **INQ000223576**] [Exhibit: **JH2/472**] - **INQ000223577**]. Both of these exhibits were provided as annexes, to the submission.
586. On 14 June 2021 the Prime Minister announced that Step 4 would be delayed by four weeks. On 19 July 2021 Step 4 was implemented and most legal limits on social contact were removed in England. PHE provided advice through SPI-M and SAGE, on easing some NPIs including modelling reviews and updates as more and more of the population became vaccinated and there was a reduction in hospital admissions [Exhibit: **JH2/473**] - **INQ000120629**].

587. On 8 August 2021 JBC produced an assessment to compare the observed effect of each roadmap step to the predictions. [Exhibit: JH2/474 - INQ000223579].
588. As the pandemic developed, along with the complexity of new evidence, there was increasing opportunity and need to provide a strategic framework to enable the breadth of PHE staff engaged nationally to stay abreast more easily of rapidly developing new knowledge, and provide consistent advice on the national, regional and local COVID-19 response. In September 2021 PHE began developing this framework and an internal communication summarising current evidence on the impact of NPIs was commissioned. [Exhibit: JH2/475 - INQ000223580].
589. By October 2021, when UKHSA was operational, much of the COVID-19 response structure and NPIs were withdrawn, or in the process of being withdrawn.
590. In October 2021 UKHSA completed a rapid review to assess the effectiveness of interventions to reduce COVID-19 transmission in adult and social care settings [Exhibit: JH2/476 - INQ000223585] [Exhibit: JH2/477 - INQ000223586]. This review had been commissioned by Advice and guidance within UKHSA COVID-19 response and findings were shared internally as well as externally with DHSC policy teams [Exhibit: JH2/478 - INQ000223587].
591. In November 2021 the Social Interventions and Behaviour Change team in NHSTT published a summary of the evidence measuring self-isolation compliance. The report concluded that the evidence from the range of data sources presented in the paper indicated that the majority of people within the Test and Trace system comply with isolation requirements and only a small proportion have non-household contacts [Exhibit: JH2/479 - INQ000223590].
592. On 6 December 2021 UKHSA developed a paper appraising possible public health interventions [Exhibit: JH2/480 - INQ000223591]. UKHSA shared this with DHSC to support discussions on longer term planning for managing COVID-19, as noted in the email chain from April 2022 exhibited below.
593. In February 2022, as part of the process of developing the Living with COVID-19 strategy, Cabinet Office commissioned UKHSA to review how COVID-19 guidance could be integrated into existing infectious disease management and provide

advice on 'safer behaviours' / NPIs. Upon discussion with UKHSA, Cabinet Office also requested that UKHSA drafted and owned the main guidance for the general public on COVID-19, including guidance on living safely with respiratory infections including COVID-19, what to do if you had symptoms of a respiratory infection including COVID-19, and principles for reducing the spread of respiratory infections including COVID-19 in the workplace.

594. These three guidance documents [Exhibit: [JH2/481](#)] - INQ000223592]; [Exhibit: [JH2/482](#)] - INQ000055596]; [Exhibit: [JH2/483](#)] - INQ000223594] were first published on 1 April 2022, in line with the Living with COVID-19 strategy, and an update to the guidance on ventilation to reduce the spread of respiratory infections including COVID-19 was published 13 May 2022 [Exhibit: [JH2/484](#)] - INQ000223595].
595. On 8 March 2022 DHSC commissioned UKHSA to produce an appraisal of the impact of various NPIs on community transmission and disease severity to inform advice to the Secretary of State for Health and Social Care as contingency for future COVID interventions over the next 2-10 years. This built upon the paper UKHSA developed in December 2021 appraising the impact of various public health interventions on transmission, which used evidence from published literature, real-world data, government analytics, and modelling, epidemiological, and engineering studies. On 12 April 2022 UKHSA shared this with DHSC [Exhibit: [JH2/485](#)] - INQ000223596]; [Exhibit: [JH2/486](#)] - INQ000223597].

Timeline of key international travel policy decisions made by HMG ministers and departments

596. Timeline of key international travel policy decisions made by HMG ministers and departments:
- a. 17 March 2020: The Foreign, Commonwealth and Development Office (FCDO) advised against all non-essential international travel, initially for a period of 30 days. The advice took effect immediately [Exhibit: [JH2/487](#)] - INQ000181694].
  - b. 22 May 2020: Home Office announced new border measures to guard against second wave of COVID [Exhibit: [JH2/488](#)] - INQ000053347].

- c. 06 July 2020: Department for Transport (DfT) announced the introduction of Travel Corridors [Exhibit: JH2/489 - INQ000086694].
- d. 09 April 2021: DfT sets out approach intended to safely restart international travel including a traffic light system and introduction of travel certification [Exhibit: JH2/490 - INQ000223605].

Role of PHE/JBC/UKHSA in analysis and assessment to support ministerial decision making on international travel policy decisions and country assignments

- 597. International travel policy included advice and measures across a range of areas which involved different departments, for example, DHSC, FCDO, Home Office, Border Force and DfT.
- 598. Over the course of the pandemic, country risk assessments to inform the international travel measures evolved. JBC and then UKHSA Global Assessment (a multi-disciplinary team set up specifically to support decision-making over the response to overseas COVID risks) led on the methodology, analysis and assessments to inform UK border measures, with input from PHE and later UKHSA International Cell.]. PHE and then UKHSA International Cell along with the National Travel Health Network and Centre (NaTHNaC – which was set up by DHSC in 2002 to improve the quality of travel advice and is now commissioned by UKHSA and hosted by University College London Hospitals) took the lead for country risk assessments to inform NaTHNaC and FCDO travel advice. The analysis and risk assessments led by the JBC / UKHSA Global Assessment with input from PHE's International Cell and NaTHNaC formed one part of a larger set of evidence from wider HMG to Ministers for ministerial decision-making on country assignments (for example, to Travel Corridors or to Red-Amber-Green lists), travel risk advice, and borders advice for individuals travelling between the UK and specific countries. Ministers took the country risk assessments into account alongside wider public health factors (e.g. the evolving epidemiology of COVID infections in the UK) to inform their decisions.
- 599. Further details of the evolution of assessment approaches over the course of the pandemic are included in the below subsections.

Advice against non-essential international travel



600. In early May 2020 PHE met with NaTHNaC to discuss approaches to providing country assessments to inform travel advice for UK nationals, and subsequently developed approaches for risk categorisation for COVID-19 travel advice. The methodology was agreed by the Incident Director and then the CMO. PHE/NaTHNaC shared information on situations in countries and assessments of risk with the FCDO from the early stages to inform decision making related to their travel advice.
601. From early July 2020 travel advice related to COVID-19 was published on TravelHealthPro.org.uk (the website comprising the travel health resources of the NaTHNaC). These risks were regularly reviewed.

#### Travel corridors

602. In June 2020 JBC, in close consultation with PHE and the CMO, developed an approach to assessing the public health risk associated with inbound travel from specific countries and territories based on relevant data and modelling. An example of a risk assessment is provided as an exhibit [**Exhibit: JH2/491 - INQ000223606**]. Based on this risk assessment, the government decided to relax border measures on some countries and territories and establish travel corridors through which passengers arriving in England from certain countries and territories would be exempted from the requirement to self-isolate. On 6 July 2020, the Secretary of State for Transport announced this new system.

#### Traffic light system

603. JBC and later UKHSA country risk assessment methodologies and revisions: Country risk assessments undertaken by JBC and later UKHSA were supported by formal methodological approaches. Methodologies were developed by colleagues in JBC and later UKHSA, reviewed by cross-Whitehall group of health and risk assessment specialists (in Cabinet Office, FCDO, DfT, DHSC, PHE and then UKHSA and the DAs), revised and then submitted to the Technical Board comprising of the Chief Medical Officers of the four nations. Methodologies were then either approved for implementation or revisions requested. Methodologies were reviewed on a quarterly basis, when a significant event in the COVID-19 pandemic occurred, or when a new approach for policy measures at international borders were announced by Ministers. The methodology was published and updated on GOV.UK [**Exhibit: JH2/492 - INQ000223609**].

604. Coordination, collaboration and undertaking of JBC and later UKHSA country risk assessments: JBC and later UKHSA's country risk assessments included an evaluation of both quantitative and qualitative information (for example, from publicly available platforms such as GISAIID, the WHO, host government websites to UK mandatory testing data and travel data). Assessments, led by JBC with input from PHE, took into account data availability (including timeliness and transparency) and limitations and biases (for example, how representative the data is and its granularity). A variety of data was used to underpin country risk assessments, including but not limited to, in country epidemiological indicators, data generated from testing international travellers arriving in the UK and variant risk assessments of SARS-CoV-2 variants of concern. A submission sent from JBC and PHE to CMOs on 5 March 2021 sharing the methodology for variant risk assessments is exhibited here [Exhibit: **JH2/493**] - **INQ000223610**].
605. Prior to finalising country risk assessments, cross-Whitehall analytical review meetings were convened, comprising colleagues from PHE and later UKHSA, FCDO, DHSC, JBC and the DAs. Each risk assessment was critically appraised by the group, and either agreed as complete or further analysis requested. Final country risk assessments were then submitted to senior officials within JBC and PHE and later UKHSA for clearance. An example of one of these risk assessments, from June 2021, is exhibited [Exhibit: **JH2/494**] - **INQ000223611**].
606. Country risk assessments were shared simultaneously with the Secretary of State for Health and Social Care and senior public health experts (including CMOs, PHE, DHSC and JBC senior leadership) and a cross Whitehall distribution list including Cabinet Office, PHE, DHSC, FCDO, DfT, the Home Office and the DAs. Cabinet Office then submitted risk assessments to the COVID-O Officials meetings (with senior representatives from all relevant HMG Departments) and COVID-O meetings (attended by a limited group of Ministers) along with other papers for deliberation. COVID-O was the forum for Ministers to take decisions on country assignments, associated borders measures and agree changes to travel advice. Ministers took the country risk assessments into account alongside wider factors to inform their decisions.

Impact of NPIs upon at-risk and other vulnerable groups

607. This section of the statement will focus on UKHSA and its predecessors', role in assessing how emergency measures, including NPIs, had an impact upon at-risk and other vulnerable groups, including but not limited to, those groups with a protected characteristic under the Equality Act 2010 and groups with existing health inequalities.
608. Infectious disease epidemics and pandemics usually expose and exacerbate existing disparities in society, such as those associated with deprivation, ethnicity, sex, age and sexuality. The COVID-19 pandemic had some predictable (for example, the striking impact on older age) and some less predictable disparities in health outcomes (for example, the risk of severe disease for people living with obesity). Disparities arising from the infection and the subsequent policy response will not always be immediately apparent and will instead emerge as the pandemic unfolds, and this was true for COVID-19.
609. PHE was aware of this from the outset of the pandemic. PHE used tools such as the Public Sector Equality Duty (PSED) checklist and the Health Inequalities Assessment (EQA) checklist to consider the impact of guidance on at-risk and other vulnerable groups and develop mitigations but the policy decisions relating to these mitigations were led by DHSC. I have included examples of a PHE PSED checklist [Exhibit: JH2/495 - INQ000223612] and a Health Inequalities Assessment Checklist from 26 June 2020 [Exhibit: JH2/496 - INQ000223613] undertaken in the development of the 16 June 2020 version of the 'Stay at Home guidance' that came into effect on 12 March 2020 and was updated throughout the pandemic). A summary of COVID-19 Guidance Health Inequalities and PSED Assessments undertaken for guidance developed during the pandemic are listed in [Exhibit: JH2/497 - INQ000223614].
610. As the epidemic progressed across the UK, PHE, and once established NHSTT/JBC and UKHSA's understanding of disparities related to SARS-CoV-2 exposure and COVID-19 outcomes rapidly evolved. The evidence was generated from epidemiological studies, surveillance from routine data, research programmes and community engagement. It evolved to better capture the necessary data over the course of the pandemic and examples are provided.
611. Early case reports and epidemiological studies on outbreaks provided some important early signals about potential disparities. Chapter 2 of the Technical report on the COVID-19 pandemic in the UK outlines some of these studies. As

early as January 2020 reports from China indicated that COVID-19 led to worse outcomes among older patients and men. Over the next two to three months additional data emerged, primarily from China and Italy, suggesting that people with certain underlying health conditions and immunosuppression were at increased risk of disease and death. Early data from China also suggested low skilled workers were at increased risk of progression to severe disease.

612. Evidence around the impact of NPIs on vulnerable groups and others under the Equality Act was also presented at SAGE meetings attended by PHE in the early part of the pandemic. Representatives from PHE attended SAGE meetings where the impact of NPIs were discussed initially in March 2020.
613. In January 2020, as cases began to appear in the UK, the First Few Hundred (FF100) enhanced surveillance protocol was commissioned by PHE, following WHO protocols and in line with previous pandemic response for MERS-CoV and H7N9 influenza. This is described at in Section 5 of this statement in paragraphs 656-667.
614. This provided basic demographic data and enhanced surveillance of clinical presentation on the FF100 cases of SARS-CoV-2 infection, allowing for an initial detailed description of people affected. Early indications of key populations most affected were highlighted – for example, the increased clinical risk in people with underlying health conditions. However, it is worth noting that FF100 investigations are prone to biases (for example, where the FF100 cases may be returning travellers with similar socio-economic status or health status).
615. Several surveillance systems and routine data sets were in place before the pandemic, such as the Second-Generation Surveillance System (SGSS), laboratory monitoring and the ONS death certification, which provided demographic data for confirmed cases.
616. The surveillance landscape was regularly assessed and mapped to identify gaps in disparities data. As a general principle, healthcare and disease surveillance systems need to be designed at the outset with reporting forms that included information on key protected characteristics. This is to ensure that data disparities linked to any of these characteristics could be analysed at the earliest stages of the pandemic, whilst not being so intrusive that people would not follow through.

There was also an ongoing need to secure public trust in data gathering and usage, ensuring usage of data was transparently communicated.

617. In April 2020, PHE collaborated on several large-scale surveillance and immunity population studies to understand COVID-19 with a number of delivery partners. The ONS COVID-19 Infection Survey was commissioned and funded by PHE (and later UKHSA). This provided weekly estimates of infection and immunity, and enabled detailed analyses of disparities such as occupation, ethnicity and deprivation. These studies contributed to our understanding of COVID-19 disparities [Exhibit: **JH2/498** - INQ000223699].
618. Although some disparities data, such as hospital admissions by age and sex, were published from the outset of the pandemic as soon as it became available, there was a need to expand and update both data collection and data publication. Data collected by PHE was used by JBC and PHE to create a Joint Situational Awareness Team with used in the Gold, Silver and Bronze LAC. The packs produced for the LAC provided analysis of case, hospital and vaccination rates by age, ethnicity and socio-economic deprivation. This analysis directly informed the operational response as well as wider policy interventions.
619. On 30 April 2020, the PHE weekly COVID-19 surveillance report was published, and had been expanded to include a wider range of disparities data, with ethnicity of COVID-19 cases and deaths with confirmed COVID-19 included in the report and infographic, for the first time [Exhibit: **JH2/499** - INQ000223700]. Other analyses and research also expanded to examine disparities. From May 2021 onwards, the publication of the PHE COVID-19 Health Disparities Monitoring for England (CHIME) tool ensured regular reporting of COVID-19 disparities for a number of determinants and outcomes and is publicly available for use by a range of stakeholders.
620. In common with most other surveillance systems during the pandemic, CHIME did not have access to data on underlying conditions, so this limited the extent to which it could adjust for comorbidities in assessing disparities. Alongside these regular publications, as mentioned above, PHE and then UKHSA participated in SAGE where they regularly reviewed evidence and data on disparities and published its minutes to support public discussion and response to these issues.

621. One such example is the discussion on 22 October 2020 at SAGE on the paper by the Environmental Modelling Group regarding COVID-19 transmission and environment routes. This concluded that the COVID-19 pandemic was strongly shaped by structural inequalities that drive household and occupational risks, such as prolonged working hours in close proximity to others, household crowding, use of public transport and/or in high-risk occupations [Exhibit: JH2/500 INQ000075016].
622. In addition to the regular surveillance data, PHE also published an in-depth review 'Disparities in the risk and outcomes of COVID-19', in June 2020 and this was updated in August 2020. [Exhibit: JH2/501 - INQ000101218].
623. This report was largely undertaken on cases presenting to hospital with a clinical need where testing was concentrated. It highlighted important disparities by age, ethnic group, sex and occupation likely to reflect disparities in both infection risk and clinical severity. It was not exhaustive and was unable at the time to adjust for some relevant factors in all analyses, such as underlying health conditions, which may affect some groups more than others. It highlighted, however, some important areas for further investigation, prompting a series of actions to address and mitigate this issue, which were documented in reports published by the Equality Hub and Cabinet Office Race Disparities Unit (CORDU).
624. In UKHSA's witness statement for Module 1 dated 14 April 2023 a detailed account of the work done by UKHSA and its predecessor organisations regarding health inequalities and COVID-19 disparities data is provided in Section 9 page 140 -155 and I have repeated some findings. Over the course of the pandemic there were marked differences in COVID-19 deaths by age, sex, ethnicity, and deprivation. These disparities were observed consistently throughout the pandemic. Older adults were disproportionately affected by COVID-19 deaths: 92% of deaths were in people aged 60 and over; and over half (58%) were aged 80 or older. Men were at greater risk of COVID-19 death, particularly during the first wave when the age-standardised mortality rate for men was double that of women.
625. Paragraph 619 of the same UKHSA statement for Module 1 reports that while people of white ethnicity comprised 84% of COVID-19 deaths, after age-standardising within the population, COVID-19 mortality rates were highest in non-white ethnic groups, particularly in Black, Asian and other ethnic groups. Likewise,

there was a clear difference by deprivation, with age-adjusted death rates being highest in the most deprived quintile of areas.

626. Chapter 2 of the Technical report on the COVID-19 pandemic in the UK provides an overview of the key disparities identified during the pandemic. The report found that co-morbidities such as diabetes, severe asthma and obesity were identified as risk factors for poor outcomes and were more prevalent in more deprived and in some ethnic minority groups.
627. Widespread closures in sectors such as hospitality, leisure and tourism had significant economic impacts for individuals employed in these sectors, a greater proportion of whom were women. People in ethnic minorities were also more likely to work in insecure and casual forms of employment which were impacted by pandemic control measures.
628. The reasons for these disparities are complex and involve a range of social, economic, behavioural and biological risks. In June 2020, following publication of the PHE report on COVID-19 disparities in risks and outcomes, mentioned above, the Cabinet Office Race Disparity Unit was tasked to lead cross-government work to address the report findings [Exhibit: JH2/502 - INQ000223703].
629. Actions to address disparities initially focused on reducing the risk of infection. For example, the government published guidance on how to make workplaces more secure for individuals unable to work from home, including specific practical guidance for occupations at higher risk of exposure such as taxi drivers. Guidance and infographics for the public were translated into the most spoken languages, and communications campaigns worked closely with the third sector to ensure local dissemination into communities.
630. Throughout the pandemic, different testing programmes were implemented to address certain disparities. This included mass asymptomatic testing programmes in care homes, the NHS and across the education sector as well as targeted community testing in areas of high or enduring transmission. Information on NHSTT services was available in multiple languages including British Sign Language. The importance of tackling disparities and supporting underserved communities was reflected in internal documents, for example the December 2020 NHSTT Business Plan exhibited at paragraph 59 noted that NHSTT had:

- a. Carried out targeted community engagement, working to make our service more inclusive;
  - b. Developed new routes for more people to access the NHSTT services;
  - c. Improved access for people with disabilities;
  - d. Developed guidance and information in 10 languages.
631. Throughout the pandemic, NHSTT also completed equality impact and PSED assessments to consider the impact of testing and tracing policies on vulnerable and at-risk groups. On 16 December 2020, NHSTT completed an equality impact assessment for the decision to enable regular testing within Private Industry organisations across the UK [Exhibit: [JH2/503](#) - INQ000223704].
632. At points during the pandemic, JBC collated data, analysis and evidence on why there were disparities with rates of transmission, with an intent to inform policy decisions including those on NPIs. For example, in late 2020, following a commission from DHSC and NHSTT (Contain), JBC produced a report (with input from wider NHSTT, PHE and local authorities) on why in some areas “transmission rates remained stubbornly higher than the national average.” Based on data, analysis and information from interviews with local stakeholders, the report concluded “it is likely to be due to a unique mix of factors in each location e.g. many of the factors are also interlinked and aligned, including: deprivation, employment and occupation, demographics and household composition, attitudes and behaviours, and the local response” [Exhibit: [JH2/504](#) - INQ000223705]. On 24 February 2021, following a leak of the report to the press before it was formally approved for sharing within government JBC shared the report with the Secretary of State for Health and Social Care. DHSC subsequently shared the report with Number 10 [Exhibit: [JH2/505](#) - INQ000223706].
633. On 22 March 2021, NHSTT sent a submission to the Secretary of State for Health and Social Care on the detailing plans for the expansion of workplace testing through workplace and community collection of tests which included a PSED assessment of the policy [Exhibit: [JH2/506](#) - INQ000223707].
634. In May 2021, NHSTT conducted an evaluation of public understanding and use of the various asymptomatic testing routes, which included some analysis in relation to different demographic groups [Exhibit: [JH2/507](#) - INQ000223708].



635. In June 2021, JBC produced the report, "Improving testing and self-isolation adherence in low-income groups: preliminary evaluation of the impact of the Test and Trace Support Payment (TTSP) scheme" [**Exhibit:** **JH2/508** - **INQ000223797**]. This report used NHSTT/JBC data, survey data from academic sources, and ONS reference data to present estimates for the scheme's impact on testing uptake and its potential impact on hospitalisations and deaths throughout June-September 2021. It concluded, "this evidence suggests that TTSP payments have been well-targeted at individuals in areas of higher deprivation, lower income, and particular ethnic groups, who are particularly affected by Covid-19 and may not be best targeted through alternative schemes, for example the furlough scheme."
636. Throughout the pandemic JBC also provided data about infection rates across different at risk and vulnerable groups broken down by age and region through the Bronze/Silver/Gold LAC process and reports to COVID-O.

#### Care homes

637. Care Homes and the care sector will be addressed in detail in an upcoming module of the inquiry, so this statement includes only a short overview of PHE's role in the first months of the pandemic.
638. As announced by DHSC, NHS and PHE in their statement on priorities for COVID-19 testing on 14 March 2020, in addition to hospital patients, pillar 1 testing was also targeted at investigating outbreaks in residential and care settings, including care homes.
639. In April 2020 the SAGE Social Care Working Group was established as a dedicated Advisory sub-group to consider the impact of the virus on populations specifically within Adult Social Care settings. PHE, and later UKHSA, attended all meetings of this working group and inputted into the consensus statements around NPIs in these settings throughout the pandemic. As an example, the COVID-19 Clinical Information Network provided a paper collating clinical information from the health care records of people of all ages admitted to hospital in the UK. This paper was presented at a SAGE meeting on 16 April 2020 for discussion [**Exhibit:** **JH2/509** - **INQ000151750**].

640. The Vivaldi study commenced in June 2020, led by UCL and funded by NHSTT then UKHSA. This collected qualitative and quantitative data on care homes to understand working conditions and the spread of infection and immunity in care home populations. Its findings have been used to inform the ongoing policy response, including vaccine recommendations. Other studies on specific groups and settings, such as for children and adults with learning disabilities, homeless shelters and prison populations, were helpful in exploring the impact of the pandemic on these groups and further description of these studies is provided in Section 5. [Exhibit: JH2/510 - INQ000106159].

### Prisons

641. Pre-planning with partner organisations to manage outbreaks of communicable diseases, water contamination incidents or other events that pose a risk to health of staff, prisoners/detainees and others entering the prison/place of detention had already occurred in advance of the COVID-19 pandemic. The 2017 document 'Multi-agency contingency plan for the management of outbreaks of communicable diseases or other health protection incidents in prisons and other places of detention in England' provides an outline plan to manage such events. This was developed in partnership between the National Offender Management Service (NOMS), Home Office Immigration Enforcement (HOIE), NHS E and PHE [Exhibit: JH2/511 - INQ000223800].
642. On 24 April 2020 PHE produced a briefing paper for the Chief Executive of HM Prison and Probation Service on an interim assessment of impact of various population management strategies in prison in response to COVID-19 [Exhibit: JH2/512 - INQ000223801].

### Section 5: Data collection, analysis and dissemination

643. This section details the collection, sharing and processing of data and dissemination of insights from key data sources related to the COVID-19 pandemic, during the period 1 January 2020 to 24 February 2022 and with a particular focus on the period up to 26 March 2020. Throughout this section, the Technical Report on the COVID-19 pandemic in the UK is referred to as "The Technical Report" [Exhibit: JH2/513 - INQ000087225]. This section also makes particular reference to Chapter 4: Situational Awareness, Analysis and

Assessment, which provides a summary of the technical aspects of data and its dissemination across the UK during the relevant date range.

644. This section provides relevant summaries structured under the following headings:
- a. The initial surveillance operation for COVID-19 (paragraphs 650-680)
  - b. Key data collected or obtained by UKHSA and its predecessor organisations (paragraphs 681-748)
  - c. Visualisation, analytics and mechanistic modelling (paragraphs 749-754)
  - d. Dissemination of data and insights from visualisation, analytics and mechanistic modelling (paragraphs 755-787)
  - e. Key data challenges (paragraphs 788-799)
645. For the purposes of this section, the following terms are defined as:
646. Relevant government bodies or groups: The following are defined as relevant for the purposes of this section - the Prime Minister's Office, the Scientific Advisory Group for Emergencies (SAGE), SAGE sub-committees, other standing independent scientific advisory groups and, as far as relevant, the Devolved Administrations (DAs), regional and local administrations, the NHS, and the care sector.
647. Mechanistic Modelling: A specific subset of advanced models sometimes applied to infectious disease data in which the underlying transmission mechanism is represented. These approaches are required to estimate properties of an epidemic that are dependent on assumptions about the mechanism, for example, the basic reproductive number or the likely impact of specific interventions. The word "modelling" is used to describe a wide variety of analytical methods. Modelling other than mechanistic models of transmission is included here as part of analytics [Exhibit: JH2/514 - INQ000223866].
648. Row-level data: Public health datasets often contain multiple observations about the same individual. For example, a list of cases with dates, age, region and date of onset. These are row-level data and are sometimes identifiable. Other types of datasets only contain aggregate data.

649. UKHSA's witness statement for Module 1 dated 14 April 2023 – in particular Section 9 – summarised the key health inequalities publications produced by Public Health England (PHE), during the relevant period therefore these reports are not described further here.

The initial surveillance operation for COVID-19

650. Public Health England (PHE) had an existing key role in undertaking surveillance of infectious diseases, as described in the remit letter 2019/20 [Exhibit: JH2/515 - INQ000090336]. These existing surveillance systems, many of which were adapted for COVID-19, are described in the following documents produced in 2014 [Exhibit: JH2/516 - INQ000119748] and 2018 [Exhibit: JH2/517 - INQ000023027].
651. Section 4 of UKHSA's witness statement for Module 1 dated 14 April 2023 provided details of PHE's role in surveillance of infectious diseases prior to the COVID-19 pandemic.
652. PHE's main objectives for COVID-19 surveillance in the UK were set out in the plan for surveillance during the delay phase of the pandemic, which is exhibited here [Exhibit: JH2/518 - INQ000119597]:
- a. To inform understanding of the epidemiology and transmission of COVID-19;
  - b. To evaluate and inform national control measures and current and future diagnostic strategies;
  - c. To describe and quantify the clinical features of COVID-19 and monitor the overall health impact of COVID-19 in the UK;
  - d. To provide timely detection of infections and clusters to enable rapid public health action;
  - e. To fulfil duties for mandatory international reporting;
  - f. To inform national health care planning and support local health & social care response.
653. Surveillance data produced by PHE was fed into Government decisions via daily "SitRep" updates, and to scientific advisory groups such as the New and Emerging

Respiratory Virus Threats Advisory Group (NERVTAG) and SAGE. From 13 March 2020, PHE produced a weekly summary of key surveillance data, which was published online from 23 April 2020 [Exhibit: **JH2/519** - INQ000120160].

654. The following categories of surveillance were undertaken in the initial period of the pandemic:
- a. Surveillance of clusters and outbreaks in the UK;
  - b. Hospitalisations and Healthcare-based surveillance;
  - c. Syndromic surveillance.

#### Surveillance of cases, clusters and outbreaks in the UK

655. This section describes the First Few Hundred Enhanced Case and Contact Protocol ("FF100" also known as the "FFX"), and the other systems used to gather early case data in the UK and outbreak surveillance.

#### FF100

656. The FF100 was an established enhanced surveillance system designed to investigate the clinical and epidemiological characteristics of at least the first 100 confirmed cases of an emerging infectious disease and their close contacts. The FF100 Enhanced Case and Contact Protocol is implemented when a novel pathogen requires assessment and was utilised during the 2009 H1N1 influenza pandemic.
657. On 7 January 2020, work commenced in PHE on modifying the existing pandemic influenza FF100 protocol for the COVID-19 outbreak, including the data collection questionnaires and electronic data capture system. The updated protocol was published later the same month [Exhibit: **JH2/520** - INQ000061497].
658. The primary objectives of the FF100 investigation were to collect data from laboratory confirmed cases of COVID-19 and provide estimates of:
- a. clinical presentation and course of disease;
  - b. secondary attack rate (overall and by key factors such as by setting, age, and gender for various endpoints). The secondary attack rate is a measure of the

frequency of new cases of an illness among the contacts of known cases in a defined period;

- c. serial interval, defined as the period from the onset of symptoms in the index case to the onset of symptoms in a contact case.

- 659. With confirmation of the first laboratory-confirmed COVID-19 cases in the UK on 31 January 2020, PHE worked to investigate the epidemiological and virological characteristics of the first few hundred confirmed UK cases and their close contacts. Data from 381 virologically-confirmed COVID-19 cases were collected, up to and including, 9 April 2020.
- 660. A Household Contact (HoCo) study with more detailed laboratory follow-up of household contacts was also set up based on the WHO outline protocol for a COVID-19 household transmission study. On 5 February 2020, the initial protocol was submitted to the IMT, with a verbal approval for funding of the study given on 19 February 2020. The Deputy Chief Medical Officer (DCMO) gave written approval on 6 March 2020.
- 661. Initially, the study was unable to start, as it relied on the identification of cases in the community. On 12 March 2020, community testing was halted and the social distancing measures meant that nurses would be unable to undertake home visits. From 19 March 2020, the protocol was substantially revised and finalised on 27 March 2020 to focus on samples from home self-swabbing, with subjects recruited by the Royal College of General Practitioners (RCGP) surveillance scheme. The first household was recruited on 30 March 2020.
- 662. Analyses were presented to the IMT and SAGE subgroups over the course of 2020, including:
  - a. a report on anosmia (loss of sense of smell) to NERVTAG (21 April 2020);
  - b. a report on serial intervals for Scientific Pandemic Infections group on Modelling (SPI-M, on 27 April 2020);
  - c. Interim analysis presented to IMT (17 July 2020) and to NERVTAG three days later;

- d. Peer reviewed publication which is exhibited [Exhibit: **JH2/521**] - **INQ000223873**].
663. Public health experts from PHE and the DAs Four Nations analysed the demographic data, clinical presentation and symptom analysis of the FF100 cohort. From 13 February 2020, FF100 descriptive analyses were used in the daily SitRep. From January 2020 to April 2020, the FF100 data collection was the primary source of enhanced epidemiological information on cases. In addition, the data generated was shared with the SPI-M modellers to develop and improve the variables in their models.
664. Raw FFX data was shared with SPI-M from 6 March 2020 [Exhibit: **JH2/522**] - **INQ000223874**]. The analysis of the FF100 cases was conducted to describe the clinical presentation and course of COVID-19 and was provided to scientific advisory groups including NERVTAG (NERVTAG Meeting 9 on 13 March 2020 and 14 on 17 April 2020) [Exhibit: **JH2/523**] - **INQ000212195**]; [Exhibit: **JH2/524**] - **INQ000120154**] was used to inform case definitions, contact tracing policy, clinical management and care pathways.
665. FFX data provided the basis for ongoing population studies and was published in peer reviewed literature to share with international academic and clinicians. As an example, PHE research on the epidemiological and clinical characteristics of early COVID-19 cases was published online on 30 November 2020 [Exhibit: **JH2/525**] - **INQ000061503**].
666. The findings of the study for the 381 cases from 31 January to 9 April 2020 were: "Approximately half of the COVID-19 cases were imported (196 cases; 51.4%), of whom the majority had recent travel to Italy (140 cases; 71.4%). Of the 94 (24.7%) secondary cases, almost all reported close contact with a confirmed case (93 cases; 98.9%), many through household contact (37 cases; 39.8%). By age, a lower proportion of children had COVID-19. Most cases presented with cough, fever and fatigue. The sensitivity and specificity of symptoms varied by age, with nonlinear relationships with age. Although the proportion of COVID-19 cases with fever increased with age, for those with other respiratory infections the occurrence of fever decreased with age. The occurrence of shortness of breath also increased with age in a greater proportion of COVID-19 cases."

667. The data collected from the FF100 study were also used to assess the transmission dynamics of COVID-19 in household and community settings. The first analysis was shared with SPI-M on 27 April 2020 [Exhibit: **JH2/526**] - **INQ000223878**] – this provided evidence of transmission from children and supported decision making on interventions in schools. It was also included in a report to NERVTAG on transmission in children on 20 August 2020. The final report was submitted to Eurosurveillance.org in August 2020 and published in April 2022 [Exhibit: **JH2/527**] - **INQ000223879**].

#### Surveillance of early cases

668. PHE initiated surveillance of cases, clusters and outbreaks of COVID-19 from the very outset of the pandemic. During the initial public health response, there were two routes through which case data was received into PHE.
669. Initial laboratory confirmed cases were reported by the PHE reference laboratory to the requesting clinician and the local Health Protection Teams (HPTs) for clinical management and public health follow-up. Counts of these cases were collated by the PHE Epidemiology cell for daily case updates, with interim and final updates provided to the DHSC by the PHE Incident Director (ID) and used to inform public announcements of case numbers in England. This system provided the initial surveillance approach for positive COVID-19 cases in the UK.
670. As testing expanded into other PHE laboratories, this arrangement transitioned into the use of the Respiratory DataMart system. This was an existing sentinel laboratory system for analysing the of results of respiratory virus tests processed within PHE and some NHS laboratories, to collate data on laboratory confirmed cases. This system allowed for the collection of positive and negative results from laboratories, making it possible to calculate the positivity rate. Negative results from other laboratories were not routinely transmitted to PHE (negative results are not mandated or statutory notifiable to UKHSA).
671. From 14 March 2020 laboratory confirmed reports of SARS-CoV-2 infection were uploaded to the Second-Generation Surveillance System (SGSS) from diagnostic laboratories daily, and negative results were added to routine reporting from 4 April 2020 [Exhibit: **JH2/528**] - **INQ000223880**] [Exhibit: **JH2/529**] - **INQ000223881**]. Additional technical guidance related to report of positive and negative SARS-CoV-2 results were issued directly to NHS laboratories [Exhibit:



[Exhibit: JH2/530 - INQ000223882]; [Exhibit: JH2/531 - INQ000223883]; [Exhibit: JH2/532 - INQ000223884]; [Exhibit: JH2/533 - INQ000223885].

672. SGSS is an established Structured Query Language (SQL) database, operated first by PHE and then by UKHSA, for reporting laboratory test results for infectious diseases. This dataset was used for multiple purposes, including providing daily anonymised data for mathematical modelling (provided daily from February 2020 to June 2022), as well as supporting the process to identify deaths among persons with SARS-CoV-2 infection. Other uses of this data during the pandemic included support for the NHS Blood and Transplant service (NHS BTS) to identify donors for convalescent plasma, identify clusters of cases based on place of residence and to develop metrics such as the positivity rate and the provision of geographical (local authority, regional, national) incidence rates by day and week to JBC.
673. From 2 May 2020 Microsoft Excel was used for the transfer of Pillar 2 results data between a staging database and core surveillance system (SGSS), due to an existing data ingest pipeline which required Excel as a template. The SGSS system was six years old at that point in time. This allowed existing functionality to be utilised rather than develop something new with limited resources. On 02 October 2020 it became apparent that certain files containing positive test results exceeded the row count when being uploaded onto central systems. The issue was identified by the Head of Data Management and Access in the PHE Data and Analytical Science Division.
674. The technical issue was not relating to the use of Excel, rather that the .xlsx files were incorrectly interpreted to be .xls (i.e. the older version) which then resulted in files being rejected by the system because of the limitations of that older file format. A rapid mitigation was subsequently put in place that split large files and enhanced system monitoring, and a full end to end review of all systems was also instigated to mitigate the risk of this happening again. All the positive case received their result and were advised on self-isolate. PHE published a statement on the issue and work done to resolve it on 4 October 2020 [Exhibit: JH2/534 - INQ000218360].

#### Surveillance of clusters and outbreaks

675. Prior to the COVID-19 pandemic, PHE's HPTs carried out routine surveillance of acute respiratory infection outbreaks, particularly within specific settings such as schools, hospitals and prisons. This continues to be a core duty of UKHSA. Suspected outbreaks were investigated by the local HPT in liaison with local partners, enhanced surveillance forms were completed where necessary, and outbreaks were reported using HPZone, the national tool for recording situations, incidents and outbreaks. This data is utilised in national surveillance reports. This process was adapted and utilised from the outset of the COVID-19 pandemic. As the volume of cases being reported increased, HPTs shifted their priority towards work focused on clinical management and highest transmission risk incidents. This which thereby reduced their capacity to capture reliable and robust outbreak data in a timely way through routine form completion.
676. Alternative mechanisms were developed for specific settings to ensure surveillance was as robust as possible. To enhance surveillance of outbreaks in care homes, PHE developed a system for correctly identifying COVID-19 outbreaks in care homes among outbreaks reported to PHE HPTs, using residential postcodes supplied on case-level laboratory data, cross-matched against Care Quality Commission (QCC) postcodes for registered care home providers. Although this system lacked the precision of a postcode in identifying a specific residential property, it provided a systematic means of identifying and monitoring potential care home outbreaks across England early in the pandemic.
677. This information was shared with local HPTs and local authority partners through the PHE Daily Care Home Report from November 2020. An example from 30 November is exhibited [Exhibit: JH2/535 - INQ000223887]. In addition, to enhance the detection of outbreaks linked to educational settings individual outbreak records were reviewed in order to establish: i) educational setting subtype i.e. nursery, primary school, secondary school, higher educational settings, and universities and ii) if any of the linked cases had confirmed SARS-CoV2 infection.
678. PHE also developed a method of monitoring outbreaks occurring in other settings nationally using a centralised Situations of Interest spreadsheet template return from HPTs. This captured the characteristics of outbreaks, including outbreak settings, and was reviewed regularly with national and local incident response teams to identify settings with high risks of COVID-19 transmission. These reports

were used to develop sector specific guidance and best practice to prevent and control outbreaks.

679. From June 2020, the PHE Joint Modelling Cell and the PHE COVID Outbreak Surveillance Team (both cells within the PHE incident response arrangements), adapted an existing algorithm (used to identify exceedances of infectious diseases) to detect local authorities with high SARS-CoV-2 activity. This information was included in a daily detailed epidemiological summary produced by the Outbreak Surveillance Team (OST) for local authorities (via Directors of Public Health), HPTs and PHE regional teams, to help understand where clusters and outbreaks were likely happening and support local decision making. These reports were shared daily between July 2020 and August 2021, after which they were produced twice a week [Exhibit: **JH2/536** - INQ000223888]; [Exhibit: **JH2/537** - INQ000223889].
680. From March 2020, OST also produced two daily regional-level COVID-19 reports (one that was high level whilst the second report being more detailed) intended primarily for HPTs and PHE regional teams. These reports included information on local outbreaks and COVID-19 disease rates, to enable comparisons between LAs and support decision making over a wider geographic area. From August 2021, the frequency of these reports reduced to two or three times a week.

Key data collected or obtained by UKHSA and its predecessor organisations

681. Initially, reports of a cluster of viral pneumonia of unknown aetiology from Wuhan City, Hubei Province of China were identified by PHE's EpiIntel team based in the Emerging Infections and Zoonoses (EIZ) team. These reports were shared with relevant stakeholders on 31 December 2019. In response to this report, further information was collated from official open sources and via other confidential sources, including the UK International Health Regulations National Focal Point, and shared either by EpiIntel team or National Focal Point with relevant stakeholders. For example, the first WHO Event Information Site information on the cluster was received via the International Health Regulations National Focal Point and shared with key stakeholders on 05 January 2020. In addition, epidemiological data on the global situation of COVID-19 was collated from official open sources and disseminated to partners across government from 08 January 2020 when the enhanced incident response was stood up.

682. Throughout the course of the relevant date range, UKHSA and its predecessor organisations collected or obtained a significant number of data sources. The data sources that are discussed in the Technical Report and any additional data sources identified as being relevant are described here, where they have not already been described in Section 2 of this statement. The information provided in the report is expanded upon to clarify what UKHSA's role was, and relevant dates are provided along with any additional relevant information. This is limited to data that UKHSA or its predecessor organisations had a role in collecting or obtaining data.
683. The following are the broad groupings of data sources described in this section:
- a. Case and Contact Tracing Data;
  - b. Mortality Data;
  - c. Surveillance Studies Data;
  - d. Genomic Data;
  - e. Health and Social Care Data;
  - f. Vaccine Monitoring Data.

#### Case and Contact Tracing Data

684. The preceding paragraphs of this statement describe the early testing and reporting of cases, including their upload to SGSS. UKHSA and predecessor organisations used case data sets to generate a data set of all positive cases in England from February 2020 onwards. This dataset was used for multiple purposes including: visualisation of key trends for situational awareness; providing anonymised data for mathematical modelling (daily from March 2020 to February 2022); providing information to regional teams; and supporting the process of identifying deaths among persons with SARS-CoV-2 infection.
- a. From February 2020 to February 2022, the daily process of data management was on a 7-day week basis, requiring individual staff input working to protocols. Automation of case data became operational from 1 February 2022, when COVID-19 datastore started automated production of the equivalent of line lists for all the different users. Prior to this, data was

pulled from SGSS and required manual processing steps to produce a consistent dataset input into daily line lists.

- b. On 1 February 2022 the reporting of COVID-19 changed from being case level (only the first positive specimen was reported per person) to episode level. A UKHSA blog posted on 4 February 2022 explained this change [Exhibit: [JH2/538](#) - INQ000223890].

685. From 10 March 2020, data on the number of COVID-19 cases and fatalities by country were collated using an all-source approach, including from ministries of health, public health agencies, and international bodies such as the European Centre for Disease Prevention and Control (ECDC) and the World Health Organisation (WHO), and shared with key partners across government - initially the Foreign & Commonwealth Office (FCO) and the Department for International Development (DFID). Within the relevant period of examination, data collection was extended to include numbers of: COVID-19 tests, people tested, people recovered, hospitalisations and intensive care unit (ICU) admissions, where data were available. In addition, the partners receiving data were also extended to include SAGE, Cabinet Office (CO), Department of Health and Social Care (DHSC), International Comparators Joint Unit (ICJU), Ministry of Defence (MoD) and HM Treasury (HMT). These data were shared daily until 03 August 2021, at which point this shifted to weekly data collation and sharing.
686. PHE produced a daily SitRep on COVID-19 from 9 January 2020 (SitRep 001) through to 15 September 2020 (SitRep 238). An example of a situational report from February 2020 is exhibited [Exhibit: [JH2/539](#) - INQ000223891]. The SitReps were 'signed-off' by one of the cohort of PHE's COVID-19 Incident Directors and ceased in September as the JBC's Joint Situational Awareness Team (JSAT) took the lead on the reporting of COVID-19 related data. The JBC's JSAT product was distributed to a wide range of cross government organisations and the DAs by the National COVID-19 Response Centre (NCRC), which was stood-up in August 2020; the NCRC was a joint team from PHE and NHSTT/JBC to facilitate and coordinate health information from regional to national teams.
687. Between January and February 2022, additional input relating to the global situation of COVID-19 was provided, as needed. For example:

- a. Provision of data on numbers of global COVID-19 tests and people tested, directly to the Prime Minister's Office;
  - b. Epidemiological data and input to inform discussions about the international spread of variants were provided to a range of stakeholders across government as required;
  - c. Provision of global COVID-19 epidemiological data for JBC country risk assessments, which formed one part of a larger set of evidence considered by Ministers in their decisions on country assignments and associated borders measures for individuals travelling to the UK from specific countries, for example, travel corridors or 'Red-Amber-Green' lists.
688. The approach to undertaking country risk assessments included significant cross government collaboration and coordination, including the FCDO, DHSC, the Department for Transport (DfT), the Home Office (HO) and the DAs. Country risk assessments included an evaluation of quantitative and qualitative information. Types of data used to underpin country risk assessments included, where available, COVID-19 cases, testing rates, hospitalisations, mortality and variants in country, UK mandatory testing data and travel data.
689. Data for risk assessments were sourced from a range of locations, including publicly available platforms, for example the Global Initiative for Sharing All Influenza Data (GISAID), WHO, government public health websites, intelligence shared by other government departments and data provided bilaterally by other governments. The process for obtaining data evolved through the course of the pandemic from manual acquisition to almost entirely automated as data availability improved. Concurrently, the country risk assessments evolved iteratively, and included an evaluation of both quantitative and qualitative information. Country risk assessments took account of data availability, including timeliness and apparent transparency, and limitations and biases in so far as the team was able to assess them, for example, how representative the data was and its granularity.
690. Prior to finalising country risk assessments, cross government analytical meetings were convened, comprising colleagues from PHE, FCDO, DHSC, JBC and DAs to critically review risk assessments. Further details of the country risk assessment methodology are published here: [Exhibit: [JH2/540](#) - INQ000223892].

691. Contact tracing data were collected from NHSTT and via the NHS COVID-19 app. Prior to the establishment of NHSTT, PHE collected and securely stored contact tracing data and information via local HPTs that were conducting contact tracing in the early days of the COVID-19 pandemic. As the pandemic progressed, a new system was set up to capture this data, known as the Contact Tracing Advisory Service (CTAS). National contact tracing under the newly resourced CTAS commenced on 28 May 2020 with data collected within CTAS. The system was updated incrementally until the end of national contact tracing on 17 February 2022.
692. CTAS continued to be used after the establishment of NHSTT. The data collected in CTAS, including ethnicity data from summer 2020, were analysed to understand further the epidemiology of COVID-19, and work was undertaken to link the contact tracing data with other data sets, such as testing and immunisation data, according to PHE information governance policy. The data collected in CTAS was shared with national contract tracing teams and local HPTs to support contact tracing of high priority individuals and those who had not interacted with the digital service within the required timelines, as well as the NHSTT data warehouse (EDGE) and NHSTT Data teams for reporting purposes. These contact tracing data sets included different records with differing levels of identifiability and detail. Data obtained from CTAS were more detailed and included records from which individuals could be safely and confidentially identified, compared with data collected via the NHS COVID-19 app, which did not allow individuals to be identified.
693. Reports which included case and testing data were provided to DAs, DHSC, JBC, SAGE sub-committees, PHE/UKHSA HPTs, local authorities and the public on a daily, weekly or ad hoc basis via public reports published on GOV.UK. The report exhibited [Exhibit: JH2/541 - INQ000223893] is an example of the weekly NHSTT statistic, that was made available to named stakeholders, or via bespoke reports or presentations. Typically, these included aggregate counts of cases and contacts, common settings and activities reported by cases, and estimates of secondary attack rates among named contacts. Chapter 4 of the Technical Report provides additional information on situational awareness, analysis and assessment [Exhibit: JH2/542 - INQ000223894].

#### Mortality Data

694. At the beginning of the pandemic, NHS England (NHSE) provided data for the public reporting of COVID-19 deaths in England. During this time, PHE and the Office for National Statistics (ONS) also collected data on COVID-19 deaths.
695. During the period covered by this statement, two sources of data were used on individual deaths from COVID-19 and an estimate of excess mortality due to COVID-19 at a population level. The first individual deaths data source was death registrations where COVID-19 was included in the death certificate. This was published by ONS with a reporting lag, due to the time taken to register deaths. The second source of individual deaths data was based on the number of people who died following a positive SARS-CoV-2 test. The latter was primarily intended as a more rapidly available deaths data source and therefore was not reliant on information from death certificates alone. The evolution of this measure is described further below.
696. The PHE mortality data series was not developed specifically for use as a published indicator. One use of PHE data was to support mathematical modelling by the Scientific Pandemic Influenza Group on Modelling, Operational sub-group (SPI-M-O), and this was provided to the PHE Joint Modelling Team (JMT) for onward dissemination to relevant modelling teams represented on SPI-M-O. Some examples of SPI-M-O papers that demonstrate this modelling are exhibited [Exhibit: JH2/436 - INQ000223534] [Exhibit: JH2/466 - INQ000223896].
697. In March 2020, Professor Neil Ferguson who was then a member of SAGE, notified the Chief Medical Officer (CMO) and Chief Scientific Adviser (CSA) of an inconsistency in deaths data between different sources [Exhibit: JH2/545 - INQ000223897]. The CMO contacted PHE, which carried out a rapid review of the issues and options.
698. PHE prepared a position paper and options appraisal, with potential options to further support national deaths reporting to ensure information on deaths was as accurate and comprehensive as possible [Exhibit: JH2/546 - INQ000223898]. The aim was to address publication figures derived using different methodologies. The preferred option was for PHE to provide a data flow intended to include deaths, both inside and outside of hospitals, that would be available to be published seven days a week. The document was also presented to DHSC.



699. On 21 April 2020, DHSC chaired a meeting that agreed that the publicly reported mortality figures should transition to the use of PHE's mortality data series. They noted that this would require ministerial agreement and engagement with the wider health family, ONS, Cabinet Office and No.10 [Exhibit: **JH2/547**] - **INQ000223899**].
700. The first publication of PHE mortality figures on the GOV.UK was on 29 April 2020, for the week 16-22 April [Exhibit: **JH2/548**] - **INQ000223948**]. It initially used data from the following sources as detailed in the report on the Office for National Statistics (ONS) website published on 31 March 2020 and updated on 28 April 2020 [Exhibit: **JH2/549**] - **INQ000223903**]:
- a. deaths occurring in hospitals, notified to NHSE by NHS trusts;
  - b. deaths notified to PHE Health Protection Teams in people with a confirmed COVID-19 test and recorded in an electronic reporting system;
  - c. Information from the Demographic Batch Service (DBS) generated from NHS records and SGSS on individuals with a laboratory-confirmed COVID-19 test who died in the previous 24 hours.
701. Initially, at this acute phase of the pandemic response, the natural history of SARS-CoV-2 infection was not yet well-described. For this reason, no cut-off was included in the definition of a COVID-19 death. This meant that at first, all deaths that occurred after a positive test were counted as a COVID-19 death.
702. Following a commission from the Secretary of State for Health and Social Care, in July 2020 PHE provided answers to a series of questions and a report detailing evidence for alternative definitions. These included potential time cut-offs at 28 and 60 days after a positive test result, for reporting the number of persons who died following a COVID-19 positive test in England. The report recommended moving to a 60 day cut-off [Exhibit: **JH2/550**] - **INQ000223904**] and accompanying information [Exhibit: **JH2/551**] - **INQ000223905**]. This report was sent to DHSC for approval for publication and approval from DHSC was awaited.
703. Following this review, the four Chief Medical Officers recommended that the headline data series change to report the numbers of persons who died within 28 days of a positive test across the UK. This change was announced by DHSC on

12 August 2020 [Exhibit: **JH2/552**] - INQ000223906]. This change reduced the reported number of persons who died following a positive test in England by 5,377, or 12.8% of the total at the time. In England, the numbers of persons who died up to 60 days after a positive test were also published as an additional metric from this point onwards.

704. During this time, the publication of the numbers of persons who died within 28 days of a positive test developed and more detailed outputs were included in the UK COVID-19 Dashboard and the national flu and COVID-19 surveillance reports, where regular publication of those data continued throughout the period of interest covered by the Public Inquiry (up to 28 June 2022). Prior to the pandemic, the routine flu surveillance report was published weekly during the influenza season (epidemiological weeks 40 to 20 of the subsequent year) and fortnightly during the summer period (epidemiological weeks 20 to 40), to which COVID-19 was added from 8 October 2020. Epidemiological weeks are a standard method for referring to time periods and used to report healthcare statistics and for comparison of data. Prior to this, the national weekly summary of COVID-19 and Flu was published separately.

#### Surveillance studies and systems

705. In early 2020, the government set up a number of COVID-19 surveillance studies with the aim of producing data and insights that would establish the rate of SARS-CoV-2 infection in the UK and how it is affecting the wider population. The studies would also help to understand how the virus was spreading, strengthen our scientific understanding of COVID-19, and help in assessing the impact of measures taken to contain the virus, such as non-pharmaceutical interventions (NPIs) and vaccines. The studies would also inform future government policy decisions and work across the testing programme.
706. The list of community surveillance undertaken is tabulated and exhibited [Exhibit: **JH2/553**] - INQ000223907]. This table documents the programme of COVID-19 surveillance activities undertaken between January 2020 to February 2022. Within the table, key dates, an overview of the purpose of each activity and who took part are outlined, as well as some pertinent insights generated by each activity.

707. The ZOE COVID-19 Symptom study collected data from participants who had downloaded an app and self-reported symptoms through it. Swab testing was offered from June 2020 for up to 20,000 ZOE participants per week who reported symptoms and asymptomatic testing of at-risk groups. Prior to the formation of UKHSA, DHSC set up a grant mechanism that funded ZOE, paying for a range of eligible activities including data analysis and app maintenance. On the formation of UKHSA, the grant was transferred from DHSC to allow for continuity of management. UKHSA funding for the ZOE app ended on 31 March 2022.

#### Wastewater monitoring and surveillance

708. In the early period of the pandemic, many countries began to explore ways to integrate wastewater monitoring into their COVID-19 response, with noteworthy articles and case studies published from the Netherlands, Australia, Italy and the US. Wastewater monitoring of SARS-CoV-2 was first piloted in England in March 2020 at four wastewater treatment plants, formalising and scaling as a programme from 15 July 2020 under the joint leadership of the JBC and Defra, with significant support from ONS and the Environment Agency, nine English water companies and academic collaborators. Initial funding from the Natural Environment Research Council (NERC) supported an academic pilot in England and Wales run by Bangor University, with the application supported by Defra, ONS and No. 10. A cross-devolved administration working group was set-up, with NERC joining to attract the best academic skills-set to support the development of the programme. The objectives of the trial and subsequent pilots were to detect the presence or absence of SARS-CoV-2 nucleic acid in local water catchments, to estimate the relative abundance of genetic material and, after December 2020, to detect variants. From July 2020, a formal wastewater monitoring programme for England was scaled up, covering 34% of the population. In parallel, the DAs developed their own wastewater monitoring programmes.
709. Given the possibility of elimination of the virus in the UK, there was a potential need for an accurate and efficient system for detecting the presence or absence of the virus in the UK population. Wastewater monitoring supported this need by providing such data at the community-scale across all regions of the country. Between December 2020 and March 2022s, the wastewater monitoring programme in England increased in scale to cover approximately 70% of the population. At this point, it was paused as part of the UK Government's 'Living with COVID'

strategy. Information on the operation of the wastewater monitoring scheme was published in May 2022, as exhibited at in the next paragraph.

710. Data from the wastewater programme were shared routinely with public health teams at national and regional level, through submissions to the weekly Surveillance and Immunity Data Debrief Group, and cross government stakeholders. Methods, results, and analyses were reported and reviewed by an expert advisory group comprising subject matter experts in academia and government, and a science steering group of technical specialists from partnering laboratories. Three papers were submitted and discussed at SAGE [Exhibit: **JH2/554** - INQ000120610]; [Exhibit: **JH2/555** - INQ000120611]; [Exhibit: **JH2/556** - INQ000074982] and regular science communication with the growing national and international community of wastewater surveillance peers was delivered through peer-reviewed manuscripts, working groups, including DAs, and technical fora. Wastewater monitoring data were published monthly on GOV.UK until the end of the programme in March 2022 [Exhibit: **JH2/557** - INQ000223911].

#### International Surveillance

711. In accordance with pre-existing surveillance mechanisms scanning for novel pathogens, from 31 December 2019 information on COVID-19 in other countries was gathered. This took an all-source approach, including data from ministries of health and other official government sources from overseas, or open-source surveillance sites such as the Program for Monitoring Emerging Diseases (ProMED). There were regular bilateral contacts with other countries including the US, Australia and Canada, as well as information from other European countries via Early Warning and Response System (EWRS). PHE had MoUs in place with a number of countries including China, France, the Netherlands, Norway, Germany and Japan. Further information on PHE's bilateral relationship with other countries including South Korea and Germany, as well as the corresponding MoUs, can be found in paragraphs 479-488 of Section 3 of this statement.
712. PHE, as a member of International Association of National Public Health Institutes (IANPHI) was in regular contact with other national public health institutes sharing data. In March 2020, IANPHI launched a series of webinars which PHE participated in to share data and learning on country level response to COVID-19 between national public health institutes. In addition, there were formal and

informal interactions with international organisations such as the US CDC, ECDC, WHO; as well as collection of information from media sources. From 22 January 2020, due to the rapidly evolving situation, there was a daily collation of official case numbers for each country for reporting at daily IMT meetings and SitReps, shared with modelling groups and DHSC.

#### Genomic Data

713. From January 2020, PHE recognised that genomics would be an important element of understanding and monitoring SARS-CoV-2 [Exhibit: JH2/558 - INQ000223912]. By 23 January 2020, the Respiratory Virus Unit (RVU) at PHE had designed a whole genome sequencing method for the novel coronavirus, pending the receipt of positive material for validation. On 29 January 2020, a sample was collected and received in RVU on 1 February 2020. The sample tested positive for the novel coronavirus, using Reverse Transcription Polymerase Chain Reaction (RT-PCR) analysis. RVU then generated a whole genome sequence from this virus sample, which was deposited in GISAID on 3 February 2020. This sequence was made publicly available within four days of sample collection.
714. A high proportion of early cases (outbreaks and FF100) underwent genomic analysis, which contributed to understanding viral diversity and virus evolution at this very early stage of the pandemic. This early work demonstrated the close relatedness of circulating viral strains and focussed on tracking chains of transmission to monitor any signals of significant virus adaptation to humans Exhibit: JH2/559 - INQ000223913]. In addition, genomic analysis was used to underpin confidence in early diagnostic tests and support development and implementation of in-house assays and commercial test kits. Rapid studies initiated by PHE used genomic data to assess the risk factors for exposures within care homes [Exhibit: JH2/560 - INQ000223914]. Genomic information that was generated within PHE with public health or scientific relevance e.g. outbreak investigations or estimation of viral mutation rates, was reported through incident management structures to supplement situational analysis, and for onward briefing where required.
715. It was recognised that a significant expansion of genomics capacity would be needed to provide a scalable response. Meetings with the academic community were convened by PHE to agree on the best way of harnessing UK academic

sequencing capacity. These meetings led to the creation of COG-UK, with funding from UK Research & Innovation (UKRI). The first COG-UK report on 23 March 2020 was a demonstration of capability using a distributed network [Exhibit: **JH2/561** - **INQ000223915**]. COG-UK was comprised of the UK public health agencies, the NHS, the Wellcome Sanger Institute and a network of academic partners. It was led by Professor Sharon Peacock (at the time Director of the National Infection Service, PHE) to collect, sequence and analyse genomes of SARS-CoV-2 as part of the COVID-19 pandemic response. Mass sequencing capability evolved with expansion in testing capacity.

716. The first report from COG-UK described its inception, role and responsibility, and analysed available UK data from PHE and DA public health agencies and other partners [Exhibit: **JH2/294** - **INQ000223378**]. Subsequently COG-UK data were summarised on regular basis for SAGE. COG-UK was initially funded by UK Research and Innovation (UKRI) and the Wellcome Trust and additional funding was obtained from October 2020, from NHS Test and Trace. PHE and NHS Test and Trace requested additional funding to enhance capacity and capabilities from DHSC in January 2021. In April 2021 NHSTT, and later UKHSA working with the devolved administrations contributed additional funding to extend COG-UK's sequencing output, as well as coordination of sequencing and analysis of SARS-CoV-2 genomic data for the public health response to increase the capacity for genome sequencing, improve the speed of data flows, and to continue to support and develop variant surveillance functions.
717. COG-UK was established to link the public health agencies with academic partners to develop a network of laboratories which could provide SARS-CoV-2 sequencing rapidly and the UK was always a major international contributor of data. Early in the pandemic, there was little evidence of significant biological variation and so sequences were used to investigate transmission. This was undertaken by both academic teams and the public health agencies. COG-UK also drew in academic partners to develop data infrastructure and core analysis tools on the Cloud Infrastructure for Microbial Bioinformatics (CLIMB), funded by the Medical Research Council (MRC).
718. Sequence data were also uploaded to GISAID, making it accessible to the global community. By April 2020, the UK contributed 426 SARS-CoV-2 genomes to GISAID, representing 13% of the total number of sequences available on the platform at the time. Over the next two years, the number of sequences uploaded

to GISAID by the UK increased, reflecting the scale-up of sequencing within the UK. By April 2021 the UK had uploaded >340,000 genomes representing 36% of all genomes on GISAID. By April 2022, the UK had contributed > 2.5 million genomes equating to 25% of all sequences submitted to GISAID.

719. PHE convened regular meetings with public health and academic teams to examine joint genomic and epidemiological data. These took place on a fortnightly basis or more frequently if required. In December 2020 this was the mechanism by which the Alpha variant of concern was identified in Kent as a significantly altered virus associated with a change in epidemiology.
720. Following briefings to NERVTAG, PHE established a technical group of PHE teams and academic partners to coordinate analyses to characterise the variant. A framework for variant risk assessment and methodologies for evaluating changes in properties such as transmissibility and antigenic properties were established. PHE (and subsequently UKHSA) used this technical group and framework to maintain biological surveillance of the SARS-CoV-2 virus through analysis of UK and global genomic surveillance data, epidemiological studies using UK data, modelling analyses, and laboratory data from academic partners. From December 2020, PHE published 23 technical briefings on SARS-CoV-2 variants [Exhibit: JH2/562 - INQ000223916] then from October 2021 UKHSA continued the series from briefing 24 to 52 (by April 2023) [Exhibit: JH2/563 - INQ000223917]; [Exhibit: JH2/564 - INQ000223918]; [Exhibit: JH2/565 - INQ000223919].
721. UKHSA continues to work closely with academics, public health agencies and the Wellcome Sanger Institute to perform and analyse SARS-CoV-2 genome sequencing and analysis.

#### Health and Social Care Data

#### Severe COVID-19 Enhanced Reporting (S-COVER) – Intensive care-based surveillance

722. On 20 February 2020, the 9<sup>th</sup> meeting of SAGE asked PHE to share detailed proposals for surveillance from clinical settings with SPI-M [Exhibit: JH2/566 - INQ000087502]. The 10<sup>th</sup> meeting of SAGE reviewed this assessment and concluded that PHE's proposed surveillance approach provided sufficient sensitivity to detect an outbreak in its early stages. However, they requested that

the DCMO, PHE and NHS England explore testing options for suspected pneumonia cases in hospitals which were not severe. [Exhibit: JH2/567] - INQ000087503].

723. Initially, there was no existing surveillance system in hospitals that was able to adapt rapidly to test patients for SARS-CoV-2. One proposed method of assessing the community transmission of COVID-19 was to test patients with respiratory illness who were on critical care but who did not meet the case definition at the time (i.e. had no epidemiological links to a COVID-19 case, travel to an area with known community transmission, or other potential exposure). In February 2020 a respiratory Intensive Care network set up for a previous PHE research study was repurposed rapidly for this, becoming known as S-COVER.
724. PHE made a request via the NHS for eleven pilot trusts to initiate testing, nine of which were already part of the sentinel surveillance sites for respiratory surveillance. The eleven pilot trusts were; Nottingham University Hospital NHS Trust, Papworth Hospital NHS Foundation Trust, Royal Brompton & Harefield NHS Foundation Trust, Sheffield Teaching Hospitals NHS Foundation Trust, The Royal Liverpool & Broadgreen University Hospitals, University Hospitals of Leicester NHS Trust, University Hospitals of South Manchester NHS Trust, Aintree University Hospitals NHS Foundation Trust, Brighton & Sussex University Hospitals, Guy's & St Thomas' NHS Foundation Trust, and Imperial College Healthcare Trust (St Mary's Hospital). These trusts were asked to commence testing on 25 February 2020. They were asked to submit samples from all patients that meet the following criteria:
- a. Adult patients (18 years or older), and
  - b. Admitted to intensive care, and
  - c. Presenting condition is an acute community-acquired respiratory infection of any kind, regardless of known or suspected causative pathogen and clinical features.
725. The letter that was sent to Nottingham University Hospital NHS Trust is exhibited as an example [Exhibit: JH2/568] - INQ000223922] along with the guidance for participating trusts. [Exhibit: JH2/569] - INQ000223923].



726. The surveillance process did not apply to any patients that met the current COVID-19 case definition, who were to be isolated and tested as usual. The first positive case reported from this system was a patient from East Midland whose sample was tested at PHE Colindale on 27 February 2020. On 2 March 2020, all ICUs in England were requested to start testing patients meeting these criteria [Exhibit: **JH2/570** - **INQ000087445**]. S-Cover was replaced with the CHES/SARI system as detailed in the next section.

#### CHES/SARI Watch

727. COVID-19 Hospitalisations in England Surveillance System (CHES) was the PHE surveillance scheme for monitoring hospitalised COVID-19 patients from March 2020. It essentially replaced and expanded the reach of S-COVER with a different reporting mechanism and data flows. It was based on the existing UK Severe Influenza Surveillance Scheme (USISS) that was created following the 2009 influenza pandemic to monitor and estimate the impact of severe influenza on the population in a timely fashion, in order to identify those who are most at risk and evaluate the effectiveness of countermeasures [Exhibit: **JH2/571** - **INQ000223925**].

728. CHES was identified as a priority surveillance programme at the PHE IMT on 6 March 2020. To support the introduction of CHES, an information and reporting requirements letter for trusts was sent from PHE to NHSE Single Point of Contact for NHSE ID approval, signature and cascade to NHS Trusts on 11 March 2020 [Exhibit: **JH2/572** - **INQ000119666**]. This letter was cascaded by NHSE on 13 March 2020. The main points were:

- a. The objectives of CHES were to monitor and estimate the impact of COVID-19 infection on the population, including estimating the proportion and rates of COVID-19 cases requiring hospitalisation and/or ICU/HDU admission;
- b. monitor hospitalisation fatality ratios among those hospitalised;
- c. describe the epidemiology of COVID-19 infection associated with hospital/ICU admission in terms of age, sex and underlying risk factors, respiratory support and outcomes monitor pressures on acute health services;
- d. inform transmission dynamic models to forecast healthcare burden and severity estimates.

729. In the summer of 2020, CHES was renamed UK Severe Acute Respiratory Infection (SARI)-Watch, to align with WHO terminology on SARI monitoring. SARI-Watch includes the same information as collected via CHES, but also includes data on other respiratory viruses. An update on the programme was set out in this note from November 2020 [**Exhibit: JH2/573** - INQ000223927].
730. CHES/SARI-Watch data were:
- a. reported in the weekly national COVID-19 surveillance reports (which later became the joint flu and covid vaccine surveillance report) and variant technical reports;
  - b. provided for wider analyses of impact of COVID-19 (deaths, disparities in outcomes, modelling burden, vaccine effectiveness);
  - c. submitted to ECDC;
  - d. provided to SAGE, SPI-M and Joint Committee on Vaccination and Immunisation (JCVI) meetings as well as for press briefings.

#### Primary care-based surveillance

731. The RCGP's pre-existing influenza surveillance system relied on a selection of GP practices. The system relied on nasopharyngeal sampling of patients presenting with clinically suspected influenza. A protocol for adapting this system to test for COVID-19 was approved by the PHE IMT on 12 February 2020 and by the PHE SRG on 13 February 2020. The way in which the RCGP study would support the response to COVID-19 was set out in this document [**Exhibit: JH2/574** - INQ000223928]. COVID-19 testing in the RCGP surveillance system began the week commencing 17 February 2020. As part of this programme, RCGP were requested and funded to expand their coverage to include testing for COVID-19. The size of the virology swabbing cohort was expanded from one hundred to three hundred practices, swabbing was moved to year-round (previously swabbing was undertaken between epidemiological weeks 40 and 20) and a target of 1000 samples per week was requested beginning 17 February 2020 (compared to approximately 100-200 swabs per week during the peak flu season in previous years).

732. The first case of COVID-19 detected within a community setting was through a GP practice participating in the RCGP surveillance scheme (sample date 25 February 2020) with a result available on 29 February 2020. DHSC were informed on that date and contact tracing commenced immediately. This individual had no travel history or contact with known high-risk travellers.
733. From late February/early March 2020, the reduction in face-to-face contacts between patients and GP practice staff minimised the opportunity for patient swabbing by health professionals. Self-swabbing kits were introduced in response to this to support data collection via the RCGP surveillance system by maintaining sample numbers [Exhibit: **JH2/575**] - **INQ000120321**]. RCGP sentinel swabbing including postal kits has continued since the aforementioned date and is published in the weekly flu and COVID surveillance report. [Exhibit: **JH2/576**] - **INQ000223930**].

#### Syndromic Surveillance

734. The national real-time syndromic surveillance systems (including those monitoring daily NHS 111 calls, GP consultations in-hours and out-of-hours, emergency department attendances and ambulance dispatch calls) are routinely monitored by UKHSA (and previously PHE). This took place each working day, looking for any unusual changes in healthcare presentations, for any cause. This all-hazard monitoring uses epidemiological and statistical methods to identify increases in healthcare presentations above what would usually be expected at the time of year. This service has been operational for over two decades, continuously delivering an all-hazard service and establishing historical baselines over many years.
735. From early January 2020, PHE's Real-time Syndromic Surveillance Team used this system to support early identification of information about the emerging COVID-19, looking daily for any changes in healthcare presentations for respiratory symptoms, including both any changes observed (indicating local/national increases in activity and/or outbreaks) and reassurance of any absence of change (where appropriate). While existing syndromic respiratory indicators (such as patients presenting with "acute respiratory infection" at emergency departments) were not COVID-19 specific, they were sensitive to changes in community-based healthcare presentation. This provided reassurance

during the period when there was no community-based COVID-19 surveillance activity.

736. From March 2020, as NHS service providers started developing and introducing COVID-19-specific clinical codes, PHE developed and launched “COVID-19-like” syndromic indicators in May 2020 for use in emergency departments, GP in-hours surgeries, the NHS 111 service and ambulance syndromic systems. These syndromic indicators did not monitor confirmed COVID-19 cases but monitored records of patients presenting to healthcare services with COVID-19 symptoms.
737. From May 2020, a new national syndromic surveillance system was developed by PHE in collaboration with NHS England, NHS 111 and NHS Digital utilising NHS 111 online assessments. Initially, this reported “potential COVID-19” in NHS 111 online assessments but these were expanded to monitoring NHS 111 online assessments for reports of key symptoms such as anosmia in response to the changing symptomology of COVID-19 infections. From July 2020, the NHS 111 online system was expanded to an all-hazards approach, monitoring a range of respiratory, gastrointestinal and non-infectious presentations, to match other syndromic surveillance systems.
738. From March 2020 until the present day, UKHSA real-time syndromic surveillance systems have continued to monitor community-based COVID-19-like activity daily. These are reported in publicly available weekly syndromic surveillance bulletins [Exhibit: JH2/577 - INQ000223931] and fed into UKHSA’s national influenza and COVID-19 surveillance report. These data have provided a continuous and standardised feed of surveillance intelligence on the progress of the pandemic.
739. After overcoming substantial technical and governance issues, including a standardised data sharing agreement between organisation, it became possible to link hospitalisation data with testing data and vaccine data as the pandemic progressed.

#### Surveillance in Care Homes

740. During April 2020, PHE recruited a cohort of 13 London care homes to understand the extent of transmission in these settings [Exhibit: JH2/578 - INQ000223932].

741. In May 2020, the VIVALDI 1 study was commissioned by NHSTT and undertaken by ONS and UCL to understand the risk factors which were contributing to outbreaks of infections in care homes across the whole of England. A report on VIVALDI 1 was published on 3 July 2020 [Exhibit: **JH2/510** - INQ000106159].
742. The VIVALDI 2 study was launched in June 2020, in a more representative sample of over 100 care homes and built upon VIVALDI 1 to investigate rates of infection and immunity, risk factors for transmission, risk of reinfection and vaccine effectiveness in residential long-term care facilities. This study was commissioned by NHSTT and undertaken by University College London (UCL) researchers and supported by the University of Birmingham. NHSTT also provided management and oversight of the studies. The initial results of VIVALDI 2 were shared by UCL with NHSTT and fed into the policy decisions made in relation to care homes, including the movement of agency staff and the regular repeat testing of all staff as well as all residents in residential care homes of all sizes. The VIVALDI 2 report was published on 6 May 2021 [Exhibit: **JH2/580** - INQ000220174].
743. UKHSA has continued to fund the VIVALDI study, which has advanced to study the reinfection rates, vaccine and booster efficacy against evolving variants, and continues to monitor effectiveness, acceptability and feasibility of regularly staff testing, to protect care home residents from severe outcomes in future [Exhibit: **JH2/581** - INQ000223935].

#### Vaccine Monitoring Data

744. PHE (and later UKHSA) was responsible for monitoring vaccine coverage, effectiveness, and impact when the COVID-19 vaccine programme began. In response to waning immunity and to emerging variants, PHE also supported the Medicines and Healthcare products Regulatory Agency (MHRA) in monitoring and evaluation of the safety of COVID-19 vaccines, including leading incidents following the identification of safety concerns. A vaccine surveillance strategy [Exhibit: **JH2/582** - INQ000223936] was published (in March 2021). This which set out the surveillance plans for monitoring coverage, vaccine safety and vaccine effectiveness (VE). The draft strategy was previously shared with the NHSE Vaccine Deployment Board and MHRA Commission on Human Medicines (CHM) Expert Group in November 2020.

745. After the vaccine programme began in December 2020, PHE (and later UKHSA) epidemiologists gathered data by linking national healthcare datasets. They also conducted epidemiological analyses, including on vaccine coverage rates, vaccine effectiveness estimates against mild and severe disease, and safety analyses.
746. Vaccine coverage data were presented weekly in the national COVID-19 surveillance reports. An example of the reports are exhibited [Exhibit: JH2/583 - INQ000223937] and in the COVID-19 vaccine surveillance reports [Exhibit: JH2/584 - INQ000223938].
747. Vaccine effectiveness estimates were generated on a regular basis with the first results shared with DCMO on 13 January 2020 and presented to JCVI on 14 January 2020. Data was presented to JCVI on an almost weekly basis and regularly shared directly with DCMO, CMO and the Secretary of State for Health and Social Care's office. The data were published in the above reports, as well as in peer-reviewed academic journals [Exhibit: JH2/585 - INQ000212182]. The UK was the second country to publish any real-world COVID vaccine effectiveness data and the first to publish vaccine effectiveness data against the Delta and Omicron variants.
748. Data on vaccine safety analyses were presented to JCVI and the MHRA CHM Expert Group. Further detail about vaccine-related data collection, analysis and dissemination will be provided as part of UKHSA's response to Module 4.

#### Visualisation, analytics and mechanistic modelling

749. This section details the key visualisation, analytics and mechanistic modelling activities undertaken by UKHSA and its predecessor organisations related to COVID-19 throughout the course of the relevant date range. UKSHA and its predecessor organisations conducted many activities in these areas to produce a range of insights that were disseminated to relevant government bodies or groups.
750. During the first three months of the response, the JMT was the key business unit conducting visualisation, analytic and mechanistic modelling activities. The JMT was formally established on 27 January 2020, in response to the growing concern over SARS-CoV-2 transmission occurring elsewhere in the world. JMT brought together the expertise that existed in PHE's Emergency Preparedness, Resilience and Response (EPRR) team at Porton Down, and the Statistics, Modelling, and

Economics Department at Colindale, both of which had previously worked on the 2009 H1N1 influenza pandemic, pandemic preparedness and exercising. Prior to the formal establishment of the JMT as a response cell, relevant staff were working informally within PHE to gain an understanding in preparation for the anticipated modelling tasks.

751. The initial aims and objectives of the JMT, which evolved during the pandemic response, were to co-ordinate the modelling and analytical tasks required for the public health response to COVID-19, and to supply timely, quantitative information to the response, both within PHE and to wider UK government via the SPI-M-O sub-committee of SAGE.
752. JMT used the data it curated to undertake a range of analyses, including initial growth estimates and scenario models.
753. Beyond the first three months of the response, UKHSA undertook multiple visualisation, analytic and mechanistic modelling activities. The Advanced Analytics division (initially within JBC) used internal and external data and advanced analytic techniques to create insights for senior officials and ministers at different points of the response. For example, using appropriately aggregated and anonymised mobility data, they were able to model the spread of the virus across different parts of the country and provide indications for where local policies would likely be needed next. In another workstream, the division set out to illustrate the regional heterogeneity of case rate growth using novel visualisation techniques. The division was also at the heart of the efforts to assess the impact that NPIs were having on the spread of the virus: at an aggregated level of the local authority in the case of the tiering policy; for those local authorities in Enhanced Response Areas (ERA) and also at the individual level in the case of the self-isolation support policy [Exhibit: JH2/586 - INQ000223940].
754. Throughout the crisis, this team also did work bringing together analytical insights related to the trade-offs that decisions makers needed to consider, whether that was in terms of the educational impacts of different school testing regimes, or the impact on travel of various isolation policies [Exhibit: JH2/587 - INQ000223941] [Exhibit: JH2/588 - INQ000223942].

Dissemination of data and insights from visualisation, analytics and mechanistic modelling

755. Throughout the period covered by Module 2, UKHSA and its predecessor organisations disseminated significant volumes of data and insight across government and to the public, academia, and researchers, including in response to specific requests from key partners. Regular activities are described here under the following headings:
- a. Daily text message;
  - b. COVID-19 Dashboard;
  - c. Weekly National COVID-19 Surveillance report (subsequently, a weekly National Flu and COVID-19 Surveillance Report);
  - d. Weekly NHS Test and Trace statistics;
  - e. Daily JSAT reports;
  - f. Local Action Committee (LAC) – Watchlist and Bronze/Silver/Gold;
  - g. SPI-M-O;
  - h. Data Debrief Group;
  - i. Cabinet Office (Including Taskforce and COVID-O).

#### Daily text message

756. At the start of the pandemic in February 2020, PHE utilised its existing emergency response communication arrangements to send out a daily short text message to a limited number of senior leaders (including CMO, NHS England, Chief Executive of PHE and PHE Communications) to communicate the daily new cases of COVID-19 in England. The daily text ceased on 28 March 2022 to align the health response with the government's 'Living with COVID-19' strategy.
757. As the daily text message had a limited information capacity, it was supplemented by a more detailed daily email. The data was provided by PHE's COVID-19 epidemiology cell (Epi Cell), which was then checked by one of the cohort of PHE's COVID-19 Incident Directors and then distributed via PHE's Egress email system (as the combination of the various information provided was OFFICIAL-SENSITIVE) to DHSC and to NHS England. This information formed the basis of



the DHSC daily COVID-19 'tweet'. The DHSC daily tweet ceased in July 2020 as the information became available via the Government's COVID-19 Dashboard.

### COVID-19 Dashboard

758. The COVID-19 dashboard was created and managed by PHE and later management of the dashboard passed to UKHSA. The dashboard was supported by a multi-agency steering group including DHSC, NHSE, NHS Digital and the DAs [Exhibit: JH2/589 - INQ000223943]. Its purpose was to provide timely, open, and transparent data that was widely accessible to all stakeholders including the public. Dashboard data supported formal research initiatives, strategic decision making as well as enabled the public and media to receive near real-time data. [Exhibit: JH2/411 - INQ000223507]. The dashboard was iterated throughout the pandemic in response to user feedback and the changing requirements of the pandemic [Exhibit: JH2/591 - INQ000223945].
759. Whilst Scotland, Wales and Northern Ireland also had their own dashboards, they collaborated with PHE, and later UKHSA, to improve the availability of cross-UK data available on the COVID19 Dashboard. There were challenges to data collection as each of the four nations collected their data on different timescales or in different formats.
760. Data for the dashboard came from over 26 separate sources, providing more than 600 million raw records which produced an average of 40 million figures. The operational team worked to ensure that raw data were processed daily so that the Dashboard was updated at 4pm each day. This included preparing to manage the surge in demand, with around 1 million unique users and over 70 million hits per day at its peak.
761. The dashboard evolved and developed according to user needs during the pandemic. From 10 March 2020, the initial dashboard design provided data on a simple map with key metrics on cases and deaths by NHS region and Upper Tier Local Authority (UTLA) and was hosted on a commercial platform. The dashboard then transitioned to GOV.UK and by May 2022 it was enabling data to be searched using over 200 metrics.
762. Most data in the dashboard were also available through a straightforward application programming interface (API) which could be accessed via its web

interface and was used to enable and support numerous independent analyses of the epidemiological situation by academics, journalists and others.

763. Dashboard data was automatically generated as part of the release process and provided to the Secretary of State for Health and Social Care in a daily email prior to publication of the dashboard [Exhibit: **JH2/592** - **INQ000223946**].

Weekly National COVID-19 Surveillance report (subsequently National Flu and COVID-19 Surveillance report)

764. PHE published a routine flu report with general respiratory indicators prior to the COVID-19 pandemics. The first COVID-19 specific surveillance report was proposed by the PHE surveillance cell on 13 March 2020, to bring together and publish a broad range of indicators and summarising information from the surveillance systems used to monitor COVID-19 activity. There were several approvals processes involving Cabinet Office and No10. The initial Publication of reports were stopped pending further approvals by the CO on 19 March 2020, subsequently on 26 March, 1 April, 9 April, and 16 April 2020 [Exhibit: **JH2/593** - **INQ000223947**]. The first COVID-19 specific surveillance report published 23 April 2020 as exhibited at paragraph 648.
765. Initially, the reports only covered data visualisations and information on COVID-19 including the number of confirmed cases in England split by age, gender, ethnicity, and region, as well as outputs of community, primary and secondary health care, virology, and mortality systems. The reports evolved over time to include additional COVID-19 surveillance as new systems came online. As of 8 October 2020, the report began to include surveillance of influenza and other seasonal respiratory viruses as well as COVID-19 [Exhibit: **JH2/548** - **INQ000223948**].

Weekly NHS Test and Trace statistics

766. NHSTT statistics were published weekly to provide an update on the implementation and performance of NHSTT and primarily for operational purposes, with the initial weekly publication taking place in June 2020 [Exhibit: **JH2/595** - **INQ000223949**]. The statistics were for England only and included the number of people who tested for COVID-19 and the number who tested positive for COVID-19. The publication also included data on contact tracing i.e. positive cases transferred to the CTAS system, close contacts identified and

contacted, and the time taken for home and satellite test centres results to become available. From February 2021, it included data on rapid LFD testing for people who were asymptomatic [Exhibit: JH2/596 - INQ000223950].

767. Routine population contact tracing ceased on the 24 February 2022 and returned to usual health protection processes for respiratory pathogens. Prior to this, NHSTT statistics included reporting on the number of contacts identified and the number of people reached and advised to self-isolate. The publication changed further during the period up until all publications were ceased in June 2022. For example, it no longer reported on contacts and cases beyond week ending 23 February 2022, with certain tables still published but only reported up to and including that week. From April 2022 the publication cadence changed from weekly to fortnightly publication of weekly data.
768. From 15 February 2021 to October 2021, NHSTT statistics included those of the Managed Quarantine Service (MQS) operated by DHSC, which reported on the number of individuals entering England from an amber or red listed country or territory who may have to quarantine at home or in a managed quarantine hotel. The MQS statistics evolved overtime in response to policy changes:
- a. the MQS data on those quarantining at home or in a managed quarantine hotel were first published in March 2021 but this was backdated to when MQS was first launched in February 2021.
  - b. home quarantine data was not updated after October 2021, when fully vaccinated arrivals from non-red list countries no longer had to quarantine. Hotel quarantine data was not updated after December 2021 when all countries were removed from the red list.
  - c. testing for international arrivals from amber and red listed countries and risk assessment data by country were first published in May 2021 (backdated to February 2021).
  - d. the testing data was not updated after March 2022 when passengers were no longer required to take tests or quarantine upon arrival. The risk assessment data was not updated after January 2022, due to data quality issues.

Daily JSAT reports

769. JSAT was made up of staff from both PHE and JBC. The team produced a COVID-19 update report called the JSAT Report, which was later renamed the COVID-19 Situational Awareness Brief (CSAB). This situational awareness report collated information and intelligence from various sources including; PHE NHSTT/JBC, DHSC and NHSE; to provide a daily summary of COVID-19 at national, regional and local authority levels. The report contained data visualisations and information on the national context, case rate and case rate change, hospitalisation, variants, care homes, mortality and vaccination uptake.
770. Alongside the JSAT reports, data tables were produced providing epidemiological figures related to the number of cases per 100,000 people in key age groups. The tables provided information for each local authority and region within England as well as England as a whole. This data was shared with local authorities and regions to ensure that they had the latest epidemiological data and it was the same as the data that was being used for decision making. An example of the COVID-19 Situational Awareness main report dated 7 September 2021 is exhibited [Exhibit: JH2/597 - INQ000223951].

#### Local Action Committee – Watchlist, Bronze/Silver/Gold

771. Section 1 of this statement describes the structure, purpose and attendee list of the LAC and its Bronze/Silver/Gold structure at paragraphs 90-101, including that this was a mechanism by which data and insights were provided to UKHSA's partners including DHSC, the CMO for England and the Secretary of State for Health & Social Care. To support these meetings, the COVID-19 Contain Framework published in July 2020 set out how national, regional and local partners should work with each other, the public, businesses, and other partners at local level to prevent, manage and contain outbreaks of coronavirus (COVID-19) [Exhibit: JH2/598 - INQ000223952].
772. The framework set out:
- a. the roles and responsibilities of local authorities and local system partners, and the support local authorities can expect from regional and national teams, as well as the decision-making and incident response structures;
  - b. the core components of the COVID-19 response across the spectrum of outbreak prevention and management, including to variants;

- c. the requirements of local authorities on the continued COVID-19 response, as well as how this should be factored into local outbreak management plans (LOMPs).

773. At the Bronze/Silver/Gold LAC meetings, a SitRep brought together a range of health and non-health data, as well as local insights on this data, and provided an assessment of the important messages arising from both the data and local intelligence for decision-makers. These SitReps were developed using the latest data, analysis and included any key associated policy recommendations. The Situation Report was adapted for the Bronze/Silver/Gold meetings to reflect the different audiences and the different levels of decisions that were needed. The Bronze pack was tailored to focus information at the regional and local authority level for discussion by the Regional Directors of Public Health (RDsPH). The Silver and Gold pack was tailored to focus on the national level whilst also providing the regional and local level if required for the CMO and Secretary of State for Health and Social Care audience. This is summarised below:

- a. Bronze: The Bronze Situational Report developed over the period the LAC meetings were in place. The report provided data for metrics to support discussion amongst Regional Directors of Public Health (RDsPH) and system stakeholders on areas of concern. Two packs were created. One was a display pack to inform discussion at the meeting which also included unpublished data draft outputs from other sources such as the ONS Coronavirus (COVID-19) Infection Survey (CIS) study ahead of its formal publication, to inform timely discussion during the meeting. The other was a circulation pack which was shared with all meeting attendees. The packs provided data on metrics at a national and local level and informed discussion between the CMO, RDsPH and other senior health leaders to identify areas of concern. Over time, additional metrics were included in the pack to meet the needs of the LAC meetings, including data on new and emerging variants and vaccination uptake rates. The pack was circulated to all meeting attendees. As examples, exhibits show a PHE/NHSTT pack from November 2020 [Exhibit: JH2/599 - INQ000223953] and UKHSA pack from January 2022 [Exhibit: JH2/600 - INQ000223954].

- b. Silver: The Silver Situational Report was provided weekly for the period LAC meetings were in place. Additional reports were created for Silver meetings called outside of the standard weekly cadence using the same format. The

pack provided data on metrics at a national and local level and informed discussion between the CMO, RDPH and other senior health leaders to identify areas of concern. A pack from November 2020 produced by PHE and NHSTT is exhibited as an example [Exhibit: JH2/601 - INQ000223955].

- c. Gold: The Gold Situational Report was provided weekly for the period LAC meetings were in place. Additional reports were created for Gold meetings called outside of the standard weekly cadence using the same format. As described in the section on Bronze meetings there were two versions: a display pack to inform discussion at the meeting, which also included unpublished data, and a circulation pack which was shared with all meeting attendees. A PHE./NHSTT pack from November 2020 is exhibited [Exhibit: JH2/602 - INQ000223956] and a later UKHSA pack from January 2022 [Exhibit: JH2/603 - INQ000223957].

774. The content of the situation reports evolved to reflect the changing landscape of the pandemic and to support decision-makers with relevant data to inform upcoming policy decisions. For example, in October 2020 when decision-making was focused on the implementation of local COVID-19 restrictions (tiering and local COVID-19 alert levels). A range of epidemiological data were presented alongside healthcare metrics (pressure on the NHS – people admitted to hospital and occupancy of hospital beds) regionally and locally to inform interventions. In March 2021 when the government was preparing to lift national NPIs, the reports were updated and re-structured to give senior decision-makers an update on progress made against the 4 key tests for exiting lockdown, with key data on variants or vaccine uptake.

775. All the LAC meeting situation reports contained the following data:

- a. Weekly Incidence rate: case rate per 100,000 population indicators were used to allow comparisons between areas of different sizes. These indicators were presented as a total for all age groups (nationally, regionally and at Lower Tier Local Authority (LTLA) level), and within specific age groups of concern (for example, over 60 or 17-21). Details on case rates in care home settings for both staff and residents were also included. Additionally, ONS CIS results were presented nationally, regionally and by age.

- b. Positivity and testing rates: based on the number of positive tests and a percentage of total tests in the area. Positivity rate interpretation required consideration of testing trends within a defined area, for example, LTLA. These indicators were presented as a total for all age groups (nationally, regionally and at LTLA level). Details on positivity and testing for staff and residents in care home settings were also included.
- c. Local context: The LAC reports included important context drawn from PHE's RDsPH and JBC response colleagues based regionally and NHSTT's regional conveners. Reports also drew on aggregate anonymised mobility data, as well as outbreak setting data. This additional context was extremely valuable as, for example, where a sudden increase in case rates could be explained by a single, contained outbreak, the LAC might suggest any additional wider intervention was not needed. As well as information associated with outbreaks, relevant local context included insight into the pressures on local NHS providers; detail of the predominant industries in an area and/or local working patterns; insight from local community or faith leaders; suitability of the chosen location of mobile testing units; or patterns in vaccine uptake.
- d. Pressure on the NHS based on the number of beds occupied by people with COVID-19 reported according to 3 categories: bed occupancy (general and acute beds) nationally, regionally, at LTLA levels; bed occupancy (mechanical ventilation beds) nationally, regionally, at LTLA level; hospital admissions nationally, regionally, at LTLA level. Additionally, NHS staff absence was presented at a national level. This included JBC analysis on NHS admissions, bed occupancy and capacity by region and analysis on length of stay.
- e. Variants of concern/variants under investigation: from February 2021 the reports included information on Variants of Concern (VoCs) and Variants Under Investigation (VUIs) circulating in the UK, including the number of cases, taken from work undertaken by the Variant Technical Group and subsequently published in the Variant Technical Briefings.
- f. Vaccination uptake and vaccine effectiveness: once the vaccination rollout had started the packs included data looking across regions and local authorities, different populations (primarily by age groups), to show uptake and the impact this had on case rates, hospitalisation and mortality.

- g. Additional indicators: where applicable, this included indicators such as trends in NHS111 calls regarding COVID-19 symptoms or mortality data (daily deaths within 28 days of positive COVID-19 test); education data – school openings and attendance and Google mobility results showing the fluctuation of mobility within different settings like residential or workplace etc; local characteristics – mobility, deprivation, ethnicity, data on reported contacts.
776. The Gold/Silver/Bronze situation reports provided the basis for a range of other situational awareness products and briefings. For example, abridged versions were used for briefing MPs, WHO, the Prime Minister and senior leaders across government, as well as in COVID-O meetings, discussions with international liaison and for media communications.
777. To keep the public informed on decisions made and the epidemiological data used to inform decision making, the following was published:
- a. June-October 2020: The Contain watchlist - a summary of this pack was published on GOV.UK weekly [Exhibit: **JH2/604** - INQ000223958]; [Exhibit: **JH2/605** - INQ000223959];
  - b. October 2020-February 2021: aligned to the implementation of local COVID-19 restrictions known as tiering. A summary of this was published on GOV.UK weekly [Exhibit: **JH2/443** - INQ000137280];
  - c. December 2020: Written statement to Parliament on review of local restriction tiers: 30 December 2020 – This provided a detailed rationale for tier allocations across England [Exhibit: **JH2/606** - INQ000223960];
  - d. November 2020-June 2021: The COVID England Briefing Packs – which set out the data that was used to advise on the roadmap out of lockdown, inform decisions on areas for enhanced response and help inform action on testing, contact tracing and local outbreak management in England. The briefings were published at the request of the Secretary of State for Health and Social Care. An example of the reports are exhibited: [Exhibit: **JH2/607** - INQ000223961]; [Exhibit: **JH2/608** - INQ000223962].



## SPI-M-O

778. Several members of the JMT were also members of SPI-M-O during this period, which continued up to the formal ending of this SAGE sub-committee. Where appropriate, modelling outputs were shared with SPI-M-O to input into the emerging picture of this pandemic and the possible responses to limit transmission [Exhibit: [JH2/609](#) - INQ000223963].
779. Data provision from PHE to SPI-M-O was discussed in January 2020. Since the 2009 H1N1 swine flu pandemic the topic of data provision had been discussed at SPI-M as routine business of pandemic preparedness. A summary of the surveillance data systems within PHE in the event of an influenza pandemic was prepared and presented to SPI-M in 2014, this was to act as assurance to DHSC regarding data provision in the event of an influenza pandemic, the exhibit is referenced in paragraph 650 of this statement. SPI-M updated its pandemic influenza modelling summary in 2018, which contains an updated Annex 4: Data Required for Real Time Modelling in an Influenza Pandemic. This sets out the range of data sources required but does identify those data streams that are not currently available but may be in future. The 2014 summary was shared again with SPI-M-O on the 27 January 2020 to discuss and assess which available data streams are pertinent. It was agreed that once data streams were adapted for COVID-19 that data would be shared daily with SPI-M-O, the exhibit can be found in paragraph 650 of this statement.
780. In addition, plans to modify the routine influenza surveillance data collections in particular results of viral swabbing of patients consulting their GP provided by the RCGP Research and Surveillance Centre to better inform on SARS-CoV-2 dynamics were also provided to SPI-M-O. Further detail on RCGP's influenza surveillance system is outlined on paragraphs 661 and 751 of this statement.
781. In July 2021, the JBC took responsibility from SPI-M-O for epidemic estimates including R, growth rate and modelled incidence which subsequently passed to UKHSA. UKHSA transitioned the approach previously used by SPI-M-O, with some adaptations [Exhibit: [JH2/610](#) - INQ000223964], and continued to work closely with SPI-M-O members. UKHSA provided national weekly epidemic updates including R and growth rate from the week commencing 19 July 2021, with the first combined estimates agreed at the Epidemiological Modelling Review Group (EMRG) on 21 July 2021.

782. The EMRG is a UKHSA Deputy Director led group of internal and external experts which reviews model outputs, their combination and provides a consensus view for publication. The outputs include estimates of key metrics for different geographies within the UK and are published by the four nations. Consensus statements from this group have been published every two weeks with data and publication quality control clearance through UKHSA [Exhibit: **JH2/611** - **INQ000223965**].
783. As part of this transition, UKHSA took over responsibility for producing all COVID-19 data products, including the continued provision of line list data for England. Previously, Defence Science & Technical Laboratories (DsTL, an executive agency of the Ministry of Defence) had collected aggregate data for the devolved administrations and combined these with the PHE line list data to provide relevant data products for the UK. In addition, UKHSA developed the capabilities to produce Medium-Term Projections (MTPs), on behalf of SPI-M-O. The UKHSA supplied MTPs to SPI-M-O from 1 November 2021.

#### Data Debrief Group (DDG)

784. The advice that government received on the emerging data from surveillance studies (including ONS CIS, REACT, VIVALDI and ZOE) was reviewed on a near weekly basis by the Data Debrief Group (DDG) membership comprised of experts drawn from academia, government and other organisations. The DDG was an informal group which reviewed and assisted in interpreting key COVID-19 data produced by the surveillance and immunity studies that has included prevalence/positivity nationally, by age, region, re-infections and antibody estimates. The groups Terms of Reference are exhibited [Exhibit: **JH2/612** - **INQ000223966**].
785. The collective views of the DDG members were consolidated and resulted in regular ministerial submissions which accompanied a technical COVID-19 insights report to the Secretary of State for Health and Social Care from May 2020 to May 2022. DDG submissions were only provided on an exception basis to ministers from May 2022. The COVID-19 and winter infectious disease epidemiology and healthcare pressures update was introduced at this point. The DDG submissions included COVID-19 data, members' interpretation of the data and matters for ministers' consideration. A submission from February 2022 is exhibited [Exhibit: **JH2/613** - **INQ000223967**].

## Cabinet Office (CO) (Including Taskforce and COVID-O)

786. The Cabinet Office received a range of products. This included the JSAT COVID-19 summary (from 23 August 2022, renamed the COVID-19 Situational Awareness Brief) and situational awareness summaries that were provided to the LAC Bronze/Silver/Gold meetings which the CO Taskforce and other government departments also attended. Recommendations from the LAC Gold meeting, including changes to regulations, were sent to COVID-O for discussion and ratification as appropriate before being implemented. International data and the international risk assessments developed by the JBC were shared with DHSC, CO and COVID-O to inform Ministerial decision making. The CO Taskforce also arranged Prime Ministerial dashboard meetings to brief the Prime Minister and other seniors on the latest data. The NHSTT/JBC and then UKHSA, worked closely with and supported the CO Taskforce by providing them with the data and analysis used in the dashboard meetings.
787. Details of the data provided to the CMO for each of the four nations is outlined in paragraphs 118-120 of Section 1 of this statement.

## Key data challenges

788. Key challenges during the period 1 January 2020 to 24 February 2022 in relation to data and analytics can be described in terms of: the data infrastructure available to capture and transfer data; the ability to provide access to those requiring it in an appropriate format; the size and availability of a community of technical experts; and the ability of different groups to effectively translate technical insight into policy advice.
789. The availability of linkable line list data has been widely recognised as important since the H1N1 influenza pandemic in 2009. Linkage of cases and mortality was undertaken routinely in early 2020 and expanded as more data streams became available. Wherever possible, line lists shared with SPI-M-O contained a pseudonymised identifier to enable linkage. To some degree, all these challenges were overcome within the period of Module 2's examination by the rapid deployment of substantial resources, both financial and human. More detail on this is set out chapter 5 of the Technical Report on the COVID-19 pandemic in the UK [Exhibit: JH2/614 - INQ000223968].

790. Existing data infrastructure for laboratory reporting was not sufficiently scalable nor flexible to efficiently adapt to the rapidly changing requirements of the response. This was due to the age of the system in use and the unprecedented volume of data reported. As a result, many manual workarounds were required, each of which introduced a risk of errors, additional delay and additional resource requirements.
791. There was a clear understanding of the data sources by SPI-M to inform modelling and analysis for an influenza pandemic. Please see exhibit in paragraph 650. Initial estimates of growth and severity is reliant on the availability of linked line lists of reported cases and deaths, regardless of the pandemic pathogen. Other surveillance systems had to be set up rapidly or modified. As an example, CHES provided data streams relevant to SARS-CoV-2 as they needed adaptation to report data relevant to a novel pathogen. Certain pre-existing routine mechanisms for data transfer were present in PHE, such as the rapid collation of positive laboratory test results from NHS laboratories into SGSS implemented by PHE in 2014 as a mechanism to receive positive laboratory test results for a wide range of pathogens, primarily those mandated by the Health Protection Regulations. The data reported by the laboratories was made available to modelling and analysis teams within 24 hours of the initial report.
792. Other data were not always able to flow sufficiently quickly between organisations during the early stages of the COVID-19 pandemic for a variety of reasons. These reasons included: the absence of clear incentives for different actors within the system to share data rapidly; the absence of established data sharing agreements between some organisations within the health family, and between Government and academia for many of the contributory tasks; the need, rightly, to ensure all legal and ethical issues were appropriately addressed; and the need to build (from scratch in some cases) the IT infrastructure to enable data to be transferred, curated and provided to analysts.
793. In late January and early February 2020, the modelling community within SPI-M-O were discussing the provision of data from PHE before the pandemic reached the UK. At this time, staff within the PHE Modelling Cell were using available data to inform risk assessments. As an example, in early February 2020, they modelled the outbreak on the Diamond Princess cruise ship from reported numbers of daily cases, concluding there was little evidence that the cabin isolation and other control measures put in place were effective. In mid-February, the PHE JMT sent

a note to SPI-M-O outlining the principles and process by which PHE would share data relevant to the response and management of the pandemic.

794. Data was generated by the PHE Epidemiology Cell and later the PHE Surveillance Cell and directly provided from the Modelling Cell under a Data Sharing Agreement signed by PHE and the individual academic groups from mid-March 2020, beginning with case line lists, the First Few 100 study data and the COVID deaths line list. The provision of additional relevant data products followed as these became established, such as NHS BTS, serology, CHES, the S gene Target Failure line list and the National Immunisation Management System (NIMS) COVID vaccination line lists.
795. These data sets became increasingly automated over time. Initially, data was transferred via a secure encrypted email. In August 2021, PHE data products were made available to the SPI-M-O via a Secure File Transfer Protocol (SFTP) server at Dstl. This process was finally replaced by a UKHSA SFTP server solution in February 2022 [Exhibit: JH2/615 - INQ000119496].
796. The cross-government community of epidemiologists, statisticians, data engineers, and data scientists with experience suitable for infectious disease outbreaks was not large enough at the start of the pandemic to respond to an incident of such magnitude. The intersection of people skilled in understanding infectious disease and the analysis of data generated by health and surveillance systems is naturally small both on a national and international level. Although collaboration with partners was able to mitigate the initial shortfall to some degree, the scale of core technical skills within the main health security function in government was not sufficient and led to an over dependence on the external teams and a low capacity for validating key results.
797. Within PHE, the resourcing and logistic support for the Agency's response to the pandemic was managed and coordinated by the COVID-19 Incident Management Team (IMT), which included a specific 'Logistics and Staffing Cell' that placed volunteers (both PHE employers and for the various external requests and campaigns for support from across other government departments and other appropriate organisations, such as from academia and research) to reinforce the existing PHE specialist teams working in key areas such as immunisation, reference laboratories, epidemiology, contact tracing etc. To enable the COVID-IMT to focus on the health aspects of the pandemic response, in May 2020 the

COVID-19 Business Incident Management was established and in September this included a 'People Cell' to manage requests from teams and departments for additional human resources. The staffing risks and issues with regard to PHE's national epidemiology team was regularly discussed and the minutes of the PHE COVID-19 Business IMT held on 8 June 2020 is exhibited [Exhibit: JH2/616 - INQ000223970].

798. The translation of key visualisation, analytics and modelling into evidence easily used for policy with the right response time was limited to only the essentials at the start of the pandemic. PHE had neither sufficient people nor the technical resources to develop standardised assessment products. Especially as the desirability of such standardised products in the early stages of a pandemic of a novel pathogen is highly limited in such a rapidly evolving situation.
799. There was also a lack of capacity for managing the relationships across government that were needed to allow these products to flow during the early stages of the pandemic. Some of these capacity constraints for standardised products were addressed by the establishment of the JBC.

#### **Section 6: Behavioural science, communications and guidance**

800. This section explains the role of UKHSA and its predecessor organisations, and of individuals within these organisations, in providing advice and briefings on Behavioural Science and Communications in response to COVID-19.
801. It also explains the role of UKHSA and its predecessor organisations in drafting and publishing COVID-19 guidance for the public and for professional bodies and steps taken to make guidance accessible to minority communities and vulnerable groups. It also provides detail on PHE's role in the formulation and implementation of the guidance 'COVID-19: specified countries and areas with implications for returning travellers or visitors arriving in the UK in the last 14 days', the decision to withdraw this guidance on 12 March 2020, and our understanding of any scientific advice on which this decision was based.

#### **Providing advice and briefings on behavioural science**

802. PHE's Behavioural Science Team (BST) was based in the Emergency Response Department of PHE's Health Protection and Medical Directorate. Prior to the pandemic this team was primarily an applied research and evaluation function,

with one core PHE-funded post (being the BST lead), and approximately six further full-time staff variously funded by National Institute of Health and Care Research (NIHR) Health Protection Research Units (HPRU), the European Commission (Horizon 2020 programme), DHSC and some small-scale external research and evaluation contracts. A further two to three PhD students, registered at collaborating universities, were based full-time with the team.

803. It is important to note that the term 'behavioural management' (as mentioned in the Rule 9 Request for this statement) is not understood by the BST in this context, and therefore the team did not contribute to advice and briefings on the use of 'behavioural management'. The BST's role was to provide advice and recommendations, using evidence from the behavioural and social sciences, to inform the design and delivery of public health guidance, communications and interventions. There was a separate NHSTT customer insight team operational through the later part of the testing programme. It is assumed this will be covered in later modules and is therefore not included in this section.
804. Individuals within PHE's BST contributed to the COVID-19 response primarily through providing advice to teams contributing to the PHE COVID-19 incident management, including the Communications Cell and External Guidance Cell as well as through research.
805. A member of PHE's BST was also asked to participate in SPI-B, the behavioural and social science sub-group of SAGE, as a subject matter expert rather than as a PHE representative [Exhibit: JH2/398 - INQ000223973]. Details of the schedule, frequency and topics covered in SPI-B meetings, from its first meeting on 24 February 2020, are available from the Government Office for Science (GO-Science), who provided the secretariat function for SAGE and its sub-groups.
806. From the early stages of the pandemic, three members of the PHE's BST provided support to PHE's COVID-19 response, with ad-hoc support provided by other members of the BST when required. From Autumn 2020 onwards, the team temporarily expanded with a further fifteen behavioural and social science roles, to provide support in areas of the response. This included: support to teams formulating theory-driven, evidence-informed guidance, messaging and communication strategies; providing tools and capacity for effective community engagement and rapid evaluation with regional communications and community engagement teams; supporting or leading the analysis and interpretation of

qualitative and quantitative data; rapid evidence synthesis on behavioural science-related topics; and providing access to new and emerging evidence and research data for specific issues.

807. The earliest advice the BST provided to PHE's COVID-19 response was in support of the establishment of the supported isolation facility in Arrowe Park Hospital for British nationals returning from Wuhan, China at the beginning of February 2020. The Incident Management Team (IMT) requested advice on minimising social mixing in Arrowe Park, and the BST wrote a short response to support planning at the facility [Exhibit: **JH2/618** - **INQ000223974**]. This advice was provided in the days leading up to the arrival of the first British nationals returning to the UK and formed part of a verbal briefing over the phone to staff setting up and running the site. The advice also included a rapidly written evidence review from the Emergency Preparedness and Response Health Protection Research Unit on managing the psychological impacts of quarantine [Exhibit: **JH2/619** - **INQ000223975**]. This review was subsequently published [Exhibit: **JH2/620** - **INQ000196902**].
808. As previously detailed in paragraph 514 under Section 4 of this statement, the BST also participated in setting up the NIHR-funded COVID-19 Rapid Survey of Adherence to Interventions and Responses (CORSAIR) study, which analysed population survey data collected by DHSC, starting in late January 2020 and repeated at regular weekly or bi-monthly intervals. The outputs of this project were briefing papers for DHSC, SAGE, SPI-B and others on a range of topics including the uptake of hand hygiene behaviours early in the pandemic (on 9 April 2020), knowledge of COVID-19 symptoms and behavioural intentions when ill (18 March 2020) which is exhibited at paragraph 530, and adherence to social distancing and self-isolation behaviours (3 and 7 April 2020) [Exhibit: **JH2/419** - **INQ000196809**]; [Exhibit: **JH2/417** - **INQ000196807**]; [Exhibit: **JH2/418** - **INQ000196808**].
809. From February 2020, the BST engaged directly in work with PHE's External Guidance Cell to provide behavioural science input into drafts of COVID-19 guidance. UKHSA's Behavioural Science and Insight Unit (BSIU) continues to provide support to the Guidance team and UKHSA.
810. Throughout the pandemic, the BST also supported PHE's and UKHSA's Communications Team in drafting and editing communications in line with



evidence-based best practice for public health communications. This helped to ensure that the communication of advice and guidance was clear, actionable, and contained sign-posting that would help people to adhere to it.

811. For example, PHE's BST contributed to early communication of public health guidance by working with PHE's Communications Team in drafting and editing the first Public Health England blog which provided an accessible summary on self-isolation guidance for people who were symptomatic, tested positive or were a close contact of someone with coronavirus. PHE published the blog on 20 February 2020, on its public-facing website Public Health Matters [Exhibit: JH2/403 - INQ000223499].

#### Providing advice and briefings on use of public communications

812. The Communications Teams within UKHSA and its predecessor organisations provided expert in-house advice on communicating science, evidence and data. This advice followed the principle that public health communications must be clear, accurate, timely, transparent, evidenced-based, equitable and accessible, to maintain public trust and confidence. There was a separate NHSTT Communications Team focused primarily on service delivery issues.
813. Throughout the pandemic, UKHSA and its predecessor organisations were active in communicating to the public and used a wide range of channels and functions to share information. This included the support of the PHE Communications Team (subsequently UKHSA's) to publish a high volume of quality-assured scientific evidence and data at pace to make it available to professionals and the public. PHE's website also provided a home for publishing material of other groups for example IPC guidance produced by the UK IPC cell within NHSE (as discussed further below) was located on the PHE's website.
814. As part of the work to maintain public confidence in public health communications, UKHSA and its predecessor organisations worked with a range of trusted partners including media medics and the Science Media Centre to interpret and share complex and often nuanced scientific information to help support public messaging, some of which was indirect through these partners.
815. An overview of UKHSA and its predecessor organisation's activities in communicating with the public is provided below:

- a. working reactively and proactively with media, including responding to a very high volume of enquiries from local, national and international media outlets; supporting the publication of organisational products and outputs such as data, dashboards and surveillance reports with media materials such as press releases, Q&As and blogs; and arranging a high number of media interviews and briefing spokespeople.
- b. creating and deploying social media content across a range of national social media channels including Facebook, Instagram, LinkedIn and Twitter as well as nine regional PHE Twitter accounts. These reinforced public health messaging, advice and guidance at various points throughout the pandemic and included video clips and animations as well as static content.
- c. engaging and communicating with regional and national stakeholders through webinars, regular meetings and stakeholder toolkits to inform and support them in sharing and amplifying public health messaging. National stakeholder and external affairs teams identified specific groups - such as voluntary sector and faith organisations, ethnic minority groups including BAPIO (British Association of Physicians of Indian Origin) and the BAME Health and Care Professional Network, industry partners, and directors of public health – who benefited from regular roundtable webinar discussions with PHE and NHS Test and Trace, and subsequently UKHSA, experts to hear explanations and ask questions about the science and evidence behind the current guidance and advice. When specific initiatives were launched or issues arose, such as the identification of new variants, or a change in testing policy and process, stakeholder packs were produced to provide background information and the content required to share and amplify messaging with their own audiences. PHE's nine regional communications teams also worked throughout the pandemic as part of local response structures with Local Authority and NHS communications colleagues, as well as Local Resilience Forums and other partners, to ensure that materials and messages were widely shared locally, as well as nationally.
- d. ensuring public guidance and other information was published on GOV.UK and other appropriate websites and channels, such as NHS.UK, in a timely manner.

- i. By agreement PHE published guidance and standards developed and agreed by the Four Nations IPC cell, which sat within NHS England, on GOV.UK on behalf of the Four Nations IPC cell. The cell included representation from PHE as well as the Public Health Agencies from the Devolved Administrations. PHE's role alongside the other Public Health Agencies was to provide scientific evidence and advice into the IPC Cell for consideration. The IPC cell reviewed all evidence provided and consensus guidelines were developed and, while the guidance was published by PHE on GOV.UK, the content of the guidance was the consensus IPC guidance of the Four Nations as coordinated by the Four Nations IPC Cell.
- e. developing, designing, producing and circulating the formal public information materials which were a legal requirement to be issued with each immunisation given as part of the COVID-19 vaccination programme. This included making these available in a range of languages and formats and also producing other supporting information leaflets, posters and record cards to help the public understand the vaccination programme and the science behind it and to widely publicise the programme.

816. PHE's marketing and campaigns team was seconded to the Cabinet Office COVID-19 Communications Hub, which led on the development of the Government's key campaign messages (including Stay at Home, Hands-Face-Space, and Get Boosted Now).

#### Involvement in government press conferences

- 817. Government press conferences were managed by Number 10 Press Office, who regularly asked public health experts to take part to explain COVID-19 epidemiology, advice and guidance etc.
- 818. A number of key representatives within UKHSA, and its predecessor organisations, were asked to participate in these conferences, in their professional roles, to present data and epidemiology and respond to clinical and scientific questions.
- 819. Key representatives who provided their professional expertise included Professor Susan Hopkins (PHE COVID Incident Director from January to August 2020 and Interim Chief Medical Advisor to NHS Test and Trace from September 2020),

Professor Yvonne Doyle (PHE Medical Director), Professor Kevin Fenton (PHE Regional Director for London), Professor John Newton (PHE Director of Health Improvement and national lead for testing from early April 2020 to June 2020), Baroness Dido Harding (Executive Chair of NHS Test and Trace), Professor Mary Ramsay (PHE Deputy Director of the National Infection Service, and divisional lead for Immunisation and Vaccination), General Sir Gordon Messenger (Community Testing Programme Head of Operations) and myself, Professor Dame Jenny Harries, (UKHSA Chief Executive from April 2021 and DCMO at DHSC prior to April 2021).

Accessible communications for at-risk and vulnerable groups

820. Throughout the pandemic, UKHSA and its predecessor organisations took steps to ensure that public messaging was accessible to at risk and vulnerable groups. These steps included the following activities (with illustrative examples attached as exhibits):
- a. Undertaking a wide range of regular qualitative and quantitative insight and evaluation activities within PHE and NHS Test and Trace and more widely across Government. This Information was used to develop and improve messaging and materials and identify other formats, channels and ways of reaching particular groups which would help to get messages to them. For example, this June 2020 Rapid Investigation Report on Leicester consider communications issues in Annex 3 [Exhibit: **JH2/621** - **INQ000223978**].
  - b. Working with Local Authorities, to tap into their expert knowledge on how to best communicate with local populations [Exhibit: **JH2/622** - **INQ000223979**] and, through them, to reach out to other local partners in appropriate ways. UKHSA's predecessor organisations worked through locally-based colleagues to access services available from Local Authorities, including the translation of materials [Exhibit: **JH2/623** - **INQ000223980**] and to gain insights and understanding on the particular communication needs of their populations. They also worked with Local Authorities to provide support with public health messaging in communications materials produced by community groups [Exhibit: **JH2/624** - **INQ000223981**]; [Exhibit: **JH2/625** - **INQ000223982**] to help ensure communities could access information in the way most appropriate to them and their particular needs.

- c. Regular webinars were held with bodies representing some of the most adversely affected and under-represented communities including disabled people, older people, people who are clinically at risk, young people, ethnic minorities, those at social risk, travellers, workplace, and pregnant women. Nineteen webinars were held in total across four themes: 1) Coming out of lockdown 2) Keeping communities safe during winter 3) Living with COVID-19 and 4) Enhanced Response Areas [Exhibit: JH2/626 - INQ000223983]; [Exhibit: JH2/627 - INQ000223984]; [Exhibit: JH2/628 - INQ000223985]; [Exhibit: JH2/629 - INQ000223986].
- d. Working with a wide range of Other Government Departments (OGDs) and organisations, providing support with public health messaging for at-risk and vulnerable groups. For example:
- i. PHE worked with a cross-government Diversity and Inclusion Communications Group, led by the Cabinet Office, and with other partners to develop communications for ethnic minority communities that were shared through partner channels [Exhibit: JH2/630 - INQ000223987]; [Exhibit: JH2/631 - INQ000223988].
  - ii. PHE, and later UKHSA, led a working group with university stakeholders to reach students with public health messaging which included advice on mental health during the pandemic. [Exhibit: JH2/632 - INQ000223989]. PHE and UKHSA provided support to the Department for Education with public health messaging to reach families to support the return to education settings [Exhibit: JH2/633 - INQ000223990]; [Exhibit: JH2/634 - INQ000223991].
  - iii. PHE worked with the Royal College of Obstetricians and Gynaecologists and the Royal College of Midwives to reach pregnant women with messaging to take up the offer of the COVID-19 vaccine [Exhibit: JH2/635 - INQ000223992].
  - iv. During the heat-health alert period in June 2020, PHE worked with partners to share public health messaging on the concurrent risks of COVID-19 and heat particularly for people shielding and other vulnerable groups. [Exhibit: JH2/636 - INQ000223993]; [Exhibit: JH2/637 - INQ000223994] PHE engaged with Local Authority leaders on winter advice, including around shielding during

winter. From February 2022, UKHSA and DHSC worked on communications for the national Enhanced Protection Programme (EPP) which coordinated activities across vaccines, antivirals and therapeutics and provides patients, clinicians and other stakeholders with clear advice and signposting on who continued to be a higher risk and who was eligible for interventions.

- e. Regular briefings of community groups took place at national level to ensure they were apprised of the latest COVID-19 policies, data and public advice and guidance. This included 'listening hours' sessions run with priority stakeholder groups to listen to concerns around the impact of COVID-19 and ideas on how to better meet the needs of their communities. Advice and guidance was also cascaded through this route so that local population groups were hearing from a local trusted source as well as from a national Government organisation. From December 2020 to January 2021, twenty-one listening sessions were held with over 300 representatives involving under-represented groups and minority communities in England [Exhibit: JH2/638 - INQ000223995].
- f. Public Advisory Group (PAG) sessions held in June 2021 [Exhibit: JH2/639 - INQ000223996], focus groups held in August 2021 [Exhibit: JH2/640 - INQ000223997], and Policy Team engagement with faith communities from November to December 2021 [Exhibit: JH2/641 - INQ000223998] proved very useful in capturing detailed feedback and suggestions for working with disproportionately impacted groups. This feedback was then used to review and update existing materials and produce different formats, such as audio recordings or easy-read versions as groups indicated would be helpful to people with a range of communication needs in accessing information about current advice and guidance and about accessing testing programmes and other services.
- g. Communications Teams in UKHSA, and its predecessor organisations, also supported wider work to address health inequalities. For example, UKHSA's Communications Team worked with partners such as the RNIB, the Macular Society, Thomas Picklington Trust, Visionary and the Torch Trust to improve testing accessibility for people who are blind or partially sighted. This included gathering feedback on the testing process, (packaging, instructions, etc.) and issuing communications on an app and video call support service to help

partially sighted people to take lateral flow tests at home [Exhibit: JH2/642]  
- INQ000223999].

#### The success of public messaging

821. Communications teams in UKHSA and its predecessor organisations had access to Government focus group research findings, polling and other insight data which looked at public health messaging. PHE's BST contributed to some of this research, including the exhibited examples [Exhibit: JH2/643] - INQ000224000]. In addition, PHE's BST also provided access to open-access published insights through its Behavioural Science Weekly Literature Reports [Exhibit: JH2/644] - INQ000224001]. This range of research and resources available from across government during the pandemic provided a picture of the high levels of awareness of public understanding of the public health messages and the public's compliance to the advice and guidance.

#### COVID-19 guidance for the public and professional bodies

822. Guidance teams in UKHSA and its predecessor organisations were involved in the drafting and publication of the government's COVID-19 guidance, and were consulted for advice on guidance produced by a number of OGDs that was ultimately owned by those departments.
823. At the start of the pandemic, in PHE, COVID-19 guidance was drafted and published by the Clinical and External Guidance Cells set up in January and February 2020 respectively and these merged to become the Advice and Guidance team in September 2020. An overarching function for PHE's Advice and Guidance team, Behavioural Science, Modelling, Rapid Evidence Service and Senior Medical Advisors and Senior Public Health Advisors (PHAGE) was stood up on 19 October 2020. PHAGE aimed to maximise the expertise of the different specialist teams, ensuring public health outputs were evidence-based, aligned, and consistent.
824. The Public Health Advice, Guidance and Expertise team (PHAGE) published guidance documents on GOV.UK for the public, for clinical audiences and for specific settings. Between September 2020 and December 2022, the team alone produced over 60 separate detailed evidence-based guidance documents, in addition to those produced by OGDs. PHAGE also published the UK Infection

Prevention and Control (IPC) guidance on behalf of the Four Nations IPC cell (see paragraph 810(d)(i) above).

825. Initial IPC guidance for novel coronavirus was developed by PHE based on guidance for MERS-CoV. The guidance was published by PHE on 10 January 2020 [Exhibit: **JH2/401** - INQ000101202]. DCMO Jonathan Van-Tam commissioned the pandemic influenza IPC guidance from NERVTAG, which began meeting from 13 January 2020. NERVTAG worked with PHE on the guidance which was reviewed, finalised and approved by the DCMO Jonathan Van-Tam. On 5 February 2020, the Four Nations IPC Cell, led by NHS England with the Chief Nursing Officer for England Ruth May as SRO, was established. IPC guidance was produced by the cell with representation from NHS and the four nation's public health bodies [Exhibits: **JH2/646** - INQ000224002]; [Exhibit: **JH2/647** - INQ000224003].
826. Commissions for new COVID-19 guidance were agreed through PHE or UKHSA's Incident Director and were received directly from the CMO or OGDs, or internally within PHE, to respond to an emerging need.
827. PHE published guidance on a wide range of topics including in relation to specific vulnerable groups such as people who use drug, rough sleepers, and people in prisons and other places of detention:
- a. Drug and alcohol guidance, [Exhibit: **JH2/648** - INQ000224005] first version [Exhibit: **JH2/649** - INQ000224006].
  - b. Hostels for those who are homeless and rough sleeping, [Exhibit: **JH2/650** - INQ000224007] first version [Exhibit: **JH2/651** - INQ000224008].
  - c. Prisons and places of detention [Exhibit: **JH2/652** - INQ000224009].
828. Guidance in the early stages of the pandemic, and subsequently where time allowed, was reviewed by the BST and Communications Teams. This provided feedback on how the guidance communicated risk and how to communicate recommended behaviours in a way that would support readers to take action and minimise potential barriers to uptake. Additional feedback was typically provided on clarity of communication, use of lay language, and structure.



829. In the early months of the pandemic, guidance for the public and non-clinical settings was cleared through the Incident Director, PHE's Medical Director [who was also the COVID-19 Strategic Director and subsequently the Senior Responsible Officer for COVID -19 in PHE] and Department of Health and Social Care and No. 10 [Exhibit: JH2/653 - INQ000224010]. Initially, clinical guidance was cleared through the Incident Director with wider input provided from PHE, NHSE/I, DHSC, CMO and DCMOs, and Devolved Administrations, where requested.
830. From 25 May 2020, the cross-government Triple Lock clearance process was introduced so that all government guidance relating to public health was cleared through PHE, OCMO, the Government Digital Service and No.10 in a process coordinated by the Cabinet Office Guidance Coordination team [Exhibit: JH2/654 - INQ000224011]; [Exhibit: JH2/655 - INQ000224012].
831. PHE and UKHSA published a large volume of advice and guidance during the COVID-19 incident response. This was produced by different teams and not held in one central repository. The two documents attached are intended to be as complete lists as possible but may not be exhaustive. The first document lists guidance that was drafted by or with the External Guidance team or the Advice and Guidance team and published by PHE/UKHSA. The second document lists guidance that was drafted by other teams, including the Clinical cell. [Exhibit: JH2/656 - INQ000224019] [Exhibit: JH2/657 - INQ000224020]. In addition to published national guidance, representatives from UKHSA's predecessor organisations contributed to local advice particularly working with Directors of Public Health to support public and professional communications.

Accessible COVID-19 guidance for minority communities and vulnerable groups

832. UKHSA and its predecessor organisations took a range of steps to make guidance widely accessible to the public including to minority communities and vulnerable groups.
833. From March 2020, the External Guidance Cell, and subsequently its successor in PHAGE, commissioned translations of COVID-19 guidance for the general public into the ten most spoken languages after English.

834. Where time allowed, COVID-19 guidance was subject to review by panels of members of the public. For example, in April 2020 a revision to self-isolation guidance was reviewed in online groups of people who were following guidance on shielding or caring for or had a family member or friend who was following the guidance on shielding. Participants were identified and recruited by Imperial College London (using established mechanisms provided by the NIHR Health Protection Research Unit in Modelling Methodologies). The groups took place on 30 April 2020, and the main insight report for this work is published online [Exhibit: [JH2/658](#) - INQ000224021]. This session was facilitated by both representatives from Imperial College London and PHE's BST.
835. In April 2021 PHAGE established an expert stakeholder group with membership from voluntary and community sector organisations as well as NHS and DHSC to advise on how to ensure that COVID-19 guidance was tailored to address the needs of people who experience health and social inequalities.
836. In the early pandemic response phase, there was a need to provide and update guidance at pace and scale whilst still maximising compliance with, and contributions to, improving health inequalities and the recognised public sector equality duty (PSED). In May 2021 PHE's IMT formally approved a new systematic approach developed by PHAGE to improve the coordination and quality of guidance. The PHAGE team subsequently reviewed all guidance documents against PSED and Health Inequalities Assessment checklists which were approved by PHE's Legal Team such as the Stay at Home guidance checklists exhibited [Exhibit: [JH2/659](#) - INQ000224022].

COVID-19 guidance: specified countries and areas with implications for returning travellers or visitors arriving in the UK in the last 14 days.

837. PHE also liaised with SAGE SPI-M on the scientific, epidemiological basis for which recommendations on public health interventions for travellers returning from particular countries might be appropriately and proportionately based. Based on these discussions PHE drafted the guidance Covid-19: specified countries and areas with implications for returning travellers or visitors arriving in the UK in the last 14 days. This was approved by the CMO and published on 25 February 2020. [Exhibit: [JH2/660](#) - INQ000224023]. The guidance set out interventions for two different risk groups and was updated regularly in context of the rapidly developing situation.

838. On the 12 March 2020, and with increasing community transmission, the Government announced that the targeted testing of returning travellers would cease and Stay at Home guidance for anyone with COVID-19 symptoms (fever or cough) was published. Stay at Home guidance was approved by DHSC, CMO and Cabinet Office and published by PHE.
839. Therefore, guidance for returning travellers from particular countries and areas, and testing and tracing in the community, was withdrawn and superseded with revised guidance in the context of a rapidly developing pandemic.

I believe that the facts stated in this witness statement are true. I understand that proceedings for contempt of court 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 in its truth.

Signed:

**Personal Data**

Dated: 22 August 2023

## Annex A

### Health Inequalities and COVID-19 Disparities Data

Information on Health Inequalities and COVID-19 Disparities Data has been provided in Section 9 of UKHSA's witness statement for Module 1 of the Inquiry dated 14 April 2023. At the request of the Inquiry, it is repeated here.

570. In this section, I:
- a. briefly describe PHE's health inequalities duties
  - b. describe how PHE fulfilled its roles and responsibilities to address health inequalities in emergency planning and risk assessments, in relation to pandemics such as COVID-19, up to 21 January 2020.
  - c. describe action taken by PHE in relation to health inequalities related to COVID-19 up to 21 January 2020.
  - d. summarise the findings of key health inequalities publications PHE contributed to throughout the pandemic until the point PHE was abolished.
  - e. exhibit analysis describing data on deaths from COVID-19 with inequalities breakdowns and describing the way in which our understanding of reported inequalities changed throughout the course of the pandemic.
571. This is not a comprehensive description of the wider work on health inequalities delivered by PHE prior to the pandemic, nor comprehensive of other work related to health inequalities conducted throughout the pandemic as I understand this will be considered in more detail in subsequent modules.

### Health Inequalities Duties

572. In addition to PHE's duty to reduce health inequalities in accordance with the Health and Social Care Act 2012 and the Equality Act 2010 as set out in section 2, PHE was also bound by, and delivered in accordance with, the Public Services (Social Value) Act 2013 and the Accessible Information Standard.
573. In September 2019, PHE published its forward look Infectious Diseases Strategy 2020 to 2025 this is at [Exhibit: JH1/044 - INQ000090352]. In it, health inequalities were highlighted as a strategic priority. It highlighted that many

pathogens disproportionately affect groups already experiencing health inequalities, including the homeless. It highlighted that it would draw on PHE's experience working on health inequalities with noncommunicable diseases and continue to develop PHE's capability in behavioural science techniques. "Through Strategic priority 6, we will turn our attention to the infectious diseases burden associated with health inequalities, building evidence through research to characterise specific areas and develop strategies to reduce their impact on health."

#### Health Inequalities in Risk Assessments

574. This section describes how health inequalities were considered as part of the risk assessment processes that PHE fed into, with a particular focus on risk assessments concerned with infectious diseases.
575. As discussed in Section 5 of UKHSA's witness statement for Module 1 of the Inquiry dated 14 April 2023, PHE contributed specialist technical advice into the Cabinet Office's National Risk Register (NRR) when requested to do so. This included advice on health inequalities.
576. As discussed in Section 5 of UKHSA's witness statement for Module 1 of the Inquiry dated 14 April 2023, PHE supported the development of Local Resilience Forum Community Risk Registers. These included a vulnerability assessment considering emerging infectious diseases, hazards and threats relating to local areas and taking into account that the impact of any response or threat will differ depending on population demographics, the prevalence of underlying health conditions and chronic disease, and the environment in which people and communities live and work.
577. As I also describe in Section 5 of UKHSA's witness statement for Module 1 of the Inquiry dated 14 April 2023, in line with the PHE NIERP [Exhibit: JH1/090] - INQ000090416], when an incident is stood up a dynamic risk assessment (DRA) is completed in the initial alerting phase. The extant DRA methodology in 2020 included an assessment against five core criteria:

**Severity:** Dynamically assessed risk of the degree of foreseeable harm that may be caused to: individuals; the population or; disruption to PHE's operating capability and possible issues with recovery.

**Confidence:** Knowledge, derived from all sources of information that confirm the existence and nature of the threat and the routes by which it can affect the population or PHE.

**Spread:** The size of the actual and potentially affected population.

**Interventions:** The availability and feasibility of interventions to alter the course and influence the outcome of the event.

**Context:** The broad environment, including media interest, public concern and attitudes, expectations, pressures, strength of professional knowledge and external factors including political decisions.

578. While health inequalities were not explicit in the extant guidance in early 2020, specific variables were included within the demographics to understand who in the population was affected. The DRA also included collected, analysed and published information on age, ethnicity, pregnancy and underlying health conditions, including data collected as part of previous FF100 studies where relevant, in order to ensure that interventions were developed for the population affected. Data on sexuality and other factors would also be collected if considered important for the threat including its mitigation and management.
579. While the implications of the incident on those people with protected characteristics (as defined by the Equality Act 2010 these are; age, disability, gender reassignment, marriage and civil partnership, pregnancy and maternity, race, religion and belief, sex, and sexual orientation) and those subject to health inequalities were included in each assessment the UKHSA DRA, updated since the start of the pandemic, is now directed to explicitly consider such parameters. This informs UKHSA's response levels as well as any impact on the wider population.
580. Risk assessments (see Section 5 of UKHSA's witness statement for Module 1 of the Inquiry dated 14 April 2023), which considered data on identified populations at risk, including those relating to health inequalities, were shared with the relevant advisory groups and government departments.

#### Health Inequalities in Emergency Planning

581. This section describes how health inequalities were considered as part of the emergency plans that PHE developed and implemented, with a particular focus on plans concerned with infectious diseases.
582. PHE's primary relevant emergency planning documents as discussed in Section 5 of UKHSA's witness statement for Module 1 of the Inquiry dated 14 April 2023, are the NIERP [Exhibit: **JH1/090**] - **INQ000090416**] and the Pandemic Influenza Plan (2014) [Exhibit: **JH1/070**] - **INQ000090387**]. The NIERP is an all-hazards plan that describes how PHE stands up its incident response, which includes the requirement to conduct a DRA as discussed previously in this section. The Pandemic Influenza Plan (2014) defines the public health activities in each phase of an influenza pandemic, which includes conducting the FF100 protocol.
583. As mentioned in Sections 4 and 8 of UKHSA's witness statement for Module 1 of the Inquiry dated 14 April 2023, PHE published a protocol called the First Few Hundred (FF100) which was ready to deploy for new and emerging infections, including pandemics. This was applied routinely for surveillance of novel respiratory viruses, and specifically in the case of COVID-19, collected data on demographics, ethnicity, country of birth, and pre-existing health conditions to obtain an understanding of those in the population who had been infected by COVID-19. I have exhibited versions of the protocol utilised for avian influenza [Exhibit: **JH1/203**] - **INQ000101197**] and for MERS-CoV [Exhibit: **JH1/203a**] - **INQ000148391**].
584. The FF100 has been deployed on a number of occasions, including as part of the 2009 influenza pandemic, to examine the prevalence of underlying medical conditions amongst cases compared to the general population, alongside demographics and access to antivirals. Pandemic (H1N1) 2009 influenza in the UK: clinical and epidemiological findings from the first few hundred (FF100) cases. McLean et al (2010) [Exhibit: **JH1/213**] - **INQ000101211**].
585. As data became available in the 2009 H1N1 pandemic, the HPA produced and disseminated analysis on:
- a. risk of death from influenza in the first 12 months of the pandemic amongst people with different medical conditions and compared the risk of death

between the over 65s and those younger. *Pandemic Influenza A (H1N1) 2009 and mortality in the United Kingdom: risk factors for death, April 2009 to March 2010*. Pebody et al. (2010). [Exhibit: JH1/214 - INQ000101212]

- b. risk of death by ethnicity and deprivation due to the pandemic. *Ethnicity, deprivation and mortality due to 2009 pandemic influenza A (H1N1) in England during the 2009/2010 pandemic and the first post-pandemic season*. Zhao et al (2015). [Exhibit: JH1/215 - INQ000101213]
- c. data on deaths, including by age, sex and prior medical conditions/health, with the CMO. *Donaldson et al (2009)*. [Exhibit: JH1/216 - INQ000101214]

586. Beyond these published plans, PHE conducted other relevant work projects that had a bearing on Health Inequalities in preparation for pandemics. I provide two examples here:

Improving communication with the public about antivirals and vaccination during the next pandemic

587. Between 2013-2015, the PHE Behavioural Science Team, that sat within ERD, in collaboration with King's College London and other academic partners, led the DHSC Policy Research Programme-funded INfluENCE project, titled, "Improving communication with the public about antivirals and vaccination during the next pandemic". Across five work packages, the project sought to identify ways of communicating better with the public about vaccination and antivirals during a future pandemic. The project concluded and reported to DHSC on 16th October 2015. A number of the project outputs have been published in peer-reviewed academic journals to be accessible nationally and internationally. An end of INfluENCE project event brought together stakeholders from across government to hear the outcomes of the project and their implications and applicability for future work. The project outputs were shared with the funder the DH Policy Research Programme in final reports, for review and dissemination within their networks.

Health Inequalities and Public Health Risk, Guidance and Information Communications

588. PHE developed a Publications Standard in January 2016 which covered both professional and public-facing materials. It aimed to ensure all content was produced to a high quality, and in a consistent and evidence-based way.



589. Along with other standards listed, the standards stated that publications must meet the known needs of stakeholders.
590. In line with those standards, prior to the pandemic, PHE aimed to ensure commissioners, providers, and relevant healthcare professionals had access to the necessary resources in order to communicate public health information to patients and the public including a wide range of groups in the population.
591. In particular, a range of information leaflets and promotional materials about the different vaccination programmes were available online, co-branded with the NHS and included HTML, translations in a range of languages, easy read for people with a learning disability, simple text for low literacy and braille, BSL, large print and audio versions of guidance for parents.
592. PHE provided patient facing leaflets written in plain English to a reading age of 7-11 years and resources were often translated into the most common languages in the UK. For example, related to measles, mumps and rubella vaccination, PHE had published a leaflet in plain English and translated it into Bengali, Polish, Romanian, Somali, Ukrainian and Yoruba for download. The resources were available on GOV.UK (MMR for all general leaflet), and information was cascaded to NHS and local authority staff for them to use for patient and public interactions.
593. PHE also worked with stakeholders, to produce a range of tailored resources for prisons, migrants, people who inject drugs (PWIDs), Gypsy Roma and Traveller groups, to make sure that each community had suitable resources and could be encouraged to take up the offer of vaccines. Resources that were co-produced with stakeholders were distributed through their networks and on their channels and the publications PHE produced can be found on the PHE Health Publications website, on GOV.UK and on the PHE Campaign Resource Centre (CRC). These were particularly welcomed by Directors of Public Health.
594. PHE worked with the NHS to prioritise other groups with disparities and improve vaccine uptake an example of this is within the 2014/15 PHE Winter Flu Plan [Exhibit: JH1/217 - INQ000101215] requesting that GP practices and other immunisation providers 'prioritise the improvement of vaccine uptake' among people with learning disabilities as well as other clinically vulnerable groups.

### Addressing Inequalities in the National Immunisation Programme

595. PHE developed a strategy, conducted a health equity audit and a template for a local action plan for addressing inequalities in the national immunisation programme in 2019. Due to COVID-19 pandemic work pressures, this publication was delayed until February 2021. [Exhibit: JH1/218 INQ000101216].

### Work conducted by 21 January 2020 by PHE to reduce Health Inequalities as a consequence of COVID-19

#### Advising on the prioritisation of routine Vaccinations and Immunisations

596. It was understood prior to 2020 that during a pandemic routine primary care services such as general practice could potentially be overwhelmed by clinical demands as there was a risk of serious outcomes such as critical care admissions and death related to secondary bacterial pneumonias. In addition, primary care staffing itself would be depleted due to pandemic illness among health professionals. There would therefore be potential for the delivery of routine immunisation programmes to be adversely affected during a pandemic. The scale of this disruption would be dependent on the clinical severity of the pandemic and the age groups affected.
597. However, disruption to coverage for non-pandemic vaccination programmes, such as childhood vaccinations, would risk co-circulation of other vaccine-preventable infections, with the possibility of outbreaks, and hospitalisation. As influenza predisposes to secondary bacterial infections, it was considered particularly important to preserve programmes that provide both direct and indirect protection against such infections - this would include vaccines against pneumococcal infection, meningococcal infection and haemophilus influenzae. If approached, PHE would therefore have recommended to DHSC that continuation of most existing vaccination programmes would be desirable to avoid additional strains on health services and public health agencies at a time of historic peak activity.
598. As such, and given that as of the 21 January 2020 there were no confirmed cases of COVID-19 in the UK, PHE had not provided any advice in relation to pausing or continuing vaccination programmes.
599. During the early stages of, and throughout, the pandemic the PHE Immunisation team continued to work with the NHS to ensure that routine immunisation coverage

was maintained. Further information on this work can be provided in subsequent modules.

#### Pausing young person and adult screening programmes, continuing antenatal and newborn screening programmes

600. Given that at the 21 January 2020 there were no confirmed cases of COVID-19 in the UK, PHE had not provided any advice in relation to pausing or continuing screening programmes as a result of COVID-19. However, there is a well-developed and used-in-practice process by which screening can be paused as a result of quality concerns [Exhibit: **JH1/219**] INQ000101217].

601. In March 2020 PHE supported NHSE&I in making a decision about pausing some aspects of some national screening programmes. It also provided advice on the issue to the CMO and ministers. These programmes were commissioned by NHSE&I under a statutory delegation from the Secretary of State. Further information on this work can be provided in subsequent modules.

#### Mapping evidence of Mental Health Impacts of COVID-19

602. Given that at the 21 January 2020 there were no confirmed cases of COVID-19 in the UK, PHE did not have data to conduct analysis on the mental health impacts of COVID-19.

#### Highlighting Health Inequalities - Summaries of key PHE Health Inequalities publications

603. Given that as of the 21 January 2020 there were no confirmed cases of COVID-19 in the UK, PHE did not have data to conduct analysis on the impacts of COVID-19 on different groups. However, the Inquiry has asked for a summary of PHE publications that identified and highlighted health inequalities during the pandemic, outside the relevant period of Module 1.

604. Specifically, the Inquiry has requested a summary of the findings of 3 publications as follows, 1) Disparities in the risks and outcomes of COVID-19 (June 2020) [Exhibit: **JH1/220**] - INQ000101218] 2) Beyond the data: Understanding the impact of COVID-19 on BAME groups (June 2020) [Exhibit: **JH1/221**] - INQ000106482 and 3) Analysis of the relationship between pre-existing conditions,

ethnicity and COVID-19 (December 2020). The summaries are provided towards the end of this section.

605. In addition, I have also provided summaries of the following:
- a. Review of the available data on the deaths of people with learning disabilities in England during the COVID-19 pandemic (November 2020) [Exhibit: JH1/222 - INQ000101220]
  - b. COVID-19 Health Inequalities Monitoring Tool for England (CHIME) tool, (launched May 2021) available on the government website [Exhibit: JH1/222a - INQ000148395]
  - c. Wider Impacts of COVID-19 on Health (WICH) [Exhibit: JH1/222b - INQ000148396]
  - d. Excess mortality in England and English Regions [Exhibit: JH1/222c - INQ000148397]
  - e. Health profile for England 2021

PHE's 'Disparities in the risks and outcomes of COVID-19'

606. This report [Exhibit: JH1/220 - INQ0001012118] was an early descriptive review of surveillance data on disparities in the risk and outcomes from COVID-19. It presented findings based on surveillance data available to PHE at the time of its publication in June 2020, including through linkage between health data sets. The review looked at different factors including age and sex, where people live, deprivation, ethnicity, people's occupation and care home residence.
607. The review confirmed that the impact of COVID-19 replicated existing health inequalities and, in some cases, increased them. These results improved our understanding of the pandemic and formulating the future public health response to it.
608. The review also stated that "The largest disparity found was by age. Among people already diagnosed with COVID-19, people who were 80 or older were seventy times more likely to die than those under 40. Risk of dying among those diagnosed with COVID-19 was also higher in males than females; higher in those living in the more deprived areas than those living in the least deprived; and higher in those in Black, Asian and Minority Ethnic (BAME) groups than in White ethnic groups.

These inequalities largely replicate existing inequalities in mortality rates in previous years, except for BAME groups, as mortality was previously higher in White ethnic groups. These analyses take into account age, sex, deprivation, region and ethnicity, but they do not take into account the existence of comorbidities, which are strongly associated with the risk of death from COVID-19 and are likely to explain some of the differences”.

#### Beyond the Data: Understanding the Impact of COVID-19 on BAME Communities

609. The Disparities report was accompanied by this report commissioned by the Chief Medical Officer. [Exhibit: JH1/221 – INQ000106482] This report was described as “a descriptive summary of stakeholder insights into the factors that may be influencing the impact of COVID-19 on BAME communities and strategies for addressing inequalities”. The report included a literature review. The executive summary highlights the findings from the literature review, the themes emerging from the stakeholder sessions and provides seven recommendations. The PHE CEO wrote a letter to the Equalities Ministers highlighting the findings along with the recommendations from the report.

#### Analysis of the relationship between pre-existing conditions, ethnicity and COVID-19

610. The Race Disparity Unit in the Cabinet Office commissioned this report [Exhibit: JH1/223 – INQ000101221] to determine whether a high prevalence of pre-existing health conditions was a contributory factor to poor outcomes from COVID-19 in some ethnic groups. The report was published in December 2020. This report concluded that, in the first wave of the COVID-19 pandemic in England, ethnic inequalities in survival following diagnosis of COVID-19 were not explained by differences in pre-existing health conditions between ethnic groups. However pre-existing conditions were defined as those with a hospital admission related to their condition in the previous 5 years and the study therefore excluded individuals who were routinely only attending primary care.

#### Deaths of people identified as having learning disabilities with COVID-19 in England in the Spring of 2020

611. DHSC commissioned PHE to review the available data on the deaths of people with learning disabilities in England during the COVID-19 pandemic. The report [Exhibit: JH1/222 – INQ000101220] was published in November 2020 and

included possible (ie unconfirmed) COVID-19 related deaths. Using extrapolated data it found that between 21 March and 5 June 2020, people registered as having a learning disability had a death rate involving COVID-19 4.1 times higher than the general population after adjusting for other factors such as age and sex. However, as not all deaths in people with learning difficulties are registered on the available databases, it is estimated the real rate may have been as high as 6.3 times higher. This study was unable to differentiate risk between underlying cohorts already known to have higher mortality rates, for example those with Downs Syndrome.

#### The COVID-19 Health Inequalities Monitoring Tool for England (CHIME) tool

612. This tool was an interactive data display tool developed by PHE to build on the Review of disparities in the risks and outcomes of COVID-19 by providing monthly analysis. It was launched in May 2021 with indicators for deaths involving COVID-19 and hospital admissions where COVID-19 was the primary reason for admission and focussed on inequality breakdowns by age, sex, ethnic group, level of deprivation and region. This tool continued to be developed and was transferred to OHID in October 2021. It is available to view on the government website.

#### Wider Impacts of COVID-19 on Health (WICH)

613. The Wider Impacts of COVID-19 on Health (WICH) monitoring tool was launched in July 2020. This data tool provided a wide range of metrics to consider their possible interaction in relation to wider impacts of the COVID-19 pandemic on health and health inequalities. For example, it includes information on associations which may represent impact on behaviours such as smoking, drinking, gambling and physical activity by a range of factors such as age, sex, ethnicity and disability. It also included information on health service use and the social determinants of health such as employment. Responsibility for publishing WICH transferred to OHID on 1 October 2021. The WICH tool is available to view on the government website.

#### Excess mortality in England and English regions

614. Monitoring excess deaths provides the most comprehensive overview of the impact of the pandemic on mortality. Excess deaths are the number of deaths over and above what would be expected, based on trends in previous years. Because

monitoring excess deaths captures deaths from all causes not just COVID-19 it gives us an idea of both the direct and indirect impact of the pandemic.

615. These reports were updated weekly on GOV.UK, and therefore I have only exhibited the most recent report as of 16 March 2023 [Exhibit: JH1/223a – INQ000148398] They present all cause excess deaths by age, sex, region, local authority, deprivation and ethnicity. They were produced weekly from July 2020 until May 2022 and are now produced monthly. Responsibility for producing the reports transferred to OHID on 1 October 2021.
616. Between 21 March 2020 and 1 October 2021, deaths were 1.13 times higher than expected across England, based on data from the nearest five year period before the pandemic, 2015 to 2019. Deaths were higher than expected in all age groups over 25, but were highest in those aged 50-64, 1.19 times higher than expected. Deaths were particularly higher than expected in those who live in deprived areas (1.17 times higher) and in the Black and Asian population (more than 1.4 times higher), reflecting the disproportionate impact of the pandemic on these groups.

#### Health Profile for England 2021

617. The 2021 edition of the Health Profile for England, published in September 2021 [Exhibit: JH1/224 – INQ000101222], provided a comprehensive overview of the health of people in England and updated indicators presented in previous reports. It also contains a summary of the wider impact of the COVID-19 pandemic on many aspects of health and health inequalities. In addition, the report makes comparisons with health in a selection of other countries (US, Canada, Japan, France, Italy, Germany, Spain, Poland) where possible.

#### Deaths from COVID-19 with inequality breakdowns

618. Over the course of the pandemic, there were marked differences in COVID-19 deaths by age, sex, ethnicity, and deprivation. These disparities were observed consistently throughout the pandemic. Older adults were disproportionately affected by COVID-19 deaths: 92% of deaths were in people aged 60 and over; and over half (58%) were aged 80 or older. Men were at greater risk of COVID-19 death, particularly during the first wave when the age-standardised mortality rate for men was double that of women.

619. By ethnicity, while people of white ethnicity comprised 84% of COVID-19 deaths, after age-standardising within the population, COVID-19 mortality rates were highest in non-white ethnic groups; particularly in Black, Asian and Other ethnic groups. Likewise, there was a clear difference by deprivation, with age-adjusted death rates being highest in the most deprived quintile of areas.
620. Some disparities were passing, such as differences in COVID-19 mortality by region and population density. For example, the most notable regional difference in COVID-19 deaths was in London during the first wave, with almost double the age-standardised mortality rate observed in other regions. Likewise, in the first wave there was a clear relationship with higher mortality rates in areas with higher population density. However, after the first wave, trends by region and population density became less clear as COVID-19 spread through different geographies. Please see [Exhibit: **JH1/225** – INQ000101223], for more detailed information.

#### Changing Trends in COVID-19 cases and deaths

621. Trends in COVID-19 cases and deaths varied significantly over the course of the pandemic. It is important to note that changes in testing practice and policy influenced case ascertainment, particularly in the period before April 2020 and after March 2022 when widespread community-based testing was not available. This means case data may not be representative of all infections during this time, and caution in interpretation is warranted.
622. Given these caveats, differences were seen in cases by age group. During the first wave, confirmed cases were highest in oldest ages because health outcomes of infection was more severe and testing was available in hospitals and care homes to detect and treat the cases. This likely masked significant transmission in younger ages due to lack of testing to detect the cases. After the first wave, case rates in the rest of 2020 and in spring 2021 remained lowest in the youngest and oldest age groups, as cases were largely driven by working age population age 20-60. From summer 2021 until the end of the year, the trends were highest among children and young people and younger adults; in autumn of 2021 case rates were highest in 1019-year-olds. Case rates remained lowest in the oldest ages (80+), likely due to success of vaccination programme (with very high uptake) and non-pharmaceutical interventions and risk messaging for these groups.



623. Age-standardised case rates were highest among women, with the exception of July 2021 when cases were briefly higher for males. By ethnicity, trends in cases varied over the course of the pandemic: in 2020 age-standardised case rates were highest in non-white ethnic groups, but thereafter trends were less clear with highest rates occurring among different ethnic groups at different time points. The same is true for difference in cases by deprivation and population density: initially more deprived, more densely populated areas were disproportionately affected but this trend became less clear after 2020 as COVID-19 spread through different geographies. In addition, uptake of interventions to mitigate serious outcomes and death similarly showed differential and persistent ethnicity patterns, with vaccination rates continuing to remain lower in Pakistani populations and in the black ethnic group as a whole.
624. As described in previous paragraphs, disparities in COVID-19 mortality (less impacted by testing practice) were clear and consistent for people of older age, males, people of non-white ethnicity and people living in most deprived areas. Whereas disparities in COVID-19 mortality by region and population density were observed more clearly in the first wave when more deprived, more densely populated areas were disproportionately affected by COVID-19 deaths. Please see [Exhibit: [JH1/225](#) – INQ000101223], for more detailed information. However, after the first wave, trends in COVID-19 mortality by region and population density became less clear as COVID-19 spread through different geographies. Please see the attached report for more detailed information

Additional data on COVID-19 Published by PHE

625. PHE also published regular data outputs, which included breakdowns down by demographics, on GOV.UK: the COVID-19 Dashboard and the National Flu and COVID-19 Surveillance report. UKHSA continues to publish these weekly.

In section 10 of UKHSA's witness statement for Module 1 of the Inquiry dated 14 April 2023 as part of the reflection segment I cover 'Health Inequalities'. At the request of the Inquiry, it is repeated here and I address this issue additionally through my own personal Rule 9 statement:

640. Covid-19 demonstrated how health threats can very frequently disproportionately impact certain groups, and the importance of addressing health inequalities in our response to health threats. We know that some people and places are at greater risk of external health threats; more vulnerable to their effects; and less likely to benefit from interventions designed to prevent, detect and respond to those threats. To fulfil our mission as an organisation, UKHSA is developing a health equity strategy, focusing on how best to support those who face a disproportionate burden in relation to external health threats. Doing so will enable us to protect those at higher risk, but also provide more effective protection for the wider public and protect our economy and public services. Our focus for this strategy is making sure we have the right approach, capability and processes in place as an organisation to deliver this key critical objective. In driving efforts to provide health security for every person in every community, we will develop our role as a system leader working with partners to tackle the disproportionate burden of health hazards on specific communities and/or populations.

**Annex B**

| <b>Summary of the key health inequality publications as set out in the UKHSA Module 1 witness statement, as they pertain to the relevant period in Module 2</b> |                  |                 |  |             |  |
|---|------------------|-----------------|--|-------------|--|
| <b>M1 Para:</b>   | <b>INQ NO:</b>   | <b>Exh Ref:</b> | <b>Name</b>  | <b>Date</b> | <b>Context</b>   |
| 71  | INQ00009<br>0329 | JH1/021         | Equality in Public Health England How we met the Public Sector Equality Duty in 2020 | Sep-21      | PHE published reports on how it met its duties under the Equalities Act which touches upon the related duties under the HSCA 2012. The final report was published in 2020  |
| 573   | INQ00009<br>0352 | JH1/044         | Infectious Diseases Strategy 2020-2025   | Sep-19      | In it, health inequalities were highlighted as a strategic priority. It highlighted that many pathogens disproportionately affect groups already experiencing health inequalities, including the homeless. It highlighted that it would draw on PHE's experience working on health inequalities with noncommunicable diseases and continue to develop PHE's capability in behavioural science techniques. "Through Strategic priority 6, we will turn our attention to the infectious diseases burden associated with health inequalities, building evidence through research to characterise specific areas and develop strategies to reduce their impact on health." |
| 577   | INQ00009<br>0416 | JH1/090         | National Incident and Emergency Response Plan version 03:00                          | Jan-20      | When an incident is stood up a dynamic risk assessment (DRA) is completed in the   |

|      |              |         |  |        |   |
|------|--------------|---------|--|--------|---|
|      |              |         |  |        | initial alerting phase. The extant DRA methodology in 2020 included an assessment against five core criteria: Severity Confidence Interventions Context   |
| 582  | INQ000090387 | JH1/070 | The Pandemic Influenza Plan  | Aug-14 | PHE's primary relevant emergency planning documents as discussed in Section 5, the Pandemic Influenza Plan (2014). The Pandemic Influenza Plan (2014) defines the public health activities in each phase of an influenza pandemic, <b>which includes conducting the FF100 protocol.</b> |
| 595  | INQ000101216 | JH1/218 | PHE Immunisation Inequalities Strategy   | Feb-21 | PHE developed a strategy, conducted a health equity audit and a template for a local action plan for addressing inequalities in the national immunisation programme in 2019. Due to COVID-19 pandemic work pressures, this publication was delayed until February 2021.                 |
| 604  | INQ000101218 | JH1/20  | Disparities in the risks and outcomes of COVID-19  | Jun-20 | Disparities in the risks and outcomes of COVID-19 (June 2020)   |
| 604  | INQ000106482 | JH1/221 | Beyond the data: Understanding the impact of COVID-19 on BAME groups                                       | Jun-20 | Beyond the data: Understanding the impact of COVID-19 on BAME groups (June 2020)  |
| 605a | INQ000101220 | JH1/222 | Deaths of people identified as having learning disabilities with COVID-19 in England in the spring of 2020 | Nov-20 | Review of the available data on the deaths of people with learning disabilities in England during the COVID-19 pandemic (November 2020)   |

|      |                  |              |   |            |   |
|------|------------------|--------------|---|------------|---|
| 605b | INQ0001483<br>95 | JH1/222<br>a | COVID-19 Health Inequalities Monitoring for England (CHIME) tool<br><a href="https://analytics.phe.gov.uk/apps/chime/">https://analytics.phe.gov.uk/apps/chime/</a>   | May-21     | COVID-19 Health Inequalities Monitoring Tool for England (CHIME) tool, (launched May 2021) available on the government website  |
| 605c | INQ0001483<br>96 | JH1/22<br>2b | Wider Impacts of COVID-19 on Health (WICH)<br><a href="https://www.gov.uk/government/statistics/wider-impacts-of-covid-19-on-health-monitoring-tool">https://www.gov.uk/government/statistics/wider-impacts-of-covid-19-on-health-monitoring-tool</a> | May-21     | Wider Impacts of COVID-19 on Health (WICH)  |
| 605d | INQ00014839<br>7 | JH1/22<br>2c | Excess mortality in England and English Regions   | Mar-23     | Excess mortality in England and English Regions   |
| 610  | INQ00010<br>1221 | JH1/22<br>3  | Analysis of the relationship between pre-existing health conditions, ethnicity and COVID-19   | Dec-20     | The Race Disparity Unit in the Cabinet Office commissioned this report to determine whether a high prevalence of pre existing health conditions was a contributory factor to poor outcomes from COVID-19 in some ethnic groups.   |
| 611  | INQ00010<br>1220 | JH1/22<br>2  | Deaths of people identified as having learning disabilities with COVID-19 in England in the spring of 2020  | Nov-20     | DHSC commissioned PHE to review the available data on the deaths of people with learning disabilities in England during the COVID-19 pandemic.  |
| 615  | INQ0001483<br>98 | JH1/22<br>3a | Excess mortality in England and English regions   | Mar - 2023 | They present all cause excess deaths by age, sex, region, local authority, deprivation and ethnicity. They were produced weekly from July 2020 until May 2022 and are now produced monthly. Responsibility for producing the reports transferred to OHID on 1 October 2021. |
| 617  | INQ00010<br>1222 | JH1/22<br>4  | Health profile for England 2021   | Sep-21     | The 2021 edition of the Health Profile for England, provided a comprehensive  |

|     |                  |         |  |        |   |
|-----|------------------|---------|--|--------|---|
|     |                  |         |  |        | overview of the health of people in England and updated indicators presented in previous reports. It also contains a summary of the wider impact of the COVID-19 pandemic on many aspects of health and health inequalities. In addition, the report makes comparisons with health in a selection of other countries (US, Canada, Japan, France, Italy, Germany, Spain, Poland) where possible.   |
| 620 | INQ00010<br>1223 | JH1/225 | 56a - Report - data on disparities for COVID-19.docx | Nov-22 | Some disparities were passing, such as differences in COVID-19 mortality by region and population density. For example, the most notable regional difference in COVID-19 deaths was in London during the first wave, with almost double the age-standardised mortality rate observed in other regions. Likewise, in the first wave there was a clear relationship with higher mortality rates in areas with higher population density. However, after the first wave, trends by region and population density became less clear as COVID-19 spread through different geographies. |